

Oracle Utilities Network Management System

Release Notes

Release 2.5.0.1.0

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Oracle Utilities Network Management System Release Notes

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Preface

These release notes provide an overview of the features in Oracle Utilities Network Management System Version 2.5.0.1.0.

This preface contains these topics:

- Audience
- Related Documents

Audience

Oracle Utilities Network Management System Release Notes is intended for anyone installing or using Oracle Utilities Network Management System Version 2.5.0.1.0.

Related Documents

For more information, see these Oracle documents:

- *Oracle Utilities Network Management System Adapters Guide*
- *Oracle Utilities Network Management System Advanced Distribution Management System Implementation Guide*
- *Oracle Utilities Network Management System Configuration Guide*
- *Oracle Utilities Network Management System OMS for Water User's Guide*
- *Oracle Utilities Network Management System Installation Guide*
- *Oracle Utilities Network Management System Licensing Information User Manual*
- *Oracle Utilities Network Management System Operations Mobile Application Installation and Deployment Guide*
- *Oracle Utilities Network Management System Quick Install Guide*
- *Oracle Utilities Network Management System Security Guide*
- *Oracle Utilities Network Management System User's Guide*

Chapter 1

Release Notes

- Enhancements in Version 2.5.0.1.0
- Upgrading to Version 2.5.0.1.0
- Supported Platforms
- Discontinued Platforms

Enhancements in Version 2.5.0.1.0

New and enhanced features in Oracle Utilities Network Management System Version 2.5.0.1.0.

Distribution Management System (DMS)

Configurable number of retries for a failed switching step

For switch sheets that execute automatically through SCADA, NMS can now be configured to re-instruct a step if it fails. The number of attempts and delay between attempts is configurable by switch plan type.

Fault Location, Isolation, & Service Restoration (FLISR)

Globally disable FLISR if a configured SCADA point is asserted

A SCADA point can be configured to globally disable FLISR when asserted. FLISR will return to its prior mode after the point has been de-asserted. The use case for this is for when transmission operators are initiating a load shed event they will assert this SCADA point so that FLISR does not trigger on loss of voltage, and try to restore the shed area from other sources.

New validation checks for restoration tie switches

Previously FLISR checked the availability of a restoration tie based on the topology status. Now FLISR can be configured to check the SCADA voltage measurement point to validate if the restoration tie is available. FLISR can now also be configured to consider predicted device outages to determine if a switch is available.

Compare pre-fault and post-FLISR violations

FLISR can now be configured to proceed with automatic execution if pre-fault violations are not worsened by a FLISR plan. An example would be if violations exist on a lateral and are not worsened by the FLISR plan, then FLISR will be allowed to proceed with automatic execution.

Automatically restore sections without violations

FLISR can now proceed with automatic restoration if some of the restoration blocks do not have violations. Previously FLISR required all blocks to be violation free to proceed with automatic execution. When a plan is partially restored automatically, the operator will be able to append steps to the plan and execute the remaining steps as they would a manual FLISR plan.

Single-phase FLISR when a gang operated device trips to lockout

If a device trips to lockout on all 3 phases due to a single-phase fault, and there are SCADA operable single-phase switching devices downstream of the tripped device, FLISR can now generate a switching plan that utilizes single-phase switching to isolate the faulted phase(s) and maximize the customers restored.

FLISR capture post event analysis data

FLISR now captures the state of the network prior to the fault so that the network can be analyzed in study mode to determine if FLISR operated as expected. When the FLISR event occurs, it creates a save case that can be initialized from the FLISR report. The save case captures the network topology, the SCADA measurements, and the load and generation profiles that were being utilized prior to the fault. When the save case is initialized from the FLISR report, suggested switching will launch with the isolate and restore objective for the faulted section of the network.

Feeder Load Management (FLM)

Ability to specify number of days to forecast in study mode

Study mode can now be configured to produce a configurable number of forecast hours and a configurable number of forecast intervals per hour for Feeder Load Management.

Add scaling factors and weather data to FLM

Feeder Load Management now shows the weather feed fields for the feeder head in the feeder load overview tab. Feeder Load Management now shows the kW/kVAr scaling factors by phase in the Feeder Load Management load details table for SCADA measurement points. Scale factors are the ratio of measured load to expected load from load profiles.

Launch Suggested Switching Relieve Violations from FLM Feeder Details.

Users can launch Suggested Switching Relieve Violations objective from a current or forecasted violation from the violations tab in FLM feeder details. This will initiate the study session used by suggested switching to the same conditions as the forecasted power flow solution.

Flex Operations

Initial release

A new optional license module Flex Operations is being released. Flex Operations provides core outage management functionality via a web browser, allowing quick access with zero download/installation. The initial release of Flex Operations includes:

- Login and Authority tool for control zone subscription
- A Work Agenda-like event list with all standard Work Agenda columns
- A crew list with the ability to change crew statuses
- The ability to right-click in the event list or crew list to assign/dispatch/en route/onsite a crew to an event
- The ability to bring up Event Details for a single event with standard Event Details tabs
- A network viewer/map that display the distribution network with optional landbase and displays standard symbols for devices, events, crews, notes, tags, etc. similar to the core NMS Viewer
- The ability to trace in the viewer, color-code conductors by feeder/phase/voltage, and see energization
- The ability to view device attributes, downstream customers, and other information
- The ability to operate non-SCADA devices to update the model
- The ability to confirm predicted device outages, or confirm service and secondary outages
- The ability to enter and view damage assessment

This initial release does not include study mode, switching management, or DMS applications

Oracle Utilities NMS Flex Operations

Connected 3/28/2021 23:37:47 nms4

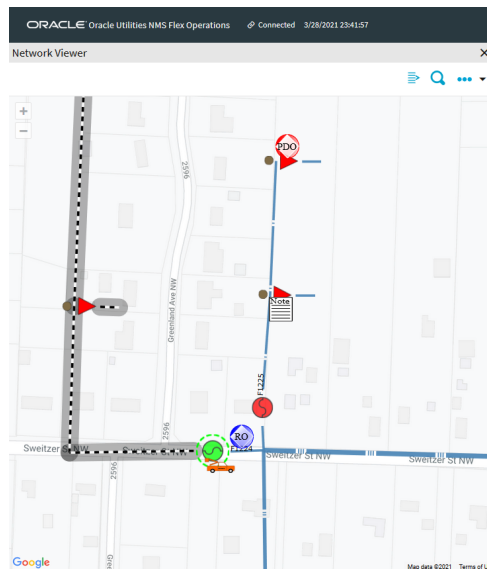
Events

Status	Event #	Feeder	DMS Status	E/H	Start Time	# Out	# Shift Out	Rel Event #	# Haz	Run Ckt	Est Restore Time	# Calls
NEW	1284	2414	0		3/28/2021 09:00	5	5	0	0			1
ONS	1283	2412	0			2	7	7	0		3/27/2021 19:05	1
UAS	1282	2414	0			4	52	0	0		3/29/2021 00:15	0
CMP	1281	2414	0			9	21	0	0		3/27/2021 15:29	0
RCVD	1280	2414	0			0	7	7	0		3/29/2021 02:58	0
CRD	1279	2414	0			6	13	13	0		3/29/2021 03:33	3

Crews

Crew ID	Crew Type	Control Zone	Contact	Mobilized	Crew Size	Shift Status	Event Status	Device	# Assign	H/W	
Mobile Crew 3	Tree Cr...	Lake	Contact 3		5551006	6	On Shift	onsite	T15130	0	80:57
Mobile Crew 4	Line	Lake	Contact 4		5551009	6	Off Shift	inactive		0	80:57
OMS Crew 1	Service	Stark	Contact 1		5551000	6	On Shift	available		0	80:57
OMS Crew 2	Trouble	Lake	Contact 2		5551003	6	On Shift	available		0	80:57
OMS Crew 5	Eval	Lake Sub	Contact 5		5551012	2	On Shift	available		0	80:57
OMS Crew 6	Guide	Marlboro S...	Contact 6		5551015	2	On Shift	available		0	80:57

Events and Crews X
https://ugbr-sch-30.amiadrshare01.gbuucdm020ad.oraclecn.com:7102/nms-ws/browser/#



High Availability (HA)

Unplanned Failover

NMS has a new monitoring service that will determine when a site is considered down. When a site is considered down, NMS will orchestrate a failover to the highest priority recovery site using Site Guard.

Operations Mobile Application (OMA)

Support Tracing in OMA

The ability to perform a distribution network trace has been added to OMA map. An OMA user can specify the type of trace (for example, to Source, to Open Points, to Sectionalizing Device, and so forth), the phases to trace, and the direction to trace (Upstream, Downstream, or All). The user can see the trace highlighted in the OMA map, view the extent of the trace, and target to the trace endpoint.

Notify OMA user when an event has been modified

If an OMS user is viewing and possibly editing information about an event (estimated restore time, event details, etc.) and updates to the event are saved by another user, a popup will notify the OMA user that the event has been edited. It will provide the option to refresh the event information to see the latest details.

View and edit tag details in OMA

An OMA user can now see more details about tags that have been placed, such as the user and timestamp, the tag ID, any tag comments, and the associated switching sheet or event ID. The OMA user can also edit the tag ID or tag comments.

Enhance management of damage assessment in OMA

Several minor improvements were done in the displaying and managing of damage assessments in OMA. These include:

- Displaying damage assessments for an event in a “card list” format similar to events, selected devices, and so on. Selecting a damage assessment can display more information and actions.
- Be able to multi-select damage assessments for an event and update them all to the same status such as Fixed or Obsolete.
- Be able to update all damage assessments created by customer calls to the same status such as Fixed or Obsolete. This is helpful if you have configuration for certain call clues to automatically create a hazard damage assessment, such as a reported wire down.

Improved related event validation and completion in OMA

Improvements were made in how OMA can validate if an event is ready for completion, especially when dealing with multiple related events (for example, a momentary outage, an associated FLA event, and an associated outage event). These improvements include:

- Validation specific to event type that can be checked programmatically by OMA when doing multiple-event completion. For example, requiring FLA events to mark all candidate fault locations as incorrect or confirmed.
- Provide dialogs if the OMA user attempts to save or complete an event and there are related events also assigned to the OMA user, asking if any updates should be also saved to the related events, and whether to only update/overwrite blank fields or all fields.
- When attempting to bulk complete multiple related events at once, display a dialog showing the validation status of all of the related events and allow the user to easily navigate to events that do not pass validation.

Display next upstream device information

The event information sent to OMA can now display the next upstream protective or predictive device in addition to the actual predicted event device. This can avoid the OMA user needing to contact the control room to request a repredict upstream should the prediction be wrong, or to request information about the next upstream protective device should the OMA user need to isolate the area. The next operable device upstream can also be calculated and sent.

Support user types in OMA

OMA previously had some permissions that could be configured into a permission set, and a user granted one or more permission sets. Now OMA supports a more robust user type functionality. Users will be prompted to select a user type if they are authorized for more than one type, and the user type controls the layout and available functionality within the OMA application once the user logs in. Sample user types of "Full Operations", "Hazard Responder", "Damage Assessor", and "View Only" are provided in the template OMA application and projects can add, edit, or remove user types by modifying the OMA template.

OMA to have a more device-responsive UX

OMA now has a more device-responsive user experience. It will automatically detect the device screen size and resolution and auto-scale to best fit. Layout of information is generally optimized for the device orientation, such as multi-column fields and labels in landscape mode becoming single-column in portrait mode. Information was also moved to menus or submenus to avoid excessive clutter and provide easy access to the most key functions. In the case of the Hazard Responder user type, the interaction was simplified and arranged for convenient access on a smart-phone with reduced risk of accidentally selecting the wrong action or item.

Optimization, Suggested Switching (SS)

Track Number of Operations for Capacitor and Regulation Devices

NMS can now be configured to track the number of close operations for capacitors and penalize them from being used for optimization if operations have exceeded a configured threshold. Penalized capacitors will only be used if required to relieve a violations.

Power Flow

Symbology to indicate cross-phase open devices

A new violation type has been added for open devices that are cross phase. When the phase angle difference on two energized sides of an open device exceeds a configured threshold, the device can be configured to have a violation glow. With this enhancement, a new violations tab has been added to the device details. On the violations tab, the user can see all violations that are present on the device.

Consider Predicted Outage as Real Outage on Solve

Power flow can now be configured to treat a predicted outage as a real outage when it solves. The predicted outage will not trigger a power flow re-solve, but when power flow solves on its cyclical time or triggered on a topology change it will consider the predicted outage device as open.

New limit types for substation transformers and conductors

Previously NMS had normal and emergency limit types for substation transformers and conductors. NMS now has Normal, Emergency Short, and Emergency Long limit types. NMS also now has the option to use temperature based limits for substation transformers and conductors instead of seasonal limits.

SCADA

Millesecond timestamp support

NMS has added support for receiving and processing millisecond timestamps for analog and digital SCADA measurements.

Web Switching Management (WSW)

Trace and auto-generate tag steps

NMS now has an option where if a switching sheet is open and recording, the user can right-click on a device in the Viewer and generate tag steps. A project can configure which device classes should generate which associated steps, such as turning off reclosing and tagging a recloser. The system will then trace to source and record the configured steps for each device found of the configured device classes.

Switching Integration with iTOA

An integration capability has been provided for exchanging information with other systems such as iTOA. This is helpful when transmission switching and distribution switching need to be coordinated across different groups within a utility. Staging tables are used to receive or store requests, generate switching sheets with request information and attachments, generate and send read-only versions of sheets with safety documents and attachments, and receive or send plan status updates.

Support replication option for switching requests

Sometimes a multi-day switching job needs to have the same general isolate, work, and restore steps done on either a daily basis or at the end of each week, to restore the network to a previous state when work isn't being done. A new "Replication" option has been added to the Request tab of switching that allows an indication of whether the switching sheet should be replicated daily or not and whether weekends will be worked. When the switching sheet is transitioned to a configured state such as approved or scheduled, it will replicate the sheet potentially many times based on the overall start and end date of the entire planned switching work.

Web Trouble (WT)

Improved outage prediction for devices affecting wye and delta customers

NMS has improved prediction logic through wye/delta transformers.

- Wye/Delta
 - Lose 1 phase above, all 3 phases below remain energized
 - Lose 2 phases above, 2 phases below remain energized
- Delta/Wye
 - Lose 1 phase above, 2 phases below are de-energized

- Lose 2 phases above, all 3 phases below are de-energized
- Floating Wye/Delta
 - Lose 1 phase above, all 3 phases below are energized (bad voltage)
 - Lose 2 phases above, all phases below are de-energized
 - Loss of any phase above, all customers below counted out.

For this enhancement NMS has a new rule to predict common phases of customers reporting for outage device. Oracle recommends enabling this rule for delta/wye scenarios.

- Example: Customers connected to AB, and customers connected to AC call in to report outage. Outaged phase is predicted to be A.

Configurable automated management of temporary crews

Thresholds can be configured to automatically transition a temporary crew's status:

- Off shift if they've had no assignments for an extended period of time.
- Inactive if they've been off shift for a different extended period of time.
- Deleted if they've been inactive for a different extended period of time.

Edit Clues for multiple calls on the same event at once

Previously NMS supported the ability to select a single call for an event, change the clues, and optionally add a comment. Now multiple calls can be selected and updated to the same set of new clues with a comment added to all of the call records. This can be helpful if multiple customers report a wire down ends up being a telecomm wire, not a power line, as all call clues can be corrected at once.

Have Repredict Downstream re-analyze calls

If an outage prediction rolled too far upstream, previously a repredict downstream action would only move it to the next level down of predictable devices. This was problematic if the original prediction consumed downstream probable service outages, for example, as the repredict downstream might only push down to the transformer or an upstream tap fuse despite there being a single call downstream of it. Now the reprediction re-analyzes more accurately to what the predictions would have been before the final roll-up.

Support setting work queue on event creation

It is now possible to select a work queue from the Create Event dialog that will be the initial work queue for the event being created. Additionally, configuration rules were added to allow new events created by partial restorations or confirming service and secondary outages automatically inherit their parent event's work queues. Also, a default work queue can be configured that would be set for events created via device operations.

Improve callback options

Several improvements were done around tracking and generating callbacks. These include:

- The ability to record the desired callback channel such as call, text, or email along with the desired phone number or email address.
- The ability to configure a single "do-not-call" window during which no callbacks will be generated.
- The ability to select one or more rows in the Work Agenda and cancel performing any callbacks for those events.

- The ability to select one or more rows in the Calls table for an event and manual trigger generation of the restoration callback list.
- The ability to store the results of multiple callback attempts to the same customer for an event.
- The ability to generate callbacks based on ERT update as well as upon event restoration.
- The ability to suppress system-generated callbacks by control zone.
- The ability to display the last callback time done for an event in a Work Agenda column.

Note that NMS does not provide the mechanism to actually perform callbacks via phone, text, or email. These enhancements regard improved content and ways to generate the callback list that can then be sent to a call center or other application.

Improved management of crew statuses

The Crews panel in Event Details now shows all of the timestamps of the crews currently associated to the event (Assign Date, Dispatch Date, En Route Date, Onsite Date). A user can also edit the date/time for any of the statuses after the fact. Furthermore, timestamps for earlier statuses are always populated and shown, so if a crew is placed directly en route to an event the same timestamp would be populated and displayed for the Assign Date. This visibility of earlier timestamps also is shown in Web Call Entry, although they cannot be edited from there.

Web Workspace (WW)

Improve tag information population, display, and editing

The mouse-over tooltip for tags in the NMS Viewer now includes the user ID and timestamp of placement, the tag ID, any tag comments, and the associated switch plan ID or event ID. For tags that support tag text, an audit trail is now available to see each edit and the previous tag text, similar to notes.

Support multiple concurrent Event Details and event locking

Operators can now multi-task with events more easily by having Event Details open for multiple events at once. Each event is shown in a separate tab, similar to the separate tabs for switch sheets when multiple switch sheets are open. Each Event Details tab still has the full set of sub-tabs for updating and completing the event, viewing customers and calls, viewing the event log, managing damage assessments, etc.

Also similar to switching, the concept of event locking has been introduced should a project wish to use it. Events can be locked when opened, preventing another user from editing certain tabs in Event Details. Other users can still open a locked event in "view-only" mode, and add event notes and damage assessments, but not change job completion dropdowns or complete the event. A new "Locked By" Work Agenda column shows the user who has the event locked if it is locked, and a lock can be stolen if a reason is provided, similar to stealing a lock on a switch sheet.

Maintain a single secondary color regardless of coloring mode

An option has been added to have secondary conductors and cables maintain a single specific color regardless of whether the Viewer is showing color-coding by feeder, phase, nominal voltage, etc.

Create an event if a device is operated that de-energizes but does not drop any customers

An option has been added to allow an outage or non-outage event to be created if a device or wire is opened that causes de-energization of a part of the network, but does not affect any customers. Previously no event would be created, but this new option allows creation of an event to ensure an operator doesn't lose track of the de-energized area.

Indicate when a de-energized customer affects no customers

Another option that complements the previous item is to indicate when a conductor is de-energized but does not cause an outage (affects no customers). With this option, the conductor linestyle can still change to indicate that it is de-energized, but without the highlight "glow" indicating a predicted or confirmed outage.

Improve display of jumpers

When placing a jumper, it could be hard to see what it connects in a congested area, or hard to see at all for an inline jumper. An option was added to allow a user to draw a jumper by clicking to indicate line segments, allowing it to be displayed above or to the side of devices or conductors.

Display event history at or downstream of a device

A new right-click option has been added for devices in the Viewer to display device history. This will open a dialog that can display events either specifically at the device or also downstream of the device. The list can show only active events or also completed events, and show outages, non-outages, or both. The user can also specify how far back to query. Information is limited to what is in the NMS database.

Support pinging an AMI meter for connection status

Previous NMS supported pinging a meter for power status and sending an on-demand read request for voltage information. A third option is now available to ping one or more meters for the "load side" status to determine if the meter is actually connected to the premise. This is helpful if the meter has power but has been disconnected for non-payment, or not yet hooked up for a new customer.

Additional Viewer trace information

When a trace is done in the NMS Viewer, a tabular Trace Results dialog can be displayed with information about all devices found along the trace path or only certain device classes found along the trace path. Information show includes the device ID and device type, location, nominal voltage and phases, and also length in the case of conductors or cables. In addition, the downstream customers and kVA can be calculated for a device in the list. Also from the list, the user can navigate directly to a device or bring up Look Ahead for the device to see more information such as customer by phase, critical customers, etc.

Upgrading to Version 2.5.0.1.0

The upgrade path to Oracle Utilities Network Management System V2.5.0.1.0 is a complete delivery of new binaries, libraries, and configuration files. There are identified migrations based upon your previous release of Oracle Utilities Network Management System, if any.

For details on supported platforms, refer to the installation documentation shipped with Oracle Utilities Network Management System V2.5.0.1.0.

Supported Platforms

For details regarding supported platforms, please see the *Oracle Utilities Network Management System Licensing Information User Manual*.

Discontinued Platforms

The following platform is still supported but is planned to be deprecated in a future NMS major release:

- Oracle Solaris

