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Oracle Enterprise Manager 12c

What has Changed?

What is New?

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Oracle Enterprise Manager 12c What has Changed? What is New?



Speaker Introduction

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- Background includes Performance Tuning, High Availability and Disaster Recovery
- Using Oracle for approximately 17 years
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Anyone Currently Using Oracle Enterprise Manager 12c?

Thoughts?
Experiences?
Likes?
Dislikes?



Outline

- Oracle Enterprise Manager Overview
- What has changed/improved in OEM 12c
- What is new for OEM 12c



Oracle Enterprise Manager Overview

- Centralized Monitoring, administration and Lifecycle Management
 - Oracle and Non-Oracle Technologies
 - IBM Websphere
 - MS SQL Server
 - Juniper Networks NetScreen Firewall
 - Etc.
 - Complete IT Infrastructure
- Oracle Enterprise Manager has been rebranded from Grid Control to Cloud Control



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Oracle Enterprise Manager 12c Overview

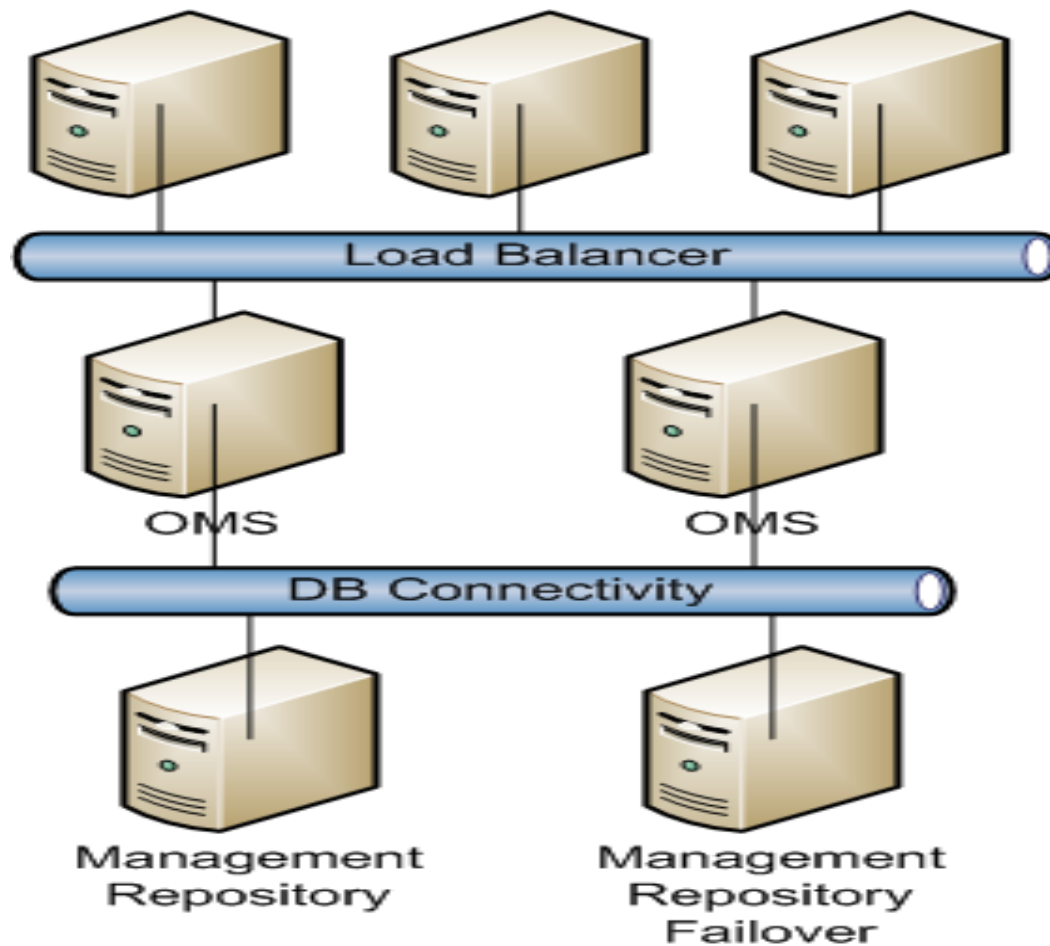


Oracle Enterprise Manager Overview

- Components
 - Oracle Management Agent
 - Oracle Management Service
 - Oracle Management Plug-ins
 - Enterprise Manager Cloud Console
 - Oracle Database for Management Repository



OEM HA Architecture





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What has Changed/Improved in OEM 12c



What Changed/Improved?

- Interface Changes/Improvements
- Management Features all Plug-ins
- Management Agent Improvements
- Improved My Oracle Support Integration
- Reporting Enhancements
- Data Masking Improvements
- Other Improvements

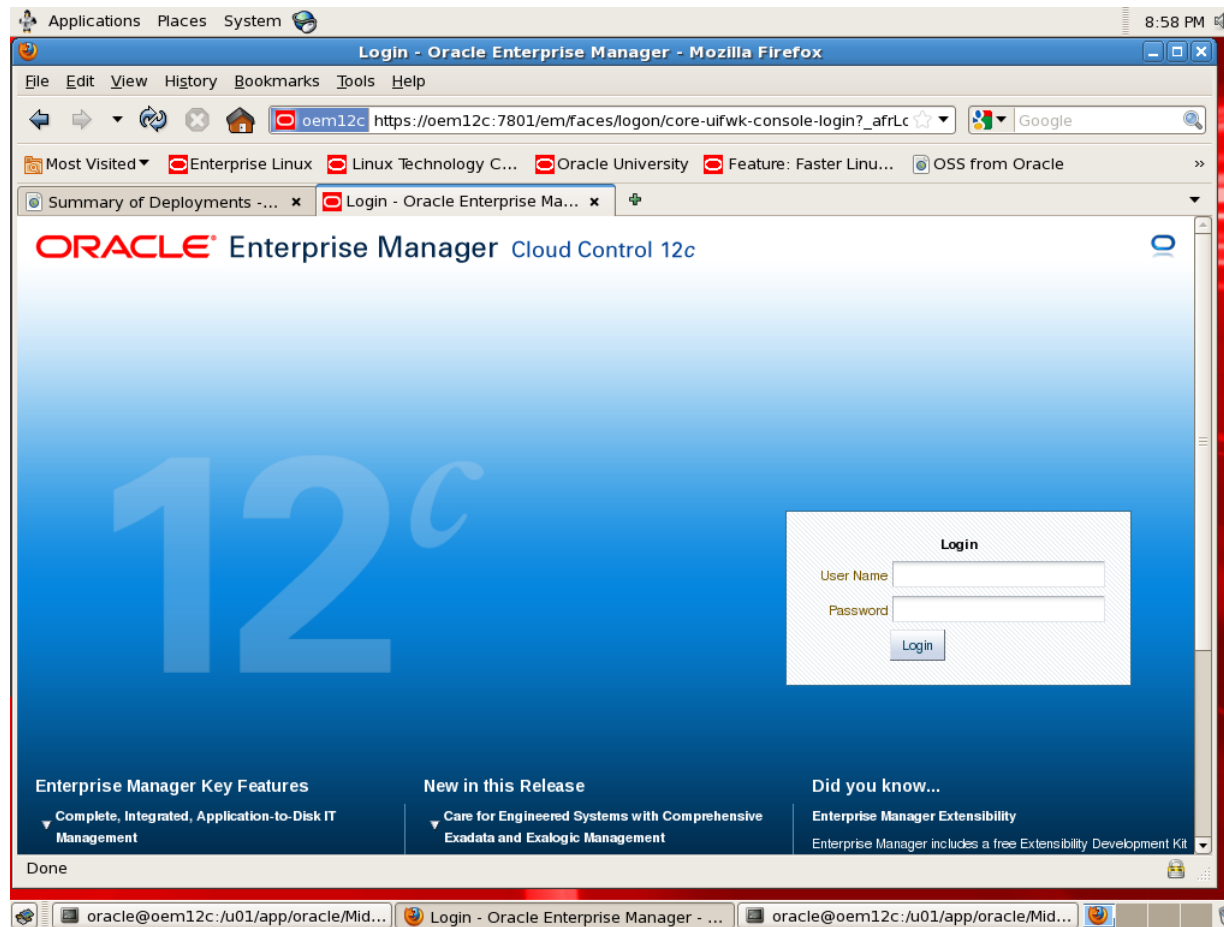


Interface Changes/Improvements

- New Login Page
- Selectable Console Home Page
- Global Search Improvements
- New Favorites Menu
- New Target Selector Dialog



OEM Login Screen





Interface Changes

- Customizable/Personalization Target Home Pages
 - Weblogic Server
 - Host
 - Database
- Can Customize regions on a page
- Add regions
- Control data displayed within a region
- Includes a set of pre-defined home page layouts



Selectable/Customizable Home

Select Enterprise Manager Home

Information
[Learn about the new user interface](#)

You can choose your preferred home page (viewed immediately after login and always accessible by clicking on the "Enterprise Manager" link in the top left corner) from one of the following options. If these options do not match your job profile or role, then using Setup > My Preferences you can make any other page in Enterprise Manager as your home page.

| Option | Description | Best for | Preview | Select As My Home |
|-----------------------|---|--|---------|-------------------|
| Summary | The summary page provides a complete and consolidated view of all targets monitored by Enterprise Manager and any critical events across those targets. | EM Administrators | | |
| Incidents | The Incident Manager helps users track, diagnose and resolve issues identified across targets by Enterprise Manager. | on-call IT Operations personnel | | |
| Middleware | Monitor and manage all Fusion Middleware targets and non-Oracle middleware in your environment from this page. | Weblogic and Middleware Administrators | | |
| Databases | Monitor any or every database instance or RAC database right on your homepage. Spot-check the load, memory consumption and any issues related to the target and initiate tuning processes with one click. | Database Administrator | | |
| SOA | An enterprise level view for all the SOA targets featuring Alerts, Policy Violations, and critical metrics. Instantly review details of SOA Composites, BPEL Processes, OSB Services and Web Services. | SOA Architect | | |
| Composite Application | An enterprise-wide view of the health, performance and availability of Composite Applications. It provides list of all Composite Applications created with their... | | | |



Selectable/Customizable Home

- Can Select / Customize you Home Screen
 - Preference
 - Job Role
 - Job Function
- Summary
- Database
- Middleware
- Incidents
- Etc.



Global Search Improvements

Enterprise Summary - Oracle Enterprise Manager - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://oem12c:7801/em/faces/sdk/nonFacesWrapper?_em.coBM=/console/mos/noflash&_afwLoop=5817708886748. lockwave Flash firefox linux

Most Visited Enterprise Linux Linux Technolog... Oracle University Feature: Faster Li... OSS from Oracle ULN: Login Dist. sources E-Delivery: Enter...

Oracle WebLogic Server Administ... Enterprise Summary - Oracle Ent...

ORACLE Enterprise Manager Cloud Control 12c Setup Help SYSMAN Log Out

Enterprise Targets Favorites History

Enterprise Summary

Overview View All Targets

Targets Monitored 28

Status

Targets with Status 19

100% Up (19)

Incidents

Open 2

| Category | Down | Up | Warning | Flag |
|--------------|------|----|---------|------|
| Availability | - | - | - | - |
| Performance | - | - | - | - |
| Security | - | - | - | - |
| Others | - | 2 | - | - |

Problems

Open 1

Without Service Request 1

Jobs

Inventory and Usage

Show Hosts See Details

View Platform

Enterprise Linux Server release 5.6 (Carthage)

Search Target Name

- Target Name
- Knowledge Base
- Knowledge Base Archives
- Bug Database
- Communities
- Documentation
- Sun System Handbook
- All Knowledge

Compliance Summary

Compliance Frameworks Compliance Standards

View View Trends

| Name | Target Evaluations | Violations | Average Compliance Score (%) |
|--------------------|--------------------|------------|------------------------------|
| No data to display | | | |

Least Compliant Targets

View View Trends

| Target Name | Target Type | Standard Evaluations | Violations | Average Compliance Score (%) |
|--------------------|-------------|----------------------|------------|------------------------------|
| No data to display | | | | |

Service Requests

https://oem12c:7801/em/faces/sdk/nonFacesWrapper?_em.coBM=/console/mos/noflash&_afwLoop=5817708886748&_afwWindowMode=0&_afwWindowId=yxabqyoes_6#



Global Search Improvements

- Can Search for Any Target right from the home screen.
- Search also can search knowledgebase, Bug Database and Community from My Oracle Support, goes along with improve My Oracle Support integration.
- Can also search Documentation
- Can Search Sun System handbook



New Favorites Menu

Databases - Oracle Enterprise Manager - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://oem12c:7801/em/faces/sdk/nonFacesWrapper?_em.coBM=/console/mos/noflash&_afLoop=5817708886748. iockwave Flash firefox linux

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Oracle WebLogic Server Administr... Databases - Oracle Enterprise M...

ORACLE Enterprise Manager Cloud Control 12c Setup Help SYSMAN Log Out

Enterprise Targets Favorites History Search Sun System Handbook Advanced Compression

Page Refreshed Dec 21, 2011 2:41:11 PM EST

Databases
View Oracle Load Map
Search

Configure Remove Add

Remove Page from Favorites
Manage Favorites...
Summary
Bug - My Oracle Support
Enterprise Manager Pages
Service Request - My Oracle Support

All Targets
Databases

| Select | Name | Status | Incidents | Compliance Violations | Average Compliance score | Version | Sessions: CPU | Sessions: I/O | Sessions: Other | Instance CPU (%) |
|----------------------------------|--------|--------|-----------|-----------------------|--------------------------|------------|---------------|---------------|-----------------|------------------|
| <input checked="" type="radio"/> | OEMREP | | | 0 0 0 0 | - | 11.2.0.1.0 | 0.01 | 0 | 0.01 | 1.4 |

TIP For an explanation of the icons and symbols used in this page, see the [Icon Key](#).

Related Links

| | | |
|-----------------------------|---------------------|--------------------------|
| Customize Table Columns | Data Comparisons | Data Masking Definitions |
| Data Masking Format Library | Recovery Catalogs | Run SQL |
| Schema Baselines | Schema Change Plans | Schema Comparisons |
| Schema Synchronizations | | |

Done



New Favorites Menu

- Create a List of favorite screens/locations in OEM 12c
- Much like favorite lists in your Web Browser.
- Makes navigation to you most used OEM 12c screens easier.
- Favorites are placed into predefined folders/categories.
 - Bug – My Oracle Support
 - Enterprise Manager Pages
 - Service Requests – My Oracle Support



Management Features for Oracle Products Now provided by Plug-ins

- In OEM 12c All Management Features provided by Plug-ins
 - Database
 - Fusion Middleware
 - Fusion Applications
 - Exadata
- Managed by new “pluggable” framework
 - Allows plug-in updates for new versions without waiting for next version of OEM



Management Agent Improvements

- Improved diagnosis capabilities for Agents
 - Warnings to Agent Issues
 - Facilitate the monitoring and management of OEM itself.
- Support Workbench Support
- Distributed Diagnostic Patching
- Diagnostics Kit Integration
- Admin Management Agents as a Group
- Monitoring of Cloud Control component services such as jobs and notifications



Improved Oracle Support Integration

My Oracle Support - Oracle Enterprise Manager - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://oem12c:7801/em/faces/sdk/nonFacesWrapper?_em.coBM=/console/mos/noflash&_afrLoop=581770: iockwave Flash firefox linux

Most Visited Enterprise Linux Linux Technolog... Oracle University Feature: Faster Li... OSS from Oracle ULN: Login Dist. sources E-Delivery: Enter...

Oracle WebLogic Server Administr... My Oracle Support - Oracle Enter...

ORACLE Enterprise Manager Cloud Control 12c Setup Help SYSMAN Log Out

Enterprise Targets Favorites History Search Target Name

My Oracle Support

Service Requests Home Create SR

Welcome, Mike Last refreshed 0 minutes ago Customize Page... FAQ

Open Service Requests by Severity

| | |
|----------------|----|
| Severity One | 1 |
| Severity Two | 8 |
| Severity Three | 11 |
| Severity Four | 2 |

Open Service Requests by Status

Service Requests

Filters: Technical SRs Only ☐ SRs Created by Me ☐ Include Closed SRs

Create SR Actions SR Number

| Problem Summary | SR ... | Sev... | Co... | Status | Last Upd... | Serial N... | Asset Na... |
|--|---------|--------|-------|----------|-------------|-------------|-------------|
| Question on RAC Cluster Setup | 3-50... | ☆ | 3 | Mike... | Today | | |
| spinoff Slow performance when runn... | 3-4... | ☆ | 2 | Lesli... | Today | | |
| XDB installation failed with ORA-3... | 3-4... | ☆ | 3 | Jose... | Today | | |
| SYSAUX Tablespace growth | 3-50... | ☆ | 3 | Chri... | Today | | |
| database slow down nothing cha... | 3-4... | ☆ | 4 | Jose... | Today | | |
| Spin-Off from SR 3-5052809351 | 3-50... | ☆ | 3 | Laur... | Today | | |
| Post Active Dataguard setup, log appl... | 3-4... | ☆ | 1 | He... | Today | | |
| U:Cannot configure database in ... | 3-4... | ☆ | 2 | Paul... | Today | | |
| ORA-03114 using dbca | 3-50... | ☆ | 3 | Laur... | Today | | |
| A!Need patch for AIX on BUG 9294110 | 3-50... | ☆ | 3 | He... | Today | | |

"Contact Us" Service Requests

Filters: "Contact Us" SRs Only ☐ SRs Created by Me ☐ Include Closed SRs

Create "Contact Us" SR Actions SR Number

| Problem Summary | SR Nu... | Se... | Contact | Status | Last Up... | Serial ... | Asset N... |
|-----------------|----------|-------|---------|--------|------------|------------|------------|
|-----------------|----------|-------|---------|--------|------------|------------|------------|

Transferring data from oem12c...



Improved Oracle Support Integration

- Service Requests
 - Create
 - Monitor
 - Update
 - Relate to configuration in OEM
- View Patch Recommendations
 - Identify missing patches
 - Patch Recommendations



Reporting Enhancements

- Integration with Oracle Business Intelligence (BI) Publisher.
 - Highly Formatted Documents
 - Customer Reporting Applications
 - Reports Designed using known Desktop Products



Database

- Auto Discovery of Targets
- Oracle Exadata Server Management Enhancements
 - Automatically Discover Exadata Targets
 - Simplify performance diagnostics
- Backup Restore Enhancements
 - Centrally Manage Database and file system backups
 - Uniform settings for database and file system backups.



Database

- Emergency Performance
 - allows a DBA to diagnose and troubleshoot a hung or extremely slow database using the memory access mode
- Compare Period Advisor
 - analyzes changes in performance, workload, configuration, and hardware and will highlight any changes found between the two provided time periods



Data Masking Improvements

- Able to be reversed
 - In OEM 12c Data Masking is based on a regular expression provided creating the ability for the masking to be reversed.
- Integrated with Real Application Testing.
 - Real Application Testing Replay of production in a non-production environment when non-production environment employs Data Masking
- Application Data Model Support
 - containing sensitive column and data relationships for data masking
 - know which columns contain sensitive information



Other Improvements/Changes

- Template Integration
 - Template Collections
 - Monitoring Templates
 - Compliance Standards
 - Streamlined process applying templates and compliance standards to targets and groups
- Blackout Enhancements
 - Consolidated Blackout Information Summary in region of the target home page.
- ASM Clusters as a Target
 - allow the management of a ASM cluster as a single target.



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What is New in OEM 12c



What is New

- Metric Extensions
- Access
- Database
- Cloud Policies
- Compliance Management and Reporting
- Consolidation Planner
- Incident Manager
- Charge Back Administration



What are Metric Extensions?

- Similar to User Defined Metrics in prior Oracle Enterprise Manager Releases
 - Extend Monitoring Capabilities
 - Custom Metrics with custom threshold
 - Allow full fledged metrics for many target types
 - Hosts, Databases, Fusion Applications, Oracle Exadata Databases and Storage Servers, Siebel Components, OBIEE Components



How Do Metric Extensions Differ from User-defined Metrics?

- User-defined metrics (UDM) collect values through executing OS scripts or SQL statements. This imposed several limitations:
 - UDM - Custom scripts/other files required file(s) be manually placed on each target's file system.
 - OS user-defined metrics cannot have child objects of servers by returning multiple rows, only for SQL user-defined metrics.
 - User-defined metrics collect multiple data pieces using multiple user-defined metrics. Cannot to refer to 2 data points from 2 metrics for alert generation as data is collected separately.
 - User-defined metrics only use the OS script and SQL execution, metric extensions can use protocols such as SNMP and JMX.
 - Only user defined metrics for host targets and SQL for database targets. No other target types allowed such as Weblogic.



Access

- Enforced Security for Web Services
 - Username/Token-based Authentication for Accessing Web Services within OEM
- Bulk Provisioning/De-provisioning of External Accounts
 - LDAP users can be provisioned in bulk to the Management Repository
 - De-provision accounts no longer needed.
- LDAP Authentication
- Kerberos and Secure Socket Layer Authentication (SSL)



Access

- Fine Grained Privileges
 - 200 new granular privileges to control access
 - Targets
 - Objects
 - Resources
 - New Out of the Box Roles
- Administration Groups
 - Manage Many Targets as a Single Entity
 - Automatic Deployments of Monitor Settings and Compliance Standard settings across all targets in a group.



Database

- Database Creation in Enterprise Manager
 - Wizard to create Oracle Database from within OEM
 - Single Instance and RAC Cluster Database
- Database Upgrade in Enterprise Manager
 - Single Instance and RAC Cluster
 - Upgrades from a Single Console
- Database Cloning
 - enhanced to capture configuration properties



Database

- Automatic Storage Management (ASM) Clusters as a Target
 - Manage ASM Clusters as a single target
 - Metric Monitoring for the cluster
- Emergency Troubleshoot
 - Diagnose and troubleshoot hung or really slow database using memory access mode.
 - Bypasses the SQL information retrieval Layer
 - Read Performance Statistics directly from the SGA



Database

- You can now use Enterprise Manager Cloud Control to centrally maintain settings for Oracle database and file system backups.



Cloud Policies

- Policies are in a sense the rules under which actions are taken to correct things under defined situations.
- Can define your own policies or use pre-defined policies
- Can not update Pre-defined Policies
- 2 types of policies
 - Performance
 - based on performance metrics of a target
 - Schedule Based
 - based on a defined schedule



Cloud Policies

- Can be created in a hierarchy where a policy at a higher level inherits the properties of the policy at the lower level
- Policy Levels
 - data center inherits zone level
 - zone level inherits server pools and server level
 - server pools and servers level



Compliance Management and Reporting

- Standard best practices measured for targets
- Business best practices for security, configuration and storage
- Make recommendations for bringing the targets into compliance
- Has database configuration data to be managed within the framework
- allows for industry standard compliance such as PCI, PCI Requirement 10, PCI 10.5, etc
- Compliance report a score based on how compliant target is to the compliance standard



Consolidation Planner

- An increase in floor space, power, cooling and management drives consolidation
- Organizations realize that in a lot of cases the servers are really only partially utilized
- Allows the matching of servers you want to consolidate with virtual environments or Exadata they can be consolidated to
- Leverages data collected from server targets and factors business and technical requirements to help determine the consolidation options



Incident Manager

The screenshot displays the Oracle Enterprise Manager web console in Mozilla Firefox. The browser address bar shows the URL: `https://oem12c:7801/em/faces/core-event-console?_afzLoop=7173213427450`. The page title is "Incident Manager: All open incidents". A table lists incidents, with one incident highlighted: "Count of targets not uploading exceeded the critical threshold (0). Current value: 1". The incident details are expanded, showing the following information:

- ID:** 22
- Metric:** Count of targets not uploading data
- Target:** oem12c:3872 (Agent)
- Incident Created:** Nov 30, 2011 1:44:03 AM EST
- Last Updated:** Nov 30, 2011 1:44:03 AM EST
- Summary:** Count of targets not uploading exceeded the critical threshold (0). Current value: 1
- Internal Event Name:** Targets_not_uploading:count
- Event Type:** Metric Alert

The interface also includes a left-hand navigation pane with options like "Standard", "My open incidents and problems", "Unassigned incidents", "Unacknowledged incidents", "Escalated incidents", "All open incidents", "Unassigned problems", "All open problems", "Events without incidents", and "Custom". A status bar at the bottom indicates "Transferring data from oem12c..." and shows the user's session information.



Incident Manager

- Show incidents/problems
- Track and Manage Incidents/problems
 - Escalate
 - Assign
 - Comments
 - Acknowledge
- See Incident/problem Details



Charge Back Administration

- collects the metrics (metering if you will) of resource consumption based on configuration or usage basis.
- ability to put metrics in place that allow the measurements of resource usage
- gives us data that can be utilized as a resource planning tool



Charge Back Administration

- 3 universal metrics of consumption
 - CPU
 - Memory
 - Storage
- Key resources have a cost tied to them for example \$1 per day of CPU, \$1 per GB of storage utilized, \$2 per day of Memory consumed.
- Universal metrics can be applied to all types of targets such as a database, a WebLogic Server, etc.



Charge Back Administration

- $\text{Cost} = \text{Resource Used} * \text{Charge per unit of resource}$
- Example
 - 100G database using 10G of RAM and 2 CPUs at 25%
 - $\text{Storage Cost} = 100\text{G} * 1$
 - $\text{CPU Cost} = (\$1 * 2\text{cpus}) * .25 \text{ percent used}$
 - $\text{Total Cost} = \text{Storage Cost} + \text{Ram Cost} + \text{CPU Cost}$



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Questions?

