Sensu Go

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Sensu is the industry leading solution for multi-cloud monitoring at scale. The Sensu monitoring event pipeline empowers businesses to automate their monitoring workflows and gain deep visibility into their multi-cloud environments. Founded in 2017, Sensu offers a comprehensive monitoring solution for enterprises, providing complete visibility across every system, every protocol, every time — from Kubernetes to bare metal.**Get started now and feel the #monitoringlove:** Learn Sensu Go.

Sensu Go is the latest version of Sensu, designed to be more portable, easier and faster to deploy, and (even more) friendly to containerized and ephemeral environments.Learn about support packages and license-activated features designed for monitoring at scale.

Automate your monitoring workflows: Limitless pipelines let you validate and correlate events, mutate data formats, send alerts, manage incidents, collect and store metrics, and more.

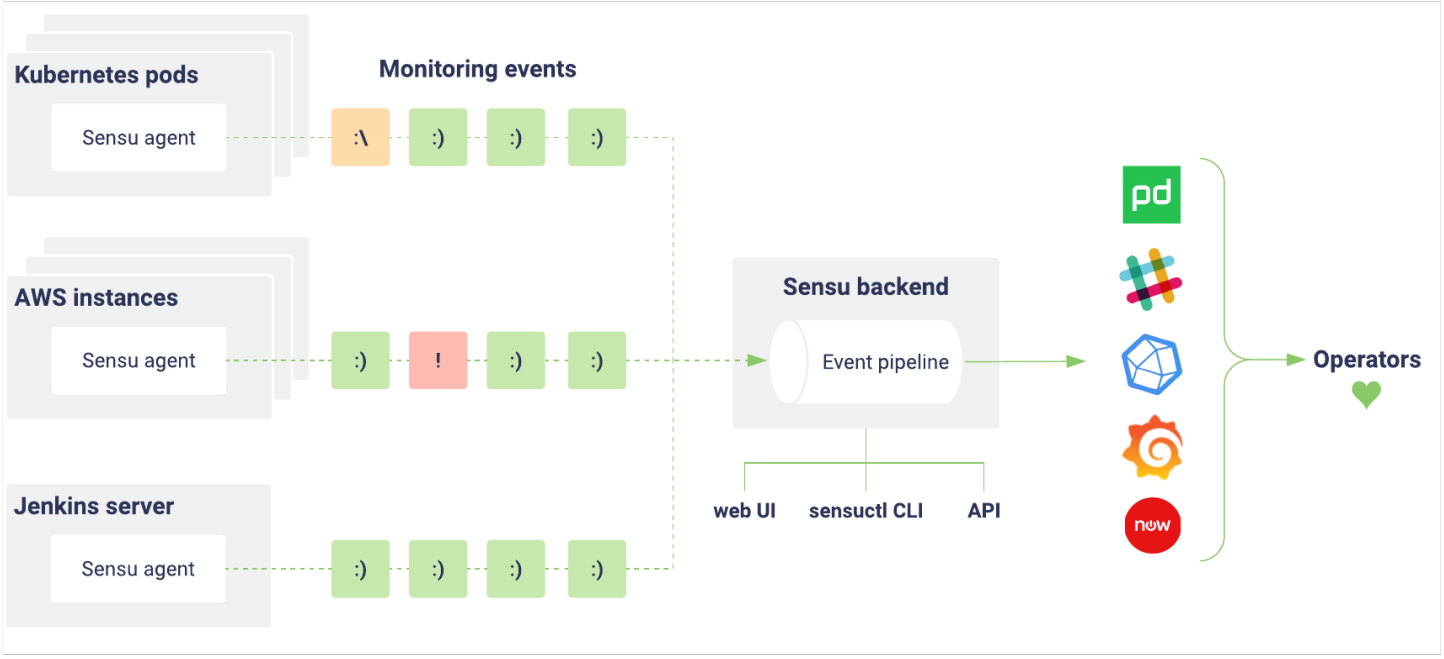
Reduce alert fatigue: Sensu gives you full control over your alerts with flexible filters, context-rich notifications, reporting, event handling, and auto-remediation.

Integrate anywhere: Sensu's open architecture makes it easy to integrate monitoring with tools you already use like Nagios plugins, Chef, Graphite, InfluxDB, and PagerDuty.

Listen to Sensu Inc. CEO Caleb Hailey explain the Sensu monitoring event pipeline.

Monitoring for Your Infrastructure

> Monitoring is the action of observing and checking the behaviors and outputs of a system and its components over time. - Greg Poirier, Monitorama 2016



Sensu is an agent-based monitoring tool that you install on your organization's infrastructure. The Sensu agent gives you visibility into everything you care about; the Sensu backend gives you flexible, automated workflows to route metrics and alerts.

Monitor containers, instances, applications, and on-premises infrastructure

Sensu is designed to monitor everything from the server closet to the cloud. Install the Sensu agent on the hosts you want to monitor, integrate with the Sensu API, or take advantage of proxy entities to monitor anything on your network. Sensu agents automatically register and de-register themselves with the Sensu backend, so you can monitor ephemeral infrastructure without getting overloaded with alerts.

Better incident response with filterable, context-rich alerts

Get meaningful alerts when and where you need them. Use event filters to reduce noise and check hooks to add context and speed up incident response. Sensu integrates with the tools and services your organization already uses like PagerDuty, Slack, and more. Check out Bonsai, the Sensu asset index, or write your own Sensu Plugins in any language.

Collect and store metrics with built-in support for industry-standard tools

Know what's going on everywhere in your system. Sensu supports industry-standard metric formats like Nagios Performance Data, Graphite Plaintext Protocol, InfluxDB Line Protocol, OpenTSDB Data Specification, and StatsD metrics. Use the Sensu agent to collect metrics alongside check results, then use the event pipeline to route the data to a time series database like InfluxDB.

Intuitive API and dashboard interfaces

Sensu includes a dashboard to provide a unified view of your entities, checks, and events, as well as a user-friendly silencing tool. The Sensu API and the `sensuctl` command-line tool allow you (and your internal customers) to create checks, register entities, manage configuration, and more.

Open core software backed by Sensu Inc.

Sensu Go's core is open source software, freely available under a permissive MIT License and publicly available on GitHub. Learn about support packages and license-activated features designed for monitoring at scale.

Sensu Go release notes

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Versioning

Sensu Go adheres to semantic versioning using MAJOR.MINOR.PATCH release numbers, starting at 5.0.0. MAJOR version changes indicate incompatible API changes; MINOR versions add backwards-compatible functionality; PATCH versions include backwards-compatible bug fixes.

Upgrading

Read the upgrade guide for information on upgrading to the latest version of Sensu Go.

5.13.2 release notes

September 19, 2019 — The latest release of Sensu Go, version 5.13.2, is now available for download. This release is a stability release that fixes a bug for users who have the postgresql event store enabled.See the upgrade guide to upgrade Sensu to version 5.13.2.

Fixes:

Metrics handlers now correctly receive metric points when the postgresql event store is enabled.

5.13.1 release notes

September 10, 2019 — The latest release of Sensu Go, version 5.13.1, is now available for download. This release is a stability release with bug fixes for multi-build asset definitions causing a panic when no matching filters are found.See the upgrade guide to upgrade Sensu to version 5.13.1.

FIXES:

Multi-build asset definitions with no matching filters will no longer cause a panic.
Fixed the `oidc` authentication provider resource.

5.13.0 release notes

September 9, 2019 — The latest release of Sensu Go, version 5.13.0, is now available for download. This is one of the most user-friendly releases yet! Sensuctl now integrates with Bonsai, the Sensu Go Asset index, making it easier than ever to fetch and use countless Sensu monitoring plugins and integrations. Additionally, sensuctl now supports loading resource configuration files (e.g. checks) from directories and URLs too! But that's not all! Sensuctl now provides a subcommand for exporting its configuration and API tokens to your shell environment. Use sensuctl to provide curl and custom scripts with fresh API access information! See the upgrading guide to upgrade Sensu to version 5.13.0.

NEW FEATURES:

Sensuctl now integrates with Bonsai, the Sensu Go Asset index, run a single sensuctl command to add an Asset to your Sensu cluster, e.g. `sensuctl asset add sensu/sensu-pagerduty-`

`handler:1.1.0`. Check to see which Assets are outdated (new releases available) with the `outdated` subcommand, e.g. `sensuctl asset outdated`.
Sensuctl now supports the `env` subcommand, for exporting sensuctl configuration and API tokens to your shell environment, e.g. `eval $(sensuctl env)`.
Sensuctl now supports loading multiple resource configuration files (e.g. checks, handlers, etc) from directories! Sensuctl can also load a file using a URL! e.g. `sensuctl create -r -f ./checks` and `sensuctl create -f https://my.blog.ca/sensu-go/check.yaml`.

FIXES:

Sensuctl interactive check create and update modes now have `none` for the metric output format as the first highlighted option, instead of `nagios-perfdata`.
Fixed a bug where silences would not expire on event resolution.

5.12.0 release notes

August 26, 2019 — The latest release of Sensu Go, version 5.12.0, is now available for download. There are some exciting feature additions in this release including the ability to output resources to a file from sensuctl and more granularity of control around checks/check hooks execution with an agent allow list. Additionally, this release includes the capability to delete assets and some more stability fixes around watcher functionality. See the upgrading guide to upgrade Sensu to version 5.12.0.

IMPORTANT:

Due to changes in the release process, Sensu binary-only archives are now named following the pattern `sensu-go_5.12.0_$OS_$ARCH.tar.gz`, where $OS is the operating system name and $ARCH is the CPU architecture. These archives include all files in the top level directory. See the installation guide for the latest download links.

NEW FEATURES:

Operators can now authenticate to Sensu via OpenID Direct Connect (OIDC) using sensuctl, see our authentication documentation for details.
Added sensu-agent and sensuctl binary builds for FreeBSD.
Added sensuctl dump command to output resources to a file or STDOUT, making it easier to backup your Sensu backends.
Agents can now be configured with a whitelist of executables which are allowed to run as check and hook commands. See the agent reference for more information.

IMPROVEMENTS:

Assets now support defining multiple builds, reducing the number of individual assets needed to cover disparate platforms in your infrastructure.
(Licensed tier) Namespaces listed in both the web UI and sensuctl are now limited to those which the user has access to.
Hooks now support the use of assets.
The event.check.name field has been added as a supported field selector.
Both the API and sensuctl can now be used to delete Assets.
The use of Protobuf serialization/deserialization over websocket can now be negotiated between agent and backend.
Web UI performance has been improved for deployments with many events and entities.
The resource caches can now rebuild themselves in case of failures.
Event and Entity resources can now be created via the API without an explicit namespace; the system will refer to the namespace in the request URL.
Event and Entity resources can now be created via the API using the POST verb.

SECURITY:

To prevent writing sensitive data to logs, decoded check result and keepalive payloads are no longer logged by the backend.

FIXES:

Tabular display of filters via Sensuctl now displays && or || as appropriate for inclusive and exclusive filters, respectively.
Requesting events from the GET /events/:entity API endpoint now returns events only for the specified entity.
Running sensuctl config view without configuration no longer causes a crash.
Creating an entity via sensuctl with the –interactive flag now prompts for the entity name when not provided on the command line.
Check hooks with stdin: true now receive actual event data on STDIN instead of an empty event.
Some issues with check scheduling and updating have been fixed by refactoring the backend's watcher implementation.

KNOWN ISSUES:

Authentication via OIDC is not yet supported in the Web UI.
Deleting an asset will not remove references to said asset. It is the operators responsibility to remove the asset from the runtime_assets field of the check, hook, filter, mutator, or handler.
Deleting an asset will not remove the tarball or downloaded files from disk. It is the operators responsibility to clear the asset cache if necessary.

5.11.1 release notes

July 18, 2019 — The latest release of Sensu Go, version 5.11.1, is now available for download. This release is a stability release with bug fixes for UPN format binding token renewal, adding of agent heartbeats and WebSocket connection negotiation made configurable. See the upgrade guide to upgrade Sensu to version 5.11.1.

FIXES:

Fixed access token renewal when UPN format binding was enabled.
The agent now sends heartbeats to the backend in order to detect network failures and reconnect faster.
The default handshake timeout for the WebSocket connection negotiation has been lowered from 45 to 15 seconds and is now configurable.

5.11.0 release notes

July 10, 2019 — The latest release of Sensu Go, version 5.11.0, is now available for download. There are some exciting feature additions in this release, including the ability to delete resources from sensuctl and manage filter and mutator resources in the web UI. Additionally, this release includes bug fixes around proxy checks and enhanced performance tuning for the PostgreSQL event store. See the upgrade guide to upgrade Sensu to version 5.11.0.

NEW FEATURES:

The Sensu web UI now includes a filters page that displays available event filters and filter configuration.
(Licensed tier) Manage your Sensu event filters from your browser: Sensu's web UI now supports creating, editing, and deleting filters.
The Sensu web UI now includes a mutators page that displays available mutators and mutator configuration.
(Licensed tier) Manage your Sensu mutators from your browser: Sensu's web UI now supports creating, editing, and deleting mutators.
sensuctl now includes the `sensuctl delete` command, letting you use resource definitions to delete resources from Sensu in the same way as `sensuctl create`. See the sensuctl reference for more information.
Assets now include a `headers` attribute to include HTTP headers in requests to retrieve assets, allowing you to access secured assets. See the asset reference for examples.
Sensu agents now support the `disable-assets` configuration flag, allowing you to disable asset retrieval for individual agents. See the agent reference for examples.
Sensu binary-only distributions are now available as zip files.

IMPROVEMENTS:

(Licensed tier) The Active Directory authentication provider now supports the `default_upn_domain` attribute, letting you appended a domain to a username when a domain is not specified during login.
(Licensed tier) The Active Directory authentication provider now supports the `include_nested_groups` attribute, letting you search nested groups instead of just the top level groups of which a user is a member.
The `sensuctl config view` command now returns the currently configured username. See the sensuctl reference for examples.
The Sensu API now returns the 201 Created response code for POST and PUT requests instead of 204 No Content.
The Sensu backend now provides advanced configuration options for buffer size and worker count of keepalives, events, and pipelines.
Sensu Go now supports Debian 10. For a complete list of supported platforms, see the platforms page.

FIXES:

The web UI now returns an error when attempting to create a duplicate check or handler.
Silenced entries are now retrieved from the cache when determining if an event is silenced.
The Sensu API now returns an error when trying to delete an entity that does not exist.
The agent WebSocket connection now performs basic authorization.
The /events API now correctly applies the current timestamp by default, fixing a regression in 5.10.0.
Multiple nested set handlers are now flagged correctly, fixing an issue in which they were flagged as deeply nested.
Round-robin proxy checks now execute as expected in the event of updated entities.
The Sensu backend now avoids situations of high CPU usage in the event that watchers enter a tight loop.
Due to incompatibility with the Go programming language, Sensu is incompatible with CentOS/RHEL 5. As a result, CentOS/RHEL 5 has been removed as a supported platform for all versions of Sensu Go.

5.10.2 release notes

June 27, 2019 — The latest release of Sensu Go, version 5.10.2, is now available for download. This is a stability release with a bug fix for expired licenses. See the upgrade guide to upgrade Sensu to version 5.10.2.

FIXES:

Sensu now handles expired licenses as expected.

5.10.1 release notes

June 25, 2019 — The latest release of Sensu Go, version 5.10.1, is now available for download. This release is a stability release with key bug fixes around proxy checks and entity deletion. See the upgrade guide to upgrade Sensu to version 5.10.1.

FIXES:

The proxy_requests entity_attributes are now all considered when matching entities.
Events are now removed when their corresponding entity is deleted.

5.10.0 release notes

June 19, 2019 — The latest release of Sensu Go, version 5.10.0, is now available for download. There are some exciting feature additions in this release, including the ability to perform advanced filtering in the web UI and use PostgreSQL as a scalable event store. This release also includes key bug fixes, most notably around high CPU usage. See the upgrade guide to upgrade Sensu to version 5.10.0.

NEW FEATURES:

(Licensed tier) The Sensu web UI now includes fast, predictive filtering for viewing checks, entities, events, handlers, and silences, including the ability to filter based on custom labels. Select the filter bar and start building custom views using suggested attributes and values. For more information, see the dashboard docs.
Free-tier Sensu instances can now delete entities in the web UI entities page. See the docs to get started using the Sensu web UI.
(Licensed tier) Sensu now supports using an external PostgreSQL instance for event storage in place of etcd. PostgreSQL can handle significantly higher volumes of Sensu events, letting you scale Sensu beyond etcd's storage limits. See the datastore reference for more information.
Sensu now includes a cluster ID API endpoint and `sensuctl cluster id` command to return the unique Sensu cluster ID. See the cluster API docs for more information.

IMPROVEMENTS:

The `sensuctl create` command now supports specifying the namespace for a group of resources at the time of creation, allowing you to replicate resources across namespaces without manual editing. See the sensuctl reference for more information and usage examples.
Sensu cluster roles can now include permissions to manage your Sensu license using the `license` resource type. See the RBAC reference to create a cluster role.

The web UI now displays up to 100,000 events and entities on the homepage.

FIXES:

Sensu now optimizes scheduling for proxy checks, solving an issue with high CPU usage when evaluating proxy entity attributes.
The Sensu API now validates resource namespaces and types in request bodies to ensure RBAC permissions are enforced.
Check `state` and `total_state_change` attributes now update as expected based on check history.
Incident and entity links in the web UI homepage now navigate to the correct views.
The web UI now displays non-standard cron statements correctly, for example: `@weekly`.
On sign in, the web UI now ensures that users are directed to a valid namespace.
In the web UI, code block scrollbars now display only when necessary.
The web UI now displays the handler `timeout` attribute correctly.
When editing resources, the web UI now fetches the latest resource prior to editing.
The web UI now handles array values correctly when creating and editing resources.

5.9.0 release notes

May 28, 2019 — The latest release of Sensu Go, version 5.9.0, is now available for download. There are some exciting feature additions in this release, including the ability to log raw events to a file (licensed tier) and view event handlers in the web UI. See the upgrade guide to upgrade Sensu to version 5.9.0. If you're upgrading a Sensu cluster from 5.7.0 or earlier, see the instructions for upgrading a Sensu cluster from 5.7.0 or earlier to 5.8.0 or later.

NEW FEATURES:

The Sensu web UI now includes a handlers page that displays available event handlers and handler configuration. See the docs to get started using the Sensu web UI.
(Licensed tier) Manage your Sensu event handlers from your browser: Sensu's web UI now supports creating, editing, and deleting handlers. See the docs to get started using the Sensu web UI.
(Licensed tier) Sensu now supports event logging to a file using the `event-log-file` and `event-log-buffer-size` configuration flags. You can use this event log file as an input source for your favorite data lake solution. See the backend reference for more information.

IMPROVEMENTS:

The Sensu web UI now includes simpler, more efficient filtering in place of filtering using Sensu query expressions.
Sensu packages are now available for Ubuntu 19.04 (Disco Dingo). See the supported platforms page for a complete list of Sensu's supported platforms and the installation guide to install Sensu packages

for Ubuntu.

FIXES:

The `occurrences` and `occurrences_watermark` event attributes now increment as expected, giving you useful information about recent events. See the events reference for an in-depth discussion of these attributes.
The `/silenced/subscriptions/:subscription` and `/silenced/checks/:check` API endpoints now return silences by check or subscription.
Sensu now handles errors when seeding initial data, avoiding a panic state.

5.8.0 release notes

May 22, 2019 — The latest release of Sensu Go, version 5.8.0, is now available for download. This is mainly a stability release with bug fixes and performance improvements. Additionally, we have added support for configurable etcd cipher suites. See the upgrade guide to upgrade Sensu to version 5.8.0.

IMPORTANT:

To upgrade to Sensu Go 5.8.0, Sensu clusters with multiple backend nodes must be shut down during the upgrade process. See the upgrade guide for more information.

IMPROVEMENTS:

The sensuctl command-line tool now supports the `--chunk-size` flag to help you handle large datasets. See the sensuctl reference for more information.
Sensu backends now support the `etcd-cipher-suites` configuration option, letting you specify the cipher suites that can be used with etcd TLS configuration. See the backend reference for more information.
The Sensu API now includes the version API, returning version information for your Sensu instance. See the API docs for more information.
Tessen now collects the numbers of events processed and resources created, giving us better insight into how we can improve Sensu. As always, all Tessen transmissions are logged for complete transparency. See the Tessen reference for more information.
Sensu licenses now include the entity limit attached to your Sensu licensing package. See the license management docs to learn more about entity limits.
Sensu backends now perform better at scale using increased worker pool sizes for events and keepalives.
The maximum size of the etcd database and etcd requests is now configurable using the `etcd-quota-backend-bytes` and `etcd-max-request-bytes` backend configuration options. These are advanced configuration options requiring familiarly with etcd; use with caution. See the backend

reference for more information.
Most Sensu resources now use protobuf serialization in etcd.

FIXES:

Events produced by checks now execute the correct number of write operations to etcd.
API pagination tokens for the users and namespaces APIs now work as expected.
Keepalive events for deleted and deregistered entities are now cleaned up as expected.

KNOWN ISSUES:

Auth tokens may not be purged from etcd, resulting in a possible impact to performance.

5.7.0 release notes

May 9, 2019 — The latest release of Sensu Go, version 5.7.0, is now available for download. This is mainly a stability release with bug fixes. Additionally, we have added support for Windows packages and updated our usage policy.See the upgrade guide to upgrade Sensu to version 5.7.0.

IMPROVEMENTS:

The Sensu agent for Windows is now available as an MSI package, making it easier to install and operate. See the installation guide and the agent reference to get started.

FIXES:

Sensu now enforces resource separation between namespaces sharing a similar prefix.
The `sensuctl cluster` commands now output correctly in JSON and wrapped JSON formats.
The API now returns an error message if label and field selectors are used without a license.

5.6.0 release notes

April 30, 2019 — The latest release of Sensu Go, version 5.6.0, is now available for download. We have added some exciting new features in this release including API filtering and the ability to create and manage checks through the web UI with the presence of a valid license key.See the upgrade guide to upgrade Sensu to version 5.6.0.

NEW FEATURES:

(Licensed tier) Manage your Sensu checks from your browser: Sensu's web user interface now supports creating, editing, and deleting checks. See the docs to get started using the Sensu web UI.
(Licensed tier) The Sensu web UI now includes an option to delete entities.
(Licensed tier) Sensu now supports resource filtering in the Sensu API and sensuctl command line tool. Filter events using custom labels and resource attributes, such as event status and check subscriptions. See the API docs and sensuctl reference for usage examples.

IMPROVEMENTS:

(Licensed tier) Sensu's LDAP and Active Directory integrations now support mutual authentication using the `trusted_ca_file`, `client_cert_file`, and `client_key_file` attributes. See the guide to configuring an authentication provider for more information.
(Licensed tier) Sensu's LDAP and Active Directory integrations now support connecting to an authentication provider using anonymous binding. See the LDAP and AD binding configuration docs to learn more.
The health API response now includes the cluster ID.
The `sensuctl cluster health` and `sensuctl cluster member-list` commands now include the cluster ID in tabular format.

FIXES:

You can now configure labels and annotations for Sensu agents using command line flags. For example: `sensu-agent start --label example_key="example value"`. See the agent reference for more examples.
The Sensu web UI now displays the correct checkbox state when no resources are present.

5.5.1 release notes

April 17, 2019 — The latest release of Sensu Go, version 5.5.1, is now available for download. This release is a stability release with key bug fixes, including addressing an issue with backend CPU utilization. Additionally, we have added support for honoring the source attribute for events received via agent socket.See the upgrade guide to upgrade Sensu to version 5.5.1.

IMPROVEMENTS:

Sensu agents now support annotations, non-identifying metadata that helps people or external tools interacting with Sensu. See the agent reference to add annotations in the agent configuration file.
The agent socket event format now supports the `source` attribute to create a proxy entity.
Sensu 5.5.1 is built with Go version 1.12.3.

FIXES:

Backends now reinstate etcd watchers in the event of a watcher failure, fixing an issue causing high CPU usage in some components.

5.5.0 release notes

April 4, 2019 — The latest release of Sensu Go, version 5.5.0, is now available for download. This release has some key bug fixes and additions including the introduction of Tessen into Sensu Go. For more information, we encourage you to read Sean Porter's blog post on Tessen. See the upgrade guide to upgrade Sensu to version 5.5.0.

NEW FEATURES:

Tessen, the Sensu call-home service, is now enabled by default in Sensu backends. See the Tessen docs to learn about the data that Tessen collects.

IMPROVEMENTS:

Sensu now includes more verbose check logging to indicate when a proxy request matches an entity according to its entity attributes.

FIXES:

The Sensu web UI now displays silences created by LDAP users.
The web UI now uses a secondary text color for quick-navigation buttons.

5.4.0 release notes

March 27, 2019 — The latest release of Sensu Go, version 5.4.0, is now available for download. This release has some very exciting feature additions including the introduction of our new homepage. 5.4.0 also includes support for API pagination to more efficiently handle large data sets and agent buffering for robustness in lower connectivity situations along with key bug fixes. See the upgrade guide to upgrade Sensu to version 5.4.0.

NEW FEATURES:

The Sensu dashboard now includes a homepage designed to highlight the most important monitoring data, giving you instant insight into the state of your infrastructure. See the dashboard docs for a preview.

The Sensu API now supports pagination using the `limit` and `continue` query parameters, letting you limit your API responses to a maximum number of objects and making it easier to handle large data sets. See the API overview for more information.
Sensu now surfaces internal metrics using the `/metrics` API. See the metrics API reference for more information.

IMPROVEMENTS:

Sensu now lets you specify a separate TLS certificate and key to secure the dashboard. See the backend reference to configure the `dashboard-cert-file` and `dashboard-key-file` flags, and check out the guide to securing Sensu for the complete guide to making your Sensu instance production-ready.
The Sensu agent events API now queues events before sending them to the backend, making the agent events API more robust and preventing data loss in the event of a loss of connection with the backend or agent shutdown. See the agent reference for more information.

FIXES:

The backend now processes events without persisting metrics to etcd.
The events API POST and PUT endpoints now add the current timestamp to new events by default.
The users API now returns a 404 response code in the event that a username cannot be found.
The sensuctl command line tool now correctly accepts global flags when passed after a sub-command flag (for example: `--format yaml --namespace development`).
The `sensuctl handler delete` and `sensuctl filter delete` commands now correctly delete resources from the currently configured namespace.
The agent now terminates consistently on SIGTERM and SIGINT.
In the event of a loss of connection with the backend, the agent now attempts to reconnect to any backends specified in its configuration.
The dashboard now handles cases in which the creator of a silence is inaccessible.
The dashboard event details page now displays “-” in the command field if no command is associated with the event.

5.3.0 release notes

March 11, 2019 — The latest release of Sensu Go, version 5.3.0, is now available for download. This release has some very exciting feature additions and key bug fixes. 5.3.0 enables Active Directory to be configured as an authentication provider with a valid license key. Additionally, round robin scheduling has been fully re-implemented and is available for use.See the upgrade guide to upgrade Sensu to version 5.3.0.

NEW FEATURES:

Round-robin check scheduling lets you distribute check executions evenly over a group of Sensu agents. To enable round-robin scheduling, set the `round_robin` check attribute to `true`. See the check reference for more information.
Sensu now provides license-activated support for using Microsoft Active Directory as an external authentication provider. Read the authentication guide to configure Active Directory, and check out the getting started guide for more information about licensing.
The dashboard now features offline state detection and displays an alert banner in the event that the dashboard loses connection to the backend.

IMPROVEMENTS:

The agent socket event format now supports the `handlers` attribute, giving you the ability to send socket events to a Sensu pipeline. See the agent reference to learn more about creating and handling monitoring events using the agent socket.
Assets now feature improved download performance using buffered I/O.
The sensuctl CLI now uses a 15-second timeout period when connecting to the Sensu backend.
The dashboard now includes expandable configuration details sections on the check and entity pages. You can now use the dashboard to review check details like command, subscriptions, and scheduling, as well as entity details like platform, IP address, and hostname.

SECURITY:

Sensu Go 5.3.0 fixes all known TLS vulnerabilities affecting the backend, including increasing the minimum supported TLS version to 1.2 and removing all ciphers except those with perfect forward secrecy.
Sensu now enforces uniform TLS configuration for all three backend components: `apid`, `agentd`, `dashboardd`.
The backend no longer requires the `trusted-ca-file` flag when using TLS.
The backend no longer loads server TLS configuration for the HTTP client.

FIXES:

Sensu can now download assets with download times over 30 seconds without timing out.
The agent now communicates entity subscriptions to the backend in the correct format.
Sensu no longer includes the `edition` configuration attribute or header.
DNS resolution in Alpine Linux containers now uses the built-in Go resolver instead of the glibc resolver.
The `sensuctl user list` command can now output `yaml` and `wrapped-json` formats when used with the `--format` flag.
The dashboard check details page now displays long commands correctly.
The dashboard check details page now displays the `timeout` attribute correctly.

5.2.1 release notes

February 11, 2019 — The latest release of Sensu Go, version 5.2.1, is now available for download. This release is a stability release with a key bug fix for proxy check functionality.See the upgrade guide to upgrade Sensu to version 5.2.1.

FIXES:

Sensu agents now execute checks for proxy entities at the expected interval.

5.2.0 release notes

February 7, 2019 — The latest release of Sensu Go, version 5.2.0, is now available for download. This release has a ton of exciting content, including the availability of our first enterprise-only features. For more details on these features, see our blog post. 5.2.0 also has some key improvements and fixes; we added support for self-signed CA certificates for sensuctl, check output truncation, and the ability to manage silencing from the event details page on our web UI just to name a few.See the upgrade guide to upgrade Sensu to version 5.2.0.

IMPORTANT:

Due to changes in the release process, Sensu binary-only archives are now named following the pattern `sensu-enterprise-go_5.2.0_$OS_$ARCH.tar.gz`, where $OS is the operating system name and $ARCH is the CPU architecture. These archives include all files in the top level directory. See the installation guide for the latest download links.

NEW FEATURES:

Announcing our first enterprise-only features for Sensu Go: LDAP authentication, the Sensu ServiceNow handler, and the Sensu JIRA handler. See the getting started guide for more information.
Sensu now provides the option to limit check output size or to drop check outputs following metric extraction. See the checks reference for more information.

IMPROVEMENTS:

Sensu now includes support for Debian 8 and 9. See the installation guide to install Sensu for Debian.
Sensu's binary-only distribution for Linux is now available for `arm64`, `armv5`, `armv6`, `armv7`, and `386` in addition to `amd64`. See the installation guide for download links.
The Sensu dashboard now provides the ability to silence and unsilence events from the events page.
The Sensu dashboard entity page now displays the platform version and deregistration configuration.

sensuctl now supports TLS configuration options, allowing you to use a self-signed certificate without adding it to the operating system's CA store, either by explicitly trusting the signer or by disabling TLS hostname verification. See the sensuctl reference for more information.
sensuctl now provides action-specific confirmation messages, like `Created`, `Deleted`, and `Updated`.

FIXES:

Check TTL failure events now persist through cluster member failures and cluster restarts.
The Sensu backend now correctly handles errors for missing keepalive events.
Token substituted values are now omitted from event data to protect sensitive information.
Sensu now correctly processes keepalive and check TTL states following entity deletion.
sensuctl can now run `sensuctl version` without being configured.
When disabling users, sensuctl now provides the correct prompt for the action.

5.1.1 release notes

January 24, 2019 — The latest patch release of Sensu Go, version 5.1.1, is now available for download. This release includes some key fixes and improvements, including refactored keepalive functionality with increased reliability. Additionally, based on Community feedback, we have added support for the Sensu agent and sensuctl for 32-bit Windows systems.See the upgrade guide to upgrade Sensu to version 5.1.1.

NEW FEATURES:

Sensu now includes a sensuctl command and API endpoint to test user credentials. See the access control reference and API docs for more information.

IMPROVEMENTS:

The Sensu agent and sensuctl tool are now available for 32-bit Windows. See the installation guide for instructions.
Keepalive events now include an output attribute specifying the entity name and time last sent.
The Sensu backend includes refactored authentication and licensing to support future enterprise features.

SECURITY:

Sensu 5.1.1 is built with Go version 1.11.5. Go 1.11.5 addresses a security vulnerability impacting TLS handshakes and JWT tokens. See the CVE for more information.

FIXES:

Keepalive events now continue to execute after a Sensu cluster restarts.
When requested, on-demand check executions now correctly retrieve asset dependencies.
Checks now maintain a consistent execution schedule following updates to the check definition.
Proxy check request errors now include the check name and namespace.
When encountering an invalid line during metric extraction, Sensu now logs an error and continues extraction.
sensuctl now returns an error when attempting to delete a non-existent entity.
sensuctl now removes the temporary file it creates when executing the `sensuctl edit` command.
The Sensu dashboard now recovers from errors correctly when shutting down.
The Sensu dashboard includes better visibility for buttons and menus in the dark theme.

5.1.0 release notes

December 19, 2018 — The latest release of Sensu Go, version 5.1.0, is now available for download. This release includes an important change to the Sensu backend state directory as well as support for Ubuntu 14.04 and some key bug fixes. See the upgrade guide to upgrade Sensu to version 5.1.0.

IMPORTANT:

NOTE: This applies only to Sensu backend binaries downloaded from `s3-us-west-2.amazonaws.com/sensu.io/sensu-go`, not to Sensu RPM or DEB packages. For Sensu backend binaries, the default `state-dir` is now `/var/lib/sensu/sensu-backend` instead of `/var/lib/sensu`. To upgrade your Sensu backend binary to 5.1.0, make sure your `/etc/sensu/backend.yml` configuration file specifies a `state-dir`. See the upgrade guide for more information.

NEW FEATURES:

Sensu agents now include `trusted-ca-file` and `insecure-skip-tls-verify` configuration flags, giving you more flexibility with certificates when connecting agents to the backend over TLS.

IMPROVEMENTS:

Sensu now includes support for Ubuntu 14.04.

FIXES:

The Sensu backend now successfully connects to an external etcd cluster.
SysVinit scripts for the Sensu agent and backend now include correct run and log paths.

Once created, keepalive alerts and check TTL failure events now continue to occur until a successful event is observed.
When querying for an empty list of assets, sensuctl and the Sensu API now return an empty array instead of null.
The sensuctl `create` command now successfully creates hooks when provided with the correct definition.
The Sensu dashboard now renders status icons correctly in Firefox.

5.0.1 release notes

December 12, 2018 — Sensu Go 5.0.1 includes our top bug fixes following last week's general availability release.See the upgrade guide to upgrade Sensu to version 5.0.1.

FIXED:

The Sensu backend can now successfully connect to an external etcd cluster.
The Sensu dashboard now sorts silences in ascending order, correctly displays status values, and reduces shuffling in the event list.
Sensu agents on Windows now execute command arguments correctly.
Sensu agents now correctly include environment variables when executing checks.
Command arguments are no longer escaped on Windows.
Sensu backend environments now include handler and mutator execution requests.

5.0.0 release notes

December 5, 2018 — We're excited to announce the general availability release of Sensu Go!Sensu Go is the flexible monitoring event pipeline, written in Go and designed for container-based and hybrid-cloud infrastructures.Check out the Sensu blog for more information about Sensu Go and version 5.0.

For a complete list of changes from Beta 8-1, see the Sensu Go changelog.Going forward, this page will be the official home for the Sensu Go changelog and release notes.

To get started with Sensu Go:

Download the sandbox
Install Sensu Go
Get started monitoring server resources

Get started with Sensu

Contents

Learn Sensu in 15 minutes

Get started with Sensu, and create your first monitoring event pipeline.

Get started in your browser with an interactive tutorial
Download the sandbox
Check out the live demo

Install Sensu Go (free tier)

Sensu Go is the flexible monitoring event pipeline, designed for container-based and multi-cloud infrastructures.Get started with the free tier by installing an official Sensu distribution.

Install Sensu Go
Discover Sensu assets
Learn about license-activated features

Monitor at scale (licensed tier)

Sensu Inc. offers support packages for Sensu Go as well as license-activated features designed for monitoring at scale.

Learn about license-activated features
Contact the sales team for a free trial
Activate your Sensu license

Build from source (OSS tier)

Sensu Go's core is open source software, freely available under an MIT license.

Visit Sensu Go on GitHub
Learn about OSS-tier features
Build from source

Getting started with license-activated features

Contents

Sensu Go offers license-activated features designed for monitoring at scale. Contact the Sensu sales team for a personalized demo and free trial. License-activated features are available for all Sensu Go packages and downloads. See the products page for a complete feature comparison.

License-activated features in Sensu Go

Manage your monitoring checks from your browser: Create, edit, and delete checks using the Sensu web UI.
Manage event handlers from your browser: Create, edit, and delete handlers using the Sensu web UI.
Authentication providers: Scale Sensu role-based access control with LDAP and Active Directory integrations.
Scalable resource filtering: Designed for large installations, label and field selectors let you filter Sensu API responses, sensuctl outputs, and Sensu web UI views using custom labels and a wider range of resource attributes.
Event logging: Log event data to a file that you can use as an input source for your favorite data lake solution. Using the event logging functionality provides better performance and reliability than using event handlers.
Enterprise-tier assets: Connect your monitoring event pipelines to industry-standard tools like ServiceNow and Jira with enterprise-tier assets.
Enterprise-scale event storage: Scale your Sensu instance and handle high volumes of events using a PostgreSQL event store.
Enterprise-class support: Sensu support gives you the assurance that help is available if you need it. Our expert in-house team offers best-in-class support to help get you up and running smoothly.

Contact us for a free trial

For a personalized demo and free trial of license-activated features in Sensu Go, contact the Sensu sales team. You can manage your Sensu account and contact support through account.sensu.io.

Contact the Sensu sales team

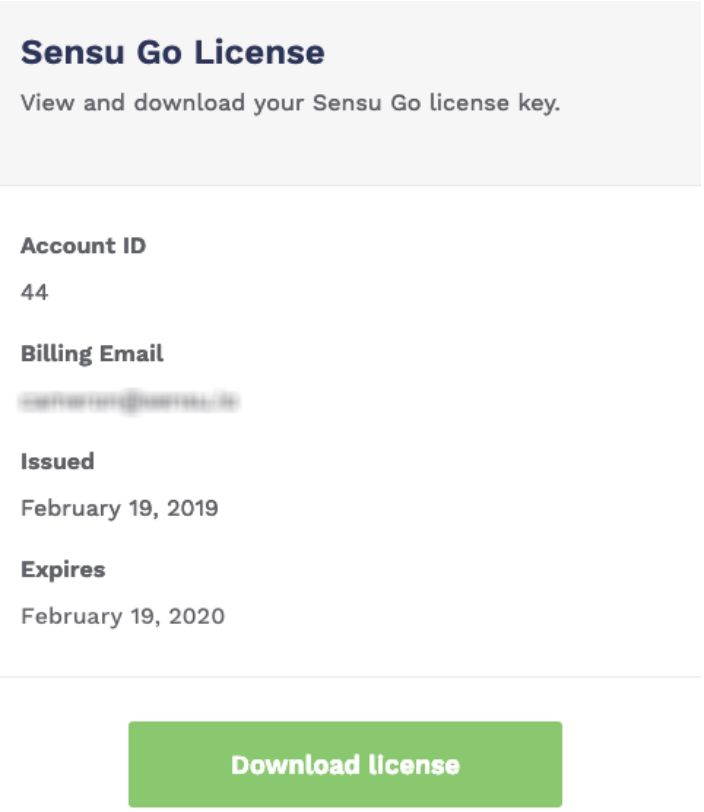
Log in to your Sensu account
Contact Sensu support

Get started with license-activated features in Sensu Go

If you haven't already, install the Sensu Go backend, agent, and sensuctl tool and configure sensuctl.

Log in to your Sensu account at account.sensu.ioand download your license file using the "Download license" link.

Sensu account: Download Sensu license.



With the license file downloaded, you can activate your license using sensuctl.

```
sensuctl create --file sensu_license.json
```

You can use sensuctl to view your license details at any time.

```
sensuctl license info
```

See these resources to get started using license-activated features in Sensu Go.

Set up authentication providers
Get started with assets
Manage your Sensu license
Log in to your Sensu account
Contact Sensu support

Sensu live demo

Contents

See a live demo of the Sensu dashboard (log in with username `guest` and password `i<3sensu`).

Explore the entities page to see what Sensu is monitoring, the events page to see the latest monitoring events, and the checks page to see active service and metric checks.

You can also use the demo to try out sensuctl, the Sensu command line tool. First, install sensuctl on your workstation, then configure sensuctl to connect to the demo.

```
sensuctl configure
? Sensu Backend URL: https://caviar.tf.sensu.io:8080
? Username: guest
? Password: i<3sensu
? Namespace: default
? Preferred output format: tabular
```

You should now be able to see the latest monitoring events.

```
sensuctl event list
```

See the sensuctl quickstart to get started using sensuctl.

About the demo

The Caviar project shown in the demo monitors the Sensu docs site using a licensed Sensu cluster of three backends.

Sensu sandbox

Contents

Welcome to the Sensu sandbox! The sandbox is the best place to get started with Sensu and try out new features.

Learn Sensu

Start here: Building your first monitoring workflow

Container monitoring

Container and application monitoring with Sensu: Monitoring a sample app on Kubernetes

Metrics

Sensu + Prometheus: Collecting Prometheus metrics with Sensu

Upgrading from Sensu 1.x to Sensu Go

Sensu translator: Translating check configuration

Glossary of Terms

Contents

Agent

A lightweight client that runs on the infrastructure components you want to monitor. Agents self-register with the backend, send keepalive messages, and execute monitoring checks. Each agent belongs to one or more subscriptions that determine which checks the agent runs. An agent can run checks on the entity it's installed on or by connecting to a remote proxy entity. Read more.

Asset

An asset is an executable that a check, handler, or mutator can specify as a dependency. Assets must be a tar archive (optionally gzipped) with scripts or executables within a bin folder. At runtime, the backend or agent installs required assets using the specified URL. Assets let you manage runtime dependencies without using configuration management tools. Read more.

Backend

A flexible, scalable monitoring event pipeline. The backend processes event data using filters, mutators, and handlers. It maintains configuration files, stores recent event data, and schedules monitoring checks. You can interact with the backend using the API, command line, and dashboard interfaces. Read more.

Check

A recurring check run by the agent to determine the state of a system component or collect metrics. The backend is responsible for storing check definitions, scheduling checks, and processing event data. Check definitions specify the command to be executed, an interval for execution, one or more subscriptions, and one or more handlers to process the resulting event data. Read more.

Check hook

A command executed by the agent in response to a check result, before creating a monitoring event. Hooks create context-rich events by gathering related information based on the check status.Read more.

Check token

A placeholder used in a check definition that the agent replaces with local information before executing the check.Tokens let you fine-tune check attributes (like thresholds) on a per-entity level while re-using the check definition.Read more.

Entity

Infrastructure components that you want to monitor.Each entity runs an agent that executes checks and creates events.Events can be tied to the entity where the agent runs or a proxy entity that the agent checks remotely.Read more.

Event

A representation of the state of an infrastructure component at a point in time, used by the backend to power the monitoring event pipeline.Event data includes the result of the check or metric (or both), the executing agent, and a timestamp.Read more.

Filter

Logical expressions that handlers evaluate before processing monitoring events.Filters can instruct handlers to allow or deny matching events based on day, time, namespace, or any attribute in the event data.Read more.

Handler

A component of the monitoring event pipeline that acts on events.Handlers can send monitoring event data to an executable (or handler plugin), a TCP socket, or a UDP socket.Read more.

Mutator

An executable run by the backend prior to the handler to transform event data.Read more.

Plugin

Sensu Plugins are executables designed to work with Sensu event data, either as a check plugin, mutator plugin, or handler plugin. You can write your own check executables in Go, Ruby, Python, and more, or use one of over 200 plugins shared by the Sensu Community. Read more.

Proxy Entity

Components of your infrastructure that can't run the agent locally (like a network switch or a website) but still need to be monitored. Agents create events with information about the proxy entity in place of the local entity when running checks with a specified proxy entity id. Read more.

RBAC

Role-based access control (RBAC) is Sensu's local user management system. RBAC lets you manage users and permissions with namespaces, users, roles, and role bindings. Read more.

Resources

Objects within Sensu that can be used to specify access permissions in Sensu roles and cluster roles. Resources can be specific to a namespace (like checks and handlers) or cluster-wide (like users and cluster roles). Read more.

Sensuctl

Command line tool that lets you interact with the backend. You can use sensuctl to create checks, view events, create users, manage cluster, and more. Read more.

Silencing

Silences allow you to suppress execution of event handlers on an ad-hoc basis. You can use silencing to schedule maintenances without being overloaded with alerts. Read more.

Sensu frequently asked questions

Contents

Thank you for visiting the Sensu FAQ! For a list of Sensu terms and definitions, see the glossary.

What platforms does Sensu support?

Sensu Go is available for Linux, Windows (agent and CLI only), macOS (CLI only), and Docker. See the list of supported platforms and the installation guide for more information.

Is Sensu available as a hosted solution?

No, Sensu is installed on your organization's infrastructure alongside other applications and services. See the list of supported platforms and the installation guide for more information.

What are the hardware requirements for running a Sensu

backend?

See the hardware requirements guide for minimum and recommended hardware to run a Sensu backend.

Is there an enterprise version of Sensu Go?

Yes! Sensu Inc. offers support packages for Sensu Go as well as license-activated features designed for monitoring at scale.Contact the Sensu sales team for a personalized demo, and see the getting started guide for more information.

What's the difference between the OSS tier, free tier, and licensed tier?

See the Enterprise page for a complete comparison.

How can I contact the Sensu sales team?

We'd love to chat about solving your organization's monitoring challenges with Sensu.Get in touch with us using this form.

What can I monitor with Sensu?

Sensu supports a wide range of plugins for monitoring everything from the server closet to the cloud. Install the Sensu agent on the hosts you want to monitor, integrate with the Sensu API, or take advantage of proxy entities to monitor anything on your network.Check out the 200+ plugins shared by the Sensu community, including monitoring checks for AWS, Jenkins, Puppet, InfluxDB, and SNMP. You can also get started writing your own Sensu Plugins in any language using the Sensu Plugins spec.

Does Sensu include a time series database for long-term storage?

No, Sensu does not store event data. We recommend integrating Sensu with a time series database, like InfluxDB, to store event data. See the guide to storing metrics with InfluxDB to get started.

Can I connect Sensu Go to clients and servers from earlier versions of Sensu Core and Sensu Enterprise?

No, Sensu Go agents and backends are not compatible with Sensu Core or Sensu Enterprise services.

Can I upgrade my Sensu version 1.x deployment to Sensu Go?

Sensu Go is a complete redesign of the original Sensu; it uses separate packages, dependencies, and data models to bring you powerful new features. See the Sensu Go release announcement for more information. Due to these changes, some features of Sensu 1.x are no longer supported in Sensu Go, such as standalone checks. To upgrade your Sensu 1.x deployment to Sensu Go, you'll need to translate your Sensu 1.x configuration to the format expected by Sensu Go and install the new Sensu Go services on your infrastructure. The Sensu Go upgrade guide includes a detailed feature comparison between Sensu Go and Sensu 1.x as well as tools to help you get started.

Which ports does Sensu use?

The Sensu backend uses:

2379 (HTTP/HTTPS) Sensu storage client: Required for Sensu backends using an external etcd instance
2380 (HTTP/HTTPS) Sensu storage peer: Required for other Sensu backends in a cluster
3000 (HTTP/HTTPS) Sensu dashboard: Required for all Sensu backends using a Sensu dashboard
8080 (HTTP/HTTPS) Sensu API: Required for all users accessing the Sensu API
8081 (WS/WSS) Agent API: Required for all Sensu agents connecting to a Sensu backend

The Sensu agent uses:

3030 (TCP/UDP) Sensu agent socket: Required for Sensu agents using the agent socket
3031 (HTTP) Sensu agent API: Required for all users accessing the agent API
8125 (UDP, TCP on Windows) StatsD listener: Required for all Sensu agents using the StatsD listener

For more information, see the guide to securing Sensu.

Can one Sensu backend monitor multiple sites?

Yes, as long as the port requirements described above are met, a single Sensu backend can monitor Sensu agents at multiple sites.

Is it possible to use Uchiwa with Sensu Go?

Due to Sensu Go's implementation, it is not possible to use Uchiwa with Sensu Go. Sensu Go does have a built-in dashboard that you can use to visually interact with your Sensu Go deployment.

Sensu Go media

Contents

Talks

Greg Poirier - Sensu Go Deep Dive at Sensu Summit 2017
Greg Poirier - Sensu Go Assets
Sean Porter, Influx Days - Data Collection & Prometheus Scraping with Sensu 5.0

Blog posts

Simon Plourde: Understanding RBAC in Sensu Go
Sean Porter: Self-service monitoring checks in Sensu Go
Christian Michel - How to monitor 1,000 network devices using Sensu Go and Ansible
Eric Chlebek - Filters: valves for the Sensu monitoring event pipeline
Greg Schofield - Sensu Habitat Core Plans are Here
Nikki Attea - Check output metric extraction with InfluxDB & Grafana
Jef Spaleta - Migrating to 5.0
Anna Plotkin - Sensu Go is here!

Tutorials

Sensu sandbox tutorials

Podcasts

Sensu Community Chat November 2018

NOTE: Prior to October 2018, Sensu Go was known as Sensu 2.0.

Installing Sensu

Contents

Sensu Go is available for Linux, Windows (agent and CLI only), macOS (CLI only), and Docker. If you're trying out Sensu for the first time, we recommend setting up a local environment using the Sensu sandbox. If you're deploying Sensu to your infrastructure, we recommend one of our supported packages, Docker images, or configuration management integrations. Sensu downloads are provided under the Sensu License; see the supported platforms page for more information.

Architecture overview

Powered by an an embedded transport and etcd datastore, the **Sensu backend** gives you flexible, automated workflows to route metrics and alerts. Sensu backends require persistent storage for their embedded database, disk space for local asset caching, and three exposed ports:

`3000` - Sensu web UI
`8080` - Sensu API used by sensuctl, some plugins, and any of your custom tooling
`8081` - WebSocket API used by Sensu agents

Sensu backends running in a clustered configuration require additional ports. See the deployment guide and hardware requirements guide for deployment recommendations.

Sensu agents are lightweight clients that run on the infrastructure components you want to monitor. Agents register automatically with Sensu as entities and are responsible for creating check and metric events to send to the backend event pipeline. Optionally, agents can expose ports `3031` for the agent API and `8125` for the StatsD listener. Agents using Sensu assets require some disk space for a local cache.

Install the Sensu backend

The Sensu backend is available for Ubuntu/Debian, RHEL/CentOS, and Docker. See the supported platforms page for more information.

1. Download

2. Configure and start

You can configure Sensu using `sensu-backend start` flags or an `/etc/sensu/backend.yml` file, the former taking precedence. At a minimum, the Sensu backend requires the `state-dir` flag, but here are some other useful configs and templates.

For a complete list of config options, see the backend reference.

3. Open the web UI

The web UI provides a unified view of your monitoring events with user-friendly tools to reduce alert fatigue. After starting the Sensu backend, open the web UI by visiting http://localhost:3000. You may need to replace `localhost` with the hostname or IP address where the Sensu backend is running.

To log in, enter your Sensu user credentials, or use Sensu's default admin credentials (username: `admin` and password: `P@ssw0rd!`). Select the ☰ icon to explore the web UI.

4. Make a request to the health API

To make sure the backend is up and running, we'll check the health of the backend using the Sensu API. You should see a response that includes `"Healthy": true`.

```
curl http://127.0.0.1:8080/health
```

Now that you've installed the Sensu backend, install and configure sensuctl to connect to your backend URL and start monitoring your infrastructure by installing Sensu agents.

Install sensuctl

Sensuctl is a command line tool for managing resources within Sensu. It works by calling Sensu's HTTP API to create, read, update, and delete resources, events, and entities. Sensuctl is available for Linux, Windows, and macOS.

To install sensuctl:

To start using sensuctl, run `sensuctl configure` and log in with your user credentials, namespace, and Sensu backend URL. To configure sensuctl using defaults:

```
sensuctl configure -n \
--username 'admin' \
--password 'P@ssw0rd!' \
--namespace default \
--url 'http://127.0.0.1:8080'
```

Here the `-n` flag triggers non-interactive mode. Run `sensuctl config view` to see your user profile. We strongly recommend that you change the default admin password immediately using `sensuctl user change-password --interactive`. For more information about using sensuctl, see the quickstart and reference docs.

Install Sensu agents

The Sensu agent is available for Ubuntu/Debian, RHEL/CentOS, Windows, and Docker. See the supported platforms page for more information.

1. Download

```
# Or via Chocolatey: choco install sensu-agent
```

2. Configure and start

You can configure the Sensu agent using `sensu-agent start` flags or an `/etc/sensu/agent.yml` file, the former taking precedence. At a minimum, the Sensu agent requires the `--backend-url` flag, but here are some other useful configs and templates.

For a complete list of config options, see the agent reference.

3. Verify keepalive events

Sensu keepalives are the heartbeat mechanism used to ensure that all registered agents are operational and able to reach the Sensu backend. To verify that the agent has registered with Sensu and is sending keepalive events, open the entity page in the Sensu web UI or run `sensuctl entity list`.

Activate licensed-tier features

Sensu Inc. offers support packages for Sensu Go as well as license-activated features designed for monitoring at scale. To learn more about license-activated features in Sensu Go, contact the Sensu sales team.

If you already have a Sensu license, log in to your Sensu account and download your license file, then activate your license using sensuctl.

```
sensuctl create --file sensu_license.json
```

You can use sensuctl to view your license details at any time.

```
sensuctl license info
```

For more information about license-activated features in Sensu Go, see the getting started guide.

Next steps

Now that you've installed Sensu, here are some resources to help continue your journey:

Send alerts to Slack
Monitor server resources
Collect StatsD metrics
Create a ready-only user

Installing Sensu Plugins

Contents

Sensu's functionality can be extended through the use of plugins. Plugins can provide executables for performing status or metric checks, mutators for changing data to a desired format, or handlers for performing an action on a Sensu event.

Installing plugins using assets

Assets are shareable, reusable packages that make it easy to deploy Sensu plugins. To get started using and deploying assets, we recommend starting with this guide on installing assets. It has everything you need to familiarize yourself with workflows involving assets.

Using the Bonsai Asset Index

Sensu's Bonsai Asset Index provides a centralized place for downloading and sharing plugin assets. If you ever need to find an asset, this is the first to stop. There, you'll find plugins, libraries and runtimes you need to automate your monitoring workflows. If you'd like to share your asset on Bonsai, we recommend reading this guide on sharing your asset.

Installing plugins using the sensu-install tool

If you've used previous versions of Sensu, you'll be familiar with the Sensu Plugins organization on GitHub. While some of these plugins are Sensu Go-enabled, not all of them contain the components necessary to work with Sensu Go. See individual plugin instructions for information about compatibility with Sensu Go.

NOTE: Plugins found in the Sensu Plugins GitHub organization are community-maintained, meaning that anyone can improve on a plugin found there. If you have a question about how you can get involved in adding to, or providing a plugin, head to the Sensu Community Slack channel. Maintainers are always happy to help answer questions and point you in the right direction.

To use community plugins that are not yet Sensu Go-enabled, you'll need to use the `sensu-install` tool. This tool comes with an embedded version of Ruby, so there's no need for Ruby to be installed on your system.

To install a Sensu Community Plugin with Sensu Go:

1. Install the sensu-plugins-ruby package from packagecloud.

2. Use the `sensu-install` command to install any plugins in the Sensu Plugins organization on GitHub by repository name. Plugins are installed into `/opt/sensu-plugins-ruby/embedded/bin`.

```
sensu-install --help
Usage: sensu-install [options]
    -h, --help                       Display this message
    -v, --verbose                    Enable verbose logging
    -p, --plugin PLUGIN              Install a Sensu PLUGIN
    -P, --plugins PLUGIN[,PLUGIN]    PLUGIN or comma-delimited list of Sensu plugins
to install
    -e, --extension EXTENSION        Install a Sensu EXTENSION
    -E, --extensions EXTENSION[,EXT] EXTENSION or comma-delimited list of Sensu
extensions to install
    -s, --source SOURCE              Install Sensu plugins and extensions from a
custom SOURCE
    -c, --clean                      Clean up (remove) other installed versions of
the plugin(s) and/or extension(s)
    -x, --proxy PROXY                Install Sensu plugins and extensions via a
PROXY URL
```

For example, to install the Sensu InfluxDB Plugin:

```
sudo sensu-install -p influxdb
```

To install a specific version of the Sensu InfluxDB Plugin with `sensu-install`, run:

```
sudo sensu-install -p 'sensu-plugins-influxdb:2.0.0'
```

We strongly recommend using a configuration management tool or using Sensu assets to pin the versions of any plugins installed in production.

NOTE: If a plugin is not Sensu Go-enabled and there is not analog on Bonsai, it is possible to add the necessary functionality. This guide on [discourse.sensu.io] will walk you through that process.

Troubleshooting the sensu-install tool

Some plugins, such as the Sensu Disk Checks Plugin, require additional tools to install successfully. Depending on the plugin, you may need to install developer tool packages.

Ubuntu/Debian:

```
sudo apt-get update
```

```
sudo apt-get install build-essential
```

RHEL/CentOS:

```
sudo yum update
```

```
sudo yum groupinstall "Development Tools"
```

Upgrading Sensu

Contents

Upgrading to the latest version of Sensu Go from 5.0.0 or later

To upgrade to the latest version of Sensu Go from version 5.0.0 or later, first install the latest packages.

Then restart the services.

NOTE: For systems using `systemd`, run `sudo systemctl daemon-reload` before restarting the services.

```
# Restart the Sensu agent
sudo service sensu-agent restart

# Restart the Sensu backend
sudo service sensu-backend restart
```

You can use the `version` command to determine the installed version using the `sensu-agent`, `sensu-backend`, and `sensuctl` tools. For example: `sensu-backend version`.

Upgrading Sensu clusters from 5.7.0 or earlier to 5.8.0 or later

NOTE: This applies only to Sensu clusters with multiple backend nodes.

Due to updates to etcd serialization, Sensu clusters with multiple backend nodes must be shut down while upgrading from Sensu Go 5.7.0 or earlier to 5.8.0 or later. See the backend reference for more information about stopping and starting backends.

Upgrading Sensu backend binaries to 5.1.0

NOTE: This applies only to Sensu backend binaries downloaded from `s3-us-west-2.amazonaws.com/sensu.io/sensu-go`, not to Sensu RPM or DEB packages.

For Sensu backend binaries, the default `state-dir` in 5.1.0 is now `/var/lib/sensu/sensu-backend` instead of `/var/lib/sensu`. To upgrade your Sensu backend binary to 5.1.0, first download the latest version, then make sure the `/etc/sensu/backend.yml` configuration file specifies a `state-dir`. To continue using `/var/lib/sensu` as the `state-dir`, add the following configuration to `/etc/sensu/backend.yml`.

```
# /etc/sensu/backend.yml configuration to store backend data at /var/lib/sensu
state-dir: "/var/lib/sensu"
```

Then restart the backend.

Migrating to Sensu Go from Sensu Core 1.x

This guide provides general information for migrating your Sensu instance from Sensu Core 1.x to Sensu Go 5.0. For instructions and tools to help you translate your Sensu configuration from Sensu Core 1.x to Sensu Go, see the following resources.

Sensu translator project
Jef Spaleta - Check configuration upgrades with the Sensu Go sandbox

Sensu Go includes important changes to all parts of Sensu: architecture, installation, resource definitions, event data model, check dependencies, filter evaluation, and more. Sensu Go also includes a lot of powerful features to make monitoring easier to build, scale, and offer as a self-service tool to your internal customers.

Packaging

Packaging

Sensu is now provided as three packages: sensu-go-backend, sensu-go-agent, and sensu-go-cli (sensuctl). This results in a fundamental change in Sensu terminology from Sensu Core 1.x: the server is now the backend; the client is now the agent. To learn more about new terminology in Sensu Go, see the glossary.

Architecture

The external RabbitMQ transport and Redis datastore in Sensu Core 1.x have been replaced with an embedded transport and etcd datastore in Sensu Go. The Sensu backend and agent are configured using YAML files or using the `sensu-backend` or `sensu-agent` command-line tools, instead of using JSON files. Sensu checks and pipeline elements are now configured via the API or sensuctl tool instead of JSON files. See the backend, agent, and sensuctl reference docs for more information.

Entities

“Clients” are now represented within Sensu Go as abstract “entities” that can describe a wider range of system components (network gear, web server, cloud resource, etc.). Entities include “agent entities” (entities running a Sensu agent) and familiar “proxy entities”. See the entity reference and the guide to monitoring external resources for more information.

Checks

Standalone checks are no longer supported in Sensu Go, although similar functionality can be

achieved using role-based access control, assets, and entity subscriptions. There are also a few changes to check definitions to be aware of. The `stdin` check attribute is no longer supported in Sensu Go, and Sensu Go no longer tries to run a “default” handler when executing a check without a specified handler. Additionally, check subdues are not yet available in Sensu Go.

Check hooks are now a resource type in Sensu Go, meaning that hooks can be created, managed, and reused independently of check definitions. You can also execute multiple hooks for any given response code.

Events

All check results are now considered events and are processed by event handlers. You can use the built-in incidents filter to recreate the Sensu Core 1.x behavior in which only check results with a non-zero status are considered events.

Handlers

Transport handlers are no longer supported by Sensu Go, but you can create similar functionality using a pipe handler that connects to a message bus and injects event data into a queue.

Filters

Ruby eval logic has been replaced with JavaScript expressions in Sensu Go, opening up powerful possibilities to filter events based on occurrences and other event attributes. As a result, the built-in occurrences filter in Sensu Core 1.x is not provided in Sensu Go, but you can replicate its functionality using this filter definition. Sensu Go includes three new built-in filters: only-incidents, only-metrics, and allow-silencing. Sensu Go does not yet include a built-in check dependencies filter or a filter-when feature.

Assets

The sensu-install tool has been replaced in Sensu Go by assets, shareable, reusable packages that make it easy to deploy Sensu plugins. Sensu Plugins in Ruby can still be installed via sensu-install by installing sensu-plugins-ruby; see the installing plugins guide for more information.

Role-based access control

Role-based access control (RBAC) is a built-in feature of the open-source version of Sensu Go. RBAC

allows management and access of users and resources based on namespaces, groups, roles, and bindings. To learn more about setting up RBAC in Sensu Go, see the RBAC reference and the guide to creating a read-only user.

Silencing

Silencing is now disabled by default in Sensu Go and must be enabled explicitly using the built-in `not_silenced` filter.

Token substitution

The syntax for using token substitution has changed from using triple colons to using double curly braces.

Aggregates

Check aggregates are supported through the license-activated Sensu Go Aggregate Check Plugin.

API

In addition to the changes to resource definitions, Sensu Go includes a new, versioned API. See the API overview for more information.

Custom attributes

Custom check attributes are no longer supported in Sensu Go. Instead, Sensu Go provides the ability to add custom labels and annotations to entities, checks, assets, hooks, filters, mutators, handlers, and silences. See the metadata attributes section in the reference documentation for more information about using labels and annotations (for example: metadata attributes for entities).

Authentication

Contents

Sensu requires username and password authentication to access the Sensu dashboard, API, and command line tool (sensuctl). For Sensu's default user credentials and more information about configuring Sensu role based access control, see the RBAC reference and guide to creating users.

In addition to built-in RBAC, Sensu includes license-activated support for authentication using external authentication providers. Sensu currently supports Microsoft Active Directory and standards-compliant Lightweight Directory Access Protocol tools like OpenLDAP.

LICENSED TIER: Unlock authentication providers in Sensu Go with a Sensu license. To activate your license, see the getting started guide.

Managing authentication providers

You can view and delete authentication providers using sensuctl and the authentication providers API. To set up an authentication provider for Sensu, see the section on configuring authentication providers.

To view active authentication providers:

```
sensuctl auth list
```

To view configuration details for an authentication provider named `openldap`:

```
sensuctl auth info openldap
```

To delete an authentication provider named `openldap`:

```
sensuctl auth delete openldap
```

Configuring authentication providers

1. Write an authentication provider configuration definition

Write an authentication provider configuration definition.

For standards-compliant Lightweight Directory Access Protocol tools like OpenLDAP, see the LDAP configuration examples and specification.For Microsoft Active Directory, see the AD configuration examples and specification.

2. Apply the configuration using sensuctl

Log in to sensuctl as the default admin user and apply the configuration to Sensu.

```
sensuctl create --file filename.json
```

You can verify that your provider configuration has been applied successfully using sensuctl.

```
sensuctl auth list

  Type     Name
 ──────── ────────────
```

```
ldap   openldap
```

3. Integrate with Sensu RBAC

Now that you've configured an authentication provider, you'll need to configure Sensu RBAC to give those users permissions within Sensu. Sensu RBAC allows management and access of users and resources based on namespaces, groups, roles, and bindings. See the RBAC reference for more information about configuring permissions in Sensu and implementation examples.

Namespaces partition resources within Sensu. Sensu entities, checks, handlers, and other namespaced resources belong to a single namespace.
Roles create sets of permissions (get, delete, etc.) tied to resource types. **Cluster roles** apply permissions across namespaces and include access to cluster-wide resources like users and namespaces.
Role bindings assign a role to a set of users and groups within a namespace; **cluster role bindings** assign a cluster role to a set of users and groups cluster-wide.

To enable permissions for external users and groups within Sensu, create a set of roles, cluster roles, role bindings, and cluster role bindings that map to the usernames and group names found in your authentication providers. Make sure to include the group prefix and username prefix when creating Sensu role bindings and cluster role bindings. Without an assigned role or cluster role, users can sign in to the Sensu dashboard but can't access any Sensu resources.

4. Log in to Sensu

Once you've configured the correct roles and bindings, log in to sensuctl and the Sensu dashboard using your single-sign-on username and password (no prefix required).

LDAP authentication

Sensu offers license-activated support for using a standards-compliant Lightweight Directory Access Protocol tool for authentication to the Sensu dashboard, API, and sensuctl. The Sensu LDAP authentication provider is tested with OpenLDAP. Active Directory users should head over to the Active Directory section.

LDAP configuration examples

Example LDAP configuration: Minimum required attributes

Example LDAP configuration: All attributes

LDAP specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. LDAP definitions should always be of type `ldap`.
required	true
type	String
example	`"type": "ldap"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For LDAP definitions, this attribute should always be `authentication/v2`.
required	true
type	String
example	`"api_version": "authentication/v2"`

metadata	
description	Top-level map containing the LDAP definition `name`. See the metadata attributes reference for details.
required	true
type	Map of key-value pairs
example	`"metadata": { "name": "openldap" }`

spec	
description	Top-level map that includes the LDAP spec attributes.
required	true
type	Map of key-value pairs
example	

```
"spec": {
  "servers": [
    {
      "host": "127.0.0.1",
      "port": 636,
      "insecure": false,
      "security": "tls",
      "trusted_ca_file": "/path/to/trusted-certificate-
authorities.pem",
      "client_cert_file": "/path/to/ssl/cert.pem",
      "client_key_file": "/path/to/ssl/key.pem",
      "binding": {
        "user_dn": "cn=binder,dc=acme,dc=org",
        "password": "P@ssw0rd!"
      },
```

```
        "group_search": {
          "base_dn": "dc=acme,dc=org",
          "attribute": "member",
          "name_attribute": "cn",
          "object_class": "groupOfNames"
        },
        "user_search": {
          "base_dn": "dc=acme,dc=org",
          "attribute": "uid",
          "name_attribute": "cn",
          "object_class": "person"
        }
      }
    ],
    "groups_prefix": "ldap",
    "username_prefix": "ldap"
}
```

Spec attributes

servers	
description	An array of LDAP servers for your directory. During the authentication process, Sensu attempts to authenticate using each LDAP server in sequence.
required	true
type	Array
example	"servers": [{ "host": "127.0.0.1", "port": 636, "insecure": false,

```
    "security": "tls",
    "trusted_ca_file": "/path/to/trusted-certificate-authorities.pem",
    "client_cert_file": "/path/to/ssl/cert.pem",
    "client_key_file": "/path/to/ssl/key.pem",
    "binding": {
      "user_dn": "cn=binder,dc=acme,dc=org",
      "password": "P@ssw0rd!"
    },
    "group_search": {
      "base_dn": "dc=acme,dc=org",
      "attribute": "member",
      "name_attribute": "cn",
      "object_class": "groupOfNames"
    },
    "user_search": {
      "base_dn": "dc=acme,dc=org",
      "attribute": "uid",
      "name_attribute": "cn",
      "object_class": "person"
    }
  }
]
```

`groups_prefix`

description: The prefix added to all LDAP groups. Sensu prepends prefixes with a colon. For example, for the groups prefix `ldap` and the group `dev`, the resulting group name in Sensu is `ldap:dev`. Use this prefix when integrating LDAP groups with Sensu RBAC role bindings

pti o n	and cluster role bindings.
re q ui re d	false
ty p e	String
ex a m pl e	`"groups_prefix": "ldap"`
u s e r n a m e _ p r e fi x	
d es cri pti o n	The prefix added to all LDAP usernames. Sensu prepends prefixes with a colon. For example, for the username prefix `ldap` and the user `alice`, the resulting username in Sensu is `ldap:alice`. Use this prefix when integrating LDAP users with Sensu RBAC role bindings and cluster role bindings. Users *do not* need to provide this prefix when logging in to Sensu.

required	false
type	String
example	`"username_prefix": "ldap"`

Server attributes

host

description	LDAP server IP address or FQDN
required	true
type	String
example	`"host": "127.0.0.1"`

port

description	LDAP server port
required	true
type	Integer
default	`389` for insecure connections, `636` for TLS connections

example	`"port": 636`

insecure

description	Skips SSL certificate verification when set to `true`. *WARNING: Do not use an insecure connection in production environments.*
required	false
type	Boolean
default	`false`
example	`"insecure": false`

security

description	Determines the encryption type to be used for the connection to the LDAP server: `insecure` (unencrypted connection, not recommended for production), `tls` (secure encrypted connection), or `starttls` (unencrypted connection upgrades to a secure connection).
ty	String

type	
default	`"tls"`
example	`"security": "tls"`

trusted_ca_file

description	Path to an alternative CA bundle file in PEM format to be used instead of the system's default bundle. This CA bundle is used to verify the server's certificate.
required	false
type	String
example	`"trusted_ca_file": "/path/to/trusted-certificate-authorities.pem"`

client_cert_file

description	Path to the certificate that should be sent to the server if it requests it
required	false
type	String
example	

```
"client_cert_file": "/path/to/ssl/cert.pem"
```

client_key_file	
description	Path to the key file associated with the `client_cert_file`
required	false
type	String
example	`"client_key_file": "/path/to/ssl/key.pem"`

binding	
description	The LDAP account that performs user and group lookups. If your sever supports anonymous binding, you can omit the `user_dn` or `password` attributes to query the directory without credentials.
required	false
type	Map
example	`"binding": { "user_dn": "cn=binder,dc=acme,dc=org", "password": "P@ssw0rd!" }`

group_search	
description	Search configuration for groups. See the group search attributes for more information.
required	true
type	Map

example	"group_search": {
	"base_dn": "dc=acme,dc=org",
	"attribute": "member",
	"name_attribute": "cn",
	"object_class": "groupOfNames"
	}

user_search	
description	Search configuration for users. See the user search attributes for more information.
required	true
type	Map

example	"user_search": {
	"base_dn": "dc=acme,dc=org",
	"attribute": "uid",
	"name_attribute": "cn",
	"object_class": "person"
	}

Binding attributes

user_dn

description	The LDAP account that performs user and group lookups. We recommend using a read-only account. Use the distinguished name (DN) format, such as `cn=binder,cn=users,dc=domain,dc=tld`. If your sever supports anonymous binding, you can omit this attribute to query the directory without credentials.
required	false
type	String
example	`"user_dn": "cn=binder,dc=acme,dc=org"`

password

description	Password for the `user_dn` account. If your sever supports anonymous binding, you can omit this attribute to query the directory without credentials.
required	false
type	String
example	`"password": "P@ssw0rd!"`

Group search attributes

base_dn

description	Tells Sensu which part of the directory tree to search. For example, `dc=acme,dc=org` searches within the `acme.org` directory.
required	true
type	String
example	`"base_dn": "dc=acme,dc=org"`

attribute

description	Used for comparing result entries. This is combined with other filters as `"(<Attribute>=<value>)"`.
required	false
type	String

default	`"member"`
example	`"attribute": "member"`

name_attribute

description	Represents the attribute to use as the entry name.
required	false
type	String
default	`"cn"`
example	`"name_attribute": "cn"`

object_class

description	Identifies the class of objects returned in the search result. This is combined with other filters as `"(objectClass=<ObjectClass>)"`.
required	false
type	String
default	`"groupOfNames"`
example	`"object_class": "groupOfNames"`

User search attributes

base_dn

description	Tells Sensu which part of the directory tree to search. For example, `dc=acme,dc=org` searches within the `acme.org` directory.
required	true
type	String
example	`"base_dn": "dc=acme,dc=org"`

attribute

description	Used for comparing result entries. This is combined with other filters as `"(<Attribute>=<value>)"`.
required	false
type	String
default	`"uid"`
example	`"attribute": "uid"`

name_attribute

description	Represents the attribute to use as the entry name.
required	false
type	String
default	`"cn"`
example	

```
"name_attribute": "cn"
```

object_class	
description	Identifies the class of objects returned in the search result. This is combined with other filters as `"(objectClass=<ObjectClass>)"`.
required	false
type	String
default	`"person"`
example	`"object_class": "person"`

Metadata attributes

name	
description	A unique string used to identify the LDAP configuration. Names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`).
required	true
type	String
example	`"name": "openldap"`

LDAP troubleshooting

In order to troubleshoot any issue with LDAP authentication, the first step should always be to increase log verbosity of sensu-backend to the debug log level. Most authentication and authorization errors are only displayed on the debug log level, in order to avoid flooding the log files.

NOTE: If you can't locate any log entries referencing LDAP authentication, make sure the LDAP provider was successfully installed using sensuctl

Authentication errors

Here are some common error messages and possible solutions:

Error message: `failed to connect: LDAP Result Code 200 "Network Error"`

The LDAP provider couldn't establish a TCP connection to the LDAP server. Verify the `host` & `port` attributes. If you are not using LDAP over TLS/SSL , make sure to set the value of the `security` attribute to `"insecure"` for plaintext communication.

Error message: `certificate signed by unknown authority`

If you are using a self-signed certificate, make sure to set the `insecure` attribute to `true`. This will bypass verification of the certificate's signing authority.

Error message: `failed to bind: ...`

The first step for authenticating a user with the LDAP provider is to bind to the LDAP server using the service account specified in the `binding` object . Make sure the `user_dn` specifies a valid **DN**, and its password is the right one.

Error message: `user <username> was not found`

The user search failed, no user account could be found with the given username. Go look at the `user_search` object and make sure that:

The specified `base_dn` contains the requested user entry DN
The specified `attribute` contains the *username* as its value in the user entry
The `object_class` attribute corresponds to the user entry object class

Error message: `ldap search for user <username> returned x results, expected only 1`

The user search returned more than one user entry, therefore the provider could not determine which of these entries should be used. The `user_search` object needs to be tweaked so the provided *username* can be used to uniquely identify a user entry. Here's few possible way of doing it:

Adjust the `attribute` so its value (which corresponds to the *username*) is unique amongst the user entries
Adjust the `base_dn` so it only includes one of the user entries

Error message: `ldap entry <DN> missing required attribute <name_attribute>`

The user entry returned (identified by `<DN>`) doesn't include the attribute specified by `name_attribute` object. Therefore the LDAP provider could not determine which attribute to use as the username in the user entry. The `name_attribute` should be adjusted so it specifies a human friendly name for the user.

Error message: `ldap group entry <DN> missing <name_attribute> and cn attributes`

The group search returned a group entry (identified by `<DN>`) that doesn't have the `name_attribute` attribute nor a `cn` attribute. Therefore the LDAP provider could not determine which attribute to use as the group name in the group entry. The `name_attribute` should be adjusted so it specifies a human friendly name for the group.

Authorization issues

Once authenticated, a user needs to be granted permissions via either a `ClusterRoleBinding` or a `RoleBinding`.

The way in which LDAP users and LDAP groups can be referred as subjects of a cluster role or role binding depends on the `groups_prefix` and `username_prefix` configuration attributes values of the LDAP provider. For example, for the groups prefix `ldap` and the group `dev`, the resulting group name in Sensu is `ldap:dev`.

Issue: Permissions are not granted via the LDAP group(s)

During authentication, the LDAP provider will print in the logs all groups found in LDAP, e.g. `found 1 group(s): [dev]`. Keep in mind that this group name does not contain the `groups_prefix` at this point.

The Sensu backend logs each attempt made to authorize an RBAC request. This is useful for determining why a specific binding didn't grant the request. For example:

```
[...] the user is not a subject of the ClusterRoleBinding cluster-admin [...]
[...] could not authorize the request with the ClusterRoleBinding system:user [...]
[...] could not authorize the request with any ClusterRoleBindings [...]
```

Active Directory authentication

Sensu offers license-activated support for using Microsoft Active Directory (AD) for authentication to the Sensu dashboard, API, and sensuctl. The AD authentication provider is based on the LDAP authentication provider.

Active Directory configuration examples

Example AD configuration: Minimum required attributes

Example AD configuration: All attributes

Active Directory specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. AD definitions should always be of type `ad`.
required	true
type	String
example	`"type": "ad"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For AD definitions, this attribute should always be `authentication/v2`.
required	true
type	String
example	`"api_version": "authentication/v2"`

metadata	
description	Top-level map containing the AD definition `name`. See the metadata attributes reference for details.
required	true
type	Map of key-value pairs
example	`"metadata": { "name": "activedirectory" }`

spec	
description	Top-level map that includes the AD spec attributes.
required	true

type	Map of key-value pairs

example

```
"spec": {
  "servers": [
    {
      "host": "127.0.0.1",
      "port": 636,
      "insecure": false,
      "security": "tls",
      "trusted_ca_file": "/path/to/trusted-certificate-
authorities.pem",
      "client_cert_file": "/path/to/ssl/cert.pem",
      "client_key_file": "/path/to/ssl/key.pem",
      "default_upn_domain": "example.org",
      "include_nested_groups": true,
      "binding": {
        "user_dn": "cn=binder,cn=users,dc=acme,dc=org",
        "password": "P@ssw0rd!"
      },
      "group_search": {
        "base_dn": "dc=acme,dc=org",
        "attribute": "member",
        "name_attribute": "cn",
        "object_class": "group"
      },
      "user_search": {
        "base_dn": "dc=acme,dc=org",
        "attribute": "sAMAccountName",
        "name_attribute": "displayName",
        "object_class": "person"
      }
    }
  ],
  "groups_prefix": "ad",
  "username_prefix": "ad"
}
```

Active Directory spec attributes

servers	
description	An array of AD servers for your directory. During the authentication process, Sensu attempts to authenticate using each AD server in sequence.
required	true
type	Array
example	

```
"servers": [
  {
    "host": "127.0.0.1",
    "port": 636,
    "insecure": false,
    "security": "tls",
    "trusted_ca_file": "/path/to/trusted-certificate-authorities.pem",
    "client_cert_file": "/path/to/ssl/cert.pem",
    "client_key_file": "/path/to/ssl/key.pem",
    "default_upn_domain": "example.org",
    "include_nested_groups": true,
    "binding": {
      "user_dn": "cn=binder,cn=users,dc=acme,dc=org",
      "password": "P@ssw0rd!"
    },
    "group_search": {
      "base_dn": "dc=acme,dc=org",
      "attribute": "member",
      "name_attribute": "cn",
      "object_class": "group"
    },
    "user_search": {
      "base_dn": "dc=acme,dc=org",
      "attribute": "sAMAccountName",
      "name_attribute": "displayName",
      "object_class": "person"
    }
  }
]
```

groups_prefix	
description	The prefix added to all AD groups. Sensu prepends prefixes with a colon. For example, for the groups prefix `ad` and the group `dev`, the resulting group name in Sensu is `ad:dev`. Use this prefix when integrating AD groups with Sensu RBAC role bindings and cluster role bindings.
required	false
type	String
example	`"groups_prefix": "ad"`

username_claim	

username_prefix	
description	The prefix added to all AD usernames. Sensu prepends prefixes with a colon. For example, for the username prefix `ad` and the user `alice`, the resulting username in Sensu is `ad:alice`. Use this prefix when integrating AD users with Sensu RBAC role bindings and cluster role bindings. Users *do not* need to provide this prefix when logging in to Sensu.
required	false
type	String
example	`"username_prefix": "ad"`

Active Directory server attributes

host	
description	AD server IP address or FQDN
required	true
type	String

example	`"host": "127.0.0.1"`

port

description	AD server port
required	true
type	Integer
default	`389` for insecure connections, `636` for TLS connections
example	`"port": 636`

insecure

description	Skips SSL certificate verification when set to `true`. *WARNING: Do not use an insecure connection in production environments.*
required	false
type	Boolean
default	`false`
example	`"insecure": false`

se

security

description	Determines the encryption type to be used for the connection to the AD server: `insecure` (unencrypted connection, not recommended for production), `tls` (secure encrypted connection), or `starttls` (unencrypted connection upgrades to a secure connection).
type	String
default	`"tls"`
example	`"security": "tls"`

trusted_ca_file

description	Path to an alternative CA bundle file in PEM format to be used instead of the system's default bundle. This CA bundle is used to verify the server's certificate.
required	false

type	String
example	`"trusted_ca_file": "/path/to/trusted-certificate-authorities.pem"`

client_cert_file

description	Path to the certificate that should be sent to the server if it requests it
required	false
type	String
example	`"client_cert_file": "/path/to/ssl/cert.pem"`

client_key_file

description	Path to the key file associated with the `client_cert_file`
required	false
type	String
example	`"client_key_file": "/path/to/ssl/key.pem"`

binding

d The AD account that performs user and group lookups. If your sever supports anonymous

description	binding, you can omit the `user_dn` or `password` attributes to query the directory without credentials. To use anonymous binding with AD, the `ANONYMOUS LOGON` object requires read permissions for users and groups.
required	false
type	Map

example	<pre>"binding": {
	  "user_dn": "cn=binder,cn=users,dc=acme,dc=org",
	  "password": "P@ssw0rd!"
	}</pre>

group_search

description	Search configuration for groups. See the group search attributes for more information.
required	true
type	Map

example	<pre>"group_search": {
	  "base_dn": "dc=acme,dc=org",
	  "attribute": "member",
	  "name_attribute": "cn",</pre>

```
    "object_class": "group"
}
```

user_search	
description	Search configuration for users. See the user search attributes for more information.
required	true
type	Map
example	`"user_search": { "base_dn": "dc=acme,dc=org", "attribute": "sAMAccountName", "name_attribute": "displayName", "object_class": "person" }`

default_upn_domain

description	Enables UPN authentication when set. The default UPN suffix that will be appended to the username when a domain is not specified during login (for example: `user` becomes `user@defaultdomain.xyz`). *WARNING: When using UPN authentication, users must re-authenticate to apply any changes made to group membership on the Active Directory server since their last authentication. To ensure group membership updates are reflected without re-authentication, specify a binding account or enable anonymous binding.*
required	false
type	String
example	`"default_upn_domain": "example.org"`

include_nested_groups

description	When set to `true`, group search includes any nested groups instead of just the top level groups that a user is a member of.
required	false
type	Boolean
example	`"include_nested_groups": true`

Active Directory binding attributes

user_dn

description	The AD account that performs user and group lookups. We recommend using a read-only account. Use the distinguished name (DN) format, such as `cn=binder,cn=users,dc=domain,dc=tld`. If your sever supports anonymous binding, you can omit this attribute to query the directory without credentials.
required	false
type	String
example	`"user_dn": "cn=binder,cn=users,dc=acme,dc=org"`

password

description	Password for the `user_dn` account. If your sever supports anonymous binding, you can omit this attribute to query the directory without credentials.

n	
required	false
type	String
example	`"password": "P@ssw0rd!"`

Active Directory group search attributes

base_dn

description	Tells Sensu which part of the directory tree to search. For example, `dc=acme,dc=org` searches within the `acme.org` directory.
required	true
type	String
example	`"base_dn": "dc=acme,dc=org"`

attribute

description	Used for comparing result entries. This is combined with other filters as `"(<Attribute>=<value>)"`.
required	false
type	String
default	`"member"`
example	

```
  "attribute": "member"
```

name_attribute	
description	Represents the attribute to use as the entry name.
required	false
type	String
default	`"cn"`
example	`"name_attribute": "cn"`

object_class	
description	Identifies the class of objects returned in the search result. This is combined with other filters as `"(objectClass=<ObjectClass>)"`.
required	false
type	String
default	`"group"`
example	`"object_class": "group"`

Active Directory user search attributes

base_dn	

description	Tells Sensu which part of the directory tree to search. For example, `dc=acme,dc=org` searches within the `acme.org` directory.
required	true
type	String
example	`"base_dn": "dc=acme,dc=org"`

attribute

description	Used for comparing result entries. This is combined with other filters as `"(<Attribute>=<value>)"`.
required	false
type	String
default	`"sAMAccountName"`
example	`"attribute": "sAMAccountName"`

name_attribute

description	Represents the attribute to use as the entry name.
required	false
type	String
default	`"displayName"`
example	`"name_attribute": "displayName"`

object_class	
description	Identifies the class of objects returned in the search result. This is combined with other filters as `"(objectClass=<ObjectClass>)"`.
required	false
type	String
default	`"person"`
example	`"object_class": "person"`

Active Directory metadata attributes

name	
description	A unique string used to identify the AD configuration. Names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`).
required	true
type	String
example	`"name": "activedirectory"`

Active Directory troubleshooting

See the LDAP troubleshooting section.

OIDC authentication

The Sensu offers license-activated support for OIDC driver for using the OpenID Connect 1.0 protocol (OIDC) on top of the OAuth 2.0 protocol for RBAC authentication.

NOTE: OIDC authentication is currently supported only via `sensuctl`. OIDC authentication for the Web UI will be added in a future release.

OIDC configuration examples

RBAC for OIDC definition specification

`oidc` *attributes*

client_id	
description	The OIDC provider application “Client ID” *NOTE: requires registration of an application in the OIDC provider.*
required	true
type	String
example	`"client_id": "1c9ae3e6f3cc79c9f1786fcb22692d1f"`

client_secret	
description	The OIDC provider application “Client Secret” *NOTE: requires registration of an application in the OIDC provider.*

required	true
type	String
example	`"client_secret": "a0f2a3c1dcd5b1cac71bf0c03f2ff1bd"`

server

description	The location of the OIDC server you wish to authenticate against. *NOTE: Configuring with http will cause the connection to be insecure.*
required	true
type	String
example	`"server": "https://sensu.oidc.provider.example.com"`

redirect_uri

description	Redirect URL to provide to the OIDC provider. Requires `/api/enterprise/authentication/v2/oidc/callback` *NOTE: only required for certain OIDC providers, such as Okta.*
required	false
type	String
example	`"redirect_uri": "http://sensu-backend.example.com:8080/api/enterprise/authentication/v2/oidc/callback"`

groups_claim

description	The claim to use to form the associated RBAC groups. *Note: The value held by the claim must be an array of strings.*
required	false
type	String
example	`"groups_claim": "ops"`

groups_prefix

description	A prefix to use to form the final RBAC groups if required.
required	false
type	String
example	`"groups_prefix": "okta"`

username_claim

description	The claim to use to form the final RBAC user name.
required	false
type	String
example	`"username_claim": "person"`

username_prefix	
description	A prefix to use to form the final RBAC user name.
required	false
type	String
example	`"username_prefix": "okta"`

additional_scopes	
description	Scopes to include in the claims, in addition to the default `openid` scope. *NOTE: For most providers you'll want to include `groups`, `email` and `username` in this list.*
required	false
type	Array
example	`"additional_scopes": ["groups", "email", "username"]`

Register an OIDC Application

To use OIDC for authentication requires registration of your Sensu Go 5.12.0 or later, as an "application". Please note the following instructions to register an OIDC application for Sensu Enterprise based on your OIDC provider:

Okta

Okta

Requirements

Access to the Okta Administrator Dashboard
Sensu Go 5.12.0 or later with a valid license

Create an Okta Application

1. From the Administrator Dashboard, select `Applications > Add Application > Create New App` to start the wizard.
2. Select the `Web` platform and `OpenID Connect` sign in method.
3. In General Settings enter an app name and (optionally) upload a logo.
4. In Configure OpenID Connect, add the following Redirect URI, without forgetting to replace DASHBOARD_URL with the URL to your dashboard:
   `{DASHBOARD_URL}/api/enterprise/authentication/v2/oidc/callback`
5. Click Save.
6. Head over to the Sign On page and click on the Edit button of the OpenID Connect ID Token section.
7. Enter the following information for the Groups claim attribute
   First field: `groups`
   Dropdown menu: `Regex`
   Second field: `.*`
8. Click Save
9. Make sure to assign people and/or groups in the Assignments page

OIDC Driver Configuration

1. Add the `aadditional_scopes` configuration attribute in the OIDC scope and set the value to `[ "groups" ]`, just like this:

```
"additional_scopes": [ "groups" ]
```

1. Add the `groups` to the `groups_claimed` string. For example an Okta group `dev` and we set a `groups_prefix` to `okta:`, we can setup RBAC objects to mention group `okta:dev` as needed

```
"additional_scopes": [ "groups" ]
```

1. Add the `redirect_uri` configuration attribute in the OIDC scope and setthe value to the Redirect URI configured at step 4 ofCreate an Okta Application, just like this:

```
"redirect_uri": "{BACKEND_URL}/api/enterprise/authentication/v2/oidc/callback"
```

Sensuctl Login with OIDC

1. Run `sensuctl login oidc`

> sensuctl login oidc

1. If on a desktop a browser will open to OIDC provider allowing you to authenticate and log in.

> Launching browser to complete the login via your OIDC provider at following URL:
> https://sensu-backend.example.com:8080/api/enterprise/authentication/v2/oidc/authorize

Hardware requirements

Contents

Sensu backend

Backend minimum requirements

The following configuration is the minimum required to run the Sensu backend, however it is insufficient for production use. See the recommended configuration for production recommendations.

64-bit Intel or AMD CPU
4 GB RAM
4 GB free disk space
10 mbps network link

Backend recommended configuration

The following configuration is recommended as a baseline for production use to ensure a good user and operator experience. Using additional resources (even over-provisioning) further improves stability and scalability.

64 bit 4-core Intel or AMD CPU
8 GB RAM
SSD (NVMe or SATA3)
Gigabit ethernet

The Sensu backend is typically CPU and storage intensive. In general, its use of these resources scales linearly with the total number of checks executed by all Sensu agents connecting to the backend.

The Sensu backend is a massively parallel application that can scale to any number of CPU cores. Provision roughly 1 CPU core for every 50 checks per second (including agent keepalives). Most installations are fine with 4 CPU cores, but larger installations may find that additional CPU cores (8+) are necessary.

Every executed Sensu check results in storage writes. When provisioning storage, a good guideline is to have twice as many **sustained disk IOPS** as you expect to have events per second. Don't forget to include agent keepalives in this calculation; each agent publishes a keepalive every 20 seconds. For example, in a cluster of 100 agents, you can expect those agents to consume 10 write IOPS for keepalives.

The Sensu backend uses a relatively modest amount of RAM under most circumstances. Larger production deployments use a larger amount of RAM (8+ GB).

Sensu agent

Agent minimum requirements

The following configuration is the minimum required to run the Sensu agent, however it is insufficient for production use. See the recommended configuration for production recommendations.

386, amd64, or ARM CPU (armv5 minimum)
128 MB RAM
10 mbps network link

Agent recommended configuration

The following configuration is recommended as a baseline for production use to ensure a good user and operator experience.

64 bit 4-core Intel or AMD CPU
512 MB RAM
Gigabit ethernet

The Sensu agent itself is quite lightweight, and should be able to run on all but the most modest hardware. However, since the agent is responsible for executing checks, factor the agent's responsibilities into your hardware provisioning.

Networking recommendations

Agent connections

Sensu uses WebSockets for communication between the agent and backend. All communication occurs over a single TCP socket.

It's recommended that users connect backends and agents via gigabit ethernet, but any somewhat-reliable network link should work (e.g. WiFi and 4G). If you see WebSocket timeouts in the backend logs, you may need to use a better network link between the backend and agents.

Cloud recommendations

AWS

The recommended EC2 instance type and size for Sensu backends running embedded etcd is **M5d.xlarge**. The M5d instance provides 4 vCPU, 16 GB of RAM, up to 10 Gbps network connectivity, and a 150 NVMe SSD directly attached to the instance host (optimal for sustained disk IOPS).

Binary-only distributions

Contents

In addition to packages, Sensu binary-only distributions are available for Linux, Windows (agent and CLI only), and macOS (CLI only).

Linux

Sensu binary-only distributions for Linux are available for these architectures and formats:

arch	format
`amd64`	`.tar.gz` | `.zip`
`arm64`	`.tar.gz` | `.zip`
`armv5`	`.tar.gz` | `.zip`
`armv6`	`.tar.gz` | `.zip`
`armv7`	`.tar.gz` | `.zip`
`386`	`.tar.gz` | `.zip`

For example, to download Sensu for Linux `amd64` in `tar.gz` format:

```
curl -LO https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_linux_amd64.tar.gz
```

Generate a SHA-512 checksum for the downloaded artifact.

```
sha512sum sensu-go_5.13.1_linux_amd64.tar.gz
```

The result should match the checksum for your platform.

```
curl -LO https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_checksums.txt && cat sensu-go_5.13.1_checksums.txt
```

Windows

Sensu binary-only distributions for Windows are available for these architectures and formats:

arch	format
`amd64`	`.tar.gz` | `.zip`
`386`	`.tar.gz` | `.zip`

For example, to download Sensu for Windows `amd64` in `zip` format:

```
Invoke-WebRequest https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_windows_amd64.zip  -OutFile "$env:userprofile\sensu-go_5.13.1_windows_amd64.zip"
```

Generate a SHA-256 checksum for the downloaded artifact.

```
Get-FileHash "$env:userprofile\sensu-go_5.13.1_windows_amd64.zip" -Algorithm SHA256 | Format-List
```

The result should match (with the exception of capitalization) the checksum for your platform.

```
Invoke-WebRequest https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_checksums.txt -OutFile "$env:userprofile\sensu-go_5.13.1_checksums.txt"

Get-Content "$env:userprofile\sensu-go_5.13.1_checksums.txt" | Select-String -Pattern
```

```
windows_amd64
```

macOS

Sensu binary-only distributions for macOS are available for these architectures and formats:

arch	format
`amd64`	`.tar.gz` | `.zip`

For example, to download Sensu for macOS `amd64` in `tar.gz` format:

```
curl -LO https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_darwin_amd64.tar.gz
```

Generate a SHA-512 checksum for the downloaded artifact.

```
shasum -a 512 sensu-go-5.13.1-darwin-amd64.tar.gz
```

The result should match the checksum for your platform.

```
curl -LO https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_checksums.txt && cat sensu-go_5.13.1_checksums.txt
```

Extract the archive.

```
tar -xvf sensu-go_5.13.1_darwin_amd64.tar.gz
```

Copy the executable into your PATH.

```
sudo cp sensuctl /usr/local/bin/
```

FreeBSD

Sensu binary-only distributions for FreeBSD are available for these architectures and formats:

arch	format
`amd64`	`.tar.gz` | `.zip`
`386`	`.tar.gz` | `.zip`

For example, to download Sensu for FreeBSD `amd64` in `tar.gz` format:

```
curl -LO https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_freebsd_amd64.tar.gz
```

Generate a SHA-512 checksum for the downloaded artifact.

```
sha512sum sensu-go_5.13.1_freebsd_amd64.tar.gz
```

The result should match the checksum for your platform.

```
curl -LO https://s3-us-west-2.amazonaws.com/sensu.io/sensu-go/5.13.1/sensu-go_5.13.1_checksums.txt && cat sensu-go_5.13.1_checksums.txt
```

Next steps

Now that you've installed Sensu:

Starting the Sensu backend
Starting the Sensu agent
sensuctl first-time setup

Monitoring server resources

Configuration Management

Contents

We highly recommend using configuration management tools to deploy Sensu in production and at scale.

Pin versions of Sensu-related software to ensure repeatable Sensu deployments.
Ensure consistent configuration between Sensu backends.

The following configuration management tools have well-defined Sensu modules to help you get started.

Puppet

The Puppet Sensu module can be found on the GitHub. Sensu has partnered with Tailored Automation to enhance the Puppet module with new features and bug fixes.

Chef

The Chef cookbook for Sensu can be found on the GitHub. Interested in more information on Sensu + Chef? Get some helpful resources here.

Ansible

The Ansible role to deploy and manage Sensu Go can be found on GitHub.

Supported platforms

Contents

Sensu is available as packages, Docker images, and binary-only distributions. We recommend installing Sensu using one of our supported packages, Docker images, or configuration management integrations. Sensu downloads are provided under the Sensu License.

Supported packages

Supported packages are available through sensu/stable on packagecloud and through the downloads page.

Sensu backend

Platform & Version	`amd64`
CentOS/RHEL 6	
CentOS/RHEL 7	
Ubuntu 14.04	
Ubuntu 16.04	
Ubuntu 18.04	

Ubuntu 18.10
Ubuntu 19.04
Debian 8
Debian 9
Debian 10

Sensu agent

Platform & Version	`amd64`	`386`
CentOS/RHEL 6		
CentOS/RHEL 7		
Ubuntu 14.04		
Ubuntu 16.04		
Ubuntu 18.04		
Ubuntu 18.10		
Ubuntu 19.04		
Debian 8		
Debian 9		
Debian 10		
Windows Server 2008 R2 and later		
Windows 7 and later		

Sensuctl command-line tool

Platform & Version	`amd64`	`386`
CentOS/RHEL 6		
CentOS/RHEL 7		
Ubuntu 14.04		
Ubuntu 16.04		
Ubuntu 18.04		
Ubuntu 18.10		
Ubuntu 19.04		
Debian 8		
Debian 9		
Debian 10		

Docker images

Docker images containing the Sensu backend and Sensu agent are available for Linux-based containers.

Image name	base
sensu/sensu	Alpine Linux
sensu/sensu-rhel	Red Hat Enterprise Linux

Integrations

Sensu Go Data Source plugin for Grafana
Chef cookbook
Puppet module
Ansible role

Binary-only distributions

Binary-only distributions containing the Sensu backend, agent, and sensuctl tool are available in `.zip` and `.tar.gz` formats.

Platform & Version	`amd64`	`arm64`	`armv5`	`armv6`	`armv7`	`386`
Linux						
Windows						
macOS						

Building from source

Sensu Go's core is open source software, freely available under an MIT license.Sensu Go instances built from source do not include some free-tier and licensed-tier features such as the web UI homepage; see the feature comparison matrix to learn more.To build Sensu Go from source, see the contributing guide on GitHub.

How to monitor server resources with checks

Contents

What are Sensu checks?

Sensu checks are **commands** (or scripts), executed by the Sensu agent, that output data and produce an exit code to indicate a state. Sensu checks use the same specification as **Nagios**, therefore, Nagios **check plugins** may be used with Sensu.

Why use a check?

You can use checks to monitor server resources, services, and application health (for example: is Nginx running?) as well as collect and analyze metrics (for example: how much disk space do I have left?).

Using checks to monitor a service

The purpose of this guide is to help you monitor server resources, more specifically the CPU usage, by configuring a check named `check-cpu` with a **subscription** named `system`, in order to target all **entities** subscribed to the `system` subscription. This guide requires a Sensu backend and at least one Sensu agent running on Linux.

Registering assets

To power the check, we'll use the Sensu CPU checks asset and the Sensu Ruby runtime asset.

Use the following sensuctl example to register the `sensu-plugins-cpu-checks` asset for CentOS, or download the asset definition for Debian or Alpine from Bonsai and register the asset using `sensuctl create --file filename.yml`.

```
sensuctl asset create sensu-plugins-cpu-checks --url
"https://assets.bonsai.sensu.io/68546e739d96fd695655b77b35b5aabfbabeb056/sensu-
plugins-cpu-checks_4.0.0_centos_linux_amd64.tar.gz" --sha512
"518e7c17cf670393045bff4af318e1d35955bfde166e9ceec2b469109252f79043ed133241c4dc96501
b6636a1ec5e008ea9ce055d1609865635d4f004d7187b"
```

Then use the following sensuctl example to register the `sensu-ruby-runtime` asset for CentOS, or download the asset definition for Debian or Alpine from Bonsai and register the asset using `sensuctl create --file filename.yml`.

```
sensuctl asset create sensu-ruby-runtime --url
"https://assets.bonsai.sensu.io/03d08cdfc649500b7e8cd1708bb9bb93d91fea9e/sensu-ruby-
runtime_0.0.8_ruby-2.4.4_centos_linux_amd64.tar.gz" --sha512
"7b254d305af512cc524a20a117c601bcfae0d51d6221bbfc60d8ade180cc1908081258a6eecfc9b196b
932e774083537efe748c1534c83d294873dd3511e97a3"
```

You can use sensuctl to confirm that both the `sensu-plugins-cpu-checks` and `sensu-ruby-runtime` assets are ready to use.

```
sensuctl asset list
        Name                          URL                          Hash
────────────────────────────────────────────────────────────────────────
 sensu-plugins-cpu-checks   //github.com/.../sensu-plugins-cpu-checks_4.0.0_centos_linux_amd64.tar.gz   518e7c1
 sensu-ruby-runtime         //github.com/.../sensu-ruby-runtime_0.0.5_centos_linux_amd64.tar.gz         1c9f0af
```

Creating the check

Now that the assets are registered, we'll create a check named `check-cpu`, which runs the command `check-cpu.rb -w 75 -c 90` using the `sensu-plugins-cpu-checks` and `sensu-ruby-runtime` assets, at an **interval** of 60 seconds, for all entities subscribed to the `system` subscription. This checks generates a warning event (`-w`) when CPU usage reaches 75% and a critical alert (`-c`) at 90%.

```
sensuctl check create check-cpu \
```

```
--command 'check-cpu.rb -w 75 -c 90' \
--interval 60 \
--subscriptions system \
--runtime-assets sensu-plugins-cpu-checks,sensu-ruby-runtime
```

Configuring the subscription

To run the check, we'll need a Sensu agent with the subscription `system`. After installing an agent, open `/etc/sensu/agent.yml` and add the `system` subscription so the subscription configuration looks like:

```
subscriptions:
  - system
```

Then restart the agent.

```
sudo service sensu-agent restart
```

Validating the check

We can use sensuctl to see that Sensu is monitoring CPU usage using the `check-cpu`, returning an OK status (`0`). It might take a few moments, once the check is created, for the check to be scheduled on the entity and the event returned to Sensu backend.

```
sensuctl event list
    Entity       Check                                      Output                                       Status
Silenced          Timestamp
────────────── ────────────
─────────────────────────────────────────────────────────────────────────────────────────────
───────────────────────────────────────────────────── ──────── ──────────
────────────────────────────────
 sensu-centos   check-cpu   CheckCPU TOTAL OK:  total=0.2 user=0.0 nice=0.0 system=0.2 idle=99.8 iowait=0.0 irq=0.0
softirq=0.0 steal=0.0 guest=0.0 guest_nice=0.0        0   false      2019-04-23 16:42:28 +0000 UTC
```

Next steps

You now know how to run a simple check to monitor CPU usage. From this point, here are some recommended resources:

Read the checks reference for in-depth documentation on checks.
Read our guide on providing runtime dependencies to checks with assets.
Read our guide on monitoring external resources with proxy checks and entities.
Read our guide on sending alerts to Slack with handlers.

How to monitor external resources with proxy requests and entities

Contents

Proxy entities allow Sensu to monitor external resources on systems or devices where a Sensu agent cannot be installed, like a network switch or a website. You can create proxy entities using sensuctl, the Sensu API, or the `proxy_entity_name` check attribute. When executing checks that include a `proxy_entity_name` or `proxy_requests` attributes, Sensu agents report the resulting event under the proxy entity instead of the agent entity.

This guide requires a running Sensu backend, a running Sensu agent, and a sensuctl instance configured to connect to the backend as a user with get, list, and create permissions for entities, checks, and events.

Using a proxy entity to monitor a website

In this section, we'll monitor the status of sensu.io by configuring a check with a **proxy entity name** so that Sensu creates an entity representing the site and reports the status of the site under this entity.

Registering assets

To power the check, we'll use the Sensu plugins HTTP asset and the Sensu Ruby runtime asset.

Use the following sensuctl example to register the `sensu-plugins-http` asset for CentOS, or download the asset definition for Debian or Alpine from Bonsai and register the asset using `sensuctl create --file filename.yml`.

```
sensuctl asset create sensu-plugins-http --url
"https://assets.bonsai.sensu.io/30d8361243af8c7806e2d6db4a6dc576dab02966/sensu-
plugins-http_5.1.1_centos_linux_amd64.tar.gz" --sha512
```

```
"31023af6e0073729eecb0f5ab834ddc467eeaa1d9b998cbf528f3302104814ec717fc746af470556c49
6806fa8db66e6ded75aef97d73abdfa29615a81270ee6"
```

Then use the following sensuctl example to register the `sensu-ruby-runtime` asset for CentOS, or download the asset definition for Debian or Alpine from Bonsai and register the asset using `sensuctl create --file filename.yml`.

```
sensuctl asset create sensu-ruby-runtime --url
"https://assets.bonsai.sensu.io/03d08cdfc649500b7e8cd1708bb9bb93d91fea9e/sensu-ruby-
runtime_0.0.8_ruby-2.4.4_centos_linux_amd64.tar.gz" --sha512
"7b254d305af512cc524a20a117c601bcfae0d51d6221bbfc60d8ade180cc1908081258a6eecfc9b196b
932e774083537efe748c1534c83d294873dd3511e97a3"
```

You can use sensuctl to confirm that both the `sensu-plugins-http` and `sensu-ruby-runtime` assets are ready to use.

```
sensuctl asset list
        Name                                URL                                Hash
──────────────────────────────
────────────────────────────────────────────────────────────────────
──────────
 sensu-plugins-http     //github.com/.../sensu-plugins-http_5.0.0_centos_linux_amd64.tar.gz     31023af
 sensu-ruby-runtime     //github.com/.../sensu-ruby-runtime_0.0.5_centos_linux_amd64.tar.gz     1c9f0af
```

Creating the check

Now that the assets are registered, we'll create a check named `check-sensu-site`, which runs the command `check-http.rb -u https://sensu.io` using the `sensu-plugins-http` and `sensu-ruby-runtime` assets, at an interval of 60 seconds, for all agents subscribed to the `proxy` subscription, using the `sensu-site` proxy entity name. To avoid duplicate events, we'll add the `round_robin` attribute to distribute the check execution across all agents subscribed to the `proxy` subscription.

Create a file called `check.json` and add the following check definition.

Now we can use sensuctl to add this check to Sensu.

```
sensuctl create --file check.json

sensuctl check list
       Name                Command            Interval  Cron  Timeout  TTL  Subscriptions  Handlers              Assets
Hooks  Publish?  Stdin?
──────────────────── ────────────────────────────────────── ─────────── ────── ────────── ────
───────────────── ─────────── ──────────────────────────────────────────── ──────── ───────────
─────────
 check-sensu-site  check-http.rb -u https://sensu.io      60           0    0  proxy              sensu-plugins-http,sensu-
ruby-runtime          true     false
```

Adding the subscription

To run the check, we'll need a Sensu agent with the subscription `proxy`. After installing an agent, open `/etc/sensu/agent.yml` and add the `proxy` subscription so the subscription configuration looks like:

```
subscriptions:
  - proxy
```

Then restart the agent.

```
sudo service sensu-agent restart
```

Validating the check

Now we can use sensuctl to see that Sensu has created the proxy entity `sensu-site`.

```
sensuctl entity list
      ID       Class    OS         Subscriptions              Last Seen
──────────────── ──────── ──────── ───────────────────────────────
───────────────────────────────────
```

```
sensu-centos   agent   linux   proxy,entity:sensu-centos   2019-01-16 21:50:03 +0000 UTC
sensu-site     proxy           entity:sensu-site           N/A
```

NOTE: It might take a few moments for Sensu to execute the check and create the proxy entity.

And that Sensu is now monitoring `sensu-site` using the `check-sensu-site` check.

```
sensuctl event info sensu-site check-sensu-site
=== sensu-site - check-sensu-site
Entity:    sensu-site
Check:     check-sensu-site
Output:
Status:    0
History:   0,0
Silenced:  false
Timestamp: 2019-01-16 21:51:53 +0000 UTC
```

We can also see our new proxy entity in the Sensu dashboard.

Using proxy requests to monitor a group of websites

Now let's say that, instead of monitoring just sensu.io, we want to monitor multiple sites, for example: docs.sensu.io, packagecloud.io, and github.com.In this section of the guide, we'll use the `proxy_requests` check attribute, along with entity labels and token substitution, to monitor three sites using the same check.Before we get started, go ahead and register the `sensu-plugins-http` and `sensu-ruby-runtime` assets if you haven't already.

Creating proxy entities

Instead of creating a proxy entity using the `proxy_entity_name` check attribute, we'll be using sensuctl to create proxy entities to represent the three sites we want to monitor.Our proxy entities need the `entity_class` attribute set to `proxy` to mark them as proxy entities as well as a few custom `labels` that we'll use to identify them as a group and pass in individual URLs.

Create a file called `entities.json` and add the following entity definitions.

```
{
  "type": "Entity",
  "api_version": "core/v2",
  "metadata": {
    "name": "sensu-docs",
    "namespace": "default",
    "labels": {
      "proxy_type": "website",
      "url": "https://docs.sensu.io"
    }
  },
  "spec": {
    "entity_class": "proxy"
  }
}
{
  "type": "Entity",
  "api_version": "core/v2",
  "metadata": {
    "name": "packagecloud-site",
    "namespace": "default",
    "labels": {
      "proxy_type": "website",
      "url": "https://packagecloud.io"
    }
  },
  "spec": {
    "entity_class": "proxy"
  }
}
{
  "type": "Entity",
  "api_version": "core/v2",
  "metadata": {
    "name": "github-site",
    "namespace": "default",
    "labels": {
      "proxy_type": "website",
      "url": "https://github.com"
    }
  },
  "spec": {
```

```
      "entity_class": "proxy"
    }
  }
```

PRO TIP: When creating proxy entities, you can add whatever custom labels make sense for your environment. For example, when monitoring a group of routers, you may want to add `ip_address` labels.

Now we can use sensuctl to add these proxy entities to Sensu.

```
sensuctl create --file entities.json

sensuctl entity list
      ID          Class    OS          Subscriptions                  Last Seen
───────────────────── ──────── ──────── ───────────────────────────────
───────────────────────────────────

 github-site         proxy                                    N/A
 packagecloud-site   proxy                                    N/A
 sensu-centos        agent   linux   proxy,entity:sensu-centos   2019-01-16 23:05:03 +0000 UTC
 sensu-docs          proxy                                    N/A
```

Creating a reusable HTTP check

Now that we have our three proxy entities set up, each with a `proxy_type` and `url` label, we can use proxy requests and token substitution to create a single check that monitors all three sites.

Create a file called `check-proxy-requests.json` and add the following check definition.

Our `check-http` check uses the `proxy_requests` attribute to specify the applicable entities.In our case, we want to run the `check-http` check on all entities of entity class `proxy` and proxy type `website`.Since we're using this check to monitor multiple sites, we can use token substitution to apply the correct `url` in the check `command`.

Now we can use sensuctl to add this check to Sensu.

```
sensuctl create --file check-proxy-requests.json
```

```
sensuctl check list
    Name                Command            Interval  Cron  Timeout  TTL  Subscriptions  Handlers             Assets             Hooks  Publish?  Stdin?
───────────────────── ─────────────────────────────────────────── ──────────── ─────── ─────────── ────── ────────────────── ──────────── ─────────────────────────────────────────────── ──────── ──────────── ──────────
  check-http    check-http.rb -u {{ .labels.url }}      60             0     0    proxy               sensu-plugins-http,sensu-ruby-runtime         true       false
```

PRO TIP: To distribute check executions across multiple agents, set the `round-robin` check attribute to `true`. For more information about round-robin checks, see the check reference.

Validating the check

Before validating the check, make sure that you've registered the `sensu-plugins-http` and `sensu-ruby-runtime` assets and added the `proxy` subscription to a Sensu agent if you haven't already.

Now we can use sensuctl to see that Sensu is monitoring docs.sensu.io, packagecloud.io, and github.com using the `check-http`, returning a status of `0` (OK).

```
sensuctl event list
    Entity            Check        Output   Status   Silenced          Timestamp
─────────────────── ─────────────────────── ────────── ────────── ──────────── ──────────────────────────────────────
github-site        check-http                    0   false     2019-01-17 17:10:31 +0000 UTC
packagecloud-site   check-http                    0   false     2019-01-17 17:10:34 +0000 UTC
sensu-centos       keepalive            ...       0   false     2019-01-17 17:10:34 +0000 UTC
sensu-docs         check-http                    0   false     2019-01-17 17:06:59 +0000 UTC
```

Next steps

You now know how to run a proxy check to verify the status of a website, as well as using proxy requests to run a check on two different proxy entities based on label evaluation. From this point, here are some recommended resources:

Read the proxy checks reference for in-depth documentation on proxy checks.

Read the guide to providing runtime dependencies to checks with assets.
Read the guide to sending alerts to Slack with handlers.

How to collect and extract metrics using Sensu checks

Contents

What are Sensu checks?

In short, Sensu checks are **commands** (or scripts), executed by the Sensu agent, that output data and produce an exit code to indicate a state. If you are unfamiliar with checks, or would like to learn how to configure one first, take a look through the check reference doc and guide before you continue.

Extracting metrics from check output

In order to extract metrics from check output, you'll need to do the following:

1. Configure the check `command` such that the command execution outputs metrics in one of the supported output metric formats.
2. Configure the check `output_metric_format` to one of the supported output metric formats.
3. Configure the check `output_metric_handlers` (optional) to a Sensu handler that is equipped to handle Sensu metrics (see handlers or influx-db handler to learn more).

You can configure the check with these fields at creation, or use the commands below assuming you have a check named `collect-metrics`. In this example, we'll be using `graphite_plaintext` format and sending the metrics to a handler named `influx-db`.

```
sensuctl check set-command collect-metrics collect_metrics.sh
sensuctl check set-output-metric-format collect-metrics graphite_plaintext
sensuctl check set-output-metric-handlers collect-metrics influx-db
```

Supported output metric formats

The output metric formats that Sensu currently supports for check output metric extraction are nagios, influxdb, graphite, and opentsdb.

nagios

output_metric_format	`nagios_perfdata`
documentation	Nagios Performance Data
example	`PING ok - Packet loss = 0%, RTA = 0.80 ms | percent_packet_loss=0, rta=0.80`

graphite

output_metric_format	`graphite_plaintext`
documentation	Graphite Plaintext Protocol
example	`local.random.diceroll 4 123456789`

influxdb

output_metric_format	`influxdb_line`
documentation	InfluxDB Line Protocol
example	`weather,location=us-midwest temperature=82 1465839830100400200`

opentsdb

output_metric_format	`opentsdb_line`
documentation	OpenTSDB Data Specification
example	`sys.cpu.user 1356998400 42.5 host=webserver01 cpu=0`

Validating the metrics

If the check output is formatted correctly according to its `output_metric_format`, the metrics will be extracted in Sensu Metric Format, and saved within the event. You should expect to see logged errors if Sensu is unable to parse the check output. You can validate that metrics have been extracted from your check through your handler, or through the resulting event. The example check we used would yield an event similar to the one below:

Next steps

Now you know how to extract metrics from check output! Check out the below resources for some further reading:

Read the checks reference for in-depth documentation on checks.
Read the checks guide for directions on how to schedule checks.
Read the handlers reference for in-depth documentation on handlers.
Read the influx-db handler guide for instructions on Sensu's built-in metric handler.

How to aggregate metrics with the Sensu StatsD listener

Contents

What is StatsD?

StatsD, originating from the daemon written by Etsy, is a daemon, tool, and protocol that can be used to send, collect, and aggregate custom metrics. Services that implement StatsD typically expose UDP port 8125 to receive metrics according to the line protocol `<metricname>:<value>|<type>`.

Why use StatsD?

StatsD allows you to measure anything and everything. You can monitor application performance by collecting custom metrics in your code and sending them to a StatsD server or you can monitor system levels of CPU, I/O, network etc. with collection daemons. The metrics that StatsD aggregates can be fed to multiple different backends to store or visualize the data.

How does Sensu implement StatsD?

Sensu implements a StatsD listener on its agents. Each `sensu-agent` listens on the default port 8125 for UDP messages which follow the StatsD line protocol. StatsD aggregates the metrics, and Sensu translates them to Sensu metrics and events to be passed to the event pipeline. The listener is configurable (see Configuring the StatsD listener) and can be accessed with the netcat utility command:

```
echo 'abc.def.g:10|c' | nc -w1 -u localhost 8125
```

Metrics received through the StatsD listener are not stored in etcd, so it is important to configure an event handler(s).

NOTE: On Windows machines running Sensu, the StatsD UDP port is not supported, rather the TCP port is exposed.

Configuring the StatsD listener

The Sensu StatsD Server is configured at the start-up of a `sensu-agent`. The flags below allow you to configure the event handlers, flush interval, address, and port:

```
--statsd-disable                      disables the statsd listener and metrics
server
--statsd-event-handlers stringSlice   comma-delimited list of event handlers for
statsd metrics
--statsd-flush-interval int           number of seconds between statsd flush (default
10)
--statsd-metrics-host string          address used for the statsd metrics server
(default "127.0.0.1")
--statsd-metrics-port int             port used for the statsd metrics server
(default 8125)
```

For example:

```
sensu-agent start --statsd-event-handlers influx-db --statsd-flush-interval 1 --
statsd-metrics-host "123.4.5.6" --statsd-metrics-port 8125
```

Next steps

Now that you know how to feed StatsD metrics into Sensu, check out the following resources to learn how to handle those metrics:

Read the handlers reference for in-depth documentation on handlers.
Read the InfluxDB handler guide for instructions on Sensu's built-in metric handler.

How to augment event data using check hooks

Contents

What are check hooks?

Check hooks are **commands** run by the Sensu agent in response to the result of a **check** command execution. The Sensu agent executes the appropriate configured hook, depending on the exit status code (e.g., `1`).

Why use check hooks?

Check hooks allow Sensu users to automate data collection routinely performed by operators investigating monitoring alerts, freeing precious operator time! While check hooks can be used for rudimentary auto-remediation tasks, they are intended for enrichment of monitoring event data.

Using check hooks to gather context

The purpose of this guide is to help you put in place a check hook which captures the process tree in the event that an `nginx_process` check returns a status of `2` (critical, not running).

Creating the hook

The first step is to create a new hook that runs a specific command to capture the process tree. We can set an execution **timeout** of 10 seconds for this command.

```
sensuctl hook create process_tree  \
--command 'ps aux' \
--timeout 10
```

Assigning the hook to a check

Now that the `process_tree` hook has been created, it can be assigned to a check. Here we apply our hook to an already existing `nginx_process` check. By setting the `type` to `critical`, we ensure that whenever the check command returns a critical status, Sensu executes the `process_tree` hook and adds the output to the resulting event data.

```
sensuctl check set-hooks nginx_process  \
--type critical \
--hooks process_tree
```

Validating the check hook

You can verify the proper behavior of the check hook against a specific event by using `sensuctl`. It might take a few moments, once the check hook is assigned, for the check to be scheduled on the entity and the result sent back to the Sensu backend. The check hook command result is available in the `hooks` array, within the `check` scope.

```
sensuctl event info i-424242 nginx_process --format json

{
  [...]
  "check": {
    [...]
    "hooks": [
      {
        "config": {
          "name": "process_tree",
          "command": "ps aux",
          "timeout": 10,
          "namespace": "default"
        },
        "duration": 0.008713605,
        "executed": 1521724622,
        "output": "",
```

```
        "status": 0
      }
    ],
    [...]
  }
}
```

Having confirmed that the hook is attached to our check, we can stop Nginx and observe the check hook in action on the next check execution. Here we use sensuctl to query event info and send the response to `jq` so we can isolate the check hook output:

```
sensuctl event info i-424242 nginx_process --format json | jq -r
'.check.hooks[0].output'

USER        PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root          1  0.0  0.3  46164  6704 ?        Ss   Nov17   0:11
/usr/lib/systemd/systemd --switched-root --system --deserialize 20
root          2  0.0  0.0      0     0 ?        S    Nov17   0:00 [kthreadd]
root          3  0.0  0.0      0     0 ?        S    Nov17   0:01 [ksoftirqd/0]
root          7  0.0  0.0      0     0 ?        S    Nov17   0:01 [migration/0]
root          8  0.0  0.0      0     0 ?        S    Nov17   0:00 [rcu_bh]
root          9  0.0  0.0      0     0 ?        S    Nov17   0:34 [rcu_sched]
```

Note that the above output, although truncated in the interest of brevity, reflects the output of the `ps aux` command specified in the check hook we created. Now when we are alerted that Nginx is not running, we can review the check hook output to confirm this was the case, without ever firing up an SSH session to investigate!

Next steps

You now know how to run data collection tasks using check hooks. From this point, here are some recommended resources:

Read the hooks reference for in-depth documentation on hooks.

How to send alerts to Slack with handlers

Contents

What are Sensu handlers?

Sensu event handlers are actions executed by the Sensu backend on events.

Why use a handler?

Handlers can be used for sending an email alert, creating or resolving an incident(in PagerDuty, for example), or storing metrics in a time-seriesdatabase (InfluxDB, for example).

Using a handler to send alerts to Slack

The purpose of this guide is to help you send alerts to Slack, on the channel `monitoring`, by configuring a handler named `slack` to a check named `check-cpu`. If you don't already have a check in place, this guide is agreat place to start.

Registering the asset

Assets are shareable, reusable packages that make it easy to deploy Sensu plugins.In this guide, we'll use the Sensu Slack handler asset to power a `slack` handler.

You can use the following sensuctl example to register the Sensu Slack handler asset for Linux AMD64, or you can download the latest asset definition for your platform from Bonsai and register the asset using `sensuctl create --file filename.yml`.

```
sensuctl asset create sensu-slack-handler --url
"https://assets.bonsai.sensu.io/3149de09525d5e042a83edbb6eb46152b02b5a65/sensu-
slack-handler 1.0.3 linux amd64.tar.gz" --sha512
```

```
"68720865127fbc7c2fe16ca4d7bbf2a187a2df703f4b4acae1c93e8a66556e9079e1270521999b5871473e6c851f51b34097c54fdb8d18eedb7064df9019adc8"
```

You should see a confirmation message from sensuctl.

```
Created
```

Getting a Slack webhook

If you're already an admin of a Slack, visit `https://YOUR WORKSPACE NAME HERE.slack.com/services/new/incoming-webhook` and follow the steps to add the Incoming WebHooks integration, choose a channel, and save the settings. (If you're not yet a Slack admin, start here to create a new workspace.) After saving, you'll see your webhook URL under Integration Settings.

Creating the handler

Now we'll use sensuctl to create a handler called `slack` that pipes event data to Slack using the `sensu-slack-handler` asset. Edit the command below to include your Slack channel and webhook URL. For more information about customizing your Sensu slack alerts, see the asset page in Bonsai.

```
sensuctl handler create slack \
--type pipe \
--env-vars "SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T0000/B000/XXXXXXXX" \
--command "sensu-slack-handler --channel '#monitoring'" \
--runtime-assets sensu-slack-handler
```

You should see a confirmation message from sensuctl.

```
Created
```

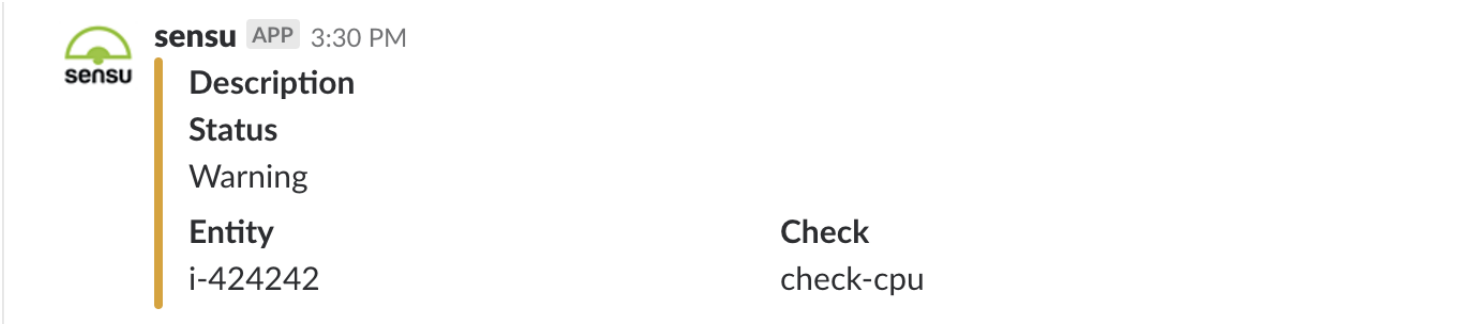
Assigning the handler to a check

With the `slack` handler now created, it can be assigned to a check. Here, since we want to receive Slack alerts whenever the CPU usage of our systems reach some specific thresholds, we will apply our handler to the check `check-cpu`.

```
sensuctl check set-handlers check-cpu slack
```

Validating the handler

It might take a few moments, once the handler is assigned to the check, for the check to be scheduled on the entities and the result sent back to Sensu backend, but once an event is handled, you should see the following message in Slack.



Otherwise, you can verify the proper behavior of this handler by using `sensu-backend` logs. See the troubleshooting guide for log locations by platform.

Whenever an event is being handled, a log entry is added with the message `"handler":"slack","level":"debug","msg":"sending event to handler"`, followed by a second one with the message `"msg":"pipelined executed event pipe handler","output":"","status":0`.

Next steps

You now know how to apply a handler to a check and take action on events. From this point, here are some recommended resources:

Read the handlers reference for in-depth documentation on handlers.
Read our guide on reducing alert fatigue with filters.

How to populate InfluxDB metrics using handlers

Contents

What are Sensu handlers?

Sensu event handlers are actions executed by the Sensu backend on events. In this example, we'll use a handler to populate a time series database. If you're not totally comfortable with handlers yet, check out the in-depth guide on handlers first!

Using a handler to populate InfluxDB

The purpose of this guide is to help you populate Sensu metrics into the time series database InfluxDB. Metrics can be collected from check output or from the Sensu StatsD Server.

Registering the asset

Assets are shareable, reusable packages that make it easy to deploy Sensu plugins. In this guide, we'll use the Sensu InfluxDB handler asset to power an `influx-db` handler.

You can use the following sensuctl example to register the Sensu InfluxDB handler asset for Linux AMD64, or you can download the latest asset definition for your platform from Bonsai and register the asset using `sensuctl create --file filename.yml`.

```
sensuctl asset create sensu-influxdb-handler --url
"https://assets.bonsai.sensu.io/b28f8719a48aa8ea80c603f97e402975a98cea47/sensu-
influxdb-handler_3.1.2_linux_amd64.tar.gz" --sha512
"612c6ff9928841090c4d23bf20aaf7558e4eed8977a848cf9e2899bb13a13e7540bac2b63e324f39d9b
1257bb479676bc155b24e21bf93c722b812b0f15cb3bd"
```

You should see a confirmation message from sensuctl.

```
Created
```

Creating the handler

Now we'll use sensuctl to create a handler called `influx-db` that pipes event data to InfluxDB using the `sensu-influxdb-handler` asset. Edit the command below to include your database name, address, username, and password. For more information about the Sensu InfluxDB handler, see the asset page in Bonsai.

```
sensuctl handler create influx-db \
--type pipe \
--command "sensu-influxdb-handler -d sensu" \
--env-vars "INFLUXDB_ADDR=http://influxdb.default.svc.cluster.local:8086,
INFLUXDB_USER=sensu, INFLUXDB_PASS=password" \
--runtime-assets sensu-influxdb-handler
```

You should see a confirmation message from sensuctl.

```
Created
```

Assigning the handler to an event

With the `influx-db` handler now created, it can be assigned to a check for check output metric extraction. In this example, the check name is `collect-metrics`:

```
sensuctl check set-output-metric-handlers collect-metrics influx-db
```

The handler can also be assigned to the Sensu StatsD listener at agent startup to pass all StatsD metrics into InfluxDB:

```
sensu-agent start --statsd-event-handlers influx-db
```

Validating the handler

It might take a few moments once the handler is assigned to the check or StatsD server, for Sensu to receive the metrics, but once an event is handled, you should start to see your InfluxDB being populated! Otherwise, you can verify the proper behavior of this handler by using `sensu-backend` logs. See the troubleshooting guide for log locations by platform.

Whenever an event is being handled, a log entry is added with the message `"handler":"influx-db","level":"debug","msg":"sending event to handler"`, followed by a second one with the message `"msg":"pipelined executed event pipe handler","output":"","status":0`.

Next steps

You now know how to apply a handler to metrics and take action on events. From this point, here are some recommended resources:

Read the handlers reference for in-depth documentation on handlers.
Read the StatsD listener guide for instructions on how to aggregate StatsD metrics in Sensu.
Read the check output metric extraction guide to learn how to collect and extract metrics using Sensu checks.

How to reduce alert fatigue with filters

Contents

What are Sensu filters?

Sensu filters allow you to filter **events** destined for one or more event **handlers**. Sensu filters evaluate their expressions against the event data, to determine if the event should be passed to an event handler.

Why use a filter?

Filters are commonly used to filter recurring events (i.e. to eliminate notification noise) and to filter events from systems in pre-production environments.

Using filters to reduce alert fatigue

The purpose of this guide is to help you reduce alert fatigue by configuring a filter named `hourly`, for a handler named `slack`, in order to prevent alerts from being sent to Slack every minute. If you don't already have a handler in place, learn how to send alerts with handlers.

Creating the filter

We'll show you two approaches to creating a filter that will handle occurrences. The first approach will be to create our own filter that we'll add to Sensu. The second approach will cover implementing the filter as an asset.

Using Sensuctl to Create a Filter

The first step is to create a filter that we will call `hourly`, which matches new events (where the event's `occurrences` is equal to `1`) or hourly events (so every hour after the first occurrence,

calculated with the check's `interval` and the event's `occurrences`).

Events in Sensu Go are handled regardless of check execution status; even successful check events are passed through the pipeline. Therefore, it's necessary to add a clause for non-zero status.

```
sensuctl filter create hourly \
--action allow \
--expressions "event.check.occurrences == 1 || event.check.occurrences % (3600 / event.check.interval) == 0"
```

Assigning the filter to a handler

Now that the `hourly` filter has been created, it can be assigned to a handler. Here, since we want to reduce the number of Slack messages sent by Sensu, we will apply our filter to an already existing handler named `slack`, in addition to the built-in `is_incident` filter so only failing events are handled.

```
sensuctl handler update slack
```

Follow the prompts to add the `hourly` and `is_incident` filters to the Slack handler.

Creating a fatigue check filter

While we can use `sensuctl` to interactively create a filter, we can create more reusable filters through the use of assets. Read on to see how to implement a filter using this approach.

Using a Filter Asset

If you're not already familiar with assets, take a minute or two and read over our guide to installing plugins with assets. This will help you understand what an asset is and how they are used in Sensu.

The first step we'll need to take is to obtain a filter asset that will allow us to replicate the behavior we used when we created the `hourly` filter via `sensuctl`. Let's use the fatigue check asset from the Bonsai Asset Index. You can download the asset directly by running the following:

```
curl -s https://bonsai.sensu.io/release_assets/nixwiz/sensu-go-fatigue-check-
```

```
filter/0.1.3/any/noarch/download | sensuctl create
```

Excellent! You've registered the asset. We still need to create our filter. We'll use the following configuration for creating the actual filter. In this case, we'll call it `sensu-fatigue-check-filter.yml`:

```
---
type: EventFilter
api_version: core/v2
metadata:
  name: fatigue_check
  namespace: default
spec:
  action: allow
  expressions:
  - fatigue_check(event)
  runtime_assets:
  - fatigue-check-filter
```

And we'll go ahead and create it:

```
sensuctl create -f sensu-fatigue-check-filter.yml
```

Now that we've created the filter asset and the filter, let's move on to the check annotations needed for the asset to work properly.

Annotating a check for filter asset use

Now that we've created the filter, we'll need to make some additions to any checks we want to use the filter with. Let's look at an example CPU check:

```
---
type: CheckConfig
api_version: core/v2
metadata:
  name: linux-cpu-check
  namespace: default
```

```
    annotations:
      fatigue_check/occurrences: '1'
      fatigue_check/interval: '3600'
      fatigue_check/allow_resolution: 'false'
  spec:
    command: check-cpu -w 90 c 95
    env_vars:
    handlers:
    - email
    high_flap_threshold: 0
    interval: 60
    low_flap_threshold: 0
    output_metric_format: ''
    output_metric_handlers:
    proxy_entity_name: ''
    publish: true
    round_robin: false
    runtime_assets:
    stdin: false
    subdue:
    subscriptions:
    - linux
    timeout: 0
    ttl: 0
```

You'll notice that under the `metadata` scope we've added some annotations. For our filter asset to work the way that our interactively created filter does, these annotations are necessary. Let's discuss those annotations briefly.

The annotations in our check definition are doing several things:

1. `fatigue_check/occurrences`: This tells the filter on which occurrence we're going to send the even through for further processing
2. `fatigue_check/interval`: This value (in seconds) tells the filter at what interval to allow additional events to be processed
3. `fatigue_check/allow_resolution`: Determines if a `resolve` event will be passed through to the filter.

For more information on configuring these values, see the filter asset README. Now let's assign our newly minted filter to a handler.

Assigning the filter to a handler

Just like we did with our interactively created filter, we're going to assign our filter to a handler. We can use the following handler example:

```
---
api_version: core/v2
type: Handler
metadata:
  namespace: default
  name: slack
spec:
  type: pipe
  command: 'sensu-slack-handler --channel ''#general'' --timeout 20 --username
''sensu'' '
  env_vars:
  - SLACK_WEBHOOK_URL=https://www.webhook-url-for-slack.com
  timeout: 30
  filters:
  - is_incident
  - fatigue_check
```

Let's move on to validating our filter.

Validating the filter

You can verify the proper behavior of these filters by using `sensu-backend` logs. The default location of these logs varies based on the platform used, but the troubleshooting guide provides this information.

Whenever an event is being handled, a log entry is added with the message `"handler":"slack","level":"debug","msg":"sending event to handler"`, followed by a second one with the message `"msg":"pipelined executed event pipe handler","output":"","status":0`. However, if the event is being discarded by our filter, a log entry with the message `event filtered` will appear instead.

Next steps

You now know how to apply a filter to a handler, as well as use a filter asset and hopefully reduce alert fatigue. From this point, here are some recommended resources:

Read the filters reference for in-depth documentation on filters.

How to route alerts using filters

Contents

Every alert has an ideal first responder: a team or individual with the knowledge to triage and address the issue. Sensu contact routing lets you alert the right people using their preferred contact methods, reducing mean time to response and recovery.

In this guide, we'll set up alerting for two teams (ops and dev) with separate Slack channels. Each team wants to be alerted only for the things they care about, using their team's Slack channel. To achieve this, we'll be creating two types of Sensu resources:

Event handlers to store contact preferences for the ops team, the dev team, and a fallback option
Event filters to match contact labels to the right handler

Here's a quick overview of the configuration we'll need to set up contact routing. You can see that the check definition includes the `contacts: dev` label, resulting in an alert being sent to the dev team, but not to the ops team or to the fallback contact.

Sensu Go contact routing: Routing alerts to the ops team using a check label

Prerequisites

To complete this guide, you'll need:

a Sensu backend
at least one Sensu agent
sensuctl, configured to talk to the Sensu backend
curl
a Slack webhook URL and three Slack channels available to receive test alerts

To set up a quick testing environment, download and start the Sensu sandbox.

Configuring contact routing

1. Register the has-contact filter asset

Contact routing is powered by the has-contact filter asset. To add the has-contact asset to Sensu, use this sensuctl command, or download the latest asset definition from Bonsai.

```
curl https://bonsai.sensu.io/release_assets/sensu/sensu-go-has-contact-filter/0.2.0/any/noarch/download \
| sensuctl create
```

You can run `sensuctl asset list --format yaml` to confirm that the asset is ready to use.

2. Create contact filters

Looking at the documentation in Bonsai, we can see that the has-contact asset supports two functions:

`has_contact`, taking the Sensu event and the contact name as arguments
`no_contact`, to use as a fallback in the absence of contact labels and taking only the event as an argument

We'll use these functions to create filters that represent the three actions that the Sensu Slack handler can take on an event: contact the ops team, contact the dev team, and contact the fallback option.

filter name	expression	description
`contact_ops`	`has_contact(event, "ops")`	Allow events with the entity or check label `contacts: ops`

`contact_dev`	`has_contact(event, "dev")`	Allow events with the entity or check label `contacts: dev`
`contact_fallback`	`no_contacts(event)`	Allow events without an entity or check `contacts` label

To add these filters to Sensu, use `sensuctl create`:

```
echo '---
type: EventFilter
api_version: core/v2
metadata:
  name: contact_ops
spec:
  action: allow
  runtime_assets:
    - sensu-go-has-contact-filter_any_noarch
  expressions:
    - has_contact(event, "ops")
---
type: EventFilter
api_version: core/v2
metadata:
  name: contact_dev
spec:
  action: allow
  runtime_assets:
    - sensu-go-has-contact-filter_any_noarch
  expressions:
    - has_contact(event, "dev")
---
type: EventFilter
api_version: core/v2
metadata:
  name: contact_fallback
spec:
  action: allow
  runtime_assets:
    - sensu-go-has-contact-filter_any_noarch
  expressions:
```

```
    - no_contacts(event)' | sensuctl create
```

You can run `sensuctl filter list --format yaml` to confirm that the filters are ready to use.

3. Create a handler for each contact

With our contact filters in place, we'll create a handler for each contact: ops, dev, and fallback.If you haven't already, add the Slack handler asset to Sensu using sensuctl:

```
curl https://bonsai.sensu.io/release_assets/sensu/sensu-slack-
handler/1.0.3/linux/amd64/download \
| sensuctl create
```

In each handler definition, we'll specify:

a unique name: `slack_ops`, `slack_dev`, or `slack_fallback`
a customized command with the contact's preferred Slack channel
the contact filter
the built-in `is_incident` and `not_silenced` filters to reduce noise and enable silences
an environment variable containing your Slack webhook URL
the `sensu-slack-handler` runtime asset

To create the `slack_ops`, `slack_dev`, and `slack_fallback` handlers, edit and run:

```
# Edit before running:
# 1. Add your SLACK_WEBHOOK_URL
# 2. Make sure the Slack channels specified in the
#    command` attributes match channels available
#    to receive test alerts in your Slack instance.
echo '---
type: Handler
api_version: core/v2
metadata:
  name: slack_ops
spec:
  command: sensu-slack-handler --channel "#alert-ops"
  env_vars:
  - SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T0000/B000/XXXXXXXX
```

```
  filters:
  - is_incident
  - not_silenced
  - contact_ops
  runtime_assets:
  - sensu-slack-handler_linux_amd64
  type: pipe
---
type: Handler
api_version: core/v2
metadata:
  name: slack_dev
spec:
  command: sensu-slack-handler --channel "#alert-dev"
  env_vars:
  - SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T0000/B000/XXXXXXXX
  filters:
  - is_incident
  - not_silenced
  - contact_dev
  runtime_assets:
  - sensu-slack-handler_linux_amd64
  type: pipe
---
type: Handler
api_version: core/v2
metadata:
  name: slack_fallback
spec:
  command: sensu-slack-handler --channel "#alert-all"
  env_vars:
  - SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T0000/B000/XXXXXXXX
  filters:
  - is_incident
  - not_silenced
  - contact_fallback
  runtime_assets:
  - sensu-slack-handler_linux_amd64
  type: pipe' | sensuctl create
```

You can run `sensuctl handler list --format yaml` to confirm that the handlers are ready to use.

4. Create a handler set

To centralize contact management and simplify configuration, we'll create a handler set that combines our contact-specific handlers under a single handler name.

Use `sensuctl` to create a `slack` handler set:

```
echo '---
type: Handler
api_version: core/v2
metadata:
  name: slack
  namespace: default
spec:
  handlers:
  - slack_ops
  - slack_dev
  - slack_fallback
  type: set' | sensuctl create
```

You should see the output of `sensuctl handler list` update to include the `slack` handler set.

Testing contact routing

To make sure our contact filters are working, we'll use the agent API to create ad-hoc events and send them to our Slack pipeline.

First, let's create an event without a `contacts` label. You may need to modify the URL with your Sensu agent address.

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "example-check"
```

```
    },
    "status": 1,
    "output": "You should receive this example event in the Slack channel specified
by your slack_fallback handler.",
    "handlers": ["slack"]
  }
}' \
http://127.0.0.1:3031/events
```

You should see a 202 response from the API and, since this event doesn't include a `contacts` label, an alert in the Slack channel specified by the `slack_fallback` handler.Behind the scenes, Sensu uses the `contact_fallback` filter to match the event to the `slack_fallback` handler.

Now let's create an event with a `contacts` label.

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "example-check",
      "labels": {
        "contacts": "dev"
      }
    },
    "status": 1,
    "output": "You should receive this example event in the Slack channel specified
by your slack_dev handler.",
    "handlers": ["slack"]
  }
}' \
http://127.0.0.1:3031/events
```

Since this event contains the `contacts: dev` label, you should see an alert in the Slack channel specified by the `slack_dev` handler.

Resolve the events by sending the same API requests with `status` set to `0`.

Managing contact labels in checks and entities

To assign an alert to a contact, add a `contacts` label to the check or entity.

Checks

For example, this check definition includes two contacts (`ops` and `dev`) and the handler `slack` . To set up the `check_cpu` check, see the guide to monitoring server resources.

```
---
type: CheckConfig
api_version: core/v2
metadata:
  name: check_cpu
  labels:
    contacts: ops, dev
spec:
  command: check-cpu.rb -w 75 -c 90
  handlers:
  - slack
  interval: 10
  publish: true
  subscriptions:
  - system
  runtime-assets:
  - sensu-plugins-cpu-checks
  - sensu-ruby-runtime
```

When the `check_cpu` check generates an incident, Sensu filters the event according to the `contact_ops` and `contact_dev` filters, resulting in an alert sent to #alert-ops and #alert-dev.

Sensu Go contact routing: Routing alerts to two contacts using a check label

Entities

You can also specify contacts using an entity label. For more information about managing entity labels,

see the entity reference.

In the case that contact labels are present in both the check and entity, the check contacts override the entity contacts. Here we can see that the `dev` label in the check configuration overrides the `ops` label in the agent definition, resulting in an alert sent to #alert-dev but not to #alert-ops or #alert-all.

Sensu Go contact routing: Check contacts take precedence over entity contacts

Next steps

Now that you've set up contact routing for two example teams, you can create additional filters, handlers, and labels to represent your team's contacts. For more tools to reduce alert fatigue, see the guide.

How to install plugins using assets

Contents

Assets are shareable, reusable packages that make it easy to deploy Sensu plugins. You can use assets to provide the plugins, libraries, and runtimes you need to automate your monitoring workflows. See the asset reference for more information about assets.

1. Download an asset definition from Bonsai

You can discover, download, and share assets using Bonsai, the Sensu asset index. To use an asset, select the Download button on the asset page in Bonsai to download the asset definition for your Sensu backend platform and architecture. Asset definitions tell Sensu how to download and verify the asset when required by a check, filter, mutator, or handler.

For example, here's the asset definition for version 1.1.0 of the Sensu PagerDuty handler asset for Linux AMD64.

```
---
type: Asset
api_version: core/v2
metadata:
  name: sensu-pagerduty-handler
  namespace: default
  labels: {}
  annotations: {}
spec:
  url:
https://assets.bonsai.sensu.io/698710262d59c72ace3e31524960630dc1e4f190/sensu-
pagerduty-handler_1.1.0_linux_amd64.tar.gz
  sha512:
```

```
e93ec4465af5a2057664e8c3cd68e9352457b81315b97578eaae5e21f0cf7419d4fc36feb0155eeb0dd5
a227e267307a58ee58a9f3e85bf3d44da3738bf691ca
  filters:
  - entity.system.os == 'linux'
  - entity.system.arch == 'amd64'
```

After downloading an asset definition, open the file and adjust the `namespace` and `filters` for your Sensu instance. Filters for *check* assets should match entity platforms, while filters for *handler and filter* assets should match your Sensu backend platform. If the provided filters are too restrictive for your platform, replace `os` and `arch` with any supported entity system attributes (for example: `entity.system.platform_family == 'rhel'`). You may also want to customize the asset `name` to reflect the supported platform (for example: `sensu-pagerduty-handler-linux`) and add custom attributes using `labels` and `annotations`.

Enterprise-tier assets (like the ServiceNow and Jira event handlers) require a Sensu license. For more information about licensed-tier features and to activate your license, see the getting started guide.

2. Register the asset with Sensu

Once you've downloaded the asset definition, you can register the asset with Sensu using sensuctl.

```
sensuctl create --file sensu-sensu-pagerduty-handler-1.1.0-linux-amd64.yml
```

You can use sensuctl to verify that the asset is registered and ready to use.

```
sensuctl asset list
```

3. Create a workflow

Now we can use assets in a monitoring workflow. Depending on the asset, you may want to create Sensu checks, filters, mutators, and handlers. The asset details in Bonsai are the best resource for information about asset capabilities and configuration.

For example, to use the Sensu PagerDuty handler asset, create a `pagerduty` handler that includes your PagerDuty service API key in place of `SECRET` and `sensu-pagerduty-handler` as a runtime

asset.

Save the definition to a file (for example: `pagerduty-handler.json`), and add to Sensu using sensuctl.

```
sensuctl create --file pagerduty-handler.json
```

Now that Sensu can create incidents in PagerDuty, we can automate this workflow by adding the `pagerduty` handler to our Sensu service checks. To get started with checks, see the guide to monitoring server resources.

Next steps

Learn more about assets
Read the asset specification
Share your assets on Bonsai

How to plan maintenance windows using silencing

Contents

What is Sensu silencing?

As **check results** are processed by a Sensu backend, the server executes event handlers to send alerts to personnel or otherwise relay **event data** to external services. Sensu's built-in **silencing**, along with the built-in `not_silenced` filter, provides the means to suppress execution of event handlers on an ad hoc basis.

When to use silencing

Silencing is used to prevent handlers configured with the `not_silenced` filter from being triggered based on the check name present in a check result or the subscriptions associated with the entity that published the check result. This can be desirable in many scenarios, giving operators the ability to quiet incoming alerts while coordinating their response.

Sensu silences make it possible to:

Silence all checks on a specific entity
Silence a specific check on a specific entity
Silence all checks on entities with a specific subscription
Silence a specific check on entities with a specific subscription
Silence a specific check on every entity

Using silencing to plan maintenance

The purpose of this guide is to help you plan a maintenance window, by creating a silenced entry for a specific entity named `i-424242` and its check named `check-http`, in order to prevent alerts as you restart or redeploy the services associated with this entity.

Creating the silenced entry

The first step is to create a silenced entry that will silence the check `check-http` on an entity named `i-424242`, for a planned maintenance window that starts at **01:00**, on **Sunday**, and ends **1 hour** later. Your username will automatically be added as the **creator** of the silenced entry.

```
sensuctl silenced create \
--subscription 'entity:i-424242' \
--check 'check-http' \
--begin '2018-03-16 01:00:00 -04:00' \
--expire 3600 \
--reason 'Server upgrade'
```

See the sensuctl documentation for the supported time formats in the `begin` flag.

Validating the silenced entry

You can verify that the silenced entry against our entity, here named `i-424242`, has been properly created, by using `sensuctl`.

```
sensuctl silenced info 'entity:i-424242:check-http'
```

Once the silenced entry starts to take effect, events that are silenced will be marked as so in `sensuctl events`.

```
sensuctl event list

  Entity      Check       Output   Status   Silenced         Timestamp
 ────────── ────────── ──────── ──────── ───────────── ──────────────────────────────

  i-424242   check-http              0       true     2018-03-16 13:22:16 -0400 EDT
```

WARNING: By default, a silenced event will be handled unless the handler uses the `not_silenced` filter to discard silenced events.

Next steps

You now know how to create silenced entries to plan a maintenance and hopefullyavoid false positive. From this point, here are some recommended resources:

Read the silencing reference for in-depth documentation on silenced entries.

How to create a read-only user with RBAC

Contents

Sensu role-based access control (RBAC) helps different teams and projects share a Sensu instance. RBAC allows management and access of users and resources based on **namespaces**, **groups**, **roles**, and **bindings**.

By default, Sensu includes a `default` namespace and an `admin` user with full permissions to create, modify, and delete resources within Sensu, including RBAC resources like users and roles. This guide requires a running Sensu backend and a sensuctl instance configured to connect to the backend as the default `admin` user.

Why use RBAC?

RBAC allows you to exercise fine-grained control over how Sensu users interact with Sensu resources. Using RBAC rules, you can easily achieve **multitenancy** so different projects and teams can share a Sensu instance.

How to create a read-only user

In this section, you'll create a user and assign them read-only access to resources within the `default` namespace using a **role** and a **role binding**.

1. Create a user with the username `alice` and assign them to the group `ops`:

```
sensuctl user create alice --password='password' --groups=ops
```

2. Create a `read-only` role with `get` and `list` permissions for all resources (`*`) within the `default` namespace:

```
```

```
sensuctl role create read-only --verb=get,list --resource=* --namespace=default
```

3. Create an `ops-read-only` role binding to assign the `read-only` role to the `ops` group:

```
sensuctl role-binding create ops-read-only --role=read-only --group=ops
```

   You can also use role bindings to tie roles directly to users using the `--user` flag.

All users in the `ops` group now have read-only access to all resources within the default namespace. You can use the `sensuctl user`, `sensuctl role`, and `sensuctl role-binding` commands to manage your RBAC configuration.

How to create a cluster-wide event-reader user

Now let's say you want to create a user that has read-only access to events across all namespaces. Since you want this role to have cluster-wide permissions, you'll need to create a **cluster role** and a **cluster role binding**.

1. Create a user with the username `bob` and assign them to the group `ops`:

```
sensuctl user create bob --password='password' --groups=ops
```

2. Create a `global-event-reader` cluster role with `get` and `list` permissions for `events` across all namespaces:

```
sensuctl cluster-role create global-event-reader --verb=get,list --
resource=events
```

3. Create an `ops-event-reader` cluster role binding to assign the `global-event-reader` role to the `ops` group:

```
sensuctl cluster-role-binding create ops-event-reader --cluster-role=global-
event-reader --group=ops
```

All users in the `ops` group now have read-only access to events across all namespaces.

Next steps

You now know how to create a user, create a role, and create a role binding to assign a role to a user. From this point, here are some recommended resources:

Read the RBAC reference for in-depth documentation on role-based access control, examples, and information about cluster-wide permissions.

Planning your Sensu Go deployment

Contents

This guide describes various deployment considerations and recommendations, including details related to communication security and common deployment architectures.

What is etcd?

etcd is a key-value store which is used by applications of varying complexity, from simple web apps to Kubernetes. The Sensu backend uses an embedded etcd instance for storing both configuration and event data, so you can get Sensu up and running without external dependencies.

By building atop etcd, Sensu's backend inherits a number of characteristics that should be considered when planning for a Sensu deployment.

Hardware sizing

Because etcd's design prioritizes consistency across a cluster, the speed with which write operations can be completed is very important to the performance of a Sensu cluster.

This means that Sensu backend infrastructure should be provisioned to provide sustained IO operations per second (IOPS) appropriate for the rate of monitoring events the system will be required to process.

For more detail, our hardware requirements document describes the minimum and recommended hardware specifications for running the Sensu backend.

Communications security

Whether using a single or multiple Sensu backends in a cluster, communication with the backend's various network ports (web UI, HTTP API, websocket API, etcd client & peer) occurs in cleartext by default. Encrypting network communications via TLS is highly recommended, and requires both some planning and explicit configuration.

Planning TLS for etcd

The URLs for each member of an etcd cluster are persisted to the database after initialization. As a result, moving a cluster from cleartext to encrypted communications requires resetting the cluster, which destroys all configuration and event data in the database. Therefore, we recommend planning for encryption before initiating a clustered Sensu backend deployment.

WARNING: Reconfiguring a Sensu cluster for TLS post-deployment will require resetting all etcd cluster members, resulting in the loss of all data.

As described in our guide for securing Sensu, the backend uses a shared certificate and key for web UI and agent communications. Communications with etcd can be secured using the same certificate and key; the certificate's common name or subject alternate names must include the network interfaces and DNS names that will point to those systems.

See our clustering guide and the etcd docs for more info on setup and configuration, including a walk-through for generating TLS certificates for your cluster.

Common Sensu architectures

Depending on your infrastructure and the type of environments you'll be monitoring, you may use one or a combination of these architectures to best fit your needs.

Single backend using embedded etcd

This architecture requires minimal resources, but provides no redundancy in the event of failure.

Sensu standalone architecture with embedded etcd

A single backend can later be reconfigured as a member of a cluster, but this operation is destructive – meaning that it requires destroying the existing database.

Use cases

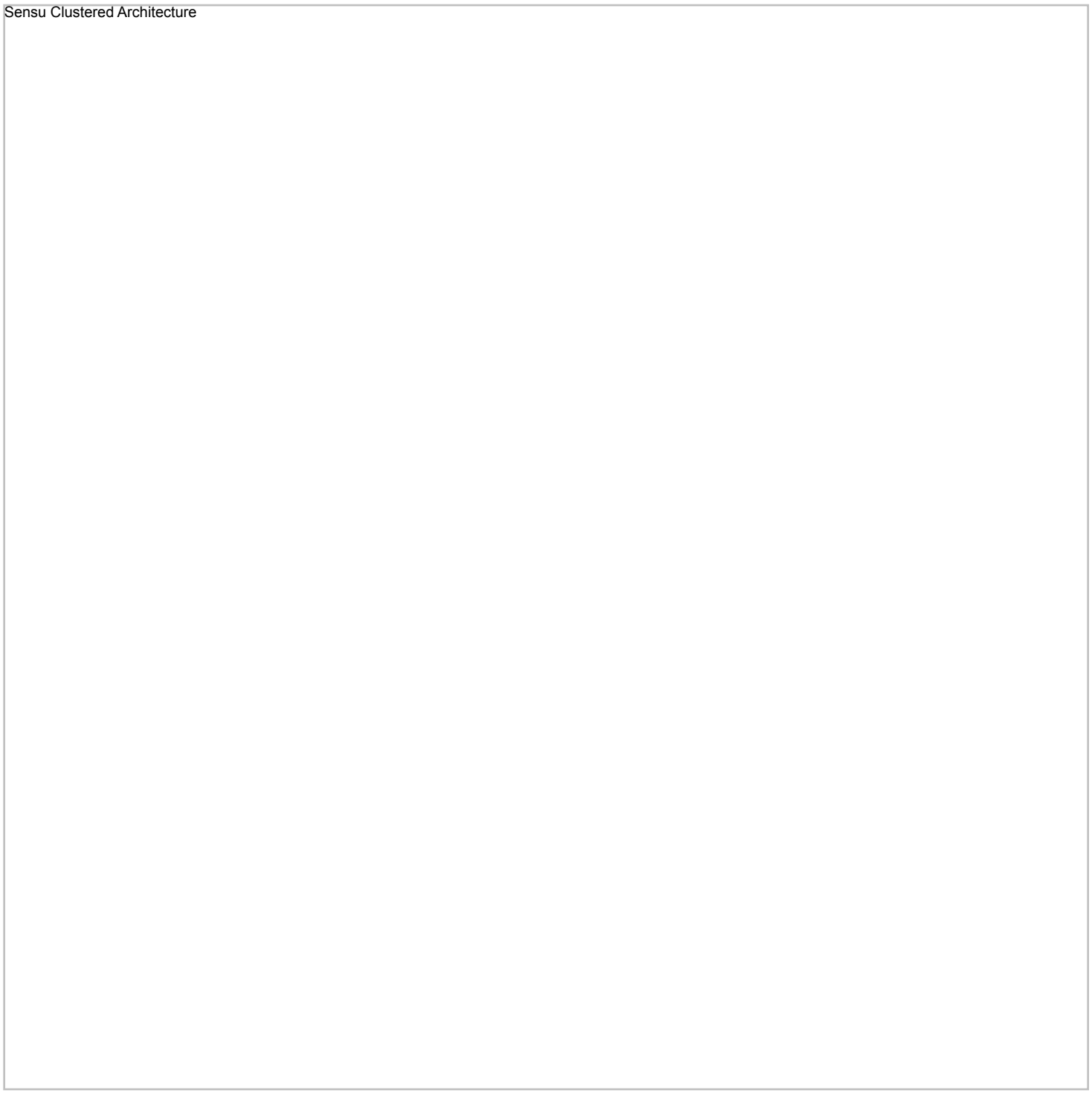
The simplicity of this architecture may make it a good fit for small to medium-sized deployments, such as monitoring a remote office or datacenter, deploying alongside individual auto-scaling groups or in various segments of a logical environment spanning multiple cloud providers.

For example, in environments with unreliable WAN connectivity, having agents connect to a local backend may be more reliable than having those agents connect over WAN or VPN tunnel to a backend running in a central location.

NOTE: Multiple Sensu backends can relay their events to a central backend using the sensu-relay-handler.

Clustered backend with embedded etcd

The embedded etcd databases of multiple Sensu backend instances can be joined together in a cluster, providing increased availability and replication of both configuration and data. Please see our clustering guide for more information.

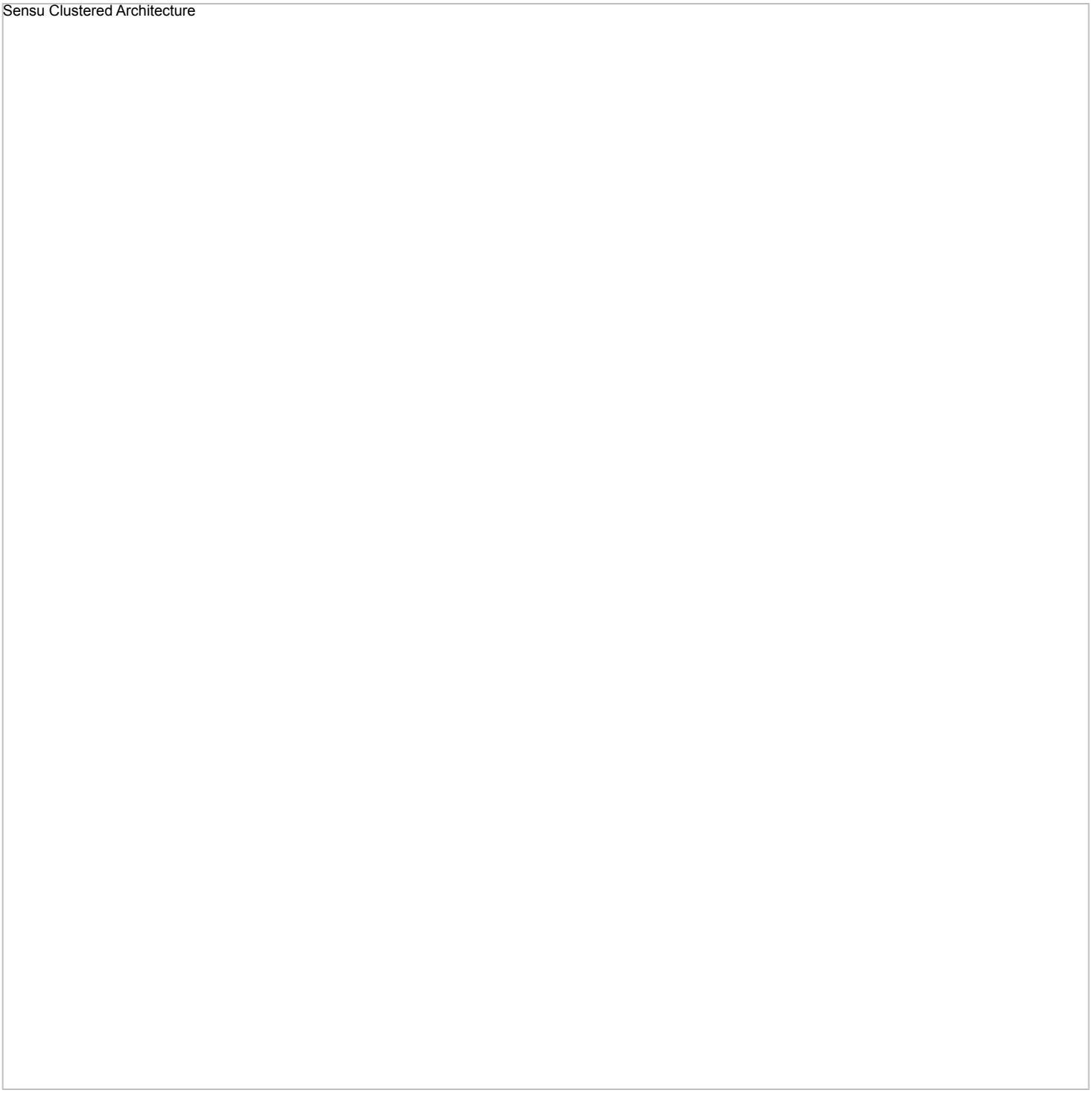


Sensu clustered architecture with embedded etcd

Clustering requires an odd number of backend instances. While larger clusters provide better fault tolerance, write performance suffers because data must be replicated across more machines. Following on the advice of the etcd maintainers, clusters of 3, 5 or 7 backends are the only recommended sizes. See the etcd docs for more info.

Scaling cluster performance with Postgres

To achieve the high rate of event processing required by many enterprises, Sensu offers support for Postgres event storage as a licensed feature. See the Datastore reference documentation for details on configuring the Sensu backend to use Postgres for event storage.



Sensu clustered architecture with embedded etcd and Postgres event storage

In load testing Sensu Go has proven capable of processing 36,000 events per second when using Postgres as the event store. See the sensu-perf project repository for detailed explanation of our testing methodology and results.

Cluster creation and maintenance

Sensu's embedded etcd supports initial cluster creation via a static list of peer URLs. Once the cluster is created, members can be added or removed using etcdctl tooling. See our clustering guide and the etcd docs for more info.

Networking considerations

Clustered deployments benefit from a fast and reliable network. Ideally they should be co-located in the same network segment with as low latency as possible between all the nodes. Clustering backends across disparate subnets or WAN connections is not recommended.

While a 1GbE is sufficient for common deployments, larger deployments will benefit from 10GbE network allowing for a reduced mean time to recovery.

As the number of agents connected to a backend cluster grows, so will the communication between members of the cluster required for data replication. With this in mind, it is recommended that clusters with a thousand or more agents use a discrete network interface for peer communication.

Load balancing

Although each Sensu agent can be configured with the URLs for multiple backend instances, we recommend that agents be configured for connecting to a load balancer. This approach provides operators with greater control over agent connection distribution and makes it possible to replace members of the backend cluster without requiring updates to agent configuration.

Conversely, the sensuctl command-line utility cannot be configured with multiple backend URLs. Under normal conditions it is desirable for both sensuctl communications and browser access to the web UI to be routed via a load balancer as well.

How to run a Sensu cluster

Contents

What is a Sensu cluster?

A Sensu cluster is a group of at least three sensu-backend nodes, each connected to a shared etcd cluster, using Sensu's embedded etcd or an external etcd cluster. Creating a Sensu cluster ultimately configures an etcd cluster.

Why use clustering?

Clustering is important to make Sensu more highly available, reliable, and durable. It will help you cope with the loss of a backend node, prevent data loss, and distribute the network load of agents.

NOTE: We recommend using a load balancer to evenly distribute agent connections across the cluster.

Configuring a cluster

The sensu-backend arguments for its store mirror the etcd configuration flags, however the Sensu flags are prefixed with `etcd`. For more detailed descriptions of the different arguments, you can refer to the etcd docs or the Sensu backend reference.

You can configure a Sensu cluster in a couple different ways (we'll show you a few below) but it's recommended to adhere to some etcd cluster guidelines as well.

> The recommended etcd cluster size is 3, 5 or 7, which is decided by the fault tolerance requirement. A 7-member cluster can provide enough fault tolerance in most cases. While a larger cluster provides better fault tolerance, the write performance reduces since data needs to be replicated to more machines. It is recommended to have an odd number of members in a cluster. Having an odd cluster size doesn't change the number needed for majority, but you gain a higher tolerance for failure by adding the extra member *(Core OS).*

We also recommend using stable platforms to support your etcd instances (see etcd's supported platforms).

Docker

If you'd prefer to stand up your Sensu cluster within Docker containers, check out the Sensu Go docker configuration. This configuration defines three sensu-backend containers and three sensu-agent containers.

Traditional computer instance

NOTE: The remainder of this guide uses on disk configuration. If you are using an ephemeral computer instance, you can use `sensu-backend start --help` to see examples of etcd command line flags. The configuration file entries below translate to `sensu-backend` flags.

Sensu backend configuration

Below are example configuration snippets from `/etc/sensu/backend.yml` using a three node cluster. The nodes are named `backend-1`, `backend-2` and `backend-3` with IP addresses `10.0.0.1`, `10.0.0.2` and `10.0.0.3`, respectively.

NOTE: This backend configuration assumes you have set up and installed the sensu-backend on all the nodes used in your cluster. You can use our installation and configuration guide guide if you have not done so.

backend-1

```
##
# store configuration for backend-1/10.0.0.1
##
 etcd-advertise-client-urls: "http://10.0.0.1:2379"
etcd-listen-client-urls: "http://10.0.0.1:2379"
etcd-listen-peer-urls: "http://0.0.0.0:2380"
etcd-initial-cluster: "backend-1=http://10.0.0.1:2380,backend-
2=http://10.0.0.2:2380,backend-3=http://10.0.0.3:2380"
etcd-initial-advertise-peer-urls: "http://10.0.0.1:2380"
etcd-initial-cluster-state: "new"
etcd-initial-cluster-token: ""
etcd-name: "backend-1"
```

backend-2

```
##
# store configuration for backend-2/10.0.0.2
##
etcd-advertise-client-urls: "http://10.0.0.2:2379"
etcd-listen-client-urls: "http://10.0.0.2:2379"
etcd-listen-peer-urls: "http://0.0.0.0:2380"
etcd-initial-cluster: "backend-1=http://10.0.0.1:2380,backend-
2=http://10.0.0.2:2380,backend-3=http://10.0.0.3:2380"
etcd-initial-advertise-peer-urls: "http://10.0.0.2:2380"
etcd-initial-cluster-state: "new"
etcd-initial-cluster-token: ""
etcd-name: "backend-2"
```

backend-3

```
##
# store configuration for backend-3/10.0.0.3
##
etcd-advertise-client-urls: "http://10.0.0.3:2379"
etcd-listen-client-urls: "http://10.0.0.3:2379"
```

```
etcd-listen-peer-urls: "http://0.0.0.0:2380"
etcd-initial-cluster: "backend-1=http://10.0.0.1:2380,backend-
2=http://10.0.0.2:2380,backend-3=http://10.0.0.3:2380"
etcd-initial-advertise-peer-urls: "http://10.0.0.3:2380"
etcd-initial-cluster-state: "new"
etcd-initial-cluster-token: ""
etcd-name: "backend-3"
```

Once each node has the configuration described above, start each sensu-backend:

```
sudo systemctl start sensu-backend
```

Adding sensu agents to the cluster

Each Sensu agent should have the following entries in `/etc/sensu/agent.yml` to ensure they are aware of all cluster members. This allows the agent to reconnect to a working backend in the scenrio where the one it is currently connected to goes into an unhealthy state.

```
##
# backend-url configuration for all agents connecting to cluster over ws
##

backend-url:
  - "ws://10.0.0.1:8081"
  - "ws://10.0.0.2:8081"
  - "ws://10.0.0.3:8081"
```

You should now have a highly available Sensu cluster! You can verify its health and try other cluster management commands using sensuctl.

Sensuctl

Sensuctl has several commands to help you manage and monitor your cluster. See `sensuctl cluster -h` for additional help usage.

Cluster health

Get cluster health status and etcd alarm information.

```
sensuctl cluster health

       ID          Name                 Error                    Healthy
────────────────── ────────── ───────────────────────────────────────────────
──────────
a32e8f613b529ad4   backend-1                                              true
c3d9f4b8d0dd1ac9   backend-2  dial tcp 10.0.0.2:2379: connect: connection refused   false
c8f63ae435a5e6bf   backend-3                                              true
```

Add a cluster member

Add a new member node to an existing cluster.

```
sensuctl cluster member-add backend-4 https://10.0.0.4:2380

added member 2f7ae42c315f8c2d to cluster

ETCD_NAME="backend-4"
ETCD_INITIAL_CLUSTER="backend-4=https://10.0.0.4:2380,backend-
1=https://10.0.0.1:2380,backend-2=https://10.0.0.2:2380,backend-
3=https://10.0.0.3:2380"
ETCD_INITIAL_CLUSTER_STATE="existing"
```

List cluster members

List the ID, name, peer urls, and client urls of all nodes in a cluster.

```
sensuctl cluster member-list

       ID          Name          Peer URLs            Client URLs
```

```
a32e8f613b529ad4   backend-1   https://10.0.0.1:2380   https://10.0.0.1:2379
c3d9f4b8d0dd1ac9   backend-2   https://10.0.0.2:2380   https://10.0.0.2:2379
c8f63ae435a5e6bf   backend-3   https://10.0.0.3:2380   https://10.0.0.3:2379
2f7ae42c315f8c2d   backend-4   https://10.0.0.4:2380   https://10.0.0.4:2379
```

Remove a cluster member

Remove a faulty or decommissioned member node from a cluster.

```
sensuctl cluster member-remove 2f7ae42c315f8c2d

Removed member 2f7ae42c315f8c2d from cluster
```

Update a cluster member

Update the peer URLs of a member in a cluster.

```
sensuctl cluster member-update c8f63ae435a5e6bf https://10.0.0.4:2380

Updated member with ID c8f63ae435a5e6bf in cluster
```

Security

Creating self-signed certificates

We will use the cfssl tool to generate our self-signed certificates.

The first step is to create a **Certificate Authority (CA)**. In order to keep things simple, we will generate all our clients and peer certificates using this CA, but you might eventually want to create distinct CA.

```
echo '{"CN":"CA","key":{"algo":"rsa","size":2048}}' | cfssl gencert -initca - |
```

```
cfssljson -bare ca -
echo '{"signing":{"default":{"expiry":"43800h","usages":["signing","key
encipherment","server auth","client auth"]}}}' > ca-config.json
```

Then, using that CA, we can generate certificates and keys for each peer (backend server) by specifying their **Common Name (CN)** and their **hosts**. A `*.pem`, `*.csr` and `*.pem` will be created for each backend.

```
export ADDRESS=10.0.0.1,backend-1
export NAME=backend-1
echo '{"CN":"'$NAME'","hosts":[""],"key":{"algo":"rsa","size":2048}}' | cfssl
gencert -config=ca-config.json -ca=ca.pem -ca-key=ca-key.pem -hostname="$ADDRESS" -
profile=peer - | cfssljson -bare $NAME

export ADDRESS=10.0.0.2,backend-2
export NAME=backend-2
echo '{"CN":"'$NAME'","hosts":[""],"key":{"algo":"rsa","size":2048}}' | cfssl
gencert -config=ca-config.json -ca=ca.pem -ca-key=ca-key.pem -hostname="$ADDRESS" -
profile=peer - | cfssljson -bare $NAME

export ADDRESS=10.0.0.3,backend-3
export NAME=backend-3
echo '{"CN":"'$NAME'","hosts":[""],"key":{"algo":"rsa","size":2048}}' | cfssl
gencert -config=ca-config.json -ca=ca.pem -ca-key=ca-key.pem -hostname="$ADDRESS" -
profile=peer - | cfssljson -bare $NAME
```

We will also create generate a *client* certificate that can be used by clients to connect to the etcd client URL. This time, we don't need to specify an address but simply a **Common Name (CN)** (here `client`). The files `client-key.pem`, `client.csr` and `client.pem` will be created.

```
export NAME=client
echo '{"CN":"'$NAME'","hosts":[""],"key":{"algo":"rsa","size":2048}}' | cfssl
gencert -config=ca-config.json -ca=ca.pem -ca-key=ca-key.pem -hostname="" -
profile=client - | cfssljson -bare $NAME
```

See etcd's guide to generating self signed certificates for detailed instructions.

Once done, you should have the following files created. The `*.csr` files will not be used in this guide.

```
backend-1-key.pem
backend-1.csr
backend-1.pem
backend-2-key.pem
backend-2.csr
backend-2.pem
backend-3-key.pem
backend-3.csr
backend-3.pem
ca-config.json
ca-key.pem
ca.csr
ca.pem
client-key.pem
client.csr
client.pem
```

Client-to-server transport security with HTTPS

Below are example configuration snippets from `/etc/sensu/backend.yml` on three Sensu backends named `backend-1`, `backend-2` and `backend-3` with IP addresses `10.0.0.1`, `10.0.0.2` and `10.0.0.3` respectively. This configuration assumes that your client certificates are in `/etc/sensu/certs/` and your CA certificate is in `/usr/local/share/ca-certificates/sensu/`.

```
##
# etcd peer ssl configuration for backend-1/10.0.0.1
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-1.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-1-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"

##
# etcd peer ssl configuration for backend-2/10.0.0.2
##
```

```
etcd-peer-cert-file: "/etc/sensu/certs/backend-2.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-2-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"

##
# etcd peer ssl configuration for backend-3/10.0.0.3
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-3.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-3-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
```

Validating with curl:

```
curl --cacert /usr/local/share/ca-certificates/sensu/ca.pem \
https://127.0.0.1:2379/v2/keys/foo -XPUT -d value=bar
```

Client-to-server authentication with HTTPS client certificates

Below are example configuration snippets from `/etc/sensu/backend.yml` on three Sensu backends named `backend-1`, `backend-2` and `backend-3` with IP addresses `10.0.0.1`, `10.0.0.2` and `10.0.0.3` respectively. This configuration assumes your client certificates are in `/etc/sensu/certs/` and your CA certificate is in `/usr/local/share/ca-certificates/sensu/`.

```
##
# etcd peer ssl configuration for backend-1/10.0.0.1
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-1.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-1-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
etcd-client-cert-auth: true

##
# etcd peer ssl configuration for backend-2/10.0.0.2
##
```

```
etcd-peer-cert-file: "/etc/sensu/certs/backend-2.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-2-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
etcd-client-cert-auth: true

##
# etcd peer ssl configuration for backend-3/10.0.0.3
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-3.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-3-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
etcd-client-cert-auth: true
```

Validating with curl, with a different certificate and key:

```
curl --cacert /usr/local/share/ca-certificates/sensu/ca.pem \
--cert /etc/sensu/certs/client.pem \
--key /etc/sensu/certs/client-key.pem \
-L https://127.0.0.1:2379/v2/keys/foo -XPUT -d value=bar
```

Peer communication authentication with HTTPS client certificates

Below are example configuration snippets from `/etc/sensu/backend.yml` on three Sensu backends named `backend-1`, `backend-2` and `backend-3` with IP addresses `10.0.0.1`, `10.0.0.2` and `10.0.0.3` respectively.

*NOTE: If you ran through the first part of the guide, you will need to update the store configuration for all backends to use http**s** instead of http.*

backend-1

```
##
# store configuration for backend-1/10.0.0.1
##

etcd-listen-client-urls: "https://10.0.0.1:2379"
```

```
etcd-listen-peer-urls: "https://0.0.0.0:2380"
etcd-initial-cluster: "backend-1=https://10.0.0.1:2380,backend-
2=https://10.0.0.2:2380,backend-3=https://10.0.0.3:2380"
etcd-initial-advertise-peer-urls: "https://10.0.0.1:2380"
etcd-initial-cluster-state: "new"
etcd-initial-cluster-token: "sensu"
etcd-name: "backend-1"

##
# etcd peer ssl configuration for backend-1/10.0.0.1
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-1.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-1-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
etcd-peer-client-cert-auth: true
```

backend-2

```
##
# store configuration for backend-2/10.0.0.2
##

etcd-listen-client-urls: "https://10.0.0.2:2379"
etcd-listen-peer-urls: "https://0.0.0.0:2380"
etcd-initial-cluster: "backend-1=https://10.0.0.1:2380,backend-
2=https://10.0.0.2:2380,backend-3=https://10.0.0.3:2380"
etcd-initial-advertise-peer-urls: "https://10.0.0.2:2380"
etcd-initial-cluster-state: "new"
etcd-initial-cluster-token: "sensu"
etcd-name: "backend-2"

##
# etcd peer ssl configuration for backend-2/10.0.0.2
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-2.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-2-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
etcd-peer-client-cert-auth: true
```

backend-3

```
##
# store configuration for backend-3/10.0.0.3
##

etcd-listen-client-urls: "https://10.0.0.3:2379"
etcd-listen-peer-urls: "https://0.0.0.0:2380"
etcd-initial-cluster: "backend-1=https://10.0.0.1:2380,backend-
2=https://10.0.0.2:2380,backend-3=https://10.0.0.3:2380"
etcd-initial-advertise-peer-urls: "https://10.0.0.3:2380"
etcd-initial-cluster-state: "new"
etcd-initial-cluster-token: "sensu"
etcd-name: "backend-3"

##
# etcd peer ssl configuration for backend-3/10.0.0.3
##

etcd-peer-cert-file: "/etc/sensu/certs/backend-3.pem"
etcd-peer-key-file: "/etc/sensu/certs/backend-3-key.pem"
etcd-peer-trusted-ca-file: "/usr/local/share/ca-certificates/sensu/ca.pem"
etcd-peer-client-cert-auth: true
```

Sensu agent with HTTPS

Below is a sample configuration for an agent that would connect to the cluster using `wss` from `/etc/sensu/agent.yml`.

```
##
# backend-url configuration for all agents connecting to cluster over wss
##

backend-url:
  - "wss://10.0.0.1:8081"
  - "wss://10.0.0.2:8081"
  - "wss://10.0.0.3:8081"
```

Using an external etcd cluster

Using Sensu with an external etcd cluster requires etcd 3.3.2 or newer. To stand up an external etcd cluster, you can follow etcd's clustering guide using the same store configuration.

In this example, we will enable client-to-server and peer communication authentication using self-signed TLS certificates. Below is how you would start etcd for `backend-1` from our three node configuration example above.

```
etcd \
--listen-client-urls "https://10.0.0.1:2379" \
--advertise-client-urls "https://10.0.0.1:2379" \
--listen-peer-urls "https://10.0.0.1:2380" \
--initial-cluster "backend-1=https://10.0.0.1:2380,backend-
2=https://10.0.0.2:2380,backend-3=https://10.0.0.3:2380" \
--initial-advertise-peer-urls "https://10.0.0.1:2380" \
--initial-cluster-state "new" \
--name "backend-1" \
--trusted-ca-file=./ca.pem \
--cert-file=./backend-1.pem \
--key-file=./backend-1-key.pem \
--client-cert-auth \
--peer-trusted-ca-file=./ca.pem \
--peer-cert-file=./backend-1.pem \
--peer-key-file=./backend-1-key.pem \
--peer-client-cert-auth \
--auto-compaction-mode revision \
--auto-compaction-retention 2
```

NOTE: The `auto-compaction-mode` and `auto-compaction-retention` flags are of particular significance. Without these settings your database may quickly reach etcd's maximum database size limit.

In order to inform Sensu that you'd like to use this external etcd data source, add the `sensu-backend` flag `--no-embed-etcd` to the original configuration, along with the path to a client certificate created using our CA.

```
sensu-backend start \
--etcd-trusted-ca-file=./ca.pem \
--etcd-cert-file=./client.pem \
--etcd-key-file=./client-key.pem \
--etcd-advertise-client-
urls=https://10.0.0.1:2379,https://10.0.0.2:2379,https://10.0.0.3:2379 \
--no-embed-etcd
```

Troubleshooting

Failures modes

See the etcd failure modes documentation for more information.

Disaster recovery

See the etcd recovery guide for more information.

Securing Sensu

Contents

As with any piece of software, it is critical to minimize any attack surface exposed by the software. Sensu is no different. The following component pieces need to be secured in order for Sensu to be considered production ready:

We'll cover securing each one of those pieces, starting with etcd peer communication.

Securing etcd peer communication

Let's start by covering how to secure etcd peer communication via the configuration at `/etc/sensu/backend.yml`. Let's look at the parameters you'll need to configure:

```
##
# backend store configuration
##
etcd-listen-client-urls: "https://localhost:2379"
etcd-listen-peer-urls: "https://localhost:2380"
etcd-initial-advertise-peer-urls: "https://localhost:2380"
etcd-cert-file: "/path/to/your/cert"
etcd-key-file: "/path/to/your/key"
etcd-trusted-ca-file: "/path/to/your/ca/file"
etcd-peer-cert-file: "/path/to/your/peer/cert"
etcd-peer-key-file: "/path/to/your/peer/key"
etcd-peer-client-cert-auth: "true"
etcd-peer-trusted-ca-file: "/path/to/your/peer/ca/file"
```

Securing the API and the dashboard

Let's go over how to secure the API and dashboard. Please note that by changing the parameters below, the server will now communicate over TLS and expect agents connecting to it to use the WebSocket secure protocol. In order for communication to continue, both this section and the following section must be completed.

Both the Sensu Go API and the dashboard use a common stanza in `/etc/sensu/backend.yml` to provide the certificate, key, and CA file needed to provide secure communication. Let's look at the attributes you'll need to configure:

```
##
# backend ssl configuration
##
cert-file: "/path/to/ssl/cert.pem"
key-file: "/path/to/ssl/key.pem"
trusted-ca-file: "/path/to/trusted-certificate-authorities.pem"
insecure-skip-tls-verify: false
```

Providing the above cert-file and key-file parameters will cause the API to serve HTTP requests over SSL/TLS (https). As a result, you will also need to specify `https://` schemafor the `api-url` parameter:

```
##
# backend api configuration
##
api-url: "https://localhost:8080"
```

You can also specify a certificate and key for the dashboard separately from the API using the `dashboard-cert-file` and `dashboard-key-file` parameters as shown in the following example.

```
##
# backend ssl configuration
##
cert-file: "/path/to/ssl/cert.pem"
key-file: "/path/to/ssl/key.pem"
```

```
trusted-ca-file: "/path/to/trusted-certificate-authorities.pem"
insecure-skip-tls-verify: false
dashboard-cert-file: "/path/to/ssl/cert.pem"
dashboard-key-file: "/path/to/ssl/key.pem"
```

In the example above, we provide the path to the cert, key and CA file. After restarting the `sensu-backend` service, the parameters are loaded and you are able to access the dashboard at https://localhost:3000. Configuring these attributes will also ensure that agents are able to communicate securely. Let's move on to securing agent to server communication.

Securing Sensu agent to server communication

We'll now discuss securing agent to server communication. Please note: by changing the agent configuration to communicate via WebSocket Secure protocol, the agent will no longer communicate over a plaintext connection. If the server is not secured as described in the section above, communication between the agent and server will not function.

By default, an agent uses the insecure `ws://` transport. Let's look at the example from `/etc/sensu/agent.yml`:

```
---
##
# agent configuration
##
backend-url:
  - "ws://127.0.0.1:8081"
```

In order to use WebSockets over SSL/TLS (wss), change the `backend-url` value to the `wss://` schema:

```
---
##
# agent configuration
##
backend-url:
  - "wss://127.0.0.1:8081"
```

The agent will then connect to Sensu backends over wss. Do note that by changing the configuration to wss, plaintext communication will not be possible.

It is also possible to provide a trusted CA as part of the agent configuration by passing `--trusted-ca-file` if starting the agent via `sensu-agent start`.

You may include it as part of the agent configuration in `/etc/sensu/agent.yml` as:

```
trusted-ca-file: "/path/to/trusted-certificate-authorities.pem"
```

NOTE: If creating a Sensu cluster, every cluster member needs to be present in the configuration. See the Sensu Go clustering guide for more information on how to configure agents for a clustered configuration.

Hopefully you've found this useful! If you find any issues or have any questions, feel free to reach out in our Community Slack, or open an issue on Github.

Troubleshooting

Contents

Service logging

Logs produced by Sensu services – i.e. sensu-backend and sensu-agent – areōften the best place to start when troubleshooting a variety of issues.

Log levels

Each log message is associated with a log level, indicative of the relative severity of the event being logged:

Log level	Description
panic	Severe errors causing the service to shut down in an unexpected state
fatal	Fatal errors causing the service to shut down (status 0)
error	Non-fatal service error messages
warn	Warning messages indicating potential issues
info	Informational messages representing service actions
debug	Detailed service operation messages to help troubleshoot issues

These log levels can be configured by specifying the desired log level as the value of `log-level` in the service configuration file (e.g. `agent.yml` or `backend.yml` configuration files), or as an argument to the `--log-level` command line flag:

```
sensu-agent start --log-level debug
```

Changes to log level via configuration file or command line arguments require restarting the service. For guidance on restarting a service, please consult the Operating section of the agent or backend reference, respectively.

Log file locations

Linux

Sensu services print structured log messages to standard output. In order to capture these log messages to disk or another logging facility, Sensu services make use of capabilities provided by the underlying operating system's service management. For example, logs are sent to the journald when systemd is the service manager, whereas log messages are redirected to `/var/log/sensu` when running under sysvinit schemes. If you are running systemd as your service manager and would rather have logs written to `/var/log/sensu/`, see the guide to forwarding logs from journald to syslog.

In the table below, the common targets for logging and example commands for following those logs are described. The name of the desired service, e.g. `backend` or `agent` may be substituted for `${service}` variable.

Platform	Version	Target	Command to follow log
RHEL/Centos	>= 7	journald	`journalctl --follow --unit sensu-${service}`
RHEL/Centos	<= 6	log file	`tail --follow /var/log/sensu/sensu-${service}`
Ubuntu	>= 15.04	journald	`journalctl --follow --unit sensu-${service}`

Ubuntu	<= 14.10	log file	`tail --follow /var/log/sensu/sensu-${service}`
Debian	>= 8	journald	`journalctl --follow --unit sensu-${service}`
Debian	<= 7	log file	`tail --follow /var/log/sensu/sensu-${service}`

NOTE: Platform versions described above are for reference only and do not supercede the documented supported platforms.

Windows

The Sensu agent stores service logs to the location specified by the `log-file` configuration flag (default: `%ALLUSERSPROFILE%\sensu\log\sensu-agent.log`, `C:\ProgramData\sensu\log\sensu-agent.log` on standard Windows installations). For more information about managing the Sensu agent for Windows, see the agent reference. You can also view agent events using the Windows Event Viewer, under Windows Logs, as events with source SensuAgent.

If you're running a binary-only distribution of the Sensu agent for Windows, you can follow the service log printed to standard output using the following command.

```
Get-Content -  Path "C:\scripts\test.txt" -Wait
```

Permission issues

Files and folders within `/var/cache/sensu/` and `/var/lib/sensu/` need to be owned by the sensu user and group. You will see a logged error similar to the following if there is a permission issue with either the sensu-backend or the sensu-agent:

```
{"component":"agent","error":"open /var/cache/sensu/sensu-agent/assets.db:
```

```
permission denied","level":"fatal","msg":"error executing sensu-agent","time":"2019-02-21T22:01:04Z"}
{"component":"backend","level":"fatal","msg":"error starting etcd: mkdir /var/lib/sensu: permission denied","time":"2019-03-05T20:24:01Z"}
```

You can use a recursive `chown` to resolve permission issues with the sensu-backend:

```
sudo chown -R sensu:sensu /var/cache/sensu/sensu-backend
```

or the sensu-agent:

```
sudo chown -R sensu:sensu /var/cache/sensu/sensu-agent
```

Troubleshooting handlers and filters

Whether implementing new workflows or modifying existing ones, its sometimes necessary to troubleshoot various stages of the event pipeline. In many cases generating events using the agent API will save you time and effort over modifying existing check configurations.

Here's an example using curl with the API of a local sensu-agent process to generate test-event check results:

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "test-event"
    },
    "status": 2,
    "output": "this is a test event targeting the email_ops handler",
    "handlers": [ "email_ops" ]
  }
}' \
http://127.0.0.1:3031/events
```

Additionally, it's frequently helpful to see the full event object being passed to your workflows. We recommend using a debug handler like this one to write an event to disk as JSON data:

With this handler definition installed in your Sensu backend, you can add the `debug` to the list of handlers in your test event:

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "test-event"
    },
    "status": 2,
    "output": "this is a test event targeting the email_ops handler",
    "handlers": [ "email_ops", "debug" ]
  }
}' \
http://127.0.0.1:3031/events
```

The event data should be written to `/var/log/sensu/debug-event.json` for inspection. The contents of this file will be overwritten by every event sent to the `debug` handler.

NOTE: When multiple Sensu backends are configured in a cluster, event processing is distributed across all members. You may need to check the filesystem of each Sensu backend to locate the debug output for your test event.

Troubleshooting assets

Asset filters allow for scoping an asset to a particular operating system or architecture. You can see an example of those in the asset reference documentation. If an asset filter is improperly applied, this can prevent the asset from being downloaded by the desired entity and will result in error messages both on the agent and the backend illustrating that the command was not found:

Agent log entry

```
{
    "asset": "check-disk-space",
    "component": "asset-manager",
    "entity": "sensu-centos",
    "filters": [
        "true == false"
    ],
    "level": "debug",
    "msg": "entity not filtered, not installing asset",
    "time": "2019-09-12T18:28:05Z"
}
```


Backend event


```
 {
  "timestamp": 1568148292,
  "check": {
    "command": "check-disk-space",
    "handlers": [],
    "high_flap_threshold": 0,
    "interval": 10,
    "low_flap_threshold": 0,
    "publish": true,
    "runtime_assets": [
      "sensu-plugins-disk-checks"
    ],
    "subscriptions": [
      "caching_servers"
    ],
    "proxy_entity_name": "",
    "check_hooks": null,
    "stdin": false,
    "subdue": null,
    "ttl": 0,
    "timeout": 0,
    "round_robin": false,
    "duration": 0.001795508,
    "executed": 1568148292,
    "history": [
```

```
        {
          "status": 127,
          "executed": 1568148092
        }
      ],
      "issued": 1568148292,
      "output": "sh: check-disk-space: command not found\n",
      "state": "failing",
      "status": 127,
      "total_state_change": 0,
      "last_ok": 0,
      "occurrences": 645,
      "occurrences_watermark": 645,
      "output_metric_format": "",
      "output_metric_handlers": null,
      "env_vars": null,
      "metadata": {
        "name": "failing-disk-check",
        "namespace": "default"
      }
    },
    "metadata": {
      "namespace": "default"
    }
  }
```


In the event you see a message like this, it's worth going back and reviewing your asset definition as this will be your clue that the entity wasn't able to download the required asset due to filter restrictions. If you can't remember where you stored the information on disk, you can find it via:

```
sensuctl asset info sensu-plugins-disk-checks --format yaml
```

or

```
sensuctl asset info sensu-plugins-disk-checks --format json
```

One common filter issue is conflating operating systems with the family they're a part of. For example,

though Ubuntu is part of the Debian family of Linux distributions, Ubuntu != Debian. A practical example would look like:

```
...
    - entity.system.platform == 'debian'
    - entity.system.arch == 'amd64'
```

Which would not allow an Ubuntu system to run the asset. Instead, the filter should look like:

```
...
    - entity.system.platform_family == 'debian'
    - entity.system.arch == 'amd64'
```

or

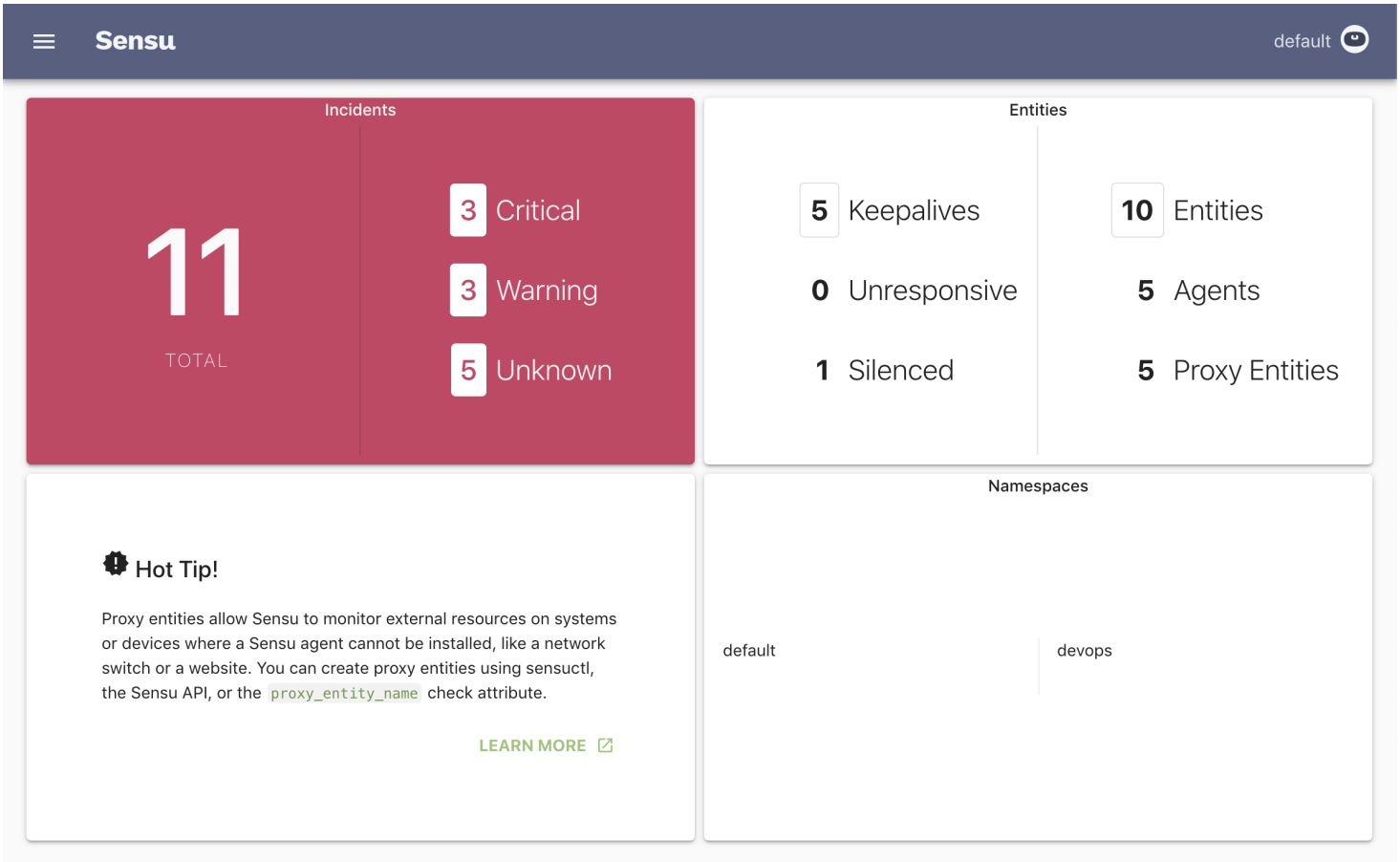
```
    - entity.system.platform == 'ubuntu'
    - entity.system.arch == 'amd64'
```

Which would allow the asset to be downloaded onto the target entity.

Dashboard overview

Contents

The Sensu backend includes the **Sensu dashboard**:a unified view of your events, entities, and checks with user-friendly tools to reduce alert fatigue.



Sensu dashboard homepage

Accessing the dashboard

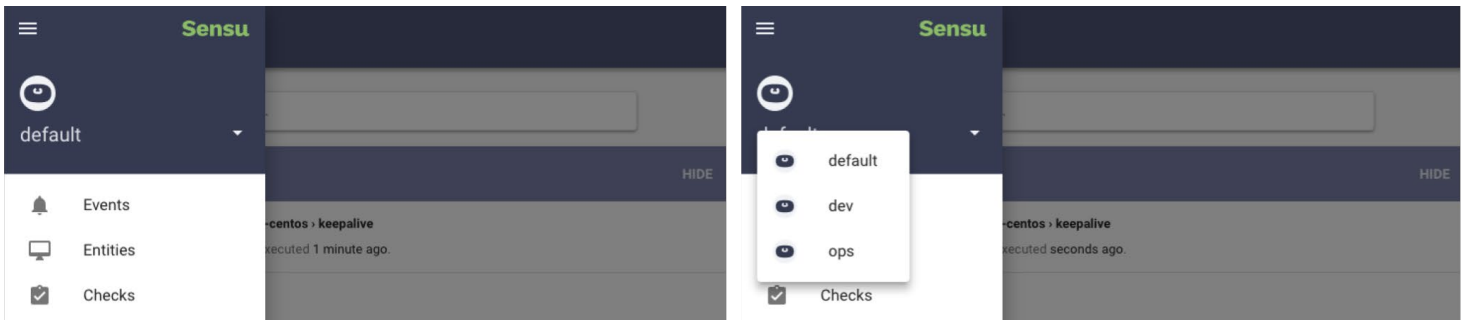
After starting the Sensu backend, you can access the dashboard in your browser by visiting http://localhost:3000. You may need to replace `localhost` with the hostname or IP address where the Sensu backend is running.

Signing in

Sign in to the dashboard with your sensuctl username and password. See the role-based access control reference for default user credentials and instructions for creating new users.

Namespaces

The dashboard displays events, entities, checks, and silences for a single namespace at a time. By default, the dashboard displays the `default` namespace. To switch namespaces, select the menu icon in the upper-left corner, and choose a namespace from the dropdown. **LICENSED TIER**: The namespaces listed will be limited to those that the current user has access to.



Sensu dashboard namespace switcher

Managing checks

LICENSED TIER: Unlock check management in the Sensu Go dashboard with a Sensu license. To activate your license, see the getting started guide.

You can create, edit, and delete Sensu checks using the dashboard checks page.

Managing entities

You can delete Sensu entities using the dashboard entities page.

Managing handlers

LICENSED TIER: Unlock handler management in the Sensu Go dashboard with a Sensu license. To activate your license, see the getting started guide.

You can create, edit, and delete Sensu handlers using the dashboard handlers page.

Managing event filters

LICENSED TIER: Unlock filter management in the Sensu Go dashboard with a Sensu license. To activate your license, see the getting started guide.

You can create, edit, and delete Sensu event filters using the dashboard filters page.

Managing mutators

LICENSED TIER: Unlock mutator management in the Sensu Go dashboard with a Sensu license. To activate your license, see the getting started guide.

You can create, edit, and delete Sensu mutators using the dashboard mutators page.

Themes

Use the preferences menu to change the theme or switch to the dark theme.

Dashboard filtering

Contents

The Sensu dashboard provides basic filters to build customized views of Sensu resources. When applied, filters create a unique link, so you can bookmark and share your favorite filter combinations.

On the **events page**, filter by entity, check, status, and silenced/unsilenced. You can also sort events by severity, last OK, newest, and oldest.
On the **entities page**, filter by entity class and subscription.
On the **checks page**, filter by subscription and published/unpublished.
On the **handlers page**, filter by handler type.
On the **filters page**, filter by action.
On the **silences page**, filter by check and subscription. You can also sort silences by start date.

Advanced filtering

LICENSED TIER: Unlock advanced filtering in the Sensu Go dashboard with a Sensu license. To activate your license, see the getting started guide.

Sensu supports advanced dashboard filtering using a wider range of attributes, including custom labels. Select the filter bar to start building custom views using suggested attributes and values.

Label selectors

To filter by custom labels on the entities, checks, handlers, filters, mutators, and silences pages, use the `labelSelector` filter and the `==` operator.

To display, on the **entities page**, only entities with a `region: us-west-1` label:

```
labelSelector: region == "us-west-1"
```

Field selectors

Field selectors let you fine-tune filters using the complete set of attributes supported by API filtering. For a complete list of supported attributes and operators, see the API docs.

To display, on the **events page**, only events with the subscription `webserver`:

```
fieldSelector: webserver in event.check.subscriptions
```

To display, on the **checks page**, only checks using the `slack` asset:

```
fieldSelector: slack in check.handlers
```

API overview

Contents

API version: v2

The Sensu backend REST API provides access to Sensu workflow configurations and monitoring event data. For the Sensu agent API, see the agent reference.

URL format

Sensu API endpoints use the standard URL format `/api/{group}/{version}/namespaces/{namespace}` where:

`{group}` is the API group. All currently existing Sensu API endpoints are of group `core`.
`{version}` is the API version: `v2`.
`{namespace}` is the namespace name. The examples in these API docs use the `default` namespace. The Sensu API requires that the authenticated user have the correct access permissions for the namespace specified in the URL. If the authenticated user has the correct cluster-wide permissions, you can leave out the `/namespaces/{namespace}` portion of the URL to access Sensu resources across namespaces. See the RBAC reference for more information about configuring Sensu users and access controls.

Data format

The API uses JSON formatted requests and responses. In terms of sensuctl output types, the Sensu API uses the `json` format, not `wrapped-json`.

Versioning

The Sensu Go API is versioned according to the format `v{majorVersion}{stabilityLevel}{iterationNumber}`, in which `v2` is stable version 2. The Sensu API guarantees backward compatibility for stable versions of the API.

Sensu makes no guarantee that an alpha or beta API will be maintained for any period of time. Alpha versions should be considered under active development and may not be published for every release. Beta APIs, while more stable than alpha versions, offer similarly short-lived lifespans and also provide no guarantee of programmatic conversions when the API is updated.

Access control

With the exception of the health and metrics APIs, the Sensu API requires authentication using a JWT access token. You can generate access tokens and refresh tokens using the authentication API and your Sensu username and password. These docs use `$SENSU_TOKEN` to represent a valid access token in API requests.

Authentication quick start

To set up a local API testing environment, save your Sensu credentials and token as environment variables:

```
# Requires curl and jq
export SENSU_USER=admin && SENSU_PASS=P@ssw0rd!

export SENSU_TOKEN=`curl -XGET -u "$SENSU_USER:$SENSU_PASS" -s
http://localhost:8080/auth | jq -r ".access_token"`
```

Basic authentication using the authentication API

The `/auth` API endpoint lets you generate short-lived API tokens using your Sensu username and password.

1. Retrieve an access token for your user. For example, to generate an access token using the default admin credentials:

   ```
   curl -u 'admin:P@ssw0rd!' http://localhost:8080/auth
   ```

   The access token should be included in the output, along with a refresh token:

   ```
   {
     "access_token": "eyJhbGciOiJIUzI1NiIs...",
     "expires_at": 1544582187,
     "refresh_token": "eyJhbGciOiJIUzI1NiIs..."
   }
   ```

2. Use the access token in the authentication header of the API request. For example:

   ```
   curl -H "Authorization: Bearer eyJhbGciOiJIUzI1NiIs..." \
   http://127.0.0.1:8080/api/core/v2/namespaces/default/events
   ```

3. Access tokens last for around 15 minutes. When your token expires, you should see a 401 Unauthorized response from the API. To generate a new access token, use the `/auth/token` API endpoint, including the expired access token in the authorization header and the refresh token in the request body:

   ```
   curl -H "Authorization: Bearer eyJhbGciOiJIUzI1NiIs..." \
   -H 'Content-Type: application/json' \
   -d '{"refresh_token": "eyJhbGciOiJIUzI1NiIs..."}' \
   http://127.0.0.1:8080/auth/token
   ```

   The new access token should be included in the output:

   ```
   {
   ```

```
  "access_token": "eyJhbGciOiJIUzI1NiIs...",
  "expires_at": 1561055277,
  "refresh_token": "eyJhbGciOiJIUzI1NiIs..."
}
```

Generating an API token using sensuctl

You can also generate an API access token using the sensuctl command-line tool. The user credentials that you use to log in to sensuctl determine your permissions to get, list, create, update, and delete resources using the Sensu API.

1. Install and log in to sensuctl.

2. Retrieve an access token for your user:

   ```
   cat ~/.config/sensu/sensuctl/cluster|grep access_token
   ```

   The access token should be included in the output:

   ```
   "access_token": "eyJhbGciOiJIUzI1NiIs...",
   ```

3. Copy the access token into the authentication header of the API request. For example:

   ```
   curl -H "Authorization: Bearer eyJhbGciOiJIUzI1NiIs..." \
   http://127.0.0.1:8080/api/core/v2/namespaces/default/events
   ```

4. Access tokens last for around 15 minutes. If your token expires, you should see a 401 Unauthorized response from the API. To regenerate a valid access token, first run any sensuctl command (like `sensuctl event list`) then repeat step 2.

Pagination

The Sensu API supports response pagination for all GET endpoints that return an array. You can request a paginated response using the `limit` and `continue` query parameters.

For example, the following request limits the response to a maximum of two objects.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces?limit=2 -H "Authorization: Bearer
$SENSU_TOKEN"
```

The response includes the available objects up to the specified limit and, if there are more objects available, a continue token. For example, the following response indicates that there are more than two namespaces available and provides a continue token to request the next page of objects.

```
HTTP/1.1 200 OK
Content-Type: application/json
Sensu-Continue: L2RlZmF1bHQvY2N4MWM2L2hlbGxvLXdvcmxkAA
[
  {
    "name": "default"
  },
  {
    "name": "development"
  }
]
```

You can then use the continue token to request the next page of objects. The following example requests the next two available namespaces following the request in the example above.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces?
limit=2&continue=L2RlZmF1bHQvY2N4MWM2L2hlbGxvLXdvcmxkAA -H "Authorization: Bearer
$SENSU_TOKEN"
```

If the request does not return a continue token, there are no further objects to return. For example, the following response indicates that there is only one additional namespace available.

```
HTTP/1.1 200 OK
Content-Type: application/json
[
```

```
  {
    "name": "ops"
  }
]
```

Filtering

LICENSED TIER: Unlock API filtering in Sensu Go with a Sensu license. To activate your license, see the getting started guide.

The Sensu API supports filtering for all GET endpoints that return an array. You can filter resources based on their labels with a label selector using the `labelSelector` query parameter and on certain pre-determined fields with a field selector using the `fieldSelector` query parameter.

For example, the following request filters the response to only include resources that have a label entry `region` with the value `us-west-1`. We will use the flag `--data-urlencode` in curl so it encodes the query parameter for us, in conjunction with the `-G` flag so it appends the data to the URL.

```
curl -H "Authorization: Bearer $SENSU_TOKEN"
http://127.0.0.1:8080/api/core/v2/checks -G \
--data-urlencode 'labelSelector=region == "us-west-1"'
```

NOTE: For examples of using label and field selectors in the Sensu dashboard, see the dashboard docs.

Label selector

A label selector can use any label attributes to group a set of resources. All resources support labels within the metadata object. For example, see entities metadata attributes.

Field selector

A field selector can use certain fields of resources to organize and select subsets of resources. Here's the list of available fields.

Resource	Fields
Asset	`asset.name` `asset.namespace` `asset.filters`
Check	`check.name` `check.namespace` `check.handlers` `check.publish` `check.round_robin` `check.runtime_assets` `check.subscriptions`
ClusterRole	`clusterrole.name`
ClusterRoleBinding	`clusterrolebinding.name` `clusterrolebinding.role_ref.name` `clusterrolebinding.role_ref.type`
Entity	`entity.name` `entity.namespace` `entity.deregister` `entity.entity_class` `entity.subscriptions`
Event	`event.name` `event.namespace` `event.check.handlers` `event.check.name` `event.check.publish` `event.check.round_robin` `event.check.runtime_assets` `event.check.status` `event.check.subscriptions` `event.entity.deregister` `event.entity.entity_class` `event.entity.subscriptions`
Exte	`extension.name` `extension.namespace`

ns io n	
Fil ter	`filter.name` `filter.namespace` `filter.action` `filter.runtime_assets`
H an dl er	`handler.name` `handler.namespace` `handler.filters` `handler.handlers` `handler.mutator` `handler.type`
H oo k	`hook.name` `hook.namespace`
M ut at or	`mutator.name` `mutator.namespace` `mutator.runtime_assets`
N a m es pa ce	`namespace.name`
R ol e	`role.name` `role.namespace`
R ol eB in di ng	`rolebinding.name` `rolebinding.namespace` `rolebinding.role_ref.name` `rolebinding.role_ref.type`
Sil en ce d	`silenced.name` `silenced.namespace` `silenced.check` `silenced.creator` `silenced.expire_on_resolve` `silenced.subscription`

User	`user.username`	`user.disabled`	`user.groups`

Supported operators

There are two *equality-based* operators supported, `==` (equality) and `!=` (inequality). For example, the following statements are possible:

```
check.publish == true
check.namespace != "default"
```

Additionally, there are two *set-based* operators to deal with lists of values, `in` and `notin`. For example, the following statements are possible:

```
linux in check.subscriptions
slack notin check.handlers
check.namespace in [dev,production]
```

Combining selectors and statements

A field or label selector can be made of multiple statements which are separated with the logical operator `&&` (*AND*). For example, the following curl request looks up checks that are configured to be published **and** have the `slack` handler:

```
curl -H "Authorization: Bearer $SENSU_TOKEN"
http://127.0.0.1:8080/api/core/v2/checks -G \
--data-urlencode 'fieldSelector=check.publish == true && slack in check.handlers'
```

In addition to selectors with multiple statements, both field and label selectors can be used at the same time:

```
curl -H "Authorization: Bearer $SENSU_TOKEN"
http://127.0.0.1:8080/api/core/v2/checks -G \
```

```
  --data-urlencode 'fieldSelector=slack in check.handlers' \
  --data-urlencode 'labelSelector=region != "us-west-1"'
```

Request size

API request bodies are limited to 0.512 MB in size.

Assets API

Contents

The `/assets` API endpoint

`/assets` (GET)

The `/assets` API endpoint provides HTTP GET access to asset data.

EXAMPLE

The following example demonstrates a request to the `/assets` API, resulting in a JSON Array containing asset definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/assets -H "Authorization:
Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
[
  {
    "url": "https://github.com/sensu/sensu-slack-
handler/releases/download/1.0.3/sensu-slack-handler_1.0.3_linux_amd64.tar.gz",
    "sha512":
"68720865127fbc7c2fe16ca4d7bbf2a187a2df703f4b4acae1c93e8a66556e9079e1270521999b58714
73e6c851f51b34097c54fdb8d18eedb7064df9019adc8",
```

```
    "filters": [
      "entity.system.os": "linux",
      "entity.system.arch": "amd64"
    ],
    "headers": null,
    "metadata": {
      "name": "sensu-slack-handler",
      "namespace": "default"
    }
  }
]
```

API Specification

/assets (GET)	
description	Returns the list of assets.
example url	http://hostname:8080/api/core/v2/namespaces/default/assets
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	`[ { "url": "https://github.com/sensu/sensu-influxdb-handler/releases/download/3.1.2/sensu-influxdb-`

```
handler_3.1.2_linux_amd64.tar.gz",
    "sha512":
"612c6ff9928841090c4d23bf20aaf7558e4eed8977a848cf9e2899bb13a13e7540bac2b
63e324f39d9b1257bb479676bc155b24e21bf93c722b812b0f15cb3bd",
    "filters": {
      "entity.system.os": "linux",
      "entity.system.arch": "amd64"
    },
    "headers": null,
    "metadata": {
      "name": "sensu-influxdb-handler",
      "namespace": "default"
    }
  },
  {
    "url": "https://github.com/sensu/sensu-slack-
handler/releases/download/1.0.3/sensu-slack-
handler_1.0.3_linux_amd64.tar.gz",
    "sha512":
"68720865127fbc7c2fe16ca4d7bbf2a187a2df703f4b4acae1c93e8a66556e9079e1270
521999b5871473e6c851f51b34097c54fdb8d18eedb7064df9019adc8",
    "filters": null,
    "metadata": {
      "name": "sensu-slack-handler",
      "namespace": "default"
    }
  }
]
```

`/assets` (POST)

/assets (POST)	
description	Create a Sensu asset.
example URL	http://hostname:8080/api/core/v2/namespaces/default/assets
payload	

```
{
```

```
    "url": "https://asset-url.tar.gz",
    "sha512": "xxxxxxxxxxxxxxxxxxxxx",
    "filters": {
      "entity.system.os": "linux",
      "entity.system.arch": "amd64"
    },
    "headers": {
      "Authorization": "Bearer $TOKEN",
      "X-Forwarded-For": "client1, proxy1, proxy2"
    },
    "metadata": {
      "name": "my-secure-asset",
      "namespace": "default"
    }
}
```

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/assets/:asset` API endpoint

`/assets/:asset` (GET)

The `/assets/:asset` API endpoint provides HTTP GET access to asset data for specific `:asset` definitions, by asset `name`.

EXAMPLE

In the following example, querying the `/assets/:asset` API returns a JSON Map containing the requested `:asset` definition (in this example: for the `:asset` named `check_script`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/assets/sensu-slack-handler
-H "Authorization: Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
```

```
{
  "url": "https://github.com/sensu/sensu-slack-handler/releases/download/1.0.3/sensu-slack-handler_1.0.3_linux_amd64.tar.gz",
  "sha512": "68720865127fbc7c2fe16ca4d7bbf2a187a2df703f4b4acae1c93e8a66556e9079e1270521999b5871473e6c851f51b34097c54fdb8d18eedb7064df9019adc8",
  "filters": {
    "entity.system.os": "linux",
    "entity.system.arch": "amd64"
  },
  "headers": null,
  "metadata": {
    "name": "sensu-slack-handler",
    "namespace": "default"
  }
}
```


API Specification

/assets/:asset (GET)	
description	Returns an asset.
example url	http://hostname:8080/api/core/v2/namespaces/default/assets/my-secure-asset
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	`{ "url": "https://asset-url.tar.gz", "sha512": "xxxxxxxxxxxxxxxxxxxx", "filters": { "entity.system.os": "linux", "entity.system.arch": "amd64"`

```
  },
  "headers": {
    "Authorization": "Bearer $TOKEN",
    "X-Forwarded-For": "client1, proxy1, proxy2"
  },
  "metadata": {
    "name": "my-secure-asset",
    "namespace": "default"
  }
}
```

`/assets/:asset` (PUT)

API Specification

/assets/:asset (PUT)	
description	Create or update a Sensu asset.
example URL	http://hostname:8080/api/core/v2/namespaces/default/assets/my-secure-asset
payload	

```
{
  "url": "https://asset-url.tar.gz",
  "sha512": "xxxxxxxxxxxxxxxxxxxxx",
  "filters": {
    "entity.system.os": "linux",
    "entity.system.arch": "amd64"
  },
  "headers": {
    "Authorization": "Bearer $TOKEN",
    "X-Forwarded-For": "client1, proxy1, proxy2"
  },
  "metadata": {
    "name": "my-secure-asset",
    "namespace": "default"
```

```
  }
}
```

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/assets/:asset` (DELETE)

The Sensu Go HTTP API provides the ability to delete an asset. Note that this does not remove the downloaded files from the asset cache, nor does it remove any references in other resources to the deleted asset.

API Specification

/assets/:asset (DELETE)	
description	Deletes a Sensu asset.
example URL	http://hostname:8080/api/core/v2/namespaces/default/assets/my-secure-asset
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output

```
curl -X DELETE -H "Authorization: Bearer $SENSU_TOKEN"
http://localhost:8080/api/core/v2/namespaces/default/assets/my_ass
et


 curl -I -X DELETE -H "Authorization: Bearer $SENSU_TOKEN"
http://
demo.sensuplusgremlin.rocks:8080/api/core/v2/namespaces/default/as
sets/my_asset
4
HTTP/1.1 204 No Content
```

```
Content-Type: application/json
Sensu-Entity-Count: 6
Sensu-Entity-Limit: 1000
Date: Mon, 26 Aug 2019 18:51:28 GMT
```

Authentication API

Contents

The `/auth` API endpoint

`/auth` (GET)

The `/auth` API endpoint provides HTTP GET access to create an access token using basic authentication.

EXAMPLE

In the following example, querying the `/auth` API with a given username and password returns a 200 OK response, indicating that the credentials are valid, along with an access and a refresh token.

```
curl -u myusername:mypassword http://127.0.0.1:8080/auth

HTTP/1.1 200 OK
{
  "access_token": "eyJhbGciOiJIUzI1NiIs...",
  "expires_at": 1544582187,
  "refresh_token": "eyJhbGciOiJIUzI1NiIs..."
}
```

API Specification

/auth (GET)	
description	Generates an access token to the API using basic authentication. Access tokens last for around 15 minutes. When your token expires, you should see a 401 Unauthorized response from the API. To generate a new access token, use the `/auth/token` API endpoint.
example url	http://hostname:8080/api/core/v2/auth
output	`{ "access_token": "eyJhbGciOiJIUzI1NiIs...", "expires_at": 1544582187, "refresh_token": "eyJhbGciOiJIUzI1NiIs..." }`
response codes	**Valid credentials**: 200 (OK) **Invalid credentials**: 401 (Unauthorized) **Error**: 500 (Internal Server Error)

The `/auth/test` API endpoint

`/auth/test` (GET)

The `/auth/test` API endpoint provides HTTP GET access to test user credentials.

EXAMPLE

In the following example, querying the `/auth/test` API with a given username and password returns a 200 OK response, indicating that the credentials are valid.

```
curl -u myusername:mypassword http://127.0.0.1:8080/auth/test

HTTP/1.1 200 OK
```

API Specification

/auth/test (GET)	
description	Tests a given username and password.
example url	http://hostname:8080/api/core/v2/auth/test
response codes	**Valid credentials**: 200 (OK) **Invalid credentials**: 401 (Unauthorized) **Error**: 500 (Internal Server Error)

The `/auth/token` API endpoint

`/auth/token` (POST)

The `/auth/test` API endpoint provides HTTP POST access to renew an access token.

EXAMPLE

In the following example, an HTTP POST request is submitted to the `/auth/token` API to generate a valid access token. The request includes the refresh token in the request body and returns a

successful HTTP 200 OK response along with the new access token.

```
curl -H "Authorization: Bearer eyJhbGciOiJIUzI1NiIs..." \
-H 'Content-Type: application/json' \
-d '{"refresh_token": "eyJhbGciOiJIUzI1NiIs..."}' \
http://127.0.0.1:8080/auth/token

HTTP/1.1 200 OK
{
  "access_token": "eyJhbGciOiJIUzI1NiIs...",
  "expires_at": 1544582187,
  "refresh_token": "eyJhbGciOiJIUzI1NiIs..."
}
```

API Specification

/auth/token (POST)	
description	Generates a new access token using a refresh token and an expired access token
example url	http://hostname:8080/api/core/v2/auth

example payload	`{`
	`  "refresh_token": "eyJhbGciOiJIUzI1NiIs..."`
	`}`

output	`{`
	`  "access_token": "eyJhbGciOiJIUzI1NiIs...",`
	`  "expires_at": 1544582187,`
	`  "refresh_token": "eyJhbGciOiJIUzI1NiIs..."`
	`}`

response codes	**Success**: 200 (OK)

Malformed: 400 (Bad Request)
Error: 500 (Internal Server Error)

Authentication providers API

Contents

LICENSED TIER: Unlock authentication providers in Sensu Go with a Sensu license. To activate your license, see the getting started guide.

The `/authproviders` API endpoints

`/authproviders` (GET)

The `/authproviders` API endpoint provides HTTP GET access to authentication provider configuration in Sensu.

API Specification

/authproviders (GET)	
description	Returns the list of active authentication providers.
example url	http://hostname:8080/api/enterprise/authentication/v2/authproviders
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array

response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output


```
[
  {
    "Type": "ldap",
    "api_version": "authentication/v2",
    "spec": {
      "servers": [
        {
          "host": "127.0.0.1",
          "binding": {
            "user_dn": "cn=binder,dc=acme,dc=org",
            "password": "P@ssw0rd!"
          },
          "group_search": {
            "base_dn": "dc=acme,dc=org"
          },
          "user_search": {
            "base_dn": "dc=acme,dc=org"
          }
        }
      ]
    },
    "metadata": {
      "name": "openldap"
    }
  }
]
```


The `/authproviders/:name` API endpoints

`/authproviders/:name` (GET)

The `/authproviders/:name` API endpoint provides HTTP GET access to authentication provider configuration for a specific `:name`.

API Specification

/authproviders/:name (GET)	
description	Returns the configuration for an authentication provider given the configured provider name.
example url	http://hostname:8080/api/enterprise/authentication/v2/authproviders/openldap
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output
```
{
  "Type": "ldap",
  "api_version": "authentication/v2",
  "spec": {
    "servers": [
      {
        "host": "127.0.0.1",
        "binding": {
          "user_dn": "cn=binder,dc=acme,dc=org",
          "password": "P@ssw0rd!"
        },
        "group_search": {
          "base_dn": "dc=acme,dc=org"
        },
        "user_search": {
          "base_dn": "dc=acme,dc=org"
        }
      }
    ]
  },
  "metadata": {
    "name": "openldap"
  }
```
 |

```
}
```

`/authproviders/:name` (PUT)

The `/authproviders/:name` API endpoint provides HTTP PUT access to create or update an authentication provider configuration given `:name`.

API Specification

/authproviders/:name (PUT)	
description	Create or update an authentication provider configuration given the name. See the authentication guide for more information about supported providers.
example url	http://hostname:8080/api/enterprise/authentication/v2/authproviders/openldap
payload	

```
{
  "Type": "ldap",
  "api_version": "authentication/v2",
  "spec": {
    "servers": [
      {
        "host": "127.0.0.1",
        "binding": {
          "user_dn": "cn=binder,dc=acme,dc=org",
          "password": "P@ssw0rd!"
        },
        "group_search": {
          "base_dn": "dc=acme,dc=org"
        },
        "user_search": {
          "base_dn": "dc=acme,dc=org"
        }
      }
    ]
```

```
  },
  "metadata": {
    "name": "openldap"
  }
}
```

payload parameters	All attributes shown in the example payload are required. For more information about configuring authentication providers, see the authentication guide.
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/authproviders/:name` (DELETE)

The `/authproviders/:name` API endpoint provides HTTP DELETE access to delete an authentication provider configuration from Sensu given the `:name`.

EXAMPLE

The following example shows a request to delete the configuration for the authentication provider `openldap`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/authproviders/openldap

HTTP/1.1 204 No Content
```

API Specification

/authproviders/:name (DELETE)	
description	Deletes an authentication provide configuration from Sensu

	given the name.
example url	http://hostname:8080/api/enterprise/authentication/v2/authproviders/openldap
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Checks API

Contents

The `/checks` API endpoint

`/checks` (GET)

The `/checks` API endpoint provides HTTP GET access to check data.

EXAMPLE

The following example demonstrates a request to the `/checks` API, resulting in a JSON Array containing check definitions.

```
curl -H "Authorization: Bearer $SENSU_TOKEN"
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks

HTTP/1.1 200 OK
[
```

```
  {
    "command": "check-cpu.sh -w 75 -c 90",
    "handlers": [
      "slack"
    ],
    "interval": 60,
    "publish": true,
    "subscriptions": [
      "linux"
    ],
    "metadata": {
      "name": "check-cpu",
      "namespace": "default"
    }
  }
]
```

API Specification

/checks (GET)	
description	Returns the list of checks.
example url	http://hostname:8080/api/core/v2/namespaces/default/checks
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	`[` `  {`

```
    "command": "check-cpu.sh -w 75 -c 90",
    "handlers": [
      "slack"
    ],
    "interval": 60,
    "publish": true,
    "subscriptions": [
      "linux"
    ],
    "metadata": {
      "name": "check-cpu",
      "namespace": "default"
    }
  },
  {
    "command": "http_check.sh https://sensu.io",
    "handlers": [
      "slack"
    ],
    "interval": 15,
    "proxy_entity_name": "sensu.io",
    "publish": true,
    "subscriptions": [
      "site"
    ],
    "metadata": {
      "name": "check-sensu-site",
      "namespace": "default"
    }
  }
]
```

`/checks` (POST)

EXAMPLE

In the following example, an HTTP POST request is submitted to the `/checks` API to create a `check-cpu` check. The request includes the check definition in the request body and returns a successful HTTP 200 OK response and the created check definition.

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "command": "check-cpu.sh -w 75 -c 90",
  "subscriptions": [
    "linux"
  ],
  "interval": 60,
  "publish": true,
  "handlers": [
    "slack"
  ],
  "metadata": {
    "name": "check-cpu",
    "namespace": "default"
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks

HTTP/1.1 200 OK
{
  "command": "check-cpu.sh -w 75 -c 90",
  "subscriptions": [
    "linux"
  ],
  "interval": 60,
  "publish": true,
  "handlers": [
    "slack"
  ],
  "metadata": {
    "name": "check-cpu",
    "namespace": "default"
  }
}
```

API Specification

/checks (POST)	
description	Create a Sensu check.
example URL	http://hostname:8080/api/core/v2/namespaces/default/checks

example payload	{
	"command": "check-cpu.sh -w 75 -c 90",
	"subscriptions": [
	"linux"
	],
	"interval": 60,
	"publish": true,
	"handlers": [
	"slack"
	],
	"metadata": {
	"name": "check-cpu",
	"namespace": "default"
	}
	}

payload parameters	Required check attributes: `interval` (integer) or `cron` (string), and a `metadata` scope containing `name` (string) and `namespace` (string). For more information about creating checks, see the check reference.
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/checks/:check` API endpoint

`/checks/:check` (GET)

The `/checks/:check` API endpoint provides HTTP GET access to check data for specific `:check` definitions, by check `name`.

EXAMPLE

In the following example, querying the `/checks/:check` API returns a JSON Map containing the requested `:check` definition (in this example: for the `:check` named `check-cpu`).

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks/check-cpu

HTTP/1.1 200 OK
{
  "command": "check-cpu.sh -w 75 -c 90",
  "handlers": [
    "slack"
  ],
  "interval": 60,
  "publish": true,
  "subscriptions": [
    "linux"
  ],
  "metadata": {
    "name": "check-cpu",
    "namespace": "default"
  }
}
```

API Specification

```
/checks/:check
(GET)
```

description	Returns a check.
example url	http://hostname:8080/api/core/v2/namespaces/default/checks/check-cpu
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	

```
{
  "command": "check-cpu.sh -w 75 -c 90",
  "handlers": [
    "slack"
  ],
  "interval": 60,
  "publish": true,
  "subscriptions": [
    "linux"
  ],
  "metadata": {
    "name": "check-cpu",
    "namespace": "default"
  }
}
```

`/checks/:check` (PUT)

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/checks/:check` API to update the `check-cpu` check, resulting in a 200 (OK) HTTP response code and the updated check definition.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
```

```
-d '{
  "command": "check-cpu.sh -w 75 -c 90",
  "handlers": [
    "slack"
  ],
  "interval": 60,
  "publish": true,
  "subscriptions": [
    "linux"
  ],
  "metadata": {
    "name": "check-cpu",
    "namespace": "default"
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks/check-cpu

HTTP/1.1 200 OK
```

API Specification

/checks/:check (PUT)	
description	Create or update a Sensu check given the name of the check as a URL parameter.
example URL	http://hostname:8080/api/core/v2/namespaces/default/checks/check-cpu
payload	{ "command": "check-cpu.sh -w 75 -c 90", "handlers": ["slack"], "interval": 60, "publish": true,

```
  "subscriptions": [
    "linux"
  ],
  "metadata": {
    "name": "check-cpu",
    "namespace": "default"
  }
}
```

payload parameters	Required check attributes: `interval` (integer) or `cron` (string), and a `metadata` scope containing `name` (string) and `namespace` (string). For more information about creating checks, see the check reference.
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/checks/:check` (DELETE)

The `/checks/:check` API endpoint provides HTTP DELETE access to delete a check from Sensu given the check name.

EXAMPLE

The following example shows a request to delete the check named `check-cpu`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks/check-cpu

HTTP/1.1 204 No Content
```

API Specification

/checks/:check (DELETE)	
description	Removes a check from Sensu given the check name.
example url	http://hostname:8080/api/core/v2/namespaces/default/checks/check-cpu
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/checks/:check/execute` API endpoint

`/checks/:check/execute` (POST)

The `/checks/:check/execute` API endpoint provides HTTP POST access to create an ad-hoc check execution request, allowing you to execute a check on demand.

EXAMPLE

In the following example, an HTTP POST request is submitted to the `/checks/:check/execute` API to execute the `check-sensu-site` check. The request includes the check name in the request body and returns a successful HTTP 202 Accepted response and an `issued` timestamp.

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{"check": "check-sensu-site"}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks/check-sensu-site/execute

HTTP/1.1 202 Accepted
{"issued":1543861798}
```

PRO TIP: Include the `subscriptions` attribute with the request body to override the subscriptions configured in the check definition. This gives you the flexibility to execute a check on any Sensu entity

or group of entities on demand.

API Specification

/checks/:check/execute (POST)	
description	Creates an adhoc request to execute a check given the check name.
example URL	http://hostname:8080/api/core/v2/namespaces/default/checks/check-sensu-site/execute
payload	`{ "check": "check-sensu-site", "subscriptions": [ "entity:i-424242" ] }`
payload parameters	`check` (required): the name of the check to execute, and `subscriptions` (optional): an array of subscriptions to publish the check request to. When provided with the request, the `subscriptions` attribute overrides any subscriptions configured in the check definition.
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/checks/:check/hooks/:type` API endpoint

`/checks/:check/hooks/:type` (PUT)

The `/checks/:check/hooks/:type` API endpoint provides HTTP PUT access to assign a hook to a check.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/checks/:check/hooks/:type` API, assigning the `process_tree` hook to the `check-cpu` check in the event of a `critical` type check result, resulting in a successful 204 (No Content) HTTP response code.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "critical": [
    "process_tree"
  ]
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks/check-cpu/hooks/critical

HTTP/1.1 204 No Content
```

API Specification

checks/:check/hooks/:type (PUT)	
description	Assigns a hook to a check given the check name and check response type.
example URL	http://hostname:8080/api/core/v2/namespaces/default/checks/check-cpu/hooks/critical

example payload	{
	  "critical": [
	    "example-hook1",
	    "example-hook2"
	  ]

```
}
```

payload parameters	This endpoint requires a JSON map of check response types (for example: `critical`, `warning`), each containing an array of hook names.
response codes	**Success**: 204 (No Content) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/checks/:check/hooks/:type/hook/:hook` API endpoint

`/checks/:check/hooks/:type/hook/:hook` (DELETE)

This endpoint provides HTTP DELETE access to a remove a hook from a check.

EXAMPLE

The following example shows a request to remove the `process_tree` hook from the `check-cpu` check, resulting in a successful 204 (No Content) HTTP response code.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/checks/check-
cpu/hooks/critical/hook/process_tree

HTTP/1.1 204 No Content
```

API Specification

/checks/:check/hooks/
:type/hook/:hook
(DELETE)

description	Removes a single hook from a check given the check name, check response type, and hook name. See the checks reference for available types.
example url	http://hostname:8080/api/core/v2/namespaces/default/checks/check-cpu/hooks/critical/hook/process_tree
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Cluster API

Contents

The `/cluster/members` API endpoint

`/cluster/members` (GET)

The `/cluster/members` API endpoint provides HTTP GET access to Sensu cluster data.

EXAMPLE

The following example demonstrates a request to the `/cluster/members` API, resulting in a JSON Map containing a Sensu cluster definition.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/cluster/members

HTTP/1.1 200 OK
{
  "header": {
    "cluster_id": 4255616304056076734,
    "member_id": 9882886658148554927,
    "raft_term": 2
  },
```

```
  "members": [
    {
      "ID": 9882886658148554927,
      "name": "default",
      "peerURLs": [
        "http://127.0.0.1:2380"
      ],
      "clientURLs": [
        "http://127.0.0.1:2379"
      ]
    }
  ]
}
```


API Specification

/cluster/members (GET)	
description	Returns the etcd cluster definition.
example url	http://hostname:8080/api/core/v2/cluster/members
response type	Map
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
example output	


```
{
  "header": {
    "cluster_id": 4255616304056076734,
    "member_id": 9882886658148554927,
    "raft_term": 2
  },
  "members": [
    {
      "ID": 9882886658148554927,
      "name": "default",
      "peerURLs": [
        "http://127.0.0.1:2380"
```

```
      ],
      "clientURLs": [
        "http://127.0.0.1:2379"
      ]
    }
  ]
}
```

`/cluster/members` (POST)

The `/cluster/members` API endpoint provides HTTP POST access to create a Sensu cluster member.

EXAMPLE

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/cluster/members?peer-addrs=http://127.0.0.1:2380

HTTP/1.1 200 OK
{
  "header": {
    "cluster_id": 4255616304056077000,
    "member_id": 9882886658148555000,
    "raft_term": 2
  },
  "members": [
    {
      "ID": 9882886658148555000,
      "name": "default",
      "peerURLs": [
        "http://127.0.0.1:2380"
      ],
      "clientURLs": [
        "http://localhost:2379"
      ]
    }
  ]
```

```
}
```

API Specification

/cluster/members/:membe r (POST)	
description	Creates a cluster member.
example url	http://hostname:8080/api/core/v2/cluster/members?peer-addrs=http://127.0.0.1:2380
query parameters	`peer-addrs` (required): A comma-delimited list of peer addresses
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/cluster/members/:member` API endpoint

`/cluster/members/:member` (PUT)

EXAMPLE

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/cluster/members/8927110dc66458af?peer-addrs=http://127.0.0.1:2380

HTTP/1.1 200 OK
{
  "header": {
    "cluster_id": 4255616304056077000,
    "member_id": 9882886658148555000,
```

```
    "raft_term": 2
  },
  "members": [
    {
      "ID": 9882886658148555000,
      "name": "default",
      "peerURLs": [
        "http://127.0.0.1:2380"
      ],
      "clientURLs": [
        "http://localhost:2379"
      ]
    }
  ]
}
```


API Specification

/cluster/members/:member (PUT)	
description	Creates a cluster member.
example url	http://hostname:8080/api/core/v2/cluster/members/8927110dc66458af?peer-addrs=http://127.0.0.1:2380
url parameters	`8927110dc66458af` (required): Required hex-encoded uint64 cluster member ID generated using `sensuctl cluster member-list`
query parameters	`peer-addrs` (required): A comma-delimited list of peer addresses
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

`/cluster/members/:member` (DELETE)

The `/cluster/members/:member` API endpoint provides HTTP DELETE access to remove a Sensu cluster member.

EXAMPLE

The following example shows a request to remove the Sensu cluster member with the ID `8927110dc66458af`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/cluster/members/8927110dc66458af

HTTP/1.1 204 No Content
```

API Specification

/cluster/members/:member (DELETE)	
description	Removes a member from a Sensu cluster given the member ID.
example url	http://hostname:8080/api/core/v2/cluster/members/8927110dc66458af
url parameters	`8927110dc66458af` (required): Required hex-encoded uint64 cluster member ID generated using `sensuctl cluster member-list`
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/cluster/id` API endpoint

`/cluster/id` (GET)

The `/cluster/id` API endpoint provides HTTP GET access to the Sensu cluster ID.

EXAMPLE

The following example demonstrates a request to the `/cluster/id` API, resulting in a string containing the Sensu cluster ID.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/cluster/members

HTTP/1.1 200 OK
"23481e76-5844-4d07-b714-6e2ffbbf9315"
```

API Specification

/cluster/id (GET)	
description	Returns the unique Sensu cluster ID.
example url	http://hostname:8080/api/core/v2/cluster/id
response type	String
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
example output	`"23481e76-5844-4d07-b714-6e2ffbbf9315"`

Cluster role bindings API

Contents

The `/clusterrolebindings` API endpoint

`/clusterrolebindings` (GET)

The `/clusterrolebindings` API endpoint provides HTTP GET access to cluster role binding data.

EXAMPLE

The following example demonstrates a request to the `/clusterrolebindings` API, resulting in a JSON Array containing cluster role binding definitions.

```
curl http://127.0.0.1:8080/api/core/v2/clusterrolebindings -H "Authorization: Bearer
$SENSU_TOKEN"

HTTP/1.1 200 OK
[
  {
    "subjects": [
      {
        "type": "Group",
        "name": "cluster-admins"
      }
```

```
    ],
    "role_ref": {
      "type": "ClusterRole",
      "name": "cluster-admin"
    },
    "metadata": {
      "name": "cluster-admin"
    }
  },
  {
    "subjects": [
      {
        "type": "Group",
        "name": "system:agents"
      }
    ],
    "role_ref": {
      "type": "ClusterRole",
      "name": "system:agent"
    },
    "metadata": {
      "name": "system:agent"
    }
  }
]
```


API Specification

/clusterrolebindings (GET)	
description	Returns the list of cluster role bindings.
example url	http://hostname:8080/api/core/v2/clusterrolebindings
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array

response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output


```
[
  {
    "subjects": [
      {
        "type": "Group",
        "name": "cluster-admins"
      }
    ],
    "role_ref": {
      "type": "ClusterRole",
      "name": "cluster-admin"
    },
    "metadata": {
      "name": "cluster-admin"
    }
  }
]
```


`/clusterrolebindings` (POST)

The `/clusterrolebindings` API endpoint provides HTTP POST access to create a cluster role binding.

EXAMPLE

In the following example, an HTTP POST request is submitted to the `/clusterrolebindings` API to create a cluster role binding that assigns the `cluster-admin` cluster role to the user `bob`. The request includes the cluster role binding definition in the request body and returns a successful HTTP 200 OK response and the created cluster role binding definition.

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
```

```
  "subjects": [
    {
      "type": "User",
      "name": "bob"
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
  },
  "metadata": {
    "name": "bob-binder"
  }
}' \
http://127.0.0.1:8080/api/core/v2/clusterrolebindings

HTTP/1.1 200 OK
{
  "subjects": [
    {
      "type": "User",
      "name": "bob"
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
  },
  "metadata": {
    "name": "bob-binder"
  }
}
```

API Specification

/clusterrolebindings (POST)	
description	Create a Sensu cluster role binding.
example URL	http://hostname:8080/api/core/v2/clusterrolebindings

payload	<pre>{
	  "subjects": [
	  {
	  "type": "User",
	  "name": "bob"
	  }
	  ],
	  "role_ref": {
	  "type": "ClusterRole",
	  "name": "cluster-admin"
	  },
	  "metadata": {
	  "name": "bob-binder"
	  }
	}</pre>

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/clusterrolebindings/:clusterrolebinding` API endpoint

`/clusterrolebindings/:clusterrolebinding` (GET)

The `/clusterrolebindings/:clusterrolebinding` API endpoint provides HTTP GET access to cluster role binding data for specific `:clusterrolebinding` definitions, by cluster role binding `name`.

EXAMPLE

In the following example, querying the `/clusterrolebindings/:clusterrolebinding` API returns a JSON Mapcontaining the requested `:clusterrolebinding` definition (in this example: for the `:clusterrolebinding` named `bob-binder`).

```
curl http://127.0.0.1:8080/api/core/v2/clusterrolebindings/bob-binder -H
```

```
"Authorization: Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
{
  "subjects": [
    {
      "type": "User",
      "name": "bob"
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
  },
  "metadata": {
    "name": "bob-binder"
  }
}
```

API Specification

/clusterrolebindings/:clusterrolebinding (GET)	
description	Returns a cluster role binding.
example url	http://hostname:8080/api/core/v2/clusterrolebindings/bob-binder
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	{ "subjects": [{ "type": "User",

```
      "name": "bob"
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
  },
  "metadata": {
    "name": "bob-binder"
  }
}
```

`/clusterrolebindings/:clusterrolebinding` (PUT)

The `/clusterrolebindings/:clusterrolebinding` API endpoint provides HTTP PUT access to create or update a cluster role binding, by cluster role binding `name`.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/clusterrolebindings/:clusterrolebinding` API to create a cluster role binding that assigns the `cluster-admin` cluster role to users in the group `ops`. The request includes the cluster role binding definition in the request body and returns a successful HTTP 200 OK response and the created cluster role binding definition.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "subjects": [
    {
      "type": "Group",
      "name": "ops"
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
```

```
  },
  "metadata": {
    "name": "ops-group-binder"
  }
}' \
http://127.0.0.1:8080/api/core/v2/clusterrolebindings/ops-group-binder

HTTP/1.1 200 OK
{
  "subjects": [
    {
      "type": "Group",
      "name": "ops"
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
  },
  "metadata": {
    "name": "ops-group-binder"
  }
}
```

API Specification

/clusterrolebindings/:clusterrolebinding (PUT)	
description	Create or update a Sensu cluster role binding.
example URL	http://hostname:8080/api/core/v2/clusterrolebindings/ops-group-binder

payload	{
	  "subjects": [
	    {
	      "type": "Group",
	      "name": "ops"

```
    }
  ],
  "role_ref": {
    "type": "ClusterRole",
    "name": "cluster-admin"
  },
  "metadata": {
    "name": "ops-group-binder"
  }
}
```

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/clusterrolebindings/:clusterrolebinding` (DELETE)

The `/clusterrolebindings/:clusterrolebinding` API endpoint provides HTTP DELETE access to delete a cluster role binding from Sensu given the cluster role binding name.

EXAMPLE

The following example shows a request to delete the cluster role binding `ops-binding`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/clusterrolebindings/ops-binding

HTTP/1.1 204 No Content
```

API Specification

/clusterrolebindings/:clusterrolebinding (DELETE)

description	Removes a cluster role binding from Sensu given the cluster role binding name.
example url	http://hostname:8080/api/core/v2/clusterrolebindings/ops-binding
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Cluster roles API

Contents

The `/clusterroles` API endpoint

`/clusterroles` (GET)

The `/clusterroles` API endpoint provides HTTP GET access to cluster role data.

EXAMPLE

The following example demonstrates a request to the `/clusterroles` API, resulting in a JSON Array containing cluster role definitions.

```
curl http://127.0.0.1:8080/api/core/v2/clusterroles -H "Authorization: Bearer
$SENSU_TOKEN"

HTTP/1.1 200 OK
[
  {
    "rules": [
      {
        "verbs": [
          "*"
        ],
```

```
        "resources": [
          "assets",
          "checks",
          "entities",
          "extensions",
          "events",
          "filters",
          "handlers",
          "hooks",
          "mutators",
          "silenced",
          "roles",
          "rolebindings"
        ],
        "resource_names": null
      },
      {
        "verbs": [
          "get",
          "list"
        ],
        "resources": [
          "namespaces"
        ],
        "resource_names": null
      }
    ],
    "metadata": {
      "name": "admin"
    }
  },
  {
    "rules": [
      {
        "verbs": [
          "*"
        ],
        "resources": [
          "*"
        ],
        "resource_names": null
      }
```

```
    ],
    "metadata": {
      "name": "cluster-admin"
    }
  }
]
```

API Specification

/clusterroles (GET)	
description	Returns the list of cluster roles.
example url	http://hostname:8080/api/core/v2/clusterroles
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	

```
[
  {
    "rules": [
      {
        "verbs": [
          "*"
        ],
        "resources": [
          "*"
        ],
        "resource_names": null
      }
    ],
    "metadata": {
```

```
        "name": "cluster-admin"
      }
    }
]
```

`/clusterroles` (POST)

/clusterroles (POST)	
description	Create a Sensu cluster role.
example URL	http://hostname:8080/api/core/v2/clusterroles

payload	{
	  "metadata": {
	  "name": "global-event-reader"
	  },
	  "rules": [
	  {
	  "verbs": [
	  "get",
	  "list"
	  ],
	  "resources": [
	  "events"
	  ],
	  "resource_names": null
	  }
	  ]
	}

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/clusterroles/:clusterrole` API endpoint

`/clusterroles/:clusterrole` (GET)

The `/clusterroles/:clusterrole` API endpoint provides HTTP GET access to cluster role data for specific `:clusterrole` definitions, by cluster role `name`.

EXAMPLE

In the following example, querying the `/clusterroles/:clusterrole` API returns a JSON Map containing the requested `:clusterrole` definition (in this example: for the `:clusterrole` named `global-event-reader`).

```
curl http://127.0.0.1:8080/api/core/v2/clusterroles/global-event-reader -H
"Authorization: Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
{
  "metadata": {
    "name": "global-event-reader"
  },
  "rules": [
    {
      "verbs": [
        "get",
        "list"
      ],
      "resources": [
        "events"
      ],
      "resource_names": null
    }
  ]
}
```

API Specification

/clusterroles/:clusterrole (GET)	
description	Returns a cluster role.
example url	http://hostname:8080/api/core/v2/clusterroles/global-event-reader
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	

```
{
  "metadata": {
    "name": "global-event-reader"
  },
  "rules": [
    {
      "verbs": [
        "get",
        "list"
      ],
      "resources": [
        "events"
      ],
      "resource_names": null
    }
  ]
}
```

`/clusterroles/:clusterrole` (PUT)

API Specification

/clusterroles/:clusterrole

(PUT)	
description	Create or update a Sensu cluster role.
example URL	http://hostname:8080/api/core/v2/clusterroles/global-event-reader
payload
```
{
  "metadata": {
    "name": "global-event-reader"
  },
  "rules": [
    {
      "verbs": [
        "get",
        "list"
      ],
      "resources": [
        "events"
      ],
      "resource_names": null
    }
  ]
}
```
 |
| response codes | **Success**: 201 (Created)
Malformed: 400 (Bad Request)
Error: 500 (Internal Server Error) |

`/clusterroles/:clusterrole` (DELETE)

The `/clusterroles/:clusterrole` API endpoint provides HTTP DELETE access to delete a cluster role from Sensu given the cluster role name.

EXAMPLE

The following example shows a request to delete the cluster role `global-event-reader`, resulting in

a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/clusterroles/global-event-reader

HTTP/1.1 204 No Content
```

API Specification

/clusterroles/:clusterrole (DELETE)	
description	Removes a cluster role from Sensu given the cluster role name.
example url	http://hostname:8080/api/core/v2/clusterroles/global-event-reader
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Entities API

Contents

The `/entities` API endpoint

`/entities` (GET)

The `/entities` API endpoint provides HTTP GET access to entity data.

EXAMPLE

The following example demonstrates a request to the `/entities` API, resulting in a JSON Array containing entity definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/entities -H
"Authorization: Bearer $SENSU_TOKEN"
[
  {
    "entity_class": "agent",
    "system": {
      "hostname": "sensu-centos",
      "os": "linux",
      "platform": "centos",
      "platform_family": "rhel",
```

```
    "platform_version": "7.4.1708",
    "network": {
      "interfaces": [
        {
          "name": "lo",
          "addresses": [
            "127.0.0.1/8",
            "::1/128"
          ]
        },
        {
          "name": "enp0s3",
          "mac": "08:00:27:11:ad:d2",
          "addresses": [
            "10.0.2.15/24",
            "fe80::f50c:b029:30a5:3e26/64"
          ]
        },
        {
          "name": "enp0s8",
          "mac": "08:00:27:9f:5d:f3",
          "addresses": [
            "172.28.128.3/24",
            "fe80::a00:27ff:fe9f:5df3/64"
          ]
        }
      ]
    },
    "arch": "amd64"
  },
  "subscriptions": [
    "entity:sensu-centos"
  ],
  "last_seen": 1543349936,
  "deregister": false,
  "deregistration": {},
  "user": "agent",
  "redact": [
    "password",
    "passwd",
    "pass",
    "api_key",
```

```
        "api_token",
        "access_key",
        "secret_key",
        "private_key",
        "secret"
      ],
      "metadata": {
        "name": "sensu-centos",
        "namespace": "default",
        "labels": null,
        "annotations": null
      }
    }
]
```

API Specification

/entities (GET)	
description	Returns the list of entities.
example url	http://hostname:8080/api/core/v2/namespaces/default/entities
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output	[
	{
	"entity_class": "agent",
	"system": {

```
      "hostname": "sensu-centos",
      "os": "linux",
      "platform": "centos",
      "platform_family": "rhel",
      "platform_version": "7.4.1708",
      "network": {
        "interfaces": [
          {
            "name": "lo",
            "addresses": [
              "127.0.0.1/8",
              "::1/128"
            ]
          },
          {
            "name": "enp0s3",
            "mac": "08:00:27:11:ad:d2",
            "addresses": [
              "10.0.2.15/24",
              "fe80::f50c:b029:30a5:3e26/64"
            ]
          },
          {
            "name": "enp0s8",
            "mac": "08:00:27:9f:5d:f3",
            "addresses": [
              "172.28.128.3/24",
              "fe80::a00:27ff:fe9f:5df3/64"
            ]
          }
        ]
      },
      "arch": "amd64"
    },
    "subscriptions": [
      "entity:sensu-centos"
    ],
    "last_seen": 1543349936,
    "deregister": false,
    "deregistration": {},
    "user": "agent",
    "redact": [
```

```
        "password",
        "passwd",
        "pass",
        "api_key",
        "api_token",
        "access_key",
        "secret_key",
        "private_key",
        "secret"
      ],
      "metadata": {
        "name": "sensu-centos",
        "namespace": "default",
        "labels": null,
        "annotations": null
      }
    }
]
```


`/entities` (POST)

/entities (POST)	
description	Create a Sensu entity.
example URL	http://hostname:8080/api/core/v2/namespaces/default/entities
payload	


```
{
  "entity_class": "proxy",
  "subscriptions": [
    "web"
  ],
  "deregister": false,
  "deregistration": {},
  "metadata": {
    "name": "sensu-centos",
    "namespace": "default",
    "labels": null,
```

```
    "annotations": null
  }
}
```

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/entities/:entity` API endpoint

`/entities/:entity` (GET)

The `/entities/:entity` API endpoint provides HTTP GET access to entity data for specific `:entity` definitions, by entity `name`.

EXAMPLE

In the following example, querying the `/entities/:entity` API returns a JSON Map containing the requested `:entity` definition (in this example: for the `:entity` named `sensu-centos`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/entities/sensu-centos -H
"Authorization: Bearer $SENSU_TOKEN"
{
  "entity_class": "agent",
  "system": {
    "hostname": "sensu-centos",
    "os": "linux",
    "platform": "centos",
    "platform_family": "rhel",
    "platform_version": "7.4.1708",
    "network": {
      "interfaces": [
        {
          "name": "lo",
          "addresses": [
            "127.0.0.1/8",
```

```
            "::1/128"
          ]
        },
        {
          "name": "enp0s3",
          "mac": "08:00:27:11:ad:d2",
          "addresses": [
            "10.0.2.15/24",
            "fe80::f50c:b029:30a5:3e26/64"
          ]
        },
        {
          "name": "enp0s8",
          "mac": "08:00:27:9f:5d:f3",
          "addresses": [
            "172.28.128.3/24",
            "fe80::a00:27ff:fe9f:5df3/64"
          ]
        }
      ]
    },
    "arch": "amd64"
  },
  "subscriptions": [
    "entity:sensu-centos"
  ],
  "last_seen": 1543349936,
  "deregister": false,
  "deregistration": {},
  "user": "agent",
  "redact": [
    "password",
    "passwd",
    "pass",
    "api_key",
    "api_token",
    "access_key",
    "secret_key",
    "private_key",
    "secret"
  ],
  "metadata": {
```

```
    "name": "sensu-centos",
    "namespace": "default",
    "labels": null,
    "annotations": null
  }
}
```


API Specification

/entities/:entity (GET)	
description	Returns a entity.
example url	http://hostname:8080/api/core/v2/namespaces/default/entities/sensu-centos
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	


```
{
  "entity_class": "agent",
  "system": {
    "hostname": "sensu-centos",
    "os": "linux",
    "platform": "centos",
    "platform_family": "rhel",
    "platform_version": "7.4.1708",
    "network": {
      "interfaces": [
        {
          "name": "lo",
          "addresses": [
            "127.0.0.1/8",
            "::1/128"
          ]
```

```
        },
        {
          "name": "enp0s3",
          "mac": "08:00:27:11:ad:d2",
          "addresses": [
            "10.0.2.15/24",
            "fe80::f50c:b029:30a5:3e26/64"
          ]
        },
        {
          "name": "enp0s8",
          "mac": "08:00:27:9f:5d:f3",
          "addresses": [
            "172.28.128.3/24",
            "fe80::a00:27ff:fe9f:5df3/64"
          ]
        }
      ]
    },
    "arch": "amd64"
  },
  "subscriptions": [
    "entity:sensu-centos"
  ],
  "last_seen": 1543349936,
  "deregister": false,
  "deregistration": {},
  "user": "agent",
  "redact": [
    "password",
    "passwd",
    "pass",
    "api_key",
    "api_token",
    "access_key",
    "secret_key",
    "private_key",
    "secret"
  ],
  "metadata": {
    "name": "sensu-centos",
    "namespace": "default",
```

```
    "labels": null,
    "annotations": null
  }
}
```

`/entities/:entity` (POST)

API Specification

/entities/:entity (POST)	
description	Create or update a Sensu entity.
example URL	http://hostname:8080/api/core/v2/namespaces/default/entities/sensu-centos
payload	`{ "entity_class": "proxy", "subscriptions": [ "web" ], "deregister": false, "deregistration": {}, "metadata": { "name": "sensu-centos", "labels": null, "annotations": null } }`
response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

Note that when an event is created via an HTTP POST request, the event will use the namespace in the request URL.

`/entities/:entity` (PUT)

API Specification

/entities/:entity (PUT)	
description	Create or update a Sensu entity.
example URL	http://hostname:8080/api/core/v2/namespaces/default/entities/sensu-centos

payload	{
	"entity_class": "proxy",
	"subscriptions": [
	"web"
	],
	"deregister": false,
	"deregistration": {},
	"metadata": {
	"name": "sensu-centos",
	"namespace": "default",
	"labels": null,
	"annotations": null
	}
	}

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

Note that when an event is created via an HTTP PUT request, the event will use the namespace in the request URL.

`/entities/:entity` (DELETE)

The `/entities/:entity` API endpoint provides HTTP DELETE access to delete an entity from Sensu given the entity name.

EXAMPLE

The following example shows a request to delete the entity `server1`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/entities/server1

HTTP/1.1 204 No Content
```

API Specification

/entities/:entity (DELETE)	
description	Removes a entity from Sensu given the entity name.
example url	http://hostname:8080/api/core/v2/namespaces/default/entities/server1
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Events API

Contents

The `/events` API endpoint

`/events` (GET)

The `/events` API endpoint provides HTTP GET access to event data.

EXAMPLE

The following example demonstrates a request to the `/events` API, resulting in a JSON Array containing event definitions.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events

HTTP/1.1 200 OK
[
  {
    "timestamp": 1542667666,
```

```
    "entity": {
      "entity_class": "agent",
      "system": {
        "hostname": "webserver01",
        "...": "...",
        "arch": "amd64"
      },
      "subscriptions": [
        "testing",
        "entity:webserver01"
      ],
      "metadata": {
        "name": "check-nginx",
        "namespace": "default",
        "labels": null,
        "annotations": null
      }
    },
    "check": {
      "check_hooks": null,
      "duration": 2.033888684,
      "command": "http_check.sh http://localhost:80",
      "handlers": [
        "slack"
      ],
      "high_flap_threshold": 0,
      "interval": 20,
      "low_flap_threshold": 0,
      "publish": true,
      "runtime_assets": [],
      "subscriptions": [
        "testing"
      ],
      "proxy_entity_name": "",
      "check_hooks": null,
      "stdin": false,
      "ttl": 0,
      "timeout": 0,
      "duration": 0.010849143,
      "output": "",
      "state": "failing",
      "status": 1,
```

```
        "total_state_change": 0,
        "last_ok": 0,
        "occurrences": 1,
        "occurrences_watermark": 1,
        "output_metric_format": "",
        "output_metric_handlers": [],
        "env_vars": null,
        "metadata": {
          "name": "check-nginx",
          "namespace": "default",
          "labels": null,
          "annotations": null
        }
      }
    }
]
```


API Specification

/events (GET)	
description	Returns the list of events.
example url	http://hostname:8080/api/core/v2/namespaces/default/events
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	`[ { `

```
  "timestamp": 1542667666,
  "entity": {
    "entity_class": "agent",
    "system": {
      "hostname": "webserver01",
      "...": "...",
      "arch": "amd64"
    },
    "subscriptions": [
      "testing",
      "entity:webserver01"
    ],
    "metadata": {
      "name": "check-nginx",
      "namespace": "default",
      "labels": null,
      "annotations": null
    }
  },
  "check": {
    "check_hooks": null,
    "duration": 2.033888684,
    "command": "http_check.sh http://localhost:80",
    "handlers": [
      "slack"
    ],
    "high_flap_threshold": 0,
    "interval": 20,
    "low_flap_threshold": 0,
    "publish": true,
    "runtime_assets": [],
    "subscriptions": [
      "testing"
    ],
    "proxy_entity_name": "",
    "check_hooks": null,
    "stdin": false,
    "ttl": 0,
    "timeout": 0,
    "duration": 0.010849143,
    "output": "",
    "state": "failing",
```

```
        "status": 1,
        "total_state_change": 0,
        "last_ok": 0,
        "occurrences": 1,
        "occurrences_watermark": 1,
        "output_metric_format": "",
        "output_metric_handlers": [],
        "env_vars": null,
        "metadata": {
          "name": "check-nginx",
          "namespace": "default",
          "labels": null,
          "annotations": null
        }
      }
    }
]
```


`/events` (POST)

The `/events` API endpoint provides HTTP POST access to create an event and send it to the Sensu pipeline.

EXAMPLE

In the following example, an HTTP POST request is submitted to the `/events` API to create an event. The request includes information about the check and entity represented by the event and returns a successful HTTP 200 OK response and the event definition.

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
      "namespace": "default"
```

```
    }
  },
  "check": {
    "output": "Server error",
    "state": "failing",
    "status": 2,
    "handlers": ["slack"],
    "interval": 60,
    "metadata": {
      "name": "server-health"
    }
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events

HTTP/1.1 200 OK
{"timestamp":1552582569,"entity":{"entity_class":"proxy","system":{"network":{"inter
faces":null}},"subscriptions":null,"last_seen":0,"deregister":false,"deregistration"
:{},"metadata":{"name":"server1","namespace":"default"}},"check":{"handlers":["slack
"],"high_flap_threshold":0,"interval":60,"low_flap_threshold":0,"publish":false,"runti
me_assets":null,"subscriptions":[],"proxy_entity_name":"","check_hooks":null,"stdin"
:false,"subdue":null,"ttl":0,"timeout":0,"round_robin":false,"executed":0,"history":
null,"issued":0,"output":"Server
error","state":"failing","status":2,"total_state_change":0,"last_ok":0,"occurrences"
:0,"occurrences_watermark":0,"output_metric_format":"","output_metric_handlers":null
,"env_vars":null,"metadata":{"name":"server-health"}},"metadata":{}}
```

`/events` (PUT)

The `/events` API endpoint provides HTTP PUT access to create an event and send it to the Sensu pipeline.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/events` API to create an event. The request includes information about the check and entity represented by the event and returns a successful HTTP 200 OK response and the event definition.

```
curl -X PUT \
```

```
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
      "namespace": "default"
    }
  },
  "check": {
    "output": "Server error",
    "state": "failing",
    "status": 2,
    "handlers": ["slack"],
    "interval": 60,
    "metadata": {
      "name": "server-health"
    }
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events

HTTP/1.1 200 OK
{"timestamp":1552582569,"entity":{"entity_class":"proxy","system":{"network":{"inter
faces":null}},"subscriptions":null,"last_seen":0,"deregister":false,"deregistration"
:{},"metadata":{"name":"server1","namespace":"default"}},"check":{"handlers":["slack
"],"high_flap_threshold":0,"interval":60,"low_flap_threshold":0,"publish":false,"runti
me_assets":null,"subscriptions":[],"proxy_entity_name":"","check_hooks":null,"stdin"
:false,"subdue":null,"ttl":0,"timeout":0,"round_robin":false,"executed":0,"history":
null,"issued":0,"output":"Server
error","state":"failing","status":2,"total_state_change":0,"last_ok":0,"occurrences"
:0,"occurrences_watermark":0,"output_metric_format":"","output_metric_handlers":null
,"env_vars":null,"metadata":{"name":"server-health"}},"metadata":{}}
```

API Specification

/eve
nts

(POST)	
description	Create a Sensu event for a new entity and check combination. To create an event for an existing entity and check combination or to update an existing event, use the `/events/:entity/:check` PUT endpoint.
example URL	http://hostname:8080/api/core/v2/namespaces/default/events
payload	`{ "entity": { "entity_class": "proxy", "metadata": { "name": "server1", "namespace": "default" } }, "check": { "output": "Server error", "state": "failing", "status": 2, "handlers": ["slack"], "interval": 60, "metadata": { "name": "server-health" } } }`
payload parameters	See the payload parameters section for the `/events/:entity/:check` PUT endpoint.
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Conflict**: 409 (Event already exists for the entity and check) **Error**: 500 (Internal Server Error)

The `/events/:entity` API endpoint

`/events/:entity` (GET)

The `/events/:entity` API endpoint provides HTTP GET access to event data specific to an `:entity`, by entity `name`.

EXAMPLE

In the following example, querying the `/events/:entity` API returns a list of Sensu events for the `sensu-go-sandbox` entity and a successful HTTP 200 OK response.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/sensu-go-sandbox

HTTP/1.1 200 OK
[
  {
    "timestamp": 1543871497,
    "entity": {
      "entity_class": "agent",
      "system": {
        "hostname": "webserver01",
        "...": "...",
        "arch": "amd64"
      },
      "subscriptions": [
        "linux",
        "entity:sensu-go-sandbox"
      ],
      "last_seen": 1543858763,
      "metadata": {
        "name": "sensu-go-sandbox",
        "namespace": "default"
      }
    },
```

```
    "check": {
      "command": "check-cpu.sh -w 75 -c 90",
      "duration": 1.054253257,
      "executed": 1543871496,
      "history": [
        {
          "status": 0,
          "executed": 1543870296
        }
      ],
      "issued": 1543871496,
      "output": "CPU OK - Usage:.50\n",
      "state": "passing",
      "status": 0,
      "total_state_change": 0,
      "last_ok": 1543871497,
      "occurrences": 1,
      "metadata": {
        "name": "check-cpu",
        "namespace": "default"
      }
    },
    "metadata": {
      "namespace": "default"
    }
  },
  {
    "timestamp": 1543871524,
    "entity": {
      "entity_class": "agent",
      "system": {
        "hostname": "webserver01",
        "...": "...",
        "arch": "amd64"
      },
      "subscriptions": [
        "linux",
        "entity:sensu-go-sandbox"
      ],
      "last_seen": 1543871523,
      "metadata": {
        "name": "sensu-go-sandbox",
```

```
        "namespace": "default"
      }
    },
    "check": {
      "handlers": [
        "keepalive"
      ],
      "executed": 1543871524,
      "history": [
        {
          "status": 0,
          "executed": 1543871124
        }
      ],
      "issued": 1543871524,
      "output": "",
      "state": "passing",
      "status": 0,
      "total_state_change": 0,
      "last_ok": 1543871524,
      "occurrences": 1,
      "metadata": {
        "name": "keepalive",
        "namespace": "default"
      }
    },
    "metadata": {}
  }
]
```


API Specification

/events/:entity (GET)	
description	Returns a list of events for the specified entity.
example url	http://hostname:8080/api/core/v2/namespaces/default/events/sensu-go-sandbox
pagination	This endpoint supports pagination using the `limit` and `continue` query

	parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	


```
[
  {
    "timestamp": 1543871524,
    "entity": {
      "entity_class": "agent",
      "system": {
        "hostname": "webserver01",
        "...": "...",
        "arch": "amd64"
      },
      "subscriptions": [
        "linux",
        "entity:sensu-go-sandbox"
      ],
      "last_seen": 1543871523,
      "metadata": {
        "name": "sensu-go-sandbox",
        "namespace": "default"
      }
    },
    "check": {
      "handlers": [
        "keepalive"
      ],
      "executed": 1543871524,
      "history": [
        {
          "status": 0,
          "executed": 1543871124
        }
      ],
      "issued": 1543871524,
      "output": "",
```

```
        "state": "passing",
        "status": 0,
        "total_state_change": 0,
        "last_ok": 1543871524,
        "occurrences": 1,
        "metadata": {
          "name": "keepalive",
          "namespace": "default"
        }
      },
      "metadata": {}
    }
]
```


The `/events/:entity/:check` API endpoint

`/events/:entity/:check` (GET)

API Specification

/events/:entity/:check (GET)	
description	Returns an event for a given entity and check.
example url	http://hostname:8080/api/core/v2/namespaces/default/events/sensu-go-sandbox/check-cpu
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	```{ "timestamp": 1543871524,```

```
  "entity": {
    "entity_class": "agent",
    "system": {
      "hostname": "webserver01",
      "...": "...",
      "arch": "amd64"
    },
    "subscriptions": [
      "linux",
      "entity:sensu-go-sandbox"
    ],
    "last_seen": 1543871523,
    "metadata": {
      "name": "sensu-go-sandbox",
      "namespace": "default"
    }
  },
  "check": {
    "handlers": [
      "keepalive"
    ],
    "executed": 1543871524,
    "history": [
      {
        "status": 0,
        "executed": 1543871124
      }
    ],
    "issued": 1543871524,
    "output": "",
    "state": "passing",
    "status": 0,
    "total_state_change": 0,
    "last_ok": 1543871524,
    "occurrences": 1,
    "metadata": {
      "name": "keepalive",
      "namespace": "default"
    }
  },
  "metadata": {}
}
```

`/events/:entity/:check` (POST)

The `/events/:entity/:check` API endpoint provides HTTP POST access to create or update an event and send it to the Sensu pipeline.

EXAMPLE

In the following example, an HTTP POST request is submitted to the `/events/:entity/:check` API to create an event for the `server1` entity and the `server-health` check and process it using the `slack` event handler. The event includes a status code of `1`, indicating a warning, and an output message of “Server error”.

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
    }
  },
  "check": {
    "output": "Server error",
    "status": 1,
    "handlers": ["slack"],
    "interval": 60,
    "metadata": {
      "name": "server-health"
    }
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/server1/server-health
```

The request returns a 200 (OK) HTTP response code and the resulting event definition. Note that a namespace is not required to create the event. The event will use the namspace in the URL by default.

```
HTTP/1.1 200 OK
{"timestamp":1552582569,"entity":{"entity_class":"proxy","system":{"network":{"interfaces":null}},"subscriptions":null,"last_seen":0,"deregister":false,"deregistration":{},"metadata":{"name":"server1","namespace":"default"}},"check":{"handlers":["slack"],"high_flap_threshold":0,"interval":60,"low_flap_threshold":0,"publish":false,"runtime_assets":null,"subscriptions":[],"proxy_entity_name":"","check_hooks":null,"stdin":false,"subdue":null,"ttl":0,"timeout":0,"round_robin":false,"executed":0,"history":null,"issued":0,"output":"Server error","status":1,"total_state_change":0,"last_ok":0,"occurrences":0,"occurrences_watermark":0,"output_metric_format":"","output_metric_handlers":null,"env_vars":null,"metadata":{"name":"server-health"}},"metadata":{}}
```


You can use sensuctl or the Sensu dashboard to see the event.

```
sensuctl event list
```

You should see the event with the status and output specified in the request.

Entity	Check	Output	Status	Silenced	Timestamp
server1	server-health	Server error	1	false	2019-03-14 16:56:09 +0000 UTC

`/events/:entity/:check` (PUT)

The `/events/:entity/:check` API endpoint provides HTTP PUT access to create or update an event and send it to the Sensu pipeline.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/events/:entity/:check` API to create an event for the `server1` entity and the `server-health` check and process it using the `slack` event handler. The event includes a status code of `1`, indicating a warning, and an output message of "Server error".

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
      "namespace": "default"
    }
  },
  "check": {
    "output": "Server error",
    "status": 1,
    "handlers": ["slack"],
    "interval": 60,
    "metadata": {
      "name": "server-health"
    }
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/server1/server-health
```

The request returns a 200 (OK) HTTP response code and the resulting event definition. Note that a namespace is not required to create the event. The event will use the namspace in the URL by default.

```
HTTP/1.1 200 OK
{"timestamp":1552582569,"entity":{"entity_class":"proxy","system":{"network":{"inter
faces":null}},"subscriptions":null,"last_seen":0,"deregister":false,"deregistration"
:{},"metadata":{"name":"server1","namespace":"default"}},"check":{"handlers":["slack
"],"high_flap_threshold":0,"interval":60,"low_flap_threshold":0,"publish":false,"runti
me_assets":null,"subscriptions":[],"proxy_entity_name":"","check_hooks":null,"stdin"
:false,"subdue":null,"ttl":0,"timeout":0,"round_robin":false,"executed":0,"history":
null,"issued":0,"output":"Server
error","status":1,"total_state_change":0,"last_ok":0,"occurrences":0,"occurrences_wa
termark":0,"output_metric_format":"","output_metric_handlers":null,"env_vars":null,"
metadata":{"name":"server-health"}},"metadata":{}}
```

You can use sensuctl or the Sensu dashboard to see the event.

```
sensuctl event list
```

You should see the event with the status and output specified in the request.

```
 Entity      Check           Output          Status   Silenced          Timestamp
────────── ───────────── ───────────────────────────────── ──────── ──────────
─────────────────────────────
 server1   server-health   Server error              1      false     2019-03-14 16:56:09 +0000 UTC
```

API Specification

/events/:entity/:check (PUT)	
description	Creates an event for a given entity and check.
example url	http://hostname:8080/api/core/v2/namespaces/default/events/server1/server-health
payload	`{ "entity": { "entity_class": "proxy", "metadata": { "name": "server1", "namespace": "default" } }, "check": { "output": "Server error", "status": 1, "handlers": ["slack"], "interval": 60, "metadata": { "name": "server-health"`

```
      }
    }
}
```

payload parameters	See the payload parameters section below.
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Payload parameters

The `/events/:entity/:check` PUT endpoint requires a request payload containing an `entity` scope and a `check` scope. The `entity` scope contains information about the component of your infrastructure represented by the event. At a minimum, Sensu requires the `entity` scope to contain the `entity_class` (`agent` or `proxy`) and the entity `name` and `namespace` within a `metadata` scope. For more information about entity attributes, see the entity specification.

The `check` scope contains information about the event status and how the event was created. At a minimum, Sensu requires the `check` scope to contain a `name` within a `metadata` scope and either an `interval` or `cron` attribute. For more information about check attributes, see the check specification.

Example request with minimum required event attributes

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
      "namespace": "default"
    }
  },
  "check": {
    "interval": 60,
    "metadata": {
```

```
      "name": "server-health"
    }
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/server1/server-health
```

The minimum required attributes shown above let you create an event using the `/events/:entity/:check` PUT endpoint, however the request can include any attributes defined in the event specification. To create useful, actionable events, we recommend adding check attributes such as the event `status` (`0` for OK, `1` for warning, `2` for critical), an `output` message, and one or more event `handlers`. For more information about these attributes and their available values, see the event specification.

Example request with minimum recommended event attributes

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
      "namespace": "default"
    }
  },
  "check": {
    "output": "Server error",
    "status": 1,
    "handlers": ["slack"],
    "interval": 60,
    "metadata": {
      "name": "server-health"
    }
  }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/server1/server-health
```

Creating metric events

In addition to the `entity` and `check` scopes, Sensu events can include a `metrics` scope containing metrics in Sensu metric format.See the events reference and for more information about Sensu metric format.

Example request including metrics

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "entity": {
    "entity_class": "proxy",
    "metadata": {
      "name": "server1",
      "namespace": "default"
    }
  },
  "check": {
    "status": 0,
    "output_metric_handlers": ["influxdb"],
    "interval": 60,
    "metadata": {
      "name": "server-metrics"
    }
  },
  "metrics": {
    "handlers": [
      "influxdb"
    ],
    "points": [
      {
        "name": "server1.server-metrics.time_total",
        "tags": [],
        "timestamp": 1552506033,
        "value": 0.005
      },
      {
        "name": "server1.server-metrics.time_namelookup",
        "tags": [],
        "timestamp": 1552506033,
```

```
          "value": 0.004
        }
      ]
    }
}' \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/server1/server-metrics
```

`/events/:entity/:check` (DELETE)

EXAMPLE

The following example shows a request to delete the event produced by the `sensu-go-sandbox` entity and `check-cpu` check, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/events/sensu-go-sandbox/check-cpu

HTTP/1.1 204 No Content
```

API Specification

/events/:entity/:check (DELETE)	
description	Deletes the event created by the specified entity using the specified check
example url	http://hostname:8080/api/core/v2/namespaces/default/events/sensu-go-sandbox/check-cpu
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Filters API

Contents

The `/filters` API endpoint

`/filters` (GET)

The `/filters` API endpoint provides HTTP GET access to filter data.

EXAMPLE

The following example demonstrates a request to the `/filters` API, resulting in a JSON Array containing filter definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/filters -H "Authorization:
Bearer $TOKEN"
[
  {
    "metadata": {
      "name": "state_change_only",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "action": "allow",
```

```
    "expressions": [
      "event.check.occurrences == 1"
    ],
    "runtime_assets": []
  }
]
```

API Specification

/filters (GET)	
description	Returns the list of filters.
example url	http://hostname:8080/api/core/v2/namespaces/default/filters
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	

```
[
  {
    "metadata": {
      "name": "state_change_only",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "action": "allow",
    "expressions": [
      "event.check.occurrences == 1"
    ],
```

```
    "runtime_assets": []
  },
  {
    "metadata": {
      "name": "development_filter",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "action": "deny",
    "expressions": [
      "event.entity.metadata.namespace == 'production'"
    ],
    "runtime_assets": []
  }
]
```

`/filters` (POST)

/filters (POST)	
description	Create a Sensu filter.
example URL	http://hostname:8080/api/core/v2/namespaces/default/filters
payload	

```
{
  "metadata": {
    "name": "development_filter",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "action": "deny",
  "expressions": [
    "event.entity.metadata.namespace == 'production'"
  ],
  "runtime_assets": []
}
```

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/filters/:filter` API endpoint

`/filters/:filter` (GET)

The `/filters/:filter` API endpoint provides HTTP GET access to filter data for specific `:filter` definitions, by filter `name`.

EXAMPLE

In the following example, querying the `/filters/:filter` API returns a JSON Map containing the requested `:filter` definition (in this example: for the `:filter` named `state_change_only`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/filters/state_change_only -
H "Authorization: Bearer $TOKEN"
{
  "metadata": {
    "name": "state_change_only",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "action": "allow",
  "expressions": [
    "event.check.occurrences == 1"
  ],
  "runtime_assets": []
}
```

API Specification

/filters/:filter (GET)	
description	Returns a filter.
example url	http://hostname:8080/api/core/v2/namespaces/default/filters/state_change_only
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	{
	"metadata": {
	"name": "state_change_only",
	"namespace": "default",
	"labels": null,
	"annotations": null
	},
	"action": "allow",
	"expressions": [
	"event.check.occurrences == 1"
	],
	"runtime_assets": []
	}

`/filters/:filter` (PUT)

API Specification

/filters/:filter (PUT)	
description	Create or update a Sensu filter.

example URL	http://hostname:8080/api/core/v2/namespaces/default/filters/development_filter

payload

```
{
  "metadata": {
    "name": "development_filter",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "action": "deny",
  "expressions": [
    "event.entity.metadata.namespace == 'production'"
  ],
  "runtime_assets": []
}
```

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/filters/:filter` (DELETE)

The `/filters/:filter` API endpoint provides HTTP DELETE access to delete a filter from Sensu given the filter name.

EXAMPLE

The following example shows a request to delete the filter `production-only`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/filters/production-only

HTTP/1.1 204 No Content
```

API Specification

/filters/:filter (DELETE)	
description	Removes a filter from Sensu given the filter name.
example url	http://hostname:8080/api/core/v2/namespaces/default/filters/production-only
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Handlers API

Contents

The `/handlers` API endpoint

`/handlers` (GET)

The `/handlers` API endpoint provides HTTP GET access to handler data.

EXAMPLE

The following example demonstrates a request to the `/handlers` API, resulting in a JSON Array containing handler definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/handlers -H
"Authorization: Bearer $SENSU_TOKEN"
[
  {
    "metadata": {
      "name": "slack",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "command": "sensu-slack-handler --channel '#monitoring'",
```

```
    "env_vars": [

"SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXXXXXXXXXXXXXX"
    ],
    "filters": [
      "is_incident",
      "not_silenced"
    ],
    "handlers": [],
    "runtime_assets": [],
    "timeout": 0,
    "type": "pipe"
  }
]
```

API Specification

/handlers (GET)	
description	Returns the list of handlers.
example url	http://hostname:8080/api/core/v2/namespaces/default/handlers
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	

```
[
  {
    "metadata": {
      "name": "slack",
```

```
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "command": "sensu-slack-handler --channel '#monitoring'",
    "env_vars": [

"SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T00000000/B00000
000/XXXXXXXXXXXXXXXXXXXXXXXX"
    ],
    "filters": [
      "is_incident",
      "not_silenced"
    ],
    "handlers": [],
    "runtime_assets": [],
    "timeout": 0,
    "type": "pipe"
  },
  {
    "metadata": {
      "name": "influx-db",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "command": "sensu-influxdb-handler -d sensu",
    "env_vars": [
      "INFLUXDB_ADDR=http://influxdb.default.svc.cluster.local:8086",
      "INFLUXDB_USER=sensu",
      "INFLUXDB_PASSWORD=password"
    ],
    "filters": [],
    "handlers": [],
    "runtime_assets": [],
    "timeout": 0,
    "type": "pipe"
  }
]
```

`/handlers` (POST)

/handlers (POST)	
description	Create a Sensu handler.
example URL	http://hostname:8080/api/core/v2/namespaces/default/handlers
payload
```
{
  "metadata": {
    "name": "influx-db",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "command": "sensu-influxdb-handler -d sensu",
  "env_vars": [
    "INFLUXDB_ADDR=http://influxdb.default.svc.cluster.local:8086",
    "INFLUXDB_USER=sensu",
    "INFLUXDB_PASSWORD=password"
  ],
  "filters": [],
  "handlers": [],
  "runtime_assets": [],
  "timeout": 0,
  "type": "pipe"
}
```
 |
| response codes | **Success**: 200 (OK)
Malformed: 400 (Bad Request)
Error: 500 (Internal Server Error) |

The `/handlers/:handler` API endpoint

`/handlers/:handler` (GET)

The `/handlers/:handler` API endpoint provides HTTP GET access to handler data for specific `:handler` definitions, by handler `name`.

EXAMPLE

In the following example, querying the `/handlers/:handler` API returns a JSON Map containing the requested `:handler` definition (in this example: for the `:handler` named `slack`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/handlers/slack -H
"Authorization: Bearer $SENSU_TOKEN"
{
  "metadata": {
    "name": "slack",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "command": "sensu-slack-handler --channel '#monitoring'",
  "env_vars": [

"SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXX
XXXXXXXXXXXX"
  ],
  "filters": [
    "is_incident",
    "not_silenced"
  ],
  "handlers": [],
  "runtime_assets": [],
  "timeout": 0,
  "type": "pipe"
}
```

API Specification

/handlers/:handler (GET)	
description	Returns a handler.
example url	http://hostname:8080/api/core/v2/namespaces/default/handlers/slack
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	{
	"metadata": {
	"name": "slack",
	"namespace": "default",
	"labels": null,
	"annotations": null
	},
	"command": "sensu-slack-handler --channel '#monitoring'",
	"env_vars": [
	"SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXXXXXXXXXXXXX"
	],
	"filters": [
	"is_incident",
	"not_silenced"
	],
	"handlers": [],
	"runtime_assets": [],
	"timeout": 0,
	"type": "pipe"
	}

`/handlers/:handler` (PUT)

API Specification

/handlers/:handler (PUT)	
description	Create or update a Sensu handler.
example URL	http://hostname:8080/api/core/v2/namespaces/default/handlers/influx-db

payload	{
	"metadata": {
	"name": "influx-db",
	"namespace": "default",
	"labels": null,
	"annotations": null
	},
	"command": "sensu-influxdb-handler -d sensu",
	"env_vars": [
	"INFLUXDB_ADDR=http://influxdb.default.svc.cluster.local:8086",
	"INFLUXDB_USER=sensu",
	"INFLUXDB_PASSWORD=password"
	],
	"filters": [],
	"handlers": [],
	"runtime_assets": [],
	"timeout": 0,
	"type": "pipe"
	}

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/handlers/:handler` (DELETE)

The `/handlers/:handler` API endpoint provides HTTP DELETE access to delete a handler from Sensu given the handler name.

EXAMPLE

The following example shows a request to delete the handler `slack`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/handlers/slack

HTTP/1.1 204 No Content
```

API Specification

/handlers/:handler (DELETE)	
description	Removes a handler from Sensu given the handler name.
example url	http://hostname:8080/api/core/v2/namespaces/default/handlers/slack
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Health API

Contents

The `/health` API endpoint

`/health` (GET)

The `/health` API endpoint provides HTTP GET access to health data for your Sensu instance.

EXAMPLE

The following example demonstrates a request to the `/health` API, resulting in a JSON map containing Sensu health data.

```
curl http://127.0.0.1:8080/health

HTTP/1.1 200 OK
{
  "Alarms": null,
  "ClusterHealth": [
    {
      "MemberID": 9882886658148554927,
      "Name": "default",
      "Err": "",
      "Healthy": true
    }
  ],
  "Header": {
    "cluster_id": 4255616304056076734,
    "member_id": 9882886658148554927,
    "raft_term": 26
  }
```

```
}
```

API Specification

/health (GET)	
description	Returns health information about the Sensu instance
example url	http://hostname:8080/health
response type	Map
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	


```
{
  "Alarms": null,
  "ClusterHealth": [
    {
      "MemberID": 9882886658148554927,
      "Name": "default",
      "Err": "",
      "Healthy": true
    }
  ],
  "Header": {
    "cluster_id": 4255616304056076734,
    "member_id": 9882886658148554927,
    "raft_term": 26
  }
}
```

Hooks API

Contents

The `/hooks` API endpoint

`/hooks` (GET)

The `/hooks` API endpoint provides HTTP GET access to hook data.

EXAMPLE

The following example demonstrates a request to the `/hooks` API, resulting in a JSON Array containing hook definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/hooks -H "Authorization:
Bearer $SENSU_TOKEN"
[
  {
    "metadata": {
      "name": "process-tree",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "command": "ps aux",
```

```
    "timeout": 10,
    "stdin": false
  }
]
```

API Specification

/hooks (GET)	
description	Returns the list of hooks.
example url	http://hostname:8080/api/core/v2/namespaces/default/hooks
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	

```
[
  {
    "metadata": {
      "name": "process-tree",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "command": "ps aux",
    "timeout": 10,
    "stdin": false
  },
  {
    "metadata": {
```

```
        "name": "nginx-log",
        "namespace": "default",
        "labels": null,
        "annotations": null
      },
      "command": "tail -n 100 /var/log/nginx/error.log",
      "timeout": 10,
      "stdin": false
    }
]
```

`/hooks` (POST)

/hooks (POST)	
description	Create a Sensu hook.
example URL	http://hostname:8080/api/core/v2/namespaces/default/hooks

payload	<pre>{
	  "metadata": {
	    "name": "process-tree",
	    "namespace": "default",
	    "labels": null,
	    "annotations": null
	  },
	  "command": "ps aux",
	  "timeout": 10,
	  "stdin": false
	}</pre>

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/hooks/:hook` API endpoint

`/hooks/:hook` (GET)

The `/hooks/:hook` API endpoint provides HTTP GET access to hook data for specific `:hook` definitions, by hook `name`.

EXAMPLE

In the following example, querying the `/hooks/:hook` API returns a JSON Map containing the requested `:hook` definition (in this example: for the `:hook` named `process-tree`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/hooks/process-tree -H
"Authorization: Bearer $SENSU_TOKEN"
{
  "metadata": {
    "name": "process-tree",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "command": "ps aux",
  "timeout": 10,
  "stdin": false
}
```

API Specification

/hooks/:hook (GET)	
description	Returns a hook.
example url	http://hostname:8080/api/core/v2/namespaces/default/hooks/process-tree
response type	Map

response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	{
	"metadata": {
	"name": "process-tree",
	"namespace": "default",
	"labels": null,
	"annotations": null
	},
	"command": "ps aux",
	"timeout": 10,
	"stdin": false
	}

`/hooks/:hook` (PUT)

API Specification

/hooks/:hook (PUT)	
description	Create or update a Sensu hook.
example URL	http://hostname:8080/api/core/v2/namespaces/default/hooks/process-tree

payload	{
	"metadata": {
	"name": "process-tree",
	"namespace": "default",
	"labels": null,
	"annotations": null
	},
	"command": "ps aux",

```
  "timeout": 10,
  "stdin": false
}
```

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/hooks/:hook` (DELETE)

The `/hooks/:hook` API endpoint provides HTTP DELETE access to delete a check hook from Sensu given the hook name.

EXAMPLE

The following example shows a request to delete the hook `process-tree`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/hooks/process-tree

HTTP/1.1 204 No Content
```

API Specification

/hooks/:hook (DELETE)	
description	Removes a hook from Sensu given the hook name.
example url	http://hostname:8080/api/core/v2/namespaces/default/hooks/process-tree
response codes	**Success**: 204 (No Content)

Missing: 404 (Not Found)
Error: 500 (Internal Server Error)

License management API

Contents

The `/license` API endpoints

For more information about license-activated features designed for enterprises, see the getting started guide.

`/license` (GET)

The `/license` API endpoint provides HTTP GET access to the active license configuration.

API Specification

/license (GET)	
description	Returns the active enterprise license configuration. To download your license, log in to your Sensu account or contact the Sensu sales team for a free trial.
example url	http://hostname:8080/api/enterprise/licensing/v2/license
response type	Map
response	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

codes

`/license` (PUT)

The `/license` API endpoint provides HTTP PUT access to activate an enterprise license.

API Specification

/license (PUT)	
description	Activates an enterprise license, or updates an existing license configuration. To download your license, log in to your Sensu account or contact the Sensu sales team for a free trial.
example url	http://hostname:8080/api/enterprise/licensing/v2/license
payload	License definition
response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

Metrics API

Contents

The `/metrics` API endpoint

`/metrics` (GET)

The `/metrics` API endpoint provides HTTP GET access to internal Sensu metrics in Prometheus format, including embedded etcd, memory usage, garbage collection, and gRPC metrics.

EXAMPLE

The following example demonstrates a request to the `/metrics` API, resulting in plaintext output containing internal Sensu metrics.

```
curl http://127.0.0.1:8080/metrics

HTTP/1.1 200 OK
# HELP etcd_debugging_mvcc_db_compaction_keys_total Total number of db keys
compacted.
# TYPE etcd_debugging_mvcc_db_compaction_keys_total counter
etcd_debugging_mvcc_db_compaction_keys_total 2386
# HELP etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds Bucketed
histogram of db compaction pause duration.
# TYPE etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds histogram
etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds_bucket{le="1"} 0
etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds_bucket{le="2"} 0
...
```

API Specification

/metrics (GET)	
description	Returns internal Sensu metrics in Prometheus format, including embedded etcd, memory usage, garbage collection, and gRPC metrics.
example url	http://hostname:8080/metrics
response type	Prometheus-formatted plaintext
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output	`# HELP etcd_debugging_mvcc_db_compaction_keys_total Total number of db keys compacted.`
	`# TYPE etcd_debugging_mvcc_db_compaction_keys_total counter`
	`etcd_debugging_mvcc_db_compaction_keys_total 2386`
	`# HELP etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds Bucketed histogram of db compaction pause duration.`
	`# TYPE etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds histogram`
	`etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds_bucket{le="1"} 0`
	`etcd_debugging_mvcc_db_compaction_pause_duration_milliseconds_bucket{le="2"} 0`
	`...`

Mutators API

Contents

The `/mutators` API endpoint

`/mutators` (GET)

The `/mutators` API endpoint provides HTTP GET access to mutator data.

EXAMPLE

The following example demonstrates a request to the `/mutators` API, resulting in a JSON Array containing mutator definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/mutators -H
"Authorization: Bearer $SENSU_TOKEN"
[
  {
    "metadata": {
      "name": "example-mutator",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "command": "example_mutator.go",
```

```
    "timeout": 0,
    "env_vars": [],
    "runtime_assets": []
  }
]
```

API Specification

/mutators (GET)	
description	Returns the list of mutators.
example url	http://hostname:8080/api/core/v2/namespaces/default/mutators
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output	[
	  {
	    "metadata": {
	      "name": "example-mutator",
	      "namespace": "default",
	      "labels": null,
	      "annotations": null
	    },
	    "command": "example_mutator.go",
	    "timeout": 0,
	    "env_vars": [],
	    "runtime_assets": []
	  }
	]

`/mutators` (POST)

/mutators (POST)	
description	Create a Sensu mutator.
example URL	http://hostname:8080/api/core/v2/namespaces/default/mutators

payload	<pre>{
	  "metadata": {
	  "name": "example-mutator",
	  "namespace": "default",
	  "labels": null,
	  "annotations": null
	  },
	  "command": "example_mutator.go",
	  "timeout": 0,
	  "env_vars": [],
	  "runtime_assets": []
	}</pre>

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/mutators/:mutator` API endpoint

`/mutators/:mutator` (GET)

The `/mutators/:mutator` API endpoint provides HTTP GET access to mutator data for specific `:mutator` definitions, by mutator `name`.

EXAMPLE

In the following example, querying the `/mutators/:mutator` API returns a JSON Map containing the requested `:mutator` definition (in this example: for the `:mutator` named `example-mutator`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/mutators/example-mutator -
H "Authorization: Bearer $SENSU_TOKEN"
{
  "metadata": {
    "name": "example-mutator",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "command": "example_mutator.go",
  "timeout": 0,
  "env_vars": [],
  "runtime_assets": []
}
```

API Specification

/mutators/:mutator (GET)	
description	Returns a mutator.
example url	http://hostname:8080/api/core/v2/namespaces/default/mutators/mutator-name
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	{
	"metadata": {
	"name": "example-mutator",

```
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "command": "example_mutator.go",
  "timeout": 0,
  "env_vars": [],
  "runtime_assets": []
}
```

`/mutators/:mutator` (PUT)

API Specification

/mutators/:mutator (PUT)	
description	Create or update a Sensu mutator.
example URL	http://hostname:8080/api/core/v2/namespaces/default/mutators/example-mutator

payload	<pre>{
	  "metadata": {
	    "name": "example-mutator",
	    "namespace": "default",
	    "labels": null,
	    "annotations": null
	  },
	  "command": "example_mutator.go",
	  "timeout": 0,
	  "env_vars": [],
	  "runtime_assets": []
	}</pre>

response codes	**Success**: 201 (Created)

Malformed: 400 (Bad Request)
Error: 500 (Internal Server Error)

`/mutators/:mutator` (DELETE)

The `/mutators/:mutator` API endpoint provides HTTP DELETE access to delete a mutator from Sensu given the mutator name.

EXAMPLE

The following example shows a request to delete the mutator `example-mutator`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/mutators/example-mutator

HTTP/1.1 204 No Content
```

API Specification

/mutators/:mutator (DELETE)	
description	Removes a mutator from Sensu given the mutator name.
example url	http://hostname:8080/api/core/v2/namespaces/default/mutators/example-mutator
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Namespaces API

Contents

The `/namespaces` API endpoint

`/namespaces` (GET)

The `/namespaces` API endpoint provides HTTP GET access to namespace data.

EXAMPLE

The following example demonstrates a request to the `/namespaces` API, resulting in a JSON Array containing namespace definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces -H "Authorization: Bearer
$SENSU_TOKEN"
[
  {
    "name": "default"
  },
  {
    "name": "development"
  }
]
```

API Specification

/namespaces (GET)	
description	Returns the list of namespaces.
example url	http://hostname:8080/api/core/v2/namespaces
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	

```
[
  {
    "name": "default"
  },
  {
    "name": "development"
  }
]
```

`/namespaces` (POST)

/namespaces (POST)	
description	Create a Sensu namespace.
example URL	http://hostname:8080/api/core/v2/namespaces
payload	

	<pre>{
	  "name": "development"
	}</pre>

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/namespaces/:namespace` API endpoint

`/namespaces/:namespace` (PUT)

API Specification

/namespaces/:namespace (PUT)	
description	Create or update a Sensu namespace.
example URL	http://hostname:8080/api/core/v2/namespaces/development

payload	<pre>{
	  "name": "development"
	}</pre>

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/namespaces/:namespace` (DELETE)

The `/namespaces/:namespace` API endpoint provides HTTP DELETE access to delete a namespace from Sensu given the namespace name.

EXAMPLE

The following example shows a request to delete the namespace `development`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/development

HTTP/1.1 204 No Content
```

API Specification

/namespaces/:namespace (DELETE)	
description	Removes a namespace from Sensu given the namespace name.
example url	http://hostname:8080/api/core/v2/namespaces/development
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/user-namespaces` API endpoint

`/user-namespaces` (GET)

The `/user-namespaces` API endpoint provides HTTP GET access to the namespaces the user has access to.

EXAMPLE

The following example demonstrates a request to the `/user-namespaces` API, resulting in a JSON Array containing the namespaces the user has access to.

```
curl http://127.0.0.1:8080/api/enterprise/user-namespaces -H "Authorization: Bearer $SENSU_TOKEN"
[
  {
    "name": "default"
  },
  {
    "name": "development"
  }
]
```

API Specification

/user-namespaces (GET)	
description	Returns the list of namespaces a user has access to.
example url	http://hostname:8080/api/enterprise/user-namespaces
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)

output	<pre>[
	  {
	  "name": "default"
	  },
	  {
	  "name": "development"
	  }</pre>

```
]
```

Role bindings API

Contents

The `/rolebindings` API endpoint

`/rolebindings` (GET)

The `/rolebindings` API endpoint provides HTTP GET access to role binding data.

EXAMPLE

The following example demonstrates a request to the `/rolebindings` API, resulting in a JSON Array containing role binding definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/rolebindings -H
"Authorization: Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
[
  {
    "subjects": [
      {
        "type": "Group",
        "name": "readers"
      }
```

```
    ],
    "role_ref": {
      "type": "Role",
      "name": "read-only"
    },
    "metadata": {
      "name": "readers-group-binding",
      "namespace": "default"
    }
  }
]
```

API Specification

/rolebindings (GET)	
description	Returns the list of role bindings.
example url	http://hostname:8080/api/core/v2/namespaces/default/rolebindings
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	

```
[
  {
    "subjects": [
      {
        "type": "Group",
        "name": "readers"
      }
    ],
    "role_ref": {
```

```
      "type": "Role",
      "name": "read-only"
    },
    "metadata": {
      "name": "readers-group-binding",
      "namespace": "default"
    }
  }
]
```

`/rolebindings` (POST)

/rolebindings (POST)	
description	Create a Sensu role binding.
example URL	http://hostname:8080/api/core/v2/namespaces/default/rolebindings

payload	<pre>{
	  "subjects": [
	    {
	      "type": "Group",
	      "name": "readers"
	    }
	  ],
	  "role_ref": {
	    "type": "Role",
	    "name": "read-only"
	  },
	  "metadata": {
	    "name": "readers-group-binding",
	    "namespace": "default"
	  }
	}</pre>

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request)

Error: 500 (Internal Server Error)

The `/rolebindings/:rolebinding` API endpoint

`/rolebindings/:rolebinding` (GET)

The `/rolebindings/:rolebinding` API endpoint provides HTTP GET access to role binding data for specific `:rolebinding` definitions, by role binding `name`.

EXAMPLE

In the following example, querying the `/rolebindings/:rolebinding` API returns a JSON Map containing the requested `:rolebinding` definition (in this example: for the `:rolebinding` named `readers-group-binding`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/rolebindings/readers-group-binding -H "Authorization: Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
{
  "subjects": [
    {
      "type": "Group",
      "name": "readers"
    }
  ],
  "role_ref": {
    "type": "Role",
    "name": "read-only"
  },
  "metadata": {
    "name": "readers-group-binding",
    "namespace": "default"
  }
}
```

API Specification

/rolebindings/:rolebinding (GET)	
description	Returns a role binding.
example url	http://hostname:8080/api/core/v2/namespaces/default/rolebindings/readers-group-binding
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)
output	

```
{
  "subjects": [
    {
      "type": "Group",
      "name": "readers"
    }
  ],
  "role_ref": {
    "type": "Role",
    "name": "read-only"
  },
  "metadata": {
    "name": "readers-group-binding",
    "namespace": "default"
  }
}
```

`/rolebindings/:rolebinding` (PUT)

API Specification

/rolebindings/:rolebinding (PUT)	
description	Create or update a Sensu role binding.
example URL	http://hostname:8080/api/core/v2/namespaces/default/rolebindings/readers-group-binding
payload
```
{
  "subjects": [
    {
      "type": "Group",
      "name": "readers"
    }
  ],
  "role_ref": {
    "type": "Role",
    "name": "read-only"
  },
  "metadata": {
    "name": "readers-group-binding",
    "namespace": "default"
  }
}
```
 |
| response codes | **Success**: 201 (Created)
Malformed: 400 (Bad Request)
Error: 500 (Internal Server Error) |

`/rolebindings/:rolebinding` (DELETE)

The `/rolebindings/:rolebinding` API endpoint provides HTTP DELETE access to delete a role binding from Sensu given the role binding name.

EXAMPLE

The following example shows a request to delete the role binding `dev-binding`, resulting in a

successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/rolebindings/dev-binding

HTTP/1.1 204 No Content
```

API Specification

/rolebindings/:rolebinding (DELETE)	
description	Removes a role binding from Sensu given the role binding name.
example url	http://hostname:8080/api/core/v2/namespaces/default/rolebindings/dev-binding
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Roles API

Contents

The `/roles` API endpoint

`/roles` (GET)

The `/roles` API endpoint provides HTTP GET access to role data.

EXAMPLE

The following example demonstrates a request to the `/roles` API, resulting in a JSON Array containing role definitions.

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/roles -H "Authorization:
Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
[
  {
    "rules": [
      {
        "verbs": [
          "read"
        ],
```

```
        "resources": [
          "*"
        ],
        "resource_names": null
      }
    ],
    "metadata": {
      "name": "read-only",
      "namespace": "default"
    }
  }
]
```

API Specification

/roles (GET)	
description	Returns the list of roles.
example url	http://hostname:8080/api/core/v2/namespaces/default/roles
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	`[ { "rules": [ { "verbs": [ "read"`

```
        ],
        "resources": [
          "*"
        ],
        "resource_names": null
      }
    ],
    "metadata": {
      "name": "read-only",
      "namespace": "default"
    }
  }
]
```

`/roles` (POST)

/roles (POST)	
description	Create a Sensu role.
example URL	http://hostname:8080/api/core/v2/namespaces/default/roles
payload	

```
{
  "rules": [
    {
      "verbs": [
        "get",
        "list"
      ],
      "resources": [
        "events"
      ],
      "resource_names": []
    }
  ],
  "metadata": {
    "name": "event-reader",
    "namespace": "default"
```

```
    }
  }
```

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/roles/:role` API endpoint

`/roles/:role` (GET)

The `/roles/:role` API endpoint provides HTTP GET access to role data for specific `:role` definitions, by role `name`.

EXAMPLE

In the following example, querying the `/roles/:role` API returns a JSON Map containing the requested `:role` definition (in this example: for the `:role` named `read-only`).

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/roles/read-only -H
"Authorization: Bearer $SENSU_TOKEN"

HTTP/1.1 200 OK
{
  "rules": [
    {
      "verbs": [
        "read"
      ],
      "resources": [
        "*"
      ],
      "resource_names": null
    }
  ],
  "metadata": {
```

```
    "name": "read-only",
    "namespace": "default"
  }
}
```

API Specification

/roles/:role (GET)	
description	Returns a role.
example url	http://hostname:8080/api/core/v2/namespaces/default/roles/read-only
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	{
	"rules": [
	{
	"verbs": [
	"read"
	],
	"resources": [
	"*"
	],
	"resource_names": null
	}
	],
	"metadata": {
	"name": "read-only",
	"namespace": "default"
	}
	}

`/roles/:role` (PUT)

API Specification

/roles/:role (PUT)	
description	Create or update a Sensu role.
example URL	http://hostname:8080/api/core/v2/namespaces/default/roles/event-reader
payload
```
{
  "rules": [
    {
      "verbs": [
        "get",
        "list"
      ],
      "resources": [
        "events"
      ],
      "resource_names": []
    }
  ],
  "metadata": {
    "name": "event-reader",
    "namespace": "default"
  }
}
```
 |
| response codes | **Success**: 201 (Created)
Malformed: 400 (Bad Request)
Error: 500 (Internal Server Error) |

`/roles/:role` (DELETE)

The `/roles/:role` API endpoint provides HTTP DELETE access to delete a role from Sensu given the role name.

EXAMPLE

The following example shows a request to delete the role `read-only`, resulting in a successful HTTP 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/roles/ready-only

HTTP/1.1 204 No Content
```

API Specification

/roles/:role (DELETE)	
description	Removes a role from Sensu given the role name.
example url	http://hostname:8080/api/core/v2/namespaces/default/roles/ready-only
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Silencing API

Contents

The `/silenced` API endpoint

`/silenced` (GET)

The `/silenced` API endpoint provides HTTP GET access to silencing entry data.

EXAMPLE

The following example demonstrates a request to the `/silenced` API, resulting in a JSON Array containing silencing entry definitions.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/silenced

HTTP/1.1 200 OK
[
  {
    "metadata": {
```

```
      "name": "linux:check-cpu",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "expire": -1,
    "expire_on_resolve": false,
    "creator": "admin",
    "subscription": "linux",
    "begin": 1542671205
  }
]
```


API Specification

/silenced (GET)	
description	Returns the list of silences.
example url	http://hostname:8080/api/core/v2/namespaces/default/silenced
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	`[ { "metadata": { "name": "linux:check-cpu", "namespace": "default", "labels": null, "annotations": null`

```
    },
    "expire": -1,
    "expire_on_resolve": false,
    "creator": "admin",
    "subscription": "linux",
    "begin": 1542671205
  }
]
```


`/silenced` (POST)

/silenced (POST)	
description	Create a Sensu silencing entry.
example URL	http://hostname:8080/api/core/v2/namespaces/default/silenced
payload	`{ "metadata": { "name": "linux:check-cpu", "namespace": "default", "labels": null, "annotations": null }, "expire": -1, "expire_on_resolve": false, "creator": "admin", "subscription": "linux", "begin": 1542671205 }`
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/silenced/:silenced` API endpoint

`/silenced/:silenced` (GET)

The `/silenced/:silenced` API endpoint provides HTTP GET access to silencing entry data for specific `:silenced` definitions, by silencing entry `name`.

EXAMPLE

In the following example, querying the `/silenced/:silenced` API returns a JSON Map containing the requested silencing entry definition (in this example: for the silencing entry named `linux:check-cpu`). Silencing entry names are generated from the combination of a subscription name and check name.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/silenced/linux:check-cpu

HTTP/1.1 200 OK
{
  "metadata": {
    "name": "linux:check-cpu",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "expire": -1,
  "expire_on_resolve": false,
  "creator": "admin",
  "subscription": "linux",
  "begin": 1542671205
}
```

API Specification

/silenced/:silenced (GET)	
description	Returns a silencing entry.

example url	http://hostname:8080/api/core/v2/namespaces/default/silenced/linux:check-cpu
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	{
	"metadata": {
	"name": "linux:check-cpu",
	"namespace": "default",
	"labels": null,
	"annotations": null
	},
	"expire": -1,
	"expire_on_resolve": false,
	"creator": "admin",
	"subscription": "linux",
	"begin": 1542671205
	}

`/silenced/:silenced` (PUT)

API Specification

/silenced/:silenced (PUT)	
description	Create or update a Sensu silencing entry.
example URL	http://hostname:8080/api/core/v2/namespaces/default/silenced/linux:check-cpu
payload	{

```
  "metadata": {
    "name": "linux:check-cpu",
    "namespace": "default",
    "labels": null,
    "annotations": null
  },
  "expire": -1,
  "expire_on_resolve": false,
  "creator": "admin",
  "subscription": "linux",
  "begin": 1542671205
}
```


---

response codes	**Success**: 201 (Created) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/silenced/:silenced` (DELETE)

The `/silenced/:silenced` API endpoint provides HTTP DELETE access to delete a silencing entry by silencing entry `name`.

EXAMPLE

In the following example, querying the `/silenced/:silenced` API to delete the the silencing entry named `linux:check-cpu` results in a successful 204 No Content response.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/silenced/linux:check-cpu

HTTP/1.1 204 No Content
```

API Specification

/silenced/:silenced (DELETE)	
description	Removes a silencing entry from Sensu given the silencing entry name.
example url	http://hostname:8080/api/core/v2/namespaces/default/silenced/linux:check-cpu
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/silenced/subscriptions/:subscription` API endpoint

`/silenced/subscriptions/:subscription` (GET)

The `/silenced/subscriptions/:subscription` API endpoint provides HTTP GET access to silencing entry data by subscription `name`.

EXAMPLE

In the following example, querying the `silenced/subscriptions/:subscription` API returns a JSON Array containing the requested silences for the given subscription (in this example: for the `linux` subscription).

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/silenced/subscriptions/linux

HTTP/1.1 200 OK
[
  {
    "metadata": {
      "name": "linux:check-cpu",
      "namespace": "default",
      "labels": null,
      "annotations": null
```

```
    },
    "expire": -1,
    "expire_on_resolve": false,
    "creator": "admin",
    "subscription": "linux",
    "begin": 1542671205
  }
]
```


API Specification

/silenced/ subscriptions/ :subscription (GET)	
description	Returns all silences for the specified subscription.
example url	http://hostname:8080/api/core/v2/namespaces/default/silenced/subscriptions/linux
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	[
	  {
	  "metadata": {
	  "name": "linux:check-cpu",
	  "namespace": "default",
	  "labels": null,
	  "annotations": null
	  },
	  "expire": -1,
	  "expire_on_resolve": false,

```
    "creator": "admin",
    "subscription": "linux",
    "begin": 1542671205
  }
]
```

The `/silenced/checks/:check` API endpoint

`/silenced/checks/:check` (GET)

The `/silenced/checks/:check` API endpoint provides HTTP GET access to silencing entry data by check `name`.

EXAMPLE

In the following example, querying the `silenced/checks/:check` API returns a JSON Array containing the requested silences for the given check (in this example: for the `check-cpu` check).

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/namespaces/default/silenced/checks/check-cpu

HTTP/1.1 200 OK
[
  {
    "metadata": {
      "name": "linux:check-cpu",
      "namespace": "default",
      "labels": null,
      "annotations": null
    },
    "expire": -1,
    "expire_on_resolve": false,
    "creator": "admin",
    "check": "linux",
    "begin": 1542671205
  }
```

```
]
```

API Specification

/silenced/checks/ :check (GET)	
description	Returns all silences for the specified check.
example url	http://hostname:8080/api/core/v2/namespaces/default/silenced/checks/check-cpu
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output	[
	  {
	  "metadata": {
	  "name": "linux:check-cpu",
	  "namespace": "default",
	  "labels": null,
	  "annotations": null
	  },
	  "expire": -1,
	  "expire_on_resolve": false,
	  "creator": "admin",
	  "check": "linux",
	  "begin": 1542671205
	  }
	]

Tessen API

Contents

The `/tessen` API endpoints

The Tessen API provides HTTP access to manage Tessen configuration. Access to the Tessen API is restricted to the default `admin` user.

`/tessen` (GET)

The `/tessen` API endpoint provides HTTP GET access to Tessen configuration.

EXAMPLE

The following example demonstrates an HTTP GET request to the `/tessen` API.

```
curl -H "Authorization: Bearer $SENSU_TOKEN"
http://127.0.0.1:8080/api/core/v2/tessen
```

The request returns a 200 (OK) HTTP response code and a JSON map containing Tessen configuration, indicating that Tessen is enabled.

```
HTTP/1.1 200 OK
{"opt_out": false}
```

API Specification

/tessen (GET)	
description	Returns the active Tessen configuration. A response of `"opt_out": false` indicates that Tessen is enabled; a response of `"opt_out": true` indicates that Tessen is disabled.
example url	http://hostname:8080/api/core/v2/tessen
response type	Map
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
example output	`{"opt_out": false}`

`/tessen` (PUT)

The `/tessen` API endpoint provides HTTP PUT access to opt in to or opt out of Tessen. Tessen is enabled by default on Sensu backends and required for licensed Sensu instances.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/tessen` API to opt in to Tessen using the `opt_out` attribute.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
```

```
-H 'Content-Type: application/json' \
-d '{"opt_out": false}' \
http://127.0.0.1:8080/api/core/v2/tessen
```

The request returns a 200 (OK) HTTP response code and the resulting Tessen configuration.

```
HTTP/1.1 200 OK
{"opt_out": false}
```

API Specification

/tessen (PUT)	
description	Updates Tessen configuration. Licensed Sensu instances override the `opt_out` attribute to `false` at runtime.
example url	http://hostname:8080/api/core/v2/tessen
request parameters	`opt_out` (required): Set to `false` to enable Tessen; set to `true` to opt out of Tessen.
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Users API

Contents

The `/users` API endpoint

`/users` (GET)

The `/users` API endpoint provides HTTP GET access to user data.

EXAMPLE

The following example demonstrates a request to the `/users` API, resulting in a JSON Array containing user definitions.

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/users
```

```
HTTP/1.1 200 OK
[
  {
    "username": "admin",
    "groups": [
      "cluster-admins"
    ],
    "disabled": false
  },
  {
    "username": "agent",
    "groups": [
      "system:agents"
    ],
    "disabled": false
  }
]
```

API Specification

/users (GET)	
description	Returns the list of users.
example url	http://hostname:8080/api/core/v2/users
pagination	This endpoint supports pagination using the `limit` and `continue` query parameters. See the API overview for details.
response type	Array
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
output	`[`

```
  {
    "username": "admin",
    "groups": [
      "cluster-admins"
    ],
    "disabled": false
  },
  {
    "username": "agent",
    "groups": [
      "system:agents"
    ],
    "disabled": false
  }
]
```

`/users` (POST)

The `/users` API endpoint provides HTTP POST access to create a user.

EXAMPLE

The following example demonstrates a POST request to the `/users` API to create the user `alice`, resulting in an HTTP 200 response and the created user definition.

```
curl -X POST \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "username": "alice",
  "groups": [
    "ops"
  ],
  "password": "temporary",
  "disabled": false
}' \
http://127.0.0.1:8080/api/core/v2/users
```

```
HTTP/1.1 200 OK
{
  "username": "alice",
  "groups": [
    "ops"
  ],
  "disabled": false
}
```

API Specification

/users (POST)	
description	Create a Sensu user.
example URL	http://hostname:8080/api/core/v2/users

payload	<pre>{
	  "username": "alice",
	  "groups": [
	    "ops"
	  ],
	  "password": "temporary",
	  "disabled": false
	}</pre>

payload parameters	`username` (string, required) `password` (string, required): Must have at least eight characters `groups` (array): Sets of shared permissions applicable to this user `disabled` : When set to `true` , invalidates user credentials and permissions
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/users/:user` API endpoint

`/users/:user` (GET)

The `/users/:user` API endpoint provides HTTP GET access to user data for a specific user by `username`.

EXAMPLE

In the following example, querying the `/users/:user` API returns a JSON Map containing the requested `:user` definition (in this example: for the `alice` user).

```
curl -H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/users/alice

HTTP/1.1 200 OK
{
  "username": "alice",
  "groups": [
    "ops"
  ],
  "disabled": false
}
```

API Specification

/users/:user (GET)	
description	Returns a user given the username as a URL parameter.
example url	http://hostname:8080/api/core/v2/users/alice
response type	Map
response codes	**Success**: 200 (OK) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

output

```
{
  "username": "alice",
  "groups": [
    "ops"
  ],
  "disabled": false
}
```

`/users/:user` (PUT)

EXAMPLE

The following example demonstrates a PUT request to the `/users` API to update the user `alice`, in this case to reset their password, resulting in an HTTP 200 response and the updated user definition.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "username": "alice",
  "groups": [
    "ops"
  ],
  "password": "reset-password",
  "disabled": false
}' \
http://127.0.0.1:8080/api/core/v2/users/alice

HTTP/1.1 200 OK
{
  "username": "alice",
  "groups": [
    "ops"
  ],
  "disabled": false
```

```
}
```

API Specification

/users/:user (PUT)	
description	Create or update a Sensu user given the username.
example URL	http://hostname:8080/api/core/v2/users/alice

payload	<pre>{
	  "username": "alice",
	  "groups": [
	  "ops"
	  ],
	  "password": "reset-password",
	  "disabled": false
	}</pre>

response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/users/:user` (DELETE)

EXAMPLE

In the following example, an HTTP DELETE request is submitted to the `/users/:user` API to disable the user `alice`, resulting in a successful 204 (No Content) HTTP response code.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/users/alice

HTTP/1.1 204 No Content
```

API Specification

/users/:user (DELETE)	
description	Disables a user given the username as a URL parameter.
example url	http://hostname:8080/api/core/v2/users/alice
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/users/:user/password` API endpoint

`/users/:user/password` (PUT)

The `/users/:user/password` API endpoint provides HTTP PUT access to update a user's password.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/users/:user/password` API to update the password for the user `alice`, resulting in a 200 (OK) HTTP response code.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
-d '{
  "username": "alice",
  "password": "newpassword"
}' \
http://127.0.0.1:8080/api/core/v2/users/alice/password

HTTP/1.1 200 OK
```

API Specification

/users/:user/password (PUT)	
description	Update the password for a Sensu user.
example URL	http://hostname:8080/api/core/v2/users/alice/password

payload	<pre>{
	  "username": "admin",
	  "password": "newpassword"
	}</pre>

payload parameters	`username` (string, required): the `username` for the Sensu user `password` (string, required): the user's new password
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/users/:user/reinstate` API endpoint

`/users/:user/reinstate` (PUT)

The `/users/:user/reinstate` API endpoint provides HTTP PUT access to re-enable a disabled user.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/users/:user/reinstate` API to

enable the disabled user `alice`, resulting in a 200 (OK) HTTP response code.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
-H 'Content-Type: application/json' \
http://127.0.0.1:8080/api/core/v2/users/alice/reinstate

HTTP/1.1 200 OK
```

API Specification

/users/:user/reinstate (PUT)	
description	Reinstate a disabled user.
example URL	http://hostname:8080/api/core/v2/users/alice/reinstate
response codes	**Success**: 200 (OK) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

The `/users/:user/groups` API endpoint

`/users/:user/groups` (DELETE)

The `/users/:user/groups` API endpoint provides HTTP DELETE access to remove a user from all groups.

EXAMPLE

In the following example, an HTTP DELETE request is submitted to the `/users/:user/groups` API to remove the user `alice` from all groups within Sensu, resulting in a successful 204 (No Content) HTTP response code.

```
```

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/users/alice/groups

HTTP/1.1 204 No Content
```

API Specification

/users/:user/groups (DELETE)	
description	Removes a user from all groups.
example url	http://hostname:8080/api/core/v2/users/alice/groups
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

The `/users/:user/groups/:group` API endpoints

`/users/:user/groups/:group` (PUT)

The `/users/:user/groups/:group` API endpoint provides HTTP PUT access to assign a user to a group.

EXAMPLE

In the following example, an HTTP PUT request is submitted to the `/users/:user/groups/:group` API to add the user `alice` to the group `ops`, resulting in a successful 204 (No Content) HTTP response code.

```
curl -X PUT \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/users/alice/groups/ops
```

```
HTTP/1.1 204 No Content
```

API Specification

/users/:user/groups/:group (PUT)	
description	Add a user to a group.
example URL	http://hostname:8080/api/core/v2/users/alice/groups/ops
payload	
response codes	**Success**: 204 (No Content) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/users/:user/groups/:group` (DELETE)

The `/users/:user/groups/:group` API endpoint provides HTTP DELETE access to remove a user from a group.

EXAMPLE

In the following example, an HTTP DELETE request is submitted to the `/users/:user/groups/:group` API to remove the user `alice` from the group `ops`, resulting in a successful 204 (No Content) HTTP response code.

```
curl -X DELETE \
-H "Authorization: Bearer $SENSU_TOKEN" \
http://127.0.0.1:8080/api/core/v2/users/alice/groups/ops

HTTP/1.1 204 No Content
```

API Specification

/users/:user/groups/:group (DELETE)	
description	Removes a user from a group.
example url	http://hostname:8080/api/core/v2/users/alice/groups/ops
response codes	**Success**: 204 (No Content) **Missing**: 404 (Not Found) **Error**: 500 (Internal Server Error)

Version API

Contents

The `/version` API endpoint

`/version` (GET)

The `/version` API endpoint provides HTTP GET access to the Sensu backend and etcd versions for your Sensu instance.

EXAMPLE

The following example demonstrates a request to the `/version` API, resulting in a JSON map containing Sensu version data.

```
curl http://127.0.0.1:8080/version

HTTP/1.1 200 OK
{
  "Etcd": {
    "etcdserver": "3.3.2",
    "etcdcluster": "3.3.0"
  },
  "SensuBackend": "5.x.x#xxxxxxx"
}
```

API Specification

```
/versi
on
```

(GET)	
description	Returns the Sensu backend and etcd version for your Sensu instance
example url	http://hostname:8080/version
response type	Map
response codes	**Success**: 200 (OK) **Error**: 500 (Internal Server Error)
response parameters	• `Etcd.etcdserver` (string, required): etcd server version • `Etcd.etcdcluster` (string, optional): etcd cluster version for Sensu instances with the default embedded etcd; not required to match the etcd server version or the cluster versions of other backends in the cluster • `SensuBackend` (string, required): Sensu backend version in the format x.x.x#yyyyyyy where x.x.x is the Sensu version and yyyyyyy is the release SHA
output	

```
{
  "Etcd": {
    "etcdserver": "3.3.2",
    "etcdcluster": "3.3.0"
  },
  "SensuBackend": "5.x.x#xxxxxxx"
}
```

Sensuctl quick reference

Contents

Quick reference

```
# Configure and log in with defaults
sensuctl configure
? Sensu Backend URL: http://127.0.0.1:8080
? Username: admin
? Password: P@ssw0rd!

# Create resources from a file containing JSON resource definitions
sensuctl create --file filename.json

# See monitored entities
sensuctl entity list

# See monitoring events
sensuctl event list

# Edit a check named check-cpu
sensuctl edit check check-cpu

# See the JSON configuration for a check named check-cpu
sensuctl check info check-cpu --format wrapped-json
```

Sensuctl

Contents

Sensuctl is a command line tool for managing resources within Sensu. It works by calling Sensu's underlying API to create, read, update, and delete resources, events, and entities. Sensuctl is available for Linux, macOS, and Windows. See the installation guide to install and configure sensuctl.

Getting help

Sensuctl supports a `--help` flag for each command and subcommand.

```
# See command and global flags
sensuctl --help

# See subcommands and flags
sensuctl check --help

# See usage and flags
sensuctl check delete --help
```

First-time setup

To set up sensuctl, run `sensuctl configure` to log in to sensuctl and connect to the Sensu backend.

```
sensuctl configure
```

When prompted, input the Sensu backend URL and your Sensu access credentials.

```
? Sensu Backend URL: http://127.0.0.1:8080
? Username: admin
? Password: P@ssw0rd!
? Namespace: default
? Preferred output format: tabular
```

Sensu backend URL

The HTTP or HTTPS URL where sensuctl can connect to the Sensu backend server, defaulting to `http://127.0.0.1:8080`. When connecting to a Sensu cluster, connect sensuctl to any single backend in the cluster. For more information on configuring the Sensu backend URL, see the backend reference.

Username | password | namespace

By default, Sensu includes a user named `admin` with password `P@ssw0rd!` and a `default` namespace. Your ability to get, list, create, update, and delete resources with sensuctl depends on the permissions assigned to your Sensu user. For more information about configuring Sensu access control, see the RBAC reference.

Preferred output format

Sensuctl supports the following output formats:

`tabular`: user-friendly, columnar format
`wrapped-json`: accepted format for use with `sensuctl create`
`yaml`: accepted format for use with `sensuctl create`

`json`: format used by the Sensu API

Once logged in, you can change the output format using `sensuctl config set-format` or set it per command using the `--format` flag.

Non-interactive

You can run `sensuctl configure` non-interactively using the `-n` (`--non-interactive`) flag.

```
sensuctl configure -n --url http://127.0.0.1:8080 --username admin --password
P@ssw0rd! --format tabular
```

Managing sensuctl

The `sencutl config` command lets you view the current sensuctl configuration and set the namespace and output format.

View sensuctl config

To view the active configuration for sensuctl:

```
sensuctl config view
```

Sensuctl configuration includes the Sensu backend url, default output format for the current user, default namespace for the current user, and currently configured username.

```
=== Active Configuration
API URL:   http://127.0.0.1:8080
Namespace: default
Format:    tabular
Username:  admin
```

Set output format

You can use the `set-format` command to change the default output format for the current user. For example, to change the output format to `tabular`:

```
sensuctl config set-format tabular
```

Set namespace

You can use the `set-namespace` command to change the default namespace for the current user. For more information about configuring Sensu access control, see the RBAC reference. For example, to change the default namespace to `development`:

```
sensuctl config set-namespace development
```

Log out of sensuctl

To log out of sensuctl:

```
sensuctl logout
```

To log back in:

```
sensuctl configure
```

View the sensuctl version number

To display the current version of sensuctl:

```
sensuctl version
```

Global flags

Global flags modify settings specific to sensuctl, such as the Sensu backend URL and namespace. You can use global flags with most sensuctl commands.

```
--api-url string              host URL of Sensu installation
--cache-dir string            path to directory containing cache & temporary files
--config-dir string           path to directory containing configuration files
--insecure-skip-tls-verify    skip TLS certificate verification (not recommended!)
--namespace string            namespace in which we perform actions
--trusted-ca-file string      TLS CA certificate bundle in PEM format
```

Additionally, these flags can be set permanently by editing `.config/sensu/sensuctl/{cluster, profile}`.

Creating resources

The `sensuctl create` command allows you to create or update resources by reading from STDIN or a flag configured file (`-f`). The `create` command accepts Sensu resource definitions in `wrapped-json` and `yaml`. Both JSON and YAML resource definitions wrap the contents of the resource in `spec` and identify the resource `type` (see below for an example, and this table for a list of supported types). See the reference docs for information about creating resource definitions.

`wrapped-json` format

The following file `my-resources.json` specifies two resources: a `marketing-site` check and a `slack` handler, separated *without* a comma.

```
{
  "type": "CheckConfig",
  "api_version": "core/v2",
  "metadata" : {
    "name": "marketing-site",
    "namespace": "default"
```

```
    },
  "spec": {
    "command": "check-http.rb -u https://sensu.io",
    "subscriptions": ["demo"],
    "interval": 15,
    "handlers": ["slack"]
  }
}
{
  "type": "Handler",
  "api_version": "core/v2",
  "metadata": {
    "name": "slack",
    "namespace": "default"
  },
  "spec": {
    "command": "sensu-slack-handler --channel '#monitoring'",
    "env_vars": [

"SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXX
XXXXXXXXXXXX"
    ],
    "filters": [
      "is_incident",
      "not_silenced"
    ],
    "handlers": [],
    "runtime_assets": [],
    "timeout": 0,
    "type": "pipe"
  }
}
```

To create all resources from `my-resources.json` using `sensuctl create`:

```
sensuctl create --file my-resources.json
```

Or:

```
cat my-resources.json | sensuctl create
```

`yaml` format

The following file `my-resources.yml` specifies two resources: a `marketing-site` check and a `slack` handler, separated with three dashes (`---`).

```
---
type: CheckConfig
api_version: core/v2
metadata:
  name: marketing-site
  namespace: default
spec:
  command: check-http.rb -u https://sensu.io
  subscriptions:
  - demo
  interval: 15
  handlers:
  - slack
---
type: Handler
api_version: core/v2
metadata:
  name: slack
  namespace: default
spec:
  command: sensu-slack-handler --channel '#monitoring'
  env_vars:
  -
SLACK_WEBHOOK_URL=https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXXX
XXXXXXXXXXX
  filters:
  - is_incident
  - not_silenced
  type: pipe
```

To create all resources from `my-resources.yml` using `sensuctl create` :

```
sensuctl create --file my-resources.yml
```

Or:

```
cat my-resources.yml | sensuctl create
```

sensuctl create resource types

sensuctl create types			
`AdhocRequest`	`adhoc_request`	`Asset`	`asset`
`CheckConfig`	`check_config`	`ClusterRole`	`cluster_role`
`ClusterRoleBinding`	`cluster_role_binding`	`Entity`	`entity`
`Event`	`event`	`EventFilter`	`event_filter`
`Handler`	`handler`	`Hook`	`hook`
`HookConfig`	`hook_config`	`Mutator`	`mutator`
`Namespace`	`namespace`	`Role`	`role`
`RoleBinding`	`role_binding`	`Silenced`	`silenced`
`ldap`	`ad`	`TessenConfig`	`PostgresConfig`

Creating resources across namespaces

By omitting the `namespace` attribute from resource definitions, you can use the `senusctl create --namespace` flag to specify the namespace for a group of resources at the time of creation, allowing you to replicate resources across namespaces without manual editing. To learn more about namespaces and namespaced resource types, see the RBAC reference.

The `sensuctl create` command applies namespaces to resources in the following order, from highest precedence to lowest:

1. **Namespaces specified within resource definitions**: You can specify a resource's namespace within individual resource definitions using the `namespace` attribute. Namespaces specified in resource definitions take precedence over all other methods.
2. **`--namespace` flag**: If resource definitions do not specify a namespace, Sensu applies the namespace provided by the `sensuctl create --namespace` flag.
3. **Current sensuctl namespace configuration**: If neither an embedded `namespace` attribute nor the `--namespace` flag is specified, Sensu applies the namespace configured in the current sensuctl session. See managing sensuctl to view your current session config and set the session namespace.

For example, the following file, `pagerduty.yml`, defines a handler *without* a `namespace` attribute.

```
type: Handler
api_version: core/v2
metadata:
  name: pagerduty
spec:
  command: sensu-pagerduty-handler
  env_vars:
  - PAGERDUTY_TOKEN=SECRET
  type: pipe
```

To create the `pagerduty` handler in the `default` namespace:

```
sensuctl create --file pagerduty.yml --namespace default
```

To create the `pagerduty` handler in the `production` namespace:

```
sensuctl create --file pagerduty.yml --namespace production
```

To create the `pagerduty` handler in the current session namespace:

```
sensuctl create --file pagerduty.yml
```

Deleting resources

The `sensuctl delete` command allows you to delete resources by reading from STDIN or a flag configured file (`-f`).The `delete` command accepts Sensu resource definitions in `wrapped-json` and `yaml` formats and uses the same resources types as `sensuctl create` .To be deleted successfully, resources provided to the `delete` command must match the name and namespace of an existing resource.

To delete all resources from `my-resources.yml` using `sensuctl delete` :

```
sensuctl delete --file my-resources.yml
```

Or:

```
cat my-resources.yml | sensuctl delete
```

Deleting resources across namespaces

By omitting the `namespace` attribute from resource definitions, you can use the `senusctl delete --namespace` flag to specify the namespace for a group of resources at the time of deletion, allowing you to remove resources across namespaces without manual editing.See the section on creating resources across namespaces for usage examples.

Updating resources

Sensuctl allows you to update resource definitions using a text editor.To use `sensuctl edit` , specify the resource type and resource name.

For example, to edit a handler named `slack` using `sensuctl edit` :

```
sensuctl edit handler slack
```

sensuctl edit resource types

sensuctl edit types			
`asset`	`check`	`cluster`	`cluster-role`
`cluster-role-binding`	`entity`	`event`	`filter`
`handler`	`hook`	`mutator`	`namespace`
`role`	`role-binding`	`silenced`	`user`
`auth`			

Exporting resources

The `sensuctl dump` command allows you to export your resources to standard out or to a file. You can choose to export all of your resources or a subset of them based on a list of resource types. The `dump` command supports exporting in `wrapped-json` and `yaml`.

NOTE: Passwords are not included when exporting users. Operators must add the `password` attribute to any exported user resources before they can be used with `sensuctl create`.

For example, to export all resources to a file named `my-resources.yaml` in `yaml` format:

```
sensuctl dump all --format yaml --file my-resources.yaml
```

To export only checks to standard out in `yaml` format:

```
sensuctl dump check --format yaml
```

To export only handlers and filters to a file named `my-handlers-and-filters.yaml` in `yaml` format:

```
sensuctl dump handler,filter --format yaml --file my-handlers-and-filters.yaml
```

Managing resources

Sensuctl provides the following commands to manage Sensu resources.

`sensuctl asset`
`sensuctl auth` (licensed tier)
`sensuctl check`
`sensuctl cluster`
`sensuctl cluster-role`
`sensuctl cluster-role-binding`
`sensuctl entity`
`sensuctl event`
`sensuctl filter`
`sensuctl handler`
`sensuctl hook`
`sensuctl license` (licensed tier)
`sensuctl mutator`
`sensuctl namespace`
`sensuctl role`
`sensuctl role-binding`
`sensuctl silenced`
`sensuctl tessen`
`sensuctl user`

Subcommands

Sensuctl provides a standard set of list, info, and delete operations for most resource types.

```
list                        list resources
info NAME                   show detailed resource information given resource name
delete NAME                 delete resource given resource name
```

For example, to list all monitoring checks:

```
```

```
sensuctl check list
```

To list checks from all namespaces:

```
sensuctl check list --all-namespaces
```

To write all checks to `my-resources.json` in `wrapped-json` format:

```
sensuctl check list --format wrapped-json > my-resources.json
```

To see the definition for a check named `check-cpu` in `wrapped-json` format:

```
sensuctl check info check-cpu --format wrapped-json
```

In addition to the standard operations, commands may support subcommands or flags that allow you to take special action based on the resource type; the following sections call out those resource-specific operations. For a list of subcommands specific to a resource, run `sensuctl TYPE --help`.

Handling large datasets

When querying sensuctl for large datasets, you can use the `--chunk-size` flag with any `list` command to avoid timeouts and improve performance. For example, the following command returns the same output as `sensuctl event list` but makes multiple API queries (each for the number of objects specified by `--chunk-size`) instead of one API query for the complete dataset.

```
sensuctl event list --chunk-size 500
```

sensuctl check

In addition to the standard subcommands, sensuctl provides a command to execute a check on demand, given the check name.

```
sensuctl check execute NAME
```

For example, the following command executes the `check-cpu` check with an attached message:

```
sensuctl check execute check-cpu --reason "giving a sensuctl demo"
```

You can also use the `--subscriptions` flag to override the subscriptions in the check definition:

```
sensuctl check execute check-cpu --subscriptions demo,webserver
```

sensuctl cluster

The `sensuctl cluster` command lets you manage a Sensu cluster using the following subcommands.

```
health           get sensu health status
id               get unique Sensu cluster ID
member-add       add cluster member to an existing cluster, with comma-separated
peer addresses
member-list      list cluster members
member-remove    remove cluster member by ID
member-update    update cluster member by ID with comma-separated peer addresses
```

To view cluster members:

```
sensuctl cluster member-list
```

To see the health of your Sensu cluster:

```
sensuctl cluster health
```

sensuctl event

In addition to the standard subcommands, sensuctl provides a command to resolve an event.

```
sensuctl event resolve ENTITY CHECK
```

For example, the following command manually resolves an event created by the entity `webserver1` and the check `check-http`:

```
sensuctl event resolve webserver1 check-http
```

sensuctl namespace

See the RBAC reference for information about using access control with namespaces.

sensuctl user

See the RBAC reference for information about local user management with sensuctl.

Filtering

LICENSED TIER: Unlock sensuctl filtering with a Sensu license. To activate your license, see the getting started guide.

Sensuctl supports filtering for all `list` commands using the `--label-selector` and `--field-selector` flags.For information about the operators and fields available to use in filters, see the API docs.

Filtering syntax quick reference

operator	description	example

`==`	Equality	`check.publish == true`
`!=`	Inequality	`check.namespace != "default"`
`in`	Included in	`linux in check.subscriptions`
`notin`	Not included in	`slack notin check.handlers`
`&&`	Logical AND	`check.publish == true && slack in check.handlers`

Filtering with labels

You can use the `--label-selector` flag to filter using custom labels. For example, the following command returns entities with the `proxy_type` label set to `switch`.

```
sensuctl entity list --label-selector 'proxy_type == switch'
```

Filtering with resource attributes

You can use the `--field-selector` flag to filter using selected resource attributes. To see the resource attributes available to use in filter statements, see the API docs.

For example, the following command returns entities with the `switches` subscription.

```
sensuctl entity list --field-selector 'switches in entity.subscriptions'
```

You can also combine the `--label-selector` and `--field-selector` flags. For example, the following command returns checks with the `region` label set to `us-west-1` and the `slack` handler.

```
sensuctl check list --label-selector 'region == "us-west-1"' --field-selector 'slack in check.handlers'
```

Time formats

Sensuctl supports multiple time formats depending on the manipulated resource. Supported canonical time zone IDs are defined in the tz database.

WARNING: Canonical zone IDs (i.e. `America/Vancouver`) are not supported on Windows.

Dates with time

Full dates with time are used to specify an exact point in time, which can be used with silences, for example. The following formats are supported:

RFC3339 with numeric zone offset: `2018-05-10T07:04:00-08:00` or `2018-05-10T15:04:00Z`
RFC3339 with space delimiters and numeric zone offset: `2018-05-10 07:04:00 -08:00`
Sensu alpha legacy format with canonical zone ID: `May 10 2018 7:04AM America/Vancouver`

Shell auto-completion

Installation (Bash Shell)

Make sure bash completion is installed. If you use a current Linux in a non-minimal installation, bash completion should be available. On macOS, install with:

```
brew install bash-completion
```

Then add the following to your `~/.bash_profile`:

```
if [ -f $(brew --prefix)/etc/bash_completion ]; then
. $(brew --prefix)/etc/bash_completion
fi
```

Once bash-completion is available, add the following to your `~/.bash_profile`:

```
```

```
source <(sensuctl completion bash)
```

You can now source your `~/.bash_profile` or launch a new terminal to utilize completion.

```
source ~/.bash_profile
```

Installation (ZSH)

Add the following to your `~/.zshrc`:

```
source <(sensuctl completion zsh)
```

You can now source your `~/.zshrc` or launch a new terminal to utilize completion.

```
source ~/.zshrc
```

Usage

`sensuctl` Tab

```
check       configure   event       user
asset       completion  entity      handler
```

`sensuctl check` Tab

```
create  delete  import  list
```

Environment variables

Sensuctl includes `sensuctl env` command to help in exporting and setting environment variables on your systems.

Usage

Configuration files

During configuration, sensuctl creates configuration files that contain information for connecting to your Sensu Go deployment. You can find them at `$HOME/.config/sensu/sensuctl/profile` and `$HOME/.config/sensu/sensuctl/cluster`. For example:

```
cat .config/sensu/sensuctl/profile
{
  "format": "tabular",
  "namespace": "demo",
  "username": "admin"
}
```

```
cat .config/sensu/sensuctl/cluster
{
  "api-url": "http://localhost:8080",
  "trusted-ca-file": "",
  "insecure-skip-tls-verify": false,
  "access_token": "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx",
  "expires_at": 1550082282,
  "refresh_token": "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
}
```

These are useful if you want to know what cluster you're connecting to, or what namespace or username you're currently configured to use.

Interacting with Bonsai

Sensuctl supports both installing asset definitions directly from Bonsai and checking your Sensu backend for outdated assets.

Usage

To install an asset definition directly from Bonsai, use `sensuctl asset add [NAME][:VERSION]`, replacing `[NAME]` with the name of the asset from Bonsai. `[:VERSION]` is only required if you require a specific version or are pinning to a specific version.

```
sensuctl asset add sensu/sensu-influxdb-handler:3.1.1
fetching bonsai asset: sensu/sensu-influxdb-handler:3.1.1
added asset: sensu/sensu-influxdb-handler:3.1.1
```

You can also use the `--rename` flag to rename the asset on install.

```
sensuctl asset add sensu/sensu-slack-handler --rename slack-handler
no version specified, using latest: 1.0.3
fetching bonsai asset: sensu/sensu-slack-handler:1.0.3
added asset: sensu/sensu-slack-handler:1.0.3
```

To check your Sensu backend for assets which have newer versions available on Bonsai, use `sensuctl asset outdated`. This will print a list of assets installed in the backend whose version is older than the newest version available on Bonsai.

```
sensuctl asset outdated
          Asset Name                   Bonsai Asset          Current Version  Latest
Version
----------------------------  ----------------------------  ---------------  -------
-------
sensu/sensu-influxdb-handler  sensu/sensu-influxdb-handler       3.1.1
3.1.2
```

Sensu agent

Contents

The Sensu agent is a lightweight client that runs on the infrastructure components you want to monitor. Agents register with the Sensu backend as monitoring entities with `type: "agent"`. Agent entities are responsible for creating check and metrics events to send to the backend event pipeline. The Sensu agent is available for Linux, macOS, and Windows. See the installation guide to install the agent.

Communication between agent and backend

The Sensu agent uses WebSocket (ws) protocol to send and receive JSON messages with the Sensu backend. For optimal network throughput, agents will attempt to negotiate the use of Protobuf serialization when communicating with a Sensu backend that supports it. By default this communication is via clear text. The backend and agent can be configured for WebSocket Secure (wss) encrypted

communication by following our Securing Sensu guide.

Creating monitoring events using service checks

Sensu's use of the publish/subscribe pattern of communication allows for automated registration and deregistration of ephemeral systems. At the core of this model are Sensu agent subscriptions.

Each Sensu agent has a defined set of `subscriptions`, a list of roles and responsibilities assigned to the system (for example: a webserver or database). These subscriptions determine which monitoring checks are executed by the agent. Agent subscriptions allow Sensu to request check executions on a group of systems at a time, instead of a traditional 1:1 mapping of configured hosts to monitoring checks. In order for an agent to execute a service check, you must specify the same subscription in the agent configuration and the check definition.

After receiving a check request from the Sensu backend, the agent:

1. Applies any tokens matching attribute values in the check definition.
2. Fetches assets and stores them in its local cache. By default, agents cache asset data at `/var/cache/sensu/sensu-agent` (`C:\ProgramData\sensu\cache\sensu-agent` on Windows systems) or as specified by the the `cache-dir` flag.
3. Executes the check `command`.
4. Executes any hooks specified by the check based on the exit status.
5. Creates an event containing information about the applicable entity, check, and metric.

Subscription configuration

To configure subscriptions for an agent, set the `subscriptions` flag. To configure subscriptions for a check, set the check definition attribute `subscriptions`.

In addition to the subscriptions defined in the agent configuration, Sensu agent entities also subscribe automatically to a subscription matching their entity `name`. For example, an agent entity with the `name: "i-424242"` subscribes to check requests with the subscription `entity:i-424242`. This makes it possible to generate ad-hoc check requests targeting specific entities via the API.

Proxy entities

Sensu proxy entities allow Sensu to monitor external resources on systems or devices where a Sensu agent cannot be installed (such a network switch). Unlike agent entities, proxy entity definitions are stored by the Sensu backend. When the backend requests a check that includes a

`proxy_entity_name`, the agent includes the provided entity information in the event data in place of the agent entity data. See the entity reference and the guide to monitoring external resources for more information about monitoring proxy entities.

Creating monitoring events using the agent API

The Sensu agent API allows external sources to send monitoring data to Sensu without needing to know anything about Sensu's internal implementation. The agent API listens on the address and port specified by the API configuration flags; only unsecured HTTP (no HTTPS) is supported at this time. Any requests for unknown endpoints result in a 404 Not Found response.

`/events` (POST)

The `/events` API provides HTTP POST access to publish monitoring events to the Sensu backend pipeline via the agent API. The agent places events created via the `/events` POST endpoint into a queue stored on disk. In the event of a loss of connection with the backend or agent shutdown, queued event data is preserved, and the agent sends queued events to the backend once a connection is reestablished.

The `/events` API uses a configurable burst limit and rate limit for relaying events to the backend. See the API configuration flags to configure the `events-burst-limit` and `events-rate-limit` flags.

Example

In the following example, an HTTP POST is submitted to the `/events` API, creating an event for a check named `check-mysql-status` with the output `could not connect to mysql` and a status of `1` (warning). The agent responds with a 202 (Accepted) response code to indicate that the event has been added to the queue to be sent to the backend.

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "check-mysql-status"
    },
    "status": 1,
    "output": "could not connect to mysql"
```

```
  }
}' \
http://127.0.0.1:3031/events

HTTP/1.1 202 Accepted
```

PRO TIP: You can use the agent API `/events` endpoint to create proxy entities by including a `proxy_entity_name` attribute within the `check` scope.

Detecting silent failures

You can use the Sensu agent API in combination with the check time-to-live attribute (TTL) to detect silent failures, creating what's commonly referred to as a "dead man's switch" (source: Wikipedia).By using check TTLs, Sensu is able to set an expectation that a Sensu agent will publish additional events for a check within the period of time specified by the TTL attribute.If a Sensu agent fails to publish an event before the check TTL expires, the Sensu backend creates an event with a status of `1` (warning) to indicate the expected event was not received.For more information on check TTLs, see the the check reference.

A great use case for the Sensu agent API is to enable tasks which run outside of Sensu's check scheduling to emit events. Using the check TTL attribute, these events create a dead man's switch, ensuring that if the task fails for any reason, the lack of an "all clear" event from the task notifies operators of a silent failure which might otherwise be missed.If an external source sends a Sensu event with a check TTL to the Sensu agent API, Sensu expects another event from the same external source before the TTL expires.

The following is an example of external event input via the Sensu agent API using a check TTL to create a dead man's switch for MySQL backups.If we assume that a MySQL backup script runs periodically and that we expect the job to take a little less than 7 hours to complete, in the case where the job completes successfully, we'd like a record of it but don't need to be alerted. If the job fails for some reason, or continues running past the expected 7 hours, we'd like to be alerted. In the following example, the script sends an event which tells the Sensu backend to expect an additional event with the same name within 7 hours of the first event.

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "mysql-backup-job"
```

```
    },
    "status": 0,
    "output": "mysql backup initiated",
    "ttl": 25200
  }
}' \
http://127.0.0.1:3031/events
```

With this initial event submitted to the agent API, we have recorded in the Sensu backend that our script started, and we've configured the dead man's switch so that we'll be alerted if the job fails or runs too long. Although it is possible for our script to handle errors gracefully and emit additional monitoring events, this approach allows us to worry less about handling every possible error case, as the lack of additional events before the 7 hour period elapses results in an alert.

If our backup script runs successfully, we can send an additional event without the TTL attribute, which removes the dead man's switch:

```
curl -X POST \
-H 'Content-Type: application/json' \
-d '{
  "check": {
    "metadata": {
      "name": "mysql-backup-job"
    },
    "status": 0,
    "output": "mysql backup ran successfully!"
  }
}' \
http://127.0.0.1:3031/events
```

By omitting the TTL attribute from this event, the dead man's switch being monitored by the Sensu backend is also removed, effectively sounding the "all clear" for this iteration of the task.

API specification

/events (POST)

description	Accepts JSON event data and passes the event to the Sensu backend event pipeline for processing
example url	http://hostname:3031/events

payload example	<pre>{
	  "check": {
	  "metadata": {
	  "name": "check-mysql-status"
	  },
	  "status": 1,
	  "output": "could not connect to mysql"
	  }
	}</pre>

payload attributes	`check` (required): All check data must be within the `check` scope. `metadata` (required): The `check` scope must contain a `metadata` scope. `name` (required): The `metadata` scope must contain the `name` attribute with a string representing the name of the monitoring check. Any other attributes supported by the Sensu check specification (optional)
response codes	**Success**: 202 (Accepted) **Malformed**: 400 (Bad Request) **Error**: 500 (Internal Server Error)

`/healthz` (GET)

The `/healthz` API provides HTTP GET access to the status of the Sensu agent via the agent API.

Example

In the following example, an HTTP GET is submitted to the `/healthz` API:

```
curl http://127.0.0.1:3031/healthz
```

Resulting in a healthy response:

```
ok
```

API specification

/healthz (GET)	
description	Returns `ok` if the agent is active and connected to a Sensu backend; returns `sensu backend unavailable` if the agent is unable to connect to a backend.
example url	http://hostname:3031/healthz

Creating monitoring events using the StatsD listener

Sensu agents include a listener to send StatsD metrics to the event pipeline. By default, Sensu agents listen on UDP socket 8125 (TCP on Windows systems) for messages that follow the StatsD line protocol and send metric events for handling by the Sensu backend.

For example, you can use the Netcat utility to send metrics to the StatsD listener:

```
echo 'abc.def.g:10|c' | nc -w1 -u localhost 8125
```

Metrics received through the StatsD listener are not stored by Sensu, so it's important to configure event handlers.

StatsD line protocol

The Sensu StatsD listener accepts messages formatted according to the StatsD line protocol:

```
```

```
<metricname>:<value>|<type>
```

For more information, see the StatsD documentation.

Configuring the StatsD listener

To configure the StatsD listener, specify the `statsd-event-handlers` configuration flag in the agent configuration, and start the agent.

```
# Start an agent that sends StatsD metrics to InfluxDB
sensu-agent --statsd-event-handlers influx-db
```

You can use the StatsD configuration flags to change the default settings for the StatsD listener address, port, and flush interval.

```
# Start an agent with a customized address and flush interval
sensu-agent --statsd-event-handlers influx-db --statsd-flush-interval 1 --statsd-metrics-host 123.4.5.11 --statsd-metrics-port 8125
```

Creating monitoring events using the agent TCP and UDP sockets

NOTE: The agent TCP and UDP sockets are deprecated in favor of the agent API.

Sensu agents listen for external monitoring data using TCP and UDP sockets. The agent sockets accept JSON event data and pass the event to the Sensu backend event pipeline for processing. The TCP and UDP sockets listen on the address and port specified by the socket configuration flags.

Using the TCP socket

The following is an example demonstrating external monitoring data input via the Sensu agent TCP socket. The example uses Bash's built-in `/dev/tcp` file to communicate with the Sensu agent socket.

```
echo '{"name": "check-mysql-status", "status": 1, "output": "error!"}' >
/dev/tcp/localhost/3030
```

You can also use the Netcat utility to send monitoring data to the agent socket:

```
echo '{"name": "check-mysql-status", "status": 1, "output": "error!"}' | nc
localhost 3030
```

Using the UDP socket

The following is an example demonstrating external monitoring data input via the Sensu agent UDP socket. The example uses Bash's built-in `/dev/udp` file to communicate with the Sensu agent socket.

```
echo '{"name": "check-mysql-status", "status": 1, "output": "error!"}' >
/dev/udp/127.0.0.1/3030
```

You can also use the Netcat utility to send monitoring data to the agent socket:

```
echo '{"name": "check-mysql-status", "status": 1, "output": "error!"}' | nc -u -v
127.0.0.1 3030
```

Socket event format

The agent TCP and UDP sockets use a special event data format designed for backwards compatibility with Sensu 1.x check results. Attributes specified in socket events appear in the resulting event data passed to the Sensu backend.

Example socket input: Minimum required attributes

```
{
  "name": "check-mysql-status",
  "status": 1,
```

```
  "output": "error!"
}
```

Example socket input: All attributes

```
{
  "name": "check-http",
  "status": 1,
  "output": "404",
  "source": "sensu-docs-site",
  "executed": 1550013435,
  "duration": 1.903135228,
  "handlers": ["slack", "influxdb"]
}
```

Socket event specification

The Sensu agent socket ignores any attributes not included in this specification.

name	
description	The check name
required	true
type	String
example	`"name": "check-mysql-status"`

s t a t u

s	
description	The check execution exit status code. An exit status code of `0` (zero) indicates `OK`, `1` indicates `WARNING`, and `2` indicates `CRITICAL`; exit status codes other than `0`, `1`, or `2` indicate an `UNKNOWN` or custom status.
required	true
type	Integer
example	`"status": 0`

output	
description	The output produced by the check `command`.
required	true
type	String
example	`"output": "CheckHttp OK: 200, 78572 bytes"`

s o	

source	
description	The name of the Sensu entity associated with the event. Use this attribute to tie the event to a proxy entity. If no matching entity exists, Sensu creates a proxy entity with the name provided by the `source` attribute.
required	false
default	The agent entity receiving the event data
type	String
example	`"source": "sensu-docs-site"`

client	
description	*NOTE: The `client` attribute is deprecated in favor of the `source` attribute (see above).* The name of the Sensu entity associated with the event. Use this attribute to tie the event to a proxy entity. If no matching entity exists, Sensu creates a proxy entity with the name provided by the `client` attribute.

required	false
default	The agent entity receiving the event data
type	String
example	<pre>"client": "sensu-docs-site"</pre>

executed

description	The time the check was executed, in seconds since the Unix epoch.
required	false
default	The time the event was received by the agent
type	Integer
example	<pre>"executed": 1458934742</pre>

duration

description	The amount of time (in seconds) it took to execute the check.
required	false
type	Float
example	`"duration": 1.903135228`

command

description	The command executed to produce the event. You can use this attribute to add context to the event data; Sensu does not execute the command included in this attribute.
required	false
type	String
example	`"command": "check-http.rb -u https://sensuapp.org"`

interval

description	The interval used to produce the event. You can use this attribute to add context to the event data; Sensu does not act on the value provided in this attribute.
required	false
default	`1`

type	Integer
example	`"interval": 60`

handlers	
description	An array of Sensu handler names to use for handling the event. Each handler name in the array must be a string.
required	false
type	Array
example	`"handlers": ["slack", "influxdb"]`

Keepalive monitoring

Sensu `keepalives` are the heartbeat mechanism used to ensure that all registered agents are operational and able to reach the Sensu backend.Sensu agents publish keepalive events containing entity configuration data to the Sensu backend according to the interval specified by the `keepalive-interval` flag.If a Sensu agent fails to send keepalive events over the period specified by the `keepalive-timeout` flag, the Sensu backend creates a keepalive alert in the Sensu dashboard.You can use keepalives to identify unhealthy systems and network partitions, send notifications, trigger auto-remediation, and other useful actions.

NOTE: Keepalive monitoring is not supported for proxy entities, as they are inherently unable to run a Sensu agent.

Handling keepalive events

You can connect keepalive events to your monitoring workflows using a keepalive handler.Sensu looks

for an event handler named `keepalive` and automatically uses it to process keepalive events.

Let's say you want to receive Slack notifications for keepalive alerts, and you already have a Slack handler set up to process events. To process keepalive events using the Slack pipeline, create a handler set named `keepalive` and add the `slack` handler to the `handlers` array. The resulting `keepalive` handler set configuration looks like this:

Operation

Starting the service

Use the `sensu-agent` tool to start the agent and apply configuration flags.

Linux

To start the agent with configuration flags:

```
sensu-agent start --subscriptions disk-checks --log-level debug
```

To see available configuration flags and defaults:

```
sensu-agent start --help
```

To start the agent using a service manager:

```
sudo service sensu-agent start
```

If no configuration flags are provided, the agent loads configuration from the location specified by the `config-file` attribute (default: `/etc/sensu/agent.yml`).

Windows

Run the following command as an admin to install and start the agent.

```
sensu-agent service install
```

By default, the agent loads configuration from `%ALLUSERSPROFILE%\sensu\config\agent.yml` (for example: `C:\ProgramData\sensu\config\agent.yml`) and stores service logs to `%ALLUSERSPROFILE%\sensu\log\sensu-agent.log` (for example: `C:\ProgramData\sensu\log\sensu-agent.log`).

You can configure the configuration file and log file locations using the `config-file` and `log-file` flags.

```
sensu-agent service install --config-file 'C:\\monitoring\\sensu\\config\\agent.yml' --
log-file 'C:\\monitoring\\sensu\\log\\sensu-agent.log'
```

Stopping the service

To stop the agent service using a service manager:

Linux

```
sudo service sensu-agent stop
```

Windows

```
sc.exe stop SensuAgent
```

Restarting the service

You must restart the agent to implement any configuration updates.

To restart the agent using a service manager:

Linux

```
sudo service sensu-agent restart
```

Windows

```
sc.exe stop SensuAgent
sc.exe start SensuAgent
```

Enabling on boot

To enable the agent to start on system boot:

Linux

```
sudo systemctl enable sensu-agent
```

To disable the agent from starting on system boot:

```
sudo systemctl disable sensu-agent
```

NOTE: On older distributions of Linux, use `sudo chkconfig sensu-agent on` *to enable the agent and* `sudo chkconfig sensu-agent off` *to disable.*

Windows

The service is configured to start automatically on boot by default.

Getting service status

To see the status of the agent service using a service manager:

Linux

```
service sensu-agent status
```

Windows

```
sc.exe query SensuAgent
```

Getting service version

To get the current agent version using the `sensu-agent` tool:

```
sensu-agent version
```

Uninstalling the service

Windows

```
sensu-agent service uninstall
```

Getting help

The `sensu-agent` tool provides general and command-specific help flags:

```
# Show sensu-agent commands
sensu-agent help

# Show options for the sensu-agent start subcommand
sensu-agent start --help
```

Clustering

Agents can connect to a Sensu cluster by specifying any Sensu backend URL in the cluster in the `backend-url` configuration flag. For more information about clustering, see Sensu backend datastore configuration flags and the guide to running a Sensu cluster.

Time synchronization

System clocks between agents and the backend should be synchronized to a central NTP server. Out of sync system time may cause issues with keepalive, metric, and check alerts.

Registration

In practice, agent registration happens when a Sensu backend processes an agent keepalive event for an agent that is not already registered in the Sensu agent registry (based on the configured agent `name`). This agent registry is stored in the Sensu backend, and is accessible via `sensuctl entity list`.

All Sensu agent data provided in keepalive events gets stored in the agent registry and used to add context to Sensu events and detect Sensu agents in an unhealthy state.

Registration events

If a Sensu event handler named `registration` is configured, the Sensu backend creates and process an event for agent registration, applying any configured filters and mutators before executing the configured handler.

PRO TIP: Use a handler set to execute multiple handlers in response to registration events.

Registration events are useful for executing one-time handlers for new Sensu agents. For example, registration event handlers can be used to update external configuration management databases (CMDBs) such as ServiceNow.

To configure a registration event handler, please refer to the Sensu event handler documentation for instructions on creating a handler named `registration`.

WARNING: Registration events are not stored in the event registry, so they are not accessible via the

Sensu API; however, all registration events are logged in the Sensu backend log.

Deregistration events

Similarly to registration events, the Sensu backend can create and process a deregistration event when the Sensu agent process stops. You can use deregistration events to trigger a handler that updates external CMDBs or performs an action to update ephemeral infrastructures. To enable deregistration events, use the `deregister` flag and specify the event handler using the `deregistration-handler` flag. You can specify a deregistration handler per agent using the `deregistration-handler` agent flag or by setting a default for all agents using the `deregistration-handler` backend configuration flag.

Configuration

The agent loads configuration upon startup, so you must restart the agent for any configuration updates to take effect.

Linux

You can specify the agent configuration using a `.yml` file or using `sensu-agent start` command-line flags. Configuration provided via command-line flags overrides attributes specified in a configuration file. See the example config file for flags and defaults.

Configuration summary

```
$ sensu-agent start --help
start the sensu agent

Usage:
  sensu-agent start [flags]

Flags:
      --allow-list string              path to agent execution allow list
configuration file
      --annotations stringToString     entity annotations map (default [])
      --api-host string                address to bind the Sensu client HTTP API to
(default "127.0.0.1")
```

```
      --api-port int                     port the Sensu client HTTP API listens on
(default 3031)
      --backend-url strings              ws/wss URL of Sensu backend server (to
specify multiple backends use this flag multiple times) (default
[ws://127.0.0.1:8081])
      --cache-dir string                 path to store cached data (default
"/var/cache/sensu/sensu-agent")
  -c, --config-file string              path to sensu-agent config file
      --deregister                       ephemeral agent
      --deregistration-handler string    deregistration handler that should process
the entity deregistration event.
      --disable-assets                   disable check assets on this agent
      --disable-api                      disable the Agent HTTP API
      --disable-sockets                  disable the Agent TCP and UDP event sockets
      --events-burst-limit               /events api burst limit
      --events-rate-limit                maximum number of events transmitted to the
backend through the /events api
  -h, --help                             help for start
      --insecure-skip-tls-verify         skip ssl verification
      --keepalive-interval int           number of seconds to send between keepalive
events (default 20)
      --keepalive-timeout uint32         number of seconds until agent is considered
dead by backend (default 120)
      --labels stringToString            entity labels map (default [])
      --log-level string                 logging level [panic, fatal, error, warn,
info, debug] (default "warn")
      --name string                      agent name (defaults to hostname) (default
"sensu-go-sandbox")
      --namespace string                 agent namespace (default "default")
      --password string                  agent password (default "P@ssw0rd!")
      --redact string                    comma-delimited customized list of fields to
redact
      --socket-host string               address to bind the Sensu client socket to
(default "127.0.0.1")
      --socket-port int                  port the Sensu client socket listens on
(default 3030)
      --statsd-disable                   disables the statsd listener and metrics
server
      --statsd-event-handlers strings    comma-delimited list of event handlers for
statsd metrics
      --statsd-flush-interval int        number of seconds between statsd flush
(default 10)
```

```
      --statsd-metrics-host string      address used for the statsd metrics server
(default "127.0.0.1")
      --statsd-metrics-port int         port used for the statsd metrics server
(default 8125)
      --subscriptions string            comma-delimited list of agent subscriptions
      --trusted-ca-file string          tls certificate authority
      --user string                     agent user (default "agent")
```

Windows

You can specify the agent configuration using a `.yml` file.See the example config file provided with Sensu packages at `%ALLUSERSPROFILE%\sensu\config\agent.yml.example` (default: `C:\ProgramData\sensu\config\agent.yml.example`) or available here.

General configuration flags

annotations	
description	Non-identifying metadata to include with event data, which can be accessed using filters and tokens. You can use annotations to add data that's meaningful to people or external tools interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	`null`

example

```
# Command line examples
sensu-agent start --annotations sensu.io/plugins/slack/config/webhook-url=https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXXXXXXXXXXXXX
sensu-agent start --annotations example-key="example value" --annotations example-key2="example value"

# /etc/sensu/agent.yml example
annotations:
  sensu.io/plugins/slack/config/webhook-url: "https://hooks.slack.com/services/T00000000/B00000000/XXXXXXXXXXXXXXXXXXXXXXXX"
```

backend-url

description	ws or wss URL of the Sensu backend server. To specify multiple backends using `sensu-agent start`, use this flag multiple times.
type	List
default	`ws://127.0.0.1:8081`

example

```
# Command line examples
sensu-agent start --backend-url ws://0.0.0.0:8081
sensu-agent start --backend-url ws://0.0.0.0:8081 --backend-url ws://0.0.0.0:8082

# /etc/sensu/agent.yml example
backend-url:
  - "ws://0.0.0.0:8081"
  - "ws://0.0.0.0:8082"
```

cache-dir

description	Path to store cached data
type	String
default	Linux: `/var/cache/sensu/sensu-agent` Windows: `C:\ProgramData\sensu\cache\sensu-agent`
example	

```
# Command line example
sensu-agent start --cache-dir /cache/sensu-agent

# /etc/sensu/agent.yml example
cache-dir: "/cache/sensu-agent"
```

config-file

description	Path to Sensu agent config file
type	String
default	Linux: `/etc/sensu/agent.yml` FreeBSD: `/usr/local/etc/sensu/agent.yml` Windows: `C:\ProgramData\sensu\config\agent.yml`
example	

```
# Command line example
sensu-agent start --config-file /sensu/agent.yml
sensu-agent start -c /sensu/agent.yml

# /etc/sensu/agent.yml example
config-file: "/sensu/agent.yml"
```

disable-as

sets	
description	When set to `true`, disables assets for the agent. In the event that an agent attempts to execute a check that requires an asset, the agent will respond with a status of `3`, and a message indicating that the agent could not execute the check because assets are disabled.
type	Boolean
default	false
example	``` # Command line example sensu-agent start --disable-assets # /etc/sensu/agent.yml example disable-assets: true ```

allow-list	
description	Path to yaml or json file containing allowlist of check or hook commands the agent can execute. See the example configuration file and the configuration spec for details on building a configuration file.
type	String
default	`""`
ex	

example	```# Command line example sensu-agent start --allow-list /etc/sensu/check-allow-list.yaml # /etc/sensu/agent.yml example allow-list: /etc/sensu/check-allow-list.yaml```

labels

description	Custom attributes to include with event data, which can be accessed using filters and tokens. In contrast to annotations, you can use labels to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`
example	

example

```
# Command line examples
sensu-agent start --labels proxy_type=website
sensu-agent start --labels example_key1="example value"
example_key2="example value"

# /etc/sensu/agent.yml example
labels:
  proxy_type: "website"
```

name

description	Entity name assigned to the agent entity
type	String
default	Defaults to hostname, for example: `sensu-centos`

example

```
# Command line example
sensu-agent start --name agent-01

# /etc/sensu/agent.yml example
name: "agent-01"
```

log-level

description	Logging level: `panic`, `fatal`, `error`, `warn`, `info`, or `debug`
type	String
default	`warn`

example

```
# Command line example
sensu-agent start --log-level debug

# /etc/sensu/agent.yml example
log-level: "debug"
```

subscriptions	
description	An array of agent subscriptions which determine which monitoring checks are executed by the agent. The subscriptions array items must be strings.
type	List

example	`# Command line examples`
	`sensu-agent start --subscriptions disk-checks,process-checks`
	`sensu-agent start --subscriptions disk-checks --subscriptions process-checks`
	
	`# /etc/sensu/agent.yml example`
	`subscriptions:`
	`  - disk-checks`
	`  - process-checks`

API configuration flags

api-host	
description	Bind address for the Sensu agent HTTP API
type	String
default	`127.0.0.1`

example	`# Command line example`
	`sensu-agent start --api-host 0.0.0.0`
	
	`# /etc/sensu/agent.yml example`
	`api-host: "0.0.0.0"`

api-port

description	Listening port for the Sensu agent HTTP API
type	Integer
default	`3031`
example	

```
# Command line example
sensu-agent start --api-port 4041

# /etc/sensu/agent.yml example
api-port: 4041
```

disable-api

description	Disable the agent HTTP API
type	Boolean
default	`false`
example	

```
# Command line example
sensu-agent start --disable-api

# /etc/sensu/agent.yml example
disable-api: true
```

events-burst-limit

description	The maximum amount of burst allowed in a rate interval for the agent events API.

type	Integer
default	`10`

example	`# Command line example`
	`sensu-agent start --events-burst-limit 20`
	
	`# /etc/sensu/agent.yml example`
	`events-burst-limit: 20`

events-rate-limit	
description	The maximum number of events per second that can be transmitted to the backend using the agent events API
type	Float
default	`10.0`

example	`# Command line example`
	`sensu-agent start --events-rate-limit 20.0`
	
	`# /etc/sensu/agent.yml example`
	`events-rate-limit: 20.0`

Ephemeral agent configuration flags

deregister	
description	Indicates whether a deregistration event should be created upon Sensu agent process stop
type	Boolean

default	`false`

example	`# Command line example`
	`sensu-agent start --deregister`
	
	`# /etc/sensu/agent.yml example`
	`deregister: true`

deregistration-handler	
description	The name of a deregistration handler that processes agent deregistration events. This flag overrides any handlers applied by the `deregistration-handler` backend configuration flag.
type	String

example	`# Command line example`
	`sensu-agent start --deregistration-handler deregister`
	
	`# /etc/sensu/agent.yml example`
	`deregistration-handler: "deregister"`

Keepalive configuration flags

keepalive-interval	
description	Number of seconds between keepalive events
type	Integer
default	`20`
example	

```
# Command line example
sensu-agent start --keepalive-interval 30

# /etc/sensu/agent.yml example
keepalive-interval: 30
```

keepalive-timeout	
description	Number of seconds after a missing keepalive event until the agent is considered unresponsive by the Sensu backend
type	Integer
default	`120`

example	`# Command line example`
	`sensu-agent start --keepalive-timeout 300`
	
	`# /etc/sensu/agent.yml example`
	`keepalive-timeout: 300`

Security configuration flags

name space	
description	Agent namespace *NOTE: Agents are represented in the backend as a class of entity. Entities can only belong to a single namespace.*
type	String
default	`default`
example	`# Command line example`

```
sensu-agent start --namespace ops

# /etc/sensu/agent.yml example
namespace: "ops"
```

user

description	Sensu RBAC username used by the agent. Agents require get, list, create, update, and delete permissions for events across all namespaces.
type	String
default	`agent`
example	

```
# Command line example
sensu-agent start --user agent-01

# /etc/sensu/agent.yml example
user: "agent-01"
```

password

description	Sensu RBAC password used by the agent
type	String
default	`P@ssw0rd!`
example	

```
# Command line example
sensu-agent start --password secure-password

# /etc/sensu/agent.yml example
password: "secure-password"
```

redact

description	List of fields to redact when displaying the entity *NOTE: Redacted secrets are sent via the websocket connection and are stored in etcd. They are not logged nor displayed via the Sensu API.*
type	List
default	By default, Sensu redacts the following fields: `password`, `passwd`, `pass`, `api_key`, `api_token`, `access_key`, `secret_key`, `private_key`, `secret`
example	

```
# Command line example
sensu-agent start --redact secret,ec2_access_key

# /etc/sensu/agent.yml example
redact:
  - secret
  - ec2_access_key
```

trusted-ca-file

description	SSL/TLS certificate authority
type	String
default	`""`
example	

```
# Command line example
sensu-agent start --trusted-ca-file /path/to/trusted-certificate-
authorities.pem

# /etc/sensu/agent.yml example
```

```
trusted-ca-file: "/path/to/trusted-certificate-authorities.pem"
```

insecure-skip-tls-verify	
description	Skip SSL verification. *WARNING: This configuration flag is intended for use in development systems only. Do not use this flag in production.*
type	Boolean
default	`false`

example	`# Command line example`
	`sensu-agent start --insecure-skip-tls-verify`
	
	`# /etc/sensu/agent.yml example`
	`insecure-skip-tls-verify: true`

Socket configuration flags

socket-host	
description	Address to bind the Sensu agent socket to
type	String
default	`127.0.0.1`

example	`# Command line example`
	`sensu-agent start --socket-host 0.0.0.0`
	
	`# /etc/sensu/agent.yml example`
	`socket-host: "0.0.0.0"`

socket-port	
description	Port the Sensu agent socket listens on
type	Integer
default	`3030`

example	`# Command line example`
	`sensu-agent start --socket-port 4030`
	
	`# /etc/sensu/agent.yml example`
	`socket-port: 4030`

disable-sockets	
description	Disable the agent TCP and UDP event sockets
type	Boolean
default	`false`

example	`# Command line example`
	`sensu-agent start --disable-sockets`
	
	`# /etc/sensu/agent.yml example`
	`disable-sockets: true`

StatsD configuration flags

statsd-disable	
description	Disables the StatsD listener and metrics server

type	Boolean
default	`false`
example	

```
# Command line example
sensu-agent start --statsd-disable

# /etc/sensu/agent.yml example
statsd-disable: true
```

statsd-event-handlers

description	List of event handlers for StatsD metrics
type	List
example	

```
# Command line examples
sensu-agent start --statsd-event-handlers influxdb,opentsdb
sensu-agent start --statsd-event-handlers influxdb --statsd-
event-handlers opentsdb

# /etc/sensu/agent.yml example
statsd-event-handlers:
  - influxdb
  - opentsdb
```

statsd-flush-interval

description	Number of seconds between StatsD flush
type	Integer
default	`10`
example	

```
# Command line example
sensu-agent start --statsd-flush-interval 30

# /etc/sensu/agent.yml example
statsd-flush-interval: 30
```

statsd-metrics-host

description	Address used for the StatsD metrics server
type	String
default	`127.0.0.1`
example	

```
# Command line example
sensu-agent start --statsd-metrics-host 0.0.0.0

# /etc/sensu/agent.yml example
statsd-metrics-host: "0.0.0.0"
```

statsd-metrics-port

description	Port used for the StatsD metrics server
type	Integer
default	`8125`
example	

```
# Command line example
sensu-agent start --statsd-metrics-port 6125

# /etc/sensu/agent.yml example
statsd-metrics-port: 6125
```

Allow list configuration

exec

description	The command to allow the Sensu agent to run as a check or a hook.
required	true
type	String
example	`"exec": "/usr/local/bin/check_memory.sh"`

sha512

description	The checksum of the check or hook executable.
required	false
type	String
example	`"sha512": "4f926bf4328..."`

args

description	Arguments for the exec command.
required	true
type	Array
example	`"args": ["foo"]`

enable_env	
description	Enable environment variables.
required	false
type	Boolean
example	`"enable_env": true`

Example allow list configuration file

Sensu backend

Contents

The Sensu backend is a service that manages check requests and event data. Every Sensu backend includes an integrated transport for scheduling checks using subscriptions, an event processing pipeline that applies filters, mutators, and handlers, an embedded etcd datastore for storing configuration and state, a Sensu API, Sensu dashboard, and `sensu-backend` command-line tool. The Sensu backend is available for Ubuntu/Debian and RHEL/CentOS distributions of Linux. See the installation guide to install the backend.

Event pipeline

The backend processes event data and executes filters, mutators, and handlers. These pipelines are powerful tools to automate your monitoring workflows. To learn more about filters, mutators, and handlers, see:

Guide to sending Slack alerts with handlers
Guide to reducing alerting fatigue with filters
Filters reference documentation
Mutators reference documentation

Handlers reference documentation

Check scheduling

The backend is responsible for storing check definitions and scheduling check requests.Check scheduling is subscription-based; the backend sends check requests to subscriptions where they're picked up by subscribing agents.

For information about creating and managing checks, see:

Guide to monitoring server resources with checks
Guide to collecting metrics with checks
Checks reference documentation

Operation

NOTE: Commands in this section may require administrative privileges.

Starting the service

Use the `sensu-backend` tool to start the backend and apply configuration flags.

To start the backend with configuration flags:

```
sensu-backend start --state-dir /var/lib/sensu/sensu-backend --log-level debug
```

To see available configuration flags and defaults:

```
sensu-backend start --help
```

If no configuration flags are provided, the backend loads configuration from `/etc/sensu/backend.yml` by default.

To start the backend using a service manager:

```
service sensu-backend start
```

Stopping the service

To stop the backend service using a service manager:

```
service sensu-backend stop
```

Restarting the service

You must restart the backend to implement any configuration updates.

To restart the backend using a service manager:

```
service sensu-backend restart
```

Enabling on boot

To enable the backend to start on system boot:

```
systemctl enable sensu-backend
```

To disable the backend from starting on system boot:

```
systemctl disable sensu-backend
```

NOTE: On older distributions of Linux, use `sudo chkconfig sensu-server on` *to enable the backend and* `sudo chkconfig sensu-server off` *to disable.*

Getting service status

To see the status of the backend service using a service manager:

```
service sensu-backend status
```

Getting service version

To get the current backend version using the `sensu-backend` tool:

```
sensu-backend version
```

Getting help

The `sensu-backend` tool provides general and command-specific help flags:

```
# Show sensu-backend commands
sensu-backend help

# Show options for the sensu-backend start subcommand
sensu-backend start --help
```

Clustering

You can run the backend as a standalone service, but running a cluster of backends makes Sensu more highly available, reliable, and durable. Sensu backend clusters build on the clustering system used by etcd. Clustering lets you synchronize data between backends and get the benefits of a highly available configuration. To configure a cluster, see:

Datastore configuration flags
Guide to running a Sensu cluster

Time synchronization

System clocks between agents and the backend should be synchronized to a central NTP server. Out of sync system time may cause issues with keepalive, metric, and check alerts.

Configuration

You can specify the backend configuration using a `/etc/sensu/backend.yml` file or using `sensu-backend start` configuration flags. The backend requires that the `state-dir` flag be set before starting; all other required flags have default values. See the example config file for flags and defaults. The backend loads configuration upon startup, so you must restart the backend for any configuration updates to take effect.

Configuration summary

```
$ sensu-backend start --help
start the sensu backend

Usage:
  sensu-backend start [flags]

General Flags:
      --agent-host string               agent listener host (default "[::]")
      --agent-port int                  agent listener port (default 8081)
      --api-listen-address string       address to listen on for api traffic (default
"[::]:8080")
      --api-url string                  url of the api to connect to (default
"http://localhost:8080")
      --cache-dir string                path to store cached data (default
"/var/cache/sensu/sensu-backend")
      --cert-file string                TLS certificate in PEM format
  -c, --config-file string              path to sensu-backend config file
      --dashboard-cert-file string      dashboard TLS certificate in PEM format
      --dashboard-host string           dashboard listener host (default "[::]")
      --dashboard-key-file string       dashboard TLS certificate key in PEM format
      --dashboard-port int              dashboard listener port (default 3000)
      --debug                           enable debugging and profiling features
      --deregistration-handler string   default deregistration handler
      --event-log-buffer-size int       buffer size of the event logger (default
```

```
100000)
      --event-log-file string           path to the event log file
      --eventd-buffer-size int           number of incoming events that can be
buffered (default 100)
      --eventd-workers int               number of workers spawned for processing
incoming events (default 100)
  -h, --help                             help for start
      --insecure-skip-tls-verify         skip TLS verification (not recommended!)
      --keepalived-buffer-size int       number of incoming keepalives that can be
buffered (default 100)
      --keepalived-workers int           number of workers spawned for processing
incoming keepalives (default 100)
      --key-file string                 TLS certificate key in PEM format
      --log-level string                 logging level [panic, fatal, error, warn,
info, debug] (default "warn")
      --pipelined-buffer-size int        number of events to handle that can be
buffered (default 100)
      --pipelined-workers int            number of workers spawned for handling
events through the event pipeline (default 100)
  -d, --state-dir string                 path to sensu state storage (default
"/var/lib/sensu/sensu-backend")
      --trusted-ca-file string          TLS CA certificate bundle in PEM format used
for etcd client (mutual TLS)

Store Flags:
      --etcd-advertise-client-urls strings         list of this member's client URLs
to advertise to the rest of the cluster. (default [http://localhost:2379])
      --etcd-cert-file string                      path to the client server TLS cert
file
      --etcd-cipher-suites strings                 list of ciphers to use for etcd
TLS configuration
      --etcd-client-cert-auth                      enable client cert authentication
      --etcd-initial-advertise-peer-urls strings   list of this member's peer URLs
to advertise to the rest of the cluster (default [http://127.0.0.1:2380])
      --etcd-initial-cluster string                initial cluster configuration for
bootstrapping (default "default=http://127.0.0.1:2380")
      --etcd-initial-cluster-state string          initial cluster state ("new" or
"existing") (default "new")
      --etcd-initial-cluster-token string          initial cluster token for the
etcd cluster during bootstrap
      --etcd-key-file string                       path to the client server TLS key
file
```

```
      --etcd-listen-client-urls strings            list of URLs to listen on for
client traffic (default [http://127.0.0.1:2379])
      --etcd-listen-peer-urls strings              list of URLs to listen on for
peer traffic (default [http://127.0.0.1:2380])
      --etcd-max-request-bytes uint                maximum etcd request size in
bytes (use with caution) (default 1572864)
      --etcd-name string                           human-readable name for this
member (default "default")
      --etcd-peer-cert-file string                path to the peer server TLS cert
file
      --etcd-peer-client-cert-auth                 enable peer client cert
authentication
      --etcd-peer-key-file string                 path to the peer server TLS key
file
      --etcd-peer-trusted-ca-file string          path to the peer server TLS
trusted CA file
      --etcd-quota-backend-bytes int               maximum etcd database size in
bytes (use with caution) (default 4294967296)
      --etcd-trusted-ca-file string               path to the client server TLS
trusted CA cert file
      --no-embed-etcd                              don't embed etcd, use external
etcd instead
```

General configuration flags

cache-dir	
description	Path to store cached data
type	String
default	`/var/cache/sensu/sensu-backend`
example	

```
# Command line example
sensu-backend start --cache-dir /cache/sensu-backend

# /etc/sensu/backend.yml example
cache-dir: "/cache/sensu-backend"
```

config-file

description	Path to Sensu backend config file
type	String
default	`/etc/sensu/backend.yml`
example	

```
# Command line example
sensu-backend start --config-file /etc/sensu/backend.yml
sensu-backend start -c /etc/sensu/backend.yml

# /etc/sensu/backend.yml example
config-file: "/etc/sensu/backend.yml"
```

debug

description	Enable debugging and profiling features
type	Boolean
default	`false`
example	

```
# Command line example
sensu-backend start --debug

# /etc/sensu/backend.yml example
debug: true
```

deregistration-handler

description	Default event handler to use when processing agent deregistration events.

type	String
default	`""`
example	

```
# Command line example
sensu-backend start --deregistration-handler
/path/to/handler.sh

# /etc/sensu/backend.yml example
deregistration-handler: "/path/to/handler.sh"
```

log-level

description	Logging level: `panic`, `fatal`, `error`, `warn`, `info`, or `debug`
type	String
default	`warn`
example	

```
# Command line example
sensu-backend start --log-level debug

# /etc/sensu/backend.yml example
log-level: "debug"
```

state-dir

description	Path to Sensu state storage: `/var/lib/sensu/sensu-backend`.
type	String
required	true
example	

```
# Command line example
sensu-backend start --state-dir /var/lib/sensu/sensu-backend
```

```
sensu-backend start -d /var/lib/sensu/sensu-backend

# /etc/sensu/backend.yml example
state-dir: "/var/lib/sensu/sensu-backend"
```

api-listen-address

description	Address the API daemon will listen for requests on
type	String
default	`[::]:8080`

example	`# Command line example`
	`sensu-backend start --api-listen-address [::]:8080`
	
	`# /etc/sensu/backend.yml example`
	`api-listen-address: "[::]:8080"`

api-url

description	URL used to connect to the API
type	String
default	`http://localhost:8080`

example	`# Command line example`
	`sensu-backend start --api-url http://localhost:8080`
	
	`# /etc/sensu/backend.yml example`
	`api-url: "http://localhost:8080"`

Agent communication configuration flags

agent-host	
description	agent listener host, listens on all IPv4 and IPv6 addresses by default
type	String
default	`[::]`

example	`# Command line example`
	`sensu-backend start --agent-host 127.0.0.1`
	
	`# /etc/sensu/backend.yml example`
	`agent-host: "127.0.0.1"`

agent-port	
description	agent listener port
type	Integer
default	`8081`

example	`# Command line example`
	`sensu-backend start --agent-port 8081`
	
	`# /etc/sensu/backend.yml example`
	`agent-port: 8081`

Security configuration flags

c e	

rt-file

description	Path to the primary backend certificate file, as well as specifies a fallback SSL/TLS certificate if the flag `dashboard-cert-file` is not use. This certificate secures communications between Sensu Dashboard and end user web browsers, as well as communication between sensuctl and the Sensu API.
type	String
default	`""`

example	`# Command line example`
	`sensu-backend start --cert-file /path/to/ssl/cert.pem`
	
	`# /etc/sensu/backend.yml example`
	`cert-file: "/path/to/ssl/cert.pem"`

key-file

description	Path to the primary backend key file, as well as specifies a fallback SSL/TLS key if the flag `dashboard-key-file` is not use. This key secures communication between Sensu Dashboard and end user web browsers, as well as communication between sensuctl and the Sensu API.
type	String
default	`""`
example	``` # Command line example sensu-backend start --key-file /path/to/ssl/key.pem # /etc/sensu/backend.yml example key-file: "/path/to/ssl/key.pem" ```

trusted-ca-file

description	Path to the primary backend CA file, as well as specifies a fallback SSL/TLS certificate authority in PEM format used for etcd client (mutual TLS) communication if the `etcd-trusted-ca-file` is not used. This CA file is used in communication between Sensu Dashboard and end user web browsers, as well as communication between sensuctl and the Sensu API.

type | Stringdefault | `""` example |

```
# Command line example
sensu-backend start --trusted-ca-file /path/to/trusted-certificate-authorities.pem

# /etc/sensu/backend.yml example
trusted-ca-file: "/path/to/trusted-certificate-authorities.pem"
```

insecure-skip-tls-verify	
description	Skip SSL verification. *WARNING: This configuration flag is intended for use in development systems only. Do not use this flag in production.*
type	Boolean
default	`false`

example	`# Command line example`
	`sensu-backend start --insecure-skip-tls-verify`
	
	`# /etc/sensu/backend.yml example`
	`insecure-skip-tls-verify: true`

Dashboard configuration flags

dashboard-cert-file

description	Dashboard TLS certificate in PEM format. This certificate secures communication with the Sensu Dashboard. If the `dashboard-cert-file` is not provided in the backend configuration, Sensu uses the certificate specified in the `cert-file` flag for the dashboard.
type	String
default	`""`
example	

```
# Command line example
sensu-backend start --dashboard-cert-file /path/to/tls/cert.pem

# /etc/sensu/backend.yml example
dashboard-cert-file: "/path/to/tls/cert.pem"
```

dashboard-key-file

description	Dashboard TLS certificate key in PEM format. This key secures communication with the Sensu Dashboard. If the `dashboard-key-file` is not provided in the backend configuration, Sensu uses the key specified in the `key-file` flag for the dashboard.
type	String
default	`""`
exa	

mple

```
# Command line example
sensu-backend start --dashboard-key-file /path/to/tls/key.pem

# /etc/sensu/backend.yml example
dashboard-key-file: "/path/to/tls/key.pem"
```

dashboard-host

description	Dashboard listener host
type	String
default	`[::]`
example	

```
# Command line example
sensu-backend start --dashboard-host 127.0.0.1

# /etc/sensu/backend.yml example
dashboard-host: "127.0.0.1"
```

dashboard-port

description	Dashboard listener port
type	Integer
default	`3000`
example	

```
# Command line example
sensu-backend start --dashboard-port 4000

# /etc/sensu/backend.yml example
dashboard-port: 4000
```

Datastore and cluster configuration flags

etcd-advertise-client-urls	
description	List of this member's client URLs to advertise to the rest of the cluster.
type	List
default	`http://localhost:2379`

example	`# Command line examples`
	`sensu-backend start --etcd-advertise-client-urls http://localhost:2378,http://localhost:2379`
	`sensu-backend start --etcd-advertise-client-urls http://localhost:2378 --etcd-advertise-client-urls http://localhost:2379`
	
	`# /etc/sensu/backend.yml example`
	`etcd-advertise-client-urls:`
	`  - http://localhost:2378`
	`  - http://localhost:2379`

etcd-cert-file	
description	Path to the etcd client API TLS cert file. Secures communication between the embedded etcd client API and any etcd clients.
type	String
default	`""`

example	`# Command line example`
	`sensu-backend start --etcd-cert-file ./client.pem`
	
	`# /etc/sensu/backend.yml example`

```
etcd-cert-file: "./client.pem"
```

etcd-client-cert-auth	
description	Enable client cert authentication
type	Boolean
default	`false`
example	

```
# Command line example
sensu-backend start --etcd-client-cert-auth

# /etc/sensu/backend.yml example
etcd-client-cert-auth: true
```

etcd-initial-advertise-peer-urls	
description	List of this member's peer URLs to advertise to the rest of the cluster
type	List
default	`http://127.0.0.1:2380`
example	

```
# Command line examples
sensu-backend start --etcd-listen-peer-urls
https://10.0.0.1:2380,https://10.1.0.1:2380
sensu-backend start --etcd-listen-peer-urls
https://10.0.0.1:2380 --etcd-listen-peer-urls
https://10.1.0.1:2380

# /etc/sensu/backend.yml example
etcd-listen-peer-urls:
  - https://10.0.0.1:2380
```

```
    - https://10.1.0.1:2380
```

etcd-initial-cluster

description	Initial cluster configuration for bootstrapping
type	String
default	`default=http://127.0.0.1:2380`
example	

```
# Command line example
sensu-backend start --etcd-initial-cluster backend-0=https://10.0.0.1:2380,backend-1=https://10.1.0.1:2380,backend-2=https://10.2.0.1:2380

# /etc/sensu/backend.yml example
etcd-initial-cluster: "backend-0=https://10.0.0.1:2380,backend-1=https://10.1.0.1:2380,backend-2=https://10.2.0.1:2380"
```

etcd-initial-cluster-state

description	Initial cluster state (`new` or `existing`)
type	String
default	`new`
example	

```
# Command line example
sensu-backend start --etcd-initial-cluster-state existing

# /etc/sensu/backend.yml example
```

```
etcd-initial-cluster-state: "existing"
```

etcd-initial-cluster-token

description	Initial cluster token for the etcd cluster during bootstrap
type	String
default	`""`
example	

```
# Command line example
sensu-backend start --etcd-initial-cluster-token sensu

# /etc/sensu/backend.yml example
etcd-initial-cluster-token: "sensu"
```

etcd-key-file

description	Path to the etcd client API TLS key file. Secures communication between the embedded etcd client API and any etcd clients.
type	String
example	

```
# Command line example
sensu-backend start --etcd-key-file ./client-key.pem

# /etc/sensu/backend.yml example
etcd-key-file: "./client-key.pem"
```

etcd-listen-client-urls

description	List of URLs to listen on for client traffic
type	List
default	`http://127.0.0.1:2379`
example	

```
# Command line examples
sensu-backend start --etcd-listen-client-urls
https://10.0.0.1:2379,https://10.1.0.1:2379
sensu-backend start --etcd-listen-client-urls https://10.0.0.1:2379
--etcd-listen-client-urls https://10.1.0.1:2379

# /etc/sensu/backend.yml example
etcd-listen-client-urls:
  - https://10.0.0.1:2379
  - https://10.1.0.1:2379
```

etcd-listen-peer-urls

description	List of URLs to listen on for peer traffic
type	List
default	`http://127.0.0.1:2380`
example	

```
# Command line examples
sensu-backend start --etcd-listen-peer-urls
https://10.0.0.1:2380,https://10.1.0.1:2380
sensu-backend start --etcd-listen-peer-urls https://10.0.0.1:2380 -
-etcd-listen-peer-urls https://10.1.0.1:2380

# /etc/sensu/backend.yml example
etcd-listen-peer-urls:
  - https://10.0.0.1:2380
  - https://10.1.0.1:2380
```

etcd-name

description	Human-readable name for this member
type	String
default	`default`
example	

```
# Command line example
sensu-backend start --etcd-name backend-0

# /etc/sensu/backend.yml example
etcd-name: "backend-0"
```

etcd-peer-cert-file

description	Path to the peer server TLS cert file
type	String
example	

```
# Command line example
sensu-backend start --etcd-peer-cert-file ./backend-0.pem

# /etc/sensu/backend.yml example
etcd-peer-cert-file: "./backend-0.pem"
```

etcd-peer-client-cert-auth

description	Enable peer client cert authentication
type	Boolean
default	`false`
example	

```
# Command line example
sensu-backend start --etcd-peer-client-cert-auth

# /etc/sensu/backend.yml example
etcd-peer-client-cert-auth: true
```

etcd-peer-key-file

description	Path to the etcd peer API TLS key file. Secures communication between etcd cluster members.
type	String
example	

```
# Command line example
sensu-backend start --etcd-peer-key-file ./backend-0-key.pem

# /etc/sensu/backend.yml example
etcd-peer-key-file: "./backend-0-key.pem"
```

etcd-peer-trusted-ca-file

description	Path to the etcd peer API server TLS trusted CA file. This certificate secures communication between etcd cluster members.
type	String
example	

```
# Command line example
sensu-backend start --etcd-peer-trusted-ca-file ./ca.pem

# /etc/sensu/backend.yml example
etcd-peer-trusted-ca-file: "./ca.pem"
```

etcd-trusted-ca-file

description	Path to the client server TLS trusted CA cert file. Secures communication with the etcd client server.
type	String
default	`""`
example	

```
# Command line example
sensu-backend start --etcd-trusted-ca-file ./ca.pem

# /etc/sensu/backend.yml example
etcd-trusted-ca-file: "./ca.pem"
```

no-embed-etcd

description	Don’t embed etcd, use external etcd instead
type	Boolean
default	`false`
example	

```
# Command line example
sensu-backend start --no-embed-etcd

# /etc/sensu/backend.yml example
no-embed-etcd: true
```

etcd-c

cipher-suites

description

List of allowed cipher suites for etcd TLS configuration. Sensu supports TLS 1.0-1.2 cipher suites as listed in the Go TLS documentation. You can use this attribute to defend your TLS servers from attacks on weak TLS ciphers. The default cipher suites are determined by Go, based on the hardware used. *NOTE: To use TLS 1.3, add the following environment variable:* `GODEBUG="tls13=1"`.

---

recommended

```
etcd-cipher-suites:
  - TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384
  - TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
  - TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256
  - TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
  - TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305
  - TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305
```

---

type

List

---

example

```
# Command line examples
sensu-backend start --etcd-cipher-suites
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
sensu-backend start --etcd-cipher-suites
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 --etcd-cipher-suites
TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
```

```
# /etc/sensu/backend.yml example
etcd-cipher-suites:
  - TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
  - TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
```

Advanced configuration options

etcd-max-request-bytes

description	Maximum etcd request size in bytes that can be sent to an etcd server by a client. Increasing this value allows etcd to process events with large outputs at the cost of overall latency. *WARNING: Use with caution. This configuration option requires familiarity with etcd. Improper use of this option can result in a non-functioning Sensu instance.*
type	Integer
default	`1572864`

example	`# Command line example`
	`sensu-backend start --etcd-max-request-bytes 1572864`
	
	`# /etc/sensu/backend.yml example`
	`etcd-max-request-bytes: 1572864`

etcd-quota

--backend-bytes	
description	Maximum etcd database size in bytes. Increasing this value allows for a larger etcd database at the cost of performance. *WARNING: Use with caution. This configuration option requires familiarity with etcd. Improper use of this option can result in a non-functioning Sensu instance.*
type	Integer
default	`4294967296`

example	`# Command line example`
	`sensu-backend start --etcd-quota-backend-bytes 4294967296`
	
	`# /etc/sensu/backend.yml example`
	`etcd-quota-backend-bytes: 4294967296`

--eventd-buffer-size	
description	Number of incoming events that can be buffered before being processed by an eventd worker. *WARNING: Modify with caution. Increasing this value may result in higher memory usage.*
type	Integer
default	`100`

example	`# Command line example`
	`sensu-backend start --eventd-buffer-size 100`
	
	`# /etc/sensu/backend.yml example`
	`eventd-buffer-size: 100`

eventd-workers	
description	Number of workers spawned for processing incoming events that are stored in the eventd buffer. *WARNING: Modify with caution. Increasing this value may result in higher CPU usage.*
type	Integer
default	`100`
example	``` # Command line example sensu-backend start --eventd-workers 100 # /etc/sensu/backend.yml example eventd-workers: 100 ```

keepalived-buffer-size	
description	Number of incoming keepalives that can be buffered before being processed by a keepalived worker. *WARNING: Modify with caution. Increasing this value may result in higher memory usage.*
type	Integer
default	`100`
example	``` # Command line example sensu-backend start --keepalived-buffer-size 100 ```

```
# /etc/sensu/backend.yml example
keepalived-buffer-size: 100
```

keepalived-workers	
description	Number of workers spawned for processing incoming keepalives that are stored in the keepalived buffer. *WARNING: Modify with caution. Increasing this value may result in higher CPU usage.*
type	Integer
default	`100`

example	`# Command line example`
	`sensu-backend start --keepalived-workers 100`
	
	`# /etc/sensu/backend.yml example`
	`keepalived-workers: 100`

pipelined-buffer-size	
description	Number of events to handle that can be buffered before being processed by a pipelined worker. *WARNING: Modify with caution. Increasing this value may result in higher memory usage.*
type	Integer
default	`100`
example	

```
# Command line example
sensu-backend start --pipelined-buffer-size 100

# /etc/sensu/backend.yml example
pipelined-buffer-size: 100
```

pipelined-workers	
description	Number of workers spawned for handling events through the event pipeline that are stored in the pipelined buffer. *WARNING: Modify with caution. Increasing this value may result in higher CPU usage.*
type	Integer
default	`100`

example	`# Command line example`
	`sensu-backend start --pipelined-workers 100`
	
	`# /etc/sensu/backend.yml example`
	`pipelined-workers: 100`

Event logging

LICENSED TIER: Unlock event logging in Sensu Go with a Sensu license. To activate your license, see the getting started guide.

All Sensu events can be optionally logged to a file in JSON format. This file can then be used as an input source for your favorite data lake solution. Using the event logging functionality provides better performance and reliability than using event handlers.

event-log-file	

description	Path to the event log file. *WARNING: The log file should be located on a local drive. Logging directly to network drives is not supported.*
type	String

example	`# Command line example`
	`sensu-backend start --event-log-file /var/log/sensu/events.log`
	
	`# /etc/sensu/backend.yml example`
	`event-log-file: "/var/log/sensu/events.log"`

event-log-buffer-size	
description	Buffer size of the event logger. Corresponds to the maximum number of events kept in memory in case the log file is temporarily unavailable or more events have been received than what can be written to the log file.
type	Integer
default	100000

example	`# Command line example`
	`sensu-backend start --event-log-buffer-size 100000`
	
	`# /etc/sensu/backend.yml example`
	`event-log-buffer-size: 100000`

Log rotation

Event logging supports log rotation via the *SIGHUP* signal. The current log file should first be renamed

(moved) and then, this signal should be sent to the sensu-backend process so it re-creates a new log file and starts logging to it. Here are some logrotate sample configurations:

systemd

```
/var/log/sensu/events.log
{
  rotate 3
  hourly
  missingok
  notifempty
  compress
  postrotate
    /bin/systemctl reload sensu-backend.service > /dev/null 2>/dev/null || true
  endscript
}
```

sysvinit

```
/var/log/sensu/events.log
{
  rotate 3
  hourly
  missingok
  notifempty
  compress
  postrotate
    kill -HUP `cat /var/run/sensu/sensu-backend.pid 2> /dev/null` 2> /dev/null ||
true
  endscript
}
```

Assets

Contents

You can discover, download, and share assets using Bonsai, the Sensu asset index. Read the guide to using assets to get started.

What is an asset?

Assets are shareable, reusable packages that make it easy to deploy Sensu plugins. You can use assets to provide the plugins, libraries, and runtimes you need to automate your monitoring workflows. Sensu supports runtime assets for checks, filters, mutators, and handlers.

NOTE: Assets are not required to use Sensu Go in production. Sensu plugins can still be installed using the sensu-install tool or a configuration management solution.

How do assets work?

Assets can be executed by the backend (for handler, filter, and mutator assets), or by the agent (for check assets). At runtime, the backend or agent sequentially evaluates assets that appear in the `runtime_assets` attribute of the handler, filter, mutator or check being executed.

What are asset builds?

An asset build is the combination of an artifact URL, SHA512 checksum and optional Sensu query expression filters. Each asset definition may describe one or more builds.

NOTE: Assets which provide `url` and `sha512` attributes at the top-level of the `spec` scope are single build assets – this form of asset defintion is deprecated. We recommend using multiple build asset defintions, which specify one or more `builds` under the `spec` scope.

How are asset builds evaluated?

For each build provided in an asset, Sensu will evaluate any defined filters to determine whether any build matches the agent or backend service's environment. If all filters specified on a build evaluate to true, that build is considered a match. For assets with multiple builds, only the first build which matches will be downloaded and installed.

How are asset builds installed?

After finding a matching build, the build artifact will be downloaded from the provided URL. If the asset definition includes headers, these will be passed along as part of the HTTP request. If the downloaded artifact's SHA512 checksum matches the checksum provided by the build, it is unpacked into the Sensu service's local cache directory.

The backend or agent's local cache path can be set using the `--cache-dir` flag. You can disable assets for an agent using the agent `--disable-assets` configuration flag.

How are asset builds executed?

The directory path of each asset defined in `runtime_assets` is appended to the `PATH` before the handler, filter, mutator or check `command` is executed. Subsequent handler, filter, mutator or check executions look for the asset in the local cache and ensure the contents match the configured checksum.

You can find a use case using a Sensu resource (a check) and an asset in this example asset with a check.

Asset format specification

Sensu expects an asset to be a tar archive (optionally gzipped) containing one or more executables within a bin folder. Any scripts or executables should be within a `bin/` folder within in the archive. See the Sensu Go Plugin template for an example asset and Bonsai configuration.

The following are injected into the execution context:

`{PATH_TO_ASSET}/bin` is injected into the `PATH` environment variable.
`{PATH_TO_ASSET}/lib` is injected into the `LD_LIBRARY_PATH` environment variable.
`{PATH_TO_ASSET}/include` is injected into the `CPATH` environment variable.

NOTE: If you have used previous versions of Sensu and are familiar with plugins from the Sensu Plugins community, it is not possible to create an asset by creating an archive of an existing project. You must follow the steps outlined in this Sensu discourse guide. For further examples of Sensu users who have added the capability for a community plugin to be used as an asset, see this post.

Default cache directory

system	sensu-backend	sensu-agent
Linux	`/var/cache/sensu/sensu-backend`	`/var/cache/sensu/sensu-agent`
Windows	N/A	`C:\ProgramData\sensu\cache\sensu-agent`

If the requested asset is not in the local cache, it is downloaded from the asset URL. The Sensu backend does not currently provide any storage for assets; they are expected to be retrieved over HTTP or HTTPS.

Example structure

```
sensu-example-handler_1.0.0_linux_amd64
├── CHANGELOG.md
├── LICENSE
├── README.md
└── bin
  └── my-check.sh
└── lib
└── include
```

Asset hello world example

In this example, we'll run a script that outputs `Hello World`:

```
hello-world.sh

#!/bin/sh

STRING="Hello World"

echo $STRING

if [ $? -eq 0 ]; then
    exit 0
else
    exit 2
fi
```

The first step is to ensure that our directory structure is in place. As noted in Example structure, our script could live in three potential directories in the project: `/bin`, `/lib`, or `/include`. For this case, we will put our script in the `/bin` directory. We'll create the directories `sensu-go-hello-world` and `/bin`:

```
$ mkdir sensu-go-hello-world

$ cd sensu-go-hello-world

$ mkdir bin

$ cp hello-world.sh bin/

$ tree
.
└── bin
    └── hello-world.sh
```

Next, we'll ensure that the script is marked as executable:

```
$ chmod +x bin/hello-world.sh
```

```
mode of 'hello-world.sh' changed from 0644 (rw-r--r--) to 0755 (rwxr-xr-x)
```

Now that the script is in the directory, let's move on to the next step: packaging the `sensu-go-hello-world` directory as an asset tarball.

Packaging the asset

Assets are archives, so the first step in packaging the asset is to create a tar.gz archive of our project. This assumes we're in the directory we want to tar up:

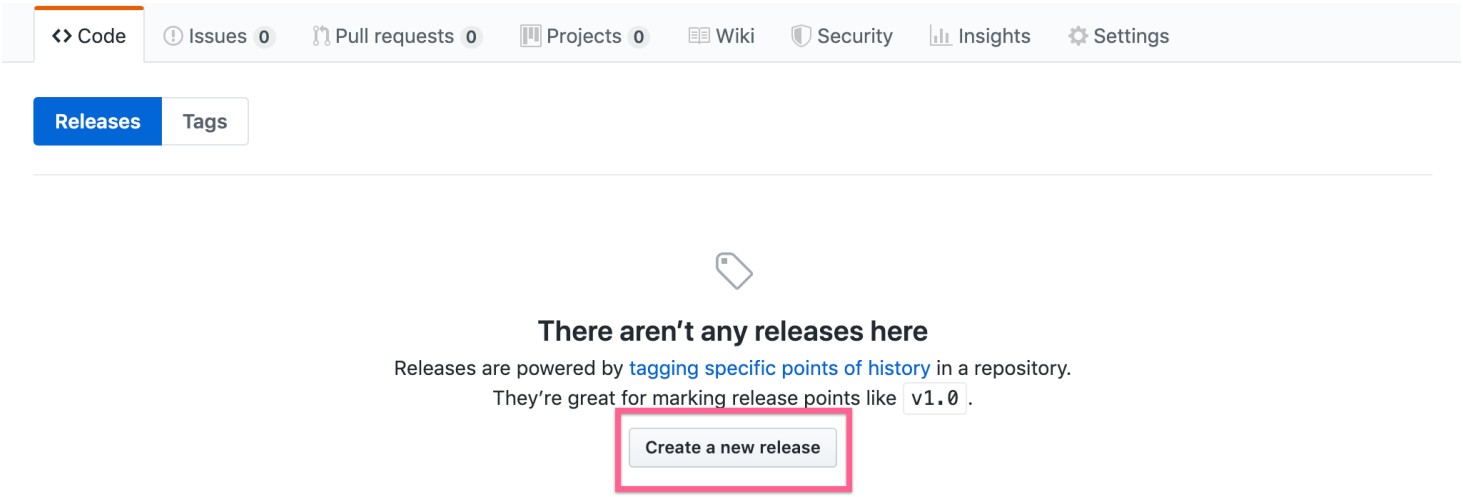
```
$ cd ..
$ tar -C sensu-go-hello-world -cvzf sensu-go-hello-world-0.0.1.tar.gz .
...
```

Excellent. Now that we've created an archive, we'll need to generate a SHA512 sum for it (this is required–otherwise, the asset won't work):

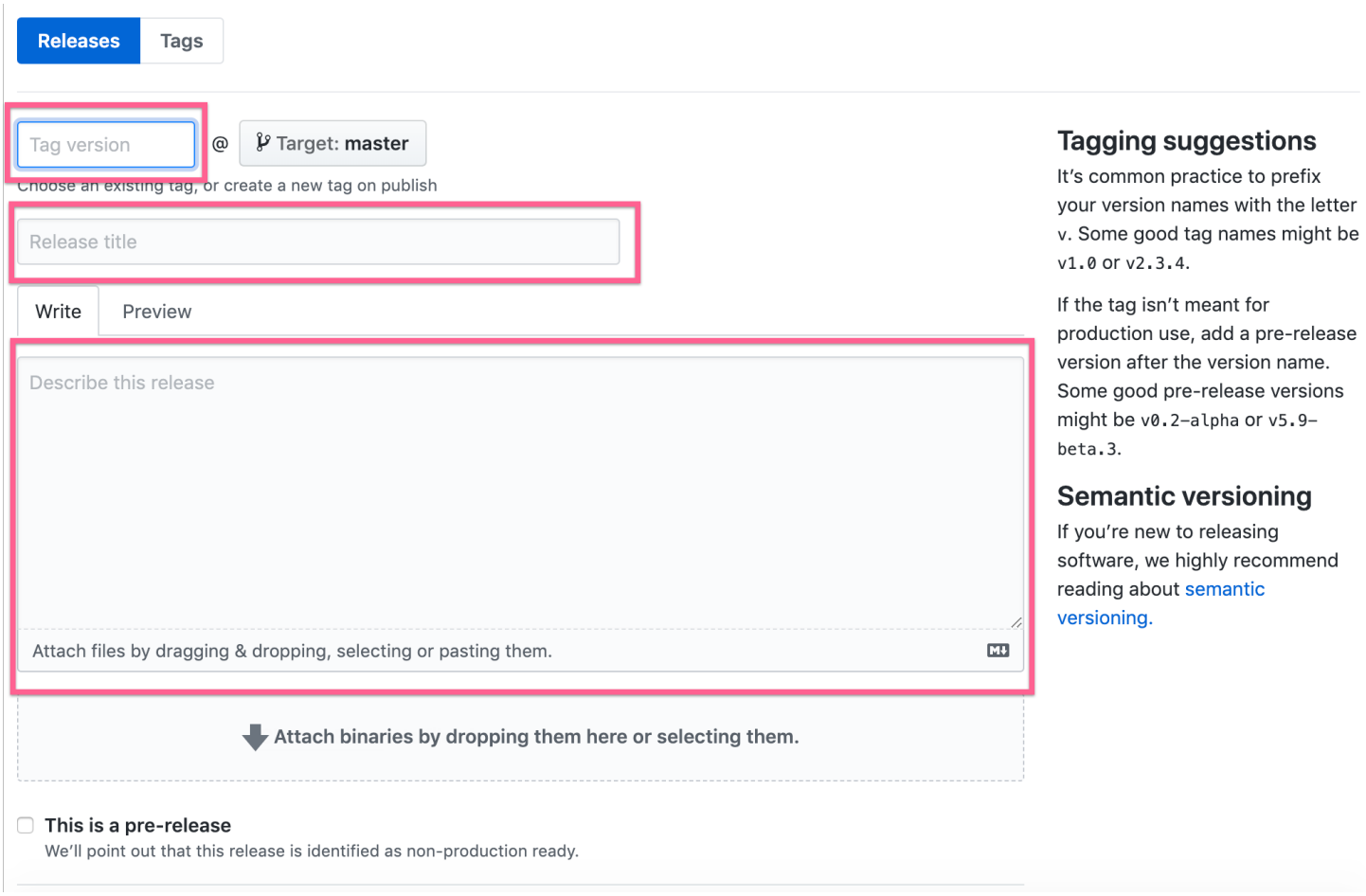
```
sha512sum sensu-go-hello-world-0.0.1.tar.gz | tee sha512sum.txt
dbfd4a714c0c51c57f77daeb62f4a21141665ae71440951399be2d899bf44b3634dad2e6f2516fff1ef4
b154c198b9c7cdfe1e8867788c820db7bb5bcad83827 sensu-go-hello-world-0.0.1.tar.gz
```

Now that we have our sha512sum, we'll need to host the release (archive and sha512sum) somewhere. You can do this with S3, a GitHub release, or even just serving the files out of a directory using Nginx/Apache.

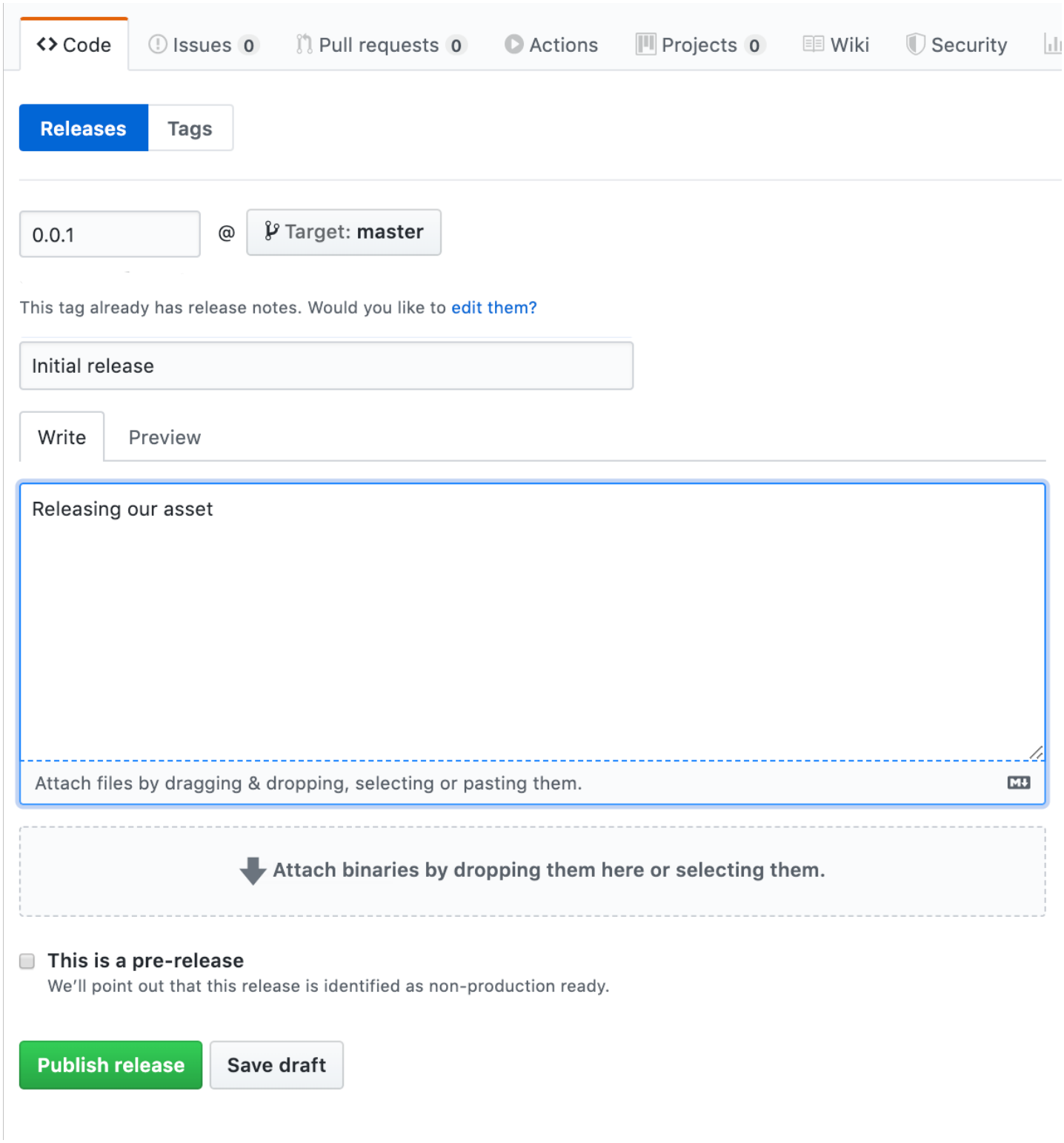
In this case, we'll use GitHub to serve our release. Click **Create a new release**:



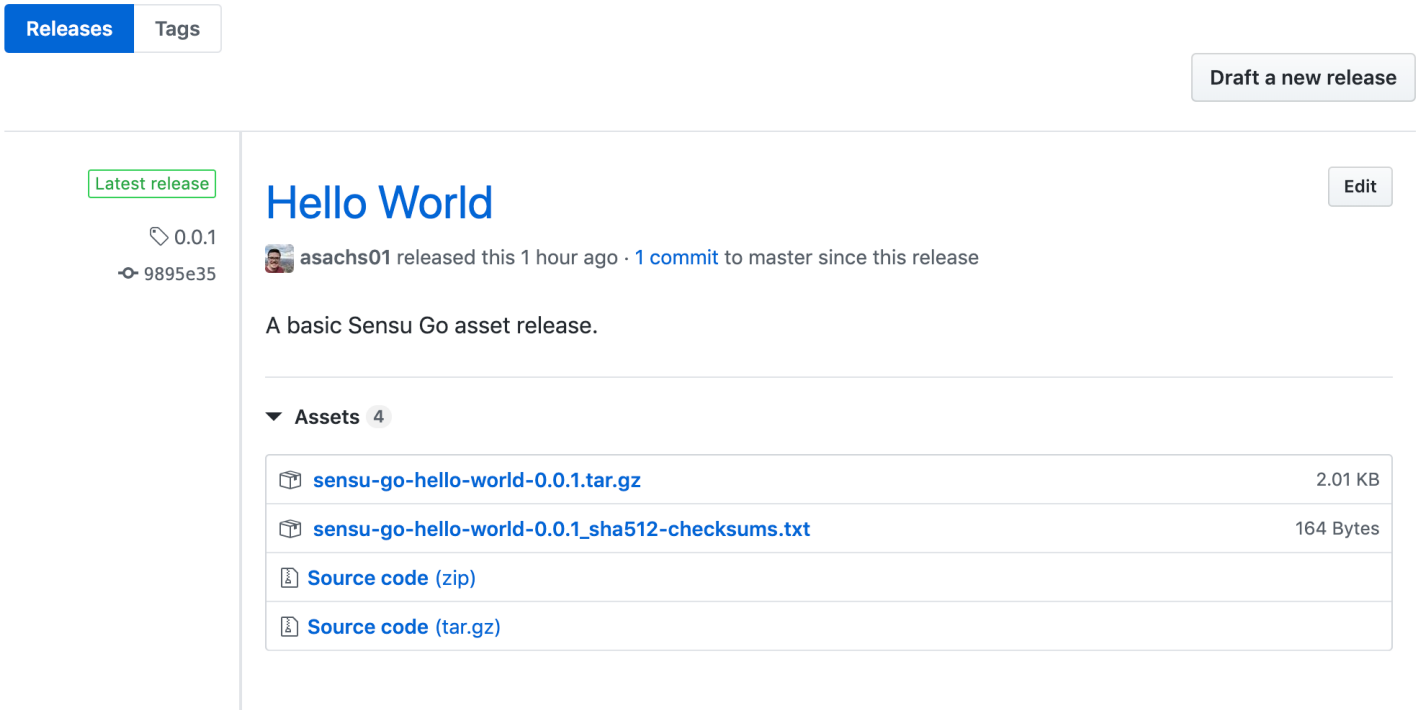
We will see the following screen:



On this screen, we'll enter a tag version, release title, and release description details and drag and drop our asset and checksum so they will be uploaded as part of the release. When we've done that, the screen will look something like this:



Click **Publish release**. The latest release page will load:



Next, we need to create definitions for the asset and the check.

Generating the definitions

So far, we've created a directory for our asset with our script present in `/bin`, packaged up the asset and generated a checksum for it, and hosted our release on GitHub. Now, let's generate some definitions for our asset to make it work.

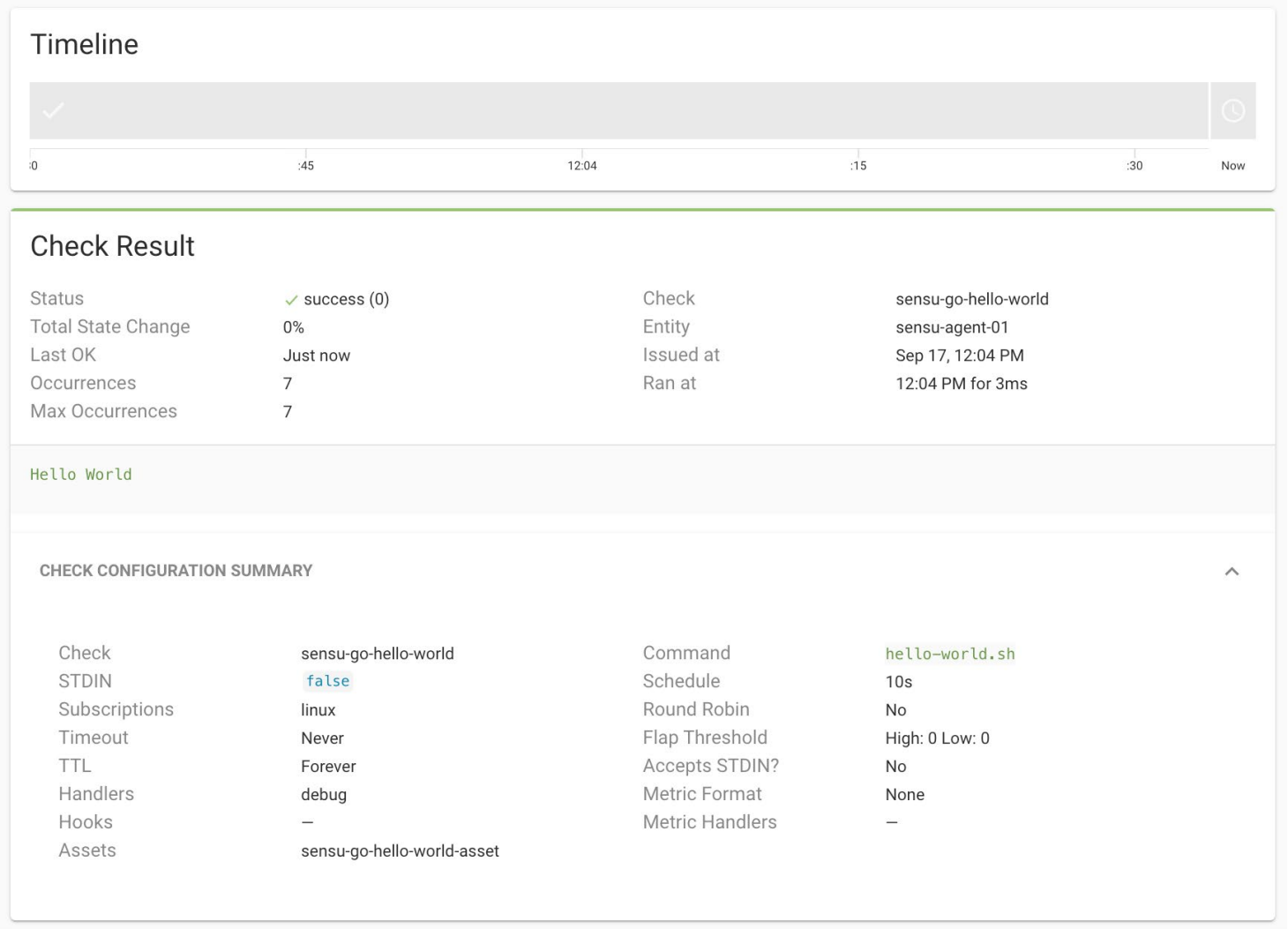
First, let's generate our asset definition:

Second, we'll create a basic check that uses the asset:

Third, we'll apply both definitions to our Sensu Go deployment:

```
sensuctl create -f sensu-go-hello-world-asset.yml
sensuctl create -f sensu-go-hello-world-check.yml
```

Finally, let's take a look in the dashboard to see our check using our asset. In this case, we have an entity named `sensu-agent-01`, and we can see that the check successfully executes:



Congratulations! You created an asset from a script, uploaded the asset to GitHub as a release, and created your own definitions to use the asset.

Asset specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Assets should always be of type `Asset`.
required	Required for asset definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.

type	String
example	`"type": "Asset"`

api_version

description	Top-level attribute specifying the Sensu API group and version. For assets in this version of Sensu, this attribute should always be `core/v2`.
required	Required for asset definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

metadata

description	Top-level collection of metadata about the asset, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the asset definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
req	Required for asset definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.

required	
type	Map of key-value pairs

example	<pre>"metadata": {
	  "name": "check_script",
	  "namespace": "default",
	  "labels": {
	  "region": "us-west-1"
	  },
	  "annotations": {
	  "playbook" : "www.example.url"
	  }
	}</pre>

spec

description	Top-level map that includes the asset spec attributes.
required	Required for asset definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example (multiple builds)	<pre>"spec": {
	  "builds": [
	  {
	  "url": "http://example.com/asset-linux-amd64.tar.gz",
	  "sha512": "487ab34b37da8ce76d2657b62d37b35fbbb240c3546dd463fa0c37dc58a72b786ef0ca396a0a12c8d006ac7fa21923e0e9ae63419a4d56aec41fccb574c1a5d3",
	  "filters": [
	  "entity.system.os == 'linux'",
	  "entity.system.arch == 'amd64'"
	  ]</pre>

```
    },
    {
        "url": "http://example.com/asset-linux-armv7.tar.gz",
        "sha512":
"70df8b7e9aa36cf942b972e1781af04815fa560441fcdea1d1538374066a4603f
c5566737bfd6c7ffa18314edb858a9f93330a57d430deeb7fd6f75670a8c68b",
        "filters": [
          "entity.system.os == 'linux'",
          "entity.system.arch == 'arm'",
          "entity.system.arm_version == 7"
        ]
      }
  ],
  "headers": {
    "Authorization": "Bearer $TOKEN",
    "X-Forwarded-For": "client1, proxy1, proxy2"
  }
}
```

---

example (single build, deprecated)

```
"spec": {
  "url": "http://example.com/asset.tar.gz",
  "sha512":
"4f926bf4328fbad2b9cac873d117f771914f4b837c9c85584c38ccf55a3ef3c2e
8d154812246e5dda4a87450576b2c58ad9ab40c9e2edc31b288d066b195b21b",
  "filters": [
    "entity.system.os == 'linux'",
    "entity.system.arch == 'amd64'"
  ],
  "headers": {
    "Authorization": "Bearer $TOKEN",
    "X-Forwarded-For": "client1, proxy1, proxy2"
  }
}
```

Spec attributes

builds	
description	A list of asset builds used to define multiple artifacts which provide the named asset.
required	true, if `url`, `sha512` and `filters` are not provided
type	Array
example	`"builds": [{ "url": "http://example.com/asset-linux-amd64.tar.gz", "sha512": "487ab34b37da8ce76d2657b62d37b35fbbb240c3546dd463fa0c37dc58a72b786ef0ca396a0a12c8d006ac7fa21923e0e9ae63419a4d56aec41fccb574c1a5d3", "filters": ["entity.system.os == 'linux'", "entity.system.arch == 'amd64'"] }, { "url": "http://example.com/asset-linux-armv7.tar.gz", "sha512": "70df8b7e9aa36cf942b972e1781af04815fa560441fcdea1d1538374066a4603fc5566737bfd6c7ffa18314edb858a9f93330a57d430deeb7fd6f75670a8c68b", "filters": ["entity.system.os == 'linux'", "entity.system.arch == 'arm'", "entity.system.arm_version == 7"] }]`

url	
description	The URL location of the asset.
required	true, unless `builds` are provided.
type	String
example	`"url": "http://example.com/asset.tar.gz"`

sha512	
description	The checksum of the asset.
required	true, unless `builds` are provided.
type	String
example	`"sha512": "4f926bf4328..."`

filters	
description	A set of Sensu query expressions used to determine if the asset should be installed. If multiple expressions are included, each expression must return true in order for Sensu to install the asset. Filters for *check* assets should match agent entity platforms, while filters for *handler and filter* assets should match your Sensu backend platform. You can create asset filter expressions using any supported entity system attributes, including `os`, `arch`, `platform`, and `platform_family`. *PRO TIP: Asset filters let you reuse checks across platforms safely. Assign assets for multiple platforms to a single check, and rely on asset filters to ensure that only the appropriate asset is installed on each agent.*

required	false
type	Array
example	`"filters": ["entity.system.os=='linux'", "entity.system.arch=='amd64'"]`

headers

description	HTTP headers to apply to asset retrieval requests. You can use headers to access secured assets. For headers requiring multiple values, separate values with a comma.
required	false
type	Map of key-value string pairs
example	`"headers": { "Authorization": "Bearer $TOKEN", "X-Forwarded-For": "client1, proxy1, proxy2" }`

Metadata attributes

name	
description	The unique name of the asset, validated with Go regex `\A[\w\.\-]+\z`.
required	true
type	String
example	`"name": "check_script"`

namespace	
description	The Sensu RBAC namespace that this asset belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

labels	
description	Custom attributes you can use to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.

description	
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`

example	<pre>"labels": {
	  "environment": "development",
	  "region": "us-west-2"
	}</pre>

annotations

description	Non-identifying metadata that's meaningful to people interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.

default	`null`

example	<pre>"annotations": {
	  "managed-by": "ops",
	  "playbook": "www.example.url"
	}</pre>

Examples

Minimum required asset attributes

Asset definition (single build, deprecated)

Asset definition (multiple builds)

Example asset with a check

Sharing an asset on Bonsai

Share your open-source assets on Bonsai and connect with the Sensu Community. Bonsai supports assets hosted on GitHub and released using GitHub releases. For more information about creating Sensu Plugins, see the Sensu Plugin specification.

Bonsai requires a `bonsai.yml` configuration file in the root directory of your repository that includes the project description, platforms, asset filenames, and SHA-512 checksums. For a Bonsai-compatible asset template using Go and GoReleaser, see the Sensu Go plugin skeleton.

To share your asset on Bonsai, log in to Bonsai with your GitHub account and authorize Sensu. Once logged in, you can register your asset on Bonsai by adding the GitHub repository, description, and tags.

Make sure to provide a helpful README for your asset with configuration examples.

`bonsai.yml` example

```
---
description: "#{repo}"
builds:
- platform: "linux"
  arch: "amd64"
  asset_filename: "#{repo}_#{version}_linux_amd64.tar.gz"
  sha_filename: "#{repo}_#{version}_sha512-checksums.txt"
  filter:
  -  "entity.system.os == 'linux'"
  -  "entity.system.arch == 'amd64'"

- platform: "Windows"
  arch: "amd64"
  asset_filename: "#{repo}_#{version}_windows_amd64.tar.gz"
  sha_filename: "#{repo}_#{version}_sha512-checksums.txt"
  filter:
  -  "entity.system.os == 'windows'"
  -  "entity.system.arch == 'amd64'"
```

`bonsai.yml` specification

description	
description	The project description
required	true
type	String
example	`description: "#{repo}"`

builds	
description	An array of asset details per platform
required	true
type	Array

example	<pre>builds:
	- platform: "linux"
	  arch: "amd64"
	  asset_filename: "#{repo}_#{version}_linux_amd64.tar.gz"
	  sha_filename: "#{repo}_#{version}_sha512-checksums.txt"
	  filter:
	  - "entity.system.os == 'linux'"
	  - "entity.system.arch == 'amd64'"</pre>

Builds specification

platform	
description	The platform supported by the asset
required	true
type	String
example	<pre>- platform: "linux"</pre>

arch	
description	The architecture supported by the asset
required	true

type	String
example	`arch: "amd64"`

asset_filename

description	The filename of the archive containing the asset
required	true
type	String
example	`asset_filename: "#{repo}_#{version}_linux_amd64.tar.gz"`

sha_filename

description	The SHA-512 checksum for the asset archive
required	true
type	String
example	`sha_filename: "#{repo}_#{version}_sha512-checksums.txt"`

filter

description	Filter expressions describing the operating system and architecture supported by the asset
required	false
type	Array

example

```
filter:
-  "entity.system.os == 'linux'"
-  "entity.system.arch == 'amd64'"
```

Deleting Assets

As of Sensu Go 5.12, assets can be deleted using the `/assets (DELETE)` endpoint, or via `sensuctl` (`sensuctl asset delete`). Note that when an asset is removed from Sensu, this *does not* remove references to the deleted asset in any other resource (checks, filters, mutators, handlers, hooks). You must also update resources and remove any reference to the deleted asset. Failure to do so will result in errors like: `sh: asset.sh: command not found`.

Errors as a result of failing to remove the asset from checks and hooks will be surfaced in the event data, whereas failing to remove the asset reference on a mutator, handler and filter will only be surfaced in the backend logs.

It is also worth noting that deleting an asset does not delete the archive or downloaded files on disk. These must be removed from the asset cache manually.

Checks

Contents

Checks work with Sensu agents to produce monitoring events automatically. You can use checks to monitor server resources, services, and application health as well as collect and analyze metrics. Read the guide to monitoring server resources to get started. You can discover, download, and share Sensu check assets using Bonsai, the Sensu asset index.

Check commands

Each Sensu check definition specifies a command and the schedule at which it should be executed. Check commands are executable commands which are executed by the Sensu agent.

A command may include command line arguments for controlling the behavior of the command executable. Most Sensu check plugins provide support for command line arguments for reusability.

Sensu advises against requiring root privileges to execute check commands or scripts. The Sensu user is not permitted to kill timed out processes invoked by the root user, which could result in zombie processes.

How and where are check commands executed?

All check commands are executed by Sensu agents as the `sensu` user. Commands must be executable files that are discoverable on the Sensu agent system (for example: installed in a system `$PATH` directory).

Check result specification

Although Sensu agents attempt to execute any command defined for a check, successful processing of check results requires adherence to a simple specification.

Result data is output to STDOUT or STDERR
For service checks, this output is typically a human-readable message.
For metric checks, this output contains the measurements gathered by the check.
Exit status code indicates state
`0` indicates “OK”
`1` indicates “WARNING”
`2` indicates “CRITICAL”
Exit status codes other than `0`, `1`, or `2` indicate an “UNKNOWN” or custom status

*PRO TIP: Those familiar with the **Nagios** monitoring system may recognize this specification, as it is the same one used by Nagios plugins. As a result, Nagios plugins can be used with Sensu without any modification.*

At every execution of a check command – regardless of success or failure – the Sensu agent publishes the check’s result for eventual handling by the **event processor** (the Sensu backend).

Check scheduling

Checks are scheduled by the Sensu backend, which publishes check execution requests to entities via a publish-subscribe model .

Subscriptions

Checks have a defined set of subscriptions, transport topics to which the Sensu backend publishes check requests. Sensu entities become subscribers to these topics (called subscriptions) via their individual `subscriptions` attribute. In practice, subscriptions typically correspond to a specific role or

responsibility (for example: a webserver or database).

Subscriptions are powerful primitives in the monitoring context because they allow you to effectively monitor for specific behaviors or characteristics corresponding to the function being provided by a particular system. For example, disk capacity thresholds might be more important (or at least different) on a database server as opposed to a webserver; conversely, CPU or memory usage thresholds might be more important on a caching system than on a file server. Subscriptions also allow you to configure check requests for an entire group or subgroup of systems rather than requiring a traditional one-to-one mapping.

To configure subscriptions for a check, use the `subscriptions` attribute to specify an array of one or more subscription names. Sensu schedules checks once per interval for each agent with a matching subscription. For example, if we have three agents configured with the `system` subscription, a check configured with the `system` subscription results in three monitoring events per interval: one check execution per agent per interval. In order for Sensu to execute a check, the check definition must include a subscription that matches the subscription of at least one Sensu agent.

Round-robin checks

By default, Sensu schedules checks once per interval for each agent with a matching subscription: one check execution per agent per interval. Sensu also supports deduplicated check execution when configured with the `round_robin` check attribute. For checks with `round_robin` set to `true`, Sensu executes the check once per interval, cycling through the available agents alphabetically according to agent name.

For example, for three agents configured with the `system` subscription (agents A, B, and C), a check configured with the `system` subscription and `round_robin` set to `true` results in one monitoring event per interval, with the agent creating the event following the pattern A -> B -> C -> A -> B -> C for the first six intervals.

In the diagram above, the standard check is executed by agents A, B, and C every 60 seconds, while the round-robin check cycles through the available agents, resulting in each agent executing the check every 180 seconds.

PRO TIP: You can use round robin to distribute check execution workload across multiple agents when using proxy checks.

Scheduling

You can schedule checks using the `interval`, `cron`, and `publish` attributes. Sensu requires that checks include either an `interval` attribute (interval scheduling) or a `cron` attribute (cron scheduling).

Interval scheduling

You can schedule a check to be executed at regular intervals using the `interval` and `publish` check attributes. For example, to schedule a check to execute every 60 seconds, set the `interval` attribute to `60` and the `publish` attribute to `true`.

NOTE: When creating an interval check, Sensu calculates an initial offset to splay the check's first scheduled request. This helps to balance the load of both the backend and the agent, and may result in a delay before initial check execution.

Example interval check

Cron scheduling

You can also schedule checks using cron syntax. For example, to schedule a check to execute once a minute at the start of the minute, set the `cron` attribute to `* * * * *` and the `publish` attribute to `true`.

Example cron check

Ad-hoc scheduling

In addition to automatic execution, you can create checks to be scheduled manually using the checks API. To create a check with ad-hoc scheduling, set the `publish` attribute to `false` in addition to an `interval` or `cron` schedule.

Example ad-hoc check

Proxy checks

Sensu supports running proxy checks where the results are considered to be for an entity that isn't

actually the one executing the check, regardless of whether that entity is a Sensu agent entity or a proxy entity. Proxy entities allow Sensu to monitor external resources on systems or devices where a Sensu agent cannot be installed, like a network switch or a website. You can create a proxy check using the `proxy_entity_name` attribute or the `proxy_requests` attributes.

Using a proxy check to monitor a proxy entity

When executing checks that include a `proxy_entity_name`, Sensu agents report the resulting events under the specified proxy entity instead of the agent entity. If the proxy entity doesn't exist, Sensu creates the proxy entity when the event is received by the backend. To avoid duplicate events, we recommend using the `round_robin` attribute with proxy checks.

Example proxy check using a `proxy_entity_name`

The following proxy check runs every 60 seconds, cycling through the agents with the `proxy` subscription alphabetically according to the agent name, for the proxy entity `sensu-site`.

Using a proxy check to monitor multiple proxy entities

The `proxy_requests` check attributes allow Sensu to run a check for each entity that matches the definitions specified in the `entity_attributes`, resulting in monitoring events that represents each matching proxy entity. The entity attributes must match exactly as stated; no variables or directives have any special meaning, but you can still use Sensu query expressions to perform more complicated filtering on the available value, such as finding entities with particular subscriptions.

The `proxy_requests` attributes are a great way to monitor multiple entities using a single check definition when combined with token substitution. Since checks including `proxy_requests` attributes need to be executed for each matching entity, we recommend using the `round_robin` attribute to distribute the check execution workload evenly across your Sensu agents.

Example proxy check using `proxy_requests`

The following proxy check runs every 60 seconds, cycling through the agents with the `proxy` subscription alphabetically according to the agent name, for all existing proxy entities with the custom label `proxy_type` set to `website`.

This check uses token substitution to import the value of the custom entity label `url` to complete the check command. See the entity reference for information about using custom labels.

Fine-tuning proxy check scheduling with splay

Sensu supports distributing proxy check executions across an interval using the `splay` and `splay_coverage` attributes. For example, if we assume that the `proxy_check_proxy_requests` check in the example above matches three proxy entities, we'd expect to see a burst of three events every 60 seconds. If we add the `splay` attribute (set to `true`) and the `splay_coverage` attribute (set to `90`) to the `proxy_requests` scope, Sensu distributes the three check executions over 90% of the 60-second interval, resulting in three events splayed evenly across a 54-second period.

Check token substitution

Sensu check definitions may include attributes that you may wish to override on an entity-by-entity basis. For example, check commands – which may include command line arguments for controlling the behavior of the check command – may benefit from entity-specific thresholds, etc. Sensu check tokens are check definition placeholders that will be replaced by the Sensu agent with the corresponding entity definition attributes values (including custom attributes).

Learn how to use check tokens with the Sensu tokens referenced documentation .

NOTE: Check tokens are processed before check execution, therefore token substitutions will not apply to check data delivered via the local agent socket input.

Check hooks

Check hooks are commands run by the Sensu agent in response to the result of check command execution. The Sensu agent will execute the appropriate configured hook command, depending on the check execution status (ex: 0, 1, 2).

Learn how to use check hooks with the Sensu hooks referenced documentation .

Check specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Checks should always be of type `CheckConfig`.
required	Required for check definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "CheckConfig"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For checks in Sensu backend version 5.4, this attribute should always be `core/v2`.
required	Required for check definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

metadata	
d	Top-level collection of metadata about the check, including the `name` and `namespace` as

description	well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the check definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
required	Required for check definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example	<pre>"metadata": {
	  "name": "collect-metrics",
	  "namespace": "default",
	  "labels": {
	  "region": "us-west-1"
	  },
	  "annotations": {
	  "slack-channel" : "#monitoring"
	  }
	}</pre>

spec

description	Top-level map that includes the check spec attributes.
required	Required for check definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example	<pre>"spec": {
	  "command": "/etc/sensu/plugins/check-chef-client.go",</pre>

```
  "interval": 10,
  "publish": true,
  "subscriptions": [
    "production"
  ]
}
```

Spec attributes

command	
description	The check command to be executed.
required	true
type	String
example	`"command": "/etc/sensu/plugins/check-chef-client.go"`

subscriptions	
description	An array of Sensu entity subscriptions that check requests will be sent to. The array cannot be empty and its items must each be a string.
required	true
type	Array
example	`"subscriptions": ["production"]`

handlers	

description	An array of Sensu event handlers (names) to use for events created by the check. Each array item must be a string.
required	false
type	Array
example	`"handlers": ["pagerduty", "email"]`

interval

description	How often the check is executed, in seconds
required	true (unless `cron` is configured)
type	Integer
example	`"interval": 60`

cron

description	When the check should be executed, using cron syntax or these predefined schedules.
required	true (unless `interval` is configured)
type	String
example	`"cron": "0 0 * * *"`

publish

description	If check requests are published for the check.
required	false
default	`false`
type	Boolean
example	`"publish": false`

timeout

description	The check execution duration timeout in seconds (hard stop).
required	false
type	Integer
example	`"timeout": 30`

ttl

description	The time to live (TTL) in seconds until check results are considered stale. If an agent stops publishing results for the check, and the TTL expires, an event will be created for the agent's entity. The check `ttl` must be greater than the check `interval`, and should accommodate time for the check execution and result processing to complete. For example, if a check has an `interval` of `60` (seconds) and a `timeout` of `30` (seconds), an appropriate `ttl` would be a minimum of `90` (seconds).
required	false

required	
type	Integer
example	`"ttl": 100`

stdin

description	If the Sensu agent writes JSON serialized Sensu entity and check data to the command process' STDIN. The command must expect the JSON data via STDIN, read it, and close STDIN. This attribute cannot be used with existing Sensu check plugins, nor Nagios plugins etc, as Sensu agent will wait indefinitely for the check process to read and close STDIN.
required	false
type	Boolean
default	false

default	
example	`"stdin": true`

low_flap_threshold

description	The flap detection low threshold (% state change) for the check. Sensu uses the same flap detection algorithm as Nagios.
required	false
type	Integer
example	`"low_flap_threshold": 20`

high_flap_threshold

description	The flap detection high threshold (% state change) for the check. Sensu uses the same flap detection algorithm as Nagios.
required	true (if `low_flap_threshold` is configured)
type	Integer
example	`"high_flap_threshold": 60`

runtime_assets	
description	An array of Sensu assets (names), required at runtime for the execution of the `command`
required	false
type	Array
example	`"runtime_assets": ["ruby-2.5.0"]`

check_hooks	
description	An array of check response types with respective arrays of Sensu hook names. Sensu hooks are commands run by the Sensu agent in response to the result of the check command execution. Hooks are executed, in order of precedence, based on their severity type: `1` to `255`, `ok`, `warning`, `critical`, `unknown`, and finally `non-zero`.
required	false

d	
type	Array
example
```
"check_hooks": [
  {
    "0": [
      "passing-hook","always-run-this-hook"
    ]
  },
  {
    "critical": [
      "failing-hook","collect-diagnostics","always-run-this-hook"
    ]
  }
]
```
 |

proxy_entity_name

description	The entity name, used to create a proxy entity for an external resource (i.e., a network switch).
required	false
type	String
validated	`\A[\w\.\-]+\z`
example
```
"proxy_entity_name": "switch-dc-01"
```
 |

pro

xy_requests

description	Sensu proxy request attributes allow you to assign the check to run for multiple entities according to their `entity_attributes`. In the example below, the check executes for all entities with entity class `proxy` and the custom proxy type label `website`. Proxy requests are a great way to reuse check definitions for a group of entities. For more information, see the proxy requests specification and the guide to monitoring external resources.
required	false
type	Hash
example	`"proxy_requests": { "entity_attributes": [ "entity.entity_class == 'proxy'", "entity.labels.proxy_type == 'website'" ], "splay": true, "splay_coverage": 90 }`

silenced	
description	The silences that apply to this check.
type	Array
example	`"silenced": ["*:routers"]`

env_vars	
description	An array of environment variables to use with command execution. *NOTE: To add* `env_vars` *to a check, use* `sensuctl create`.
required	false
type	Array
example	`"env_vars": ["RUBY_VERSION=2.5.0", "CHECK_HOST=my.host.internal"]`

output_metric_format	
description	The metric format generated by the check command. Sensu supports the following metric formats: `nagios_perfdata` (Nagios Performance Data) `graphite_plaintext` (Graphite Plaintext Protocol) `influxdb_line` (InfluxDB Line Protocol) `opentsdb_line` (OpenTSDB Data Specification) When a check includes an `output_metric_format`, Sensu will extract the metrics

	from the check output and add them to the event data in Sensu metric format. For more information about extracting metrics using Sensu, see the guide.
required	false
type	String
example	`"output_metric_format": "graphite_plaintext"`

output_metric_handlers

description	An array of Sensu handlers to use for events created by the check. Each array item must be a string. `output_metric_handlers` should be used in place of the `handlers` attribute if `output_metric_format` is configured. Metric handlers must be able to process Sensu metric format. For an example, see the Sensu InfluxDB handler.
required	false
type	Array
example	`"output_metric_handlers": ["influx-db"]`

round_ro

bin	
description	When set to `true`, Sensu executes the check once per interval, cycling through each subscribing agent in turn. See the round robin section for more information. You can use the `round_robin` attribute with proxy checks to avoid duplicate events and distribute proxy check executions evenly across multiple agents. See the section on proxy checks for more information.
required	false
type	Boolean
example	`"round_robin": true`

subdue	
description	Check subdues are not yet implemented in Sensu Go. Although the `subdue` attribute appears in check definitions by default, it is a placeholder and should not be modified.
example	`"subdue": null`

Metadata attributes

name	

description	A unique string used to identify the check. Check names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`). Each check must have a unique name within its namespace.
required	true
type	String
example	`"name": "check-cpu"`

namespace

description	The Sensu RBAC namespace that this check belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

labels

description	Custom attributes to include with event data, which can be accessed using event filters. In contrast to annotations, you can use labels to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`

example	<pre>"labels": {
	  "environment": "development",
	  "region": "us-west-2"
	}</pre>

annotations

description	Non-identifying metadata to include with event data, which can be accessed using event filters. You can use annotations to add data that's meaningful to people or external tools

tion	interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	`null`
example	`"annotations": { "managed-by": "ops", "playbook": "www.example.url" }`

Proxy requests attributes

entity_attributes	
description	Sensu entity attributes to match entities in the registry, using Sensu query expressions
required	false
type	Array
example	`"entity_attributes": [ "entity.entity_class == 'proxy'", "entity.labels.proxy_type == 'website'" ]`

splay

description	If proxy check requests should be splayed, published evenly over a window of time, determined by the check interval and a configurable splay coverage percentage. For example, if a check has an interval of `60` seconds and a configured splay coverage of `90`%, its proxy check requests would be splayed evenly over a time window of `60` seconds * `90`%, `54` seconds, leaving `6`s for the last proxy check execution before the the next round of proxy check requests for the same check.
required	false
type	Boolean
default	false
example	`"splay": true`

sp

splay_coverage	
description	The **percentage** of the check interval over which Sensu can execute the check for all applicable entities, as defined in the entity attributes. Sensu uses the splay coverage attribute to determine the amount of time check requests can be published over (before the next check interval).
required	required if `splay` attribute is set to `true`
type	Integer
example	`"splay_coverage": 90`

Check output truncation attributes

max_output_size	
description	Maximum size, in bytes, of stored check outputs. When this attribute is set to a non-zero value, the Sensu backend truncates check outputs larger than this value before storing to etcd. `max_output_size` does not affect data sent to Sensu filters, mutators, and handlers.
required	false

type	Integer
example	`"max_output_size": 1024`

discard_output	
description	Discard check output after extracting metrics. No check output will be sent to the Sensu backend.
required	false
type	Boolean
example	`"discard_output": true`

Examples

Minimum recommended check attributes

NOTE: The attribute `interval` is not required if a valid `cron` schedule is defined.

Metric check

Datastore

Contents

Event storage

Sensu stores the most recent event for each entity and check pair using an embedded etcd (default) or an external etcd instance. You can access event data using the dashboard events page, `sensuctl event` commands, and the events API. For longer retention of event data, we recommend integrating Sensu with a time series database, like InfluxDB, or a searchable index, like ElasticSearch or Splunk.

Scaling event storage

LICENSED TIER: Unlock enterprise-scale event storage in Sensu Go with a Sensu license. To activate your license, see the getting started guide.

Sensu supports using an external PostgreSQL instance for event storage in place of etcd. PostgreSQL can handle significantly higher volumes of Sensu events, letting you scale Sensu beyond etcd's 8GB limit.

Configured with a PostgreSQL event store, Sensu connects to PostgreSQL to store and retrieve event data in place of etcd, while etcd continues to store Sensu entity and configuration data. You can access event data stored in PostgreSQL using the same Sensu web UI, API, and sensuctl processes as etcd-stored events.

Requirements

Sensu supports PostgreSQL 9.5 and later, including Amazon Relational Database Service (Amazon

RDS) when configured with the PostgreSQL engine. See the PostgreSQL docs to install and configure PostgreSQL.

Configuration

At the time of enabling the PostgreSQL event store, event data cuts over from etcd to PostgreSQL, resulting in a loss of recent event history. No restarts or Sensu backend configuration changes are required to enable the PostgreSQL event store.

After installing and configuring PostgreSQL, configure Sensu by creating a `PostgresConfig` resource. See the specification for more information.

With the `PostgresConfig` resource definition saved to a file (for example: postgres.yml), use sensuctl, configured as the admin user, to activate the PostgreSQL event store.

```
sensuctl create --file postgres.yml
```

At this time, there is no supported method for viewing a `PostgresConfig` resource. To update your Sensu PostgreSQL configuration, repeat the `sensuctl create` process shown above. You can expect to see PostgreSQL status updates and error messages in the Sensu backend logs at the `warn` and `error` log levels, respectively.

Disabling the PostgreSQL event store

To disable the PostgreSQL event store, use `sensuctl delete` with your `PostgresConfig` resource definition:

```
sensuctl delete --file postgres.yml
```

When disabling the PostgreSQL event store, event data cuts over from PostgreSQL to etcd, resulting in a loss of recent event history. No restarts or Sensu backend configuration changes are required to disable the PostgreSQL event store.

Specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. PostgreSQL datastore configs should always be of type `PostgresConfig`.
required	true
type	String
example	`type: PostgresConfig`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For PostgreSQL datastore configs, this attribute should be `store/v1`.
required	true
type	String
example	`api_version: store/v1`

metadata	
description	Top-level scope containing the PostgreSQL datastore `name`.
required	true
type	Map of key-value pairs

example	```yaml
	metadata:
	  name: my-postgres
	``

spec	
description	Top-level map that includes the PostgreSQL datastore config spec attributes.
required	true
type	Map of key-value pairs

example	```yaml
	spec:
	  dsn: "postgresql://user:secret@host:port/dbname"
	  pool_size: 20
	``

Metadata attributes

name	
description	The PostgreSQL datastore name used internally by Sensu
required	true
type	String

example	```yaml
	name: my-postgres
	``

Spec attributes

ds n

description	Use the `dsn` attribute to specify the data source names as a URL or PostgreSQL connection string. See the PostgreSQL docs for more information about connection strings.
required	true
type	String
example	`dsn: "postgresql://user:secret@host:port/dbname"`

pool_size

description	The maximum number of connections to hold in the PostgreSQL connection pool. We recommend `20` for most instances.
required	false
default	`0` (unlimited)
type	Integer
example	`pool_size: 20`

Entities

Contents

How do entities work?

Agent entities are monitoring agents, which are installed and run on every system that needs to be monitored. The entity is responsible for registering the system with the Sensu backend service, sending keepalive messages (the Sensu heartbeat mechanism), and executing monitoring checks. Each entity is a member of one or more `subscriptions` – a list of roles and/or responsibilities assigned to the agent entity (ex: a webserver or a database). Sensu entities will “subscribe” to (or watch for) check requests published by the Sensu backend (via the Sensu Transport), execute the corresponding requests locally, and publish the results of the check back to the transport (to be processed by a Sensu backend).

An entity represents anything (ex: server, container, network switch) that needs to be monitored, including the full range of infrastructure, runtime and application types that compose a complete monitoring environment (from server hardware to serverless functions). We call these monitored parts of an infrastructure “entities”. An entity not only provides context to event data (what/where the event is from) but an event’s uniqueness is determined by the check name and the name of the entity upon which the check ran. In addition, an entity can contain system information such as the hostname, OS,

platform, and version.

Usage limits

This version of Sensu has no functional limitations based on entity count. If your Sensu instance includes over 1,000 entities, contact us to learn about license-activated features designed for monitoring at scale. See Discourse for more information about our usage policy.

Proxy entities

Proxy entities (formerly known as proxy clients, “Just-in-time” or “JIT” clients) are dynamically created entities, added to the entity store if an entity does not already exist for a check result. Proxy entity registration differs from keepalive-based registration because the registration event happens while processing a check result (not a keepalive message). Sensu proxy entities allow Sensu to monitor external resources on systems and/or devices where a sensu-agent cannot be installed (such a network switch) using the defined check ProxyEntityName to create a proxy entity for the external resource.

Managing entity labels

Labels are custom attributes that Sensu includes with event data, which can be accessed using filters and tokens. In contrast to annotations, you can use labels to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu’s internal performance, so we recommend moving complex, non-identifying metadata to annotations.

Proxy entities

For entities with class `proxy`, you can create and manage labels using sensuctl. For example, to create a proxy entity with a `url` label using sensuctl `create`, create a file called `example.json` with an entity definition that includes `labels`.

Then run `sensuctl create` to create the entity based on the definition.

```
sensuctl create --file entity.json
```

To add a label to an existing entity, you can use sensuctl `edit`.For example, run `sensuctl edit` to add a `url` label to a `sensu-docs` entity.

```
sensuctl edit entity sensu-docs
```

And update the `metadata` scope to include `labels`.

Agent entities

For entities with class `agent`, you can define entity attributes in the `/etc/sensu/agent.yml` configuration file.For example, to add a `url` label, open `/etc/sensu/agent.yml` and add configuration for `labels`.

```
labels:
  url: sensu.docs.io
```

Or using `sensu-agent start` configuration flags.

```
sensu-agent start --labels url=sensu.docs.io
```

Entities specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Entities should always be of type `Entity`.
require	Required for entity definitions in `wrapped-json` or `yaml` format for use with

d	`sensuctl create`.
type	String
example	`"type": "Entity"`

api_version

description	Top-level attribute specifying the Sensu API group and version. For entities in this version of Sensu, this attribute should always be `core/v2`.
required	Required for entity definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

metadata

description	Top-level collection of metadata about the entity, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the entity definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.

required	Required for entity definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	`"metadata": { "name": "webserver01", "namespace": "default", "labels": { "region": "us-west-1" }, "annotations": { "slack-channel" : "#monitoring" } }`

spec

description	Top-level map that includes the entity spec attributes.
required	Required for entity definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	`"spec": { "entity_class": "agent", "system": { "hostname": "sensu2-centos", "os": "linux", "platform": "centos", "platform_family": "rhel", "platform_version": "7.4.1708",`

```
      "network": {
        "interfaces": [
          {
            "name": "lo",
            "addresses": [
              "127.0.0.1/8",
              "::1/128"
            ]
          },
          {
            "name": "enp0s3",
            "mac": "08:00:27:11:ad:d2",
            "addresses": [
              "10.0.2.15/24",
              "fe80::26a5:54ec:cf0d:9704/64"
            ]
          },
          {
            "name": "enp0s8",
            "mac": "08:00:27:bc:be:60",
            "addresses": [
              "172.28.128.3/24",
              "fe80::a00:27ff:febc:be60/64"
            ]
          }
        ]
      },
      "arch": "amd64"
    },
    "subscriptions": [
      "entity:webserver01"
    ],
    "last_seen": 1542667231,
    "deregister": false,
    "deregistration": {},
    "user": "agent",
    "redact": [
      "password",
      "passwd",
      "pass",
      "api_key",
      "api_token",
```

```
        "access_key",
        "secret_key",
        "private_key",
        "secret"
      ]
    }
```

Spec attributes

entity_class	
description	The entity type, validated with go regex `\A[\w\.\-]+\z`. Class names have special meaning. An entity that runs an agent is of class `agent` and is reserved. Setting the value of `entity_class` to `proxy` creates a proxy entity. For other types of entities, the `entity_class` attribute isn't required, and you can use it to indicate an arbitrary type of entity (like `lambda` or `switch`).
required	true
type	string

type	
example	`"entity_class": "agent"`

subscriptions

description	A list of subscription names for the entity. The entity by default has an entity-specific subscription, in the format of `entity:{name}` where `name` is the entity's hostname.
required	false
type	array
default	The entity-specific subscription.
example	`"subscriptions": ["web", "prod", "entity:example-entity"]`

system

description	System information about the entity, such as operating system and platform. See the system attributes for more information.
required	false
type	map
exam	

ple

last_seen

description	Timestamp the entity was last seen, in seconds since the Unix epoch.
required	false
type	integer
example	`"last_seen": 1522798317`

deregister

description	If the entity should be removed when it stops sending keepalive messages.
required	false
type	boolean
default	false
example	`"deregister": false`

deregistration

description	A map containing a handler name, for use when an entity is deregistered. See the deregistration attributes for more information.
required	false
type	map
example	

redact	
description	List of items to redact from log messages. If a value is provided, it overwrites the default list of items to be redacted.
required	false
type	array
default	[“password”, “passwd”, “pass”, “api_key”, “api_token”, “access_key”, “secret_key”, “private_key”, “secret”]
example	

user	
description	Sensu RBAC username used by the entity. Agent entities require get, list, create, update, and delete permissions for events across all namespaces.
type	String
default	`agent`
example	`"user": "agent"`

Metadata attributes

name	
description	The unique name of the entity, validated with Go regex `\A[\w\.\-]+\z`.
required	true

type	String
example	`"name": "example-hostname"`

namespace

description	The Sensu RBAC namespace that this entity belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

labels

description	Custom attributes to include with event data, which can be accessed using filters and tokens. In contrast to annotations, you can use labels to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false

required	
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`

example	<pre>"labels": {
	  "environment": "development",
	  "region": "us-west-2"
	}</pre>

annotations

description	Non-identifying metadata to include with event data, which can be accessed using filters and tokens. You can use annotations to add data that's meaningful to people or external tools interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
def	`null`

ault	

exa
mpl
e
	<pre>"annotations": {
	"managed-by": "ops",
	"playbook": "www.example.url"
	}</pre>

System attributes

hostname

description	The hostname of the entity.
required	false
type	string
example	<pre>"hostname": "example-hostname"</pre>

os

description	The entity’s operating system.
required	false
type	string
example	<pre>"os": "linux"</pre>

platform

description	The entity’s operating system distribution.

required	false
type	string
example	`"platform": "ubuntu"`

platform_family

description	The entity's operating system family.
required	false
type	string
example	`"platform_family": "debian"`

platform_version

description	The entity's operating system version.
required	false
type	string
example	`"platform_version": "16.04"`

network

description	The entity's network interface list. See the network attributes for more information.
required	false
type	map

example	

arch	
description	The entity's system architecture. This value is determined by the Go binary architecture, as a function of runtime.GOARCH. An `amd` system running a `386` binary will report the arch as `386`.
required	false
type	string
example	`"arch": "amd64"`

Network attributes

network_interface	
description	The list of network interfaces available on the entity, with their associated MAC and IP addresses.
required	false
type	array NetworkInterface
example	

NetworkInterface attributes

name	
description	The network interface name.
required	false
type	string
example	`"name": "eth0"`

mac	
description	The network interface's MAC address.
required	false
type	string
example	`"mac": "52:54:00:20:1b:3c"`

addresses	
description	The list of IP addresses for the interface.
required	false
type	array
example	`"addresses": ["93.184.216.34/24", "2606:2800:220:1:248:1893:25c8:1946/10"]`

Deregistration attributes

handler	
description	The name of the handler to be called when an entity is deregistered.
required	false
type	string
example	`"handler": "email-handler"`

Examples

Entity definition

Events

Contents

How do events work?

An event is a generic container used by Sensu to provide context to checks and/or metrics. The context, called “event data,” contains information about the originating entity and the corresponding check/metric result. An event must contain a check or metrics, and in certain cases, an event can contain both. These generic containers allow Sensu to handle different types of events in the pipeline. Since events are polymorphic in nature, it is important to never assume their contents, or lack-thereof.

Check-only events

A Sensu event is created every time a check result is processed by the Sensu server, regardless of the status indicated by the check result. An event is created by the agent on receipt of the check execution result. The agent will execute any configured hooks the check might have. From there, it is forwarded to the Sensu backend for processing. Potentially noteworthy events may be processed by one or more event handlers to do things such as send an email or invoke an automated action.

Metric-only events

Sensu events can also be created when the agent receives metrics through the Statsd listener. The agent will translate the statsd metrics to Sensu Metric Format, and place them inside an event. These events, since they do not contain checks, bypass the store, and are sent off to the event pipeline and corresponding event handlers.

Check and metric events

Events that contain *both* a check and metrics, most likely originated from check output metric extraction. If a check is configured for metrics extraction, the agent will parse the check output and transform it to Sensu Metric Format. Both the check results, and resulting (extracted) metrics are stored inside the event. Event handlers from `event.Check.Handlers` and `event.Metrics.Handlers` will be invoked.

Creating events using the Sensu agent

The Sensu agent is a powerful event producer and monitoring automation tool. You can use Sensu agents to produce events automatically using service checks and metric checks. Sensu agents can also act as a collector for metrics throughout your infrastructure.

Creating events using service checks
Creating events using metric checks
Creating events using the agent API
Creating events using the agent TCP and UDP sockets
Creating events using the StatsD listener

Creating events using the events API

You can send events directly to the Sensu pipeline using the events API. To create an event, send a JSON event definition to the events API PUT endpoint.

Managing events

You can manage event using the Sensu dashboard, events API, and the sensuctl command line tool.

Viewing events

To list all events:

```
sensuctl event list
```

To show event details in the default output format:

```
sensuctl event info entity-name check-name
```

With both the `list` and `info` commands, you can specify an output format using the `--format` flag:

`yaml` or `wrapped-json` formats for use with `sensuctl create`
`json` format for use with the events API

```
sensuctl event info entity-name check-name --format yaml
```

Deleting events

To delete an event:

```
sensuctl event delete entity-name check-name
```

You can use the `--skip-confirm` flag to skip the confirmation step.

```
sensuctl event delete entity-name check-name --skip-confirm
```

You should see a confirmation message on success.

```
```

```
Deleted
```

Resolving events

You can use sensuctl to change the status of an event to `0` (OK).Events resolved by sensuctl include the output message: “Resolved manually by sensuctl”.

```
sensuctl event resolve entity-name check-name
```

You should see a confirmation message on success.

```
Resolved
```

Event format

Sensu events contain:

`entity` scope (required)
Information about the source of the event, including any attributes defined in the entity specification
`check` scope (optional if the `metrics` scope is present)
Information about how the event was created, including any attributes defined in the check specification
Information about the event and its history, including any check attributes defined in the event specification on this page
`metrics` scope (optional if the `check` scope is present)
Metric points in Sensu metric format
`timestamp`
Time that the event occurred in seconds since the Unix epoch

Using event data

Event data is powerful tool for automating monitoring workflows.For example, see the guide to reducing alert fatigue by filtering events based on the event `occurrences` attribute.

Occurrences and occurrences watermark

The `occurrences` and `occurrences_watermark` event attributes give you context about recent events for a given entity and check. You can use these attributes within event filters to fine-tune incident notifications and reduce alert fatigue.

Starting at `1`, the `occurrences` attribute increments for events with the same status as the preceding event (OK, WARNING, CRITICAL, or UNKNOWN) and resets whenever the status changes. You can use the `occurrences` attribute to create a state-change-only filter or an interval filter.

The `occurrences_watermark` attribute gives you useful information when looking at events that change status between non-OK (WARNING, CRITICAL, or UNKNOWN) and OK. For these resolution events, the `occurrences_watermark` attribute tells you the number of preceding events with a non-OK status. Sensu resets `occurrences_watermark` to `1` on the first non-OK event. Within a sequence of only OK or only non-OK events, Sensu increments `occurrences_watermark` when the `occurrences` attribute is greater than the preceding `occurrences_watermark`.

The following table shows the occurrences attributes for a series of example events:

event sequence	`occurrences`	`occurrences_watermark`
1. OK event	`occurrences: 1`	`occurrences_watermark: 1`
2. OK event	`occurrences: 2`	`occurrences_watermark: 2`
3. WARNING event	`occurrences: 1`	`occurrences_watermark: 1`
4. WARNING event	`occurrences: 2`	`occurrences_watermark: 2`
5. WARNING event	`occurrences: 3`	`occurrences_watermark: 3`
6. CRITICAL event	`occurrences: 1`	`occurrences_watermark: 3`
7. CRITICAL event	`occurrences: 2`	`occurrences_watermark: 3`
8. CRITICAL event	`occurrences: 3`	`occurrences_watermark: 3`
9. CRITICAL event	`occurrences: 4`	`occurrences_watermark: 4`
10. OK event	`occurrences: 1`	`occurrences_watermark: 4`
11. CRITICAL event	`occurrences: 1`	`occurrences_watermark: 1`

Events specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Events should always be of type `Event`.
required	Required for events in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "Event"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For events in this version of Sensu, this attribute should always be `core/v2`.
required	Required for events in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

m

metadata	
description	Top-level scope containing the event `namespace`. The `metadata` map is always at the top level of the check definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
required	Required for events in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	`{ "metadata": { "namespace": "default" } }`

spec	
description	Top-level map that includes the event spec attributes.
required	Required for events in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example


```
"spec": {
  "check": {
    "check_hooks": null,
    "command": "/opt/sensu-plugins-ruby/embedded/bin/metrics-curl.rb -u
\"http://localhost\"",
    "duration": 0.060790838,
    "env_vars": null,
    "executed": 1552506033,
    "handlers": [],
    "high_flap_threshold": 0,
    "history": [
      {
        "executed": 1552505833,
        "status": 0
      },
      {
        "executed": 1552505843,
        "status": 0
      }
    ],
    "interval": 10,
    "issued": 1552506033,
    "last_ok": 1552506033,
    "low_flap_threshold": 0,
    "metadata": {
      "name": "curl_timings",
      "namespace": "default"
    },
    "occurrences": 1,
    "occurrences_watermark": 1,
    "output": "sensu-go-sandbox.curl_timings.time_total 0.005
1552506033\nsensu-go-sandbox.curl_timings.time_namelookup 0.004",
    "output_metric_format": "graphite_plaintext",
    "output_metric_handlers": [
      "influx-db"
    ],
    "proxy_entity_name": "",
    "publish": true,
    "round_robin": false,
    "runtime_assets": [],
```

```
    "state": "passing",
    "status": 0,
    "stdin": false,
    "subdue": null,
    "subscriptions": [
      "entity:sensu-go-sandbox"
    ],
    "timeout": 0,
    "total_state_change": 0,
    "ttl": 0
  },
  "entity": {
    "deregister": false,
    "deregistration": {},
    "entity_class": "agent",
    "last_seen": 1552495139,
    "metadata": {
      "name": "sensu-go-sandbox",
      "namespace": "default"
    },
    "redact": [
      "password",
      "passwd",
      "pass",
      "api_key",
      "api_token",
      "access_key",
      "secret_key",
      "private_key",
      "secret"
    ],
    "subscriptions": [
      "entity:sensu-go-sandbox"
    ],
    "system": {
      "arch": "amd64",
      "hostname": "sensu-go-sandbox",
      "network": {
        "interfaces": [
          {
            "addresses": [
              "127.0.0.1/8",
```

```
              "::1/128"
            ],
            "name": "lo"
          },
          {
            "addresses": [
              "10.0.2.15/24",
              "fe80::5a94:f67a:1bfc:a579/64"
            ],
            "mac": "08:00:27:8b:c9:3f",
            "name": "eth0"
          }
        ]
      },
      "os": "linux",
      "platform": "centos",
      "platform_family": "rhel",
      "platform_version": "7.5.1804"
    },
    "user": "agent"
  },
  "metrics": {
    "handlers": [
      "influx-db"
    ],
    "points": [
      {
        "name": "sensu-go-sandbox.curl_timings.time_total",
        "tags": [],
        "timestamp": 1552506033,
        "value": 0.005
      },
      {
        "name": "sensu-go-sandbox.curl_timings.time_namelookup",
        "tags": [],
        "timestamp": 1552506033,
        "value": 0.004
      }
    ]
  },
  "timestamp": 1552506033
}
```

Metadata attributes

namespace	
description	The Sensu RBAC namespace that this event belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

Spec attributes

timestamp	
description	Time that the event occurred in seconds since the Unix epoch
required	false
type	Integer
default	Time that the event occurred
example	`"timestamp": 1522099512`

entity	
description	The entity attributes from the originating entity (agent or proxy).

type	Map
required	true
example	


```
"entity": {
  "deregister": false,
  "deregistration": {},
  "entity_class": "agent",
  "last_seen": 1552495139,
  "metadata": {
    "name": "sensu-go-sandbox",
    "namespace": "default"
  },
  "redact": [
    "password",
    "passwd",
    "pass",
    "api_key",
    "api_token",
    "access_key",
    "secret_key",
    "private_key",
    "secret"
  ],
  "subscriptions": [
    "entity:sensu-go-sandbox"
  ],
  "system": {
    "arch": "amd64",
    "hostname": "sensu-go-sandbox",
    "network": {
      "interfaces": [
        {
          "addresses": [
            "127.0.0.1/8",
            "::1/128"
          ],
          "name": "lo"
        },
        {
          "addresses": [
```

```
            "10.0.2.15/24",
            "fe80::5a94:f67a:1bfc:a579/64"
          ],
          "mac": "08:00:27:8b:c9:3f",
          "name": "eth0"
        }
      ]
    },
    "os": "linux",
    "platform": "centos",
    "platform_family": "rhel",
    "platform_version": "7.5.1804"
  },
  "user": "agent"
}
```


check

description	The check definition used to create the event and information about the status and history of the event. The check scope includes attributes described in the event specification and the check specification.
type	Map
required	true
example	`"check": { "check_hooks": null, "command": "/opt/sensu-plugins-ruby/embedded/bin/metrics-curl.rb -u \"http://localhost\"",`

```
  "duration": 0.060790838,
  "env_vars": null,
  "executed": 1552506033,
  "handlers": [],
  "high_flap_threshold": 0,
  "history": [
    {
      "executed": 1552505833,
      "status": 0
    },
    {
      "executed": 1552505843,
      "status": 0
    }
  ],
  "interval": 10,
  "issued": 1552506033,
  "last_ok": 1552506033,
  "low_flap_threshold": 0,
  "metadata": {
    "name": "curl_timings",
    "namespace": "default"
  },
  "occurrences": 1,
  "occurrences_watermark": 1,
  "output": "sensu-go-sandbox.curl_timings.time_total 0.005",
  "output_metric_format": "graphite_plaintext",
  "output_metric_handlers": [
    "influx-db"
  ],
  "proxy_entity_name": "",
  "publish": true,
  "round_robin": false,
  "runtime_assets": [],
  "state": "passing",
  "status": 0,
  "stdin": false,
  "subdue": null,
  "subscriptions": [
    "entity:sensu-go-sandbox"
  ],
  "timeout": 0,
```

```
    "total_state_change": 0,
    "ttl": 0
  }
```

metrics	
description	The metrics collected by the entity in Sensu metric format. See the metrics attributes.
type	Map
required	false
example	`"metrics": { "handlers": [ "influx-db" ], "points": [ { "name": "sensu-go-sandbox.curl_timings.time_total", "tags": [], "timestamp": 1552506033, "value": 0.005 }, { "name": "sensu-go-sandbox.curl_timings.time_namelookup", "tags": [], "timestamp": 1552506033, "value": 0.004 } ] }`

Check attributes

Sensu events include a `check` scope containing information about how the event was created,

including any attributes defined in the check specification, and information about the event and its history, including the attributes defined below.

duration

description	Command execution time in seconds
required	false
type	Float
example	`"duration": 1.903135228`

executed

description	Time that the check request was executed
required	false
type	Integer
example	`"executed": 1522100915`

history

description	Check status history for the last 21 check executions. See the history attributes.
required	false
type	Array
example	

```
"history": [
  {
    "executed": 1552505983,
    "status": 0
```

```
    },
    {
      "executed": 1552505993,
      "status": 0
    }
]
```

issued

description	Time that the check request was issued in seconds since the Unix epoch
required	false
type	Integer
example	`"issued": 1552506033`

last_ok

description	The last time that the check returned an OK `status` (`0`) in seconds since the Unix epoch
required	false
type	Integer
example	`"last_ok": 1552506033`

occurre

n c e s	
d e s cr ip ti o n	The number of preceding events with the same status as the current event (OK, WARNING, CRITICAL, or UNKNOWN). Starting at `1`, the `occurrences` attribute increments for events with the same status as the preceding event and resets whenever the status changes. See the using event data section for more information.
r e q ui r e d	false
ty p e	Integer greater than 0
e x a m pl e	`"occurrences": 1`

oc cu rre nc es _ w at er	

mark	
description	The `occurrences_watermark` attribute gives you useful information when looking at events that change status between OK (`0`)and non-OK (`1` -WARNING, `2` -CRITICAL, or UNKNOWN). For these incident and resolution events, the `occurrences_watermark` attribute tells you the number of preceding events with an OK status (for incident events) or non-OK status (for resolution events). Sensu resets `occurrences_watermark` to `1` whenever an event for a given entity and check transitions between OK and non-OK. Within a sequence of only OK or only non-OK events, Sensu increments `occurrences_watermark` only when the `occurrences` attribute is greater than the preceding `occurrences_watermark` . See the using event data section for more information.
required	false
type	Integer greater than 0
example	`"occurrences_watermark": 1`

output	
description	The output from the execution of the check command
required	false
type	String
example	`"output": "sensu-go-sandbox.curl_timings.time_total 0.005"`

sta	

t e

description	The state of the check: `passing` (status `0`), `failing` (status other than `0`), or `flapping`. You can use the `low_flap_threshold` and `high_flap_threshold` check attributes to configure `flapping` state detection.
required	false
type	String
example	`"state": "passing"`

status

description	Exit status code produced by the check `0` indicates “OK” `1` indicates “WARNING” `2` indicates “CRITICAL” exit status codes other than `0`, `1`, or `2` indicate an “UNKNOWN” or custom status
required	false
type	Integer
example	`"status": 0`

total_state_change	
description	The total state change percentage for the check's history
required	false
type	Integer
example	`"total_state_change": 0`

History attributes

executed	
description	Time that the check request was executed in seconds since the Unix epoch
required	false
type	Integer
example	`"executed": 1522100915`

status	
description	Exit status code produced by the check `0` indicates "OK" `1` indicates "WARNING" `2` indicates "CRITICAL" exit status codes other than `0`, `1`, or `2` indicate an "UNKNOWN" or custom status
required	false
type	Integer

example	<pre>"status": 0</pre>

Metric attributes

handlers	
description	An array of Sensu handlers to use for events created by the check. Each array item must be a string.
required	false
type	Array

example	<pre>"handlers": [
	  "influx-db"
	]</pre>

points	
description	Metric data points including a name, timestamp, value, and tags. See the points attributes.
required	false
type	Array

example	<pre>"points": [
	  {
	  "name": "sensu-go-sandbox.curl_timings.time_total",
	  "tags": [
	  {
	  "name": "response_time_in_ms",</pre>

```
          "value": "101"
        }
      ],
      "timestamp": 1552506033,
      "value": 0.005
    },
    {
      "name": "sensu-go-sandbox.curl_timings.time_namelookup",
      "tags": [
        {
          "name": "namelookup_time_in_ms",
          "value": "57"
        }
      ],
      "timestamp": 1552506033,
      "value": 0.004
    }
]
```


Points attributes

name	
description	The metric name in the format `$entity.$check.$metric` where `$entity` is the entity name, `$check` is the check name, and `$metric` is the metric name.
required	false
type	String
example	`"name": "sensu-go-sandbox.curl_timings.time_total"`

t

tags	
description	Optional tags to include with the metric. Each element of the array must be a hash containing two key value pairs, one being the `name` of the tag and the other describing the `value`. Both values of the pairs must be strings.
required	false
type	Array
example	`"tags": [ { "name": "response_time_in_ms", "value": "101" } ]`

timestamp	
description	Time that the metric was collected in seconds since the Unix epoch
required	false
type	Integer
example	`"timestamp": 1552506033`

value	
description	The metric value
required	false
type	Float
example	`"value": 0.005`

Examples

Example check-only event data

Example event with check and metric data

Example metric-only event

Filters

Contents

How do Sensu filters work?

Sensu filters are applied when **event handlers** are configured to use one or more filters. Prior to executing a handler, the Sensu backend will apply any filters configured for the handler to the **event** data. If the event is not removed by the filter(s), the handler will be executed. The filter analysis flow performs these steps:

When the Sensu backend is processing an event, it will check for the definition of a `handler` (or `handlers`). Prior to executing each handler, the Sensu server will first apply any configured `filters` for the handler.
If multiple `filters` are configured for a handler, they are executed sequentially.
Filter `expressions` are compared with event data.
Filters can be inclusive (only matching events are handled) or exclusive (matching events are not handled).
As soon as a filter removes an event, no further analysis is performed and the event handler will not be executed.

*NOTE: Filters specified in a **handler set** definition have no effect. Filters must be specified in individual handler definitions.*

Inclusive and exclusive filtering

Filters can be *inclusive* `"action": "allow"` (replaces `"negate": false` in Sensu 1) or *exclusive* `"action": "deny"` (replaces `"negate": true` in Sensu 1). Configuring a handler to use multiple *inclusive* filters is the equivalent of using an `AND` query operator (only handle events if they match *inclusive* filter `x AND y AND z`). Configuring a handler to use multiple *exclusive* filters is the equivalent of using an `OR` operator (only handle events if they don't match `x OR y OR z`).

Inclusive filtering: by setting the filter definition attribute `"action":"allow"`, only events that match the defined filter expressions are handled.
Exclusive filtering: by setting the filter definition attribute `"action":"deny"`, events are only handled if they do not match the defined filter expressions.

Filter expression comparison

Filter expressions are compared directly with their event data counterparts. For inclusive filter definitions (like `"action": "allow"`), matching expressions will result in the filter returning a `true` value; for exclusive filter definitions (like `"action": "deny"`), matching expressions will result in the filter returning a `false` value, and the event will not pass through the filter. Filters that return a true value will continue to be processed via additional filters (if defined), mutators (if defined), and handlers.

Filter expression evaluation

When more complex conditional logic is needed than direct filter expression comparison, Sensu filters provide support for expression evaluation using Otto. Otto is an ECMAScript 5 (JavaScript) VM, and evaluates javascript expressions that are provided in the filter. There are some caveats to using Otto; most notably, the regular expressions specified in ECMAScript 5 do not all work. See the Otto README for more details.

Filter assets

Sensu filters can have assets that are included in their execution context. When valid assets are associated with a filter, Sensu evaluates any files it finds that have a ".js" extension before executing a filter. The result of evaluating the scripts is cached for a given asset set, for the sake of performance. For an example of how to implement a filter as an asset, see the guide on reducing alert fatigue.

Built-in filters

Sensu includes built-in filters to help you customize event pipelines for metrics and alerts. To start using built-in filters, see the guides to sending Slack alerts and planning maintenances.

Built-in filter: only incidents

The incidents filter is included in every installation of the Sensu backend. You can use the incidents filter to allow only high priority events through a Sensu pipeline. For example, you can use the incidents filter to reduce noise when sending notifications to Slack. When applied to a handler, the incidents filter allows only warning (`"status": 1`), critical (`"status": 2`), and resolution events to be processed.

To use the incidents filter, include the `is_incident` filter in the handler configuration `filters` array:

The `is_incident` filter applies the following filtering logic:

status	allow	discard
0		
1		
2		
other		

1 –> 0 or 2 –> 0
(resolution event)

Built-in filter: allow silencing

Sensu silencing lets you suppress execution of event handlers on an on-demand basis, giving you the ability to quiet incoming alerts and plan maintenances.

To allow silencing for an event handler, add the `not_silenced` filter to the handler configuration `filters` array:

When applied to a handler configuration, the `not_silenced` filter silences events that include the `silenced` attribute. The handler in the example above uses both the silencing and incidents filters, preventing low priority and silenced events from being sent to Slack.

Built-in filter: has metrics

The metrics filter is included in every installation of the Sensu backend. When applied to a handler, the metrics filter allows only events containing Sensu metrics to be processed. You can use the metrics filter to prevent handlers that require metrics from failing in case of an error in metric collection.

To use the metrics filter, include the `has_metrics` filter in the handler configuration `filters` array:

When applied to a handler configuration, the `has_metrics` filter allows only events that include a `metrics` scope.

Building filter expressions

You can write custom filter expressions as Sensu query expressions using the event data attributes described in this section. For more information about event attributes, see the event reference.

Syntax quick reference

operator	description
`===` / `!==`	Identity operator / Nonidentity operator
`==` / `!=`	Equality operator / Inequality operator
`&&` / `||`	Logical AND / Logical OR
`<` / `>`	Less than / Greater than
`<=` / `>=`	Less than or equal to / Greater than or equal to

Event attributes available to filters

attribute	type	description

`event.has_check`	boolean	Returns true if the event contains check data
`event.has_metrics`	boolean	Returns true if the event contains metrics
`event.is_incident`	boolean	Returns true for critical alerts (status `2`), warnings (status `1`), and resolution events (status `0` transitioning from status `1` or `2`)
`event.is_resolution`	boolean	Returns true if the event status is OK (`0`) and the previous event was of a non-zero status
`event.is_silenced`	boolean	Returns true if the event matches an active silencing entry
`event.timestamp`	integer	Time that the event occurred in seconds since the Unix epoch

Check attributes available to filters

attribute	type	description
`event.check.annotations`	map	Custom annotations applied to the check
`event.check.command`	stri	The command executed by the check

	ng	
`event.check.cron`	string	Check execution schedule using cron syntax
`event.check.discard_output`	boolean	If the check is configured to discard check output from event data
`event.check.duration`	float	Command execution time in seconds
`event.check.env_vars`	array	Environment variables used with command execution
`event.check.executed`	integer	Time that the check was executed in seconds since the Unix epoch
`event.check.handlers`	array	Sensu event handlers assigned to the check
`event.check.high_flap_threshold`	integer	The check's flap detection high threshold in percent state change
`event.check.history`	array	Check status history for the last 21 check executions
`event.check.hooks`	array	Check hook execution data

`event.check.interval`	integer	The check execution frequency in seconds
`event.check.issued`	integer	Time that the check request was issued in seconds since the Unix epoch
`event.check.labels`	map	Custom labels applied to the check
`event.check.last_ok`	integer	The last time that the check returned an OK status (`0`) in seconds since the Unix epoch
`event.check.low_flap_threshold`	integer	The check's flap detection low threshold in percent state change
`event.check.max_output_size`	integer	Maximum size, in bytes, of stored check outputs
`event.check.name`	string	Check name
`event.check.occurrences`	integer	The number of preceding events with the same status as the current event
`event.check.occurrences_watermark`	integer	For resolution events, the number of preceding events with a non-OK status

`event.check.output`	string	The output from the execution of the check command
`event.check.output_metric_format`	string	The metric format generated by the check command: `nagios_perfdata`, `graphite_plaintext`, `influxdb_line`, or `opentsdb_line`
`event.check.output_metric_handlers`	array	Sensu metric handlers assigned to the check
`event.check.proxy_entity_name`	string	The entity name, used to create a proxy entity for an external resource
`event.check.proxy_requests`	map	Proxy request configuration
`event.check.publish`	boolean	If the check is scheduled automatically
`event.check.round_robin`	boolean	If the check is configured to be executed in a round-robin style
`event.check.runtime_assets`	array	Sensu assets used by the check
`event.check.state`	strin	The state of the check: `passing` (status `0`), `failing` (status other than `0`), or `flapping`

	g	
`event.check.status`	integer	Exit status code produced by the check: `0` (OK), `1` (warning), `2` (critical), or other status (unknown or custom status)
`event.check.stdin`	boolean	If the Sensu agent writes JSON-serialized entity and check data to the command process' STDIN
`event.check.subscriptions`	array	Subscriptions that the check belongs to
`event.check.timeout`	integer	The check execution duration timeout in seconds
`event.check.total_state_change`	integer	The total state change percentage for the check's history
`event.check.ttl`	integer	The time to live (TTL) in seconds until the event is considered stale
`event.metrics.handlers`	array	Sensu metric handlers assigned to the check
`event.metrics.points`	array	Metric data points including a name, timestamp, value, and tags

Entity attributes available to filters

attribute	type	description
`event.entity.annotations`	map	Custom annotations assigned to the entity
`event.entity.deregister`	boolean	If the agent entity should be removed when it stops sending keepalive messages
`event.entity.deregistration`	map	A map containing a handler name, for use when an entity is deregistered
`event.entity.entity_class`	string	The entity type: usually `agent` or `proxy`
`event.entity.labels`	map	Custom labels assigned to the entity
`event.entity.last_seen`	integer	Timestamp the entity was last seen, in seconds since the Unix epoch
`event.entity.name`	string	Entity name
`event.entity.redact`	array	List of items to redact from log messages
`event.entity.subscriptions`	array	List of subscriptions assigned to the entity
`event.entity.system`	map	Information about the entity's system
`event.entity.system.arch`	string	The entity's system architecture
`event.entity.system.hostname`	string	The entity's hostname
`event.entity.system.network`	map	The entity's network interface list
`event.entity.system.os`	string	The entity's operating system
`event.entity.system.platform`	string	The entity's operating system distribution

`event.entity.system.platform_family`	string	The entity's operating system family
`event.entity.system.platform_version`	string	The entity's operating system version
`event.entity.user`	string	Sensu RBAC username used by the agent entity

Filter specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Filters should always be of type `EventFilter`.
required	Required for filter definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "EventFilter"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For filters in this version of Sensu, this attribute should always be `core/v2`.
required	Required for filter definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.

type	String
example	`"api_version": "core/v2"`

metadata

description	Top-level collection of metadata about the filter, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the filter definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
required	Required for filter definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	

```
"metadata": {
  "name": "filter-weekdays-only",
  "namespace": "default",
  "labels": {
    "region": "us-west-1"
  },
  "annotations": {
    "slack-channel" : "#monitoring"
  }
```

```
}
```

spec	
description	Top-level map that includes the filter spec attributes.
required	Required for filter definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example	<pre>"spec": {
	  "action": "allow",
	  "expressions": [
	  "event.entity.namespace == 'production'"
	  ],
	  "runtime_assets": []
	}</pre>

Spec attributes

action	
description	Action to take with the event if the filter expressions match. *NOTE: see Inclusive and exclusive filtering for more information.*
required	true
type	String
allowed values	`allow`, `deny`
example	<pre>"action": "allow"</pre>

expressions	
description	Filter expressions to be compared with event data. Note that event metadata can be referenced without including the `metadata` scope, for example: `event.entity.namespace`.
required	true
type	Array
example	`"expressions": [ "event.check.team == 'ops'" ]`

runtime_assets	
description	Assets to be applied to the filter's execution context. JavaScript files in the lib directory of the asset will be evaluated.
required	false
type	Array of String
default	[]
example	`"runtime_assets": ["underscore"]`

Metadata attributes

name

description	A unique string used to identify the filter. Filter names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`). Each filter must have a unique name within its namespace.
required	true
type	String
example	`"name": "filter-weekdays-only"`

namespace

description	The Sensu RBAC namespace that this filter belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

la

labels

description	Custom attributes you can use to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`
example	`"labels": { "environment": "development", "region": "us-west-2" }`

annotations

description	Non-identifying metadata that's meaningful to people or external tools interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	`null`
example	`"annotations": { "managed-by": "ops", "playbook": "www.example.url" }`

Filter Examples

Minimum required filter attributes

Handling production events

The following filter allows only events with a custom entity label `"environment": "production"` to be handled.

Handling non-production events

The following filter discards events with a custom entity label `"environment": "production"`, allowing only events without an `environment` label or events with `environment` set to something other than `production` to be handled. Note that `action` is `deny`, making this an exclusive filter; if evaluation returns false, the event is handled.

Handling state change only

Some teams migrating to Sensu have asked about reproducing the behavior of their old monitoring system which alerts only on state change. This `state_change_only` inclusive filter provides such.

Handling repeated events

The following example filter definition, entitled `filter_interval_60_hourly`, will match event data with a check `interval` of `60` seconds, and an `occurrences` value of `1` (the first occurrence) -OR- any `occurrences` value that is evenly divisible by 60 via a modulo operator calculation (calculating the remainder after dividing `occurrences` by 60).

The next example will apply the same logic as the previous example, but for checks with a 30 second `interval`.

Handling events during office hours only

This filter evaluates the event timestamp to determine if the event occurred between 9 AM and 5 PM UTC on a weekday. Remember that `action` is equal to `allow`, so this is an inclusive filter. If evaluation returns false, the event will not be handled.

Using JavaScript libraries with Sensu filters

You can include JavaScript libraries in their filter execution context with assets. For instance, assuming you've packaged underscore.js into a Sensu asset, you could then use functions from the underscore library for filter expressions.

Handlers

Contents

Discover, download, and share Sensu handlers assets using Bonsai, the Sensu asset index.Read the guide to installing plugins using assets to get started.

How do Sensu handlers work?

Handlers actions are executed by the Sensu backend on events, and there areseveral types of handlers available. The most common handler type is the `pipe` handler, which works very similarly to how checks work, enabling Sensu tointeract with almost any computer program via standard streams.

Pipe handlers. Pipe handlers pipe event data into arbitrary commands via `STDIN`.
TCP/UDP handlers. TCP and UDP handlers send event data to a remote socket.
Handler sets. Handler sets (also called “set handlers”) are used to groupevent handlers, making it easy to manage groups of actions that should beexecuted for certain types of events.

Pipe handlers

Pipe handlers are external commands that can consume event data via STDIN.

Pipe handler command

Pipe handler definitions include a `command` attribute, which is a command to be executed by the Sensu backend.

Pipe handler command arguments

Pipe handler `command` attributes may include command line arguments for controlling the behavior of the `command` executable.

TCP/UDP handlers

TCP and UDP handlers enable Sensu to forward event data to arbitrary TCP or UDP sockets for external services to consume.

Handler sets

Handler set definitions allow groups of handlers (individual collections of actions to take on event data) to be referenced via a single named handler set.

NOTE: Attributes defined on handler sets do not apply to the handlers they include. For example, `filters`, and `mutator` attributes defined in a handler set will have no effect.

Handling keepalive events

Sensu keepalives are the heartbeat mechanism used to ensure that all registered Sensu agents are operational and able to reach the Sensu backend. You can connect keepalive events to your monitoring workflows using a keepalive handler. Sensu looks for an event handler named `keepalive` and automatically uses it to process keepalive events.

Let's say you want to receive Slack notifications for keepalive alerts, and you already have a Slack handler set up to process events. To process keepalive events using the Slack pipeline, create a handler set named `keepalive` and add the `slack` handler to the `handlers` array. The resulting `keepalive` handler set configuration looks like this:

Handler specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Handlers should always be of type `Handler`.
required	Required for handler definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "Handler"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For handlers in this version of Sensu, this attribute should always be `core/v2`.
required	Required for handler definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

metada

t a	
d es cri pti o n	Top-level collection of metadata about the handler, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the handler definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
re q ui re d	Required for handler definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
ty p e	Map of key-value pairs
ex a m pl e	`"metadata": { "name": "handler-slack", "namespace": "default", "labels": { "region": "us-west-1" }, "annotations": { "slack-channel" : "#monitoring" } }`

spec	
descripti on	Top-level map that includes the handler spec attributes.
required	Required for handler definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example	<pre>"spec": {
	  "type": "tcp",
	  "socket": {
	  "host": "10.0.1.99",
	  "port": 4444
	  },
	  "metadata" : {
	  "name": "tcp_handler",
	  "namespace": "default"
	  }
	}</pre>

Spec attributes

type	
description	The handler type.
required	true
type	String
allowed values	`pipe`, `tcp`, `udp` & `set`
example	<pre>"type": "pipe"</pre>

filters	
description	An array of Sensu event filters (names) to use when filtering events for the handler. Each array item must be a string.
required	false
type	Array

example	`"filters": ["occurrences", "production"]`

mutator

description	The Sensu event mutator (name) to use to mutate event data for the handler.
required	false
type	String
example	`"mutator": "only_check_output"`

timeout

description	The handler execution duration timeout in seconds (hard stop). Only used by `pipe`, `tcp`, and `udp` handler types.
required	false
type	Integer
default	`60` (for `tcp` and `udp` handlers)
example	`"timeout": 30`

comma

n d	
de sc rip tio n	The handler command to be executed. The event data is passed to the process via `STDIN`.*NOTE: the `command` attribute is only supported for Pipe handlers (i.e. handlers configured with `"type": "pipe"`).*
re qu ire d	true (if `type` equals `pipe`)
ty pe	String
ex a m pl e	`"command": "/etc/sensu/plugins/pagerduty.go"`

en v_ va rs	
de scri pti on	An array of environment variables to use with command execution.*NOTE: the `env_vars` attribute is only supported for Pipe handlers (i.e. handlers configured with `"type": "pipe"`).*
req uir ed	false
typ e	Array
ex am ple	`"env_vars": ["API_KEY=0428d6b8nb51an4d95nbe28nf90865a66af5"]`

socket

description	The `socket` definition scope, used to configure the TCP/UDP handler socket. *NOTE: the `socket` attribute is only supported for TCP/UDP handlers (i.e. handlers configured with `"type": "tcp"` or `"type": "udp"`).*
required	true (if `type` equals `tcp` or `udp`)
type	Hash
example	`"socket": {}`

handlers

description	An array of Sensu event handlers (names) to use for events using the handler set. Each array item must be a string.*NOTE: the `handlers` attribute is only supported for handler sets (i.e. handlers configured with `"type": "set"`).*
required	true (if `type` equals `set`)
type	Array
example	`"handlers": ["pagerduty", "email", "ec2"]`

runtime_assets	
description	An array of Sensu assets (names), required at runtime for the execution of the `command`
required	false
type	Array
example	`"runtime_assets": ["ruby-2.5.0"]`

Metadata attributes

name

description	A unique string used to identify the handler. Handler names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`). Each handler must have a unique name within its namespace.
required	true
type	String
example	`"name": "handler-slack"`

namespace

description	The Sensu RBAC namespace that this handler belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

labels

description	Custom attributes you can use to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`
example	`"labels": { "environment": "development", "region": "us-west-2" }`

annot

ations	
description	Non-identifying metadata that’s meaningful to people or external tools interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu’s internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	`null`
example	`"annotations": { "managed-by": "ops", "playbook": "www.example.url" }`

`socket` attributes

host	
description	The socket host address (IP or hostname) to connect to.
required	true
type	String
example	`"host": "8.8.8.8"`

port	
description	The socket port to connect to.

required	true
type	Integer
example	`"port": 4242`

Handler examples

Minimum required pipe handler attributes

Minimum required TCP/UDP handler attributes

This is an example of a `tcp` type handler. Changing the type from `tcp` to `udp` gives you the minimum configuration for a `udp` type handler.

Sending slack alerts

This handler will send alerts to a channel named `monitoring` with the configured webhook URL, using the `handler-slack` executable command.

Sending event data to a TCP socket

This handler will forward event data to a TCP socket (10.0.1.99:4444) and will timeout if an acknowledgement (`ACK`) is not received within 30 seconds.

Sending event data to a UDP socket

The following example will also forward event data but to UDP socket instead(ex: 10.0.1.99:4444).

Executing multiple handlers

The following example handler will execute three handlers: `slack`, `tcp_handler`, and `udp_handler`.

Hooks

Contents

How do hooks work?

Hooks are executed in response to the result of a check command execution and based on the exit status code of that command (ex: `1`). Hook commands can optionally receive JSON serialized Sensu client data via STDIN. You can create, manage, and reuse hooks independently of checks.

Check response types

Each **type** of response (ex: `non-zero`) can contain one or more hooks, and correspond to one or more exit status code. Hooks are executed, in order of precedence, based on their type:

1. `1` to `255`
2. `ok`
3. `warning`
4. `critical`
5. `unknown`
6. `non-zero`

You can assign one or more hooks to a check in the check definition. See the check specification to configure the `check_hooks` attribute.

Check hooks

The hook command output, status, executed timestamp and duration are captured and published in the resulting event.

You can use `sensuctl` to view this data:

```
sensuctl event info entity_name check_name --format yaml
```

```
type: Event
api_version: core/v2
metadata:
  namespace: default
spec:
  check:
    ...
    hooks:
    - command: df -hT / | grep '/'
      duration: 0.002904412
      executed: 1559948435
      issued: 0
      metadata:
        name: root_disk
        namespace: default
      output: "/dev/mapper/centos-root xfs    41G  1.6G   40G   4% /\n"
      status: 0
      stdin: false
      timeout: 60
```

Hooks specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Hooks should always be of type `HookConfig`.
required	Required for hook definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String

example	`"type": "HookConfig"`

api_version

description	Top-level attribute specifying the Sensu API group and version. For hooks in this version of Sensu, this attribute should always be `core/v2`.
required	Required for hook definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

metadata

description	Top-level collection of metadata about the hook, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the hook definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
require	Required for hook definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.

d	
type	Map of key-value pairs

example	<pre>"metadata": {
	  "name": "process_tree",
	  "namespace": "default",
	  "labels": {
	  "region": "us-west-1"
	  },
	  "annotations": {
	  "slack-channel" : "#monitoring"
	  }
	}</pre>

spec	
description	Top-level map that includes the hook spec attributes.
required	Required for hook definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example	<pre>"spec": {
	  "command": "ps aux",
	  "timeout": 60,
	  "stdin": false
	}</pre>

Spec attributes

command	
description	The hook command to be executed.
required	true
type	String
example	`"command": "sudo /etc/init.d/nginx start"`

timeout	
description	The hook execution duration timeout in seconds (hard stop).
required	false
type	Integer
default	60
example	`"timeout": 30`

stdin	
description	If the Sensu agent writes JSON serialized Sensu entity and check data to the command process' STDIN. The command must expect the JSON data via STDIN, read it, and close STDIN. This attribute cannot be used with existing Sensu check plugins, nor Nagios plugins etc, as Sensu agent will wait indefinitely for the hook process to read and close STDIN.

required	false
type	Boolean
default	false
example	`"stdin": true`

runtime_assets

description	An array of Sensu assets (names), required at runtime for the execution of the `command`
required	false
type	Array
example	`"runtime_assets": ["log-context"]`

Metadata attributes

name

description	A unique string used to identify the hook. Hook names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`). Each hook must have a unique name within its namespace.
required	true
type	String
example	`"name": "process_tree"`

namespace

description	The Sensu RBAC namespace that this hook belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

l

labels	
description	Custom attributes to include with event data, which can be accessed using event filters. In contrast to annotations, you can use labels to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`
example	`"labels": { "environment": "development", "region": "us-west-2" }`

annot	

ations	
description	Non-identifying metadata to include with event data, which can be accessed using event filters. You can use annotations to add data that's meaningful to people or external tools interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	`null`

example	<pre>"annotations": {
	  "managed-by": "ops",
	  "playbook": "www.example.url"
	}</pre>

Examples

Rudimentary auto-remediation

Hooks can be used for rudimentary auto-remediation tasks, for example, starting a process that is no longer running.

NOTE: Using hooks for auto-remediation should be approached carefully, as they run without regard to the number of event occurrences.

Capture the process tree

Hooks can also be used for automated data gathering for incident triage, for example, a check hook could be used to capture the process tree when a process has been determined to be not running etc.

Mutators

Contents

How do mutators work?

A handler can specify a mutator to transform event data. Mutators are executed prior to the execution of a handler. If the mutator executes successfully, the modified event data is returned to the handler, and the handler is then executed. If the mutator fails to execute, an error will be logged, and the handler will not be executed.

When the Sensu backend processes an event, it will check the handler for the presence of a mutator, and execute that mutator before executing the handler.
If the mutator executes successfully (it returns an exit status code of 0), modified event data is provided to the handler, and the handler is executed.
If the mutator fails to execute (it returns a non-zero exit status code, or fails to complete within its configured timeout), an error will be logged and the handler will not execute.

Mutator specification

Accepts input/data via `STDIN`
Able to parse JSON event data
Outputs JSON data (modified event data) to `STDOUT` or `STDERR`
Produces an exit status code to indicate state:
`0` indicates OK status
exit codes other than `0` indicate failure

Commands

Each Sensu mutator definition defines a command to be executed. Mutator commands are executable

commands which will be executed on a Sensu backend, run as the `sensu user`. Most mutator commands are provided by Sensu Plugins.

Sensu mutator `command` attributes may include command line arguments for controlling the behavior of the `command` executable. Many Sensu mutator plugins provide support for command line arguments for reusability.

How and where are mutator commands executed?

As mentioned above, all mutator commands are executed by a Sensu backend as the `sensu` user. Commands must be executable files that are discoverable on the Sensu backend system (installed in a system `$PATH` directory).

NOTE: By default, the Sensu installer packages will modify the system `$PATH` for the Sensu processes to include `/etc/sensu/plugins`. As a result, executable scripts (like plugins) located in `/etc/sensu/plugins` will be valid commands. This allows `command` attributes to use "relative paths" for Sensu plugin commands, for example: `"command": "check-http.go -u https://sensuapp.org"`.

Built-in mutators

Sensu includes built-in mutators to help you customize event pipelines for metrics and alerts.

Built-in mutator: only check output

To process an event, some handlers require only the check output, not the entire event definition. For example, when sending metrics to Graphite using a TCP handler, Graphite expects data that follows the Graphite plaintext protocol. By using the built-in `only_check_output` mutator, Sensu reduces the event to only the check output, so it can be accepted by Graphite.

To use the only check output mutator, include the `only_check_output` mutator in the handler configuration `mutator` string:

Mutators specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Mutators should always be of type `Mutator`.
required	Required for mutator definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "Mutator"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For mutators in this version of Sensu, this attribute should always be `core/v2`.
required	Required for mutator definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

metadat	

a	
description	Top-level collection of metadata about the mutator, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the mutator definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
required	Required for mutator definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	`"metadata": { "name": "example-mutator", "namespace": "default", "labels": { "region": "us-west-1" }, "annotations": { "slack-channel" : "#monitoring" } }`

spec	
description	Top-level map that includes the mutator spec attributes.
required	Required for mutator definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example

```
"spec": {
  "command": "example_mutator.go",
  "timeout": 0,
  "env_vars": [],
  "runtime_assets": []
}
```

Spec attributes

command

description	The mutator command to be executed by the Sensu backend.
required	true
type	String
example	`"command": "/etc/sensu/plugins/mutated.go"`

env_vars

description	An array of environment variables to use with command execution.
required	false
type	Array
example	`"env_vars": ["RUBY_VERSION=2.5.0"]`

timeout

description	The mutator execution duration timeout in seconds (hard stop).

required	false
type	integer
example	`"timeout": 30`

runtime_assets	
description	An array of Sensu assets (names), required at runtime for the execution of the `command`
required	false
type	Array
example	`"runtime_assets": ["ruby-2.5.0"]`

Metadata attributes

name	
description	A unique string used to identify the mutator. Mutator names cannot contain special characters or spaces (validated with Go regex `\A[\w\.\-]+\z`). Each mutator must have a unique name within its namespace.
required	true

type	String
example	`"name": "example-mutator"`

namespace

description	The Sensu RBAC namespace that this mutator belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

labels

description	Custom attributes you can use to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.
required	false

required	
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`

example	<pre>"labels": {
	  "environment": "development",
	  "region": "us-west-2"
	}</pre>

annotations

description	Non-identifying metadata that's meaningful to people or external tools interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	`null`
example	<pre>"annotations": {</pre>

```
    "managed-by": "ops",
    "playbook": "www.example.url"
}
```

Examples

The following Sensu mutator definition uses an imaginary Sensu plugin called `example_mutator.go` to modify event data prior to handling the event.

Mutator definition

Minimum required mutator attributes

Role-based access control

Contents

Sensu role-based access control (RBAC) helps different teams and projects share a Sensu instance. RBAC allows management and access of users and resources based on **namespaces**, **groups**, **roles**, and **bindings**.

Namespaces partition resources within Sensu. Sensu entities, checks, handlers, and other namespaced resources belong to a single namespace.
Roles create sets of permissions (get, delete, etc.) tied to resource types. **Cluster roles** apply permissions across namespaces and include access to cluster-wide resources like users and namespaces.
Users represent a person or agent that interacts with Sensu. Users can belong to one or more **groups**.
Role bindings assign a role to a set of users and groups within a namespace; **cluster role bindings** assign a cluster role to a set of users and groups cluster-wide.

Sensu access controls apply to sensuctl, the Sensu API, and the Sensu dashboard. In addition to built-in RBAC, Sensu includes license-activated support for authentication using external authentication providers.

Namespaces

Namespaces help teams use different resources (entities, checks, handlers, etc.) within Sensu and impose their own controls on those resources. A Sensu instance can have multiple namespaces, each with their own set of managed resources. Resource names need to be unique within a namespace, but not across namespaces.

To create and manage namespaces, configure sensuctl as the default `admin` user or create a cluster

role with `namespaces` permissions.

Default namespace

Every Sensu backend includes a `default` namespace. All resources created without a specified namespace are created within the `default` namespace.

Viewing namespaces

You can use sensuctl to view all namespaces within Sensu:

```
sensuctl namespace list
```

NOTE: For licensed tier users, `sensuctl namespace list` will list only the namespaces that the current user has access to.

Creating a namespace

You can use sensuctl to create a namespace. For example, the following command creates a namespace called `production`:

```
sensuctl namespace create production
```

Namespace names can contain alphanumeric characters and hyphens, but must begin and end with an alphanumeric character.

Managing namespaces

You can use sensuctl to view, create, and delete namespaces.

To delete a namespace:

```
sensuctl namespace delete [NAMESPACE-NAME]
```

To get help managing namespaces with sensuctl:

```
sensuctl namespace help
```

Assigning a resource to a namespace

You can assign a resource to a namespace in the resource definition.Only resources belonging to a namespaced resource type (like checks, filters, and handlers) can be assigned to a namespace.

For example, to assign a check called `check-cpu` to the `production` namespace, include the `namespace` attribute in the check definition:

See the reference docs for the corresponding resource type to create resource definitions.

PRO TIP: By omitting the `namespace` attribute from resource definitions, you can use the `senusctl create --namespace` flag to specify the namespace for a group of resources at the time of creation, allowing you to replicate resources across namespaces without manual editing. See the sensuctl reference for more information.

Namespace specification

Attributes

name	
description	The name of the namespace. Names can contain alphanumeric characters and hyphens, but must begin and end with an alphanumeric character.
required	true
type	String

example

```
"name": "production"
```

Namespace example

The following examples are in `yml` and `wrapped-json` formats for use with `sensuctl create`.

Resources

Permissions within Sensu are scoped to resource types, like checks, handlers, and users. You can use resource types to configure permissions in Sensu roles and cluster roles.

Namespaced resource types

Namespaced resources must belong to a single namespace and can be accessed by roles and cluster roles.

Type	Description
`assets`	Asset resources within a namespace
`checks`	Check resources within a namespace
`entities`	Entity resources within a namespace
`events`	Event resources within a namespace
`extensions`	Placeholder type
`filters`	Filter resources within a namespace
`handlers`	Handler resources within a namespace
`hooks`	Hook resources within a namespace
`mutators`	Mutator resources within a namespace

`rolebindings`	Namespace-specific role assigners
`roles`	Namespace-specific permission sets
`silenced`	Silencing resources within a namespace

Cluster-wide resource types

Cluster-wide resources cannot be assigned to a namespace and can only be accessed by cluster roles.

Type	Description
`cluster`	Sensu clusters running multiple Sensu backends
`clusterrolebindings`	Cluster-wide role assigners
`clusterroles`	Cluster-wide permission sets
`namespaces`	Resource partitions within a Sensu instance
`users`	People or agents interacting with Sensu
`authproviders`	Authentication provider configuration (licensed tier)
`license`	Sensu license

Special resource types

Special resources types can be accessed by both roles and cluster roles.

Type	Description
`*`	All resources within Sensu. **The `*` type takes precedence over other rules within the same role.** If you wish to deny a certain type, you can't use the `*` type and must explicitly allow every type required. When applied to a role, the `*` type applies only to namespaced

resource types. When applied to a cluster role, the `*` type applies to both namespaced resource types and cluster-wide resource types.

Users

A user represents a person or an agent which interacts with Sensu. Users and groups can be assigned one or more roles and inherit all permissions from each role assigned to them.

You can use your Sensu username and password to configure sensuctl or log in to the dashboard.

Default user

By default, Sensu includes a global `admin` user that you can use to manage Sensu and create new users.

attribute	value
username	`admin`
password	`P@ssw0rd!`
groups	`cluster-admins`
cluster role	`cluster-admin`
cluster role binding	`cluster-admin`

We **strongly** recommended changing the default password for the admin user immediately. Once authenticated, you can change the password using the `change-password` command.

```
sensuctl user change-password
```

Sensu also includes an `agent` user that is used internally by the Sensu agent. You can configure an agent's user credentials using the `user` and `password` agent configuration flags.

Viewing users

You can use sensuctl to see a list of all users within Sensu. The following example returns a list of users in `yaml` format for use with `sensuctl create`.

```
sensuctl user list --format yaml
```

Creating a user

You can use sensuctl to create a user. For example, the following command creates a user with the username `alice`, creates a password, and assigns the user to the `ops` and `dev` groups. Passwords must have at least eight characters.

```
sensuctl user create alice --password='password' --groups=ops,dev
```

Assigning user permissions

To assign permissions to a user:

1. Create the user.
2. Create a role or (for cluster-wide access) a cluster role.
3. Create a role binding (or cluster role binding) to assign the role to the user.

Managing users

To test the password for a user:

```
sensuctl user test-creds USERNAME --password 'password'
```

An empty response indicates valid credentials; a request-unauthorized response indicates invalid credentials.

To change the password for a user:

```
sensuctl user change-password USERNAME --current-password CURRENT_PASSWORD --new-password NEW_PASSWORD
```

To disable a user:

```
sensuctl user disable USERNAME
```

To re-enable a disabled user:

```
sensuctl user reinstate USERNAME
```

User specification

Attributes

username	
description	The name of the user. Cannot contain special characters.
required	true
type	String
example	`"username": "alice"`

password	
description	The user's password. Passwords must have at least eight characters.
required	true

type	String
example	`"password": "P@ssw0rd!"`

groups

description	Groups to which the user belongs.
required	false
type	Array
example	`"groups": ["dev", "ops"]`

disabled

description	The state of the user's account.
required	false
type	Boolean
default	false
example	`"disabled": false`

User example

The following examples are in `yml` and `wrapped-json` formats for use with `sensuctl create`.

Groups

A group is a set of users within Sensu. Groups can be assigned one or more roles and inherit all permissions from each role assigned to them. Users can be assigned to one or more groups. Groups are not a resource type within Sensu; you can create and manage groups only within user definitions.

Default group

Sensu includes a default `cluster-admins` group that contains the default `admin` user and a `system:agents` group used internally by Sensu agents.

Assigning a user to a group

Groups are created and managed within user definitions. You can use sensuctl to add users to groups.

To add a user to a group:

```
sensuctl user add-group USERNAME GROUP
```

To set the groups for a user:

```
sensuctl user set-groups USERNAME GROUP1[,GROUP2, ...[,GROUPN]]
```

Removing a user from a group

You can use sensuctl to remove users from groups.

To remove a user from a group:

```
sensuctl user remove-group USERNAME GROUP
```

To remove a user from all groups:

```
sensuctl user remove-groups USERNAME
```

Roles and cluster roles

A role is a set of permissions controlling access to Sensu resources. **Roles** specify permissions for resources within a namespace while **cluster roles** can include permissions for cluster-wide resources. You can use role bindings to assign roles to user and groups. To avoid re-creating commonly used roles in each namespace, create a cluster role and use a role binding (not a cluster role binding) to restrict permissions within a specific namespace.

To create and manage roles cluster-wide, configure sensuctl as the default `admin` user or create a cluster role with `roles` permissions. To create and manage roles within a namespace, create a role with `roles` permissions within that namespace.

Cluster roles

Cluster roles can specify access permissions for cluster-wide resources like users and namespaces as well as namespaced resources like checks and handlers. They can also be used to grant access to namespaced resources across all namespaces (needed to run `sensuctl check list --all-namespaces`, for example) when used in conjunction with cluster role bindings. Cluster roles use the same specification as roles and can be managed using the same sensuctl commands with `cluster-role` substituted for `role`.

To create and manage cluster roles, configure sensuctl as the default `admin` user or create a cluster role with permissions for `clusterroles`.

Default roles

Every Sensu backend includes:

Role name	Type	Description
`clu`	`Cl`	Full access to all resource types across namespaces, including access to cluster-

`cluster-admin`	`ClusterRole`	wide resource types.
`admin`	`ClusterRole`	Full access to all resource types. You can apply this cluster role within a namespace by using a role binding (not a cluster role binding).
`edit`	`ClusterRole`	Read and write access to most resources with the exception of roles and role bindings. You can apply this cluster role within a namespace by using a role binding (not a cluster role binding).
`view`	`ClusterRole`	Read-only permission to most resource types with the exception of roles and role bindings. You can apply this cluster role within a namespace by using a role binding (not a cluster role binding).
`system:agent`	`ClusterRole`	Used internally by Sensu agents. You can configure an agent's user credentials using the `user` and `password` agent configuration flags.

Viewing roles

You can use sensuctl to see a list of roles within Sensu:

```
sensuctl role list
```

To see the permissions and scope for a specific role:

```
sensuctl role info admin
```

To view cluster roles, use the `cluster-role` command:

```
sensuctl cluster-role list
```

Creating a role

You can use sensuctl to create a role. For example, the following command creates an admin role restricted to the production namespace.

```
sensuctl role create prod-admin --verb get,list,create,update,delete --resource * --
namespace production
```

Once you've create the role, create a role binding (or cluster role binding) to assign the role to users and groups. For example, to assign the `prod-admin` role created above to the `oncall` group, create the following role binding.

```
sensuctl role-binding create prod-admin-oncall --role=prod-admin --group=oncall
```

Creating a cluster-wide role

You can use sensuctl to create a cluster role. For example, the following command creates a global event reader role that can read only events across all namespaces within Sensu.

```
sensuctl cluster-role create global-event-reader --verb get,list --resource events
```

Managing roles

You can use sensuctl to view, create, edit, and delete roles. To use any of these commands with cluster roles, substitute the `cluster-role` command for the `role` command.

To edit a role:

```
sensuctl edit roles [ROLE-NAME] [flags]
```

To delete a role:

```
sensuctl role delete [ROLE-NAME]
```

To get help managing roles with sensuctl:

```
sensuctl role help
```

Role and cluster role specification

Role attributes

name	
description	Name of the role
required	true
type	String
example	`"name": "admin"`

namespace	
description	Namespace the role is restricted to. This attribute is not available for cluster roles.
required	false

type	String
example	`"namespace": "production"`

rules	
description	The rulesets that a role applies.
required	true
type	Array
example	`"rules": [ { "verbs": ["get", "list"], "resources": ["checks"], "resource_names": [""] } ]`

Rule attributes

A rule is an explicit statement which grants a particular permission to a resource.

verbs	
description	The permissions to be applied by the rule: `get`, `list`, `create`, `update`, or `delete`.
required	true
type	Array
example	`"verbs": ["get", "list"]`

resources

description	The type of resource that the rule has permission to access. Roles can only access namespaced resource types while cluster roles can access namespaced and cluster-wide resource types. See resource types for available types.
required	true
type	Array
example	`"resources": ["checks"]`

resource_names

description	Specific resource names that the rule has permission to access. Resource name permissions are only available for `get`, `delete`, and `update` verbs.

required	false
type	Array
example	`"resource_names": ["check-cpu"]`

Role example

The following examples are in `yml` and `wrapped-json` formats for use with `sensuctl create`.

Cluster role example

The following examples are in `yml` and `wrapped-json` formats for use with `sensuctl create`.

Role bindings and cluster role bindings

A **role binding** assigns a **role** or **cluster role** to users and groups within a namespace. A **cluster role binding** assigns a **cluster role** to users and groups across namespaces and resource types.

To create and manage role bindings within a namespace, create a role with `rolebindings` permissions within that namespace, and log in by configuring sensuctl.

Cluster role bindings

Cluster role bindings can assign a cluster role to users and groups. Cluster role bindings use the same specification as role bindings and can be managed using the same sensuctl commands with `cluster-role-binding` substituted for `role-binding`.

To create and manage cluster role bindings, configure sensuctl as the default `admin` user or create a cluster role with permissions for `clusterrolebindings`.

Viewing role bindings

You can use sensuctl to see a list of role bindings within Sensu:

```
sensuctl role-binding list
```

To see the details for a specific role binding:

```
sensuctl role-binding info [BINDING-NAME]
```

To see a list of cluster role bindings:

```
sensuctl cluster-role-binding list
```

Creating a role binding

You can use sensuctl to see a create a role binding that assigns a role:

```
sensuctl role-binding create [NAME] --role=NAME [--user=username] [--
group=groupname]
```

Or a role binding that assigns a cluster role:

```
sensuctl role-binding create [NAME] --cluster-role=NAME [--user=username] [--
group=groupname]
```

To create a cluster role binding:

```
sensuctl cluster-role-binding create [NAME] --cluster-role=NAME [--user=username] [-
-group=groupname]
```

Managing role bindings

You can use sensuctl to see a list, create, and delete role bindings and cluster role bindings. To use any of these commands with cluster roles, substitute the `cluster-role-binding` command for the `role-binding` command.

To delete a role binding:

```
sensuctl role-binding delete [ROLE-NAME]
```

To get help managing role bindings with sensuctl:

```
sensuctl role-binding help
```

Role binding and cluster role binding specification

roleRef	
description	References a role in the current namespace or a cluster role.
required	true
type	Hash

example	<pre>"roleRef": {
	  "type": "Role",
	  "name": "event-reader"
	}</pre>

subjects	
description	The users or groups being assigned.

required	true
type	Array

example	<pre>"subjects": [
	  {
	  "type": "User",
	  "name": "alice"
	  }
	]</pre>

`roleRef` *specification*

type	
description	`Role` for a role binding or `ClusterRole` for a cluster role binding.
required	true
type	String
example	<pre>"type": "Role"</pre>

name	
description	The name of the role or cluster role being assigned.
required	true
type	String
example	<pre>"name": "event-reader"</pre>

`subjects` *specification*

type	
description	`User` for assigning a user or `Group` for assigning a group.
required	true
type	String
example	`"type": "User"`

name	
description	Username or group name.
required	true
type	String
example	`"name": "alice"`

Role binding example

The following examples are in `yml` and `wrapped-json` formats for use with `sensuctl create`.

Cluster role binding example

The following examples are in `yml` and `wrapped-json` formats for use with `sensuctl create`.

Role and role binding examples

The following role and role binding give a `dev` group access to create and manage Sensu workflows within the `default` namespace.

```
{
  "type": "Role",
  "api_version": "core/v2",
  "metadata": {
    "name": "workflow-creator",
    "namespace": "default"
  },
  "spec": {
    "rules": [
      {
        "resource_names": [],
        "resources": ["checks", "hooks", "filters", "events", "filters", "mutators",
"handlers"],
        "verbs": ["get", "list", "create", "update", "delete"]
      }
    ]
  }
}
{
  "type": "RoleBinding",
  "api_version": "core/v2",
  "metadata": {
    "name": "dev-binding",
    "namespace": "default"
  },
  "spec": {
    "role_ref": {
      "name": "workflow-creator",
      "type": "Role"
    },
    "subjects": [
      {
        "name": "dev",
        "type": "Group"
      }
    ]
```

```
  }
}
```

Example workflows

Assigning user permissions within a namespace
Assigning group permissions within a namespace
Assigning group permissions across all namespaces

Assigning user permissions within a namespace

To assign permissions to a user:

1. Create the user.
2. Create a role.
3. Create a role binding to assign the role to the user.

For example, the following configuration creates a user `alice`, a role `default-admin`, and a role binding `alice-default-admin`, giving `alice` full permissions for namespaced resource types within the `default` namespace. You can add these resources to Sensu using `sensuctl create`.

```
{
  "type": "User",
  "api_version": "core/v2",
  "metadata": {},
  "spec": {
    "disabled": false,
    "username": "alice"
  }
}
{
  "type": "Role",
  "api_version": "core/v2",
  "metadata": {
    "name": "default-admin",
    "namespace": "default"
  },
  "spec": {
```

```
    "rules": [
      {
        "resource_names": [],
        "resources": [
          "assets", "checks", "entities", "events", "filters", "handlers",
          "hooks", "mutators", "rolebindings", "roles", "silenced"
        ],
        "verbs": ["get", "list", "create", "update", "delete"]
      }
    ]
  }
}
{
  "type": "RoleBinding",
  "api_version": "core/v2",
  "metadata": {
    "name": "alice-default-admin",
    "namespace": "default"
  },
  "spec": {
    "role_ref": {
      "name": "default-admin",
      "type": "Role"
    },
    "subjects": [
      {
        "name": "alice",
        "type": "User"
      }
    ]
  }
}
```

Assigning group permissions within a namespace

To assign permissions to group of users:

1. Create at least once user assigned to a group.
2. Create a role.
3. Create a role binding to assign the role to the group.

For example, the following configuration creates a user `alice` assigned to the group `ops`, a role `default-admin`, and a role binding `ops-default-admin`, giving the `ops` group full permissions for namespaced resource types within the `default` namespace. You can add these resources to Sensu using `sensuctl create`.

```
{
  "type": "User",
  "api_version": "core/v2",
  "metadata": {},
  "spec": {
    "disabled": false,
    "username": "alice"
  }
}
{
  "type": "Role",
  "api_version": "core/v2",
  "metadata": {
    "name": "default-admin",
    "namespace": "default"
  },
  "spec": {
    "rules": [
      {
        "resource_names": [],
        "resources": [
          "assets", "checks", "entities", "events", "filters", "handlers",
          "hooks", "mutators", "rolebindings", "roles", "silenced"
        ],
        "verbs": ["get", "list", "create", "update", "delete"]
      }
    ]
  }
}
{
  "type": "RoleBinding",
  "api_version": "core/v2",
  "metadata": {
    "name": "ops-default-admin",
    "namespace": "default"
  },
```

```
  "spec": {
    "role_ref": {
      "name": "default-admin",
      "type": "Role"
    },
    "subjects": [
      {
        "name": "ops",
        "type": "Group"
      }
    ]
  }
}
```

PRO TIP: To avoid re-creating commonly used roles in each namespace, create a cluster role and use a role binding to restrict permissions within a specific namespace.

Assigning group permissions across all namespaces

To assign cluster-wide permissions to group of users:

1. Create at least once user assigned to a group.
2. Create a cluster role.
3. Create a cluster role binding) to assign the role to the group.

For example, the following configuration creates a user `alice` assigned to the group `ops`, a cluster role `default-admin`, and a cluster role binding `ops-default-admin`, giving the `ops` group full permissions for namespaced resource types and cluster-wide resource types across all namespaces. You can add these resources to Sensu using `sensuctl create`.

```
{
  "type": "User",
  "api_version": "core/v2",
  "metadata": {},
  "spec": {
    "disabled": false,
    "username": "alice",
    "groups": ["ops"]
  }
```

```
}
{
  "type": "ClusterRole",
  "api_version": "core/v2",
  "metadata": {
    "name": "default-admin"
  },
  "spec": {
    "rules": [
      {
        "resource_names": [],
        "resources": [
          "assets", "checks", "entities", "events", "filters", "handlers",
          "hooks", "mutators", "rolebindings", "roles", "silenced",
          "cluster", "clusterrolebindings", "clusterroles",
          "namespaces", "users", "authproviders", "license"
        ],
        "verbs": ["get", "list", "create", "update", "delete"]

      }
    ]
  }
}
{
  "type": "ClusterRoleBinding",
  "api_version": "core/v2",
  "metadata": {
    "name": "ops-default-admin"
  },
  "spec": {
    "role_ref": {
      "name": "default-admin",
      "type": "ClusterRole"
    },
    "subjects": [
      {
        "name": "ops",
        "type": "Group"
      }
    ]
  }
}
```

Sensu query expressions

Contents

How do Sensu query expressions work?

Sensu query expressions (**SQE**) are based on JavaScript expressions, and provide additional functionalities for Sensu usage (like nested parameters and custom functions) so Sensu resources can be directly evaluated. SQE should always return **true** or **false**.

Syntax quick reference

operator	description
`===` / `!==`	Identity operator / Nonidentity operator
`==` / `!=`	Equality operator / Inequality operator
`&&` / `||`	Logical AND / Logical OR
`<` / `>`	Less than / Greater than
`<=` / `>=`	Less than or equal to / Greater than or equal to

Sensu query expressions specification

Sensu query expressions are valid ECMAScript 5 (JavaScript) expressions that return **true** or **false**. Other values are not allowed. If other values are returned, an error is logged and the filter evaluates to false.

Custom functions

`hour`: returns the hour, in UTC and in the 24-hour time notation, of a UNIX Epoch time.

```
// event.timestamp equals to 1520275913, which is Monday, March 5, 2018 6:51:53 PM UTC
// The following expression returns true
hour(event.timestamp) >= 17
```

`weekday`: returns a number representing the day of the week, where Sunday equals `0`, of a UNIX Epoch time.

```
// event.timestamp equals to 1520275913, which is Monday, March 5, 2018 6:51:53 PM UTC
// The following expression returns false
weekday(event.timestamp) == 0
```

Sensu query expressions examples

Evaluating an event attribute

The following example returns true if the event's entity contains a custom attribute named `namespace` that is equal to `production`.

```
event.entity.namespace == 'production'
```

Evaluating an array

To evaluate an attribute that contains an array of elements, use the `.indexOf` method. The following example returns true if an entity includes the subscription `system`.

```
entity.subscriptions.indexOf('system') >= 0
```

Evaluating the day of the week

The following example returns true if the event occurred on a weekday.

```
weekday(event.timestamp) >= 1 && weekday(event.timestamp) <= 5
```

Evaluating office hours

The following example returns true if the event occurred between 9 AM and 5 PMUTC.

```
hour(event.timestamp) >= 9 && hour(event.timestamp) <= 17
```

Silencing

Contents

How does silencing work?

Silences are created on an ad-hoc basis via `sensuctl`. When silencing entries are successfully created, they are assigned a `name` in the format `$SUBSCRIPTION:$CHECK`, where `$SUBSCRIPTION` is the name of a Sensu entity subscription and `$CHECK` is the name of a Sensu check. Silences can be used to silence checks on specific entities by taking advantage of per-entity subscriptions, for example: `entity:$ENTITY_NAME`. When the check name and/or subscription described in a silencing entry match an event and a handler use the `not_silenced` built-in filter, this handler will not be executed.

These silences are persisted in the Sensu data store. When the Sensu server processes subsequent check results, matching silences are retrieved from the store. If one or more matching entries exist, the event is updated with a list of silenced entry names. The presence of silences indicates that the event is silenced.

When creating a silencing entry, a combination of check and subscription can be specified, but only one or the other is strictly required.

For example, when a silencing entry is created specifying only a check, its name will contain an asterisk (or wildcard) in the `$SUBSCRIPTION` position. This indicates that any event with a matching check name will be marked as silenced, regardless of the originating entities' subscriptions.

Conversely, a silencing entry which specifies only a subscription will have a name with an asterisk in the `$CHECK` position. This indicates that any event where the originating entities' subscriptions match the subscription specified in the entry will be marked as silenced, regardless of the check name.

Silencing specification

Silenced entry names

Silences must contain either a subscription or check name, and are identified by the combination of `$SUBSCRIPTION:$CHECK`. If a check or subscription is not provided, it will be substituted with a wildcard (asterisk): `$SUBSCRIPTION:*` or `*:$CHECK`.

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Silences should always be of type `Silenced`.
required	Required for silencing entry definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "Silenced"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For silences in this version of Sensu, this attribute should always be `core/v2`.
required	Required for silencing entry definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String

example	`"api_version": "core/v2"`

metadata

description	Top-level collection of metadata about the silencing entry, including the `name` and `namespace` as well as custom `labels` and `annotations`. The `metadata` map is always at the top level of the silencing entry definition. This means that in `wrapped-json` and `yaml` formats, the `metadata` scope occurs outside the `spec` scope. See the metadata attributes reference for details.
required	Required for silencing entry definitions in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs

example

```
"metadata": {
  "name": "appserver:mysql_status",
  "namespace": "default",
  "labels": {
    "region": "us-west-1"
  }
```

spec

description	Top-level map that includes the silencing entry spec attributes.
required	Required for silences in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	`"spec": { "expire": -1, "expire_on_resolve": false, "creator": "admin", "reason": null, "check": null, "subscription": "entity:i-424242", "begin": 1542671205 }`

Spec attributes

check	
description	The name of the check the entry should match
required	true, unless `subscription` is provided
type	String
example	`"check": "haproxy_status"`

subscription	
description	The name of the subscription the entry should match
required	true, unless `check` is provided

type	String
example	`"subscription": "entity:i-424242"`

begin

description	Time at which silence entry goes into effect, in epoch.
required	false
type	Integer
example	`"begin": 1512512023`

expire

description	Number of seconds until this entry should be deleted.
required	false
type	Integer
default	-1
example	`"expire": 3600`

expire_on_resolve

description	If the entry should be deleted when a check begins return OK status (resolves).

required	false
type	Boolean
default	false
example	`"expire_on_resolve": true`

creator

description	Person/application/entity responsible for creating the entry.
required	false
type	String
default	null
example	`"creator": "Application Deploy Tool 5.0"`

reason

description	Explanation for the creation of this entry.
required	false
type	String
default	null
example	`"reason": "rebooting the world"`

Metadata attributes

name

description	Silencing identifier generated from the combination of a subscription name and check name.
required	false - This value cannot be modified.
type	String
example	`"name": "appserver:mysql_status"`

namespace

description	The Sensu RBAC namespace that this silencing entry belongs to.
required	false
type	String
default	`default`
example	`"namespace": "production"`

labels

description	Custom attributes you can use to create meaningful collections that can be selected with API filtering and sensuctl filtering. Overusing labels can impact Sensu's internal performance, so we recommend moving complex, non-identifying metadata to annotations.

description	
required	false
type	Map of key-value pairs. Keys can contain only letters, numbers, and underscores, but must start with a letter. Values can be any valid UTF-8 string.
default	`null`

example	<pre>"labels": {
	  "environment": "development",
	  "region": "us-west-2"
	}</pre>

annotations

description	Non-identifying metadata that's meaningful to people interacting with Sensu. In contrast to labels, annotations cannot be used in API filtering or sensuctl filtering and do not impact Sensu's internal performance.
required	false
type	Map of key-value pairs. Keys and values can be any valid UTF-8 string.
default	

default	`null`

example

```
 "annotations": {
  "managed-by": "ops",
  "playbook": "www.example.url"
}
```

Examples

Silence all checks on a specific entity

Assume a Sensu entity `i-424242` which we wish to silence any alerts on. We'll do this by taking advantage of per-entity subscriptions:

Silence a specific check on a specific entity

Following on the previous example, silence a check named `check_ntp` on entity `i-424242`, ensuring the entry is deleted once the underlying issue has been resolved:

The optional `expire_on_resolve` attribute used here indicates that when the server processes a matching check from the specified entity with status OK, this silencing entry will automatically be removed.

When used in combination with other attributes (like `creator` and `reason`), this provides Sensu operators with a method of acknowledging that they have received an alert, suppressing additional notifications, and automatically clearing the silencing entry when the check status returns to normal.

Silence all checks on entities with a specific subscription

In this case, we'll completely silence any entities subscribed to `appserver`. Just as in the example of silencing all checks on a specific entity, we'll create a silencing entry specifying only the `appserver` subscription:

Silence a specific check on entities with a specific subscription

Assume a check `mysql_status` which we wish to silence, running on Sensu entities with the subscription `appserver`:

Silence a specific check on every entity

To silence the check `mysql_status` on every entity in our infrastructure, regardless of subscriptions, we only need to provide the check name:

Deleting silences

To delete a silencing entry, you will need to provide its name. Subscription only silencing entry names will be similar to this:

Check only silencing entry names will be similar to this:

Tessen

Contents

Tessen is the Sensu call-home service. Enabled by default on Sensu backends, Tessen sends anonymized data about Sensu instances to Sensu Inc., including the version, cluster size, number of events processed, and number of resources created (like checks and handlers). We rely on this data to understand how Sensu is being used and make informed decisions about product improvements. Read the blog post to learn more about Tessen.

All data submissions are logged for complete transparency at the `info` log level and transmitted over HTTPS. See the troubleshooting guide to set the Sensu backend log level and view logs.

Configuring Tessen

You can use the Tessen API and sensuctl to view and manage Tessen configuration. Tessen is enabled by default on Sensu backends and required for licensed Sensu instances. To manage Tessen configuration using sensuctl, configure sensuctl as the default `admin` user.

To see the status of Tessen:

```
sensuctl tessen info
```

To opt out of Tessen:

```
sensuctl tessen opt-out
```

NOTE: Licensed Sensu instances override Tessen configuration to opt in at runtime.

You can use the `--skip-confirm` flag to skip the confirmation step.

```
sensuctl tessen opt-out --skip-confirm
```

To opt in to Tessen:

```
sensuctl tessen opt-in
```

Tessen specification

Top-level attributes

type	
description	Top-level attribute specifying the `sensuctl create` resource type. Tessen configuration should always be of type `TessenConfig`.
required	Required for Tessen configuration in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"type": "TessenConfig"`

api_version	
description	Top-level attribute specifying the Sensu API group and version. For Tessen configuration in this version of Sensu, this attribute should always be `core/v2`.

required	Required for Tessen configuration in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	String
example	`"api_version": "core/v2"`

spec	
description	Top-level map that includes Tessen configuration spec attributes.
required	Required for Tessen configuration in `wrapped-json` or `yaml` format for use with `sensuctl create`.
type	Map of key-value pairs
example	`"spec": { "opt_out": false }`

Spec attributes

opt_out	
description	Set to `false` to enable Tessen; set to `true` to opt out of Tessen. Licensed Sensu instances override the `opt_out` attribute to `false` at runtime.
required	true
default	`false`

type	Boolean
example	`opt_out": false`

Tessen configuration example

The following example is in `wrapped-json` format for use with `sensuctl create`. To manage Tessen using the Tessen API, use non-wrapped `json` format as shown in the API docs.

Tessen payload example

If opted in to Tessen, there are various metrics that get sent back to the Tessen service. In the example payload below, you can see that the number of check hooks is sent back to the Tessen service.

```
{
    "component": "tessend",
    "level": "debug",
    "metric_name": "hook_count",
    "metric_value": 2,
    "msg": "collected a metric for tessen",
    "time": "2019-09-16T09:02:11Z"
}
```

There are other metrics sent on, such as the number of handlers:

```
{
    "component": "tessend",
    "level": "debug",
    "metric_name": "handler_count",
    "metric_value": 10,
```

```
    "msg": "collected a metric for tessen",
    "time": "2019-09-16T09:02:06Z"
}
```

Or the number of filters:

```
{
    "component": "tessend",
    "level": "debug",
    "metric_name": "filter_count",
    "metric_value": 4,
    "msg": "collected a metric for tessen",
    "time": "2019-09-16T09:02:01Z"
}
```

If opted into Tessen, all of the metrics and payloads sent are avaiable to view in the logs, which you can view via `journalctl -u sensu-backend.service`. If you'd like to view the events on-disk, please see the guide on configuring systemd to log to disk.

Tokens

Contents

Tokens are placeholders included in a check definition that the agent replaces with entity information before executing the check. You can use tokens to fine-tune check attributes (like alert thresholds) on a per-entity level while re-using the check definition.

How do tokens work?

When a check is scheduled to be executed by an agent, it first goes through a token substitution step. The agent replaces any tokens with matching attributes from the entity definition, and then the check is executed. Invalid templates or unmatched tokens will return an error, which is logged and sent to the Sensu backend message transport. Checks with token matching errors will not be executed.

Managing entity labels

You can use token substitution with any defined entity attributes, including custom labels. See the entity reference for information on managing entity labels for proxy entities and agent entities.

Sensu token specification

Sensu Go uses the Go template package to implement token substitution. Sensu Go token substitution uses double curly braces around the token, and a dot before the attribute to be substituted, such as: `{{ .system.hostname }}`.

Token substitution syntax

Tokens are invoked by wrapping references to entity attributes and labels with double curly braces,

such as `{{ .name }}` to substitute an entity's name. Nested Sensu entity attributes can be accessed via dot notation (ex: `system.arch`).

`{{ .name }}` would be replaced with the entity `name` attribute
`{{ .labels.url }}` would be replaced with a custom label called `url`
`{{ .labels.disk_warning }}` would be replaced with a custom label called `disk_warning`
`{{ index .labels "disk_warning" }}` would be replaced with a custom label called `disk_warning`
`{{ index .labels "cpu.threshold" }}` would be replaced with a custom label called `cpu.threshold`

NOTE: when an annotation or label name has a dot (ex: `cpu.threshold`), the template index function syntax must be used to ensure correct processing, as the dot notation is also used for object nesting.

Token substitution default values

In the event that an attribute is not provided by the entity, a token's default value will be substituted. Token default values are separated by a pipe character and the word `default` (`| default`), and can be used to provide a "fallback value" for entities that are missing a specified token attribute.

`{{.labels.url | default "https://sensu.io"}}` would be replaced with a custom label called `url`. If no such attribute called `url` is included in the entity definition, the default (or fallback) value of `https://sensu.io` will be used to substitute the token.

Unmatched tokens

If a token is unmatched during check preparation, the agent check handler will return an error, and the check will not be executed. Unmatched token errors will look similar to the following:

```
error: unmatched token: template: :1:22: executing "" at <.system.hostname>: map has no entry for key "System"
```

Check config token errors will be logged by the agent, and sent to Sensu backend message transport as a check failure.

Examples

Token substitution for check thresholds

In this example check configuration, the `check-disk-usage.go` command accepts `-w` (warning) and `-c` (critical) arguments to indicate the thresholds (as percentages) for creating warning or critical events. If no token substitutions are provided by an entity configuration, Sensu will use default values to create a warning event at 80% disk capacity (i.e. `{{ .labels.disk_warning | default 80 }}`), and a critical event at 90% capacity (i.e. `{{ .labels.disk_critical | default 90 }}`).

The following example entity would provide the necessary attributes to override the `.labels.disk_warning` and `labels.disk_critical` tokens declared above.

License management

Contents

Quick links

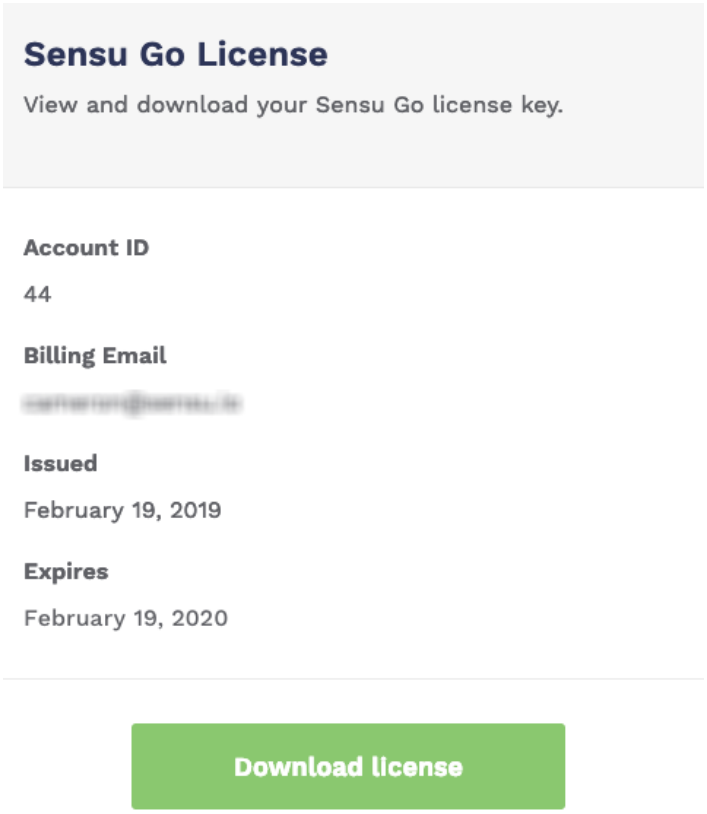
Log in to your Sensu account
Configure authentication providers
Discover enterprise assets
Guide to using assets
Contact Sensu support
Contact Sensu sales

Activating your license

If you haven't already, install the backend, agent, and sensuctl and configure sensuctl.

Log in to your Sensu account at account.sensu.io and download your license file using the "Download license" link.

Sensu account: Download Sensu license.



With the license file downloaded, you can activate your license using sensuctl or the license API.

To activate your license using sensuctl:

```
sensuctl create --file sensu_license.json
```

You can use sensuctl to view your license details at any time.

```
# Active license
sensuctl license info
=== Training Team - Sensu
Account Name: Training Team - Sensu
Account ID:   123
Plan:         managed
Version:      1
Features:     all
EntityLimit:  0
Issuer:       Sensu, Inc.
Issued:       2019-02-15 15:01:44 -0500 -0500
Valid:        true
```

```
Valid Until:  2019-03-15 00:00:00 -0800 -0800

# No license found
sensuctl license info
Error: not found
```

Entity limit

Your license includes the entity limit tied to your Sensu licensing package.(An entity limit of `0` allows unlimited entities.)Both agent and proxy entities count towards the overall entity limit.Contact us to upgrade your license.

To see your current entity count, use any `/api/core` or `/api/enterprise` API request. For example:

```
curl http://127.0.0.1:8080/api/core/v2/namespaces/default/entities -v -H
"Authorization: Bearer $SENSU_TOKEN"
```

You should see the current entity count and limit as response headers.

```
HTTP/1.1 200 OK
Content-Type: application/json
Sensu-Entity-Count: 4
Sensu-Entity-Limit: 0
```

License expiration

To see your license expiration date, log in to your Sensu account at account.sensu.io.

If your license is within 30 days of expiration, Sensu issues regular warnings in the Sensu backend logs.If your license expires, you will no longer have access to licensed-tier features.

Learn Sensu Go

Contents

In this tutorial, we'll download the Sensu sandbox and create a monitoring workflow with Sensu.

Set up the sandbox

1. Install Vagrant and VirtualBox

Download Vagrant
Download VirtualBox

2. Download the sandbox

Download from GitHub or clone the repository:

```
git clone https://github.com/sensu/sandbox && cd sandbox/sensu-go
```

3. Start Vagrant

```
ENABLE_SENSU_SANDBOX_PORT_FORWARDING=1 vagrant up
```

The Learn Sensu sandbox is a CentOS 7 virtual machine pre-installed with Sensu, InfluxDB, and Grafana. It is intended for use as a learning tool; we do not recommend this tool as part of a production installation. To install Sensu in production, please see the installation guide. The sandbox startup process

takes about five minutes.

NOTE: The sandbox configures VirtualBox to forward TCP ports 3002 and 4002 from the sandbox virtual machine to the localhost to make it easier for you to interact with the sandbox dashboards. Dashboard links provided in this tutorial assume port forwarding from the VM to the host is active.

4. SSH into the sandbox

Thanks for waiting! To start using the sandbox:

```
vagrant ssh
```

You should now have shell access to the sandbox and should be greeted with this prompt:

```
[sensu_go_sandbox]$
```

To exit out of the sandbox, use `CTRL` + `D`. To erase and restart the sandbox, use `vagrant destroy` then `vagrant up`. To reset the sandbox's Sensu configuration to the beginning of this tutorial, use `vagrant provision`.

NOTE: The sandbox pre-configures sensuctl with the Sensu Go admin user, so you won't have to configure sensuctl each time you spin up the sandbox to try out a new feature. Before installing sensuctl outside of the sandbox, read the first time setup reference to learn how to configure sensuctl.

Lesson #1: Create a Sensu monitoring event

First off, we'll make sure everything is working correctly by using the sensuctl command line tool. We can use sensuctl to see that our Sensu backend instance has a single namespace, `default`, and two users: the default admin user and the user created for use by a Sensu agent.

```
sensuctl namespace list
  Name
─────────
 default
```

```
sensuctl user list
 Username    Groups     Enabled
─────────── ──────────────── ──────────
admin    cluster-admins  true
agent    system:agents   true
```

Sensu keeps track of monitored components as entities. Let's start by using sensuctl to make sure Sensu hasn't connected to any entities yet:

```
sensuctl entity list
 ID  Class  OS  Subscriptions  Last Seen
──── ─────── ──── ──────────────── ───────────
```

Now we can go ahead and start the Sensu agent to start monitoring the sandbox:

```
sudo systemctl start sensu-agent
```

We can use sensuctl to see that Sensu is now monitoring the sandbox entity:

```
sensuctl entity list
      ID        Class    OS        Subscriptions              Last Seen
──────────────────── ─────── ─────── ───────────────────────────
──────────────────────────────────
sensu-go-sandbox  agent  linux  entity:sensu-go-sandbox  2019-01-24 21:29:06 +0000 UTC
```

Sensu agents send keepalive events to help you monitor their status. We can use sensuctl to see the keepalive events generated by the sandbox entity:

```
sensuctl event list
     Entity       Check                       Output                         Status  Silenced         Timestamp
──────────────────── ────────────
──────────────────────────────────────────────────────────────────────────────────
──────── ─────────── ──────────────────────────────────
sensu-go-sandbox  keepalive  Keepalive last sent from sensu-go-sandbox at 2019-01-24 21:29:06 +0000 UTC      0   false
```

```
2019-01-24 21:29:06 +0000 UTC
```

The sensu-go-sandbox keepalive event has status 0, meaning the agent is in an OK state and able to communicate with the Sensu backend.

We can also see the event and the entity in the Sensu dashboard. Log in to the dashboard as the default admin user: username `admin` and password `P@ssw0rd!`.

Lesson #2: Pipe keepalive events into Slack

Now that we know the sandbox is working properly, let's get to the fun stuff: creating a workflow. In this lesson, we'll create a workflow that sends keepalive alerts to Slack. (If you'd rather not create a Slack account, you can skip ahead to lesson 3.)

1. Get your Slack webhook URL

If you're already an admin of a Slack, visit `https://YOUR WORKSPACE NAME HERE.slack.com/services/new/incoming-webhook` and follow the steps to add the Incoming WebHooks integration, choose a channel, and save the settings. (If you're not yet a Slack admin, start here to create a new workspace.) After saving, you'll see your webhook URL under Integration Settings.

2. Register the Sensu Slack handler asset

Assets are shareable, reusable packages that make it easy to deploy Sensu plugins. In this lesson, we'll use the Sensu Slack handler asset to power a `slack` handler.

Use sensuctl to register the Sensu Slack handler asset.

```
sensuctl asset create sensu-slack-handler --url
"https://assets.bonsai.sensu.io/3149de09525d5e042a83edbb6eb46152b02b5a65/sensu-
slack-handler_1.0.3_linux_amd64.tar.gz" --sha512
"68720865127fbc7c2fe16ca4d7bbf2a187a2df703f4b4acae1c93e8a66556e9079e1270521999b58714
73e6c851f51b34097c54fdb8d18eedb7064df9019adc8"
```

You should see a confirmation message from sensuctl.

```
Created
```

```
```

The `sensu-slack-handler` asset is now ready to use with Sensu. You can use sensuctl to see the complete asset definition.

```
sensuctl asset info sensu-slack-handler --format yaml
```

PRO TIP: You can use resources definition to create and update resources (like assets) using `sensuctl create --file filename.yaml`. See the sensuctl docs for more information.

3. Create a Sensu Slack handler

Open the `sensu-slack-handler.json` handler definition provided with the sandbox, and edit the definition to include your Slack channel, webhook URL, and the `sensu-slack-handler` asset.

```
"env_vars": [
  "KEEPALIVE_SLACK_WEBHOOK=https://hooks.slack.com/services/AAA/BBB/CCC",
  "KEEPALIVE_SLACK_CHANNEL=#monitoring"
],
"runtime_assets": ["sensu-slack-handler"]
```

Now we can create a Slack handler named `keepalive` to process keepalive events.

```
sensuctl create --file sensu-slack-handler.json
```

You can use sensuctl to see available event handlers.

```
sensuctl handler list
```

You should see the `keepalive` handler.

```
  Name      Type   Timeout   Filters   Mutator                    Execute
Environment Variables                    Assets
 ────────── ────── ───────── ───────── ─────────
```

```
 keepalive   pipe       0                  RUN:    /usr/local/bin/sensu-slack-handler -c "${KEEPALIVE_SLACK_CHANNEL}" -
w "${KEEPALIVE_SLACK_WEBHOOK}"
KEEPALIVE_SLACK_WEBHOOK=https://hooks.slack.com/services/XXX,KEEPALIVE_SLACK_CHANNEL=#monito
ring   sensu-slack-handler
```

You should now see monitoring events in Slack indicating that the sandbox entity is in an OK state.

4. Filter keepalive events

Now that we're generating Slack alerts, let's reduce the potential for alert fatigue by adding a filter that only sends only warning, critical, and resolution alerts to Slack.

To accomplish this, we'll interactively add the built-in is_incident filter to the keepalive handler so we'll only receive alerts when the sandbox entity fails to send a keepalive event.

```
sensuctl handler update keepalive
```

When prompted for the filters selection, enter `is_incident` to apply the incidents filter.

```
? Filters: [? for help] is_incident
```

We can confirm that the keepalive handler now includes the incidents filter using sensuctl:

```
sensuctl handler info keepalive
=== keepalive
Name:                       keepalive
Type:                       pipe
Timeout:                    0
Filters:                    is_incident
```

With the filter in place we should no longer be receiving messages in the Slack channel every time the sandbox entity sends a keepalive event.

Let's stop the agent and confirm that we receive the expected warning message.

```
sudo systemctl stop sensu-agent
```

You should see the warning message in Slack after a couple of minutes, informing you that the sandbox entity is no longer sending keepalive events.

Before we go, start the agent to resolve the warning.

```
sudo systemctl start sensu-agent
```

Lesson #3: Automate event production with the Sensu agent

So far we've used the Sensu agent's built-in keepalive feature, but in this lesson, we'll create a check that automatically produces workload-related events. Instead of sending alerts to Slack, we'll store event data with InfluxDB and visualize it with Grafana.

1. Make sure the Sensu agent is running

```
sudo systemctl restart sensu-agent
```

2. Install Nginx and the Sensu HTTP Plugin

We'll use the Sensu HTTP Plugin to monitor an Nginx server running on the sandbox.

First, install and start Nginx:

```
sudo yum install -y nginx && sudo systemctl start nginx
```

And make sure it's working with:

```
curl -I http://localhost:80

HTTP/1.1 200 OK
```

Then install the Sensu HTTP Plugin:

```
sudo sensu-install -p sensu-plugins-http
```

We'll be using the `metrics-curl.rb` plugin. We can test its output using:

```
/opt/sensu-plugins-ruby/embedded/bin/metrics-curl.rb -u "http://localhost"

...
sensu-go-sandbox.curl_timings.http_code 200 1535670975
```

3. Create an InfluxDB pipeline Now let's create the InfluxDB pipeline to store these metrics and visualize them with Grafana. To create a pipeline to send metric events to InfluxDB, start by registering the Sensu InfluxDB handler asset.

```
sensuctl asset create sensu-influxdb-handler --url
"https://assets.bonsai.sensu.io/b28f8719a48aa8ea80c603f97e402975a98cea47/sensu-
influxdb-handler_3.1.2_linux_amd64.tar.gz" --sha512
"612c6ff9928841090c4d23bf20aaf7558e4eed8977a848cf9e2899bb13a13e7540bac2b63e324f39d9b
1257bb479676bc155b24e21bf93c722b812b0f15cb3bd"
```

You should see a confirmation message from sensuctl.

```
Created
```

The `sensu-influxdb-handler` asset is now ready to use with Sensu. You can use sensuctl to see the complete asset definition.

```
sensuctl asset info sensu-influxdb-handler --format yaml
```

Open the `influx-handler.json` handler definition provided with the sandbox, and edit the `runtime_assets` attribute to include the `sensu-influxdb-handler` asset.

```
"runtime_assets": ["sensu-influxdb-handler"]
```

Now you can use sensuctl to create the `influx-db` handler.

```
sensuctl create --file influx-handler.json
```

We can use sensuctl to confirm that the handler has been created successfully.

```
sensuctl handler list
```

You should see the `influx-db` handler.(If you've completed lesson #2, you'll also see the `keepalive` handler.)

4. Create a check to monitor Nginx

Use the `curl_timings-check.json` file provided with the sandbox to create a service check that runs `metrics-curl.rb` every 10 seconds on all entities with the `entity:sensu-go-sandbox` subscription and sends events to the InfluxDB pipeline:

```
sensuctl create --file curl_timings-check.json

sensuctl check list
    Name                              Command                              Interval   Cron   Timeout   TTL       Subscriptions
Handlers   Assets   Hooks   Publish?   Stdin?     Metric Format      Metric Handlers
________________
______________________________________________________________________________________
___________ _______ __________ _____ ____________________________ ___________ _________ ________
___________ _________ _______________________ ___________________
```

```
curl_timings  /opt/sensu-plugins-ruby/embedded/bin/metrics-curl.rb -u "http://localhost"  10  0  0
entity:sensu-go-sandbox  true  false  graphite_plaintext  influx-db
```

This check defines a metrics handler and metric format. In Sensu Go metrics are a core element of the data model, so we can build pipelines to handle metrics separately from alerts. This allows us to customize our monitoring workflows to get better visibility and reduce alert fatigue.

After about 10 seconds, we can see the event produced by the entity:

```
sensuctl event info sensu-go-sandbox curl_timings --format json | jq .
...
  "history": [
    {
      "status": 0,
      "executed": 1556472457
    },
  ],
  "output": "sensu-go-sandbox.curl_timings.time_total 0.005 1556472657\n...",
  ...
  "output_metric_format": "graphite_plaintext",
  "output_metric_handlers": [
    "influx-db"
  ],
...
```

Because we configured a metric format, the Sensu agent is able to convert the Graphite-formatted metrics provided by the check command into a set of Sensu-formatted metrics (not shown in the output), which are then sent to the InfluxDB handler that reads Sensu-formatted metrics and converts them to a format InfluxDB accepts. Metric support isn't limited to just Graphite; the Sensu agent can extract metrics in multiple line protocol formats, including Nagios performance data.

5. See the HTTP response code events for Nginx in Grafana.

Log in to Grafana as username: `admin` and password: `admin`. We should see a graph of live HTTP response codes for Nginx.

Now if we turn Nginx off, we should see the impact in Grafana:

```
sudo systemctl stop nginx
```

Start Nginx:

```
sudo systemctl start nginx
```

6. Automate disk usage monitoring for the sandbox

Now that we have an entity set up, we can easily add more checks. For example, let's say we want to monitor disk usage on the sandbox.

First, install the plugin:

```
sudo sensu-install -p sensu-plugins-disk-checks
```

And test it:

```
/opt/sensu-plugins-ruby/embedded/bin/metrics-disk-usage.rb

sensu-core-sandbox.disk_usage.root.used 2235 1534191189
sensu-core-sandbox.disk_usage.root.avail 39714 1534191189
...
```

Then create the check using sensuctl and the `disk_usage-check.json` file included with the sandbox, assigning it to the `entity:sensu-go-sandbox` subscription and the InfluxDB pipeline:

```
sensuctl create --file disk_usage-check.json
```

We should see it working in the dashboard entity view and via sensuctl:

```
sensuctl event list
```

Now we should be able to see disk usage metrics for the sandbox in Grafana.

You made it! You're ready for the next level of Sensu-ing. Here are some resources to help continue your journey:

Install Sensu Go
Collect StatsD metrics
Create a ready-only user

Container and application monitoring with Sensu

Contents

In this tutorial, we'll deploy a sample app with Kubernetes and monitor it with Sensu. The sample app has three endpoints: `/` returns the local hostname, `/metrics` returns Prometheus metric data, `/healthz` returns the boolean health state, and `POST /healthz` toggles the health state.

Prerequisites

The sample app requires Kubernetes and a Kubernetes Ingress controller. Most hosted Kubernetes offerings, such as GKE, include a Kubernetes Ingress controller.

In this tutorial, we'll be using Minikube, a cross-platform application for running a local single-node Kubernetes cluster. After you've installed and started Minikube, proceed through the rest of the guide.

Setup

1. Clone the sample app.

```
git clone https://github.com/sensu/sensu-kube-demo && cd sensu-kube-demo
```

2. Create the Kubernetes ingress resources.

```
minikube start

kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/master/deploy/static/mandatory.yaml

minikube addons enable ingress

kubectl create -f go/ingress-nginx/ingress/sensu-go.yaml
```

3. Deploy kube-state-metrics.

```
git clone https://github.com/kubernetes/kube-state-metrics

kubectl apply -f kube-state-metrics/kubernetes
```

4. Open your `/etc/hosts` file and add the following hostnames.

NOTE: Here we'll use the IP address for the Minikube VM in our hosts file. To view the address, use the command `minikube ip`.

```
192.168.99.100       sensu.local webui.sensu.local sensu-enterprise.local dashboard.sensu-enterprise.local
192.168.99.100       influxdb.local grafana.local dummy.local
```

5. Install sensuctl.

Jump over to the sensuctl installation guide, and follow the instructions to install sensuctl on Windows, macOS, or Linux.

6. Deploy two instances of the sample app (dummy) behind a load balancer.

```
kubectl apply -f go/deploy/dummy.yaml
```

We can test the dummy app using the API.

```
# Linux/macOS
curl -i http://dummy.local
```

```
# Windows
Invoke-WebRequest -Uri http://dummy.local -Method GET
```

A `200` response indicates that the dummy app is working correctly.

7. Deploy the Sensu backend

```
kubectl create -f go/deploy/sensu-backend.yaml
```

Multitenancy

Use Sensu role-based access control to create a `demo` namespace and a `demo` user.

1. Configure sensuctl to use the built-in `admin` user.

```
sensuctl configure
? Sensu Backend URL: http://sensu.local
? Username: admin
? Password: P@ssw0rd!
? Namespace: default
? Preferred output format: tabular
```

2. Create a `demo` namespace.

```
sensuctl namespace create demo
```

We can use sensuctl to confirm that the namespace was created successfully and set the `demo` namespace as the default for our sensuctl session.

```
sensuctl namespace list

sensuctl config set-namespace demo
```

3. Create a `dev` user role with full-access to the `demo` namespace.

```
sensuctl role create dev \
--verb get,list,create,update,delete \
--resource \* --namespace demo
```

4. Create a `dev` role binding for the `dev` group.

```
sensuctl role-binding create dev --role dev --group dev
```

5. Create a `demo` user that is a member of the `dev` group.

```
sensuctl user create demo --interactive
? Username: demo
? Password: password
? Groups: dev
```

6. Reconfigure sensuctl to use the `demo` user and `demo` namespace.

```
sensuctl configure
? Sensu Backend URL: http://sensu.local
```

```
? Username: demo
? Password: password
? Namespace: demo
? Preferred output format: tabular
```

Deploying Sensu agents and InfluxDB

1. Deploy InfluxDB with a Sensu agent sidecar

Create a Kubernetes ConfigMap for InfluxDB configuration.

```
kubectl create configmap influxdb-config --from-file go/configmaps/influxdb.conf
```

Deploy InfluxDB with a Sensu agent sidecar.

```
kubectl create -f go/deploy/influxdb.sensu.yaml
```

2. Create a Sensu pipeline to store metrics with InfluxDB.

Use the files provided with the sample app to create a Sensu asset for the Sensu InfluxDB handler and create an `influxdb` event handler.

```
sensuctl create --file go/config/assets/influxdb-handler.yaml

sensuctl create --file go/config/handlers/influxdb.yaml
```

3. Deploy Sensu agent sidecars for the dummy app instances.

```
kubectl apply -f go/deploy/dummy.sensu.yaml
```

Monitoring an app

Let's take a look at what we're monitoring. We can see the Sensu agents installed on our two dummy app instances with their last seen timestamp, as well as the Sensu agent monitoring our InfluxDB instance.

```
sensuctl entity list

          ID            Class    OS              Subscriptions                        Last Seen
 ─────────────────────────────── ──────── ────────
 ────────────────────────────────────────────────── ────────────────────────────────────
dummy-76d8fb7bdf-967q7     agent   linux   dummy,entity:dummy-76d8fb7bdf-967q7       2019-01-18 10:56:56 -0800 PST
dummy-76d8fb7bdf-knh7r     agent   linux   dummy,entity:dummy-76d8fb7bdf-knh7r       2019-01-18 10:56:56 -0800 PST
influxdb-64b7d5f884-f9ptg   agent   linux   influxdb,entity:influxdb-64b7d5f884-f9ptg   2019-01-18 10:56:59 -0800 PST
```

Create a Sensu pipeline to Slack

Let's say we want to receive a Slack alert if the dummy app returns an unhealthy response. We can create a Sensu pipeline to send events to Slack using the Sensu Slack plugin. Sensu Plugins are open-source collections of Sensu building blocks shared by the Sensu Community.

1. Create an asset to help agents find and install the Sensu Slack handler.

```
sensuctl create --file go/config/assets/slack-handler.yaml
```

2. Get your Slack webhook URL and add it to `go/config/handlers/slack.yaml`.

If you're already an admin of a Slack, visit `https://YOUR WORKSPACE NAME HERE.slack.com/services/new/incoming-webhook` and follow the steps to add the Incoming WebHooks integration and save the settings. (If you're not yet a Slack admin, start here to create a new workspace.) After saving, you'll see your webhook URL under Integration Settings.

Open `go/config/handlers/slack.yaml` and replace `SECRET` in the following line with your Slack workspace webhook URL and `#demo` with the Slack channel of your choice:

```
"command": "slack-handler --channel '#demo' --timeout 20 --username 'sensu' --
```

```
  webhook-url 'SECRET'",
```

So it looks something like:

```
"command": "slack-handler --channel '#my-channel' --timeout 20 --username 'sensu' --
webhook-url 'https://hooks.slack.com/services/XXXXXXXXXXXXXXX'",
```

3. Create a handler to send events to Slack using the `slack-handler` asset.

```
sensuctl create --file go/config/handlers/slack.yaml
```

Create a Sensu service check to monitor the status of the dummy app

To automatically monitor the status of the dummy app, we'll create an asset that lets the Sensu agents use a Sensu HTTP plugin.

1. Create the `check-plugins` asset.

```
sensuctl create --file go/config/assets/check-plugins.yaml
```

2. Now we can create a check to monitor the status of the dummy app that uses the `check-plugins` asset and the Slack pipeline.

```
sensuctl create --file go/config/checks/dummy-app-healthz.yaml
```

3. With the automated alert workflow in place, we can see the resulting events in the Sensu dashboard.

Sign in to the Sensu dashboard with your sensuctl username (`demo`) and password (`password`). Since we're working within the `demo` namespace, select the `demo` namespace in the Sensu dashboard menu.

4. Toggle the health of the dummy app to simulate a failure.

```
# Linux/macOS
curl -iXPOST http://dummy.local/healthz
```

```
# Windows
Invoke-WebRequest -Uri http://dummy.local/healthz -Method POST
```

We should now be able to see a critical alert in the Sensu dashboard as well as by using sensuctl:

```
sensuctl event list
```

You should also see an alert in Slack.

Continue to post to `/healthz` until all Sensu entities return to a healthy state.

```
# Linux/macOS
curl -iXPOST http://dummy.local/healthz
```

```
# Windows
Invoke-WebRequest -Uri http://dummy.local/healthz -Method POST
```

Collecting app metrics

Create a Sensu metric check to collect Prometheus metrics

To automatically collect Prometheus metrics from the dummy app, we'll create an asset that lets the Sensu agents use the Sensu Prometheus plugin.

1. Create the `prometheus-collector` asset.

```
```

```
sensuctl create --file go/config/assets/prometheus-collector.yaml
```

2. Now we can create a check to collect Prometheus metrics that uses the `prometheus-collector` asset.

```
sensuctl create --file go/config/checks/dummy-app-prometheus.yaml
```

Visualize metrics with Grafana

1. Deploy Grafana with a Sensu agent sidecar.

Create Kubernetes ConfigMaps for Grafana configuration.

```
kubectl create configmap grafana-provisioning-datasources --from-file=./go/configmaps/grafana-provisioning-datasources.yaml

kubectl create configmap grafana-provisioning-dashboards --from-file=./go/configmaps/grafana-provisioning-dashboards.yaml
```

Deploy Grafana with a Sensu agent sidecar.

```
kubectl apply -f go/deploy/grafana.sensu.yaml
```

After a few minutes, we can see the Sensu agents we have installed on the dummy app, InfluxDB, and Grafana pods.

```
sensuctl entity list
          ID            Class    OS                Subscriptions                    Last Seen
────────────────────────────── ──────── ────────
──────────────────────────────────────────────── ──────────────────────────────────
dummy-6c57b8f868-ft5dz     agent   linux   dummy,entity:dummy-6c57b8f868-ft5dz        2018-11-20 18:43:15 -0800 PST
dummy-6c57b8f868-m24hw     agent   linux   dummy,entity:dummy-6c57b8f868-m24hw        2018-11-20 18:43:15 -0800
PST
grafana-5b88f8df8d-vgjtm    agent   linux   grafana,entity:grafana-5b88f8df8d-vgjtm     2018-11-20 18:43:14 -0800 PST
```

```
influxdb-78d64bcfd9-8km56   agent   linux   influxdb,entity:influxdb-78d64bcfd9-8km56   2018-11-20 18:43:12 -0800 PST
```

2. Log in to Grafana.

To see the metrics we're collecting from the dummy app, log into Grafana with the username `admin` and password `password`.

3. Create a dashboard.

Create a new dashboard using the InfluxDB datasource to see live metrics from the dummy app.

Collecting Kubernetes metrics

Now that we have a pipeline set up to send metrics, we can create a check that collects Prometheus metrics from Kubernetes and connect it to the pipeline.

Deploy a Sensu agent as a dameonset on your Kubernetes node.

```
kubectl apply -f go/deploy/sensu-agent-daemonset.yaml
```

Then create a check to collect Prometheus metrics from Kubernetes using the `prometheus-collector` asset and `influxdb` handler.

```
sensuctl create --file go/config/checks/kube-state-prometheus.yaml
```

You should now be able to access Kubernetes metric data in Grafana and see metric events in the Sensu dashboard.

Next steps

To stop or delete the sample app, use `minikube stop` or `minikube delete` respectively.

For more information about monitoring with Sensu, check out the following resources:

Reducing alert fatigue with Sensu filters
Aggregating StatD metrics with Sensu
Aggregating Nagios metrics with Sensu

Using the Sensu Prometheus Collector

Contents

What is the Sensu Prometheus Collector?

The Sensu Prometheus Collector is a check plugin that collects metrics from a Prometheus exporter or the Prometheus query API. This allows Sensu to route the collected metrics to one or more time series databases, such as InfluxDB or Graphite.

Why use Sensu with Prometheus?

The Prometheus ecosystem contains a number of actively maintained exporters, such as the node exporter for reporting hardware and operating system metrics or Google's cAdvisor exporter for monitoring containers. These exporters expose metrics which Sensu can collect and route to one or more time series databases, such as InfluxDB or Graphite. Both Sensu and Prometheus can run in parallel, complementing each other and making use of environments where Prometheus is already deployed.

In this guide

This guide uses CentOS 7 as the operating system with all components running on the same compute resource. Commands and steps may change for different distributions or if components are running on different compute resources.

At the end, you will have Prometheus scraping metrics. The Sensu Prometheus Collector will then query the Prometheus API as a Sensu check, send those to an InfluxDB Sensu handler, which will send metrics to an InfluxDB instance. Finally, Grafana will query InfluxDB to display those collected metrics.

Set up

Install and configure Prometheus

Download and extract Prometheus.

```
wget https://github.com/prometheus/prometheus/releases/download/v2.6.0/prometheus-2.6.0.linux-amd64.tar.gz

tar xvfz prometheus-*.tar.gz

cd prometheus-*
```

Replace the default `prometheus.yml` configuration file with the following configuration.

```
global:
  scrape_interval: 15s
  external_labels:
    monitor: 'codelab-monitor'

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    static_configs:
      - targets: ['localhost:9090']
```

Start Prometheus in the background.

```
nohup ./prometheus --config.file=prometheus.yml > prometheus.log 2>&1 &
```

Ensure Prometheus is running. The matching result will vary slightly.

```
ps -ef | grep "[p]rometheus"
vagrant   7647  3937  2 22:23 pts/0    00:00:00 ./prometheus --
config.file=prometheus.yml
```

Install and configure Sensu Go

Follow the RHEL/CentOS install instructions for the Sensu backend, Sensu agent and sensuctl.

Add an `app_tier` subscription to `/etc/sensu/agent.yml`.

```
subscriptions:
  - "app_tier"
```

Restart the sensu agent to apply the configuration change.

```
sudo systemctl restart sensu-agent
```

Ensure Sensu services are running.

```
systemctl status sensu-backend
systemctl status sensu-agent
```

Install and configure InfluxDB

Add InfluxDB repo.

```
echo "[influxdb]
name = InfluxDB Repository - RHEL \$releasever
baseurl = https://repos.influxdata.com/rhel/\$releasever/\$basearch/stable
enabled = 1
gpgcheck = 1
gpgkey = https://repos.influxdata.com/influxdb.key" | sudo tee
/etc/yum.repos.d/influxdb.repo
```

Install InfluxDB.

```
sudo yum -y install influxdb
```

Open `/etc/influxdb/influxdb.conf` and uncomment the `http` API line.

```
[http]
  # Determines whether HTTP endpoint is enabled.
  enabled = true
```

Start InfluxDB.

```
sudo systemctl start influxdb
```

Add the Sensu user and database.

```
influx -execute "CREATE DATABASE sensu"

influx -execute "CREATE USER sensu WITH PASSWORD 'sensu'"

influx -execute "GRANT ALL ON sensu TO sensu"
```

Install and configure Grafana

Install Grafana.

```
sudo yum install -y https://s3-us-west-2.amazonaws.com/grafana-releases/release/grafana-5.1.4-1.x86_64.rpm
```

Change Grafana's listen port to not conflict with the Sensu Dashboard.

```
sudo sed -i 's/^;http_port = 3000/http_port = 4000/' /etc/grafana/grafana.ini
```

Create a `/etc/grafana/provisioning/datasources/influxdb.yaml` file, and add an InfluxDB data source.

```
apiVersion: 1

deleteDatasources:
  - name: InfluxDB
    orgId: 1

datasources:
  - name: InfluxDB
    type: influxdb
    access: proxy
    orgId: 1
    database: sensu
    user: grafana
    password: grafana
    url: http://localhost:8086
```

Start Grafana.

```
sudo systemctl start grafana-server
```

Create a Sensu InfluxDB pipeline

Create a Sensu InfluxDB handler asset

Put the following asset definition in a file called `asset_influxdb`:

Create a Sensu handler

Put the following handler definition in a file called `handler`:

PRO TIP: `sensuctl create -f` also accepts files containing multiple resources definitions.

Use `sensuctl` to add the handler and the asset to Sensu.

```
sensuctl create --file handler --file asset_influxdb
```

Collect Prometheus metrics with Sensu

Create a Sensu Prometheus Collector asset

Put the following handler definition in a file called `asset_prometheus`:

Add a Sensu check to complete the pipeline

Given the following check definition in a file called `check`:

Use `sensuctl` to add the check to Sensu.

```
sensuctl create --file check --file asset_prometheus
```

We can see the events generated by the `prometheus_metrics` check in the Sensu dashboard. Visit http://127.0.0.1:3000, and log in as the default admin user: username `admin` and password `P@ssw0rd!`.

We can also see the metric event data using sensuctl.

```
sensuctl event list
    Entity        Check                                          Output                                   Status   Silenced          Timestamp
────────────── ──────────────────── ──────────────────────────────────────────────────────────────────────── ──────── ────────── ───────────────────────────────
sensu-centos   keepalive          Keepalive last sent from sensu-centos at 2019-02-12 01:01:37 +0000 UTC       0   false
2019-02-12 01:01:37 +0000 UTC
sensu-centos   prometheus_metrics   up,instance=localhost:9090,job=prometheus value=1 1549933306              0   false
2019-02-12 01:01:46 +0000 UTC
```

Visualize metrics with Grafana

Configure a dashboard in Grafana

Download the Grafana dashboard configuration file from the Sensu docs.

```
wget https://docs.sensu.io/sensu-go/latest/files/up_or_down_dashboard.json
```

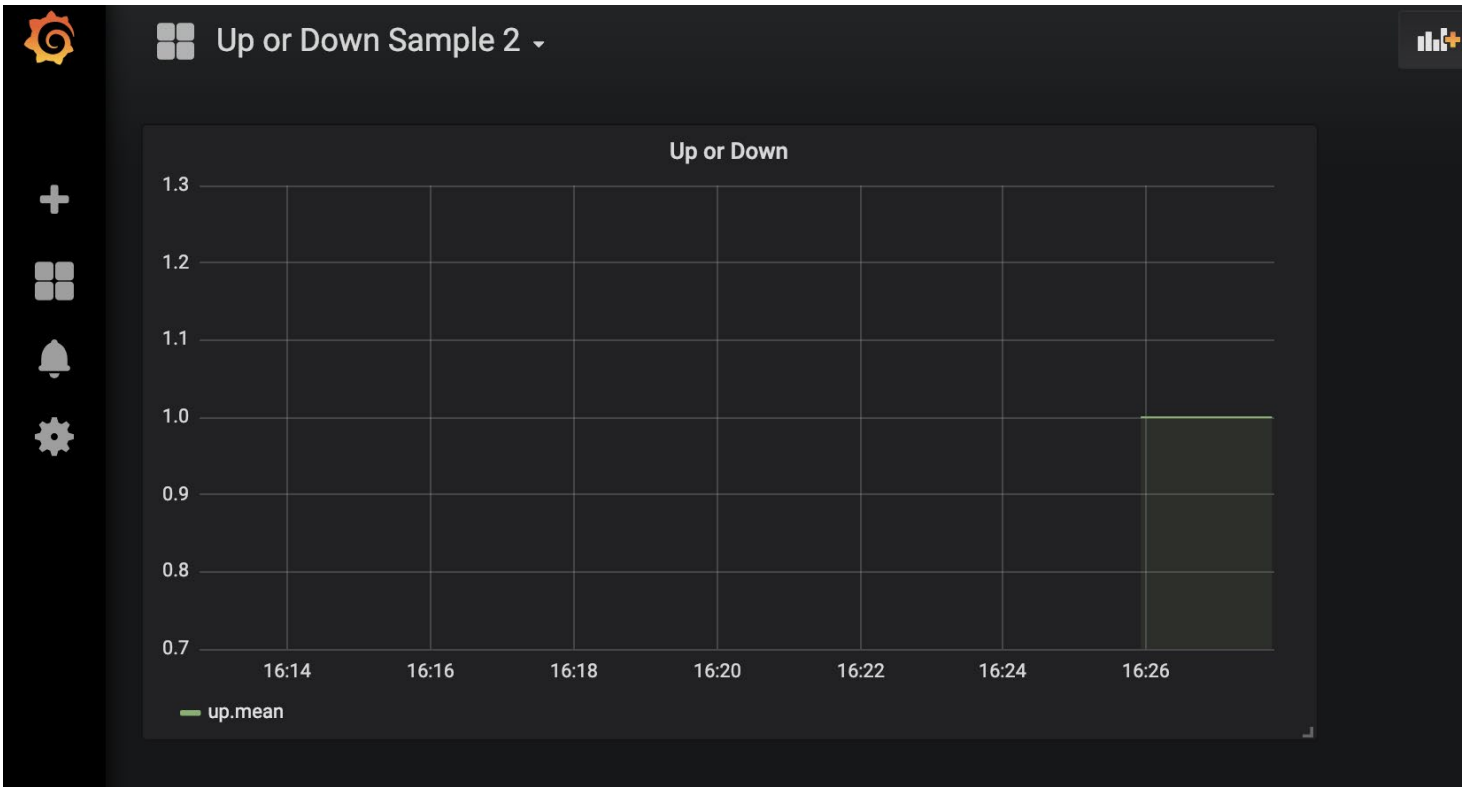
Using the downloaded file, add the dashboard to Grafana using an API call.

```
curl  -XPOST -H 'Content-Type: application/json' -d@up_or_down_dashboard.json
HTTP://admin:admin@127.0.0.1:4000/api/dashboards/db
```

View metrics in Grafana

Confirm metrics in Grafana with `admin:admin` login at http://127.0.0.1:4000.

Once logged in, click on Home in the upper left corner, then below click on the Up or Down Sample 2 dashboard. Once there, you should see a graph that has started showing metrics like this



Conclusion

You should now have a working setup with Prometheus scraping metrics. The Sensu Prometheus Collecting is being ran via a Sensu check and collecting those metrics from Prometheus' API. The metrics are then handled by the InfluxDB handler, sent to InfluxDB and then visualized by a Grafana Dashboard.

Using this information, you can now plug the Sensu Prometheus Collector into your Sensu ecosystem and leverage Prometheus to gather metrics and Sensu to send them to the proper final destination. Prometheus has a comprehensive list of additional exporters to pull in metrics.

Sensu service logging with systemd

Contents

By default, systems where systemd is the service manager do not write logs to `/var/log/sensu/` for the `sensu-agent` and the `sensu-backend` services. This guide walks you through how to add log forwarding from journald to syslog, have rsyslog write logging data to disk, and set up log rotation of the newly created log files.

To configure journald to forward logging data to syslog, modify `/etc/systemd/journald.conf` to include the following line:

```
ForwardToSyslog=yes
```

Next, set up rsyslog to write the logging data received from journald to `/var/log/sensu/servicename.log`. In this example, the `sensu-backend` and `sensu-agent` logging data is sent to individual files named after the service. The `sensu-backend` is not required if only setting up log forwarding for the `sensu-agent` service.

```
# For the sensu-backend service, inside /etc/rsyslog.d/99-sensu-backend.conf
if $programname == 'sensu-backend' then {
        /var/log/sensu/sensu-backend.log
        ~
}

# For the sensu-agent service, inside /etc/rsyslog.d/99-sensu-agent.conf
if $programname == 'sensu-agent' then {
        /var/log/sensu/sensu-agent.log
        ~
}
```

Restart rsyslog and journald to apply the new configuration:

```
systemctl restart systemd-journald
systemctl restart rsyslog
```

Set up log rotation for newly created log files to ensure logging does not fill up your disk. These examples rotate the log files `/var/log/sensu/sensu-agent.log` and `/var/log/sensu/sensu-backend.log` weekly, unless the size of 100M is reached first. The last seven rotated logs are kept and compressed, with the exception of the most recent one. After rotation, `rsyslog` is restarted to ensure logging is written to a new file and not the most recent rotated file.

```
# Inside /etc/logrotate.d/sensu-agent.conf
/var/log/sensu/sensu-agent.log {
    daily
    rotate 7
    size 100M
    compress
    delaycompress
    postrotate
      /bin/systemctl restart rsyslog
    endscript
}

# Inside /etc/logrotate.d/sensu-backend.conf
/var/log/sensu/sensu-backend.log {
    daily
    rotate 7
    size 100M
    compress
    delaycompress
    postrotate
      /bin/systemctl restart rsyslog
    endscript
}
```

You can use the following command to see what logrotate would do if it were executed now based on the above schedule and size threshold. The `-d` flag will output details, but it will not take action on the logs or execute the postrotate script.

```
logrotate -d /etc/logrotate.d/sensu.conf
```

NOTE: On Ubuntu systems, be sure to run `chown -R syslog:adm /var/log/sensu` *so syslog can write to that directory.*

Reference

- Agent
- Assets
- Backend
- Checks
- Datastore
- Entities
- Events
- Filters
- Handlers
- Hooks
- License
- Mutators
- Rbac
- Sensu-Query-Expressions
- Silencing
- Tessen
- Tokens