

Oracle® Manufacturing Operations Center

User's Guide

Release 12.1

Part No. E14412-04

August 2010

Oracle Manufacturing Operations Center User's Guide, Release 12.1

Part No. E14412-04

Copyright © 2010, Oracle and/or its affiliates. All rights reserved.

Primary Author: Kevin Brown, Susan Saperstein, Madhavi Agarwal

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS

Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

This software and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third party content, products and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third party content, products or services.

Contents

Send Us Your Comments

Preface

1 Overview

Overview of Oracle Manufacturing Operations Center.....	1-1
Technology Overview.....	1-2
Architecture Overview.....	1-2
Manufacturing Operations Center Instances.....	1-4

2 Setup Steps

Setting Up Manufacturing Operations Center	2-1
--	-----

3 Administrator Role

Overview of the Administrator Role.....	3-1
Setting Up Tags.....	3-2
Mapping Tags to Equipment.....	3-5
Running the MTH: Process and Populate MOC Entity Sustainability Aspect.....	3-6
Creating Equipment Contextualization Information.....	3-6
Adding Reason Codes.....	3-9
Setting Up Equipment Reason Codes.....	3-11
Setting Up Events.....	3-14
Setting Up Extensible Attributes for MOC Entities.....	3-17
Viewing Classifications for Shop Floor Entities.....	3-19
Viewing and Creating Attribute Group Data for Entities.....	3-22
Viewing and Creating Attribute Pages for Entities.....	3-25

4 User Role

Overview of the User Role.....	4-1
Using the Manual Contextualization Method.....	4-2
Viewing and Adding Reason Codes.....	4-4
Extensible Attributes Data for Entities.....	4-5
Actual Meters Data Entry.....	4-6

5 Manufacturing Operations Center Catalog

Overview of the MOC Catalog.....	5-1
Using the MOC Catalog.....	5-21

6 Plant Manager Dashboard

Overview of the Plant Manager Dashboard.....	6-2
Asset Performance (OEE).....	6-5
Asset Performance (OEE) by Equipment.....	6-7
Equipment Downtime Analysis.....	6-10
Equipment Downtime Reasons.....	6-11
Production Slippage Trend.....	6-12
Equipment Scrap Analysis.....	6-13
Equipment Scrap Reasons.....	6-15
Equipment Efficiency Analysis.....	6-16
Equipment Efficiency Detail.....	6-18
Production Loss Analysis.....	6-19
Production Loss Detail.....	6-22
Production Performance.....	6-24
Batch Performance.....	6-26
Batch Performance Detail.....	6-28
Sustainability Performance by Department.....	6-30
Sustainability Performance by Equipment	6-36
Sustainability Performance Equipment Hourly Summary Page.....	6-37
Sustainability Performance Equipment Hourly Detail Page.....	6-39

7 Facilities Manager Dashboard

Overview of the Facilities Manager Dashboard.....	7-1
Understanding the Summary Page.....	7-2
Understanding the Site Page.....	7-7
Understanding the Building Page.....	7-11
Understanding the Floor Page	7-15

Understanding the Floor Section Page.....	7-19
Equipment Hourly Summary Page.....	7-21
Equipment Hourly Detail Page.....	7-24

8 MOC and Oracle Enterprise Asset Management (eAM) Integration

Overview.....	8-1
---------------	-----

9 Ad hoc Reports

Using Ad hoc Reports.....	9-1
Single Entity Ad hoc Analysis Report.....	9-1
Multiple Entities Ad hoc Analysis Report.....	9-2
Compare Periods Ad hoc Analysis Report.....	9-2

A Navigation

Manufacturing Operations Center Navigation Paths.....	A-1
---	-----

B Error Management

Managing Error Records.....	B-1
-----------------------------	-----

Glossary

Index

Send Us Your Comments

Oracle Manufacturing Operations Center User's Guide, Release 12.1

Part No. E14412-04

Oracle welcomes customers' comments and suggestions on the quality and usefulness of this document. Your feedback is important, and helps us to best meet your needs as a user of our products. For example:

- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

If you find any errors or have any other suggestions for improvement, then please tell us your name, the name of the company who has licensed our products, the title and part number of the documentation and the chapter, section, and page number (if available).

Note: Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Oracle E-Business Suite Release Online Documentation CD available on My Oracle Support and www.oracle.com. It contains the most current Documentation Library plus all documents revised or released recently.

Send your comments to us using the electronic mail address: appsdoc_us@oracle.com

Please give your name, address, electronic mail address, and telephone number (optional).

If you need assistance with Oracle software, then please contact your support representative or Oracle Support Services.

If you require training or instruction in using Oracle software, then please contact your Oracle local office and inquire about our Oracle University offerings. A list of Oracle offices is available on our Web site at www.oracle.com.

Preface

Intended Audience

Welcome to Release 12.1 of the *Oracle Manufacturing Operations Center User's Guide*.

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

Deaf/Hard of Hearing Access to Oracle Support Services

To reach Oracle Support Services, use a telecommunications relay service (TRS) to call Oracle Support at 1.800.223.1711. An Oracle Support Services engineer will handle technical issues and provide customer support according to the Oracle service request process. Information about TRS is available at <http://www.fcc.gov/cgb/consumerfacts/trs.html>, and a list of phone numbers is available at <http://www.fcc.gov/cgb/dro/trsphonebk.html>.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The

conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Structure

- 1 Overview**
- 2 Setup Steps**
- 3 Administrator Role**
- 4 User Role**
- 5 Manufacturing Operations Center Catalog**
- 6 Plant Manager Dashboard**
- 7 Facilities Manager Dashboard**
- 8 MOC and Oracle Enterprise Asset Management (eAM) Integration**
- 9 Ad hoc Reports**
- A Navigation**

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

- B Error Management**
- 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.

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 Business Intelligence Answers, Delivers, and Interactive Dashboards User Guide

This guide contains information about using Business Intelligence components such as Answers, Delivers, and Interactive Dashboards applications to organize and present data for making critical and timely business decisions.

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 Warehouse Builder 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.

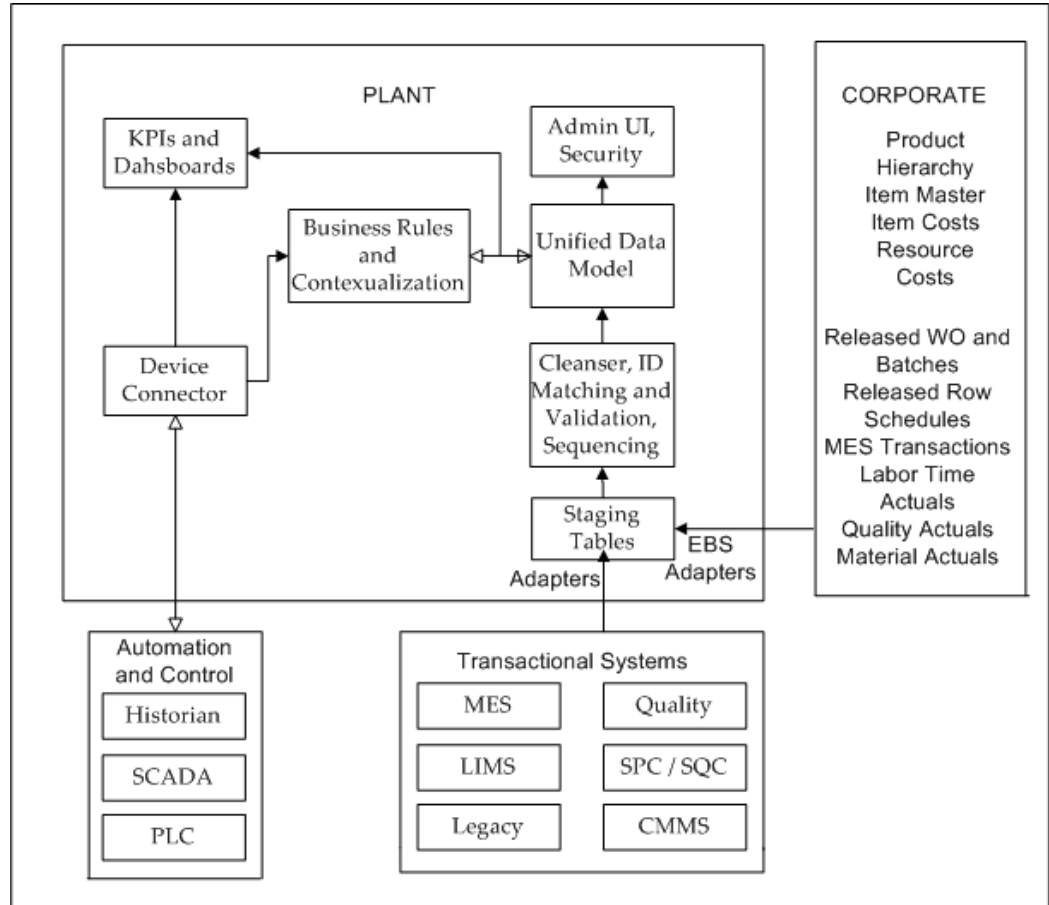
Technology Overview

Manufacturing Operations Center uses the following Oracle technologies:

- Oracle Data Warehouse Builder (OWB)
- 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

- Pluggable business rules (OWB mappings)

- 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 Warehouse Builder (OWB), the data warehousing tool to extract and process data. A concurrent program is used to process meter readings for sustainability aspect consumptions.

Prepackaging

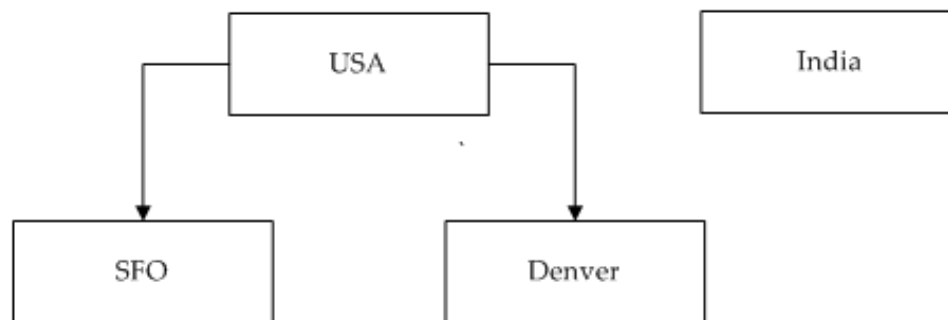
EBS Adapters: Oracle MOC is prepackaged with an EBS adapter for Release11i10.

KPIs and Dashboards: Oracle MOC is prepackaged with more than sixty 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.

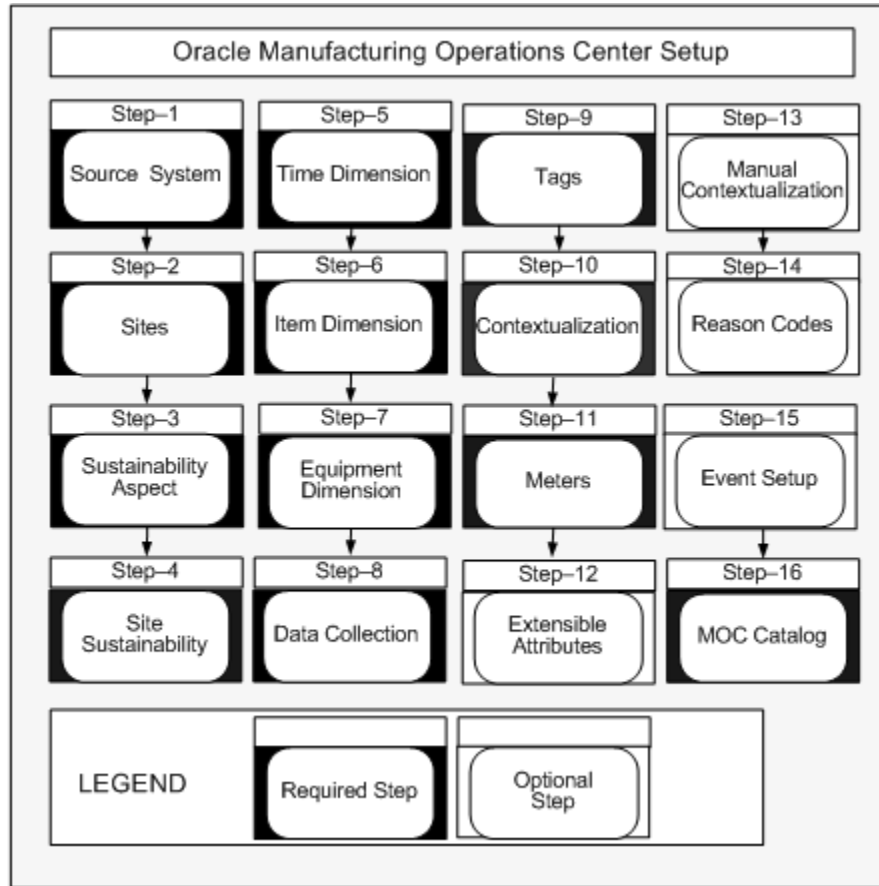
Setup Steps

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 Warehouse Builder (OWB), and the MOC setup pages:

- OBIEE provides analytics from data spanning enterprise sources and applications.
- OWB 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 Warehouse Builder 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 3-6

11. Meter Setup

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

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

12. 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 3-17, and Viewing Extensible Attributes Data for Entities, page 4-5

13. 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

14. 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

15. 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 3-14

16. 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 5-1

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 3-6

Setting Up Extensible Attributes for MOC Entities, page 3-17

Running the MTH: Process and Populate MOC Entity Sustainability Aspect, page 3-6

Setting Up Events, page 3-14

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.

Tag metadata is imported into MOC through Oracle Warehouse Builder mapping by loading data from the comma-separated values (csv) templates. See: Tag Setup, *Oracle Manufacturing Operations Center Implementation Guide*

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.

Tag Setup

[Cancel](#) [Save](#)

TIP * Indicates required field

[Personalize Header: \(WholeBody\)](#)

Tag Data Sources

[Personalize "Tag Data Sources"](#)
[Personalize Advanced Table: \(TagDataSourceRN\)](#)

[Add Source](#) ⏪ Previous 1-10 of 16 Next 6 ⏩

Select Tag Data Source	Tag Type	System
<input type="radio"/> st test1	Sustainability	-99999
<input type="radio"/> Ma1	Operation	XLS
<input type="radio"/> Ma2	Sustainability	XLS
<input type="radio"/> Ma3	Sustainability	XLS
<input type="radio"/> GDTEST	Operation	-99999
<input type="radio"/> GDTEST2	Sustainability	-99999

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.

Select Tag Code	Tag	Description	Data Type	Reading Type	Order	Reset Value	Initial Value	Reading Interval (in Minutes)	Status
Ma2a	Ma2a	Ma2a	Numeric	Incremental				10	Active
Ma2b	Ma2b	Ma2b	Numeric	Cumulative	Ascending	10	0		Active

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.

Tag Mapping

* Indicates required field

Personalize Header: (SearchRNHd)

* Site Name: STR2_01

* Equipment Name: STR2_01_EQP-002

Go Clear

Personalize Advanced Table: (TagMappingTable)

Add Delete Update

Select All | Select None

Select Tag	Data Element	Attribute Group	Attribute
<input type="checkbox"/> STAT_EQP1007	Status	Specifications	Parameter

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.

ORACLE® Setup Diagnostics Home Logout Preferences

Equipment Contextualization Setup Save Cancel

Plant: Texas Manufacturing Equipment: Go

Select Context and: Enter Context in Batch Previous 1-10 Next 10

[Select All](#) | [Select None](#)

Select Equipment	Contextualization Method	Workorder	Workorder Segment	Item
<input type="checkbox"/> Fabricator-01	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Fabricator-02	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Fabricator-03	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Grinder-01	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Grinder-02	Schedule Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Grinder-03	Schedule Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> MILLING-05	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> MILLING-06	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Miller-01	Tag Based	Mandatory	Mandatory	Mandatory
<input type="checkbox"/> Miller-02	Tag Based	Mandatory	Mandatory	Mandatory

Select Context and: Enter Context in Batch Previous 1-10 Next 10

Save Cancel

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.

The screenshot shows the Oracle Setup interface for the 'Batch Equipment Contextualization Update' page. The page has a blue header with the Oracle logo and 'Setup' text. Navigation links for 'Diagnostics', 'Home', 'Logout', and 'Preferences' are in the top right. The main content area has a title 'Batch Equipment Contextualization Update' and a form with the following fields: 'Contextualization Method' (dropdown menu showing 'Tag Based'), 'Workorder' (dropdown menu showing 'Mandatory'), 'Workorder Segment' (dropdown menu showing 'Mandatory'), and 'Item' (dropdown menu). Below the form are two buttons: 'Enter in Batch' and 'Cancel and Return'. At the bottom of the page, there are links for 'About this Page' and 'Privacy Statement', and a copyright notice: 'Copyright (c) 2006, Oracle. All rights reserved.'

3. Select the appropriate values in the following fields for the batch update:
 - Contextualization Method
 - Workorder
 - Workorder Segment
 - Item
4. Select Enter in Batch 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)

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.

Code	Meaning	Description	Tag	Effective Dates	Enabled	
				From	To	
DF	Die Failure			13-MAR-2009		<input checked="" type="checkbox"/>
DP	Dimension problem			13-MAR-2009		<input checked="" type="checkbox"/>
HAZ	Heat Affected Zone			13-MAR-2009		<input checked="" type="checkbox"/>
PAINT	Paint Problem			13-MAR-2009		<input checked="" type="checkbox"/>
RM	Raw Material Issue			13-MAR-2009		<input checked="" type="checkbox"/>
UC	Under Cut			13-MAR-2009		<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

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.

Application Object Library Lookups

Type: MTH_SCRAP_REASON
Meaning: MTH_SCRAP_REASON
Application: Oracle Manufacturing Operations Center
Description:

Access Level:
☐ User
☐ Extensible
☒ System

Code	Meaning	Description	Tag	Effective Dates	Enabled
				From To	
DF	Die Failure			13-MAR-2009	<input checked="" type="checkbox"/>
DP	Dimension problem			13-MAR-2009	<input checked="" type="checkbox"/>
HAZ	Heat Affected Zone			13-MAR-2009	<input checked="" type="checkbox"/>
PAINT	Paint Problem			13-MAR-2009	<input checked="" type="checkbox"/>
RM	Raw Material Issue			13-MAR-2009	<input checked="" type="checkbox"/>
UC	Under Cut			13-MAR-2009	<input checked="" type="checkbox"/>
PD	Product Defect	Defective Product from S		20-APR-2009	<input checked="" type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

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.

ORACLE Setup Diagnostics Home Logout Preferences

Equipment Reason Code Setup

* Equipment Hierarchy: Department Hierarchy * Level Name: PLANT
 * Level Instance: Noida-Disc-Mfg Equipment Criticality:
 Go Clear

Equipments

Select Equipments: Update Sequentially Previous 1-10 Next 10

Select All Select None

Select Equipment	Description	Criticality
<input type="checkbox"/> ENM-1113	ENM-1113	Critical
<input type="checkbox"/> ENM-1127	ENM-1127	Non-Critical
<input type="checkbox"/> ENM-1126	ENM-1126	Non-Critical
<input type="checkbox"/> ENM-1102	ENM-1102	Critical
<input type="checkbox"/> ENM-1112	ENM-1112	Critical
<input type="checkbox"/> ENM-1124	ENM-1124	Non-Critical
<input type="checkbox"/> ENM-1122	ENM-1122	Critical
<input type="checkbox"/> ENM-1106	ENM-1106	Non-Critical
<input type="checkbox"/> ENM-1104	ENM-1104	Critical
<input type="checkbox"/> ENM-1121	ENM-1121	Critical

Select Equipments: Update Sequentially Previous 1-10 Next 10

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.

ORACLE Setup

Diagnostics Home Logout Preferences

Update Equipment Reason Code Sequentially: ENM-1113 (1 of 5)

Cancel Equipment 1 of 5 Next Apply

Downtime Idle Time Scrap

Reason Code

Reason Code: Add

Reason Code	Reason Name	Expected Uptime (Hours)	Delete
LP	Low Pressure	1.5	
HT	High Temperature	1	

Cancel Equipment 1 of 5 Next Apply

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.

ORACLE Setup

Diagnostics Home Logout Preferences

Update Equipment Reason Code Sequentially: ENM-1113 (1 of 5)

Cancel Equipment 1 of 5 Next Apply

Downtime Idle Time Scrap

Reason Code

Reason Code: Add

Reason Code	Reason Name	Expected Uptime (Hours)	Delete
INSP	Manual Inspection	1	

Cancel Equipment 1 of 5 Next Apply

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.

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. The events are created based on Oracle Warehouse Builder pluggable mapping, and is defined as an event type. 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.

ORACLE® Setup Diagnostics Home Logout Preferences

Event Setup

**Indicates required field*

* Equipment Hierarchy: * Level Name:
 * Level Instance: Equipment Criticality:

Equipments

Select Equipments: Previous 1-10 Next 10

[Select All](#) | [Select None](#)

Select Equipment	Description	Criticality
<input checked="" type="checkbox"/> ENM-1113	ENM-1113	Critical
<input checked="" type="checkbox"/> ENM-1127	ENM-1127	Non-Critical
<input checked="" type="checkbox"/> ENM-1126	ENM-1126	Non-Critical
<input checked="" type="checkbox"/> ENM-1102	ENM-1102	Critical
<input type="checkbox"/> ENM-1112	ENM-1112	Critical
<input type="checkbox"/> ENM-1124	ENM-1124	Non-Critical
<input type="checkbox"/> ENM-1122	ENM-1122	Critical
<input type="checkbox"/> ENM-1106	ENM-1106	Non-Critical
<input type="checkbox"/> ENM-1104	ENM-1104	Critical
<input type="checkbox"/> ENM-1121	ENM-1121	Critical

Select Equipments: Previous 1-10 Next 10

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.

ORACLE® Setup Diagnostics Home Logout Preferences

Update Equipment Event Action Sequentially: ENM-1113 (1 of 4) Cancel Equipment 1 of 4 Next Finish

Event Types

Event Type:

Select *	Event Type	Reason Code	Delete
<input checked="" type="radio"/>	Scrap		<input type="button" value="Delete"/>
<input type="radio"/>	Equipment Down	High Temperature	<input type="button" value="Delete"/>

Event Action **Notification**

Seeded Actions

Seeded Action:

*Event Action	Delete
Create Work Request in EAM	<input type="button" value="Delete"/>

Custom Actions

Custom Action:

*Event Action	Delete
API Number01	<input type="button" value="Delete"/>

Cancel Equipment 1 of 4 Next Finish

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.

ORACLE Setup

Diagnostics Home Logout Preferences Help

Update Equipment Event Action Sequentially: ENM-1126 (1 of 1)

Cancel Finish

Event Types

Event Type: Add

Select * Event Type	Reason Code	Delete
<input checked="" type="radio"/> Equipment Out of Control		
<input type="radio"/> Control Limit Warning		
<input type="radio"/> Equipment Unstable		

Event Action Notification

User: Add

Full Name	Email Address	Mobile Phone Number	Domain	Delete
Lawrence	kausik.roy@oracle.com	919866602605	Netcom	

Cancel Finish

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 3-19

Viewing and Creating Attribute Group Data for Entities, page 3-22

Viewing and Creating Attribute Pages for Entities, page 3-25

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 3-17

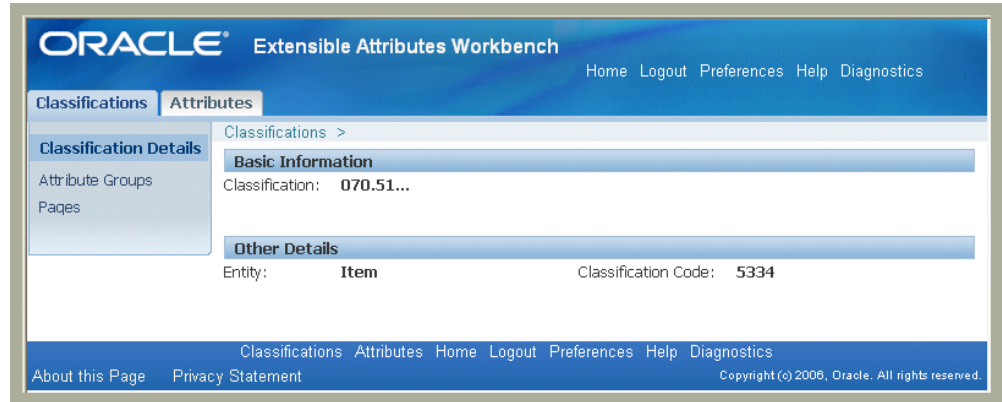
You can filter your list by entering a value in the Classification field and selecting Go.

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

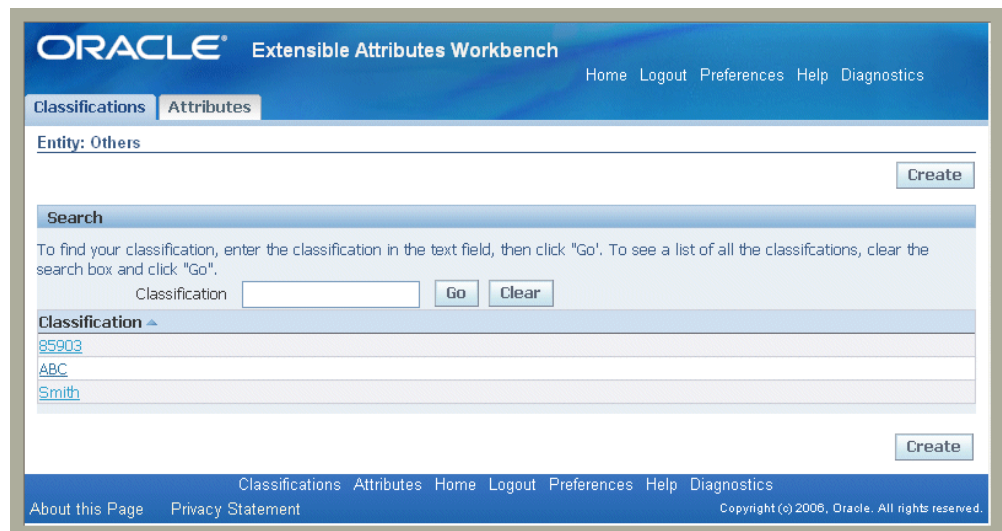
This page enables you to navigate to associated attribute groups and attribute pages for this item classification.



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 3-17

Viewing and Creating Attribute Group Data for Entities, page 3-22

Viewing and Creating Attribute Pages for Entities, page 3-25

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.

ORACLE® Extensible Attributes Workbench

Home Logout Preferences Help Diagnostics

Classifications **Attributes**

Entity: Equipment

Specify parameters and values to filter the data that is displayed in your results set.

☒ Show table data when all conditions are met.

☐ Show table data when any condition is met.

Attribute Group Display Name is

Internal Name is

Attribute Group Description is

Business Entity is

Select Object: |

[Select All](#) | [Select None](#)

Select	Display Name	Internal Name	Description	Business Entity	Type	Behavior	Copy
<input type="checkbox"/>	Actuals	ACTUALS	Attribute group holds Pressure, Temperature, RPM, Length, Width, Thickness and Weight attribute readings from tags.	Equipment	Equipments	Multi-Row	
<input type="checkbox"/>	Grinder56	Grinder_class56	Set of machines on floor	Equipment	Equipments	Multi-Row	
<input type="checkbox"/>	Specifications	SPECIFICATIONS	Attribute group holds upper and lower control specifications for the equipment parameters.	Equipment	Equipments	Multi-Row	
<input type="checkbox"/>	abc	abc1	abc	Equipment	Equipments	Single-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.

The screenshot shows the Oracle Extensible Attributes Workbench interface. The main heading is "Attribute Groups for Equipment" under the "Kol-Disc-Mfg" classification. Below this, there is a search bar with a "Search By" dropdown set to "Display Name" and a "Go" button. To the right of the search bar is an "Add Attribute Groups" button. Below the search bar is a "Select Attribute Groups:" section with a "Delete" button and links for "Select All" and "Select None". A table lists attribute groups with columns for "Display Select Name", "Description", "Data Level", and "Pages". One group, "Specifications", is listed with a description: "Attribute group holds upper and lower control specifications for the equipment parameters." and a data level of "Equipment". The footer contains navigation links like "Classifications", "Attributes", "Home", "Logout", "Preferences", "Diagnostics", "About this Page", and "Privacy Statement", along with a copyright notice for Oracle 2006.

Display Select Name	Description	Data Level	Pages
<input type="checkbox"/> Specifications	Attribute group holds upper and lower control specifications for the equipment parameters.	Equipment	

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.

ORACLE Extensible Attributes Workbench Home Logout Preferences Diagnostics

Classifications > Classification Details > Attribute Groups for Equipment >

Add Attribute Groups for Equipment

Specify parameters and values to filter the data that is displayed in your results set.

☒ Show table data when all conditions are met.
☐ Show table data when any condition is met.

Display Name is
Description is
Internal Name is
Behavior is

Go Clear Add Another Attribute Group Type Add

Select All Select None

Select	Display Name	Internal Name	Description	Business Entity	Behavior	Attribute Group Type
<input type="checkbox"/>	Actuals	ACTUALS	Attribute group holds Pressure, Temperature, RPM, Length, Width, Thickness and Weight attribute readings from tags.	Equipment	Multi-Row	Equipments
<input type="checkbox"/>	Grinder56	Grinder_class56	Set of machines on floor	Equipment	Multi-Row	Equipments
<input type="checkbox"/>	aaa	aaa		Equipment	Single-Row	Equipments
<input type="checkbox"/>	abc	abc	abc	Equipment	Single-Row	Equipments

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 3-17
- Viewing Classifications for Shop Floor Entities, page 3-19
- Viewing and Creating Attribute Pages for Entities, page 3-25

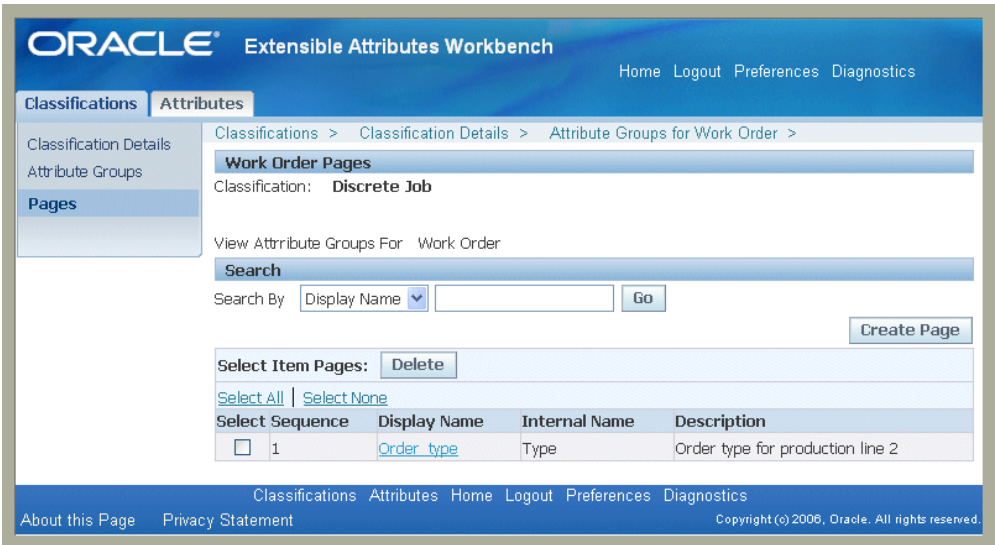
Viewing and Creating Attribute Pages for Entities

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.

ORACLE® Extensible Attributes Workbench Home Logout Preferences Diagnostics

Classifications > Attributes

Classifications > Classification Details > Pages for Work Order >

Add Pages for Work Order

* Indicates required field

Basic Information

* Display Name: Line_23 * Internal Name: 23
 Description: Production one line 23 * Sequence: 2
 Business Entity: Work Order

Attribute Groups

Select Object:

[Select All](#) | [Select None](#)

Select	*Sequence	*Display Name	Description
<input type="checkbox"/>	2	Discrete	

Classifications Attributes Home Logout Preferences Diagnostics

About this Page Privacy Statement Copyright (c) 2006, Oracle. All rights reserved.

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 3-17

Viewing Classifications for Shop Floor Entities, page 3-19

Viewing and Creating Attribute Group Data for Entities, page 3-22

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 Adhoc 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.

Plant: From Date: To Date:

Equipment: Tag:

☐ All ☐ Missing Optional Context Only ☒ Missing Mandatory Context Only

Select Context and:

[Select All](#) | [Select None](#)

Select	Plant	Equipment	Tag	Value	Time	Workorder	Item	Workorder Segment
<input checked="" type="checkbox"/>	Kol-Disc-Mfg	Grinder-01	Status011	1	24-Mar-2009 19:00:00	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	Kol-Disc-Mfg	Fabricator-01	Status	1	24-Mar-2009 15:48:48	91221	ITEM-7526362-02	-99999
<input type="checkbox"/>	Kol-Disc-Mfg	Grinder-01	Scrap Qty011	4	24-Mar-2009 18:45:00	91208	PROD-171821A	<input type="text"/>
<input type="checkbox"/>	Kol-Disc-Mfg	Painter-02	STAT-P02	3	14-Mar-2009 18:30:00	Unassigned	Unassigned	-99999

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.

ORACLE Tag Data Workbench Diagnostics Home Logout Preferences

Batch Contextualization Update

Workorder: Item: Shift: Workorder Segment:

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 3-6

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.

Select Equipment	From Time	To Time
<input type="checkbox"/> Painter-03	14-Mar-2009 18:30:00	

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
Painter-03	14-Mar-2009 18:30:00		Over Heating

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.

The screenshot shows the 'Downtime Reasons Entry' form in the Oracle Tag Data Workbench. The form has a header with the Oracle logo and 'Tag Data Workbench' text. On the right, there are links for 'Diagnostics', 'Home', 'Logout', and 'Preferences'. Below the header, there are 'Save' and 'Cancel' buttons. The main area contains a table with two columns: 'Downtime Reason' and 'Delete'. The first row has 'Drive Motor Failure' in the 'Downtime Reason' column and a 'Delete' button. The second row is empty. Below the table is an 'Add Reason' button. At the bottom right, there are 'Save' and 'Cancel' buttons.

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.

The screenshot shows a table titled 'Equipment Downtime Reasons'. The table has four columns: 'Equipment', 'From Time', 'To Time', and 'Reason'. There are two rows of data. The first row shows 'Paintor-03' for Equipment, '14-Mar-2009 18:30:00' for From Time, and 'Drive Motor Failure' for Reason. The second row shows 'Paintor-03' for Equipment, '14-Mar-2009 18:30:00' for From Time, and 'Over Heating' for Reason. There are 'OK' buttons at the top right and bottom right of the table.

Equipment	From Time	To Time	Reason
Paintor-03	14-Mar-2009 18:30:00		Drive Motor Failure
Paintor-03	14-Mar-2009 18:30:00		Over Heating

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.

ORACLE Extensible Attributes Data

Home Logout Preferences Help Diagnostics

Items

Entity: Item

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
88832-KM3	12.2FLCOMP-44A		NEW.MISC.
88831-KM3	12.2FLPROD-44		NEW.MISC.
87906-KM2	12.2ITEM18A		NEW.MISC.
87907-KM2	12.2ITEM18B		NEW.MISC.
88839-KM3	12.2ITEM2129		NEW.MISC.
88830-MOC3	12.2ITEM23		NEW.MISC.
88830-MOC2	12.2ITEM23		NEW.MISC.
88830-MOC1	12.2ITEM23		NEW.MISC.
88825-MOC1	12.2ITEM26		NEW.MISC.
88845-MOC3	12.2ITEM27		NEW.MISC.

Previous 1-10 Next 10

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.

ORACLE Extensible Attributes Data

Home Logout Preferences Help Diagnostics

Items

Overview

Items > Overview for 12.2FLCOMP-44A

Item Name	12.2FLCOMP-44A	Description	12.2FLCOMP-44A
Plant Name	Kol-Proc-Mfg	System Name	EBS System
Primary UOM	Ea	Secondary UOM	
Unit Weight		Weight UOM	
Unit Volume		Volume UOM	
Base Model Item name			

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

Cancel Save

TIP * Indicates required field

Search Meters

Personalize "Search Meters"

* Sustainability Aspect Electricity

Entity Hierarchy Building Hierarchy

Entity Name

Meter Type Actual

Entity

Meter Code

Go Clear

Search Results: Meter Data Entry

Personalize "Search Results: Meter Data Entry"

Personalize Table: (MTHMeterDataEntryVO)

Previous 1-10 of 14 Next 4

Meter Code	Meter Name	From Time	To Time	Usage Value	Usage UOM
MTR-1005	MTR-1005	31-May-2010 23:59:01			KWH
stn1	st metertest 1	10-Jun-2010 19:43:27			KWH
MEQP-1009	MeterEQP-1009	25-Jun-2010 04:30:35			KWH

Manufacturing Operations Center Catalog

Overview of the MOC Catalog

The Manufacturing Operations Center Catalog provides the Plant Manager Dashboard, Facilities Manager 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 contextualizes 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 $\text{Emission} = \text{Emission Factor} \times \text{Planned Consumption}$.
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 $\text{Emission \% Change (Plan)} = (\text{Actual Emission} - \text{Planned Emission}) \times 100 / \text{Planned Emission}$.
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 $\text{Emission \% Change (Last Year)} = (\text{Actual Emission} - \text{Last Year's Actual Emission}) \times 100 / \text{Last Year's Actual Emission}$.
Emission per Unit Area	Actual emission of an entity normalized by total area of that entity. This is calculated as $\text{Emission per Unit Area} = \text{Actual Emission of Entity} / \text{Effective Surface Area}$.
Planned Emission per Unit Area	Planned emission of an entity normalized by total area of that entity. This is calculated as $\text{Emission per Unit Area} = \text{Planned Emission of Entity} / \text{Effective Surface Area}$.
Emission per Person	Actual emission of an entity normalized by total persons of that entity. This is calculated as $\text{Emission per Person} = \text{Emission of Entity} / \text{Number of Persons}$.
Planned Emission per Person	Planned emission of an entity normalized by total persons of that entity. This is calculated as $\text{Emission per Person} = \text{Emission of Entity} / \text{Number of Persons}$.

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 $\text{Cost \% Change (Plan)} = (\text{Cost} - \text{Planned Cost}) \times 100 / \text{Planned Cost}$.
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 $\text{Cost \% Change (Last Year)} = (\text{Cost} - \text{Last Year's Cost}) \times 100 / \text{Last Year's Cost}$.
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 $\text{Planned Cost per Unit Area} = \text{Planned Cost of Entity} / \text{Effective Surface Area}$.
Cost per Unit Area	Cost of sustainability aspect consumed by an entity normalized by total area of that entity. This is calculated as $\text{Cost per Unit Area} = \text{Cost of Entity} / \text{Effective Surface Area}$.

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 $\text{Planned Cost per Person} = \text{Planned Cost of Entity} / \text{Number of Persons}$.
Cost per Person	Cost of sustainability aspect consumed by an entity normalized by total number of persons of that entity. This is calculated as $\text{Cost per Person} = \text{Cost of Entity} / \text{Number of Persons}$.
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 the 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 5-21

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*

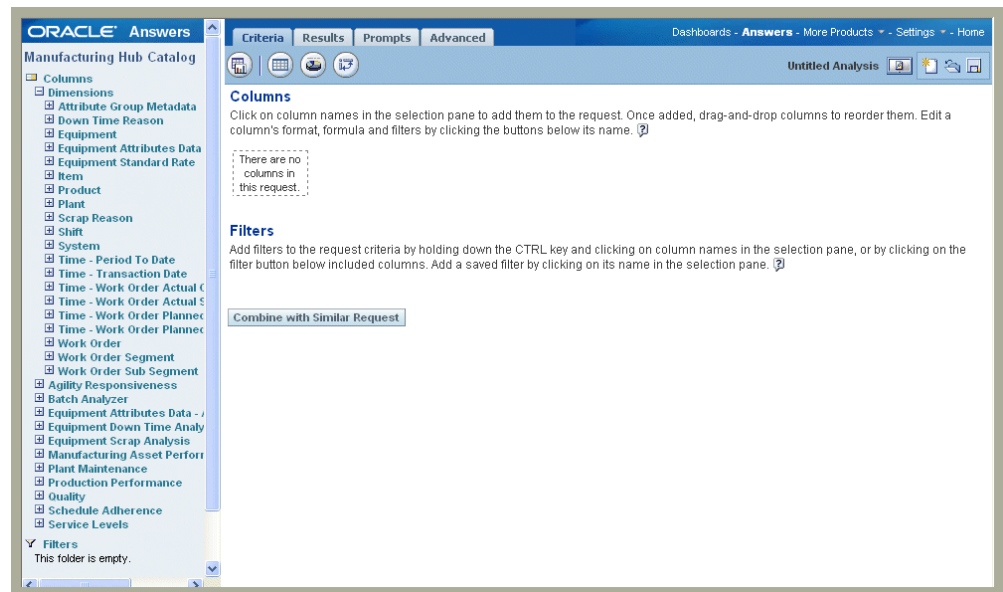
Using the MOC Catalog

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.

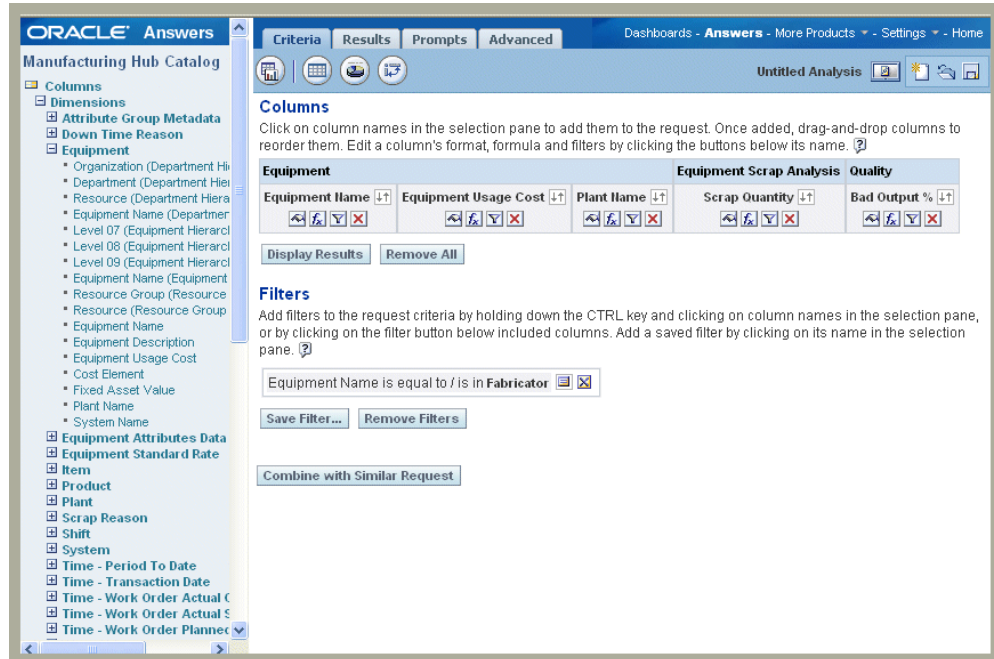


2. In the Selection pane, expand the specific columns for the areas you want on your report.

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.

ORACLE® Answers

Criteria Results Prompts Advanced Dashboards - Answers - More Products - Settings - Home

Compound Layout

Untitled Analysis

Add View

Table

Equipment Name	Equipment Usage Cost	Plant Name	Scrap Quantity	Bad Output %
DEMOEQP-25	0.00	PR1		0.00
DEMOEQP-26	0.00	PR1		0.00
DEMOEQP-27	0.00	PR1		0.00
DEMOEQP-28	0.00	PR1		0.00
Fabricator-01	20.00	Kol-Disc-Mfg		0.00
Fabricator-02	20.00	Kol-Disc-Mfg		0.00
Fabricator-03	20.00	Kol-Disc-Mfg		0.00
Fabricator-11	50.00	Kol-Proc-Mfg		0.00
Fabricator-12	50.00	Kol-Proc-Mfg		0.00
Fabricator-13	50.00	Kol-Proc-Mfg		0.00
Fabricator4-101	0.00	Kol-Disc-Mfg		0.00
Grinder-01	30.00	Kol-Disc-Mfg		0.00
Grinder-02	30.00	Kol-Disc-Mfg		0.00
Grinder-03	30.00	Kol-Disc-Mfg		0.00
Grinder-11	10.00	Kol-Proc-Mfg		0.00
Grinder-12	10.00	Kol-Proc-Mfg		0.00
Grinder-13	10.00	Kol-Proc-Mfg		0.00
Miller-01	10.00	Kol-Disc-Mfg		0.00
Miller-02	10.00	Kol-Disc-Mfg		0.00

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.

- 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
- Asset Performance (OEE)
- Asset 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
- Production Loss Analysis
- Production Loss Detail
- Production Performance
- Batch Performance
- Batch Performance Detail
- 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
Asset 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
Asset Performance (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

Asset Performance (OEE)

The Asset 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. Asset Performance (OEE) reporting regions include:

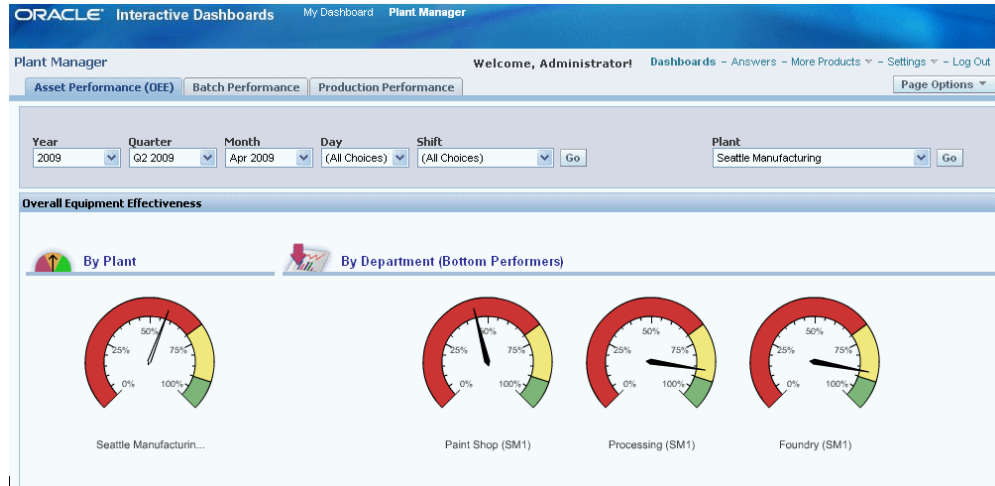
- Overall Equipment Effectiveness by Plant
- Overall Equipment Effectiveness by Department (Bottom Performers)
- Overall Equipment Effectiveness Details by Plant
- Overall Equipment Effectiveness Details by Department
- Overall Equipment Effectiveness Trend by Plant
- Overall Equipment Effectiveness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

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

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

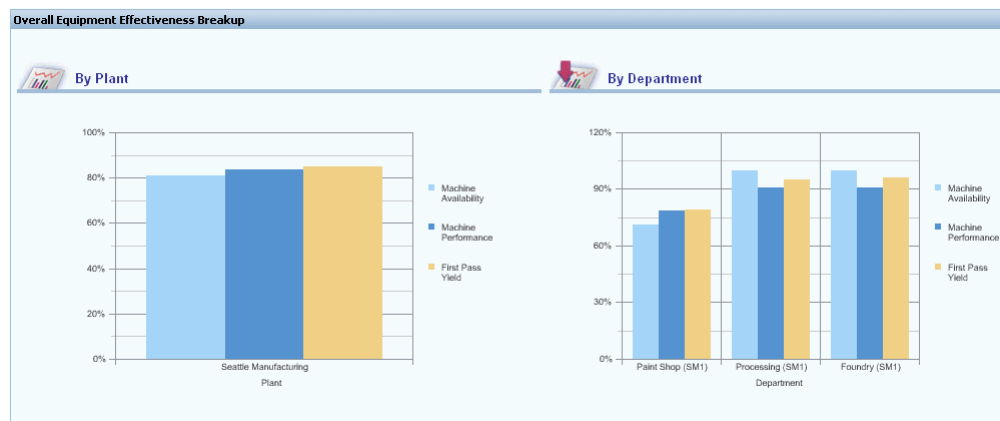
To view asset performance (OEE):

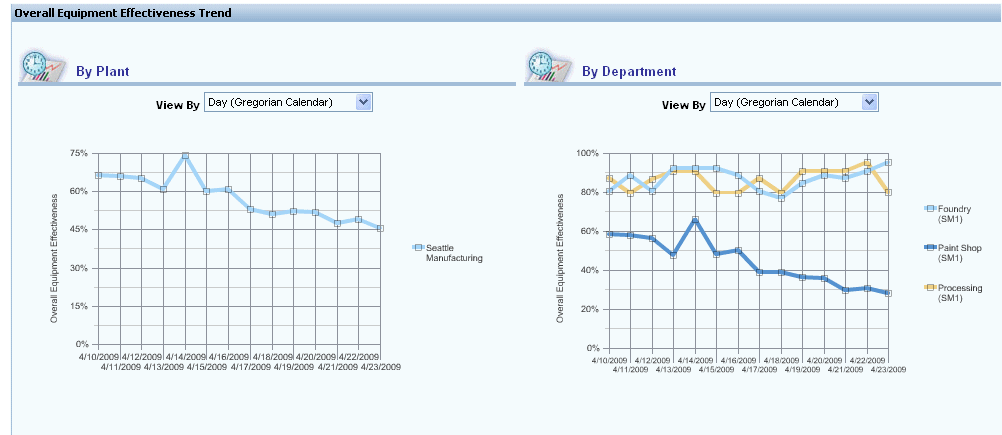
1. From the Manufacturing Operations Center User responsibility, select the Plant Manager Dashboard. The Asset Performance (OEE) page appears. This page displays Overall Equipment Effectiveness, Overall Equipment Effectiveness Details, and Overall Equipment Effectiveness Trend regions.



2. Scroll down the Asset 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 Asset Performance (OEE) page, you can navigate to other pages to view additional manufacturing operations details.

Related Topics

Asset Performance (OEE) by Equipment, page 6-7

Asset 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:

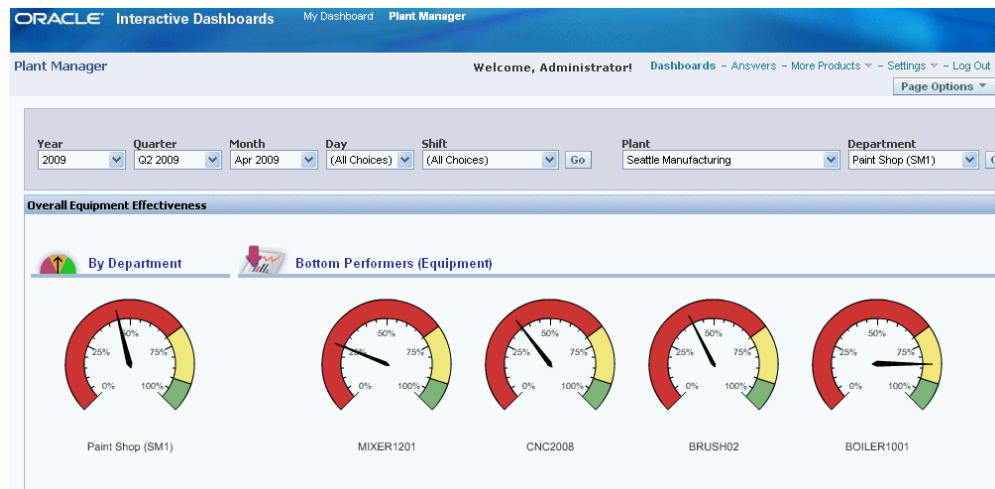
- Overall Equipment Effectiveness by Department
- Overall Equipment Effectiveness by Equipment (Bottom Performers)
- Overall Equipment Effectiveness Details by Department
- Overall Equipment Effectiveness Details by Equipment
- Overall Equipment Effectiveness Trend by Department
- Overall Equipment Effectiveness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

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

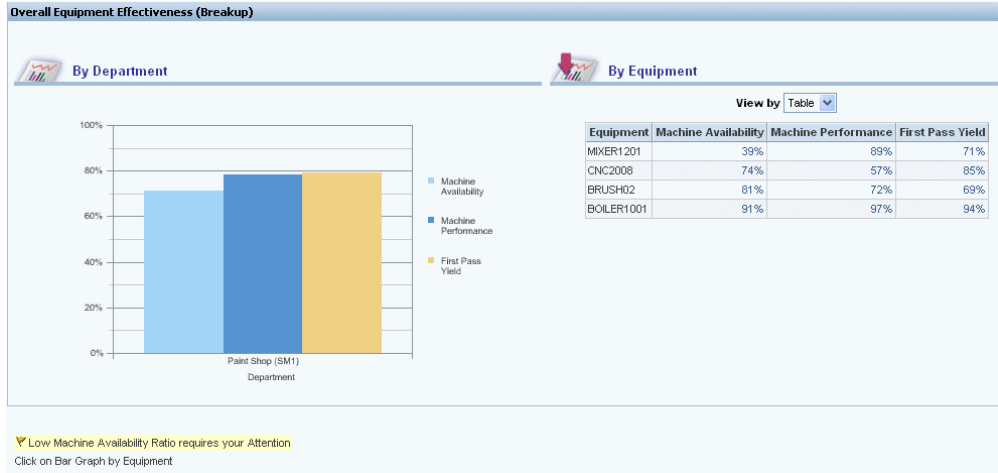
- Time dimension – Year, Quarter, Month, Day and Shift
- Equipment dimension – Plant and Department

To view Asset Performance (OEE) by Equipment:

1. From the Asset 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 Asset Performance (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



- Select a link in the Machine Availability column to view Equipment Downtime details. See: Equipment Downtime Analysis, page 6-10, and Equipment Downtime Reasons, page 6-11.
- Scroll further to view Overall Equipment Effectiveness Trend by Department and by Equipment regions.



Related Topics

Asset Performance (OEE), page 6-5

Equipment Downtime Analysis

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

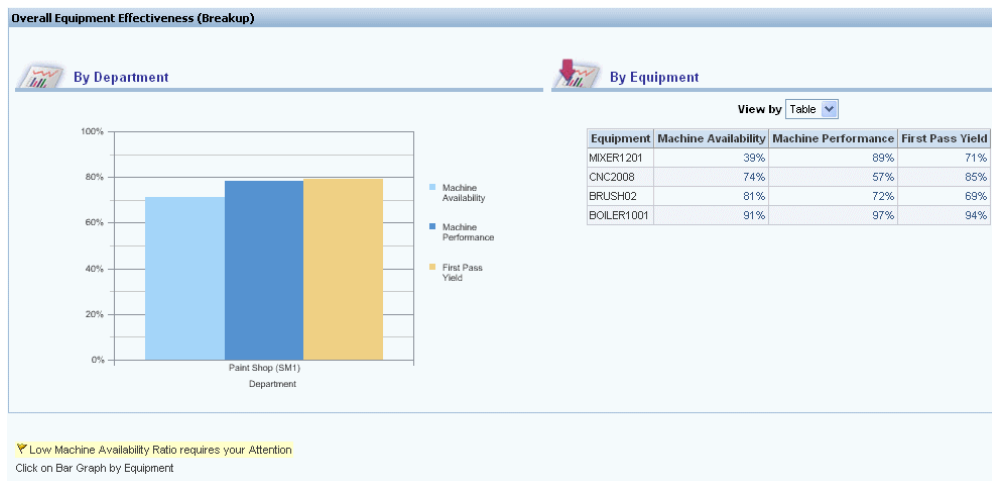
- Equipment Downtime Analysis
- Machine Availability Ratio Trend
- Equipment Downtime Detail

You can view equipment downtime by the following dimensions:

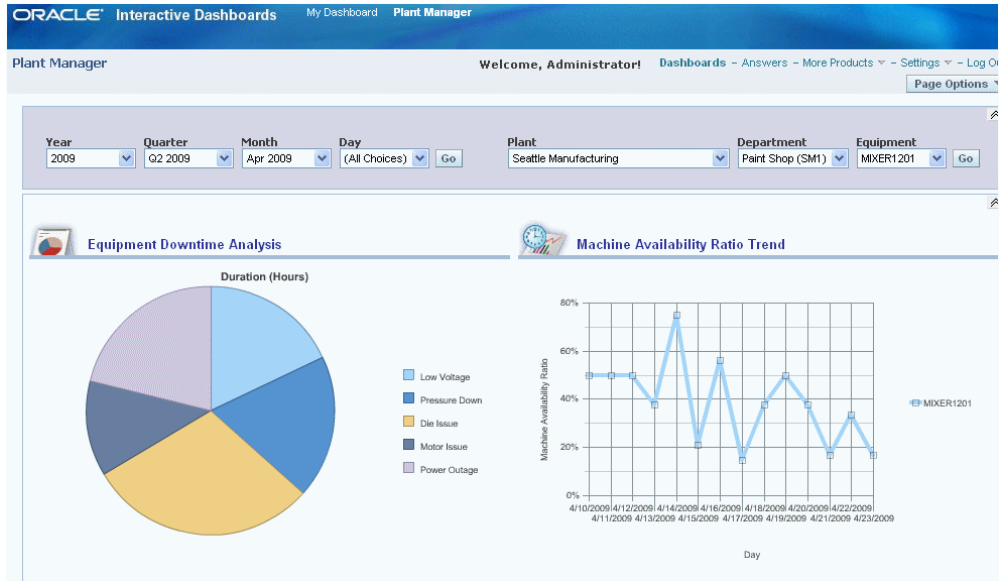
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant, Department, and Equipment

To view equipment downtime details:

1. From the Asset Performance (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 Down Time (Hours)	Production Loss due to Unplanned Downtime (Hours)	Actual Available Time (Hours)	Machine Availability Ratio	Production Slippage Report
MIXER1201	4/10/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/11/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/12/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/13/2009	24.0	24.0	0.0	15.0	15.0	9.0	38%	Go To
MIXER1201	4/14/2009	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MIXER1201	4/15/2009	24.0	12.0	12.0	7.0	7.0	5.0	21%	Go To
MIXER1201	4/16/2009	24.0	24.0	0.0	10.5	10.5	13.5	56%	Go To
MIXER1201	4/17/2009	24.0	12.0	12.0	8.5	8.5	3.5	15%	Go To
MIXER1201	4/18/2009	24.0	24.0	0.0	15.0	15.0	9.0	38%	Go To
MIXER1201	4/19/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

6. Select the Asset Performance (OEE) by Equipment link to return to that page.

Related Topics

Equipment Downtime Reasons, page 6-11

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:

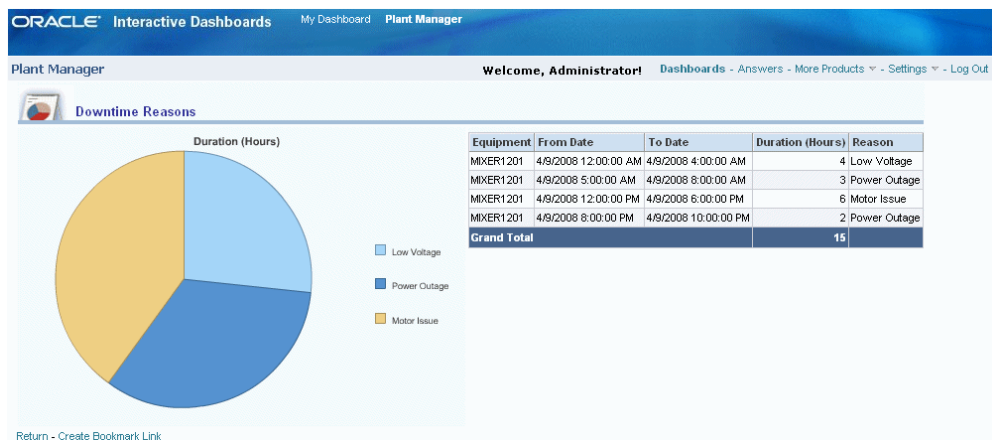
1. Navigate to the Equipment Downtime Analysis page and scroll down to the Equipment Downtime details region.

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
MIXER1201	4/10/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/11/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/12/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/13/2009	24.0	24.0	0.0	15.0	15.0	9.0	38%	Go To
MIXER1201	4/14/2009	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MIXER1201	4/15/2009	24.0	12.0	12.0	7.0	7.0	5.0	21%	Go To
MIXER1201	4/16/2009	24.0	24.0	0.0	10.5	10.5	13.5	56%	Go To
MIXER1201	4/17/2009	24.0	12.0	12.0	8.5	8.5	3.5	15%	Go To
MIXER1201	4/18/2009	24.0	24.0	0.0	15.0	15.0	9.0	38%	Go To
MIXER1201	4/19/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

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.



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

Related Topics

Equipment Downtime Analysis, page 6-10

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:

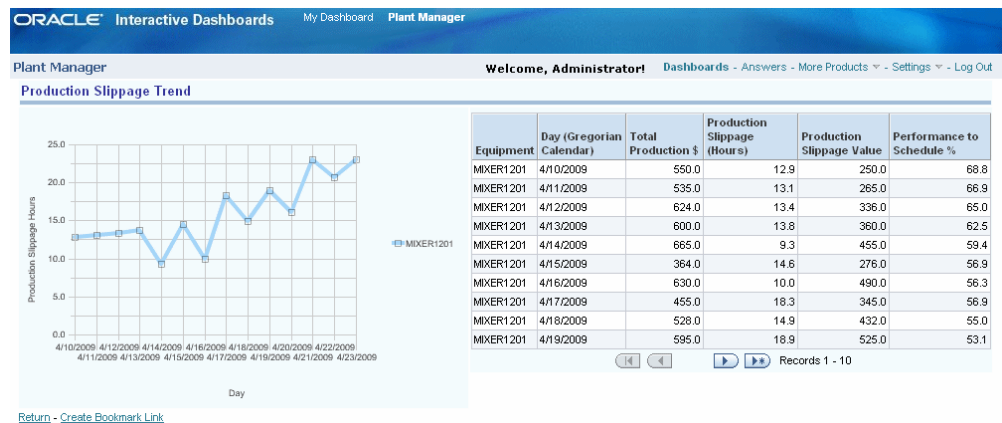
1. Navigate to the Equipment Downtime Analysis page and scroll down to the Equipment Downtime details region.

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
MIXER1201	4/10/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/11/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/12/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To
MIXER1201	4/13/2009	24.0	24.0	0.0	15.0	15.0	9.0	38%	Go To
MIXER1201	4/14/2009	24.0	24.0	0.0	6.0	6.0	18.0	75%	Go To
MIXER1201	4/15/2009	24.0	12.0	12.0	7.0	7.0	5.0	21%	Go To
MIXER1201	4/16/2009	24.0	24.0	0.0	10.5	10.5	13.5	56%	Go To
MIXER1201	4/17/2009	24.0	12.0	12.0	8.5	8.5	3.5	15%	Go To
MIXER1201	4/18/2009	24.0	24.0	0.0	15.0	15.0	9.0	38%	Go To
MIXER1201	4/19/2009	24.0	24.0	0.0	12.0	12.0	12.0	50%	Go To

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

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 6-24

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

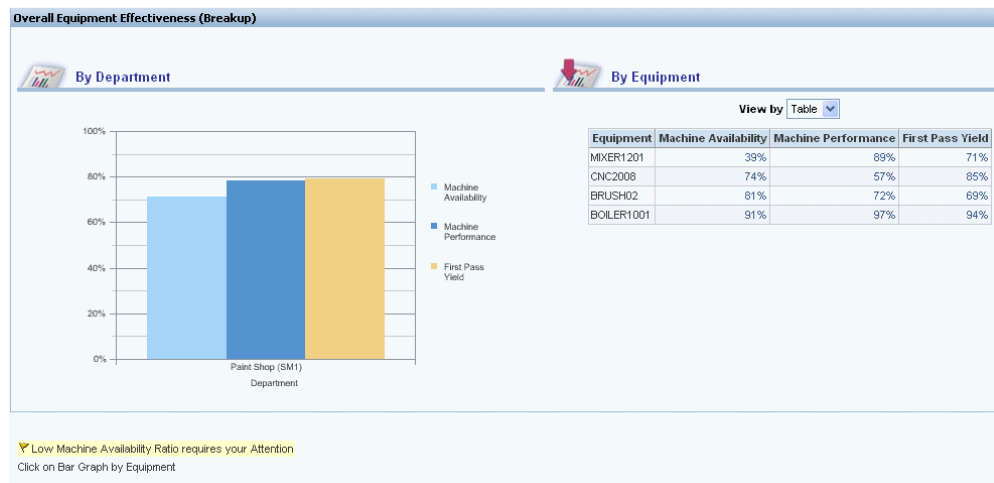
- First Pass Yield Trend
- Equipment Scrap Detail

You can view scrap transactions by the following dimensions:

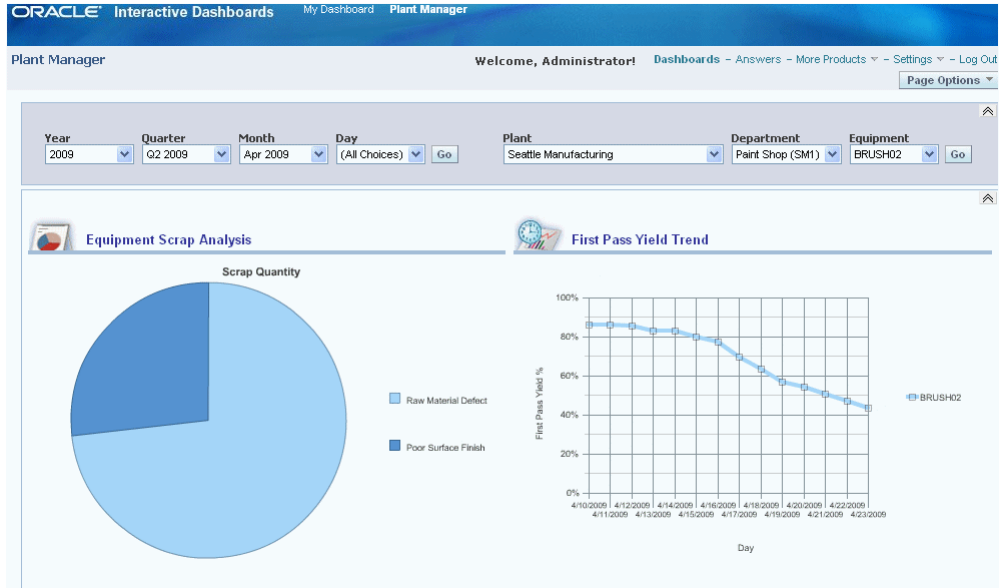
- Time dimension – Year, Quarter, Month and Day
- Equipment dimension – Plant, Department, and Equipment

To view Equipment Scrap Analysis:

1. Navigate to the Asset Performance (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	4/10/2009	17.7	123	143	20	0	20	86%	15.2	2.5
BRUSH02	4/11/2009	18.0	126	146	20	0	20	86%	15.5	2.5
BRUSH02	4/12/2009	17.6	118	138	20	0	20	86%	15.0	2.5
BRUSH02	4/13/2009	17.1	110	132	22	0	22	83%	14.2	2.8
BRUSH02	4/14/2009	9.0	108	130	22	0	22	83%	7.5	1.5
BRUSH02	4/15/2009	16.7	100	125	25	0	25	80%	13.4	3.3
BRUSH02	4/16/2009	14.9	96	124	28	0	28	77%	11.5	3.4
BRUSH02	4/17/2009	14.3	90	129	39	0	39	70%	10.0	4.3
BRUSH02	4/18/2009	12.0	80	126	46	0	46	63%	7.6	4.4
BRUSH02	4/19/2009	10.1	70	123	53	0	53	57%	5.7	4.3

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

6. Select the Asset Performance (OEE) by Equipment link to return to that page.

Related Topics

Equipment Scrap Reasons, page 6-15

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:

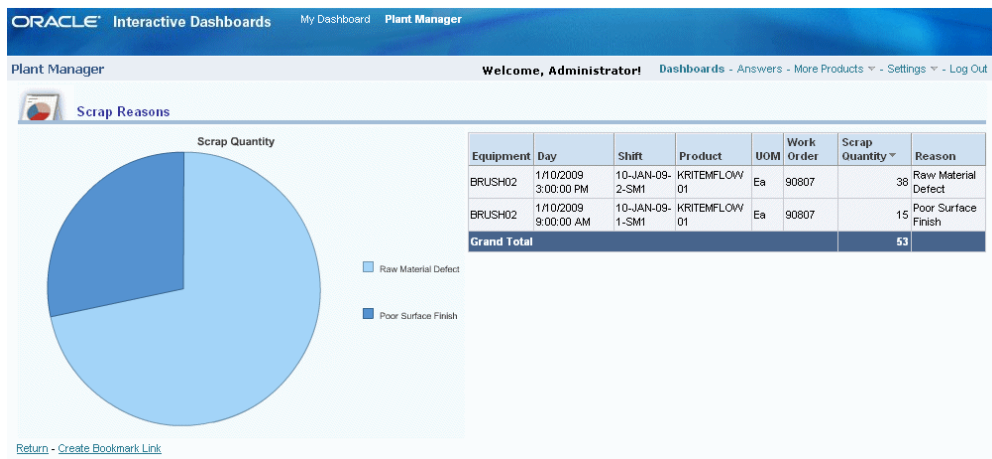
1. Navigate to the Equipment Scrap Analysis page.
2. Scroll down to the Equipment Scrap Analysis Details region.

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	4/10/2009	17.7	123	143	20	0	20	86%	15.2	2.5
BRUSH02	4/11/2009	18.0	126	146	20	0	20	86%	15.5	2.5
BRUSH02	4/12/2009	17.6	118	138	20	0	20	86%	15.0	2.5
BRUSH02	4/13/2009	17.1	110	132	22	0	22	83%	14.2	2.8
BRUSH02	4/14/2009	9.0	108	130	22	0	22	83%	7.5	1.5
BRUSH02	4/15/2009	18.7	100	125	25	0	25	80%	13.4	3.3
BRUSH02	4/16/2009	14.9	96	124	28	0	28	77%	11.5	3.4
BRUSH02	4/17/2009	14.3	90	129	39	0	39	70%	10.0	4.3
BRUSH02	4/18/2009	12.0	80	126	46	0	46	63%	7.6	4.4
BRUSH02	4/19/2009	10.1	70	123	53	0	53	57%	5.7	4.3

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

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 6-13

Equipment Efficiency Analysis

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

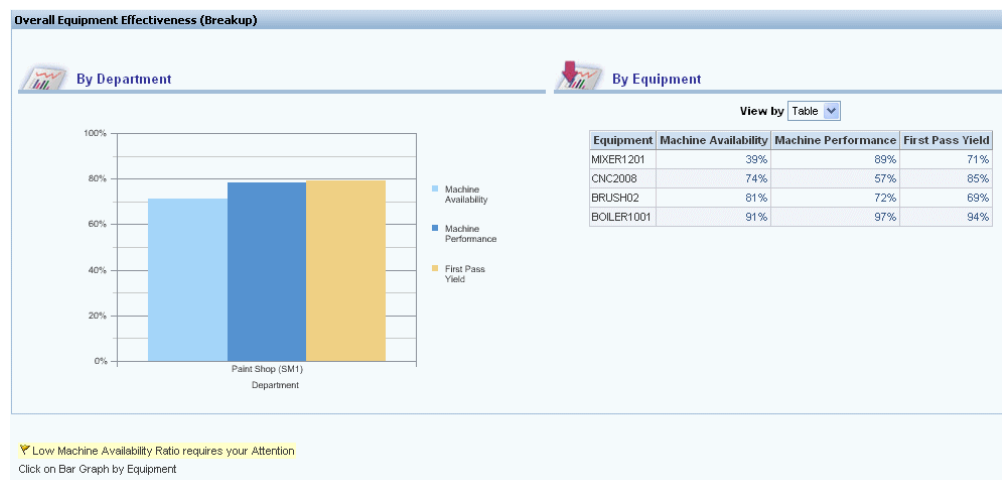
- Equipment Efficiency Analysis
- Machine Performance Ratio Trend
- Equipment Efficiency Detail

You can view Equipment Efficiency Analysis by the following dimensions:

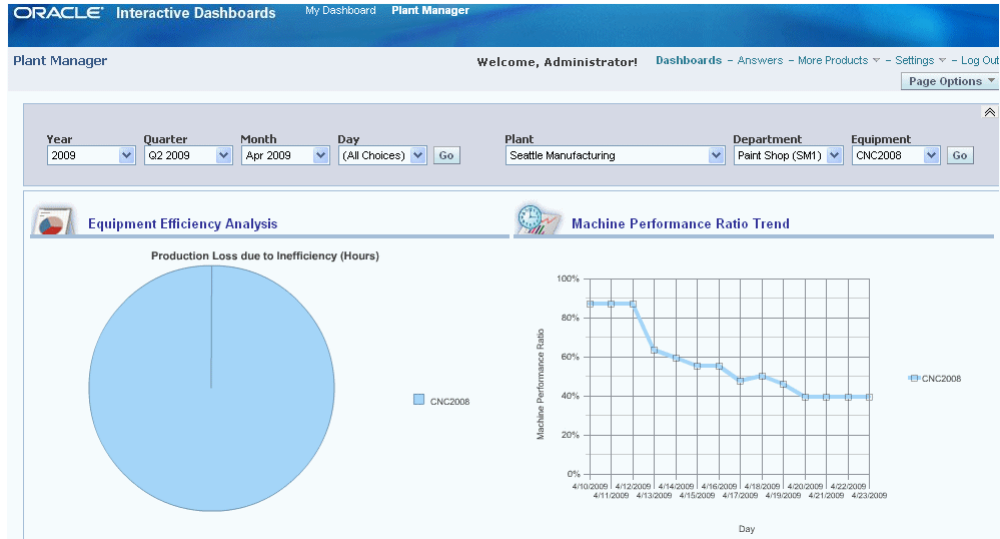
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant, Department, and Equipment

To view the Equipment Efficiency Analysis page:

1. Navigate to the Asset Performance (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 Run Time (Hours)	Machine Efficiency	Effective Run Time (Hours)	Machine Performance Ratio	Production Loss due to Inefficiency (Hours)
CNC2008	4/10/2009	17.4	90%	15.7	87%	1.7
CNC2008	4/11/2009	17.4	90%	15.7	87%	1.7
CNC2008	4/12/2009	17.4	90%	15.7	87%	1.7
CNC2008	4/13/2009	12.7	90%	11.4	63%	1.3
CNC2008	4/14/2009	12.7	84%	10.7	60%	2.0
CNC2008	4/15/2009	11.1	90%	10.0	56%	1.1
CNC2008	4/16/2009	11.1	90%	10.0	56%	1.1
CNC2008	4/17/2009	10.3	84%	8.6	48%	1.7
CNC2008	4/18/2009	9.5	90%	8.6	50%	0.9
CNC2008	4/19/2009	9.5	83%	7.9	46%	1.7

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

6. Select the Asset Performance (OEE) by Equipment link to return to that page.

Related Topics

Production Loss Analysis, page 6-19

Equipment Efficiency Detail, page 6-18

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 Run Time (Hours)	Machine Efficiency	Effective Run Time (Hours)	Machine Performance Ratio	Production Loss due to Inefficiency (Hours)
CNC2008	4/10/2009	17.4	90%	15.7	87%	1.7
CNC2008	4/11/2009	17.4	90%	15.7	87%	1.7
CNC2008	4/12/2009	17.4	90%	15.7	87%	1.7
CNC2008	4/13/2009	12.7	90%	11.4	63%	1.3
CNC2008	4/14/2009	12.7	84%	10.7	60%	2.0
CNC2008	4/15/2009	11.1	90%	10.0	56%	1.1
CNC2008	4/16/2009	11.1	90%	10.0	56%	1.1
CNC2008	4/17/2009	10.3	84%	8.6	48%	1.7
CNC2008	4/18/2009	9.5	90%	8.6	50%	0.9
CNC2008	4/19/2009	9.5	83%	7.9	46%	1.7

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

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

ORACLE®


Interactive Dashboards

My Dashboard

Plant Manager

Plant Manager

Welcome, MOC! Da



Equipment Efficiency Detail

Equipment	Day	Shift	Equipment First Time Good Quantity	Actual Run Time (Hours)	Equipment Standard Rate	Machine Efficiency	Effective Run Time (Hours)	Production Loss due to Inefficiency
Wrapper-02	4/23/2009	Shift-1	203	1.8	100	110%	2.0	
Wrapper-02	4/23/2009	Shift-2	104	3.8	110	25%	0.9	
Grand Total			307	5.7		67%	3.8	

[Return](#) - [Create Bookmark Link](#)

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

Related Topics

Equipment Efficiency Analysis, page 6-16

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:

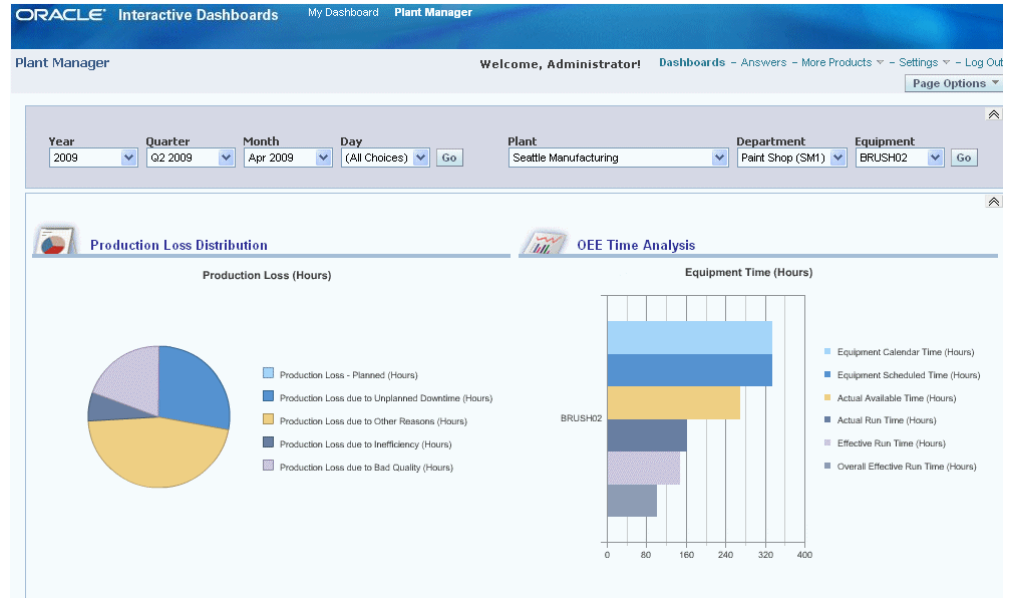
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant, Department, and Equipment

To view Production Loss Analysis:

1. Navigate to the Asset Performance (OEE) by Equipment page.



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



3. The page displays the distribution of production loss as well as the OEE time metrics for the equipment.
4. 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
5. Scroll down the page to view Production Loss Analysis. This includes Total Production Loss in hours and Overall Effective Run Time in hours.

Production Loss Analysis										
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)	
BRUSH02	4/10/2009	24.0	0.0	7.0	0.0	0.0	2.5	9.5	15.2	
BRUSH02	4/11/2009	24.0	0.0	8.0	0.0	0.0	2.5	10.5	15.5	
BRUSH02	4/12/2009	24.0	0.0	7.0	0.0	0.0	2.5	9.5	15.0	
BRUSH02	4/13/2009	24.0	0.0	6.0	0.0	0.9	2.8	9.8	14.2	
BRUSH02	4/14/2009	24.0	0.0	3.0	12.0	0.0	1.5	16.5	7.5	
BRUSH02	4/15/2009	24.0	0.0	7.0	0.0	0.3	3.3	10.6	13.4	
BRUSH02	4/16/2009	24.0	0.0	5.3	0.0	3.9	3.4	12.5	11.5	
BRUSH02	4/17/2009	24.0	0.0	8.0	0.0	1.7	4.3	14.0	10.0	
BRUSH02	4/18/2009	24.0	0.0	6.7	0.0	5.3	4.4	16.4	7.6	
BRUSH02	4/19/2009	24.0	0.0	7.3	0.0	6.6	4.3	18.3	5.7	

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

[Equipment Downtime Analysis](#)

[Equipment Efficiency Analysis](#)

[Equipment Scrap Analysis](#)

6. 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 Asset Performance (OEE) by Equipment link to return to that page.

Related Topics

Production Loss Detail, page 6-22

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.

Production Loss Analysis										
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)	
BRUSH02	4/10/2009	24.0	0.0	7.0	0.0	0.0	2.5	9.5	15.2	
BRUSH02	4/11/2009	24.0	0.0	8.0	0.0	0.0	2.5	10.5	15.5	
BRUSH02	4/12/2009	24.0	0.0	7.0	0.0	0.0	2.5	9.5	15.0	
BRUSH02	4/13/2009	24.0	0.0	6.0	0.0	0.9	2.8	9.8	14.2	
BRUSH02	4/14/2009	24.0	0.0	3.0	12.0	0.0	1.5	16.5	7.5	
BRUSH02	4/15/2009	24.0	0.0	7.0	0.0	0.3	3.3	10.6	13.4	
BRUSH02	4/16/2009	24.0	0.0	5.3	0.0	3.9	3.4	12.5	11.5	
BRUSH02	4/17/2009	24.0	0.0	8.0	0.0	1.7	4.3	14.0	10.0	
BRUSH02	4/18/2009	24.0	0.0	6.7	0.0	5.3	4.4	16.4	7.6	
BRUSH02	4/19/2009	24.0	0.0	7.3	0.0	6.6	4.3	18.3	5.7	

Records 1 - 10

[Asset Performance \(OEE\) by Equipment](#)

[Equipment Downtime Analysis](#)

[Equipment Efficiency Analysis](#)

[Equipment Scrap Analysis](#)

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

ORACLE® Interactive Dashboards

My Dashboard

Plant Manager

Plant Manager

Welcome, NDC1

Dashboards - Answers - M

Year2009

QuarterQ2 2009

MonthApr 2009

Daydate 2009-04-23


Shift(All Choices)

Go

PlantSI-Proc-Mfg

Department1-PACKLINE

EquipmentWhrapp

 Production Loss Detail

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	Equipment Standard Rate	Machine Efficiency	Effective Run Time (Hours)	Production Loss due to Inefficiency (Hours)	Equipment First Time Good Quantity	Total Quantity Produced	First Pass Yield	Prod Loss Bad C (Hou	
Whrapp	02	4/23/2009	23-Apr-1-PR	4.0	4.0	0.0	0.2	0.2	3.8	1.8	2.0	110	100	110%	2.0	0.0	203	213	95%	
Whrapp	02	4/23/2009	23-Apr-2-PR	4.0	4.0	0.0	0.0	0.0	4.0	3.8	0.1	27	110	25%	0.9	2.9	104	108	96%	
Whrapp	02	4/23/2009	23-Apr-3-PR	4.0	4.0	0.0	0.0	0.0	4.0	0.0	4.0	0	120	0%	0.0	0.0	0	0	0%	
Whrapp	02	4/23/2009	23-Apr-4-PR	4.0	4.0	0.0	0.0	0.0	4.0	0.0	4.0	0	130	0%	0.0	0.0	0	0	0%	
Whrapp	02	4/23/2009	23-Apr-5-PR	4.0	4.0	0.0	0.0	0.0	4.0	0.0	4.0	0	140	0%	0.0	0.0	0	0	0%	
Whrapp	02	4/23/2009	23-Apr-6-PR	3.5	3.5	0.0	0.0	0.0	3.5	0.0	3.5	0	80	0%	0.0	0.0	0	0	0%	
Grand Total			23.4	23.4	0.0	0.2	0.2	23.2	5.7	17.6	54		67%	3.8	1.8	307	321	96%		

Refresh - Download

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

Related Topics

Production Loss Analysis, page 6-19

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:

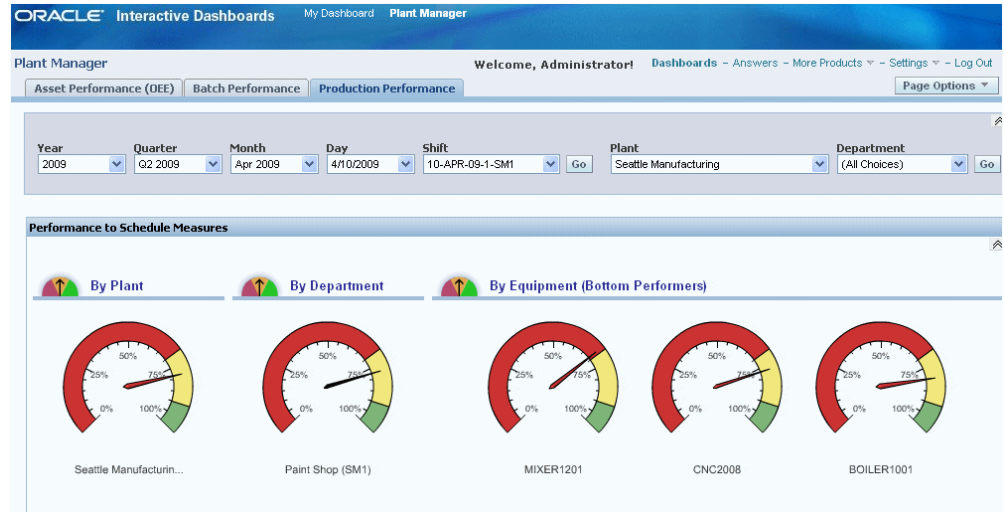
- Performance to Schedule Measures by Plant
- Performance to Schedule Measures by Department
- Performance to Schedule Measures by Equipment (Bottom Performers)
- Production Slippage by Equipment
- Current Month Production Slippage Trend by Department
- Current Month Production Slippage Trend by Equipment

You can view Production Performance by the following dimensions:

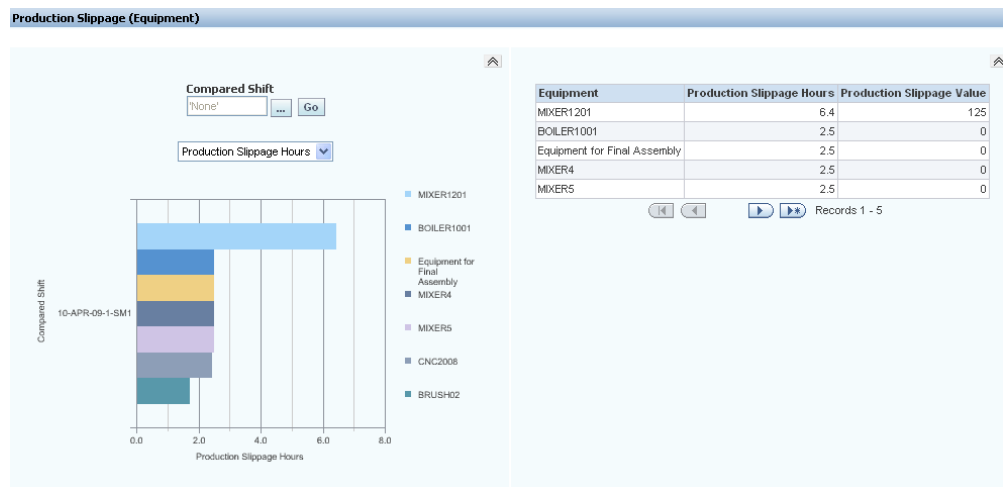
- Time dimension – Year, Quarter, Month, Day, and Shift
- Equipment dimension – Plant and Department

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 6-12

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:

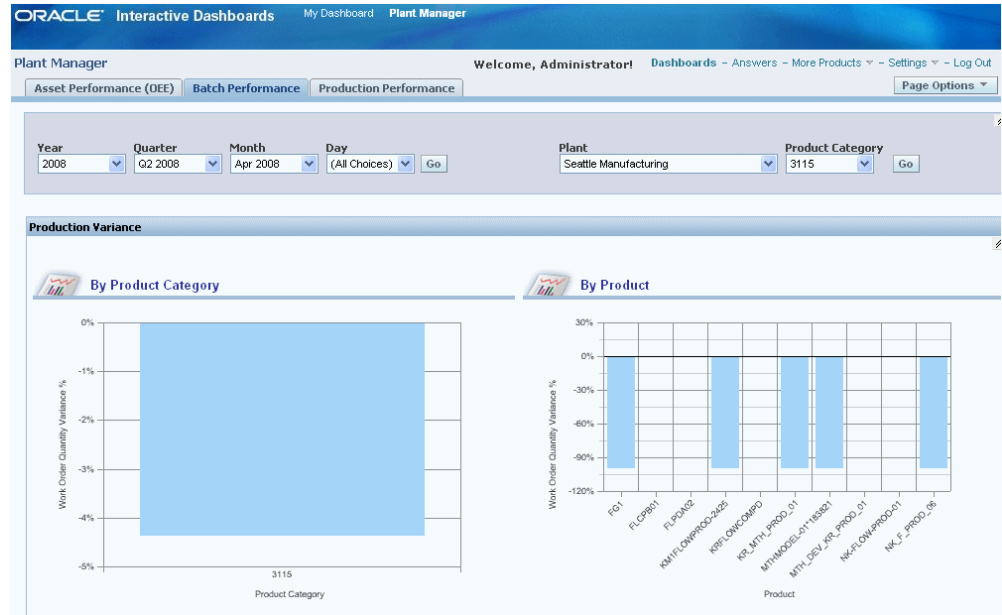
- Production Variance by Product Category
- Production Variance by Product
- PPM Trend (Month to Date)
- Batch Cycle Time Trend (Month to Date)
- Service Level Performance by Product Category
- Service Level Performance by Product

You can view Batch Performance by the following dimensions:

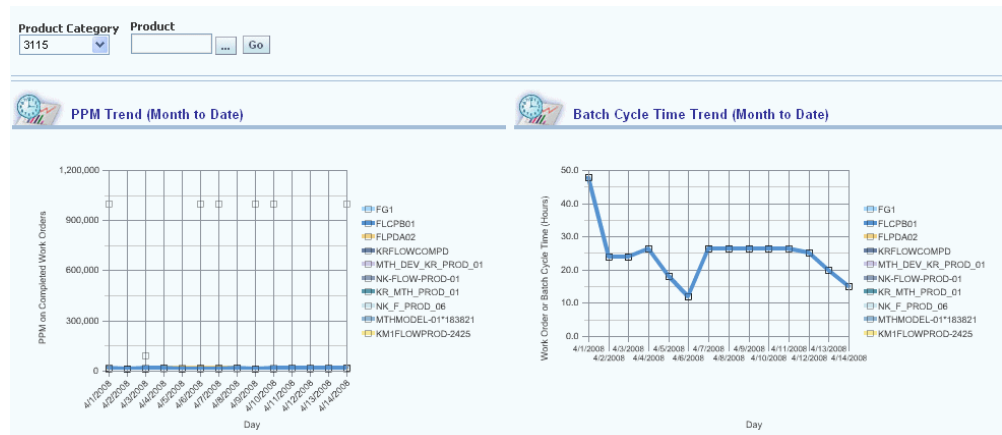
- Time dimension – Year, Quarter, Month, and Day
- Equipment dimension – Plant and Product Category

To view Batch Performance:

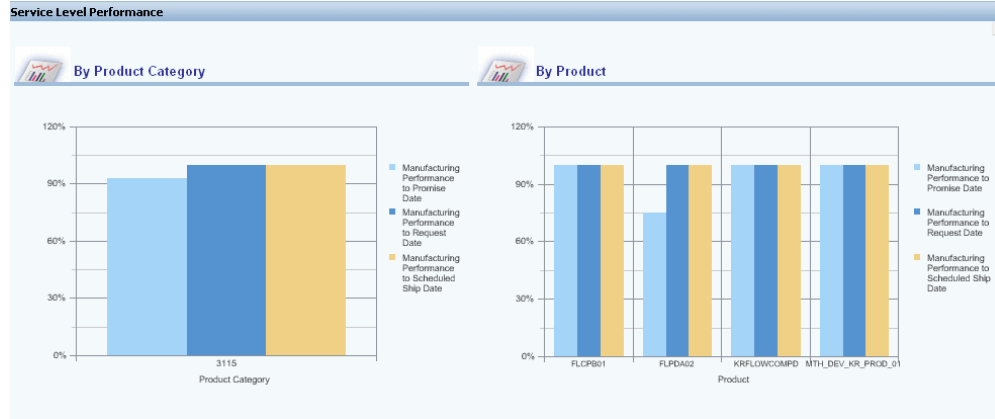
1. Navigate to the Batch Performance page to view production variance. You can view production variance by Product Category and by Product.



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

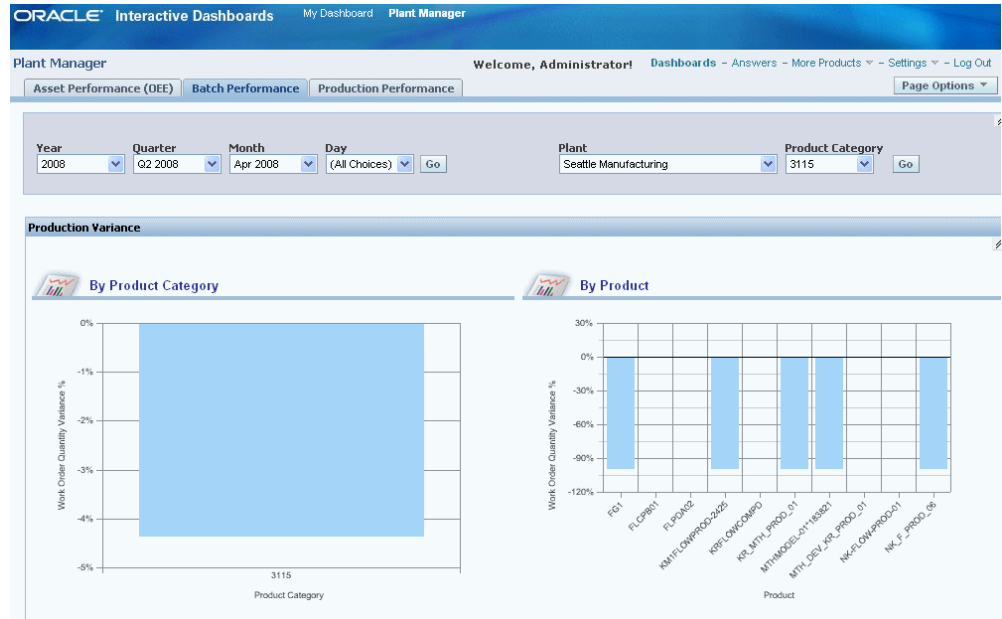
Batch Performance Detail, page 6-28

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.

The screenshot shows the Oracle Plant Manager dashboard with the "Batch Performance" tab selected. The filters are the same as the previous screenshot, but the "Product" filter is set to "FO1". The main content area displays a table titled "Batch Performance Detail" with the following data:

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
JOB7	FO1	Ea	3/30/2008 2:16:37 AM	4/1/2008 2:16:37 AM	48.0	3/30/2008 2:15:59 AM	4/1/2008 2:15:59 AM	48.0	100
Total					48.0			48.0	

At the bottom of the page, there is a link labeled "Batch Performance".

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 6-26

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

Welcome, Administrator

Dashboards - Answers - More Products - Settings - Log Out

Asset Performance (OEE)Batch PerformanceProduction PerformanceSustainability Performance

Page Options

Plant Characteristics

Plant: Zurich-Maintenance
Business Function: Maintenance
Headcount: 500
Area: 40,000
Area UOM: Square Feet

Year: 2010Quarter: (All Choices)Period: (All Choices)Week: (All Choices)Date: (All Choices)Go

Plant: Zurich-MaintenanceGo

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
				Direct	Indirect	Total						
ZH-DEP1002	Maintenance	40,000	500	0	46,149	46149.34	52,510	83,746	-12.11	-44.89	1.15	92.30
ZH-DEP1001	Manufacturing	80,000	2,000	44,068	0	44067.94	52,510	79,979	-16.08	-44.90	0.55	22.03
Grand Total		120,000	2,500	44,068	46,149	90217.28	105,021	163,724	-14.10	-44.90		

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
ZH-DEP1002	Maintenance	40,000	500	332,275	378,074	669,965	-12.11	-50.40	8.31	664.55

Plant Manager

Welcome, Administrator

Dashboards - Answers - More Products - Settings - Log Out

Asset Performance (OEE)Batch PerformanceProduction PerformanceSustainability Performance

Page Options

Plant Characteristics

Plant: Zurich-Maintenance
Business Function: Maintenance
Headcount: 500
Area: 40,000
Area UOM: Square Feet

Year: 2010Quarter: (All Choices)Period: (All Choices)Week: (All Choices)Date: (All Choices)Go

Plant: Zurich-MaintenanceGo

Electricity Consumption

Electricity Cost

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
ZH-DEP1002	Maintenance	40,000	500	27,690	31,500	50,247	-12.10	-44.89	0.69	55.38
ZH-DEP1001	Manufacturing	80,000	2,000	26,441	31,500	47,987	-16.06	-44.90	0.33	13.22
Grand Total		120,000	2,500	54,130	63,000	98,235	-14.08	-44.90		

CO2 Emission UOM: KG, Area UOM: Square Feet

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.

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
1001-ZH1	9,000	25561.59	184043.43	15336.95	2.84	20.45	1.70
1002-ZH1	4,600	202.18	1455.69	121.31	0.04	0.32	0.03
1003-ZH1	4,700	258.19	1858.94	154.91	0.05	0.40	0.03
Grand Total	18,300	26021.95	187358.06	15613.17	1.41	10.18	0.85

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

Trend:

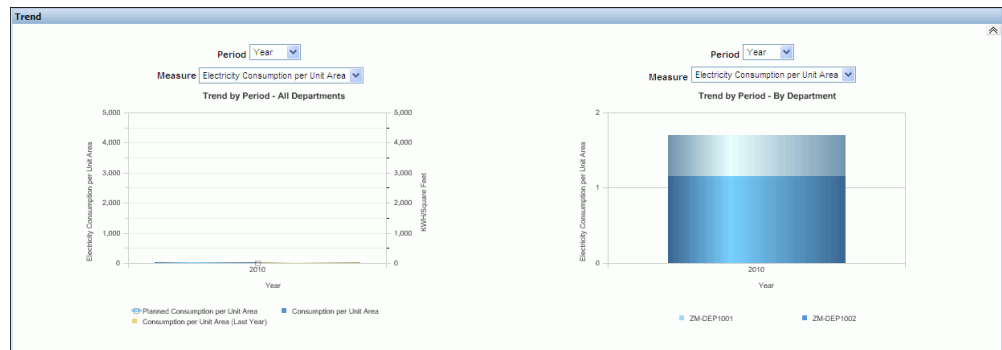
The Trend graph report provides a graphical representation of the electricity consumption, electricity cost, and CO2 emission for:

- 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:

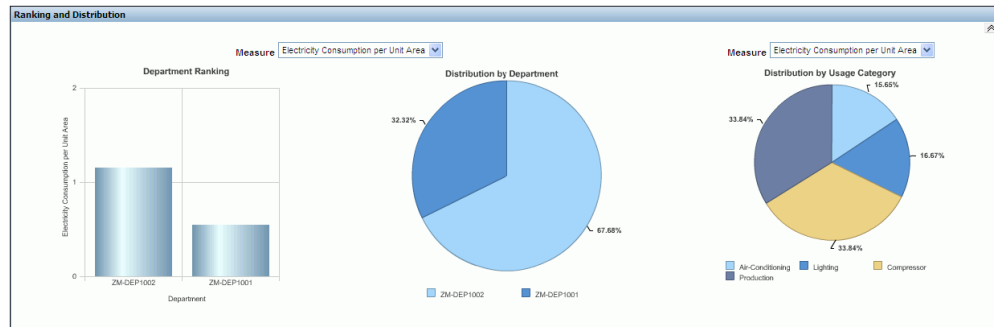
- Electricity Consumption
- Electricity Consumption Per Unit Area
- Electricity Consumption Per Person
- Electricity Cost
- Electricity Cost Per Unit Area
- Electricity Cost Per Person
- CO2 Emission
- CO2 Emission Per Unit Area
- CO2 Emission Per Person

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.

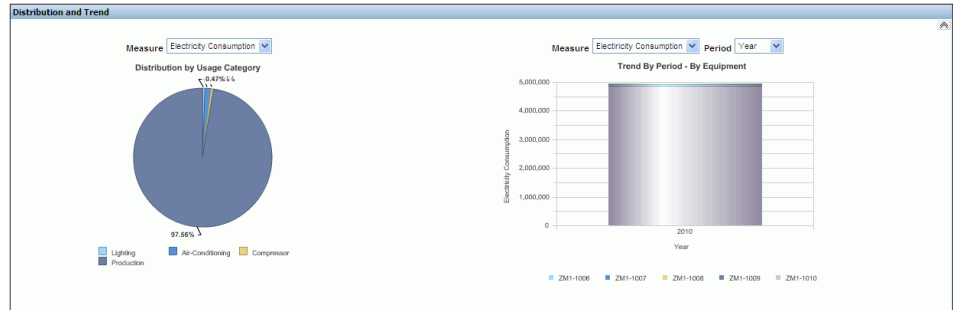


Sustainability Performance by Equipment

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.

Equipment	Department	Scrap %	Total Electricity Consumption	Value Added Electricity Consumption	Non-Value Added Electricity Consumption	Value Added Electricity %	CO2 Emission	Overall Equipment Effectiveness
ZM1-1006	ZM-DEP1002	4.23	189	189	0	100.00	114	
ZM1-1007	ZM-DEP1002	0.00	0					
ZM1-1008	ZM-DEP1002	0.00	0					
ZM1-1009	ZM-DEP1002	0.00	0					
ZM1-1010	ZM-DEP1002	0.00	0					
Grand Total		4.23	189	189	0	100.00	114	

Electricity Consumption UOM: KWH, CO2 Emission UOM: KG

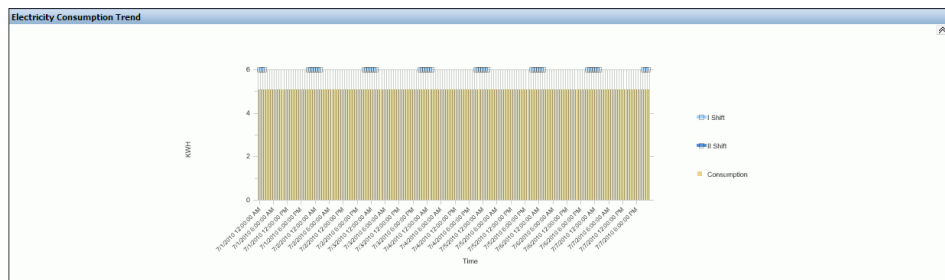
Sustainability Performance Equipment Hourly Summary Page

You can view the electricity consumption, electricity cost, equipment output, and

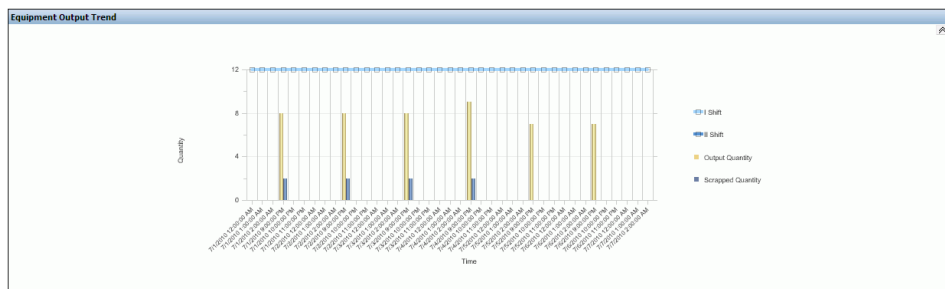
carbon emission for hourly time periods for equipment in a plant using the Sustainability Performance Equipment Hourly Summary Page.

To view the sustainability performance equipment hourly summary page:

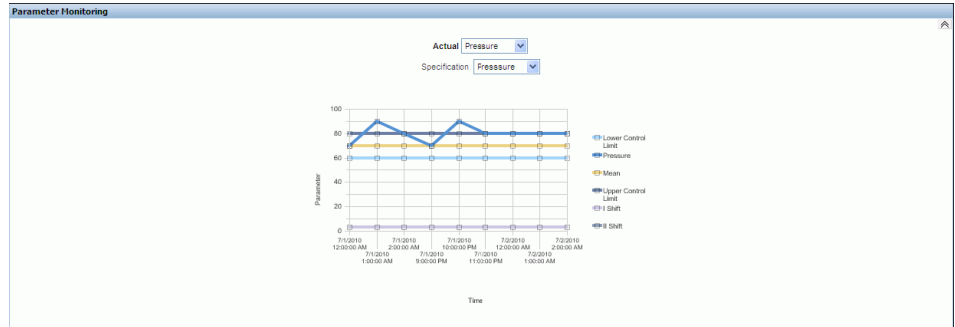
1. Navigate to the Sustainability Performance tab. The Sustainability Performance by Department displays.
2. Select a department from the Department column of the Electricity Consumption report. The Sustainability Performance page by Equipment displays.
3. Select equipment in the Equipment Summary report. 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.



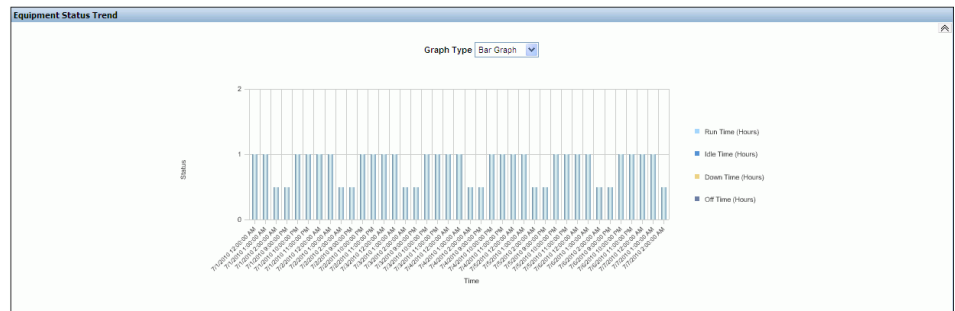
- Equipment Output Trend report is a graphical representation of the trend in output production and the scrap quantity recorded for the equipment during shifts.



- 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.

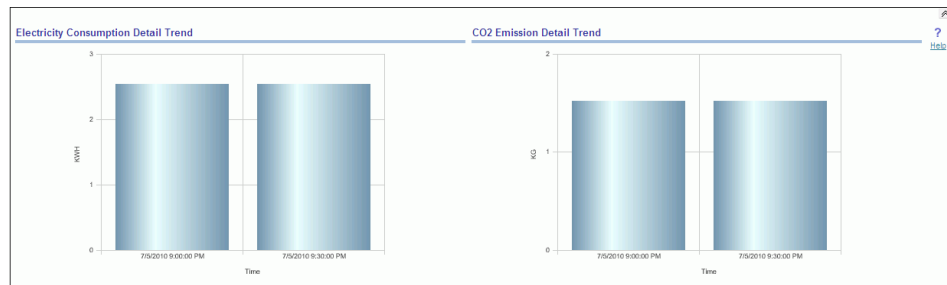
From Time	To Time	Work Order	Product	Output Quantity	Scrapped Quantity	Run Time (Hours)	Idle Time (Hours)	Down Time (Hours)	Off Time (Hours)	Total Electricity Consumption	Value Added Electricity Consumption	Value Added Electricity %
7/1/2010 12:00:00 AM	7/1/2010 12:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/1/2010 1:00:00 AM	7/1/2010 1:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/1/2010 2:00:00 AM	7/1/2010 2:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/1/2010 3:00:00 AM	7/1/2010 3:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/1/2010 4:00:00 AM	7/1/2010 4:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/1/2010 5:00:00 AM	7/1/2010 5:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/1/2010 6:00:00 AM	7/1/2010 6:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/1/2010 7:00:00 AM	7/1/2010 7:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/1/2010 8:00:00 AM	7/1/2010 8:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/1/2010 9:00:00 AM	7/1/2010 9:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/1/2010 10:00:00 AM	7/1/2010 10:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/1/2010 11:00:00 AM	7/1/2010 11:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/2/2010 12:00:00 AM	7/2/2010 12:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/2/2010 1:00:00 AM	7/2/2010 1:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/2/2010 2:00:00 AM	7/2/2010 2:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 3:00:00 AM	7/2/2010 3:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 4:00:00 AM	7/2/2010 4:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 5:00:00 AM	7/2/2010 5:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 6:00:00 AM	7/2/2010 6:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/2/2010 7:00:00 AM	7/2/2010 7:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/2/2010 8:00:00 AM	7/2/2010 8:59:59 AM	1001-ZM1	1001-ZM1	0	0	1.00	0.00	0.00	0.00	5	5	100.00
7/2/2010 9:00:00 AM	7/2/2010 9:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 10:00:00 AM	7/2/2010 10:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 11:00:00 AM	7/2/2010 11:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 12:00:00 PM	7/2/2010 12:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 1:00:00 PM	7/2/2010 1:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 2:00:00 PM	7/2/2010 2:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 3:00:00 PM	7/2/2010 3:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 4:00:00 PM	7/2/2010 4:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 5:00:00 PM	7/2/2010 5:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 6:00:00 PM	7/2/2010 6:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 7:00:00 PM	7/2/2010 7:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 8:00:00 PM	7/2/2010 8:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 9:00:00 PM	7/2/2010 9:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 10:00:00 PM	7/2/2010 10:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 11:00:00 PM	7/2/2010 11:59:59 PM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00
7/2/2010 12:00:00 AM	7/2/2010 12:59:59 AM	1001-ZM1	1001-ZM1	0	0	0.50	0.00	0.00	0.00	3	3	100.00

Sustainability Performance Equipment Hourly Detail Page

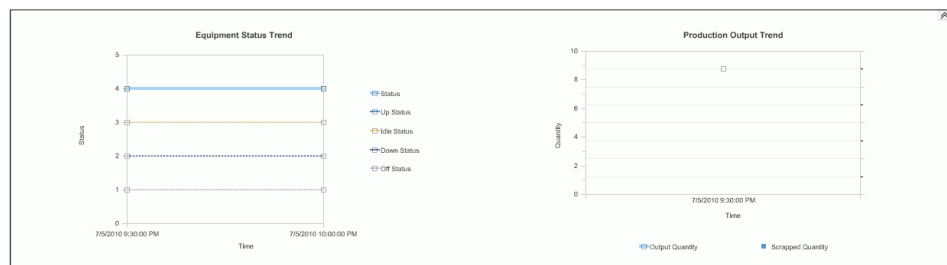
You can view the detailed information on electricity consumption, electricity cost, equipment output, and carbon emission for an equipment in a specific hourly time period using the Sustainability Performance Equipment Hourly Detail Page.

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.



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.

ORACLE Interactive Dashboards My Dashboard Adhoc Analysis Facilities Manager Plant Manager

Facilities Manager Welcome, MOCI Dashboards - Answers - More Products - My Account - Home

Summary Site Building Floor Floor Section Page Options

Year: 2009 Quarter: (All Choices) Period: (All Choices) Week: (All Choices) Date: (All Choices) Go

Electricity Consumption

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
Manchester Manufacturing		Manufacturing	100,000	5,000	492,357					4.92	98.47
Grand Total			100,000	5,000	492,357						

Electricity Consumption UOM: KWH, Area UOM: Square Feet

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.

Facilities Manager											
Welcome, MDCI Dashboards - Answers - More Products - My Account - Home											
Summary Site Building Floor Floor Section											
<div> <div>Year</div> <div>2009</div> <div>Quarter</div> <div>(All Choices)</div> <div>Period</div> <div>(All Choices)</div> <div>Week</div> <div>(All Choices)</div> <div>Date</div> <div>(All Choices)</div> <div>Go</div> </div>											
Electricity Consumption											
Electricity Cost											
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	
Manchester Manufacturing	Manufacturing	100,000	5,000	2,658,730					26.59	531.75	
Grand Total		100,000	5,000	2,658,730							
Area UOM: Square Feet, Currency UOM: USD											

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.

Facilities Manager

Welcome, MDCI

Dashboards - Answers - More Products - My Account - Home

SummarySiteBuildingFloorFloor Section

Page Options

YearQuarterPeriodWeekDate

2009All ChoicesAll ChoicesAll ChoicesAll ChoicesGo

Electricity Consumption

Electricity Cost

CO2 Emission

Site	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
Manchester Manufacturing	Manufacturing	100,000	5,000	433,275					4.33	86.65
Grand Total		100,000	5,000	433,275						

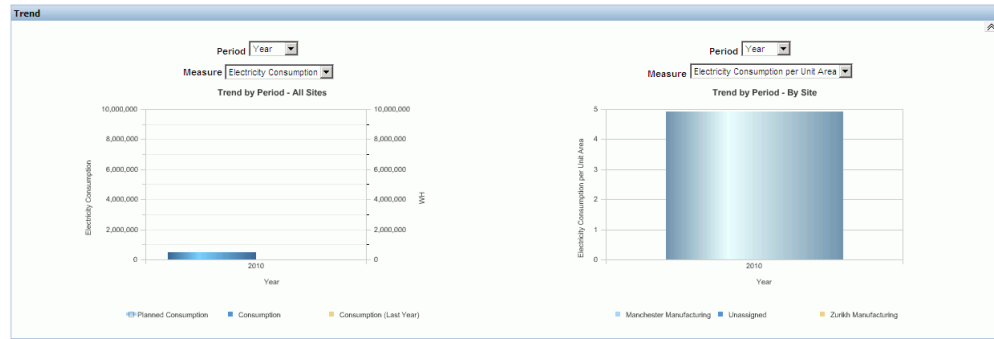
CO2 Emission UOM: KG, Area UOM: Square Feet

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



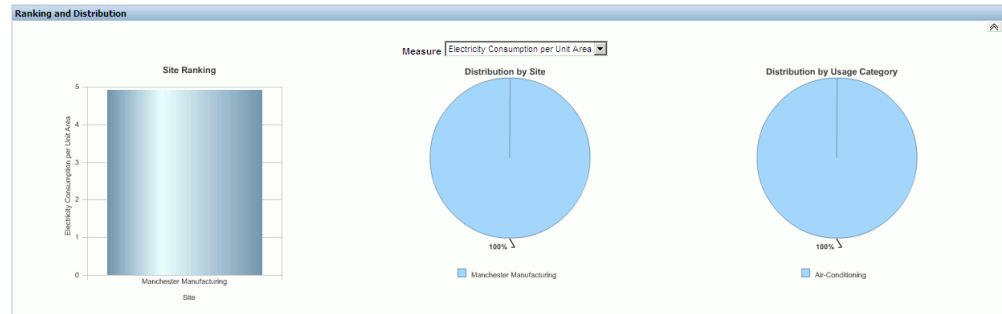
Ranking and Distribution

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.

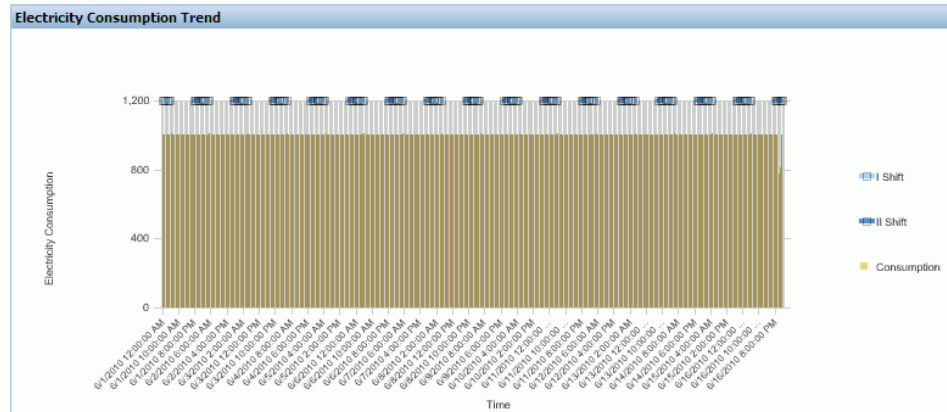
Equipment Hourly Summary Page

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:

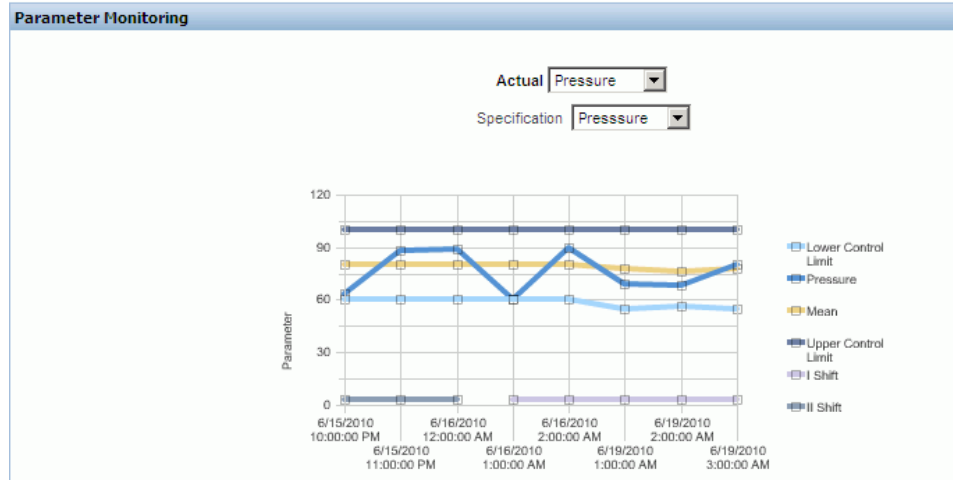
- Electricity Consumption Trend report is a graphical representation of the trend in electricity consumption of the equipment in hourly time intervals.



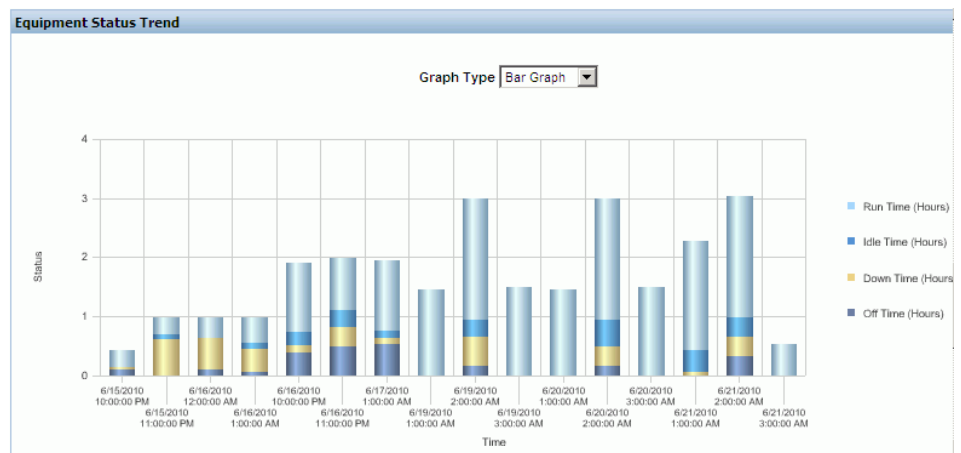
- Parameter Monitoring report is a graphical representation of the measures of parameters like temperature and pressure over hourly time periods.

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.

Equipment Summary							
From Time	To Time	Run Time (Hours)	Idle Time (Hours)	Down Time (Hours)	Off Time (Hours)	Energy Consumption	
6/15/2010 10:00:00 PM	6/15/2010 10:59:59 PM	0.30	0.00	0.03	0.11	130.54	
6/15/2010 11:00:00 PM	6/15/2010 11:59:59 PM	0.30	0.07	0.62	0.00	303.61	
6/16/2010 12:00:00 AM	6/16/2010 12:59:59 AM	0.37	0.00	0.52	0.11	365.00	
6/16/2010 1:00:00 AM	6/16/2010 1:59:59 AM	0.42	0.11	0.40	0.06	160.02	
6/16/2010 10:00:00 PM	6/16/2010 10:59:59 PM	1.16	0.22	0.13	0.40	1606.53	
6/16/2010 11:00:00 PM	6/16/2010 11:59:59 PM	0.89	0.27	0.34	0.49	1582.22	
6/17/2010 1:00:00 AM	6/17/2010 1:59:59 AM	1.19	0.13	0.10	0.53	1513.91	
6/19/2010 1:00:00 AM	6/19/2010 1:59:59 AM	1.47	0.00	0.00	0.00	671.51	
6/19/2010 2:00:00 AM	6/19/2010 2:59:59 AM	2.05	0.30	0.48	0.17	1917.16	
6/19/2010 3:00:00 AM	6/19/2010 3:59:59 AM	1.50	0.00	0.00	0.00	705.85	

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:

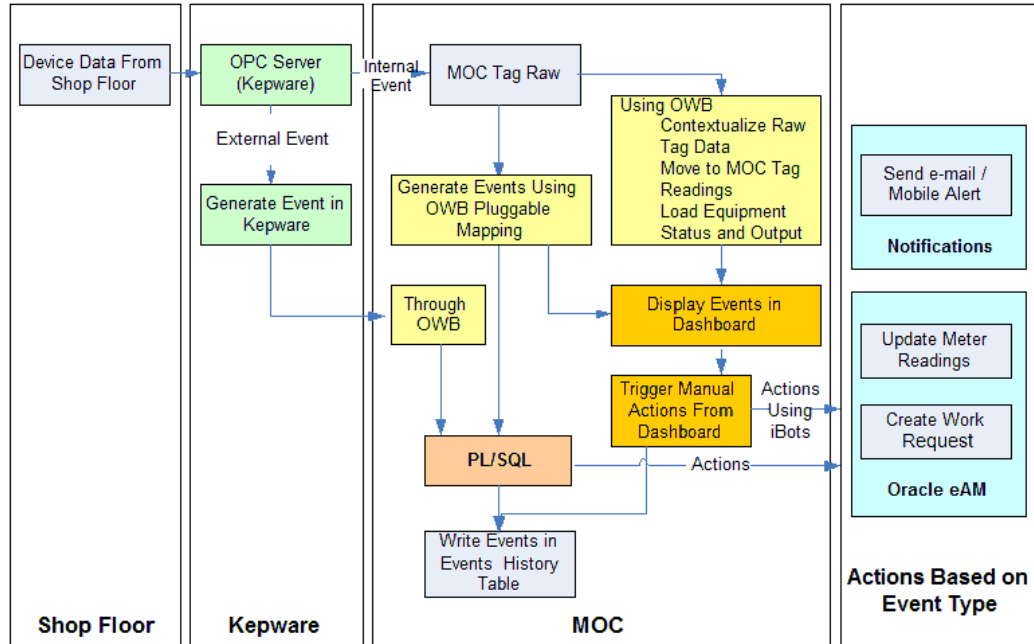
- Reduces reaction time between event occurrence and the action/response
- Improves scheduling based on equipment availability

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

MOC and eAM integration is illustrated by the following process flow. It illustrates the integration of data coming from Shop floor devices using Event Management Framework.



Data coming from shop floor is collected using the OPC server provided by device partners (Kepware, Matricon or ILS).

MOC processes the data internally and externally. Processing data internally occurs when the data is collected from the OPC server into MOC, and is then processed. Within MOC, rules are defined using Oracle Warehouse Builder (OWB) pluggable mapping to generate events and allow users to acknowledge and manually trigger actions from the role-based dashboard. External processing of data does not involve MOC, and actions occur outside the boundary of MOC. However, the actions are the same for both internal and external processed events.

Actions include creating work requests, and sending email or mobile alert notifications.

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.

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 (OEE)	MOC User > Manufacturing Operations Center Analytics > Plant Manager Dashboard

Page Name	Navigation Path
Asset Performance (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	MOC Administrator > Extensible Attributes Workbench > Items MOC User > Extensible Attributes Data > Items
Entity: Item Classifications	MOC Administrator > Extensible Attributes Workbench > Items > Entity: Item > [select Entity Name link]
Entity: Others	MOC Administrator > Extensible Attributes Workbench > Others MOC User > Extensible Attributes Data > Others
Entity: Others Classifications	MOC Administrator > Extensible Attributes Workbench > Others > Entity: Others > [select Entity Name link]
Entity: Work Order	MOC Administrator > Extensible Attributes Workbench > Work Orders MOC User > Extensible Attributes Data > Work Orders
Entity: Work Order Classifications	MOC Administrator > Extensible Attributes Workbench > Work Orders > Entity: Work Order > [select Entity Name link]
Equipment Contextualization Setup	MOC Administrator > Setup > Contextualization Setup
Equipment Downtime Analysis	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]

Page Name	Navigation Path
Equipment Downtime Reasons	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]
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]

Page Name	Navigation Path
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]
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

Page Name	Navigation Path
Manual Contextualization	MOC User > Tag Data Workbench > Manual Contextualization
Manufacturing Operations Center Catalog	MOC User > Manufacturing Operations Center Analytics > Manufacturing Operations Center Catalog
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]
Scrap Reason	MOC User > Tag Data Workbench > Scrap Reasons

Page Name	Navigation Path
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]
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]
Work Order Pages	MOC Administrator > Extensible Attributes Workbench > Work Orders > [select Entity Name link] > Classifications tab [Pages]

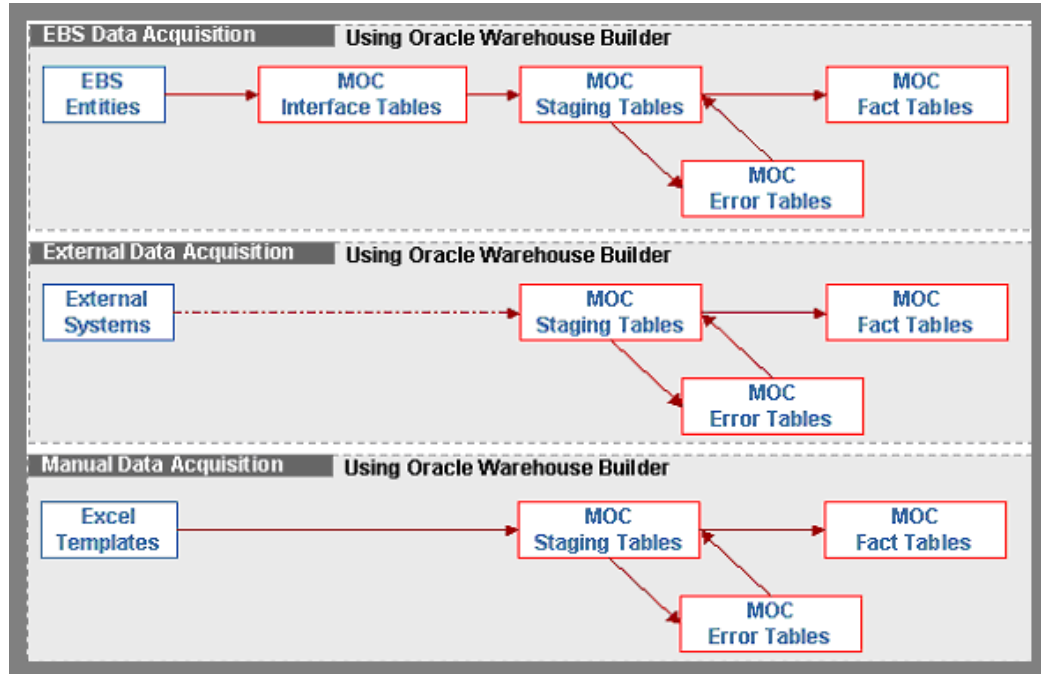
Error Management

Managing Error Records

The Manufacturing Operations Center acts as an integration layer connecting plant floor systems and synchronizing with the ERP systems. In order to accomplish this, MOC needs to interact and collect data from different source systems at different frequencies. During this process, records collected for an entity where the data is dependent on another entity, can result in:

- Required data is not yet collected
- Mandatory columns without the provided data
- Duplicate records passed in the data load

These rows are identified and staged into a separate table; the table is populated with reason codes for those errors. These records need to be corrected and reprocessed, or deleted. You can use an application such as Oracle Express for correcting the records in error table. The following graphic displays the error processing logic of moving the from the Staging to Fact tables if any of the rows are effected because of the these reasons. They are moved into Error table. After correcting the data in Error table or the reference data source, enable reprocessing flag. The data then moves back to the Staging table and again starts verification.



Error Codes

The following table lists error codes, descriptions, column references, and types.

Error Code	Description	Reference Physical Column	Error Type
CAT	Missing category reference	CATEGORY_FK	Referential Integrity
DIM	Missing dimension Reference	DIMENSION_NAME	Referential Integrity
DTR	Invalid downtime reason code or the status is not down	STATUS, DOWNTIME_REASON_CODE	Referential Integrity
DUP	Duplicate rows	Duplicate rows	Duplicate rows
ENT	Missing equipment or user dimension entity reference	ENTITY_FK	Referential Integrity
EQP	Missing equipment reference	EQUIPMENT_FK	Referential Integrity

Error Code	Description	Reference Physical Column	Error Type
ESD	Missing reference record in the MTH_EQUIPMENT_SHIFTS_D table	N/A	Referential Integrity
FLC	Missing FND lookup code	MATERIAL_FK STATUS (WO Status)	Referential Integrity
ITM	Missing item or product reference	ITEM_FK	Referential Integrity
HRY	Missing hierarchy reference	HIERARCHY_NAME	Referential Integrity
LFK	Missing level reference for time, item, equipment and user dimensions	LEVEL_FK	Referential Integrity
MCT	Missing Material Consumed Transaction reference	WO_MAT_TXN_PK_KEY	Referential Integrity
MLC	Missing MTH lookup code	N/A	Referential Integrity
MPT	Missing Material Produced Transaction reference	WO_COMP_PK_KEY	Referential Integrity
MTL	Missing material reference	MATERIAL_FK	Referential Integrity
PFK	Missing parent reference for time, item, equipment and user dimensions	PARENT_FK	Referential Integrity
PLT	Missing plant reference	PLANT_FK	Referential Integrity

Error Code	Description	Reference Physical Column	Error Type
RES	Missing resource reference	RESOURCE_FK	Referential Integrity
SEG	Missing segment reference	SEGMENT_FK	Referential Integrity
SPR	Invalid scrap reason code or no scrap quantity	QTY_SCRAP, SCRAP_REASON_CODE	Referential Integrity
SSG	Missing sub segment reference	SUB_SEGMENT_FK_KEY	Referential Integrity
UD1	Missing User Dimension Key1	USER_DIM1_FK	Referential Integrity
UD2	Missing User Dimension Key2	USER_DIM2_FK	Referential Integrity
UD3	Missing User Dimension Key3	USER_DIM3_FK	Referential Integrity
UD4	Missing User Dimension Key4	USER_DIM4_FK	Referential Integrity
UD5	Missing User Dimension Key5	USER_DIM5_FK	Referential Integrity
WDS	Missing workday shift reference	SHIFT_WORKDAY_FK	Referential Integrity
WKO	Missing work order reference	WORKORDER_FK	Referential Integrity
ENT	Missing Equipment dimension Entity reference or user dimension entity reference	ENTITY_FK	Referential Integrity

Error Code	Description	Reference Physical Column	Error Type
MPT	Missing Material Produced Transaction reference	WO_COMP_PK_KEY	Referential Integrity
ETC	Missing Event Type Code reference in the FND_LOOKUPS	EVENT_TYPE_CODE	Referential Integrity
RCS	Missing Reason code reference in the MTH_EQUIPMENT_REASON_SETUP table	REASON_CODE	Referential Integrity
ATC	Missing Action Type Code reference in the FND_LOOKUPS	ACTION_TYPE_CODE	Referential Integrity
PER	Missing Personnel reference	PERSON_FK	Referential Integrity
AHC	Missing Action Handler Code reference in the FND_LOOKUPS	ACTION_HANDLER_CODE	Referential Integrity
DOM	Missing Domain Name reference in the FND_LOOKUPS	DOMAIN_NAME	Referential Integrity
ERT	Wrong Reason Type in MTH_EQUIPMENT_REASON_SETUP table	REASON_TYPE	Wrong Data
EUT	Expected uptime for Scrap Reason in MTH_EQUIPMENT_REASON_SETUP table	EXPECTED_UP_TIME	Wrong Data

Error Code	Description	Reference Physical Column	Error Type
NTN	Personnel reference or Email notification or Mobile notification is missing for the NOTIFICATION event action.	NOTIFICATION	Wrong Data
LVN	ENTITY_TYPE is not equal with LEVEL_NAME	LEVEL_NAME	Wrong Data
NOL	Number_of_level is wrong	Number_of_level	Wrong Data
DIM	DIMENSION_NAME is null	DIMENSION_NAME	Referential Integrity
HIE	HIERARCHY_NAME is nul	HIERARCHY_NAME	Referential Integrity
EFD	Effective date is wrong	Effective_date	Wrong Data
SYS	System pk key is null	System_pk	Referential Integrity
BFC	BUSI_FUNC_CODE is wrong	BUSI_FUNC	Referential Integrity
MRV	MAX_RESET_VALU E is null	MAX_RESET_VALU E	Wrong Data
RED	READING_TYPE_CO DE is null	READING_TYPE	Referential Integrity
SRC	tag_data_source_name is wrong	tag_data_source_name	Referential Integrity
DTE	To_date is less than from date	To_date, from_date	Wrong Data
SFT	shift_fk is wrong	shift_fk	Referential Integrity

Error Code	Description	Reference Physical Column	Error Type
STS	STATUS_CODE is wrong	STATUS	Referential Integrity
PDT	Production type is wrong	production type	Referential Integrity
ENC	ENT_TYPE_CODE is null	ENT_TYPE	Referential Integrity
TAT	TAG_TYPE_CODE IS NULL	TAG_TYPE	Referential Integrity
DAT	DATA_TYPE_CODE is null	DATA_TYPE	Referential Integrity
ORT	ORDER_TYPE_CODE is null	ORDER_TYPE	Referential Integrity
GRA	GRAVEYARD_CODE is wrong	GRAVEYARD	Referential Integrity
INI	INITIAL_VALUE is wrong	INITIAL_VALUE	Wrong Data
IEN	Inactive Entities	STATUS	STATUS not in ACTIVE
POU	Period of usage not present in 445 calendar	PERIOD_OF_USAGE	Referential Integrity
EET	Entity Reference Missing	ENTITY_FK+ENTITY – TYPE	Referential Integrity
IDS	TAG_TYPE in tag data source is not correct or missing data source	TAG_TYPE	Missing data source or incorrect data

Error Code	Description	Reference Physical Column	Error Type
NGV	Value in TAG_VALUE or USAGE_VALUE is negative	TAG_VALUE / USAGE VALUE	Negative value
OTR	Usage value is out of range defined for a cumulative tag.	TAG_VALUE	Data out of range
OTO	Readings are out of order	TAG_VALUE	Data out of order
MIM	There is no meter associated with the tag	N/A	Missing associated meter for the meter tag
WFQ	Wrong frequency number	FREQUENCY_IN_MINUTES	Wrong frequency number
NFQ	Frequency is not support for OPERATION tag type	FREQUENCY_IN_MINUTES	Frequency not supported
USI	Not required setting for incremental tags, including INITIAL_VALUE, MAX_RESET_VALUE, ORDER_TYPE_CODE, and READING_TYPE_CODE	N/A	Wrong data

Error Code	Description	Reference Physical Column	Error Type
WSC	Wrong setting for cumulative tags including missing or wrong INITIAL_VALUE, missing or wrong MAX_RESET_VALUE, missing ORDER_TYPE_CODE, or un-needed FREQUENCY_IN_MINUTE	N/A	Wrong data
CRI	Wrong Equipment Criticality	EQUIPMENT_CRITICALITY	Wrong Data
DTC	For Alphanumeric data type tags setting of READING_TYPE, ORDER_TYPE or MAX_RESET_VALUE	N/A	Wrong data
MET	Meter Reference Missing	METER_FK	Referential Integrity
FMT	Null From date	FROM_DATE	Wrong data
TOT	Null To date	TO_DATE	Wrong data
USG	Null Usage Value	USAGE_VALUE	Wrong data
OLP	Overlap Time	TO_DATE, FROM_DATE	Wrong data
AVF	Invalid AVAILABILITY_FLAG	AVAILABILITY_FLAG	Wrong data
RSN	Provided REASON for availability of entity shift	REASON	Wrong data

Error Code	Description	Reference Physical Column	Error Type
RCD	Wrong REASON for unavailability of entity shift	REASON	Wrong data

The following list shows the error tables provided in MOC:

Table Name	Description of Error Table
MTH_DIM_HIERARCHY_ERR	Error table for MTH_DIM_HIERARCHY
MTH_DIM_LEVEL_LOOKUP_ERR	Dimension level lookup entity
MTH_ENTITY_PLANNED_USAGE_ERR	Error table for MTH_ENTITY_PLANNED_USAGE
MTH_EQUIPMENTS_ERR	Equipment entity
MTH_EQUIP_ENTITIES_ERR	Error table for MTH_EQUIP_ENTITIES_MST
MTH_EQUIP_HIERARCHY_ERR	Equipment hierarchy entity
MTH_EQUIPMENT_SHIFTS_ERR	Error table for MTH_EQUIPMENT_SHIFTS_D
MTH_EQUIP_OUTPUT_ERR	Equipment output fact
MTH_EQUIP_PROD_PERFORMANCE_ERR	Equipment production performance fact
MTH_EQUIP_PROD_SCHEDULE_ERR	Equipment production schedule entity
MTH_EQUIP_STANDARD_RATES_ERR	Equipment standard rates entity
MTH_EQUIP_STATUSES_ERR	Equipment status fact
MTH_EXT_ATTR_ERR	Extensible attributes fact
MTH_ITEMS_ERR	Item dimension
MTH_ITEM_COST_ERR	Item cost fact

Table Name	Description of Error Table
MTH_ITEM_HIERARCHY_ERR	Item hierarchy table
MTH_METER_READINGS_ERR	Error table for MTH_METER_READINGS
MTH_MTL_CONSUMED_TXN_LOT_ERR	Material consumed transaction lot fact
MTH_MTL_PRODUCED_TXN_LOT_ERR	Material produced transaction lot fact
MTH_PERIOD_ERR	Period entity
MTH_PERSONNEL_ERR	Personnel resource entity
MTH_PRODUCTION_SCHEDULES_ERR	Production schedule fact
MTH_PRODUCTION_SEGMENTS_ERR	Production segment entity
MTH_PROD_MTL_CONSUMED_ERR	Production material consumed fact
MTH_PROD_MTL_CONSUMED_TXN_ERR	Production material consumed transaction fact
MTH_PROD_MTL_PRODUCED_ERR	Production material produced fact
MTH_PROD_MTL_PRODUCED_TXN_ERR	Production material produced transaction fact
MTH_PROD_SEGMENTS_TXN_ERR	Production segment transaction fact
MTH_PROD_SUB_SEGMENTS_ERR	Production sub-segment entity
MTH_QUARTER_ERR	Quarter entity
MTH_RESOURCES_ERR	Resource entity
MTH_RESOURCE_COST_ERR	Resource cost fact
MTH_RESOURCE_REQUIREMENTS_ERR	Resource requirement fact
MTH_RESOURCE_TXN_ERR	Resource transaction fact
MTH_RUNTIME_ERR	Stores errors happened during run time

Table Name	Description of Error Table
MTH_TAG_DATA_SOURCES_ERR	Error table for MTH_TAG_DATA_SOURCES
MTH_TAG_MASTER_ERR	Error table for MTH_TAG_MASTER
MTH_TAG_READINGS_ERR	Error table for tag readings table
MTH_TAG_READINGS_RAW_ERR	Tag readings raw table
MTH_TAG_READINGS_STG_ERR	Tag readings staging table
MTH_TAG_READINGS_UNPROCESS_ERR	Error table for MTH_TAG_READINGS_RAW
MTH_TIME_HIERARCHY_ERR	Time hierarchy entity
MTH_USER_DIM_ENTITIES_ERR	User dimension entities
MTH_USER_DIM_HIERARCHY_ERR	User defined dimension hierarchy entity
MTH_WEEK_ERR	Week entity
MTH_WORKDAY_SHIFTS_ERR	Workday shift entity
MTH_WO_SALES_ORDERS_ERR	Sales orders fact
MTH_YEAR_ERR	Year entity

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.

OWB or Oracle Warehouse Builder

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.

Index

A

- Adding Reason Codes, 3-9
- Ad hoc Reports, 9-1
 - Multiple Entities, 9-2
 - Single Entity, 9-1
- Ad hoc Reports
 - Compare Periods, 9-2
- Asset Performance (OEE)
 - Plant Manager Dashboard, 6-5
- Asset Performance (OEE) by Equipment, 6-7
- attribute groups, 3-22
- Attributes, 3-22
 - attribute pages, 3-25

B

- Batch Performance, 6-26
- Batch Performance Detail, 6-28
- Business Intelligence , 5-1

C

- Catalog
 - dimensions, 5-21
 - KPIs, 5-21
 - overview, 5-1
 - using the catalog, 5-21
- Classifications, 3-17
 - viewing, 3-19
- Concurrent Program
 - MTH: Process and Populate MOC Entity
 - Sustainability Aspect, 3-6
- Contextualization

- batch update, 3-6
- setup page, 3-6

E

- eAM Integration
 - overview, 8-1
- Entities
 - associated attribute information, 3-22
 - shop floor, 3-19
- Equipment Contextualization Setup page, 3-6
- Equipment Downtime Analysis, 6-10
- Equipment Downtime Reason, 4-4
- Equipment Downtime Reasons, 6-11
- Equipment Efficiency Analysis, 6-16
- Equipment Efficiency Detail, 6-18
- Equipment Reason Codes
 - setting up, 3-11
- Equipment Scrap Analysis, 6-13
- Equipment Scrap Reason, 4-4
- Equipment Scrap Reasons, 6-15
- Error records, B-1
- Events
 - setting up, 3-14
- Extensible Attributes Workbench
 - associating attributes to entities, 3-17

F

- Facilities Manager, 7-1
 - Building Page, 7-11
 - Equipment Hourly Detail Page, 7-24
 - Floor Page, 7-15
 - Floor Section Page, 7-19

- Site Page, 7-7
- Summary Page, 7-2
- Facilities Manager Dashboard
 - Overview, 7-1
- Facility Manager
 - Equipment Hourly Summary Page, 7-21

I

- instances, 1-4
- interface, 5-1

K

- KPIs
 - catalog, 5-1

M

- Manual Contextualization
 - user role, 4-2
- Meters
 - data entry, 4-6

N

- Navigation paths, A-1

O

- Overview, 7-1
 - Administrator role , 3-1
 - MOC Catalog, 5-1
 - overview of Oracle Manufacturing Operations Center, 1-1
 - Plant Manager Dashboard, 6-2
- Overview of the Facilities Manager Dashboard, 7-1
- Overview of the Plant Manager Dashboard, 6-2

P

- Plant Manager
 - Sustainability Performance by Equipment Hourly Detail, 6-39
- Plant Manager
 - Sustainability Performance by Equipment , 6-36
 - Sustainability Performance by Equipment Hourly Summary, 6-37

- Plant Manager Dashboard
 - asset performance (OEE), 6-5
 - Asset Performance (OEE) by Equipment, 6-7
 - Batch Performance, 6-26
 - Batch Performance Detail, 6-28
 - Equipment Downtime Analysis, 6-10
 - Equipment Downtime Reasons, 6-11
 - Equipment Efficiency Analysis, 6-16
 - Equipment Efficiency Detail, 6-18
 - Equipment Scrap Analysis, 6-13
 - Equipment Scrap Reasons, 6-15
 - overview, 6-2
 - Production Loss Analysis, 6-19
 - Production Loss Detail, 6-22
 - Production Performance, 6-24
 - Production Slippage Trend, 6-12
 - Sustainability Performance, 6-30
- Production Loss Analysis, 6-19
- Production Loss Detail, 6-22
- Production Performance, 6-24
- Production Slippage Trend, 6-12

R

- Reason Codes
 - adding, 3-9
 - equipment downtime reason, 4-4
 - equipment scrap reason, 4-4

S

- Setup
 - administrator pages, 3-1
 - associating attribute data, 3-22
 - attribute pages, 3-25
 - attributes, 3-17
 - equipment contextualization, 3-6
 - equipment reason codes, 3-11
 - events, 3-14
 - role tasks, 2-1
 - steps, 2-1
 - tags, 3-2
- Shop floor entities, 3-19
- Sustainability Performance by Department, 6-30
- Sustainability Performance by Equipment , 6-36
- Sustainability Performance by Equipment Hourly Detail, 6-39
- Sustainability Performance by Equipment

Hourly Summary, 6-37

T

Tags

- Mapping, 3-5

- setup, 3-2

- Tag Setup page, 3-2

Tag Setup page, 3-2

U

User Role

- manual contextualization, 4-2

- overview, 4-1

- viewing extensible attributes data, 4-5

V

Viewing

- entity classifications, 3-19

Viewing Extensible Attributes Data, 4-5

