

# OpenNMS Meridian Release Notes

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# OpenNMS Meridian 2020

## System Requirements

- **Java 8 through 11:** OpenNMS Meridian 2020 runs on JDK 8 through 11. We recommend the most recent version of OpenJDK 11.
- **Default Heap Size:** The default heap size is 2GB.
- **PostgreSQL 10 or higher:** Meridian 2020 requires any supported version of PostgreSQL 10 or higher.

## What's New in Meridian 2020

Since Meridian 2019, we have refined a number of the features introduced relating to telemetry, correlation, and other underlying APIs.

Meridian 2020 roughly matches the feature set available in Horizon 26.1.

## Documentation Updates

Documentation improvements have been made in a number of areas:

- Docker
- Grafana PDF Reports
- Graph Service API
- Minion
- Telemetry/flows
- Thresholding
- Timeseries Integration

## Graph API

A new API has been added for querying graph data, inspired by [GraphML](#). This API consolidates a number of internal APIs for accessing topology, application, BSM, link, and other data.

## Kafka and RPC

The RPC APIs for communicating between the OpenNMS core, Minion, and Sentinel have been improved, including adding support for gRPC communication.

It is now possible to configure Kafka to use a single topic for communication rather than one per module.

You can now configure flow data to be enriched with node metadata before being forwarded to Kafka.

## Minion and Sentinel

- The Minion can now be configured using `confd` by creating a `minion-config.yaml` file. For details, see [the README in the Minion source](#).
- The Minion Docker container has a number of enhancements:
  - Minion container sizes have been halved.
  - Native ICMP support has been added to improve performance.
  - Dockerized Minion now supports ARM.
- The Jolokia HTTP-JMX bridge has been added to the Minion and Sentinel.

## Polling and Monitoring

- The HTTP POST monitor has been updated to support injecting headers into the request.
- The poller now does a better job of validating configs on startup/reload.

## Provisioning

- Provisiond has been enhanced to improve performance of scans.
- Nodes provisioned through new suspect events now get assigned a foreign source.

## Telemetry and BMP

- The flow classification editor now supports CIDR notation for IP address expressions.
- Support has been added for the BGP Monitoring Protocol (BMP).

## Time-Series API

A new experimental internal API has been added for supporting persisting time-series data in a way that doesn't carry the baggage of the existing persistence APIs which are still heavily influenced by RRDTool.

## Web UI Improvements

- The navbar notification alert now shows everywhere, not just the front page.
- The "user" menu has been reorganized and cleaned up.
- The requisitions UI now supports deleting a node from its node page in the editor.

## Breaking Changes

### Flow Classification

In Meridian 2019, the Flow Classification UI accepted invalid IP address values, e.g., `10,192.1,168.1,5.1-160`. When upgrading OpenNMS Meridian, existing Flow Classification Rules may be considered invalid. In this case they are silently ignored by the Flow Classification Engine.

In order to assure no invalid Flow Classification Rules exist, please run the OSGi shell command `opennms-classification:list-invalid-rules` to list all invalid rules. If there are any invalid rules, you must manually fix them using the Flow Classification UI. For more details, refer to issue [NMS-12422](#).

## Events and Kafka

Events forwarded to Kafka are now keyed by `id` rather than `uei`.

## Karaf Shell Command Changes

All of the custom Karaf shell commands have now been updated to use a common scope of `opennms`. This makes it easier to find and enumerate the commands.

Mapping from previous to new commands is as follows:

Previous Command	New Command
<code>opennms-provision:detect</code>	<code>opennms:detect</code>
<code>opennms-provision:list-detectors</code>	<code>opennms:list-detectors</code>
<code>opennms-provision:show-import</code>	<code>opennms:show-import</code>
<code>opennms-provision:import-requisition</code>	<code>opennms:import-requisition</code>
<code>opennms-dns:lookup</code>	<code>opennms:dns-lookup</code>
<code>opennms-dns:reverse-lookup</code>	<code>opennms:dns-reverse-lookup</code>
<code>opennms-ping:sweep</code>	<code>opennms:ping-sweep</code>
<code>opennms-ping:ping</code>	<code>opennms:ping</code>
<code>opennms-jira:list-projects</code>	<code>opennms:jira-list-projects</code>
<code>opennms-jira:verify</code>	<code>opennms:jira-verify</code>
<code>opennms-jira:show-config</code>	<code>opennms:jira-show-config</code>
<code>opennms-jira:list-priorities</code>	<code>opennms:jira-list-priorities</code>
<code>opennms-jira:list-fields</code>	<code>opennms:jira-list-fields</code>
<code>opennms-jira:list-versions</code>	<code>opennms:jira-list-versions</code>
<code>opennms-jira:list-issue-types</code>	<code>opennms:jira-list-issue-types</code>
<code>opennms-jira:list-components</code>	<code>opennms:jira-list-components</code>
<code>opennms-scv:set</code>	<code>opennms:scv-set</code>
<code>opennms-scv:get</code>	<code>opennms:scv-get</code>
<code>opennms-datachoices:reset-system-id</code>	<code>opennms:datachoices-reset-system-id</code>
<code>opennms-datachoices:display-usage-report</code>	<code>opennms:datachoices-display-usage-report</code>
<code>opennms-datachoices:send-usage-report</code>	<code>opennms:datachoices-send-usage-report</code>
<code>opennms-poller:test</code>	<code>opennms:poll-test</code>

Previous Command	New Command
<code>opennms-poller:list-monitors</code>	<code>opennms:list-monitors</code>
<code>opennms-poller:poll</code>	<code>opennms:poll</code>
<code>opennms-filters:filter</code>	<code>opennms:filter</code>
<code>opennms-measurements:show-newts-samples</code>	<code>opennms:show-newts-samples</code>
<code>opennms-measurements:delete-resource</code>	<code>opennms:delete-measurement-resources</code>
<code>opennms-measurements:show-measurements</code>	<code>opennms:show-measurements</code>
<code>opennms-measurements:show-resources</code>	<code>opennms:show-measurement-resources</code>
<code>opennms-enlinkd:delete-topology</code>	<code>opennms:delete-topology</code>
<code>opennms-enlinkd:generate-topology</code>	<code>opennms:generate-topology</code>
<code>opennms-provision:list-detectors</code>	<code>opennms:list-detectors</code>
<code>opennms-collection:list-collectors</code>	<code>opennms:list-collectors</code>
<code>opennms-minion:id</code>	<code>opennms:minion-id</code>
<code>opennms-minion:ping</code>	<b>*Removed in favor of <code>opennms:health-check</code></b>
<code>opennms-dns:stress</code>	<code>opennms:stress-dns</code>
<code>opennms-kafka-producer:sync-alarms</code>	<code>opennms:kafka-sync-alarms</code>
<code>opennms-kafka-producer:push-topology-edges</code>	<code>opennms:kafka-push-topology-edges</code>
<code>opennms-kafka-producer:evaluate-filter</code>	<code>opennms:kafka-evaluate-filter</code>
<code>opennms-kafka-producer:list-alarms</code>	<code>opennms:kafka-list-alarms</code>
<code>opennms-nodocache:sync</code>	<code>opennms:sync-node-cache</code>
<code>opennms-coordination:join-election-domain</code>	<code>opennms:join-election-domain</code>
<code>opennms-kv-blob:put</code>	<code>opennms:kv-put-blob</code>
<code>opennms-kv-blob:get</code>	<code>opennms:kv-get-blob</code>
<code>opennms-kv-blob:benchmark</code>	<code>opennms:kv-benchmark-blob</code>
<code>opennms-kv-json:get</code>	<code>opennms:kv-get-json</code>
<code>opennms-kv-json:put</code>	<code>opennms:kv-put-json</code>
<code>opennms-classification:list-rules</code>	<code>opennms:list-classification-rules</code>
<code>opennms-classification:reload-engine</code>	<code>opennms:reload-classification-engine</code>
<code>opennms-classification:list-groups</code>	<code>opennms:list-classification-groups</code>
<code>opennms-classification:list-invalid-rules</code>	<code>opennms:list-classification-invalid-rules</code>
<code>opennms-classification:classify</code>	<code>opennms:classify-flow</code>
<code>opennms-elasticsearch:send-historic-events</code>	<code>opennms:send-events-to-elasticsearch</code>
<code>opennms-events:show-event-config</code>	<code>opennms:show-event-config</code>
<code>opennms-reload:daemon</code>	<code>opennms:reload-daemon</code>

<b>Previous Command</b>	<b>New Command</b>
<code>opennms-events:stress</code>	<code>opennms:stress-events</code>
<code>opennms-events:send</code>	<code>opennms:send-event</code>
<code>opennms-bsm:generate-hierarchies</code>	<code>opennms:bsm-generate-hierarchies</code>
<code>opennms-bsm:delete-generated-hierarchies</code>	<code>opennms:bsm-delete-generated-hierarchies</code>
<code>opennms-bsm:render-graph</code>	<code>opennms:bsm-render-graph</code>
<code>opennms-asset-topology:regenerate</code>	<code>opennms:asset-topo-regenerate</code>
<code>opennms-asset-topology:remove</code>	<code>opennms:asset-topo-remove</code>
<code>opennms-asset-topology:list</code>	<code>opennms:asset-topo-list</code>
<code>opennms-asset-topology:create</code>	<code>opennms:asset-topo-create</code>
<code>opennms-asset-topology:regenerateall</code>	<code>opennms:asset-topo-regenerate-all</code>
<code>opennms-topo:show-history</code>	<code>opennms:topo-show-history</code>
<code>opennms-topo:delete-history</code>	<code>opennms:topo-delete-history</code>
<code>opennms-onms:listnamespaces</code>	<code>opennms:list-namespaces</code>
<code>opennms-topo:listoperations</code>	<code>opennms:topo-list-operations</code>
<code>opennms-activemq:stats</code>	<code>opennms:activemq-stats</code>
<code>opennms-activemq:purge-queue</code>	<code>opennms:activemq-purge-queue</code>
<code>opennms-sentinel:id</code>	<code>opennms:id</code>
<code>opennms-collection:list-collectors</code>	<code>opennms:list-collectors</code>
<code>opennms-collection:collect</code>	<code>opennms:collect</code>
<code>opennms-metrics:stress</code>	<code>opennms:stress-metrics</code>
<code>opennms-threshold-states:details</code>	<code>opennms:threshold-details</code>
<code>opennms-threshold-states:enumerate</code>	<code>opennms:threshold-enumerate</code>
<code>opennms-threshold-states:clear-all</code>	<code>opennms:threshold-clear-all</code>
<code>opennms-threshold-states:clear</code>	<code>opennms:threshold-clear</code>
<code>opennms-meta:test</code>	<code>opennms:metadata-test</code>
<code>opennms-rpc:stress</code>	<code>opennms:stress-rpc</code>
<code>opennms-kafka-sink:topics</code>	<code>opennms:kafka-sink-topics</code>
<code>opennms-kafka-rpc:topics</code>	<code>opennms:kafka-rpc-topics</code>
<code>opennms-snmp:fit</code>	<code>opennms:snmp-fit</code>
<code>opennms-snmp:show-config</code>	<code>opennms:snmp-show-config</code>
<code>opennms-snmp:remove-from-definition</code>	<code>opennms:snmp-remove-from-definition</code>
<code>opennms-snmp:walk</code>	<code>opennms:snmp-walk</code>
<code>snmp:local-engine-id</code>	<code>opennms:snmp-local-engine-id</code>



Previous Command	New Command
<code>opennms-health:metrics-list</code>	<code>opennms:metrics-list</code>
<code>opennms-health:metrics-display</code>	<code>opennms:metrics-display</code>
<code>opennms-health:check</code>	<code>opennms:health-check</code>
<code>opennms-graph:get</code>	<code>opennms:graph-get</code>
<code>opennms-graph:list</code>	<code>opennms:graph-list</code>
<code>opennms-graph:force-reload</code>	<code>opennms:graph-force-reload</code>
<code>opennms-graph:search</code>	<code>opennms:graph-search</code>

## Notable Internal Changes

- Kafka has been updated to version 2.4.0.
- Protobuf has been updated to version 3.11.4.
- The OpenNMS Integration API is now version 0.4.
- Internally, events are, in most cases, immutable. For the most part, you should see no changes in the external and code places that events are interacted with. They are converted to mutable versions in places where they are often manipulated (like Drools).

## Other Improvements

Since Meridian 2020 is based on Horizon 26.1, it contains all the fixes and updates that have occurred since Meridian 2019 was created from the Horizon 25 codebase.

For a more complete list of major changes included in this release, see the ["What's New" documentation](#) for Horizon 26.1.3.

### Release Meridian-2020.1.3

Release 2020.1.3 is the fourth release in the Meridian 2020 series.

It contains a critical fix to a reporting API bug that could cause OpenNMS to fail to start.

**BREAKING:** If you created reports in 2020.1.2, they will need to be recreated in 2020.1.3.

The codename for 2020.1.3 is *Fjord*.

#### Bug

- report timezone changes break reading pre-existing reports from Quartz (Issue [NMS-13037](#))

### Release Meridian-2020.1.2

Release 2020.1.2 is the third release in the Meridian 2020 series.

It contains a number of bug fixes including a fix for a critical Jetty CVE.

The codename for 2020.1.2 is *Skerry*.

### Bug

- Timezone inconsistency when generating PDF reports from Grafana dashboards (Issue [NMS-12930](#))
- RRD files for SNMP data are not created until a Service Restart (Issue [NMS-12974](#))
- Unable to enable Jaeger tracing in Sentinel (Issue [NMS-12998](#))
- Update typo in BMP docs (Issue [NMS-13002](#))
- CVE-2020-27216: Jetty webserver vulnerability (Issue [NMS-13009](#))
- Null pointer exception whe minion receives traps (Issue [NMS-13015](#))

## Release Meridian-2020.1.1

Release 2020.1.1 is the second release in the Meridian 2020 series.

It contains a number of bug fixes and enhancements.

The codename for 2020.1.1 is *Tombolo*.

### Bug

- Unable to poll Vcenter CIM - Calling something in OpenJDK11 that has been removed. (Issue [NMS-12919](#))
- service starts / restarts work but spit out an error if configured to wait for startup (Issue [NMS-12966](#))
- Alarm (v1 & v2) ReST Service PUT Can't PUT Multiple Things (Issue [NMS-12979](#))

### Enhancement

- Add custom string attributes based on indirect and complex SNMP Indices (Issue [NMS-8484](#))
- Identify message broker strategies in web "about" page (Issue [NMS-12971](#))

## Release Meridian-2020.1.0

Release 2020.1.0 is the first release in the Meridian 2020 series, based on Horizon 26.1.x.

The codename for 2020.1.0 is *Archipelago*.

### Bug

- HTTP Detector does not accept a response without a reason as valid (Issue [NMS-10351](#))
- Slack-compatible notification strategies expect "url" for switch name, should be "-url" (Issue [NMS-10552](#))

- `opennms.pid` missing when started by Systemd (Issue [NMS-12769](#))
- Interfaces incorrectly marked as having flows resulting in no data via Helm (Issue [NMS-12814](#))
- Response Time Summary database report missing latency calculation (Issue [NMS-12837](#))
- `SslContextFactory` needs to be changed to `SslContextFactory.Server` in `jetty.xml` (Issue [NMS-12847](#))
- Wrong startup command for Minion running with Docker and health check issues (Issue [NMS-12872](#))
- Install guide RHEL instructions are invalid on RHEL 7 (Issue [NMS-12891](#))

## Enhancement

- Update collectors chapter (Issue [NMS-12682](#))
- Include XML schema for `wsman-datacollection-config.xml` in assemblies (Issue [NMS-12813](#))
- Fix `CollectdTest` mock'ing errors (Issue [NMS-12828](#))
- Fix JMX datacollection config generator test (Issue [NMS-12829](#))
- Remove unused import in `BsonUtils` (Issue [NMS-12830](#))
- Update `mockito/powermock` dependencies (Issue [NMS-12831](#))
- Update Minion installation documentation (Issue [NMS-12917](#))
- sort custom reports (Issue [NMS-12931](#))
- Update Copyright notice for 2020 (Issue [NMS-12933](#))