

Oracle® Manufacturing Operations Center
User's Guide
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Oracle Manufacturing Operations Center User's Guide, Release 12.2

Part No. E48947-02

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- Do you need different information or graphics? If so, where, and in what format?
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Preface

Intended Audience

Welcome to Release 12.2 of the *Oracle Manufacturing Operations Center User's Guide*.

See Related Information Sources on page x for more Oracle E-Business Suite product information.

Documentation Accessibility

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Structure

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12 MOC and Oracle Enterprise Asset Management (eAM) Integration

13 Ad hoc Reports

A Navigation

This appendix lists navigation paths for pages in the Oracle Manufacturing Operations Center application.

Glossary

Related Information Sources

Integration Repository

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

You can navigate to the Oracle Integration Repository through Oracle E-Business Suite Integrated SOA Gateway.

Oracle Advanced Planning Implementation and User's Guide

This guide describes how to use Oracle's supply chain planning performance for forecasting and managing both supply and demand for your items. You plan your requirements, and execute and release the plan for discrete jobs, repetitive schedules, and flow schedules.

Oracle Cost Management User's Guide

This guide describes how to use Oracle Cost Management in either a standard costing or average costing organization. Cost Management can be used to cost inventory, receiving, order entry, and work in process transactions. It can also be used to collect transaction costs for transfer to Oracle Projects. Cost Management supports multiple cost elements and multiple sub-elements. It also provides comprehensive valuation and variance reporting.

Oracle Inventory User's Guide

This guide describes how to define items and item information, perform receiving and inventory transactions, maintain cost control, plan items, perform cycle counting and physical inventories, and set up Oracle Inventory.

Oracle Manufacturing Operations Center Implementation Guide

This guide describes how to install and implement Oracle Manufacturing Operations Center. The tasks include setup for the following areas: Manufacturing Operations Center, Oracle Data Integrator source system data, and various manufacturing dimensions

Oracle Work in Process User's Guide

This guide describes how Oracle Work in Process provides a complete production management system. Specifically this guide describes how discrete, repetitive, assemble-to-order, project, flow, and mixed manufacturing environments are supported.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Overview

This chapter covers the following topics:

- Overview of Oracle Manufacturing Operations Center
- Technology Overview
- Architecture Overview
- Manufacturing Operations Center Instances

Overview of Oracle Manufacturing Operations Center

Oracle Manufacturing Operations Center (MOC) is a prebuilt, flexible, and extensible solution that improves your plant performance by collecting data from disparate plant floor systems, contextualizing them with business context, and provides real-time intelligence on plant floor operations. Oracle Manufacturing Operations Center is the foundation for continuous improvement. Key components of this application include:

- A data model based on ISA-95 industry standard and extensible attribute framework.
- Pre-built extensible adapters for Oracle EBS.
- A robust contextualization rules engine to convert raw shop floor data into meaningful business information.
- Pre-built key performance indicators and analytics, delivered in Oracle's industry leading, easy to configure and extend Business Intelligence (BI) technology.
- Ability to monitor production performance in real time.

Oracle Manufacturing Operations Center provides new capabilities to drive sustainability initiatives. Sustainability Aspect is a generic name used for continuous inputs consumed by companies to be able to operate and create goods or services. Common examples of sustainability aspects are electricity, gas, oil, water, helium etc.

The Sustainability Sensor Data Management system of Oracle MOC helps you meet the legislative requirements and social responsibilities to go green and accelerate sustainability improvements of companies focusing on manufacturing, innovation, or services, and enables you to:

- Monitor and analyze energy consumption, energy cost, and carbon emissions with dashboards and built-in key performance indicators (KPIs), leveraged by Oracle Business Intelligence Enterprise Edition (OBIEE) technology.
- Integrate with smart meters, environmental management systems.
- Build automation systems and collect energy consumption and emissions data.
- Identify specific opportunities for improving energy efficiency and reduction in carbon emissions.
- Normalize and correlate energy consumption to operating conditions and production variables, and enable energy-aware manufacturing.
- Leverage as a certifiable data repository for energy usage reporting based on Global Reporting Initiative (GRI) framework and Green House Gas (GHG) protocol.

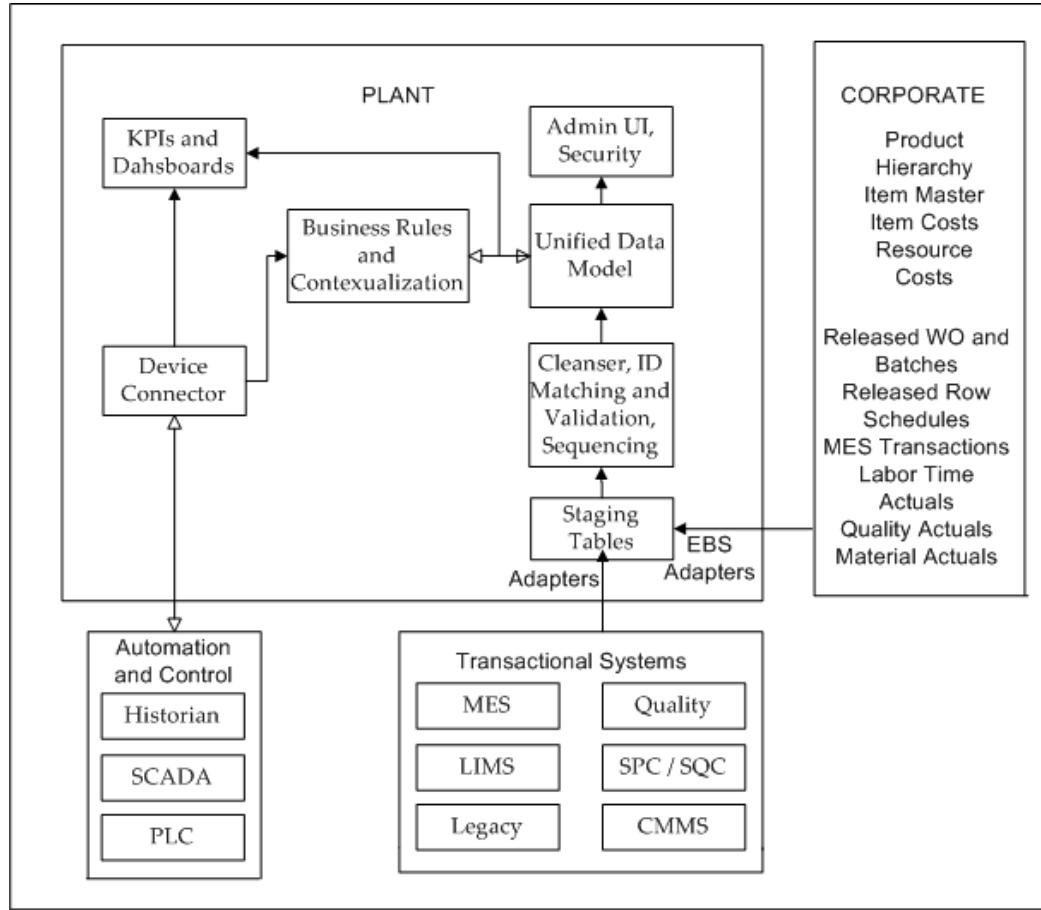
Technology Overview

Manufacturing Operations Center uses the following Oracle technologies:

- Oracle Data Integrator (ODI)
- Oracle Business Intelligence Enterprise Edition (OBIEE)
- Oracle E-Business Suite (EBS) Foundation

Architecture Overview

The following diagram provides an overview of Oracle Manufacturing Operations Center's architecture:



The diagram describes the following:

Data Model

Oracle MOC data model complies with ISA-95 standards and is optimized for intelligence and integration. ISA-95 is a standard for Enterprises to control system integration that includes batch, continuous, and discrete industries. Managed by ISA (Instrumentation, Systems and Automation Society), ISA-95 defines terminology, functional requirements, and borrows or is based on PRM (Purdue Reference Model) for manufacturing. The Oracle MOC Data model is open and scalable for capturing user specific attributes and building custom hierarchies, etc. and lets you incorporate data collection for energy consumption, energy costs, emissions of multiple sustainability aspects (i.e. electricity, gas etc.). The data model's granularity accommodates measurement frequencies collected down to a minute's level in order to perform accurate analysis and energy contextualization.

Extensibility

- Ad hoc dashboards and reports with OBIEE

Connectivity

Oracle MOC supports heterogeneous systems including device data and provides wide range of options for collecting shop floor data, directly from Programmable Logic Controllers (PLCs), Supervisory Control and Data Acquisition (SCADA) systems, Meters, Sensors and Distributed Control Systems (DCSs). Oracle MOC leverages Oracle Data Integrator (ODI), the data warehousing tool to extract and process data. A concurrent program is used to process meter readings for sustainability aspect consumptions.

Prepackaging

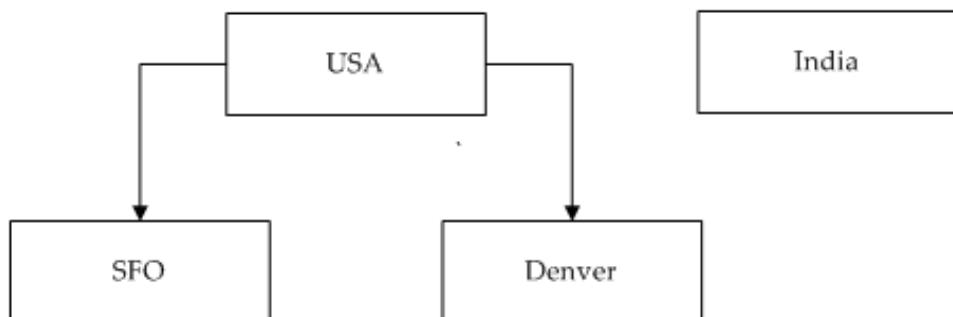
EBS Adapters: Oracle MOC is prepackaged with EBS adapters Release 11.5.10, Release 12.0.6 , Release 12.1.3, and Release 12.2.

KPIs and Dashboards: Oracle MOC is prepackaged with more than one hundred forty metrics and role-based dashboards and reports.

Manufacturing Operations Center Instances

Typically, Oracle Manufacturing Operations Center (MOC) is installed locally at a plant location. There can be single or multiple plant installations. It can be installed on a server for a single plant or for multiple plants that are connected. A company may have several instances of Oracle MOC installed.

Consider the following example of a global manufacturing company with plants at two locations, in the U.S. and in India, and the U.S. has two different plant locations:



In this example, following options are available for installing MOC instances:

Option 1

- MOC Instance 01 - USA - SFO

- MOC Instance 02 - USA - Denver
- MOC Instance 03 - India

With this option, plants are not grouped together and an instance of MOC is installed at each plant and organized at the plant level.

Option 2

- MOC Instance 01 - USA
- MOC Instance 02 - India

With this option, plants are grouped by country. The plants at SFO and Denver have been grouped together into a single instance called USA.

Option 3

- MOC Instance 01 - USA & India

This option is a corporate installation for which all three of the individual plants are grouped into one instance called USA & India.

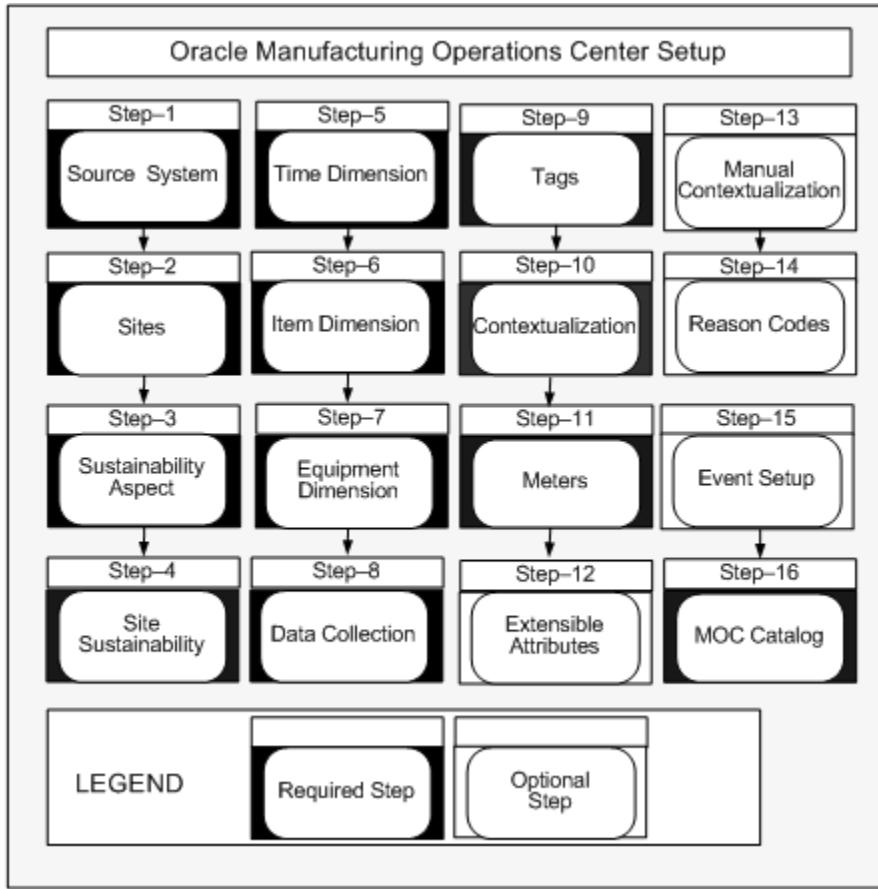
Setup Steps

Setting Up Manufacturing Operations Center

The Oracle Manufacturing Operations Center (MOC) setup steps span several Oracle systems including Oracle Business Intelligence Enterprise Edition (OBIEE), Oracle Data Integrator (ODI), and the MOC setup pages:

- OBIEE provides analytics from data spanning enterprise sources and applications.
- ODI provides data extraction, and transformation and loading from source systems into the MOC environment.
- The MOC Administrator role is used to setup Sustainability Aspect, Emission Factors, Tags, Meters, Entity Hierarchy, and setup contextualization methods for business context, and create and associate attribute groups and attribute data entities. It can also be used to create meters, run concurrent program to process meter readings, and use extensible attributes workbench to setup classifications and attributes for user-defined attributes.
- The User role is used to view and integrate data collection, and perform analytic reporting. User can use extensible attributes workbench to create attributes and attribute groups, and associate them with classifications.

The following chart lists the setup steps for Oracle Manufacturing Center Operations. Some steps are required, others are optional, depending upon other functions in your environment:



1. Source Systems Setup

Source system definitions are set up to load data from different source systems.

See: *Setting Up Source Systems, Oracle Manufacturing Operations Center Implementation Guide*

2. Site Setup

Site definitions are set up and mapped to source organizations in different systems.

See: *Setting Up Sites, Oracle Manufacturing Operations Center Implementation Guide*

3. Sustainability Aspect Setup

Sustainability Aspect is a generic name used for continuous inputs consumed by companies in order to be able to operate and create goods or services. Common examples of sustainability aspect are electricity, gas, oil, water, helium etc.

Sustainability aspects always have associated costs for companies and are often source of harmful emissions to environment. Companies usually monitor consumption of sustainability aspects and make efforts to minimize them for efficiency and environmental concerns. Setting up sustainability aspect refers to defining energy, usage categories, and emissions.

See: Setting Up Sustainability Aspect, *Oracle Manufacturing Operations Center Implementation Guide*

4. Site Sustainability Setup

Setting up sustainability aspect for a site by defining energy sources, planned energy usage, cost, and emission factors. You must perform this setup to populate sustainability aspect for any entity belonging to the site.

See: Setting Up Sustainability Aspect, *Oracle Manufacturing Operations Center Implementation Guide*

5. Time Dimension Setup

Define time dimensions including calendars and workday shifts. You can analyze data for different hierarchies for time dimension.

See: Setting Up Time Dimension Hierarchies, *Oracle Manufacturing Operations Center Implementation Guide*

6. Item Dimension Setup

Define item dimensions. You can analyze items by different hierarchies. Three item hierarchies are seeded, and any number of hierarchies can be built and analyzed. Item hierarchy supports ten levels.

See: Setting Item Dimension Hierarchies, *Oracle Manufacturing Operations Center Implementation Guide*

7. Equipment Dimension Setup

Define equipment dimensions. You can build multiple hierarchies for equipment, and these can be rolled up using different hierarchies for reporting. Five seeded hierarchies are provided, and ten hierarchy levels are supported. Any number of equipment hierarchies can be built and analyzed.

See: Setting Equipment Dimension Hierarchies, *Oracle Manufacturing Operations Center Implementation Guide*

8. Data Collection Setup

This task involves setting the profile option MTH: System Global Name in the source EBS system for collecting data from E-Business Suite applications master data. This data includes item and item hierarchies, resource and resource hierarchies, and shift definition. Reference data is also collected for production schedules and material produced, item and resource costs, and sale order lines pegged to work orders. Set up Oracle Data Integrator to load data using Microsoft Excel templates from other source systems into the MOC staging tables.

See: Load Data Reference and Transaction Data, *Oracle Manufacturing Operations Center Implementation Guide*

9. Tag Setup

After loading tag master details from the device connector into MOC, you can configure tags to equipment and the data element to define the data the tag contains like Output Quantity, Scrap Quantity etc. You can also define tags to associate with meters.

See: Setting Up Tags, page 3-2

10. Contextualization Setup

The contextualization setup enables the type of contextualization required for the equipment, defines whether the business context is mandatory or optional.

See: Creating Equipment Contextualization Information, page 3-7

11. Inbound and Outbound Integration Setup

Inbound integration with Oracle EBS enables you to collect resource instances as equipment entities within MOC and also work order or process manufacturing batches reference data such as:

- Operations.
- Activities.
- Resource requirements from EBS.
- Resource instance schedules as equipment production schedules from EBS.
- Material consumed.

The outbound integration with Oracle EBS for Discrete Manufacturing creates the following discrete job transactions:

- Move transaction: MOC tags for completed, scrap, rejected quantities create corresponding move transactions in Oracle WIP.

Note: In EBS, you have to manually perform To Move of current operation to the Queue of next operation.

- Completion Transaction: Using output quantity, scrap and rejected quantity tags you can perform a To Move to Completion transaction.
- Resource Transaction: The status tags from shop floor process resource transactions in MOC and create resource transactions in Oracle EBS. The transaction posted is for run hours of the resource.

12. Meter Setup

Setup Actual and Virtual Meters for data acquisition of electricity usage.

See: Setting Up Meters, *Oracle Manufacturing Operations Center Implementation Guide*

13. Extensible Attributes Setup

The extensible attributes framework captures specific attributes for manufacturing entities including item, equipment, user-defined attributes, work order, batch operation, and miscellaneous custom entities. The entities and associated attributes are setup in the Extensible Attributes Workbench.

See: Setting Up Extensible Attributes for MOC Entities, page 3-16, and Viewing Extensible Attributes Data for Entities, page 4-5

14. Defining Manual Contextualization

This task involves entering and editing business context for active tags that have not been summarized to the equipment summary tables.

See: Using the Manual Contextualization Method, page 4-2

15. Defining Reason Codes

You can define a list of possible reason codes for equipment downtime, equipment idle time, and equipment scrap quantity.

See: Reason Codes, page 4-4

16. Event Setup

MOC provides a Workbench to generate and process events based on event types. You must set up event actions for the event types.

See: Event Setup, page 3-13

17. MOC Catalog Setup

The prepackaged KPIs, reports and dashboards in OBIEE toolset needs to be configured through this setup. The MOC Catalog provides the KPIs, Plant Manager and Facilities Manager Dashboards related to manufacturing operations and monitoring sustainability aspect usage. This provides visibility to shop floor and operational analytics.

See: Overview of the MOC Catalog, page 7-1

Related Topics

Setup Overview, *Oracle Manufacturing Operations Center Implementation Guide*

Overview of the Administrator Role, page 3-1

Overview of the User Role, page 4-1

Administrator Role

Overview of the Administrator Role

The MOC Administrator role is used to setup and maintain master data for the Manufacturing Operations Center application. It is also used to calculate meter readings and sustainability consumption. Following is a brief overview of the tasks under this role:

- Contextualization setup: Used to setup contextualization method for equipment.
- Tag setup: Used to associate tags to equipment and MOC entities, and define rules for adding the business context through the contextualization setup.
- Sustainability aspect setup: Used to setup sustainability aspect and its corresponding usage categories and emission codes.
- Site setup: Used to setup site.
- Site sustainability setup: Used to setup the association of site to sustainability aspect and define the sustainability aspect sources and emission factors.
- Equipment setup: Used to setup equipments.
- Tag equipment mapping setup: Used to associate tags to equipment.
- Resource setup: Used to setup resources.
- User-defined entities setup: Used to setup user defined entities.
- Shift setup: Used to create shift templates and generate shifts for site and its entities.
- Hierarchy setup: Used to setup and build hierarchy.
- Meter setup: Used to setup meters.

- Meter entity association: Used to associate meter to entities.
- Lookups setup: Used to setup lookup values.
- Extensible attributes setup: Used to create attribute groups and attributes and associate to classifications and create pages.
- Run Requests: Used to run the MTH: Process and Populate MOC Entity Sustainability Aspect program that calculates meter readings and sustainability aspect consumption.
- Events

Refer to the *Oracle Manufacturing Operations Implementation Guide* for detailed information on setting up sustainability, site sustainability, equipment, resources, user defined entities, shifts, hierarchy, meters and lookups.

Related Topics

[Setting Up Tags, page 3-2](#)

[Creating Equipment Contextualization Information, page 3-7](#)

[Setting Up Extensible Attributes for MOC Entities, page 3-16](#)

[Running the MTH: Process and Populate MOC Entity Sustainability Aspect, page 3-6](#)

[Setting Up Events, page 3-13](#)

Setting Up Tags

A tag is the metadata configured in PLC or other device connector providing data at the program interval. MOC requires specific tags for obtaining the operation details and business context. There are two types of tags. Business context tags provide work order, operation, product, and equipment details. Data tags provide value of output, scrap, rework, quantity, and completed quantity.

To define tag data information:

1. Navigate to the Tag Setup page. If you have already imported the tag metadata using the csv template, then they display on this page.
2. To add a new Tag Data Source, Click Add Source.
3. Enter the name of the new tag data source in the Tag Data Source field.
4. Select the Type of the tag. Options are Operation and Sustainability.

The screenshot shows the Oracle Manufacturing Operations Center Tag Setup page. At the top, there are tabs for 'Tag Setup' and 'Tag Sources'. Below the tabs, there is a 'Tag Data Sources' section with a table showing various source types and their details. The table includes columns for 'Select Tag Data Source', 'Tag Type', and 'System'. Below this is a 'Configure Tags' section for the 'MANUAL' source, with a table showing tag details. The table includes columns for 'Select Tag Code', 'Tag', 'Description', 'Data Type', 'Reading Type', 'Order', 'Reset Value', 'Initial Value', 'Reading Interval (in Minutes)', and 'Status'.

Select Tag Data Source	Tag Type	System
EXTATTR	Operation	-99999
SSDM	Operation	-99999
TAG_METER	Sustainability	-99999
ERP	Operation	-99999
EVENT	Operation	-99999
TAGBASED	Operation	mtby220
SCHEDULE	Operation	-99999
MANUAL	Operation	-99999
NRQRY	Operation	-99999
NCNTXT	Operation	-00000

Select Tag Code	Tag	Description	Data Type	Reading Type	Order	Reset Value	Initial Value	Reading Interval (in Minutes)	Status
MBC_STATUS	MBC_STATUS	MBC_STATUS	Numeric	Incremental					Active
MBC_SCP_QTY	MBC_SCP_QTY	MBC_SCP_QTY	Numeric	Incremental					Active
MBC_REL_QTY	MBC_REL_QTY	MBC_REL_QTY	Numeric	Incremental					Active
MBC_EQP_CYCL	MBC_EQP_CYCL	MBC_EQP_CYCL	Numeric	Incremental					Active

5. Select the System for the tag. The list of Source Systems that you set up while setting up the MOC application display in the list of values for this field. Refer to the "Setting Up Source Systems" chapter of the Oracle Manufacturing Operations Systems Implementation Guide for more information.
6. Save your work.

To add tags to a tag data source:

1. Select a Tag Data Source to which you want to add tags.
2. Click Add.
3. Enter the following information for a tag:
 - Tag Code is the code for the tag.
 - Tag is the name of the tag.
 - Description is a brief description of the tag.
4. Select the Data Type for the tag. Options are Alphanumeric and Numeric. Numeric displays by default.
5. Select the Reading Type for the tag. Options are Cumulative and Incremental. Cumulative displays by default.
6. Select the Order in which the readings for the tag are recorded. Options are

Ascending and Descending. This field is enabled only if you select Cumulative as the Reading Type. If you select Cumulative as the Reading Type, then Ascending displays by default.

The screenshot shows the Oracle Manufacturing Operations Center Tag Setup interface. At the top, there are tabs for 'Tag Setup' and 'Tag Data Sources'. The 'Tag Data Sources' tab is selected, showing a table with three rows: 'NPROMON', 'INACTAG', and 'CSV Testing'. The 'CSV Testing' row is selected. Below this, a table titled 'Configure Tags: CSV Testing' is displayed, showing a list of tags: CSVTestTag1, CSVTestTag2, and CSVTestTag3. The 'Status' column for all tags is 'Active'. The 'Reset Value' column is set to 0 for all tags. The 'Initial Value' column is set to 0 for all tags. The 'Reading Interval (in Minutes)' column is set to 0 for all tags. The 'Status' column is set to 'Active' for all tags.

7. Enter a Reset Value. Reset Value is the value at which the tag reading recording must be reset. This field is enabled only if you select Cumulative as the Reading Type.
8. Enter an Initial Value. Initial Value is the starting value that you expect to receive from a tag meter recording. This field is enabled only if you select Cumulative as the Reading Type. Zero is the default value.
9. Enter a Reading Interval (in minutes) as the time interval at which the tag readings must be recorded. You can enter a reading interval only for a tag of the sustainability type tag data source.
10. Status displays as Active by default. To inactive a tag, click Inactivate.
11. Click Save.

Note: A tag can be associated to an equipment record only once, but can be associated to multiple equipment.

To update a tag:

1. Select a tag.
2. Click Update. Edit the following fields:
 - Tag

- Description
 - Reading Type
 - Order. This field is enabled for a Cumulative reading type tag only.
 - Reset Value. This field is enabled for a Cumulative reading type tag only.
 - Initial Value. This field is enabled for a Cumulative reading type tag only.
 - Reading Interval. This field is enabled for Incremental reading type tag of a Sustainability type tag data source.
3. Click Save.

Mapping Tags to Equipment

Oracle Manufacturing Operations Center enables you to map tags to equipment using the Tag Mapping page. You map a separate tag for each equipment output.

To map tags to equipment:

1. Navigate to the Tag Mapping page.
2. Select the Site Name. All the Sites defined in the MOC application display in the list of values (LOV).
3. Select Equipment Name of the equipment to which you want to map tags.
4. Click Go. If tags are already mapped to the selected equipment, then they display.
5. Click Add to map a tag.
6. Enter the Tag Code that you want to map to the equipment. All the tags in the Tag Master display in the LOV. This is a required field.

Select Tag	Data Element	Attribute Group	Attribute
<input type="checkbox"/> TBC_RCP_VER	Recipe Version		
<input type="checkbox"/> TBC_STATUS	Status		
<input type="checkbox"/> TBC_EQP_IDLE_RSN	Equipment Idle Reason		
<input type="checkbox"/> TBC_COMP_QTY	Completed Quantity		
<input type="checkbox"/> TBC_OP_QTY	Output Quantity		
<input type="checkbox"/> TBC_ITM	Item		
<input type="checkbox"/> TBC_SCP_QTY	Scrap Quantity		
<input type="checkbox"/> TBC_RWK_QTY	Rework Quantity		
<input type="checkbox"/> TBC_SCP_RSN	Scrap Reason		
<input type="checkbox"/> TBC_WO	Workorder		

7. Optionally, enter a Data Element for the tag.
8. Optionally, enter Attribute Group Name and Attribute Name. You can choose from a list of attribute groups and attributes that you define using the Extensible Attributes page as part of setting up the MOC application. Refer to the topic "Setting Up Extensible Attributes" chapter of the *Oracle Manufacturing Operations Implementation Guide* for more information.
9. Click Submit.

Note: You can associate a tag to either to an entity or an attribute belonging to an attribute group. MOC does not allow an association to both an entity and attribute.

Running the MTH: Process and Populate MOC Entity Sustainability Aspect

Run the MTH: Process and Populate MOC Entity Sustainability Aspect to calculate the carbon emission and electricity usage costs for an entity. When you run the concurrent program the data obtained from the meter readings is processed to calculate the sustainability aspect consumed, the cost of and the carbon emission due to the consumption.

To run the MTH: Process and Populate MOC Entity Sustainability Aspect

1. Navigate to the Parameters window.
2. Enter the Process Mode as:
 - INIT to run the process in Initial mode.

- INCR to run the process in Incremental mode.
3. Enter the Meter Calculation Start Date.
 4. Click Submit.
 5. Note the Request ID number.
 6. Choose View from the menu and select Requests to view the status of your request in the concurrent program manager.
 7. When your request ID is complete with a Status of Normal, click View Details to view the details of the run.

Creating Equipment Contextualization Information

Contextualization is the ability to take highly granular tag data collected from shop floor transactions and convert it into meaningful business data for analyzing. The contextualization rules engine enables users with various levels of sophistication on the shop floor to add the business context to the data tags. There are two tag types used:

- Business Context Tags—tags that provide work order, operation, product, and equipment details.
- Data Tags—tags that provide value of output quantity, scrap quantity, rework quantity, reject quantity, completed quantity, equipment status, and attribute tags.

The Equipment Contextualization page is used to associate a contextualization method for equipment and to define the mandatory or optional context for the business related to that equipment. The following three methods are used to add the business context:

Tag Based Contextualization

Business context such as work order, operation, and item is derived from the tags that are configured in the PLC for that equipment from the shop floor. The business context tags and the data tags are received into MOC with using the same group identifier for this type of contextualization.

Schedule Based Contextualization

Business context is derived from the equipment production schedule. If this contextualization method is selected, MOC uses the data tags from the equipment to select business context of:

- Work order and operation from the equipment production schedule
- Product from production material produced
- Equipment based on the setup of the tag to equipment association is done

- Shift based on the reading time

Manual Contextualization

Context is determined through data entered manually and is not derived from the Manufacturing Operations Center hub. The Manual Contextualization page on the Tag Data Workbench under the User role enables you to manually enter and edit context for all active tags that have not been summarized in the Equipment Summary tables.

To select equipment for contextualization:

1. Navigate to the Equipment Contextualization Setup page.
2. Select a value in the Plant field.
3. In the Equipment field, select a specific record and then select Go. You can also leave the field null and select Go to display all the equipment records for the plant.

The results table displays all the equipment associated to this plant record.

Select Equipment	Contextualization Method	Workorder	Workorder Segment	Item
BUR-PA2 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ASSE1 EQUIP2	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ME1 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ASSE2 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory
BUR-PA3 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ASSE1 EQUIP3	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ME2 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ASSE1 EQUIP2	Tag Based	Mandatory	Mandatory	Mandatory
BUR-ASSE3 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory
BUR-PA1 EQUIP1	Tag Based	Mandatory	Mandatory	Mandatory

4. To edit equipment contextualization values, select equipment records and select a Contextualization Method. Choices are:
 - Tag Based—context is determined through tag readings of the equipment.
 - Schedule Based—context is determined through schedule data in the Equipment Production Schedules table.
 - Manual—context is determined through data entered manually.
5. In the Workorder field, indicate whether a business context is Mandatory or Optional for the selected equipment.

Workorder context is determined from either the tag or the equipment production

schedule.

6. In the Workorder Segment field, indicate whether a business context is Mandatory or Optional for the selected equipment.
7. In the Item field, indicate whether a business context is Mandatory or Optional for the selected equipment.
8. Save your work.

To change multiple records using the same contextualization rule:

1. Select equipment records to create similar contextualization rules.
2. Select Enter Context in Batch to display the Batch Equipment Contextualization Update page.



3. Select the appropriate values in the following fields for the batch update:
 - Contextualization Method
 - Workorder
 - Workorder Segment
 - Item
4. Select OK to return to the Equipment Contextualization Setup page.
5. Save your work to create the batch update for the selected records.

Related Topics

[Setting Up Tags, page 3-2](#)

Adding Reason Codes

You can use tags to display reasons for downtime status and scrap quantity. You can define a list of all reason codes and reason meanings for Manufacturing Operations Center (MOC) plants, at the Instance level in FND_LOOKUPs, and equipment level in the Equipment Reason Setup user interface. In the Tag Mapping setup for the reason

tag, map the tag to a data element (Equipment Downtime Reason and Scrap Reason).

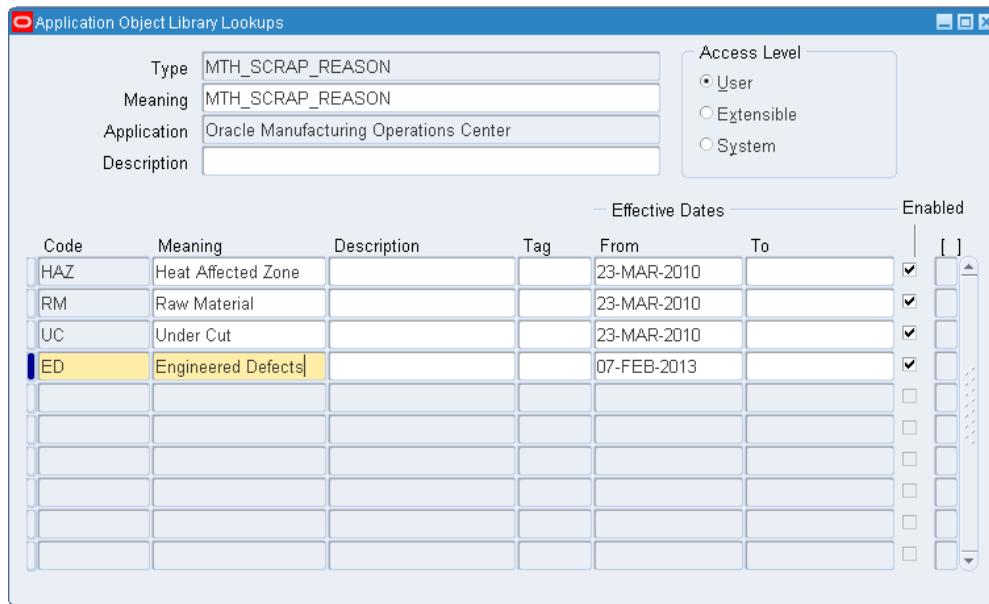
You can set up Reason Codes using FND Lookup. Lookup types seeded by Manufacturing Operations Center include:

- MTH_SCRAP_REASON (for setting up scrap reasons)
 - MTH_EQUIP_DOWNTIME_REASON (for setting up downtime reason)
 - MTH_EQUIP_IDLE_REASON (for setting up idle time reason)

Add reason codes in the Application Object Library Lookups window from the Development Manager responsibility. You can also set up reason codes using the Lookups menu from the MOC Administrator's responsibility.

To add reason codes:

1. Navigate to the Application Object Library Lookups window.
 2. In the Type field, query by example MTH_SCRAP_REASON, MTH_EQUIP_DOWNTIME_REASON, or MTH_EQUIP_IDLE_REASON. The window displays all Reason Codes associated with these types.



3. Click a new (empty) row to add a new code.
 4. Enter a Code.
 5. Enter a Meaning for the code.
 6. Enter an optional Description.

7. Enter an Effective date range. The From date defaults to the current date.
8. The Enabled indicator defaults to Enabled.
9. Save your work.

Related Topics

[Viewing and Adding Reason Codes, page 4-4](#)

Setting Up Equipment Reason Codes

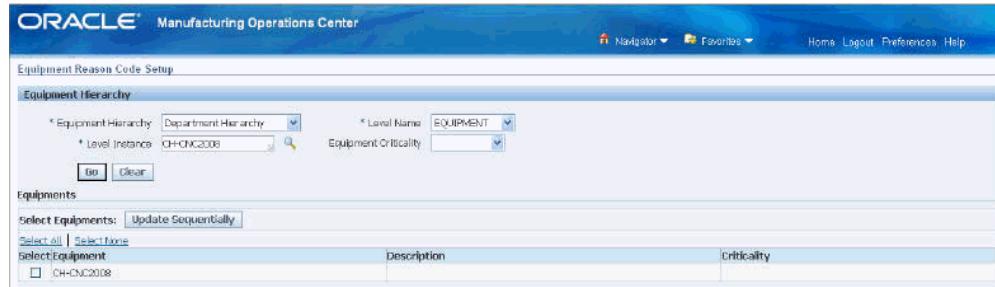
You must add equipment reason codes prior to adding events. Reason codes define the Equipment Down event types with associated reasons.

Equipment can be down and unavailable due to planned preventive maintenance activities. MOC updates the equipment shift for each equipment item, taking into account planned downtime.

MOC captures the expected uptime for each equipment item when the equipment is down due to unplanned downtime, or when equipment is idle. The application helps to identify equipment availability for production.

To set up equipment reason codes:

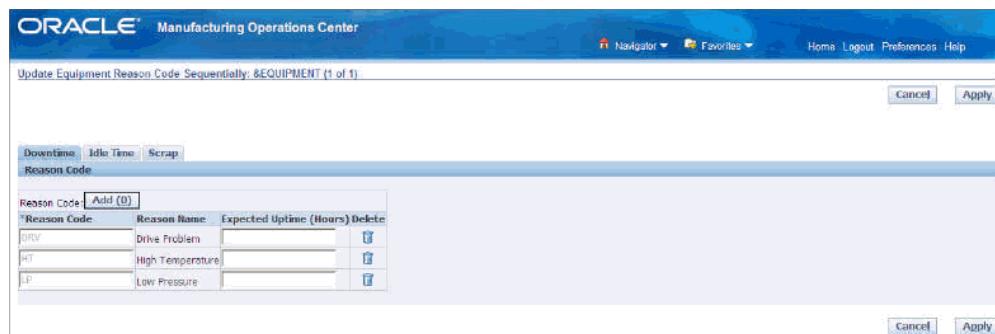
1. Navigate to the Equipment Reason Code Setup page. Use the Equipment Reason Code Setup page to set up equipment downtime reason codes. You can define the following reasons for equipment:
 - Downtime Reasons and Expected Uptime
 - Idle Time Reasons and Expected Uptime
 - Scrap Reasons
2. Select an Equipment Hierarchy from the List of Values (LOV).
3. Select a Level Name from the LOV.
4. Select a Level Instance.
5. You can optionally select an Equipment Criticality value from the LOV.
6. Click Go to perform your search. Based on the search criteria, the page displays the Level Instance and equipment for the selected Level in the Equipment Hierarchy.



7. Select one or more equipment rows and click the Update Sequentially button to navigate to the Update Equipment Reason Code Sequentially page. You can add Downtime reasons, Idle Time reason, and Scrap reasons for your equipment. You can also define Expected Uptime for each Downtime and Idle Time reason code.

To add or update equipment reason code sequentially:

1. From the Update Equipment Reason Code Sequentially page, select the Downtime tab to add or update equipment downtime reason codes and expected uptime.



2. Enter a Downtime Reason Code, or select a code from the search page.
3. Enter a value for Expected Uptime (Hours).
4. Click the Next button to enter Downtime reasons for the next equipment item that you selected, or click Apply to save your work.
5. Select the Idle Time tab to enter equipment idle time reason and expected uptime.

Reason Code	Reason Name	Expected Uptime (Hours)	Delete
CLE	Cleaning	0.5	
LOA	Loading	0.5	

6. Enter an idle time Reason Code, or select a code from the search page.
7. Enter a value for Expected Uptime (Hours).
8. Click the Next button to enter Idle Time reasons for the next equipment item that you selected, or click Apply to save your work.
9. Select the Scrap tab to enter equipment scrap reasons.

Reason Code	Reason Name	Delete
HAZ	Heat Affected Zone	
RM	Raw Material	
UC	Under Cut	

10. Click Add to enter a new scrap reason.
11. Enter a Reason Code, or select a code from the search page.
12. Click the Next button to enter Scrap reasons for the next equipment item that you selected, or click Apply to save your work.

Setting Up Events

Oracle Manufacturing Operations Center (MOC) provides a workbench to generate and process events based on event types. Based on the event type, action is taken by PL/SQL.

MOC supports collection of data from external OPC systems, and by using Event Management Framework, the application routes events and takes appropriate actions.

Update Equipment Event Action Sequentially Page

Use this page to add and update Event Types and Event Actions. You can also add notifications when events occur. You can add and update event types and actions for equipment items in order of selection from the Events Setup page. You can also view event actions previously added for equipment items (rows).

To set up events:

1. Navigate to the Event Setup page. Use the Event Setup page to set up event actions for event types. You can select the following actions against an event type by equipment items:
 - Seeded action such as creating work requests in EAM
 - Calling custom APIs or PL/SQL scripts
 - Sending e-mail notifications
 - Sending mobile alerts
2. Select an Equipment Hierarchy from the List of Values (LOV).
3. Select a Level Name from the LOV.
4. Select a Level Instance.
5. You can optionally select an Equipment Criticality value from the LOV.
6. Click the Go button to perform your search. Based on the search criteria, the page displays the Level Instance and equipment for the selected Level in the Equipment Hierarchy.

The screenshot shows the Oracle Manufacturing Operations Center Event Setup page. At the top, there are search fields for 'Equipment Hierarchy' (set to 'Department Hierarchy'), 'Level Name' (set to 'EQUIPMENT'), and 'Equipment Criticality'. Below these are buttons for 'Go' and 'Clear'. The main area is titled 'Equipments' and contains a table with columns 'Description' and 'Criticality'. A single row is selected, showing 'CH-MIXER1201' in the 'Description' column. At the bottom left of the table, there are buttons for 'Select All' and 'Selections', and a 'Select Equipment' checkbox.

7. Select one or more equipment rows and click the Update Sequentially button to navigate to the Update Equipment Event Action Sequentially. You can add or update event actions for each equipment row selected.

To add or update equipment event actions:

1. From the Update Equipment Event Action Sequentially page, click the Add button

in the Event Types region to add a new Event Type. If an event action was previously defined for an event type and you return to this page, then the earlier definition appears and you can modify the actions, if required.

The screenshot shows the Oracle Manufacturing Operations Center interface for Event Action Setup. The top navigation bar includes 'Navigator', 'Favorites', 'Home', 'Logout', 'Preferences', and 'Help'. The main content area has tabs for 'Event Action' (selected) and 'Notification'. The 'Event Types' section contains a table with the following data:

Event Type	Reason Code	Delete
Equipment Down	Drive Problem	
Equipment Down	High Temperature	
Equipment Down	Low Pressure	
Scrap		
Equipment Idle over a Period		
Scrap		
Equipment Idle over a Period		
Scrap		

The 'Event Action' and 'Notification' sections are currently empty, showing 'No results found.'

2. Select an Event Type from the LOV.
3. Select a Reason Code from the LOV (if applicable.) The Reason Code LOV is enabled only for the Equipment Down event type.
4. Click the Add button to add Event Types.
5. Select the Event Action tab. The Seeded Actions region appears.
6. Click the Add button to add a seeded event action.
7. Select a seeded Event Action from the LOV.
8. Select the Name and the appropriate indicators for the notification method.
9. Click the Add button in the Custom Actions region to add custom event actions
10. Select the Notification tab to add event notifications.

Event Type	Reason Code	Delete
Equipment Down	Drive Problem	
Equipment Down	High Temperature	
Equipment Down	Low Pressure	
Scrap		
Equipment Idle over a Period		
Scrap		
Equipment Idle over a Period		
Scrap		

User	Full Name	Email Address	Mobile Phone Number	Domain	Delete
veeresh.juluru		<input type="checkbox"/> veeresh.juluru@oracle.com	<input type="checkbox"/>		
Saurabh Surendra		<input checked="" type="checkbox"/> saurabh.surendra@oracle.com	<input type="checkbox"/>		
Raveender Yalaka		<input checked="" type="checkbox"/> raveender.yalaka@oracle.com	<input type="checkbox"/>		
Satyendra Bansal		<input checked="" type="checkbox"/> satyendra.bansal@oracle.com	<input type="checkbox"/>		

11. Click the Add button to add new notifications.
12. Enter notification details for the selected event.
13. Click Finish to save your work.
14. Click the Next button to add event actions for the next equipment item that you selected, or click Finish to save your work.

Setting Up Extensible Attributes for MOC Entities

Oracle Manufacturing Operations Center supports an extensible attributes framework to capture specific attributes for manufacturing entities. The extensible attributes framework helps in setting up and capturing parameters that are unique for your business environment, plant, equipment, items, work orders, batch operations and user-defined entities. The extensible attributes setup consists of the following steps:

- Setting up profile options for item and equipment entity classifications
- Defining classifications for Others entity type
- Creating attribute groups
- Creating attributes
- Associating attribute groups to classifications
- Creating attribute pages

Entities and Classifications

Shop floor or manufacturing entities are business objects in Oracle Applications with unique characteristics and processes. MOC supports item, equipment, work order, batch operation, and miscellaneous custom entities.

Entities are grouped into classification to define the type of attributes they can monitor. For example, boiler equipment in the shop floor are classified into one group which is the resource Boiler. You can define this classification using attribute metadata such as Pressure, Temperature, and so forth. Each MOC entity type page contains two tabbed regions: Classifications and Attributes. Entity pages open with all the classification values displaying in the search results table region. You can filter this list.

Classifications are defined based on the hierarchy of the entities. The hierarchy level is determined by the information in the following table:

Entity	Classification Source Creation	Values
Item:	Profile Option-MTH:Item Classification for Extensible Attributes	Hierarchy Name. The level is always Level 9 for the hierarchy selected.
Equipment:	Profile Option- MTH:Equipment Classification for Extensible Attributes	Hierarchy Levels.
Work Order:	Work order type	Discrete or Process Manufacturing work order types only.
Other:	No classification	N/A
Batch Operations	Work order	Work Order Number

Attributes and Attribute Groups

Attribute groups are a grouping of similar attributes used to monitor an entity. For example, Specifications is a seeded attribute group for the Equipment entity containing the attributes Parameter, Upper Control Limit, and Lower Control Limit. Oracle Product Information Management functionality is used for attribute creation.

Similar attributes can be categorized in an attribute group, such as a collection of items similar in type or function. You can:

- Group attributes based on business functions
- Define and use an unlimited number of attribute groups

- Create attribute pages for ease of viewing attributes

Attribute Pages

An attribute page is a view used to display, create, and edit different attributes from the various attribute group categories. An attribute page is a way of categorizing attribute groups and displaying them separately in these categories based on different functional areas. You can create attribute pages for each item, equipment, work order, batch operation, user-defined entity and other values of your entities—and assign corresponding attribute groups to these pages.

Refer to the *Oracle Manufacturing Operations Center Implementation Guide* for more information.

Related Topics

[Viewing Classifications for Shop Floor Entities, page 3-42](#)

[Viewing and Creating Attribute Group Data for Entities, page 3-44](#)

[Viewing and Creating Attribute Pages for Entities, page 3-46](#)

Setting Up E-Business Suite to run the Inbound Integrations for Discrete Flow

Manufacturing Operations Center (MOC) inbound integration is designed to work with E-Business Suite (EBS) and non-EBS target systems. The inbound integration with Oracle E-Business suite includes and enhances the collection of equipment entities and reference data, such as production segments, sub-segments, and resource schedules. This integration reduces the entity creation effort within MOC and also helps to reconcile data with Oracle EBS.

With MOC inbound integration, master and reference data collection from EBS into MOC is enhanced to collect resource instance, operation, and activity data so that there is no reconciliation issue of the references used in MOC and EBS for this integration.

MOC also collects the output and usage data from shop floor. On a demand basis, this data is consolidated to perform operation move, work order completion, and scrap and resource transactions. This data is pushed to the interface table for non-EBS consumption and targets the EBS interface table for EBS transactions.

To set up and collect inventory organizations from Oracle EBS:

Prerequisites

- Set up MOC Locations under the source organizations.
- For outbound integration, set flag PROJECT_REFERENCE_ENABLED = 2.

1. Navigate to the Organizations window:

Manufacturing and Distribution Manager > Inventory > Setup > Organizations > Organizations

2. Select an organization in the Name field.
3. Enter a location in the Location field.
4. Enter address details in the Address field.
5. In the Organizations Classification region, enter Inventory Organization.
6. Select the corresponding Enabled check box.
7. Save the record.
8. Select the Others button.

The Additional Organization Information window opens.

9. Select Accounting Information.
10. Click OK.
11. In the Accounting Information window, select the appropriate record in the Primary Ledger, Legal Entity, and Operating Unit fields.
12. Click OK, and save the record.

13. Click the Others button.

The Organization Parameters window opens.

14. Select a workday calendar.
15. Optionally, select the EAM Enabled check box if you want this location to be associated to the EAM organization.
16. Click Costing Information tab.

17. Enter costing details in the mandatory fields.

18. Save and close the window.

For more information on setting up parameters, see: Defining Default Inventory Parameters, *Oracle Inventory User's Guide*.

19. Navigate to MTH Project > MTH Setup > MTH Systems to run the Oracle Data Integrator (ODI) package for the organization setup.

20. Run the ODI package MTH_PKG_ORGANIZATIONS_SRC

To create the site in MOC and map the organization to that site:

1. Navigate to the Sites Summary window.
2. Select the Add button.
The Add Site window opens.
3. Enter a site code in the Site Code field.
4. Enter a site name in the Site Name field.
5. Click the Add button in the Data Sources region.
6. Select a system code from the System Code LOV.
7. Select the source organization from the Source Organization LOV.
8. Click the Save & Close button.

To create a department:

1. Navigate to the Departments window:
Manufacturing and Distribution Manager > Bills of Material > Routings > Departments
2. Select an organization in the Organization window.
3. Enter a department in the Department field of the Departments window.
4. Save and Close the window.

For detailed information on creating departments, see: Defining a Department, *Oracle Bills of Material User's Guide*.

To create a resource group:

1. Navigate to the CRP RESOURCE GROUPS Lookups window:
Manufacturing and Distribution Manager > Bills of Material > Setup > Resource Groups
The Application Utilities: CRP RESOURCE GROUPS Lookups window opens.
2. Click New from the File menu.
3. Enter the organization code in the Code field.

4. Enter the meaning of the code in the Meaning field.

5. Enter a description in the Description field.

6. Save and close the window.

See: Defining Resource Groups, *Oracle Capacity User's Guide*.

7. Navigate to MTH Project > MTH Setup > MTH Equipment Hierarchy.

8. Run the ODI package MTH_PKG_EQUIPMENT_ENTITIES_SRC.

To define a resource and attach the resource to the department:

1. Navigate to the Resources window:

Manufacturing and Distribution Manager > Bills of Material > Routings > Resources

2. Enter the resource, description, type, charge type details in the Resources window.

3. Save the record.

4. Click the Equipment button.

The Equipment Types window opens.

5. Enter the equipment name in the Equipment field.

6. Save and close the window.

7. Navigate to the Departments window.

8. Query the department you want to attach to the resource.

9. Select the Resources button.

10. Query the resource that you created and assign it to the department.

See: Defining a Resource, *Oracle Bills of Material User's Guide*.

Defining a Department, *Oracle Bills of Material User's Guide*.

11. Navigate to MTH Project > MTH Setup > MTH Resources.

12. Run the ODI package MTH_PKG_RESOURCES_SRC.

To create resource costs:

1. Navigate to the Resources window.

2. Query for the resource you created and select the Costed check box. This enables the Absorption Account field.
3. Select the Standard Rate check box.
4. Enter Absorption Account and Variance Account details in the respective fields.
5. Click the Rates button.

The Resource Costs window opens.

6. Enter the cost type as Frozen or Pending.

7. Enter the Resource Unit Cost.

8. Save and close the window.

See: Defining a Resource, *Oracle Bills of Material User's Guide*.

9. Navigate to MTH Project > MTH Setup > MTH Resources.

10. Run the ODI package MTH_PKG_RESOURCE_COST_SRC.

To collect resource instances, such as an equipment:

Note: Resource instances are collected as equipment entities and they are of type Machine in MOC.

Prerequisite

Create items of type Equipment and then generate a serial number for the equipment items.

1. Create items.

See: Defining Items, *Oracle Inventory User's Guide*.

2. Define equipment items.

See: Define Equipment Items, *Oracle Warehouse Management Implementation Guide*.

3. Generate serial number for the item.

See: Setting Up Serial Number Control, *Oracle Inventory User's Guide*.

4. Run the ODI package MTH_PKG_EQUIPMENTS_SRC 001.

To collect department and resource group hierarchies:

1. Associate the department or resource groups with resources and equipment.

2. Map the serial number with resource instances by setting up the hierarchy between equipment entities and resources and equipments.
3. Assign the resources to the department.
See: To define a resource and attach the resource to the department, page 3-18.
4. Run the ODI package MTH_PKG_EQUIPMENT_HIERARCHY_SRC.
5. Review the equipment hierarchy and the equipment denorm tables.

To collect the inventory items with BOM and routing setup:

1. Create an item and assign it to your organization.
See: Defining Items, *Oracle Inventory User's Guide*.
2. Navigate to MTH Project > MTH Setup > MTH Items.
3. Run the ODI package MTH_PKG_ITEMS_SRC.

To set up and collect item categories from EBS:

Prerequisite

Update MTH_DIM_HIERARCHY table with the CATEGORY_SET_NAME column.

1. Create an item category and assign it to an existing item.
See: Defining Categories, *Oracle Inventory User's Guide*.
2. Navigate to MTH Project > MTH Setup > MTH Items.
3. Run the ODI package MTH_PKG_ITEM_CATEGORIES_SRC.
4. Search for the new item category in the MTH_ITEM_CATEGORIES_D table.

To set up and collect the item costs from EBS:

1. Define cost type for the item.
See: Define Your Cost Types, *Oracle Inventory User's Guide*.
Defining Cost Types, *Oracle Cost Management User's Guide*.
2. Navigate to MTH Project > MTH Setup > MTH Items.
3. Run the ODI package MTH_PKG_ITEM_COST_SRC.
4. Search for the cost details in the MTH_ITEM_COST table.

To set up and collect item hierarchy and item denorm from EBS:

1. Navigate to MTH Project > MTH Setup > MTH Items.
2. Run the ODI package MTH_PKG_ITEM_HIERARCHY_SRC.
3. Validate the item hierarchy created for the created items, item categories in the MTH_ITEM_HIERARCHY table.
4. Search for the new records in the item Denorm table, MTH_ITEM_DENORM_D.

To collect the work orders:

1. Create a discrete job.

See: Defining Discrete Jobs Manually, *Oracle Work in Process User's Guide*.

2. Navigate to MTH Project > MTH Transactions > MTH Production Schedules.
3. Run the ODI package MTH_PKG_PRODUCTION_SCHEDULES_SRC.
4. Search for the discrete job in the MTH_PRODUCTION_SCHEDULES_F table.

To set up and collect work order associated with sales order reservations from EBS:

1. Create a sales order.

See: Defining Sales Order Main and Other Header Information, *Oracle Order Management User's Guide*.

2. Attach the sales order to a WIP job.
See: Creating Reservations, *Oracle Inventory User's Guide*.
3. Navigate to MTH Project > MTH Transactions > MTH Sales Orders.
4. Run the ODI package MTH_PKG_WORKORDER_RESERVATION_SRC.
5. Search for the created sales order in the MTH_WO_SALES_ORDERS_F table.

Note: You can also update and delete the work order associated with sales order reservations.

To collect the work order segments:

1. Query the discrete job.

See: Finding Discrete Jobs, *Oracle Work in Process User's Guide*.

2. Select the Operations button to review the operation details.
3. Run the ODI package to collect production segments.
4. Review the data in the MTH_PRODUCTION_SEGMENTS_F table.

To collect the work day shifts:

Prerequisites

Set the profile MTH: Shifts Setup as External Source.

Create a workday calendar and assign it to Inventory organization.

1. Create a workday calendar.

See: Using the Workday Calendar, *Oracle Bills of Material User's Guide*.

2. Update the calendar value in the Organizations Parameters window.
3. Navigate to MTH Project > MTH Setup > MTH Workday Shifts.
4. Run the ODI package MTH_PKG_WORKDAY_SHIFTS_SRC.
5. Search for the workday shifts in the MTH_WORKDAY_SHIFTS_D table.

To collect the equipment shifts:

Prerequisite

Work day shifts must be collected for the plant.

1. Navigate to MTH Project > MTH Setup > MTH Workday Shifts.
2. Run the ODI package MTH_PKG_EQUIPMENT_SHIFTS_SRC.
3. Search for the shifts in the MTH_EQUIPMENT_SHIFTS_D table with entity type as Site and Equipment as two different entities.

To set up and collect resource requirements or resource usage from EBS:

Prerequisite

You should have already collected work order and work order segment.

1. Query the discrete job.

See: Finding Discrete Jobs, *Oracle Work in Process User's Guide*.

2. Run the ODI package to view the data collected in

MTH_RESOURCE_REQUIREMENTS_F table.

To set up and collect material requirements and material consumed from EBS:

Prerequisite

You should have already collected work order and work order segment.

1. Query the discrete job.

See: Finding Discrete Jobs, *Oracle Work in Process User's Guide*.

2. Review the required quantities in the Material Requirement window by selecting the Components button.
3. Run the ODI package to view the data collected in MTH_PROD_MTL_CONSUMED_F table.

To set up and collect equipment schedule and resource instance schedule from EBS:

Prerequisites

Collect work day shifts and equipment shifts to collect the equipment production schedules.

Collect work orders and work order segments.

1. Update the discrete job.

See: Adding and Updating Operations, *Oracle Work in Process User's Guide*.

2. Update the date in the Resource Requirements window.

See: Viewing Job and Schedule Operations, *Oracle Work in Process User's Guide*.

3. Select the Instance button to add the instances and save the record.

4. Run the ODI package to view the data collected in MTH_EQUIP_PROD_SCHEDULES_F table.

Setting Up E-Business Suite to run the Outbound Integrations for Discrete Flows

MOC outbound integration is designed to work with EBS and non-EBS target systems. MOC's outbound integration with ERP Systems enables you to automate the process of updating the enterprise and transaction system data with operational data captured from shop floor with minimal or no latency. The equipment transaction data such as status and output are collected from Shop floor, processed within MOC and then

interfaced to Oracle EBS as Oracle WIP transactions.

The outbound integration's primary objective is to avoid the redundant effort of having to enter the transaction and reference data back into the enterprise and transaction systems. It also provides close integration with Oracle E-Business suite for Discrete Shop Floor Management and Flow Manufacturing applications.

Master and Reference data collection from EBS into MOC is enhanced to collect resource instances, operation and activity references so that there is no reconciliation issue of the references used in MOC and EBS for this integration.

MOC also collects the output and usage data from shop floor. The data is consolidated on a demand basis to perform the operation move, work order completion, scrap, and resource transactions. The data is pushed to the interface table for non-EBS consumption and then targets the EBS interface table for EBS transactions.

Prerequisites

- Export details profile should be set as Yes to collect the outbound integration data.

To set up tags in MOC for outbound integration after collecting inbound data:

Create the tags and set up the tag mapping in MOC. See: Setting Up Tags, page 3-2

The types of tags required include:

- Output
- Status
- Item
- Work Order
- Work Order Segment

Note: Set up tags separately for equipment associated with each segment of the work order. Tag data should be populated for the first part of the ITEM_PK (item tag). The work order tag is the first part of the WorkOrder_PK. The work order segment tag is the first part of the WOSegment_PK.

To set up the tag based contextualization for the equipment collected from EBS:

Note: Set up the tags separately for equipment associated with each

segment of the work order.

- Set up equipment contextualization.

See: Creating Equipment Contextualization Information, page 3-7.

To launch the interface managers:

1. Launch a transaction manager from the list.
See: To launch a transaction manager, *Oracle Inventory User's Guide*.
2. Select the Schedule button in the Launch Inventory Managers window.
The Schedule window opens.
3. Enter the Start At and End At dates.
4. Enter the time in Re-run every field.
5. Click OK.
6. Repeat the steps for Material Transaction and Move Transaction in the Interface Managers window.

Setting Up Inbound Data Collection for Oracle Process Manufacturing (OPM)

Set Up and Collect the Organization Information:

Prerequisites

- Set up MOC Locations under the source organization.
 - Ensure that system_pk is the same as source system SID as defined in MTH_SOURCE_LOCATION.
 - Set up Yield Subinventory and Yield Locator parameters for the outbound collection in OPM organization.
1. Set up the organization.
See: Setting Up E-Business Suite to run the Inbound Integrations for Discrete Flow, page 3-18.

Note: In the Inventory Parameters tab of the Organization

Parameters window, select Process Manufacturing Enabled check box for process manufacturing organization in the Enabled Products & Features region.

2. Create the site in MOC and map the organization to that site.

See: Setting Up E-Business Suite to run the Inbound Integrations for Discrete Flow, page 3-18.

Collect Resource Class and Resource Category:

Note: In OPM flow, Resource Class is same as the Resource Group and Resource Category is same as the Department of MOC. Hence, Resource Category and Resource Class are collected into MOC as Department and Resource Group, respectively.

To create resource class

1. Navigate to the Resource Classes window.

OPM Process Planning > Capacity Planning > Setup > Resource Classes

2. Enter the name of the resource class.
3. Save the record.

To create a generic resource

1. Navigate to the Resources window.

OPM Process Engineer > Setup > Generic Resources

2. Enter a resource name in the Resource field.
3. Enter a description for the resource.
4. Enter the unit of measure in the Usage UOM field.
5. Enter a component class in the Cost Component Class field.
6. Clear the Capacity region fields.
7. Save and close the window.

To create a resource category and plant resource

1. Navigate to the Resource Information window.

2. Query the resource that you created in the Resources window.
3. Enter the count number.
4. Enter the planning cost number.
5. Select a value from the Schedule Indicator LOV.
6. Enter the Usage UOM value.
7. Enter the capacity range values in the Range and To fields.
8. Enter the Ideal Capacity value.
9. Select the Capacity UOM value from the LOV.
10. Save the record.

Collect Resources:

Note: Resources of type Machine and Person are only collected, for which Resource Class should be Machine for machine type resource and Labor for person type resource. The resources must be attached to a department.

1. Create a generic resource in the Resources window.

Note: Create records with Machine and Labor in Resource Class field.
2. Create a plant resource by navigating to the Resource Information window.

See: To create a resource category and plant resource, page 3-28.
3. Run the ODI Package MTH_PKG_RESOURCES_SRC.

Collect Resource Instances:

Prerequisite

Create items of type Equipment and then generate a serial number for the equipment items.

See: Setting Up E-Business Suite to run the Inbound Integrations for Discrete Flow, page 3-18.

1. Navigate to the Resource Information window.
2. Query the resource created.
3. Click the Equipments button.

The Resource Equipments window opens.
4. Enter the Equipment Item.
5. Save the record.
6. Select Scheduling to Instance from the Schedule Indicator LOV.

The Instances button is now enabled.
7. Click the Instances button.
8. Enter the Start Date. This defaults to the system date.
9. Enter the End Date.
10. Click the Accept button.

The Resource Instances window opens.
11. Enter the Serial Number, Equipment Item, and Equip Serial Number in the respective fields.
12. Save and close the window.
13. Run the ODI package MTH_PKG_EQUIPMENTS_SRC.
14. Query the created records in the MTH_RESOURCES_D and MTH_EQUIPMENTS_D tables.

Set Up Hierarchy between Equipment Entities and Resources and Equipments:

Note: When the entities, resources and resource instances are set up, the hierarchies between equipment entities and resources and equipments are simultaneously set up.

1. Run the ODI package MTH_PKG_EQUIPMENT_HIERARCHY_SRC.
2. Query the equipment hierarchy and equipment denorm tables for the collected hierarchies.

Collect Inventory Items from EBS:

Note: Items are collected if INVENTORY_ITEM_FLAG = Y,
MTL_TRANSACTIONS_ENABLED_FLAG = Y,
STOCK_ENABLED_FLAG = Y

To set up formula

1. Navigate to the Formula Details window.
Formulator > Formulas
2. Enter the Formula name.
3. Enter a version for the formula.
4. Enter a description in the Description field.
5. Enter product details.
6. Select the Ingredients tab.
7. Enter the ingredient.
8. Enter quantity in the Quantity field.
9. Enter all the mandatory information for the product line.

10. Save the record.
11. Select Change Status option from the Actions menu.

The Change Status window opens.

12. Change the status to Approved for General Use.
13. Click OK.

See: Setting Up Formula Information, *Oracle Process Manufacturing Product Development User's Guide*.

To set up process operations

1. Navigate to the Process Operation Details:Activities window.
Process Engineer > Process Operations
2. Enter the operation name, version, description, and the process quantity in the respective fields.

3. Enter the activity details in the Activities region.

4. Click the Resources button.

The Process Operation window for the activity opens.

5. Select the resource from the Resource LOV.

6. Enter the Process Quantity and the Usage details.

7. Save the record.

8. Select Change Status option from the Actions menu.

The Change Status window opens.

9. Change the status to Approved for General Use.

10. Click OK.

To set up routing

1. Navigate to the Process Routing Details window.

Process Engineer > Process Routings

2. Enter a routing name.

3. Enter a description for the routing.

4. Enter the quantity in the Quantity field.

5. Select the unit of measure in the UOM LOV.

6. In the Routing Steps region, enter the operation step.

7. Enter the name of the operation, and the version for each routing step.

8. Save the record.

9. Select Change Status from the Actions menu.

The Change Status window opens.

10. Change the status to Approved for General User.

11. Click OK.

To set up recipe

1. Navigate to the Recipe Details window.

2. Enter a recipe name, its version, and description.
3. Enter a product name, formula, and the version.
4. Enter a routing and its version.
5. Select a unit of measure from the UOM LOV.
6. Save the record.

7. Click the Step/Material Association button.

The Recipe: Step/Material Association window opens.

8. Select an operation step from the Step LOV.
9. Select a line from the Line LOV.
10. Save the record.

11. Select Change Status from the Actions menu.

The Change Status window opens.

12. Change the status to Approved for General Use.
13. Click OK.

To set up validity rules

1. Navigate to the Recipe Details window.

2. Query the recipe that you created.

Ensure that the status of the recipe is Approved for General Use.

3. Click the Validity Rules button.

The Recipe: Validity Rule Details window opens.

4. Enter the Organization name.

5. Check the effective start date, unit of measure, and the product details.

6. Save the record.

7. Select Change Status from the Actions menu.

The Change Status window opens.

8. Change the status to Approved for General Use.
9. Click OK.

To collect the EBS inventory items

1. Create an item and assign it to your organization.

Note: Enable the Recipe Enabled and Process Execution Enabled check boxes in the Process Manufacturing tab of the Master Items window.

See: Defining Items, *Oracle Inventory User's Guide*.

2. Navigate to MTH Project > MTH Setup > MTH Items.
3. Run the ODI package MTH_PKG_ITEMS_SRC.
4. Query the item in the MTH_ITEMS_D table.

Set Up and Collect Item Categories from EBS:

Prerequisite

Update MTH_DIM_HIERARCHY table with the Category_set_name column.

1. Create an item category.
See: Defining Categories, *Oracle Inventory User's Guide*.
2. Navigate to MTH Project > MTH Setup > MTH Items.
3. Run the ODI package MTH_PKG_ITEM_CATEGORIES_SRC.
4. Search for the new item category in the MTH_ITEM_CATEGORIES_D table.

Set Up and Collect the Item Hierarchy and Item Denorm from EBS:

1. Navigate to MTH Project > MTH Setup > MTH Items.
2. Run the ODI package MTH_PKG_ITEM_HIERARCHY_SRC.
3. Validate the item hierarchy created for the items and item categories in MTH_ITEM_HIERARCHY table.
4. Search for the records in the MTH_ITEM_DENORM_D table.

Collect the Production Batches:

Prerequisites

- Create items with recipe and formula information.
- Batch information such as resources, equipment hierarchies, and items should have already been collected.
- Sufficient on-hand stock of components and ingredients must be available before executing work orders or batches.
- OPM batch and batch steps should be in WIP released status.

To create batch details

1. Navigate to the Create Batch/Firm Planned Order window.

Production Supervisor > Batch Details

2. Select the organization.

Note: The organization must be Process Manufacturing Enabled.

The Find Batches window opens.

3. Click the New button.

The Create Batch/Firm Planned Order window opens.

4. Select a recipe from the Recipe LOV and the version of the recipe from the Version LOV.

5. Select the Product Output tab.

6. Select a product from the Product LOV.

7. Enter the product quantity and the unit of measure.

8. Click OK.

The Batch Details window opens listing the new production batch with status as Pending.

9. Select the Release option in the Actions menu.

The Release Batch dialog box opens.

10. Click OK.

11. Navigate to Batch Steps window.
Production Supervisor > Batch Steps

12. Select a step.
13. Select the Release Step option in the Actions menu. Optionally, you can also complete the batch from the Actions menu.
14. Navigate to MTH Project > MTH Transactions > MTH Production Schedules
15. Run the ODI package MTH_PKG_PRODUCTION_SCHEDULES_SRC.
16. Query the record in the MTH_PRODUCTION_SCHEDULES_F table.

Set Up and Collect Production Batches associated with Sales Order reservations from EBS:

Note: Only those sales orders associated with an OPM batch are collected. Any modification done to the reservation in EBS will automatically update the record in MOC.

To create an OPM batch associated with sales order reservation

1. Create a sales order of Order Type Standard(Process).
See: Defining Sales Order Main and Other Header Information, *Oracle Order Management User's Guide*.
2. Attach the sales order to an OPM batch.
 1. Navigate to the Item Reservations window.
Inventory Super User (Process Operations) > On-hand, Availability > Reservations.
The Item Reservations window opens.
 2. Create a sales order with the Demand Source Type as Sales Order and the Supply Type as Job or Schedule (Process Batch).
See: Creating Reservations, *Oracle Inventory User's Guide*.
3. Navigate to MTH Project > MTH Transactions > MTH Sales Orders.
4. Run the ODI package MTH_PKG_WORKORDER_RESERVATION_SRC.
5. Search for the created sales order in the MTH_WO_SALES_ORDERS_F table.

Note: You can also update and delete work orders associated with sales order reservations.

Collect the Production Batch Segments:

Prerequisites

- Set up process operations for recipe.
 - Production batches should have already been collected.
1. Navigate to the Batch Details window.
Production Supervisor > Batch Details
The Batch Details window opens.
 2. Query the batch that you created.
 3. Select the Steps button.
The Batch Steps window opens.
 4. Review the batch step and operation details.
 5. Run the ODI package MTH_PKG_PRODUCTION_SEGMENTS_SRC to collect the production segments.
 6. Review the data in the MTH_PRODUCTION_SEGMENTS_F table.

Collect the Production Batch Sub-segments:

Prerequisites

- Set up process operations for the recipe for which the batch is created.
 - Associate activities (sub-segments) with each operation (batch steps).
 - Batch and batch segments should have already been collected.
1. Navigate to the Batch Steps window.
Production Supervisor > Batch Details > Steps (Button)
 2. Select the Activities button.
The Step Activities window opens.
 3. Review the batch step activities.

4. Run the ODI package MTH_PKG_PRODUCTION_SUB_SEGMENTS_SRC to collect the production sub-segments.
5. Review the data collected in the MTH_PROD_SUB_SEGMENTS_F table.

Create Workday Shifts from UI:

Prerequisites

- Set up the profile option MTH: Shifts Setup as MOC.
 - Your plant should have been created and mapped to the OPM organization.
1. Navigate to the Sites Summary window.
The Sites Summary window opens.
 2. Select the Entity Shift Setup tab.
The Entity Shift Setup window opens.
 3. Select the plant for which process manufacturing is set up from the Site LOV.
 4. Enter the Start Date and the End Date.
 5. Select the Generate button.
 6. Choose Yes in the Confirmation window.

Create Equipment Shifts from UI:

Prerequisites

- Set up the profile option MTH: Shifts Setup as MOC.
- Your plant should have been created and mapped to the OPM organization.
- Resources and equipments (resource instances) must have been created and collected in MOC for the OPM organization.

Create workday shifts from UI.

Note: Generating workday shifts for the plant will automatically generate the shifts for all its child entities in that plant.

Set Up and Collect Resource Requirements or Resource Usage from EBS:

Prerequisites

- Set up process operations for the recipe for which the batch is created.
- Associate activities with each operation.
- Batch, batch segments, and batch sub-segments should have already been collected.

1. Navigate to the Step Resources window.

Production Supervisor > Batch Details > Steps (B) > Batch Steps > Activities (B) > Step Activities > Resources (B)

The Step Resources window opens.

2. Review the resource details.
3. Run the ODI package MTH_PKG_RESOURCE_REQUIREMENTS_SRC to collect the resource requirements.
4. Review the data collected in the MTH_RESOURCE_REQUIREMENTS table.

Set Up and Collect Material Requirements or Materials Consumed from EBS:

Prerequisites

- Set up Step/Material Association for the recipe for which the batch is created.
 - Associate ingredients and final product with the operation steps.
 - Batch, batch segments, and batch sub-segments should have already been collected.
1. Query the batch created in the Find Batches window.
 2. Review the material requirements information in the Ingredients, Products, and By-Products tabs.
 3. Run the ODI package MTH_PKG_MTL_CONSUMED_SRC to collect the material requirements.
 4. Review the data in MTH_PROD_MTL_CONSUMED_F table.

Set Up and Collect Equipment Schedule or Resource Instance Schedule from EBS:

Prerequisites

- Workday shifts and equipment shifts must have been already collected.
- Production batch, batch segments, and batch sub-segments should have been already collected.

- Planned_End_Date of a batch is determined based on the process operations and process routing set up of a recipe or product.
1. Query the batch already created.
 2. Review the Plan Start Date and Plan Completion Date of each resource in the batch in the Step Resources window.
 3. Run the ODI package MTH_PKG_EQUIPMENT_PROD_SCHEDULE_SRC to collect the equipment production schedules.
 4. Review the data collected in the MTH_EQUIP_PROD_SCHEDULES_F table.

Note: Plan Start Date and Plan Completion Date of each resource in the batch should be collected as Schedule_from_date and Schedule_to_date in the MTH_EQUIP_PROD_SCHEDULES_F table.

Setting Up Tags in MOC for Outbound Integration after Collecting Inbound Data for OPM

Create Tags and Set Up the Tag Mapping in MOC

See: Setting Up Tags, page 3-2.

The types of tags required include:

- Output
- Status
- Item
- Work Order
- Work Order Segment

Note: Set up tags separately for equipment associated with each segment of the work order.

1. Tag data should be populated for the Status and Output tags along with the item, work order and work order segment as the three data elements are mandatory in the tag based contextualization.

2. Value for the item tag should be populated in the first part of the ITEM_PK. Similarly, value for the work order tag should be populated in the first part of the WorkOrder_PK and value for the work order segment tag in the first part of the WOSegment_PK.

Set Up the Tag Based Contextualization for the Equipment Collected from EBS

- Set up equipment contextualization.

See: Creating Equipment Contextualization Information, page 3-7.

Viewing Classifications for Shop Floor Entities

Manufacturing Operation Center entities are grouped into classifications, and associated to attributes that define specific characteristics for items in your organization. MOC supports item, equipment, work order, user-defined entities, batch operation, and other miscellaneous entities:

- Equipment classifications can designate the machine or plant location where manufacturing activity is performed on the shop floor.
- Item entity classifications can be group by categories such as product or line type, ABC classes, or cost structure.
- Other entity classifications are created on the Extensible Attributes Workbench per your requirements for miscellaneous categories in your organization.
- Work Order classifications designate Work in Process work order types, choices are discrete or process types.

To view entity classifications:

1. Navigate to the specific Entity page.

MOC provides Entity: Batch Operation, Entity: Equipment, Entity: Item, Entity: Others, Entity: User Defined and Entity: Work Order.

There are two tabbed regions: Classifications and Attributes. The page opens with all the classification values displaying in the search results table region.

Classifications are created in several different areas depending on the entity type, see: Setting Up Extensible Attributes for MOC Entities, page 3-16

You can filter your list by entering a value in the Classification field and selecting Go.



2. Select a value link in the Classification column to navigate to the Classifications Details page.

This page displays the following values in the Basic Information and Other Details regions:

- Classification—name for this grouping
- Entity—type of entity
- Classification Code

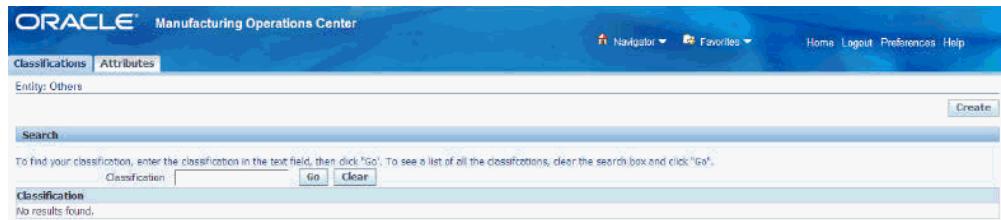
This page enables you to navigate to associated attribute groups and attribute pages for this item classification.



To create and update Others entity classifications:

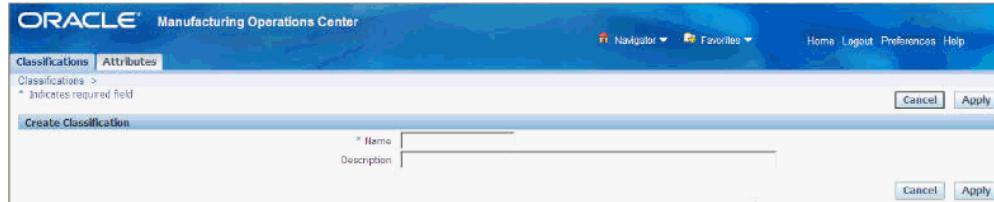
1. Navigate to the Entity: Others page.

The page opens with all the Classification values displaying in the search results table region.



2. Select Create to create a new classification record.

3. On the Create Classification page— enter values in the Name and, optionally, Description fields.



4. Select Apply to save your work.

To update an Other entity classification record:

1. Navigate to the Update Classification page.
2. Change the appropriate information in the Name and Description fields.
3. Select Apply to save your work.

Related Topics

[Setting Up Extensible Attributes for MOC Entities, page 3-16](#)

[Viewing and Creating Attribute Group Data for Entities, page 3-44](#)

[Viewing and Creating Attribute Pages for Entities, page 3-46](#)

Viewing and Creating Attribute Group Data for Entities

Manufacturing Operation Center Equipment entities are associated to attributes that capture specific characteristics for functional areas in your organization. Similar attributes can be categorized in an attribute group, and you can define an unlimited number of attribute groups that fit your business environment.

To view all attribute groups created for specific entities:

1. In the specific Entity page, select the Attributes tabbed region. This includes the Entity: Batch Operation, Entity: Equipment, Entity: Item, Entity: Others, Entity: User Defined, and Entity: Work Order pages.

All the existing attribute groups for the specific entity type selected appear in the results table.

You can filter the display by using a combination of values and conditional qualifiers in the following fields: Attribute Group Display, Attribute Group Description, Attribute Group Descriptions, Behavior, Business Entity, Database

View, and Internal Name.

Select Display Name	Internal Name	Description	Business Entity	Type	Behavior	Copy
ACTUALS_AROB	ACTUALS_AROB	Attribute group holds Gas Pressure, Arc Volt, Arc Current, Ambient Temperature, Condenser Pressure, Temp In, Temp Out,...	Equipment	Equipment	Multi-Row	
Actuals	ACTUALS	Attribute group holds Pressure, Temperature, RPM, Length, Width, Thickness and Weight attribute readings from tags.	Equipment	Equipment	Multi-Row	
Specifications	SPECIFICATIONS	Attribute group holds upper and lower control specifications for the equipment parameters.	Equipment	Equipment	Multi-Row	

This page enables you to select:

- A record link in the Display Name column to navigate to the Attribute Group Details page
- Create to navigate to the Create Attribute Group for Equipments page
- Copy to create a new attribute group using information in an existing record

To view and add attribute groups to a shop floor entity:

1. On the specific Entity Classification Details page, select Attribute Groups to display the Attribute Groups for an entity page.

All attribute groups associated to this equipment entity appear.

You can filter the results by using values for Display Name or Description. This page enables you to:

- Navigate to the Attribute Group Details page.
- Select an attribute group value link.
- Add attribute groups to this specific entity.

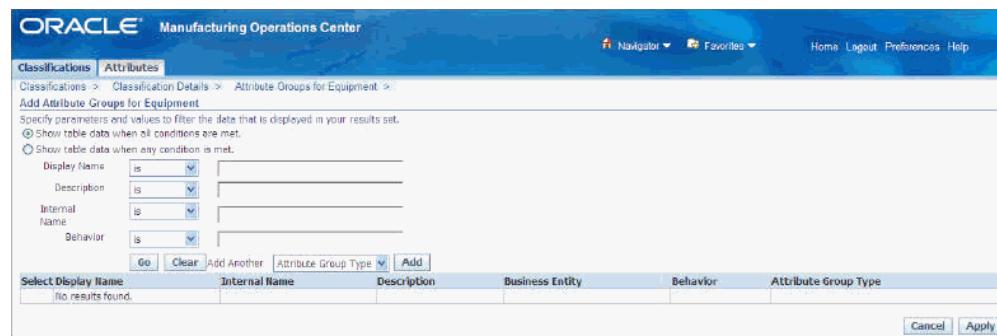
Select Display Name	Description	Data Level Pages
Specifications	Attribute group holds upper and lower control specifications for the equipment parameters.	Equipment - Parameter Monitoring
Actuals	Attribute group holds Pressure, Temperature, RPM, Length, Width, Thickness and Weight attribute readings from tags.	Equipment - Parameter Monitoring

2. Select Add Attribute Groups to associate attribute groups to the entity selected.

Depending on the entity is selected, the following pages appear:

- Add Attribute Groups for Batch Operation
- Add Attribute Groups for Equipment
- Add Attribute Groups for Item
- Add Attribute Groups for Others
- Add Attribute Groups for User Defined Entities
- Add Attribute Groups for Work Order

On the Add Attribute Groups page you can filter the display by using a combination of Attribute Group Type, Behavior, Display Name, Description, and Internal Name.



The screenshot shows the Oracle Manufacturing Operations Center interface. The top navigation bar includes 'Navigator', 'Favorites', 'Home', 'Logout', 'Preferences', and 'Help'. The main content area is titled 'Add Attribute Groups for Equipment'. It features a search section with dropdown menus for 'Display Name', 'Description', 'Internal Name', and 'Behavior'. Below the search is a table with columns: 'Select Display Name', 'Internal Name', 'Description', 'Business Entity', 'Behavior', and 'Attribute Group Type'. A note 'No results found.' is displayed in the table. At the bottom are 'Cancel' and 'Apply' buttons.

3. In the results table, select the attribute group records you want to add to the selected entity.
4. Select Apply to save your work.

The records appear on the refreshed Attribute Groups for this entity page.

Related Topics

[Setting Up Extensible Attributes for MOC Entities, page 3-16](#)

[Viewing Classifications for Shop Floor Entities, page 3-42](#)

[Viewing and Creating Attribute Pages for Entities, page 3-46](#)

Viewing and Creating Attribute Pages for Entities

Attribute pages can be created for each entity for ease of use in data entry and viewing. You can assign multiple attribute pages to a specific entity attribute group. For each page, you can choose the attributes displayed and the specific order listed.

To view and create Attribute Group Pages:

1. Select Pages to display attribute pages created for this entity classification.

This includes Batch Operation Pages, Equipment Pages, Items Pages, Others Pages, User Defined pages, and Work Order Pages.

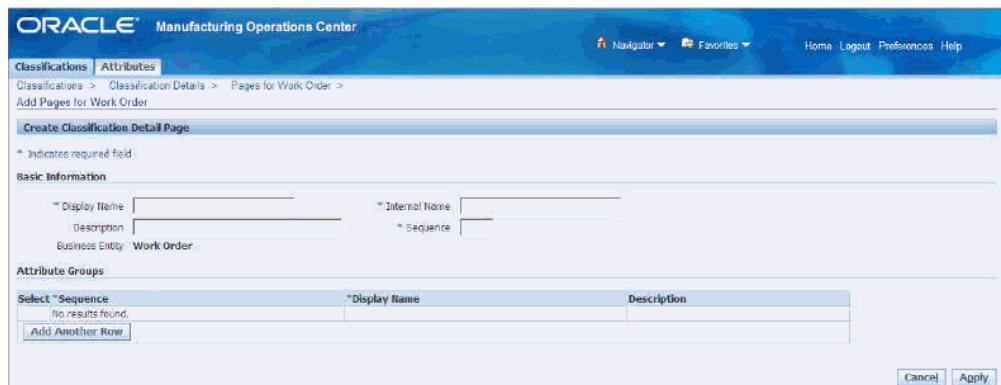
The attribute group pages for the specific entity selected appear in the results table.

You can search records on the entity Pages by Display Name or Description.



2. Select Create to create a new page for this entity.

The Add Pages for the select entity type appears.



3. Enter the following data in the Basic Information region:

- Display Name—name displayed on the page.
- Description—a description of the attribute category.
- Internal Name—internal name for the page, this value cannot be updated once a page has been created.
- Sequence—sequence number for each page associated with an attribute group, the sequence number determines the order pages are listed.

4. In the Attribute Groups region, select Add Another Row to add attributes groups to this page. To add an existing attribute group:
 - Enter a Sequence number
 - Select an existing Display Name value
5. Select Apply to save your work.

The attributes for this entity, and the display sequence appear in the Pages region.

Related Topics

[Setting Up Extensible Attributes for MOC Entities, page 3-16](#)

[Viewing Classifications for Shop Floor Entities, page 3-42](#)

[Viewing and Creating Attribute Group Data for Entities, page 3-44](#)

User Role

Overview of the User Role

The Manufacturing Operations Center (MOC) User role is used to integrate shop floor devices in manufacturing plants to the Manufacturing Operations Center for the purpose of data collection and reporting. The MOC User role consists of three functional areas - Tag Data Workbench, Extensible Attributes Data, and Manufacturing Operations Center Analytics.

- Tag Data Workbench includes:
 1. Manual Contextualization page - use this page to view or update business context for data that has the context method as Manual Contextualization.
 2. Equipment Downtime Reason page - use this page to provide Downtime Reasons for the downtime event.
 3. Equipment Scrap Reasons page - use this page to provide scrap reasons for the scrap event.
- Extensible Attributes Data - used to view and add data to entities such as Items, Equipment, Work Orders, Batch Operations, and miscellaneous custom entities.
- Manufacturing Operations Center Analytics - provides analytical tools and reporting using the Manufacturing Operations Center Catalog and the Plant Manager, Facilities Manager, and Ad hoc Dashboards.
- Shift Exceptions - use this page to edit shifts for exceptions. Refer to the topic "Editing Shifts for Exceptions" in the Setting Up Time Dimension Hierarchies chapter of the *Oracle Manufacturing Operations Center Implementation Guide* for more information.
- Actual Meters Data Entry- Use this page to enter meter readings manually using the

Actual Meters Data Entry page and also view the history of readings for a meter.

Related Topics

- [Adding Reason Codes, page 3-9](#)
- [Viewing and Adding Reason Codes, page 4-4](#)
- [Extensible Attributes Data for Entities, page 4-5](#)
- [Performing Actual Meters Data Entry, page 4-6](#)

Using the Manual Contextualization Method

Use the Manual Contextualization page to manually enter and edit context for all active tags that have not been summarized to the equipment summary tables, and whose contextualization method is either schedule-based or manual-based. If you use the manual contextualization method, then the application will not apply any logic to get the context, other than equipment and shift, and you can manually enter the work order, segment, or item context in the Manual Contextualization page.

For the schedule-based contextualization method, you must update the Equipment Production Schedule to get the context of shift, work order, segment, and item. Using Manual Contextualization page, mark the rows for reprocessing to get the updated context for the tag from Equipment Production Schedule.

To manually enter and edit context:

1. Navigate to the Manual Contextualization page.
2. Select a Plant. You can refine your search further by selecting a value in the Equipment field and Tag field.
3. Enter From and To Dates to refine your search to a specific date range.
4. Click Go.
5. You can display your search results by Missing Mandatory Context Only, Missing Optional Context Only, or All Context. The Missing Mandatory Context Only option displays tag rows that do not have the context, but were set as mandatory context for the equipment. The Missing Optional Context Only option displays tag rows which do not have the context but were set as optional context for the equipment. All context displays rows from both Missing Mandatory and Optional Context options.

Select Equipment	Contextualization Method	Workorder	Workorder Segment	Item
CH-BOL	Tag Based	Mandatory	Mandatory	Mandatory
CH-BRUSH02	Tag Based	Mandatory	Mandatory	Mandatory
CH-CNC2008	Tag Based	Mandatory	Mandatory	Mandatory
CH-DLP	Tag Based	Mandatory	Mandatory	Mandatory
CH-MIXER_1201	Manual	Mandatory	Mandatory	Mandatory
CH-MIXER_ESD	Tag Based	Mandatory	Mandatory	Mandatory
CH-MIXER_EQ	Tag Based	Mandatory	Mandatory	Mandatory
CH-POT	Tag Based	Mandatory	Mandatory	Mandatory
CH-PLT	Tag Based	Mandatory	Mandatory	Mandatory
CH-STS	Tag Based	Mandatory	Mandatory	Mandatory

To update context detail:

You can update context detail for each row, or update context detail for multiple rows in a batch.

1. To update context within a single row, click the search icon for a context field. The Search and Select window appears.
2. Enter your search criteria and click Go. A list of results displays. Select a value and click Select.
3. To update context for multiple rows in a batch, select rows that you want to update and click the Enter Context in Batch button. The Batch Contextualization Update page appears.

4. Enter each context and click the Enter in Batch button. Each context field for the selected rows are updated.
5. Save your work.

Related Topics

[Creating Equipment Contextualization Information](#), page 3-7

Viewing and Adding Reason Codes

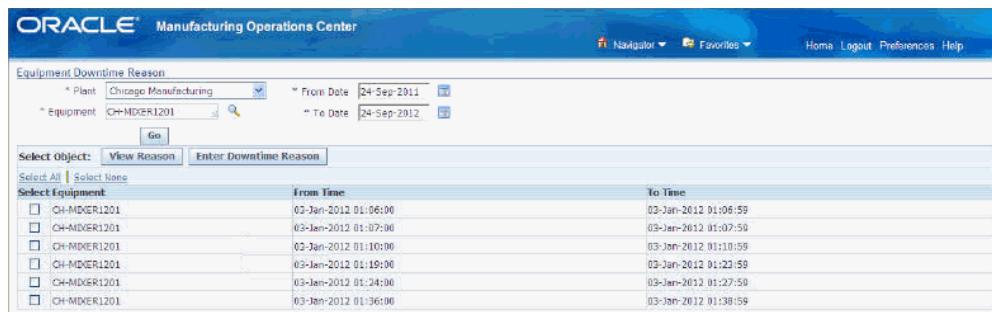
From the Tag Data Workbench, you can add or view reasons for equipment downtime or equipment scrap quantity.

To view and add reason codes from the Tag Data Workbench:

1. Navigate to the Equipment Downtime Reason page or the Scrap Reason page. The Tag Data Workbench appears.

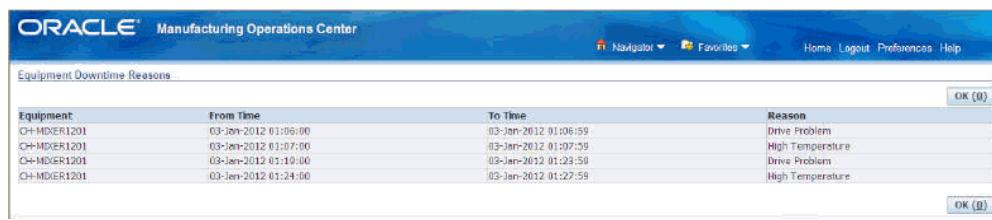
Note: The following steps apply to both Equipment Downtime Reasons and Equipment Scrap Reasons.

2. Select a Plant from the List of Values (LOV).
3. Enter a valid value for Equipment, or search for a value.
4. Specify a date range for viewing or adding equipment downtime or scrap reason.
5. Click Go. The page displays the equipment downtime or scrap reading.



Equipment	From Time	To Time	Reason
CH-MDGER1201	03-Jan-2012 01:06:00	03-Jan-2012 01:06:59	Drive Problem
CH-MDGER1201	03-Jan-2012 01:07:00	03-Jan-2012 01:07:59	High Temperature
CH-MDGER1201	03-Jan-2012 01:10:00	03-Jan-2012 01:10:59	Drive Problem
CH-MDGER1201	03-Jan-2012 01:19:00	03-Jan-2012 01:23:59	High Temperature
CH-MDGER1201	03-Jan-2012 01:24:00	03-Jan-2012 01:27:59	Drive Problem
CH-MDGER1201	03-Jan-2012 01:36:00	03-Jan-2012 01:38:59	High Temperature

6. Select rows to view and add one or more reasons.
7. Click the View Reason button to view existing reasons for the date range specified.



Equipment	From Time	To Time	Reason
CH-MDGER1201	03-Jan-2012 01:06:00	03-Jan-2012 01:06:59	Drive Problem
CH-MDGER1201	03-Jan-2012 01:07:00	03-Jan-2012 01:07:59	High Temperature
CH-MDGER1201	03-Jan-2012 01:19:00	03-Jan-2012 01:23:59	Drive Problem
CH-MDGER1201	03-Jan-2012 01:24:00	03-Jan-2012 01:27:59	High Temperature

8. Click the Enter Downtime Reason button to add a downtime reason to your equipment. The Downtime Reasons Entry page appears.

Note: If you are adding Equipment Scrap Reasons, then the Equipment Scrap Reasons page appears.

9. In the Downtime Reason field or Scrap Reason field, enter a value, or search for a valid reason. You can add multiple reasons to selected equipment downtime or scrap reading rows.

10. Save your work. You can now click the View Reason button to verify that the reason code is now attached to the selected downtime or scrap reading rows.

Select Equipment	From Time	To Time
CH-MDER1201	03-Jan-2012 01:06:00	03-Jan-2012 01:06:59
CH-MDER1201	03-Jan-2012 01:07:00	03-Jan-2012 01:07:59
CH-MDER1201	03-Jan-2012 01:10:00	03-Jan-2012 01:10:59
CH-MDER1201	03-Jan-2012 01:19:00	03-Jan-2012 01:23:59
CH-MDER1201	03-Jan-2012 01:24:00	03-Jan-2012 01:27:59
CH-MDER1201	03-Jan-2012 01:36:00	03-Jan-2012 01:38:59

Extensible Attributes Data for Entities

Equipment and other manufacturing entities are business objects in the shop floor with unique characteristics and processes. MOC supports the collection of attributes for item, equipment, work order, batch operation, and miscellaneous custom entities. You can update or view attributes for manufacturing entities from the Manufacturing Operations Center User responsibility.

To view extensible attributes data for entities:

1. Navigate to the entity-specific page. The entity-specific attributes display.

Equipment			
Entity: Equipment			
Search			
Enter the name of the entity to be searched for and press "Go!"	Entity Name	Go!	Clear
Entity Natural Key	Entity Name	Description	Classification
BLR-R01 EQUIP1	BLR-R01 EQUIP1		Unassigned
BLR-F01 EQUIP1	BLR-F01 EQUIP1		Unassigned
BLR-W01 EQUIP1	BLR-W01 EQUIP1		Unassigned
MM1-EQUIP2	MM1-EQUIP2		Unassigned
MM1-EQUIP-EP2	MM1-EQUIP-EP2		Unassigned
MM1-EQUIP-EXTNSBL	MM1-EQUIP-EXTNSBL		Unassigned
M2-CHC2008	M2-CHC2008		Unassigned
MM1-EQUIP-INACTAG	MM1-EQUIP-INACTAG		Unassigned
BLR-ASSY1 EQUIP1	BLR-ASSY1 EQUIP1		Unassigned
CH-001	CH-001		Unassigned

2. You can further refine your display by searching on the Entity Name.
3. Click on an Entity Name link to view details. The Overview page appears and displays entity-specific details.

Work Orders			
Work Orders > Overview for WO1.CH			
Overview		Work Order Type: Discrete Job	
Work order Name	WO1.CH	Line Code	
Status Code	4	System Name	MOC Hat Files
Plant Name	Chicago Manufacturing	Planned Completion Date	31-Jan-2012
Planned Start Date	01-Jan-2012	Actual Completion Date	31-Jan-2012
Actual Start Date	01-Jan-2012	Parent Workorder Name	
Date Released	01-Jan-2012		

Note: The MOC User Role allows you to enter the values for the attributes. A typical example would be defining specification attributes and comparing with actual attribute values for the entities.

The Entity Instance Attribute Details page of the MOC Administrator Role appears in the MOC User Role for the entity, and allows you to enter or view the attribute values.

Actual Meters Data Entry

You can enter meter readings manually using the Actual Meters Data Entry page and also view the history of readings for a meter.

To enter meter readings manually:

1. Navigate to the Actual Meter Data Entry page.
2. Enter Sustainability Aspect to find a meter using its sustainability aspect.

3. Enter the following criteria to search for a meter:
 - Meter Type to find a meter using its type.
 - Entity Hierarchy to find a meter using its entity hierarchy
 - Entity and Entity Name to find a meter by its entity.
 4. Click Go. The page displays a list of all the actual meters for which you can enter data readings.
 5. The following fields display for each meter:
 - Meter Code
 - Meter Name
 6. Enter the time period for which you want to enter the readings in the From Time and To Time fields.
 7. Enter the value of the sustainability aspect usage in the Usage Value field. Usage UOM is the unit of measure in which the sustainability aspect usage is expressed.

Actual Meters Data Entry

Search Meters

* Sustainability Aspect		Electricity	Meter Type	Actual
Entity Hierarchy		Department Hierarchy	Entity	<input type="text"/>
Entity Name		<input type="text"/>	Meter Code	<input type="text"/>
		<input type="button" value="Go (G)"/>	<input type="button" value="Clear (C)"/>	<input type="button" value="Search"/>

Search Results: Meter Data Entry

Meter Code	Meter Name	From Time	To Time	Usage Value	Usage Unit
MTR_ACT_FU1_PC_DPT_LIGT	MTR_ACT_FU1_PC_DPT_LIGT	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_PC_DPT_COMP	MTR_ACT_FU1_PC_DPT_COMP	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_TST_DPT_LIGT	MTR_ACT_FU1_TST_DPT_LIGT	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_PKG_DPT_COMP	MTR_ACT_FU1_PKG_DPT_COMP	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_PKG_DPT_LIGT	MTR_ACT_FU1_PKG_DPT_LIGT	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_GA_DPT_LIGT	MTR_ACT_FU1_GA_DPT_LIGT	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_PC_EQP_B01L	MTR_ACT_FU1_EQP_B01L	06-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_PC_EQP_C11	MTR_ACT_FU1_EQP_C11	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_TST_EQP_C12	MTR_ACT_FU1_TST_EQP_C12	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH
MTR_ACT_FU1_PKG_EQP_C13	MTR_ACT_FU1_PKG_EQP_C13	31-Aug-2016 23:00:00	<input type="button"/>	<input type="button"/>	KWH

Reprocessing of MOC Data

Overview of Reprocessing of MOC Data

Reprocessing of MOC Data feature recalculates the past data for tag readings, output, status, output summary, status summary, and reason readings table when you provide input data for tag readings raw, CSV data for equipment output, or CSV data for equipment status. Recalculation enables you to go back in time and update any past status data coming from the CSV file, providing you the flexibility to correct any past data. This feature is used at a specific equipment level and all equipments level in a plant.

Prerequisites

1. Build equipment hierarchy.
2. Define equipment reason setups.
3. Maintain transactions for status and output.
4. Prepare new status and/or output data.

Note: You can execute recalculation at the status, output, and both at the status and the output levels.

Status Recalculation

1. Upload new status flat file to file location.
2. Run ODI scenario for reprocessing.
3. Check scenario completion and then review log.

4. Query status, summary, tag reason readings.

Output Recalculation

1. Upload new output flat file to file location.
2. Run ODI scenario for reprocessing.
3. Check scenario completion and review log.
4. Query output, summary, tag reason readings.

Status and Output Recalculation

1. Upload new status and output flat files to file location.
2. Run ODI scenario for reprocessing.
3. Check scenario completion and review log.
4. Query status, summary, and tag reason readings.

Variable Name	Expected Value
MTH_V_USER_NAME	MFG or MOC
MTH_V_RESPONSIBILITY_NAME	Manufacturing Operations Center Administrator
MTH_V_FROM_TIMEZONE	User Defined Time Zone (Optional)
MTH_V_TO_TIMEZONE	User Defined Time Zone (Optional)
MTH_V_PROCESS_MODE	RECAL
MTH_V_SOURCE_VALUE	For Status Recalculation: CSVS For Output Recalculation: CSVO For Both Status and Output Recalculation: CSVSO
MTH_V_SITE_FOR_RECAL	PLANT_PK

Variable Name	Expected Value
MTH_V_EQUIP_FOR_RECAL	EQUIPMENT_PK
MTH_D_RECAL_FROM_DATE	For Status: From Date of First Record For Output: Reading Time of first Record
MTH_D_RECAL_TO_DATE	For Status: To Date of last Record less one second For Output: Reading Time of last record

Reprocessing OUTOUT CSV data only

Reprocessing of equipment output data and equipment status data can be done individually or both at a time based on the input parameters that you choose.

Prerequisites

Organizations, Plants, WorkdayShifts, Equipments, resources and EquipEntities, EquipmentShifts, Equip Hierarchy, EquipDenorm and EquipmentReasonSetup data should be set up.

Example Data:

Plant_pk = Plant_01.

Plant_Pk_Key = 1000.

Equipment_Pk = Equip_01.

Equipment_Pk_Key = 1001.

Workday shifts and Equipment shifts are defined for the plant and equipment.

Assume that Shift_Workday_pk_key is the same as the corresponding hour number. (For example, for 10:00:00 it is 10, for 17:00:00 it is 17, and so on.)

Scrap reason codes: HAZ, UC (Reason type = 2)

Existing data in output, status and their summary tables, and tag reason readings table are listed below.

Existing data in Equipment Output table

Equipment_Fk_key	Reading_Time	Hour_fk_key	Qty_completed	QTY_SCRAP
1001	2012.09.17 10:07:00	10	50	
1001	2012.09.17 10:28:00	10	25	5(UC)
1001	2012.09.17 10:50:00	10	30	
1001	2012.09.17 11:25:00	11	25	
1001	2012.09.17 11:25:00	11	60	10(HAZ)

Existing data in Equipment Output Summary table

Equipment_Fk_Key	From_time (mth_hour_d)	To_time (mth_hour_d)	Hour_fk_key	Qty_Completed	QTY_SCRAP
1001	2012.09.17 10:00:00	2012.09.17 10:59:59	10	115	5
1001	2012.09.17 11:00:00	2012.09.17 11:59:59	11	85	10

Existing data in Equipment Tag Reason Readings table

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
2	1001	2012.09.17 10:28:00	2012.09.17 10:28:00	10	2012.09.17 10:28:00	UC

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
2	1001	2012.09.17 11:48:00	2012.09.17 11:48:00	11	2012.09.17 11:48:00	HAZ

1. Update the OUTPUT CSV with records to be reprocessed.

OUTPUT CSV data

Equipment_Fk_Key	Reading_Time	Qty_Complete_d	QTY_SCRAP	Scrap_Reason_code
1001	2012.09.17 10:10:00	110	10	HAZ
1001	2012.09.17 10:30:00	60		
1001	2012.09.17 10:40:00	50		
1001	2012.09.17 11:30:00	40	20	UC
1001	2012.09.17 11:56:59	30		

2. Upload the CSVs to the (or EXT table) using FileZilla.
3. Follow the steps below to run ODI scenario:
 1. Go to ODI studio.
 2. Navigate to MTH Transactions > MTH Equipment Transactions > MTH_PKG_REPROCESS_TRANSACTIONS.
 3. Right click and select Execute to run the Scenario.
 4. Select the correct Context in the Execution window that appears.
 5. Click OK.

window appears.

6. Deselect the Last Values.
7. Enter the following parameters:
 - MTH_V_USER_NAME : <MOC>
 - MTH_V_RESPONSIBILITY_NAME : <Manufacturing Operations Center Administrator>
 - MTH_V_FROM_TIMEZONE : <>
 - MTH_V_TO_TIMEZONE : <>
 - MTH_V_PROCESS_MODE : <RECAL>
 - MTH_V_SOURCE_VALUE : <CSVO>
 - MTH_V_SITE_FOR_RECAL : <Plant_01>
 - MTH_V_EQUIP_FOR_RECAL : <Equip_01>
 - MTH_D_RECAL_FROM_DATE : <2012.09.17 10:10:00>
(Reading_Time of first record in OUTPUT CSV.)
 - MTH_D_RECAL_TO_DATE : <2012.09.17 11:56:59>
(Reading_Time of last record in OUTPUT CSV)

8. Click OK to run the Scenario.
9. Click on Operator tab.

If the scenario is completed, a CP request is submitted.

4. Log on to the application.

User name is MOC and the password is welcome.

5. Select View Requests from the Tool menu.

Verify the CP request status and log information.

6. Connect to the SQL tool.

7. Query the OUTPUT, OUTPUT SUMMARY, and TAGReasonReadings tables.

Verify if the data has been reprocessed or not. If reprocessed, then the recalculated data in OUTPUT, OUTPUT SUMMARY, TAGReasonReadings tables are as follows:

New and recalculated data in Equipment Output table

Equipment_Fk_key	Reading_Time	Hour_fk_key	Qty_completed	QTY_SCRAP
1001	2012.09.17 10:10:00	10	110	10(HAZ)
1001	2012.09.17 10:30:00	10	60	
1001	2012.09.17 10:40:00	10	50	
1001	2012.09.17 11:30:00	11	40	20(UC)
1001	2012.09.17 11:56:59	11	30	

New and recalculated data in Equipment Output Summary table

Equipment_Fk_Key	From_time (mth_hour_d)	To_time (mth_hour_d)	Hour_fk_key	Qty_Comple ted	QTY_SCRAP
1001	2012.09.17 10:00:00	2012.09.17 10:59:59	10	220	10
1001	2012.09.17 11:00:00	2012.09.17 11:59:59	11	70	20

New and recalculated data in Equipment Tag Reason Readings table

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
2	1001	2012.09.17 10:10:00	2012.09.17 10:10:00	10	2012.09.17 10:10:00	HAZ

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
2	1001	2012.09.17 11:30:00	2012.09.17 11:30:00	11	2012.09.17 11:30:00	UC

Note: The recalculation of the Equipment Output Summary and Status Summary for Equip_01 involves the following scenarios based on the data you populate in CSVs to reprocess:

1. Output Summary and Status Summary do not have data prior to the RECAL_FROM_DATE and data after the RECAL_TO_DATE.
2. Output Summary and Status Summary do not have data prior to the RECAL_FROM_DATE but have data for Equip_01 after the RECAL_TO_DATE.
3. Output Summary and Status Summary have data prior to the RECAL_FROM_DATE but the data do not exist for the dates after RECAL_TO_DATE for Equip_01.
4. Output Summary and Status Summary have data prior to the RECAL_FROM_DATE and data for dates after the RECAL_TO_DATE for Equip_01.
5. Output Summary and Status Summary do not have data prior to the RECAL_FROM_DATE and also for dates after the RECAL_TO_DATE for Equip_01.
6. Output Summary and Status Summary do not have data prior to the RECAL_FROM_DATE but have data for the dates after the RECAL_TO_DATE for Equip_01.
7. Output Summary and Status Summary have data prior to the RECAL_FROM_DATE but do not have data for the dates after the RECAL_TO_DATE for Equip_01.
8. Output Summary and Status Summary have data prior to the RECAL_FROM_DATE and also have data for dates after the RECAL_TO_DATE for Equip_01.

Reprocessing STATUS CSV data only

Reprocessing of equipment output data and equipment status data can be done individually or both at a time based on the input parameters that you choose.

Prerequisites

Organizations, Plants, WorkdayShifts, Equipments, resources and EquipEntities, EquipmentShifts, Equip Hierarchy, EquipDenorm and EquipmentReasonSetup data should be set up.

Example Data:

Plant_pk = Plant_01

Plant_Pk_Key = 1000

Equipment_Pk = Equip_01

Equipment_Pk_Key = 1001

Workday shifts and Equipment shifts are defined for the plant and equipment.

Assume that Shift_Workday_pk_key is the same as the corresponding hour number. (For example, for 10:00:00 it is 10, for 17:00:00 it is 17, and so on.)

Idle reason codes: LOA, CLE (Reason type = 3).

Down reason codes: DRV, HT (Reason type = 1).

Existing data in status, status summary, and tag reason readings table are listed below:

Existing data in Equipment Status table

Equipment_Fk_Key	From_time	To_time	Hour_fk_key	Status	READING_TIME
1001	2012.09.17 10:00:00	2012.09.17 10:25:00	10	1	2012.09.17 10:00:00
1001	2012.09.17 10:25:01	2012.09.17 10:45:00	10	2(LOA)	2012.09.17 10:25:01
1001	2012.09.17 10:45:01	2012.09.17 10:59:59	10	3(DRV)	2012.09.17 10:45:01
1001	2012.09.17 11:00:00	2012.09.17 11:15:00	11	1	2012.09.17 11:00:00

Equipment_Fk_Key	From_time	To_time	Hour_fk_key	Status	READING_TIME
1001	2012.09.17 11:15:01	2012.09.17 11:37:00	11	2(LOA)	2012.09.17 11:15:01

Existing data in Equipment Status Summary table

Equipment_Fk_Key	UP_Hours	Down_Hours	Idle_Hours	Run_Hours	Off_Hours	Hour_FK_key
1001	.750000	.250000	.3333	.416667	0.00000	10
1001	1.0000	0.00000	.594595	.405405	0.00000	11

Existing data in Equipment Tag Reason Readings table

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
3	1001	2012.09.17 10:25:01	2012.09.17 10:45:00	10	2012.09.17 10:25:01	LOA
1	1001	2012.09.17 10:45:01	2012.09.17 10:59:59	10	2012.09.17 10:45:01	DRV
3	1001	2012.09.17 11:15:00	2012.09.17 11:37:00	11	2012.09.17 11:15:00	LOA

1. Update the STATUS CSV with records to be reprocessed.

STATUS CSV data

Equipment_Fk_Key	From_time	To_time	Status	Down_Time_Reason_code
1001	2012.09.17 10:10:00	2012.09.17 10:40:00	2	

1001	2012.09.17 10:40:00	2012.09.17 10:55:00	3	HT
1001	2012.09.17 10:55:00	2012.09.17 11:10:00	2	CLE
1001	2012.09.17 11:10:00	2012.09.17 11:35:00	3	DRV
1001	2012.09.17 11:35:00	2012.09.17 11:57:00	1	

2. Upload the Status CSV to the Flat file Directory (or EXT table) using FileZilla.

3. Follow the steps below to run ODI scenario.

1. Go to ODI studio.

2. Navigate to MTH Transactions > MTH Equipment Transactions > MTH_PKG_REPROCESS_TRANSACTIONS.

3. Right click and select Execute to run the scenario.

4. Select the correct Context in the Execution window that appears.

5. click OK.

Variable Values window appears.

6. Deselect the Last Values.

Enter the following parameters:

- MTH_V_USER_NAME : <MOC>
- MTH_V_RESPONSIBILITY_NAME : <Manufacturing Operations Center Administrator>
- MTH_V_FROM_TIMEZONE : <>
- MTH_V_TO_TIMEZONE : <>
- MTH_V_PROCESS_MODE : <RECAL>
- MTH_V_SOURCE_VALUE : <CSVs>

- MTH_V_SITE_FOR_RECAL : <Plant_01>
- MTH_V_EQUIP_FOR_RECAL : <Equip_01>
- MTH_D_RECAL_FROM_DATE : <2012.09.17 10:10:00>
(From_date of first record in STATUS CSV.)
- MTH_D_RECAL_TO_DATE : <2012.09.17 11:56:59>
(To_date of last record minus one second in status CSV)

7. Click OK to Run the scenario.

8. Click on the Operator tab.

If the scenario is completed, a CP request is submitted.

4. Log on to the application.

User name is MOC and the password is welcome.

5. Select View Requests from the Tool menu.

Verify the CP request status and log information.

6. Connect to SQL tool.

7. Query the STATUS, STATUS SUMMARY, TAGReasonReadings tables.

Verify if the data has been reprocessed or not. If reprocessed, then the recalculated data in status, status summary, and Tag reason readings table are as follows:

New and recalculated data in Equipment Status table

Equipment_Fk_Key	From_time	To_time	Hour_fk_key	Status	READING_TIME
1001	2012.09.17 10:00:00	2012.09.17 10:40:00	10	2	2012.09.17 10:00:00
1001	2012.09.17 10:40:01	2012.09.17 10:55:00	10	3(HT)	2012.09.17 10:40:01
1001	2012.09.17 10:55:01	2012.09.17 10:59:59	10	2(CLE)	2012.09.17 10:55:01

Equipment_Fk_Key	From_time	To_time	Hour_fk_key	Status	READING_TIME
1001	2012.09.17 11:00:00	2012.09.17 11:10:00	11	2(CLE)	2012.09.17 11:00:00
1001	2012.09.17 11:10:01	2012.09.17 11:35:00	11	3(DRV)	2012.09.17 11:10:01
1001	2012.09.17 11:35:01	2012.09.17 11:57:00	11	1	2012.09.17 11:35:01

New and recalculated data in Equipment Status Summary table

Equipment_Fk_Key	UP_Hours	Down_Hours	Idle_Hours	Run_Hours	Off_Hours	Hour_FK_key
1001	.750000	.250000	.750000	0.000	0.00000	10
1001	.561403509	.438596	.175439	.385965	0.00000	11

New and recalculated data in Equipment Tag Reason Readings table

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
3	1001	2012.09.17 10:00:00	2012.09.17 10:40:00	10	2012.09.17 10:00:00	
1	1001	2012.09.17 10:40:01	2012.09.17 10:55:00	10	2012.09.17 10:40:01	HT
3	1001	2012.09.17 10:55:01	2012.09.17 10:59:59	10	2012.09.17 10:55:01	CLE
3	1001	2012.09.17 11:00:00	2012.09.17 11:10:00	11	2012.09.17 11:00:00	CLE
1	1001	2012.09.17 11:10:01	2012.09.17 11:35:00	11	2012.09.17 11:10:01	DRV

Note: The recalculation of the Equipment Status Summary for Equip_01 involves the following scenarios based on the data you populate in CSVs to reprocess:

1. Status Summary does not have data prior to the RECAL_FROM_DATE and also has data after the RECAL_TO_DATE.
2. Status Summary does not have data prior to the RECAL_FROM_DATE but has data for Equip_01 after the RECAL_TO_DATE.
3. Status Summary has data prior to the RECAL_FROM_DATE but no data exists for the dates after RECAL_TO_DATE for Equip_01.
4. Status Summary has data prior to the RECAL_FROM_DATE and also has data for dates after the RECAL_TO_DATE for Equip_01.
5. Status Summary does not have data prior to the RECAL_FROM_DATE and also for dates after the RECAL_TO_DATE for Equip_01.
6. Status Summary does not have data prior to the RECAL_FROM_DATE but has data for the dates after the RECAL_TO_DATE for Equip_01.
7. Status Summary has data prior to the RECAL_FROM_DATE but does not have data for the dates after the RECAL_TO_DATE for Equip_01.
8. Status Summary has data prior to the RECAL_FROM_DATE and also has data for dates after the RECAL_TO_DATE for Equip_01.

Reprocessing both STATUS and OUTOUT CSVs data at a time

Reprocessing of equipment output data and equipment status data can be done individually or both at a time based on the input parameters that you choose.

Prerequisites

Organizations, Plants, WorkdayShifts, Equipments, resources and EquipEntities, EquipmentShifts, Equip Hierarchy, EquipDenorm and EquipmentReasonSetup data should be set up.

Example Data:

Plant_pk = Plant_01

Plant_Pk_Key = 1000

Equipment_Pk = Equip_01

Equipment_Pk_Key = 1001

Workday shifts and equipment shifts are defined for the plant and equipment.

Assume that Shift_Workday_pk_key is the same as the corresponding hour number.
(For example, for 10:00:00 it is 10, for 17:00:00 it is 17, and so on.)

Idle reason codes: LOA, CLE (Reason type = 3).

Down reason codes: DRV, HT (Reason type = 1).

Scrap reason codes: HAZ, UC (Reason type = 2).

Existing data in output, status and their summary tables, and Tag reason readings table are listed below:

Existing data in Equipment Status table

Equipment_Fk_Key	From_time	To_time	Hour_fk_key	Status	READING_TIME
1001	2012.09.17 10:00:00	2012.09.17 10:25:00	10	1	2012.09.17 10:00:00
1001	2012.09.17 10:25:01	2012.09.17 10:45:00	10	2(LOA)	2012.09.17 10:25:01
1001	2012.09.17 10:45:01	2012.09.17 10:59:59	10	3(DRV)	2012.09.17 10:45:01
1001	2012.09.17 11:00:00	2012.09.17 11:15:00	11	1	2012.09.17 11:00:00
1001	2012.09.17 11:15:01	2012.09.17 11:37:00	11	2(LOA)	2012.09.17 11:15:01

Existing data in Equipment Status Summary table

Equipment_Fk_Key	UP_Hours	Down_Hours	Idle_Hours	Run_Hours	Off_Hours	Hour_FK_key
1001	.750000	.250000	.3333	.416667	0.00000	10
1001	1.0000	0.00000	.594595	.405405	0.00000	11

Existing data in Equipment Output table

Equipment_Fk_key	Reading_Time	Hour_fk_key	Qty_completed	QTY_SCRAP
1001	2012.09.17 10:07:00	10	50	
1001	2012.09.17 10:28:00	10	25	5(UC)
1001	2012.09.17 10:50:00	10	30	
1001	2012.09.17 11:25:00	11	25	
1001	2012.09.17 11:48:00	11	60	10(HAZ)

Existing data in Equipment Output Summary table

Equipment_Fk_Key	From_time(mth_hour_d)	To_time(mth_hour_d)	Hour_fk_key	Qty_Completed	QTY_SCRAP
1001	2012.09.17 10:00:00	2012.09.17 10:59:59	10	115	5
1001	2012.09.17 11:00:00	2012.09.17 11:59:59	11	85	10

Existing data in Equipment Tag Reason Readings table

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
2	1001	2012.09.17 10:28:00	2012.09.17 10:28:00	10	2012.09.17 10:28:00	UC
2	1001	2012.09.17 11:48:00	2012.09.17 11:48:00	11	2012.09.17 11:48:00	HAZ
3	1001	2012.09.17 10:25:01	2012.09.17 10:45:00	10	2012.09.17 10:25:01	LOA
1	1001	2012.09.17 10:45:01	2012.09.17 10:59:59	10	2012.09.17 10:45:01	DRV
3	1001	2012.09.17 11:15:00	2012.09.17 11:37:00	11	2012.09.17 11:15:00	LOA

1. Update the STATUS CSV and OUTPUT CSV with records to be reprocessed.

STATUS CSV data

Equipment_Fk_Key	From_time	To_time	Status	Down_Time_Reason_code
1001	2012.09.17 10:10:00	2012.09.17 10:40:00	2	
1001	2012.09.17 10:40:00	2012.09.17 10:55:00	3	HT
1001	2012.09.17 10:55:00	2012.09.17 11:10:00	2	CLE
1001	2012.09.17 11:10:00	2012.09.17 11:35:00	3	DRV
1001	2012.09.17 11:35:00	2012.09.17 11:57:00	1	

OUTPUT CSV data

Equipment_Fk_Key	Reading_Time	Qty_Complete_d	QTY_SCRAP	Scrap_Reason_code
1001	2012.09.17 10:10:00	110	10	HAZ
1001	2012.09.17 10:30:00	60		
1001	2012.09.17 10:40:00	50		
1001	2012.09.17 11:30:00	40	20	UC
1001	2012.09.17 11:56:59	30		

2. Upload the CSVs to the Flat file Directory (or EXT table) using FileZilla.
3. Follow the steps below to run ODI scenario:
 1. Go to ODI studio.
 2. Navigate to MTH Transactions > MTH Equipment Transactions > MTH_PKG_REPROCESS_TRANSACTIONS.
 3. Right click and select Execute to run the scenario.
Check if the correct Context is selected in the Execution window that appears.
 4. Click OK.
Variable Values window appears.
 5. Deselect the Last Values.
 6. Enter the following parameters:
 - MTH_V_USER_NAME : <MOC>
 - MTH_V_RESPONSIBILITY_NAME : <Manufacturing Operations Center Administrator>

- MTH_V_FROM_TIMEZONE :<>
- MTH_V_TO_TIMEZONE :<>
- MTH_V_PROCESS_MODE :<RECAL>
- MTH_V_SOURCE_VALUE :<CSVSO>
- MTH_V_SITE_FOR_RECAL :<Plant_01>
- MTH_V_EQUIP_FOR_RECAL :<Equip_01>
- MTH_D_RECAL_FROM_DATE :<2012.09.17 10:10:00>
(From_date of first record in STATUS CSV or Reading_Time of first record in OUTPUT CSV.)
- MTH_D_RECAL_TO_DATE :<2012.09.17 11:56:59>
(To_date of last record minus one second in status CSV or Reading_Time of last record in OUTPUT CSV.)

7. Click OK to Run the Scenario.

8. Click on the Operator tab.

If the scenario is completed, a CP request is submitted.

4. Log on to the application.

User name is MOC and the password is welcome.

5. Select View Requests from the Tool menu.

Verify the CP request status and log information.

6. Connect to the SQL tool.

7. Query the OUTPUT, STATUS, SUMMARY, TAGReasonReadings tables.

Verify if the data has been reprocessed or not. If reprocessed, then the recalculated data in output, status and their summary tables, and tag reason readings table are as follows:

New and recalculated data in Equipment Status table

Equipment_Fk_Key	From_time	To_time	Hour_fk_key	Status	READING_TIME
1001	2012.09.17 10:00:00	2012.09.17 10:40:00	10	2	2012.09.17 10:00:00
1001	2012.09.17 10:40:01	2012.09.17 10:55:00	10	3(HT)	2012.09.17 10:40:01
1001	2012.09.17 10:55:01	2012.09.17 10:59:59	10	2(CLE)	2012.09.17 10:55:01
1001	2012.09.17 11:00:00	2012.09.17 11:10:00	11	2(CLE)	2012.09.17 11:00:00
1001	2012.09.17 11:10:01	2012.09.17 11:35:00	11	3(DRV)	2012.09.17 11:10:01
1001	2012.09.17 11:35:01	2012.09.17 11:57:00	11	1	2012.09.17 11:35:01

New and recalculated data in Equipment Status Summary table

Equipment_Fk_Key	UP_Hours	Down_Hours	Idle_Hours	Run_Hours	Off_Hours	Hour_FK_key
1001	.750000	.250000	.750000	0.000	0.00000	10
1001	.561403509	.438596	.175439	.385965	0.00000	11

New and recalculated data in Equipment Output table

Equipment_Fk_key	Reading_Time	Hour_fk_key	Qty_completed	QTY_SCRAP
1001	2012.09.17 10:10:00	10	110	10(HAZ)

Equipment_Fk_key	Reading_Time	Hour_fk_key	Qty_completed	QTY_SCRAP
1001	2012.09.17 10:30:00	10	60	
1001	2012.09.17 10:40:00	10	50	
1001	2012.09.17 11:30:00	11	40	20(UC)
1001	2012.09.17 11:56:59	11	30	

New and recalculated data in Equipment Output Summary table

Equipment_Fk_Key	From_time (mth_hour_d)	To_time (mth_hour_d)	Hour_fk_key	Qty_Completed	QTY_SCRAP
1001	2012.09.17 10:00:00	2012.09.17 10:59:59	10	220	10
1001	2012.09.17 11:00:00	2012.09.17 11:59:59	11	70	20

New and recalculated data in Equipment Tag Reason Readings table

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
2	1001	2012.09.17 10:10:00	2012.09.17 10:10:00	10	2012.09.17 10:10:00	HAZ
2	1001	2012.09.17 11:30:00	2012.09.17 11:30:00	11	2012.09.17 11:30:00	UC
3	1001	2012.09.17 10:00:00	2012.09.17 10:40:00	10	2012.09.17 10:00:00	

REASON_TYPE	Equipment_Fk_key	From_time	To_time	Hour_Fk_Key	READING_TIME	REASON_CODE
1	1001	2012.09.17 10:40:01	2012.09.17 10:55:00	10	2012.09.17 10:40:01	HT
3	1001	2012.09.17 10:55:01	2012.09.17 10:59:59	10	2012.09.17 10:55:01	CLE
3	1001	2012.09.17 11:00:00	2012.09.17 11:10:00	11	2012.09.17 11:00:00	CLE
1	1001	2012.09.17 11:10:01	2012.09.17 11:35:00	11	2012.09.17 11:10:01	DRV

Note: Recalculation of the equipment output summary and status summary for Equip_01 involves the following scenarios based on the data you populate in CSVs to reprocess:

1. Output summary and status summary do not have data prior to the RECAL_FROM_DATE and data after the RECAL_TO_DATE.
2. Output summary and status summary do not have data prior to the RECAL_FROM_DATE but have data for Equip_01 after the RECAL_TO_DATE.
3. Output summary and status summary have data prior to the RECAL_FROM_DATE but no data exists for the dates after RECAL_TO_DATE for the Equip_01.
4. Output summary and status summary have data prior to the RECAL_FROM_DATE and also data for dates after the RECAL_TO_DATE for Equip_01.
5. Output summary and status summary do not have data prior to the RECAL_FROM_DATE and also for dates after the RECAL_TO_DATE for Equip_01.
6. Output summary and status summary do not have data prior to the RECAL_FROM_DATE but have data for the dates after the RECAL_TO_DATE for Equip_01.
7. Output summary and status summary have data prior to the RECAL_FROM_DATE but do not have data for the dates after the

RECAL_TO_DATE for Equip_01.

8. Output summary and status summary have data prior to the RECAL_FROM_DATE and also data for dates after the RECAL_TO_DATE for Equip_01.

6

Error Management

WebADI based Error Reprocessing

The Manufacturing Operations Center provides capability to correct the errors encountered during loading of data through flat files or collected from source systems such as Oracle E-Business Suite using a simple WebADI based template. It also provides an ability to view the entire error data, improving the efficiency and accuracy of data integration.

Note: You do not require database access for data upload to correct the incorrectly entered data.

Reprocessing Errors:

1. Navigate to Reprocess Errors window.

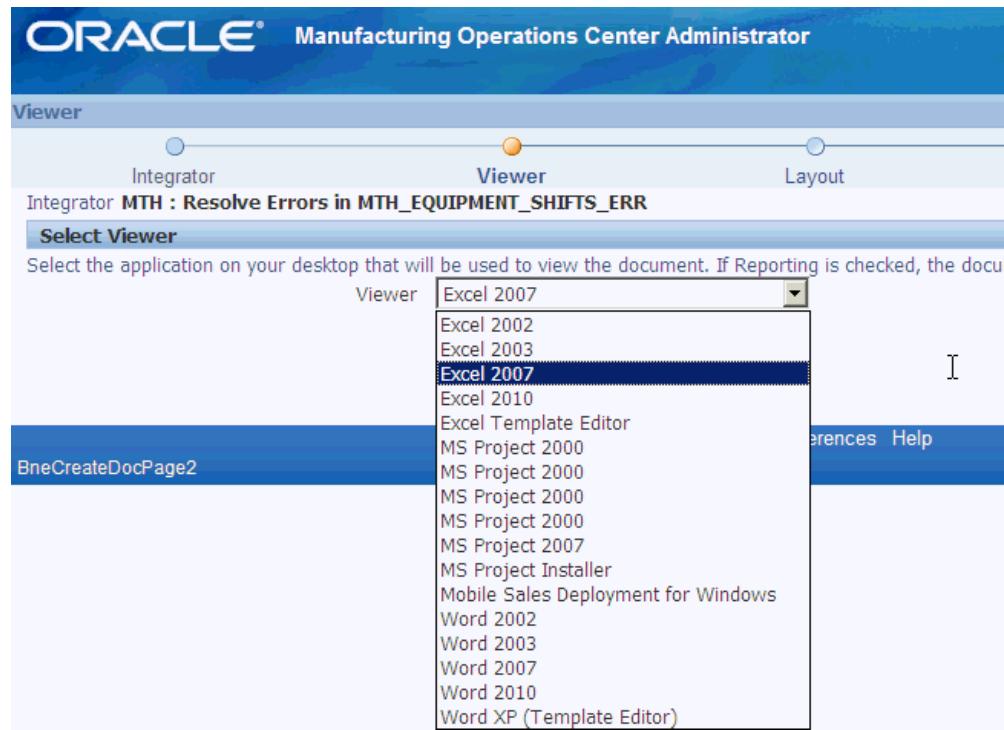
Reprocess Errors window opens with a list of 45 error tables.

Table Name	Unreviewed	Reprocess Ready
MTH_ASSET_ERR	2	0
MTH_DAY_ERR	1	3
MTH_DIM_HIERARCHY_ERR	1	0
MTH_DIM_LEVEL_LOOKUP_ERR	2	0
MTH_ENTITY_PLANNED_USAGE_ERR	8	1
MTH_EQUIPMENTS_ERR	3	0
MTH_EQUIPMENT_REASON_SETUP_ERR	5	0
MTH_EQUIPMENT_SHIFTS_ERR	1	0
MTH_EQUIP_ENTITIES_ERR	0	4
MTH_EQUIP_HIERARCHY_ERR	7	0

2. Click on the error record's number link against the Table Name you want to reprocess in the Not Modified column.

The Viewer window appears.

3. Select Excel 2007 option from the list of values in the Viewer field.



4. Click Next.

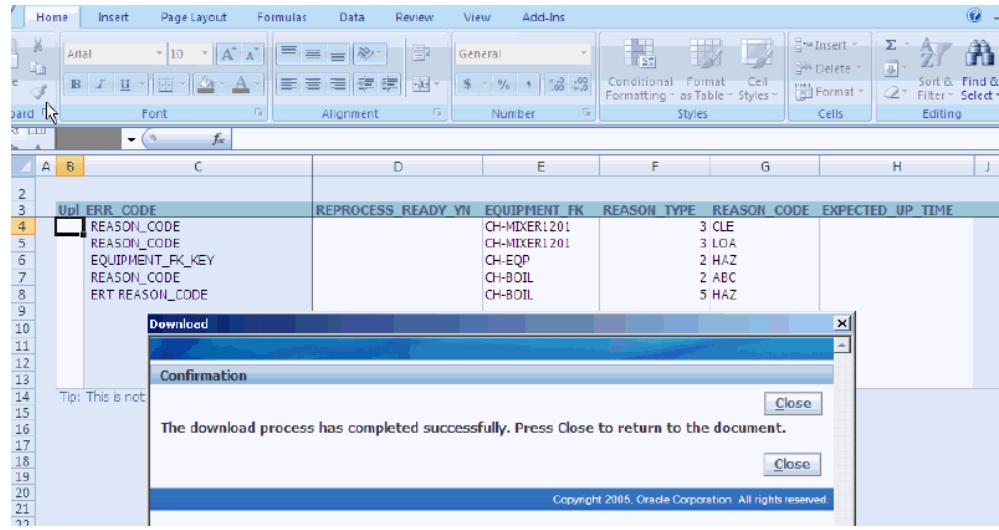
The Document Creation Review window appears with the list of parameters that will be used to create your document.

5. Click the Create Document button.

The File Download window appears.

6. Click Open.

The Confirmation window appears with a message that the download process has been completed successfully.



7. Click Close.
8. Go to Add-Ins in the menu bar.
9. Click Upload option in the Oracle drop-down list.
10. Click the Upload button.

The Confirmation message appears.

Note: Validations are added to ensure REPROCESS_READY_YN is D for time dimension tables and Y, N, D for all other tables.

REPROCESS_READY_YN column allows mandatory values of Y, N, and D for all error tables and for the following TIMEDIMENSION error tables only D is allowed:

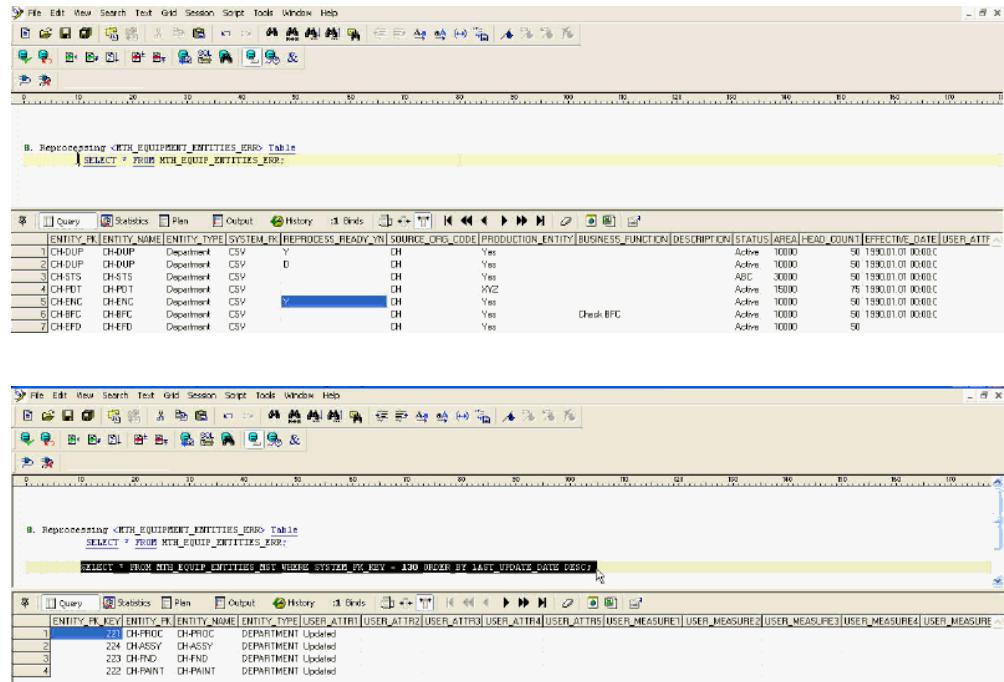
- MTH_TIME_HIERARCHY_ERR
- MTH_DAY_ERR
- MTH_YEAR_ERR
- MTH_QUARTER_ERR
- MTH_PERIOD_ERR
- MTH_WEEK_ERR

Records will not be committed if a batch has any invalid value

other than D, Y, or N.

11. Click Close.

Check the Error table data and the Fact table data before reprocessing.



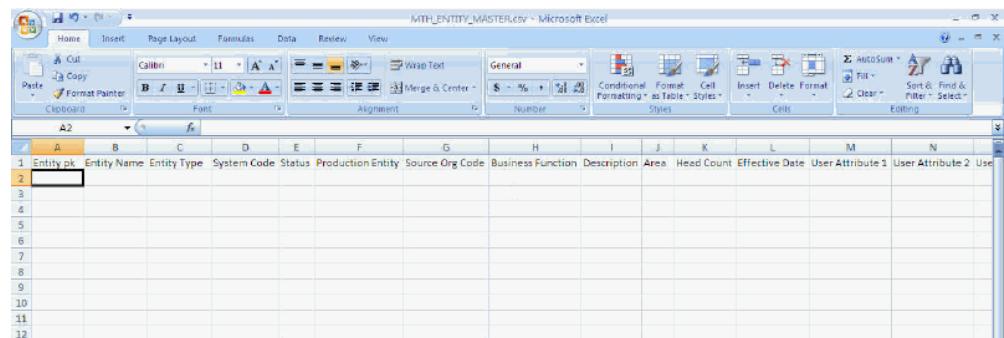
Reprocessing XMT_EQUIPMENT_ENTITIES_ERR Table
SELECT * FROM XMT_EQUIPMENT_ENTITIES_ERR;

ENTITY_PK	ENTITY_NAME	ENTITY_TYPE	SYSTEM_PK	REPROCESS_READY_YN	SOURCE_ORG_CODE	PRODUCTION_ENTITY	BUSINESS_FUNCTION	DESCRIPTION	STATUS	AREA	HEAD_COUNT	EFFECTIVE_DATE	USER_ATTRIBUTE
1	CH-DUP	CH-DUP	Department	CSV	Y	CH	Yes		Active	10000	50	1990-01-01 00:00:00	
2	CH-PRO	CH-PRO	Department	CSV	0	CH	Yes		Active	10000	50	1990-01-01 00:00:00	
3	CH-STS	CH-STS	Department	CSV	0	CH	Yes		Active	10000	50	1990-01-01 00:00:00	
4	CH-POT	CH-POT	Department	CSV	0	CH	K2		Active	75000	75	1990-01-01 00:00:00	
5	CH-ENC	CH-ENC	Department	CSV	Y	CH	Yes		Active	10000	50	1990-01-01 00:00:00	
6	CH-BFC	CH-BFC	Department	CSV	0	CH	Yes		Active	10000	50	1990-01-01 00:00:00	
7	CH-FPD	CH-FPD	Department	CSV	0	CH	Yes		Check BFC	10000	50	1990-01-01 00:00:00	

Reprocessing XMT_EQUIPMENT_ENTITIES_ERR Table
SELECT * FROM XMT_EQUIPMENT_ENTITIES_ERR;

ENTITY_PK	ENTITY_NAME	ENTITY_TYPE	USER_ATTRIBUTE1	USER_ATTRIBUTE2	USER_ATTRIBUTE3	USER_ATTRIBUTE4	USER_ATTRIBUTE5	USER_ATTRIBUTE6	USER_ATTRIBUTE7	USER_ATTRIBUTE8	USER_ATTRIBUTE9
1	221	CH-PROC	CH-PROC	DEPARTMENT	Updated						
2	224	CH-ASSY	CH-ASSY	DEPARTMENT	Updated						
3	223	CH-FND	CH-FND	DEPARTMENT	Updated						
4	222	CH-PAINT	CH-PAINT	DEPARTMENT	Updated						

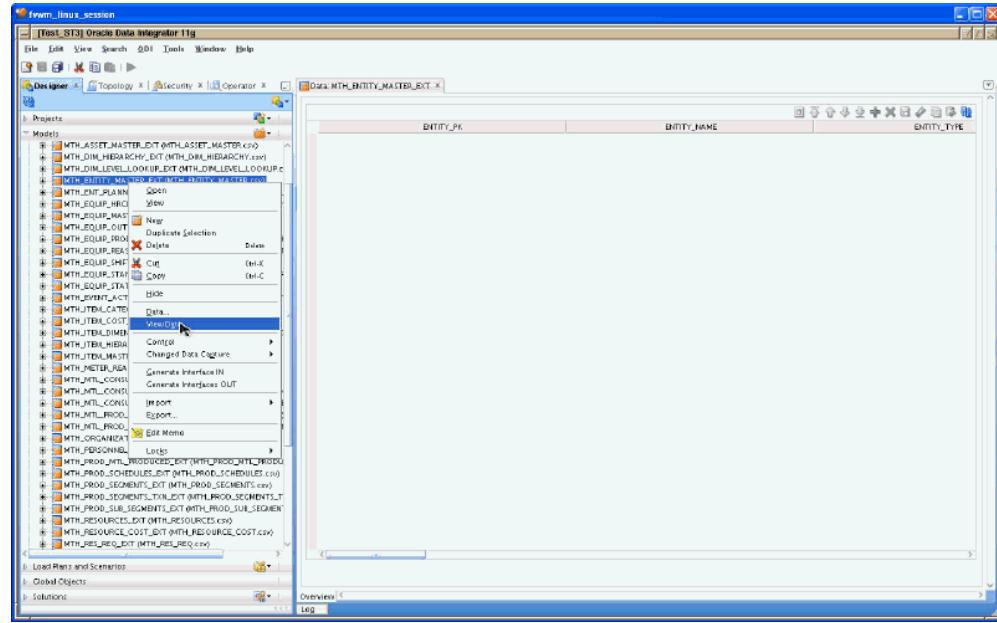
12. Place an empty flat file in the CSV file path of the ODI configured environment.



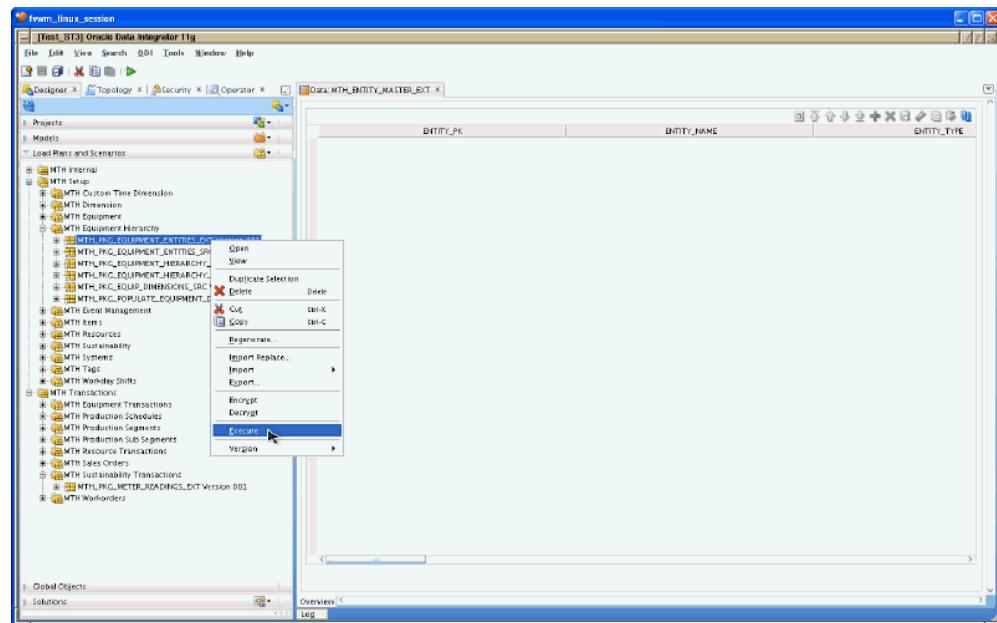
MTH_ENTITY_MASTER.csv - Microsoft Excel

A	B	C	D	E	F	G	H	I	J	K	L	M	N				
1	Entity_pk	Entity_Name	Entity_Type	System_Code	Status	Production_Entity	Source_Org_Code	Business_Function	Description	Area	Head_Count	Effective_Date	User_Attribute1	User_Attribute2	User_Attribute3	User_Attribute4	User_Attribute5
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

13. Check the EXT table to ensure that an empty flat file is placed.

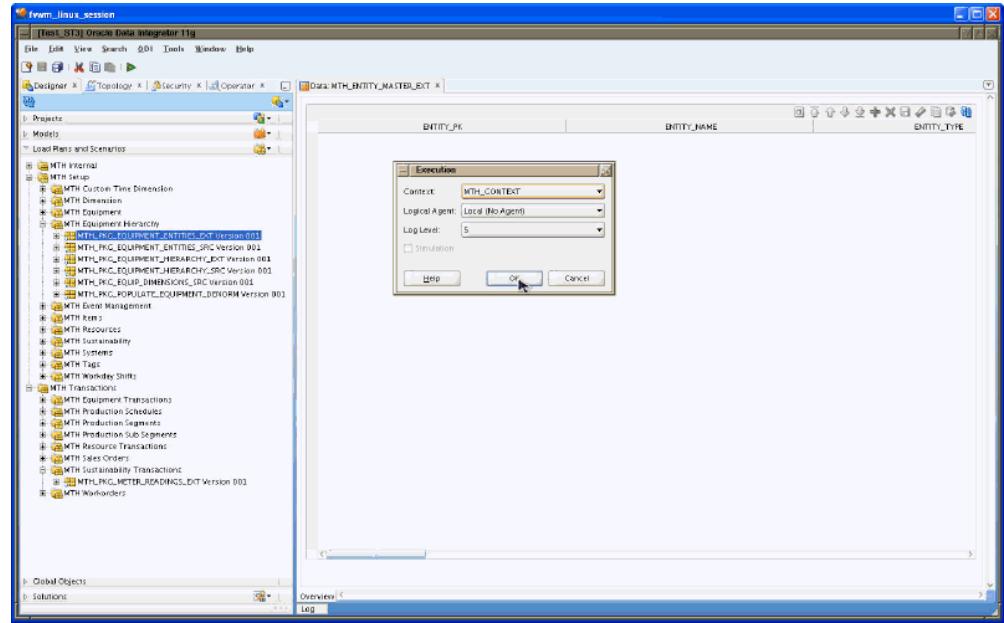


14. Select the scenario and right click to Execute in the ODI.



15. Select the Context in the Execution window to run the ODI scenario.

16. Click OK to run the ODI scenario.



Check if reprocessing is complete in the Error table and the Fact table after the Scenario is completed successfully.

Manufacturing Operations Center Catalog

Overview of the MOC Catalog

The Manufacturing Operations Center Catalog provides the Plant Manager Dashboard, Facilities Manager Dashboard, Production Supervisor Dashboard, Asset Performance Dashboard, and Ad hoc Dashboard with performance areas related to manufacturing operations. It uses the ISA-95 (Instrumentation, Systems and Automation Society) structure to integrate Enterprise Resource Planning (ERP) and shop floor manufacturing equipment and systems transactions. This combination enables the catalog to provide operational analytics visibility. The catalog uses data from multiple sources and builds a logical data model providing industry-rich operational metrics to be analyzed by multiple dimensions and hierarchies. The manufacturing performance areas include the following:

Performance Areas	Description
Agility Responsiveness	Used to analyze flexibility related measures by system, plant, item, time and equipment.
Batch Analyzer	Used to analyze usage and production variance and other work order related measures by system, item, plant and time.
Equipment Attributes Data	Attributes associated to equipment entities.
Equipment Down Time Analysis	Used to analyze the downtime duration of equipment.
Equipment Scrap Analysis	Used to analyze the scrap quantity reported for the equipment at different points of time.

Performance Areas	Description
Manufacturing Asset Performance	Used to analyze overall equipment effectiveness and production loss analysis by system, plant, item, time, and equipment.
Plant Maintenance	Used to analyze maintenance related downtime measures by system, time, and equipment.
Production Performance	Used to analyze operation cycle time and its components of run, down, and idle time contributing to cycle time.
Quality	Used to analyze first pass yield, scrap, reject, and rework measures by system, plant, time, and equipment.
Schedule Adherence	Used to analyze production to performance and backlog related measures by system, plant, item, time, and equipment.
Service Level	Used to analyze manufacturing performance relative to pegged sales orders shipped using request and promise dates by system, plant, item and time.
Sustainability Performance	This performance area contains metrics that measures sustainability performance of manufacturing and non-manufacturing companies. It contains metrics that a company can use to monitor and reduce energy consumption, its cost, and associated Green House Gas emissions.
Production Sustainability Performance	Used to analyze sustainability performance of production organizations. Contains normalized sustainability metrics by production activity.
Equipment Sustainability Analysis	used to analyze sustainability characteristics of manufacturing equipments. Contains metrics that contextualize manufacturing activity and consumption data.

Performance Areas	Description
Ad hoc Analysis	It is used to analyze electricity consumption, pressure, and temperature for an entity and specific time-period.

Key Performance Indicators (KPIs)

The MOC Catalog provides KPIs based on the analytics layer of Oracle Business Intelligence. These KPIs are industry-rich metrics used in managing the plant operations. Since these metrics are available on the metadata-driven Oracle Business Intelligence tool, you can personalize and modify existing reports and the Plant Manager and Facilities Manager Dashboards. It also enables flexibility to add new and modify existing KPIs in the catalog.

Performance Area: Batch Analyzer

KPI	Description
Work Order Quantity variance	Variance of actual produced quantity compared to the planned production quantity in units.
Work Order Quantity variance %	Variance of actual produced quantity compared to the planned production quantity in percentage.
Work in Progress Planned Quantity	WIP Planned Quantity for OPM batches. The quantity that is planned during the release of process batch for production.
Material Usage Variance	Cost of variance of actual usage quantity compared to the planned usage quantity for components
Resource Usage Variance	Cost of variance of actual usage quantity compared to the planned usage quantity for resources
Work order or Batch Cycle Time (Hours)	Cycle time between start and end of a work order or batch

KPI	Description
First Time Quality %	Ratio of the total production that is good the first time without any rejection or scrap
PPM on completed Work Orders	Parts per Million - estimated rejected and scrapped quantity for every million units of production.
Work Order Planned Start Date	Work Order Planned Start Date
Work Order Planned Completion Date	Work Order Planned Completion Date
Work Order Actual Start Date	Work Order Actual Start Date
Work Order Actual Completion Date	Work Order Actual Completion Date
Work Order Actual Completion Quantity	Work Order Actual completed quantity without reject or scrap
Work Order Planned Completion Quantity	Work Order Planned Completion Quantity
Work Order Planned Material Usage Quantity	Planned material usage quantity for the work order
Work Order Actual Material Usage Quantity	Actual material usage quantity for the work order
Work Order Planned Resource Usage Quantity	Planned resource usage quantity for the work order
Work Order Actual Resource Usage Quantity	Actual resource usage quantity for the work order
Work Order First Time Good Quantity	Work Order Output Quantity that has not been reworked or scrapped
Work Order Total Rejected Quantity	Work Order Total Rejected Quantity which includes rework and scrap
Production Material Consumed Scrap Quantity	Planned Scrap quantity based on scrap factor associated with ingredients in process batches

Performance Area: Service Levels

KPI	Description
Manufacturing Performance to scheduled ship date	Percentage of work orders that were completed on or before scheduled ship date of the pegged SO line
Manufacturing Performance to request date	Percentage of work orders that were completed on or before request date of the pegged SO line
Manufacturing Performance to promise date	Percentage of work orders that were completed on or before promise date of the pegged SO line
Sales Order Number	Sales Order Number
Sales Order Line Number	Sales Order Line Number
Customer	Customer Name
Sales Order Ship Date	Sales Order Ship Date
Sales Order Request Date	Sales Order Request Date
Sales Order Promise Date	Sales Order Promise Date

Performance Area: Manufacturing Asset Performance

KPI	Description
Equipment Calendar Time (Hours)	Work Hours Based on Site Calendar
Equipment Scheduled Time (Hours)	Scheduled Availability Time based on Equipment Shift Availability
Production Loss - Planned (Hours)	Planned equipment downtime (down for maintenance or other reasons) in Hours

KPI	Description
Production Loss - Planned (Value)	Cost of Planned equipment downtime (down for maintenance or other reasons) in terms of resource cost
Production Loss - Planned (%)	Cost of Planned equipment downtime (down for maintenance or other reasons) in percentage terms of %
Actual Down Time (Hours)	Unplanned Equipment Down time
Actual Available Time (Hours)	Actual Available time for the equipment after accounting for planned and unplanned downtimes
Production Loss due to Unplanned Downtime (Hours)	Unplanned equipment downtime (down because of breakdown or other reasons) in Hours
Production Loss due to Unplanned Downtime (Value)	Unplanned equipment downtime (down because of breakdown or the reasons) in terms of resource cost
Production Loss due to Unplanned Downtime (%)	Unplanned equipment downtime (down because of breakdown or other reasons) in percentage terms
Machine Availability Ratio	Actual time for which equipment was available for operation divided by calendar time based on the site calendar
Actual Run time (Hours)	Equipment Run Time
Production Loss due to Other Reasons (Hours)	Unplanned Equipment Production Loss in Hours due to reasons other than downtime, efficiency or bad quality (lack of demand or material)
Production Loss due to Other Reasons (Value)	Unplanned Equipment Production Loss in cost terms due to reasons other than downtime, efficiency or bad quality (lack of demand or material)

KPI	Description
Production Loss due to Other Reasons (%)	Unplanned Equipment Production Loss in percentage terms due to reasons other than downtime, efficiency or bad quality (lack of demand or material)
Machine Efficiency	Actual rate of production compared to the ideal rate of production
Effective Run Time (Hours)	Effective Equipment Run time after taking machine efficiency into account
Performance Ratio	Ratio of effective run time to actual available time
Production Loss due to Efficiency (Hours)	Unplanned Equipment Production Loss in Hours Due to Machine inefficiency when compared to ideal rate of production
Production Loss due to Efficiency in %	Unplanned Equipment Production Loss in cost terms Due to Machine inefficiency when compared to ideal rate of production
Production Loss due to Efficiency (Value)	Unplanned Equipment Production Loss in percentage terms Due to Machine inefficiency when compared to ideal rate of production
Equipment Output Quantity	Total Equipment output quantity including good and bad quantities
Equipment Standard Rate	Equipment Standard production rate in units per hour
Equipment First Time Good Quantity	Equipment Output Quantity that has not been reworked or scrapped
First Pass Yield	Percentage of the total production that is good the first time itself without any rejection or scrap
Overall effective run time (Hours)	Effective Run Time after deducting for bad quality

KPI	Description
Production Loss due to Bad Quality (%)	Unplanned Equipment Production Loss in Hours due to bad quality
Production Loss due to Bad Quality (Hours)	Unplanned Equipment Production Loss in cost terms due to bad quality
Production loss due to Bad Quality (Value)	Unplanned Equipment Production Loss in percentage terms due to bad quality
Equipment Standard Efficiency	Standard efficiency of the equipment in Percentage
Equipment Standard Utilization	Standard Utilization of Equipment in Percentage
Resource Standard Efficiency	Standard efficiency of the Resource in Percentage
Resource Standard Utilization	Standard Utilization of Resource in Percentage
Overall Equipment Effectiveness	Overall Equipment Effectiveness

Performance Area: Schedule Adherence

KPI	Description
Performance to schedule %	Actual production compared to Scheduled production
Production to Schedule linearity (Actual vs Schedule) Applies to Lean	Difference between actual and scheduled production measured on a linearity scale of 1
Shift Scheduled Production	Production Scheduled for the current shift
Shift Actual Production	Actual Production for the current shift
Total Production \$ (Production Reporting)	The cost value of total production

KPI	Description
Remaining Shift Time (Hours)	Remaining hours of production for current shift
Work remaining for the Shift	Cost value of Open Work orders meant to be produced in the given shift
Production Backlog Value	Cost value of Open Work orders meant to be produced in the given period
Production Backlog Hours	The number of hours required to complete the remaining backlog production for the period
Actual Completion Quantity	Actual completed quantity without reject or scrap
Equipment Scheduled Quantity	Planned completion quantity for the equipment
Equipment Standard Rate	Equipment Standard production rate in units per hour

Performance Area: Plant Maintenance

KPI	Description
Equipment Downtime %	Equipment Downtime Compared to Equipment Scheduled Time
Equipment Scheduled Time (Hours)	Scheduled Availability Time based on Equipment Shift Availability

Performance Area: Quality

KPI	Description
First Pass Yield	Percentage of the total production that is good the first time itself without rejection or scrap

KPI	Description
Bad Output %	Percentage of the total production that is rejected
Scrap %	Percentage of the total production that is scrapped
Rework %	Percentage of the total production that is reworked
Equipment First Time Good Quantity	Equipment Output Quantity that has not been reworked or scrapped
Equipment Output Quantity	Total Equipment output quantity including good and bad quantities
Equipment Scrapped Quantity	Equipment Scrapped Quantity
Equipment Reworked Quantity	Equipment Reworked Quantity
Equipment Rejected Quantity	Equipment Rejected Quantity

Performance Area: Agility and Responsiveness

KPI	Description
Flexibility Ratio	The ratio of actual daily production to the average daily production
Actual Completion Quantity	Completed quantity from the equipment without rework or scrap

Performance Area: Work Order

KPI	Description
Work Order Schedule Number	Work Order Schedule Number

KPI	Description
Work Order Status	Work Order Status
Work Order Type	Work Order Type

Performance Area: Production Performance

KPI	Description
Average Cycle Time	Average Cycle time for an Equipment to process a Work Order Operation in a Shift
Cycle Time	Cycle Time for an Equipment to process a Work Order Operation in a Shift
Down Time during Cycle	Down Time during Cycle
Idle Time during Cycle	Idle Time during Cycle
Run Time during Cycle	Run Time during Cycle

Performance Area: Sustainability Performance

KPI	Description
Sustainability Aspect	Sustainability Aspect is a generic name used for continuous inputs consumed by companies in order to be able to operate and create goods or services. Common examples of sustainability aspect are electricity, gas, oil, water, helium etc. Sustainability aspects always have associated costs for companies and are often source of harmful emissions to environment. Companies usually monitor consumption of sustainability aspects and make efforts to minimize them for efficiency and environmental concerns. Sustainability aspect must be used along with other KPIs for creating a query in OBIEE answers, in order to constraint the result of the query to the sustainability aspect of interest.
Consumption	Actual sustainability aspect consumed by an entity. For instance, an electric meter measures electricity consumption readings of the entity. The meter readings are collected for a specified time frequency and transferred to MOC, which then calculates the consumption on an hourly basis. Consumption can be rolled up from an hour to a shift, day, month, and year.
Planned Consumption	Planned sustainability aspect consumed by an entity. For instance, electricity planned to be consumed is entered in MOC and can be rolled up to a quarter or a year.
Consumption (Last Year)	Actual sustainability aspect consumed by an entity in a specified period of the previous year.
Consumption % Change (Plan)	Percentage deviation of actual from planned electricity consumption and is calculated as $\frac{\text{Actual Electricity Usage} - \text{Planned Electricity Usage}}{\text{Planned Electricity Usage}} \times 100$

KPI	Description
Consumption % Change (Last Year)	Percentage deviation of actual consumption in a specific period of the current year from that of the last year and is calculated as $\text{Consumption \% Change (Last Year)} = (\text{Actual Consumption} - \text{Last Year's Actual Consumption}) \times 100 / \text{Last Year's Actual Consumption.}$
Production Output	Production output for an equipment, production line, area, floor, or a department expressed in the Primary UOM of the product. The production output higher than equipment level is calculated as the sum of the output of all work orders for a specific product.
Production Output Value	Value of the production output for an equipment, production line, area, floor, or a department.
Consumption Per Unit Area	Actual consumption of an entity normalized by total area of that entity. This is calculated as $\text{Consumption per Unit Area} = \text{Actual Consumption of Entity} / \text{Effective Surface Area of Entity}$
Consumption Per Person	Actual consumption of an entity normalized by total number of persons of that entity. This is calculated as $\text{Consumption per Person} = \text{Consumption of Entity} / \text{Number of Persons.}$
Consumption per Unit Area (Last Year)	Actual consumption of an entity normalized by total area of that entity in a specified period of the previous year.
Consumption per Person (Last Year)	Actual consumption of an entity normalized by total persons of the entity in a specified period of the previous year.
Emission	Actual emissions based on actual sustainability consumption.

KPI	Description
Planned Emission	Planned emissions based on sustainability aspect consumption. It is calculated at every level in the entity hierarchy where data is available. This is calculated as $Emission = Emission Factor \times Planned Consumption$.
Emissions (Last Year)	Emission (Last Year) Emissions based on sustainability aspect consumed by an entity in a specified period of the previous year.
Emission % Change (Plan)	Percentage deviation of actual from planned emissions and is calculated as $Emission \% Change (Plan) = (Actual Emission - Planned Emission) \times 100 / Planned Emission$.
Emission % Change (Last Year)	Percentage deviation of actual emission in a specific period of the current year from that of the last year and is calculated as $Emission \% Change (Last Year) = (Actual Emission - Last Year's Actual Emission) \times 100 / Last Year's Actual Emission$.
Emission per Unit Area	Actual emission of an entity normalized by total area of that entity. This is calculated as $Emission per Unit Area = Actual Emission of Entity / Effective Surface Area$.
Planned Emission per Unit Area	Planned emission of an entity normalized by total area of that entity. This is calculated as $Emission per Unit Area = Planned Emission of Entity / Effective Surface Area$.
Emission per Person	Actual emission of an entity normalized by total persons of that entity. This is calculated as $Emission per Person = Emission of Entity / Number of Persons$.
Planned Emission per Person	Planned emission of an entity normalized by total persons of that entity. This is calculated as $Emission per Person = Planned Emission of Entity / Number of Persons$.

KPI	Description
Emission per Unit Area (Last Year)	Actual emission of an entity normalized by total area of that entity in a specified period of the previous year.
Emission per Person (Last Year)	Actual emission of an entity normalized by total persons of the entity in a specified period of the previous year.
Cost	Cost of the actual sustainability aspect consumed by an entity.
Planned Cost	Cost of the actual sustainability aspect planned to be consumed by an entity.
Cost (Last Year)	Cost of the actual sustainability aspect consumed by an entity in a specified period of the previous year.
Cost % Change (Plan)	Percentage deviation of the actual Cost from Planned cost and is calculated as Cost % Change (Plan) = $(\text{Cost} - \text{Planned Cost}) \times 100 / \text{Planned Cost}$.
Cost % Change (Last Year)	Percentage deviation of actual cost in a specific period of the current year from that of the last year and is calculated as Cost % Change (Last Year) = $(\text{Cost} - \text{Last Year's Cost}) \times 100 / \text{Last Year's Cost}$.
Planned Cost per Unit Area	Planned cost of sustainability aspect to be consumed by an entity normalized by total area of that entity. This is calculated as Planned Cost per Unit Area = Planned Cost of Entity/Effective Surface Area.
Cost per Unit Area	Cost of sustainability aspect consumed by an entity normalized by total area of that entity. This is calculated as Cost per Unit Area = Cost of Entity/Effective Surface Area.

KPI	Description
Planned Cost per Person	Planned cost of sustainability aspect to be consumed by an entity normalized by total number of persons of that entity. This is calculated as Planned Cost per Person = Planned Cost of Entity/Number of Persons.
Cost per Person	Cost of sustainability aspect consumed by an entity normalized by total number of persons of that entity. This is calculated as Cost per Person = Cost of Entity/Number of Persons.
Cost per Unit Area (Last Year)	Cost of sustainability aspect consumed by an entity normalized by total area of that entity in a specified period of the previous year.
Cost per Person (Last Year)	Cost of sustainability aspect consumed by an entity normalized by total number of persons of that entity in a specified period of the previous year.
Total Consumption By Direct Usage	Actual sustainability aspect consumed by an entity for production purposes. For example, conveyor, robot, assembly station, automated storage/retrieval system, air compressor, and industrial lighting etc.
Total Consumption By Indirect Usage	Actual sustainability aspect consumed by an entity for functions other than production, such as research and development, sales and marketing etc. For example, air compressor, equipment, maintenance equipment, and lighting.
Overall Consumption	Actual sustainability aspect consumed by an entity by direct and indirect usages.

Performance Area: Production Sustainability Performance

KPI	Description
Consumption Per Production Output	Actual sustainability aspect consumed by an entity for the production of one unit of production output. This is calculated as Consumption Measurements for Production of a Product in a Period/Units Manufactured in Period.
Consumption Per Production Value	Actual sustainability aspect consumed by an entity for the production of the value of one unit of production output. This is calculated as Consumption Measurements for Production of a Product in a Period/Value of Units Manufactured in Period.
Emission Per Production Output	Emission based on actual sustainability aspect consumed by an entity for the production of one unit of production output. This is calculated as Emission Measurements for Production of a Product in a Period/Units Manufactured in Period.
Emission Per Production Value	Emissions based on actual sustainability aspect consumed by an entity for the production of the value of one unit of production output. This is calculated as Emission Measurements for Production of a Product in a Period/Value of Units Manufactured in Period.
Cost Per Production Output	Cost of actual sustainability aspect consumed by an entity for the production of one unit of production output. This is calculated as Cost of Sustainability Aspect Consumed for Production of a Product in a Period/Units Manufactured in Period.

KPI	Description
Cost Per Production Value	Cost of actual sustainability aspect consumed by an entity for the production of the value of one unit of production output. This is calculated as Cost of Sustainability Aspect Consumed for Production of a Product in a Period/Value of Units Manufactured in Period.

Performance Area: Equipment Sustainability Analysis

KPI	Description
Total Consumption (TC)	Sum of Value Added Consumption and Non Value Added Consumption.
Value Added Consumption (VAC)	Actual sustainability aspect consumed by an entity in the RUN status. This is applicable to production entities only.
Non Value Added Consumption	Actual sustainability aspect consumed by an entity in the IDLE, DOWN, or OFF statuses. This is applicable to production entities only.
Value Added Consumption%	Percentage of the Value Added Consumption per the Total consumption for an entity. This can be calculated as $(VAC \times 100) / TC$.

Dimensions

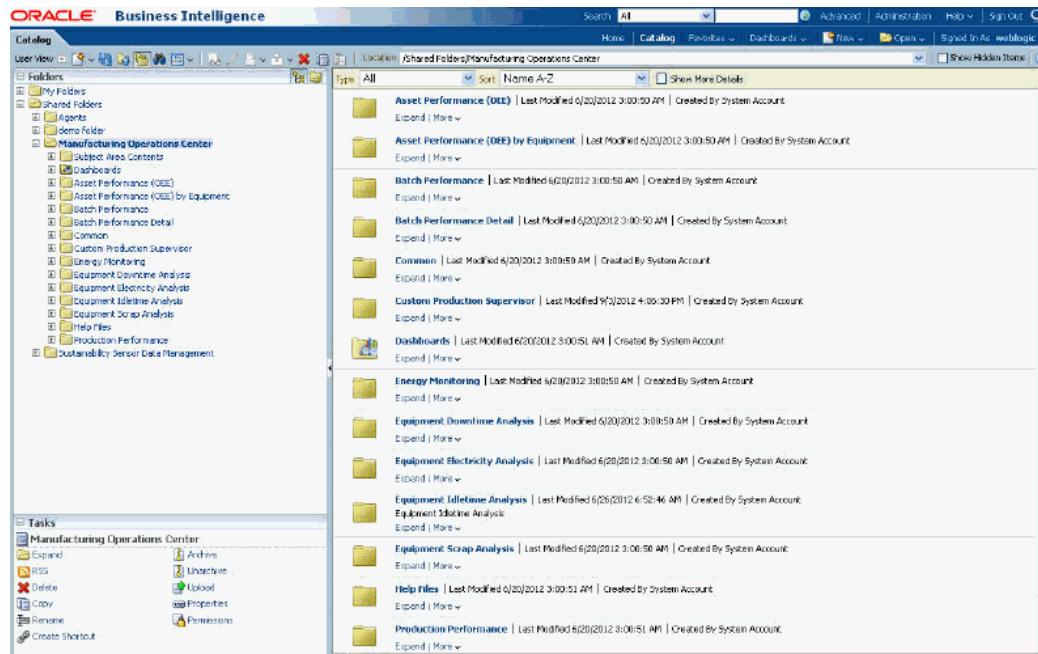
The KPIs in the performance areas can be analyzed by the dimensions seeded in the MOC Catalog. Each of the following dimension folders contain the dimensions, hierarchies and attributes to analyze the KPIs

- Attribute Group Metadata
- Down Time Reason
- Entity
- Equipment
- Equipment Attributes Data

- Equipment Standard Rate
- Item
- Plant
- Scrap Reason
- Shift
- Sustainability Aspect
- System
- Time
- Time - Period To Date
- Time - Transaction Date
- Time Sustainability
- Time - Work Order Actual Completion Date
- Time - Work Order Actual Start Date
- Time - Work Order Planned Completion Date
- Time - Work Order Planned Start Date
- Time - Ad hoc
- Work Order
- Work Order Segment
- Work Order Sub Segment

Oracle Business Intelligence (BI)

The MOC Catalog is based on the analytics layer of the Oracle Business Intelligence (BI) platform from Oracle Fusion Middleware. The catalog uses this technology to organize data to analyze and provide the metrics required for measuring in your business. The catalog interface consists of the Oracle BI Presentation Services and the MOC application. The interface is organized into pages with the following components:



- **Answers**

The Manufacturing Hub Catalog displays on this page and enables you to build and modify reports of the information gathered in your system. The data can be presented in charts, tables, and reports.

- **Panes**

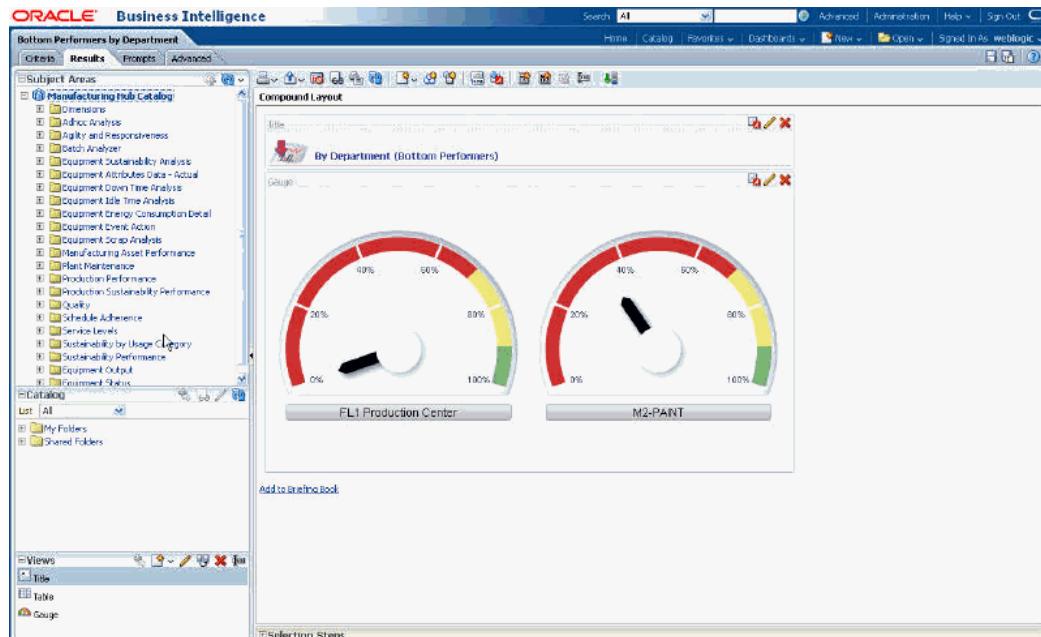
The Answers page contains two panes. The selection pane is used to navigate, select, and manage saved information; the display pane shows the content selected.

Columns in the selection pane are used to choose data for your request. To run a request, specify at least one column. A filter mechanism is available to restrict the result output.

- **Tabbed Regions**

The tabbed regions in the catalog are:

- **Criteria** provides access to the columns selected for the request.
- **Results** enables you to work with the results of the request.
- **Prompts** enables you to create prompts to filter the request.
- **Advanced** enables you to work with the XML and logical SQL for the request.



- **Dashboards**

Accesses the dashboards used to display reports containing content you have set up. You can create custom dashboards with specific information, and access the Plant Manager Dashboard and Facilities Manager Dashboard from this page.

- **More Products**

Accesses Oracle BI Publisher, Delivers, Marketing, and Disconnected Analytics.

- **Settings**

Accesses the Administration and the My Account pages. Administration displays the BI Presentation Services to setup control and issue requests. The My Account page enables you to view general account information and set your preferences for the BI application.

Related Topics

[Using the MOC Catalog, page 7-22](#)

[Overview of Oracle BI for End Users, *Oracle Business Intelligence Answers, Delivers, and Interactive Dashboards User Guide*](#)

[Performing Common Tasks in Oracle BI, *Oracle Business Intelligence Answers, Delivers, and Interactive Dashboards User Guide*](#)

[Using the Oracle BI My Account Page, *Oracle Business Intelligence Answers, Delivers, and Interactive Dashboards User Guide*](#)

Using the MOC Catalog

More than eighty KPIs are grouped in the Manufacturing Hub Catalog selection pane. These provide an aggregate level analysis on KPIs and enable you to drill down to detailed analysis.

To select catalog data for reporting:

1. Navigate to the MOC Catalog and select the Answers link.

The Answers page contains two panes. The selection pane contains the Manufacturing Hub Catalog columns you select. The display workspace shows the columns selected for the request.

2. In the Selection pane, expand the specific columns for the areas you want on your report.

Columns indicate the columns of data that your request will return.

3. Select details in the performance areas you want displayed on the report.

Choices selected appear in the display workspace in the Criteria tabbed region.

The Criteria tab is used to view or change the columns and filters for the request. You can specify the order in which the results display, column subtotals, formatting, formulas. For each selection you can format the column data using the following:

- Value Format to override default settings such as font type and size
- Edit Formula to change the formula for the column.

See: Using Column Formatting Functions in Oracle BI Answers, *Oracle Business Intelligence Answers, Delivers, and Interactive Dashboards User Guide*

4. You have the option to control the output display by creating a filter. Choose the Create/Edit Filter icon to create a filter expression to display as a CASE statement.

You can save this filter for other reports. See: Editing the Formula of a Column, *Oracle Business Intelligence Answers, Delivers, and Interactive Dashboards User Guide*

5. Select Display Results or the Results tabbed regions to display your report.

You can choose several different display views, and combine views and arrange them for display on the Plant Manager, Facilities Manager, and Ad hoc Dashboards.

6. To combine the results of multiple requests, choose Select Combine with Similar Requests.

Plant Manager Dashboard

This chapter covers the following topics:

- Overview of the Plant Manager Dashboard
- Equipment Performance (OEE)
- Equipment Performance (OEE) by Equipment
- Equipment Downtime Analysis
- Equipment Downtime Reasons
- Production Slippage Trend
- Equipment Scrap Analysis
- Equipment Scrap Reasons
- Equipment Efficiency Analysis
- Equipment Efficiency Detail
- Equipment Idletime Analysis
- Equipment Idletime Reasons
- Production Loss Analysis
- Production Loss Detail
- Batch Performance
- Batch Performance Detail
- Production Performance
- Sustainability Performance by Department
- Sustainability Performance by Equipment
- Sustainability Performance Equipment Hourly Summary Page
- Sustainability Performance Equipment Hourly Detail Page

Overview of the Plant Manager Dashboard

Overall Equipment Effectiveness (OEE) is a key metric that every plant manager monitors. The Plant Manager Dashboard provides a complete view of the equipment and helps the plant manager to assess where the source for production losses occur. The Plant Manager Dashboard and integrated reports provide the plant manager views of the production data for the plant in terms of overall equipment effectiveness, batch performance, schedule adherence, and production loss analysis for the departments and equipment on the shop floor

Oracle Manufacturing Operations Center collects data from disparate sources into this single role-based dashboard that allows Plant Managers and staff to view manufacturing operations efficiently and effectively. The open and flexible BI technology from Oracle Fusion Middleware makes it easy to build and modify KPIs and dashboards.

The Plant Manager Dashboard lets you report and analyze electricity consumption, electricity cost, and carbon emission for an entity. You can view information for all the levels of entity hierarchy, plant, department, floor, floor section, and equipment.

The following table identifies the dashboard pages and the reports made available to the Plant Manager role:

Dashboard Pages	Reports
Equipment Performance (OEE)	Overall Equipment Effectiveness by Plant
	Overall Equipment Effectiveness By Department (Bottom Performers)
	Overall Equipment Effectiveness Details By Plant
	Overall Equipment Effectiveness Details By Department
	Overall Equipment Effectiveness Trend by Plant
	Overall Equipment Effectiveness Trend by Department
OEE by Equipment	Overall Equipment Effectiveness by Department
	Overall Equipment Effectiveness by Equipment (Bottom Performers)

Dashboard Pages	Reports
	Overall Equipment Effectiveness Details by Department
	Overall Equipment Effectiveness Details by Equipment
	Overall Equipment Effectiveness Trend by Department
	Overall Equipment Effectiveness Trend by Equipment
Equipment Downtime Analysis	Equipment Downtime Analysis
	Machine Availability Ratio Trend
Equipment Downtime Reasons	Downtime Reasons
Production Slippage Trend	Production Slippage Trend
Production Loss Analysis	Production Loss Distribution
	Effective Production Capacity
	Production Loss Analysis
Production Loss Detail	Production Loss Detail
Equipment Efficiency Analysis	Equipment Efficiency Analysis
	Equipment Performance Ratio Trend
Equipment Efficiency Detail	Equipment Efficiency Detail
Equipment Scrap Analysis	Equipment Scrap Analysis
	First Pass Yield Trend
Equipment Scrap Reasons	Equipment Scrap Reasons

Dashboard Pages	Reports
Batch Performance	Production Variance by Product Category
	Production Variance by Product
	PPM Trend (Month to Date)
	Batch Cycle Time Trend (Month to Date)
	Service Level Performance by Product Category
	Service Level Performance by Product
Batch Performance Detail	Batch Performance Detail
Production Performance	Performance to Schedule Measures by Plant
	Performance to Schedule Measures by Department
	Performance to Schedule Measures by Equipment (Bottom Performers)
	Production Slippage (Equipment)
	Current Month Production Slippage Trend by Department
	Current Month Production Slippage Trend by Equipment
Sustainability Performance	Electricity Consumption
	Electricity Cost
	CO2 Emission
	Production Value Analysis by Product
	Trend
	Ranking and Distribution

Equipment Performance (OEE)

The Equipment Performance page provides performance data for the plant and displays the bottom four departments performance in terms of Overall Equipment Effectiveness (OEE) measures. It displays Machine Availability Ratio, Machine Performance Ratio, and First Pass Yield. Equipment Performance (OEE) reporting regions include:

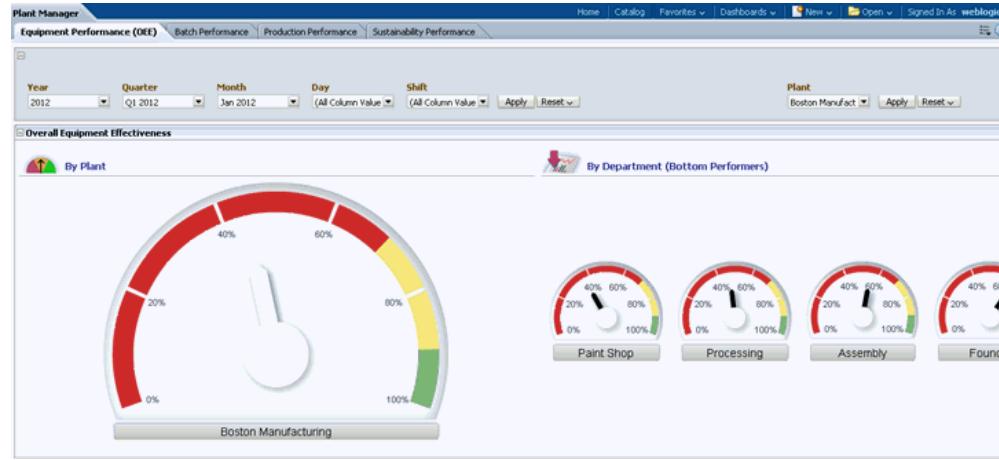
- Overall Equipment Effectiveness by Plant
- Overall Equipment Effectiveness by Department (Bottom Performers)
- Overall Equipment Effectiveness Details by Plant
- Overall Equipment Effectiveness Details by Department
- Overall Equipment Effectiveness Trend by Plant
- Overall Equipment Effectiveness Trend by Department

You can view Equipment Performance (OEE) by the following dimensions:

- Time dimension – Year, Quarter, Month, Day, and Shift
- Equipment dimension – Plant

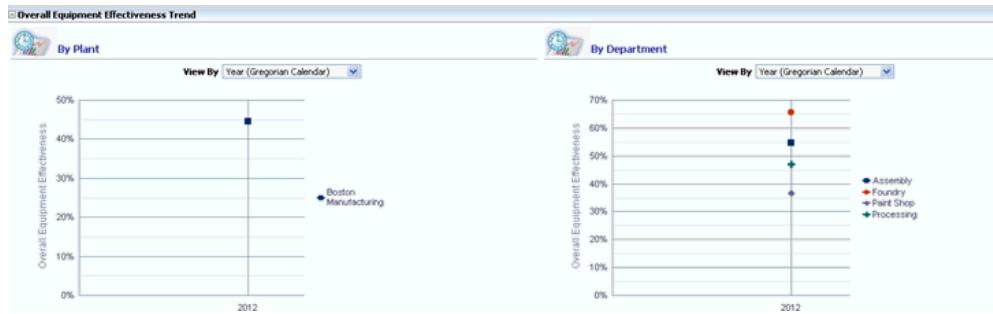
To view equipment performance (OEE):

1. From the Manufacturing Operations Center User responsibility, select the Plant Manager Dashboard. The Equipment Performance (OEE) page appears. This page displays Overall Equipment Effectiveness, Overall Equipment Effectiveness Details, and Overall Equipment Effectiveness Trend regions.



2. Scroll down the Equipment Performance (OEE) page to view:
 - Overall Equipment Effectiveness By Plant
 - Overall Equipment Effectiveness By Department (Bottom Performers)
 - Overall Equipment Effectiveness Details By Plant
 - Overall Equipment Effectiveness Details By Department
 - Overall Equipment Effectiveness Trend By Plant
 - Overall Equipment Effectiveness Trend By Department





From the Equipment Performance (OEE) page, you can navigate to other pages to view additional manufacturing operations details.

Related Topics

[Asset Performance \(OEE\) by Equipment, page 8-7](#)

Equipment Performance (OEE) by Equipment

The Asset Performance page provides performance data for equipment and displays the bottom four equipment performance in terms of Overall Equipment Effectiveness (OEE) measures. It displays Machine Availability Ratio, Machine Performance Ratio, and First Pass Yield. Reporting regions include:

- Overall Equipment Effectiveness by Department
- Overall Equipment Effectiveness by Equipment (Bottom Performers)
- Overall Equipment Effectiveness Details by Department
- Overall Equipment Effectiveness Details by Equipment
- Overall Equipment Effectiveness Trend by Department
- Overall Equipment Effectiveness Trend by Equipment

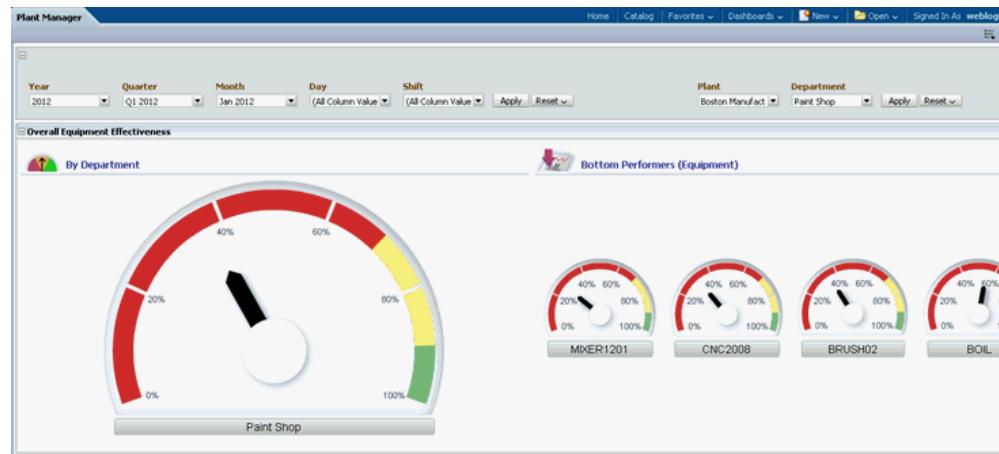
You can view OEE by Equipment by the following dimensions:

- Time dimension – Year, Quarter, Month, Day and Shift
- Equipment dimension – Plant and Department

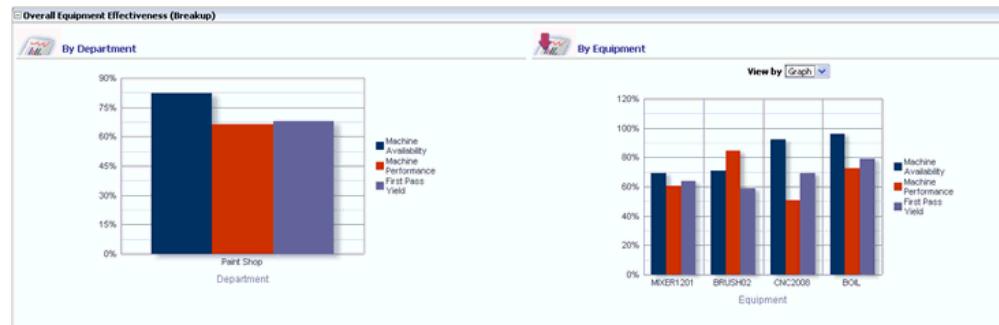
To view OEE by Equipment:

1. From the Equipment Performance (OEE) page, click on a Department gauge in the Overall Equipment Effectiveness By Department (Bottom Performers) region. For example, click on the Paint Shop (SM1) gauge to drill down and display details of

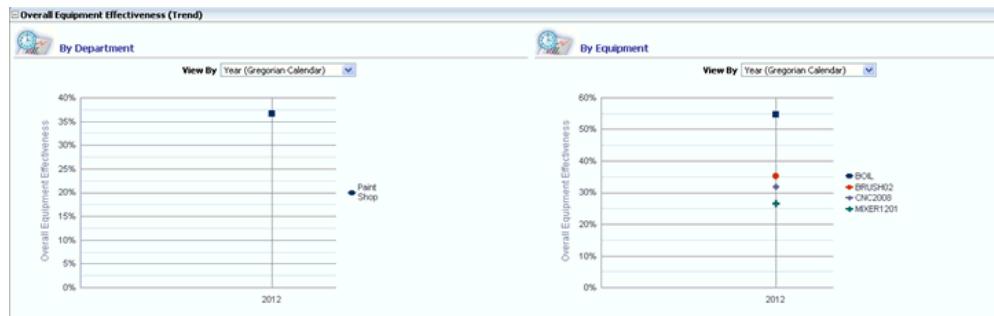
low OEE contribution. The OEE by Equipment page displays the Overall Equipment Effectiveness (OEE) for Equipment belonging to the Paint Shop department.



2. Scroll down the page to view Overall Equipment Effectiveness Details by Department and by Equipment regions. The page displays Machine Availability Ratio, Machine Performance Ratio, and First Pass Yield by Department and by Equipment.
3. Change the View by to: Table



4. Select a link in the Machine Availability column to view Equipment Downtime details. See: Equipment Downtime Analysis, page 8-9, and Equipment Downtime Reasons, page 8-10.
5. Scroll further to view Overall Equipment Effectiveness Trend by Department and by Equipment regions.



Related Topics

Asset Performance (OEE), page 8-5

Equipment Downtime Analysis

You can use the Equipment Downtime Analysis page to analyze the equipment downtime by downtime reasons. Reporting regions include:

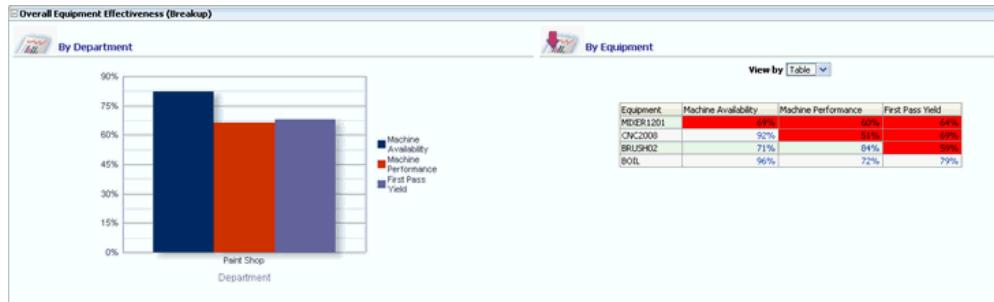
- Equipment Downtime Analysis
- Machine Availability Ratio Trend
- Equipment Downtime Detail

You can view equipment downtime by the following dimensions:

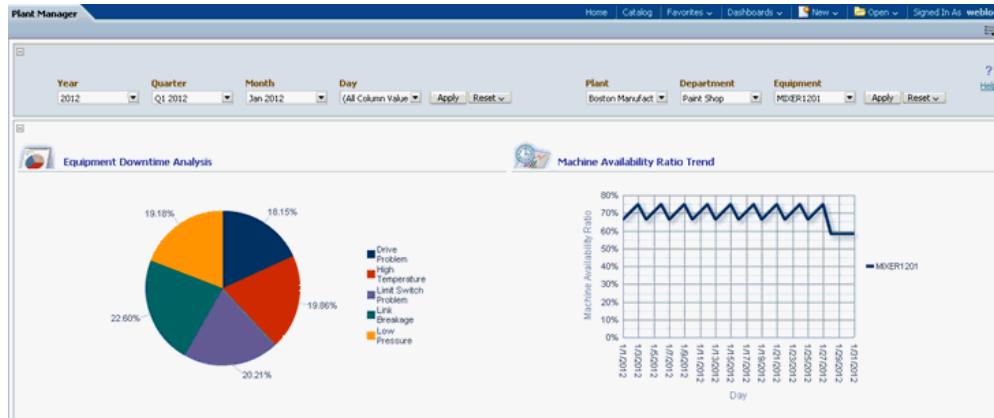
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant, Department, and Equipment

To view equipment downtime details:

1. From the OEE by Equipment page, you can navigate to the Equipment Downtime Analysis page to view equipment downtime details. Scroll down to Overall Equipment Effectiveness Details by Equipment region.
2. Change the View by to: Table
3. Select a link from the Machine Availability column.



4. The Equipment Downtime Analysis page appears. This page displays Equipment Downtime Reasons and Machine Availability Ratio Trend graphs.



5. Scroll down this page to view daily details of equipment downtime information.

Equipment	Day	Equipment Calendar Time (Hours)	Equipment Scheduled Time (Hours)	Production Loss - Planned (Hours)	Actual Downtime (Hours)	Production Loss due to Unplanned Downtime (Hours)	Actual Available Time (Hours)	Machine Availability Ratio	Production Slippage Report
MDER1201	1/1/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To
MDER1201	1/2/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	Go To
MDER1201	1/3/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MDER1201	1/4/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To
MDER1201	1/5/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	Go To
MDER1201	1/6/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MDER1201	1/7/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To
MDER1201	1/8/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	Go To
MDER1201	1/9/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MDER1201	1/10/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To

6. Select the OEE by Equipment link to return to that page.

Related Topics

[Equipment Downtime Reasons](#), page 8-10

Equipment Downtime Reasons

The Equipment Downtime Reasons report lets you view the downtime reasons for a particular day selected from the Equipment Downtime Analysis page. The report displays Downtime Hours and Reasons for the equipment by Shift level for the day.

To view Equipment Downtime Reasons:

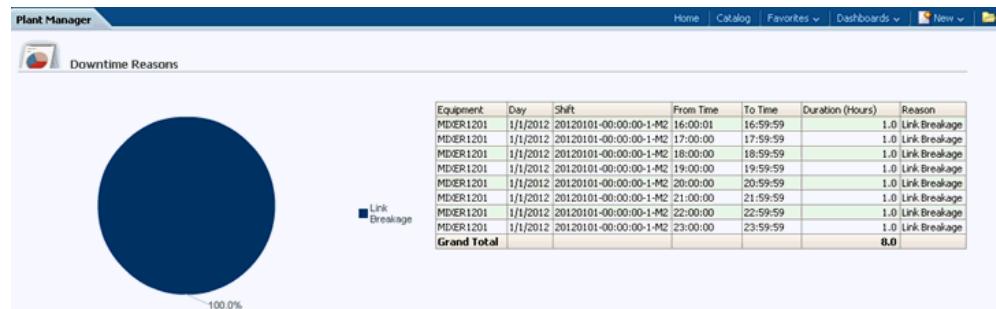
1. Navigate to the Equipment Downtime Analysis page and scroll down to the Equipment Downtime details region.



Equipment	Day	Equipment Calendar Time (Hours)	Equipment Scheduled Time (Hours)	Production Loss - Planned (Hours)	Actual Down Time (Hours)	Production Loss due to Unplanned Downtime (Hours)	Actual Available Time (Hours)	Machine Availability Ratio	Production Slippage Report
MDER1201	1/1/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To
MDER1201	1/2/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	Go To
MDER1201	1/3/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MDER1201	1/4/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To
MDER1201	1/5/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	Go To
MDER1201	1/6/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MDER1201	1/7/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To
MDER1201	1/8/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	Go To
MDER1201	1/9/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MDER1201	1/10/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Go To

Rows 1 - 10

2. Select a link from the Actual Down Time (Hours) column. The Downtime Reasons page appears and displays Equipment Downtime reasons by Shift for the day.



Equipment	Day	Shift	From Time	To Time	Duration (Hours)	Reason
MDER1201	1/1/2012	20120101-00:00:00-1M2	16:00:00	16:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	17:00:00	17:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	18:00:00	18:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	19:00:00	19:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	20:00:00	20:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	21:00:00	21:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	22:00:00	22:59:59	1.0	Link Breakage
MDER1201	1/1/2012	20120101-00:00:00-1M2	23:00:00	23:59:59	1.0	Link Breakage
Grand Total						0.0

3. Click the Return link to return to the Equipment Downtime Analysis page.

Related Topics

[Equipment Downtime Analysis](#), page 8-9

Production Slippage Trend

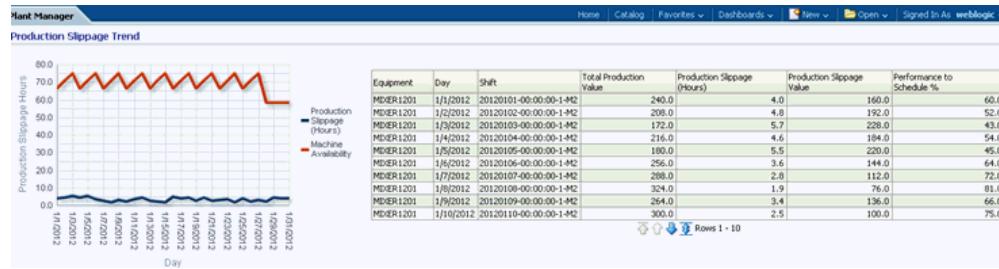
The Production Slippage Trend report displays the production slippage and trend by equipment and shift for a monthly period.

To view Production Slippage Trend:

1. Navigate to the Equipment Downtime Analysis page and scroll down to the Equipment Downtime details region.

Equipment	Day	Equipment Calendar Time (Hours)	Equipment Scheduled Time (Hours)	Production Loss - Planned (Hours)	Actual Down Time (Hours)	Production Loss due to Unplanned Downtime (Hours)	Actual Available Time (Hours)	Machine Availability Ratio	Production Slippage Report
MDER1201	1/1/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	Production Slippage Trend
MDER1201	1/2/2012	24.0	24.0	0.0	7.0	7.0	17.0	75%	Go To
MDER1201	1/3/2012	24.0	24.0	0.0	6.0	6.0	18.0	67%	Go To
MDER1201	1/4/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	71% Go To
MDER1201	1/5/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	75% Go To
MDER1201	1/6/2012	24.0	24.0	0.0	6.0	6.0	18.0	67%	67% Go To
MDER1201	1/7/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	75% Go To
MDER1201	1/8/2012	24.0	24.0	0.0	7.0	7.0	17.0	71%	75% Go To
MDER1201	1/9/2012	24.0	24.0	0.0	6.0	6.0	18.0	75%	75% Go To
MDER1201	1/10/2012	24.0	24.0	0.0	8.0	8.0	16.0	67%	67% Go To

2. Select a link from the Production Slippage Report column. The Production Slippage page appears. The page displays production slippage measures and trend by equipment and shift for a month period.



Related Topics

Production Performance, page 8-26

Equipment Scrap Analysis

You can use the Equipment Scrap Analysis page to analyze the scrap transactions by scrap reasons. Reporting regions include:

- Equipment Scrap Analysis
- First Pass Yield Trend
- Equipment Scrap Detail

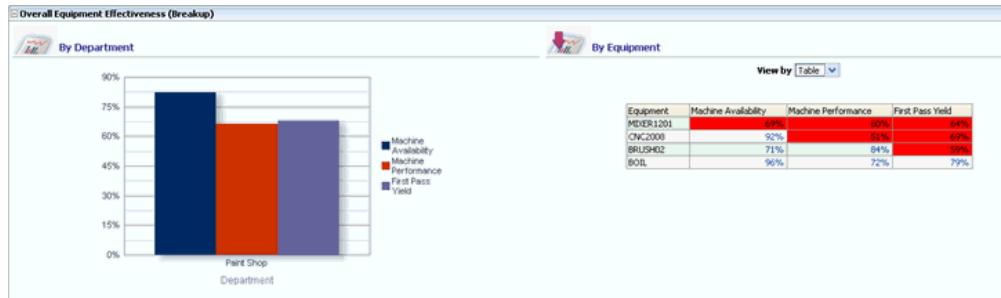
You can view scrap transactions by the following dimensions:

- Time dimension – Year, Quarter, Month and Day
- Equipment dimension – Plant, Department, and Equipment

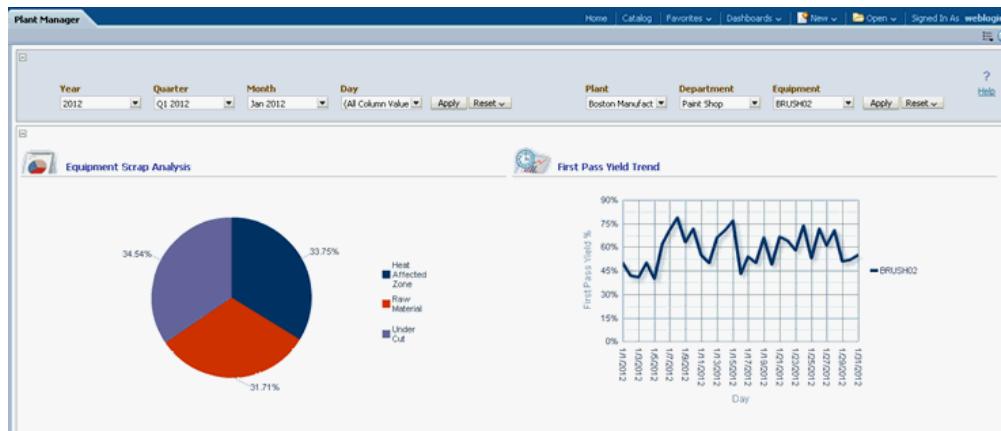
To view Equipment Scrap Analysis:

1. Navigate to the OEE by Equipment page.
2. Scroll down to the Overall Equipment Effectiveness Details - By Equipment region.

3. Change the View by to: Table



4. Select a value in the First Pass Yield column. The Equipment Scrap Analysis page appears where you can view quality details. This page displays Equipment Scrap Analysis and First Pass Yield Trend graphs.



5. Scroll down the page to view Scrap Details.

Equipment	Day	Effective Run Time (Hours)	Equipment First Time Good Quantity	Total Quantity Produced	Rejected Quantity	Reworked Quantity	Scrapped Quantity	First Pass Yield	Overall Effective Run Time (Hours)	Production Loss due to Bad Quality (Hours)
BRUSH02	1/1/2012	14.3	50	100	50	0	0	50%	7.1	7.1
BRUSH02	1/2/2012	14.3	42	100	58	0	58	42%	6.0	8.3
BRUSH02	1/3/2012	14.3	41	100	59	0	59	41%	5.9	8.4
BRUSH02	1/4/2012	14.3	50	100	50	0	50	50%	7.1	7.1
BRUSH02	1/5/2012	14.3	40	100	60	0	60	40%	5.7	8.6
BRUSH02	1/6/2012	14.3	62	100	38	0	38	62%	8.9	5.4
BRUSH02	1/7/2012	14.3	71	100	29	0	29	71%	10.1	11
BRUSH02	1/8/2012	14.3	79	100	21	0	21	79%	11.3	3.0
BRUSH02	1/9/2012	14.3	63	100	37	0	37	63%	9.0	5.3
BRUSH02	1/10/2012	14.3	72	100	28	0	28	72%	10.3	4.0

6. Select the OEE by Equipment link to return to that page.

Related Topics

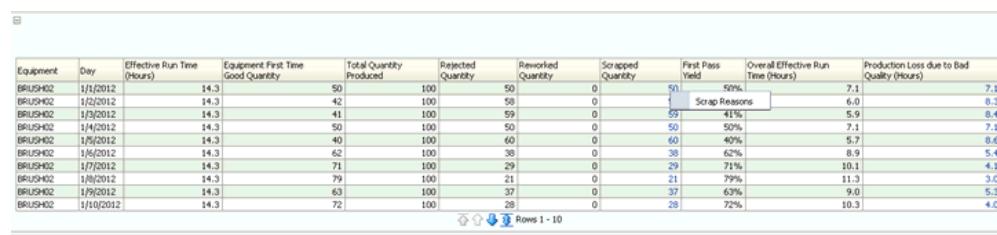
Equipment Scrap Reasons, page 8-14

Equipment Scrap Reasons

The Scrap Reasons report lets you view the scrap reasons for a particular day. Select Scrap Reasons from the Equipment Scrap Analysis page. The report displays the Scrap Quantity and Reasons for the equipment at shift level for the day.

To view Equipment Scrap Reasons:

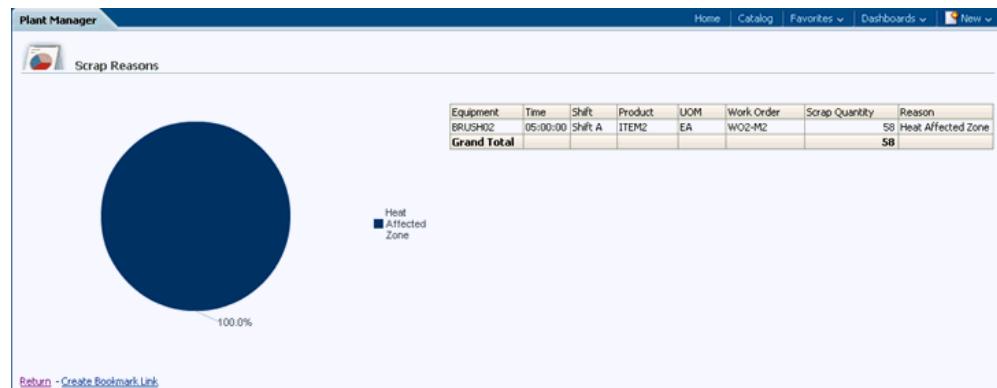
1. Navigate to the Equipment Scrap Analysis page.
2. Scroll down to the Equipment Scrap Analysis Details region.



Equipment	Day	Effective Run Time (Hours)	Equipment First Time Good Quantity	Total Quantity Produced	Rejected Quantity	Reworked Quantity	Scrapped Quantity	First Pass Yield	Overall Effective Run Time (Hours)	Production Loss due to Bad Quality (Hours)
BRUSH02	1/1/2012	14.3	50	100	50	0	50	50%	7.1	7.1
BRUSH02	1/2/2012	14.3	42	100	58	0	59	41%	6.0	8.3
BRUSH02	1/3/2012	14.3	41	100	59	0	59	41%	5.9	8.4
BRUSH02	1/4/2012	14.3	50	100	50	0	50	50%	7.1	7.1
BRUSH02	1/5/2012	14.3	40	100	60	0	60	40%	5.7	8.6
BRUSH02	1/6/2012	14.3	62	100	38	0	38	62%	8.9	5.4
BRUSH02	1/7/2012	14.3	71	100	29	0	29	71%	10.1	4.1
BRUSH02	1/8/2012	14.3	79	100	21	0	21	79%	11.3	3.0
BRUSH02	1/9/2012	14.3	63	100	37	0	37	63%	9.0	5.3
BRUSH02	1/10/2012	14.3	72	100	28	0	28	72%	10.3	4.0

Rows 1 - 10

3. Select a value in the Scrapped Quantity column to view scrap details and reasons by shift for the day. The Scrap Reasons report appears.



4. Select the Return link to return to the Equipment Scrap Analysis page.

Related Topics

[Equipment Scrap Analysis, page 8-12](#)

Equipment Efficiency Analysis

The Equipment Efficiency Analysis page displays production loss due to inefficiency of the equipment. Reporting regions include:

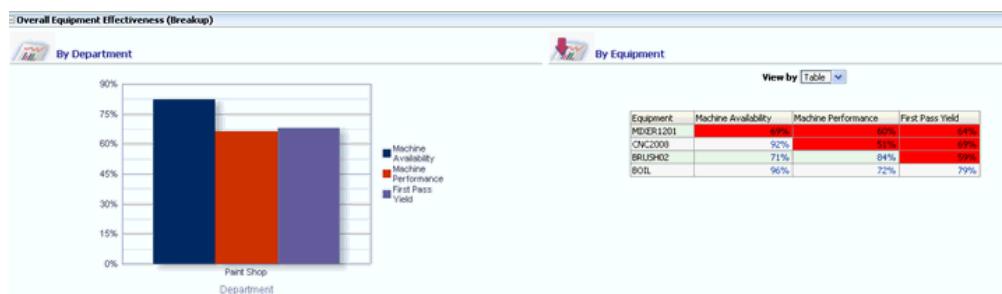
- Equipment Efficiency Analysis
- Machine Performance Ratio Trend
- Equipment Efficiency Detail

You can view Equipment Efficiency Analysis by the following dimensions:

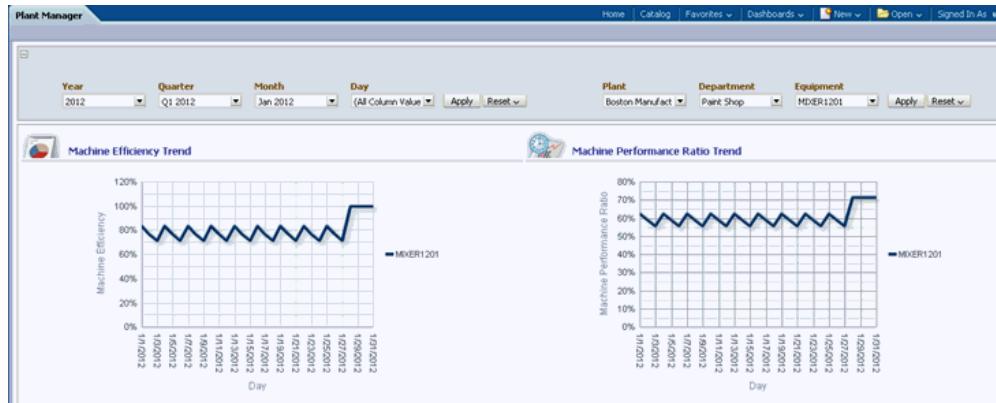
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant, Department, and Equipment

To view the Equipment Efficiency Analysis page:

1. Navigate to the OEE by Equipment page.
2. Scroll down to the Overall Equipment Effectiveness Details by Equipment region.
3. Change View by to: Table.



4. Select a value from the Machine Performance column for an equipment item. The Equipment Efficiency Analysis page appears. This page displays and reports the production loss due to inefficiency.



5. Scroll down the page to view Equipment Efficiency Details.

Equipment	Day	Actual Available Time (Hours)	Actual Run Time (Hours)	Production Loss due to Other Reasons (Hours)	Machine Efficiency	Effective Run Time (Hours)	Machine Performance Ratio	Production Loss due to Inefficiency (Hours)
MDER1201	1/1/2012	16.00	12.0	4.00	63%	10.0	63%	2.0
MDER1201	1/2/2012	17.00	13.0	4.00	77%	10.0	59%	3.0
MDER1201	1/3/2012	18.00	14.0	4.00	71%	10.0	56%	4.0
MDER1201	1/4/2012	16.00	12.0	4.00	63%	10.0	63%	2.0
MDER1201	1/5/2012	17.00	13.0	4.00	77%	10.0	59%	3.0
MDER1201	1/6/2012	18.00	14.0	4.00	71%	10.0	56%	4.0
MDER1201	1/7/2012	16.00	12.0	4.00	63%	10.0	63%	2.0
MDER1201	1/8/2012	17.00	13.0	4.00	77%	10.0	59%	3.0
MDER1201	1/9/2012	18.00	14.0	4.00	71%	10.0	56%	4.0
MDER1201	1/10/2012	16.00	12.0	4.00	63%	10.0	63%	2.0

6. Select the OEE by Equipment link to return to that page.

Related Topics

[Production Loss Analysis](#), page 8-20

[Equipment Efficiency Detail](#), page 8-16

Equipment Efficiency Detail

The Equipment Efficiency Detail report lets you view the Equipment Efficiency for a particular day, and is selected from the Equipment Efficiency Analysis report. The report displays the Efficiency for the equipment at shift level for the day.

To view Equipment Efficiency Detail:

1. Navigate to the Equipment Efficiency Analysis page.
2. Scroll down the page to the details region.

Equipment	Day	Actual Available Time (Hours)	Actual Run Time (Hours)	Production Loss due to Other Reasons (Hours)	Machine Efficiency	Effective Run Time (Hours)	Machine Performance Ratio	Production Loss due to Inefficiency (Hours)
MDER1201	1/1/2012	16.00	12.0	4.00	75%	10.0	63%	2.0
MDER1201	1/2/2012	17.00	13.0	4.00	77%	10.0	56%	3.0
MDER1201	1/3/2012	18.00	14.0	4.00	71%	10.0	63%	4.0
MDER1201	1/4/2012	16.00	12.0	4.00	83%	10.0	56%	2.0
MDER1201	1/5/2012	17.00	13.0	4.00	77%	10.0	59%	3.0
MDER1201	1/6/2012	18.00	14.0	4.00	71%	10.0	56%	4.0
MDER1201	1/7/2012	16.00	12.0	4.00	83%	10.0	63%	2.0
MDER1201	1/8/2012	17.00	13.0	4.00	77%	10.0	59%	3.0
MDER1201	1/9/2012	18.00	14.0	4.00	71%	10.0	56%	4.0
MDER1201	1/10/2012	16.00	12.0	4.00	83%	10.0	63%	2.0

Rows 1 - 10

3. Select a value in the Machine Efficiency column. The Equipment Efficiency Details report appears.

Equipment Efficiency Detail								
Equipment	Day	Shift	Equipment First Time Good Quantity	Actual Run Time (Hours)	Machine Efficiency	Effective Run Time (Hours)	Production Loss due to Inefficiency (Hours)	
MDER1201	1/1/2012	Shift A	60	12.0	83%	10.0	10.0	2.0
Grand Total			60	12.0	83%	10.0	10.0	2.0

4. Select the Return link to return to the Equipment Efficiency Analysis page.

Related Topics

[Equipment Efficiency Analysis](#), page 8-14

Equipment Idletime Analysis

You can use the Equipment Idletime Analysis page to analyze the equipment idletime by idletime reasons. The reporting regions include:

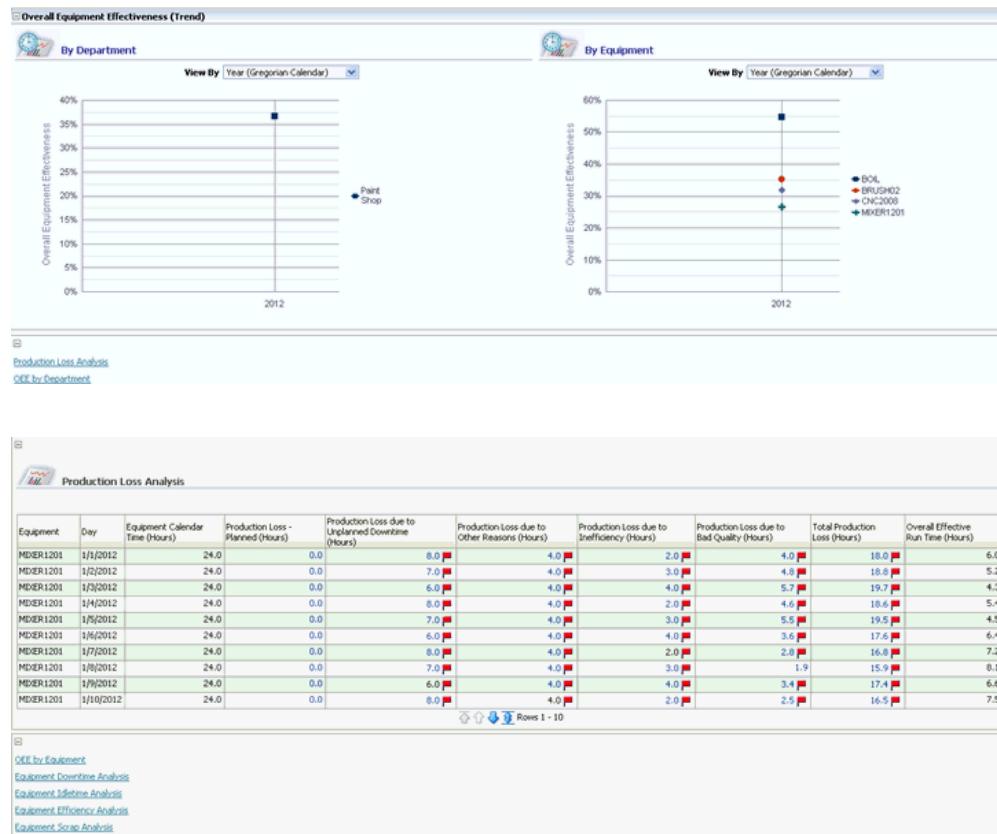
- Equipment Idletime Analysis.
- Equipment Idletime Trend.
- Equipment Idletime Detail.

You can view equipment idletime with the following dimensions:

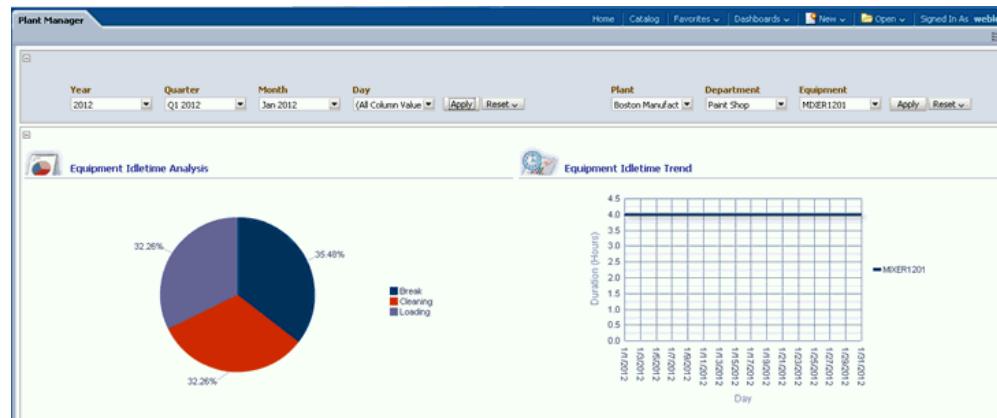
- Time dimension - Year, Quarter, Month, and Day.
- Equipment dimension - Plant, Department, and Equipment.

To view equipment idletime details:

1. Navigate to the Equipment Idletime Analysis link from the OEE by Equipment page to view equipment idletime details.
2. Click on Production Loss Analysis link.
3. Select Equipment Idletime Analysis link.



The Equipment Idletime Analysis page appears. This page displays Equipment Idletime Reasons and Equipment Idletime Trend graphs.



4. Scroll down this page to view daily details of equipment idletime information.

Equipment	Day	Shift	Idle From	Idle To	Duration (Hours)	Idle Reason
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 12:00:01 PM	1/1/2012 12:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 1:00:00 PM	1/1/2012 1:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 2:00:00 PM	1/1/2012 2:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 3:00:00 PM	1/1/2012 4:00:00 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 4:00:00 PM	1/1/2012 4:59:59 PM	0.00	Break
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 1:00:01 PM	1/2/2012 1:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 2:00:00 PM	1/2/2012 2:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 3:00:00 PM	1/2/2012 3:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 4:00:00 PM	1/2/2012 4:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 5:00:00 PM	1/2/2012 5:00:00 PM	0.00	Cleaning

- Select the OEE by Equipment link to return to that page.

Related Topics

See: Equipment Idletime Reasons, page 8-19.

Equipment Idletime Reasons

The Equipment Idletime Reasons report enables you to view the idletime reasons for a particular day selected from the Equipment Idletime Analysis page. The report displays idletime hours and reasons for the equipment at Shifts level for a day.

To view equipment idletime reasons:

- Navigate to the Equipment Idletime Analysis page and scroll down to the Equipment Idletime details region.

Equipment	Day	Shift	Idle From	Idle To	Duration (Hours)	Idle Reason
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 12:00:01 PM	1/1/2012 12:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 1:00:00 PM	1/1/2012 1:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 2:00:00 PM	1/1/2012 2:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 3:00:00 PM	1/1/2012 3:59:59 PM	1.00	Break
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 4:00:00 PM	1/1/2012 4:59:59 PM	0.00	Break
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 1:00:01 PM	1/2/2012 1:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 2:00:00 PM	1/2/2012 2:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 3:00:00 PM	1/2/2012 3:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 4:00:00 PM	1/2/2012 4:59:59 PM	1.00	Cleaning
MDER1201	1/2/2012	20120102-00:00:00-1-M2	1/2/2012 5:00:00 PM	1/2/2012 5:00:00 PM	0.00	Cleaning

- Select a link from the Idle Reason column. The Idletime Reasons page appears and displays equipment idletime reasons by Shift for the day.

Plant Manager						
Equipment						
Equipment	Day	Shift	Idle From	Idle To	Duration (Hours)	Idle Reason
MDER1201	1/1/2012	20120101-00:00:00-1-M2	1/1/2012 12:00:01 PM	1/1/2012 12:59:59 PM	1.00	Break
Grand Total					1.00	BRK

- Click the Return link to return to the Equipment Idletime Analysis page.

Related Topics

See: Equipment Idletime Analysis, page 8-17.

Production Loss Analysis

You can use the Production Loss Analysis page to analyze production loss by equipment. Reporting regions include:

- Production Loss Distribution
- OEE Time Analysis
- Production Loss Analysis

You can view Production Loss by the following dimensions:

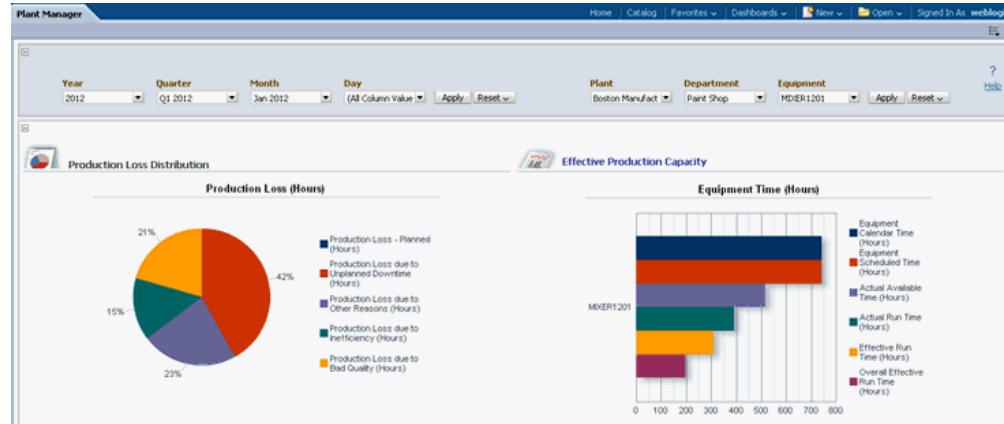
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant, Department, and Equipment

To view Production Loss Analysis:

1. Navigate to the OEE by Equipment page.



2. Select the Production Loss Analysis link. The Production Loss Analysis page appears.



- The page displays the distribution of production loss as well as the OEE time metrics for the equipment.
- The page provides the Production Loss detail and can be defined as:
 - Planned
 - Unplanned
 - Due to Other Reasons
 - Due to Inefficiency
 - Due to Bad Quality
- Scroll down the page to view Production Loss Analysis. This includes Total Production Loss in hours and Overall Effective Run Time in hours.

The screenshot shows the Production Loss Analysis table for equipment MDER1201. The table includes the following columns:

Equipment	Day	Equipment Calendar Time (Hours)	Production Loss - Planned (Hours)	Production Loss due to Unplanned Downtime (Hours)	Production Loss due to Other Reasons (Hours)	Production Loss due to Inefficiency (Hours)	Production Loss due to Bad Quality (Hours)	Total Production Loss (Hours)	Overall Effective Run Time (Hours)
MDER1201	1/1/2012	24.0	0.0	8.0	4.0	2.0	4.0	18.0	6.0
MDER1201	1/2/2012	24.0	0.0	7.0	4.0	3.0	4.8	18.8	5.2
MDER1201	1/3/2012	24.0	0.0	6.0	4.0	4.0	5.7	19.7	4.3
MDER1201	1/4/2012	24.0	0.0	6.0	4.0	2.0	4.6	18.6	5.4
MDER1201	1/5/2012	24.0	0.0	7.0	4.0	3.0	5.5	19.5	4.5
MDER1201	1/6/2012	24.0	0.0	6.0	4.0	4.0	5.6	17.6	6.4
MDER1201	1/7/2012	24.0	0.0	8.0	4.0	2.0	2.8	16.8	7.2
MDER1201	1/8/2012	24.0	0.0	7.0	4.0	3.0	1.9	15.9	8.1
MDER1201	1/9/2012	24.0	0.0	6.0	4.0	4.0	3.4	17.4	6.6
MDER1201	1/10/2012	24.0	0.0	8.0	4.0	2.0	2.5	16.5	7.5

Below the table, there are links: OEE by Equipment, Equipment Downtime Analysis, Equipment Idletime Analysis, Equipment Efficiency Analysis, and Equipment Scrap Analysis.

- You can view the Production Loss Detail page by selecting a value in the Total Production Loss column and analyze the Production Loss by day and shift.

7. Select the OEE by Equipment link to return to that page.

Related Topics

Production Loss Detail, page 8-22

Production Loss Detail

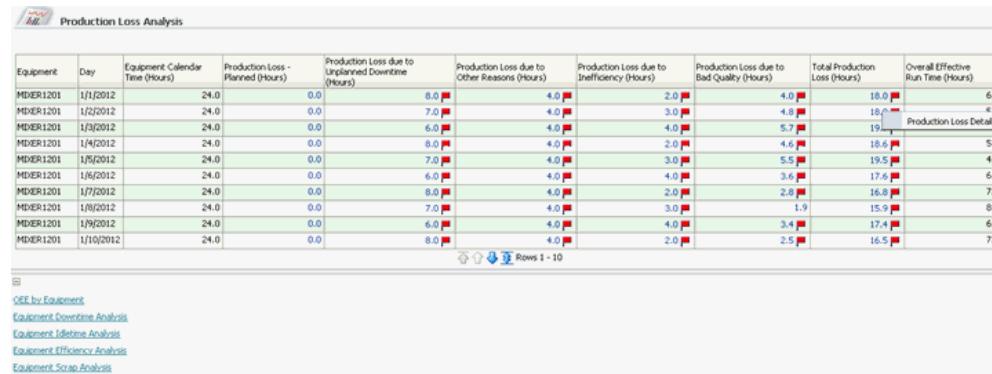
The Production Loss Detail page lets you view the Production Loss for a particular day, and is selected from the Production Loss Analysis page. The page displays the Production Loss and details for the equipment at the shift level for the day.

You can view Production Loss Detail page by the following dimensions:

- Time dimension – Year, Quarter, Month, Day and Shift
- Equipment dimension – Plant, Department, and Equipment

To view Production Loss Detail:

1. Navigate to the Production Loss Analysis page and scroll down to the Production Loss Analysis region.



Equipment	Day	Equipment Calendar Time (Hours)	Production Loss - Planned (Hours)	Production Loss due to Unplanned Downtime (Hours)	Production Loss due to Other Reasons (Hours)	Production Loss due to Inefficiency (Hours)	Production Loss due to Bad Quality (Hours)	Total Production Loss (Hours)	Overall Effective Run Time (Hours)
MDER1201	1/1/2012	24.0	0.0	8.0	4.0	2.0	4.0	18.0	6.0
MDER1201	1/2/2012	24.0	0.0	7.0	4.0	3.0	4.8	18.2	5.8
MDER1201	1/3/2012	24.0	0.0	6.0	4.0	4.0	5.7	19.3	5.4
MDER1201	1/4/2012	24.0	0.0	6.0	4.0	2.0	4.6	18.6	5.4
MDER1201	1/5/2012	24.0	0.0	7.0	4.0	3.0	5.5	19.5	4.5
MDER1201	1/6/2012	24.0	0.0	6.0	4.0	4.0	3.6	17.6	6.4
MDER1201	1/7/2012	24.0	0.0	6.0	4.0	2.0	2.8	16.8	7.2
MDER1201	1/8/2012	24.0	0.0	7.0	4.0	3.0	1.9	15.9	8.1
MDER1201	1/9/2012	24.0	0.0	6.0	4.0	4.0	3.4	17.4	6.6
MDER1201	1/10/2012	24.0	0.0	8.0	4.0	2.0	2.5	16.5	7.5

Rows 1 - 10

[OEE by Equipment](#)
[Equipment Downtime Analysis](#)
[Equipment Idle Time Analysis](#)
[Equipment Efficiency Analysis](#)
[Equipment Scrap Analysis](#)

2. Select a value in the Total Production Loss column to analyze the Production Loss by day and shift. The Production Loss Detail page appears.

Equipment	Day	Shift	Equipment Calendar Time (Hours)	Equipment Scheduled Time (Hours)	Production Loss - Planned (Hours)	Actual Down Time (Hours)	Production Loss due to Unplanned Downtime (Hours)	Actual Available Time (Hours)	Actual Run Time (Hours)	Production Loss due to Other Reasons (Hours)	Equipment Actual Rate	Machine Efficiency	Effective Run Time (Hours)	Production Loss due to Inefficiency (Hours)	Equipment First Time Good Quantity
MDER1201	1/2/2012	20120102-00:00:00-1-M2	24.0	24.0	0.0	7.0	7.0	17.0	13.0	4.0	4	77%	10.0	3.0	52
Grand Total			24.0	24.0	0.0	7.0	7.0	17.0	13.0	4.0	4	77%	10.0	3.0	52

3. This report displays the Production Loss detail as well as the OEE Time Analysis for equipment.
4. Select the Return link to return to the Production Loss Analysis page.

Related Topics

[Production Loss Analysis](#), page 8-20

Batch Performance

The Batch Performance page displays performance metrics that include Work Order Quantity Variance, PPM, Batch Cycle Time Trend, and Service Level Performance. Reporting regions include:

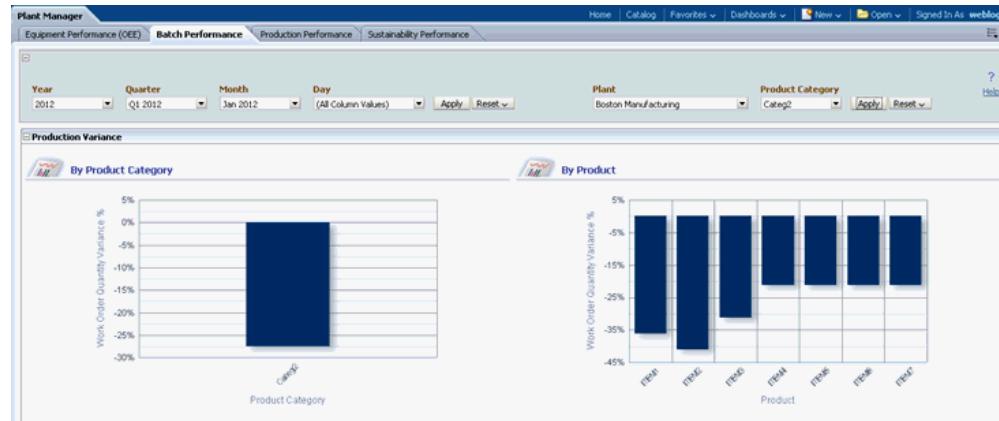
- Production Variance by Product Category
- Production Variance by Product
- PPM Trend (Month to Date)
- Batch Cycle Time Trend (Month to Date)
- Service Level Performance by Product Category
- Service Level Performance by Product

You can view Batch Performance by the following dimensions:

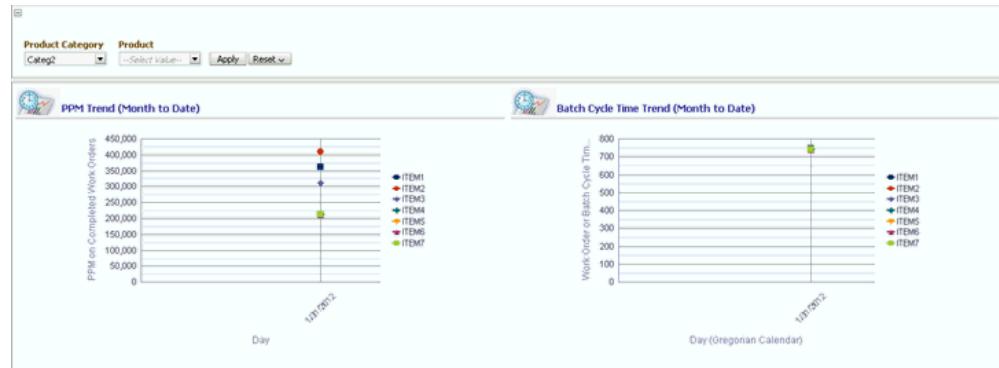
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant and Product Category

To view Batch Performance:

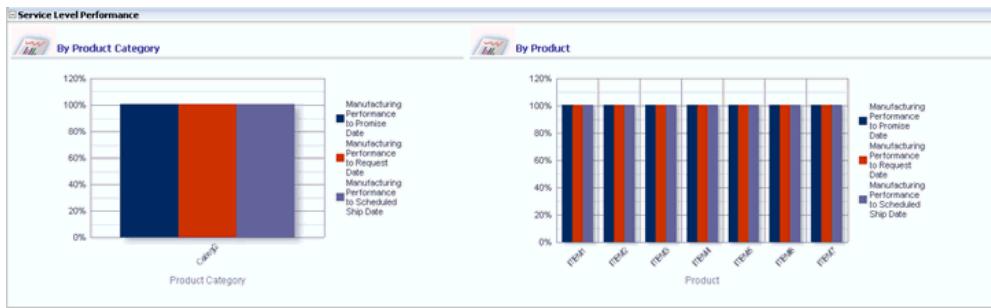
1. Navigate to the Batch Performance page to view production variance. You can view production variance by Product Category and by Product.



2. In the Production Variance By Product region, you can click on a Work Order Quantity Variance Percent bar within the bar graph to view work order contributing details.
3. Scroll down the Batch Performance page to view PPM Trend (Month to Date) and Batch Cycle Time Trend (Month to Date) regions.



4. Continue to scroll down the page to also view Service Level Performance by Product Category and by Product.



Related Topics

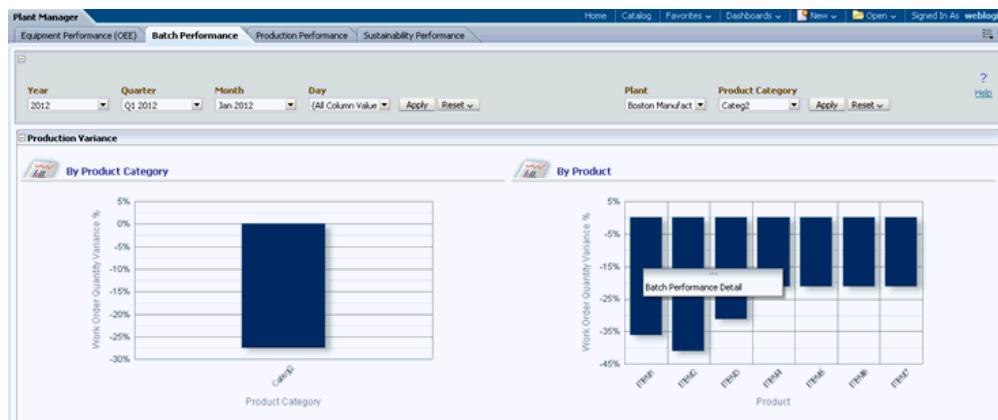
Batch Performance Detail, page 8-25

Batch Performance Detail

The Batch Performance page allows you to navigate to the Batch Performance Detail page. From the Batch Performance Details page, you can view details of specific work orders that are contributing to the production variance.

To view Batch Performance Detail:

1. Navigate to the Batch Performance page.



2. In the Production Variance By Product region, you can click on a Work Order Quantity Variance Percent bar within the bar graph to view work order contributing details. The page displays details of work orders that contribute to the production variance for the product.

Work Order Number	Product	Primary UOM	Planned Start Date	Planned End Date	Planned Cycle Time (Hours)	Actual Start Date	Actual End Date	Actual Cycle Time (Hours)	Planned Completion Quantity	Actual Completion Quantity	Work Order Quantity Variance %	Status
W01-M2	ITEM1	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	3,100	1,979	-36% Complete	
W02-M2	ITEM2	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	743.0	3,100	1,029	-41% Complete	
W03-M2	ITEM3	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	742.0	3,100	2,134	-31% Complete	
W04-M2	ITEM4	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	741.0	3,100	2,444	-21% Complete	
W05-M2	ITEM5	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	741.0	3,100	2,444	-21% Complete	
W06-M2	ITEM6	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	741.0	3,100	2,444	-21% Complete	
W07-M2	ITEM7	EA	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	744.0	1/1/2012 12:00:00 AM	1/31/2012 11:59:59 PM	741.0	3,100	2,444	-21% Complete	
Total					744.0			741.9			-28%	

3. Select the Batch Performance link at the bottom of the page to navigate back to the Batch Performance page.

Related Topics

Batch Performance, page 8-23

Production Performance

The Production Performance page provides the performance to schedule measures by plant, department, and bottom performing equipment. It also displays production slippage in comparison to different shifts and the current month production slippage trend. Reporting regions include:

- Performance to Schedule Measures by Plant
- Performance to Schedule Measures by Department
- Performance to Schedule Measures by Equipment (Bottom Performers)
- Production Slippage by Equipment
- Current Month Production Slippage Trend by Department
- Current Month Production Slippage Trend by Equipment

You can view Production Performance by the following dimensions:

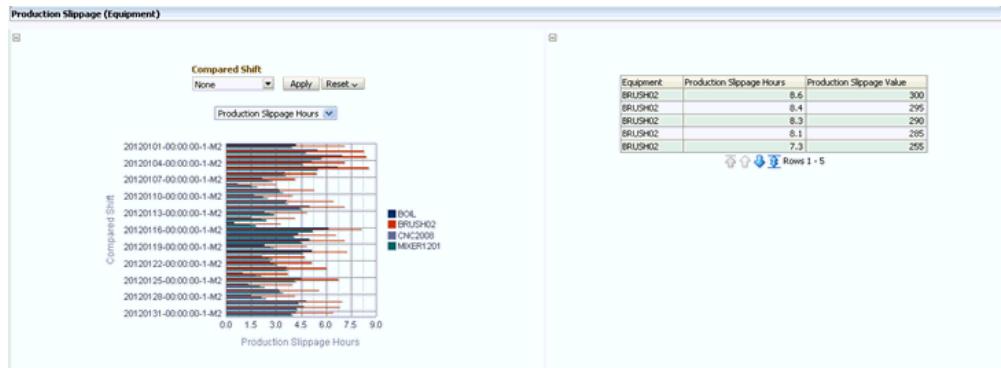
- Time dimension – Year, Quarter, Month, Day, and Shift
- Equipment dimension – Plant and Department

To view Production Performance:

1. Navigate to the Production Performance page. The page displays Performance to Schedule Measures By Plant, By Department, and By Equipment Bottom Performers.



2. Scroll down the Production Performance page to view the Production Slippage (Equipment) region.



3. You can scroll down the page further to view Current Month Production Slippage Trend by Department and by Equipment.



Related Topics

Production Slippage Trend, page 8-11

Sustainability Performance by Department

The Sustainability Performance by Department page displays the electricity consumption, electricity cost, and carbon emission for all departments in a plant.

To view the Sustainability Performance by Department page :

1. Navigate to the Plant Manager dashboard using the Manufacturing Operations Center User responsibility. Select the Sustainability Aspect tab.
2. Select the time period for which you want to view the details. Choose the Year, Quarter, Period, Week, and Date. All Choices displays as the default value for all the time period fields.
3. Select the Plant for which you want to display the reports. All production sites from the Site master display in the list of values. The first site in ascending alphabetical order of Sites is the default value.
4. Click Go. The Sustainability Performance by Department Appears. The following Plant Characteristics display:
 - Plant
 - Business Function is the business function of the plant.
 - Headcount is the number of employees in the plant
 - Area is the area of the plant.
 - Area UOM is the unit of measure in which Area is expressed.
5. Scroll down the page to view the following reports for each department in the

plant:

- Electricity Consumption
- Electricity Cost
- CO2 Emission
- Production Value Analysis by Product
- Trend
- Ranking and Distribution

Electricity Consumption:

- Department is the name of the department of the plant. You can click on a department to view reports on the equipment in the department.
- Business Function is the business function of the department
- Area is the area of the department.
- Headcount is the number of employees working in the department.
- Direct Actual Consumption- Period to Date is the actual electricity consumed by the department in a specific time period for production purposes.
- Indirect Actual Consumption- Period to Date is the actual electricity consumed by the department in a specific time period for non-production purposes. For example, lighting, air-conditioning, and water treatment systems.
- Total Actual Consumption – Period to Date is the sum of Direct and Indirect Actual Consumption.
- Plan Consumption- Period to Date is the planned electricity to be consumed by the department.
- Last Year Consumption – Period Date is the electricity consumed by the department in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of actual consumption from planned electricity consumption by the department. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual electricity usage by the department in the period of the current year from that of the last year. A red flag displays when the value is more than zero.

- Actual Consumption Per Unit Area is the actual electricity consumed per unit area of the department.
- Actual Consumption Per Person is the actual electricity consumed per person in the department.
- Electricity Consumption UOM is the unit of measure in which electricity consumption is expressed.
- Area UOM is the unit of measure in which the department area is expressed.

Electricity Cost:

- Actual Cost-Period to Date is the cost of actual electricity consumed by the department in a specific time period.
- Plan Cost-Period to Date is the cost of planned electricity to be consumed by the department in a specific time period.
- Last Year Cost-Period Date is the cost of electricity consumed by the department in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of cost of actual electricity consumption from planned electricity consumption by the department. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of cost of actual electricity usage by the department in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Cost Per Unit Area is the cost of actual electricity consumed per unit area of the department.
- Actual Cost Per Person is the cost of actual electricity consumed per person in the department.

CO2 Emission

- Actual Emission-Period to Date is the carbon emission based on electricity consumption by the department in a specific time period.
- Plan Emission-Period to Date is planned emissions based on electricity consumption by the department.
- Last Year Emission-Period Date is emission based on electricity consumed by the department in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of actual from planned emissions

by the department. A red flag displays when the value is more than zero.

- % Change (Last Year) is the percentage deviation of actual emission by the department in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Emission Per Unit Area is the actual emission per unit area of the department.
- Actual Emission Per Person is the emission per person in the department.

Plant Manager Asset Performance (OEE) Batch Performance Production Performance Sustainability Performance

Plant: Florida Manufacturing Year: 2010 Quarter: Period: Week: Date: Plant: Florida Manufacturing

Business Function: Manufacturing Headcount: 2000.00 Area UOM: Square Feet

Electricity Consumption

Department	Business Function	Area	Head Count	Actual Consumption - Period to Date	Plan Consumption - Period to Date	Last Year Consumption - Period to Date	% Change (Plan)	% Change (Last Year)	Actual Consumption per Unit Area	Actual Consumption per Person
PL1 Packaging	Manufacturing	30,000	500	53,053.39	3,000	31,947	1668.45	66.07	1.77	106.11
PL1 Testing	Manufacturing	20,000	100	77,487	0	6,000	46,513	1191.46	66.59	3.87
PL1 Production Center	Manufacturing	150,000	1,200	141,189	0	141,188.50	18,000	92,432	684.38	52.75
PL1 Administration	Administration	50,000	200	22,470	0	22,469.67	3,000	13,530	648.99	66.07
Grand Total		250,000	2,000	294,199	0	294,198.92	30,000	184,421	880.66	59.53

Electricity Consumption UOM: KWH, Area UOM: Square Feet

Electricity Cost

Department	Business Function	Area	Head Count	Actual Cost - Period to Date	Plan Cost - Period to Date	Last Year Cost - Period to Date	% Change (Plan)	% Change (Last Year)	Actual Cost per Unit Area	Actual Cost per Person
PL1 Testing	Manufacturing	20,000	100	5,812	450	3,488	1191.46	66.59	66.07	58.12
PL1 Production Center	Manufacturing	150,000	1,200	10,589	1,350	6,932	684.38	52.75	0.67	8.82
PL1 Packaging	Manufacturing	30,000	500	3,979	225	2,296	1668.45	66.07	66.07	7.96
PL1 Administration	Administration	50,000	200	1,685	225	1,015	648.99	66.07	0.03	8.43
Grand Total		250,000	2,000	22,065	2,250	13,832	880.66	59.53		

Area UOM: Square Feet, Currency UOM: USD

CO2 Emission

Department	Business Function	Area	Head Count	Actual Emission - Period to Date	Plan Emission - Period to Date	Last Year Emission - Period to Date	% Change (Plan)	% Change (Last Year)	Actual Emission per Unit Area	Actual Emission per Person
PL1 Packaging	Manufacturing	30,000	500	27,853	1,575	15,772	1668.45	66.07	0.93	55.71
PL1 Testing	Manufacturing	20,000	100	40,681	3,150	24,419	1191.46	66.59	2.03	406.81
PL1 Production Center	Manufacturing	150,000	1,200	74,124	9,450	48,527	684.38	52.75	0.49	61.77
PL1 Administration	Administration	50,000	200	11,797	1,575	7,103	648.99	66.07	0.24	58.98
Grand Total		250,000	2,000	154,454	15,750	96,821	880.66	59.53		

CO2 Emission UOM: KG, Area UOM: Square Feet

Production Value Analysis by Product

Product	Production Value	Actual Electricity Consumption - Period to Date	Actual Electricity Cost - Period to Date	Actual Electricity Emission - Period to Date	Actual Electricity Consumption per Unit Production Value	Actual Electricity Cost per Unit Production Value	Actual Electricity Emission per Unit Production Value
PLITEM1-PL1	100	18.00	1.35	9.45	0.18	0.01	0.09
PLITEM2-PL1	100	154.00	11.55	80.85	1.54	0.12	0.81
Grand Total	200	172.00	12.90	90.30	0.76	0.06	0.40

Electricity Consumption UOM: KWH, CO2 Emission UOM: KG, Currency UOM: USD

Production Value Analysis by Product:

The Production Value Analysis by Product report provides information on the actual electricity consumed, cost of electricity consumed, and carbon emissions due to the consumption per production output of the department.

- Product is the product name.
- Production Value is the value of the produced product.

- Actual Electricity Consumption-Period to Date is the actual electricity consumed for producing the product.
- Actual Electricity Cost-Period to Date is the cost of the actual electricity consumed for producing the product.
- Actual CO2 Emission – Period to Date is carbon emission based on electricity consumption by the department in a specific time period.
- Actual Electricity Consumption per Unit Production Value is the actual electricity consumed by the department for the production of the value of one unit of production output.
- Actual Electricity Cost Per Unit Production Value is the cost of actual electricity consumed by the department for the production of the value of one unit of production output.
- Actual CO2 Emission Per Unit Production Value is the CO2 emission based on actual electricity consumed by an entity for the production of the value of one unit of production output.
- Electricity Consumption UOM is the unit of measure in which the electricity consumption is expressed.
- CO2 Emission UOM is the unit of measure in which the CO2 emission is expressed.
- Currency UOM is the currency in which the Production Value is expressed.

Trend:

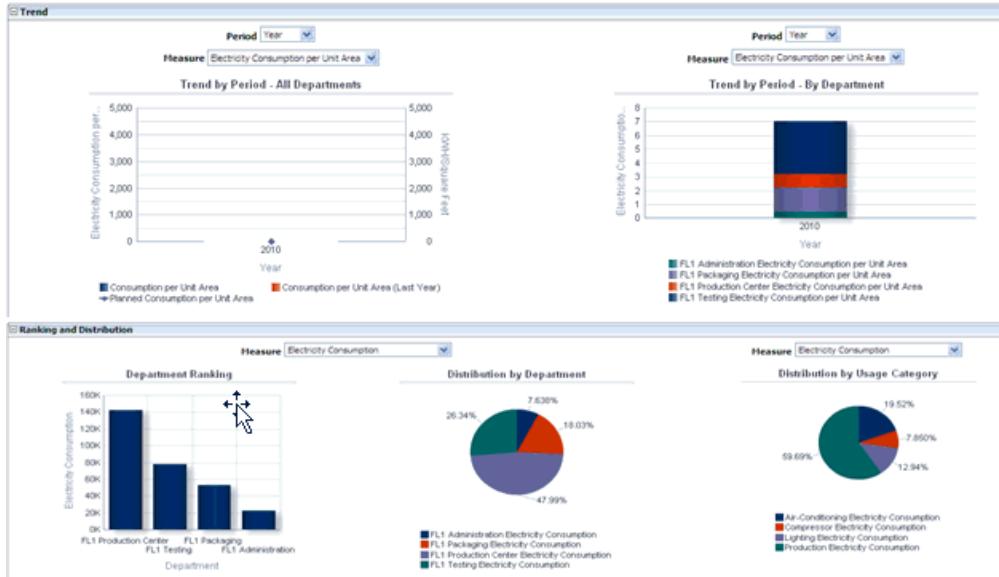
The Trend graph report provides a graphical representation of the electricity consumption, electricity cost, and CO2 emission for:

- All departments in a plant by the Trend by Period-All Departments report.
- Each department in a plant by the Trend by Period-By Department report

To view the trend graph report, select the report you want to view in the Measure field from the following options.

- Electricity Consumption
- Electricity Consumption Per Unit Area
- Electricity Consumption Per Person
- Electricity Cost

- Electricity Cost Per Unit Area
- Electricity Cost Per Person
- CO2 Emission
- CO2 Emission Per Unit Area
- CO2 Emission Per Person



Ranking and Distribution:

The Ranking and Distribution report provides a graphical representation of the department rankings and distributions based on electricity consumption, cost, and CO2 emission.

To view the Ranking and Distribution report select any one of the following KPIs in the Measure field for which you want to view the report:

- Electricity Consumption
- Electricity Consumption Per Unit Area
- Electricity Consumption Per Person
- Electricity Cost
- Electricity Cost Per Unit Area
- Electricity Cost Per Person

- CO2 Emission
- CO2 Emission Per Unit Area
- CO2 Emission Per Person

Site Ranking report displays the top five departments in the descending order for the selected measure.

Distribution by Department report displays the distribution of the selected measure across all departments of the plant.

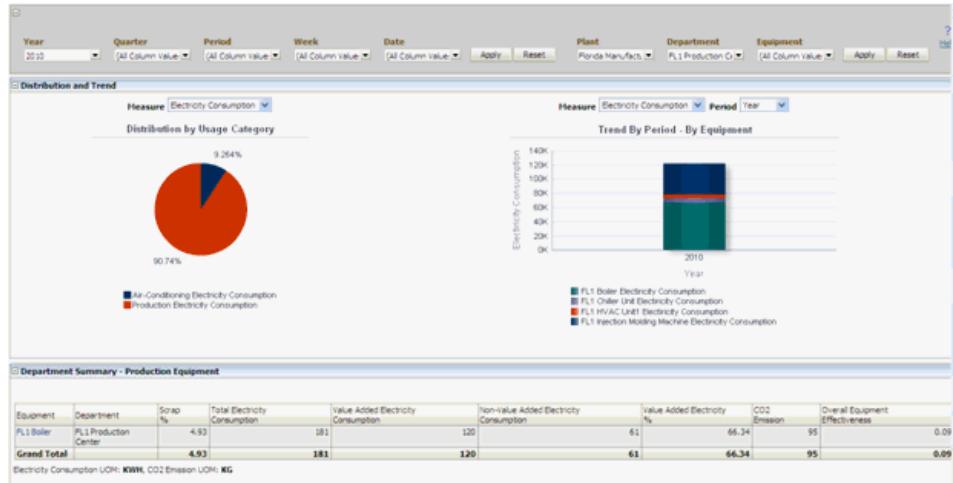
Distribution by Usage Category displays the distribution of the selected measure across various usage categories for all departments at the plant, for example, electricity consumption for air conditioning, lighting, production equipment etc.

Sustainability Performance by Equipment

You can view the electricity consumption, electricity cost, and carbon emission for all equipments in a department using the Sustainability Performance by Equipment page.

To view the sustainability performance by equipment page:

1. Navigate to the Sustainability Performance page.
2. Select a department from the Department column of the Electricity Consumption report. The Sustainability Performance page by Equipment displays. You can also change the time period and the Department for which you want to view the report or select All Choices to view the reports for all departments.
3. The following reports display:
 - Distribution and Trend region displays the following graph reports:
 - Distribution by Usage Categories graph provides the distribution of the selected measure across various usage categories for all equipment in the department. You can choose to view the report for the Measures, Electricity Consumption, CO2 Emission, and Electricity Cost.
 - Trend by Period- By Equipment graph provides the trend in electricity consumption, CO2 emission, and electricity cost by all equipments in a department over a specific time period.



- Department Summary region displays the following information for the department:
 - Equipment is the name of the equipment.
 - Department is the department in which the equipment is present.
 - Scrap % is the percentage of scrap expected for equipment.
 - Total Electricity Consumption is the actual electricity consumed by the equipment in the RUN, IDLE, DOWN, and OFF statuses.
 - Value Added Electricity Consumption is the actual electricity consumed by the equipment in the RUN status.
 - Non- Value Added Electricity Consumption is the electricity consumed by the equipment in the IDLE, DOWN, or OFF statuses.
 - Value Added Electricity % is the percentage of the Value Added Consumption per Total consumption for an entity.
 - CO2 Emission is the actual CO2 emission by the equipment.
 - Overall Equipment Effectiveness is calculated by multiplying Availability Ratio, Performance Ratio, and First Pass Yield for an equipment.

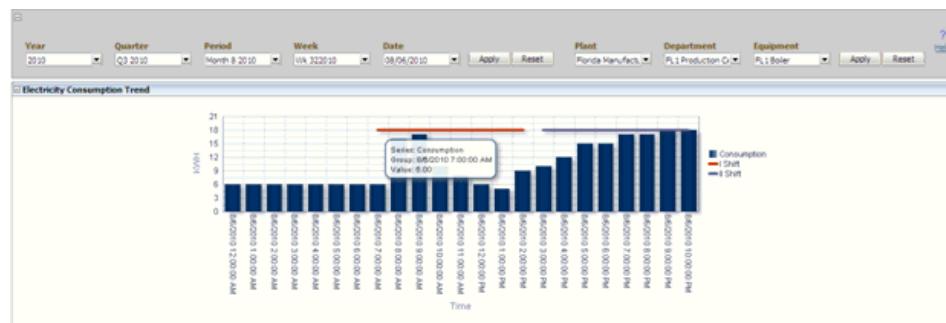
Sustainability Performance Equipment Hourly Summary Page

You can view the electricity consumption, electricity cost, equipment output, and carbon emission for hourly time periods for equipment in a plant using the

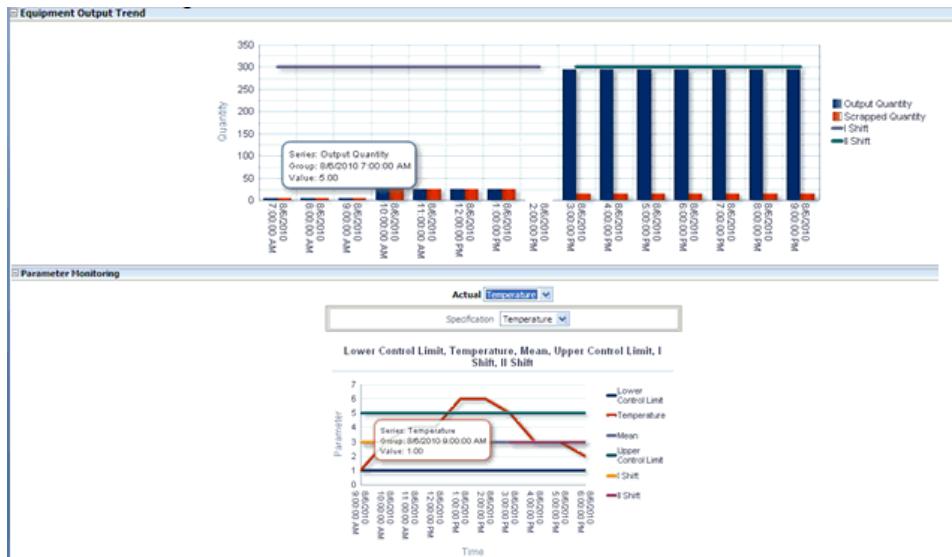
Sustainability Performance Equipment Hourly Summary Page.

To view the sustainability performance equipment hourly summary page:

1. Navigate to the Sustainability Performance tab. The Sustainability Performance by Department displays.
2. Select a department from the Department column of the Electricity Consumption report. The Sustainability Performance page by Equipment displays.
3. Select equipment in the Equipment Summary report. The Sustainability Performance by Equipment Hourly Summary displays. You can also change the time period and the Equipment for which you want to view the reports or select All Choices to view the reports for all equipments.
4. The following reports display for the equipment:
 - Electricity Consumption Trend report is a graphical representation of the trend in electricity consumption of the equipment in hourly time intervals.



- Equipment Output Trend report is a graphical representation of the trend in output production and the scrap quantity recorded for the equipment during shifts.



- Parameter Monitoring report is a graphical representation of the measures of parameters like temperature and pressure over hourly time periods.
- Equipment Status Trend is a graphical representation of the trend in which an equipment is in Idle, Run, Down, and Off statuses over hourly time periods. You can choose to display a Bar or Area Graph.



- Equipment Summary report is a tabular representation of the durations for which the equipment is in the Idle, Run, Down and Off statuses over hourly time periods.

Equipment Summary												
From Time	To Time	Work Order	Product	Output Quantity	Scrapped Quantity	Run Time (hours)	Idle Time (hours)	Down Time (hours)	Off Time (hours)	Total Electricity Consumption	Value Added Electricity Consumption	Value Added Electricity %
8/6/2010 8:00:00 AM	8:00:00 AM	PLVVO1001-PL1	PLITEM2-PL1	5	5	1.00	0.00	0.00	0.00	6	6	100.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	5	5	1.00	0.00	0.00	0.00	16	16	100.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	5	5	1.00	0.00	0.00	0.00	17	17	100.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	5	5	1.00	0.00	0.00	0.00	17	17	100.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	25	25	0.13	0.48	0.18	0.00	10	1	13.34
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	0	0	0.00	0.00	0.00	0.00	0	0	0.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	25	25	0.19	0.33	0.52	0.00	8	1	15.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	0	0	0.00	0.00	0.00	0.00	0	0	0.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	25	25	0.00	0.23	0.77	0.00	6	0	0.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	25	25	0.00	0.15	0.85	0.00	5	0	0.00
8/6/2010 8:00:00 AM	8:59:59 AM	PLVVO1001-PL1	PLITEM2-PL1	0	0	0.00	0.00	0.00	0.00	0	0	0.00
Rows 1 - 10												

Sustainability Performance Equipment Hourly Detail Page

You can view the detailed information on electricity consumption, electricity cost, equipment output, and carbon emission for an equipment in a specific hourly time period using the Sustainability Performance Equipment Hourly Detail Page.

To view the Sustainability Performance Equipment Hourly Detail page:

1. Navigate to the Equipment Summary region of the Equipment Hourly Summary page.
2. Click the From Time to view the equipment detail reports for the equipment within a specific hour. The Equipment Hourly Detail page appears.
3. The following reports display for the equipment within the selected hour:
 - Electricity Consumption Detail Trend graphically displays the electricity consumption by the equipment within the selected hour.
 - CO2 Emission Detail Trend graphically displays the carbon emission by the equipment within the selected hour.



- Equipment Status Trend graphically displays the times for which the equipment is in the Up, Idle, Down, and Off Statuses within the selected hour.
- Production Output Trend graphically displays the product output quantity and scrap quantity produced by the equipment within the selected hour.

Asset Performance Dashboard

Overview of Asset Performance Dashboard

Asset Performance Dashboard provides reporting capabilities for production and maintenance assets within an organization. The dashboard displays the reports for the shop floor events such as breakdown, excessive scrap, unstable equipment and also details of asset status, production performance, output, scrap, and operating parameters.

Asset Performance Dashboard is a role-based dashboard for plant managers, providing an insight into:

- 360 degree view of equipment performance of production and non-production assets.
- Events, asset detail status trend, asset downtime analysis, asset production performance, asset output and scrap, and asset operational parameters for production assets.
- Events, asset detail status trend, asset downtime analysis, asset operational parameters for non-production assets.

It provides the following business values:

- Out-of-box dashboard for monitoring performance of production and non-production assets.
- Track equipment events and alarms on shop floor exceptions such as equipment down, excessive scrap or unstable equipment.
- Monitor Overall Equipment Effectiveness (OEE).
- Monitor critical process parameters and raise alerts for exceptions.

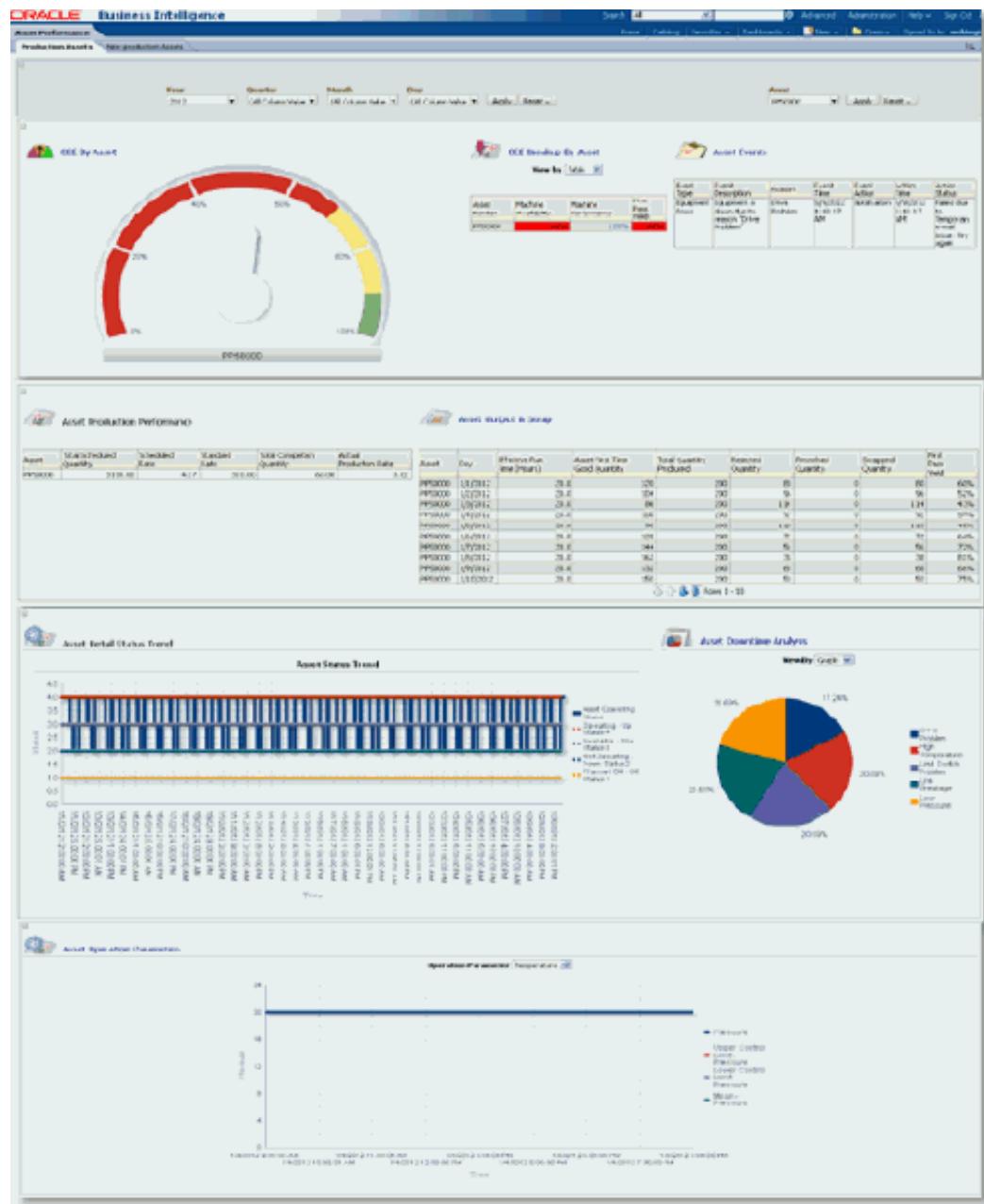
- Overall visibility of equipment health in a maintenance organization.
- User friendly tool to create ad hoc reports.

Asset Performance Dashboard shows performance information of a production asset. It consists of Production Assets tab and Non-Production Assets tab.

Production Assets

The Production Asset tab has several sections:

The first section shows the time prompts and the asset prompt that contain only the list of production assets. The default value for the time prompt is the previous month.



The second section shows three charts: OEE By Asset, OEE Breakup by Asset and Asset Events. The OEE by Asset chart shows a gauge indicating the OEE value for the selected production asset. The OEE Breakup chart shows Machine Availability, Machine Performance, and First Pass Yield values in a table format or a bar chart where table format defaults. You can navigate to the Machine Availability Details page, Machine Performance Details page, and First Pass Yield Details page by clicking on the links in the respective tables in Machine Availability, Machine Performance, and First Pass Yield columns, respectively. The third chart is Asset Events.

Asset Production Performance and Asset Output and Scrap are the two reports that you

can generate from the third section.

The next section provides two reports such as Asset Details Status Trend and Asset Downtime Analysis. The Asset Downtime Analysis pie chart shows the percentage of down time by downtime reason. The Machine Availability Ratio Trend chart shows the daily values of machine availability ratio ranging from 0% to 100%.

Following are the reports available from the Production Asset page:

- OEE By Asset.
- OEE Breakup by Asset.
- Asset Events.
- Asset Production Performance.
- Asset Output and Scrap.
- Asset Status Trend.
- Asset Downtime Analysis.
- Asset Operation Parameter Trend.

The OEE By Asset chart shows a gauge indicating the OEE value for the selected production asset.

The OEE breakup chart shows Machine Availability, Machine Performance, and First Pass Yield values in a table format or a bar chart where table format defaults. You can drill down into Machine Availability Details page, Machine Performance Details page, and First Pass Yield Details page by clicking on the links in the table under Machine Availability, Machine Performance, and First Pass Yield columns, respectively.

Asset Events chart displays the details of events triggered for the assets such as time, description of events, reasons for the events and event actions. Manufacturing Operations Center (MOC) provides two seeded event actions, such as creation of work request in Oracle Enterprise Asset Management Application and Mail Notification.

The Asset Production Performance report compares the actual production rate and the completion quantity with the scheduled quantity and standard rate.

Asset Output and Scrap report shows the total quantity produced by the production asset, rejected quantity, scrap quantity, reworked quantity, and first pass yield.

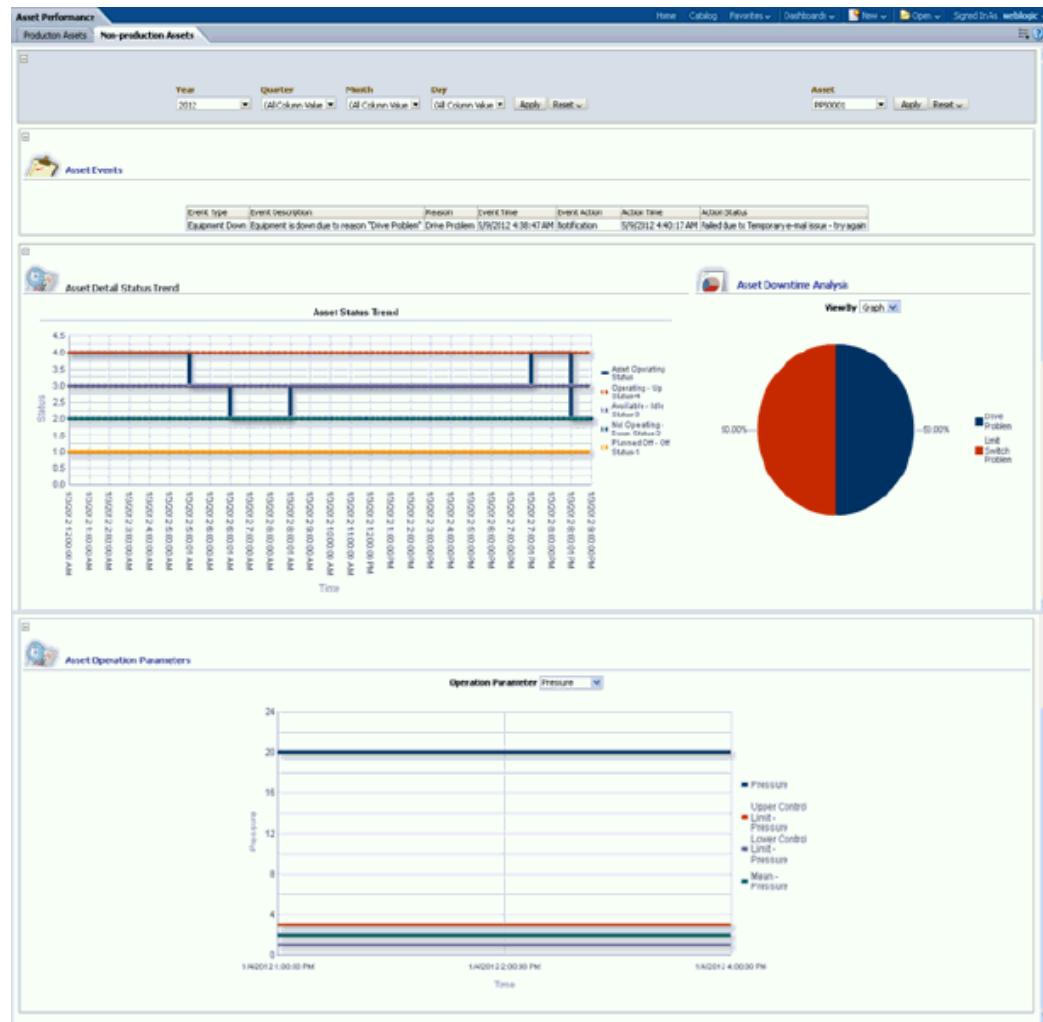
The Asset Status Trend chart shows trend of run time, idle time, down time and off time in hours. The Asset Downtime Analysis pie chart shows percentage of down time by downtime reasons.

Asset Operation Parameters show the trend of a selected operation parameter from the operation parameter prompt, which consists of a list of operation parameters seeded for Extensible Attribute in MOC. These parameters include pressure, temperature, RPM,

length, width, thickness, and weight.

Non-Production Assets

The Non-Production Asset tab of Asset Performance dashboard shows performance information for a selected non-production asset.



Following are the reports available from the Non-Production Asset page:

- Asset Events.
- Asset Status Trend.
- Asset Downtime Analysis.
- Asset Operation Parameter Trend.

The default value of selected time period is the previous month from the current date.

The Asset prompt contains a list of non-production only assets.

The Asset Events region displays all the events generated for assets.

The Asset Detail Status Trend region shows two charts: The Asset Status Trend chart and Asset Downtime Analysis chart. The Asset Status Trend chart shows the trend of run time, idle time, down time, and off time in hours. The Asset Downtime Analysis pie chart shows the percentage of down time by downtime reasons.

The Asset Operation Parameters region shows the daily chart of a selected operation parameter from the operation parameter prompt, which consists of a list of operation parameters seeded for Extensible Attribute in MOC. These parameters include pressure, temperature, RPM, length, width, thickness, and weight.

Production Supervisor Dashboard

Overview of Production Supervisor Dashboard

Production Supervisor Dashboard generates reports that fetch data from shop floor equipment and provide real-time information about equipment status and production performance. Using this dashboard you can generate the following reports:

- Equipment Status
- Equipment Status Analysis
- Equipment Status Trend
- Equipment Output Trend
- Equipment Downtime Analysis

Equipment Status - Production Performance

The reports in the dashboard enable production supervisors, who are responsible for day-to-day monitoring and control of shop floor operations.

Equipment Status report provides the latest equipment status, time of last status change, and time since last status update.

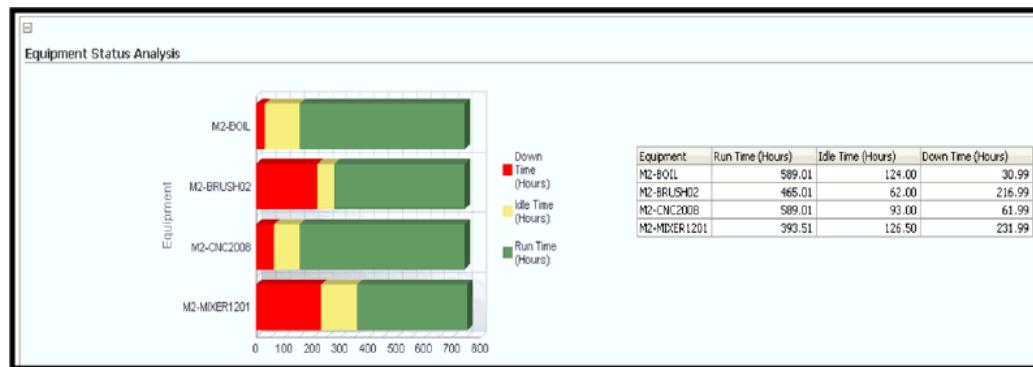
Equipment	Total Scheduled Quantity	Scheduled Rate (Hour)	Standard Rate	Total Completion Quantity	Scrap Quantity	Actual Production Rate (Hour)	Catch Up Rate	PLAIN
M2-B01L	3100	3.7	1000.0	2444	856	4.2	4.2	
M2-BRUSH02	3100	3.7	220.0	160	160	4.2	4.2	
M2-CNC2008	3100	3.7	220.0	2139	266	4.2	4.2	
M2-MIXER1201	3100	3.7	320.0	1979	121	4.2	4.2	

Equipment Production Performance report provides information about the actual production with respect to scheduled production. Catch up Rate indicates the production rate to meet the scheduled production target.

At the top of the dashboard there is an alert on high scrap. You can set up the threshold value of this in the OBIEE.

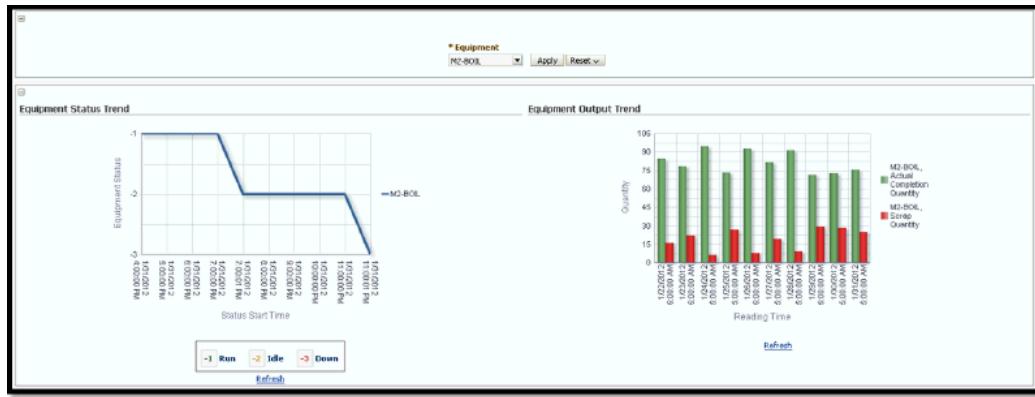
Equipment Status Analysis

The Equipment Status Analysis report shows the breakup of Down Time, Idle Time, and Run time hours for equipment within a plant both in a graph and tabular format.



Equipment Status - Output Trend

Equipment Status Trend displays equipment run, idle and down trend for all reading times for the selected time period.



Equipment Output Trend displays the trend of completed, scrap quantity for equipment for all reading times for the selected time period.

Facilities Manager Dashboard

Overview of the Facilities Manager Dashboard

Oracle Manufacturing Operations Center provides new capabilities to accelerate sustainability improvements of companies focusing on manufacturing, innovation, or services.

Oracle Manufacturing Operations Center can directly connect to smart meters and environmental management systems to collect real time energy consumption and green house gases emission data in both manufacturing and non-manufacturing facilities of enterprises across all industries.

The Sustainability Sensor Data Management system of Oracle MOC provides the Facilities Manager dashboard with built-in Key Performance Indicators (KPIs) that help you:

- Monitor and analyze energy consumption, energy cost, and carbon emissions.
- Identify specific opportunities for improving energy efficiency and reducing carbon emissions.
- Directly integrate with smart meters, environmental management systems, and building automation systems, and collect energy consumption, and emissions data.
- Leverage as a certifiable data repository for reporting energy usage.
- Upload data through spreadsheets at any desired frequency and at any level of granularity, in cases where energy information is not available through meters or other sensors.

The Facilities Manager dashboard and the integrated reports provide the facility manager with information on the electricity consumption, electricity cost, and carbon emissions at the following five seeded levels of a facility hierarchy:

- Site

- Building
- Floor
- Floor Section
- Equipment

You can also define hierarchies based on your requirements.

Understanding the Summary Page

The Summary page displays the electricity consumption, electricity cost, and carbon emission for all the sites in an enterprise.

To view the Summary page:

1. Navigate to the Facilities Manager dashboard using the Manufacturing Operations Center User responsibility. The Summary page displays.
2. Select the time period for which you want to view the details. Choose the Year, Quarter, Period, Week, and Date. All Choices displays as the default value for all the time period fields. Click Go. The following regions display for the enterprise:

Electricity Consumption

- Site is the name of the site in the enterprise. You can click on a site to view the Site reports. Refer to the "Understanding Site Page" topic for a detailed description of the site page.
- Plan vs Actual-Period to Date is the difference in the planned electricity consumption and actual electricity in a specific time period. A dial displays as red when the difference is greater than zero and as green when the difference is lesser than or equal to zero
- Business Function is the business function of the site.
- Area is the area of the site.
- Headcount is the number of employees working at the site
- Actual Consumption- Period to Date is the actual electricity consumed by the site in a specific time period.
- Plan Consumption- Period to Date is the planned electricity to be consumed by the site for the time period.
- Last Year Consumption – Period Date is the electricity consumed by the site in

the same time period of the previous year.

- % Change (Plan) is the percentage deviation of actual consumption from planned electricity consumption by the site. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual electricity usage by the site in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Consumption Per Unit Area is the actual electricity consumed per unit area of the site.
- Actual Consumption Per Person is the actual electricity consumed per person in the site.
- Electricity Consumption UOM is the unit of measure in which electricity is consumed.
- Area UOM is the unit of measure for the site area.

The screenshot shows the Facilities Manager Dashboard with the 'Summary' tab selected. The top navigation bar includes links for Home, Catalog, Favorites, Dashboards, News, Open, and Signed In As. The main content area displays two reports: 'Electricity Consumption' and 'Electricity Cost'.

Electricity Consumption Report:

Site	Plan Vs Actual - Period to Date	Business Function	Area	Head Count	Actual Consumption - Period to Date	Plan Consumption - Period to Date	Last Year Consumption - Period to Date	% Change (Plan)	% Change (Last Year)	Actual Consumption per Unit Area	Actual Consumption per Person
Vision Headquarters	● Sales	Sales	160,000	500	249,517	40,000	102,271	523.79	143.98	1.56	499.03
Vision Jaipur	● Planning	Planning	20,000	100	14,903		9,092		50.66	0.75	149.03
Grand Total			180,000	600	264,420	40,000	112,163	561.05	135.75		

Electricity Consumption UOM: KWH, Area UOM: Square Feet

Electricity Cost Report:

Site	Business Function	Area	Head Count	Actual Cost - Period to Date	Plan Cost - Period to Date	Last Year Cost - Period to Date	% Change (Plan)	% Change (Last Year)	Actual Cost per Unit Area	Actual Cost per Person
Vision Headquarters	Sales	160,000	500	32,437	5,200	13,295	523.79	143.98	0.20	64.87
Vision Jaipur	Planning	20,000	100	1,490		989		50.66	0.07	14.90
Grand Total		180,000	600	33,927	5,200	14,284	552.45	137.51		

Area UOM: Square Feet, Currency UOM: USD

Electricity Cost

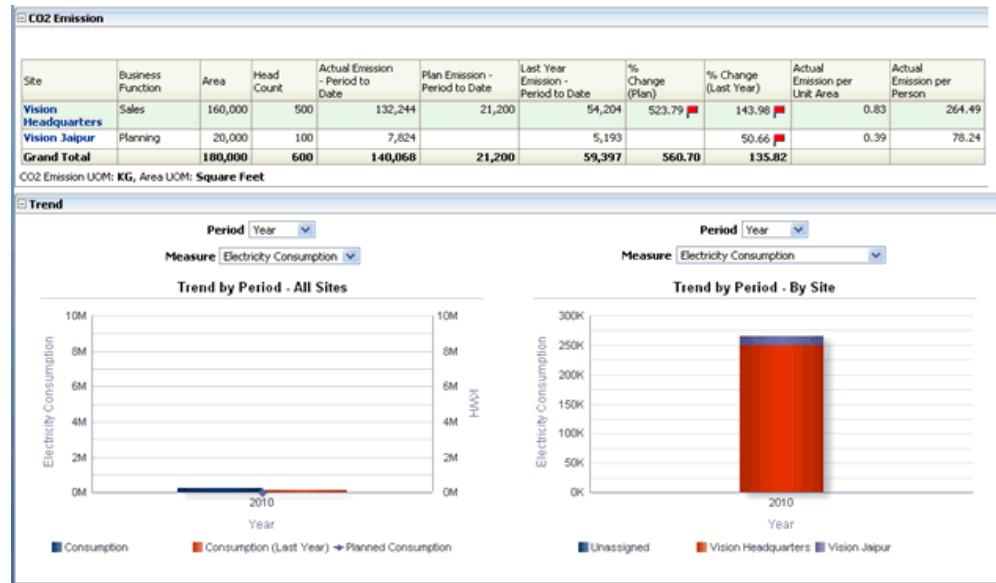
- Actual Cost - Period to Date is the cost of the actual electricity consumed by the site in a specific time period.
- Plan Cost- Period to Date is the cost of planned electricity to be consumed by the site in a specific time period.
- Last Year Consumption – Period Date is the cost of electricity consumed by the

site in the same time period of the previous year.

- % Change (Plan) is the percentage deviation of cost of actual electricity consumption from planned electricity consumption by the site. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of cost of actual electricity usage by the site in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Cost Per Unit Area is the cost of actual electricity consumed per unit area of the site.
- Actual Cost Per Person is the cost of actual electricity consumed per person in the site.

CO2 Emission

- Actual Emission-Period to Date is the carbon emission based on electricity consumption by the site in a specific time period.
- Plan Emission- Period to Date is planned emissions based on electricity consumption by the site.
- Last Year Emission-Period Date is emission based on electricity consumed by the site in a specified period of the previous year.
- % Change (Plan) is the percentage deviation of actual from planned emissions by the site. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual emission by the site in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Emission Per Unit Area is the actual emission per unit area of the site.
- Actual Emission Per Person is the emission per person in the site.



Trend

The Trend graph reports provide a graphical representation of the electricity consumption, electricity cost, and CO2 emission of all sites in an enterprise and also for each site of the enterprise for a specific time period.

To view the Trend Graph Report:

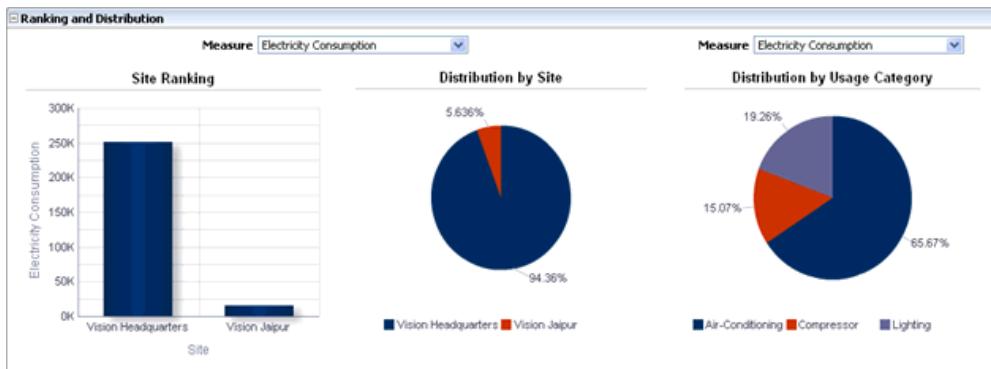
1. Scroll down the Summary page. You can view the following reports:
 - Trend by Period- All Sites displays the report for all sites of the enterprise.
 - Trend by Period- By Site displays the report for each site of the enterprise.
2. To view the Trend by Period- All Sites, select the Period for which you want to view the reports. Options are: Year, Quarter, Period, Week, and Date.
3. Select the report you want to view in the Measure field. Options are: Electricity Consumption, Electricity Cost, and CO2 Emission.
4. To view the Trend by Period- By Site, select the Period for which you want to view the reports. Options are: Year, Quarter, Period, Week, and Date.
5. Select the report you want to view in the Measure field:
 - Electricity Consumption
 - Electricity Cost
 - CO2 Emission

Ranking and Distribution

The Ranking and Distribution report provides a graphical representation of the site rankings and distributions based on electricity consumption, cost, and CO2 emission.

To view the Ranking and Distribution report:

1. Scroll down the Summary page to the Ranking and Distribution region. Select any one of the following KPIs in the Measure field for which you want to view the report:
 - Electricity Consumption
 - Electricity Consumption Per Unit Area
 - Electricity Consumption Per Person
 - Electricity Cost
 - Electricity Cost Per Unit Area
 - Electricity Cost Per Person
 - CO2 Emission
 - CO2 Emission Per Unit Area
 - CO2 Emission Per Person
2. The Site Ranking report displays the top five sites in a descending order for the selected measure.
3. The Distribution by Site report displays the distribution of the selected measure across all sites of the enterprise.
4. The Distribution by Usage Category displays the distribution of the selected measure across various usage categories at all sites, for example, electricity consumption for air conditioning, lighting, production equipment etc.



Understanding the Site Page

The Site page displays the electricity consumption, electricity cost, and carbon emission for all the buildings of a site. You can also choose to view information for a single building.

To view the Site page:

1. Navigate to the Facilities Manager dashboard using the Manufacturing Operations Center User responsibility. The Summary page displays.
2. Select the Site tab or click on a site in the Site field of the Summary page. The Site page appears.
3. Select the time period for which you want to view the details. Options are: Year, Quarter, Period, Week, and Date. Year displays the current year by default. All Choices displays as the default value for Quarter, Period, Week, and Date time periods.
4. Select the Site for which you want to view reports. A list of sites from the Site Master displays. If you navigate to the site page using the Site tab, then the first Site in ascending alphabetical order of Site names displays as the default value.
5. Select the Building for which you want to view report from a list of buildings of the site.
6. Click Go. The header region of the page displays the following Site Characteristics:
 - Building
 - Business Function is business function of the building.
 - Area is the area of the building.

- Headcount is the number of employees working in the building.
7. The following information displays for a site:
- Electricity Consumption**
- Actual Consumption- Period to Date is the actual electricity consumed by the building in a specific time period.
 - Plan Consumption- Period to Date is the planned electricity to be consumed by the building in the specific time period.
 - Last Year Consumption – Period Date is the electricity consumed by the building in the same time period of the previous year.
 - % Change (Plan) is the percentage deviation of actual consumption from planned electricity consumption by the building. A red flag displays when the value is more than zero.
 - % Change (Last Year) is the percentage deviation of actual electricity usage by the building in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
 - Actual Consumption Per Unit Area is the actual electricity consumed per unit area of the building.
 - Actual Consumption Per Person is the actual electricity consumed per person in the building.
 - Electricity Consumption UOM is the unit of measure in which electricity is consumed.
 - Area UOM is the unit of measure for the building area.

Electricity Cost

- Actual Cost-Period to Date is the cost of the actual electricity consumed by the building in a specific time period.
- Plan Cost-Period to Date is the cost of planned electricity to be consumed by the building in a specific time period.
- Last Year Consumption-Period Date is the cost of electricity consumed by the building in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of cost of actual electricity consumption from planned electricity consumption by the building. A red flag displays when the value is more than zero.

- % Change (Last Year) is the percentage deviation of cost of actual electricity usage by the building in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Cost Per Unit Area is the cost of actual electricity consumed per unit area of the building.
- Actual Cost Per Person is the cost of actual electricity consumed per person in the building.

CO2 Emission

- Actual Emission - Period to Date is the carbon emission based on electricity consumption by the building in a specific time period.
- Plan Emission- Period to Date is planned emissions based on electricity consumption by the building.
- Last Year Emission – Period Date is emission based on electricity consumed by the building in a specified period of the previous year.
- % Change (Plan) is the percentage deviation of actual from planned emissions by the building. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual emission by the building in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Emission Per Unit Area is the actual emission per unit area of the building.
- Actual Emission Per Person is the emission per person in the building.

Trend Graph Reports

The Trend graph reports provide a graphical representation of the electricity consumption, electricity cost, and CO2 emission of all buildings at a site and also for each building of the site for a specific time period.

To view the Trend Graph Report:

1. Navigate to the Site page. You can view the following reports:
 - Trend by Period- All Buildings displays the report for all buildings of the site.
 - Trend by Period- By Building displays the report for each building of the site.
2. To view the Trend by Period- All Buildings and Trend by Period-By Building

reports, select the Period for which you want to view the reports. Options are: Year, Quarter, Period, Week, and Date.

3. Select the report you want to view in the Measure field:

- Electricity Consumption
- Electricity Consumption Per Unit Area
- Electricity Consumption Per Person
- Electricity Cost
- Electricity Cost Per Unit Area
- Electricity Cost Per Person
- CO2 Emission
- CO2 Emission Per Unit Area
- CO2 Emission Per Person

Ranking and Distribution

The Ranking and Distribution report provides a graphical representation of the building rankings and distributions based on electricity consumption, cost, and CO2 emission.

To view the Ranking and Distribution report:

1. Navigate to the Site page.
2. Scroll down to the Ranking and Distribution page. Select any one of the following KPIs in the Measure field for which you want to view the report:
 - Electricity Consumption
 - Electricity Consumption Per Unit Area
 - Electricity Consumption Per Person
 - Electricity Cost
 - Electricity Cost Per Unit Area
 - Electricity Cost Per Person
 - CO2 Emission

- CO2 Emission Per Unit Area
 - CO2 Emission Per Person
3. The Building Ranking report displays the top five buildings in a descending order for the selected measure.
 4. The Distribution by Building report displays the distribution of the selected measure across all buildings of the site.
 5. The Distribution by Usage Category displays the distribution of the selected measure across various usage categories for all the buildings at the site, for example, electricity consumption for air conditioning, lighting, production equipment etc.

Understanding the Building Page

The Building page displays the electricity consumption, electricity cost, and carbon emission for all the floors in a building. You can also choose to view information for a single floor.

To view the Building page:

1. Navigate to the Facilities Manager dashboard using the Manufacturing Operations Center User responsibility. The Summary page displays.
2. Select the Building tab or click on a building in the Building field of the Site page. The Building page appears.
3. Select the time period for which you want to view the details. Choose the Year, Quarter, Period, Week, and Date. Year displays the current year by default. All Choices displays as the default value for Quarter, Period, Week, and Date time periods.
4. Select the Site, Building, and Floor for which you want to view reports. All the floors in the building display in the list of values of the Floor field.
5. Click Go. The header region of the page displays the Building Characteristics. The following information displays for the building:
 - Building
 - Business Function is business function of the floor.
 - Area is the area of the floor.

- Area UOM is the unit of measure in which the building area is expressed.
- Headcount is the number of employees working on the floor.

Electricity Consumption

- Floor is the name of the floor.
- Actual Consumption- Period to Date is the actual electricity consumed by the floor in a specific time period.
- Plan Consumption- Period to Date is the planned electricity to be consumed by the floor in the specific time period.
- Last Year Consumption – Period Date is the electricity consumed by the floor in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of actual consumption from planned electricity consumption by the floor. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual electricity usage by the floor in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Consumption Per Unit Area is the actual electricity consumed per unit area of the floor.
- Actual Consumption Per Person is the actual electricity consumed per person in the floor.

Electricity Cost

- Actual Cost - Period to Date is the cost of the actual electricity consumed by the floor in a specific time period.
- Plan Cost- Period to Date is the cost of planned electricity to be consumed by the floor in a specific time period.
- Last Year Consumption – Period Date is the cost of electricity consumed by the floor in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of cost of actual electricity consumption from planned electricity consumption by the floor. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of cost of actual electricity usage by the floor in the period of the current year from that of the last year. A

red flag displays when the value is more than zero.

- Actual Cost Per Unit Area is the cost of actual electricity consumed per unit area of the floor.
- Actual Cost Per Person is the cost of actual electricity consumed per person in the floor.

CO2 Emission

- Actual Emission-Period to Date is the carbon emission based on electricity consumption by the floor in a specific time period.
- Plan Emission-Period to Date is planned emissions based on electricity consumption by the floor.
- Last Year Emission-Period Date is emission based on electricity consumed by the floor in a specified period of the previous year.
- % Change (Plan) is the percentage deviation of actual from planned emissions by the floor. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual emission by the floor in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Emission Per Unit Area is the actual emission per unit area of the floor.
- Actual Emission Per Person is the emission per person in the floor.

Trend

The Trend graph reports provide a graphical representation of the electricity consumption, electricity cost, and CO2 emission of all floors at a building and also for each floor of the building for a specific time period.

To view the Trend Graph Report:

1. Scroll down to the Trend region. You can view the following reports:
 - Trend by Period- All Floors displays the report for all floors of the building.
 - Trend by Period- By Floor displays the report for each floor of the building.
2. To view the Trend by Period- All Floors and Trend by Period-By Floor reports, select the Period for which you want to view the reports. Options are: Year, Quarter, Period, Week, and Date.

3. Select the report you want to view in the Measure field:
 - Electricity Consumption
 - Electricity Consumption Per Unit Area
 - Electricity Consumption Per Person
 - Electricity Cost
 - Electricity Cost Per Unit Area
 - Electricity Cost Per Person
 - CO2 Emission
 - CO2 Emission Per Unit Area
 - CO2 Emission Per Person

Ranking and Distribution

The Ranking and Distribution report provides a graphical representation of the floor rankings and distributions based on energy consumption, cost, and CO2 emission.

To view the Ranking and Distribution report:

1. Scroll down to the Ranking and Distribution page. Select any one of the following KPIs in the Measure field for which you want to view the report:
 - Electricity Consumption
 - Electricity Consumption Per Unit Area
 - Electricity Consumption Per Person
 - Electricity Cost
 - Electricity Cost Per Unit Area
 - Electricity Cost Per Person
 - CO2 Emission
 - CO2 Emission Per Unit Area
 - CO2 Emission Per Person

2. The Building Ranking report displays the top five floors in a descending order for the selected measure.
3. The Distribution by Building report displays the distribution of the selected measure across all floors of the building.
4. The Distribution by Usage Category displays the distribution of the selected measure across various usage categories at all floors of the building, for example, electricity consumption for air conditioning, lighting, production equipment etc.

Understanding the Floor Page

The Floor page displays the electricity consumption, electricity cost, and carbon emission for all the floor sections on a floor. You can also choose to view information for a single floor section.

To view the Floor page:

1. Navigate to the Facilities Manager dashboard using the Manufacturing Operations Center User responsibility. The Summary page displays.
2. Select the Floor tab or click on a floor in the Floor field of the Building page. The Floor page appears.
3. Select the time period for which you want to view the details. Choose the Year, Quarter, Period, Week, and Date. Year displays the current year by default. All Choices displays as the default value for Quarter, Period, Week, and Date time periods.
4. Select the Site, Building, Floor, and Floor Section for which you want to view reports. All the floor sections of the floor display in the list of values of the Floor Section field.
5. Click Go. The header region of the page displays the Floor Characteristics. The following information displays for the building:
 - Floor
 - Business Function is business function of the floor.
 - Area is the area of the floor.
 - Area UOM is the unit of measure in which the floor area is expressed.
 - Headcount is the number of employees working on the floor.

Electricity Consumption

- Floor Section is the name of the floor section.
- Actual Consumption- Period to Date is the actual electricity consumed by the floor section in a specific time period.
- Plan Consumption- Period to Date is the planned electricity to be consumed by the floor section in the specific time period.
- Last Year Consumption – Period Date is the electricity consumed by the floor section in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of actual consumption from planned electricity consumption by the floor section. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual electricity usage by the floor section in the period of the current year from that of last year. A red flag displays when the value is more than zero.
- Actual Consumption Per Unit Area is the actual electricity consumed per unit area of the floor section.
- Actual Consumption Per Person is the actual electricity consumed per person in the floor section.

Electricity Cost

- Actual Cost-Period to Date is the cost of the actual electricity consumed by the floor section in a specific time period.
- Plan Cost-Period to Date is the cost of planned electricity to be consumed by the floor section in a specific time period.
- Last Year Consumption-Period Date is the cost of electricity consumed by the floor section in the same time period of the previous year.
- % Change (Plan) is the percentage deviation of cost of actual electricity consumption from planned electricity consumption by the floor section. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of cost of actual electricity usage by the floor section in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Cost Per Unit Area is the cost of actual electricity consumed per unit area of the floor section.

- Actual Cost Per Person is the cost of actual electricity consumed per person in the floor section.

CO2 Emission

- Actual Emission-Period to Date is the carbon emission based on electricity consumption by the floor section in a specific time period.
- Plan Emission-Period to Date is planned emissions based on electricity consumption by the floor section.
- Last Year Emission-Period Date is emission based on electricity consumed by the floor section in a specified period of the previous year.
- % Change (Plan) is the percentage deviation of actual from planned emissions by the floor section. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual emission by the floor section in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Emission Per Unit Area is the actual emission per unit area of the floor section.
- Actual Emission Per Person is the emission per person in the floor section.

Trend

The Trend graph reports provide a graphical representation of the electricity consumption, electricity cost, and CO2 emission of all floors sections on a floor and also for each floor section of the floor for a specific time period.

To view the Trend Graph Report:

1. Scroll down to the Trend region. You can view the following reports:
 - Trend by Period-All Floor Sections displays the report for all floor sections of the floor.
 - Trend by Period-By Floor section displays the report for each floor section of the floor.
2. To view the Trend by Period-All Floor Sections and Trend by Period-By Floor Section reports, select the Period for which you want to view the reports. Options are: Year, Quarter, Period, Week, and Date.
3. Select the report you want to view in the Measure field:

- Electricity Consumption
- Electricity Cost
- CO2 Emission

Ranking and Distribution

The Ranking and Distribution report provides a graphical representation of the floor section rankings and distributions based on energy consumption, cost, and CO2 emission.

To view the Ranking and Distribution report:

1. Scroll down to the Ranking and Distribution page. Select any one of the following KPIs in the Measure field for which you want to view the report:
 - Electricity Consumption
 - Electricity Consumption Per Unit Area
 - Electricity Consumption Per Person
 - Electricity Cost
 - Electricity Cost Per Unit Area
 - Electricity Cost Per Person
 - CO2 Emission
 - CO2 Emission Per Unit Area
 - CO2 Emission Per Person
2. The Floor Ranking report displays the top five floors in a descending order for the selected measure.
3. The Distribution by Floor report displays the distribution of the selected measure across all floors of the building.
4. The Distribution by Usage Category displays the distribution of the selected measure across various usage categories on all the floor sections of the floor, for example, electricity consumption for air conditioning, lighting, production equipment etc.

Understanding the Floor Section Page

The Floor Section page displays the electricity consumption, electricity cost, and carbon emission for all equipments in a floor section. You can also choose to view information for single equipment.

To view the Floor Section page:

1. Navigate to the Facilities Manager dashboard using the Manufacturing Operations Center User responsibility. The Summary page displays.
2. Select the Floor Section tab or click on a floor section in the Floor Section field of the Floor page. The Floor Section page appears.
3. Select the time period for which you want to view the details. Choose the Year, Quarter, Period, Week, and Date. Year displays the current year by default. All Choices displays as the default value for Quarter, Period, Week, and Date time periods.
4. Select the Site, Building, Floor, Floor Section, and Equipment for which you want to view reports. All the equipment on the floor section display in the list of values of the Equipment field.
5. Click Go. The header region of the page displays the Floor Section Characteristics. The following information displays for the floor section:
 - Floor Section
 - Business Function is business function of the floor section.
 - Area is the area of the floor section.
 - Area UOM is the unit of measure in which the floor section area is expressed.
 - Headcount is the number of employees working on the floor section.

Equipment Summary

- Equipment is the name of the equipment.
- Actual Consumption- Period to Date is the actual electricity consumed by the equipment in a specific time period.
- Plan Consumption- Period to Date is the planned electricity to be consumed by the equipment in the specific time period.
- Last Year Consumption – Period Date is the electricity consumed by the

equipment in the same time period of the previous year.

- % Change (Plan) is the percentage deviation of actual consumption from planned electricity consumption by the equipment. A red flag displays when the value is more than zero.
- % Change (Last Year) is the percentage deviation of actual electricity usage by the equipment in the period of the current year from that of the last year. A red flag displays when the value is more than zero.
- Actual Emission-Period to Date is the carbon emission based on electricity consumption by the equipment in a specific time period.
- Plan Emission-Period to Date is planned emissions based on electricity consumption by the equipment.
- Last Year Emission-Period Date is emission based on electricity consumed by the equipment in a specified period of the previous year.

Trend

The Trend graph reports provide a graphical representation of the electricity consumption, electricity cost, and CO2 emission of all equipments on a floor and also for a single equipment of the floor section for a specific time period.

To view the Trend Report:

1. Scroll down to the Trend region. You can view the following reports:
 - Trend by Period-All Equipments displays the report for all equipments of the floor section.
 - Trend by Period-By Equipment displays the report for an equipment of the floor section.
2. To view the Trend by Period- All Equipments and Trend by Period-By Equipment reports, select the Period for which you want to view the reports. Options are: Year, Quarter, Period, Week, and Date.
3. Select the report you want to view in the Measure field:
 - Electricity Consumption
 - Electricity Cost
 - CO2 Emission

Ranking and Distribution

The Ranking and Distribution report provides a graphical representation of the equipment rankings and distributions based on energy consumption, cost, and CO2 emission.

To view the Ranking and Distribution report:

1. Scroll down to the Ranking and Distribution page. Select any one of the following KPIs in the Measure field for which you want to view the report:
 - Electricity Consumption
 - Electricity Cost
 - CO2 Emission
2. The Equipment Ranking report displays the top five equipments in a descending order for the selected measure.
3. The Distribution by Equipment report displays the distribution of the selected measure across all equipments of the floor section.
4. The Distribution by Usage Category displays the distribution of the selected measure across various usage categories for all equipments on a floor section, for example, electricity consumption for air conditioning, lighting, production equipment etc.

Equipment Hourly Summary Page

You can view the electricity consumption, electricity cost, equipment output, and carbon emission for hourly time periods for equipment using the Equipment Hourly Summary Page.

To view the Equipment Hourly Summary page:

1. Navigate to the Equipment Summary region of the Floor Section page. Click in the Equipment field to view reports for an equipment. The Equipment Hourly Summary page appears.
2. Select the report you want to view using the following options for time and entity:
 - Year, Quarter, Period, Week, and Date
 - Site, Building, Floor, Floor Section, and Equipment
3. The following reports display for the equipment:

- Electricity Consumption Trend report is a graphical representation of the trend in electricity consumption of the equipment in hourly time intervals.



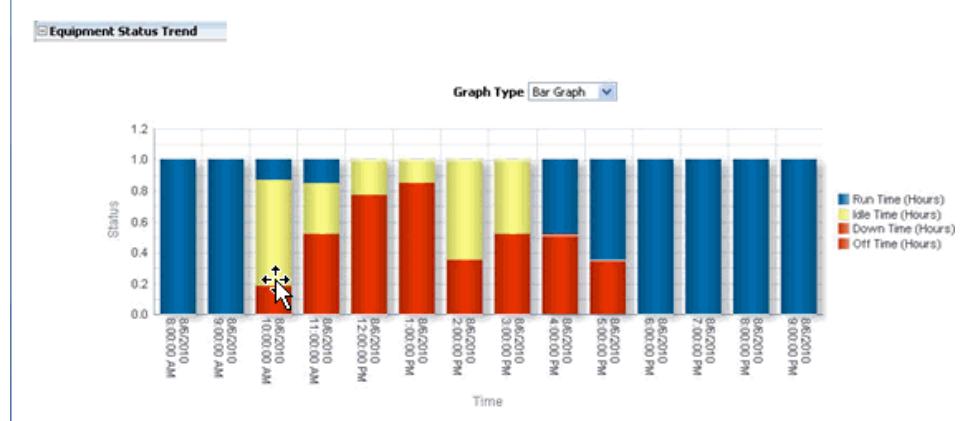
- Parameter Monitoring report is a graphical representation of the measures of parameters like temperature and pressure over hourly time periods.

To view the report:

- Select Actual as Temperature or Pressure
- Select Specification as Temperature or Pressure. If you select Actual as Pressure, then you must also select the Specification as Pressure. The graph report displays the values of measured parameter over specified time periods with respect to the graphs of the Upper and Lower limits of the specifications. Refer to the topic "Creating Attribute Groups" in the *Oracle Manufacturing Operations Center Implementation Guide* for more information on specifications.



- Equipment Status Trend is a graphical representation of the trend in which an equipment is in Idle, Run, Down, and Off statuses over hourly time periods. You can choose to display a Bar or Area Graph.



- Equipment Summary report is a tabular representation of the durations for which the equipment is in the Idle, Run, Down and Off statuses over hourly time periods.

The report displays the following information:

- From Time and To Time is the hourly time period
- Run Time (Hrs) is the time in hours for which the equipment is in Run status.
- Idle Time (Hrs) is the time in hours for which the equipment is in Idle status.

- Down Time (Hrs) is the time in hours for which the equipment is in Down status.
- Off Time (Hrs) is the time in hours for which the equipment is in Off status.
- Electricity Consumption is electricity consumed by the equipment for the time range.



The screenshot shows a table titled 'Equipment Summary' with the following data:

From Time	To Time	Run Time (Hours)	Idle Time (Hours)	Down Time (Hours)	Off Time (Hours)	Energy Consumption
8/6/2010 8:00:00 AM	8/6/2010 8:59:59 AM	1.00	0.00	0.00	0.00	16.00
8/6/2010 9:00:00 AM	8/6/2010 9:59:59 AM	1.00	0.00	0.00	0.00	17.00
8/6/2010 10:00:00 AM	8/6/2010 10:59:59 AM	0.13	0.66	0.18	0.00	10.00
8/6/2010 11:00:00 AM	8/6/2010 11:59:59 AM	0.15	0.33	0.52	0.00	8.00
8/6/2010 12:00:00 PM	8/6/2010 12:59:59 PM	0.00	0.23	0.77	0.00	6.00
8/6/2010 1:00:00 PM	8/6/2010 1:59:59 PM	0.00	0.15	0.85	0.00	5.00
8/6/2010 2:00:00 PM	8/6/2010 2:59:59 PM	0.00	0.65	0.35	0.00	9.00
8/6/2010 3:00:00 PM	8/6/2010 3:59:59 PM	0.00	0.48	0.52	0.00	10.00
8/6/2010 4:00:00 PM	8/6/2010 4:59:59 PM	0.48	0.00	0.35	0.17	12.00
8/6/2010 5:00:00 PM	8/6/2010 5:59:59 PM	0.65	0.00	0.00	0.35	15.00

Equipment Hourly Detail Page

You can view the detailed information on electricity consumption, electricity cost, equipment output, and carbon emission for an equipment in a specific hourly time period using the Sustainability Performance Equipment Hourly Detail Page.

To view the Equipment Hourly Detail page:

1. Navigate to the Equipment Summary region of the Equipment Hourly Summary page.
2. Click the From Time to view the equipment detail reports for the equipment within a specific hour. The Equipment Hourly Detail page appears.
3. The following reports display for the equipment within the selected hour:
 - Electricity Consumption Detail Trend graphically displays the electricity consumption by the equipment within the selected hour.
 - CO2 Emission Detail Trend graphically displays the carbon emission by the equipment within the selected hour.
 - Equipment Status Trend graphically displays the times for which the equipment is in the Up, Idle, Down, and Off Statuses within the selected hour.

MOC and Oracle Enterprise Asset Management (eAM) Integration

This chapter covers the following topics:

- Overview

Overview

Oracle Manufacturing Operations Center (MOC) and Oracle Enterprise Asset Management (eAM) integration provides effective coordination between production and maintenance departments to achieve greater utilization of equipment on the shop floor. This is achieved by the rapid exchange of information related to equipment. Examples include down or idle condition of equipment, or equipment exceeding control parameters. MOC initiates actions based on events and alerts captured from shop floor equipment and passes the actions to the specific roles, such as the Maintenance Supervisor. MOC also receives the expected and actual uptime from the maintenance department that assists the planner or scheduler to modify the production schedules according to equipment availability.

MOC and eAM integration:

- Reduces reaction time between event occurrence and the action/response
- Improves scheduling based on equipment availability

MOC and eAM integration supports:

- Configuration and collection of eAM specific objects including meter readings, events, and alarms from actual equipment in MOC
- Process integration between MOC and eAM to meet the principles of Condition Based Maintenance (CBM)
- Dashboards and KPI's designed for maintenance specific users and roles

- Manual or automatic actions based on events using Event Management Framework

The equipment status data from the shop floor can be obtained through tags and can be imported to MOC using OPC Server provided by device partners (Kepware, Matricon or ILS). The data is stored in the Tag Readings Raw table. MOC processes the data collected from the OPC server and creates events for the generation of notifications like e-mails and mobile alerts, and work requests in the EBS source system. You must run the Process Transactions concurrent program to load the data into the Tag Readings table and trigger the MOC Event Management procedure. The procedure creates event actions as defined in the Event Setup for the equipment. The following event actions are available:

- Send notifications like e-mails or mobile alerts to the person setup in the Event.
- Create work request in the source instance EAM Application.

You must select the Work Request Auto Approve option for the maintenance organization in the EAM Parameters window of the Oracle Enterprise Asset Management application to create work requests. Refer to the *Oracle Enterprise Asset Management User's Guide* for more information. Equipment Event Action folder in the presentation layer of the OBIEE metadata analyzes the equipment events into equipment, work order, and shifts.

Setting Up MOC- EAM Integration Using Event Management Framework

Complete the following steps to set up the MOC-EAM Integration using Event Management Framework:

1. Set up Organizations. Define non-EBS source organizations in the Microsoft Excel template by updating the definitions in MTH_ORG.csv. Refer to the Setting Up Source Systems chapter of the *Oracle Manufacturing Operations Center Implementation Guide* for more information.
2. Create personnel record in mth_personnel_d and run the ODI scenario MTH_PKG_PERSONNEL_EXT.
3. Set up the following profile options:
 - MTH: Notification E-Mail Server Name
 - MTH: Notification E-Mail Server Port
 - MTH: Source Instance DBLink
 - MTH: Notification E-Mail From Display Name

Refer to the Profile Options chapter in the *Oracle Manufacturing Operations Center Implementation Guide* for more information.

4. Set up Assets. Define assets using Microsoft Excel template by updating the definitions in the MTH_ASSET_MASTER.csv. You can also load assets by running MTH_PKG_ASSETS_EXT scenario in ODI.
5. Create Tags for the assets using the Tag Setup page. Refer to the "Setting Up Tags" topic for more information.
6. Define MOC Equipments. Refer to the "Setting Up Equipment Dimensions" chapter in the *Oracle Manufacturing Operations Center Implementation Guide* for more information.
7. Perform equipment to tag mapping. Refer to the "Mapping Tags to Equipment" topic for more information.
8. Generate shifts for equipment. Refer to the "Performing Entity Shift Setup" topic of the Setting Up Time Dimensions chapter of the *Oracle Manufacturing Operations Center Implementation Guide* for more information.
9. Set up Events. Refer to the "Setting Up Events" topic for more information.

Ad hoc Reports

Using Ad hoc Reports

Oracle Manufacturing Operations Center (MOC) enables you to build custom reports for analyzing process parameters like electricity consumption, pressure, temperature, etc. that are captured for equipments based on specifications setup. Oracle MOC provides the following seeded reports for ad hoc analysis and enables you to analyze electricity consumption and parameters like temperature or pressure for single or multiple entities in a specific time period or over multiple time periods:

- Single Entity Ad hoc Analysis Report
- Multiple Entity Ad hoc Analysis Report
- Compare Periods Ad hoc Analysis Report

Single Entity Ad hoc Analysis Report

The Single Entity Ad hoc Analysis report enables you to analyze electricity consumption with parameters, Temperature or Pressure for a single entity and a single time period.

To run a single entity ad hoc analysis report:

1. Using the Manufacturing Operations Center User responsibility, click Ad hoc Analysis menu option. The Ad hoc Analysis page displays.
2. In the Single Entity tab, enter the following fields:
 - From Date and To Date to specify the time period for which you want to analyze the electricity consumption.
 - Entity Type. Options are: Building, Department, Equipment, Floor, Floor

Section, Resource, Resource Group, and Site.

- Entity for which you want to analyze the electricity consumption. All entities of the selected entity type display.
 - Parameter as Temperature or Pressure.
3. Click Go. The Electricity Consumption and Parameter Monitoring graphical report displays electricity consumption and the parameter recordings

Multiple Entities Ad hoc Analysis Report

The Multiple Entities Ad hoc Analysis report enables you to analyze electricity consumption or monitor temperature or pressure for multiple entities in a specified time period.

To run the Multiple Entities Ad hoc Analysis Report:

1. Using the Manufacturing Operations Center User responsibility, click Ad hoc Analysis menu option. The Ad hoc Analysis page displays.
2. Select the Multiple Entities tab and enter the following fields:
 - From Date and To Date to specify the time period for which you want to analyze the electricity consumption or monitor temperature or pressure.
 - Entity Type. Options are: Building, Department, Equipment, Floor, Floor Section, Resource, Resource Group, and Site.
 - Entities for which you want to analyze the electricity consumption or a parameter. All entities of the selected entity type display.
 - Parameter as Temperature, Pressure, or Electricity Consumption.
3. Click Go. The Electricity Consumption or Parameter Monitoring graphical report displays the electricity consumption or parameter readings for the selected entities for the specified time period.

Compare Periods Ad hoc Analysis Report

The Compare Period Ad hoc Analysis report enables you to analyze electricity consumption and monitor temperature and pressure for an entity for multiple time periods.

To run the Compare Periods Ad hoc Analysis Report:

1. Using the Manufacturing Operations Center User responsibility, click Ad hoc Analysis menu option. The Ad hoc Analysis page displays.
2. Select the Compare Period tab and enter the following fields
 - Choose the time period. Options are Year, Quarter, Period, Week, and Day.
 - Entity Type. Options are: Building, Department, Equipment, Floor, Floor Section, Resource, Resource Group, and Site.
 - Entities for which you want to analyze the electricity consumption or a parameter. All entities of the selected entity type display.
 - Parameter as Temperature, Pressure, or Electricity Consumption.
3. Click Go. The Electricity Consumption or Parameter Monitoring graphical report displays the electricity consumption or parameter readings for the entity in the selected time period.

A

Navigation

This appendix lists navigation paths for pages in the Oracle Manufacturing Operations Center application.

This appendix covers the following topics:

- Manufacturing Operations Center Navigation Paths

Manufacturing Operations Center Navigation Paths

Brackets ([]) indicate a button or link.

Page Name	Navigation Path
Actual Meters Data Entry	MOC User > Data Entry > Actual Meters Data Entry
Add Attribute Groups for Batch Operation	MOC Administrator > Extensible Attributes Workbench > Batch Operations > [select Entity Name link] > Classifications tab [Attribute Groups] > [Add Attribute Groups]
Add Attribute Groups for Equipment	MOC Administrator > Extensible Attributes Workbench > Equipment > [select Entity Name link] > Classifications tab [Attribute Groups] > [Add Attribute Groups]
Add Attribute Groups for Item	MOC Administrator > Extensible Attributes Workbench > Items > [select Entity Name link] > Classifications tab [Attribute Groups] > [Add Attribute Groups]

Page Name	Navigation Path
Add Attribute Groups for Others	MOC Administrator > Extensible Attributes Workbench > Others > [select Entity Name link] > Classifications tab [Attribute Groups] > [Add Attribute Groups]
Add Attribute Groups for Work Order	MOC Administrator > Extensible Attributes Workbench > Work Orders > [select Entity Name link] > Classifications tab [Attribute Groups] > [Add Attribute Groups]
Add Pages for Batch Operation	MOC Administrator > Extensible Attributes Workbench > Batch Operations > [select Entity Name link] > Classifications tab [Pages] > [Add Pages for Batch Operation] > [Create Page]
Add Pages for Equipment	MOC Administrator > Extensible Attributes Workbench > Equipment > [select Entity Name link] > Classifications tab [Pages] > [Add Pages for Equipment] > [Create Page]
Add Pages for Item	MOC Administrator > Extensible Attributes Workbench > Items > [select Entity Name link] > Classifications tab [Pages] > [Add Pages for Item] > [Create Page]
Add Pages for Others	MOC Administrator > Extensible Attributes Workbench > Others > [select Entity Name link] > Classifications tab [Pages] > [Add Pages for Others] > [Create Page]
Add Pages for Work Order	MOC Administrator > Extensible Attributes Workbench > Work Orders > [select Entity Name link] > Classifications tab [Pages] > [Add Pages for Work Order] > [Create Page]
Application Object Library Lookups	Development Manager Responsibility > Lookups
Asset Performance Dashboard	MOC User > Manufacturing Operations Center Analytics: Asset Performance Dashboard
Equipment Performance (OEE)	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard

Page Name	Navigation Path
OEE by Equipment	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge]
Attribute Group Details	MOC Administrator > Extensible Attributes Workbench > [select Entity type] > [select Entity Name link] > Classifications tab [Attribute Groups] > [Add Attribute Groups] > [Display Name link]
Attribute Groups for Batch Operation	MOC Administrator > Extensible Attributes Workbench > Batch Operations > [select Entity Name link] > Classifications tab [Attribute Groups]
Attribute Groups for Equipment	MOC Administrator > Extensible Attributes Workbench > Equipment > [select Entity Name link] > Classifications tab [Attribute Groups]
Attribute Groups for Item	MOC Administrator > Extensible Attributes Workbench > Items > [select Entity Name link] > Classifications tab [Attribute Groups]
Attribute Groups for Others	MOC Administrator > Extensible Attributes Workbench > Others > [select Entity Name link] > Classifications tab [Attribute Groups]
Attribute Groups for Work Order	MOC Administrator > Extensible Attributes Workbench > Work Orders > [select Entity Name link] > Classifications tab [Attribute Groups]
Batch Equipment Contextualization Update	MOC Administrator > Setup > Contextualization Setup > [select records] > [Enter Context in Batch]
Batch Operations Segments Overview	MOC User > Extensible Attributes Data > Batch Operations > [select an Entity Name link] > Entity: Batch Operation select [Entity Name link]

Page Name	Navigation Path
Batch Operation Pages	MOC Administrator > Extensible Attributes Workbench > Batch Operations > [select Entity Name link] > Classifications tab [Page]
Batch Performance	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [Batch Performance]
Batch Performance Detail	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [Batch Performance] > Production Variance by Product region > [select a Work Order Quantity Variance Bar within bar graph]
Create Classification	MOC Administrator > Extensible Attributes Workbench > Others > [Create]
Downtime Reasons Entry	MOC User > Tag Data Workbench > Equipment Downtime Reasons > [select data on Equipment Downtime Reason] > [select records] > [Enter Downtime Reason]
Entity: Batch Operation	MOC Administrator > Extensible Attributes Workbench > Batch Operations
	MOC User > Extensible Attributes Data > Batch Operations
Entity: Batch Operation Classifications	MOC Administrator > Extensible Attributes Workbench > Batch Operations > Entity: Batch Operation > [select Entity Name link]
Entity: Equipment	MOC Administrator > Extensible Attributes Workbench > Equipment
	MOC User > Extensible Attributes Data > Equipment
Entity: Equipment Classifications	MOC Administrator > Extensible Attributes Workbench > Equipment > Entity: Equipment > [select Entity Name link]

Page Name	Navigation Path
Entity: Item	<p>MOC Administrator > Extensible Attributes Workbench > Items</p> <p>MOC User > Extensible Attributes Data > Items</p>
Entity: Item Classifications	<p>MOC Administrator > Extensible Attributes Workbench > Items > Entity: Item > [select Entity Name link]</p>
Entity: Others	<p>MOC Administrator > Extensible Attributes Workbench > Others</p> <p>MOC User > Extensible Attributes Data > Others</p>
Entity: Others Classifications	<p>MOC Administrator > Extensible Attributes Workbench > Others > Entity: Others > [select Entity Name link]</p>
Entity: Work Order	<p>MOC Administrator > Extensible Attributes Workbench > Work Orders</p> <p>MOC User > Extensible Attributes Data > Work Orders</p>
Entity: Work Order Classifications	<p>MOC Administrator > Extensible Attributes Workbench > Work Orders > Entity: Work Order > [select Entity Name link]</p>
Equipment Contextualization Setup	<p>MOC Administrator > Setup > Contextualization Setup</p>
Equipment Downtime Analysis	<p>MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Overall Equipment Effectiveness Details Region] > [select a Machine Availability Value]</p>
Equipment Downtime Reasons	<p>MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > Overall Equipment Effectiveness Details Region > [select Machine Availability Value] > [select Actual Downtime Hours value]</p>

Page Name	Navigation Path
Equipment Downtime Reason	MOC User > Tag Data Workbench > Equipment Downtime Reasons
Equipment Downtime Reasons Entry	MOC User > Tag Data Workbench > Equipment Downtime Reasons > [Enter Downtime Reason]
Equipment Downtime Reasons [View]	MOC User > Tag Data Workbench > Equipment Downtime Reasons > [select data on Equipment Downtime Reason] > [select records] > [View Reason]
Equipment Efficiency Analysis	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Overall Equipment Effectiveness Details Region] > [select a Machine Performance Value]
Equipment Efficiency Detail	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Overall Equipment Effectiveness Details Region] > [select a Machine Performance Value] > [select a Machine Efficiency value]
Equipment Overview	MOC User > Extensible Attributes Data > Equipment > Entity: Equipment [select Entity Name link]
Equipment Pages	MOC Administrator > Extensible Attributes Workbench > Equipment > [select Entity Name link] > Classifications tab [Pages]
Equipment Reason Code Setup	MOC Administrator > Equipment Reason Code Setup
Equipment Scrap Analysis	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Overall Equipment Effectiveness Details Region] > [select a First Pass Yield Value]

Page Name	Navigation Path
Equipment Scrap Reason	MOC User > Tag Data Workbench > Equipment Scrap Reasons
Equipment Scrap Reasons Entry	MOC User > Tag Data Workbench > Equipment Scrap Reasons > [Enter Scrap Reason]
Equipment Scrap Reasons View	MOC User > Tag Data Workbench > Equipment Scrap Reasons > [select data on Equipment Scrap Reason] > [select records] > [View Reason]
Equipment Scrap Reasons	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Overall Equipment Effectiveness Details Region] > [select a First Pass Yield Value] > [select a Scrapped Quantity value]
Event Setup	MOC Administrator > Event Setup
Extensible Attributes Data	MOC User > Extensible Attributes Data
Facilities Manager	MOC User > Manufacturing Operations Center Analytics > Facilities Manager
Items Overview	MOC User > Extensible Attributes Data > Items > [select an Entity Name link] > Entity: Item [Entity Name link]
Item Pages	MOC Administrator > Extensible Attributes Workbench > Items > [select Entity Name link] > Pages
Manual Contextualization	MOC User > Tag Data Workbench > Manual Contextualization
Manufacturing Operations Center Catalog	MOC User > Manufacturing Operations Center Analytics > Manufacturing Operations Center Catalog

Page Name	Navigation Path
Others Overview	MOC User > Extensible Attributes Data > Others > [select an Entity Name link] > Entity: Others [select Entity Name link]
Others Pages	MOC Administrator > Extensible Attributes Workbench > Others > [select Entity Name link] > Classifications tab [Pages]
Parameters	MOC Administrator > Setup > Run Requests > Submit Request
Plant Manager Dashboard	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard
Production Loss Analysis	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Production Loss Analysis]
Production Loss Detail	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [select a Bottom Performers Equipment Gauge] > [Production Loss Analysis] > [select a Total Production Loss value]
Production Performance	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [Production Performance]
Production Slippage Trend	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > [Production Performance]
Production Supervisor Dashboard	MOC User > Manufacturing Operations Center Analytics: Production Supervisor Dashboard
Reprocess Errors	MOC Administrator > Setup > Reprocess Errors
Reprocess Transactions	ODI Studio > MTH Transactions > MTH Equipment Transactions [Folder] > Reprocess Transactions

Page Name	Navigation Path
Scrap Reason	MOC User > Tag Data Workbench > Scrap Reasons
Scrap Reasons Entry	MOC User > Tag Data Workbench > Equipment Scrap Reasons > [select data on Equipment Scrap Reason] > [select records] > [Enter Scrap Reason]
Scrap Reasons [View]	MOC User > Tag Data Workbench > Equipment Scrap Reasons > [select data on Equipment Scrap Reason] > [select records] > [View Reason]
Sites Summary	MOC Administrator > Setup > Site Home
Sustainability Performance	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard > Sustainability Performance
Tag Mapping	MOC Administrator > Entity Hierarchy Home Page > Equipment Setup > Tag Mapping
Tag Setup	MOC Administrator > Setup > Tag Setup
Update Classification	MOC Administrator > Extensible Attributes Workbench > Others > Entity: Others [select Entity Name link] > [Update]
Update Equipment Event Action Sequentially	MOC Administrator > Event Setup > [Update Sequentially]
Update Equipment Reason Code Sequentially	MOC Administrator > Equipment Reason Code Setup > [Update Sequentially]
Work Orders Order Type	MOC User > Extensible Attributes Data > Work Orders > Entity: Work Order [select Entity Name link] > Order Type
Work Orders Overview	MOC User > Extensible Attributes Data > Work Orders > Entity: Work Order [select Entity Name link]

Page Name	Navigation Path
Work Order Pages	MOC Administrator > Extensible Attributes Workbench > Work Orders > [select Entity Name link] > Classifications tab [Pages]

Glossary

Attributes

Details that define the manufacturing entity and specify behavior. For example; physical item attributes identify the size, shape, and color of an item.

Attribute Group

Attribute groups represent the logical grouping of similar entity attributes. They collect characteristics (attributes) that can be used to record specifications or represent the properties.

Batch Quantity

A quantity scheduled to be produced. MOC uses process manufacturing batches.

- For discrete products, the batch is planned to be the standard batch quantity, but during production, the standard batch quantity may be broken into smaller lots.
- In non-discrete or process products, the batch is a quantity that is planned to be produced in a given time period—based on a formula or recipe developed to produce a given number of end items.

Contextualization

The ability to take highly granular tag data collected from shop floor transactions and convert it into meaningful business data. The contextualization rules engine synchronizes entities such as equipment, work orders, routing operations, items, and shifts—with ERP data.

Device

This term is typically used for PLCs or any other type of devices such as sensors, counters, and bar code readers that can serve as means for collecting MOC data.

ETL or Extract, Transform, Load

Database and data warehousing involves extracting data from outside sources, transforming data per your requirements, and loading it into the database or data warehouse.

ISA-95 or Instrumentation, Systems and Automation Society

A standard for Enterprise systems to control system integration that includes batch, continuous, and discrete industries. This standard is managed by the Instrumentation, Systems and Automation Society. ISA-95 defines terminology, functional requirements, and uses PRM (Purdue Reference Model) for manufacturing.

KPIs or Key Performance Indicators

Quantifiable measurements reflecting the critical success factors of an organization.

MES or Manufacturing Execution System

MES is used for a class of mid-level systems that operate between ERP and the shop floor. These systems typically belong to an enterprise class of software, but provide a deeper view of the manufacturing execution process on the shop floor.

OBIEE or Oracle Business Intelligence Enterprise Edition

A comprehensive suite of enterprise business intelligence products that deliver a full range of analysis and reporting capabilities. OBIEE provides intelligence and analytics from data spanning enterprise sources and applications.

OPC or OLE for Process Control

OPC is a set of standard interfaces based upon Microsoft's OLE/COM technology. The application of the OPC standard interface makes possible interoperability between automation/control applications, field systems/devices, and so forth.

ODI or Oracle Data Integrator

A comprehensive tool for ETL (extract, transform and load), relational and dimensional modeling, data quality, data auditing, and full lifecycle management of data and metadata.

OEE or Overall Equipment Effectiveness

The OEE measure is the basic building block of a manufacturing improvement approach called total productive manufacturing or TPM. Developed by the Japanese in the 1960s, TPM is a shop floor focused improvement program whose primary objective is to maximize OEE. The three performance elements of OEE are influenced by numerous events—also known as losses. For instance, availability may be lost because of breakdowns, material shortages, or operator absence. Each of these account for a proportion of the loss, and each can be measured in percentages. By understanding both the types of loss and their duration, operators can focus their improvement activities on areas that provide the greatest benefits.

PLC or Programmable Logic Controller

A type of industrial controller. Originally industrial automation was implemented with discrete relays and timers, which were connected together with copper wire; changes in

the function (or logic) of the control system required rewiring. PLCs were developed to replace these banks of relays in semi-automated factories, notably automobile plants in the late 1960s. The programming method that most PLCs use is called ladder logic. Scan rates are critical for a PLC, because they constantly read (scan) all points, process logic, and then write to all points. Most PLCs run on a proprietary network.

Sensor

A device that responds to a physical stimulus (heat, light, sound, pressure, motion, flow, and so on), and produces a measurable corresponding electrical signal known as transducer.

Tag

A term used to represent individual data elements on a PLC. The tags are configurable and can be programmed using PLC programming techniques.

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