

# OpenNMS Release Notes

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# What's New in OpenNMS Horizon 23

## System Requirements

- **Java 8:** OpenNMS Horizon 23 requires Java 8 as the runtime environment. To run Horizon 23, we recommend the most recent version of Oracle JDK 8 for your platform.
- **PostgreSQL 9 or higher:** Horizon 23 requires Any supported version PostgreSQL 9 or higher. As of this writing, PostgreSQL 9.3 is the earliest version under active support, but OpenNMS is known to work with at least PostgreSQL 9.1 and up.

## Breaking Changes

### Vacuumd Alarm Handling

In previous OpenNMS releases, a large portion of the alarm workflow was handled by Vacuumd automations, triggers, and actions. As part of the work to implement alarm correlation, this logic has been moved to Drools, running inside Alarmd.

If you made any changes to `vacuumd-configuration.xml` related to alarms, it is strongly recommended you port them to the new Alarmd Drools context. The Drools rules are in the `$OPENNMS_HOME/etc/alarmd/drools-rules.d/` directory.

Also, we no longer generate `alarmCreated`, `alarmEscalated`, `alarmCleared`, `alarmUncleared`, `alarmUpdatedWithReducedEvent`, and `alarmDeleted` events. Instead, it is recommended that you add Drools rules to react to alarm changes. For more complicated integrations, we also have a new API — `AlarmLifecycleListener` — for reacting to alarm changes.

## New Features

### OpenNMS Correlation Engine ("Sextant") Proof of Concept

Horizon 23 introduces the groundwork for supporting correlation of alarms into meta-alarms called "situations" using an external engine called the [OpenNMS Correlation Engine](#). Situations are OpenNMS alarms that contain one or more triggering alarms, which allows them to be browsed, acknowledged, and unacknowledged just like any other alarm. A high-level overview of the goal and implementation of correlation can be seen [on the Sextant wiki page](#).

Please note that implementing OCE is an advanced topic and there is still work to do before it is ready for general use. While the OpenNMS core supports situations, the logic of creating them is part of the OCE, which is designed to run in a separate Karaf container. Full support for OCE and correlation is due to be released in Horizon 24.

### Alarmd Improvements

In addition to the Alarmd Drools updates mentioned previously, there have been some other enhancements made to Alarmd.

Traditionally, OpenNMS has created and resolved alarms in pairs, with one alarm representing the triggering event (or events), and then a second alarm representing the resolution. Horizon 23 changes this default behavior to use a single alarm to track the problem state, incrementing the alarm count when it occurs while in a problem state, or when moving from resolved *back* into a problem state. Additionally, you can configure OpenNMS to create a new alarm if a problem happens again.

These behaviors are controlled by the introduction of 2 new settings in the `opennms.properties` file:

#### `org.opennms.alarmd.legacyAlarmState`

This setting reverts to the old (pre-23) behavior of creating separate alarms for a problem and its resolution.

#### `org.opennms.alarmd.newIfClearedAlarmExists`

This setting forces Alarmd to create a new alarm if a problem reoccurs, rather than incrementing an existing alarm. (Note: this is ignored if `legacyAlarmState` is set to `true`.)

These improvements are covered in a [lunch and learn video](#) we published recently, if you would like to learn more.

## Kafka Data Collection Sync

In addition to publishing events, alarms, and node inventory to Kafka, we can now [publish collected time-series data to the Kafka bus](#) as well.

## Sentinel

In addition to the Minion, we have added a new container-based subsystem called "Sentinel." The Sentinel is a standalone container that can be configured to run a subset of OpenNMS daemons as a standalone tool, to aid in horizontal scaling and/or high availability.

This initial release of Sentinel is designed to run our Karaf/Camel/SQS-based messaging bus, syslog listener, Netflow receiver, and Newts and Elasticsearch persistence.

## Other Improvements

- A number of monitors now support using placeholders in parameter values to allow runtime substitution of IP address, node ID, and so on. (See: [NMS-10200](#))
- A new WSMAN monitor has been added which can use WQL filters against an endpoint to detect arbitrary services.
- The web UI now fully supports configuring date formats and user time zone in `opennms.properties` which was partially introduced in Horizon 22.
- Daemon reloading can now be done from the Karaf shell. Also, Syslogd and Trapd can now respond to daemon reload events.
- The RadixTreeSyslogParser now handles [Cisco Syslog Message formats](#).
- RPC to Minions is now fully supported when using Kafka rather than JMS.
- A bunch of tools for checking the health of OpenNMS, Minions, and Sentinel containers have

been added to the Karaf command-line. (Run `health:check --help` for more details.)

- Many other improvements were made to the flow support introduced in Horizon 22.
- Support for HTTP proxies has been added to a number of places where OpenNMS makes outgoing HTTP connections. ([NMS-10312](#), [NMS-10313](#))
- A number of VMware improvements have been made including configurable timeouts and handling of unacknowledged vSphere alarms.
- Many subsystems have been improved as part of the refactoring to make them capable of running in the Sentinel container.
- The OSGi Plugin Manager has been updated to version 1.1.0.
- A policy (`ScriptPolicy`) has been added to Provisiond that allows you to run arbitrary Groovy scripts before persistence. An example policy can be found in `$OPENNMS_HOME/etc/examples/script-policies/`.

## Changelog

### Release 23.0.2

OpenNMS Horizon 23.0.2 is an update to Horizon 23.0.2. It contains a number of bug fixes and enhancements, including performance improvements to topology maps, many fixes and improvements to Kafka support, and a bunch of correlation and alarm updates.

For a high-level overview of what's changed in OpenNMS 23, see [What's New in OpenNMS 23](#).

The codename for 23.0.2 is *Sabrina*.

### Bug

- Cannot clear alarms (Issue [HZN-1437](#))
- No stack-traces for exceptions thrown by REST services in OSGi (Issue [HZN-1458](#))
- BestMatchPingerFactory returns NullPinger when better options are available (Issue [NMS-9659](#))
- Sentinel does not start using init scripts on RHEL 6.6 (Issue [NMS-10434](#))
- Support large buffer sizes in Kafka RPC (Issue [NMS-10446](#))
- noisy logs by the kafka-offset-producer (Issue [NMS-10464](#))
- Fix offheap doc to be included in docs (Issue [NMS-10468](#))
- duplicate key exceptions in alarmd (Issue [NMS-10473](#))
- Kafka Producer: Sync timing issues cause erroneous deletes (Issue [NMS-10474](#))
- When using the events:stress command, the node-id or interface passed as parameters are ignored when using jexl (Issue [NMS-10475](#))
- Alarm Dashlet CriteriaBuilder In-Restriction not working (Issue [NMS-10479](#))
- Standard output get wasted with "Unknown record type: 0 / 2209" messages (Issue [NMS-10480](#))
- Broken links in Newts install documentation (Issue [NMS-10481](#))

- Drools alarm may update alarms unnecessarily on snapshot (Issue [NMS-10494](#))
- Harden Drools engine in alarmd (Issue [NMS-10509](#))
- Syslog test failures due to year offset in eventConverter (Issue [NMS-10523](#))
- Flow query fails with NPE if it returns no data (Issue [NMS-10530](#))

## Enhancement

- Topologies REST Service (Issue [HZN-1377](#))
- Add an "ssh" action to bin/opennms (Issue [HZN-1391](#))
- Update telemetryd documentation to reflect single port support (Issue [HZN-1408](#))
- Add example on how to use Drools with alarms for nagging events (Issue [HZN-1450](#))
- Replaced jdhcp with dhcp4java (Issue [NMS-10337](#))
- Performance problems with the Topology Map on large networks (Issue [NMS-10369](#))
- APCs rpdu's total energy/power metric is missing (Issue [NMS-10383](#))
- Apply initial loading improvements to IsIs, lldp, ospf protocols (Issue [NMS-10439](#))
- Allow PostgreSQL 11.x (Issue [NMS-10450](#))
- Support Additional EIF Protocol Version (Issue [NMS-10454](#))
- Make favicons in the web application great again (Issue [NMS-10483](#))
- Measure and improve performance of Interface loading and mapping (Issue [NMS-10459](#))
- Measure and improve performance of Cdp/Lldp/IsIsElement loading (Issue [NMS-10487](#))
- Add select/deselect all packages when creating a scheduled outage (Issue [NMS-10227](#))

## Release 23.0.1

OpenNMS Horizon 23.0.1 is an update to Horizon 23.0.0. It contains a number of bug fixes and enhancements, including additional HTTP proxy support, reliability updates, UI performance improvements, and a number of Kafka-related fixes.

For a high-level overview of what's changed in OpenNMS 23, see [What's New in OpenNMS 23](#).

The codename for 23.0.1 is *Endora*.

## Bug

- Cannot use SASL Authentication for Kafka on Minions (might impact Sentinel) (Issue [HZN-1387](#))
- Sink API drops messages when there is no connectivity with Kafka (Issue [NMS-10395](#))
- Discovery UI should not allow selection of Minions as Foreign Source (Issue [NMS-10400](#))
- Reloading of Script in telemetry collection is broken (Issue [NMS-10403](#))
- Kafka Producer: Sync pushes all alarms when suppressIncrementalAlarms=false (Issue [NMS-10423](#))
- Typo in BSFMonitor Documentation (Issue [NMS-10428](#))

- Cannot use SASL Authentication for kafka-producer module. (Issue [NMS-10436](#))
- Default Metaspace configuration is insufficient (Issue [NMS-10437](#))

## Enhancement

- Change eventconf for newSuspect to include location name in logmsg (Issue [HZN-814](#))
- Be able to use Proxy for any Monitor or Collector that uses HttpClient (Issue [NMS-9710](#))
- Detect and Attempt to Restart Failed Drools Engines (Issue [NMS-10363](#))
- Other classes that use Http (Issue [NMS-10379](#))

## Release 23.0.0

OpenNMS Horizon 23.0.0 is the first release of the stable 23 series. It contains a number of bug fixes and enhancements, including support for alarm correlation, running OpenNMS components in an external container, and many other improvements.

For a high-level overview of what's changed in OpenNMS 23, see [What's New in OpenNMS 23](#).

The codename for 23.0.0 is *Granny Weatherwax*.

## Bug

- VMWare-Center-Monitoring make for every virtual machine a login/logout (Issue [NMS-8204](#))
- The ReST API used to return XMLs with namespace, and now it doesn't (Issue [NMS-8524](#))
- Config-tester not validating varbind matching in event files (Issue [NMS-9821](#))
- enlinkd prints bridge forwarding table debug messages in output.log (Issue [NMS-10258](#))
- Document notifd's match-all parameter (Issue [NMS-10275](#))
- DefaultProvisionService logs noisily for monitored service having state "N" (Issue [NMS-10291](#))
- LSB init script does not start Minion on Ubuntu/Debian (Issue [NMS-10294](#))
- SNMP monitor doesn't take service down (Issue [NMS-10308](#))
- Kafka consumers on Sentinel are not shown on kafka-manager (Issue [NMS-10310](#))
- Sentinel init scripts fail to start the Karaf instance (Issue [NMS-10330](#))
- navbar.ftl not rendering (Issue [NMS-10342](#))
- Wrong data type for certain Cassandra JMX counters (Issue [NMS-10352](#))
- Cannot override TTL when running the Karaf Command collections:collect through Minions (Issue [NMS-10367](#))
- Trendbox on start page is empty (Issue [NMS-10368](#))
- Erroneous INFO-level log messages during every forced node rescan (Issue [NMS-10370](#))
- Wrong JMX MBeans for minions (Issue [NMS-10372](#))
- Alarm processing is very slow when Kafka producer is enabled and Kafka is unavailable (Issue [NMS-10378](#))



- webpack build runs even if source files are unchanged (Issue [NMS-10381](#))
- Problems with featuresRepositories and featuresBoot in features.cfg on Sentinel (Issue [NMS-10388](#))
- `find-java.sh` doesn't understand newer JDK output (Issue [NMS-10401](#))
- int overflow in InstallerDb causes bamboo failures (Issue [NMS-10402](#))
- The configuration example for Elasticsearch on the admin-docs is incorrect (Issue [NMS-10407](#))

## Enhancement

- Merge User and Admin Guide (Issue [NMS-10182](#))
- Allow use of placeholders in parameter values of monitors (Issue [NMS-10200](#))
- Add support for persisting Data Collection to Kafka (Issue [NMS-10215](#))
- apply centralized datetime rendering to freemarker template(s) (Issue [NMS-10239](#))
- Update Syslogd to respond to reload configuration events (Issue [NMS-10252](#))
- Bump asciidoctor from 1.5.6 to 1.5.7 (Issue [NMS-10255](#))
- The Contribution file in our repository duplicates community guide (Issue [NMS-10260](#))
- Only increment the alarm count if the alarm type is not a resolving event. (Issue [NMS-10264](#))
- Remove non used core/doc module (Issue [NMS-10266](#))
- Add support for Cisco Syslog Message formats to the RadixTreeSyslogParser (Issue [NMS-10273](#))
- Update health:check command to check Kafka connectivity when no JMS involved (Issue [NMS-10300](#))
- ServiceLookup and TelemetryAdapterRegistry don't wait properly (Issue [NMS-10303](#))
- Refactor timeseries applicationContext xml files with 'timeseries' prefix (Issue [NMS-10304](#))
- Support reload daemon for Trapd (Issue [NMS-10305](#))
- Create karaf shell commands for reload daemon (Issue [NMS-10306](#))
- Be able to use Proxy for any Monitor or Collector that uses HttpClientWrapper directly (Issue [NMS-10312](#))
- Be able to use Proxy for any Monitor or Collector that uses HttpClient via UrlFactory (Issue [NMS-10313](#))
- Optionally create new alarms when a problem reoccurs (Issue [NMS-10331](#))
- Implement a OSGi-aware CollectionAgentFactory (Issue [NMS-10340](#))
- VmwareMonitor should go down for an entity with unacknowledged vSphere-Alarms (Issue [NMS-10345](#))
- Link Node Page to Node Requisition (Issue [NMS-10364](#))
- Improve concurrency in Vmware Connection Pool (Issue [NMS-10373](#))
- Add Configurable Timeouts to VMware vCenter Discovery (Issue [NMS-10377](#))
- Set JVM flag to start Attach listener by default (Issue [NMS-10384](#))

- Class paths for collectd selector strategy in documentation is not correct (Issue [NMS-10387](#))