

# OpenNMS Meridian Release Notes

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# OpenNMS Meridian Development Team

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## OpenNMS Meridian 2017

### System Requirements

- **Java 8:** OpenNMS Meridian 2017 requires Java 8 as the runtime environment. To run Meridian 2017, we recommend the most recent version of Oracle JDK 8 for your platform.
- **PostgreSQL 9:** Meridian 2017 requires PostgreSQL 9.x, version 9.2 or higher.

### What's New in Meridian 2017

Since Meridian 2016, a huge number of backend changes have occurred, including a large refactor of provisioning, many cleanups in Enlinkd, and a number of new features including the Business Service Monitor.

### Important Upgrade Notes

- **Clean Up Events and Alarms:** Please clean up your event and alarm lists as much as possible before performing an upgrade to Meridian 2017. The upgrade process includes a change to move event parameters to a separate table, rather than being encoded in a column in the event table. If you prune unused data from these tables beforehand, it will make the upgrade process much quicker.
- **Remote Poller API Change:** Due to internal API changes, the Remote Poller API has changed in Meridian 2017. If you upgrade to Meridian 2017, you will also need to upgrade all Remote Pollers attached to the system to 2017 as well.

- **Cassandra JMX Metrics:** The default value for the `friendly-name` attribute on the `JMX-Cassandra` collection service has changed from `cassandra21x` to `cassandra`.

This changes the path in which the metrics are stored. If you have already been collecting these metrics and wish to preserve them, you can ignore this change when merging your configuration.

- **Jetty 9.4 Upgrade:** Jetty has been upgraded from `8.1` to the latest `9.4`.

If you have a custom `jetty.xml` in your `etc` folder, you will need to migrate your changes. Use `etc/examples/jetty.xml` as a starting point.

- **Drools 6.5.0 Upgrade:** Drools has been upgraded from `6.0.1.Final` to `6.5.0.Final`.

If you have custom Drools rules, they may need to be revised. The compiler used in `6.5.0.Final` is stricter than the compiler in previous versions.

- **Separate opennms-webapp-remoting Package:** The webapp that supports the Remote Poller has been separated from the main OpenNMS webapp.

This will make installations much smaller for users that do not use the Remote Poller. If you use the Remote Poller, you will need to install the `meridian-webapp-remoting` package.

- **User roles moved from magic-users.properties into users.xml:** The `users.xml` file now contains a list of roles for each user alongside the rest of the user attributes.

- **JICMP 2.0 Upgrade:** Our Java ICMP library has been upgraded to version 2.0.

You will need to upgrade to this version before upgrading to OpenNMS Meridian 2017.

- **org.opennms.newts.nan\_on\_counter\_wrap:** If you are using Newts, returning NaN when a counter-wrap is encountered now defaults to true.

If you relied on the old behavior, you can change it back by setting `org.opennms.newts.nan_on_counter_wrap=false` in a file in `opennms.properties.d`.

## Breaking Changes

- **Custom Topology Icon Definitions:** Custom Icon Definitions in the Topology Map are now handled differently.

You will need to migrate your existing custom icons to the new layout. The [Administrators Guide](#) covers this topic in more detail.

- **Event Translator:** The default behavior of the event translator preserving SNMP data when cloning event has been changed to **NOT** preserve that data by default.

To restore the old behavior, set `preserve-snmp-data="true"` on the event XML. For more information, see [issue NMS-8374](#).

- **ReST API:** The ReST API has been normalized to give better and more consistent responses to queries.

This includes dropping support for redirecting to the model URL on write operations (POST, etc.) If you were relying on this old (broken) behavior, please update your ReST API calls accordingly. Most client code should be unaffected.

- [NMS-9303](#): Deprecated Capsd and Linkd event definitions are removed.

Otherwise unused event definitions are also cleaned up and removed from the code and configurations. For a detailed list of all removed events see [NMS-9303](#). For people maintaining databases prior to OpenNMS 1.8, we provide a maintenance script for Linux and Windows in the *opennms-contrib* package to clean up old events in the database. The script is named [NMS-9303-cleanup-deprecated-events.sh](#) and executes a SQL script. In case you run PostgreSQL on Windows, you can use `psql.exe -d opennms -U opennms -W -a -f NMS-9303-cleanup-deprecated-events.sql` to run the maintenance script.

## New Features

- **Business Service Monitor**: Correlation for root cause and business impact analysis.

The goal of the Business Service Monitor is to provide a high-level correlation of business rules, and to display them in the topology map.

In the BSM, you define a Business Service that encompasses a set of entities (nodes, interfaces, services, and other Business Services) and the relationships among them. The alarm states of the component entities are rolled up in a map-reduce fashion to drive a state machine. The state of a Business Service is reflected in a new type of event, and can also be visualized (along with the service hierarchy) in the existing OpenNMS topology map.

For details on using the BSM, see [the Administrators Guide](#).

- **Modular Configuration Updates**: Now most properties set in the `opennms.properties` file can be instead overridden by creating a file in the `${OPENNMS_HOME}/etc/opennms.properties.d` directory.
- **Notifications**: New notification strategies for Slack and Mattermost have been added.
- **OpenNMS Plugin Manager**: An API for adding 3rd-party "plugins" to OpenNMS.

The core of a tool for adding plugins into OpenNMS has been included in Meridian 2017. This provides a set of tools for finding and adding plugins to be loaded into the OpenNMS OSGi container.

- **Provisioning Requisition UI**: A huge number of improvements have gone into the requisition UI. Also, the old "Quick-Add Node" functionality has been reimplemented using the same backend as the requisition UI.
- **"Scan Report" Remote Poller GUI**: A new front-end for the remote poller that lets you perform a single scan and get a pass/fail report in a GUI has been added. You can enable this alternate UI with the "-s" option on the remote poller CLI.
- **Topology UI Updates**: As part of the BSM work, the topology UI has been vastly improved for both performance and usability.
- **TSRM Ticketing Plugin**: Create incidents in IBM's TSRM.

Information on configuring the TSRM ticketing plugin can be found in [the Administrators Guide](#).

- **Usage Statistics:** Collect anonymous usage statistics.

To get a better idea of how to estimate hardware requirements and the performance characteristics of OpenNMS, we wrote a tool to occasionally submit anonymous diagnostic information about your OpenNMS install. It will submit information like the number of nodes, alarms, etc. as well as some basic system information to our servers for statistical reasons.

When a user with the Admin role logs into the system for the first time, they will be prompted as to whether or not they want to opt-in to publish these statistics. Statistics will only be published once an Administrator has opted-in.

These statistics are visualized on [stats.opennms.org](http://stats.opennms.org).

- **GraphML Topology Provider:** A new Topology Provider is available that reads GraphML formatted graphs and displays them in the the Topology UI.
- **OpenNMS Elasticsearch ReST Forwarder:** This Elasticsearch forwarder can store events, alarms, and alarm state changes in Elasticsearch for archival or searching. It is compatible with all currently supported versions of Elasticsearch.
- **Drools Persistence:** Drools working memory can now be persisted to disk upon shutdown of OpenNMS.
- **Unified JAAS Authentication:** The web UI, the Apache Karaf OSGi console, and the built-in ActiveMQ broker all use a single authentication method.
- **Monitoring Location Events:** Events will be sent when Monitoring Locations are added, updated, or deleted.
- **External JMS broker:** It is possible to configure OpenNMS to use an external JMS broker if desired.
- **New Syslog Parser:** A new syslog parser, the [RadixTreeSyslogParser](#), has been added, which supports all major syslog message formats, and uses Grok for more performant parsing.
- **String Persisting over TCP:** The TCP persister can now persist string values.
- **ICMP traffic class and don't-fragment support:** It is possible to configure OpenNMS to set DSCP traffic class and "don't fragment" bits when polling ICMP.
- **Geographical Maps:** Geographical maps are now included by default in the center of the Web UI front page.
- **Web UI improvements:** Location information has been added to many places in the UI, and a number of pages have been enhanced including the BSM editor and topology UI.
- **Asset Topology Provider:** The Asset Topology Provider generates a GraphML topology based on node metadata including asset fields. ([more details](#)).
- **Alarm Sounds:** The web UI can now optionally flash and play an alert sound when alarms are created and optionally updated. ([more details](#)).

## Events

New or updated trap definitions have been added for the following classes of devices:

- APC
- Juniper IVE
- NetGear ProSafe Smart Switch
- OpenWRT
- SonicWall

## Data Collection

- AKCP SensorProbe
- Cisco ASA5515-X and ASA5525-X
- Juniper SRX100h and SRX210he2 Router
- **HTTP:**
  - Elasticsearch
- **JMX:**
  - Apache Kafka
  - VMware vCenter Server 6.0.0

## Other Improvements

As always, many updates and cleanups have been made to the OpenNMS core, through refactoring, addition of unit tests, and other code modernization.

- **Minion Infrastructure:** Minion is OpenNMS's project to provide full distributed monitoring and collection.

While the Minion is not supported in Meridian 2017, the work that went towards Minion support (modernizing polling and data collection) is included.

- **ActiveMQ:** An ActiveMQ broker is now embedded in the OpenNMS JVM.
- **Discovery Daemon Rewrite:** The discovery daemon has been replaced with a Camel-based implementation to facilitate future Minion support.
- **Enhanced Linkd:** Enlinkd has had many bugs fixed and should perform orders of magnitude faster in many configurations.
- **JNA:** The JNA ping implementation got cleaned up and received many improvements.
- **Newts:** A number of bugfixes and improvements have been made to the Newts support since Meridian 2017.
- **Syslog Daemon Updates:** The performance of the OpenNMS syslog support has been vastly improved and updated.

- We replaced all of the GWT components in the web UI with AngularJS components.

This reduces the complexity of the UI code and will make it easier for developers with Javascript experience to maintain and contribute to the UI.

- All Javascript dependencies for the web UI are now managed by Bower and Gulp.
- Jasper reports are now automatically recompiled if changed.
- The JIRA ticketer has been improved.
- The default database connection pool has been switched from c3p0 to HikariCP (<http://brettwouldridge.github.io/HikariCP/>) to increase performance.
- Our ICMP libraries are now capable of being run by non-root users (although OpenNMS is not yet configured to support this).
- The startup order of OpenNMS has been improved to make sure that a number of time-sensitive event-consuming daemons are ready immediately after Eventd, and before traps are consumed.
- Collection APIs have been refactored and cleaned up immensely as part of refactoring for future Minion support.
- JSON datacollection now supports properly handling responses that return an array.
- Path handling for collection resources has been improved.
- Many improvements have been made to the documentation, including documentation for collectors, detectors, and monitors, as well as Karaf shell commands and event sources.
- A number of improvements to geolocation resolution and node maps have been made.
- Internal OpenNMS events have been cleaned up and broken into logical parts in `$OPENNMS_HOME/etc`.
- Graphs that use relative time periods have additional drop-down choices now.
- The topology infrastructure has been vastly improved, with MANY bug fixes and performance improvements.
- Fix a thread leak in SNMP queries that can happen when old connections don't get closed properly.
- Fix a long-standing bug in the `vacuumd-configuration.xml` that referred to the wrong ticket state for "closed".
- Fix calculation of KSC report "Last Week" and "This Week" timespans.
- Fix startup on systems without any IPv6 support.
- Reverse lookups in provisioning now handle IPs without a corresponding A record.

## Release Meridian-2017.1.19

Release 2017.1.19 is a small update to 2017.1.18 that fixes an exception and adds a utility for viewing config changes.

The codename for 2017.1.19 is *Ujjain*.



## Bug

- No class found exception in OSGi for org.osgi.service.jdbc.DataSourceFactory (Issue [NMS-9341](#))

## Enhancement

- Add a command to show configuration diffs (Issue [NMS-12129](#))

## Release Meridian-2017.1.18

Release 2017.1.18 is a small update to 2017.1.17 that fixes an issue with timeline graphs in the node details page.

The codename for 2017.1.18 is *Kyoto*.

## Bug

- Timeline missing for service names including slashes (Issue [NMS-12097](#))

## Release Meridian-2017.1.17

Release 2017.1.17 is a small update to 2017.1.16 that has a few UI fixes and security updates, as well as a fix for memory leaks in WS-Man monitoring and the JMX collector.

The codename for 2017.1.17 is *Old Naval Observatory meridian*.

## Bug

- Node detail page renders with no content when invalid node ID specified (Issue [NMS-10679](#))
- Apparent memory leak in JMX collector, possibly restricted to "weird" JMX transports (Issue [NMS-10684](#))
- CVE-2018-20433: XXE Vulnerability in c3p0 < 0.9.5.3 (Issue [NMS-10694](#))
- Memory leak in WS-Man (Issue [NMS-10696](#))
- Reflected XSS vulnerability in notification/detail.jsp and outage/detail.htm (Issue [NMS-10707](#))

## Release Meridian-2017.1.16

Release 2017.1.16 is a small update to 2017.1.15 that has a few changes including UI updates and an SNMP loop bug that could cause out-of-memory crashes.

The codename for 2017.1.16 is *Florence meridian*.

## Bug

- ROLE\_PROVISION doesn't work on the UI when the ACL feature is enabled. (Issue [NMS-9786](#))
- Search on KSC Reports page in WebUI does not work (Issue [NMS-10416](#))
- Backport SNMP successor validation (Issue [NMS-10622](#))
- ArrayIndexOutOfBoundsException during error handling in SNMP MIB Compiler (Issue [NMS-](#)

10647)

- When editing a surveillance category from Admin flow, lists of nodes are not sorted by node label (Issue [NMS-10654](#))
- Karaf shell history thrown out with bathwater on upgrade (Issue [NMS-10664](#))

### Enhancement

- "Event text contains" should search beyond eventlogmsg (Issue [NMS-8444](#))

## Release Meridian-2017.1.15

Release 2017.1.15 is a small update to 2017.1.14 that fixes a performance issue in the measurements API.

The codename for 2017.1.15 is *Warsaw meridian*.

### Bug

- Poor performance when using filters in the Measurements API (Issue [NMS-10589](#))
- Update webapp copyright dates to 2019 (Issue [NMS-10591](#))

## Release Meridian-2017.1.14

Release 2017.1.14 is a minor update to OpenNMS Meridian 2017.1.13. It contains a few small bug fixes and documentation enhancements, including a fix for alarm criteria browsing, pinger initialization, and sending notifications for events without associated nodes.

The codename for 2017.1.14 is *Tabulae Varadienses*.

### Bug

- BestMatchPingerFactory returns NullPinger when better options are available (Issue [NMS-9659](#))
- Alarm Dashlet CriteriaBuilder In-Restriction not working (Issue [NMS-10479](#))
- syslog events are creating notifications and disregarding rules in place (Issue [NMS-10486](#))

## Release Meridian-2017.1.13

Release 2017.1.13 is a minor update to OpenNMS Meridian 2017.1.12. It contains a documentation fix and an enhancement to Drools engine stability.

The codename for 2017.1.13 is *Cadiz meridian*.

### Bug

- Typo in BSFMonitor Documentation (Issue [NMS-10428](#))

## Enhancement

- Detect and Attempt to Restart Failed Drools Engines (Issue [NMS-10363](#))

## Release Meridian-2017.1.12

Release 2017.1.12 is a small update to OpenNMS Meridian 2017.1.11. It contains a few small system-level bug fixes and improvements to VMware connection pooling.

The codename for 2017.1.12 is *Meridian of Alexandria*.

## Bug

- `find-java.sh` doesn't understand newer JDK output (Issue [NMS-10401](#))
- int overflow in InstallerDb causes bamboo failures (Issue [NMS-10402](#))

## Enhancement

- Improve concurrency in VMware Connection Pool (Issue [NMS-10373](#))

## Release Meridian-2017.1.11

Release 2017.1.11 is a small update to OpenNMS Meridian 2017.1.10. It contains a few small bug fixes and enhancements.

The codename for 2017.1.11 is *Paris meridian*.

## Bug

- Content-Type tag wrong in emailed reports (Issue [NMS-9027](#))
- The upgrade task for magic-users.properties fails because of the read-only attribute (Issue [NMS-9267](#))

## Enhancement

- add polling interval definition on service UI (Issue [NMS-9747](#))
- Release notes in Help / Support links to 2015 (Issue [LTS-214](#))

## Release Meridian-2017.1.10

Release 2017.1.10 is a small update to OpenNMS Meridian 2017.1.9. It contains a critical RADIUS fix as well as a number of smaller enhancements.

The codename for 2017.1.10 is *Capitol meridian*.

## Breaking Change: trapd-configuration.xml

Meridian 2017.1.10 includes a [bug fix that introduces validation of the Trapd config file](#). In the process of testing this fix we found that the `trapd-configuration.xml` that shipped with Meridian 2017 had issues that could prevent proper configuration of the `snmp-trap-address`.

To fix your `trapd-configuration.xml` file, make the following changes:

- If your `trapd-configuration.xml` contains an attribute called `snmpv3-user-count`, delete it.
- If your `trapd-configuration.xml` has `<snmp-trap-address>...</snmp-trap-address>`, delete that element and add an `snmp-trap-address="..."` attribute to the enclosing `<trapd-configuration />` tag instead. (The only thing that should be inside the `<trapd-configuration>` tag is `<snmpv3-user>` elements.)

*Before:*

```
<trapd-configuration snmpv3-user-count="0" queue-size="10000"
  include-raw-message="false" new-suspect-on-trap="false"
  batch-interval="500" batch-size="1000" snmp-trap-port="162" threads="0">
  <snmp-trap-address>*</snmp-trap-address>
</trapd-configuration>
```

*After:*

```
<trapd-configuration snmp-trap-address="*" queue-size="10000"
  include-raw-message="false" new-suspect-on-trap="false"
  batch-interval="500" batch-size="1000" snmp-trap-port="162" threads="0">
</trapd-configuration>
```

## Breaking Change: RADIUS Authentication Provider

A security issue in the `RadiusAuthenticationProvider` has been fixed (Issue [NMS-10212](#)) This requires changes to the `radius.xml` file located in `${OPENNMS_HOME}/jetty-webapps/opennms/WEB-INF/spring-security.d`. Now instead of providing a bean for the `authTypeClass` property, it is sufficient to just provide the class name:

*Before*

```
<?xml version="1.0" encoding="UTF-8"?>
<beans:beans xmlns="http://www.springframework.org/schema/security"
  xmlns:beans="http://www.springframework.org/schema/beans"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
  http://www.springframework.org/schema/security
http://www.springframework.org/schema/security/spring-security-3.1.xsd">
  <beans:bean id="externalAuthenticationProvider" class=
"org.opennms.protocols.radius.springsecurity.RadiusAuthenticationProvider">
    <!-- ... -->
    <beans:property name="authTypeClass"><beans:bean class=
"net.jradius.client.auth.PAPAuthenticator"/></beans:property>
    <!-- ... -->
  </beans:bean>
</beans:beans>
```

## After

```
<?xml version="1.0" encoding="UTF-8"?>
<beans:beans xmlns="http://www.springframework.org/schema/security"
xmlns:beans="http://www.springframework.org/schema/beans"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
http://www.springframework.org/schema/security
http://www.springframework.org/schema/security/spring-security-3.1.xsd">
<beans:bean id="externalAuthenticationProvider" class=
"org.opennms.protocols.radius.springsecurity.RadiusAuthenticationProvider">
  <!-- ... -->
  <beans:property name="authTypeClass" value="
net.jradius.client.auth.PAPAuthenticator"/>
  <!-- ... -->
</beans:bean>
</beans:beans>
```

Supported values for `authTypeClass` are:

- `net.jradius.client.auth.TunnelAuthenticator`
- `net.jradius.client.auth.PAPAuthenticator`
- `net.jradius.client.auth.EAPMSCHAPv2Authenticator`
- `net.jradius.client.auth.MSCHAPv2Authenticator`
- `net.jradius.client.auth.EAPMD5Authenticator`
- `net.jradius.client.auth.CHAPAuthenticator`
- `net.jradius.client.auth.MSCHAPv1Authenticator`
- `net.jradius.client.auth.RadiusAuthenticator`
- `net.jradius.client.auth.EAPAuthenticator`

If no value is provided `net.jradius.client.auth.PAPAuthenticator` is used.

## Bug

- VMWare-Center-Monitoring make for every virtual machine a login/logout (Issue [NMS-8204](#))
- LDAPMonitor causes Errors in ldap logfiles (Issue [NMS-8891](#))
- The KSC Dashlet for the Ops-Board is not working (Issue [NMS-10191](#))
- Radius Login Problem (Issue [NMS-10212](#))
- Trapd does not validate config against XSD (Issue [NMS-10242](#))
- Drools correlation engine do not always respond to targeted reloadDaemonConfig events (Issue [NMS-10257](#))
- DefaultProvisionService logs noisily for monitored service having state "N" (Issue [NMS-10291](#))

## Enhancement

- Failed to run Jasper report local\_Serial-Interface-Utilization-Summary: Key receive rate is duplicated in pie dataset (Issue [NMS-9875](#))

## Release Meridian-2017.1.9

Release 2017.1.9 is a small update to OpenNMS Meridian 2017.1.8. It contains a few bug fixes and documentation updates.

The codename for 2017.1.9 is *Antwerp meridian*.

## Bug

- Entering new destination path in GUI with near identical name overwrites the current one (Issue [NMS-3994](#))
- Just opening a foreign-source in the web UI causes it to be written to disk (Issue [NMS-4720](#))
- Surveillance category membership of deleted nodes "leaks" in filters to interfaces of successor nodes (Issue [NMS-4876](#))
- ConcurrentModificationException in DefaultEventHandlerImpl (Issue [NMS-8413](#))
- The ReST API used to return XMLs with namespace, and now it doesn't (Issue [NMS-8524](#))
- MBean "TasksCompleted" for Collectd and Pollerd returns wrong counters (Issue [NMS-9741](#))
- The auto-acknowledge-alarm tag with no content doesn't work on notifd-configuration.xml (Issue [NMS-10085](#))
- The KSC Dashlet for the Ops-Board is not working (Issue [NMS-10191](#))

## Enhancement

- Link to privacy policy from Data Choices UI elements (Issue [NMS-10169](#))

## Release Meridian-2017.1.8

Release 2017.1.8 is a small update to OpenNMS Meridian 2017.1.7. It contains a few bug fixes and an update to support Newts cache priming.

The codename for 2017.1.8 is *IERS Reference Meridian*.

## Bug

- ONMS starts with broken threshold configuration file (Issue [NMS-9064](#))
- Interface delete from a node does not work (Issue [NMS-9506](#))
- Topology map node icons vanish (IE10, IE11 only) when alarm status unchecked (Issue [NMS-9614](#))
- Access Denied With Surveillance View In Ops Board (Issue [NMS-9678](#))
- Enlinkd startup fails due to NPE in BroadcastDomain class (Issue [NMS-9852](#))

- Value of `{nodeLabel}` for PSM services apparently not eagerly updated (Issue [NMS-9900](#))
- Wrong initial message displayed on AngularJS based tables. (Issue [NMS-9932](#))
- Alarm favorite link URL does not have `AddRefreshHeader-30` applied (Issue [NMS-9938](#))
- Cannot see StrafePing graphs when using Backshift. (Issue [NMS-9946](#))
- foreign-id with space (`%20`) at end causes issues with Newts (Issue [NMS-9961](#))
- perfddata-receiver doesn't compile (Issue [NMS-9967](#))
- Home Page Map does not display node details (Issue [NMS-10008](#))
- Backport intermittent SNMPv3 failures to foundation-2016 (Issue [NMS-10153](#))

## Enhancement

- Improve performance of newts.indexing to avoid overwhelm Cassandra cluster (Issue [NMS-9959](#))

## Release Meridian-2017.1.7

Release 2017.1.7 is a small update to OpenNMS Meridian 2017.1.6. It contains a few bug fixes and minor enhancements.

The codename for 2017.1.7 is *United Kingdom Ordnance Survey Zero Meridian*.



### *Configuration Update*

Some updates to Cisco data collection and graph configuration have been made since 2017.1.6. They add collection from `CISCO-REMOTE-ACCESS-MONITOR-MIB` on a number of ASAxxxx devices, as well as alarm reduction keys for FRU insertion and removal. Additionally, graphs for tunnel sessions have been added. To avoid configuration conflicts, however, the updated files have been written with the extension `.xml-2017.1.7`. If you wish to use these new configurations, rename the `.xml-2017.1.7` files to `.xml`, overwriting the existing files.

## Bug

- Node ReST service not handling assets and deleting properly (Issue [NMS-9855](#))
- JasperStudio extension dependency error (Issue [NMS-9915](#))
- `EventUtils.eventsMatch()` fails if `nodeId` is greater than 127 (Issue [NMS-9941](#))
- compilation fails on windows due to checkstyle exceptions (Issue [NMS-9943](#))
- Java not found properly when building from Windows CMD proc (Issue [NMS-9947](#))

## Enhancement

- Subsume "Event Configuration How-To" from wiki into admin guide (Issue [NMS-9926](#))
- Update docs section of devel guide with section on migrating info from wiki (Issue [NMS-9934](#))
- Refactor `UserGroupLdapAuthoritiesPopulator` to provide a default role. (Issue [NMS-9937](#))

## Release Meridian-2017.1.6

Release 2017.1.6 is a small update to OpenNMS Meridian 2017.1.5. It contains a few bug fixes.

The codename for 2017.1.6 is *Meridianus Posoniensis*.

### Bug

- It is not possible to see Statsd results on the WebUI (Issue [NMS-9861](#))
- Inconsistent handling of keyboard navigation on top menu (Issue [NMS-9867](#))

## Release Meridian-2017.1.5

Release 2017.1.5 is a small update to OpenNMS Meridian 2017.1.4. It contains a few bug fixes and performance enhancements.

The codename for 2017.1.5 is *Pulkovo meridian*.

### Bug

- Change links to docs in help page using https (Issue [NMS-9832](#))
- Copyright dates need a bump for 2018 (Issue [NMS-9871](#))

### Enhancement

- ES REST plugin not doing preemptive basic auth (Issue [NMS-9699](#))
- bsmd: avoid processing alarm lifecycle events when no rules are defined (Issue [NMS-9835](#))

## Release Meridian-2017.1.4

Release 2017.1.4 is an update to OpenNMS Meridian 2017.1.3. It is primarily a bug fix release.

The codename for 2017.1.4 is *Tenerife meridian*.

### Bug

- Notification storm causes JVM crash with: Native memory allocation (mmap) failed (Issue [NMS-9766](#))
- The typeahead widget for KSC Report Search on front page is not working (Issue [NMS-9776](#))
- The geographical maps on large installations is unusable (Issue [NMS-9777](#))
- Cannot create user groups through the WebUI (NPE) (Issue [NMS-9785](#))
- Broken Link in Admin guide to Alarm Introduction (Issue [NMS-9802](#))
- Wrong syntax for automatic rescanning in admin guide (Issue [NMS-9803](#))
- Geocoordinates truncated to 5 decimal places (Issue [HZN-1219](#))



## Release Meridian-2017.1.3

Release 2017.1.3 is an update to OpenNMS Meridian 2017.1.2. It is primarily a security and bug fix release.

The codename for 2017.1.3 is *Ferro meridian*.

### Bug

- Privilege Escalation Bug with Grafana Plugin (Issue [NMS-8093](#))
- IOActive: Cross-Site Scripting in createFavorite filter Parameter (Issue [NMS-9670](#))
- IOActive: Reflected Cross-site Scripting in userGroupView/roles roleDescr and Other Parameters (Issue [NMS-9673](#))
- IOActive: Reflected Cross-site Scripting in admin/thresholds/index.htm filterField and Other Parameters (Issue [NMS-9674](#))
- HEAD requests to static resources in the UI don't work (Issue [NMS-9689](#))
- The EXE installer of the remote poller on Windows is not working (Issue [NMS-9721](#))
- IllegalStateException in OnmsVaadinContainer (Issue [NMS-9742](#))
- Karaf snmp:show-config command lists value of timeout for retries (Issue [NMS-9745](#))
- The content of the clone foreign source definition dialog is misleading (Issue [NMS-9749](#))
- Relative path reference to version.properties (Issue [NMS-9767](#))

### Enhancement

- Authentication proxy support (Issue [NMS-9739](#))

## Release Meridian-2017.1.2

Release 2017.1.2 is the third release of OpenNMS Meridian 2017. It is primarily a security and bug fix release.

The codename for 2017.1.2 is *Kraków meridian*.

### Bug

- JMX config GUI can't connect to JMX service with JNDI name not "jmxrmi" (Issue [NMS-8596](#))
- Tweak Mattermost notification docs not to specify a channel (Issue [NMS-9362](#))
- INFO-level "unable to locate resource" log messages for interfaces not persisted by policy (Issue [NMS-9388](#))
- rescan-exitsing attribute of requisition-def tag in provisiond-configuration.xml is not passed to scanNode() in CoreImportActivities (Issue [NMS-9492](#))
- Northbounders implementation are not sending feedback events for reloadDaemonConfig (Issue [NMS-9524](#))
- XSS: HTML attribute values with quotes not escaped properly (Issue [NMS-9645](#))

- Incorrect logging of exceptions in Slack and Mattermost notifications (Issue [NMS-9656](#))
- IOActive: Reflected Cross-site Scripting in instrumentationLogReader.jsp searchString Parameter (Issue [NMS-9672](#))
- Typo prevents FIQL query values from being URI-encoded (Issue [NMS-9694](#))
- Typo in regional status geo map: Unacknowledges (for unacknowledged) (Issue [NMS-9700](#))
- Typo: "not eligible" for SNMP primary N enumeration (Issue [NMS-9701](#))
- Duty schedules with embedded newlines break startup (Issue [NMS-9709](#))
- Unexpected errors while generating event definitions from TRAP-TYPE without a DESCRIPTION field (Issue [NMS-9718](#))
- NPE in Enlinkd bridge topology broadcast domain calculation (Issue [NMS-9720](#))
- Null pointer exception in SurveillanceViewConfigurationCategoryWindow.java (Issue [NMS-9722](#))
- ReST v1 does not return errors for unparseable events (Issue [NMS-9724](#))
- Sending bad XML to the Requisitions ReST end point makes the API unusable (Issue [NMS-9725](#))

## Enhancement

- ES REST plugin not doing preemptive basic auth (Issue [NMS-9699](#))

## Release Meridian-2017.1.1

Release 2017.1.1 is the second release of OpenNMS Meridian 2017. It contains a number of security and bug fixes and a few small enhancements.

The codename for 2017.1.1 is *Meridian of Monte Mario*.

## Bug

- An empty category is not shown when in focus (Issue [NMS-9423](#))
- Multiple XSS vulnerabilities in OpenNMS webapp (Issue [NMS-9457](#))
- The button to add a graph to a KSC report doesn't work (Issue [NMS-9498](#))
- RadixTreeSyslogParser confuses timezone and hostname fields (Issue [NMS-9522](#))
- Stale IP Address Cache (Issue [NMS-9613](#))
- opennms-webapp-remoting JARs are not signed (Issue [NMS-9638](#))
- trapd may silently discard invalid traps (Issue [NMS-9660](#))
- Trap event parenting lacks bias toward SNMP primary interfaces (Issue [NMS-9666](#))
- IOActive: Stored Cross-site Scripting in SNMP Trap Message (Issue [NMS-9668](#))
- IOActive: Reflected Cross-site Scripting in heatmap/outages heatmap Parameter (Issue [NMS-9671](#))

## Enhancement

- Display AlarmId on Event page (Issue [NMS-8445](#))
- Check/add support for PostgreSQL 10 (Issue [NMS-9679](#))

## Release Meridian-2017.1.0

Release 2017.1.0 is the first release of OpenNMS Meridian 2017. It is based on OpenNMS Horizon 19, plus a number of other bug fixes and changes that went into Horizon 20.

The codename for 2017.1.0 is *Bering Strait*.

## Bug

- collectd does not unschedule deleted nodes (Issue [NMS-5105](#))
- provisiond hangs (Issue [NMS-5593](#))
- vmware urls do not support username/passwords that require URL encoding (Issue [NMS-6530](#))
- noSuchInstance causing problems during provision scan (Issue [NMS-8046](#))
- Renaming a root business services does not work anymore (Issue [NMS-8370](#))
- Simulation mode is ended when clicking on "Set as focal point" (Issue [NMS-8542](#))
- Outage ReST service forNode use case calculates dates incorrectly (Issue [NMS-8823](#))
- DB installer tries to class-load every file under OPENNMS\_HOME as a JAR (Issue [NMS-8860](#))
- Updating assets/categories through ReST affects Forced Unmanaged services. (Issue [NMS-8879](#))
- Statsd: erroneous reporting; aggregators not reset between worker's runs (Issue [NMS-8944](#))
- Skip /var/lock/subsys actions when running as unprivileged user (Issue [NMS-8962](#))
- Copyright bump 2017 (Issue [NMS-9060](#))
- Collection timing enhancements (Issue [NMS-9090](#))
- "Manually Add an Interface" seems broken (Issue [NMS-9108](#))
- opennms stays running when during a rpm/yum/dnf update (Issue [NMS-9127](#))
- Fix CORS section to include /api/\* besides /rest (Issue [NMS-9133](#))
- Fix the execution of Drools rules when using streaming (CEP, Temporal Reasoning) (Issue [NMS-9172](#))
- NPE in GeolocationProvisioningAdapter (Issue [NMS-9187](#))
- OSPF Router Id not properly updated (Issue [NMS-9218](#))
- DNS Adapter on Delete Node does not delete DNS record (Issue [NMS-9219](#))
- Topology Map ip like search produces duplicates (Issue [NMS-9265](#))
- Make TCP output queue parameters configurable (Issue [NMS-9282](#))
- syslogd logs "No hideMessage configured" though it is really not needed (Issue [NMS-9289](#))
- Logging for TCP output queue (Issue [NMS-9291](#))

- The geolocation provisioning adapter is not updating coordinates correctly (Issue [NMS-9316](#))
- Installation issues with OpenJDK JRE (Issue [NMS-9327](#))
- geo-coder creates invalid latitude/longitude in assets table (Issue [NMS-9338](#))
- XSS vulnerability on quick-add node page (Issue [NMS-9353](#))
- XSS vulnerability on node error page (Issue [NMS-9354](#))
- XSS vulnerability with application names (Issue [NMS-9355](#))
- Thresholding on WSMAN datasources appears broken (Issue [NMS-9361](#))
- Business service states are not properly updated when alarms are deleted (Issue [NMS-9369](#))
- Incorrect sysoid for the systemDef Juniper J-Routers (Issue [NMS-9372](#))
- Breadcrumb for requisitions has extra "/app" in path (Issue [NMS-9386](#))
- Increase default connection timeout for HikariCP (Issue [NMS-9387](#))
- TCP persistence strategy should output time in milliseconds, not seconds (Issue [NMS-9409](#))
- NullPointerException during nodeScan on devices with broken IP-MIB::ipAddressIfIndex (Issue [NMS-9415](#))
- Quick search HTTP error (Issue [NMS-9419](#))
- No bounds-checking in processing of DHCP Options (Issue [NMS-9420](#))
- Possible XSS in Alarm Filter Favorites (Issue [NMS-9421](#))
- Event Configuration Screen Requires Alarm Type (Issue [NMS-9422](#))
- Grouped status circle on geomap is not a circle (Issue [NMS-9424](#))
- ClassNotFoundException when running vmwarecimquery/vmwareconfigbuilder (Issue [NMS-9456](#))
- Fix JSP issues related to JAXB update (Issue [NMS-9460](#))
- SQL injection in DefaultSurveillanceViewService (Issue [NMS-9476](#))
- Clone foreign source requisition overwrites config of other requisition without any hint or warning (Issue [NMS-9481](#))
- Using maskelements based on nodeID (and maybe other fields) to match event definition doesn't work (Issue [NMS-9496](#))
- The alarm-type for BSM event definitions is conceptually incorrect (Issue [NMS-9497](#))
- Using varbind to match event definition doesn't work (when using the same UEI in many definitions) (Issue [NMS-9507](#))
- ConcurrentModificationException thrown by Statsd (Issue [NMS-9511](#))
- Update copyright date in docs (Issue [NMS-9516](#))
- Document supported products and versions for Remedy integration (Issue [NMS-9538](#))
- Microsoft IE and Edge doesn't like relative path on Angular apps (Issue [NMS-9542](#))
- initial-delay="null" when adding a new destination path (Issue [NMS-9548](#))
- The reason parameter for a nodeLostService event is limited to 255 characters (Issue [NMS-9550](#))

- Eventd does not respect event configuration order when reloading (Issue [NMS-9551](#))
- reloadDaemonConfig doesn't work for Eventd, only eventsConfigChange works (Issue [NMS-9555](#))
- users.xml being overwritten on installation (Issue [NMS-9573](#))
- Apache CXF is not decoding url parameters correctly. (Issue [NMS-9578](#))
- Custom security roles files is not mentioned on the documentation (Issue [NMS-9579](#))
- ExceptionMapper does not update the entity type accordingly (Issue [NMS-9598](#))
- offset=0 is rendering as offset=null in ReSTv2 collections (Issue [NMS-9599](#))
- Unable to modify poller packages through the Monitoring Locations UI (Issue [NMS-9608](#))
- Remove any mention of using Atomikos as a valid DB Connection Pool to avoid unwanted side effects (Issue [NMS-9609](#))
- vmware importer fails with NPE (Issue [NMS-9611](#))
- Basic syslog messages with Informational severity turn into unknown events (Issue [NMS-9615](#))
- quick add node is broken (Issue [NMS-9618](#))
- Remote poller logs have place holders for their names (Issue [NMS-9621](#))
- Missing visual aid on BSM Admin Page after hitting Reload Daemon (Issue [NMS-9624](#))
- Remote Poller log path incorrect when using the NSIS installer (Issue [NMS-9631](#))
- Pristine installation with an empty content for etc/drools-engine.d/ncs which is invalid (Issue [NMS-9636](#))
- MomentJS warning after running sample code (Issue [NMS-9637](#))
- yum error when upgrading from Meridian 2016 to Meridian 2017 with XML protocol package (Issue [NMS-9640](#))
- Changed thresholds file in Meridian 2017 (Issue [NMS-9641](#))
- notifd-configuration file wrong in Meridian 2017 (Issue [NMS-9642](#))
- Misordered collections in datacollection-config.xml (Issue [NMS-9643](#))
- Meridian 2017.1.0 needs some packages from yum.opennms.org repo (Issue [NMS-9644](#))
- re-fix BSM alarm types (Issue [NMS-9653](#))
- The Surveillance View and the Dashboard are rendered with Horizon colors (Issue [LTS-201](#))
- "Manage Minions" is not supposed to appear on the Admin Pages. (Issue [LTS-204](#))
- Display the Meridian logo in the Jasper reports (Issue [LTS-205](#))
- Color scheme in "Help improve OpenNMS" is too horizon like (Issue [LTS-210](#))
- The favicon does not comply with the meridian color scheme. (Issue [LTS-211](#))
- Distributed/Geographical Maps do not show images anymore (Issue [NMS-8597](#))

## Enhancement

- Simple usability improvement to the provisioning UI (Issue [NMS-8601](#))

- Make an automation to clear pathOutage alarms (Issue [NMS-8857](#))
- Add foreignSource and foreignId parameters when sending events as an alternative to nodeId (Issue [NMS-8919](#))
- Save syslog hostname in an event parameter (Issue [NMS-8928](#))
- Identify time-series strategy in support/about page (Issue [NMS-8936](#))
- VMware collector support for units and value modifier (Issue [NMS-9092](#))
- SNMP data collection definitions for Cisco ASA5585-SSP-60 devices (Issue [NMS-9094](#))
- Migrate remaining XSDs from Castor to JAXB (Issue [NMS-9134](#))
- Cleanup and remove Castor related dependencies (Issue [NMS-9135](#))
- Persist Drools working memory to disk when stopping and starting OpenNMS (Issue [NMS-9143](#))
- Expose task queue size for ExecutorService runners. (Issue [NMS-9161](#))
- Add Checkstyle to the build (Issue [NMS-9174](#))
- Upgrade Spring from 4.0 to 4.1 (Issue [NMS-9259](#))
- Finishing the implementation of the missing endpoints for ReST v2 (Issue [NMS-9278](#))
- Upgrade Drools to 6.5.0 (Issue [NMS-9279](#))
- Redefine the start ordering of the OpenNMS daemons during bootstrap. (Issue [NMS-9280](#))
- Reload Drools configuration without restart OpenNMS (Issue [NMS-9290](#))
- Alarms Page Enhancements - Sound and Flashing (Issue [NMS-9375](#))
- Improved visualization for large trees with the Hierarchy Layout (Issue [NMS-9379](#))
- Add support for retrieving the SNMPv2 agent address from a specific varbind (Issue [NMS-9449](#))
- Improve logging for EventIpcManagerDefaultImpl (Issue [NMS-9452](#))
- Minion requires location-specific definitions in SNMP config (Issue [NMS-9462](#))
- add HTTPS response time datacollection and graph defintions (Issue [NMS-9465](#))
- Add parameterized SQL support to Criteria API (Issue [NMS-9480](#))
- Programmable Northbounder Interfaces (Issue [NMS-9513](#))
- Remove "delete" flag from default downtime model (Issue [NMS-9257](#))