Oracle Utilities Mobile Workforce Management

Admin Tools User's Guide

Release 1.5.0.21

August 2013

ORACLE

Oracle Utilities Mobile Workforce Management, Release 1.5.0.21

Contents

Chapter 1

Chapter 2

Chapter 3

Appendix A

Chapter 1

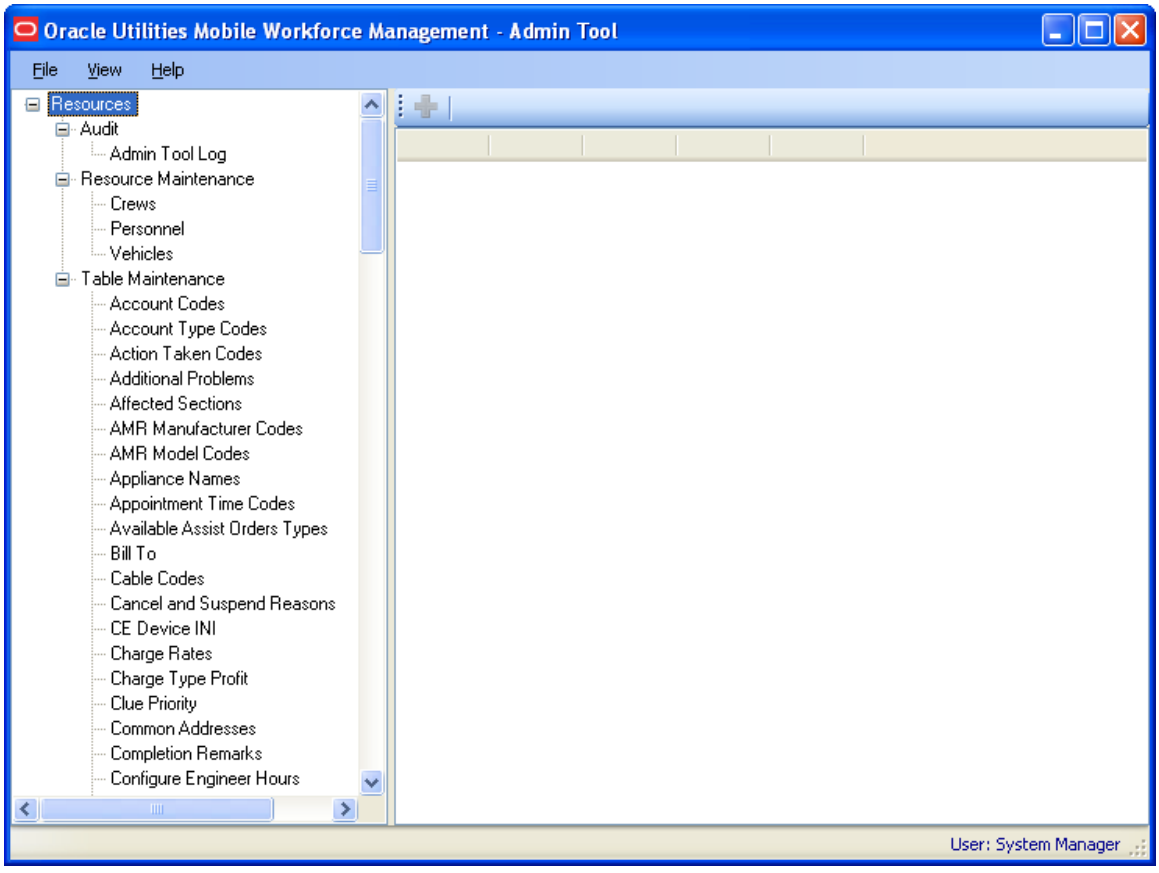
The Basics

This chapter provides an overview the Admin Tool. It includes the following topics:

- **Overview**
- **Document Structure**
- **Admin Tool User Interface**

Overview

The Admin Tool subsystem provides the Dispatch Workstation user the capability of updating system resources such as Personnel, Crew, Vehicle, and Field. Admin Tool security is role-based. The user sees only resources that he or she is authorized to change. For browse-only users, all actionable buttons (*Add*, *Save*, *Delete*) are disabled, which prevents any changes to data.



The Admin Tool can be launched from the Dispatch Workstation screen: the logged-on user ID determines the user's role. The Admin Tool can also be started as a stand-alone program. When started outside of the Dispatch Workstation application, the user must enter his or her user ID and the correct password.

A startup or logon failure will terminate the application. When the application's initial screen appears, the logged-on user's name will be displayed in the lower right hand corner of the screen.

The Admin Tool uses a user-configurable metadata XML file, selected at runtime based on the current operating system globalization setting, which controls display and validation settings for all maintainable tables. Documentation about this external metadata file is contained in a separate file. It will be referred to in this document as the "metadata XML file".

The Admin Tool updates databases directly. The version number of the appropriate Oracle Utilities Mobile Workforce Management table will be updated in the table versions table. A trigger record will be inserted in into the table update table. The Server will read the record from the table update table, and the contents of the updated table will be read from the database and serialized to the hard drive. The Server will create an updated table data transaction containing the updated records (based on the version number of the table) and forward the transaction to all other logged-on Dispatch Workstation users for processing.

Help is available either by selecting *Help>Admin Tool Help* from the screen menu or press the *F1* key.

Document Structure

This document serves as a reference guide for all resources and tables maintained by the Oracle Utilities Mobile Workforce Management/Oracle Real-time Scheduler Admin Tool. The first two sections of the document, Admin Tool and Maintenance Screens, describe the high level characteristics of the tool itself. The Admin Tool section explains how to navigate in the main startup screen and how to navigate to the different maintenance screens that maintain the resources and tables in the Oracle Utilities Mobile Workforce Management/Oracle Real-time Scheduler system. The Maintenance Screens section describes the features and functionality that are common across all of the different maintenance screens in the tool.

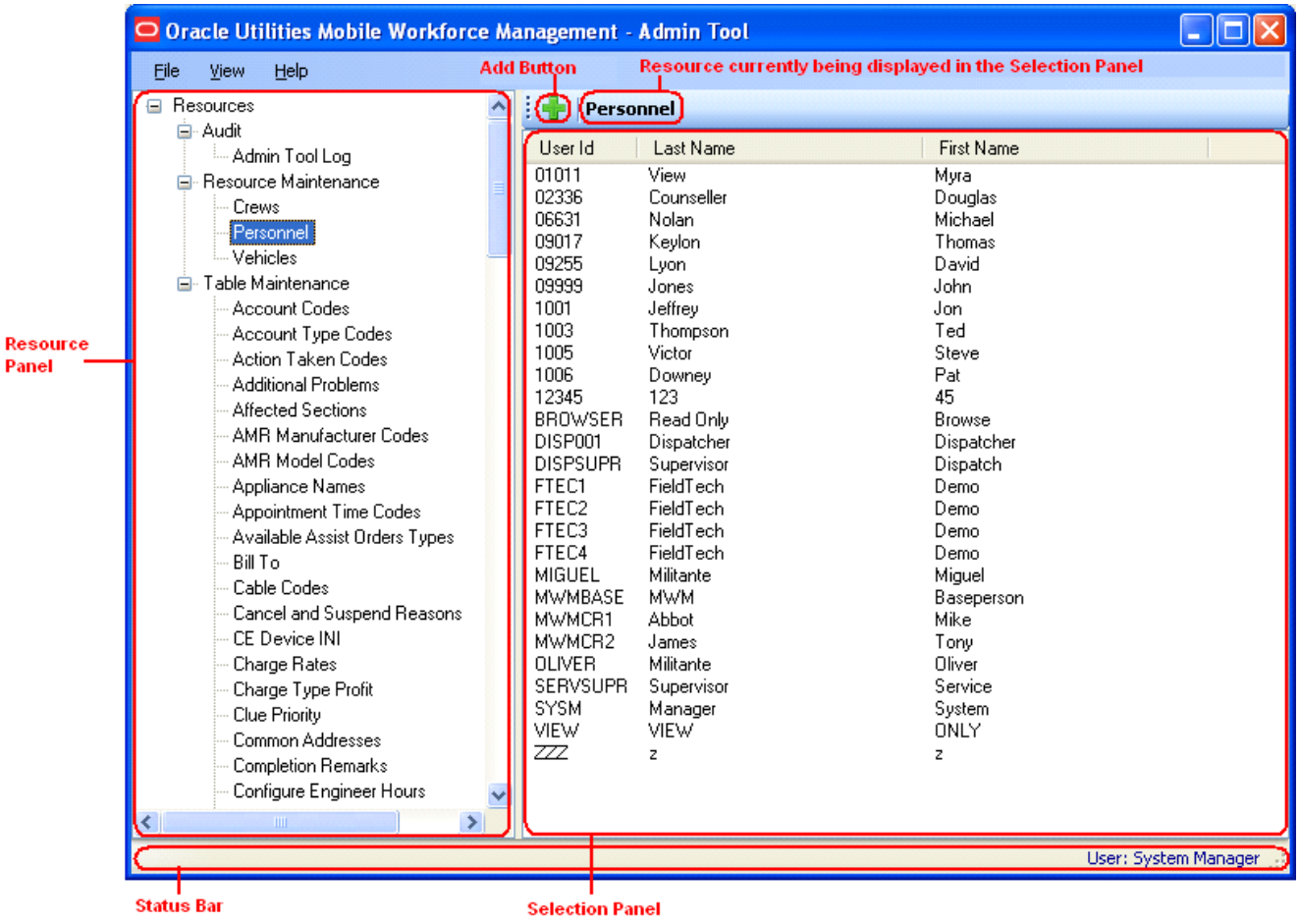
One of the nice features of the tool is that it hides from the user special processing that must take place when many of the different tables in Oracle Utilities Mobile Workforce Management/Oracle Real-time Scheduler are updated. The section entitled, Additional Processing, describes this internal processing that happens behind the scenes unbeknownst to the user.

At this point the document starts describing the numerous maintenance screens in the tool. Many of the tables maintained by the Oracle Utilities Mobile Workforce Management/Oracle Real-time Scheduler Admin Tool are serviced by one special maintenance screen. The section titled, "Generic Maintenance Screen" goes over this particular screen and lists the tables that are serviced by it.

Finally, the rest of the document describes the maintenance screens that are custom (not serviced by the generic maintenance screen). Each section describes the custom maintenance screen's function and process, gives a list with a short description of all the data fields on the screen, provides a data mapping of what table/column in the database the field maps to, and describes any validation logic that takes place prior to a database update. For each screen, data constraints have been specified in the metadata XML file. If any additional, non-configurable constraints exist, those will be listed in the Data Constraints section of the screen's Data Fields section.

Admin Tool User Interface

The main Admin Tool startup screen is divided into two main sections. The Resource Panel on the left side displays all resource tables that the current user has access to. The Selection Panel on the right side displays all of the existing records for the selected resource table. If no resource table is selected, the Selection Panel will be empty.



The Resource Panel displays all available resources in a tree view which can be expanded by clicking on *Expand TreeView* or collapsed by clicking on *Collapse TreeView* from the *View* menu. Resources are listed in alphabetic order, and can be selected by double-clicking on their names. To navigation to a desired resource via the keyboard, select the first letter of the table's description. The first item that begins with that letter (or comes closest, if there is no match) will be highlighted. For example, to highlight the first resource starting with the letter "F" (such as Field Order Types), press the "F" key and the first resource starting with "F" will be highlighted. Repeatedly pressing a character key will cycle through all the resource names that begin with that letter. Press "Enter" to select the highlighted resource.

When a resource is selected in the Resource Panel and that table contains at least one record, the Selection Panel is populated with rows from the selected resource table. Up to 5 columns of data will be displayed in the Selection Panel. For each resource, this document describes which columns are displayed by default; however, displayed columns can be configured via the XML file, so each installation may differ. Data is initially sorted in table key order; however, columns may be sorted by clicking the mouse on the appropriate column header. A second click on the same column header will reverse the sort order. Tables of more than 1000 rows may take a second or two to sort.

When a resource is selected in the Resource Panel and there are no existing rows in the resource table, the maintenance screen for that resource will automatically be displayed so a new record can be added.

The Selection Panel allows the user to add a new record or edit/view an existing record. To add a new record for the selected resource, either click the Add button (indicated with a green "+" sign) above the Selection Panel, or select *Add new record…* from the *File* menu. The maintenance screen for the selected resource will be displayed, allowing the user to enter the data required to add a new record. To edit an existing record, double-clicked on the desired row in the Selection Panel, or highlight the desired row and press the Enter key. The resource's maintenance screen will then be populated with data from the selected record and displayed in an edit mode where the data can be modified or deleted, if so desired.

The Admin Tool contains two basic types of maintenance screens: specialized and generic. The generic or dynamic maintenance screen is a single form that is used to maintain single, simple lookup tables containing only string data (referred to in this document as "generic tables"). Account Codes and Completion Remarks are two examples of generic tables. Specialized maintenance screens are more complex forms designed to maintain one or more tables containing varying types of data. Examples of specialized screens are Personnel and Field Order Types. Specialized screens are individually documented in detail here. The Generic Maintenance Screen is documented in a more generalized fashion.

Validation in specialized tables may be a combination of metadata directives specified in the metadata XML file and hard-coded business rules. Generic tables, on the other hand, obtain all validation directives from the metadata XML file. Validation rules are specified in the XML file by use of data entry masks and regular expressions. The size of entered data is also configured in the XML file, but database size restrictions will always override those set in the XML file if there is ever conflict. During validation, regular expression patterns are checked for the correct syntax; illegal patterns will cause the validation process to fail.

On all screens, bright blue labels denote that data entry is required for a field, while dark blue labels indicate that a field is optional.

Multiple Database Support

For the system to work together properly data must be kept in sync between Oracle Utilities Mobile Workforce Management and Oracle Real-time Scheduler. As a result, there are several custom maintenance screens that update information in both the Oracle Utilities Mobile Workforce Management and Oracle Real-time Scheduler databases simultaneously. The admin tool ensures data integrity by committing all of the data into both databases concurrently. If a transaction fails for either database then a rollback of all data occurs. Therefore, if data is entered into either the Oracle Utilities Mobile Workforce Management or the Oracle Real-time Scheduler system via a different mechanism other then the Oracle Utilities Mobile Workforce Management/ Oracle Real-time Scheduler Admin Tool there exists a HIGH probability that the system will not work properly as a whole and a wide range of errors could result.

The following custom maintenance screens update information in both Oracle Utilities Mobile Workforce Management and Oracle Real-time Scheduler: Crew Information, Personnel, Vehicle, District, Service Area, Skill Codes, and Vehicle Capabilities.

Version and Update Tables

There are many tables in Oracle Utilities Mobile Workforce Management that contain a column called VERSION_NUMBER. This column is used to sync data between the server and users of the Mobile Workstation/Dispatch Workstation application. When a record in one of these versioned tables is modified via an add, update, or delete the current version number for the table is retrieved from the DHTTBVER table. This number is incremented and put into the VERSION_NUMBER column in the modified row.

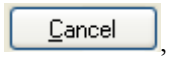
The version number for the table is also incremented in MWM_DHTTBVER and a trigger record is inserted into the table update table (DHTTBUPD). The Oracle Utilities Mobile Workforce Management server reads the record from the table update table. The contents of the updated table are read from the database and serialized to the hard drive. The Server will create an updated table data transaction containing the updated records (based on the version number of the table) and forward the transaction to all other logged on Dispatch Workstation users for processing. The Oracle Utilities Mobile Workforce Management/Oracle Real-time Scheduler Admin Tool handles all of the version processing in the Oracle Utilities Mobile Workforce Management database.

Postbox Table

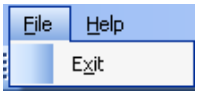
In Oracle Utilities Mobile Workforce Management there are some tables that, when modified, require a record to be written to a special table called the Postbox. The postbox record is generated automatically be the Oracle Utilities Mobile Workforce Management/Oracle Real-time Scheduler Admin Tool.

Maintenance Screens

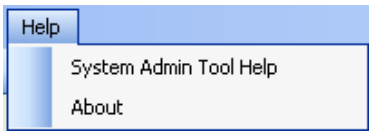
All screens that are used to maintain tables have these common characteristics:

The File menu contains the "Exit" option, which closes the form and returns to the main startup screen. This same functionality is also provided by pressing the "Esc" key, or by clicking the Cancel button 

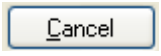
, Back button  , or Close icon  .

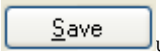


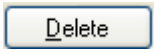
- The Help menu contains "System Admin Tool Help" and "About" options. Selecting "System Admin Tool Help" displays the online Help documentation (this can also be displayed by pressing the "F1" key). Selecting "About" displays the application's About dialog.



- Light blue text indicates that a field is required.
- Dark blue text indicates that a field is optional.
- A key  indicates that the adjacent field is a key value in a table. Key values are always required fields, and they can only be edited when a new record is being created. If an existing record is being modified, these fields are disabled.

  Note: Dashes are not allowed in key values.
- Numeric values are displayed using controls which have a minimum and maximum value that cannot be exceeded. For example, if 0 is entered and the minimum value allowed is 1, the value will automatically be changed to 1. Similarly, if the maximum value allowed is 100 and the value of 200 is entered, the value will automatically be changed to 100. Refer to individual screen documentation for minimum and maximum values for numeric fields.
- The Cancel button 

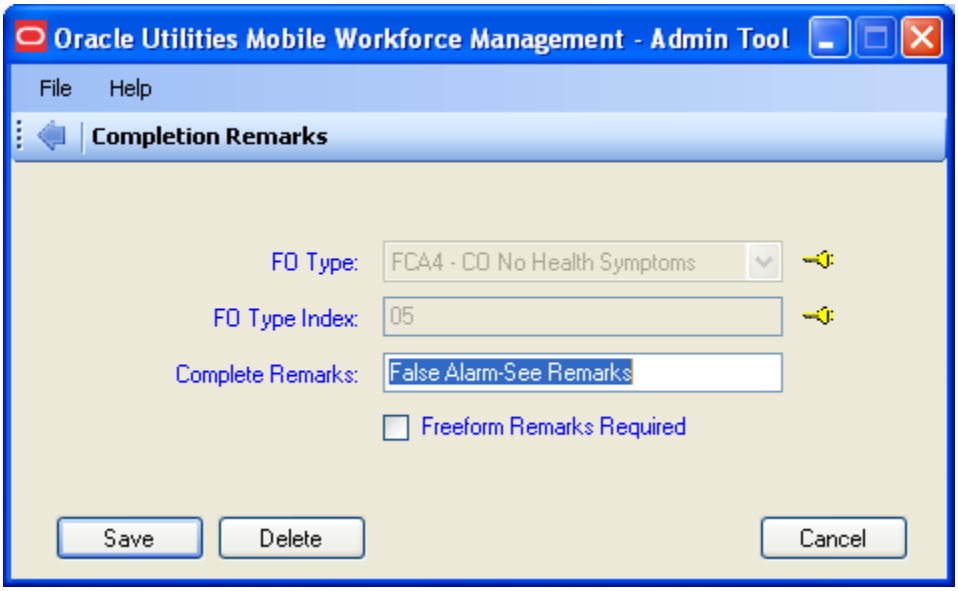
and Back button  both close the form, returning the user to the main startup form.
- The Save button 

updates a table by creating a new record or updating an existing record. When editing an existing record, if no data has been modified, the unchanged data will not be saved. This button is disabled if the user only has "browse" rights.
- The Delete button 

removes an existing record from a table (this button only active if an existing record is open). This button is disabled if the user only has "browse" rights.
- Validation is preformed on all form entries when the Save button is selected. Fields are validated against both the database limitations and the limitations that are specified in the metadata XML file. If there is any discrepancy between constraints in the XML file and constraints in the database, the database constraints will always be used. If any data on a form does not pass validation, the record cannot be saved.

Dynamic Maintenance Screen

The dynamic screen handles the maintenance of tables that only require adding, editing and deleting of records. All user-accessible data fields for a table are displayed. Control type, label text, data entry masks (if any), and validation directives for each field are obtained from the metadata XML file.



The following tables are maintained by the Dynamic Maintenance Screen in the base product:

Description	MWM Table	Purpose
Account Codes	DHTACTCD	This table contains action codes and descriptions for the Restoration Order. For example “Customer Equipment” or “No Access”.
Account Type Codes	DHTACTTP	This table contains codes and descriptions indicating the type of account. For example “Residential”, “Commercial”, “Street Light”, etc.
Additional Problems	DHTADPRB	This table contains codes and descriptions to allow specification of problems on the Restoration order. For example “Meter Damaged” or “Cable Failure”.
Affected Sections	DHTASECT	This table contains the codes and descriptions to allow specification of the affected section in the Damage Assessment screen.
AMR Manufacturer Codes	DHTAMRMC	This table contains codes indicating the AMR device manufacturer.
AMR Model Codes	DHTAMRMD	This table contains codes indicating the actual device model and relates back to the manufacturer code.
Appliance Names	DHTAPPNM	This table contains codes indicating the appliance name. For example Furnace, Stove, or Water Heater.
Available Assist Orders Types	DHTPCKUP	This table contains the original FO type and the allowable associated FO types to be used as pickup or assist orders.

Description	MWM Table	Purpose
Bill To	DHTBILL	This table contains codes indicating to whom the bill is to be sent. For example "Customer" or "Landlord".
Cable Codes	DHTCABLE	This table contains codes indicating different cable types or parts for the Restoration screen.
Cancel and Suspend Reasons	DHTUIRSN	This table contains codes and descriptions used by the system to indicate Cancel and Suspend Reasons for the Water Heater, Streetlight, and Customer Charge screens. Relates field order type to the acceptable reasons for that type.
CE Device INI	DHTCEINI	This table contains CE Device initialization parameters.
Charge Type Profit	DHTCHTYP	This table contains charge types related to a profit code. Charge type examples "MATERIAL", "LABOR_TRAVEL", and "LABOR_WORK".
Clue Priority	DHTCLUEPRIORITY	This table will contain the OMS Clue codes used for deriving order type and their search priority, where the lower number is the highest priority. If an order contains multiple clue codes, the clue code with the highest priority will be used to derive the order type using the DHTOMSFOTYPE table.
Completion Remarks	DHTCREMK	This table contains standard completion remarks associated with field order types.
Construction Codes	DHTCNSTR	This table contains codes and descriptions relating to construction codes for Electric Trouble and Restoration screens.
Contractor Codes	DHTCONTR	This table contains codes and descriptions for the external contractors the company uses. This is referenced in the support vehicles screen.
Control Zone Mapping	DHTCZMAP	This table will hold data for mapping control zones from Oracle Utilities Network Management System to Division, District, and Service Area in Oracle Utilities Mobile Workforce Management. The table will also be used to map Division, District, and Service Area to the appropriate control zones before sending data to OMS.
Corporation Codes	DHTCORP	This table contains codes and descriptions for internal corporate entities for timesheet (if used).
Credit Card Type	DHTCCTYP	This table contains possible credit card types. ("M/C", "VISA", AMEX", etc.)
Crew Type Codes	DHTTYPECREW	This table contains Crew types for the Damage Assessment and Unrelated Damage Assessment forms. For example "Tree Crew", "Eval", or "Line".
Damage Assessment Parts	DHTDMPRT	This table contains codes and descriptions of part types for the Damage Assessment screen.
Damage Location	DHTDMLOC	This table contains codes and descriptions of damage locations such as "Street" and "Rear Lot" for the Damage Assessment and Unrelated Damage Assessment screens.

Description	MWM Table	Purpose
Damage Types	DHTDMTYP	This table contains codes and descriptions of damage types such as "Wire Down" and "Fuses Blown" for the Damage Assessment and Unrelated Damage Assessment screens.
Department Codes	DHTDEPT	This table contains codes and descriptions of internal departments.
Dispatch (DW) INI	DHTDWINI	This table contains Dispatcher station initialization parameters.
Disposition Codes	DHTODIPT	This table contains the codes and descriptions relating the field order types with the available disposition codes for the streetlight and water heater screens. For example "Taps were cut" or "Meter reconnected".
External Connection Codes/Description	DHTEXTCONN	This table contains codes and descriptions for the various external connections.
External Message Configuration	DHTEXTMSGCFG	This table contains configuration information for messages sent by external applications.
External Messages	DHTXALMSG	This table is used in cases where a message code is passed to Oracle Utilities Mobile Workforce Management from an external connection in lieu of actual text. It contains the message code and associated text.
Failed Equipment Manufacturer Codes	DHTFEMFG	This table contains code and descriptions for the Manufacturers of devices. In this case, failed devices. For the Oracle Utilities Network Management System "Failed Equipment" screen.
Fuse Codes	DHTFUSE	This table contains fuse types for the Restoration screen.
Gas Shutoff Location	DHTGSLOC	This table contains codes and descriptions indicating gas shutoff locations.
ICD Priority	DHTICDPR	This table relates Icd IDs to RF priorities and indicates whether or not the Icd is Guaranteed.
Irregular Test Codes	DHTIRTST	This table contains codes and descriptions for irregular test conditions for the meter read screens.
Item Type Codes	DHTITTYP	This table contains item type codes for the CCB Detail screen.
Job Codes	DHTJOB	This table will contain the valid job codes used to identify special job functions of users in the Oracle Utilities Mobile Workforce Management system. These codes can be used to drive functionality (e.g. print orders).
Leak Location	DHTLKLOC	This table contains codes and descriptions relating the location of a gas leak. For example "Cellar" or "Kitchen".
Leak Odor	DHTLKODR	This table contains codes and descriptions relating the strength of the gas leak odor. For example "Minor" or "Strong".
Leak Odor Duration	DHTLKDUR	This table contains codes and descriptions related to the length of time the gas leak has been noticed.

Description	MWM Table	Purpose
Leak Priorities	DHTLKPRI	This table allows the ranking of leaks by priority, relating the type, location, odor, and duration.
Load Affected Codes	DHTLDAFF	This table contains codes and descriptions to relate whether or not the load has been affected. For the OMS Damage Assessment and OMS Unrelated Damage Assessment screens.
Manhole Events	DHTMHEVT	This table contains codes and descriptions relating possible manhole events/problems. For example “Cable Smoking” or “Structural Damage”. For the Restoration screen.
Meter Access Codes	DHTMTRRI	This table contains the meter read instructions. These indicate information and warnings such as “Dog In Yard”, “Downstairs”, or “Get Key”.
Meter Action Codes	DHTMTRAC	This table contains codes and descriptions for meter actions. This indicates the status of the meter when the field tech leaves the premise.
Meter Form Codes	DHTMTRFM	This table contains codes and descriptions for meter form. Used by the meter Set/Change screens.
Meter Location Codes	DHTMTRLO	This table contains the standard locations that meters may be found. i.e. “Garage”, “Barn”, or “Boiler Room”.
Meter Manufacturer Codes	DHTMTRMC	This table contains codes and descriptions of meter manufacturers of interest to the system.
Meter Model Codes	DHTMTRMD	This table contains codes and descriptions relating meter manufacturer to meter model.
Meter Phase Codes	DHTMTRPC	This table contains codes and descriptions of meter phase types. For example “3 Phase”.
Meter Point Type Codes	DHTMTRPT	This table associates the meter point service type with the meter point type.
Meter Remote Port Codes	DHTMTRRP	This table contains codes and descriptions indicating type of remote port (for reading) with which the meter (or device) is equipped.
Meter Status Codes	DHTMTRST	This table contains code and descriptions indicating the current status of the selected meter.
Meter Test Codes	DHTMTRTR	This table contains code and descriptions indicating the standard possible meter test reasons, such as “Complaint”, or “Periodic”.
Miscellaneous Codes	DHTMISC	This table contains the valid miscellaneous entries/codes that don't warrant a separate table. They are usually small in number and rarely, if ever, modified. It is also used to store some configuration information (.e.g. required minimum version of the Mobile Station application).
Miscellaneous Trouble Codes	DHTTMISC	This table contains the valid miscellaneous trouble resolution codes.
Mobile (MW) INI	DHTMWINI	This table contains Mobile station initialization parameters.

Description	MWM Table	Purpose
Municipal Codes	DHTMUNI	This table contains descriptions for municipal codes - usually towns/ cities. Used in timesheet form.
OMS Order Type	DHTOMSFOTYPE	This table contains codes and descriptions relating the Outage type with the field order type and the clue code. Used to derive the field order type from the outage type and clues.
Outage Types	DHTOTTYP	This table contains the outage types for the electric trouble orders.
Part Type	DHTPTTYP	This table contains part types used by the parts screen. Used to define larger unit parts, such as "Meter", "Water Heater", etc.
Parts	DHTPARTS	This table contains part pieces and types for the parts screen. Used to define more specific items, such as "Fuse" or "Loadbreak Connector". Allows you to associates a unit cost with the part if desired.
Pay Class	DHTAPYCL	This table contains pay classes used on the timesheet summary.
Phase Affected Codes	DHTPHAFF	This table contains codes and descriptions to indicate if phases have been affected and if so, which. For example "A", "AC", "BC", etc. For the OMS Damage Assessment and OMS Restoration Steps forms.
Pilot Codes	DHTPILOT	This table contains codes and descriptions indicating the state of the pilot light for devices that include them.
Pole Codes	DHTPOLE	This table contains codes and descriptions indicating pole types and parts for the Restoration form.
Position Codes	DHTPOSIT	This table contains position codes.
Premise Description Codes	DHTPREMD	This table contains codes and descriptions for various premise types. For example "Apartment", "Single Family", "Commercial Bldg".
Premise Entrance Instruction Codes	DHTPEINT	This table contains standard entrance instruction codes and descriptions aimed at the field tech. For example "Don't walk on Lawn" or "Key on Porch".
Problem Codes	DHTPRBLM	This table contains problem codes and descriptions for the Restoration screen.
Program ID	DHTPRGID	This table contains information associating meter point type with meter program id, reading type and use, sequence#, precision and # of dials. For meter information and meter read screens.
Program ID Descriptions	DHTPIDDS	This table associates a text description with the meter program ID codes.
Read Type Codes	DHTRTYPC	This table contains codes and descriptions for the meter Read Type codes. Is used in Program ID table to relate read type to program id.
Read Use Codes	DHTRDUCD	This table contains codes and descriptions for the meter Read Use codes. Used in Program ID table to relate read use to program id.

Description	MWM Table	Purpose
Reason Codes	DHTREASN	This table contains codes and descriptions for reasons used in field order screens, including: B - Out of Service I - Incomplete reasons R- Read reasons T - Return Field Order reasons V - Cancel Order reasons
Refer To Codes	DHTREFER	This table will contain the valid sources for referral codes used to specify where an electric trouble problem should be referred.
Register Group Codes	DHTREGGR	Table associates a register group code with the read type code, number of dials, and number of decimals. For meter reads.
Register Group Description	DHTRGRDS	This table contains codes and descriptions describing a Register group. See the Register Group Codes table above.
Removal Reason Codes	DHTRMRSN	This table contains codes and descriptions of reasons a meter or device is to be removed from the premises. For example "Customer Request" or "Bad Bearings".
Reserve Capacity Definitions	RES_CAP_DEFS (ORS)	This table contains reserve capacity types used by the Cost Control feature.
Response Center Codes	DHTRCN	This table contains codes and descriptions for Response centers. Used by timesheet form.
Review Required by Groups	DHTRVWRQ	This table contains codes and descriptions of groups which may be required to inspect a completed order. For example "Collections Center". Is used to fill the Review Required by drop-down.
Router INI	DHTRTINI	This table contains Router initialization parameters.
Seal Codes	DHTSEALC	This table contains codes and descriptions indicating the state of device seals. For example "TAMPERED", or "MISSING" also "GOOD". For meter read forms.
Server INI	DHTSVINI	This table contains Server initialization parameters.
Service Centers	DHTSVCTR	This table contains codes and descriptions for Service Center locations (typically, city names).
Service Point Disconnected Location Codes	DHTSPDLO	This table will contain the valid service point disconnect location code used to indicate where a service point was disconnected.
Service Point Type	DHTSERPT	This table will contain the valid meter service point type codes used to define the type of meter installed (e.g. gas vs. electric).
Service Profile Codes	DHTSVPRF	This table contains the Service Profile codes and descriptions for the meter, describing the Profile for meter operation.
Special Handling	DHTSPHDL	This table contains the valid special handling codes.
Shift Differential	DHTSHFTD	This table contains shift differential codes and descriptions.
States / Provinces	DHTSTATE	This table contains codes and descriptions for states in which customer is set up to operate.

Description	MWM Table	Purpose
Step Action Codes for Partial Restoration	DHTSTEPACTN	This table contains codes and descriptions for the Step Action Codes for Partial Restoration. Used by the OMS Restoration Steps form.
Stock Location Codes	DHTSTKLO	This table contains the valid stock locations used when entities (e.g. meters) are returned to stock.
Tax Table	DHTTAXTP	Tax type for the customer charge screen. Relates a tax type code to a rate.
Tax Type for Order Type	DHTTAXTB	This table contains a row representing each applicable tax type for a specific order type.
Town Codes	DHTTOWN	This table contains codes and descriptions for Towns usually stored in the description field with state abbreviation: "Big Piney, Wy".
Version Control	DHTVERS	This table contains the Oracle Utilities Mobile Workforce Management version associated with each mobile device.
WAM Component Category Codes	DHTWAMCOMPNTCAT	This table contains valid component category codes used for processing Oracle Utilities Work and Asset Management field work orders.
WAM Direct Charge Type	DHTWAMDIRCHRG	This table contains valid direct charge type codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Employee Codes	DHTWAMEMPL	This table contains the valid employee codes used by for processing Oracle Utilities Work and Asset Management field orders. This table is also used for processing WAM Time Sheets.
WAM Failure Codes	DHTWAMFAILURE	This table contains the valid failure codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Failure Mode Codes	DHTWAMFAILMODE	This table contains the valid failure mode codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Further Action Codes	DHTWAMFURTHERACT	This table contains the valid further action codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Premium Labor Earnings Type Codes	DHTWWAMPREMEARN	This table contains the valid premium earnings type codes used for processing WAM time sheets.
WAM Regular Labor Earnings Type Codes	DHTWAMREGEARN	This table contains the valid regular earnings type codes used for processing WAM time sheets.
WAM Repair Codes	DHTWAMREPAIR	This table contains the valid repair codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Shift Differential Codes	DHTWAMSHIFTDIFF	This table contains the valid shift differential codes used for processing WAM Time Sheets.
WAM Stock Codes	DHTWAMSTOCK	This table contains the valid stock codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Vendor Codes	DHTWAMVENDOR	This table contains the valid vendor codes used for processing Oracle Utilities Work and Asset Management field orders.

Description	MWM Table	Purpose
WAM Work Codes	DHTWAMWORK	This table contains the valid work codes used for processing Oracle Utilities Work and Asset Management field orders.
WAM Work Unit Codes	DHTWAMWKUNT	This table contains the valid work unit codes used for processing Oracle Utilities Work and Asset Management field orders.
Water Heater Size	DHTWHSZ	This table contains indication of how many units (i.e. gallons) the water heater services.
Work Skills	DHTWKSKL	Table associates work skills with CMS order types. (Exists in FO Ex table).
Work Table	DHTWORK	Table associates work codes with descriptions.

Data Fields

For each table maintained with the Dynamic Maintenance Screen, data field information is defined in the metadata XML file.

Validation

Data is validated against limitations that are specified in the metadata XML file.

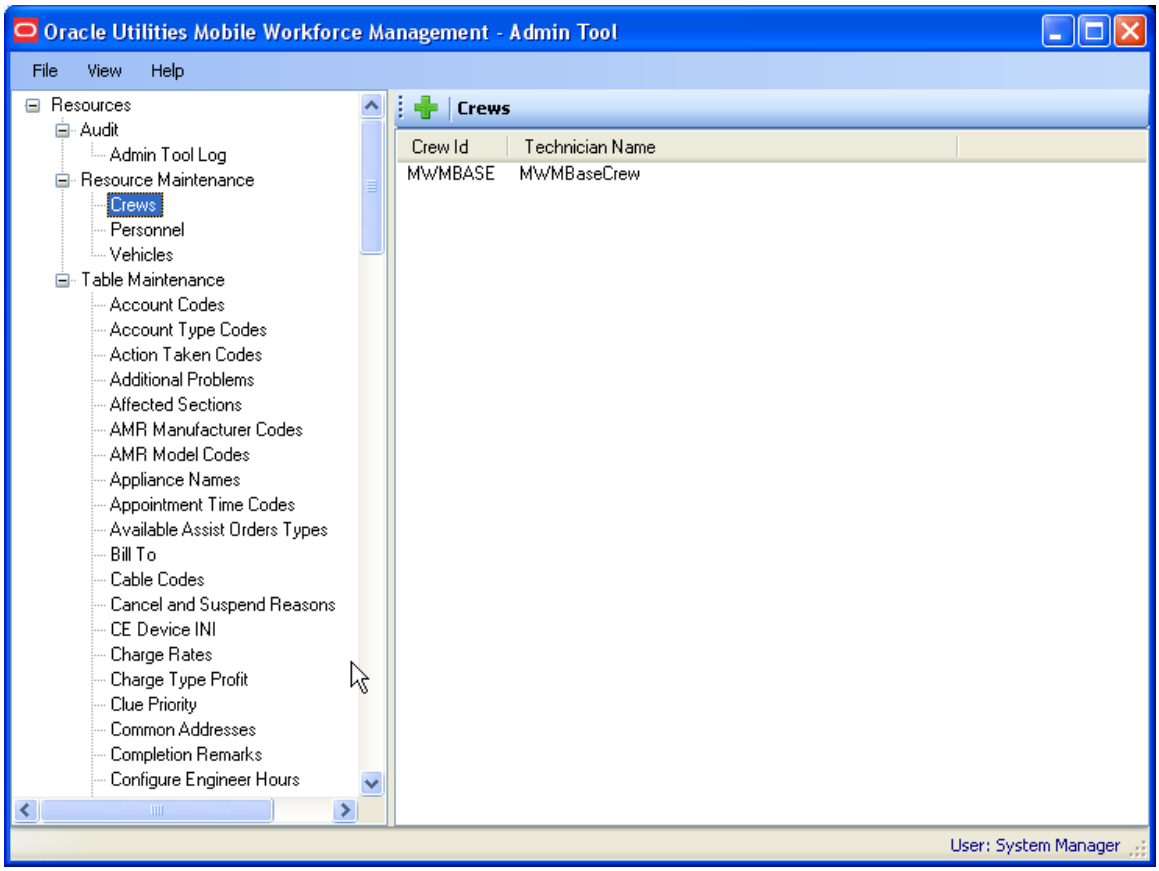
Chapter 2

Resource Maintenance

This chapter describes how to maintain system resources. It includes the following topics:

- **Crews**
- **Personnel**
- **Vehicle**

Crews



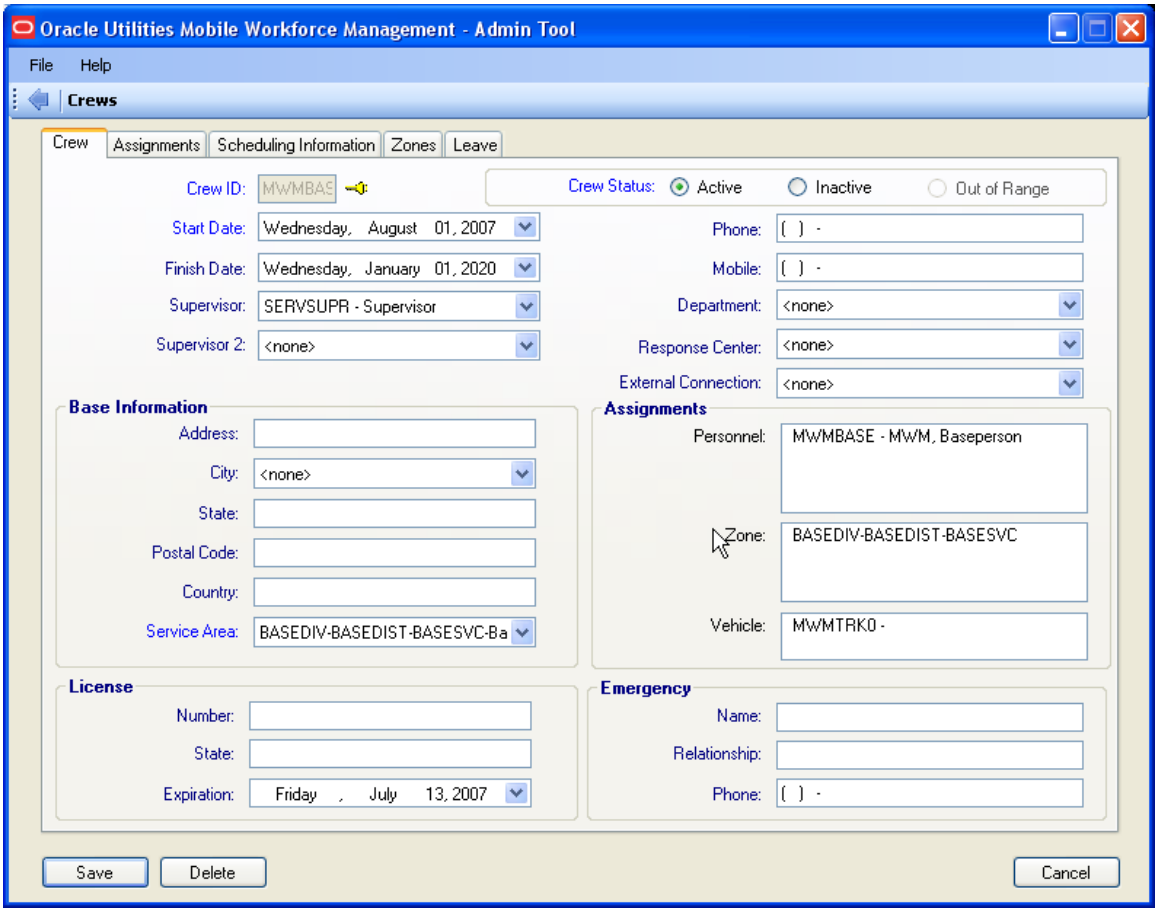
Crew Information can be modified via the Admin Tool by selecting *Resources-Resource Maintenance-Crews* in the Resource Panel. When *Crews* is selected, existing Crew records are displayed in the

Selection Panel. By default, the Crew Id and corresponding Technician Name are displayed for each crew in the Oracle Utilities Mobile Workforce Management system.

The Crews maintenance screen is used to add, view, delete or modify a crew. This screen provides the user the ability to change basic crew information and scheduling parameters, as well as modifying different crew assignments such as personnel, vehicles, and zones.

The Crews screen updates DHTCREW, DHTPTOC, DHTVEHCL, DHTTBVER, and DHTTBUPD out of the Oracle Utilities Mobile Workforce Management database. It also updates DRIVER, DRV_ATTRS, DRV_ZONES, and POSTBOX out of the Oracle Real-time Scheduler database.

Crew Tab – Function/Process Description



The Crew Tab contains general information about a crew. Most of these fields are just placeholders and have no functionality beyond the holding of information. The lone exceptions are Start Date and Finish Date. Start Date determines the date shift records will start being generated for the crew. This field is required and will default to the current day.

Finish Date determines the date shift records will stop being generated for the crew. Note that unless a crew is deleted (by pressing the delete button) a crew will still exist in the Oracle Utilities Mobile Workforce Management system and can log in and have orders assigned to it. If a crew record is deleted, the finish date is automatically filled in to stop the scheduler from generating shift records and the crew is logically deleted from the Oracle Utilities Mobile Workforce Management database.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Crew ID	Id of the crew being maintained. This field is only enabled in add mode.	None
Crew Status	The current status of the crew being maintained. Either the active or inactive button must be selected. The Out of Range button can never be selected. Only the Server will change a crew's status to out of range.	None
Start Date	The date the crew starts with the company. Oracle Real-time Scheduler will start creating shift records for the crew after this date.	None
Finish Date	The date the crew leaves the company. Oracle Real-time Scheduler will stop creating shift records for the crew after this date.	None
Supervisor	Id of the crew's primary supervisor. This list is populated with the service supervisors (access level = 2) using the personnel table (DHTPERS).	None
Supervisor 2	Id of the crew's secondary supervisor. This list is populated with the service supervisors (access level = 2) using the personnel table (DHTPERS).	None
Phone	Placeholder for the phone number of the crew	None
Mobile	Placeholder for the mobile phone number of the crew.	None
Department	The department for the crew being maintained. This list is populated with the available departments using the department validation table (DHTDEPT). This field is used by the Timesheet function.	None
Response Center	The responsibility center for the crew being maintained. This list is populated with the available responsibility centers departments using the responsibility centers validation table (DHTRCN). This field is used by the Timesheet function.	None
External Connection	External system code that the crew is associated with. May be things like OMS, CIS, etc. Is used by the system to send certain crew related messages to specific external systems only associated with that crew.	None
Personnel Assignments	Lists the personnel currently assigned to this crew.	None
Zone Assignments	Lists the Oracle Real-time Scheduler Zones the crew is assigned to.	None
Vehicle Assignments	Lists the vehicles currently assigned to this crew.	None
Base Information		None

Field Name	Description	Data Constraints
Address	The crew's address	None
City	The crew's city. This list is populated with a list of the towns defined in the town table (DHTTOWN);	None
State	The crew's state.	None
Postal Code	The crew's postal code.	None
Country	The crew's country.	None
Base Service Area	The service area/division/district of the crew. This list is populated with the available service areas using the service area validation table (DHTSERV).	None
License		None
Number	The license number of the crew.	None
State	The state the license belongs to.	None
Expiration	The expiration date of the license.	None
Emergency		None
Name	Who to contact in case of an emergency.	None
Relationship	Their relationship to the crew.	None
Phone	The phone number of the person.	None

Validation

A crew cannot be modified or deleted if it is logged on. Crew ID, Crew Status, Start Date, and Service Area are all required. A crew cannot be deleted if work is assigned to it. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file. The Finish Date cannot be less than the Start Date.

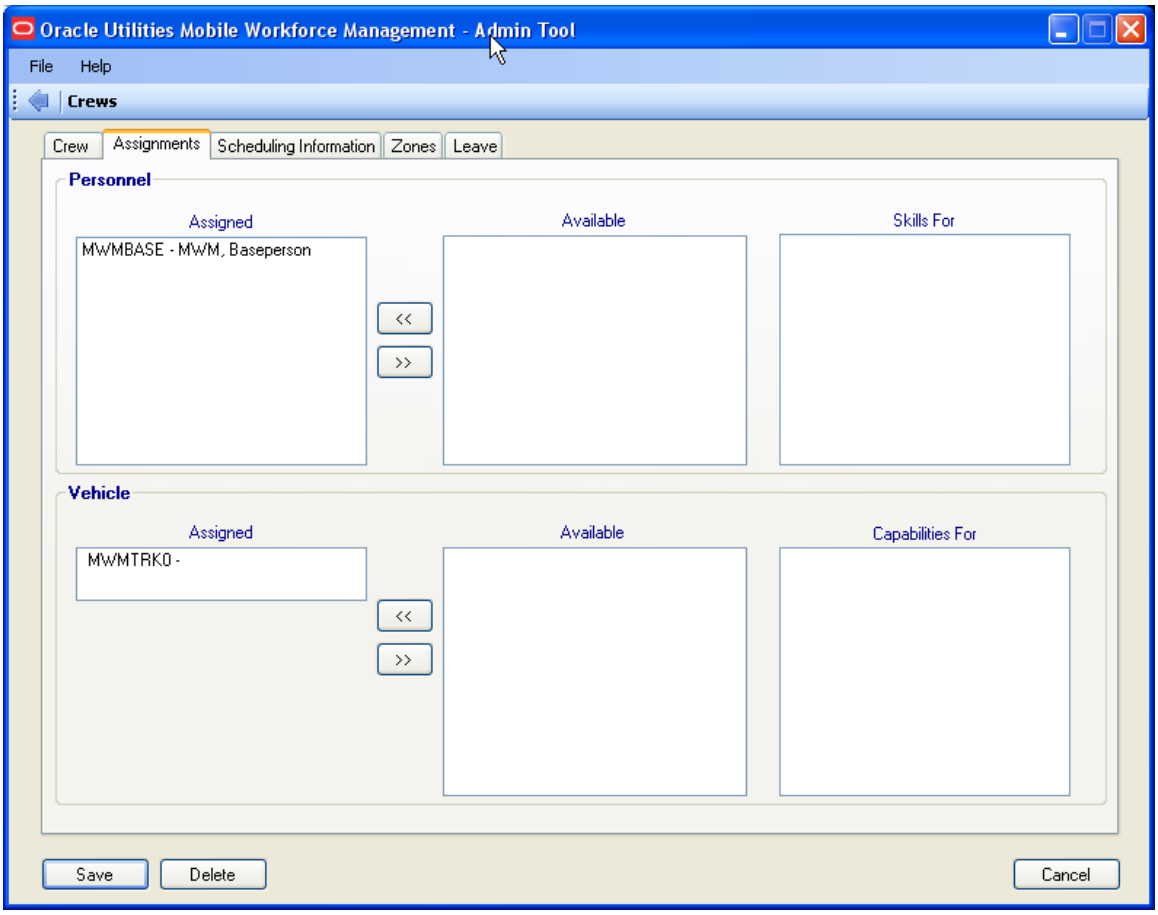
Data Mapping

The following table shows where the data in the Crew Tab gets mapped to Oracle Utilities Mobile Workforce Management (MWM) and Oracle Real-time Scheduler (ORS). In the case of the Assignments list boxes, it is the data base column that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Crew ID	DHTCREW:CREW	DRIVERS:DRV_ID
Crew Status	DHTCREW:CREW_STATUS	DRIVERS:DRV_STATUS
Start Date		DRIVERS:START_DATE
Finish Date		DRIVERS:FINISH_DATE
Supervisor	DHTCREW:SUPERVISOR	
Supervisor 2	DHTCREW:SUPERVISOR_2	
Phone		DRIVERS:PHONE_HOME

Field Name	MWM Table:Column	ORS Table:Column
Mobile		DRIVERS:PHONE_MOBILE
Department	DHTCREW:SPARE_6	
Response Center	DHTCREW:SPARE_5	
External Connection	DHTCREW:EXT_CONN_NAME	
Personnel Assignments	DHTPTOC	
Zone Assignments	:	DRV_ZONES
Vehicle Assignments	DHTVEHCL:CREW	
Base Information		
Address	DHTCREW:BASE_ADDRESS	DRIVERS:ADDRESS_1
City	DHTCREW:BASE_TOWN_CODE	DRIVERS:CITY
State		DRIVERS:STATE
Postal Code	DHTCREW:BASE_ZIP_CODE	DRIVERS:POSTCODE
Country		DRIVERS:COUNTRY
Base Service Area	DHTCREW:DIVISION DHTCREW:DISTRICT DHTCREW:SERVICE_AREA	
License		
Number		DRIVERS:LIC_NUMBER
State		DRIVERS:LIC_STATE
Expiration		DRIVERS:LIC_EXPIRY
Emergency		
Name		DRIVERS:EMERG_CONTACT
Relationship		DRIVERS:EMERG_RELATION
Phone		DRIVERS:EMERG_PHONE

Assignments Tab – Function/Process Description



The Assignments Tab controls the assignment of a vehicle and personnel to a crew. Based on the setting of the personnel to crew association (PersonToCrewAssociation) and vehicle to crew association (VehicleToCrewAssociation) parameters in DHTSVINI the assignment of personnel and/or a vehicle will be required. If PersonToCrewAssociation is set to TRUE then at least on person must be assigned to the crew. If VehicleToCrewAssociation is set to TRUE then at least one vehicle must be assigned to the crew. If both are set to TRUE then one assigned person and an assigned vehicle are required. Note that PersonToCrewAssociation and VehicleToCrewAssociation cannot be set to FALSE at the same time, so at least one person or one vehicle must be assigned to a crew.

When a person is highlighted in either the Personnel "Available" or Personnel "Assigned" list, the skills assigned to that person will be displayed in the Personnel "Skills For" list. To assign personnel, highlight the desired person in the Personnel "Available" list and press the "<<" button between the Personnel "Assigned" and Personnel "Available" list boxes. The selected person will be moved from the Personnel "Available" list to the Personnel "Assigned" list. Unassign personnel by highlighting the person in the Personnel "Assigned" list box and pressing the ">>" button. The selected person will be moved from the Personnel "Assigned" list to the Personnel "Available" list. The "<<" button is disabled when the limit of five people have been assigned to the crew.

When a vehicle is highlighted in either the Vehicle "Assigned" or Vehicle "Available" list, the capabilities assigned to that vehicle are displayed in the Vehicle "Capabilities For" list. To assign a vehicle, highlight the desired vehicle in the Vehicle "Available" list and press the "<<" button between the Vehicle "Assigned" and Vehicle "Available" list boxes. The selected vehicle will be moved from the Vehicle "Available" list to the Vehicle "Assigned" list. Unassign a vehicle by highlighting the vehicle in the Vehicle "Assigned" list box and pressing the ">>" button. The

selected vehicle will be moved from the Vehicle "Assigned" list to the Vehicle "Available" list. Only one vehicle can be assigned to a crew. If the user selects a vehicle in the Vehicle "Available" list box and presses the ">>" button when there is already a vehicle in the Vehicle "Assigned" box, the two vehicles will simply swap list boxes.

Note that Oracle Real-time Scheduler has no concept of personnel. Therefore on an add or an update the admin tool takes all of the skills assigned to the personnel in the Personnel Assigned list box and inserts these relationships in the Oracle Real-time Scheduler DRV_ATTRS table.

Data Fields

Field Name	Description	Data Constraints
Personnel Assigned	The personnel assigned to the crew.	None
Personnel Available	The personnel available to be assigned. Populated from the personnel table (DHTPERS).	None
Personnel Skills For	The skills that are assigned to the selected person. Populated from the Personnel Skills assigned table (DHTPDAY).	None
Vehicles Assigned	The vehicle assigned to the crew.	None
Vehicles Available	The vehicles available to be assigned. Populated from the vehicles table (DHTVEHCL).	None
Vehicles Capabilities For	The Vehicle Capabilities that are assigned to the selected vehicle. Populated from the Vehicle Capabilities assignments table (DHTVCAPB).	None

Validation

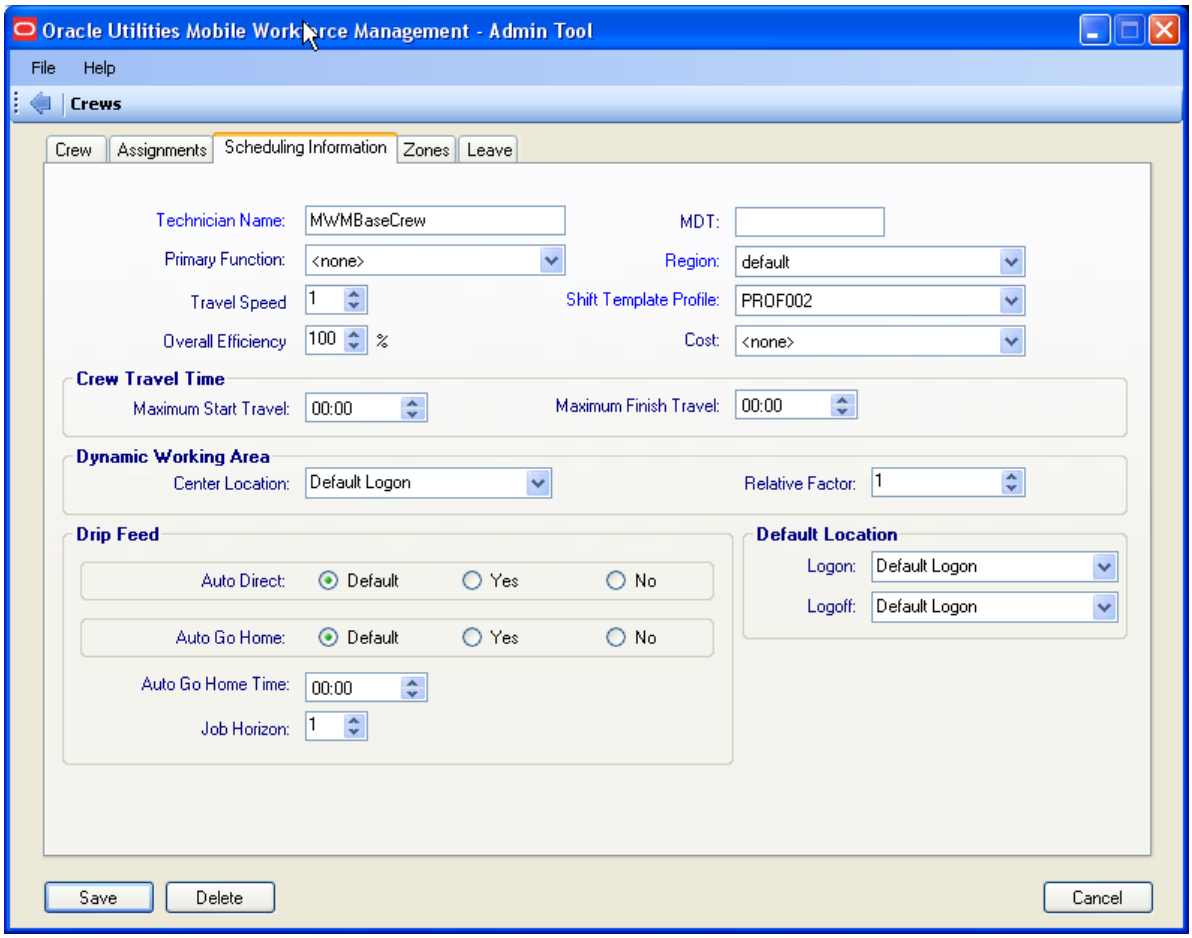
If PersonToCrewAssociation is TRUE at least one person must be assigned to the crew. If VehicleToCrewAssociation is TRUE a vehicle must be assigned to the crew. Only one vehicle can be assigned to a crew.

Data Mapping

The following table shows where the data in the Assignments Tab gets mapped to. In the cases of the Personnel "Available", Vehicle "Available", Personnel "Skills For", and Vehicle "Capabilities For" list boxes, it is the data base tables that populate the list boxes.

Field Name	MWM Table:Column	ORS Table:Column
Personnel Assigned	DHTPTOC	DRV_ATTRS
Personnel Available	DHTPERS	
Personnel Skills For	DHTPDAY	
Vehicles Assigned	DHTVEHCL	DRIVERS:VEH_ID
Vehicles Available	DHTVEHCL	
Vehicles Capabilities For	DHTVCAPB	

Scheduling Tab- Function/Process Description



The Scheduling tab contains information and parameters that directly affect how the crew is scheduled. A high level description and overview of these parameters are given here. For more information, please see the related scheduler documentation.

Some of these parameters are only used if configuration is not done globally for the crew. The Default Location "Logon" and the Default Location "Logoff" are used only if these are blank on the selected Shift profile. Dynamic Working Area is only used if Dynamic Zones are configured. See the scheduler documentation for more information on Dynamic Zones. Finally, the Auto Enroute parameters are used only if drip feed is enabled. "Maximum Start Travel" and "Maximum Finish Travel" can be overridden in the Oracle Real-time Scheduler CONFIG table. If not defined in the configuration table, these values are used.

Data Fields

Field Name	Description	Data Constraints
Technician Name	The name of the primary technician assigned to the crew being maintained.	None

Field Name	Description	Data Constraints
Primary Function	The primary function for the crew being maintained. This list is populated with the available primary functions using the primary function validation table (DHTPFUNC). This field is only used by the Oracle Utilities Mobile Workforce Management scheduling module and is required if the scheduling module is used.	None
Travel Speed	The average travel speed for the crew being maintained. This field is only used by the Oracle Utilities Mobile Workforce Management scheduling module and is required if the scheduling module is used.	None
Overall Efficiency	The overall efficiency rating for the crew being maintained. This field is only used by the Oracle Utilities Mobile Workforce Management scheduling module and is required if the scheduling module is used.	None
MDT	The identifier of the MDT that the crew possesses.	None
Region	The region of the Oracle Real-time Scheduler. This is used for partitioning purposes. Most installations will only have one region. This list is populated from the Oracle Real-time Scheduler REGION_ID table.	None
Shift	The shift profile the driver is assigned to. This list is populated from the Oracle Real-time Scheduler SHIFT_TEMPLATE_PROFILES table.	None
Cost	The cost profile the driver is assigned to. This list is populated from the Oracle Real-time Scheduler COST_PROFILE table.	None
Engineers Travel Time		None
Maximum Start Travel	How long the driver can travel on his/her own time before starting the job.	None
Maximum Finish Travel	How long the driver can travel on his/her own time before finishing the job.	None
Dynamic Working Area		None
Center Location	This is the center of the dynamic zone. This list is populated from the Oracle Real-time Scheduler COMMON_ADDRESS table.	None
Relative Factor	This is the cost of moving further and further away from the center of the dynamic zone defined above.	None
Auto Direct	A flag that turns drip feed on or off.	None
Auto Enroute	A flag that specifies if Oracle Real-time Scheduler automatically puts the crew enroute.	None
Auto Go Home	A flag that determines if the crew can go home if there are no more jobs to schedule	None
Auto Go Home Time	If auto go home is yes then how long before finishing time can the crew go home.	None

Field Name	Description	Data Constraints
Job Horizon	The number of jobs the drip feed dispatch looks at. If set at one only one job is allocated at a time. If set higher Oracle Real-time Scheduler makes sure that the crew has this number of jobs in their schedule at any given time.	None
Default Location		None
Logon	The location where the driver logs on in the morning. This is the center of the dynamic zone. This list is populated from the Oracle Real-time Scheduler COMMON_ADDRESS table.	None
Logoff	The location where the driver logs off in the morning. This is the center of the dynamic zone. This list is populated from the Oracle Real-time Scheduler COMMON_ADDRESS table.	None

Validation

"Technician Name", "Region", and "Shift" are all required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

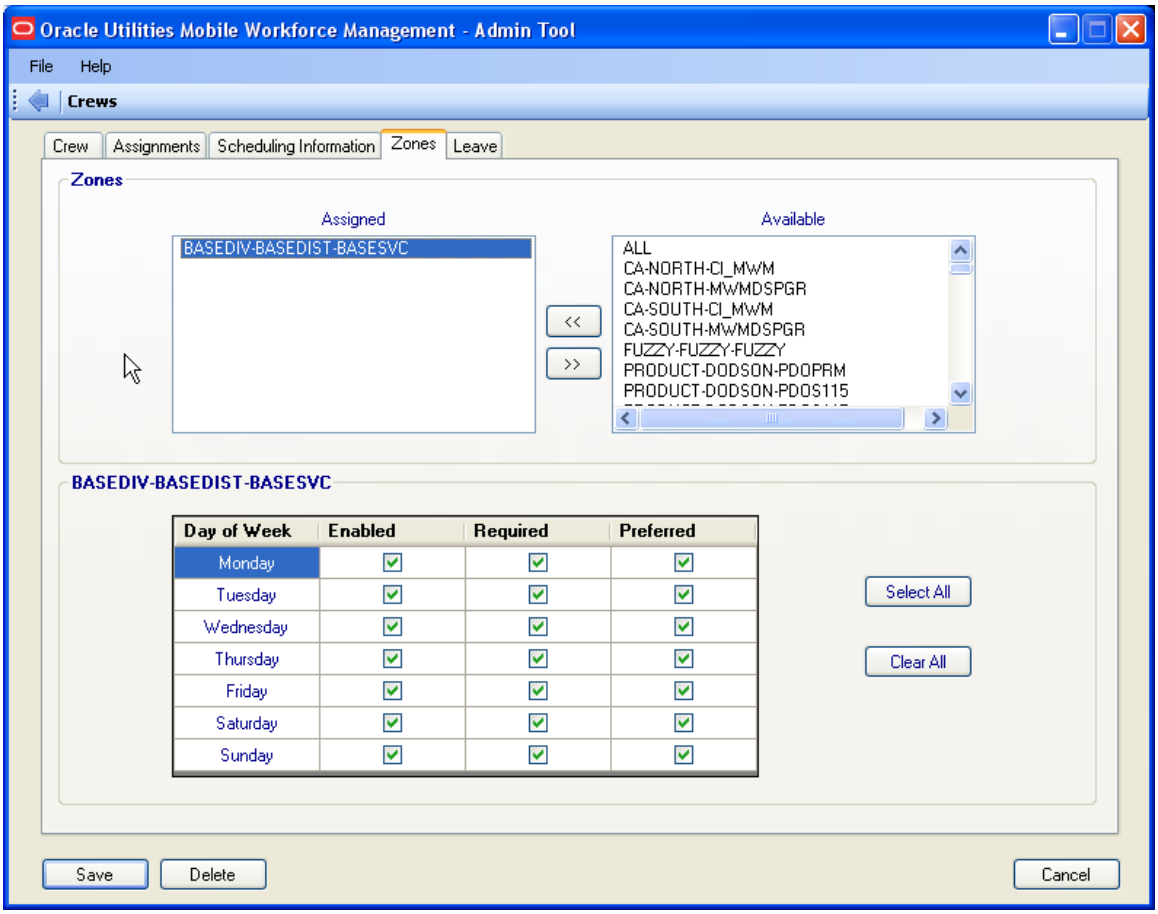
Data Mapping

The following table shows where the data in the Scheduling Info Tab gets mapped to:

Field Name	MWM Table:Column	ORS Table:Column
Technician Name	DHTCREW:TECH_NAME	DRIVERS:DRV_NAME
Primary Function	DHTCREW:PRIMARY_FUNC_CD	
Travel Speed	DHTCREW:TRAVEL_SPEED	
Overall Efficiency	DHTCREW:OVERALL_EFFICIENCY	DRIVERS:REL_EFFICIENCY
MDT		DRIVERS:MDT_ID
Region		DRIVERS:REGION_ID
Shift		DRIVERS:PROFILE_ID
Cost		DRIVERS:COST_PROFILE_ID
Engineers Travel Time		
Maximum Start Travel		DRIVERS:START_OWN_TRAVEL
Maximum Finish Travel		DRIVERS:FINISH_OWN_TRAVEL
Dynamic Working Area		
Center Location		DRIVERS:DNMC_WA_CENTRE
Relative Factor		DRIVERS:REL_DNMC_WA
Auto Enroute		
Auto Direct		DRIVERS:AUTO_DIRECT

Field Name	MWM Table:Column	ORS Table:Column
Auto Enroute		DRIVERS:AUTO_ENROUTE
Auto Go Home		DRIVERS:AUTO_GO_HOME
Auto Go Home Time		DRIVERS:TIME_GO_HOME
Job Horizon		DRIVERS:JOB_HORIZON
Default Location		
Logon		DRIVERS:LOGON_LOCATION
Logoff		DRIVERS:LOGOFF_LOCATION

Zones Tab – Function/Process Description



The Zones Tab controls the assignment of a zone to a crew (for information on zones, please refer to scheduler documentation). Depending on how your software is set up, Zones can be configured to either District or Service Area. To assign zones to a crew, highlight the desired zone in the Zones "Available" list and press the "<<" button between the Zones "Assigned" and Zones "Available" list boxes. The selected zone will be moved from the Zones "Available" list to the Zones "Assigned" list. Unassign a zone by highlighting the zone in the Zones "Assigned" list box and pressing the ">>" button. The selected zone will be moved from the Zones "Assigned" list to the Zones "Available" list.

There are other parameters in an assigned zone that the user can set. To set these parameters, select a zone in the Zones "Assigned" list box. The table at the bottom is populated with the zone parameter settings for the selected zone. The day of the week for the zone can be set, as well as whether the zone is required and/or preferred for that day. If a user moves a zone from the Zones "Assigned" list to the Zones "Available" list, the zone parameters settings are reset.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Zone	The name of the zone.	None
Enabled	Checked if the zone is enabled for that particular day.	None

Field Name	Description	Data Constraints
Required	Checked if the zone is required for that particular day.	None
Preferred	Checked if the zone is preferred for that particular day.	None

Validation

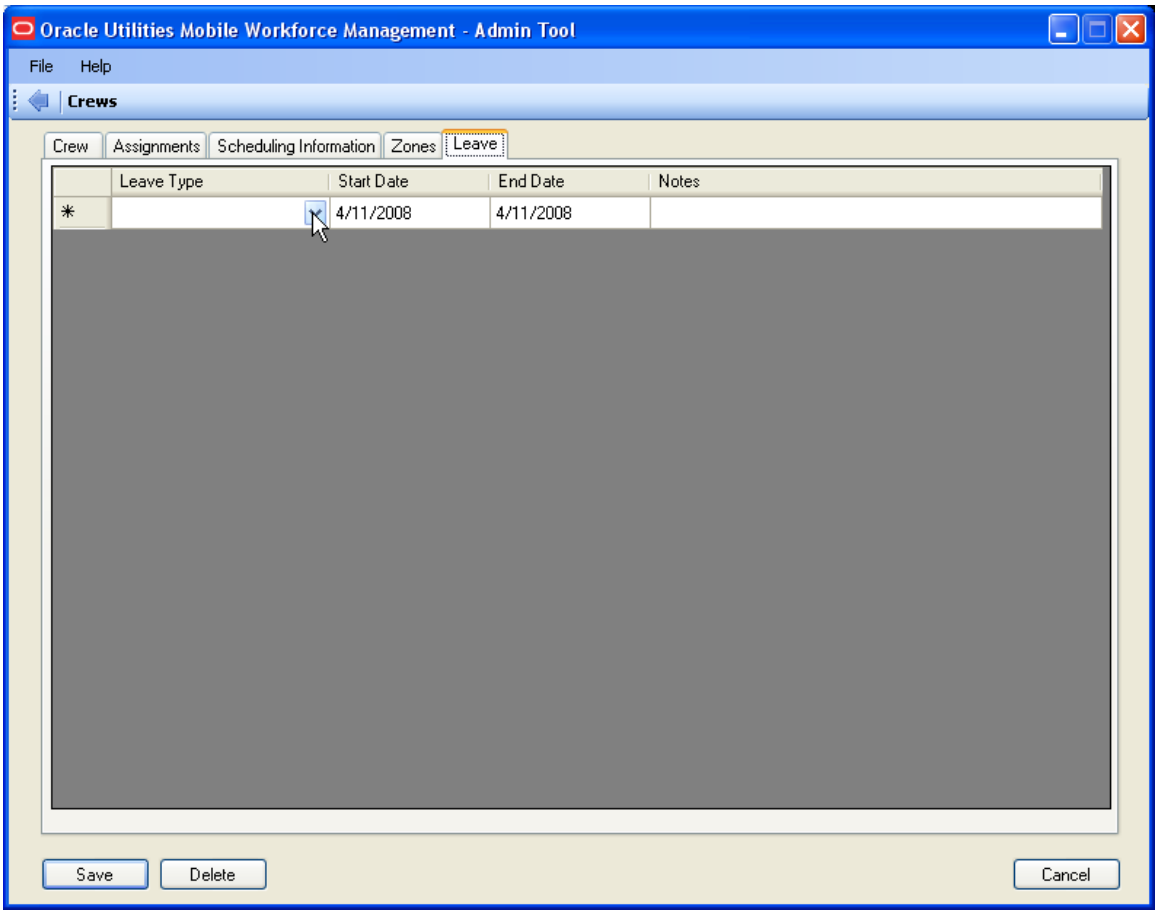
There is no validation processing on this form.

Data Mapping

The Enabled field is used to determine if a record is written out to the DRV_ZONES table for that day and has no Table:Column value.

Field Name	MWM Table:Column	ORS Table:Column
Zone		DRV_ZONES:ZONE
Day of Week		DRV_ZONES:DAY_OF_WEEK
Required		DRV_ZONES:REQUIRED
Preferred		DRV_ZONES:PREFERRED

Leave Tab – Function/Process Description



The Leave tab maintains the list of the leaves plotted for the Crew. This tab is only available for existing crews and is hidden when adding a new record. To create a leave, select a leave type, enter the start and end date and provide notes (optional). To delete an existing leave, simply right click on a particular row in the grid and select the "Delete This Leave" menu item.

Data Fields

Data fields are described below

:

Field Name	Description	Data Constraints
Leave Type	Leave classification	Leave types are defined in the ORS table LEAVE_CONFIG:LEAVE_TYPE
Start Date	Initial date of the leave period.	None
End Date	Last date of the leave period.	None
Notes	Optional details of the leave.	None

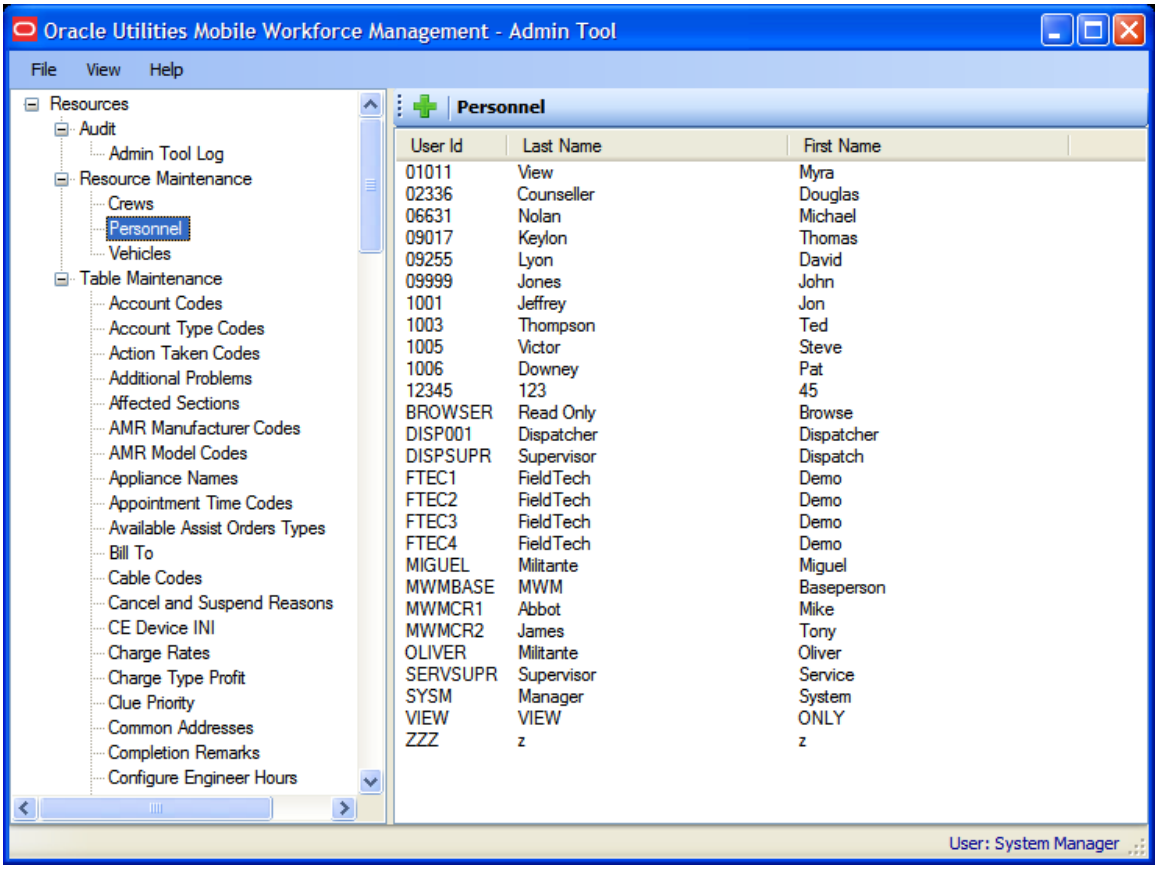
Validation

The leave type, start date and end date are required with the end date being the later date of the two. Also, the leave dates must be correct and not overlap other leaves for the crew.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Leave Type		DRV_LEAVE:LEAVE_TYPE
Start Date		DRV_LEAVE:LEAVE_FROM
End Date		DRV_LEAVE:LEAVE_TO
Notes		DRV_LEAVE:NOTES

Personnel

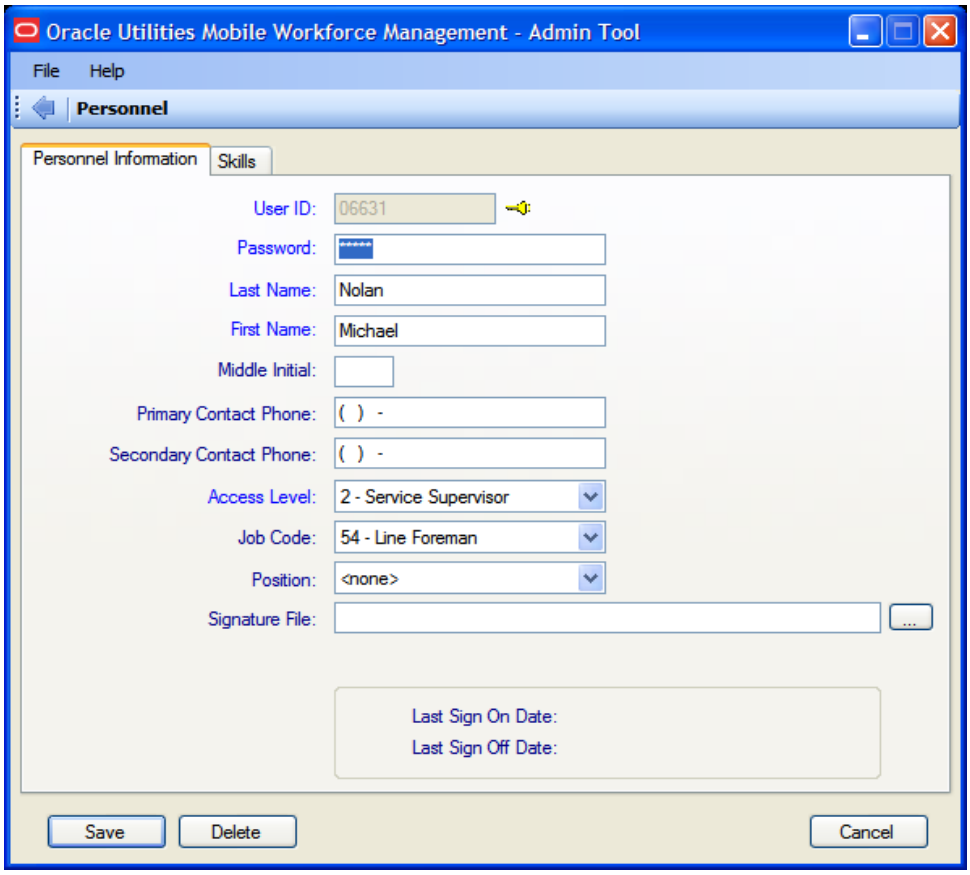


Personnel can be modified via the Admin Tool by selecting *Resources-Resource Maintenance-Personnel* in the Resource Panel. When *Personnel* is selected in the Resource Panel, existing Personnel records are displayed in the Selection Panel. By default, the User ID, Last Name, First Name and Access Level are displayed for each Personnel record in the Oracle Utilities Mobile Workforce Management system.

The Personnel maintenance screen is used to add, view, delete or modify personnel. This screen provides the user the ability to change personnel information which is stored in the Personnel resource table.

The Admin Tool application will update the personnel table (DHTPERS) in the database directly. The skills assigned to a person are stored in the Personnel Skills database table (DHTPCAPB). The days of the week selected for each assigned skill are stored in the DHTPDAY table. The Admin Tool application will also update the version number of the personnel table in the table versions database table and generate a trigger record in the table update table. It also updates DRV_ATTRS, and POSTBOX in the Oracle Real-time Scheduler database.

Personnel Maintenance Tab – Function/Process Description



The Personnel Tab contains general information about the personnel. The user id must be unique and is not editable for existing records. For each "User ID" there should be a corresponding "Password" for user login. The other fields contain basic information about a particular person; namely: "Last Name", "First Name", "MI", "Primary Contact Number" and "Secondary Contact Number". The "Access Level", "Job Code" and "Position" fields are populated with data from other tables. "Last Sign On Date" and "Last Sign Off Date" are applicable for existing records only.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
User ID	The id of the user being maintained. This field is only enabled in add mode.	None
Password	The password for this person being maintained. The password will be displayed as asterisks as a security measure. The password is case sensitive. The password must be between the minimum and maximum length as specified by INI parameters.	None
Last Name	The last name of the person.	None
First Name	The first name of the person.	None

Field Name	Description	Data Constraints
MI	The middle initial of the person.	None
Primary Contact Number	The primary contact phone number for the person (e.g. cell phone, pager, office phone, etc.)	None
Secondary Contact Number	The secondary contact phone number for the person (e.g. cell phone, pager, office phone, etc.)	None
Access Level	Access level for this person. This list is populated with the available access levels using the access level process table (DHTLEVEL).	At least one Access Level must be created before a Personnel record can be added
Job Code	Job code for this person. This code can be used to identify special job functions that can be used to drive functionality (e.g. print orders). This list is populated with the available job codes using the job validation table (DHTJOB).	None
Position	Position code for this person. This list is populated with the available position codes using the position validation table (DHTPOSIT).	None
Signature File	The path name where the user's signature file can be found. The path name can be entered, or you can browse to the location of the signature file by pressing the '…' button to the right of the field.	None
Last sign on date/ time	Date and time this person last signed on the Oracle Utilities Mobile Workforce Management system. This field is read-only and is updated by the Server when a logon is processed.	None
Last signoff date/time	Date and time this person last signed off the Oracle Utilities Mobile Workforce Management system. This field is read-only and is updated by the Server when a logoff is processed.	None

Validation

"User ID", "Password", "Last Name", "First Name", and "Access Level" are all required. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

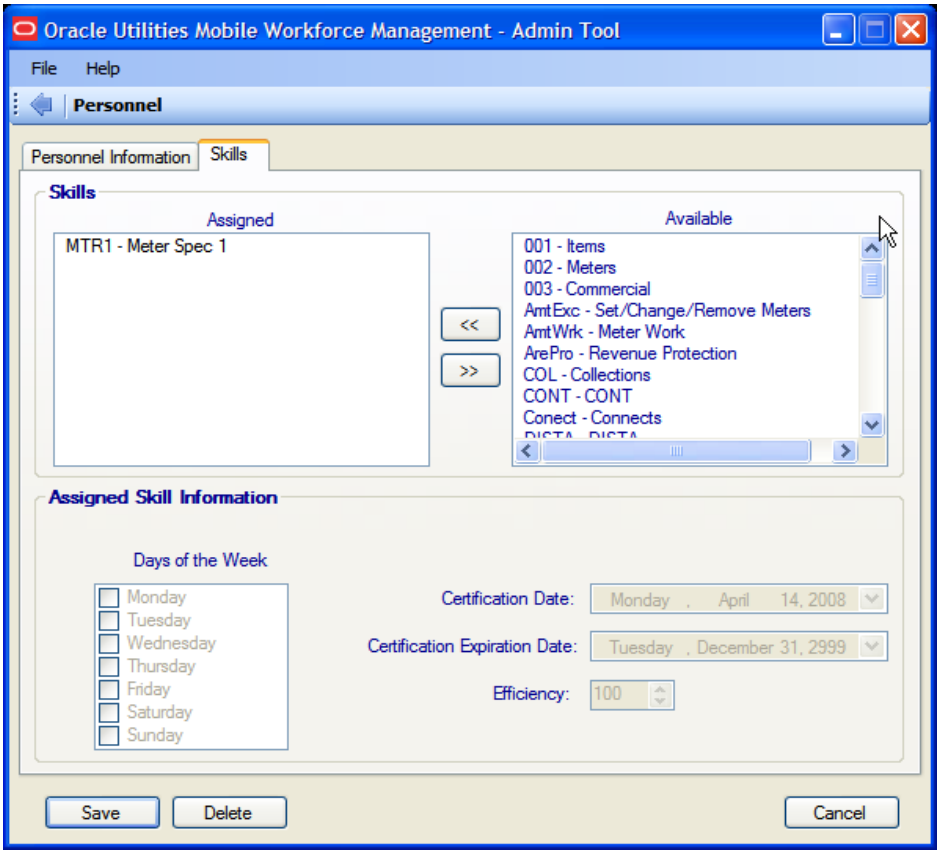
Data Mapping

The following table shows where the data in the Personnel maintenance screen gets mapped to:

Field Name	MWM Table:Column	ORS Table:Column
User ID	DHTPERS:USER_ID	
Password	DHTPERS:PASSWORD	
Last Name	DHTPERS:LAST_NAME	
First Name	DHTPERS:FIRST_NAME	

MI	DHTPERS:MI
Primary Contact Number	DHTPERS:PAGER_NUMBER
Secondary Contact Number	DHTPERS:PAGER_NUMBER_2
Access Level	DHTPERS:ACCESS_LEVEL
Job Code	DHTPERS:JOB_CODE
Position	DHTPERS:POSITION
Signature File	DHTPERS:SIG_FILE
Last sign on date/time	DHTPERS:LAST_SIGNON_DTTM
Last signoff date/time	DHTPERS:LAST_SIGNOFF_DTTM

Skills Tab – Function/Process Description



The Skills Tab controls the assignment of skills to a person. To assign skills to a person, highlight the desired skill in the "Available" list and press the "<<" button between the "Assigned" and "Available" list boxes. The selected skill will be moved from the "Available" list to the "Assigned" list. Unassign a skill by highlighting the skill in the "Assigned" list box and pressing the ">>" button. The selected skill will be moved from the "Assigned" list to the "Available" list.

There are other parameters that may be set for each skill in the "Assigned" list. To set these parameters, select a skill in the "Assigned" list box. The skill information below will then be enabled. The user can set the "Certification Date", "Certification Expiration Date", "Efficiency rating" and "Day of Week" for the selected skill. If a skill is moved from the "Assigned" list to the "Available" list these parameters are reset.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned	The skills assigned to the selected person.	None
Available	The skills available to be assigned. Populated from the skills table (DHTSKILL).	None
Certification Date	The certification date for the assigned skill.	None
Certification Expiration Date	The date this person's certification for the selected skill will expire.	None

Efficiency	The efficiency rating for the assigned skill. Minimum value is 0 and maximum value is 100.	Min: 0 Max: 100
Day of Week	The day of the week the assigned skill is available to the personnel.	None

Validation

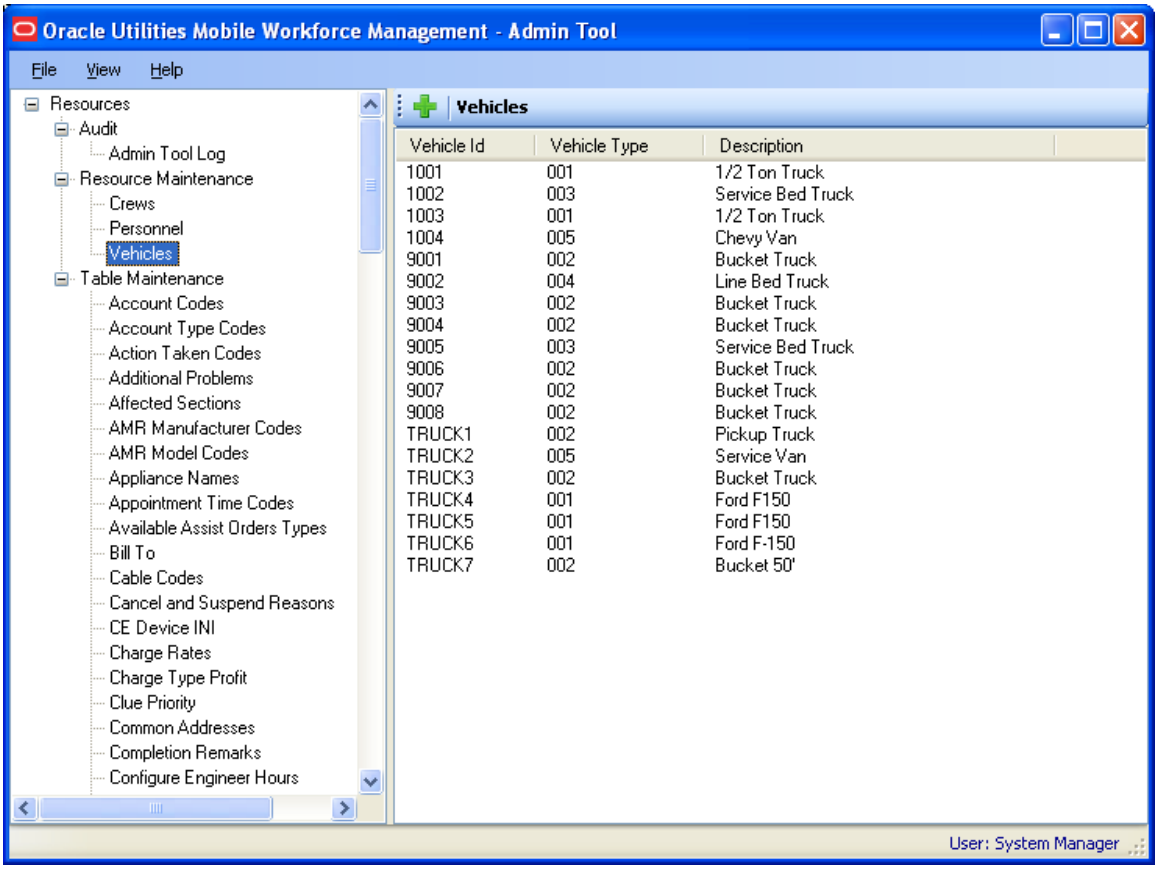
Day of Week is required. The certification expiration date must be after the certification date.

Data Mapping

The following table shows where the data in the Skills Tab gets mapped to.

Field Name	MWM Table:Column	ORS Table:Column
Assigned	DHTCAPB	
Available	DHTSKILL	DRV_ATTR_DEFS
Cert. Date	DHTCAPB:CERTIFICATION_DATE	
Cert. Exp. Date	DHTCAPB:CERT_EXPIRE_DATE	DRIVERS:VEH_ID
Efficiency	DHTCAPB:EFFICIENCY_RATING	
Day of Week	DHTPDAY:DAY_OF_WEEK	DRV_ATTRS:DAY_OF_WEEK

Vehicle



Vehicles can be modified via the Admin Tool by selecting *Resources-Resource Maintenance-Vehicle* in the Resource Panel. When *Vehicle* is selected, existing Vehicle records are displayed in the Selection Panel. By default, the Vehicle ID, Vehicle Type and Description are displayed for each vehicle in the Oracle Utilities Mobile Workforce Management system.

The Vehicle maintenance screen is used to add, view, delete or modify a Crew. This screen provides the user the ability to add or modify vehicle records.

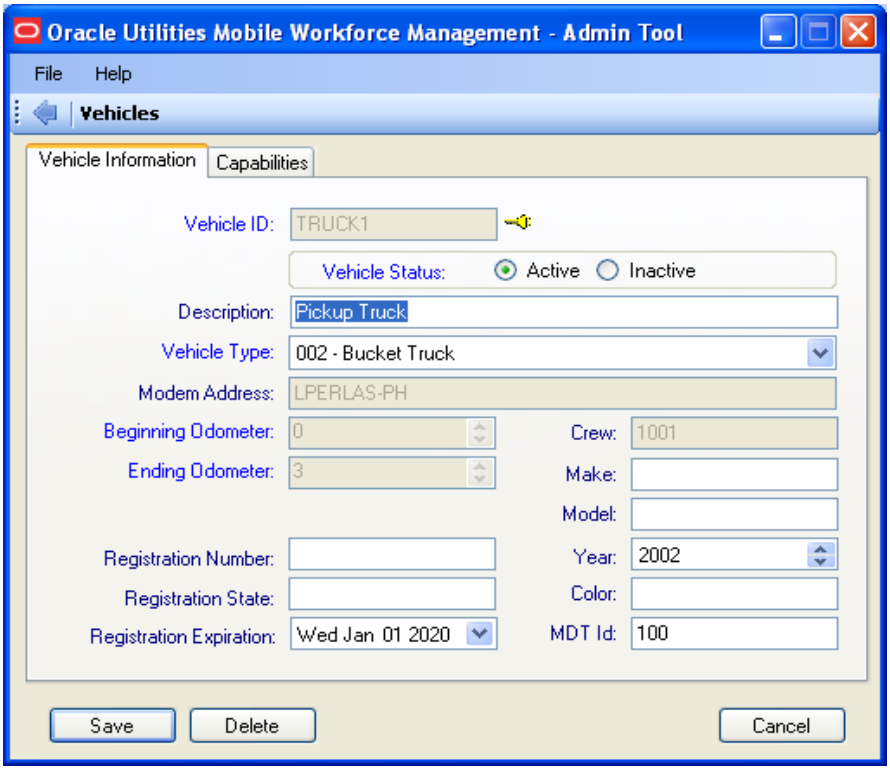
The Server updates the beginning odometer and modem address when the mobile logon is processed. The Server updates the ending odometer when the mobile logoff is processed. The id of the Crew is set in the Crew Maintenance screen when this vehicle is assigned to a Crew.

The Admin Tool application will update the Oracle Utilities Mobile Workforce Management and Oracle Real-time Scheduler databases directly. The Vehicle screen updates DHTVEHCL, DHTVCAPB, DHTTBVER and DHTTBUPD out of the Oracle Utilities Mobile Workforce Management database. It also updates VEHICLES and VEH_ATTRS out of the Oracle Real-time Scheduler database.

When a vehicle is modified via an add, update or delete, the version number of the vehicle table will be updated in the table versions table (DHTTBVER). A trigger record is inserted in into the table update table (DHTTBUPD).

The Server will read the record from the table update table. The contents of the updated table are read from the database and serialized to the hard drive. The Server will create an updated table data transaction containing the updated records (based on the version number of the table) and forward the transaction to all other logged on Dispatch Workstation users for processing.

Vehicle Details Tab – Function/Process Description



The Vehicle Details tab contains general information about a vehicle in the Oracle Utilities Mobile Workforce Management system; however, "Description" is stored in both Oracle Utilities Mobile Workforce Management and Oracle Real-time Scheduler Vehicle tables.

"Vehicle Type" is populated with all defined Vehicle Types.

Once a "Vehicle Type" is selected, the "Available" list on the Capabilities tab will be populated with the newly-selected Vehicle Type's default capabilities, resetting any capability settings that might have existed for the previously-selected Vehicle Type.

The beginning odometer, ending odometer, modem address, and Crew fields are always read-only.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Vehicle ID	Id of the vehicle being maintained. This field is only enabled in add mode.	None
Description	A description of the vehicle being maintained.	None
Vehicle Type	Type of vehicle being maintained. This list is populated with the available vehicle types using the vehicle type validation table (DHTVHTYP). When selection is changed, updates are automatically made on the Capabilities tab to show the Capabilities available for the newly-selected vehicle type.	At least one Vehicle Type must exist before a vehicle can be created

Modem Address	The modem address for the vehicle being maintained. The Server updates this field with the computer name of the mobile unit from the mobile logon by sending it in the logon transaction. This field is not editable.	None
Beginning Odometer	The beginning odometer reading for the vehicle being maintained. The Server updates this field when a user logs on the mobile software and enters a beginning odometer reading. This field is not editable	None
Ending Odometer	The ending odometer reading for the vehicle being maintained. The Server updates this field with the user logs off the mobile software and enters an ending odometer reading. This field is not editable	None
Crew	Id of the Crew to which this vehicle is assigned. This Crew is set in the Crew Maintenance form. This field is blank if the vehicle is not assigned to a Crew. This field is not editable	None
Status	The current status of the vehicle being maintained. Either the active or inactive button must be selected.	None
Tag Number	Tag/registration number of the vehicle being maintained.	None
Tag State	State where the vehicle is registered.	None
Tag Expiry	Date when the vehicle's tag/registration will expire.	None
MDT ID	MDT ID of the vehicle being maintained.	None
Make	Describes the maker of the vehicle being maintained.	None
Model	Describes the model of the vehicle being maintained.	None

Validation

"Vehicle ID", "Vehicle Type", "Description", and "Status" are required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

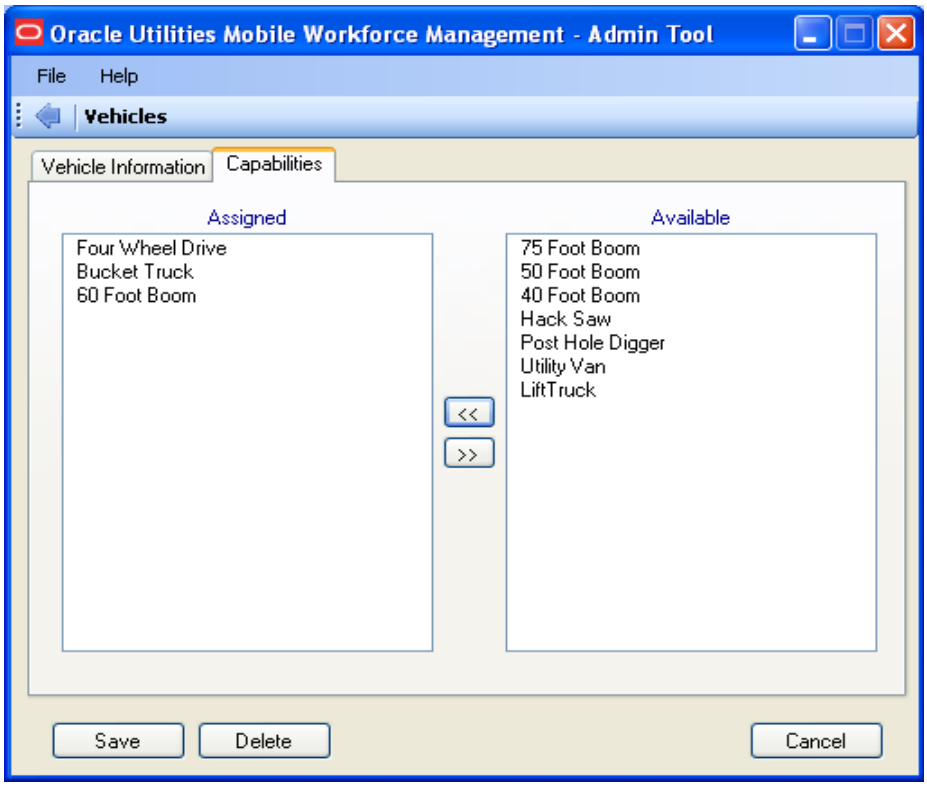
Data Mapping

The following table shows where the data in the Crew Tab gets mapped to.

Field Name	MWM Table:Column	ORS Table:Column
Vehicle ID	DHTVEHCL.VEHICLE_ID	
Description	DHTVEHCL.VEHICLE_DESC	VEHICLES.VEH_DESC
Vehicle Type	DHTVEHCL.VEHICLE_TYPE	
Modem Address	DHTVEHCL.MODEM_ADDRESS	
Beginning Odometer	DHTVEHCL.BEGINNING_ODOMETER	

Ending Odometer	DHTVEHCL.ENDING_ODOMETER	
Crew	DHTVEHCL.CREW	
Status	DHTVEHCL.VEHICLE_STATUS	
Tag Number		VEHICLES.REG_NO
Tag State		VEHICLES.REG_STATE
Tag Expiry		VEHICLES.REG_EXPIRY
MDT ID		VEHICLES.MDT_ID
Make		VEHICLES.MAKE
Model		VEHICLES.MODEL

Capabilities Tab – Function/Process Description



The Capabilities tab controls the assignment of capabilities to a vehicle. Items listed in the "Available" list box are those belonging to the selected "Vehicle Type" (on the Vehicle Details tab).

To assign Vehicle Capabilities, highlight the desired capability in the "Available" list and press the "<<" button between the "Assigned" and "Available" list boxes. The selected capabilities will be moved from the "Available" list to the "Assigned" list. To unassign a capability, highlight the capability in the "Assigned" list and press the ">>" button to move the selected item back to the "Available" list. Multiple capabilities can be moved from one list to another at the same time. Simply select all of the desired capabilities and press the "<<" or ">>" button.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned	Contains a list of the capabilities currently assigned to the vehicle being maintained.	There is no limit to the number of capabilities that can be assigned to a vehicle.
Available	Contains a list of the capabilities available but not currently assigned to the vehicle being maintained.	None

Validation

None

Data Mapping

The following table shows where the data in the Crew Tab gets mapped to. In the case of the "Available" list box it is the database table that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Assigned	DHTVCAPB.VEHICLE_CAPABILITY	
Available	DHTVTYPC.CAPABILITY_DESC	

Chapter 3

Table Maintenance

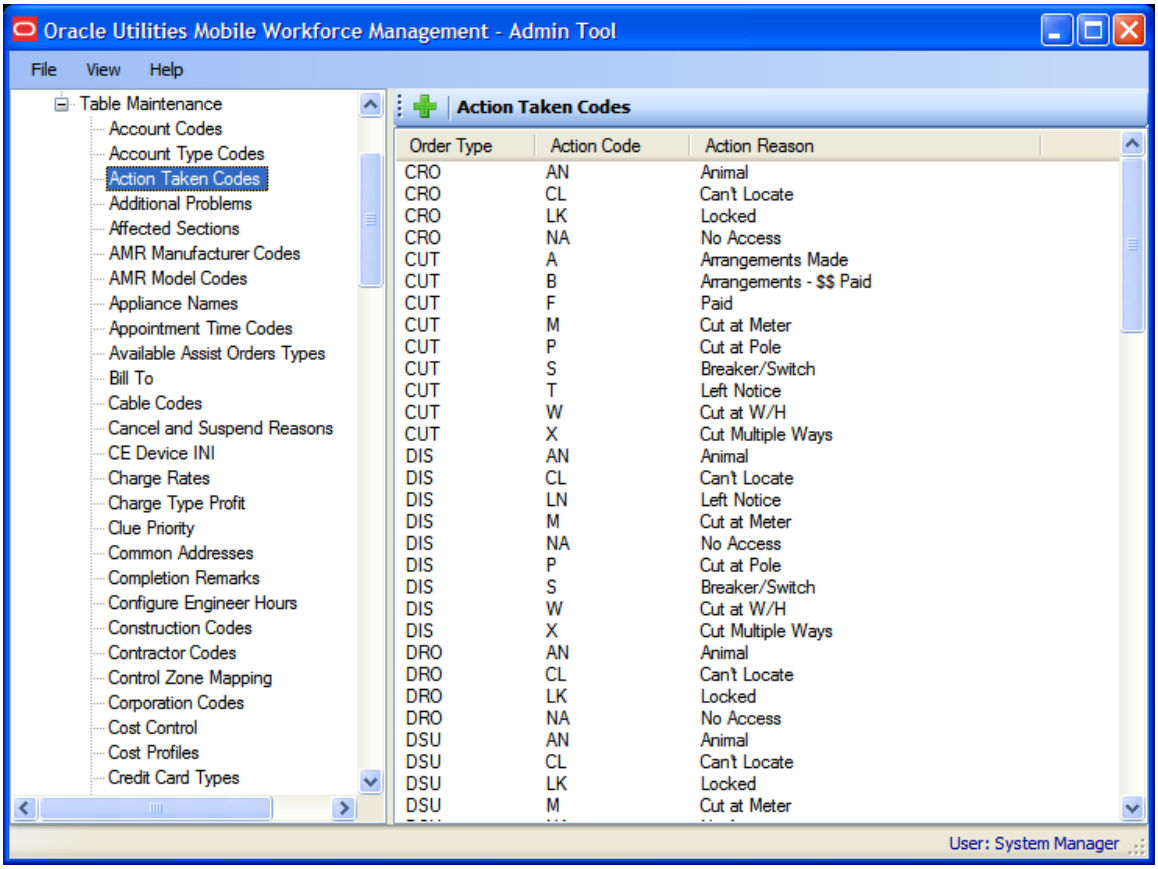
This chapter describes how to maintain the specialized tables listed under Table Maintenance in the Admin Tool resource panel.

> **Note**: Generic tables listed under Table Maintenance are maintained by the **Dynamic Maintenance Screen** and are not included in this section.)

This chapter describes the following tables:

- **Action Taken Codes**
- **Appointment Time Code**
- **Charge Rate**
- **Common Addresses**
- **Configure Engineer Hours**
- **Cost Control**
- **Cost Profile**
- **Dispatch Area**
- **District**
- **Division**
- **Field Order Types**
- **Incompletion Reason**
- **Periods of Unavailability**
- **POU Template**
- **Primary Function Codes**
- **Priority Codes**
- **Public Holidays**
- **Region**
- **Service Areas**
- **Service Point**
- **Shift Template Profiles**
- **Shift**
- **Skill Codes**
- **Slot Profile**
- **Transaction Control (Wireless)**
- **Vehicle Capabilities**
- **Vehicle Type**

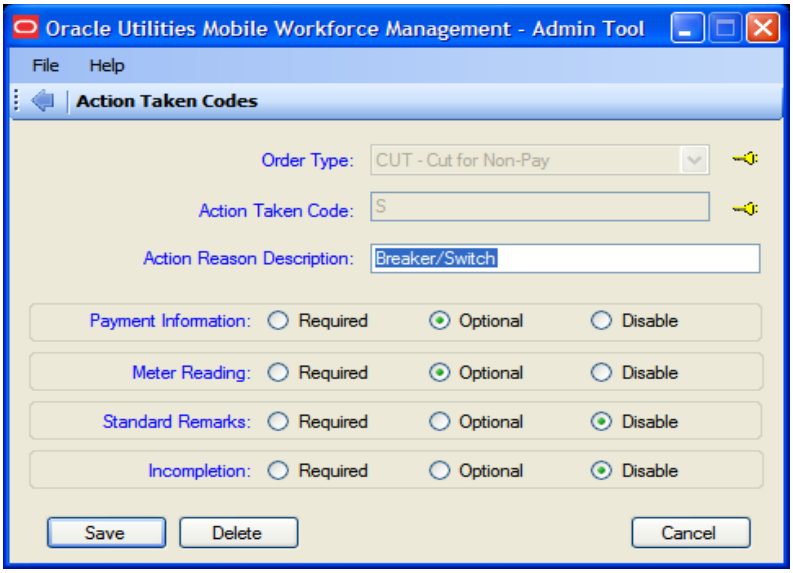
Action Taken Codes



Action Taken Codes can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Action Taken Codes* in the Resource Panel. When *Action Taken Codes* is selected, existing Action Taken Code records are displayed in the Selection Panel. By default, the Order Type, Action Code, and Action Reason are displayed for each Action Taken Code record in the Oracle Utilities Mobile Workforce Management system.

The Action Taken Codes maintenance screen is used to add, view, delete or modify Action Taken Codes.

Function/Process Description



The Action Taken Codes screen is used to maintain Action Taken codes. This table use a multipart key composed of the (Field) Order Type and the Action Taken Code.
This screen directly updates the following tables: DHTACTN, DHTTBVER, and DHTTBUPD.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Order Type	The Field Order Type. This list is populated with the available field order types using the field order type table (DHTFOTYP).	At least one Field Order Type must exist before an Action Taken Code can be created
Action Taken Code	The action taken code for this action.	None
Action Reason Description	A description of this action.	None
Payment Information	Can be used by the order completion screen to indicate that this action taken requires that payment information be entered. Normally, "Required" indicates the data must be entered, "Optional" indicates the data is optional, and "Disabled" indicates the payment fields should be disabled on the screen, but this is determined by the project team designing the order completion screen.	Choices are "Required", "Optional", and "Disable". The default is "Disable".

Field Name	Description	Data Constraints
Meter Reading	Can be used by the order completion screen to indicate that this action taken requires that meter readings be entered. Normally, "Required" indicates the readings must be entered, "Optional" indicates the readings are optional, and "Disabled" indicates the reading fields should be disabled on the screen, but this is determined by the project team designing the order completion screen.	Choices are "Required", "Optional", and "Disable". The default is "Disable".
Standard Remarks	Can be used by the order completion screen to indicate that this action taken requires that standard remarks be selected. Normally, "Required" indicates the standard remarks must be selected, "Optional" indicates the standard remarks are optional, and "Disabled" indicates the standard remarks field should be disabled on the screen, but this is determined by the project team designing the order completion screen.	Choices are "Required", "Optional", and "Disable". The default is "Disable".
Incompletion	Can be used by the order completion screen to indicate that this action taken requires that the order be incomplete. Normally, "Required" indicates the Incomplete button will be selected and the Complete/ Incomplete buttons disabled, "Optional" indicates the incomplete button should be enabled, and "Disabled" indicates the Incomplete button should be disabled on the screen, but this is determined by the project team designing the order completion screen.	Choices are "Required", "Optional", and "Disable". The default is "Disable".

Validation

All fields are required to be entered on this screen. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

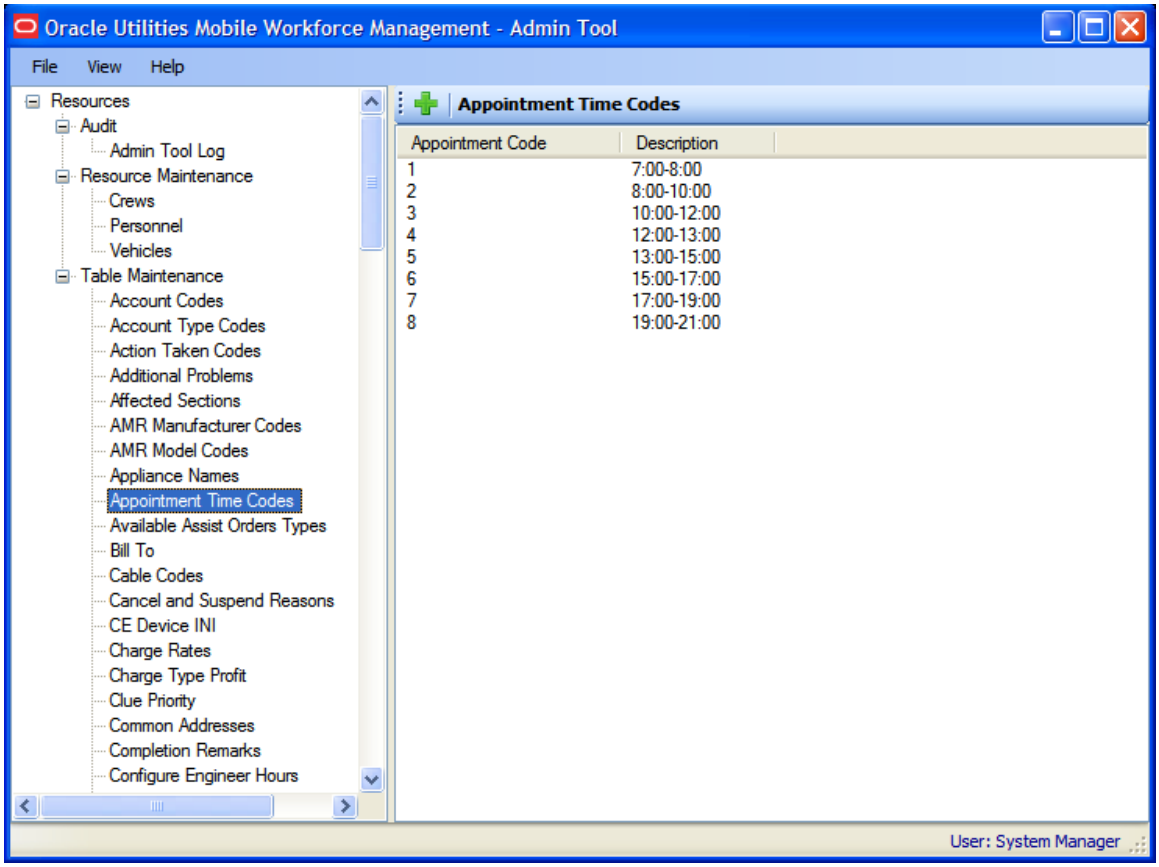
Data Mapping

The following table shows where the data in the Action Taken Code screen is mapped to:

Field Name	MWM Table:Column	ORS Table:Column
Order Type	DHTACTN.FO_TYPE	
Action Taken Code	DHTACTN.ACTION_TAKEN_CD	
Action Reason Description	DHTACTN.ACTION_TAKEN_DESC	

Field Name	MWM Table:Column	ORS Table:Column
Payment Information	DHTACTN.PAY_INFO_REQ	
Meter Reading	DHTACTN.MTR_READ_REQ	
Standard Remarks	DHTACTN.STD_RMRK_REQ	
Incompletion	DHTACTN.INCMPL_REQ	

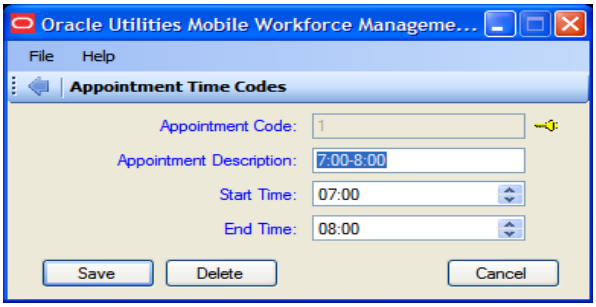
Appointment Time Code



Appointment Time Codes can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Appointment Time Code* in the Resource Panel. When *Appointment Time Code* is selected, existing Appointment Time Code records are displayed in the Selection Panel. By default, the Appointment Code and Description are displayed for each Crew in the Oracle Utilities Mobile Workforce Management system.

The Appointment Time Code maintenance screen is used to add, view, delete or modify appointment time codes.

Function/Process Description



The Appointment Time Code contains information regarding the selected appointment time code from the Selection Panel, or default information if a new record is being added. Aside from the "Appointment Code" and "Appointment Description", the "Start Time" and "End Time" are also included.

The Appointment Time Code screen updates the DHTAPTCD and DHTTBVER tables. When the appointment is modified via an add, update or delete, the version number of the Crew table will be updated in the table versions table (DHTTBVER).

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Appointment Code	Id of the appointment time being maintained. This field is only enabled in add mode.	None
Appointment Description	The description regarding the appointment time. This field is required.	None
Start Time	The time the appointment starts.	24-hour time
End Time	The time the appointment ends.	24-hour time

Validation

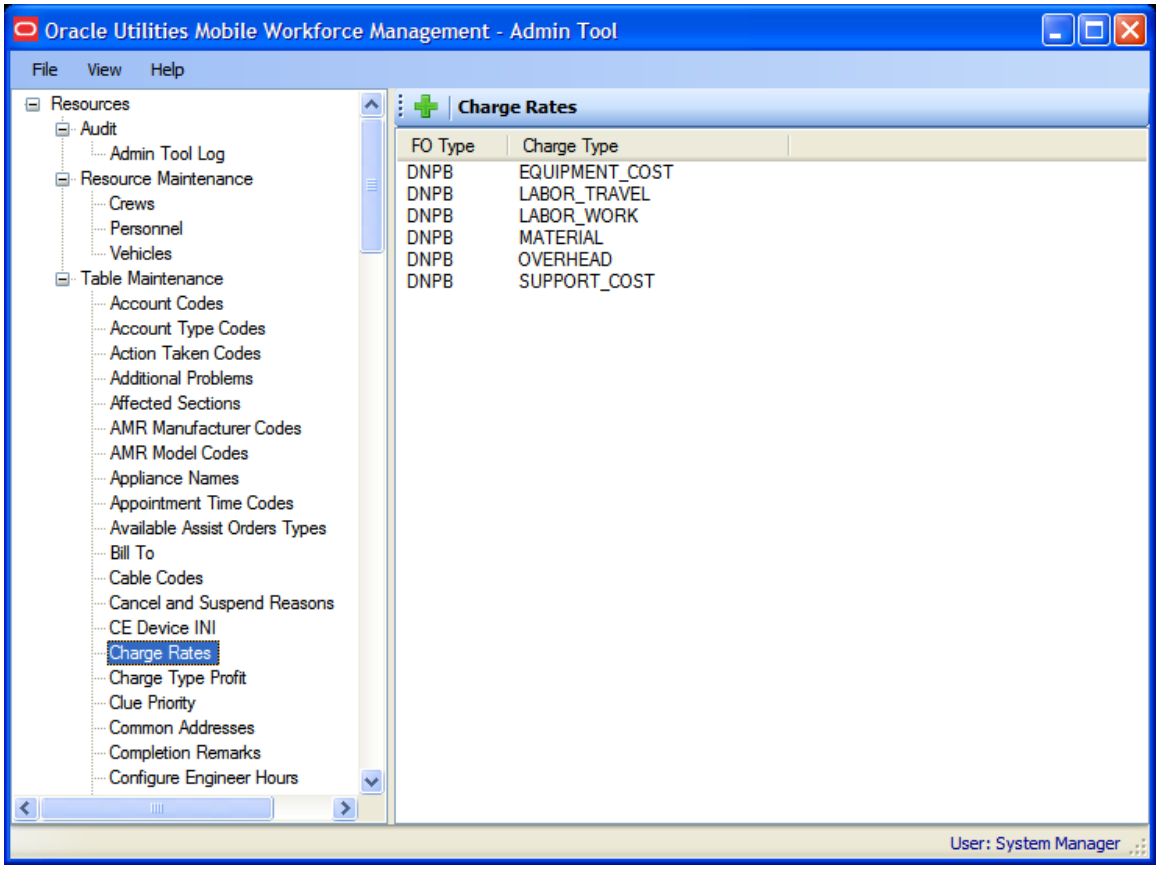
"Appointment Code", "Appointment Description", "Start Time", and "End Time" are all required. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Appointment Time Code screen is mapped to:

Field Name	MWM Table:Column	ORS Table:Column
Appointment Code	DHTAPTCD.APPOINTMENT_CODE	
Appointment Description	DHTAPTCD.APPOINTMENT_DESC	
Start Time	DHTAPTCD.SCHD_FROM_TIME	
End Time	DHTAPTCD.SCHD_END_TIME	

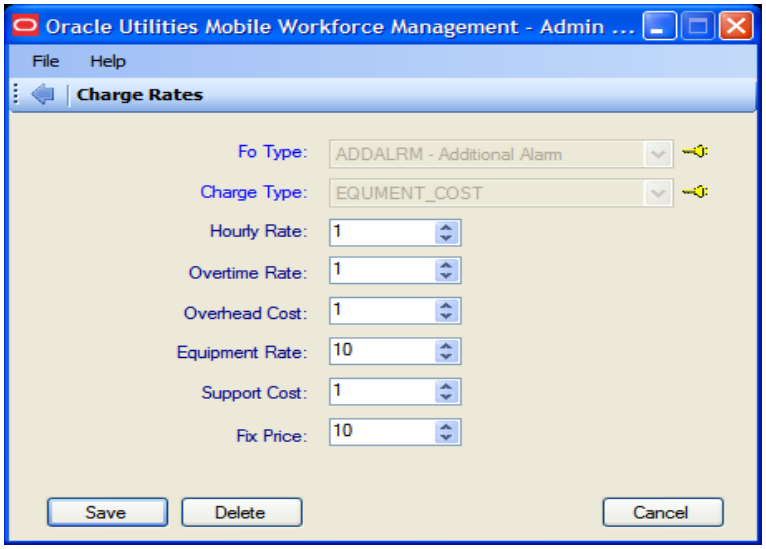
Charge Rate



Charge Rates can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Charge Rate* in the Resource Panel. When *Charge Rate* is selected, existing Charge Rate records are displayed in the Selection Panel. By default, the FO Type and Charge Type displayed for each Charge Rate record in the Oracle Utilities Mobile Workforce Management system.

The Charge Rate maintenance screen is used to add, view, delete or modify charge rates. The user is to set the differing rates related to each type of charge. For example labor rates for travel would likely to be different from labor rates for work performed, and both would have different rates from material charges.

Function/Process Description



For each type of field order/ charge type combination, the user may set the relevant rates and costs for that field order and charge type.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Fo Type	The order type of the charge rate being maintained. The list is populated with the available field order types using the field order type table (DHTFOTYP).	None
Charge Type	The charge type of the charge rate being maintained. The list is populated with the available charge types using the charge type table (DHTCHTYP).	None
Hourly Rate	The hourly rate for this field order type/charge type combination.	
Overtime Rate	The overtime rate for this field order type/charge type combination.	
Overhead Cost	The overhead cost for this field order type/charge type combination.	
Equipment Rate	The equipment rate for this field order type/charge type combination.	
Support Cost	The support cost for this field order type/charge type combination.	
Fix Price	The fix price cost for this field order type/charge type combination.	

Validation

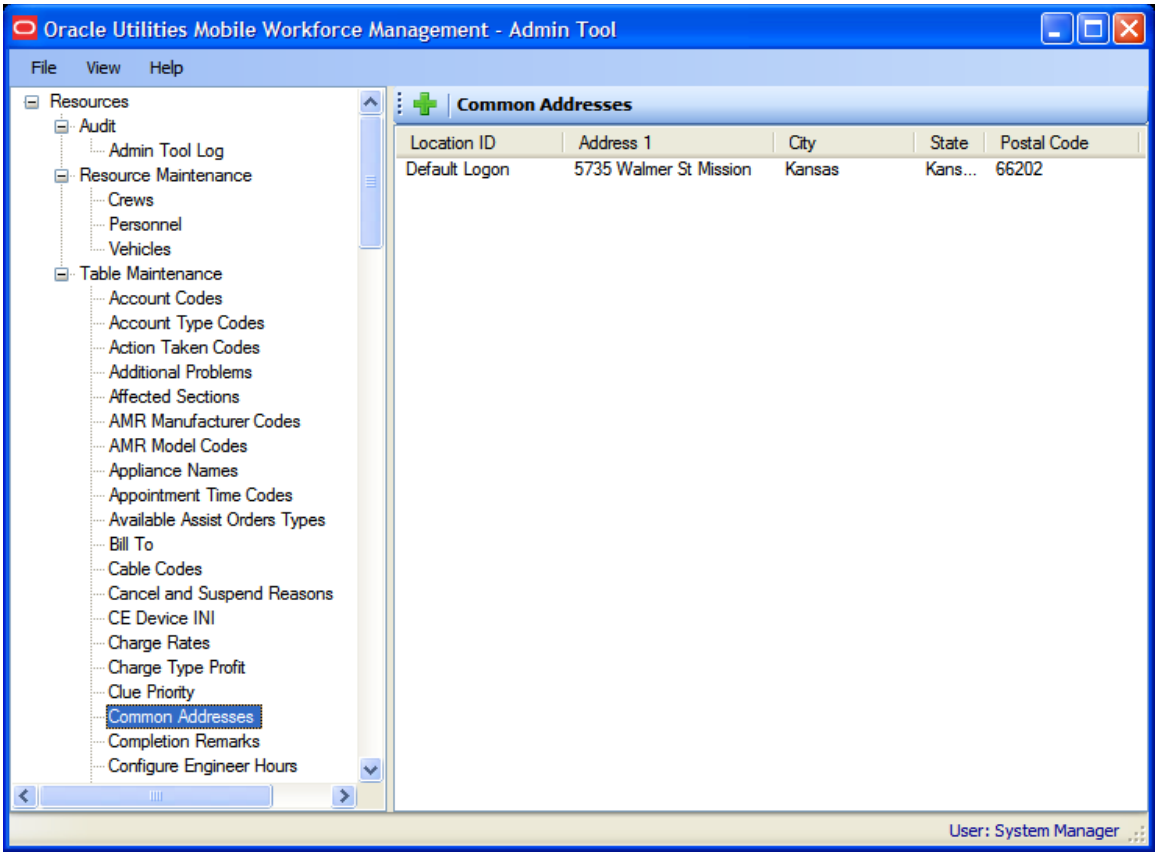
Field order type and charge type are required fields.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Fo Type	DHTCRCST. FO_TYPE	
Charge Type	DHTCRCST. CHARGE_TYPE	
Hourly Rate	DHTCRCST. HOURLY_RATE	
Overtime Rate	DHTCRCST. OVERTIME_RATE	
Overhead Cost	DHTCRCST. OVERHEAD_COST	
Equipment Rate	DHTCRCST. EQP_RATE	
Support Cost	DHTCRCST. SUPPORT_COST	
Fix Price	DHTCRCST. FIX_PRICE	

Common Addresses

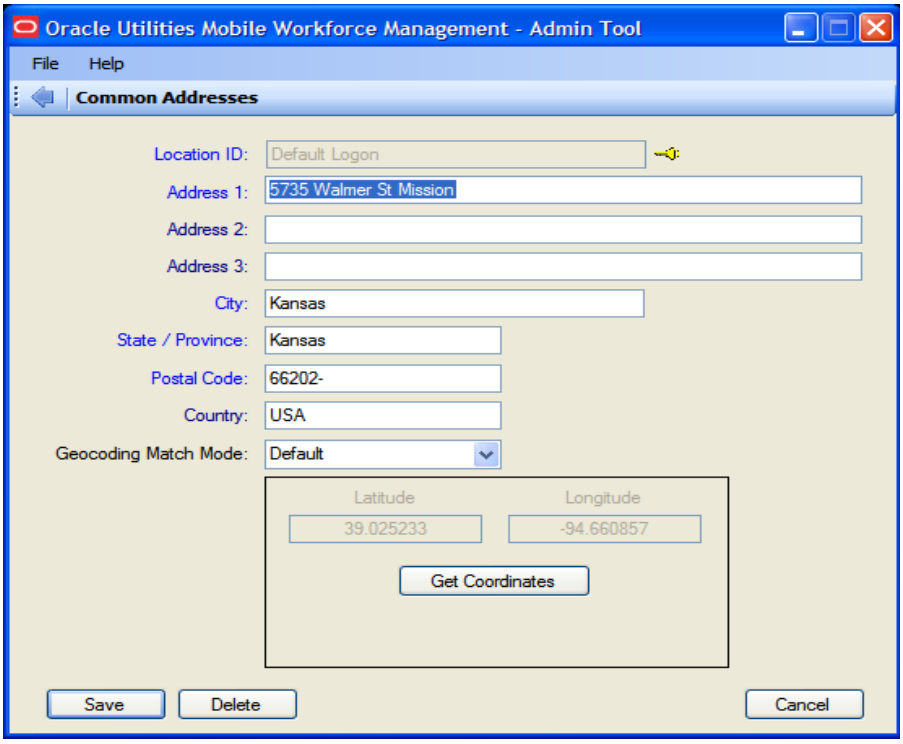
Common Addresses are used on several screens to specify where Crews log on and log off, where Shifts are to begin and end, etc. A Common Address record cannot be successfully added unless a valid address, which can be geo-coded, is entered.



Common Addresses can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Common Addresses* in the Resource Panel. When *Common Addresses* is selected, existing Common Address records are displayed in the Selection Panel. By default, the Location ID, Address 1, City, State, and Postal Code are displayed for each Common Address record.

The Common Address maintenance screen is used to add, view, delete or modify a Common Address record.

Function/Process Description



The Common Address screen maintains common addresses used by the scheduler. Address information is submitted for "Geo-coding" by making a call to an Oracle Spatial database to obtain the GPS coordinates (latitude and longitude) for the given address.

"Address 1" is always required and usually consists of both a street number and street name. However, this screen can be configured in the metadata XML file so that the three "address" fields can be renamed, have different masks, or different validation scripts. "Address 2" and "Address 3" may also be hidden or disabled. "Address 1" cannot be hidden or disabled.

By default, address coordinates must be obtained by clicking the "Get Coordinates" button; however, it is possible to manually enter coordinates if the "Latitude" and "Longitude" fields are enabled by changing their editStyle values to "editable" in the XML file. Addresses without coordinates (or with coordinates of 0, 0) cannot be saved.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Location ID	The key for this address. This ID must be unique.	None
Address 1	Address line 1. Usually the street number and street name.	None
Address 2	Address line 2. Supplementary address information.	None
Address 3	Address line 3. Supplementary address information.	None
City	The address city.	None
State / Province	The address state or province. This is an editable drop-down populated with all previously entered states and / or provinces.	None
Postal Code	The address postal code (ZIP code in the US).	None
Country	The address country. This is an editable drop-down populated with all previously entered countries.	None

Validation

"Location ID" and "Country" must be provided. All other fields can be enabled/disabled via the XML file. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Common Address Form gets mapped to:

Field Name	MWM Table:Column	ORS Table:Column
Location ID		COMMON_ADDRESS:LOCATION_ID
Address 1		COMMON_ADDRESS:ADDRESS1
Address 2		COMMON_ADDRESS:ADDRESS2
Address 3		COMMON_ADDRESS:ADDRESS3
City		COMMON_ADDRESS:CITY
State / Province		COMMON_ADDRESS:STATE
Postal Code		COMMON_ADDRESS:POSTCODE
Country		COMMON_ADDRESS:COUNTRY

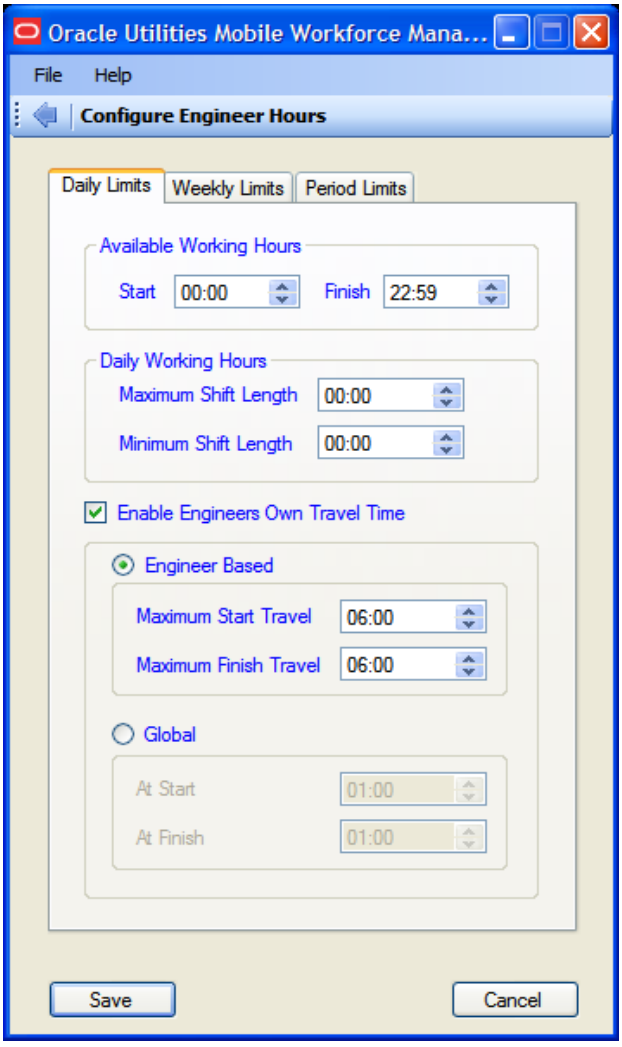
Configure Engineer Hours

The Configure Engineer Hours form is used to set working hour limits for Engineers.

The Configure Engineer Hours form can be accessed by selecting *Resources-Table Maintenance-Configure Engineer Hours* in the Resource Panel. When *Configure Engineer Hours* is selected, the user is taken directly to the Configure Engineer Hours form.

The Configure Engineer Hours screen updates the Oracle Real-time Scheduler CONFIG table. Each field in the screen represents a corresponding record in the table. If any of these records is missing, the default value will be displayed in the screen during loading and a corresponding record will then be added in the database once the Save button is clicked.

Daily Limits Tab – Function/Process Description



The Daily Limits Tab is used to set the working hours limit for a day. Available Working Hours represent the time frame that an engineer is available for work. This time frame can be defined by setting the Start and Finish values. Daily Working Hours represent the maximum and minimum hours beyond which the engineer is not allowed to work. Engineers Own Travel Time is the period of time before the start and after the finish of the shift which engineers are allowed to travel on their time. This can either be set globally for all engineers or on an engineer-to-engineer basis.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Start	Start of the time frame during which the Engineer is available for work.	None
Finish	End of the time frame during which the Engineer is available for work.	None
Maximum Shift Length	Maximum hours beyond which the Engineer is not allowed to work.	None
Minimum Shift Length	Minimum hours beyond which the Engineer is not allowed to work.	None
Enable Engineers Own Travel Time	A period of time before the start and after the finish of the Shift during which Engineers are allowed to travel on their own time.	None
Engineer Based	If checked, the Engineers Own Travel Time is set on an Engineer-by-Engineer basis.	None
Maximum Start Travel	Maximum Start Travel represents the upper limits that will be applied on the Engineers Own Travel Time At Start values respectively within the Engineer form.	None
Maximum Finish Travel	Maximum Finish Travel represents the upper limits that will be applied on the Engineers Own Travel Time At Finish values respectively within the Engineer form.	None
Global	If checked, the Engineers Own Travel Time is set at once for all the Engineers.	None
At Start	Start of the Engineers Own Travel Time.	None
At Finish	End of the Engineers Own Travel Time.	None

Validation

Start time should not be greater than the End time.

Maximum Shift Length should always be greater than the Minimum Shift Length.

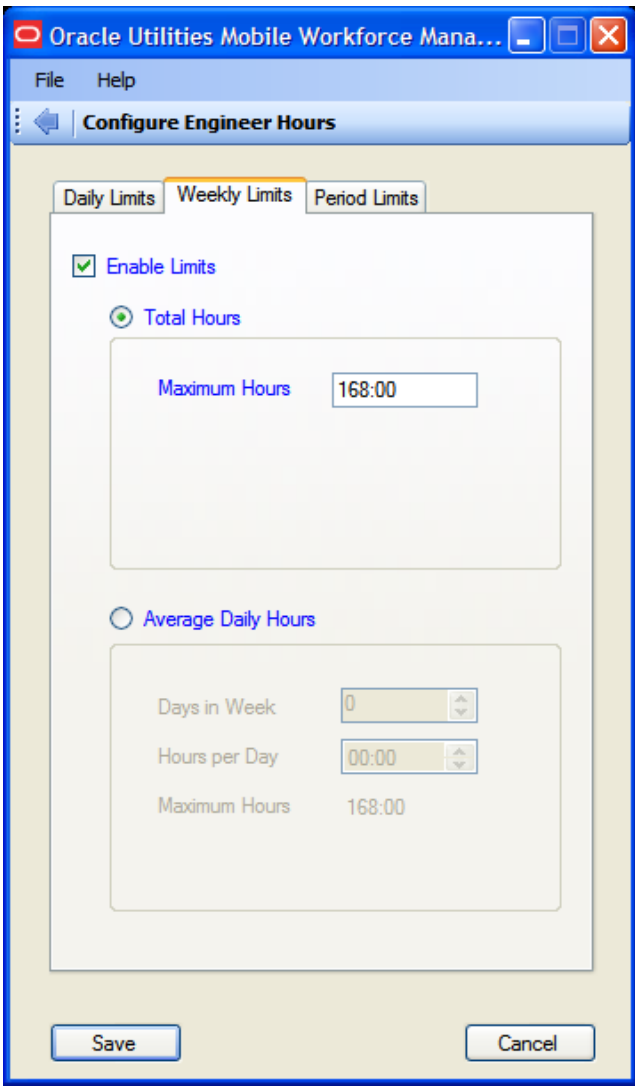
Data Mapping

All fields that are maintained in this screen have a corresponding record in the CONFIG table. Listed below are the primary keys used for daily limits:

Field Name	MWM Table:Column	ORS Table:Record
Start		START_TIME
Finish		END_TIME

Field Name	MWM Table:Column	ORS Table:Record
Maximum Shift Length		MAX_SHIFT
Minimum Shift Length		MIN_SHIFT
Enable Engineers Own Travel Time		DRIVER_OWN_TRAVEL
Maximum Start Travel		MAX_START_OWN_TRAVEL
Maximum Finish Travel		MAX_FINISH_OWN_TRAVEL
At Start		GLOBAL_START_OWN_TRAVEL
At Finish		GLOBAL_FINISH_OWN_TRAVEL

Weekly Limits Tab – Function/Process Description



The Weekly Limits Tab is used to set the maximum hours that engineers are allowed to work in a week. In order to configure the weekly limits, the Enable Limits option must be enabled first. Weekly Limits can be set as Total Hours or Average Daily Hours.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Enable Limits	If checked, it allows the configuration of Weekly Limits.	None
Total Hours	If checked, enables the maximum hours and disables the Average Daily Hours.	None
Maximum Hours	The maximum hours an engineer will work in a week.	None
Average Daily Hours	If checked, enables the Average Daily Hours and disables the Average Daily Hours.	None
Days in Week	The number of days in a week an engineer will work.	None
Hours per Day	The number of hours per day an engineer will work.	None

Validation

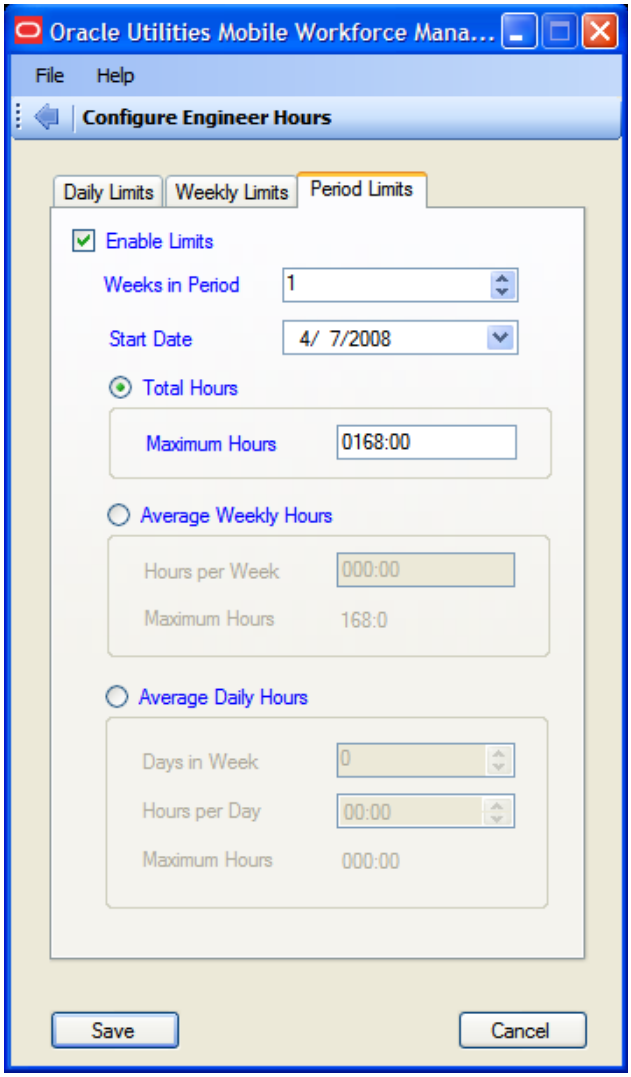
None.

Data Mapping

All fields that are maintained in this screen have a corresponding record in the CONFIG table. Listed below are the primary keys for weekly limits:

Field Name	MWM Table:Column	ORS Table:Record
Enable Limits		WEEKLY_LIMIT
Maximum Hours		MAX_WEEKLY_HOURS
Days in Week		DAYS_PER_WEEK
Hours per Day		HOURS_PER_DAY

Period Limits Tab – Function/Process Description



The Period Limits Tab is used to set the maximum hours that engineers are allowed to work in a specified period. In order to configure the period limits, the Enable Limits option must be enabled first. Period Limits can be set as Total Hours, Average Weekly Hours or Average Daily Hours.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Enable Limits	If checked, it allows the configuration of Period Limits.	None
Weeks in Period	The number of weeks in a given period.	None
Start Date	The start date for the period.	None
Total Hours	If checked, enables the total maximum hours.	None

Field Name	Description	Data Constraints
Maximum Hours	The maximum hours an engineer will work in the specified period.	None
Average Weekly Hours	If checked, enables the average weekly hours.	None
Hours per Week	The number of hours per week an engineer will work.	None
Average Daily Hours	If checked, enables the average daily hours.	None
Days in Week	The number of days in a week an engineer will work.	None
Hours per Day	The number of hours per day an engineer will work.	None

Validation

None.

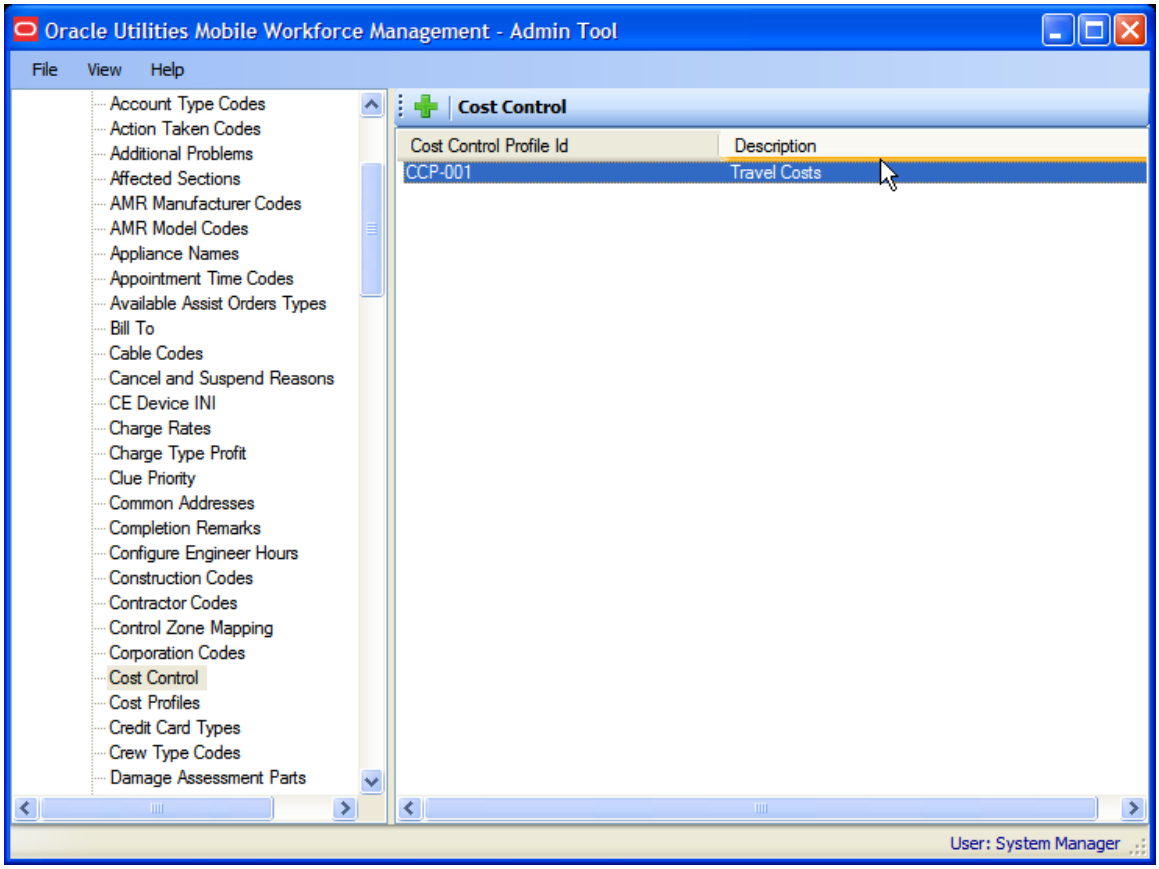
Data Mapping

All fields that are maintained in this screen have a corresponding record in the CONFIG table. Listed below are the primary keys for period limits:

Field Name	MWM Table:Column	ORS Table:Record
Enable Limits		PERIOD_LIMIT
Weeks in Period		WEEKS_IN_PERIOD
Start Date		PERIOD_START
Maximum Hours		MAX_PERIOD_HOURS
Hours per Week		MAX_PERIOD_HOURS
Days in Week		AV_DAYS_PER_WEEK
Hours per Day		AV_HOURS_PER_DAY

Cost Control

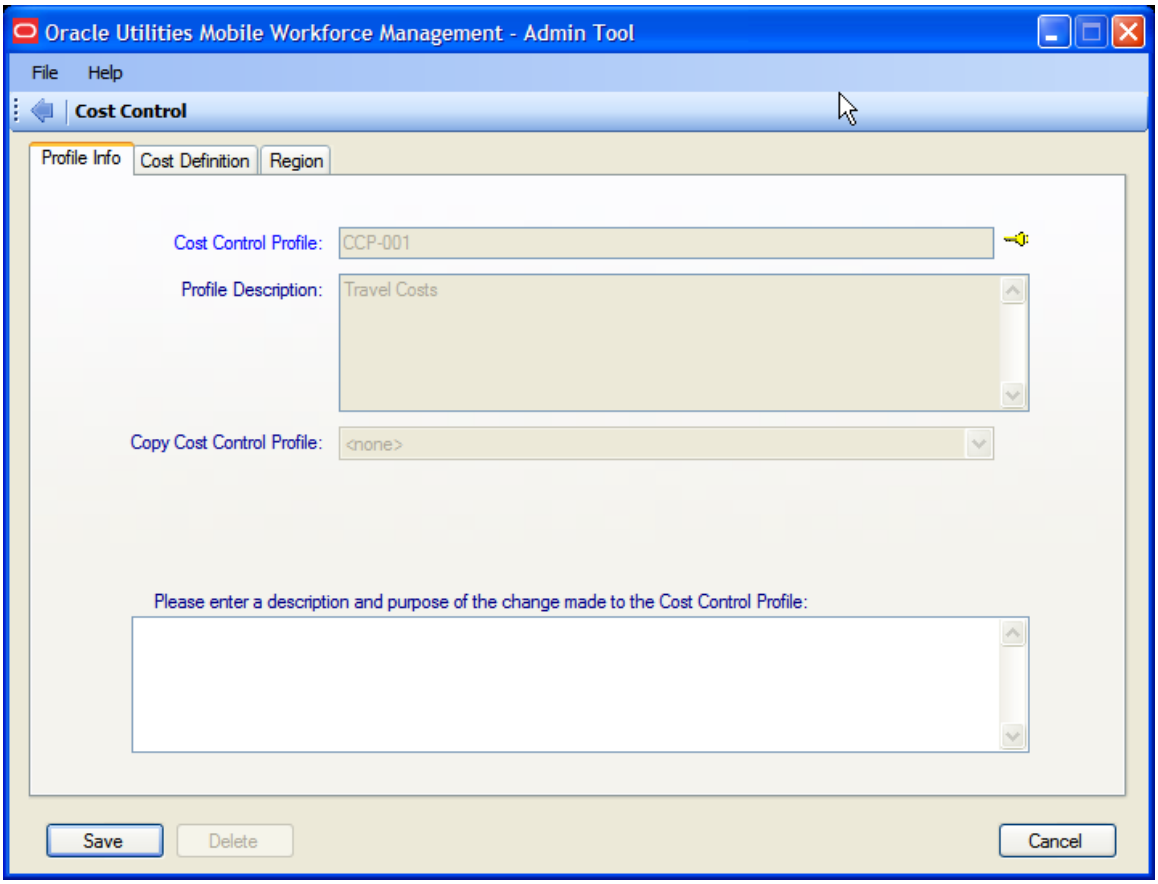
A Cost Control can be set up to define a set of costs settings for a particular cost control profile.



Cost Control can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Cost Control* in the Resource Panel. When *Cost Control* is selected, existing Cost Control Profile records are displayed in the Selection Panel. By default, the Cost Control Profile Id and Description are displayed for each Cost Control record.

The Cost Control maintenance screen is used to add, view, delete or modify a Cost Control record.

Profile Info Tab – Function/Process Description



The Profile Info Tab contains information regarding cost control profile. Description of changes made to the cost control profile can be placed here as well.

When creating new cost control profile, an option to copy cost control definitions from an existing profile can be done here. When a cost control profile is copied, all the associated cost controls will be copied as well. These cost controls will be displayed as default in the Cost Definition Tab. However, this does not limit the user from modifying it. See the **Cost Definition Tab – Function/Process Description** on page 3-24 for further details.

Although, regions assigned to the cost control profile are not included when copied. See **Region Tab - Function/Process Description** on page 3-27 for further details.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Cost Control Profile	The Id of the Profile associated with the Cost Control Profile record.	None
Profile Description	A description of the cost control profile being maintained.	None

Field Name	Description	Data Constraints
Copy Cost Control Profile	The Id of the Profile used to copy to the new cost control profile. Populated from the cost control profile table (COST_CONTROL_PROFILE).	None
Description and purpose of the change	A description of the changes made to the cost control profile.	None

Validation

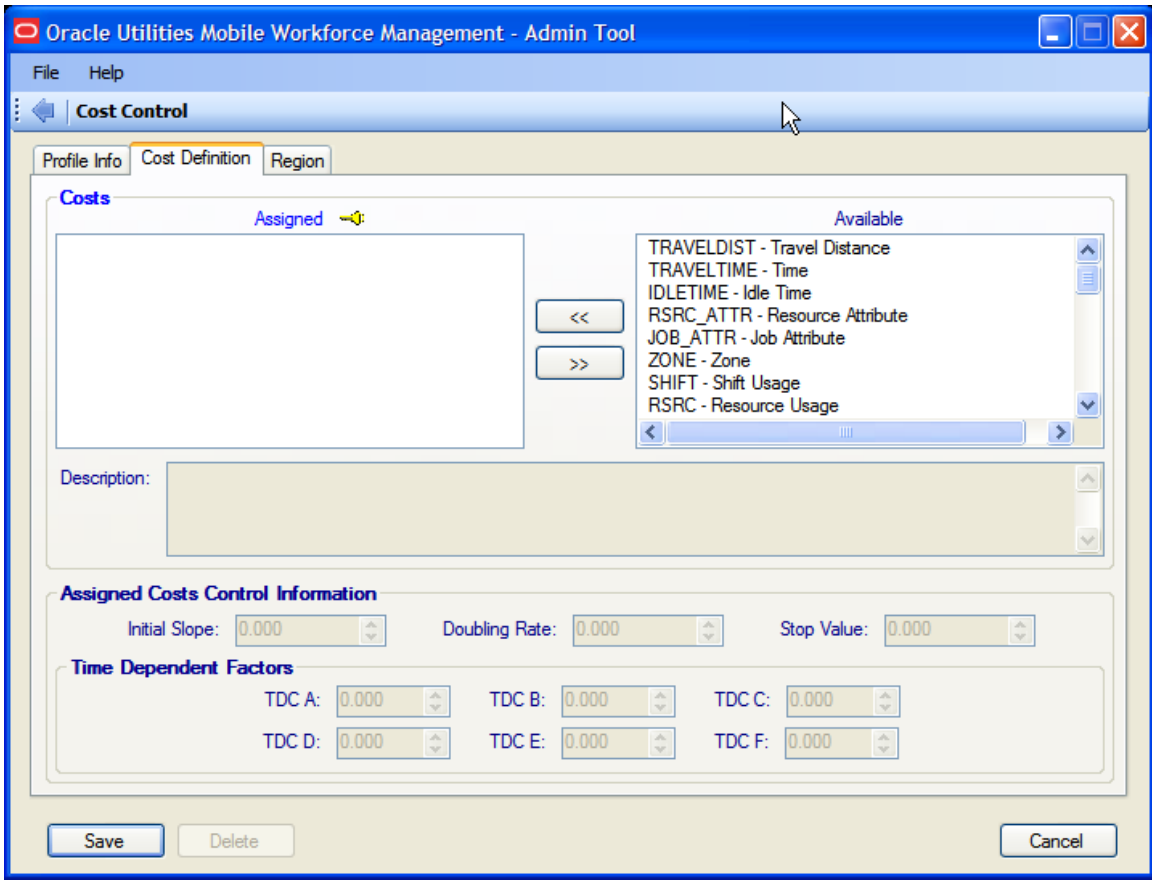
"Cost Control Profile" is a required field. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Profile Info Tab are mapped. In the case of the Copy Cost Control Profile drop-down combo box, it is the data base column that populates the drop-down combo box.

Field Name	MWM Table: Column	ORS Table:Column
Cost Control Profile		COST_CONTROL_PROFILE.COST_CONTROL_PROFILE_ID COST_CONTROL_PROFILE_AUDIT.COST_CONTROL_PROFILE_ID COST_CONTROL.COST_CONTROL_PROFILE_ID REGION_COST_CONTROL.COST_CONTROL_PROFILE_ID
Profile Description		COST_CONTROL_PROFILE.DESCRIPTION
Copy Cost Control Profile		COST_CONTROL_PROFILE
Description and purpose of the change		COST_CONTROL_PROFILE_AUDIT.DESCRIPTION

Cost Definition Tab – Function/Process Description



The Cost Definition Tab controls the assignment of cost controls to a cost control profile. There is no limit to the number of cost controls that can be assigned but there should always be at least 1 cost control existing for a profile. When a cost control is highlighted in either the "Assigned" or "Available" list, the description for that cost control will be displayed.

When a cost control is highlighted in the "Assigned" list, the information for the cost control will be displayed in the "Assigned Cost Control Information". To assign cost control, highlight the desired cost control in the Available list and press the "<<" button between the "Assigned" and "Available" list boxes. The selected cost control will be moved from the "Available" list to the "Assigned" list. Unassign the cost control by highlighting the cost control in the "Assigned" list and pressing the ">>" button. The selected cost control will be moved from the "Assigned" list to the "Available" list.

Controls in the "Assigned Cost Control Information" will be disabled until an assigned cost control is selected. These controls will be enabled depending upon the cost definition, contained in COST_CONTROL_DEF table, set to a cost control. Initial slope, doubling rate and stop value will depend upon the type of the cost control. The Time Dependent Factors will depend upon the ALLOW_TDC flag.

Data Fields

Field Name	Description	Data Constraints
Assigned	List all the assigned costs for the cost control profile	This list cannot be empty. At least 1 cost must be assigned. There is no limit to the number of cost controls that can be assigned.
Available	List all the available costs for the cost control profile not already in the Assigned list.	This list can be empty. There is no limit to the number of cost controls that may be assigned. Only costs with COST_CONTROL_DEF.DISPLAY_COST='Y' are displayed.
Description	A description of the cost control selected from the list boxes.	None
Initial Slope	The initial slope value for the selected cost control.	The range depends on the cost control definition Max value: COST_CONTROL_DEF.USER_MIN_COSTA Min value: COST_CONTROL_DEF.USER_MAX_COSTA
Doubling Rate	The doubling rate value for the selected cost control.	The range depends on the cost control definition Max value: COST_CONTROL_DEF.USER_MIN_COSTB Min value: COST_CONTROL_DEF.USER_MAX_COSTB
Stop Value	The stop value for the selected cost control.	The range depends on the cost control definition Max value: COST_CONTROL_DEF.USER_MIN_COSTC Min value: COST_CONTROL_DEF.USER_MAX_COSTC
TDC A	One of the time-dependent values for the selected cost control.	Used only when COST_CONTROL_DEF.ALLOW_TDC='Y' Max value: 10 Min value: 0
TDC B	One of the time-dependent values for the selected cost control.	Used only when COST_CONTROL_DEF.ALLOW_TDC='Y' Max value: 2400 Min value: 0
TDC C	One of the time-dependent values for the selected cost control.	Used only when COST_CONTROL_DEF.ALLOW_TDC='Y' Max value: 10 Min value: 0.1
TDC D	One of the time-dependent values for the selected cost control.	Used only when COST_CONTROL_DEF.ALLOW_TDC='Y' Max value: 2400 Min value: 0
TDC E	One of the time-dependent values for the selected cost control.	Used only when COST_CONTROL_DEF.ALLOW_TDC='Y' Max value: 10 Min value: 0

Field Name	Description	Data Constraints
TDC F	One of the time-dependent values for the selected cost control.	Used only when COST_CONTROL_DEF.ALLOW_TDC='Y' Max value: 10 Min value: -10

Validation

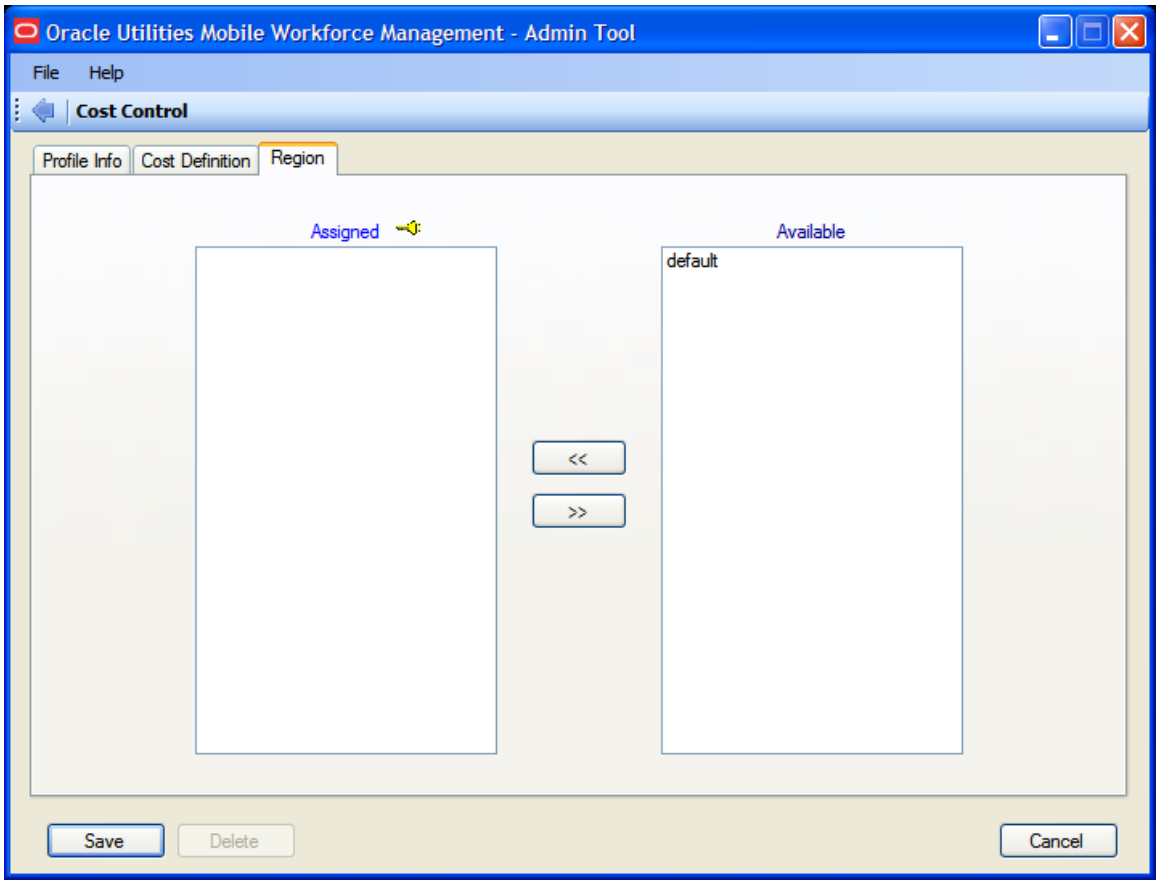
There should always be at least 1 cost control assigned to a cost control profile. Range of values for initial slope, doubling rate, stop value and TDCs depends upon the cost control selected. These limits are specified in the cost control definition table. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Cost Definition Tab are mapped. In the cases of the Costs Available list box and Costs Description text box, it is the data base table that populates these controls.

Field Name	MWM Table:Column	ORS Table:Column
Assigned		COST_CONTROL
Available		COST_CONTROL_DEF
Description		COST_CONTROL_DEF.DESCRIPTION
Initial Slope		COST_CONTROL.COST_A
Doubling Rate		COST_CONTROL.COST_B
Stop Value		COST_CONTROL.COST_C
TDC A		COST_CONTROL.TDC_A
TDC B		COST_CONTROL.TDC_B
TDC C		COST_CONTROL.TDC_C
TDC D		COST_CONTROL.TDC_D
TDC E		COST_CONTROL.TDC_E
TDC F		COST_CONTROL.TDC_F

Region Tab - Function/Process Description



The Region Tab contains two list boxes where regions assigned and available to the cost control profile are displayed. Regions can become available to a cost control profile if it is not yet assigned to another cost control profile.

To assign a region to the cost control profile, highlight the desired region in the "Available" list and press the "<<" button. The selected region will then be moved to the "Assigned" list from the "Available" list. Unassign region by highlighting the region in the "Assigned" list box and pressing the ">>" button. The selected region will be moved from the "Assigned" list to the Personnel "Available" list.

Data Fields

Field Name	Description	Data Constraints
Assigned	The regions assigned to the cost control profile.	This list can be empty. There is no limit to the number of regions that can be assigned to a cost control profile.
Available	The regions available to the cost control profile.	This list can be empty. There is no limit to the number of regions that may be assigned to a cost control profile. However, a region can only be assigned to 1 cost control profile at a time.

Validation

A region can only be assigned to 1 cost control profile at a time. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

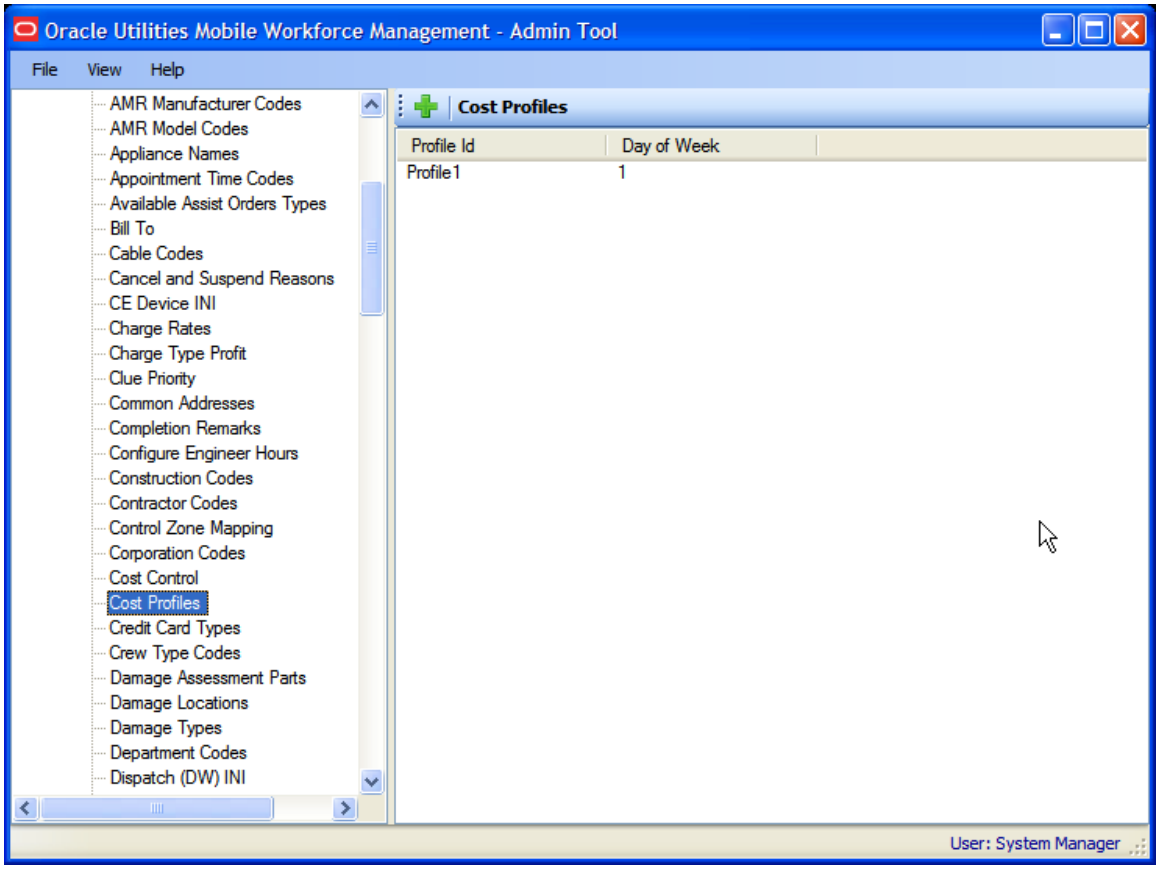
Data Mapping

The following table shows where the data in the Region Tab are mapped:

Field Name	MWM Table:Column	ORS Table:Column
Assigned		REGION_COST_CONTROL.REGION_ID
Available		REGION_COST_CONTROL.REGION_ID REGIONS.ID

Cost Profile

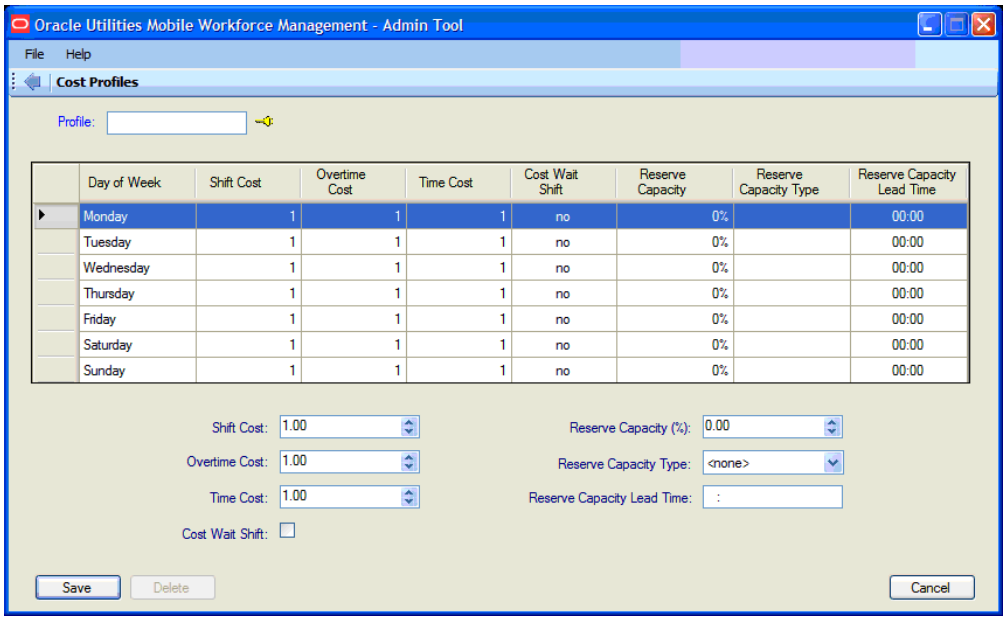
A Cost Profile can be set up to define a set of costs and Reserve Capacity settings for a particular day of the week.



Cost Profiles can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Cost Profile* in the Resource Panel. When *Cost Profile* is selected, existing Cost Profile records are displayed in the Selection Panel. By default, the Profile ID and Day of Week are displayed for each Cost Profile record.

The Cost Profile maintenance screen is used to add, view, delete or modify a Cost Profile record.

Function/Process Description



When a new cost profile is created, the system automatically creates a profile record for each day of the week. The user can configure different cost profile settings for each day, if desired. When you select a day in the grid, the values for that day are displayed in the fields below the grid.

The "Shift Cost", "Overtime Cost", and "Time Cost" are numeric values. The "Cost Wait Shift" contains 2 options only: "Yes" or "No". "Reserve Capacity" is a percentage, while the "Reserve Capacity Type" is populated with values from the Oracle Real-time Scheduler RES_CAP_DEFS table. Use the Reserve Capacity Definitions form to fill out values in this table and hence this drop-down. The "Reserve Capacity Lead Time" is in hours and minutes.

Cost values that can be used to alter the costs (Shift Cost, Overtime Cost, Time Cost) of a Shift. These costs could be varied to encourage or discourage the use of a particular Shift. Overtime (time worked outside a Shift window, or maximum Shift length) can be discouraged by increasing the Shift's Overtime Cost. If this value is not set, then overtime will not be discouraged.

Reserve Capacity Type indicates that part of a Shift (specified by "Reserve Capacity (%)" is to be reserved for a specific type of reserve capacity. This ensures that advance bookings do not consume the entire Shift capacity, but reserves a percentage of its capacity to service hi-priority orders that may be generated later. For example, installation orders are booked well in advance, but Shift capacity to service emergency and other hi-priority orders that need immediate attention must be maintained.

If a Shift is assigned an order that matches its Reserve Capacity Type, part of the reserve will be used. For orders that do not match, capacity will simply remain unused. Orders are associated with a specific Reserve Capacity on the Field Order Types form where there is an analogous Reserve Capacity Type drop down.

Reserve Capacity costs for each second that reserve capacity is less than specified in the "Reserve Capacity (%)" field.

The "Capacity Lead Time" tells the scheduler when to release the reserved capacity. All reserved capacity will be released before the start of the Shift. The "Lead Time" is an offset from the Shift's start time, indicating that the Shift's reserve capacity will be released this many hours before the scheduled start of the Shift. It is not possible to delay the release of reserved capacity until after the start of the Shift.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Profile Id	The Id of the Profile associated with the cost Profile record.	None
Day of Week	The day of week.	None
Shift Cost	Relative cost for activating this Shift.	Min: .01 Max: 100.00
Overtime Cost	Relative cost when calculating the overtime cost for this Shift.	Min: .01 Max: 100.00
Time Cost	Relative time cost for using this Shift.	Min: .01 Max: 100.00
Cost Wait Shift	Specify that cost be incurred upon waiting for the Shift to start.	None
Reserve Capacity Type	A listing of all of the Reserve Capacities in the system. These are defined in the Reserve Capacities Definitions form.	None
Reserve Capacity	The portion of the Shift to be reserved for the order type specified by Reserve Capacity Type. No capacity is reserved when this value is 0, and the whole Shift's capacity is reserved if it is 100.	Min: 0 Max: 100
Capacity Lead Time	The time period from the Shift's start time after which the reserved capacity will be released. If it is not specified, then the reserved capacity is not released.	None

Validation

"Profile ID" and "Day of Week" are required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

The Delete button is disabled when a cost profile is assigned to a crew.

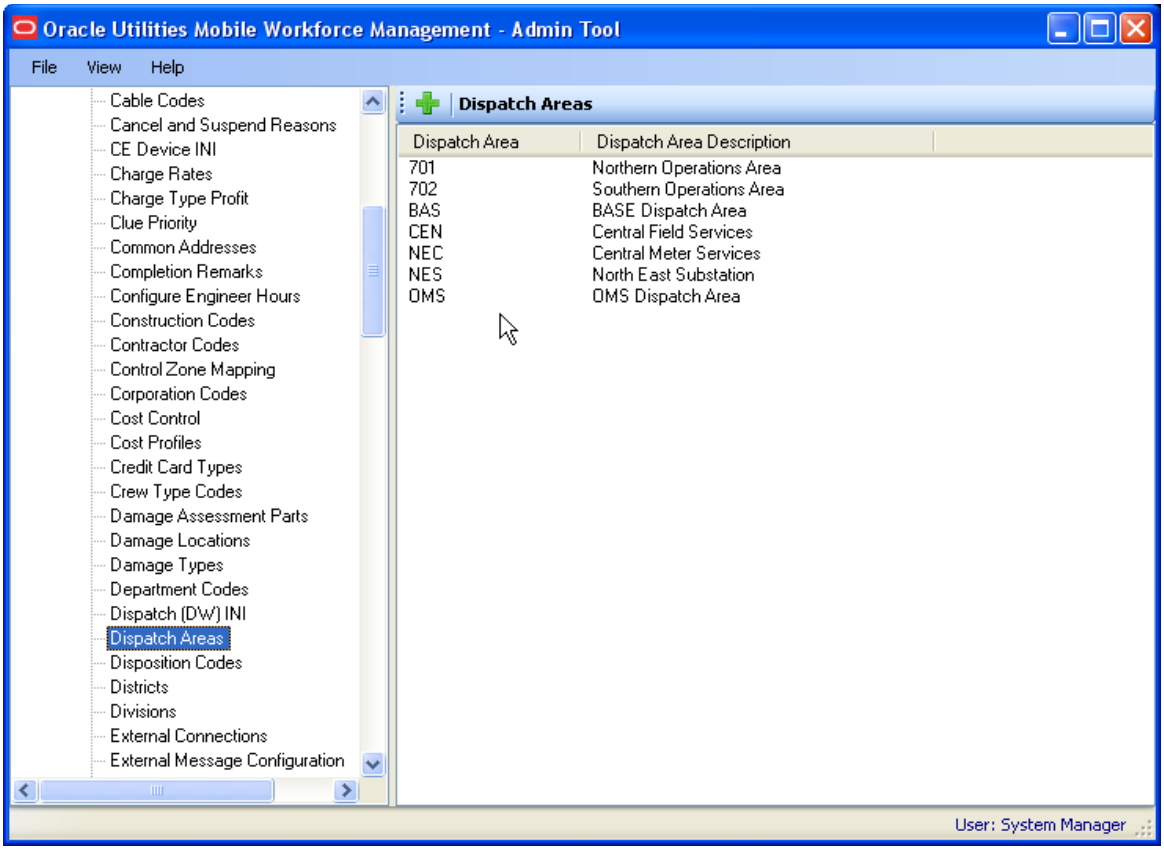
Data Mapping

The following table shows where the data in the Cost Profile screen are mapped:

Field Name	MWM Table: Column	ORS Table:Column
Profile Id		COST_PROFILE:PROFILE_ID
Day of Week		COST_PROFILE:DAY_OF_WEEK
Shift Cost		COST_PROFILE:SHIFT_COST

Field Name	MWM Table: Column	ORS Table:Column
Overtime Cost		COST_PROFILE:OVERTIME_COST
Time Cost		COST_PROFILE:TIME_COST
Cost Wait Shift		COST_PROFILE:COST_WAIT_SHIFT
Reserve Capacity		COST_PROFILE:RESERVE_CAPACITY
Reserve Capacity Type		COST_PROFILE:RESERVE_CAPACITY_TYPE
Reserve Capacity Lead Time		COST_PROFILE:CAPACITY_LEAD_TIME

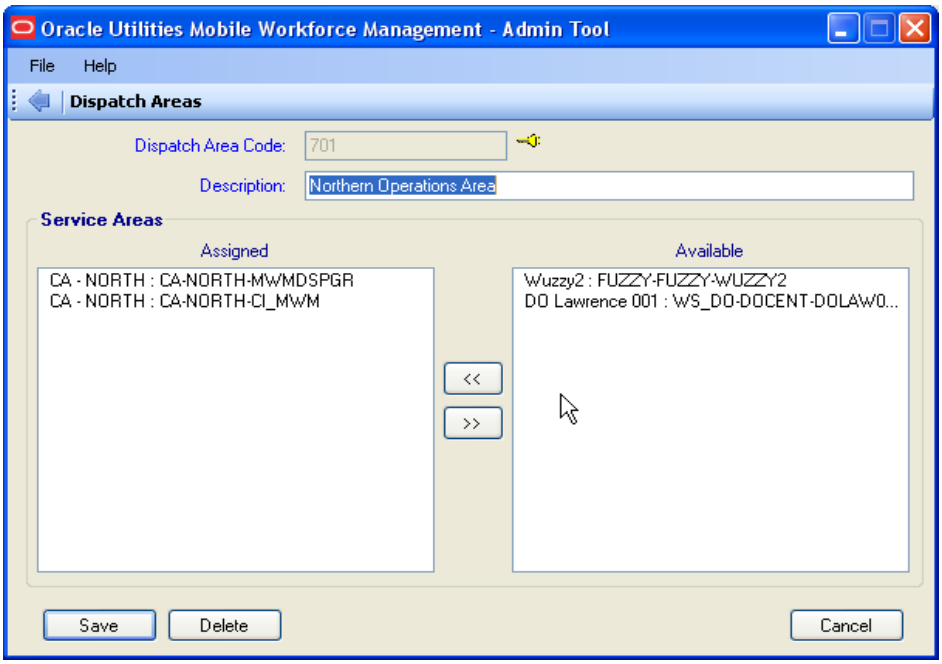
Dispatch Area



Dispatch Area can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Dispatch Area* in the Resource Panel. When *Dispatch Area* is selected, existing Dispatch Area records are displayed in the Selection Panel. By default, the Dispatch Area and Dispatch Area Description are displayed for each Dispatch Area record.

The Dispatch Area maintenance screen is used to add, view, delete or modify a Dispatch Area record.

Function/Process Description



The Dispatch Area screen contains general information about a Dispatch Area. There is no limit to the number of Service Areas that can be assigned to a Dispatch Area, but a Service Area can only be assigned to one Dispatch Area. Any Service Areas currently assigned to the Dispatch Area are listed in the Assigned list box. Any Service Areas not currently assigned to *any* Dispatch Area are listed in the Available list box.

To assign a Service Area to the Dispatch Area, highlight a Service Area from the list of "Available" Service Areas, then press "<<" button. To remove a Service Area from the "Assigned" list, highlight the Service Area in the list of "Assigned" Service Areas the press the ">>" button.

The Dispatch Area maintenance updates the Oracle Utilities Mobile Workforce Management DHTDISP table for the Dispatch Areas, and the Oracle Utilities Mobile Workforce Management DHTSERV table to add/remove Service Area assignments.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Dispatch Area ID	Id of the Dispatch Area being maintained. This is only enable on add mode.	None
Description	A short description of the Dispatch Area.	None
Assigned Service Areas	List of all Service Areas assigned to the Dispatch Area.	None
Available Service Areas	List of Service Areas that are currently not assigned to any Dispatch Area.	None

Validation

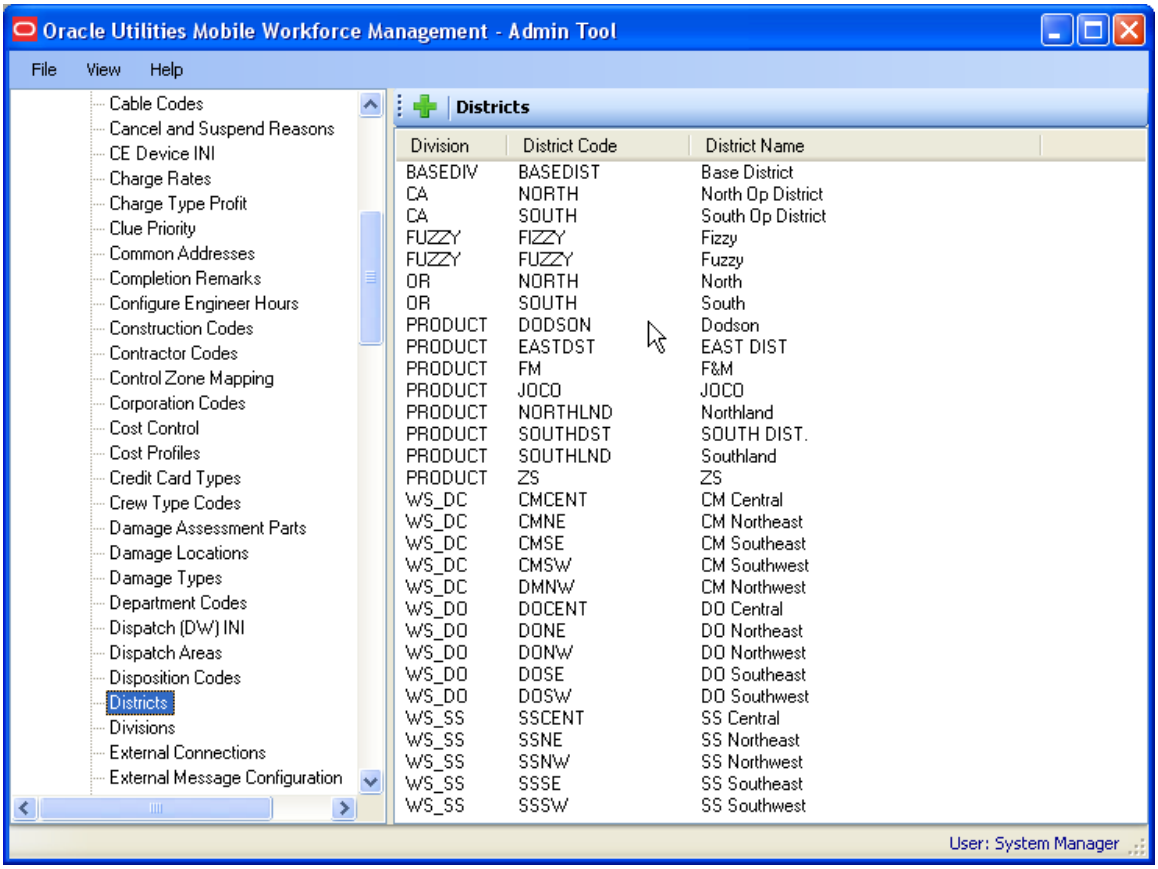
"Dispatch Area ID" and "Description" are required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Dispatch Area are mapped. In the case of the Assignments lists, it is the data base column that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Dispatch Area ID	DHTDISP:DISPATCH_AREA	
Description	DHTDISP:DISPATCH_DESC	
Assigned Service Areas	DHTSERV:SERVICE_AREA, DHTSERV:DIVISION, DHTSERV:DISTRICT, DHTSERV:SERVICE_AREA_DESC	
Unassigned Service Areas	DHTSERV:SERVICE_AREA, DHTSERV:DIVISION, DHTSERV:DISTRICT, DHTSERV:SERVICE_AREA_DESC	

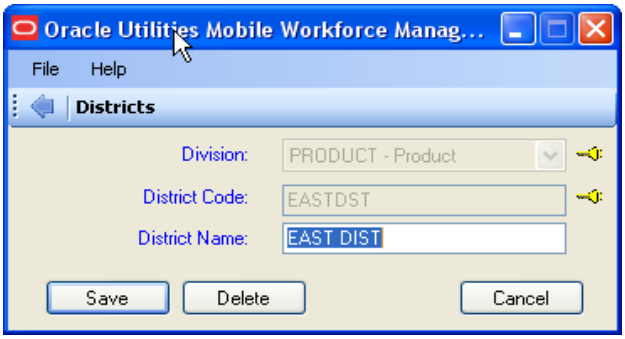
District



Districts can be modified via the Admin Tool by selecting *Resources-Table Maintenance-District* in the Resource Panel. When *District* is selected, existing District records are displayed in the Selection Panel. By default, the Division, District, and District Name are displayed for each District record.

The District maintenance screen is used to add, view, delete or modify a District record.

Function/Process Description



The District screen contains general information about a district.

It also allows the user to assign a district to a division.

To assign the district to a division, select the division code from the drop down list. A District record cannot be added unless at least one Division exists.

The District maintenance screen updates the Oracle Utilities Mobile Workforce Management DHTDIST table. It may also update the Oracle Real-time Scheduler ZONE_DEFS table if Zones are mapped to Districts (Zones map to Service Areas by default).

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Division	The division where the district is assigned. This will only be enabled on add mode.	At least one Division record must exist before a District can be added.
District Code	Id of the district. This will only be enabled on add mode.	None
District Name	The descriptive name of the district.	None

Validation

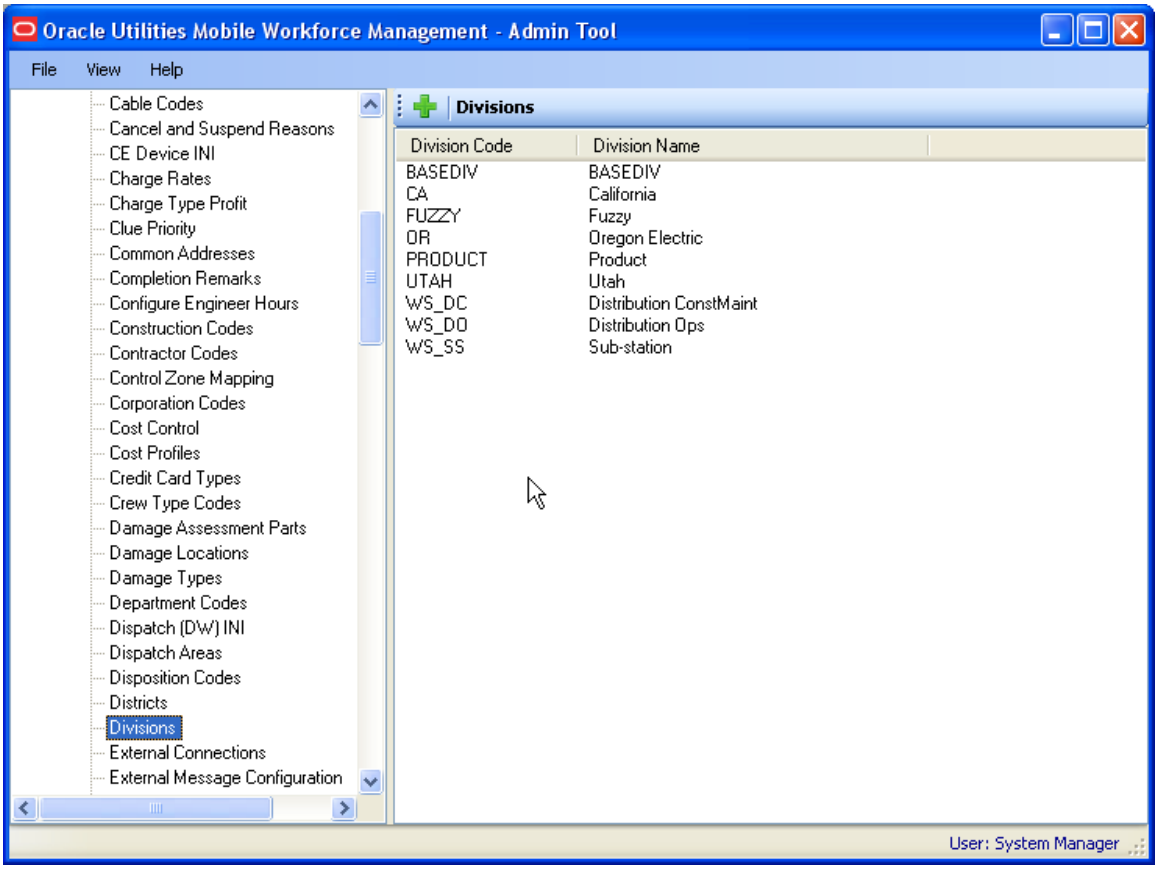
"Division", "District Code" and "District Name" are all required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the District are mapped. In the case of the assignments drop down list, it is the data base column that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Division	DHTDIV:DIVISION	
District Code	DHTDIST:DISTRICT	ZONE_DEFS:ZONE
District Name	DHTDIST:DISTRICT_NAME	

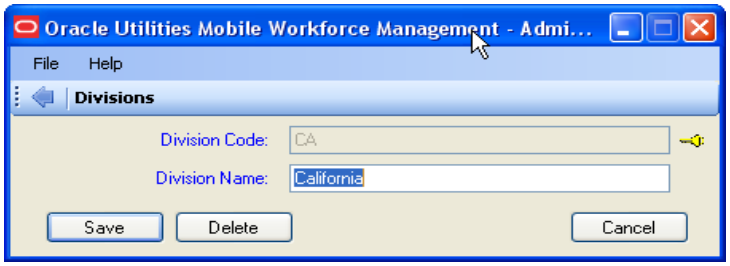
Division



Divisions can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Division* in the Resource Panel. When *Division* is selected, existing Division records are displayed in the Selection Panel. By default, the Division and Division Name are displayed for each Division record.

The Division maintenance screen is used to add, view, delete or modify a Division record.

Function/Process Description



The Division screen has two fields: “Division Code” and “Division Name”, which define a division. At least one Division record must be added before a District of Service Area can be added.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Division Code	ID of the division. This will only be enable on add mode.	None
Division Name	The descriptive name of the division.	None

Validation

"Division Code" and "Division Name" are both required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

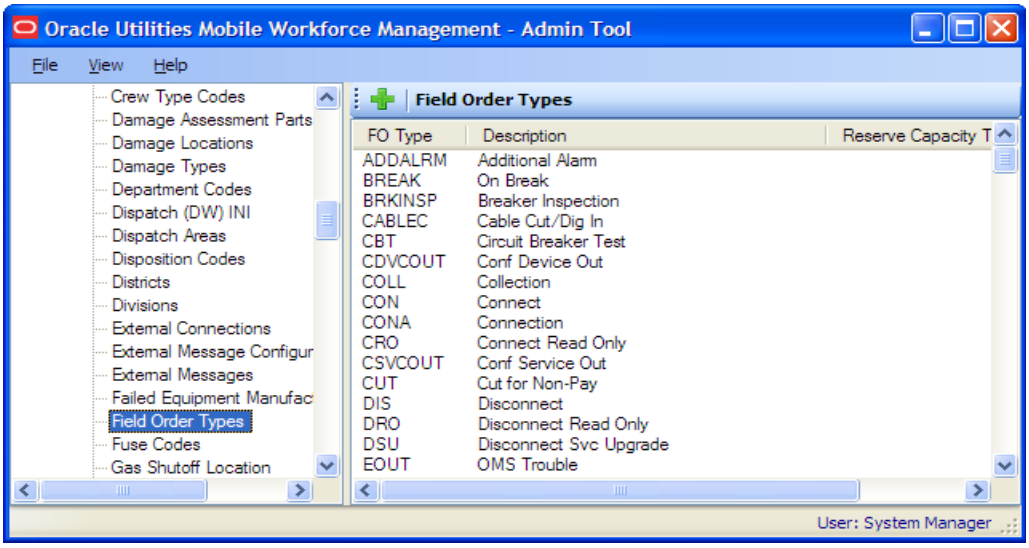
Data Mapping

The following table shows where the data on the Division screen are mapped.

Field Name	MWM Table:Column	ORS Table:Column
Division	DHTDIV:DIVISION	
District Code	DHTDIV:DIVISION_NAME	

Field Order Types

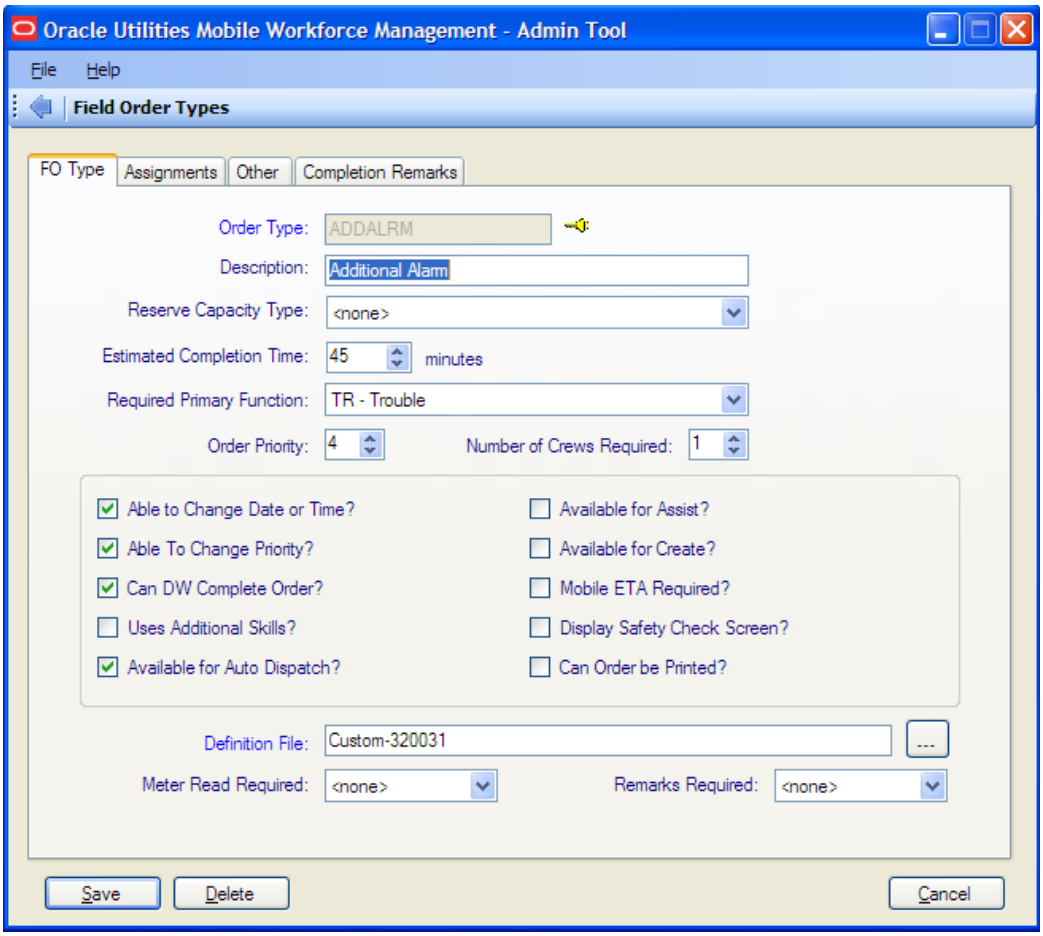
Field Order Types are used to categorize different types of field orders based on a specific set of criteria. Once a Field Order Type is created, the order type can be associated with new orders that are created. The Order Type associated with an order indicates the priority, description, resources, etc. of the order.



The Field Order Types screen maintains Field Order type information, including the Personnel Skills and Vehicle Capabilities required to work this order type. The form displays 4 Tabs: FO Type, Assignments, Other, and Completion Remarks.

This screen directly updates the following tables: DHTFOTYP, DHTFOSSR, DHTSREQ, DHTVREQ, DHTTBVER, and DHTTBUPD

FO Type Tab – Function/Process Description



The "Order Type" is the table key; once saved, this value cannot be changed. The "Required Primary Function", "Meter Read Required", "Remarks Required", and "Sorted Remarks Code" drop-downs have a default selection value of <none>. There may be fewer than ten checkboxes displayed on your screen: checkbox visibility is set in the metadata XML file.

The small button to the right of the "Definition File" field displays a Find File dialog when clicked. The default directory is the Oracle Utilities Mobile Workforce Management definition file directory. The default file extension is ".DEF".

If the "Sorted Remarks" drop-down value is changed from some value other than <none>, a dialog will be displayed requesting confirmation of this action. An affirmative answer will remove all Assigned Completion Remarks on the "Completion Remarks" tab and dynamically load all Available Completion Remarks for this new Sorted Remarks code.

TIP: After changing the Sorted Remarks code, you can reverse the dynamic data reload if you reinstate the *original* Sorted Remarks code before attempting to save your changes.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Order Type	The type of the field order. This is the only field that is required on this tab, and it is only enabled in add mode.	None
Description	A description of the order type	None
Reserve Capacity Type	The reserve capacity type associated with this field order. The definitions from this drop down are defined via the Reserve Capacity Definitions form.	None
Estimated Completion Time	The average number of minutes to complete an order of this type once the Crew has arrived onsite.	This field sets the order duration for scheduling purposes.
Required Primary Function	The primary function required to work an order of this type. This field is only used by the Oracle Utilities Mobile Workforce Management scheduling module.	None
Order Priority	The priority of this order type. This priority is used to indicate emergency vs. non-emergency orders. Emergency orders required manual acknowledgment of receipt by the Crew.	None
# Crews Required	The number of Crews required to work an order of this type.	None
Able to Change Date and Time?	Indicates whether date/times can be changed for a completed order of this type. See the Time Edit function in the Dispatch Workstation User's Guide.	None
Able to Change Priority?	Indicates whether the priority of an order of this type can be changed. See the Change Priority function in the Dispatch Workstation User's Guide.	None
Can DW Complete Order?	Indicates whether an order of this type can be completed using the Complete function in the Dispatcher Workstation application	None
Uses Additional Skills?	Indicates whether the required skills/capabilities for the service point type contained within the order should be used in addition to the required skills/capabilities for the order type.	None
Available for Auto Dispatch?	Indicates whether an order of this type is eligible for auto dispatch.	None

Field Name	Description	Data Constraints
Available for Assist?	Indicates an order of this type can be created using the Add Order and Create Assist functions. For more information, see the Add Order and Create Assist functions in the Dispatch Workstation User's Guide and the Add Field Order function in the Mobile Workstation User's Guide.	None
Available for Create?	Indicates that an order of this type can be created in the Station Application using the Add or Order Assist functions.	None
Mobile ETA Required?	Indicates that the mobile Crew must enter an estimated arrival time when they go enroute to an order of this type.	None
Display Safety Check Screen?	Indicates if the Safety Check screen should be displayed on the mobile when the Crew arrives onsite to an order of this type.	None
Can Order Be Printed?	Indicates an order of this type can be printed / completed. For more information, see the Print Order function in the Dispatch Workstation User's Guide.	None
Definition File	The Primary Detail screen script used for this order type. If the value begins with the word 'Custom', it is a custom screen and the number is the resource ID of the screen; otherwise it is the name of the user-defined screen (the screen file is specified without the def extension)	An invalid entry will cause an error when an order of this type is viewed.
Meter Read Required? None, Current, Old, Both	Indicates if meter reads are required to complete an order of this type and if so, what kinds of meter reads are required.	<none> is a valid selection in this field
Remarks Required? None, Free or Std, Std Only	Indicates if completion remarks are required to complete an order of this type and if so, what kinds of completion remarks are required.	<none> is a valid selection in this field
Sorted Remarks Code	Used to specify a specific sequence for standard completion remarks. This value determines which group of remarks will be used in the Field Order Type Completion Remarks Assignment screen.	<none> is a valid selection in this field

Validation

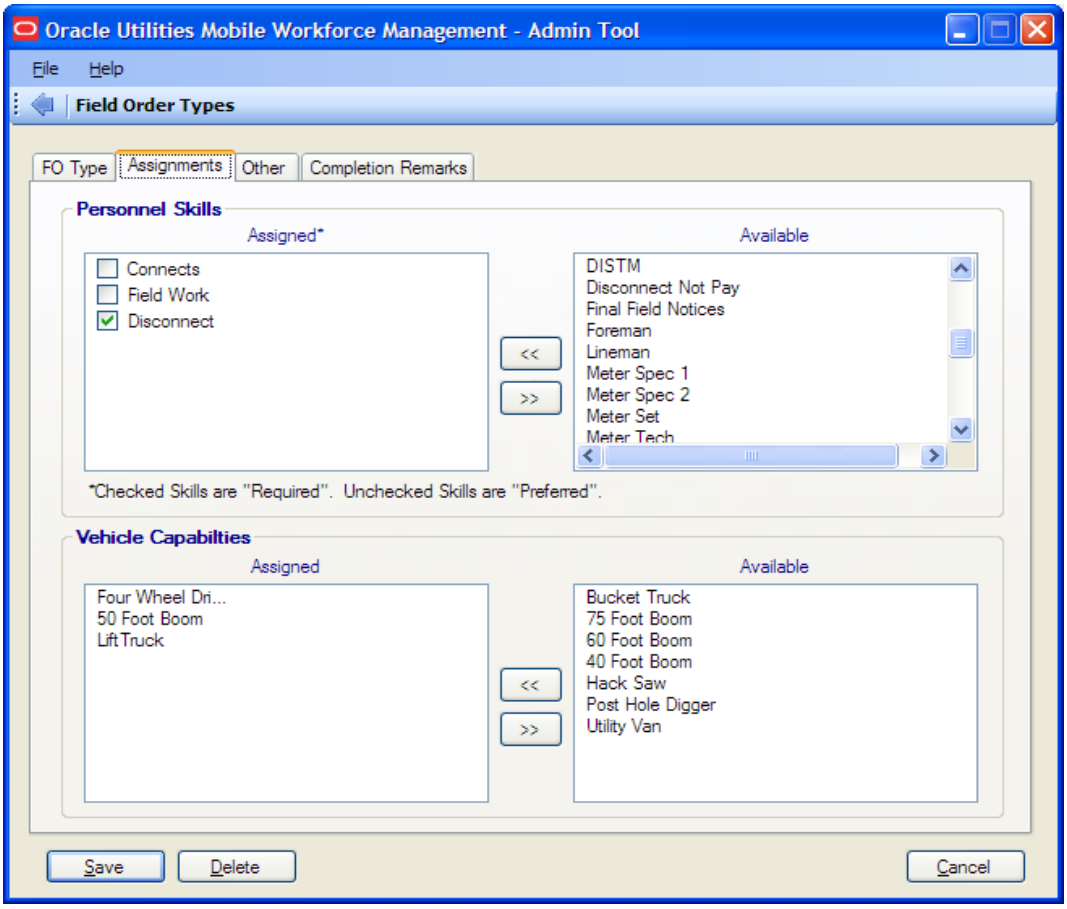
"Order Type" is required. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Order Type	DHTFOTYP.FO_TYPE	RES_CAP_DEFS.RESERVE_CAPACITY_TYPE
Description	DHTFOTYP.FO_TYPE_DESC	
Reserve Capacity Type	DHTFOTYP.RESERVE_CAPACITY_TYPE	
Estimated Completion Time	DHTFOTYP.EST_CMPL_MINUTES	
Required Primary Function	DHTFOTYP.PRIMARY_FUNC_CD	
Order Priority	DHTFOTYP.PRIORITY	
# Crews Required	DHTFOTYP.NBR_OF_CREWS_REQ	
Able to Change Date and Time?	DHTFOTYP.CHANGE_DATE_TIME	
Able to Change Priority?	DHTFOTYP.CHANGE_PRIORITY	
Can DW Complete Order?	DHTFOTYP.DW_COMPLETION_FLAG	
Uses Additional Skills?	DHTFOTYP.ADDL_SKILLS_FLAG	
Available for Auto Dispatch?	DHTFOTYP.AUTO_DISPATCH	
Available for Assist?	DHTFOTYP.AVAIL_FOR_ASSIST	
Available for Create?	DHTFOTYP.AVAIL_FOR_CREATE	
Mobile ETA Required?	DHTFOTYP.MW_ETA_REQ	
Display Safety Check Screen?	DHTFOTYP.DISPLAY_SAFETY_SCREEN	
Can Order Be Printed?	DHTFOTYP.ORDER_PRINTABLE	
Definition File	DHTFOTYP.DEFINITION_FILE	
Meter Read Required? None, Current, Old, Both	DHTFOTYP.METER_READ_REQ	
Remarks Required? None, Free or Std, Std Only	DHTFOTYP.CMPL_REMARKS_REQ	

Field Name	MWM Table:Column	ORS Table:Column
Sorted Remarks Code	DHTFOTYP.SORTED_REMARKS_CD	

Assignments Tab – Function/Process Description



There are two sets of interrelated lists on this Tab: "Assigned" and "Available" Personnel Skills, and "Assigned" and "Available" Vehicle Capabilities

Select the Available (or Assigned) items you want to transfer to the corresponding list and click the appropriate VCR-style button to move them. There is currently no drag and drop capability, but multiple item selection is permitted using the mouse, "Shift" key, and "Ctrl" key.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned Personnel Skills	Lists the assigned Personnel Skills currently required to work an order of this type.	This list can be empty. A field order does not have to have required skills. There is no limit to the number of skills that can be assigned to an order type.
Available Personnel Skills	Lists the unassigned Personnel Skills that are available to work an order of this type.	None

Field Name	Description	Data Constraints
Assigned Vehicle Capabilities	Lists the assigned Vehicle Capabilities currently required to work an order of this type.	This list can be empty. A field order does not have to have required capabilities. There is no limit to the number of capabilities that can be assigned to an order type.
Available Vehicle Capabilities	Lists the unassigned Vehicle Capabilities that are available to work an order of this type.	None

Validation

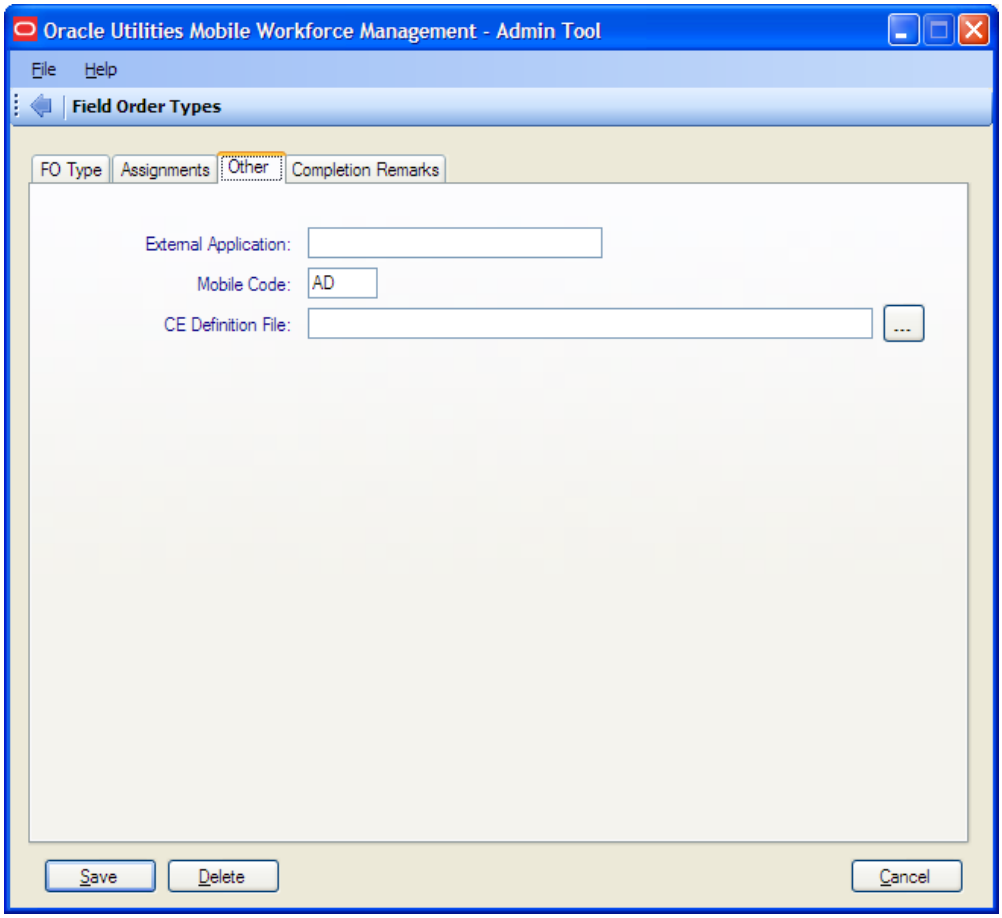
There is not validation on this tab, since neither required skills nor capabilities are required.

Data Mapping

The following table shows where the data on the Assignments Tab are mapped.

Field Name	MWM Table:Column	ORS Table:Column
Assigned Personnel Skills	DHTSREQ.SKILL_CODE	
Available Personnel Skills	DHTSKILL.SKILL_CODE	
Assigned Vehicle Capabilities	DHTVREQ.VEHICLE_CAPABILITY	
Available Vehicle Capabilities	DHTVCAPB.VEHICLE_CAPABILITY	

Other Tab - Function/Process Description



The small button to the right of the "CE Definition File" field displays a Find File dialog when clicked. The default directory is the Oracle Utilities Mobile Workforce Management definition file directory. The default file extension is ".DEF".

In the area below the "CE Definition File", a "User Defined Data" area will be displayed if additional fields were added when the system was configured. This area could contain up to six user-defined data entry fields. Label, mask, size, visibility, and validation patterns for those fields must be entered in the metadata XML file in the SPARE_1 through SPARE_6 elements of the DHTFOTYP Table element. If the element's editStyle attribute is "hidden", neither the label nor the data entry field will be displayed. In the figure above, this area is not displayed because no user-defined fields exist in the base product.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
External Application	An optional internal routing directive for this field order type. This value would be used by the Router application to determine which external application would receive transactions related to this order type. This only applies to orders created in Oracle Utilities Mobile Workforce Management; not orders received from an external application.	None
Mobile Code	An optional 2-character abbreviation for the field order type that can be used for display purposes. This is usually used in the CE mobile station application where screen real estate is an issue.	None
CE Definition File	The CE device Primary Detail screen script used for this order type. If the value begins with the word 'Custom', it is a custom screen and the number is the resource ID of the screen; otherwise it is the name of the user-defined screen (the screen file is specified without the def extension)	None
Enable Business Center Review? (Y/N)	Indicates if the Business Center Review checkbox should be enabled on the primary detail screen for this order type. This value is stored in the Spare 1 field.	None
Can Order Be Incomplete? (Y/N)	Indicates if an order of this type can be worked with a status of incomplete. This value is stored in the Spare 3 field.	None
Meter Status Left	Used to populate the Status Left list box on the meter screens. This value is stored in the Spare 5 field.	None

Validation

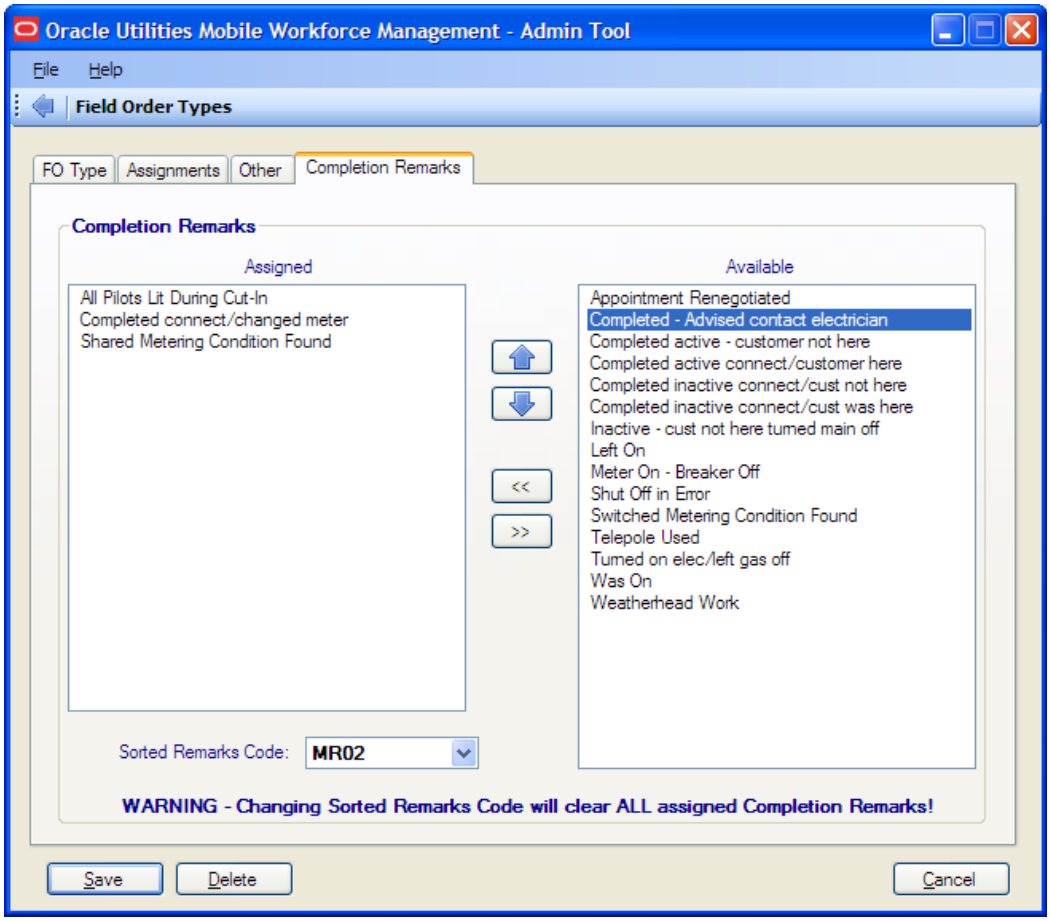
Basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data on the Other Tab are mapped.

Field Name	MWM Table:Column	ORS Table:Column
External Application	DHTFOTYP.EXTERNAL_APPLICATION	
Mobile Code	DHTFOTYP.FO_MOBILE_CD	
CE Definition File	DHTFOTYP.CE_DEFINITION_FILE	

Completions Remark Tab – Function/Process Description



The Completion Remarks Tab contains two interrelated lists: "Assigned" and "Available". Select the Available or Assigned items you want to transfer to the corresponding list and click the appropriate VCR-style button to move them. There is currently no drag and drop capability, but multiple item selection is permitted using the mouse, "Shift" key, and "Ctrl" key.

The item order in the Assigned list may be changed by using the blue up-down arrows. Select (highlight) a single item and then click the appropriate arrow button in the direction you want to move the item. You can "wrap" an item that is at the top or bottom of the list by clicking the up or down arrow key respectively.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned Completion Remarks	Lists the assigned completion remarks currently selected for this order type. The remarks are listed in a user-specified order.	None
Available Completion Remarks	Lists the unassigned completion remarks that are available to select for this order type.	None

Validation

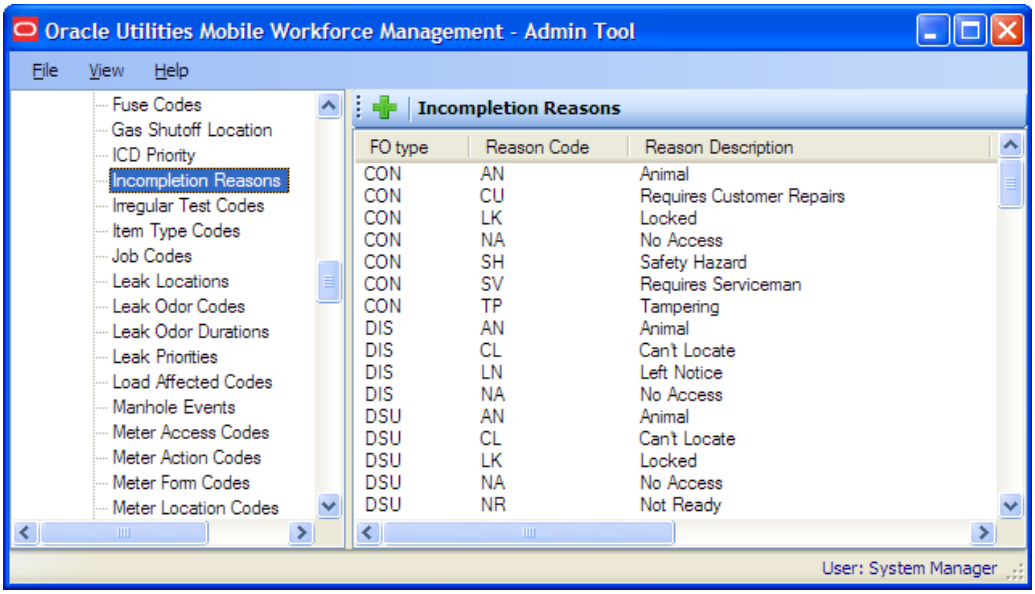
There is no validation on this Tab, since sorted completion remarks are not required.

Data Mapping

The following table shows where the data on the Completion Remarks Tab are mapped.

Field Name	MWM Table:Column	ORS Table:Column
Assigned Completion Remarks	DHTFOSSR.FO_TYPE_CODE DHTFOSSR.FO_TYPE_INDX	
Available Completion Remarks	DHTCREMK.FO_TYPE DHTCREMK.FO_TYPE_INDX	

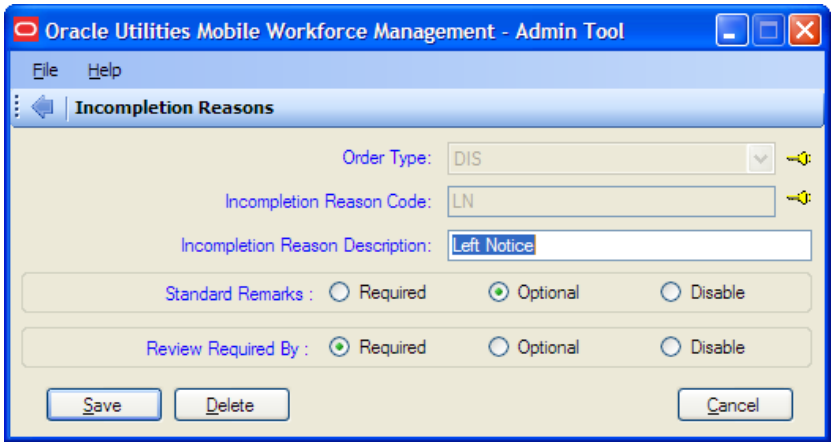
Incompletion Reason



Incompletion Reasons can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Incompletion Reason* in the Resource Panel. When *Incompletion Reason* is selected, existing Incompletion Reason records are displayed in the Selection Panel. By default, the FO Type, Reason Code, Reason Description, Standard Remark Requirement, and Rev by Requirement are displayed for each Incompletion Reason record.

The Incompletion Reason maintenance screen is used to add, view, delete or modify an Incompletion Reason record.

Function/Process Description



The Incompletion Reason screen contains general information about an incompletion reason. Incompletion reasons and are used in the system by field technicians to indicate why a field order is not being completed, or is being cancelled. The reasons relate the field order to the acceptable Incompletion Reasons for that order type. "Standard Remarks" indicates whether the completion screen should require remarks, and "Review Required" indicates whether a review is required when the particular Incompletion Reason is chosen by the field tech.

- The Incompletion Reason Description should be a text description of the reason the tech is not completing the field order.
- Select Required, Optional, or Disable to indicate whether the system should require, or make available "Standard Remarks" for this order type on the completion screen.
- Select Required, Optional, or Disable to indicate whether the system should require, or make available "Review Required" by checkbox and drop-down for this order type on the completion screen.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Order Type	Field order type of the incompletion reason. This is only enabled in add mode.	None
Incompletion Reason Code	ID of the incompletion reason. This is only enabled in add mode.	None
Incompletion Reason Description	Description of the incompletion reason.	None
Standard Remarks	Flag that indicates if standard remarks are required, optional or disabled.	None
Review Required By	Flag that indicates if reviews are required, optional or disabled.	None

Validation

All of the fields are required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data on the Incompletion Reason screen are mapped.

Field Name	MWM Table:Column	ORS Table:Column
Order Type	DHTFOTYP:FO_TYPE	
Incompletion Reason Code	DHTINRSN:REASON_CD	
Incompletion Reason Description	DHTINRSN:REASON_DESC	
Standard Remarks	DHTINRSN:STD_RMRK_REQ	
Review Required By	DHTINRSN:REV_BY_REQ	

Periods of Unavailability

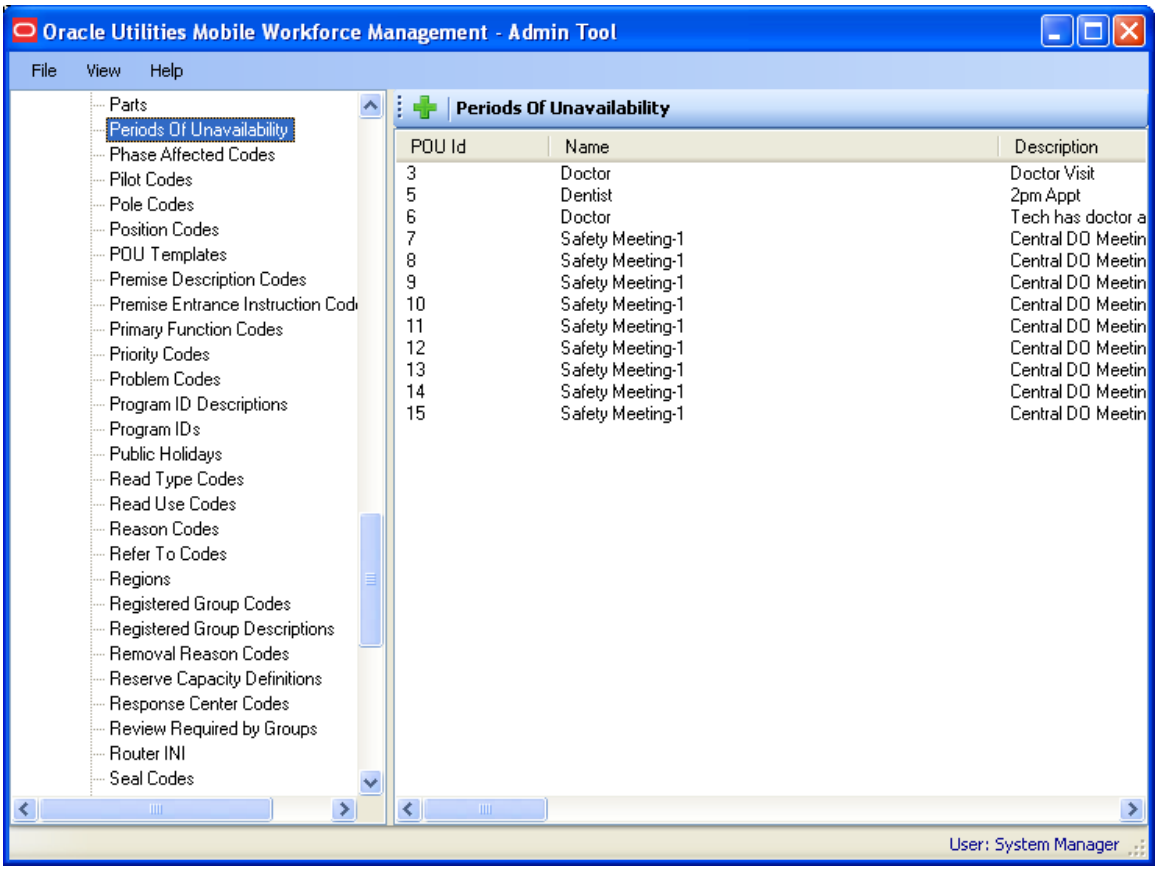
A period of unavailability (POU) is a specified time period that is blocked out from a Shift for a specific reason. For example, you could define a two-hour POU for a team meeting. POUs consume available Shift time and prevent orders from being scheduled during the specified time period. POUs are optional, and are sent to the scheduling application as orders of type POU.

A POU is defined by:

- The time of day at which a Crew is unavailable
- The amount of time that the Crew is unavailable for
- The location where the Crew is for the duration of unavailability

Multiple Crews can be associated with the same POU. This would be useful if, for example, all Crews from the maintenance department will be at the Main office today to attend a two-hour meeting commencing at 14:00 hours. The POU screen can be used to specify which Crews will be unavailable at the time, duration and location entered. POU records are created for each of the selected Crews.

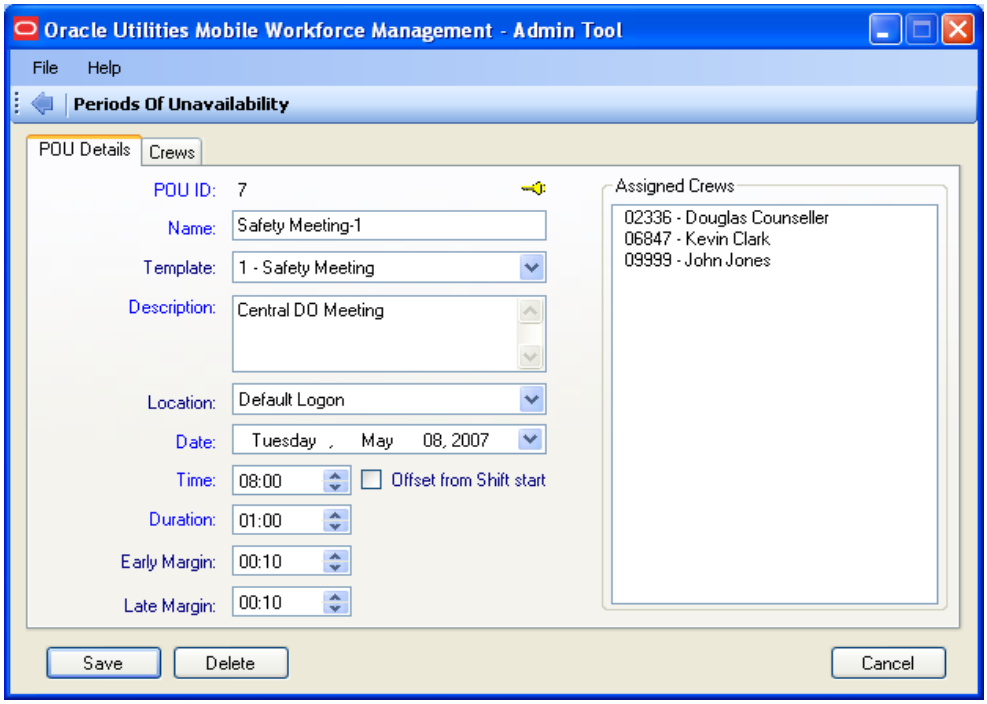
Periods of Unavailability (POUs) can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Periods of Unavailability* in the Resource Panel, as shown in the following figure.



When *Periods of Unavailability* is selected, existing POU records are displayed in the Selection Panel. By default, the POU ID, Name, and Description are displayed for each POU record.

The Periods of Unavailability maintenance screen is used to add, view, delete or modify a POU record.

POU Details – Function/Process Description



The POU Details tab displays core information about the POU. The "Name" is a key value and must be unique. The "Template" field, when specified, will set the POU details to the default values defined for the POU Template selected. The "Description" for the POU is optional. The values for the "Location" are from the Common Address table. The default value for the "Date" is the current date. The "Day" field is not editable, it only displays the current day for the selected date. The "Time", "Duration", "Early Margin", and "Late Margin" are in hours and minutes format.

The Periods of Unavailability screen updates the POU table (POU), Driver POU table (DRV_POU) and Driver POU Template table (DRV_POU_TEMPLATE) in the database directly. It also updates the POSTBOX out of the Oracle Real-time Scheduler database.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Name	The name of the POU being maintained.	None
Template	The POU Template. This list is populated using the POU Template table (POU_TEMPLATE).	None
Description	The description of the POU.	None
Location	The location where the actual POU will take place. The values for this field are in the COMMON_ADDRESS table.	None
Date	The date specified for the particular POU.	None

Field Name	Description	Data Constraints
Time	The start time associated with the selected Template.	None
Duration	This is the length of time the Crew (s) associated with the POU will be unavailable for work	None
Early Margin	This is the number of minutes before the POU start time that the time window of the actual POU stop should start	None
Late Margin	This is the number of minutes after the POU start time that the time window of the actual POU stop should finish.	None
Offset from Shift Start	This field determines if there is an offset from the Shift Start.	None

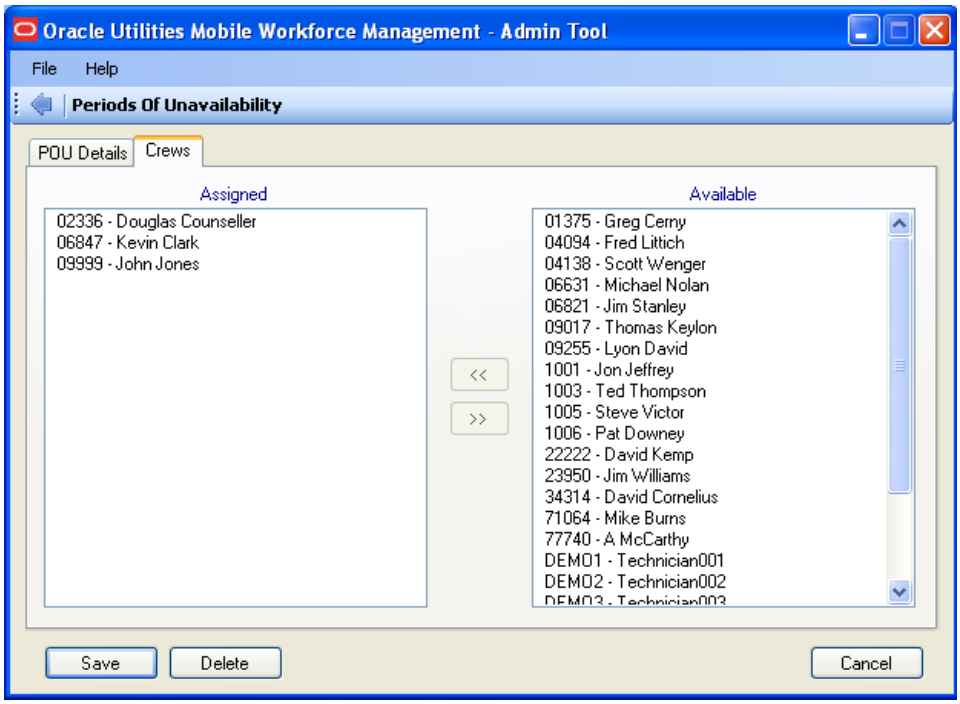
Validation

"Name" is the only field required. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Name		POU:NAME
Template		POU:TEMPLATE_ID
Description		POU:DESCRIPTION
Location		POU:LOCATION
Date		POU:POU_DATE
Time		POU:STAT_TIME
Duration		POU:DURATION
Early Margin		POU:EARLY_MARGIN
Late Margin		POU:LATE_MARGIN
Offset from Shift Start		POU:SHIFT_OFFSET

Crews Tab – Function/Process Description



The Crews tab controls the assignment of Crews to a POU. To assign a Crew, highlight the desired Crew name in the "Available" list and press the "<<" button between the "Assigned" and "Available" list boxes. The selected Crew will be moved from the "Available" list to the "Assigned" list. In the "Assigned" list, the time the Crew arrived, started, and completed its work will be shown. The status is also included in the list. To unassign a Crew, highlight the Crew in the "Assigned" list box and press the ">>" button. The selected Crew will be moved from the "Assigned" list to the "Available" list.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned	The Crews assigned to a particular POU.	None
Available	The Crews available to be assigned. Populated from the drivers table (Oracle Real-time Scheduler DRIVERS).	None
Arrived	The actual arrival time of the Crew.	None
Started	The actual time the Crew started.	None
Completed	The actual completion time.	None
Status	The status of the Crew related to POU.	None

Validation

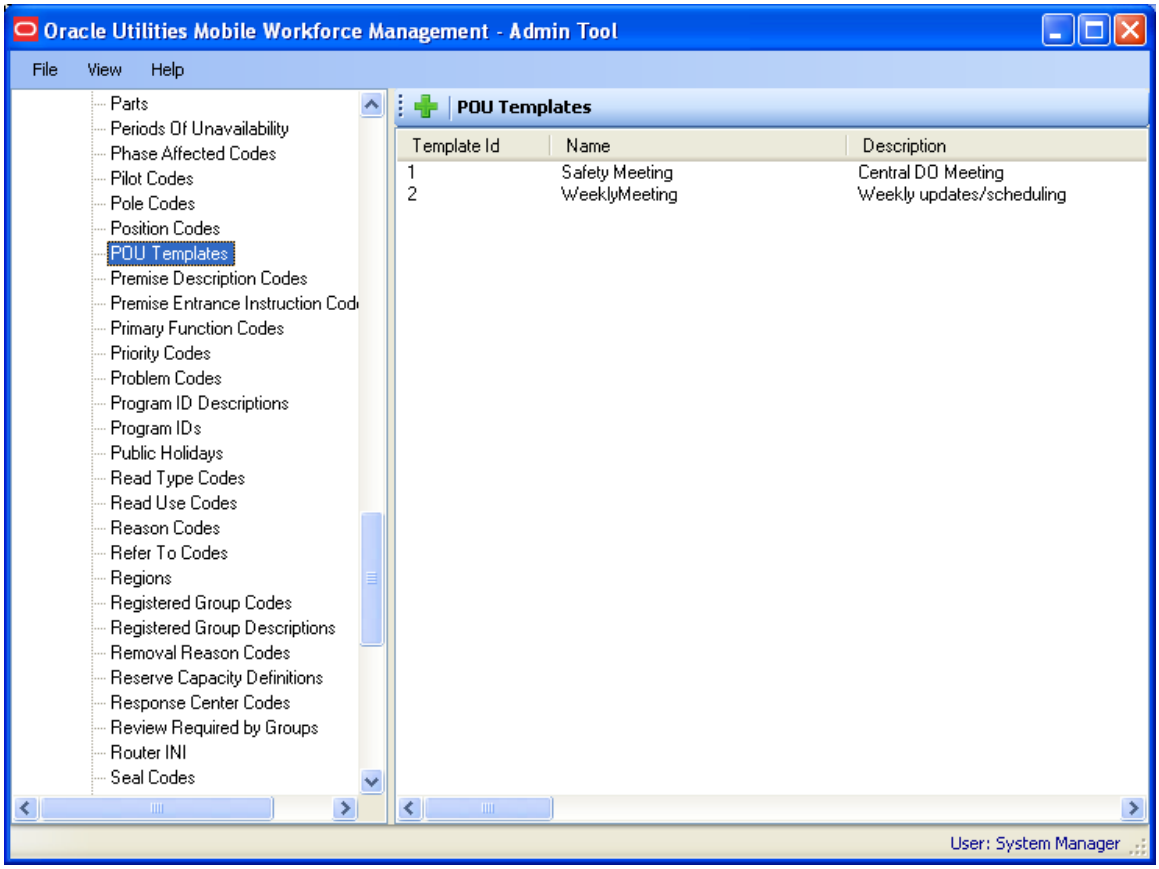
None

Data Mapping

Field Name	MWM Table: Column	ORS Table: Column
Assigned		DRV_POU
Available		DRIVERS
Arrived		DRV_POU:ACT_ARRIVAL_TIME
Started		DRV_POU:ACT_START_TIME
Completed		DRV_POU:ACT_COMPL_TIME
Status		DRV_POU:STATUS

POU Template

A Period of Unavailability (POU) can be defined if there is a period of time which is blocked out of a Shift for a specific reason. A POU Template can be used as a foundation for a POU. POU Templates might be useful in cases where the same (or similar) events occur repeatedly. For instance, if there is a meeting every Monday, Wednesday and Friday at the same meeting times, a Template could be created so that any POU based off this Template would already have the appropriate times, locations, etc. populated.

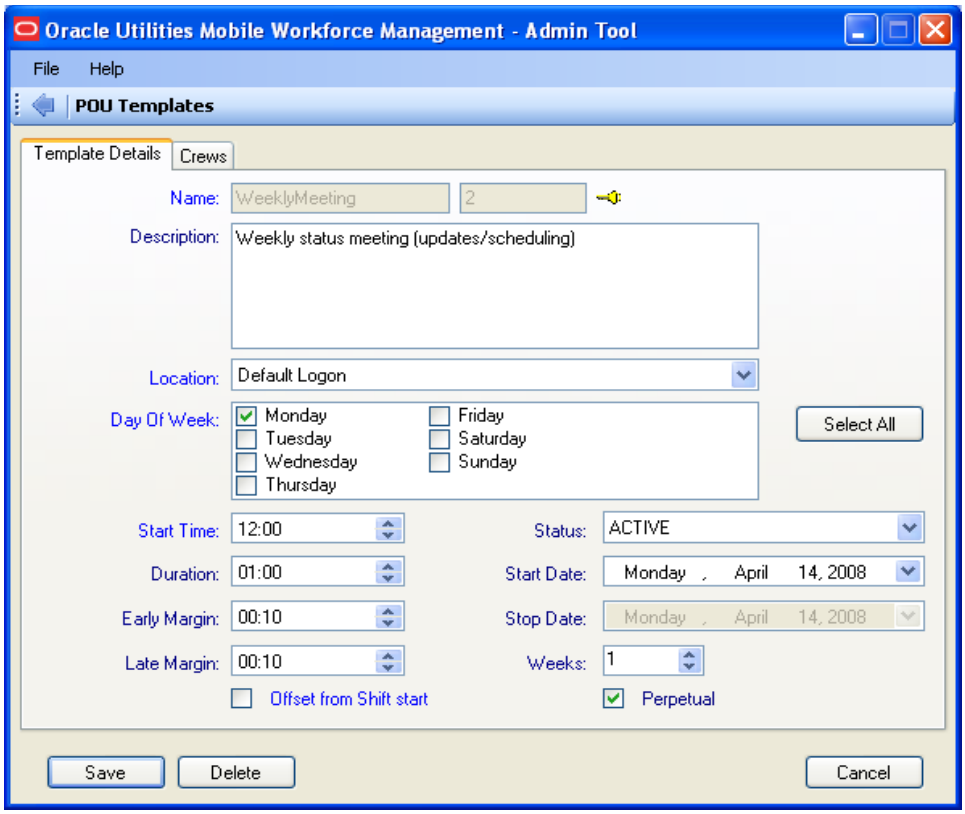


POU Templates can be modified via the Admin Tool by selecting *Resources-Table Maintenance-POU Template* in the Resource Panel. When *POU Template* is selected, existing POU Template records are displayed in the Selection Panel. By default, the Template ID, Name, and Description are displayed for each POU Template record.

The POU Template maintenance screen is used to add, view, delete or modify a POU Template record.

The values entered for the Template will serve as the default values for any POU created using this Template. When an existing POU Template is edited, the system will prompt the user if pending POUs referring to the record need to be updated to reflect the Template changes. Also, if certain POUs become invalid because of the Template changes, the system prompts the user if these records are to be deleted.

Template Details – Function/Process Description



The Template Details tab contains general information about a POU Template. Although the "Name" field is not the record's primary key value, defining a unique name is advised since this will appear in the POU Maintenance's Template id combo box. The "Description" for the Template is optional. The values for "Location" are populated from the Common Address table. For the "Day of Week" field, at least one value must be selected. The "Time", "Duration", "Early Margin", and "Late Margin" are in hours and minutes format. The "Status" of the POU Template should either be active or inactive. The default values for the "Start Date" and "Stop Date" are the current date, but the "Stop Date" will only be enabled if the "Perpetual" checkbox is not checked. Default value for "Weeks" is 1.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Name	The name of the POU Template being maintained.	None
Description	The description of the POU Template.	None
Location	The location where the POU will take place. The values are in the COMMON_ADDRESS table.	None
Day of Week	The day(s) of the week the POU will take place	None
Time	The start time for POUs defined by this template	None

Field Name	Description	Data Constraints
Duration	This is the length of time the Crew (s) associated with the POU will be unavailable for work.	None
Early Margin	This is the number of minutes before the POU start time that the time window of the POU stop should start	None
Late Margin	This is the number of minutes after the POU start time that the time window of the POU stop should finish	None
Status	The status of the POU Template, whether it is active or disabled.	None
Start Date	This is the Monday in the week the Template should begin creating POUs.	Start Date must be earlier than Stop Date, and must be a Monday
Stop Date	This is the Monday in the week the Template should cease creating POUs.	Stop Date must be later than Stop Date, and must be a Monday
Weeks	The number of weekly intervals that a POU Template is valid.	Min: 1 Max: 100
Perpetual	This can be selected to instruct the scheduler to ignore the Stop Date and continue creating POUs forever	None
Offset from Shift Start	This field determines if there is an offset from the Shift Start.	None

Validation

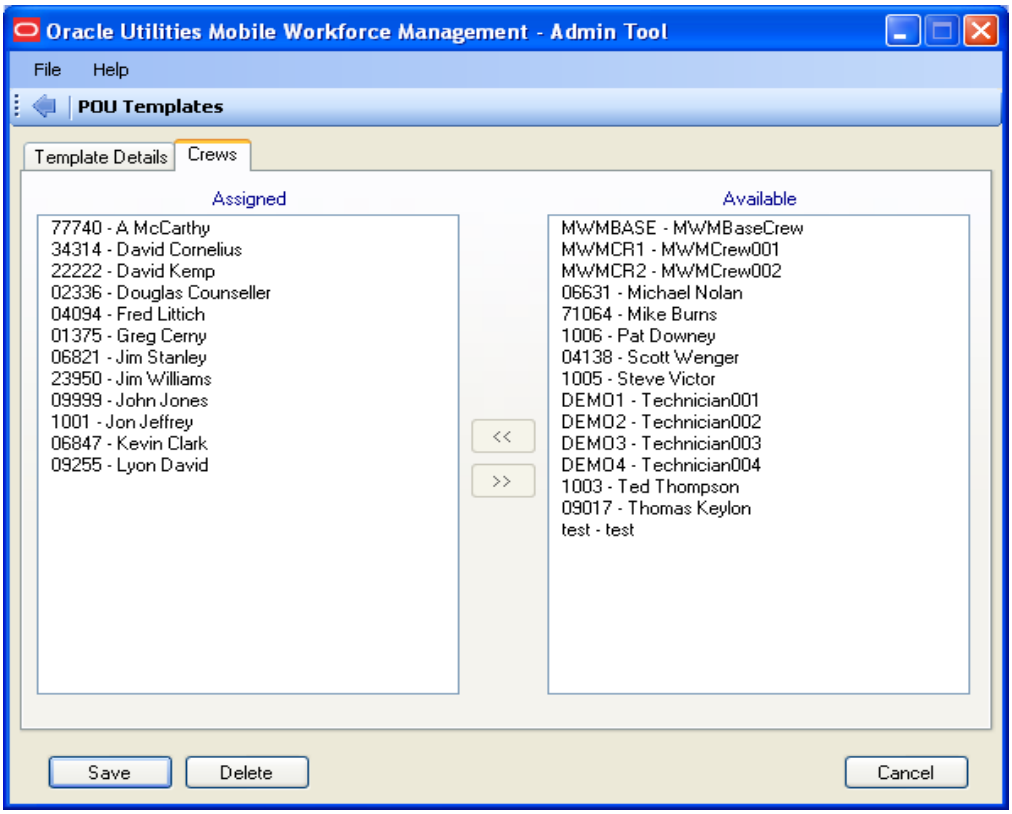
"Name", "Location", "Day of Week", and "Status" are all required. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Name		POU_TEMPLATE:NAME
Description		POU_TEMPLATE:DESCRIPTION
Location		POU_TEMPLATE:LOCATION
Day of Week		POU_TEMPLATE:DAY_OF_WEEK
Time		POU_TEMPLATE:START_TIME
Duration		POU_TEMPLATE:DURATION
Early Margin		POU_TEMPLATE:EARLY_MARGIN

Field Name	MWM Table:Column	ORS Table:Column
Late Margin		POU_TEMPLATE:LATE_MARGIN
Status		POU_TEMPLATE:STATUS
Start Week		POU_TEMPLATE:FROM_DATE
Stop Week		POU_TEMPLATE:TO_DATE
Weeks		POU_TEMPLATE:NUM_WEEKS
Perpetual		POU_TEMPLATE:PERPETUAL
Offset from Shift Start		POU_TEMPLATE:SHIFT_OFFSET

Crews Tab – Function/Process Description



The Crews tab controls the assignment of Crews to a POU Template. To assign Crews, highlight the desired Crew in the "Available" list and press the "<<" button between the "Assigned" and "Available" list boxes. The selected Crew will be moved from the "Available" list to the "Assigned" list. To unassign a Crew, highlight the Crew in the "Assigned" list box and press the ">>" button. The selected Crew will be moved from the "Assigned" list to the "Available" list.

The POU Template screen will update the POU Template table (POU_TEMPLATE), Driver POU table (DRV_POU) and Driver POU Template table (DRV_POU_TEMPLATE) in the database directly. It also updates the POSTBOX out of the Oracle Real-time Scheduler database

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned	The Crews assigned to a particular POU Template.	None
Available	The Crews available to be assigned. Populated from the Oracle Real-time Scheduler Drivers table (Oracle Real-time Scheduler DRIVERS).	None

Validation

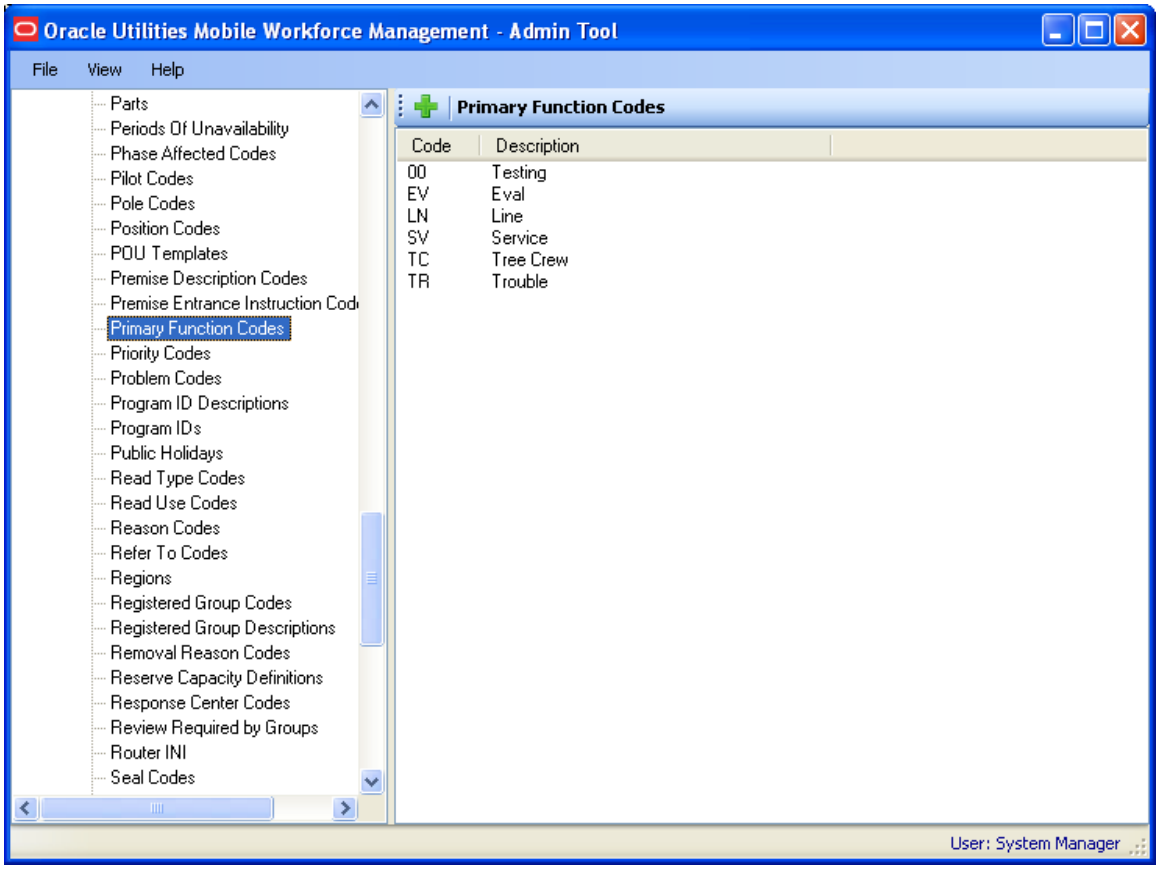
None

Data Mapping

Data mapping fields are described below:

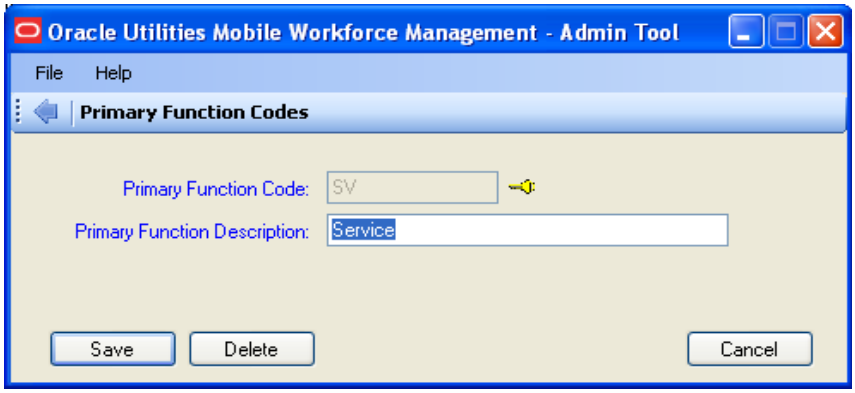
Field Name	MWM Table:Column	ORS Table:Column
Assigned		DRV_POU_TEMPLATE
Available		DRIVERS

Primary Function Codes



Primary Function Information can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Primary Function Codes* in the Resource Panel. When *Primary Function Codes* is selected, existing Primary Function Code records are displayed in the Selection Panel. By default, the Primary Function Code and corresponding Primary Function Description are displayed for each primary function in the Oracle Utilities Mobile Workforce Management system. The Primary Function Codes maintenance screen is then used to add, view, delete or modify a primary function.

Function/Process Description



Primary Functions can be defined and assigned to crews. The definition of the primary function takes place on this form. The assignment of a primary function to a crew takes place on the Crew form under Resource Maintenance.

To define a primary function the user must supply a Primary Function Code for the primary function being defined in the Primary Function Description. The Primary Function Code is simply shorthand for the primary function being defined. Note that primary functions are analogous to driver attributes in Oracle Real-time Scheduler and that this form also updates the Oracle Real-time Scheduler database accordingly.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Primary Function Code	The code assigned to the primary function being defined in the Primary Function Description field.	None
Primary Function Description	The description of a primary function that a crew may possess.	None

Validation

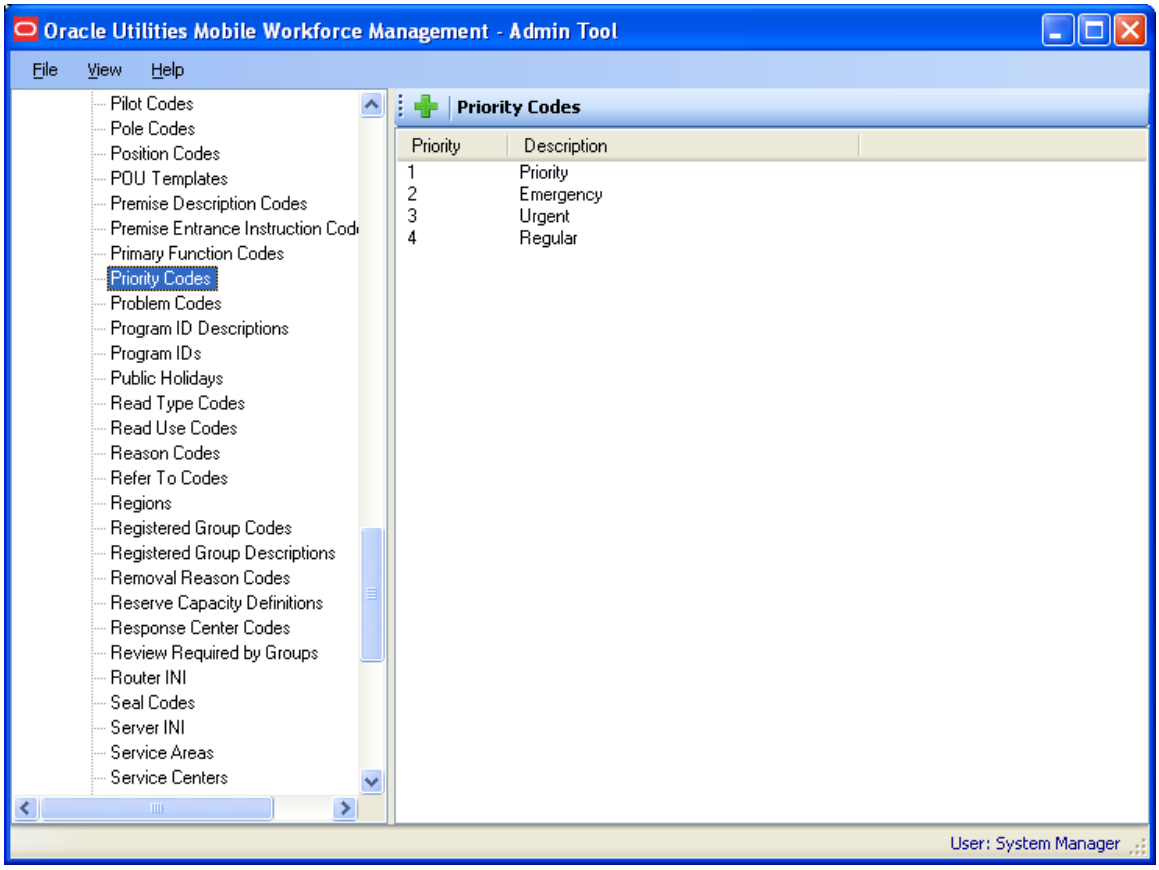
Primary Function Code is a required field. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Data mapping fields are described below:

Field Name	MWM Table:Column	ORS Table:Column
Primary Function Code	DHTPFUNC.PRIMARY_FUNC_CD	DRV_ATTR_DEFS:ATTRIBUTE
Primary Function Description	DHTPFUNC.PRIMARY_FUNC_DESC	

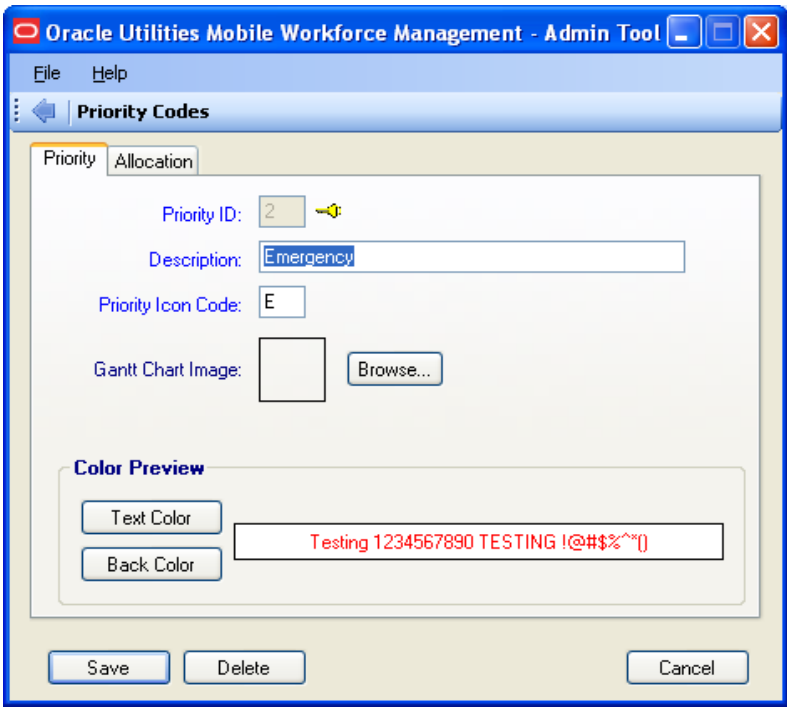
Priority Codes



Priority Codes can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Priority Codes* in the Resource Panel. When *Priority Codes* is selected, existing Priority Code records are displayed in the Selection Panel. By default, the Priority and Description are displayed for each Priority Code record.

The Priority Codes maintenance screen is used to add, view, delete or modify a Priority Code record.

Priority Function/Process Description



The Priority Codes tab is used to maintain priority codes and priority icons for the Dispatch Workstation application.

The Color Preview section allows the user to experiment with foreground (Text) and background (Back) color combinations. The Text Color cannot be the same as the Back Color.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Priority ID	The priority ID (key).	None
Description	The priority description.	None
Priority Icon ID	A single character icon ID used by DW.	None
Icon Image	A .bmp file selected via a File Find dialog. The full path and name of this file are not directly accessible by the user.	None
Text Color	The priority text (foreground) color selected via a Color dialog. The color value is not directly accessible by the user. The Text Color cannot be the same as the Back Color.	None
Back Color	The priority text (background) color selected via a Color dialog. The color value is not directly accessible by the user. The Back Color cannot be the same as the Text Color.	None

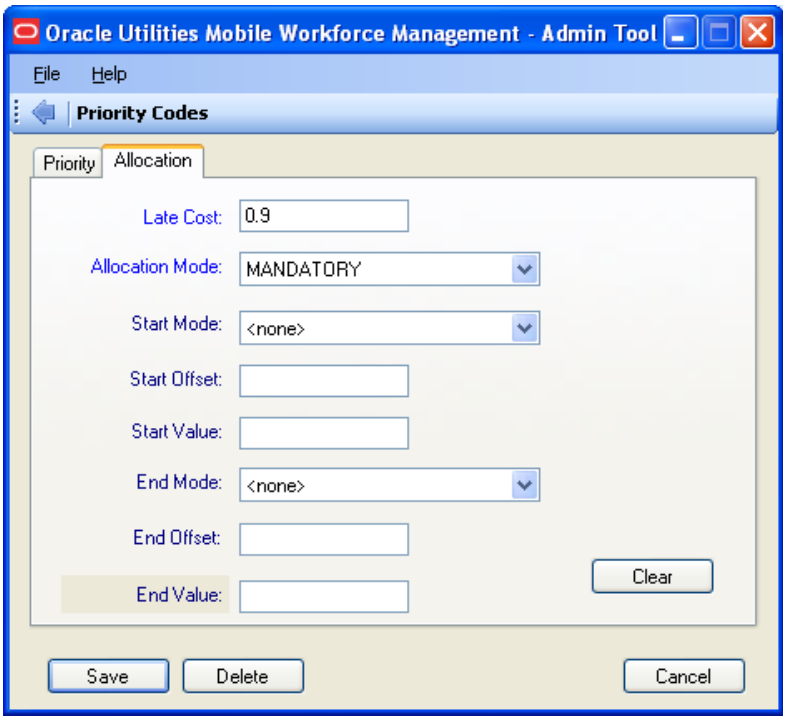
Validation

Priority ID, Description, and Priority Icon Id are all required fields. In addition, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Priority ID	DHTPRTY:PRIORITY	
Description	DHTPRTY:PRIORITY_DESC	
Priority Icon ID	DHTPRTY:PRIORITY_ICON	
Icon Image	DHTPRTY:GANTT_BITMAP	
Text Color	DHTPRTY:TEXT_COLOR	
Back Color	DHTPRTY:BACK_COLOR	

Allocation Tab – Function/Process Description



Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Late Cost	This field will contain the late cost of the allocation. It only accepts numeric values. Default to 1.0 (0.001~1e10).	
Allocation Mode	This combo-box will contain the list of modes of the allocation: MANDATORY, FLAT, FOREVER, REVERT. Default to MANDATORY.	
Start Mode	This combo-box will contain the list of start modes of the allocation: TWSTART, TWEND, REFDATE.	
Start Offset	This field will contain the start offset of the allocation. (-400.0 ~ 400.0)	
Start Value	This field will contain the start value of the allocation. (0 > ~)	
End Mode	This combo-box will contain the list of end modes of the allocation: TWSTART, TWEND, REFDATE.	
End Offset	This field will contain the end offset of the allocation. (-400.0 ~ 400.0)	
End Value	This field will contain the end value of the allocation. (# > Start Value)	

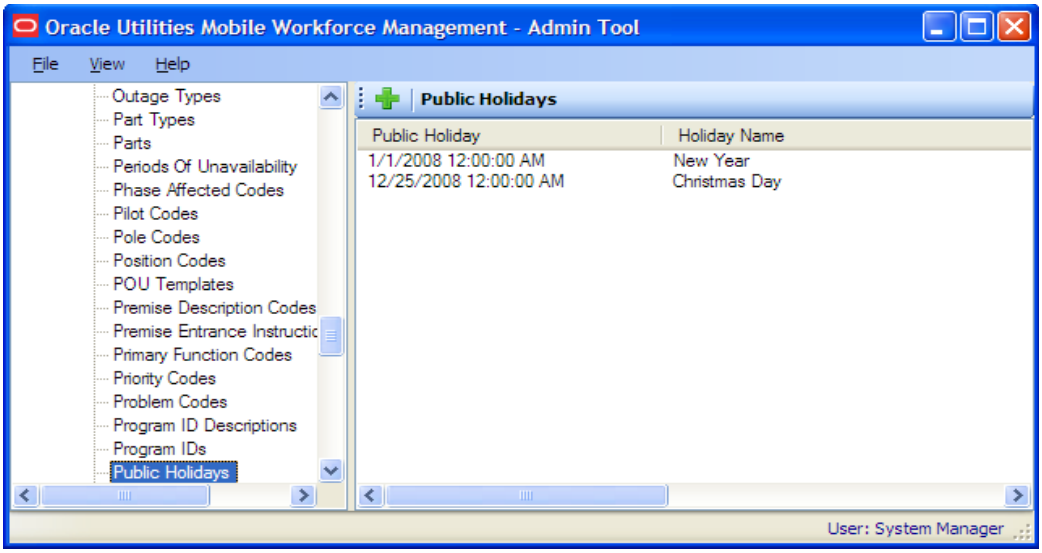
Validations

Late Cost and Allocation Mode are all required fields. In addition, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Late Cost	DHTPRIALLOC:LATE_COST	
Allocation Mode	DHTPRIALLOC:ALLOC_MODE	
Start Mode	DHTPRIALLOC:START_MODE	
Start Offset	DHTPRIALLOC:START_OFFSET	
Start Value	DHTPRIALLOC:START_VALUE	
End Mode	DHTPRIALLOC:END_MODE	
End Offset	DHTPRIALLOC:END_OFFSET	
End Value	DHTPRIALLOC:END_VALUE	

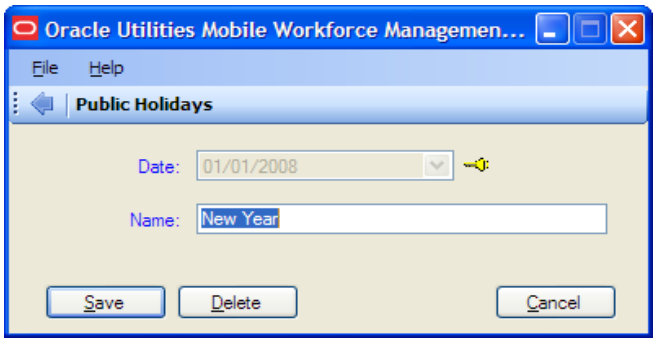
Public Holidays



Public Holidays can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Public Holidays* in the Resource Panel. When *Public Holiday* is selected, existing Public Holiday records are displayed in the Selection Panel. By default, Public Holiday and Holiday Name are displayed for each Public Holiday record.

The Public Holidays maintenance screen is used to add, view, delete or modify a Public Holiday record.

Function/Process Description



The Public Holiday screen contains information about a public holiday. It simply holds the date the holiday falls on and the name of that holiday. Shifts are not generated on Public Holidays but if a new holiday is added, current Shifts already generated for that day will not be deleted.

The Public Holiday screen updates the PUBLIC_HOLIDAYS and POSTBOX tables. A record is written to the postbox table (Oracle Real-time Scheduler POSTBOX). The record written to this table depends on the action being performed: add, update, or delete.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Date	The date the public holiday falls on. This field is only enabled in add mode.	None
Name	The name of the public holiday.	None

Validation

"Date" and "Name" are required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

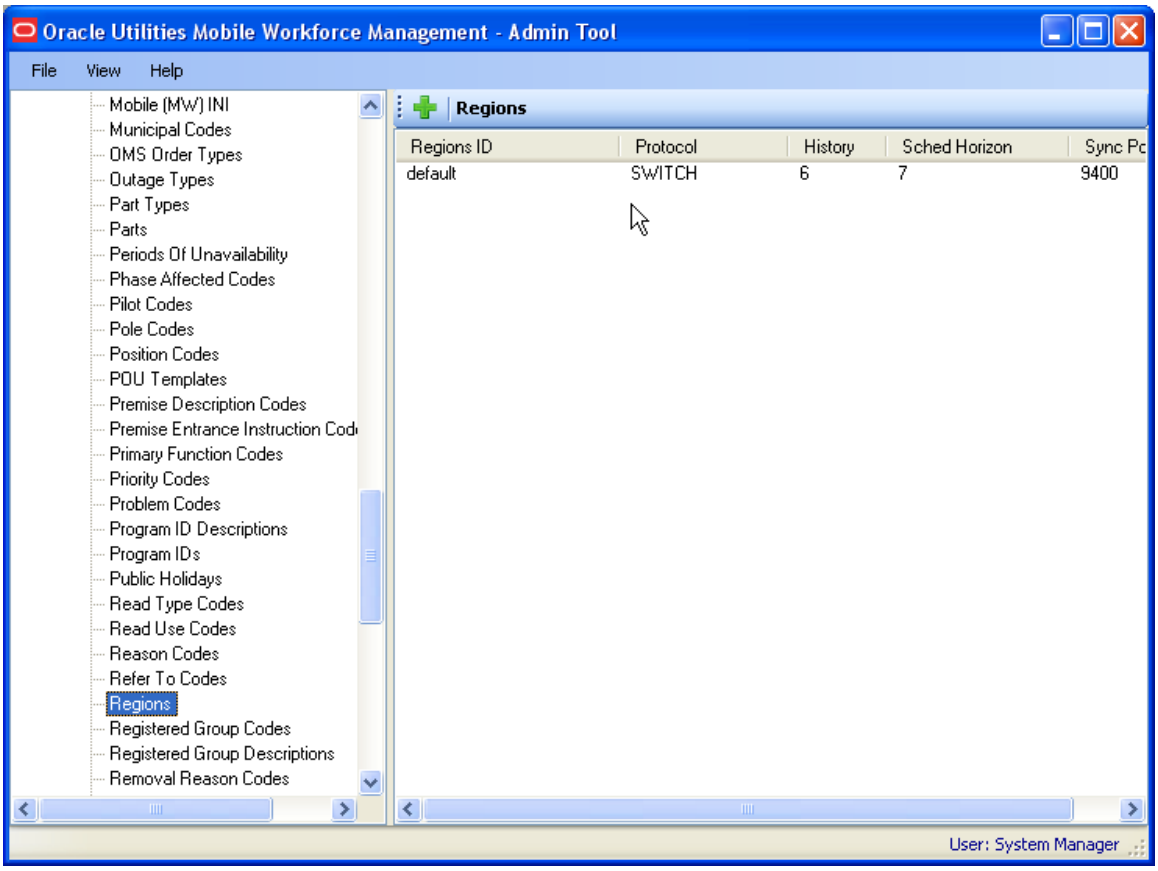
Data Mapping

The following table shows where the data on the Public Holiday screen gets mapped to:

Field Name	MWM Table:Column	ORS Table:Column
Date		PUBLIC_HOLIDAYS.PUB_HOL_DATE
Name		PUBLIC_HOLIDAYS.PUB_HOL_NAME

Region

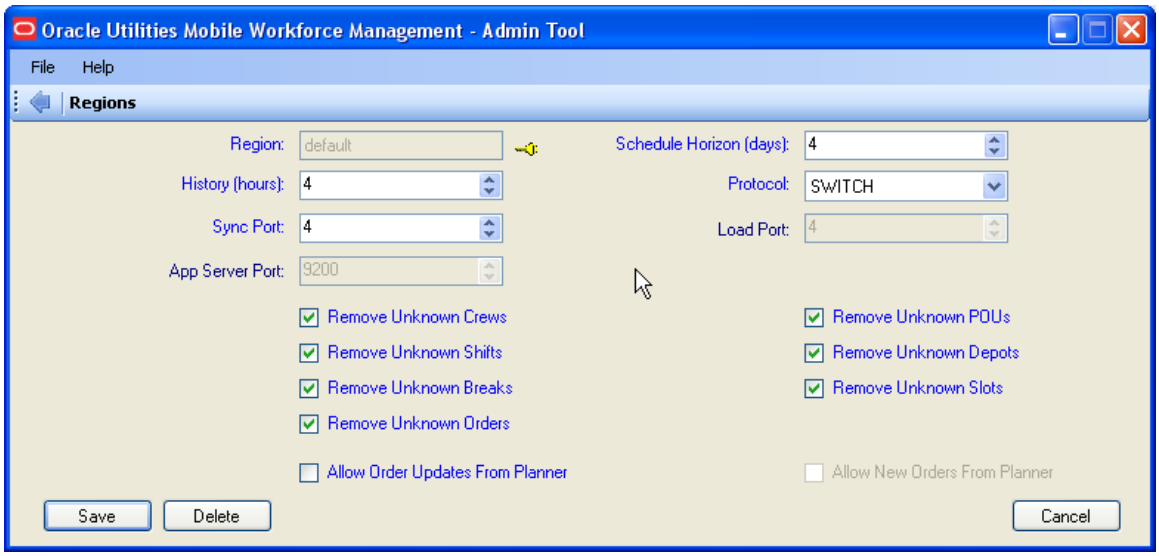
A Region record is a group of setting and preference for an installation of the scheduler that covers a certain geographical region. If more than one geographical region is to be scheduled from the same installation and hardware, then separate region records might be created for each geographical region.



Regions may be modified via the Admin Tool by selecting *Resources-Table Maintenance-Region* in the Resource Panel. When *Region* is selected, existing Region records are displayed in the Selection Panel. By default, Regions ID, Protocol, History, Sched Horizon and Sync Port are displayed for each Region record.

The Region maintenance screen is used to add, view, delete or modify a Region record.

Function/Process Description



The Region window contains the general settings for a geographical region covered by the scheduler. In add mode, the default values are assigned on the fields except for "Region".

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Region	Region ID. This is only enabled on add mode.	
Schedule Horizon (days)	The maximum number of days the scheduler should take into consideration when scheduling orders. The Schedule Horizon identifies how far into the future the scheduler should look in order to make sensible scheduling decisions.	Min: 1 Max: 1000
History (hours)	Number of hours a scheduler history is kept	Min: 1 Max: 24
Protocol	Connection protocol the region will use, either SMAUTO or SWITCH.	None
Sync Port	Synchronization port to be used.	Min: 1024 Max: 60000
Load Port	Load port to be used.	Min: 1024 Max: 60000
App Server Port	Port of the application server.	Min: 1024 Max: 60000
Remove Unknown Crews	Flag to indicate whether unknown Crews should be removed from the region	None

Field Name	Description	Data Constraints
Remove Unknown POUs	Flag to indicate whether unknown POUs should be removed from the region	None
Remove Unknown Shifts	Flag to indicate whether unknown Shifts should be removed from the region	None
Remove Unknown Depots	Flag to indicate whether unknown Depots should be removed from the region	None
Remove Unknown Breaks	Flag to indicate whether unknown Breaks should be removed from the region	None
Remove Unknown Slots	Flag to indicate whether unknown Slots should be removed from the region	None
Remove Unknown Orders	Flag to indicate whether unknown Orders should be removed from the region	None
Allow Order Updates from Planner	Flag to indicate whether order updates should be received from the scheduler	None
Allow New Orders From Planner	Flag to indicate whether new orders should be received from the scheduler	None

Validation

All fields are required except "App Server Port" and "Load Port". Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

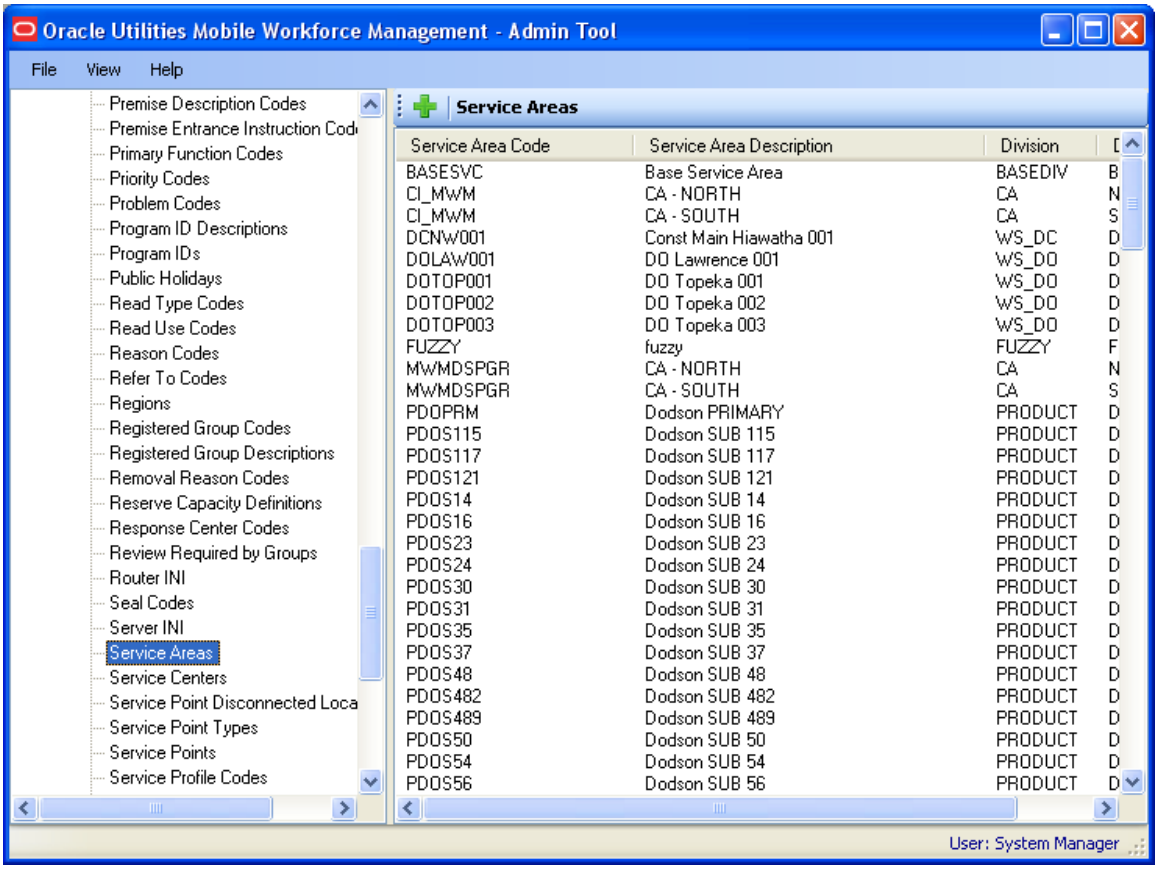
Data Mapping

The following table shows where the data on the Region screen are mapped:

Field Name	MWM Table: Column	ORS Table:Column
Region		REGIONS:ID
Scheduled Horizon (days)		REGIONS:SCHED_HORIZON
History (hours)		REGIONS:HISTORY
Protocol		REGIONS:PROTOCOL
Sync Port		REGIONS:SYNC_PORT
Load Port		REGIONS:LOAD_PORT
App Server Port		REGIONS:APP_SRV_PORT
Remove Unknown Crews		REGIONS:RM_DRIVERS
Remove Unknown POUs		REGIONS:RM_POUS
Remove Unknown Shifts		REGIONS:RM_SHIFTS

Field Name	MWM Table: Column	ORS Table:Column
Remove Unknown Depots		REGIONS:RM_DEPOTS
Remove Unknown Breaks		REGIONS:RM_BREAKS
Remove Unknown Slots		REGIONS:RM_SLOTS
Remove Unknown Orders		REGIONS:RM_STOPS
Allow Order Updates from Planner		REGIONS:UPDT_STOPS
Allow New Orders From Planner		REGIONS:NEW_STOPS

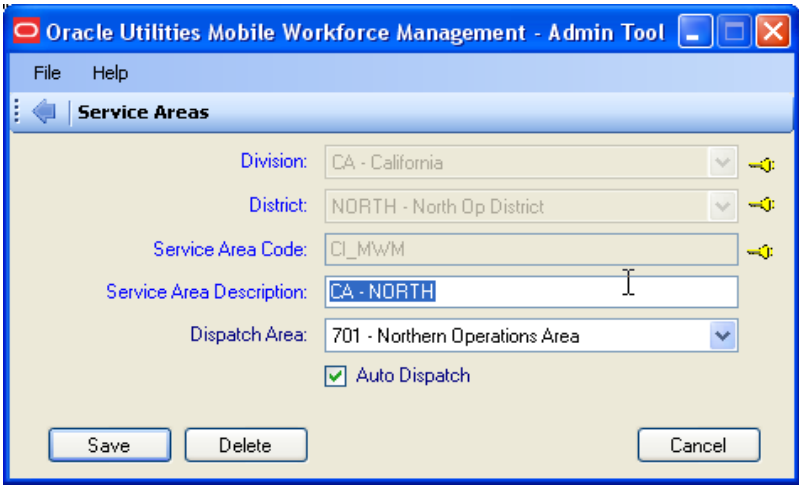
Service Areas



Service Areas can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Service Areas* in the Resource Panel. When *Service Areas* is selected, existing Service Area records are displayed in the Selection Panel. By default, the Area ID, Description, Division and District are displayed for each Service Area record.

The Service Areas maintenance screen is used to add, view, modify or delete a Service Area record.

Function/Process Description



The Service Area screen contains general information about a Service Area. It also allows the user to define a Service Area by Division, District and Dispatch Area.

A Service Area cannot be added unless at least one Division and one District have been added.

The Service Area maintenance screen updates the Oracle Utilities Mobile Workforce Management DHTSERV table. It may also update the Oracle Real-time Scheduler ZONE_DEFS table if Zones are mapped to Service Areas (Zones map to Service Areas by default).

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Service Area Id	Id of the Service Area. This is only enabled on add mode.	None
Description	Description of the Service Area.	None
Division	Division where the Service Area is contained. All existing Divisions are listed here. This is only enabled on add mode.	This is a required field, so at least one Division must exist before a Service Area can be created
District	District where the Service Area is contained. All Districts within the selected Division are listed here. This is only enabled on add mode.	This is a required field, so at least one Division must exist before a Service Area can be created
Dispatch Area	Dispatch area where the Service Area is contained. All existing Dispatch Areas are listed here. This is only enabled on add mode.	None
Auto Dispatch	Flag that indicates if Service Area is eligible for auto dispatch.	None

Validation

"Service Area ID", "Description", "Division" and "District" are required. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

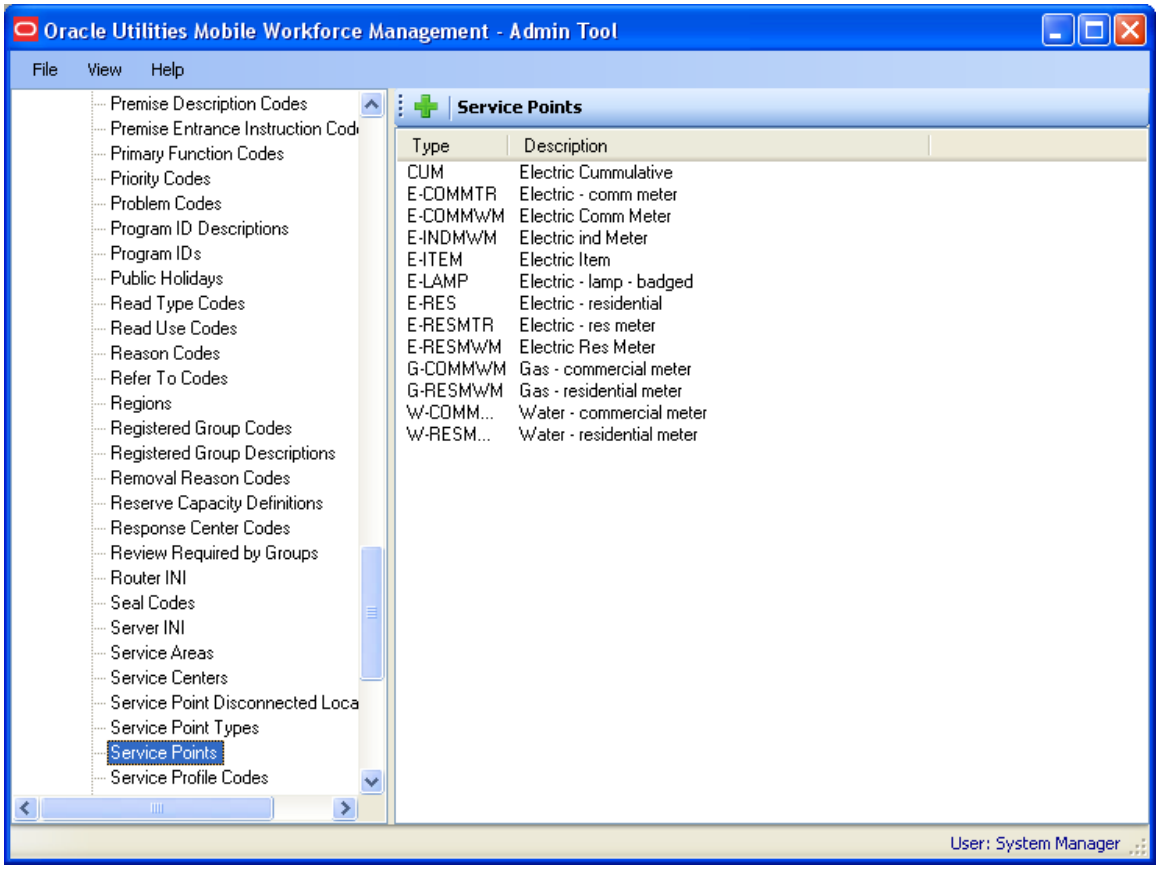
Data Mapping

The following table shows where the data in the Service Area are mapped:

Field Name	MWM Table:Column	ORS Table:Column
Service Area Id	DHTSERV:SERVICE_AREA	ZONE_DEFS:ZONE
Description	DHTSERV:SERVICE_AREA_DESC	
Division	DHTDIV:DIVISION	
District	DHTDIST:DISTRICT	
Dispatch Area	DHTDISP:DISPATCH_AREA	
Auto Dispatch	DHTSERV:AUTO_DISPATCH_IND	

Service Point

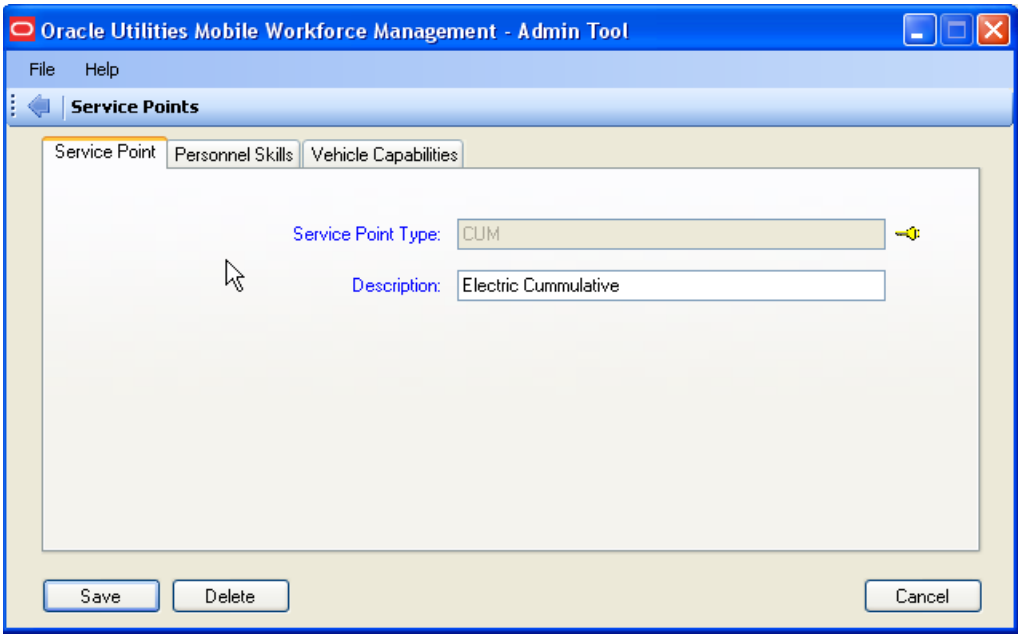
A Service point is an entity used in the CC&B system. It is used to identify the type of service at a customer point. A customer may have multiple service points but there is only one service point per order.



Service Points can be modified via the Admin Tool by selecting *Resources-Table Maintenance- Service Point* in the Resource Panel. When *Service Point* is selected, existing Service Point records are displayed in the Selection Panel. By default, the Service Point and Service Point Description are displayed for each Address record.

The Service Point maintenance screen is used to add, view, modify or delete a Service Point record. This screen is used to maintain the Personnel Skills and Vehicle Capabilities required to work an order with the service point type.

Service Point – Function/Process Description



Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Service Point Type	Id of the service point. This is only enabled on add mode.	None
Description	Description of the service point.	None

Validation

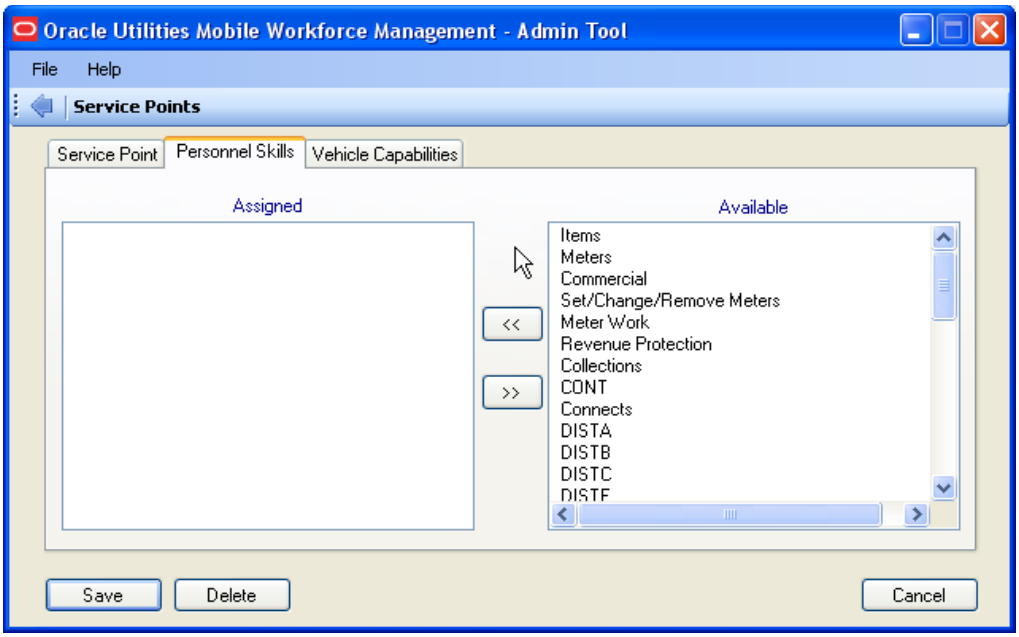
All fields are required to be entered on this screen. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Service Point tab are mapped:

Field Name	MWM Table:Column	ORS Table:Column
Service Point Type	DHTSPTYP:SP_TYPE_CD	
Description	DHTSERV:SP_TYPE_DESC	

Personnel Skills – Function/Process Description



The Personnel Skills tab displays the list of Personnel Skills assigned to the service point. Adding and removing assigned Personnel Skills may be performed in this tab.

A Service Point can be used to further refine the type of work to be done for an order type. For example, an order type of Turn On, could be further defined as a gas or electric meter, based on the Service Point. This screen allows the user to identify skills required to work an order with the specific service point. If "Uses Additional Skills?" is selected for the order type, the skills required for the service point type will also be used in scheduling the order.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned Personnel Skills	Lists the Personnel Skills required to work an order containing this service point type.	This list can be empty. A service point does not have to have required skills. There is no limit to the number of skills that can be assigned to a service point type.
Unassigned Personnel Skills	Lists the Personnel Skills that are NOT required to work an order containing the service point type being maintained.	

Validation

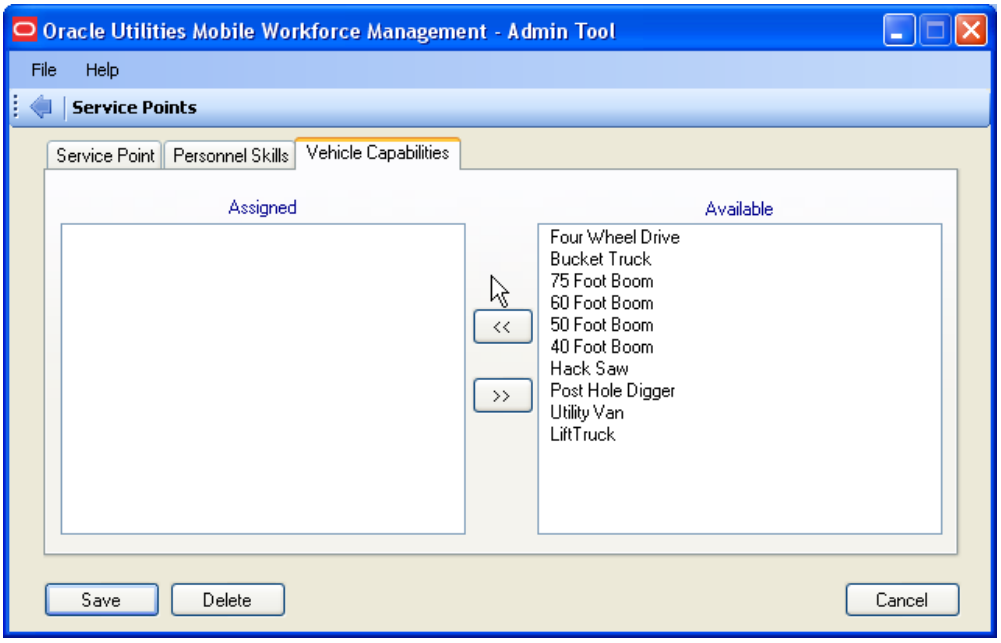
There is no validation on this Tab, since Service Point skills are not required.

Data Mapping

The following table shows where the data in the Personnel Skills tab are mapped:

Field Name	MWM Table:Column	ORS Table:Column
Assigned Personnel Skills	DHTSPSKL:REQ_SKILL_CD	
Unassigned Personnel Skills	DHTSKILL:SKILL_CODE	

Vehicle Capabilities – Function/Process Description



This tab displays the list of Vehicle Capabilities assigned to the service point. Adding and removing assigned Vehicle Capabilities may be performed on this tab.

A Service Point can be used to further refine the type of work to be done for an order type. For example, an order type of Turn On, could be further defined as an underground or overhead meter, based on the Service Point. This screen allows the user to identify capabilities required to work an order with the specific service point. If "Uses Additional Skills?" is selected for the order type, the capabilities required for the service point type will also be used in scheduling the order.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned Vehicle Capabilities	Lists the Vehicle Capabilities required to work an order containing this service point type.	This list can be empty. A service point does not have to have required capabilities. There is no limit to the number of capabilities that can be assigned to a service point type.
Available Vehicle Capabilities	Lists the Vehicle Capabilities that are NOT required to work an order containing the service point type being maintained.	This list may be empty of no Vehicle Capabilities have been created yet.

Validation

There is no validation on this Tab, since Service Point capabilities are not required.

Data Mapping

The following table shows where the data in the Vehicle Capabilities tab are mapped:

Field Name	MWM Table:Column	ORS Table:Column
Assigned Vehicle Capabilities	DHTSPCAP:REQ_VCAP_CD	
Available Vehicle Capabilities	DHTVCAPC:VEHICLE_CAPABILITY	

Shift Template Profiles

A Shift Template Profile is the foundation of all Shift-related activities. It is a predefined pattern of specific working calendar days within a working period. Shift Template Profiles should be created to address typical Shift patterns, and then the Profiles can be applied to the Crews (see the **Crews** on page 2-1 section for more on how to assign Shift Template Profiles to Crew).

No Shifts can be created until at least one Shift Template Profile has been created.

A Shift Template Profile is defined by the following:

1) Unique Profile ID

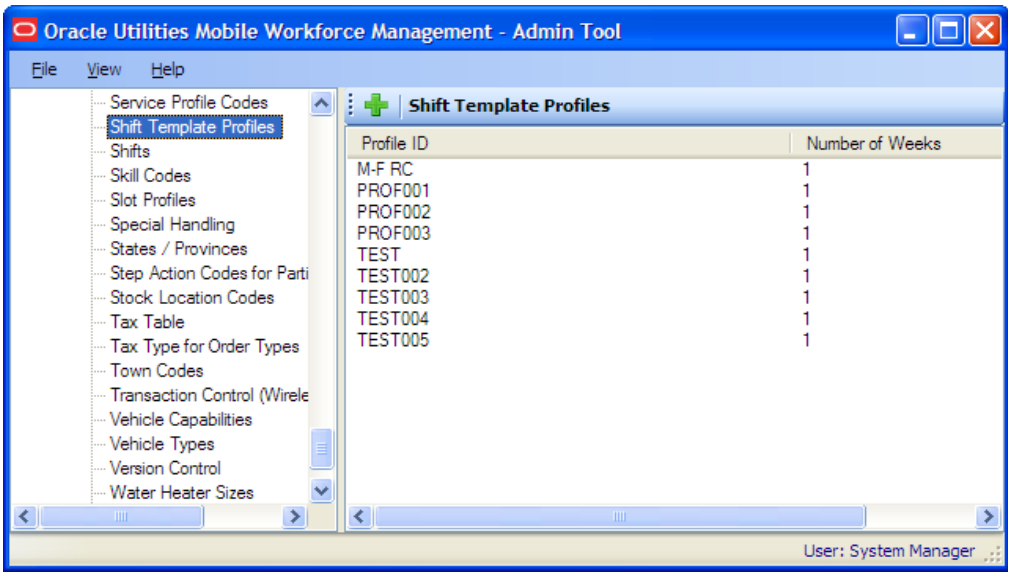
2) Start date

3) Duration (Number of weeks)

Once a Shift Template Profile has been created, defining the work period, Shift Templates can be created for the days that fall within that period.

A Shift Template defines planned work times for a single day within a Shift Template Profile's working period. All Templates with the same Profile ID represent a full cycle of Shift patterns. The scheduler makes use of Shift Templates to generate actual Shifts. It is not mandatory to have Shift Templates for all the days covered by a Shift Template Profile (the scheduler will only generate Shifts for days with Shift Templates). When a Shift Profile is applied to a Crew, the Shift pattern defined by the selected Profile and its associated Templates establish a Shift pattern for this Crew indefinitely into the future.

A Shift Break is a specified time period in a Shift during which the Shift may not carry out any work or travel between Stops. If Shift Template Breaks are defined for a Shift Template, then actual Shift Breaks are created along with Shifts at the time of Shift generation. (Shifts and Shift Breaks are discussed in detail in other sections of this document).

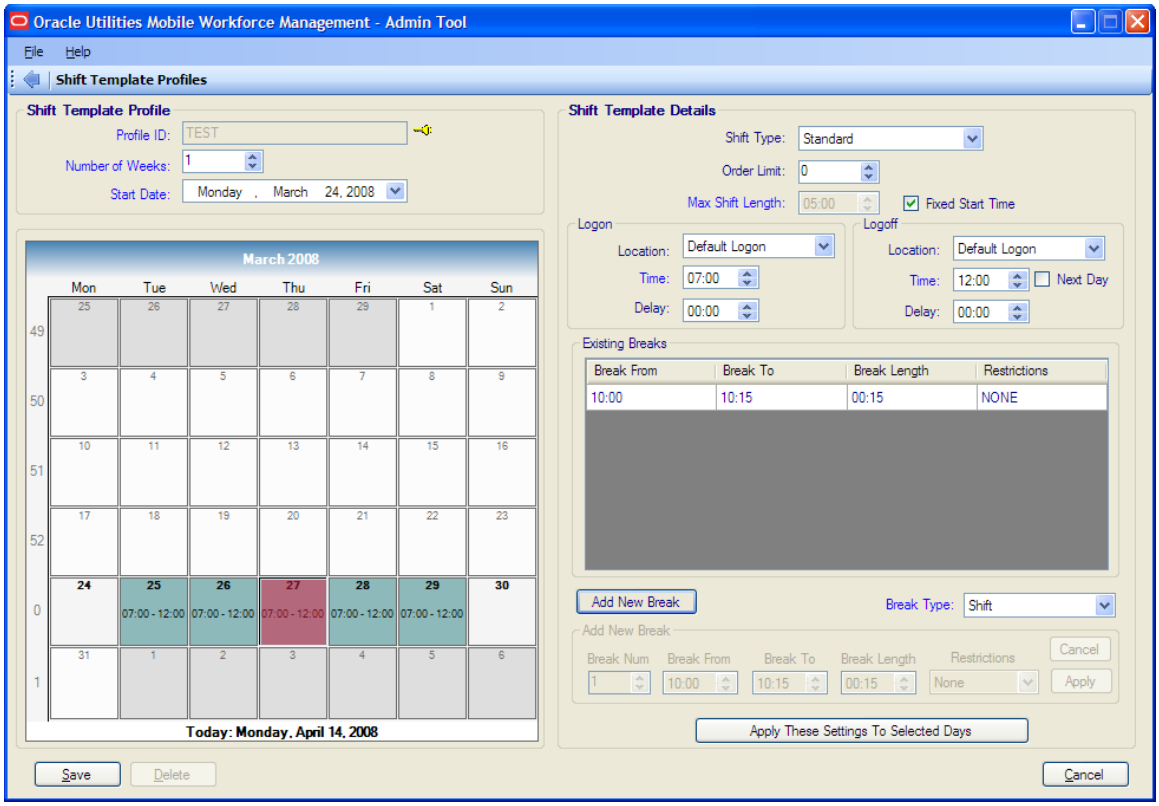


Shift Template Profiles and its associated Shift Templates and Shift Template Breaks can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Shift Template Profiles* in the Resource Panel. When *Shift Template Profiles* is selected, existing Shift Template Profile records are displayed in the Selection Panel. By default, the Profile ID, Number of Weeks, and Start Date are displayed for each Shift Template Profile record.

The Shift Template Profiles maintenance screen is used to add, view, or modify Shift Template Profiles, Shift Templates and Shift Template Breaks. *Shift Template Profiles cannot be deleted.*

The Shift Template Profile screen updates the Oracle Real-time Scheduler SHIFT_TEMPLATE_PROFILES, SHIFT_TEMPLATES, and SHIFT_BREAK tables. It also updates the Oracle Real-time Scheduler POSTBOX table to log the events on the SHIFT_TEMPLATE_PROFILES, SHIFT_TEMPLATES and SHIFT_BREAK tables.

Function/Process Description



The Shift Template Profile screen allows users to add or modify Shift Template Profiles, Shift Templates, and Shift Template Breaks. Shift Template Profiles *cannot* be deleted.

Only one Template may be created for each day in the working period, but a Template is not required for each day. A Shift Template Profile is associated with each Crew, and Shifts will only be generated for the Crew on days for which Shift Templates exist.

Breaks are optional, defining idle periods of rest time associated within a Shift. A Shift Template can have up to 8 Shift Template breaks assigned to it.

The break time window (defined by the "Break From" and "Break To" times) is used by the scheduling application to schedule breaks at most efficient position in the Shift.

The Save and Delete buttons at the bottom of the form behave differently on this screen than on any other screen. When Save is selected, changes to the Shift Template Profile, as well as its Shift Templates and Shift Template Breaks, are saved to the database. Shift Template Profiles cannot be deleted, but it is possible to delete Shift Templates and Shift Template Breaks belonging to the Profile. See the section titled **Deleting, Copying, Cutting and Pasting** on page 3-95 for more information on deleting Shift Templates.

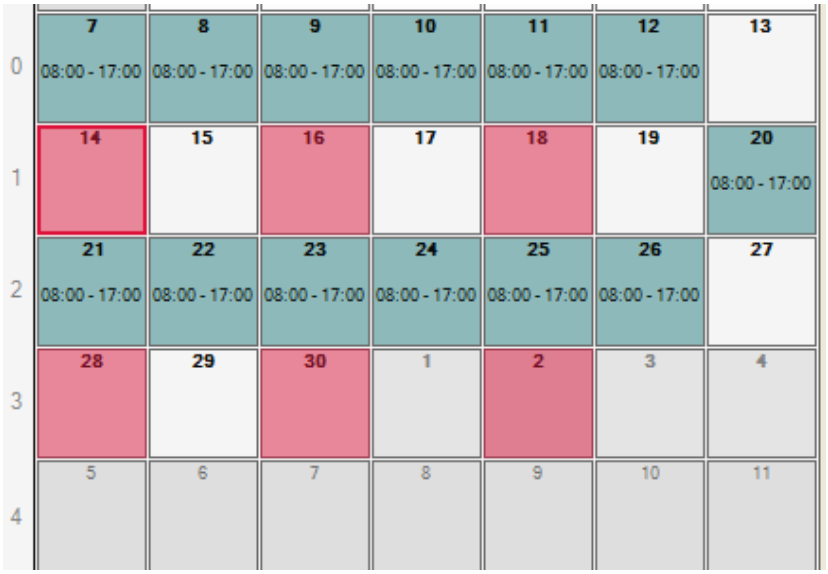
Calendar – Function/Process Description

The Calendar control on the left side of the screen shows all Shift Templates belonging to a single Shift Template Profile. Each date is shaded and labeled to give a quick overview of a Profile's Shifts.

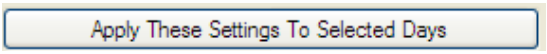
Creating / Editing Shift Templates

To view or edit the Shift Template and Shift Template Break details for a particular date, select the date on the calendar. The Shift Template details on the right side of the screen will be updated with data for that date's Shift Template.

It is possible to create multiple, identical Shift Templates all at once by selecting any number of dates on the calendar and updating the Shift Template details. In the figure below, the user has selected Monday, Wednesday and Friday of the 2nd and 4th weeks in the Profile. The Shift Template details that are entered will be used to create identical Shift Templates for all 6 of those days at once.



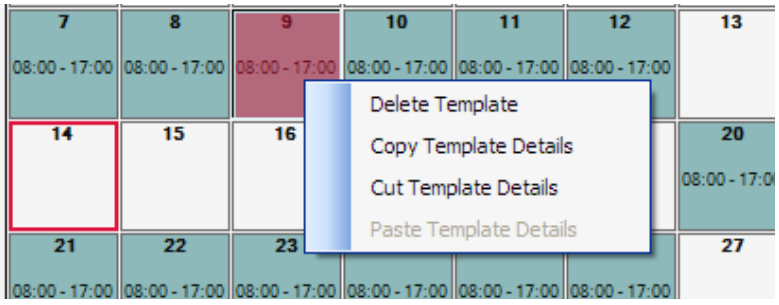
Once Shift Template details are updated for selected day(s), apply the changes by clicking the "Apply…" button below the settings:



Clicking this button will save the changes to the calendar and store them in memory so that they may be saved later when the form's "Save" button is selected.

Deleting, Copying, Cutting and Pasting

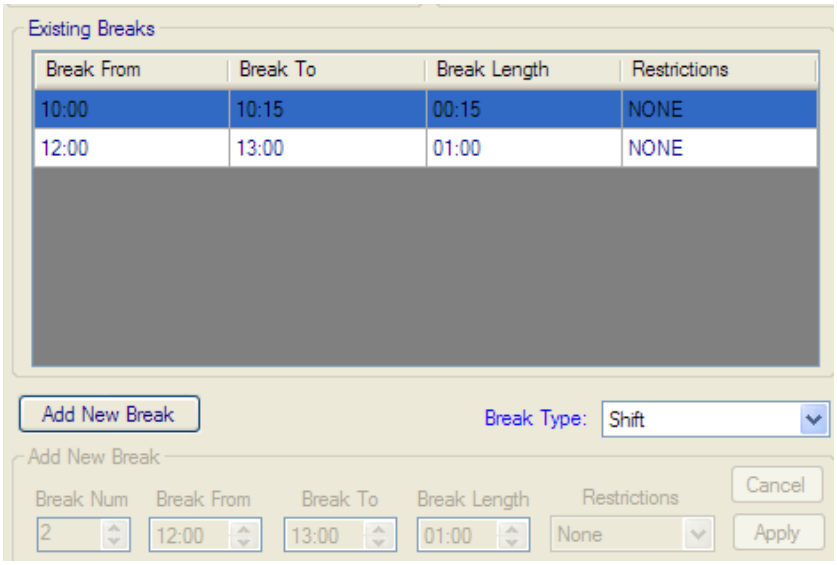
Shift Templates can also be copied/cut/pasted/deleted from the Calendar by selecting a date and right clicking with the mouse. A context menu will be displayed with all of the options available for that date.



1. **Delete**: The "Delete" option is offered for days with existing Templates, and is shown whenever one or more dates are selected. This option will not be available if the selected dates do not have Shift Templates.

2. **Copy**: The "Copy" option is offered when a single Shift Template is selected. Selecting this menu option will not modify the selected Shift Template, but will copy the Shift Template (and Shift Template Break) details to the clipboard so that they may be pasted onto other dates. This option will not be available if the selected dates do not have Shift Templates.
3. **Cut**: The "Cut" option is offered when a single day with a Shift Template is selected. Selecting this menu option will delete the selected Shift Template and copy its Shift Template details to the clipboard so that they may be pasted onto other dates. This option will not be available if the selected dates do not have Shift Templates.
4. **Paste**: The "Paste" option is offered whenever a Shift Template has previously been copied or cut and Shift Template details are on the clipboard. A paste may be performed on any date, regardless of whether a Shift Template already exists on that date. If a Shift Template does exist, it will be overwritten. If a Shift Template does not exist, a new one will be created.

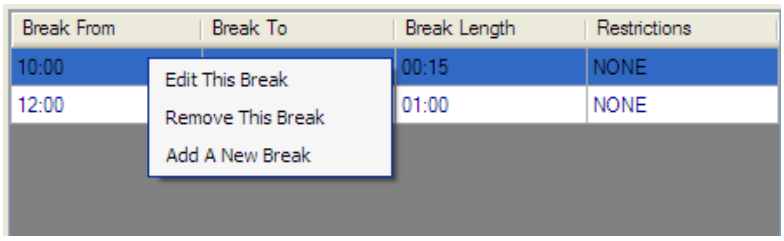
Breaks – Function/Process Description



All Shift Template Breaks belonging to a Shift Template are displayed beneath the Shift Template details. Breaks are optional, defining idle periods of rest time associated within a Shift. A Shift Template can have up to 8 Shift Template Breaks assigned to it.

The break time window (defined by the "Break From" and "Break To" times) is used by the scheduling application to schedule breaks at the most efficient position in the Shift.

A new Shift Template Break can be added to a Shift Template by clicking the "Add New Break" button, which activates the controls at the bottom of the tab. Breaks can also be edited by selecting a row in the table, then right-clicking and selecting "Edit This Break" from the drop-down menu. This will populate the fields at the bottom of the tab with the selected break's data, and enable the controls so that the values may be edited.



After Break details have been updated, click the "Apply" button to save the changes and update the list of Shift Template Breaks. To abort the add/edit operation, click the "Cancel" button.

Data Fields

Shift Template Profile fields

Field Name	Description	Data Constraints
Profile Id	Id of the Shift Template Profile. This is only editable when creating a new Profile	None
Number of Weeks	Number of weeks available for the Profile	Min: 1 Max: 53
Start Date	First day of the working period defined by the Profile	None

Shift Template fields

Field Name	Description	Data Constraints
Shift Type	The type of Shift, this may either be Standard, One Way or none	None
Week Number	The week number which this Template belongs to	This value is limited by the number of weeks defined in the selected Profile ID
Day of Week	Day of the week this Template belongs to	None
Jobs Limit	The maximum number of jobs that can be assigned to a Crew during this Shift	Min: 0 Max: 100
Max Shift Length	Total hours a Shift is allowed to work within the Shift window. Shifts working beyond this limit are considered to be in overtime.	Must be less than the time window defined by Logon and Logoff time.
Fixed Logon	Indicates that the scheduling application will only start the Shift at the specified Logon time. Selecting this option disables Max Shift Length and takes the max Shift length from the Shift window (logoff time – logon time)	None
Logon Location	Location where Shifts created from this Template will begin. This list is populated based on the common address table.	Shifts will not be generated unless Logon and Logoff Locations are specified.
Logon Time	The beginning of a Shift window, indicating the earliest time that a Shift can begin	None
Logon Delay	Amount of time the Shift will spend logging on. The sum of the Logon and Logoff Delays cannot exceed the available time of the shift.	None
Logoff Location	The location where Shifts created from this Template will end. This list is populated based on the common address table.	Shifts will not be generated unless Logon and Logoff Locations are specified.

Field Name	Description	Data Constraints
Logoff Time	The end of a Shift window, indicating the latest time that a Shift should end. Work done after this time is considered overtime.	None
Logoff Delay	The amount of time the Crew will spend logging off. The sum of the Logon and Logoff Delays cannot exceed the available time of the shift.	None

Shift Template Break fields:

Field Name	Description	Data Constraints
Break Number (not editable)	The break number for the Shift Template. Eight (8) breaks are allowed for each Shift id.	Min: 0 Max: 7
Break Type	The type of break for that Id. Break type specifies how the break timing is calculated. Break types are described below: • SHIFT - elapsed time from the earliest possible start of the Shift • LOGON - elapsed time from the predicted or actual time of Logon • ELAPSED - elapsed time from the predicted or actual start of the previous Break or Logon • DRIVE - accumulated driving time from the predicted or actual start of the previous Break or Logon. The calculated Time Window is used by Planner to position the Break Stop at the most efficient position in the Shift.	All breaks belonging to the same Shift must be of the same type.
Break Length	The desired length of the break, in hours and minutes.	Min: 00:00 Max: 23:59
Restrictions	Restriction of the break, this may be None or At Depot.	None
Break From	Start of the break window, based on the Break Type.	24-hr time "From" value must be earlier than "To" time
Break To	End of the break window, based on the Break Type.	24-hr time "To" time must be later than "From" time

Validation

Only one Shift Template can be created for each day in a Profile's working period. Creation of multiple Templates for the same day will not be allowed. Template "Logon Time" and "Logoff Time" are required and they must be different (with logon time being earlier than logoff time).

Break From must be earlier than Break To, and the break window (hours between "From" and "To" times) must not overlap with other breaks belonging to the same Shift Template.

Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

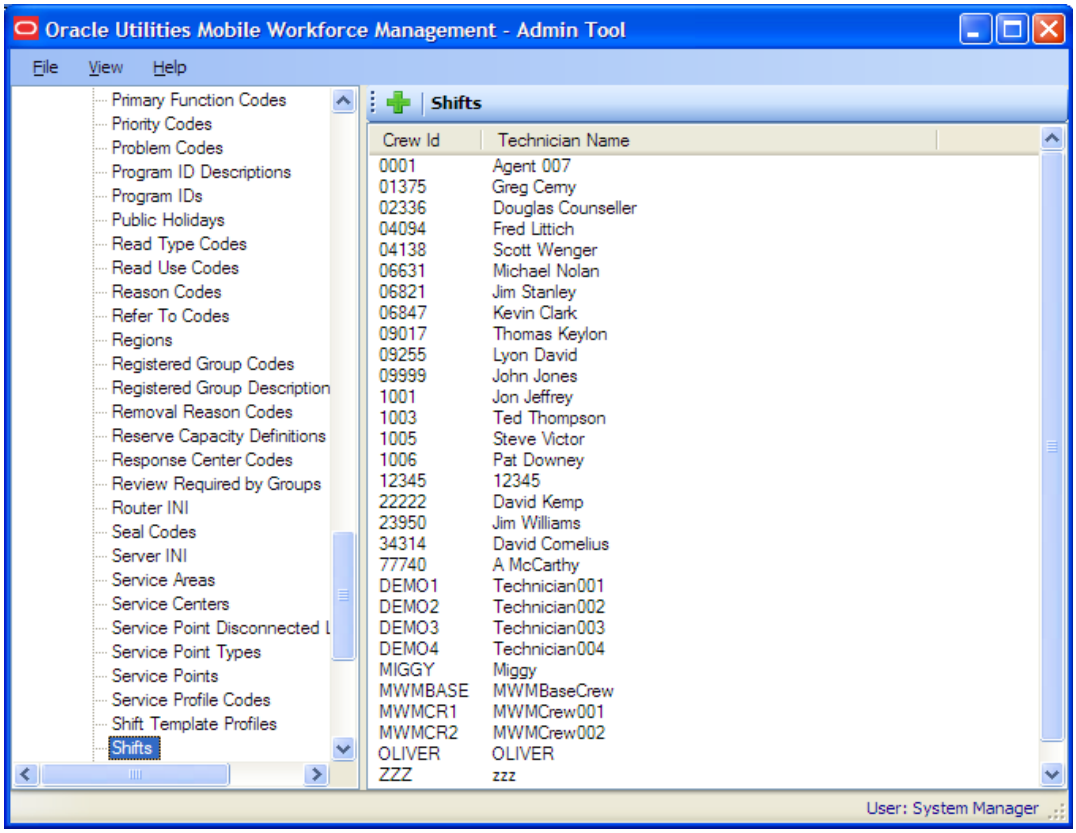
The following table shows where the data on the Shift Template Profile screen are mapped. In the case of a drop down list, it is the database column that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Profile ID		SHIFT_TEMPLATE_PROFILES:PROFILE_ID SHIFT_TEMPLATES:PROFILE_ID
Number of Weeks		SHIFT_TEMPLATE_PROFILES:NUM_WEEKS
Start Date		SHIFT_TEMPLATE_PROFILES:START_DATE
Template ID (not shown and not editable)		SHIFT_TEMPLATES:TEMPLATE_ID SHIFT_TEMPLATE_BREAK:SHIFT_TEMPLATE_ID
Shift Type		SHIFT_TEMPLATES:SHIFT_TYPE
Week Number (from calendar)		SHIFT_TEMPLATES:DAYS_APPLIED
Day of Week (from calendar)		SHIFT_TEMPLATES: DAYS_APPLIED
Jobs Limit		SHIFT_TEMPLATES:JOBS_LIMIT
Max Shift Length		SHIFT_TEMPLATES:MAX_SHIFT
Logon Location		SHIFT_TEMPLATES:LOGON_LOCATION
Logon Time		SHIFT_TEMPLATES:LOGON_TIME
Logon Delay		SHIFT_TEMPLATES:LOGON_DELAY
Logoff Location		SHIFT_TEMPLATES:_LOGOFF_LOCATION
Logoff Time		SHIFT_TEMPLATES:LOGOFF_TIME
Logoff Delay		SHIFT_TEMPLATES:LOGOFF_DELAY
Break Number (not editable)		SHIFT_TEMPLATE_BREAK:BREAK_NUM
Break Type		SHIFT_TEMPLATE_BREAK:BREAK_TYPE
Break Length		SHIFT_TEMPLATE_BREAK:LENGTH
Restrictions		SHIFT_TEMPLATE_BREAK:RESTRICTIONS
Break From		SHIFT_TEMPLATE_BREAK:BREAK_FROM
Break To		SHIFT_TEMPLATE_BREAK:BREAK_TO

Shift

A Shift defines the details of a single workday for a particular Crew. A Shift should be created (or generated by the scheduler) for each day that a Crew is working. Shift Breaks are specified time periods within a Shift during which the Shift may not carry out any work or travel between Stops.

Shifts and Shift Breaks are most often generated automatically by the scheduler based on the Shift Template Profile that is assigned to a Crew; however, there may be times when it is necessary for Shifts to be manually created, or for Shift details to be modified. In those cases, the Shift screen should be used.



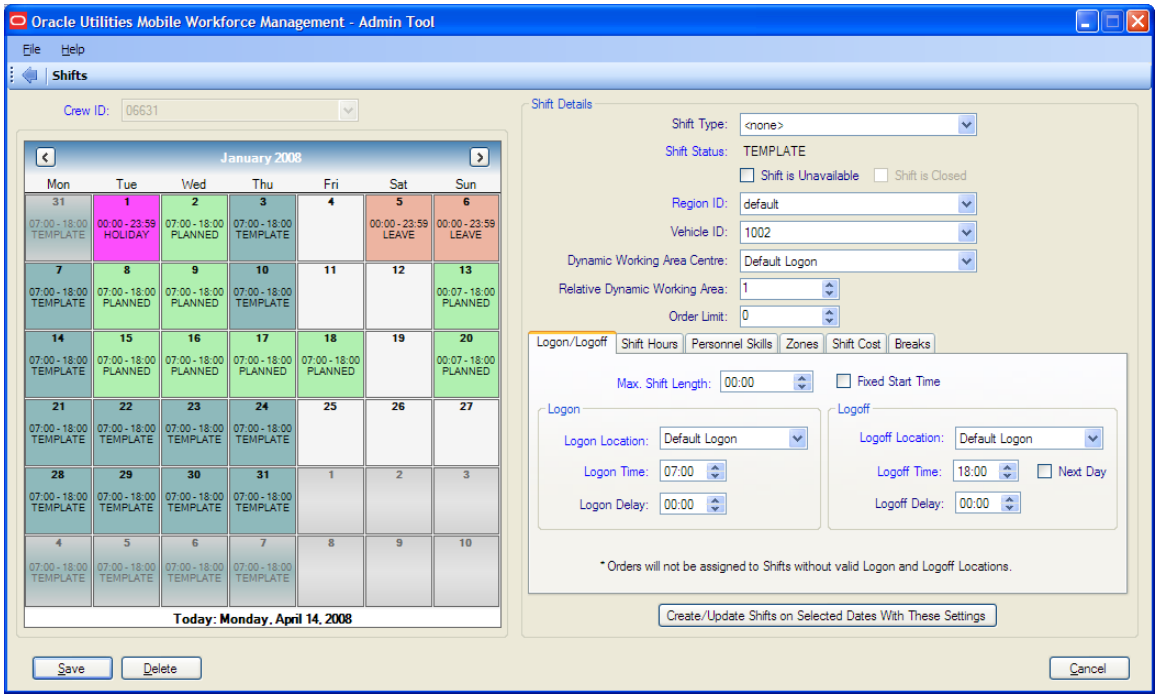
Shifts can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Shifts* in the Resource Panel. When *Shifts* is selected, existing Crew IDs are displayed in the Selection Panel. By default, the Crew ID and Technician Name are displayed for each Crew record.

Selecting a Crew from the list will display the Shifts screen, which is used to add, modify or delete Shifts and Shift Breaks for a particular Crew.

The Shift screen updates the Oracle Real-time Scheduler SHIFTS, SHIFT_BREAK and POSTBOX tables. The record written to this table depends on the action being performed: add, update, or delete.

Shift Function/Process Description

The Shift screen is used to create, edit and delete actual Shifts and Shift Breaks.



The Shift screen contains general information about the Shifts of a Crew. Selecting a date on the calendar results in details about that date's Shift being displayed on the right side of the screen. When a different date is selected, the data is updated to reflect the new selection. It also displays the public holidays and scheduled leaves for the Crew.

The Save and Delete buttons at the bottom of the form behave differently on this screen than on any other screen. When Save is selected, changes to all Shifts and Shift Breaks belonging to the selected Crew are saved to the database. When Delete is selected, all Shifts and Shift Breaks belonging to the selected Crew are deleted from the database (excluding Shifts that currently have orders assigned to them).

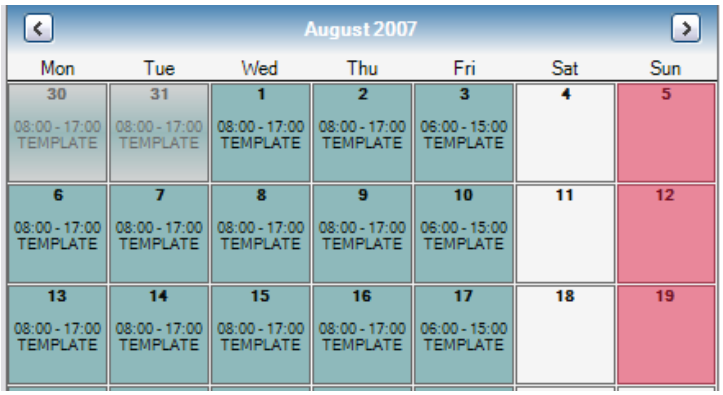
Calendar – Function/Process Description

The Calendar control on the left side of the screen shows all Shifts, Public Holidays, and Engineer Leaves on a Crew's schedule. Each date is shaded and labeled to give a quick overview of a Crew's Shifts.

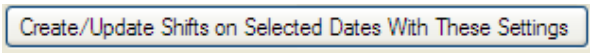
Creating / Editing Shifts

To view or edit the Shift details for a particular date, select the date on the calendar. The Shift Details on the right side of the screen will be updated with data for that date's Shift. However, shifts cannot be created for dates that are declared a leave. If the selected date falls on a scheduled leave, the Shift Details controls will be disabled, preventing the user from adding a shift. If the selected date falls on a holiday, a message will be displayed asking the user to confirm the action.

It is possible to create multiple, identical Shifts all at once by selecting any number of dates on the calendar and updating the Shift details. In the following figure, the user has selected 3 consecutive Sundays. The Shift details that are entered will be used to create identical Shifts for all 3 Sundays at the same time.



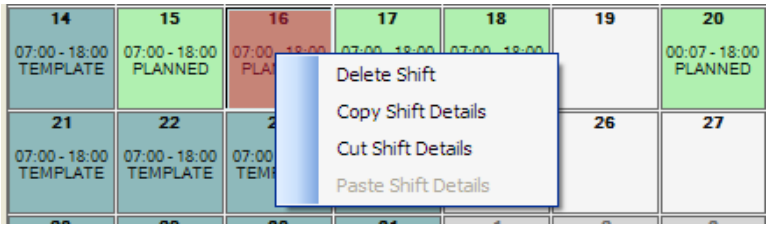
Once Shift details are updated for selected day(s), apply the changes by clicking the "Create…" button below the settings:



Clicking this button will save the changes to the calendar and store them in memory so that they may be saved later when the form's "Save" button is selected. When a user selects multiple dates with some dates falling on leaves, a message will be displayed informing the user that shifts will not be created for those dates. If some dates fall on holidays, a message will be displayed asking the user to confirm the action.

Deleting, Copying, Cutting and Pasting

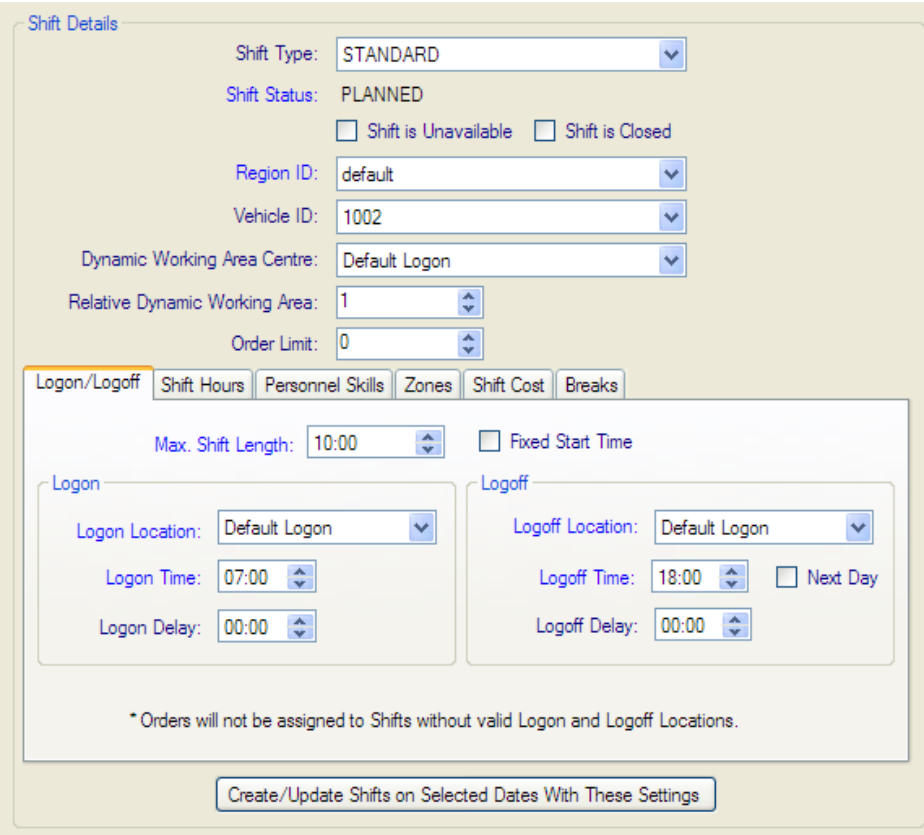
Shifts can also be copied/cut/pasted/deleted from the Calendar by selecting a date and right clicking with the mouse. A context menu will be displayed with all of the options available for that date.



1. **Delete**: The "Delete" option is offered for actual Shifts, and is shown whenever one or more dates are selected. This option will not be available if the selected dates do not have Shifts, falls on a leave, or if Shifts have not yet been generated (i.e. Templates).
2. **Copy**: The "Copy" option is offered when a single Shift is selected. Selecting this menu option will not modify the selected Shift, but will copy the Shift details to the clipboard so that they may be pasted onto other dates. This option will not be available if the selected dates do not have Shifts, falls on a leave, or if Shifts have not yet been generated (i.e. Templates).
3. **Cut**: The "Cut" option is offered when a single date with a Shift is selected. Selecting this menu option will delete the selected Shift and copy its Shift details to the clipboard so that they may be pasted onto other dates. This option will not be available if the selected dates do not have Shifts, falls on a leave, or if Shifts have not yet been generated (i.e. Templates).
4. **Paste**: The "Paste" option is offered whenever a Shift has previously been copied or cut and Shift details are on the clipboard. A paste may be performed on any date that doesn't fall on a scheduled leave, regardless of whether a Shift already exists on that date. If a Shift does exist, it will be overwritten. When a shift detail is pasted on a group of dates and some of those

dates fall on a leave, a message will appear saying that the dates that fall on a leave won't be pasted. If some of the dates fall on holidays, a message will be displayed asking the user to confirm the action.

Shift Details – Function/Process Description



The Shift Details portion of the screen is used to update all Shift details for a selected date (or dates). Scheduler documentation should be consulted for detailed descriptions of these settings, but an overview is provided here.

A Shift Type may be specified when setting up a Shift. Available Shift types are:

- Standard -The Shift commences at the log-on position and terminates at the log-off position.
- One Way -The Shift commences at the log-on position and terminates at the log-off position, but the total cost calculation for the Shift does not include the travel distance and time between the last stop and log-off stop.

Shift Status is automatically updated and cannot be updated from the Shift maintenance screen. The following Status values may be displayed:

- Inactive – Shift exists, but has been disabled
- Planned – Shift has been scheduled and now has a planned start and end time
- Started – Shift has started
- Completed – Shift if complete
- Template – Shift Template exists on this day
- Unused – Shift was planned but was not used
- Closed - Shift has been closed (**Shift is Closed** checkbox is checked)

Crew ID is populated with Crew IDs from the Oracle Utilities Mobile Workforce Management DHTCREW table, but only Crew IDs, which also appear in the Oracle Real-time Scheduler DRIVERS table, will be shown in the list. Region ID is populated with region ids (ID) from the Regions table. Dynamic Working Area Centre is populated with location ids from the Common Address table.

Vehicle ID is populated with ids (ID) from VEHICLES table. If no vehicle is to be used, set the vehicle id to <none>.

"Dynamic Work Areas" is a method of keeping Crews working as close as possible to a central point. The central point is defined as a Common Address. This can be configured for a Crew on the Crew Information screen, or can be set for a specific Shift on this screen. Each Shift for a Crew inherits the "Dynamic Work Area Centre" location and Relative Factor from the Crew unless those fields are modified for the Shift.

The "Relative Dynamic Work Area" value controls the size of a Shifts dynamic work area relative to the surrounding Shifts

For more information on Dynamic Work Areas, see related scheduler documentation.

Other Shift settings are group and displayed on tabs. Those are discussed further in the sections below.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Shift ID	ID of the Crew's Shift.	None
Crew ID	ID of the Crew assigned to the Shift.	None
Shift Date	Date of this Shift.	None
Vehicle ID	ID of the vehicle used by the Crew during this Shift. This will be the same vehicle associated with the Crew on the Crew Maintenance form.	None
Shift Type	Type of the Crew's Shift.	None
Shift Status	Status of the Crew's Shift. Set automatically – not editable.	None
Shift is Unavailable	Status of the Crew's Shift. Check to set the Shift status to 'INACTIVE'.	None
Shift is Closed	Determines if the Crew's Shift is closed or on going.	None
Region ID	The region of the Oracle Real-time Scheduler. This is used for partitioning purposes. Most installations will only have one region. This list is populated from the Oracle Real-time Scheduler:REGION_ID table.	None
Dynamic Working Area Centre	Location for the dynamic working area (see scheduler documentation for more information)	None

Field Name	Description	Data Constraints
Relative Dynamic Working Area	Relative factor applied to the travel time for the Shift (see scheduler documentation for more information)	Min: 0 Max: 9999.999
Jobs Limit	Max number of jobs a Crew can be assigned for this Shift.	Min: 0 Max: 999999999

Validation

Shift ID, Crew ID, Shift Date, Shift Status and Region ID are required fields. A Shift cannot be deleted if still being used by STOP_SCHED and STOP_SCHED_ARCHIVE tables.

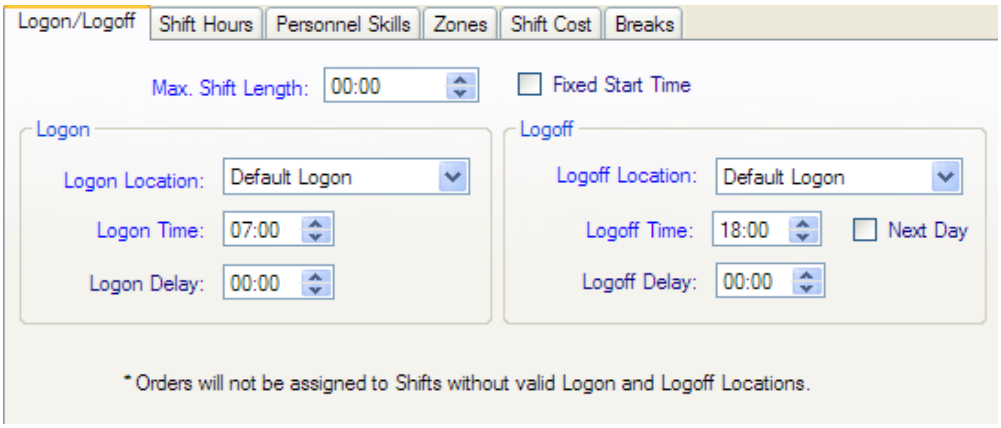
Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where data gets mapped:

Field Name	MWM Table:Column	ORS Table:Column
Shift ID		SHIFTS.SHIFT_ID
Crew ID		SHIFTS.DRV_ID
Shift Date		SHIFTS.SHIFT_DATE
Vehicle		SHIFTS.VEH_ID
Shift Type		SHIFTS.SHIFT_TYPE
Shift Status		SHIFTS.SHIFT_STATUS
Shift is Unavailable		SHIFTS.SHIFT_STATUS
Shift is Closed		SHIFTS.SHIFT_CLOSED
Region ID		SHIFTS.REGION_ID
Dynamic Working Area Centre		SHIFTS.DNMC_WA_CENTRE

Logon/Logoff Tab – Function/Process Description



The Logon/Logoff tab contains information regarding the Crew's logon and logoff time. The "Logon Location" and "Logoff Location" indicate the location where the Shift will begin and end, respectively. The "Logon Time" and "Logoff Time" define the Shift window (the time window within which the Shift must be started and completed). When "Fixed Start Time" is selected, "Max. Shift Length" is calculated automatically based on the difference between the logon and logoff times, and the scheduling application will only allow logon at the start of its time window (at the Logon Time). When "Fixed Start Time" is not selected, the scheduling application allows the Shift to find the optimal start time within its time window. The "Logon Delay" and "Logoff Delay" indicate the amount of time the Crew will spend logging on and logging off, respectively.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Max. Shift Length	Maximum length of time a Crew can work in this shift.	Max Shift Length cannot be longer than the shift window (defined by Logoff Time minus Logon Time)
Fixed Start Time	If selected, indicates that the shift must begin at the Logon Time. If this is selected, the Max Start Time will be Logoff Time minus Logon Time.	None
Logon Location	The location where Shift will begin. This list is populated based on the common address table.	Shifts will not be generated unless Logon and Logoff Locations are specified.
Logon Time	The beginning of a Shift window, indicating the earliest time that a Shift can begin. The sum of the Logon and Logoff Delays cannot exceed the available time of the shift.	Must be earlier than Logoff Time
Logon Delay	The amount of time the Shift will spend logging on	None
Logoff Location	The location where Shifts will end. This list is populated based on the common address table.	Shifts will not be generated unless Logon and Logoff Locations are specified.

Field Name	Description	Data Constraints
Logoff Time	The end of a Shift window, indicating the latest time that a Shift should end. Work done after this time is considered overtime.	Must be later than Logon Time
Next Day	Indicates that the logoff time is on the following day	None
Logoff Delay	The amount of time the Crew will spend logging off. The sum of the Logon and Logoff Delays cannot exceed the available time of the shift.	None

Validation

Logon Time and Logoff Time are required fields. Logon Location and Logoff Location are populated with location ids (LOCATION_ID) from the COMMON_ADDRESS table.

Logoff Time cannot be earlier than Logon Time.

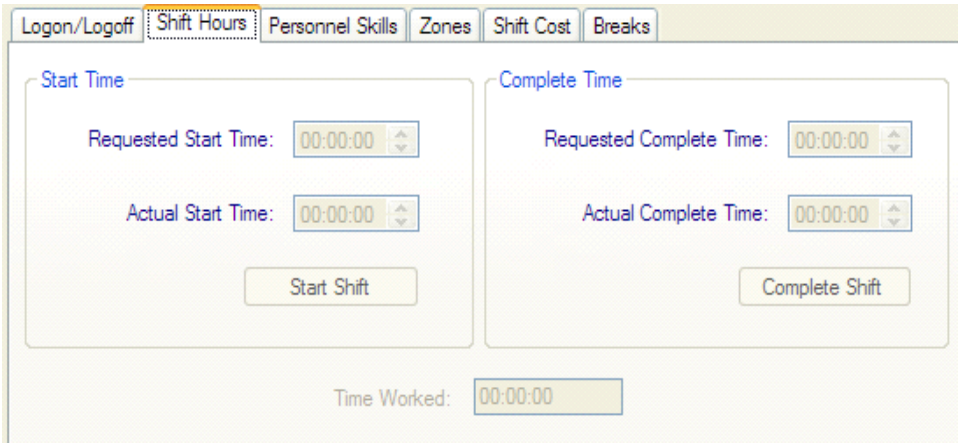
The sum of the Logon and Logoff Delays cannot exceed the available time of the shift.

Data Mapping

The following table shows where the data in the Crew Tab gets mapped:

Field Name	MWM Table:Column	ORS Table:Column
Max. Shift Length		SHIFTS.MAX_SHIFT
Fixed Start Time		SHIFTS.FIXED_START_TIME
Logon Location		SHIFTS.LOGON_LOCATION
Logon Time		SHIFTS.LOGON_TIME
Logon Delay		SHIFTS.LOGON_DELAY
Logoff Location		SHIFTS.LOGOFF_LOCATION
Logoff Time		SHIFTS.LOGOFF_TIME
Logoff Delay		SHIFTS.LOGOFF_DELAY

Shift Hours Tab – Function/Process Description



The Shift Hours tab contains information about the duration of a Crew's Shift. The Requested Start Time and Requested Complete Time are populated by the Scheduler and are initially set to "00:00:00". Time Worked is automatically computed based from the difference between Actual Start Time and Actual Complete Time.

The Actual Start Time and Actual Complete Time are the times in which the Shift was actually started and completed, respectively.

The Start Shift button starts a Shift by changing its status to "STARTED". The Complete Shift button ends a Shift and changes its status to "COMPLETED".

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Requested Start Time	The requested (planned) start time for the Crew's Shift. The scheduler sets this value once the Shift has been scheduled. It is not editable.	None
Actual Start Time	Actual logon time for the Shift. The scheduler returns this value once the Shift begins. It is not editable.	None
Requested Complete Time	The requested (planned) end time for the Crew's Shift. The scheduler sets this value once the Shift has been scheduled. It is not editable.	None
Actual Complete Time	Actual logoff time for the Shift. Scheduler returns this value once the Shift has ended. It is not editable.	None
Time Worked	Total time worked for the duration of the Shift. This is the length of time between the Actual Start Time and Actual Complete Time. This value is not editable.	None

Validation

Actual Start Time and Actual Complete Time are disabled when the Shift Status is "PLANNED" or "INACTIVE". Actual Start Time will be enabled when the Start Shift button is clicked and the Shift Status is set to "STARTED". Both actual times will be enabled when the Complete Shift button is clicked and the Shift Status is set to "COMPLETED".

When Shift Status is set to "STARTED", Actual Start Time is required. When Shift is "COMPLETED" both actual start time and actual complete time is required.

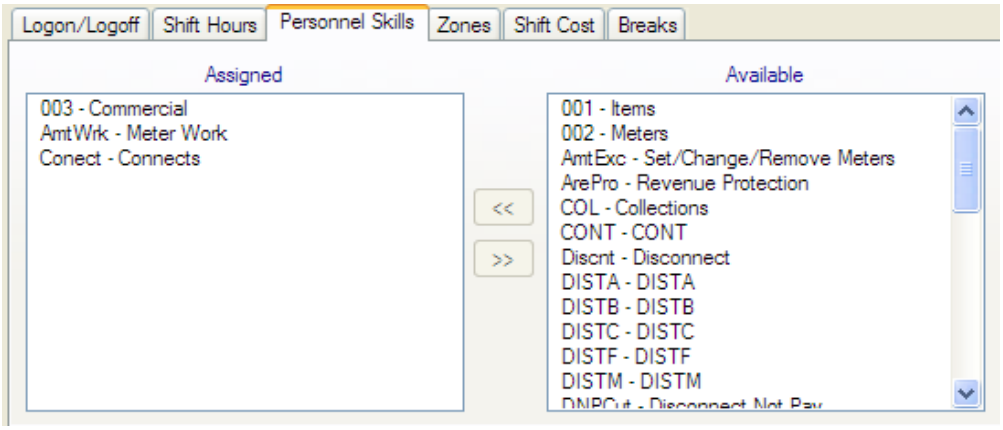
The sum of the Logon and Logoff Delays cannot exceed the available time of the shift.

Data Mapping

The following table shows where the data in the Crew Tab gets mapped.

Field Name	MWM Table:Column	ORS Table:Column
Requested Start Time		SHIFTS.REQ_START_TIME
Actual Start Time		SHIFTS.REQ_END_TIME
Requested Complete Time		SHIFTS.ACT_START_TIME
Actual Complete Time		SHIFTS.ACT_END_TIME
Time Worked		SHIFTS.WORK_TIME

Personnel Skills Tab – Function/Process Description



There are two interrelated lists on this Tab: "Assigned" and "Available". The "Available" skills are all of the Personnel Skills that the Crew assigned to this shift possesses. The "Assigned" list contains a list of Personnel Skills that are offered for this particular Shift (this is a subset of the "Available" skills).

To move skills back and forth between the "Available" and "Assigned" lists, select the item to be moved and click the appropriate button to move them.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned Personnel Skills	Lists the assigned Personnel Skills currently offered on this Shift.	This list can be empty. There is no limit to the number of skills that a Shift can be assigned.

Field Name	Description	Data Constraints
Available Personnel Skills	Lists all of the Personnel Skills belonging to this Shift's Crew that aren't in the Assigned list.	This list can be empty. There is no limit to the number of skills that a Shift's Crew may be assigned.

Validation

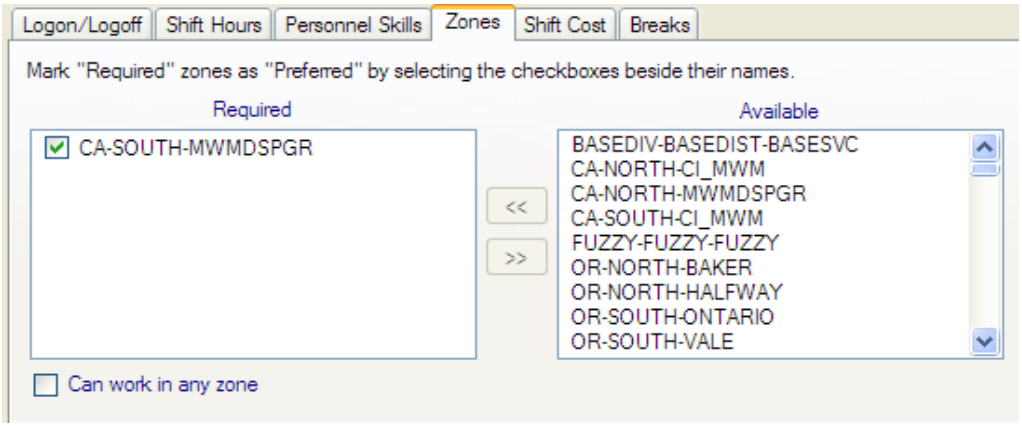
There is no validation on this tab, since skills are not required.

Data Mapping

The following table shows where the data on the Personnel Skills Tab are mapped.

Field Name	MWM Table:Column	ORS Table:Column
Assigned Personnel Skills		DRV_ATTRS:ATTRIBUTE
Available Personnel Skills		DRV_ATTRS:ATTRIBUTE

Zones Tab – Function/Process Description



The Zones tab contains information regarding zones where a Crew is to work for the duration of the Shift. These fields are optional. If no zones are specified, there is no constraint.

Shifts can have multiple "Required" and "Preferred" zones. Preferred zones are a subset of required zones. A Shift will only be assigned orders that are in the "Required" zone list. If preferred zones have been selected, Shifts will primarily be assigned orders in the preferred zones. Shift may be assigned orders, which lie outside the preferred zone(s), though, if the solution is efficient.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Required Zones	Zones where the Crew is requested to work for the duration of the Shift	By default Zones map to Service Areas (this is a configuration setting)

Field Name	Description	Data Constraints
Preferred Zones	Zones where the Crew prefer to work for the duration of the Shift	By default Zones map to Service Areas (this is a configuration setting)
Available Zones	All zones that have been assigned to the selected Crew	By default Zones map to Service Areas (this is a configuration setting)
Can work in any zone	Indicates that the orders in any zone can be assigned to this Shift (moves all "Available" zones into the "Required" zones list	None

Validation

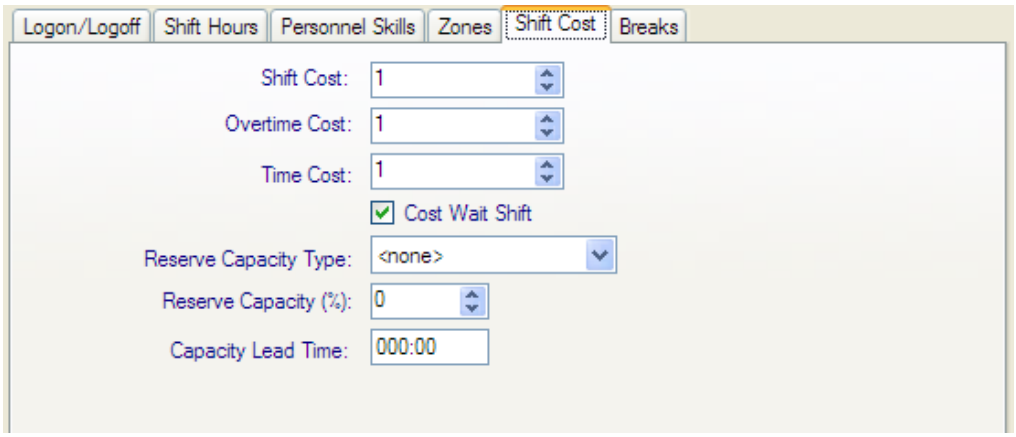
No validation is done for items on this tab.

Data Mapping

The following table shows where the data in the Zones Tab gets mapped:

Field Name	MWM Table:Column	ORS Table:Column
Zone Must		SHIFTS.ZONE_MUST
Zone Preference		SHIFTS.ZONE_PREF

Shift Cost Tab – Function/Process Description



The Shift Cost tab contains information about costs incurred during the Shift.

Costs ("Shift Cost", "Overtime Cost", "Time Cost") can be altered relative to the costs of other Shifts in the system. These costs can be varied to encourage or discourage the use of a particular Shift. Overtime, which is time worked outside a Shift window or maximum Shift length, can be discouraged by increasing the Shift's Overtime Cost. If this value is not set, then overtime will not be discouraged.

"Cost Wait Shift" enables or disables the idle-time costing of a Crew, which is weighted according to the "time from now" factor. The value is selected by default.

Reserve Capacity Type is the order type for which part of a shift is to be reserved. The percentage of the shift to be reserved is specified by "Reserve Capacity (%)". This ensures that advance bookings do not consume the entire Shift capacity, but reserves a percentage of its capacity to

service hi-priority orders that may be generated later. For example, installation orders are booked well in advance, but Shift capacity to service emergency and other hi-priority orders that need immediate attention must be maintained.

If a Shift is assigned an order, which matches its Reserve Capacity Type, part of the reserve will be used. For orders, which do not match, capacity will simply remain unused.

Reserve Capacity is cost for each second that reserve capacity is less than specified in the "Reserve Capacity (%)" field.

The "Capacity Lead Time" tells the scheduler when to release the reserved capacity. All reserved capacity will be released before the start of the Shift. The "Lead Time" is an offset from the Shift's start time, indicating that the Shift's reserve capacity will be released this many hours before the scheduled start of the Shift. It is not possible to delay the release of reserved capacity until after the start of the Shift.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Shift Cost	Relative cost for activating this Shift.	Min: .01 Max: 100.00
Overtime Cost	Relative cost when calculating the overtime cost for this Shift.	Min: .01 Max: 100.00
Time Cost	Relative time cost for using this Shift.	Min: .01 Max: 100.00
Cost Wait Shift	Specify that cost incurred upon waiting for the Shift to start.	None
Reserve Capacity Type	The Field Order Type that some fraction of the Shift is to be reserved for. This is a list of all existing Field Order Types.	None
Reserve Capacity	The portion of the Shift to be reserved for the order type specified by Reserve Capacity Type. No capacity is reserved when this value is 0, and the whole Shift's capacity is reserved if it is 100.	Min: 0 Max: 100
Capacity Lead Time	The time period from the Shift's start time after which the reserved capacity will be released. If it is not specified, then the reserved capacity is not released.	None

Validation

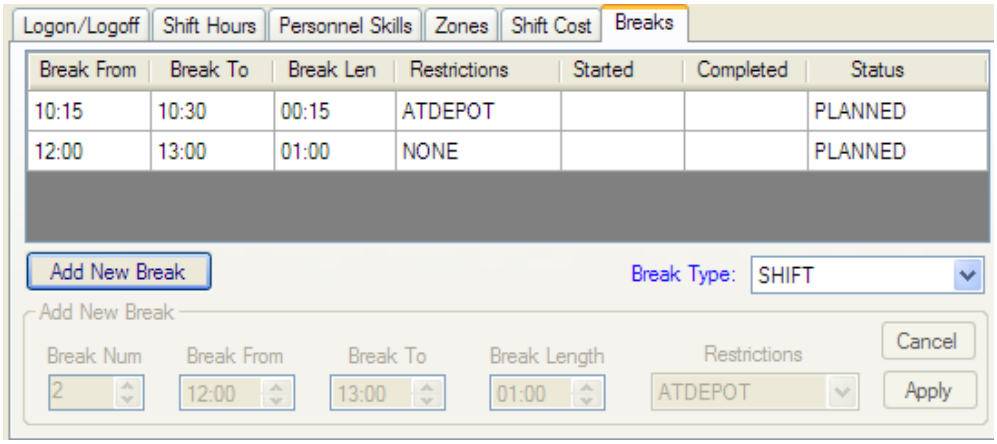
Basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Crew Tab gets mapped.

Field Name	MWM Table:Column	ORS Table:Column
Shift Cost		SHIFTS.SHIFT_COST
Overtime Cost		SHIFTS.OVERTIME_COST
Time Cost		SHIFTS.TIME_COST
Cost Wait Shift		SHIFTS.COST_WAIT_SHIFT
Reserve Capacity Type		SHIFTS.RESERVE_CAPACITY_TYPE
Reserve Capacity		SHIFTS.RESERVE_CAPACITY
Capacity Lead Time		SHIFTS.CAPACITY_LEAD_TIME

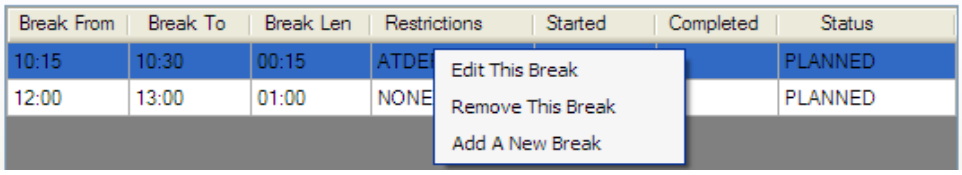
Breaks Tab – Function/Process Description



The Breaks tab displays a list of all Breaks belonging to a Shift.Breaks are optional, defining idle periods of rest time associated within a Shift. A Shift can have up to 8 breaks assigned to it.

The break time window (defined by the "Break From" and "Break To" times) is used by the scheduling application to schedule breaks at the most efficient position in the Shift.

A new Break can be added to a Shift by clicking the "Add New Break" button, which activates the controls at the bottom of the tab. Breaks can also be edited by selecting a row in the table, then right-clicking and selecting "Edit This Break" from the drop-down menu. This will populate the fields at the bottom of the tab with the selected break's data, and enable the controls so that the values may be edited.



After Break details have been updated, click the "Apply" button to save the changes and update the list of Shift Breaks. To abort the add/edit operation, click the "Cancel" button.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Break Type	The type of break for that Id. Break type can be "Shift", "Logon", "Elapsed" or "Drive".	All breaks belonging to the same Shift must be of the same type.
Break Length	The desired length of the Shift breaks, in hours and minutes.	Min: 00:00 Max: 23:59
Restrictions	This can be either "None" or "At Depot". Selecting "At Depot" indicates that the break is only to be taken at the Depot.	None
Status	In add mode, this will always be PLANNED. This value will be updated by the application if/when the break's status changes. This value is never editable – it is only displayed for informational purposes.	None
Break From	Start of the break window (the earliest time a break should be scheduled to begin).	24-hr time "From" value must be earlier than "To" time
Break To	End of the break windows (the latest time that a break should be scheduled to end)	24-hr time "To" time must be later than "From" time
Start Time	Actual start of break. This time is set automatically, and is for display purposes only. It cannot be modified.	24-hr time
Complete Time	Actual end of break. This time is set automatically, and is for display purposes only. It cannot be modified.	24-hr time

Validation

All Breaks belonging to the same Shift must be of the same Break Type. Break From must be earlier than Break To, and the break window (hours between From and To times) must not overlap with other breaks belonging to the same Shift. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

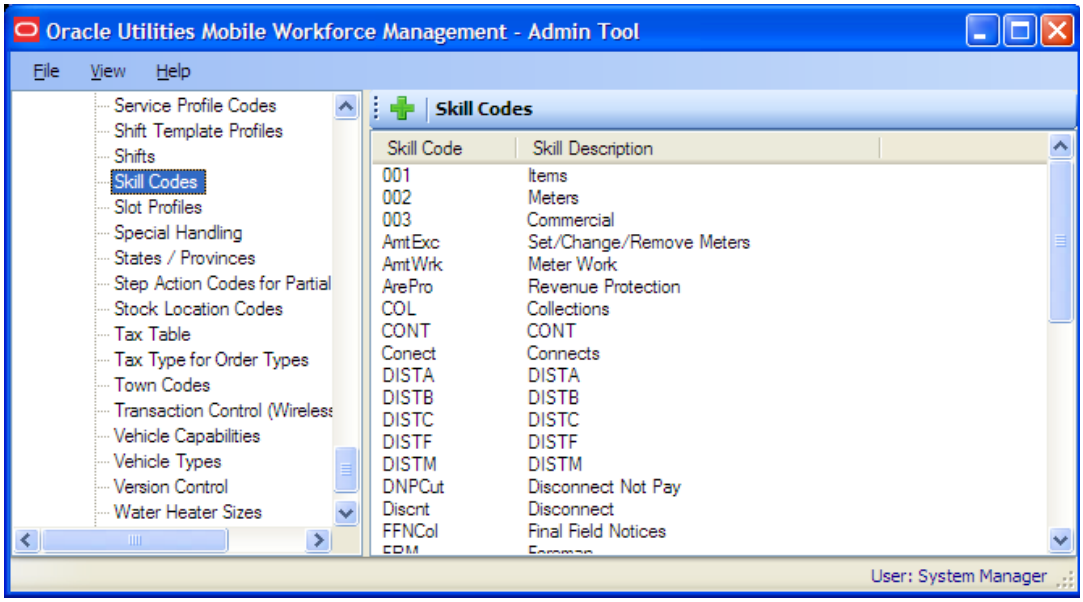
Data Mapping

The following table shows where the data on the Shift Break screen are mapped. In the case of the drop down list, it is the data base column that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Break ID (not shown and not editable)		SHIFT_BREAK:BREAK_ID
Shift ID (not shown and not editable)		SHIFT_BREAK:SHIFT_ID

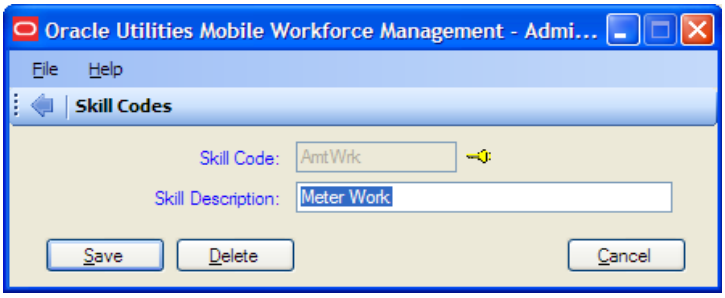
Field Name	MWM Table:Column	ORS Table:Column
Break Number (not shown and not editable)		SHIFT_BREAK:BREAK_NUM
Break Type		SHIFT_BREAK:BREAK_TYPE
Break Length		SHIFT_BREAK:LENGTH
Restrictions		SHIFT_BREAK:RESTRICTIONS
Status		SHIFT_BREAK:STATUS
Break From		SHIFT_BREAK:BREAK_FROM
Break To		SHIFT_BREAK:BREAK_TO
Start Time		SHIFT_BREAK:START_TIME
Complete Time		SHIFT_BREAK:COMPL_TIME

Skill Codes



Skill Information can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Skill Codes* in the Resource Panel. When *Skill Codes* is selected, existing Skill Code records are displayed in the Selection Panel. By default, the Skill Code and corresponding Skill Description are displayed for each skill in the Oracle Utilities Mobile Workforce Management system. The Skill Codes maintenance screen is then used to add, view, delete or modify a skill.

Function/Process Description



Skills can be defined and assigned to personnel. The definition of the skill takes place on this form. The assignment of a skill to a person takes place on the Person form under Resource Maintenance.

To define a skill the user must supply a Skill Code for the skill being defined in the Skill Description. The Skill Code is simply shorthand for the skill being defined. Note that skills are analogous to driver attributes in Oracle Real-time Scheduler and that this form also updates the Oracle Real-time Scheduler database accordingly.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Skill Code	The code assigned to the skill being defined in the Skill Description field.	None
Skill Description	The description of a skill that a person may possess.	None

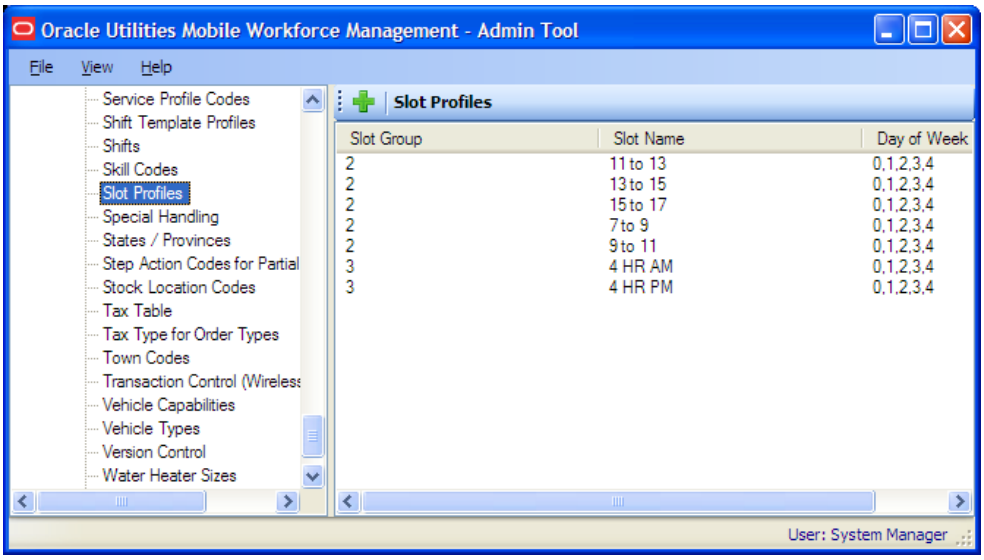
Validation

Skill Code is a required field. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

Field Name	MWM Table:Column	ORS Table:Column
Skill Code	DHTSKILL:SKILL_CODE	DRV_ATTR_DEFS:ATTRIBUTE
Skill Description	DHTSKILL:SKILL_DESC	

Slot Profile

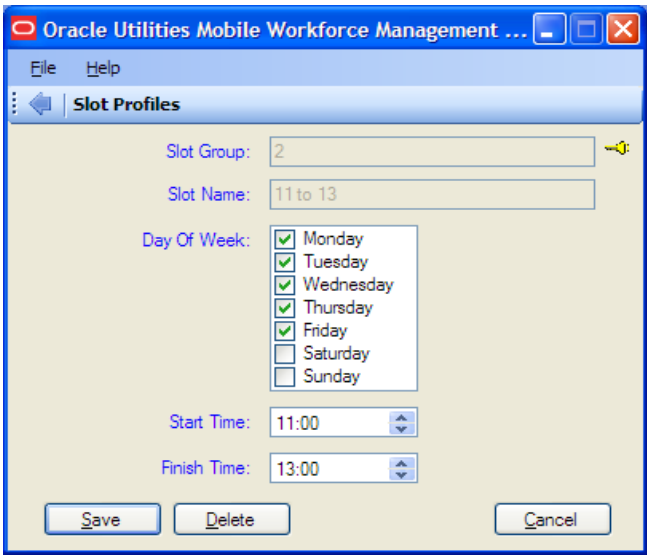


Slot Profiles can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Slot Profile* in the Resource Panel. When *Slot Profile* is selected, existing Slot Profile records are displayed in the Selection Panel. By default, the Slot Group, Slot Name and Day of Week are displayed for each Slot Profile record.

The Slot Profile maintenance screen is used to add, view, modify or delete a Slot Profile record.

A corresponding Postbox record in the Oracle Real-time Scheduler Database is created for every updated, created or deleted Slot Profile record.

Function/Process Description



The Slot Profile maintenance screen contains information on the schedule of a specific slot Profile. The Active Slot records reference the Slot Profile records.

When a user adds a slot Profile, both the "Slot Group" and "Slot Name" are blank initially. Both of these fields must be populated. Sunday is the default "Day Of Week", and both the "Start Time" and "Finish Time" are defaulted to 00:00.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Slot Group	Part of the ID of the slot Profile being maintained. This field is only enabled in Add mode.	None
Slot Name	Name of the slot Profile that usually describes the start time and end time. This is also part of the ID and only enabled in Add mode.	None
Day of the Week	The days in which this slot Profile is applicable. More than one day can be selected. This defaults to Sunday on a new record.	None
Start Time	This is the starting time for this slot Profile	24-hr time format
Finish Time	This is the ending time for this slot Profile	24-hr time format

Validation

All the fields are required. A slot Profile must have one Day of Week selected.

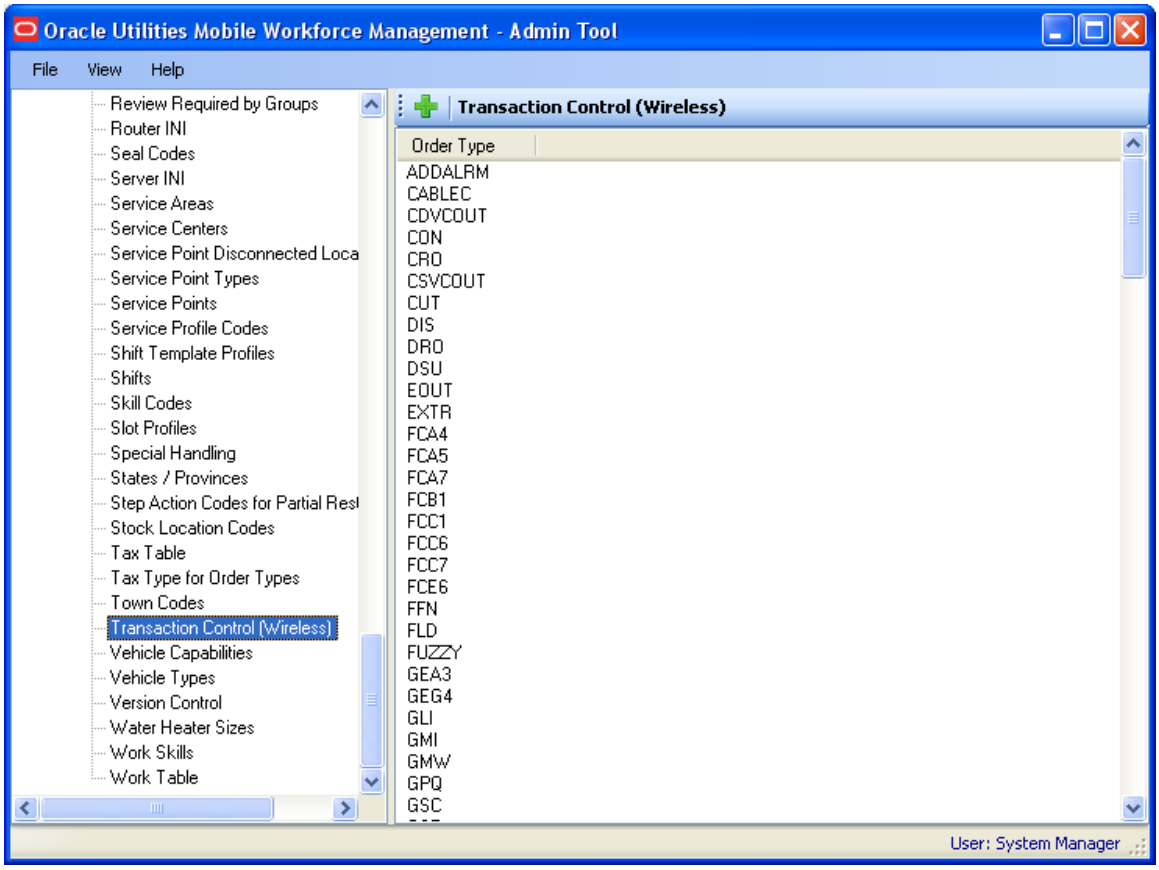
Start Time should always be less than the End Time. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data on the Slot Profile screen gets mapped:

Field Name	MWM Table:Column	ORS Table:Column
Slot Group		SLOT_PROFILE:SLOT_GROUP
Slot Name		SLOT_PROFILE:SLOT_NAME
Day Of Week		SLOT_PROFILE:DAY_OF_WEEK
Start Time		SLOT_PROFILE:START_TIME
Finish Time		SLOT_PROFILE:FINISH_TIME

Transaction Control (Wireless)

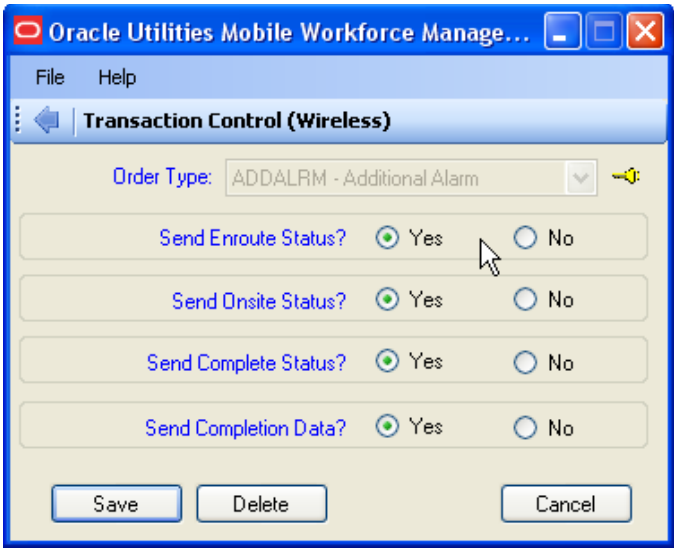


Transaction Controls can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Transaction Control (Wireless)* in the Resource Panel. When *Transaction Control (*Wireless*)* is selected, existing Transaction Control records are displayed in the Selection Panel. By default, Order Type is displayed for each Transaction Control record.

The Transaction Control maintenance screen is used to add, view, modify or delete a Transaction Control record.

The DW application will update the transaction control table (DHTTRCTL) in the database directly. The DW application will also update the version number of the transaction control table in the table versions database table and generate a trigger record in the table update table.

Function/Process Description



The Transaction Control screen allows the user to set the send status for a specific field order. "Send Enroute Status", "Send Onsite Status", "Send Complete Status", and "Send Completion Status" can either be set to "Yes" or "No".

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Order Type	The field order type (this list is populated with all available Field Order Types).	None
Send Enroute Status?	The enroute status for the field order selected. "No" is the default value.	None
Send Onsite Status?	The onsite status for the field order selected. "No" is the default value.	None
Send Complete Status?	The complete status for the field order selected. "No" is the default value.	None
Send Completion Status?	The completion status for the field order selected. "No" is the default value.	None

Validation

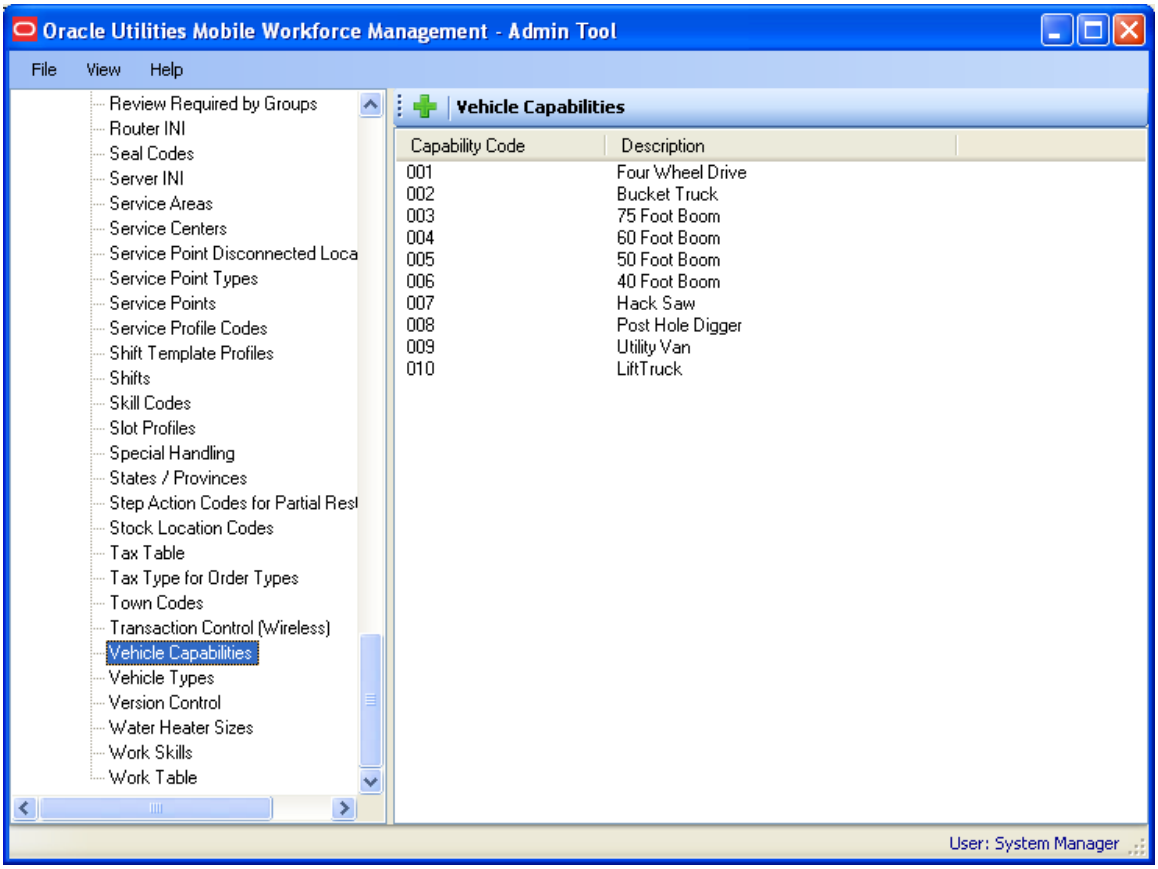
All fields are required.

Data Mapping

The following table shows where the data in the Transaction Control screen gets mapped:

Field Name	MWM Table:Column	ORS Table:Column
Order Type	DHTTRCTL:FO_TYPE	
Send Enroute Status?	DHTTRCTL:SEND_ENROUTE	
Send Onsite Status?	DHTTRCTL:SEND_ONSITE	
Send Complete Status?	DHTTRCTL:SEND_COMPLETE	
Send Completion Status?	DHTTRCTL:SEND_CMPL_DATA	

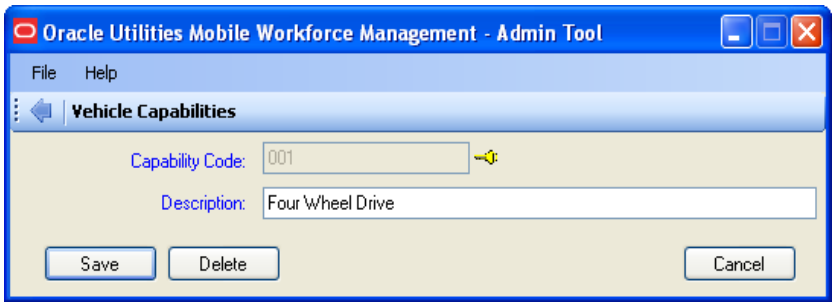
Vehicle Capabilities



Vehicle Capabilities can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Vehicle Capabilities* in the Resource Panel. When *Vehicle Capabilities* is selected, existing Vehicle Capability records are displayed in the Selection Panel. By default, the Location ID, Vehicle Capability 1, City, State, and Postal Code are displayed for each Vehicle Capability record.

The Vehicle Capabilities maintenance screen is used to add, view, modify or delete a Vehicle Capability record.

Function/Process Description



The Vehicle Capabilities screen contains the code and description of a vehicle capability. In this screen, the user can add a new vehicle capability, or view, update or delete an existing record.

Records created in this function may be used when creating records for vehicle types.

This maintenance screen will update the Oracle Utilities Mobile Workforce Management and Oracle Real-time Scheduler databases directly. The Vehicle Capabilities screen updates DHTVCAPC, DHTTBVER and DHTTBUPD out of the Oracle Utilities Mobile Workforce Management database. It also updates VEH_ATTR_DEFS and VEH_ATTRS out of the Oracle Real-time Scheduler database.

When the vehicle attribute is modified via an add, update or delete, the version number of the vehicle attribute table will be updated in the table versions table (DHTTBVER). A trigger record is inserted in into the table update table (DHTTBUPD).

The Server will read the record from the table update table. The contents of the updated table are read from the database and serialized to the hard drive. The Server will create an updated table data transaction containing the updated records (based on the version number of the table) and forward the transaction to all other logged on DW users for processing.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Capability Code	Id code used to represent this vehicle capability. This field is only enabled in add mode.	None
Description	A simple description about the vehicle capability	None

Validation

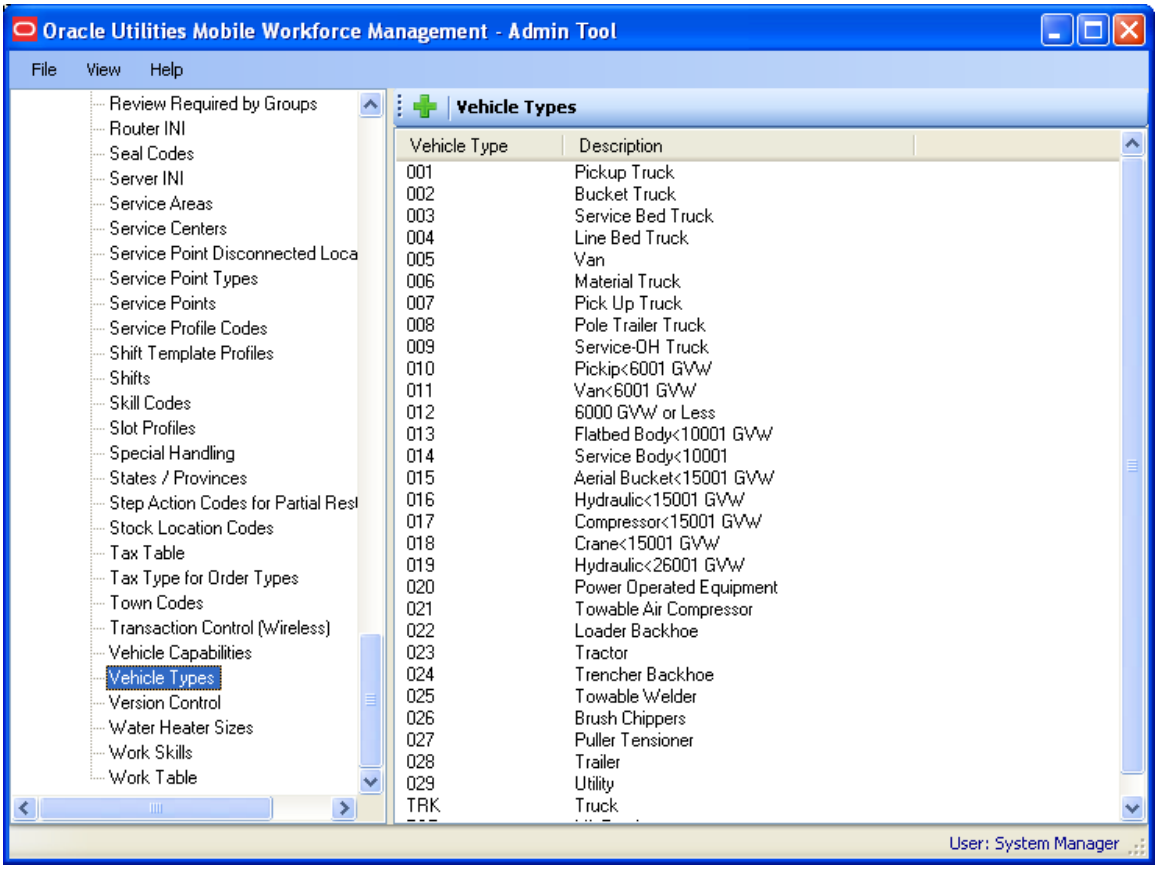
Both "Capability Code" and "Description" are required fields. In the Oracle Real-time Scheduler database, the "Description" field is the only field in the table as well as its primary key. Because of this, vehicle capability description has to be unique, as well as the Capability Code. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Vehicle Capabilities gets mapped.

Field Name	MWM Table:Column	ORS Table:Column
Attributes Code	DHTVCAPC.VEHICLE_CAPABILITY	
Description	DHTVCAPC.CAPABILITY_DESC	VEH_ATTR_DEFS.ATTRIBUTE

Vehicle Type



Vehicle Types can be modified via the Admin Tool by selecting *Resources-Table Maintenance-Vehicle Types* in the Resource Panel. When *Vehicle Types* is selected, existing Vehicle Type records are displayed in the Selection Panel. By default, the Vehicle Type and Description are displayed for each Vehicle Type record.

The Vehicle Type maintenance screen is used to add, view, modify or delete a Vehicle Type record.

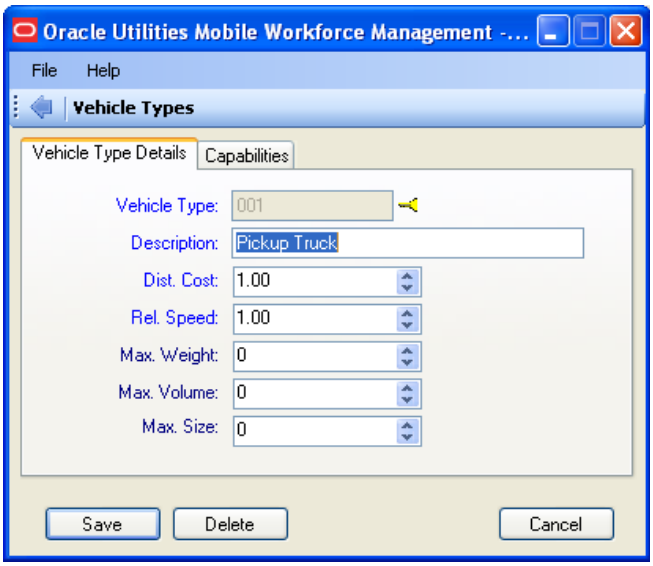
The Vehicle Type screen allows the user to maintain vehicle type records. Records created here are used by the Vehicle screen to give more detailed information about a vehicle.

The application will update the Oracle Utilities Mobile Workforce Management database directly. The Vehicle Type screen updates the DHTVHTYP, DHTVTYPC, DHTTBVER, and DHTTBUPD out of the Oracle Utilities Mobile Workforce Management database. It also updates the VEH_CLASSES out of the Oracle Real-time Scheduler database.

When the vehicle type is modified via add, update or delete, the version number of the vehicle type table will be updated in the table versions table (Oracle Utilities Mobile Workforce Management: DHTTBVER). A trigger record is inserted in into the table update table (Oracle Utilities Mobile Workforce Management: DHTTBUPD).

The Server will read the record from the table update table. The contents of the updated table are read from the database and serialized to the hard drive. The Server will create an updated table data transaction containing the updated records (based on the version number of the table) and forward the transaction to all other logged on DW users for processing.

Vehicle Type Details – Function/Process Description



The Vehicle Type Details tab contains general information about the vehicle type including cost, speed and maximum dimensions of vehicles that falls under this category.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Vehicle Type	Id of the vehicle type being maintained. This field is only enabled in add mode.	None
Description	A simple description about this type of vehicle	None
Distribution Cost	Distribution Cost of this type of vehicle	Max value: 100 Min value: 0.01
Relative Speed	Relative Speed of this type of vehicle	Max value: 100 Min value: 0.01
Maximum Weight	Maximum Weight of this type of vehicle	Max value: 10000000000 Min value: 0
Maximum Volume	Maximum Volume of this type of vehicle	Max value: 10000000000 Min value: 0
Maximum Size	Maximum Size of this type of vehicle	Max value: 10000000000 Min value: 0

Validation

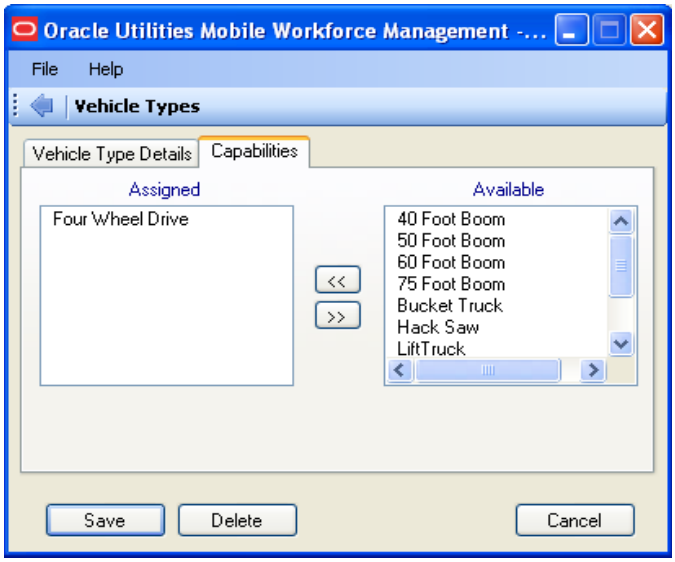
Both "Vehicle Type" and "Description" are required fields. Additionally, basic validation is done against masks (where applicable) and regular expressions provided in the metadata XML file.

Data Mapping

The following table shows where the data in the Vehicle Type Details tab are mapped:

Field Name	MWM Table:Column	ORS Table:Column
Vehicle Type	DHTVHTYP.VEHICLE_TYPE_CD	VEH_CLASSES.VEH_CLASS
Description	DHTVHTYP.VEHICLE_TYPE_DESC	VEH_CLASSES.DESCRIPTION
Distribution Cost		VEH_CLASSES.RUNCOST
Relative Speed		VEH_CLASSES.RELSPEED
Maximum Weight		VEH_CLASSES.MAX_WEIGHT
Maximum Volume		VEH_CLASSES.MAX_VOLUME
Maximum Size		VEH_CLASSES.MAX_SIZE

Capabilities – Function/Process Description



The Capabilities tab controls the assignment of capabilities to a vehicle. Items listed in the "Available" list box are the ones created in the Vehicle Capabilities screen.

"Available" list box is populated by Vehicle Capabilities from the vehicle capability (DHTVCAPC) table.

To assign Vehicle Capabilities, highlight the desired attribute in the "Available" list and press the "<<" button between the "Assigned" and "Available" list boxes. The selected capability will be moved from the "Available" list to the "Assigned" list. To unassign a capability, highlight the capability in the "Assigned" list and press the ">>" button to move the selected item to the "Available" list. Multiple capabilities can be moved from one list to another at the same time. Simply select the desired capabilities and press the "<<" or the ">>" button

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
Assigned	Contains a list of the attributes/capabilities currently assigned to the vehicle type being maintained.	None
Available	Contains a list of the attributes/capabilities available but not currently assigned to the vehicle type being maintained.	None

Validation

None required.

Data Mapping

The following table shows where the data in the Capabilities Tab are mapped. In the case of the Available list box it is the database table that populates the list box.

Field Name	MWM Table:Column	ORS Table:Column
Assigned	DHTVTYPC.VEHICLE_CAPABILITY	
Available	DHTVCAPC.CAPABILITY_DESC	

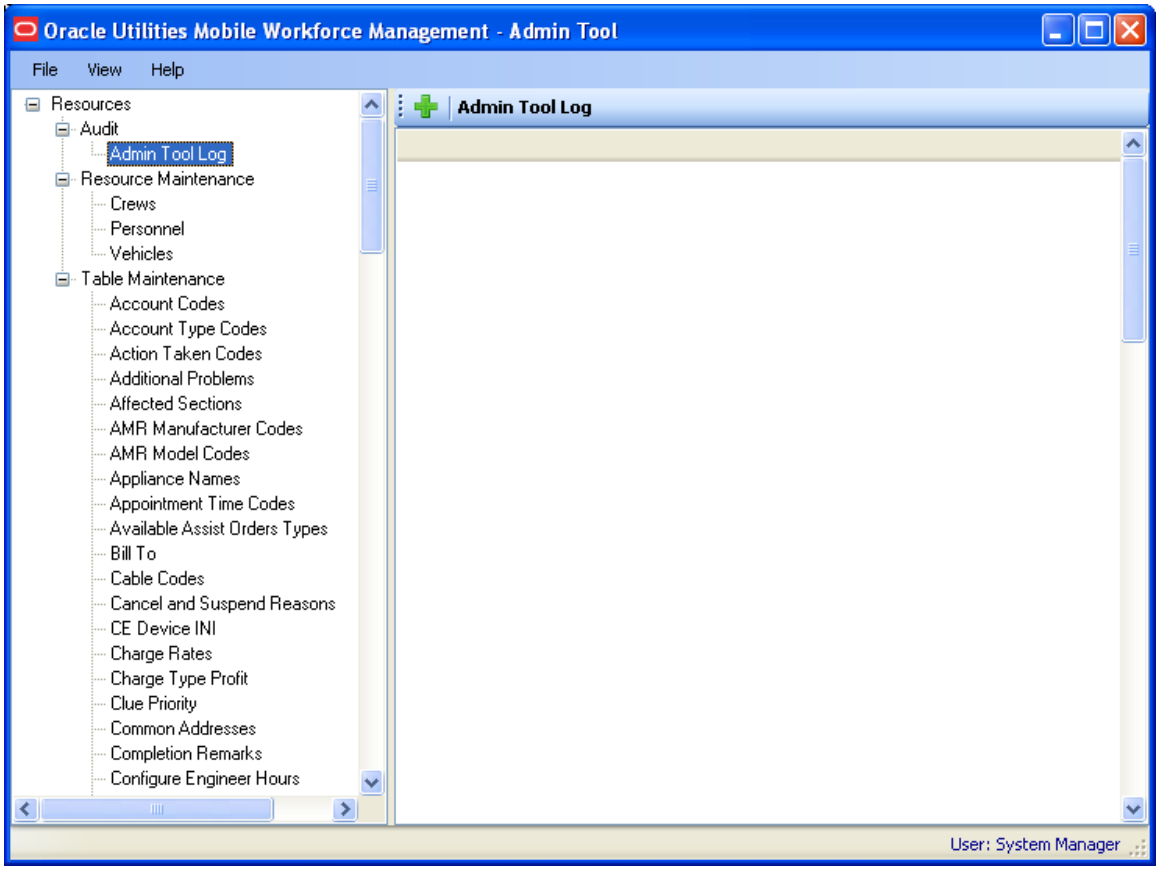
Chapter 4

Admin Tool Audit Log

Admin Tool Log

The Admin Tool Log form is used to view an audit trail of the changes made by admin tool users.

The Admin Tool Log can be viewed via the Admin Tool by selecting *Resources-Audit-Admin Tool Log* in the Resource Panel. When *Admin Tool Log* is selected, the user is taken directly to the Admin Tool Log form.

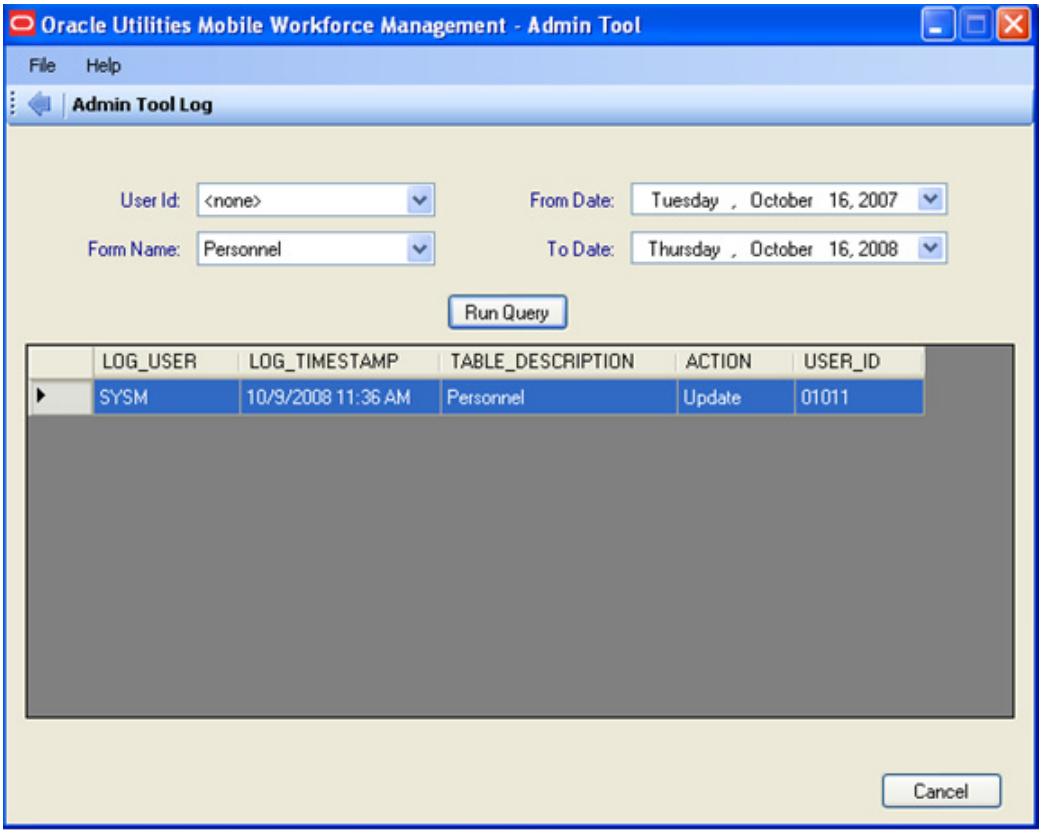


Function/Process Description

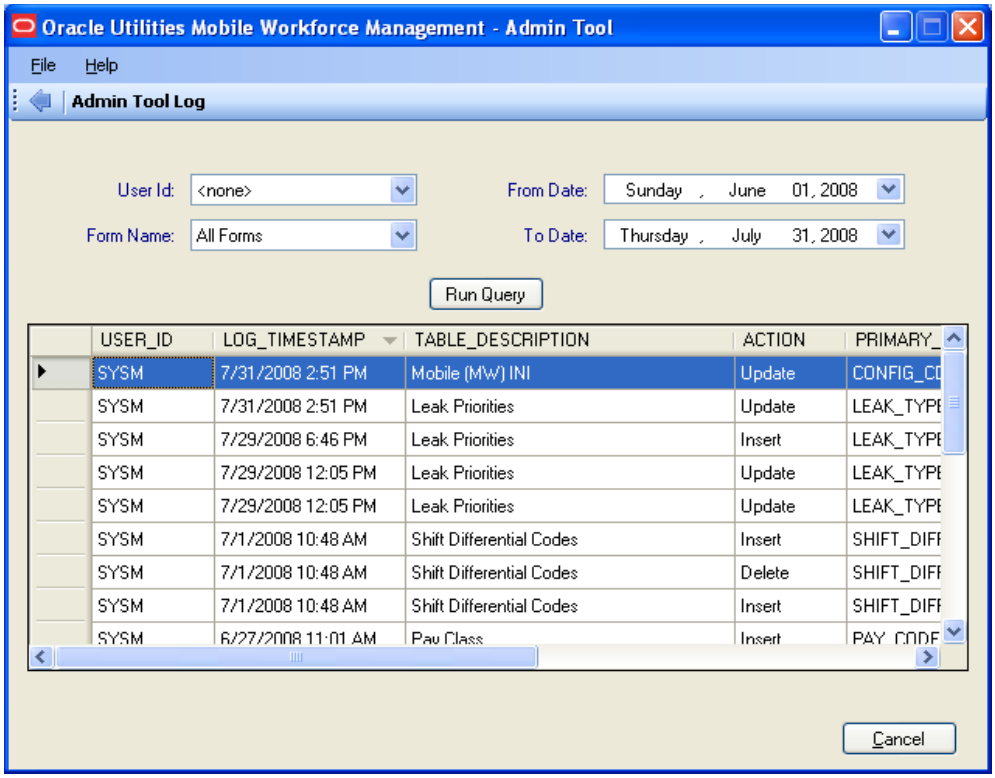
The Admin Tool Log form is used to view an audit trail of changes made by the Admin Tool. The drop-downs at the top of the screen are used to select which audit records to view. You can specify a user ID and a range of dates during which changes were made. You can also select a specific

Admin Tool form or view logs for all forms. When you click the Run Query button, the middle section of the form displays the associated audit records. It shows who made the change, the date/time the change was made, the table that was changed, the action (create, update, etc.), and the key values of the table that were changed. If the form changed multiple tables, then the key values of the main table are displayed. If All Forms is selected from the Form Name drop-down, all primary keys are displayed in a single column with both the database field names and values.

The following shows the Admin Tool Log screen when a single form, Mobile (MW) INI, is selected:



The following shows the Admin Tool Log screen when All Forms is selected from the Form Name drop-down



This screen reads from the DHTATLOG table.

Data Fields

Data fields are described below:

Field Name	Description	Data Constraints
User Id	The user who made the change.	<none> is a valid selection here.
Form Name	The form that was changed. If All Forms is selected, logs for all forms are displayed.	To prevent an abnormal amount of rows from being returned a form must be selected and the drop-down enforces this.
From Date	This field, along with To Date, function as a date range while querying for audit records.	None
To Date	This field, along with From Date, function as a date range while querying for audit records.	Choices are “Required”, “Optional”, and “Disable”. The default is “Disable”.

Validation

No validation is done on this form because all of the data is entered through either drop-downs or date pickers.

Data Mapping

The following table shows where the data in this screen is mapped:

Field Name	MWM Table:Column	ORS Table:Column
User Id	DHTPERS.USER_ID	
Form Name	Taken from the Resource Manager XML file.	
From Date	None	
To Date	None	
USER_ID	DHTATLOG.USER_ID	
LOG_TIMESTAMP	DHTATLOG.LOG_TIMESTAMP	
TABLE_DESCRIPTION	Taken from Resource Manager XML file. Derived from DHTATLOG.TABLE_NAME	
ACTION	DHTATLOG.ACTION	
PRIMARY_KEYS	DHTATLOG.PRIMARY_KEYS	

Appendix A

Admin Tool Metadata

This appendix describes the metadata file used by the Admin Tool for data validation. It includes the following topics:

- **Overview**
- **The Metadata Document**
- **Column-Specific Metadata**
- **Using the CreateXML Tool**
- **Sample Metadata Table**

Overview

The Admin Tool uses a single metadata file that allows users to externally configure the way the application displays and validates table data. Metadata is data about data. External configuration files have many benefits; however, if configured badly they can lead to serious runtime errors. The Admin Tool design attempts to minimize external configuration errors by supplementing configuration data with runtime data obtained from the database's system tables.

Admin Tool functionality is enforced by (1) querying actual table values (such as primary key, data type, size, and nullability) in the database system tables and (2) through table metadata obtained from an XML format configuration file. In the case of a conflict between system data and configuration data, system data wins.

The Admin Tool is a Microsoft .NET application. The .NET Frameworks are designed for global multi-language deployment; .NET is fully Unicode-enabled. The Admin Tool's metadata file is also designed to be globalized, i.e. translated into multiple languages. This is the reason for the naming convention used by the Admin Tool's metadata file.

In the United States, the Admin Tool's external configuration file is named "ResourceManager-en-US.xml". The "en-US" portion of this file name is important. The "en" portion represents the Region ("English") and the "US" portion represents the Locale ("United States"). This is the Microsoft globalization naming convention known as a "region-locale" pair. For example, a French-Canadian region-locale pair is named "fr-CA". When using a Microsoft operating system, this region-locale pair can be found on the user's machine; multiple users on the same machine can have different settings. This value controls many settings: the manner in which date and currency values are displayed, runtime error messages, sorting, fonts, keyboard mapping, and language-specific characteristics. In some countries, it can change the way data is displayed, from left-to-right displays to right-to-left displays.

Regardless of the country the Admin Tool is deployed in, a "ResourceManager-en-US.xml" file must be present. This is the default, or fallback, external globalization file for the Admin Tool application. Other configuration files may be present in the same directory. Using the French-

Canadian example, there may be a "ResourceManager-fr-CA.xml" file that contains French-Canadian translations of labels, headings, and other displayable data. The application looks for the correct configuration file based on the user's current globalization (region-locale) setting. If it fails to find a ResourceManager-*region-locale*.xml file with the proper region-locale name, it will use the default file "ResourceManager-en-US.xml". If this default file is missing, application startup will fail.

For optimum security and maintainability, it is recommended that all Admin Tool installations obtain metadata information from a single shared read-only directory. This read-only directory should contain only globalized copies of the Admin Tool metadata file. Only Professional Services and customer administrators should have write access to this file.

The Metadata Document

The Admin Tool metadata file is an XML-format document. While relatively easy to read, XML documents have rigid syntax rules and will fail to load if improperly formed. XML documents are case sensitive and, unlike HTML script, both starting and ending tags are required.

The Admin Tool checks the formatting of the document when it is loaded at application startup. If the document is not "well-formed", application startup will fail. It is strongly recommended that those who edit this file do so with a dedicated XML editor or, if using a non-formatting text editor, test the final result by loading it into Internet Explorer. IE uses a validating parser and will display only "well-formed" XML documents. You can download a free dedicated XML editor, "XML Notepad 2007", from Microsoft at this URL (subject to change by Microsoft): http://msdn.microsoft.com/xml/xmldownloads/.

The metadata document is loaded only during application startup—it is not periodically refreshed. If changes are made to the document, the application must be restarted for the changes to take effect. Each <Table> element must contain all of the columns contained in the database schema for this table. The database schema rules here. If a metadata <Table> element is missing a column or has a misspelled column name, a runtime error will occur and the maintenance screen launch process will, by design, fail.

XML is designed to be self-documenting. An XML document can contain not only data but context information that describes how that data is used. Users are encouraged to add XML comments to the document wherever they wish. The metadata file contains table schemas for all tables that are either maintained or used in the application. The structure is simple. A <Tables> root element contains many <Table> elements which contain many <Columns> elements. XML attributes are used to contain data that pertains to Table elements and Column elements. Element attributes do not have to be in the same order; however, for the sake of readability you should keep them in the same order. Not all elements require the same set of attributes; it depends on the element's usage.

There is a tool, CreateXML.exe, that creates a base XML document named "RawResourceManager-en-US.xml" by reading system data from a user-selected database. For more information about this tool, see **Using the CreateXML Tool** on page A-9.

There is enough commonality among the <Table> elements (and their child elements) to use a single Table as an example of how to configure table metadata. For this example, we will use table DHTFOTYP (Field Order Types). A complete listing of this metadata Table element section can be found at the end of this document. As there is much attribute duplication, not all columns will be covered here.

Table-Specific Metadata

This section describes table-specific metadata, using the DHTFOTYP (Field Order Types) table as an example.

```
<Table>
   <Name description="Field Order Types" scope="base"
    editor="ResourceManager" plugIn="MWMFOType.dll"
    accessLevel="0,1,2,6" rootnode="Resources" subnode1="Table
    Maintenance" subnode2="" helpPage="TO BE CREATED" cssKey="MWM"
    dataID="DHTFOTYP.TBL">
         DHTFOTYP
   </Name>
```

Note: Only Tables present in the metadata XML file are maintainable by the Admin Tool.

WARNING: Table names must be unique. Names must be spelled exactly the same as their database counterparts.

The "<Table>" element contains all the XML tags for this table. The <Name> element value, "DHTFOTYP" can be found after the element attributes but before the closing </Name> tag. Each table element has the following attributes:

description

The runtime description for this table. This value will appear in the Admin Tool startup screen's TreeView list, the startup screen's Listview, and as the header on the applicable maintenance screen.

scope

All Oracle Utilities Mobile Workforce Management tables in the install build are considered "base" tables. Customer specific tables (those that start with X) should have something other than "base" here; the customer's corporate name is suggested.

editor

This must be "ResourceManager".

plug-in

This value is used internally by the Admin Tool to launch the correct support application for this table. Generic tables use "MWMGeneric.dll" as their maintenance application. Table DHTFOTYP requires specialized maintenance and uses "MWMFOType.dll". A missing or misspelled support application will not cause a runtime error; however, the table will not be maintainable.

accessLevel

Security in the Admin Tool application is role based. Oracle Utilities Mobile Workforce Management roles (aka access levels) can be found in table DHTLEVEL. This value should be either a single number or a comma-delimited string of numbers. Roles are determined during startup authentication. All Table elements where the logged-on user role matches a corresponding number in this attribute value will be displayed. Unless the logged-on user is assigned a browse only role (such as an auditor), users have full row INSERT, UPDATE, and DELETE capability for all actionable TreeView nodes.

Tables with an accessLevel attribute value of "99" will not be displayed as a TreeView node, regardless of the user's role or access level. These Tables are consumed internally by the maintenance applications.

rootnode

This is the TreeView root node name. All Table rootnode attributes must contain the same name. The default (en-US) rootnode attribute value is “Resources”.

subnode1

This value permits Tables to be grouped together which can aid readability. A value is required. Tables with like values will be grouped together.

subnode2

This attribute is not currently used; make no entry here.

helpPage

Used at runtime to display screen specific help.

cssKey

The Admin Tool simultaneously administers two separate databases: 'MWM' and 'RTS.' This value permits the Admin Tool to switch database connections at runtime based on the selected table. This value must be either “MWM” or “RTS”.

dataID

This attribute is not currently used. Selected 'MWM' tables are downloadable via .tbl files. Historically, these .tbl files are named after their corresponding database table name, e.g., “DHTFOTYP.tbl”. This only applies to certain 'MWM' tables; 'RTS' tables are not downloadable. By design, 'MWM' download eligibility is determined solely on usage in the DHTTBVER table and not on any entry here.

Column-Specific Metadata

This section describes column-specific metadata, using the DHTFOTYP (Field Order Types) table as an example.

```
<Columns>
    <FO_TYPE editHeader="" selectHeader="FO Type"
    controlType="MaskedTextBox">
        <Constraints editStyle="editable" editSize="1-8"
        editMask="CCCCCCCC" regexValidation="[a-zA-Z]*[0-9]*"
        selectSize="8" selectOrdinal="1" />
    </FO_TYPE>
    <FO_TYPE_DESC editHeader="" selectHeader="Description"
    controlType="TextBox">
        <Constraints editStyle="editable" editSize="0-25" editMask=""
        regexValidation="" selectSize="25" selectOrdinal="2" />
    </FO_TYPE_DESC>
…
    <EST_CMPL_MINUTES editHeader="" selectHeader=""
    controlType="NumericUpDown">
        <Constraints editStyle="editable" editSize="0-120" editMask=""
        regexValidation="[0-9]*" selectSize="0" />
    </EST_CMPL_MINUTES>
```

> **WARNING**: All columns present in the database schema for this table must be present in the metadata XML file. Missing columns or misspelled column names will cause a support application startup failure.

Column metadata is all attribute data contained between the column name tags, e.g., all attribute data between <FO_TYPE> and </FO_TYPE>. The "Constraints" element is used just for the sake of readability. All attributes between the column name tags are specific to that column. Note that not all column elements have the same number of attributes—this is acceptable practice.

editHeader

This is the runtime label value that describes the column data; this value is generally used only with generic tables. Unless the column data is hidden at runtime, all generic tables must have an editHeader value. In the US, editHeader values should end with a colon ":" symbol.

Specialized maintenance screens have label text entered at design-time; they are capable of being globalized via .NET's .resx files. However, some Admin Tool maintenance applications use this value to override the label's design-time value. As an example, look at the SPARE_3 column in the sample Table. The default (design-time) label value for this column is the rather vague "Spare3" which will be used unless something (hopefully less vague) is entered here.

selectHeader

(This attribute's usage depends on the selectOrdinal attribute value (if any)). Enter a value here only if this column is going to be displayed on the Admin Tool startup screen's ListView as a displayable column. Because up to 5 columns can be displayed in this ListView, it is possible that you may want to shorten the description for use as a column header. For example, let's say we have an editHeader value of "Applicable Service States". If this is a displayable column in the ListView, you can enter "State" here and possibly prevent the user from having to scroll right in order to see column information.

controlType

This should be the current .NET control type used to display this column's data. User's should not edit this column unless instructed to do so by support personnel. All generic tables use "MaskedTextBox" as the underlying editable control type.

editStyle

For generic tables, and certain columns in specialize tables, this determines how this column is displayed at runtime.

- **editable**: Both the label and corresponding data entry field are visible. The data entry field may be edited subject to the underlying row state (new or re-edit).
- **noteditable:** Both the label and corresponding data entry field are visible. The data entry field is disabled. If there is data for this column, it will be displayed, but the user cannot change the value.
- **hidden:** Both the label and corresponding data entry field are invisible at runtime. As a general rule, hidden columns are maintained internally or the data is simply not used by this customer. For example, FO Types allows you to hide SPARE_N columns and any CheckBox control.

editSize

This attribute value, which is usually entered as a minimum-maximum range of values, e.g., "1-25", is used by certain controls to limit data entry either as a runtime property setting (TextBox and NumericUpDown controls) or during validation (MaskedTextBox). Other control types may use this value on a local (specialized) basis.

For generic tables, the editSize value can be used to supplement the MaskedTextBox mask value. For TextBoxes, this value can be used to limit the number of characters that can be entered to a count less than the maximum data column size.

A single numeric value, such as "5", specifies that the data for this field must be entered and must be exactly n characters in length. A range value such as "1-5" specifies that data for this field must be entered but the acceptable character count can range from 1 to 5. A value of "0-5" specifies that data entry is optional and, if entered, cannot exceed 5 characters. However, with the exception of the NumericUpDown control type, system data may trump any entry here: constraints placed on this database column may override the editSize value.

For example, let's say we have a column named CountryKey that is a non-nullable column that can contain up to 10 characters. The editSize value is erroneously entered as the range "0-15". During the control initialization and/or validation process the editSize attribute value is compared with the system data column size and tested for nullability. In this example, the editSize parameters will be overridden as if the editSize mask was actually entered as "1-10" (at least one character and no more than 10 characters can be entered).

NumericUpDown controls operate differently: the editSize range sets the Minimum and Maximum property values for this control. As an example, see the EST_CMPL_MINUTES column described above. The minimum value is 1; the maximum value is 120. If the user enters a zero at runtime, the control defaults to a value of 1. If the user enters a value of 500 at runtime, the control defaults to a value of 120. This makes this control type self-validating.

As a rule, this range value should be set only for "green" or unpopulated data tables. Future changes may cause a runtime error if a data value exceeds the control's Minimum or Maximum property setting.

NumericUpDown controls have another potentially serious downside: the application currently does not check that the entered value can be contained by the underlying data type. For this reason, only Professional Services should edit this value based on their knowledge of the underlying data type. If the entered value exceeds the underlying data type capacity, a runtime DataException will be raised after validation and the row will not be saved. Most of ORACLE UTILITIES MOBILE WORKFORCE MANAGEMENT's numeric data types are of sufficient

size for this not to be an issue; however, the column data type should *always* be checked to make certain that values entered into a NumericUpDown control will not cause a runtime underflow or overflow.

editMask

This is used only with MaskedTextBox controls. If there is no mask value, this control functions like a single-line TextBox control. The mask syntax is identical to the old Visual Basic MaskedEditBox control syntax. It is not as flexible as a regular expression; however, it is possible to limit data entry to a fixed number of characters and characters of a certain type. For more information on this control's masking language, use this URL (subject to change by Microsoft) http://msdn2.microsoft.com/en-us/library/system.windows.forms.maskedtextbox.mask(VS.80).aspx or search for "MaskedTextBox.Mask Property" at www.msdn.microsoft.com.

regexValidation

Certain control types can have their data validated with regular expression patterns. There are major differences between MaskedTextBox masks and regular expression patterns. Masks, if available, control the user's ability to enter only certain characters (such as numbers). Regular expressions, if available, operate after data entry during the validation process.

The Admin Tool uses .NET regular expression patterns (Perl 5 equivalent) to determine what characters are *acceptable* or valid. The validation code uses a collection of match collections and then compares the total character count in all matches with the number of characters entered in the control. If the counts match, all of the characters are valid. If the count comparison fails, there is at least one invalid character in the data.

> **WARNING**: You should never allow the hyphen (ASCII 45) or the semi-colon (ASCII 59) as a valid character in any column that is wholly or in part a 'MWM' primary key.

Using the regular expression pattern from the FO_TYPE column above, "[a-zA-Z]*[0-9]*", this is a breakdown of valid character matches:

- All lower case letters 'a' through 'z'.
- All upper case letters 'A' through 'Z'.
- All numbers 0 (zero) through 9.

In the pattern above, no other characters are permitted, including spaces. To limit FO_TYPE to only upper case letters and numbers, the regular expression pattern is: "[A-Z]*[0-9]*". Other valid characters can be added as required. For example, consider the string value (ignore quotes): "3425 O'Hare Dr.". This is the validating regular expression required: "([a-zA-Z]*[0-9]*[\s'.]*)". The "\s" indicates that whitespace is valid. If you require a hyphen (ASCII 45) as a valid character, always place it just before the closing bracket, as in "[\s'.-]*" or it will act like a pattern separator character, .e.g., "[A-Z]*".

A tutorial on regular expressions is beyond the scope of this document. However, if you enter a regexValidation attribute value, the application checks the validity of this value prior to execution. A validation error will be raised if the regular expression is itself invalid. For more information about .NET regular expressions, use this URL (subject to change by Microsoft): http://msdn2.microsoft.com/en-us/library/hs600312.aspx.

selectSize

This attribute's usage depends on the selectOrdinal attribute value (if any). The Admin Tool startup screen's ListView column width defaults to the width of the text entered in the selectHeader attribute. In order to display more data than this default width allows, you can override the column width setting by entering a selectSize value. If used, this value must be greater than the number of characters in the selectHeader attribute value or it will have no effect.

This value is not necessarily the number of displayable characters for this column. As a general guideline, this value will be a fraction of the underlying database column size. The value entered here may take some tweaking to get right. The ListView column property format is pixels so you will be converting a pseudo text width value to screen pixel size.

selectOrdinal

This is the sole determining attribute on whether column data will be displayed in the Admin Tool startup screen's ListView. The default value for this attribute is 0 (zero). A zero means that this column's data will not be displayed in the ListView. If this attribute is included in the column attributes, acceptable numbers are 0, 1, 2, 3, 4, and 5. If a value other than zero is entered here, columns will be displayed in that order. This enables you to override the database schema column ordinal order. In the example <Table>, columns FO_TYPE and FO_TYPE_DESC have a selectOrdinal value of 1 and 2 respectively. Therefore row data for table DHTFOTYP is displayed as the FO type code in column 1 and the FO type description in column 2. ListView columns 3-5 will be invisible at runtime.

Using the CreateXML Tool

The System Admin Tool application maintains two types of database tables: generic and specialized. Generally speaking, generic tables are simple lookup tables that have no dependencies with other tables and are maintained by the generic table support application "MWMGeneric.dll". Specialized tables, on the other hand, are maintained by dedicated support applications like "MWMFOType.dll" or "MWMCrew.dll".

> **Note:** Generic table specifications are in the Admin Tool External Design document.

Specialized <Table> XML sections are usually generated at the developer level as part of creating the support application, so the real usage of this tool will be to generate <Table> sections for generic tables, including "X" tables.

The CreateXML.exe tool reads the database system tables and creates an XML "template" document based on the database's table and column information for all user tables. Support personnel can then cut and paste the template's <Table>…</Table> section into the production "ResourceManager-en-US.xml" document and set the attribute values to the customer's specifications.

There are two main reasons for using this tool. All system user tables are generated with correctly spelled column names in database ordinal order. This includes "X" tables (user-defined tables). Secondly, the XML that is produced is "well-formed". Cutting and pasting this XML with a non-formatting text editor preserves the XML structure and minimizes syntax errors in the production document.

To generate the raw XML template document using the CreateXML tool, follow these steps:

1. Start the CreateXML application.
2. Select an ODBC data source. There are several options, from using a file source to selecting a Machine Data Source.
3. After selecting the ODBC data source, enter the correct password to connect to this database.
4. Click the "*Start*" button to bring up a *Save As* dialog. The default output is to a file named "RawResourceManager-en-US.xml". You can change the name if you need to; just don't overwrite the existing ResourceManager-en-US.xml file.
5. The tool will begin creating the template document when you click *OK* in the *Save As* dialog.
6. Table names are displayed in the tool as it creates each <Table> section based on the database schema for this table.
7. The tool will display "Finished" when the template document is complete.

These are the tool's default attribute values (generally tailored for generic tables):

- description – blank
- scope — "base"
- editor — "ResourceManager"
- plugIn — "MWMGeneric.dll"
- accessLevel — "0,6"
- rootnode — "Resources"
- subnode1 — "Table Maintenance"
- subnode2 — blank
- helpPage — "default.htm"
- cssKey — "MWM"

- dataID — "<TableName>.TBL"
- editHeader — blank
- selectHeader — blank
- controlType — "MaskedTextBox"
- editStyle — "editable" (except for administrative columns which are "hidden")
- editSize — if column type is char or varchar, the actual system size, e.g., "8"
- editMask — blank
- regexValidation — "[a-zA-Z]*[0-9]*"
- selectSize — "0" (zero)
- selectOrdinal — "0" (zero)

See the previous sections in this document for attribute definitions and proper usage.

Sample Metadata Table

```
<Table>
    <Name description="Field Order Types" scope="base"
    editor="ResourceManager" plugIn="MWMFOType.dll"
    accessLevel="0,1,2,6" rootnode="Resources" subnode1="Table
    Maintenance" subnode2="" helpPage="TO BE CREATED" cssKey="MWM"
    dataID="DHTFOTYP.TBL">

   </Name>

    <Columns>

        <FO_TYPE editHeader="" selectHeader="FO Type"
        controlType="MaskedTextBox">

            <Constraints editStyle="editable" editSize="1-8"
            editMask="CCCCCCCC" regexValidation="[a-zA-Z]*[0-9]*"
            selectSize="8" selectOrdinal="1" />

        </FO_TYPE>

        <FO_TYPE_DESC editHeader="" selectHeader="Description"
        controlType="TextBox">

            <Constraints editStyle="editable" editSize="0-25"
            editMask="" regexValidation="" selectSize="25"
            selectOrdinal="2" />

        <EST_CMPL_MINUTES editHeader="" selectHeader=""
        controlType="NumericUpDown">

            <Constraints editStyle="editable" editSize="0-120"
            editMask="" regexValidation="[0-9]*" selectSize="0" />

       </EST_CMPL_MINUTES>

        <PRIORITY editHeader="" selectHeader=""
        controlType="NumericUpDown">

            <Constraints editStyle="editable" editSize="1-20"
            editMask="" regexValidation="[0-9]*" selectSize="0" />

       </PRIORITY>

        <CMPL_REMARKS_REQ editHeader="" selectHeader=""
        controlType="ComboBox">

            <Constraints editStyle="editable" editSize="0-1" editMask=""
            regexValidation="[0-2]*" selectSize="0" />

       </CMPL_REMARKS_REQ>

        <AUTO_DISPATCH editHeader="" selectHeader=""
        controlType="CheckBox">

            <Constraints editStyle="editable" editSize="1" editMask=""
            regexValidation="" selectSize="0" />

        </AUTO_DISPATCH>

        <AVAIL_FOR_ASSIST editHeader="" selectHeader=""
        controlType="CheckBox">

            <Constraints editStyle="editable" editSize="1" editMask=""
            regexValidation="" selectSize="0" />

        </AVAIL_FOR_ASSIST>

        <SPARE_1 editHeader="" selectHeader=""
        controlType="MaskedTextBox"

            <Constraints editStyle="hidden" editSize="0-2" editMask=""
            regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />
```

```
</SPARE_1>
<SPARE_2 editHeader="" selectHeader=""
controlType="MaskedTextBox">
    <Constraints editStyle="hidden" editSize="0-2" editMask=""
    regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />
</SPARE_2>
<SPARE_3 editHeader="Test 3" selectHeader=""
controlType="MaskedTextBox">
    <Constraints editStyle="hidden" editSize="0-2" editMask=""
    regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />
</SPARE_3>
<SPARE_4 editHeader="" selectHeader=""
controlType="MaskedTextBox">
    <Constraints editStyle="hidden" editSize="0-6" editMask=""
    regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />
</SPARE_4>
<SPARE_5 editHeader="" selectHeader=""
controlType="MaskedTextBox">
    <Constraints editStyle="hidden" editSize="0-6" editMask=""
    regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />
</SPARE_5>
<SPARE_6 editHeader="" selectHeader=""
controlType="MaskedTextBox">
    <Constraints editStyle="hidden" editSize="0-6" editMask=""
    regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />
</SPARE_6>
<CHANGE_PRIORITY editHeader="" selectHeader=""
controlType="CheckBox">
    <Constraints editStyle="editable" editSize="1" editMask=""
    regexValidation="" selectSize="0" />
</CHANGE_PRIORITY>
<VERSION_NUMBER editHeader="">
    <Constraints editStyle="hidden" />
</VERSION_NUMBER>
<DELETE_FLAG editHeader="">
     <Constraints editStyle="hidden" />
</DELETE_FLAG>
<PRIMARY_FUNC_CD editHeader="" selectHeader=""
controlType="ComboBox">
    <Constraints editStyle="editable" editSize="1-2" editMask=""
    regexValidation="[[a-zA-Z]*[0-9]*" selectSize="0" />
</PRIMARY_FUNC_CD>\
<NBR_OF_CREWS_REQ editHeader="" selectHeader=""
controlType="NumericUpDown">
    <Constraints editStyle="editable" editSize="0-10"
    editMask="" regexValidation="[0-9]*" selectSize="0" />
</NBR_OF_CREWS_REQ>
```

```
<DEFINITION_FILE editHeader="" selectHeader=""
controlType="TextBox">
    <Constraints editStyle="editable" editSize="0-255"
    editMask="" regexValidation="" selectSize="0" />
</DEFINITION_FILE>
<DW_COMPLETION_FLAG editHeader="" selectHeader=""
controlType="CheckBox">
    <Constraints editStyle="editable" editSize="1" editMask=""
    regexValidation="" selectSize="0" />
</DW_COMPLETION_FLAG>
 <METER_READ_REQ editHeader="" selectHeader=""
controlType="ComboBox">
    <Constraints editStyle="editable" editSize="0-1" editMask=""
    regexValidation="[0-3]*" selectSize="0" />
      </METER_READ_REQ>
<CHANGE_DATE_TIME editHeader="" selectHeader=""
controlType="CheckBox">
    <Constraints editStyle="editable" editSize="1" editMask=""
    regexValidation="" selectSize="0" />
      </CHANGE_DATE_TIME>
<MW_ETA_REQ editHeader="" selectHeader=""
controlType="CheckBox">
    <Constraints editStyle="editable" editSize="1" editMask=""
    regexValidation="" selectSize="0" />
</MW_ETA_REQ>
<ADDL_SKILLS_FLAG editHeader="" selectHeader=""
controlType="CheckBox">
    <Constraints editStyle="editable" editSize="1" editMask=""
    regexValidation="" selectSize="0" />
</ADDL_SKILLS_FLAG>
<FO_MOBILE_CD editHeader="" selectHeader=""
controlType="MaskedTextBox">
    <Constraints editStyle="editable" editSize="0-2"
    editMask="CC" regexValidation="[a-zA-Z]*[0-9]*"
    selectSize="0" />
</FO_MOBILE_CD>
<CE_DEFINITION_FILE editHeader="" selectHeader=""
controlType="TextBox">
    <Constraints editStyle="editable" editSize="0-255"
    editMask="" regexValidation="" selectSize="0" />
</CE_DEFINITION_FILE>
<EXTERNAL_APPLICATION editHeader="" selectHeader=""
controlType="TextBox">
    <Constraints editStyle="editable" editSize="0-20"
    editMask=""

    regexValidation="" selectSize="0" />
</EXTERNAL_APPLICATION>
<AVAIL_FOR_CREATE editHeader="" selectHeader=""
controlType="CheckBox">
```

```
            <Constraints editStyle="editable" editSize="1" editMask=""
            regexValidation="" selectSize="0" />

        </AVAIL_FOR_CREATE>

        <DISPLAY_SAFETY_SCREEN editHeader="" selectHeader=""
        controlType="CheckBox">

            <Constraints editStyle="editable" editSize="1" editMask=""
            regexValidation="" selectSize="0" />

        </DISPLAY_SAFETY_SCREEN>

        <ORDER_PRINTABLE editHeader="" selectHeader=""
        controlType="CheckBox">

            <Constraints editStyle="editable" editSize="1" editMask=""
            regexValidation="" selectSize="0" />

        </ORDER_PRINTABLE>

        <SORTED_REMARKS_CD editHeader="" selectHeader=""
        controlType="ComboBox">

            <Constraints editStyle="editable" editSize="0-8" editMask=""
            regexValidation="[a-zA-Z]*[0-9]*" selectSize="0" />

        </SORTED_REMARKS_CD>

    </Columns>

</Table>
```