Oracle Real-Time Scheduler

Release Notes

Release 2.2.0 Service Pack 1

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Oracle Real-Time Scheduler, Release Notes, Release 2.2.0 Service Pack 1

Contents

Preface

These release notes provide an overview of the enhancements, known issues, and other changes in this release.

Audience

This guide is intended for anyone installing or using Oracle Real-Time Scheduler 2.2.0 Service Pack 1.

Related Documents

For more information, refer to these Oracle documents:

Installation, Configuration and Release Notes

- *Oracle Real-Time Scheduler Release Notes*
- *Oracle Real-Time Scheduler Quick Install Guide*
- *Oracle Real-Time Scheduler Installation Guide*
- *Oracle Real-Time Scheduler DBA Guide*
- *Oracle Real-Time Scheduler Configuration Guide*

User Guides

- *Oracle Real-Time Scheduler User's Guide*
- *Oracle Real-Time Scheduler Mobile Application User's Guide*

Map Editor Installation and User Guides

- *Oracle Real-Time Scheduler Map Editor User's Guide*
- *Oracle Real-Time Scheduler Map Editor Installation Guide*

Framework Guides

- *Oracle Utilities Application Framework V4.2.0.2 Business Process Guide*
- *Oracle Utilities Application Framework V4.2.0.2 Administration Guide*

Supplemental Documents

- *Oracle Real-Time Scheduler Server Administration Guide*
- *Oracle Real-Time Scheduler Batch Server Administration Guide*
- *Oracle Real-Time Scheduler Security Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Release Notes

This document provides general information about the Oracle Real-Time Scheduler 2.2.0 Service Pack 1 release including new functionality, known issues and other important information.

Prior to installing this release, it is important that you review all of the release notes and review your business processes as they relate to the new enhancements. There may be steps to complete or information to review before accepting the release. Refer to the quick install guide and installation guide for information regarding supported platforms and installation steps.

This guide includes the following:

- Release Overview
- Integration Information
- New Functionality
- Oracle Utilities Application Framework Enhancements
- Bug Fixes
- Known Issues
- End of Support Notices
- Demo Data Information

Release Overview

The release includes all the components and features previously released in earlier service packs, plus a number of fixes tested and released together. There are features introduced in this service pack which are highlighted in the New Functionality section.

- Refer to the Quick install guide for a full list of the media pack components and application components included with this release.
- Refer to the release notes available with previous service packs for functionality delivered with those versions.
- Visit My Oracle Support (http://support.oracle.com) for the most recent service packs and patches for this release to ensure you have the most current version of this product.

Relationship Between 2.2.0 Service Pack 1 and Prior Versions

This release supports update paths as indicated below. Please refer to the Oracle Real-Time Scheduler Installation Guide for release v2.2.0.1 included in this release for complete information.

- **Initial Install:** If you are installing Oracle Real-Time Scheduler for the first time, you can install v2.2.0.1 directly.

- **Upgrade Install:** Oracle Real-Time Scheduler v2.2.0.1 supports the following upgrade paths:

  - Upgrading from version v2.1.0.6 to v2.2.0.1

  - Upgrading from version v2.2.0.0 to v2.2.0.1

- **Oracle Utilities Application Framework:** Ensure that you have installed the latest version of Oracle Utilities Application Framework, v4.2.0.2, as indicated in the installation guide.

Supported Platforms Notice

See the Supported Platforms section of the Oracle Real-Time Scheduler Quick Install Guide for release v2.2.0.1 included in this release for an updated list of supported platforms.

Changes in Supported Platforms
The following platforms were newly certified in this release:

- AIX 7.1 (64-bit)

- Oracle Enterprise Linux / Red Hat 6.5 (64-bit)

- Oracle Enterprise Linux / Red Hat 6.4 (64-bit)

- Sun Solaris 10 (64-bit)

- Sun Solaris 11 (64-bit)

- Windows 2008 Server R2 (64-bit)

- Windows 7

- Windows 8.1

Changes in Supported Mobile Platforms
The following mobile platforms were newly certified in this release:

- Motorola MC75

- Panasonic Toughbook 30

- Panasonic H2 Tablet

- Samsung Galaxy S3

- HTC Desire

- Apple iPod Touch/iPhone (Connected mode only)

- Apple iPad (Connected mode only)

Note: Android 2.2 for MCP is not supported.

Database Changes

This release includes database enhancements such as added support for Oracle Database 12c. For more information about these changes refer to the Oracle Real-Time Scheduler Database Administrator's Guide.

Integration Information

The following integrations are supported in this version of Oracle Real-Time Scheduler:

- **Oracle Utilities Analytics, 2.5.0**

  Please note that the product name for Oracle Utilities Analytics, 2.5.0 was formerly "Oracle Utilities Advanced Spatial and Operational Analytics" in previous versions.

- **Oracle Integration Pack for Oracle Utilities Field Work 3.1**
  The Process Integration Pack for Oracle Utilities Field Work supports the creation and synchronization of field work records between Oracle Utilities Customer Care and Billing, Oracle Utilities Work and Asset Management, and Oracle Real-Time Scheduler. Please refer to integration documentation available on the Oracle Technology Network for more information.

New Functionality

The following sections provide details on the new features implemented in this release with a summary of new user interface and functionality enhancements and some implementation and training information. While these notes provide high level configuration information, please refer to the configuration guide for comprehensive guidelines on configuring and implementing the enhancements. You can also reference the demo environment for examples.

- General Enhancements

- Activity Enhancements

- Scheduler Enhancements

- MCP Enhancements

General Enhancements

Attachments

Oracle Real-Time Scheduler has been enhanced to allow attachments to be sent to and received from the host system. Attachments can be sent along with activities as part of the same message that maintains the activities. Attachments can also be added with the activity or sent as an update to the activity later. When an activity is completed, new attachments added to the activity that were not originally sent from the host are sent back to the host with the activity completion details. By default, any attachment created in the field is always sent back to the host. Any other attachments added to activity within the system must be marked explicitly in order to be sent to the host.

An example scenario where this would be necessary is if the host sends an activity to investigate a possible electricity diversion by a customer. During the investigation, the mobile worker confirms the electricity diversion and takes a picture of the evidence. That picture is returned to the host application along with the investigation activity completion information. On a subsequent disconnect service activity resulting from the investigation, the host sends in the picture taken during the investigation to aid the mobile worker in the disconnection activity. The picture would not be returned to the host again.

Gantt

The CDI has been enhanced to provide more details about activities scheduled to shifts. Dispatchers can select a crew shift in the **Gantt**, right click on the **Crew Name** and switch to the **Tasks View** to see the following information:

- A list of all tasks for the shift
  This shows the task time windows including any restrictions on each activity such as any

overrides that may be active as well as the available windows in which each activity can be scheduled (effective and arrival time windows).

- A list of important information about each task (such as activity type and arrival time).

To return to the shifts view, click on the orange x on the upper right corner of the view.

Activity Enhancements

Support for ERTs

Oracle Real-Time Scheduler has been enhanced with functionality to support the use of ERT (Encoder Receiver Transmitter or Electronic Radio Transponder) devices to read meters. ERTs allow utilities to remotely read meters by using a handheld or vehicle-based radio device, or by a fixed network system. The ERT might be installed at the same time as the meter or added to an existing meter, and some might have a different register configuration than the underlying meter.

ERT processing can be used by field technicians to conduct meter reads, replace meters, install or replace meters, install ERTs, or to manage periodic maintenance and investigations required to address issues. The field technician may also generate a related pickup activity to perform a meter investigation.

This enhancement adds new ERT fields to the meter details sections for activities that handle a meter and the assignment to manage the meter. In addition, premise type and service type business objects were added to the service point sections to support additional service point details. This information is only used if the host sends it as part of the activity information.

The meter exchange business object was enhanced to support "ERT only" work as indicated on the activity type. A new meter exchange activity type business object was added to support this control at the activity type level. Existing meter exchange activity type records using the generic activity type business object function as in prior releases in that they assume a complete meter exchange is required. To set up an "ERT only" activity type your implementation must use the new meter exchange activity type. Notice that the base implementation allows the crew to perform and record a full meter exchange as needed even if the activity type suggested ERT only work. Refer to Meter ERT under Simplified Activity User Interface Configuration for more information on the business object enhancement.

Create Activities in the Field

Oracle Real-Time Scheduler has been enhanced with functionality to allow your implementation to configure whether or not activities can be created by workers in the field. The enhancement allows you to define which activity types can be created as related activities, unrelated activities or never created in the field.

In addition, the list of activities that can be created as related activities when working an activity of a specific type can be further restricted.

An example scenario where this might be used is where connects or disconnects can be worked when dispatched as part of the shift schedule but never created in the field.

Existing behavior in which any activity is allowed to be created in the field is retained by default. Please review your activity types to set them up to meet your business needs.

Site Management

In existing functionality, by default, the system generates a site ID of all site address elements for an activity and sends that site ID along with the activity details to the scheduler. With this enhancement, your implementation can now configure a designated site ID to list a subset of site address elements to be used instead. This is done by creating a new custom Site ID Feature Configuration. Refer to the feature configuration for CM-SITEID in the demo environment for an example. You can also refer to the Oracle Utilities Application Framework documentation for information on creating feature configurations.

In addition, Oracle Real-Time Scheduler was enhanced so that the host may send in an explicit site ID to be used instead of a generated site ID.

Site grouping functionality was enhanced to support activities that are located in the same area (site) but that have different addresses (locations). For example, a campus, an apartment complex or an office park would have various units with different addresses but are in close proximity. Activities with the same site ID are assigned to the same shift as long as all of the activities have compatible criteria such as activity dates and priorities.

Also verify the setting of the scheduler configuration parameter, Force Use of Site Functionality, to ensure that site delay will function properly.

Simplified Activity User Interface Configuration

In an effort to simplify the configuration effort involved with implementing a new type of activity, the activity and assignment lifecycle business objects were converted to support UI hints as the source for rendering server side user interface.

With this enhancement, new custom activity and assignment business objects can be designed with UI hints embedded in the BO schema such that full maintenance and display UI maps are no longer needed. If configured correctly with UI hints, such business objects would only require a mobile user interface since the server user interface for the activity and assignment entities would be automatically rendered. Refer to the Oracle Utilities Application Framework documentation for more information on UI hints.

The following base activity and assignment BOs were converted to use UI hints as examples:

- M2-CutNonPayItem activity and assignment

- M2-CutNonPayMeter activity and assignment

- M2-MeterRead assignment

In order to support UI hints on any subclass business object, the lifecycle business object must not have any display nor maintenance map of its own. As part of this conversion:

- The base display maps and their scripts were removed from the activity and assignment lifecycle and added to all base subclass business objects that were not converted to UI hints.

- These maps and scripts were also added to all custom subclass business objects that previously relied on them being on the lifecycle business objects.

- If custom display maps and their scripts are used on the activity and assignment lifecycle business objects they were copied down to all subclass base and custom business objects. This way your custom user interface remains intact.

Important upgrade notes
- This conversion does not impact mobile user interface at all as it is server based only.

- If you have a customized version of the display map and display script on the base activity and assignment lifecycle business objects then in order to benefit from this enhancement and have the ability to introduce new custom business object with a simpler configuration that leverages UI hint capability, your implementation must remove these maps and scripts from the lifecycle business objects. Note that the upgrade script has already added them onto all subclass business objects.

- If you have implemented custom UI map fragment extensions embedded in the old base server activity and assignment UI maps, this conversion will NOT carry over your extensions for the business objects that were converted to UI hints since the old server UI maps are no longer used.

You may either reference the base activity and assignment UI maps directly on these business objects or redo the extension using a newer technique supported by the Oracle Utilities Application Framework which is to directly override the corresponding base UI map fragment

with an override HTML. The ability to override base HTML is supported starting in Oracle Utilities Application Framework 4.2.0.2.

If you decide to reference the old base full UI map back on these business objects you may not benefit from changes made to the UI hint version of the user interface. Using the Override HTML technique to customize base UI map fragments should be your preferred option as it does not prevent use of UI hints allowing you to benefit from base changes made to these business objects.

Collection
The cut for non-payment and assignment business object were enhanced to also support a type of work where the crew is offered a few actions to take that do not necessarily result in cutting the service such as accepting payment options or posting a door handler in the field. A new collection activity type business object was added to support such control at the activity type level. By default existing collection activity types would keep assuming that cutting the service is required. Use this activity type to configure collection work that allows the crew to choose from valid actions to be taken in the field as per your business requirements.

Meter Investigation
The meter read activity and assignment business object were enhanced to also support a meter investigation type of work for which a meter reading is optional. A new meter read activity type business object was added to allow the activity type to control whether meter read is required or not as well as whether the crew should provide meter investigation details. Existing meter read activity type records using the generic activity type business object would work as before in that they would assume a meter reading is required and would not handle meter investigation details. To set up an activity type for which a meter read is optional and/or required meter investigation work you would need to use the new meter read activity type.

Meter ERT
The meter exchange and install meter activity and assignment business object were enhanced to support work related to meter ERTs . The base Meter Read Assignment business object was converted to UI hints to support this enhancement. As a result, the Display UI Map and State Transition UI Map on the COMPLETED state were removed. If your implementation previously used the base maps, you can add them back to the base business object, but you will not benefit from the meter investigation section as it is managed in UI hints. Refer to Support for ERTs for more information on ERT enhancements.

To use the Meter Investigation section, your implementation should consider making your CM UI Map fragments as overrides on the base fragments. This is supported starting in Oracle Utilities Application Framework 4.2.0.2 which is being released with this release. Alternatively, you can add the meter investigation section to your custom map.

Custom Utility Forms
Several new utilities based activity and assignment business objects were added to Oracle Real-Time Scheduler demo environment to support standard utilities type forms such as:

- billing investigation

- revenue protection work

- simple inspection.

These business objects are only delivered in the demo environment, not base, and were created for laptop and Android device types.

These business objects also demonstrate the simplified configuration benefit using UI hints.

Cutoff Template

This enhancement allows cutoffs to be set up as ongoing templates. Prior to this enhancement, cutoffs could only be set up "on the fly." Now your implementation can set up depot cutoffs in

advance with regular cutoff times. Cutoffs can also still be set up on a one time basis. As with existing functionality, cutoffs only apply for distribution depots.

For example, with any delivery the system would need to lock down the schedule some time prior to the "run" or shift planned start time to give enough time to load trucks with delivery items. If your business requires shifts to be closed and all planned scheduled to be locked down before it starts then you should be using the existing functionality of advance dispatching. If deliveries should be locked down on a "run" basis leaving the shifts open, and you would like the system to generate the cutoffs automatically then you should define cutoff times on your depots or depot profiles.

Regardless of whether the cutoff was initiated by the host or automatically generated by Oracle Real-Time Scheduler, you can configure the system to automatically send the schedule manifest of all shifts impacted by the cutoff.

In addition, the host can send an ad-hoc request to provide the schedule manifest for either a list of specific shifts or all shifts that matches certain criteria using the M1-RequestShiftManifest web service.

Cutoffs and the option to automatically send the manifest when the cutoff is processed are set up on the depot or depot profile.

Skill Proficiency

Oracle Real-Time Scheduler has been enhanced to factor in a skill efficiency value when the scheduler calculates the scheduled duration of an activity. A new field on the **Skill** record captures a skill efficiency value for a skill level relative to other levels within the same skill set. The scheduler uses this factor to adjust the scheduled duration of an activity when the assigned resource posses a higher or lower skill level than required by the activity. On activity types, a new **Efficiency Duration Impact (%)** field captures the percentage of the scheduled duration that is affected by skill efficiency adjustment.

This functionality is ignored when the activity references more than one required skill as well as when multi person crews are used. It is not available for complex activities.

Your implementation should review your skills to determine if efficiencies are required, then review activity types to determine if duration impact percentages should be set based on those efficiencies.

Scheduler Enhancements

Speed Profiles

In regions where traffic issues have a significant impact on mobile worker travel times and schedules, it is beneficial for the scheduler to be able to factor in these traffic patterns when scheduling shifts and calculating travel times. Oracle Real-Time Scheduler was enhanced to allow for the creation of speed profile templates that define specific days and times where travel speeds are impacted. After defining the speed templates, define geographic areas to show the specific regions where the speed profiles apply. Note that these are indications of relative speeds, not time.

For example, the speed profile for weekday rush hour would indicate slower speeds than the profile for a week day at mid day or on the weekends. The speed profile does not impact which road or route the scheduler selects or adjust the travel speeds in real time based on the geographic area of the destination. Rather, it allows the scheduler to make a more precise travel time calculation with the expected traffic conditions taken into account.

Use the **Speed Profile** portal to set up daily templates to establish a default (no traffic), and additional travel factors such as rush hour, weekends, and holidays, then draw the applicable map areas in the **Geographic Areas** portal.

Real Time Traffic

In situations where mobile workers encounter traffic issues, especially during week day rush hour, delays can cause significant scheduling changes for activities. Oracle Real-Time Scheduler has been enhanced with the ability to notify the scheduler of an estimated time of arrival for an enroute activity so the remaining schedule can be adjusted. A new element is added on the assignment object to capture the time update.

You can use this functionality to integrate with real time traffic services such as HERE Platform Traffic API.

Refer to the documentation delivered with your real time traffic service software for information regarding how to call the service.

MCP Enhancements

Mapping for Handheld Devices

Oracle Real-Time Scheduler has been enhanced so that general mapping functionality can now be used on Android devices. To use this functionality, ensure that you have an MDT Type for Android type devices which includes the mapping capability.

Oracle Utilities Application Framework Enhancements

This release includes Oracle Utilities Application Framework version 4.2.0 Service Pack 2, which includes enhancements. For information about these enhancements, refer to the following documents:

- The *Oracle Utilities Application Framework Service Pack 2 (V4.2.0.2.0) Release Notes.* This document provides information about specific framework modifications and is included in the documentation delivered with the Oracle Utilities Application Framework product.

- The Oracle Utilities Application Framework administration guide and business process guide. These documents are included with the documentation that is delivered with this media pack.

- The Known Issues in Oracle Utilities Application Framework section in this document provides a list of known Oracle Utilities Application Framework issues that impact this release of Oracle Real-Time Scheduler.

Bug Fixes

This section provides details on customer reported bugs that were fixed for this release.

- Bug 19187942 - Newly created depots not activated and not pushed to scheduler for appointments or scheduling.

- Bug 19607745 - Postponed activity prevents activities being assigned. (Copy of bug 19556081)

- Bug 16523230 - Unable to manually add site ID to an activity.

- Bug 16828806 - Site matching problem when same site has activities with different latitude/longitude.

- Bug 17368381 - Scheduler registry displays "no such activity" where stop geocode varies for common addresses.

Known Issues

This section describes known issues at the time of release. Single fixes may be released for these issues at a later date.

- Various Oracle Utilities Application Framework issues cause the Configuration Migration Assistant to respond unexpectedly. This functionality has been deprecated for this release.

- Bug 19320429 - Geocode values for an activity are not getting populated on Oracle Database 11.2.0.4 and 12.1.0.1.

- Bug 19544855 - The scheduler stops scheduling if the schedMode parameter within Scheduler Configuration set as "Variable".
  Users should change this parameter to "Forever" for seamless scheduling.

- Bug 19565908 - Windows embedded handheld requires that the Map viewer URL is configured on the same server as the application server for maps to be displayed on the MDT.

- Bug 19667399 - Some batch controls have the **Batch Control Type** set as "timed" where they should be set as "not timed". Your implementation should verify the settings and manually adjust the mode to "Not Timed" for the following:

  - Crew Shift Monitor

  - Depot Monitor

  - ILM Crawler Initiator

  - Remote Message Monitor

  - Remote Script Invocation Manager

- Bug 19608569 - The legend does not display correctly in the map in windows. Throughout the mapviewer API your implementation can prefix an object with a desired data source such as "cisadm2201:object", however, this does not work in XML Requests sent to the omserver. Requests sent to the omserver must have the DB user name (owner) as the prefix. Example: cisadm:object.

  Only Windows Mobile uses an XML Request and is therefore the only device affected.

  Your implementation must ensure that the data source is named the same as the user. In the example above, you would change the data source name to "cisadm" in the mapviewer configuration and the mapping feature configuration.

Known Issues in Oracle Utilities Application Framework

This section describes known issues in the Oracle Utilities Application Framework that impact Oracle Real-Time Scheduler. Single fixes for these issues will be released at a later date.

- Bug 19452504 - When a user displays a multi query zone once, navigates away, then navigates back to the query screen through **History** or the back button, the drop downs do not display the descriptions. The query options are then displayed as code instead of a description.

End of Support Notices

Items that are no longer supported as of this release: include:

- Android 2.2 for MCP

Demo Data Information

The application delivers a demo database based on the application versions provided with the release, including Oracle Utilities Application Framework. Demo data provides sample configuration and data for key application features.

Demo data is posted separately and includes its own installation instructions.

Oracle recommends that you do not clone the demonstration environment as a basis for a new production environment. The demonstration environment typically includes transactional data that will be irrelevant to your production environment and can cause unexpected issues if it is not purged correctly. The recommended process is to start a new production environment from a new installation and migrate "clean" system data (such as business objects and algorithms) and administrative data (such as sample activity types or other administrative entities) from the demonstration and/or test or development environments as applicable.

Please refer to the configuration guide for more information or contact Oracle Support.