Oracle Enterprise Manager 12c

IBM DB2 Database Plug-in

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Safe Harbor Statement

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Heterogeneous Datacenter Management
Oracle's Philosophy

- Productize our deep understanding of the Oracle stack to provide integrated management

- Provide generic Oracle solutions for managing non-Oracle technology
  - User Experience Management, Middleware Management, Business Transaction Management, Testing & Test Data Management , …

- Incent and promote others to provide optimized management for non-Oracle technology

- Provide product extensibility wherever possible (today's focus: Plug-Ins)

Enterprise Manager 12c Heterogeneous Management

Making The Complex Simple In Three Steps

1. Use or create **plug-ins** using Enterprise Ready Extensible Framework

2. Leverage common functions through plug-ins
   - Performance & Availability Monitoring
   - Configuration Management
   - Compliance Management
   - Job System
   - Alerting & Notifications
   - Custom UI
   - Reporting

3. Manage like any other target

Event and Service Desk Connectors

Oracle Plug-ins

Third Party Plug-ins

RESOLVE DEVELOP TEST DEPLOY OPERATE MONITOR DIAGNOSE

Applications
Middleware
Database
Operating System
Virtual Machine
Servers
Storage

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IBM DB2 Plug-in
Revamped for Better Performance Analysis and Monitoring

NEW

New features

- New Performance page
- Enabled more Metric Thresholds
- 3 Out-of-the-Box Monitoring templates
- Migrated Information Publisher Reports to Business Intelligence Publisher Reports and more!

IBM DB2 Plug-in 12.1.0.4.0

Benefits

Apply Enterprise Manager management and monitoring to your IBM DB2 workloads.

✓ **Comprehensive Monitoring**
- Availability, Performance Metrics
- Alerts, Blackouts
- Templates
- Groups/ Systems

✓ **Configuration Analysis**
- Detailed configuration collection
- View/Save/Compare Configurations

✓ **Reporting**

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IBM DB2 Plug-in

Features

- IBM DB2 as EM Managed Target

- Comprehensive collection of monitoring Metrics (~ 390)
  - Buffer Statistics, Memory Statistics, Cache Statistics
  - Locks, Processes, Space Usage
  - Users and Roles
  - HADR Cluster performance and status
- Out-of-box thresholds on key metrics
- 19 Out of the box Reports summarize key configuration and performance data

- Comprehensive configuration management
  - Server Configuration, Database Settings, Registry and Security Settings
  - Ability to View, Search and Compare configurations
- Ability to schedule Jobs
- Ability to kill blocking DB2 Applications
- Ability to Start/Stop IBM DB2 Instances
- Quiesce and Unquiesce jobs for DB2 Databases
- Versions supported:
  - IBM DB2 9.1, 9.5, 9.7, 10.1, and 10.5

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New Intuitive UI Dashboards

- Revamped for Better Performance Analysis and Monitoring

- Exposes even more key performance indicators

- Adds additional performance page with advanced investigative capabilities

New IBM DB2 Focused Dashboard Views

- View Database server as well as individual database instance health and availability

- Stop and Start jobs for the database instance and Quiesce and Unquiesce jobs for the monitored Database

- Key health, performance, and availability views

Drill into DB2 Lock Wait and Query Statistics

- View SQL statistics by CPU time and Execution Count

- Break down of Lock Waits by Top Waits by Blocking Application, Top Waits by Blocked Application, Top Waits by Table, and All Waits

Identify Top IBM DB2 SQL Activity

- Identify "Top" SQL queries

- View by CPU Time or Execution Count

- Limit to last Day, Week or Month

Top SQL Statements

CPU Time ▾	● Day ○ Week ○ Month
CPU Time	
Execution Count	

Top SQL Statements

CPU Time ▾   ● Day ○ Week ○ Month

Milliseconds
3000
0

Apr 25, 1:00:00 am   Apr 25, 3:00:00 am   Apr 25, 5:00:00 am   Apr 25, 7:00:00 am   Apr 25, 9:00:00 am   Apr 25, 11:00:00 am   Apr 25, 1:00:00 pm

CPU Time (ms per Hour)	Query
1555	SELECT CAST(stmt_text as varchar(5000)), (TOTAL_EXEC_TIME * 1000000 + TOTAL_EXEC_TIME
888	SELECT T2.db_name, T2.pool_data_l_reads, T2.pool_data_p_reads, T2.pool_index_l_reads, T2.po
0	SELECT app.AGENT_ID, min(app.APPL_NAME), COALESCE(sum(wait.LOCK_WAIT_ELAPSED_TIME
0	SELECT tbl.CREATOR, tbl.NAME, COALESCE(sum(wait.LOCK_WAIT_ELAPSED_TIME), 0) FROM SYS
0	SELECT app.AGENT_ID, min(app.APPL_NAME), COALESCE(sum(wait.LOCK_WAIT_ELAPSED_TIME

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Managing IBM DB2 Applications

- Identify "Top" DB2 lock waits by Blocking Application, Blocked Application, Table, and All Waits

- Kill troublesome blocking DB2 applications from within the UI

Lock Waits

All Waits ▼   Kill Application

Lock Name	Lock Type	Schema	Locked Table	Duration Waiting (s)	Application Reque...	User Requesting ...	Application Holdin...	User Holding Lock
0002000600000000002€	ROW	DB2INST1	EMPLOYEE	30.00	db2bp	DB2INST1	db2bp	DB2INST1

View Historical Key Performance Indicators
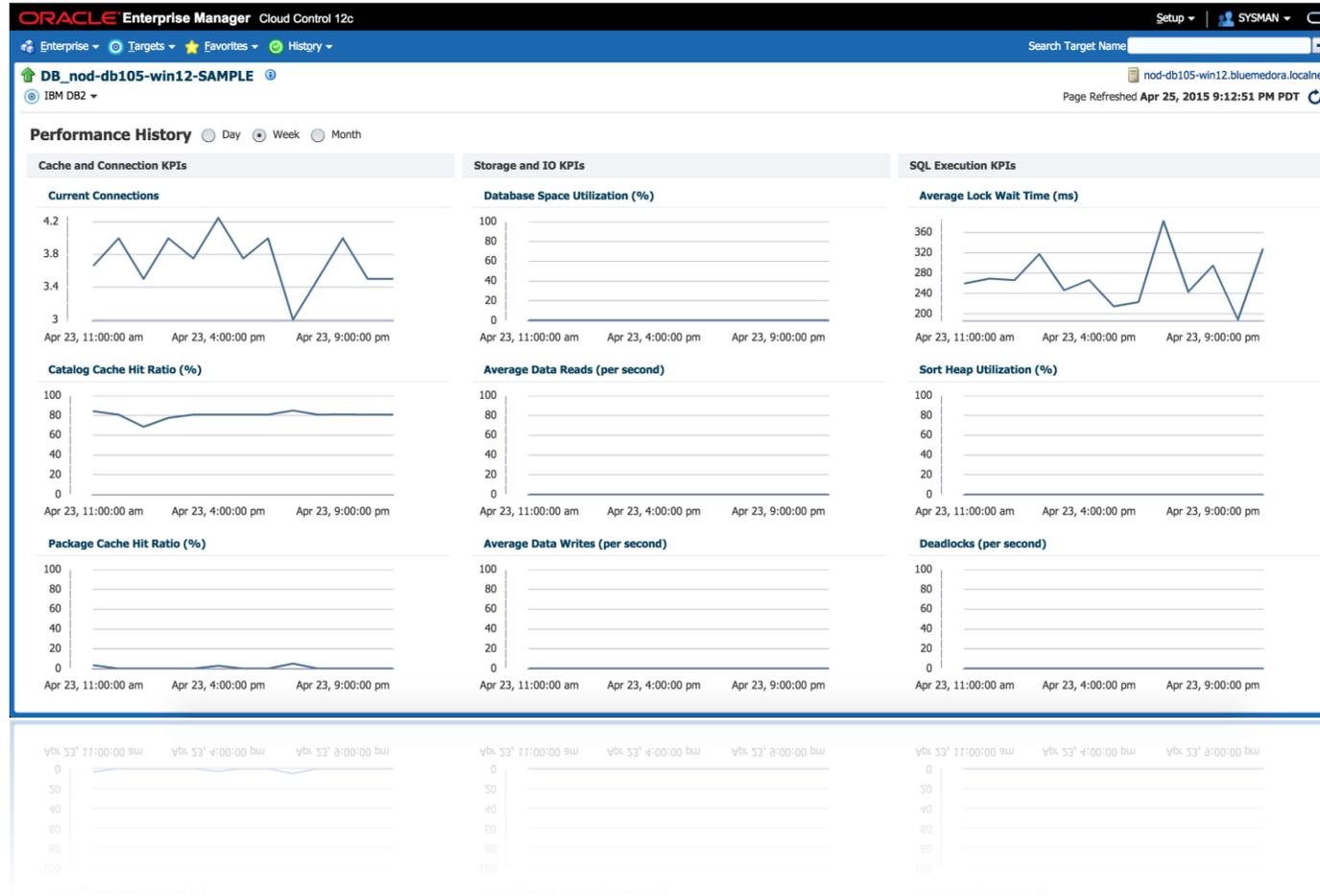
- Cache and Connection KPIs

- Storage and IO KPIs

- SQL Execution KPIs

- View the performance history by Day, Week, or Month

Inventory and Usage Details
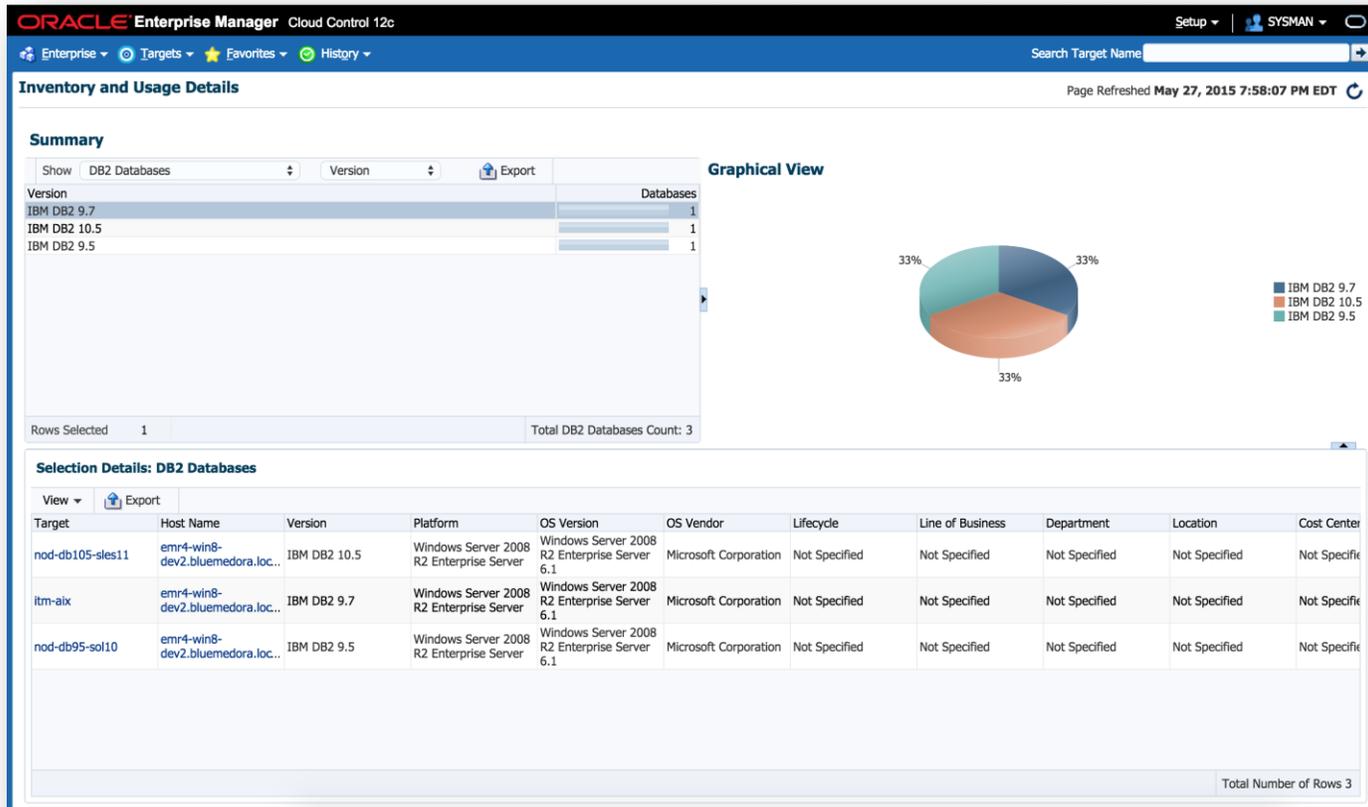
- Drill down multiple levels of inventory details

- View different trends in inventory counts charted

Metrics

Hundreds of performance and configuration metrics available for incident thresholds, reports, analysis and comparison.

Drill Down Into Individual IBM DB2 Statistics

- Drill into hundreds of IBM DB2 metrics

- View associated alerts for particular metrics

- Choose to view the metric in real-time or customized historical views

Comprehensive IBM DB2 Metric Thresholds

IBM DB2 Monitoring Templates

- Apply a subset of collection settings to multiple targets

- Standardize monitoring across your enterprise

Heterogeneous System Topology

Enterprise Manager helps you meet the challenges of managing the heterogeneous enterprise

- **Comprehensive, top-down visibility into your infrastructure**

- **Rapid, accurate diagnosis & resolution of complex problems**

Incident Manager For IBM DB2 Plug-In

Metric Extensions

Missing a metric your team depends on?

Do you want to integrate custom scripts?

Use Oracle Enterprise Manager's Metric Extension capabilities to easily expand and customize the IBM DB2 solution with a convenient UI-based development workflow.

Latest Configuration of IBM DB2

- DB2 version and fix pack level

- Platform and OS details

- Relevant DB2 registry settings

- DB Manager Configuration details

Compare IBM DB2 Configurations

Reports

Comprehensive out-of-the-box reports

Includes 19 IBM DB2 reports including reports focused on:

- Performance Monitoring

- Configuration

- Storage
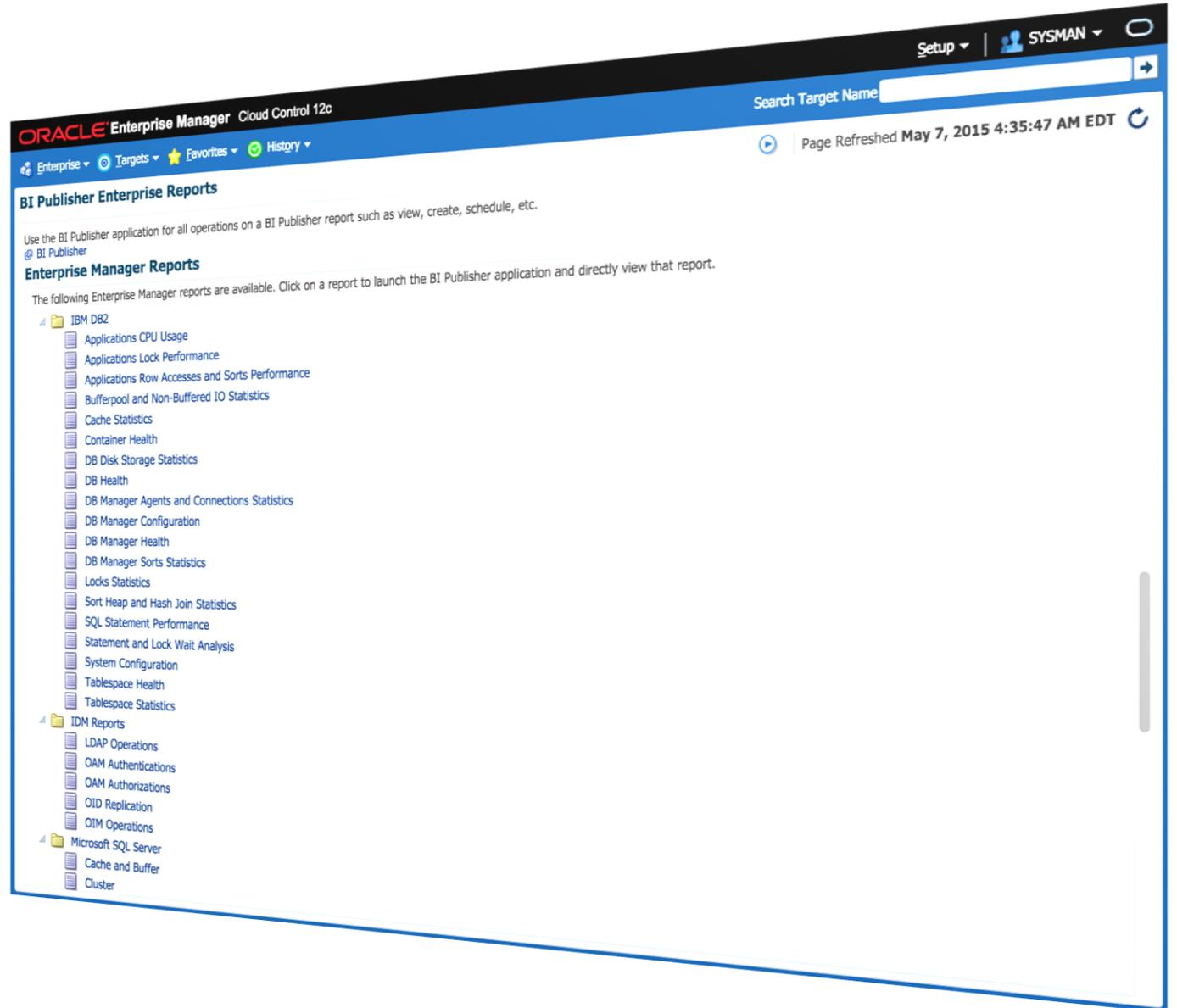
Reports
Performance

- In-depth performance reports

- View the SQL query statements consuming the most resources or taking the longest to execute

ORACLE **BI Publisher Enterprise**   Search All   Administration | Help ∨ | Sign Out

Applications Lock Performance   Home | Catalog | New ∨ | Open ∨ | Signed In As sysman ∨

Target Name nod-db105-sles11   Apply

Applications Lock Perfo...

Applications Lock Performance
This page shows the data related to IBM DB2 Database Applications Lock Performance.
Top 10 Applications Based on Average Lock Wait Time (ms)

Agent Id	SQL Statement	Application Name	Average Lock Wait Time (ms)	Locks Held	Lock Timeouts
5683		db2fw1	0	0	0
5684		db2fw0	0	0	0
5687		db2lused	0	0	0
5705		db2pcsd	0	0	0
5697		db2wlmd	0	0	0
5699		db2stmm	0	0	0
5703		OEM Plug-in	0	2	0
5692		db2taskd	0	0	0

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Reports
Configuration

- In-depth configuration reports

- Reports for database and system configuration

- At-a-glance comparison of key database configuration values

Reports
Storage

- Schedule a report to identify databases storage utilization

- Identify file growth and location
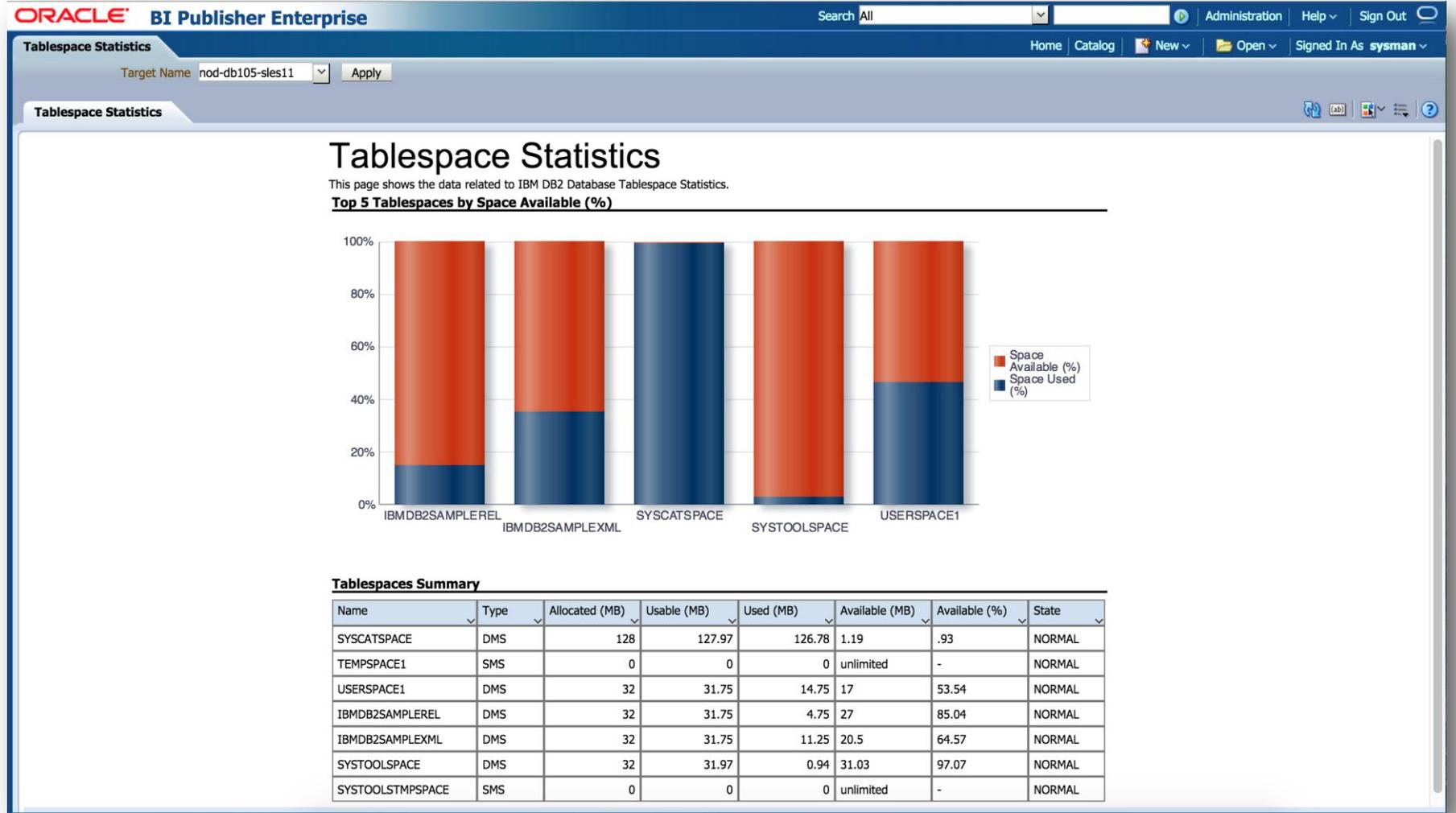
Plug-ins: Where do you get them?

Self Update: Oracle Provided Content

- Self Update
- Download the IBM DB2 plug-in directly from Self Update
- Delivers new features and updates
- Single console to search, download and manage target plug-ins
- Proactive notification for Oracle supplied updates if running in connected mode
- Supports Online & Offline modes
- Allows import of non-Oracle entities

Plug-in Updates

Actions ▾	⬇ Download	🗐 Apply	🔗 Plug-in	🗔	Search Description		→

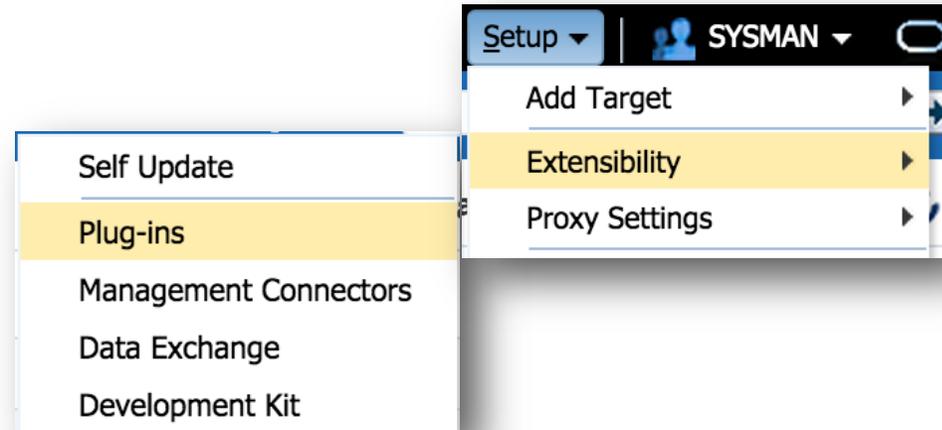| Status	OS Platform	Plug-in Name	Rev	Version	Vendor
Applied	Generic Platform	Microsoft SQLServ...	0	12.1.0.6.0	ORACLE
Available	Generic Platform	Oracle Secure Glo...	0	12.1.0.1.0	ORACLE
Available	Generic Platform	MySQL Database	0	12.1.0.2.0	ORACLE
Applied	Generic Platform	Sybase ASE Datab...	0	12.1.0.4.0	ORACLE
Applied	Generic Platform	IBM DB2 Database	0	12.1.0.4.0	ORACLE
Available	Generic Platform	Oracle Database A...	0	12.1.0.1.0	ORACLE

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Plug-In Manager

Single window Solution for all (Un)Deployment

- Integrated with Self Update

- Plug-ins must be deployed to OMS before agents

- Download, Deploy and Upgrade Plug-Ins across OMS and agent

- Option to resume the plug-in deployment. It will start from failed step.

For More Information…

- The IBM DB2 Plug-in is listed in the **Oracle Technology Global Price List** under: System Monitoring Plug-in for Non Oracle Databases

- The **Oracle Global Price List** can be found at: http://www.oracle.com/us/corporate/pricing/technology-price-list-070617.pdf

- Latest IBM DB2 Plug-in documentation for installation, troubleshooting and monitoring metric reference: http://docs.oracle.com/cd/E24628_01/install.121/e25215/toc.htm