

Oracle Utilities Mobile Workforce Management

Release Notes

Release 2.1.0.1

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Preface

These release notes provide an overview of the enhancements, known issues, and other changes in Oracle Utilities Mobile Workforce Management 2.1.0.x.

This preface contains these topics:

- **Audience**
- **Related Documents**
- **Conventions**

Audience

Oracle Utilities Mobile Workforce Management Release Notes is intended for anyone installing or using Oracle Utilities Mobile Workforce Management 2.1.0.x.

Related Documents

For more information, see these Oracle documents:

- *Oracle Utilities Mobile Workforce Management Quick Install Guide*
- *Oracle Utilities Mobile Workforce Management Installation Guide*
- *Oracle Utilities Mobile Workforce Management Configuration Guide*
- *Oracle Utilities Mobile Workforce Management Database Administrator's 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.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Chapter 1

Release Notes

These release notes contain the following sections:

- **About This Release**
- **Enhancements in Release 2.1.0**
 - **Mobile Workforce Management Enhancements**
 - **Application Framework Enhancements**
- **Known Issues**
- **Desupported Platforms**
- **Installation Information**
- **Upgrade Information**
- **Documentation Information**
- **Integration Information**
- **Demo Data Information**

About This Release

This section contains general information about this release of Oracle Utilities Mobile Workforce Management. Refer to the quick install guide and installation guide for information regarding supported platforms and installation steps.

Please 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.

Business Intelligence for Oracle Utilities Mobile Workforce Management

Business intelligence for Oracle Utilities Mobile Workforce Management is being introduced in a separate product called Oracle Utilities Advanced Operational and Spatial Analytics 2.4, part of the Oracle Utilities Business Intelligence (OUBI) product suite. The OUBI 2.4 release is based on the Oracle Business Intelligence 11g platform. For more details, see the documentation for Oracle Utilities Advanced Operational & Spatial Analytics 2.4.

Enhancements in Release 2.1.0

This section contains the following topics:

- **Mobile Workforce Management Enhancements**
- **Application Framework Enhancements**

Mobile Workforce Management Enhancements

This section describes new and enhanced features in Oracle Utilities Mobile Workforce Management 2.1.0, including:

- **Resource Planning and Scheduling**
- **Common Dispatching Interface (CDI)**
- **Mobile Application**
- **Mobile Communication Platform (MCP)**

Resource Planning and Scheduling

This section describes enhancements in the Resource Planning and Scheduling (RPS) component of Mobile Workforce Management, including:

- **Resources**
- **Scheduling**
- **Activities**
- **Shifts**
- **Transfer of Goods**

Resources

Skill Proficiency Levels

This release introduces skill proficiency levels for scheduling work. This feature enables companies to define differing levels of skills for field workers performing similar tasks. For example, new hire, standard, or expert. The scheduling algorithm selects the most cost-effective field worker based upon the skill level required for the job.

Common Weekly Shift

This release provides the capability to share a common shift weekly template across multiple crews where:

- All resources subscribing to a common template follow the same rotation. In other words, generated shifts of these resources are exactly the same and in the same timing in the rotation, except for resource specific details like allocated resources.
- Subscription to a common template is effective dated. Resources may subscribe to follow a common template as of a given date and this relationship can expire. Each resource can subscribe at different times but their shifts are generated in the same rotation timing as all other subscribed resources, regardless of when they subscribed.
- Changes made to the common template affect all subscribed resources at shift generation time.

This template capability is useful for companies to efficiently administer the generation of the shifts when they have large numbers of very similar shifts.

Multi-Day Leave

This release supports the capability to configure multiple day periods of leave or vacation for field workers and other resources. Leave is defined at the field worker level in hourly increments. Field workers are excluded from any planned shift that overlaps with their leave time. A leave “masks” the shifts so that if the leave is removed or modified, the originally generated shift(s) will restore the field worker to the shift(s). The original shift still exists but will be overridden by the leave events. The leave time is also displayed on the field worker's calendar.

Route Replay

This release includes a new Resource Route Replay portal to show a replay of a crew's actual route based on GPS coordinate history sent from their mobile device or their vehicle. This feature can be used to analyze route patterns and audit work practices.

Scheduling

Conditional Booking

This release includes support to facilitate the confirmation of appointments booked outside of Mobile Workforce Management. The application making the appointment reservation (the host) requests available appointment options from the Mobile Workforce Management scheduler. The host application presents the options to the customer who may or may not select one. If the customer selects a specific appointment time, the scheduler is asked to confirm the selected time is still available and, if available, the activity is created in Mobile Workforce Management and a confirmation is returned to the host. If the selected appointment time is no longer available, no activity is created and the customer is notified to make a new selection.

Appointment Rebooking

This enhancement enables customers to rebook or change an existing appointment in a host application, such as a customer relationship management or customer information system. This feature provides a call center operator or customer with new appointment booking time slots. Once an appointment time is selected, the new booking request is typically sent to Mobile Workforce Management as conditional against the new time window. If the new appointment time slot is confirmed, Mobile Workforce Management automatically removes the original time window and replaces it with the new time window. If the new appointment window is no longer available, the original appointment window is retained and the requesting user is notified to make a new selection.

Shift Best-Fit Chooser

This enhancement provides the dispatcher with the ability to select a shift to allocate an activity from a list of shifts recommended by the scheduler. The display ranks the shifts based upon cost,

travel distance, travel time, or other business defined fields. The dispatcher has the ability to “relax” the rules in order to make the scheduler consider more options. For example, removing area restrictions shows shifts in other geographic areas. By relaxing the rules, a dispatcher can find the closest crew to handle an emergency.

Activities

Advanced Allocation of Work

This release supports the ability to lock in a crew assignment for certain types of activities at some predetermined time prior to shift start. This effectively locks in such activities to their currently assigned crew but still allows the scheduler to optimize their work order within the shift as needed. This can be useful when a crew is assigned work, and information about the assignment may be communicated with other parties before the shift's planned start time.

Activity's Required Capabilities

An activity's required skills and equipment are typically defined by the activity type. This enhancement enables the skills or equipment defined on the activity type to be overridden at the activity level. For example, if a company is installing thousands of products, knowing how to install each individual product is a skill. The actual skill required to install product A is different than the skill required to install product B. When adding the activity, the specific skills needed for that activity are selected.

This new feature can be used by host applications to automatically send activities to Mobile Workforce Management along with their required capabilities, so that capability requirements don't have to be maintained in both the host application and Mobile Workforce Management.

Dependent Activities / Bound Work

This release includes functionality to create dependencies between activities with respect to resources and timing, and to schedule the activities as bound work. Dependency is formed as a chain of parent and dependent activities, where a dependent activity may also be a parent of another activity. In this release, an activity may only be directly dependent on a single parent activity. For resources, a dependent activity can request any resource, including the same resource as other activities in the chain, a separate resource from that of the parent activity, or a separate resource from all the activities in the chain. For timing, an activity can start after another activity starts or finishes, and the timing can have a minimum or maximum offset. An example would be the scheduling of a project that has a set of activities (such as trenching, installing conduit, back-filling, and paving) to either the same or multiple crews, based upon rules defined by the company.

The Gantt chart is modified to provide a clear view of the activities' dependencies and their current scheduling state. A new Activity Dependency portal is added to show the relationship between activities.

Assist Activities

In this release, an activity chain can also be used when a crew needs another crew to assist them in performing a specific activity. For example, during the installation of a heavy commercial meter, the installer needs help carrying the meter from the vehicle to the install location. The two crews need to be scheduled to arrive at the same location at the same time, but the assisting crew is scheduled just long enough to help carry the meter, and then goes on to work their own activities. An assist activity depends on the original activity forming a chain dependency.

Jobs

Jobs are now supported in this release. A job contains multiple activities that must be performed during a single crew's shift. These are used when the action taken during one activity in a job (such as picking up a parcel) is required to complete a later activity (delivering the parcel).

Service Level Agreement Time Window by Activity Type

This release introduces the capability to automatically default an activity's latest time by which work should be completed if it is not explicitly specified by the host system. A Service Level Agreement (SLA) time window may be defined on the activity type for this purpose. SLA time windows are necessary for optimized scheduling and are defined by companies, and often by regulators, based on the type of work.

If an activity is sent from a host system with no appointment and no time window, Mobile Workforce Management will use the default time window associated with that activity type. This functionality could be used to handle a regulation that mandates a customer be reconnected within two days of making a payment.

Expired Activity Processing (Auto Extend)

This release introduces an automated process to deal with activities which were not completed within their expected time windows. When an activity has not been worked on by the time its last Effective Time Window (ETW) expires, a new process automatically updates expired activities based upon business rules. Business rules are configured by activity type and might include automatically extending the ETW, cancelling the activity, creating a to do entry (for example, to rebook an appointment), or taking no action.

Enforcing Override Time Windows

This enhancement supports preventing unwanted activities from being scheduled by the system, regardless of cost controls. For example, if a business requirement is to prevent residential service disconnects for gas or electricity during periods of extreme cold or heat, this feature is used to force compliance with the requirement regardless of the cost. The scheduling of such activities may only be prevented while activities have not yet been dispatched. Once dispatched, any override violations are tracked by way of a CDI KPI that allows the dispatcher to manually handle their recall.

New "Arrived" State

This release includes an additional activity state called "arrived" to differentiate between the on-site and work started states. The arrived state can be used when field workers are required to record both the time of arrival on site and the activity's actual start time. This recording of the arrived state is useful to report time variances where field workers may have to wait for a period of time to start working on an activity due to a variety of reasons such as waiting on parts, waiting for the customer to arrive, or waiting for a "call before you dig" procedure. The reason for the wait can also be recorded. By default, starting an activity implies that the crew has arrived on site, so there is no need to explicitly state this separately.

Shifts

Ability to Close and Re-Open Shifts

This enhancement allows a dispatcher or any custom process to close a crew's shift schedule so that no more work is automatically added to it by the scheduler. Closing a shift allocates all activities currently on the shift and prevents the scheduler from removing them or adding more activities to the current shift. A dispatcher or any custom process can re-open the shift allowing the scheduler to add more work to it as needed. Closed shifts have a border on the shift bar to provide a visual prompt to the dispatcher.

Stand-by Shifts

This release supports stand-by shifts, which can be used for after-hours or holiday work. Standby shifts do not represent available capacity and as such are not scheduled with work. This type of shift enables the dispatchers or resource planners to identify stand-by crews and assign emergency or same-day work to their shifts when needed. Once a standby shift is started by the crew or explicitly opened by the dispatcher it is scheduled as normal by the scheduler.

Shift Time for Non-Productive Tasks

This enhancement supports providing time in the shift for non-productive tasks such as replenishing the stock on a vehicle at the beginning of a shift or stopping by a lockbox. These non-productive tasks are similar to breaks with the exception that they are associated with a location. Because non-productive tasks represent time not available for work, they are portrayed as POU's on the map and Gantt chart.

Entry of Breaks as Offset to Shift

This enhancement enables the Resource Planning and Scheduling administrator to enter breaks on a shift (or a shift template) as an offset to the start of the shift, or as a fixed time of day. This feature enables the administrator to provide a break that is a specific number of hours after the start of a shift. No matter if the break is entered as an offset or a fixed time, the scheduler honors the offset.

Transfer of Goods

These enhancements introduce the ability to handle the transfer of cargo, supplies, freight, or other commodities that have to be transported from one place to another.

This functionality includes the ability to define the capacity for goods on an activity and the maximum carrying capacity a shift can handle. The scheduler uses these maximum carrying capacities to optimize the loading of activities across shifts.

If your business process also involves loading or unloading goods at central locations, you can configure depots to manage these locations. Depots can be used in the system to model, for example, parts stores, warehouses, retail stores, bank drops, and recycling centers. Crews may be restricted to specific depots, or have access to any depots. Based upon the depots and their operational controls, the scheduler builds delivery or collections runs, or mixed activity type runs, and plans the return of vehicles to the appropriate depots for either re-loading or off-loading.

To use this functionality you must configure several custom business objects and define capacities. Please refer to the Transfer of Goods chapter in the Configuration Guide for detailed information.

Depot Cutoffs

To allow time for depot runs to be picked, the runs must be closed as early as is necessary to pick and load Vehicles in time for their planned departure. The closing of runs and the setting of the earliest departure of open runs is the "Cutoff" process. This process allows a schedule to be partly locked down. You should ensure that the runs being picked are not changed. The scheduler will ensure all new runs are planned to depart from a depot after the earliest departure time.

Common Dispatching Interface (CDI)

This section describes new features and enhancements in the Common Dispatching Interface (CDI) component of Mobile Workforce Management, including:

- **Safety and Alerts**
- **Mapping**
- **CDI Display**
- **Communication**
- **Gantt Chart**

Safety and Alerts

Continuous Audible Alert on CDI

The Alert Type business object supports an audible alert so that the dispatcher is alerted to an emergency notification even if they are not looking at their display. Master configuration

parameters are used to define the audible sound, the duration it is played, and the duration of the pause between sounds.

New Alert: Activity Taking Too Long

This release handles an alert to the dispatcher that occurs when a field worker or crew is taking longer than expected to complete an activity. A business rule defines the number of minutes over the estimated completion time that triggers the alert.

Backup Dispatcher

This enhancement supports improving crew safety and exception management by sending alerts to a backup dispatcher in addition to the primary dispatcher. Dispatchers specify the list of dispatchers who they will back up during their shift.

Mapping

Show/Hide Routes (Street Level)

When showing a crew's route on the CDI map, the map shows the street-level route generated by the scheduler and the corresponding activities in the sequence of the schedule. This feature does not require Oracle Spatial Database option to display the street level routes.

Show Entity on Map

This enhancement enables dispatchers to highlight on the map an activity, crew, or shift that is associated with an alert. The system gets the latest location upon every map refresh.

CDI Display

Support for Multiple Time Zones

This enhancement supports displaying and maintaining entities across multiple time zones. For example, if field workers and dispatchers are in different time zones, data is displayed and can be searched using the user's time zone. The CDI defaults to the user's time zone, but the user can toggle between the available time zones, and the application adjusts the Gantt chart and other zones accordingly.

Communication

Mobile Mail / Messaging

This release includes an embedded mail messaging system. This feature enables CDI users to communicate with MCP and SMS crews without leaving the Mobile Workforce Management application. The messaging function reuses the existing wireless communication and provides the dispatcher the capability to easily trigger context-driven messages within the system. This enables better control of message behavior (for example, an emergency message will take control of the MCP user interface to make sure the user sees it), and enables users to write a free-form text message or to select from a list of preconfigured template messages.

A message may be sent to a specific user or to a group of users. Dispatchers can require an acknowledgement and can be notified if the acknowledgement is not received in a specific amount of time. However, acknowledgement is not supported for SMS Crews. In addition, SMS crews can only receive mail messages.

Gantt Chart

This release includes several enhancements to the Gantt chart to improve usability. These enhancements provide dispatchers with a quick and easy way to know a crew's current status and other indicators without looking in the Gantt chart to find the current activity and decoding its color. This also improves usability for color-blind users.

Alternating Color Grid Lines

This enhancement supports alternating the colored backgrounds and indicators between shift lines to enable the dispatcher to line up field workers, crews and shifts.

Shift Background Colors

This enhancement introduces different background colors to represent various states of the shift on the task schedule area. A different color is used for planned, in service, out of service, and completed shifts. A thick frame is used to indicate the shift is closed.

Crew Shift Status

This enhancement enables the dispatcher to scan down the list of crews on their Gantt to get a quick look at their statuses. The Crew Shift Status text is enhanced to show more than planned, out of service, in service, and completed statuses. This status field now indicates whether a crew that started their shift is out of range or offline. If the crew is connected, the status may also reflect the state of their current task (for example, if they are en route to it, started it, and so on).

Selection of Multiple Activities

The dispatcher can now select multiple activities and perform an action on them in the Gantt chart.

Show Activity Type in Task Bar

The Gantt may be configured to show an activity's type code inside an activity task bar on the task schedule. By default the system is configured to not show this text.

SMS Indicator

A Short Message Services (SMS) indicator now appears in the Gantt chart next to field workers communicating via SMS. A cell phone icon is the default icon. As with other icons displayed in the Gantt chart, the icon image can be replaced with a different image.

Ability to Close and Re-Open Shifts

This enhancement enables the dispatcher to close and re-open a shift from the Gantt chart. See **Ability to Close and Re-Open Shifts** on page 1-5 for more information.

Ability to Allocate All Scheduled Activities

This enhancement enables the dispatcher to allocate to a shift all its currently scheduled activities.

Mobile Application

This section describes new features and enhancements in the Mobile Application component of Mobile Workforce Management, including:

- **Working Activities**
- **Safety and Alerts**
- **Mapping**

Working Activities

Capture Digital Content

This enhancement enables field workers to capture digital content such as a photograph or an audio clip and attach it to an activity. For example, you can take pictures of conditions at a site, equipment for inclusion on an activity, or a signature. You can also capture the audio of a motor making a peculiar sound. The digital content is sent to the server and can then be displayed from the activity portal. Other types of digital content capture can be added through customization, such as interval consumption data that is pulled from an electric meter or diagnostic information that is pulled from a hardware probe. The MDT Type record lists the various digital content capture capabilities supported by mobile devices of this type.

Offline Mode

This enhancement enables MCP operators to proactively disconnect from the communications infrastructure while continuing to perform work. This is particularly useful in areas where coverage is poor or the crew works in a “dock-and-go” mode. In order to support the offline mode, whenever the MCP operator indicates they are offline, Mobile Workforce Management automatically turns off real-time scheduling for the individual shift. This prevents the scheduler from pushing out assignments, and assumes the crew is on time, preventing alerts. This feature enables an MCP operator to toggle between offline and online modes throughout the day.

Update Activity Duration

This release provides the capability for a crew to re-forecast the remaining duration of work for their current activity. When a crew arrives on site and determines it is going to take a much different amount of time (either less or more) to complete the activity, they can communicate updated time estimates to the scheduler via a new “Send Now” button. The scheduler can then reschedule the rest of the shift.

Create Activities

This release introduces the capability for a crew to create new work activities while in the field. For example, if a field worker is driving down the street and notices somebody has diverted service, they can create a new activity to correct the situation and either complete the work or allow it to be assigned to another crew. The new activity may be for the same location as the activity they are currently working at or it may be for a different location.

Schedule Preview

This release supports a “preview” mode that enables field workers to see their first few tasks before starting a shift. They can then better plan their departure time to travel to the first task. Additionally, it enables the field workers to determine if they have the proper materials on board their vehicle for the scheduled activities and if not, plan for a parts pickup before heading to the activity. Tasks are made available for preview at a pre-determined time prior to the start of the shift. This effectively locks in their work order within the shift and sets them as ready to be dispatched once the crew starts their shift. The number of tasks, as well as how early before the shift start they are available for preview, is configured on the shift.

Mobile Mail / Messaging

This enhancement enables MCP users to communicate with dispatchers or other crews by using an embedded mail messaging system. See **Mobile Mail / Messaging** on page 1-7 for more information. See **MCP Indicator Bar** on page 1-10 for additional information about mail related enhancements in the MCP indicator bar.

Safety and Alerts

Panic Button

This release supports a panic button on the MCP. The panic button looks like a red cross and can be used if a field worker is injured or needs immediate help. When the panic button is clicked by the field worker, the system sends a synchronous message to alert a dispatcher. From the alert queue, the dispatcher can show the crew’s most recent location on the CDI map. It is recommended that this type of alert be configured as audible. (See related information in **Continuous Audible Alert on CDI** on page 1-6.)

Timed Event

This enhancement supports adding a timed event feature to help improve field worker safety. This feature lets the field worker set a timer when they go into a confined area or start an activity that is potentially dangerous. If the field worker does not stop the timer before it expires, the system alerts a dispatcher to contact the field worker. It is recommended that this type of alert be configured as audible.

Continuous Audible Alert on MCP

To improve emergency response, whenever an activity or mail message that require the crew's receipt acknowledgement is sent to the MCP, the mobile application generates an audible notification so that the crew is alerted even if they are not looking at their display.

Mapping

Mapping on Mobile Devices

This enhancement supports displaying a map that shows activities and driving directions on a mobile device. The map can be accessed from the Open Tasks and the Task Details screens by clicking an icon in the navigation bar. From the map, the field worker can see their current location and can get directions by clicking a direction icon. Getting directions also displays the route on the map, along with driving directions. In addition, maps can contain additional, customizable themes which can be toggled on and off by the field worker. Examples include display of an electric distribution network or showing the location of other field workers. These themes are built using Oracle Map Builder and displayed using Oracle MapViewer.

Mobile Communication Platform (MCP)

This section describes new features and enhancements in the Mobile Communication Platform component of Mobile Workforce Management, including:

- **Mobile Communications**
- **Deployment**
- **General MCP Enhancements**

Mobile Communications

MCP Indicator Bar

This enhancement supports providing visual indicators to represent application conditions and statuses in the MCP. A new indicator bar is added near the top of the MCP to display these indicators. Examples of indicators are network connectivity, new email, or mail emergency.

MCP Communication Indicator

This enhancement supports providing visual indicators in the MCP Indicator Bar to indicate whether or not the MDT has proper network communication and signal strength. The communications indicator has three states:

- Communication OK
- Communication Down
- Communication Disabled

The Communication Disabled indicator is displayed when the crew has requested to be offline. See **Offline Mode** on page 1-9 for more information.

Dial Phone from MCP

While en route, onsite, or browsing an activity, the field worker can now initiate a phone call to the customer by using a phone number link displayed on the screen.

Deployment

Base Owned Deployment Parts

This release supports base owned deployment parts that you can use to build your deployments. This eliminates the need to ensure that all necessary base product items are included in the deployment.

General MCP Enhancements

View Attachments on MCP

This release provides a service for downloading attachments to the MCP. The service requires the crew to be connected. Customization is required to use this functionality. When implemented, the crew can open the attachments in their native viewer. Examples of attachments include schematics, a list of materials, or specific repair instructions in a Microsoft Word or Adobe PDF document.

Support for Android

This release fully supports smartphone and tablet devices running the Android 2.3 operating system. All existing functionality of the Windows Mobile MCP is supported on the Android platform.

MCP Data Encryption and Security

This enhancement supports regulatory and corporate security compliance mandates by encrypting data sent to and stored on the MCP mobile devices. Over-the-air transmissions are secured via the HTTPS protocol. Transaction information, such as activities that might include customer names, addresses, and phone numbers, stored locally on the file system (MCP database) is encrypted. Encryption is entirely optional and managed by the system administrator.

Java Business Services

This release supports using Java to add customized functionality to the MCP. Custom Java Business Services can be created to perform complex and/or performance sensitive logic, or to interact with the specific hardware capabilities or other software installed on the MCP device. Examples include field billing, scanning, and printing in the field. The new interfaces and APIs ensure that the Java Business Services follow the standards required to interact with the MCP device.

Version Control on MCP

This release provides embedded version control for the MCP to ensure that MCP users have the correct version of the MCP application. This feature eliminates problems caused by MCP users attempting to operate the system with out-of-date versions of the MCP application. Mobile Workforce Management now prevents MCP users from logging in with incorrect versions of the MCP and displays a message to the MCP user indicating inconsistency between the MCP version they have and the version they should be running. It also directs the MCP user to contact their administrative support person for assistance.

Application Framework Enhancements

This section describes new and enhanced features in Oracle Utilities Application Framework 4.1.0, including:

- **Advanced Configurable Object Enhancements**
- **Operational Enhancements**
- **Security Enhancements**

Advanced Configurable Object Enhancements

This section lists enhancements that support the development of configurable objects.

Business Object Maintenance Usability Enhancements

A number of enhancements have been implemented to give more flexibility to development and to improve the Business Object development process. The enhancements that have been added in this release of the framework include:

- A “View Schema” option is now available from the Business Object General Information zone.
- The Business Object Summary tab displays less white space. If no lifecycle is available for the Business Object then the Lifecycle Display zone will display an appropriate message rather than using white space. If the Business Object does not include any options then the Options zone is optimized to reduce the use of white space. If the Business Object does not include any rules then the Rules zone is optimized to reduce the use of white space.
- The description of the option is now included in the Options zone rather than the foreign key reference.
- The order of the nodes in the Rules zone is now in order of invocation rather than alphabetic. For example, the Enter nodes are listed before the Monitor nodes and the Exit nodes are listed last.
- A new zone has been added to list the Business Object Hierarchy for the developer.

Custom Search

It is now possible to add search capability to UI maps. Implementers should be able to build custom searches, using the oraSearch tag in UI maps similar to those available in explorer zones.

Table Classification Flag

A number of additional attributes have been added to the object metadata to allow classification of data for reference purposes. Each table in the product can now have an appropriate classification within metadata (Administration, Master, Transaction, unclassified, or variations of these values).

It is expected that products will deliver appropriate values for each of their products. By default Unclassified will be used for products not providing these values. Implementations are responsible for custom tables.

Master Data Synchronization

The product now supports a new Synchronization Business Object that allows multi-product Business Object/Maintenance Object synchronization. The synchronization specification is attached to the relevant Maintenance Object as options. The format of the synchronization data is included in the specification. The Oracle Utilities Application Framework uses purpose built adapters and the JMS based transport to send outgoing synchronization and process incoming synchronization messages for data synchronization. A set of portals are also available to monitor synchronizations and manage exceptions for incoming synchronizations.

Operational Enhancements

This section lists enhancements designed to reduce IT Total Cost of Ownership and enhance the operations of the Oracle Utilities Application Framework based product.

Support for Oracle Real Application Clustering Fast Connection Failover

RAC Fast Connection Failover (FCF) is now natively supported through configuration specific settings. For more information on this enhancement refer to the Server Administration Guide provided with your product.

Security Enhancements

This section lists enhancements that implement new or updated flexible levels of security. Implementations can configure and implement additional security or link into external security products for greater control.

Support for Database Vault

The Oracle Utilities Application Framework now ships with optional additional installation files to enable a default Database Vault solution for the product. This restricts system and DBA accounts to appropriate access to product data. By default, the system users in Oracle (i.e. the SYS and SYSTEM user), DBA users (SPLADM/CISADM) and any user with the SYSDBA role has full access to the application data. While this is generally acceptable for most sites, some sites have considered this a potential security issue. These particular sites wish to use an option for the Oracle database called Database Vault that allows additional security to be defined to restrict system and DBA users to their allocated tasks. A new default set of configuration files for Database Vault allows restriction of Data Manipulation Language (DML) access to the product data for system and DBA users whilst allowing appropriate access to Data Definition Language (DDL) and Data Control Language (DCL). Customers wishing to use this facility must license and enable the Database Vault option on the Oracle Database prior to enabling the Database Vault product solution provided.

IP Address available for Algorithms

The audit facility within the framework allows registration of user credentials as part of the audit information captured. It is now possible to capture IP Address of the end user for use on the audit record (if desired). This feature also supports recording real and proxy IP addressed and proxy connections (if the proxy is configured to place the pre-proxy address in the request header context variable \$REQUESTING-IP-ADDRESS).

Note: To use this facility the base audit facility must be extended. Please refer to your product documentation to see if this has been enabled in your product.

Update to Oracle Identity Manager Support

In Oracle Utilities Application Framework v2.2, the integration of Oracle Identity Manager with Oracle Utilities Application Framework security was introduced. This release adds integrated support for SPML and support for the latest version of the Oracle Identity Manager product.

Refer to Oracle Identity Manager Integration Overview whitepaper available from My Oracle Support at KB ID: 970785.1 for more details of this interface.

Generic User Portal

To support extensions to the authorization model, a generic user tab has been added to the user object to allow products and implementations to add specialist zones to display, modify or add additional information on the user object. This portal can be used by products to support security for specific market requirements as well as provide implementations for a means to provide customers with additional site specific security facilities.

Known Issues

This section describes known issues in Oracle Utilities Mobile Workforce Management 2.1.0.1 at the time of release. Single fixes for these issues will be released at a later date. This section includes the following topics:

- **Service Management**
- **Common Dispatcher Interface**
- **Other Known Issues**

Service Management

Issue with Dispatching Break Tasks

A Break task will not be dispatched to a MDT laptop client if the Scheduler Real Time configuration has 'Break Dispatch Mode' set to 'Horizon'. The workaround is to set 'Break Dispatch Mode' to 'Advance' in the Scheduler Configuration's Real Time zone. The Break task will then get dispatched. (Bug number 13322884)

Common Dispatcher Interface

Issue with Zones Refreshing

Auto-refresh zones, including the Alert Zone, do not get refreshed even though the auto-refresh interval has been set. The workaround is to specify different refresh intervals for Alert Zone, Backup Alert Zone, and Mail Summary in the Portal Preferences for the affected users. A difference of 1 second is enough to fix the issue. (Bug number 13456175)

Other Known Issues

Issue with Browser Freezing

The application browser freezes if an invalid date is entered while searching for activities. When searching for an activity through the search activity UI, if user enters an invalid date (for example, "33-33-2011") and hits the enter key the browser freezes. The user must then refresh the browser. (Bug number 13012194)

Upgraded Environments Require New Algorithm on Installation Options

A To Do Pre-creation Algorithm should be plugged in to Installation Options to make To Dos searchable in upgraded environments. After upgrading to V2.1.0, the new To Do Pre-creation Algorithm will not be plugged into the Installation Options. This will prevent To Dos from being found on the To Do Search portal. See the Configuration Guide for more information on plugging in the algorithm. (Bug number 13437289)

Desupported Platforms

The following platforms are not supported by Oracle Utilities Mobile Workforce Management 2.1.0:

- Windows Mobile 6.1
- Android 2.2

Installation Information

This section describes changes in the installation process.

Oracle Location Service (elocation)

To download the latest elocation.ear, log on to My Oracle Support at support.oracle.com and download Patch 13446793, “SPATIAL elocation for Mobile Workforce Management Release 12.”

Common Batch Scheduler Tasks

In addition to using the spl.sh script to start and stop batch scheduler, you can use the batchscheduler script as shown in the following procedures:

To Stop the Scheduler:

Unix:

```
cd $SPLEBASE  
batchscheduler.sh stop
```

Windows:

```
cd %SPLEBASE%  
batchscheduler.cmd stop
```

To check the status of Scheduler:

Unix:

```
cd $SPLEBASE  
batchscheduler.sh check
```

Windows:

```
cd %SPLEBASE%  
batchscheduler.cmd check
```

Upgrade Information

This section describes changes that are required for upgrading to 2.1.0.

Sync Request Batch Control

When upgrading, the FW Sync Request batch control needs to be updated to run the MessageToHost Monitor plug-in. This plug-in will execute the specified script to generate the outbound message.

To update the batch control:

1. Access the batch control by going to **Admin Menu, Batch Control** and selecting F1-SYNRQ.
2. Change the Batch Control Type to Timed and enter the following data in the timer section:

Field	Value
Timer Interval	Number of seconds between execution (for example, 120 for every 2 minutes)
Time Active	Yes (set to No to turn off the batch job)
User ID	Valid user ID
Batch Language	English
Thread Count	1 (set higher in production where there will be more transactions)
Override Nbr Records to Commit	1 (set higher in production where there will be more transactions)

Note: Be sure that the Thread Pool Worker is running or the Monitor plug-ins will not be executed.

To Do Pre-Creation Algorithm

When upgrading from version 2.0, you must plug the base To Do Pre-Creation algorithm in to the installation options in order to make new to do entries searchable. Please refer to the Configuration Guide for more information.

Documentation Information

Release 2.1.0.1 includes an updated Configuration Guide to include details on batch controls and utilities specific activity types.

Integration Information

The following integrations are supported in this version of Oracle Utilities Mobile Workforce Management:

- Oracle Process Integration Pack for Oracle Utilities Field Work 3.1. Continued support is currently provided for this version of the integration pack. Certification testing of MWM 2.1 with the PIP is ongoing and formal certification will be announced upon its completion. The supported features of the integration will be equivalent to the features available in MWM 2.0.1.

Demo Data Information

Oracle Utilities Mobile Workforce Management 2.1.0.1 contains the same demo database as released with 2.1.0. This database contains sample data based on the application versions provided with that release, including:

- Oracle Utilities Application Framework 4.1.0
- Oracle Utilities Mobile Workforce Management 2.1.0