

 accenture

 ODTUG  
Oracle Developer & Technology User Group

# Oracle Enterprise Manager EM24ai

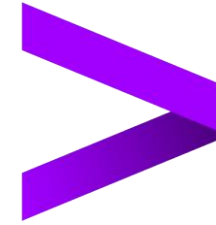
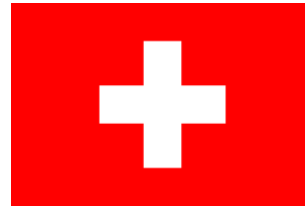
Oracle Enterprise Manager 24ai - Be the Patchinator!

Martin Berger

**Accenture** Technology

# Martin Berger

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Oracle ACE  
Pro



Database Platforms - Data Eng, Mgmt & Governance Mgr

Kestenholz / Jurasüdfuss / Schweiz

2 Junior-DBAs (11 & 13)

Firefighter 2<sup>nd</sup> in command

E-Biker / Running-Beginner

Cloud Enthusiast



[martinberger.bsky.social](https://martinberger.bsky.social)



[www.martinberger.swiss](http://www.martinberger.swiss)

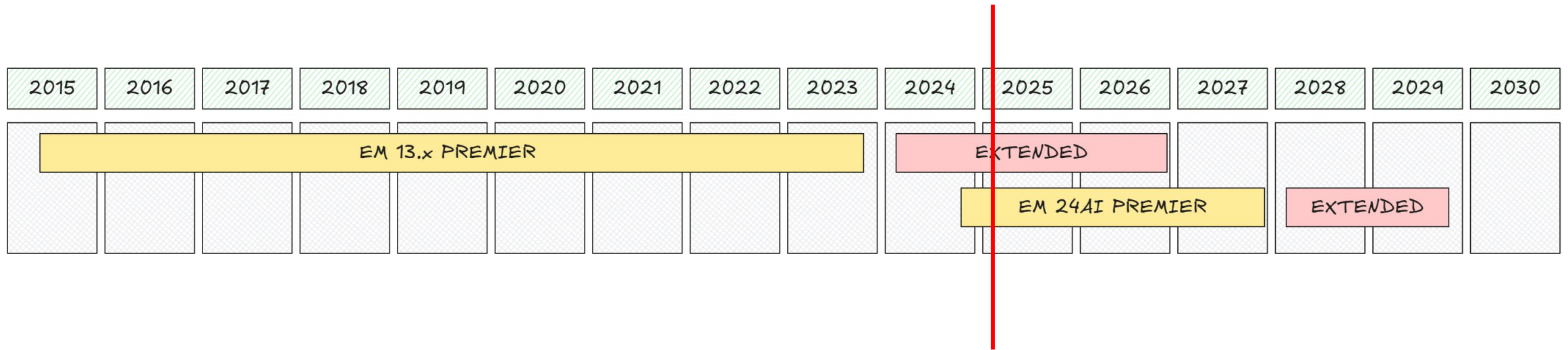


# Agenda

- 01** Basics
- 02** OMS RU
- 03** OMS Holistic
- 04** Agent
- 05** Misc

# Basics

# Lifetime Support Policy

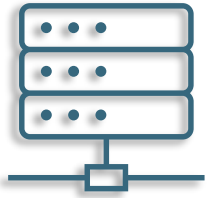


## Primary Note for Enterprise Manager Certification and Lifetime Support Policy (Doc PNEWS2124)

- 13.5: Long term waived extended support till Dec 2026
- 24: Premier support till end of Dec 2027 and extended support till end of Dec 2029
- Sustaining is in state Indefinite



# Enterprise Manager Main Components



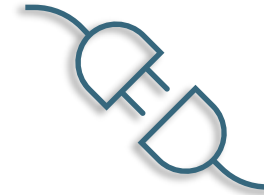
Oracle Management  
Server



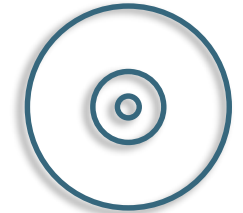
Repository  
Database



Agent

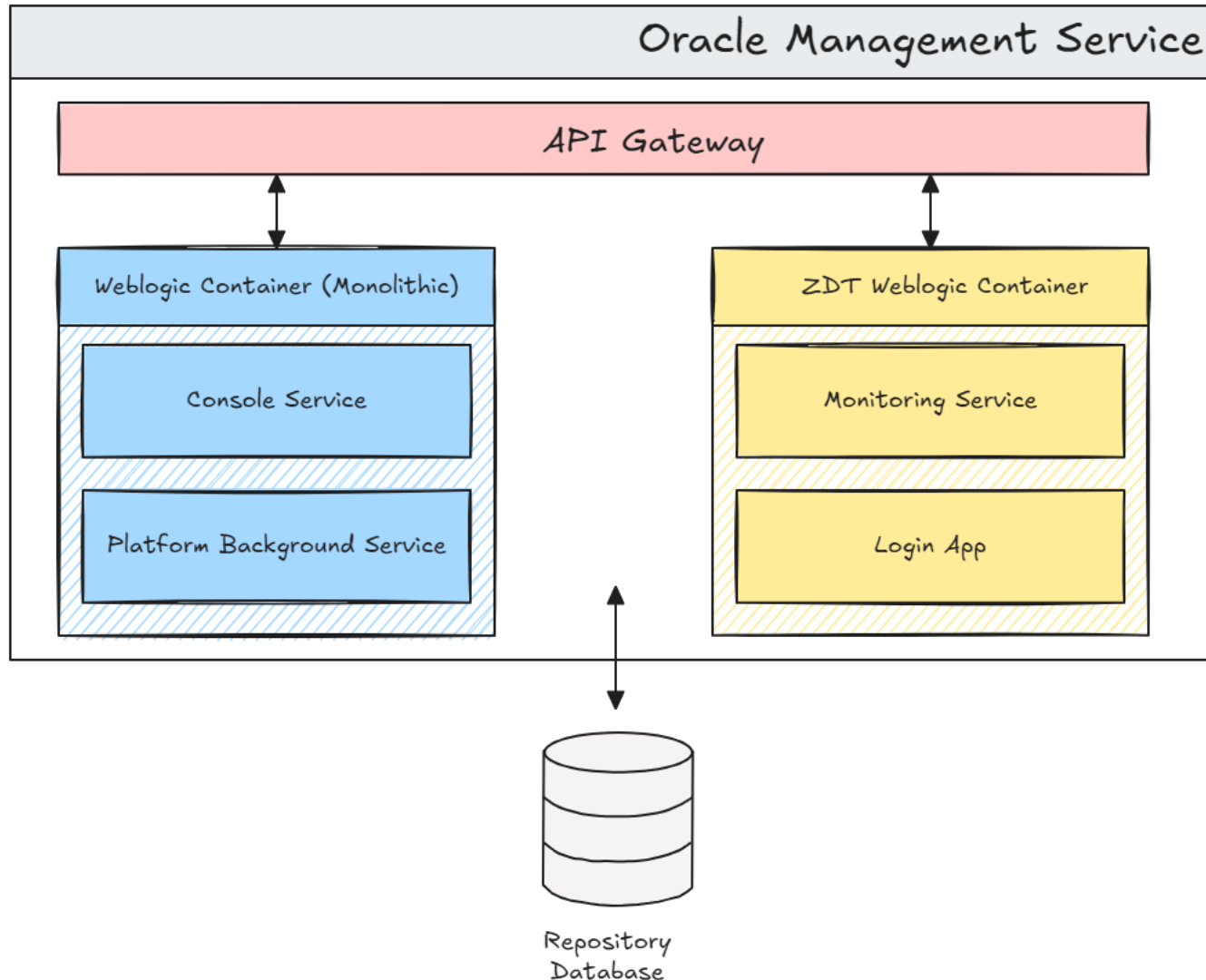


Plug-Ins



Operating System

# ZDT OMS - Architecture



## Two Containers

- Traditional WebLogic container
- ZDT WebLogic container for uninterrupted monitoring

## API Gateway

- Single entry point for UI traffic, API calls, Agent upload

# Under the Hood – A new Weblogic Domain

The screenshot displays the Oracle WebLogic Server Administration Console. The top navigation bar includes 'Home', 'Log Out', 'Preferences', 'Record', and 'Help'. A red warning message states: 'Security warnings detected. Click here to view the report and recommended remedies.' The user is logged in as 'weblogic' and connected to 'EMExtDomain1'. The breadcrumb trail is: Home > Summary of Servers > EMEXT\_OMS1\_ZDT > Summary of Deployments > emlogin(24.1.0.0.0,24.1.0.0.0) > EMExtDomain1 > Summary of Deployments > Summary of Servers > EMExtDomain1 > Summary of Deployments > Summary of Servers.

The main content area is titled 'Summary of Servers' and has two tabs: 'Configuration' (selected) and 'Control'. It contains the following text:

A server is an instance of WebLogic Server that runs in its own Java Virtual Machine (JVM) and has its own configuration.

This page summarizes each server that has been configured in the current WebLogic Server domain.

Below the text is a table with the following data:

Name	Type	Cluster	Machine	State	Health	Listen Port
EMEXT_ADMINSERVER(admin)	Configured			RUNNING	OK	7001
EMEXT_OMS1_ZDT	Configured		EMEXT_MACHINE	RUNNING	OK	7601

The table includes 'New', 'Clone', and 'Delete' buttons above and below it. The page also features a 'Change Center' on the left with 'Lock & Edit' and 'Release Configuration' buttons, a 'Domain Structure' tree, and a 'How do I...' section with links like 'Create Managed Servers' and 'Clone servers'. The system status at the bottom indicates 'Health of Running Servers as of 7:45 PM'.

URL: [https://oms-kestenholz.internal:7016/console/console.portal?\\_nfpb=true&\\_pageLabel=CoreServerServerTablePage](https://oms-kestenholz.internal:7016/console/console.portal?_nfpb=true&_pageLabel=CoreServerServerTablePage)



# ZDT Architecture

```
db* basenv [2026-11-20 11:57:49]
[opc@oms-kestenholz ~]$ sudo su - oracle

TYPE (Cluster|DG) : SID/PROCESS      STATUS      HOME
-----
API Gateway      :                               up          /u01/app/oracle/middleware/ext_oms_home/apigateway
Agent            : emagent24                       up          /u01/app/oracle/agent/agent_inst
WLS admin       : EMEXT_ADMINSERVER up          /u01/app/oracle/middleware/ext_oms_home/wlserver
WLS admin       : EMGC_ADMINSERVER  up          /u01/app/oracle/middleware/oms_home/wlserver
WLS mgmt        : EMEXT_OMS1_ZDT    up          /u01/app/oracle/middleware/ext_oms_home/wlserver
WLS mgmt        : EMGC_OMS1         up          /u01/app/oracle/middleware/oms_home/wlserver
WLS node        : 1                 up          <REDACTED>/user_projects/domains/EMExtDomain1/nodemanager
WLS node        : 1                 up          <REDACTED>/user_projects/domains/GCDomain/nodemanager
```

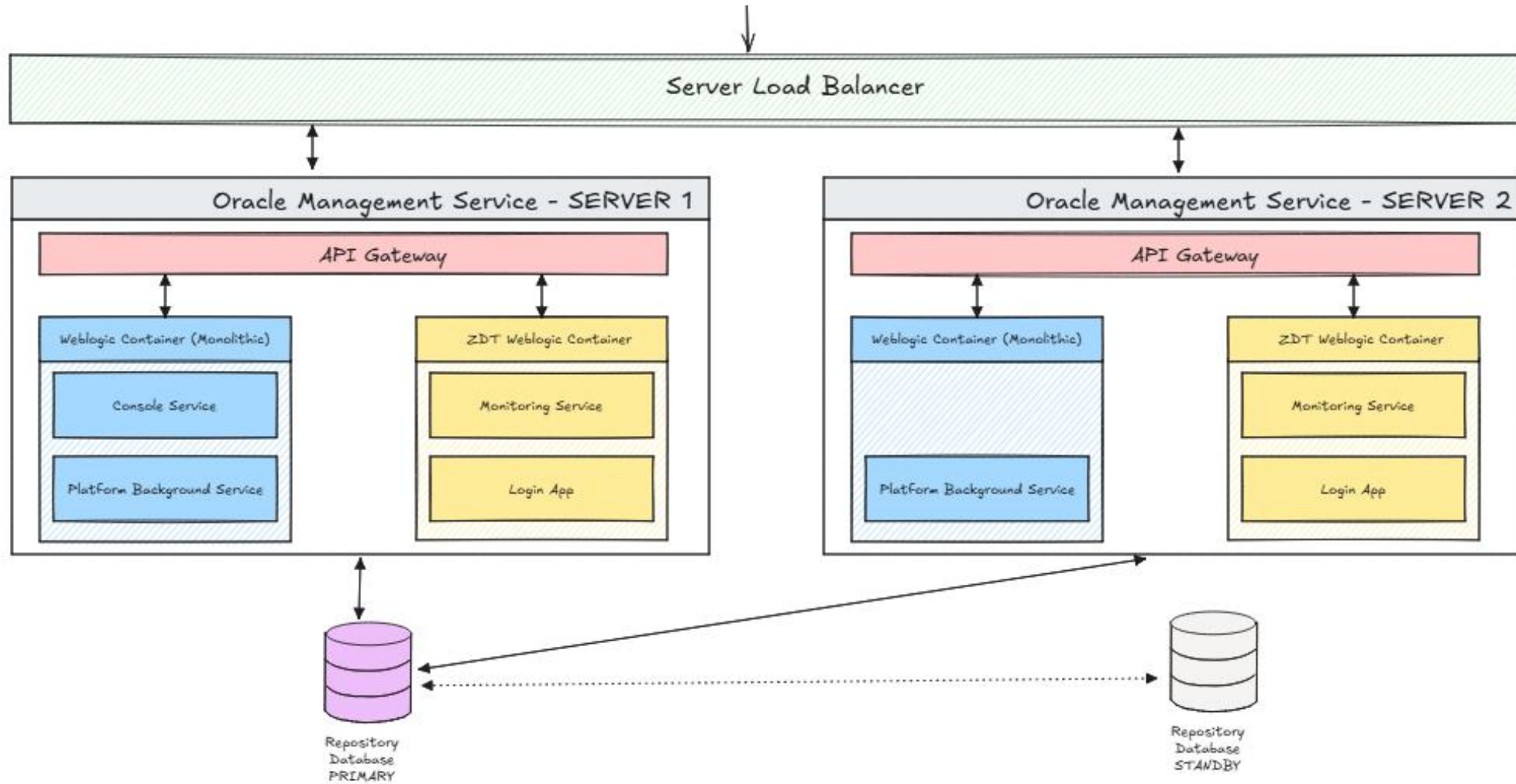


# 24ai - Zero Downtime (ZDT) Architecture

- ZDT Allows applying Enterprise Manager 24ai Release Updates (RUs) while the part of the OMS remains **ONLINE**.
- Ensures continuous monitoring of critical targets during planned maintenance windows and engage **RULES**.
- Uses the **OMSPATCHER** utility to patch the OMS without service interruption.
- Leverages Oracle Database **EDITION-BASED-REDEFINITION** (EBR) to update EM schema components in a separate edition while EM is actively in use.



# EM24ai - Multi OMS - 1 WLS Admin Server only



# How ZDM Works – Patch Host oms-kestenholz

oem_console_back																							
	Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Status	
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis		
oms-kestenholz.internal	0	0	-	0	0		0	0	-	0	0	?	0	0		0		0	0	0	0	4s DOWN	
oms-oensingen.internal	0	0	-	0	0		0	0	-	0	0	?	0	0		0		0	0	0	0	4s UP	
Backend	0	0		0	0		0	0	26 213	0	0	?	0	0	0	0		0	0	0	0	4s UP	

oem_upload_front																							
Frontend	Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Status	
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis		
Frontend				0	0	-	0	0	262 127	0			0	0	0	0	0					OPEN	

oem_upload_back																							
	Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Status	
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis		
oms-kestenholz.internal	0	0	-	0	0		0	0	-	0	0	?	0	0		0		0	0	0	0	3s DOWN	
oms-oensingen.internal	0	0	-	0	0		0	0	-	0	0	?	0	0		0		0	0	0	0	4s UP	
Backend	0	0		0	0		0	0	26 213	0	0	?	0	0	0	0		0	0	0	0	4s UP	



# How ZDM Works – Patch Host oms-oensingen

oem_console_back																							
Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Status		
Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status		
0	0	-	0	57		0	52	-	210	0	1m57s	285 666	2 597 946	0	0	0	0	0	0	0	12m32s UP		
0	0	-	0	0		0	0	-	0	0	?	0	0	0	0	0	0	0	0	0	5m14s DOWN		
0	0		0	57		0	52	26 213	211	0	1m57s	285 666	2 597 946	0	0		0	0	0	0	16m42s UP		

oem_upload_front																							
Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Status		
Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status		
			0	14	-	0	10	262 127	317			1 360 298	690 710	0	0	0					OPEN		

oem_upload_back																							
Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Status		
Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status		
0	0	-	0	7		0	4	-	182	179	2s	1 040 864	445 455	0	0	1	0	3	0	0	12m33s UP		
0	0	-	0	14		0	9	-	138	138	5m24s	319 434	245 255	0	0	0	0	0	0	0	5m14s DOWN		
0	0		0	14		0	9	26 213	317	317	2s	1 360 298	690 710	0	0		1	0	3	0	16m42s UP		

# Which Monitoring Fits Best

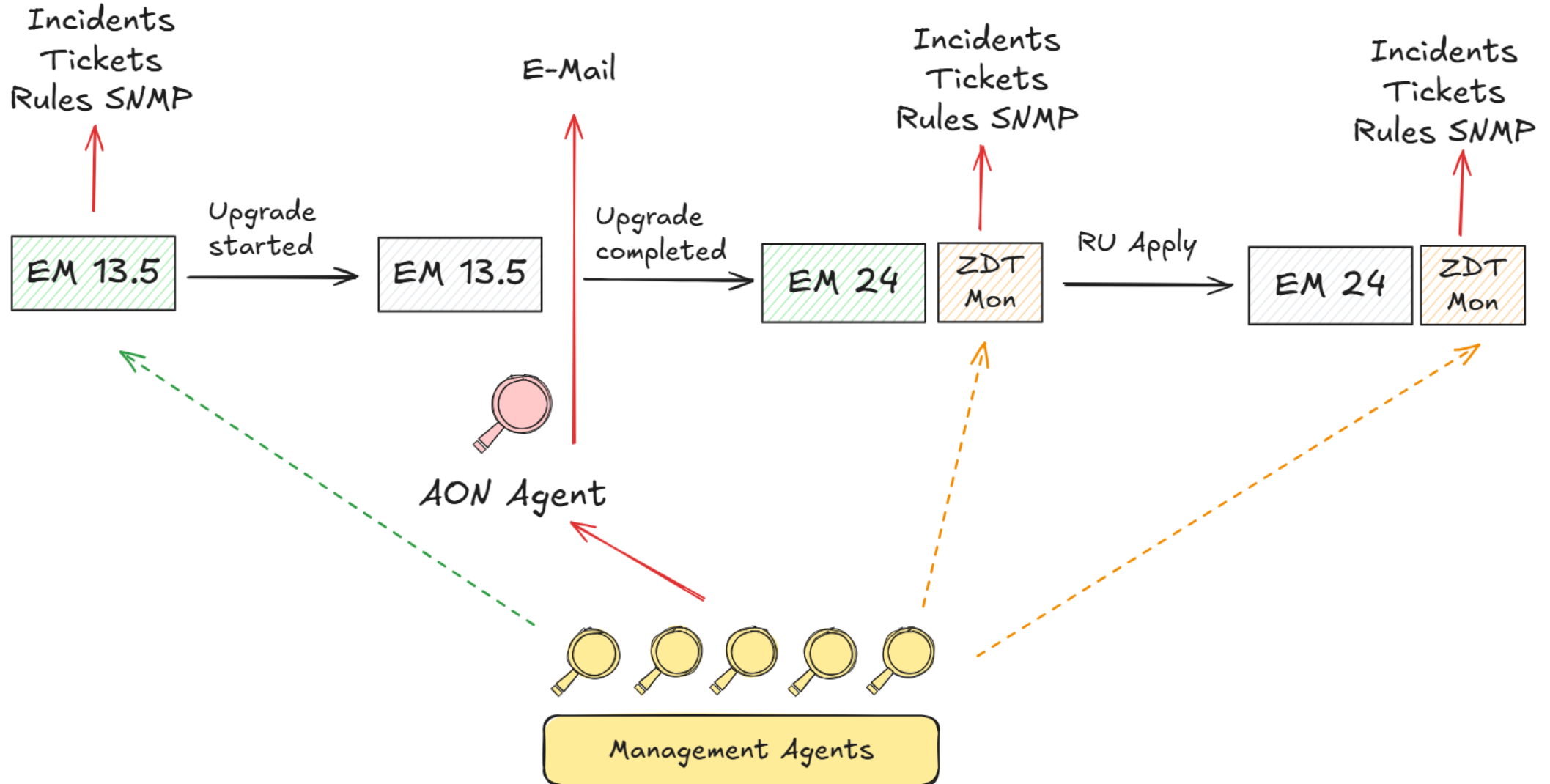
## Always-On (AOM)

- Target availability only
- Email only to Contact
- Separate Repository
- Critical Alerts
- Fits for 13.5 > EM24ai Upgrade

## Zero Downtime (ZDT)

- Honors incident rule sets
- Event compression
- Multiple notification channels
- Ticketing Connectors
- Event Connectors

# Ensure Monitoring during EM24ai Upgrade



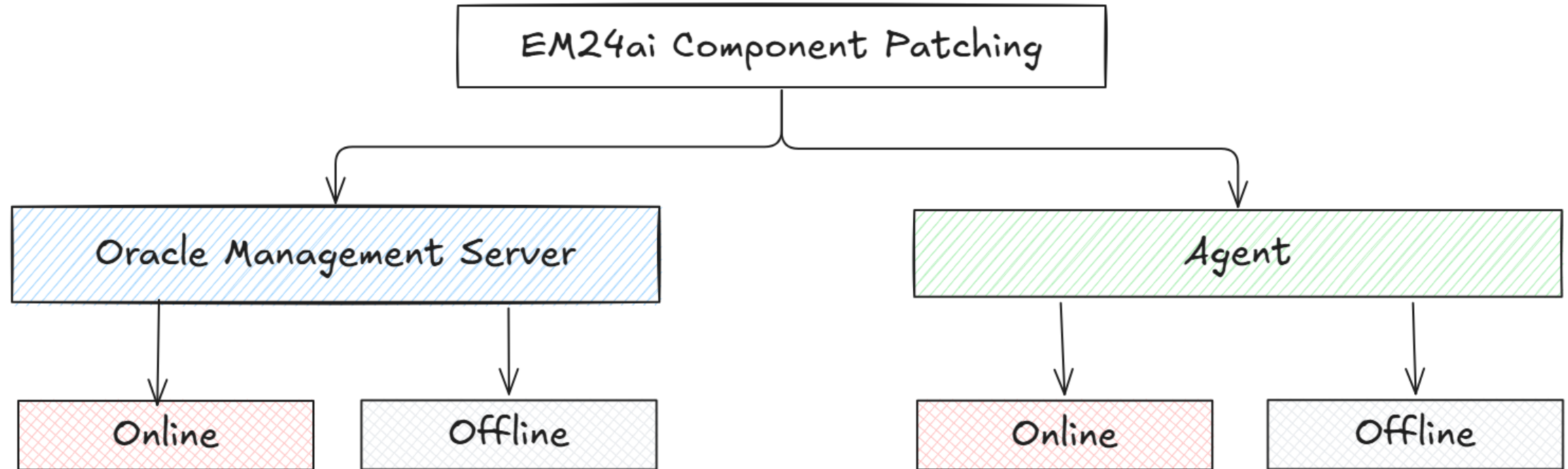
# Backup First

- Repository Database by **RMAN**
- Enterprise Manager by **EMCTL**

## Backup before Patch

```
$ mkdir /u01/app/oracle/admin/em24aioms/backup  
  
$ emctl exportconfig oms -dir  
/u01/app/oracle/admin/em24aioms/backup
```

# Online or Offline



# Online of Offline Mode

## **Online Mode – Internet Connection**

---

- YES:
  - Search and download patches from MOS
  - Access community information, knowledge articles, service requests.

## **Offline Mode – No Internet Connection**

---

- NO:
  - Search and download patches from My Oracle Support.
  - View additional information about the patch.
  - Access community information, knowledge articles, service requests.

### Offline Patching

Go online for optimal usability. Allow Enterprise Manager to connect to My Oracle Support to download patches, get the latest health checks, download self-updates and more. This is a one-way connection and outside services cannot connect to Enterprise Manager. No customer data is sent from Enterprise Manager to Oracle.

Connection  Online  
 Offline



# No Patch for EM 13.5 to latest version when...

- ...you want to upgrade your EM to version 24ai – or: you wait for RU 08

---

## Release Update

## Minimum Upgrade Path to Version 24ai

13.5 RU 29

24ai RU 08 or later

13.5 RU28

24ai RU06 or later

13.5 RU 27

24ai RU 04 or later

13.5 RU 26

24ai RU 02 or later

13.5 RU 25

24ai RU 01 or later

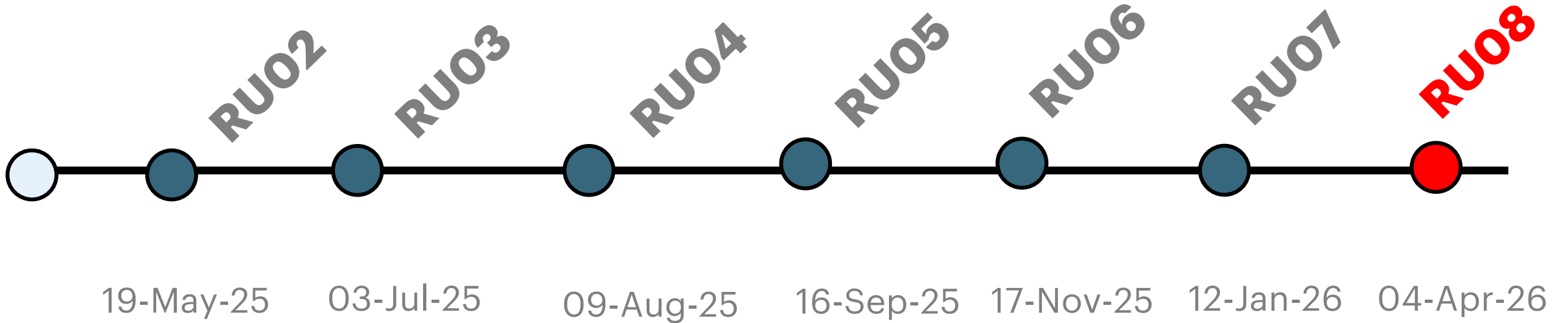
13.5 RU 22 through RU 24

24.1 Base Release or later



# OMS Release Update

# Oracle Management RU Timeline



*Enterprise Manager Cloud Control Updates: List of Available RUs (Release Updates) and PSUs (Patch Set Updates) (Doc KB222111)*

# New Features by Enterprise Manager 24ai Release

<b>RU01</b>	5
<b>RU02</b>	7
<b>RU03</b>	12
<b>RU04</b>	9
<b>RU05</b>	5
<b>RU06</b>	11
<b>RU07</b>	8
<b>RU08</b>	17

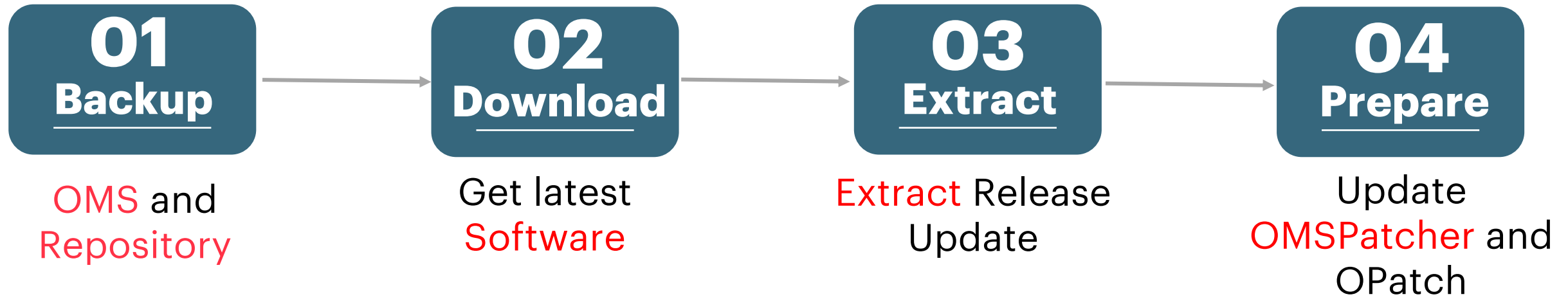


# Enterprise Manager 24ai Main Release Update List (Includes Plug-ins) - KA1271

Latest 24ai OMS Release Update	Version (Release Date)	EM 24ai OMS RU Bug List Note
<p>Patch <a href="#">38532004</a></p> <p>You need to upgrade the omspatcher to the latest version per the instructions in My Oracle Support Note: <a href="#">KB371380</a></p>	<p>RU 07(13-Jan-2026)</p>	<p>- 24ai Enterprise Manager Cloud Control Base Platform Periodic Release Update (RU) 07 Bug List - <a href="#">KB865127</a></p>
Latest 24ai Agent Release Update	Agent RU Version (Release Date)	EM 24ai Agent RU Bug List Note
<p>Patch <a href="#">38532036</a></p> <p>Verify the correct version of agent patcher (See Patch's README)</p>	<p>RU 07(13-Jan-2026)</p>	<p>- Enterprise Manager Cloud Control Management Agent 24ai Release Update (RU) 07 Bug List - <a href="#">KB865136</a></p>



# Oracle Management Server - Preparation



*Always verify the readme document to ensure correct OMSPatcher and OPatch version.*

# Update OMSPatcher - Patch 19999993

- Read the README – Section 2: Prerequisites

## Version anzeigen

```
$ORACLE_HOME/OMSPatcher/omspatcher version  
OMSPatcher Version: 13.9.24.9.0  
OPlan Version: 12.2.0.1.160sysModel build: Tue Apr 28  
18:16:31 PDT 2020  
OMSPatcher succeeded.
```

# Release Update Apply - Traditional versus ZDT

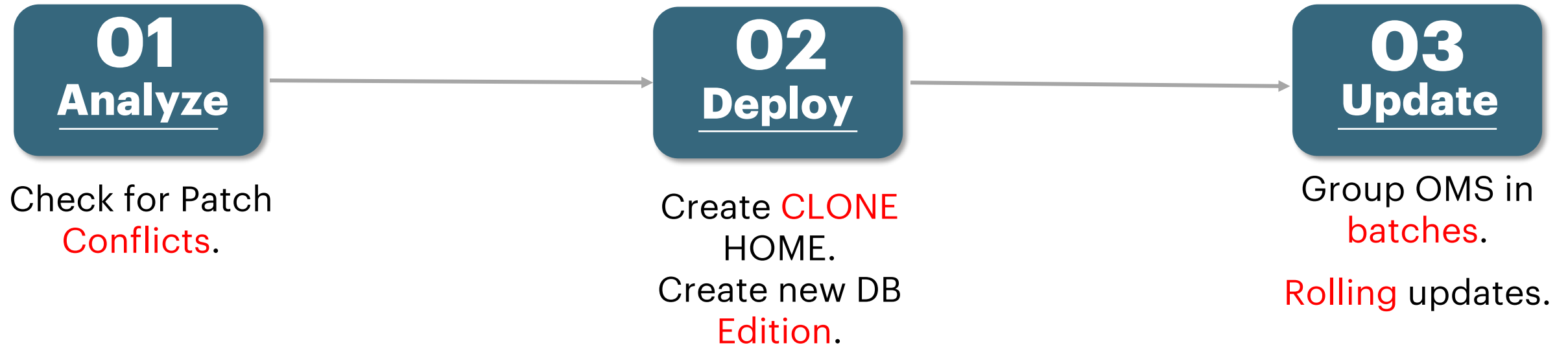
## Traditional

- unzip Patch
- omspatcher apply -analyze
- emctl stop oms
- omspatcher apply

## ZDT

- unzip Patch
- omspatcher deploy -analyze
- omspatcher deploy
- omspatcher update

# Oracle Management Server – Patching ZDT



*Always run OMSPatcher with flag `-analyze` to verify system readiness!*

# Property File 1/2

- OMS automated patching requires the WebLogic Administration Server URL and credentials for patching and configuration detection, as it manages the Managed Server hosting the OMS.
- To avoid re-entering credentials during patching, you can store them in a property file and reuse them with OPatch.

## Step 1 – Create Keys

```
mkdir -p /u01/app/oracle/admin/em24aioms/wlskeys
cd /u01/app/oracle/admin/em24aioms/wlskeys

$ORACLE_HOME/OMSPatcher/wlskeys/createkeys.sh -oh $ORACLE_HOME -
location /u01/app/oracle/admin/em24aioms/wlskeys
```

# Property File 2/2

## Step 2 – Get Information

```
$ $ORACLE_HOME/bin/emctl status oms -details
```

## Step 3 – Create File, add URL

```
$ cat em24aioms.properties
```

```
AdminServerURL=t3s://oms-allinone.internal:7102
```

```
AdminConfigFile=/u01/app/oracle/admin/em24aioms/wlskeys/config
```

```
AdminKeyFile=/u01/app/oracle/admin/em24aioms/wlskeys/key
```

# Patch Command Example

## Set ORACLE\_HOME variable and change to Patch Directory

```
$ export ORACLE_HOME=/u01/app/oracle/middleware/oms_home  
$ cd /u01/app/oracle/stage/38322525
```

## Deploy -analyze

```
$ORACLE_HOME/OMSPatcher/omspatcher deploy -analyze -property_file  
/u01/app/oracle/admin/em24aioms/etc/24ai.properties
```

# OMSPatcher – Status Verification

## EMCLI Method

```
$ $ORACLE_HOME/OMSPatcher/omspatcher status  
OMSPatcher Automation Tool  
Copyright (c) 2024, Oracle Corporation. All rights reserved.
```

<REDACTED>

```
Patch ID: 38532004  
Action: Update  
Deployment Mode: Rapid Platform Update  
Update Status: Successful  
Deploy Status: Completed  
Start Time: Mon Feb 02 14:05:25 CET 2026  
End Time: Mon Feb 02 14:37:43 CET 2026  
Deploy Execution Time: 75 Minutes  
Update Execution Time: 32 Minutes
```

```
OMSPatcher succeeded.
```

# Opatch - Update

## Run Installer

```
cd /u01/app/oracle/stage/oms-ru05 && unzip p28186730_1394221_Generic.zip
```

```
export ORACLE_HOME=/u01/app/oracle/middleware/oms_home
```

```
/u01/app/oracle/middleware/oms_home/OPatch/opatch version
```

```
OPatch Version: 13.9.4.2.17
```

```
OPatch succeeded.
```

```
opatch$ORACLE_HOME/oracle_common/jdk/bin/java -jar
```

```
/u01/app/oracle/stage/6880880/opatch_generic.jar -silent
```

```
oracle_home=$ORACLE_HOME
```

```
/u01/app/oracle/middleware/oms_home/OPatch/opatch version
```

```
OPatch Version: 13.9.4.2.21
```

```
OPatch succeeded.
```



# OMSPatcher – Update

## Copy and Extract

```
$ export ORACLE_HOME=/u01/app/oracle/middleware/oms_home  
  
$ /u01/app/oracle/middleware/oms_home/OMSPatcher/omspatcher version  
OMSPatcher Version: 13.9.24.1.0  
<REDACTED>  
  
$ cd /u01/app/oracle/middleware/oms_home  
$ mv OMSPatcher OMSPatcher_old  
  
$ cp /u01/app/oracle/stage/p19999993_241000_Generic.zip .  
$ unzip p19999993_241000_Generic.zip  
  
$ /u01/app/oracle/middleware/oms_home/OMSPatcher/omspatcher version  
OMSPatcher Version: 13.9.24.8.0  
<REDACTED>
```

# OMS Holistic

# Holistic or Release Update

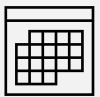
## Holistic



Weblogic, JDK, ADF etc.



No ZDT Support



Quartely released



Minimum RU required

## Release Update



OEM Fixes and Features



ZDT Supported



OMS Core, Agent, Plugins

# Release Update First

Holistic	Release Update
APRIL 2025 Holistic Patch 3770256	RU 01 Patch 37466946
July 2025 Holistic Patch 38194787	RU 03 Patch 37826012
Oct 2025 Holistic Patch 38544618	RU 05 Patch 38155872
Jan 2026 Holistic Patch 38864999	RU 07 Patch 38532004



*Patch by order, Release Update before Holistic Patch!*



# Holistic Command

OEM 24AI: How To Apply/Rollback Holistic Patch On OEM 24.1 (Doc ID 3082475.1)

## OMS Components Only

```
$ORACLE_HOME/OMSPatcher/omspatcher apply  
/u01/app/oracle/stage/38194787 -spb_patch
```



## AIX only

## OMS JDK Included

```
$ORACLE_HOME/OMSPatcher/omspatcher apply  
/u01/app/oracle/stage/38194787 -spb_patch -jdk_update  
<jdk_location>
```

# Content Excerpt

linux64\_patchlist.txt

```
$ORACLE_BASE/stage/38544618/binary_patches/fmw_dbclient/linux64/  
$ORACLE_BASE/stage/38544618/binary_patches/ohs/linux64/  
$ORACLE_BASE/stage/38544618/binary_patches/oss/linux64/  
$ORACLE_BASE/stage/38544618/binary_patches/adf/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/coherence/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/fmw_thirdparty/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/jdbc/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/owsm/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/rda/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/webcenter/generic/  
$ORACLE_BASE/stage/38544618/binary_patches/wls/generic/
```

# Agent

# Introduction

## Agent Patches fresh Installation

```
./agentpatcher lspatches
AgentPatcher Automation Tool
Copyright (c) 2021, Oracle Corporation. All rights reserved.
```

```
AgentPatcher version : 13.9.24.0.0
OUI version          : 13.9.4.0.0
Running from         : /u01/app/oracle/agent/agent_24.1.0.0.0
Log file location    : /u01/app/oracle/agent/agent_24.1.0.0.0/cfgtoollogs/agentpatcher/opatch2026-03-09_21-02-30PM_1.log
```

Component Name/Version	Component Type	System Patch	(Sub)-Patches	Patch Description
oracle.rsa.crypto/12.2.1.4.0	Core	N/A	37087476	WLS PATCH SET UPDATE 12.2.1.4.240922
oracle.jrf.dms.common/12.2.1.4.0	Core	N/A	37087476	WLS PATCH SET UPDATE 12.2.1.4.240922
oracle.sysman.agent.ic/24.1.0.0.0	Core	N/A	37121017	Non System patch Tracking <REDACTED>
oracle.pki/12.2.1.4.0	Core	N/A	37096063	OSS 19C BUNDLE PATCH 12.2.1.4.241001
oracle.ldap.rsfc/12.2.1.4.0	Core	N/A	37096063	OSS 19C BUNDLE PATCH 12.2.1.4.241001
oracle.jse.dms/12.2.1.4.0	Core	N/A	37087476	WLS PATCH SET UPDATE 12.2.1.4.240922

<REDACTED>



*Agents installed by Add Target are not patched.  
Solutions: a) Patch Plan or b) Gold Image.*



# Online or Offline

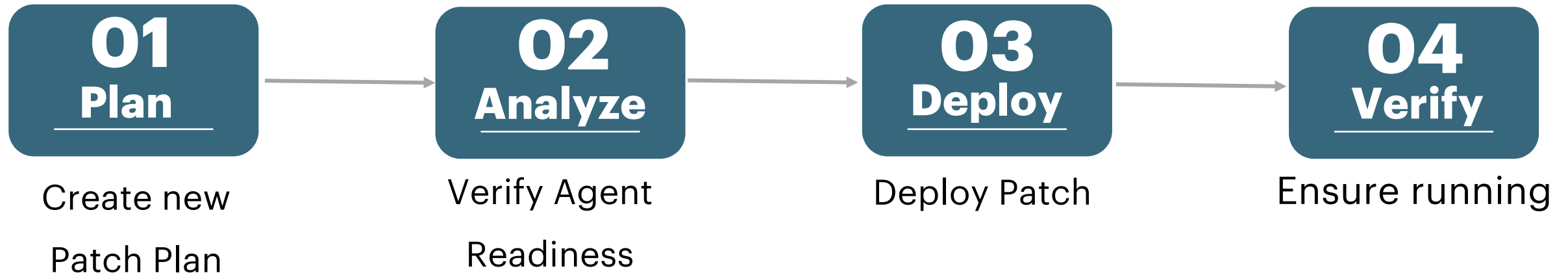
## Online

- Create Patch Plan
- Apply
- Rollout

## Offline

- Update Agentpatcher
- Apply
- Rollout

# Oracle Management Agent – Online Patching



*Automated Management Agent Patching Using Patch Plans is the Oracle recommended way.*

# Patch Plan

ORACLE Enterprise Manager 24ai

Search target names and menus

Patches & Updates

Page Refreshed Apr 10, 2026 2:06:49 PM CEST

FAQ

Step 4: Validation

The plan is locked because the patches were deployed. Create a template to apply these patches on a new set of targets. [Save as Template](#)

Deployment Successful [Show Detailed Results](#)

Issues to Resolve (None)

Added from Analysis (None)

Informational Message(s) (1)

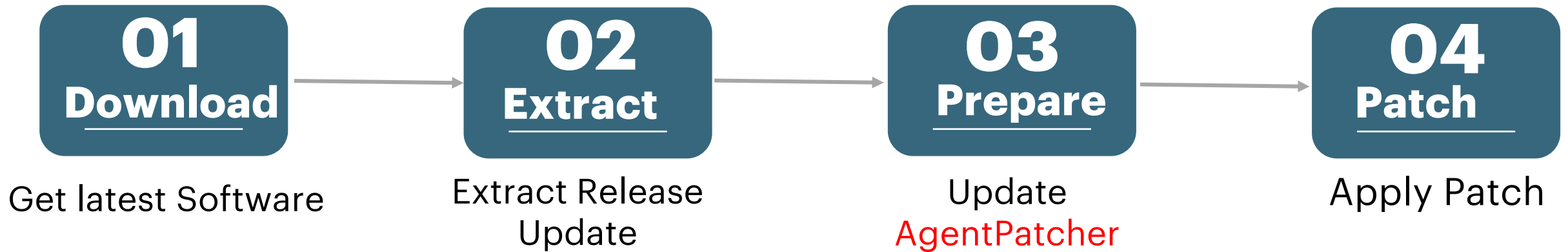
Informational messages during the last analysis. [Understand the reasons...](#)

* Patch Name	Reason	Description	Oracle Home	Host
38735209	Patch 38735209 of metadata type oracle_si_virtual_platform and metadata version 241108.0 must be first applied on the OMS.	Oracle Enterprise Manager 24ai Release 1 Update 8 (24.1.0.8) for Oracle Management Agent	/u01/app/oracle/agent/agent_...	repo-olten.internal

- OMS manages prechecks, Opatch upgrades (optional), validation
- Combine: Use Patch plan to patch your Gold Agent candidate, then build Gold Image

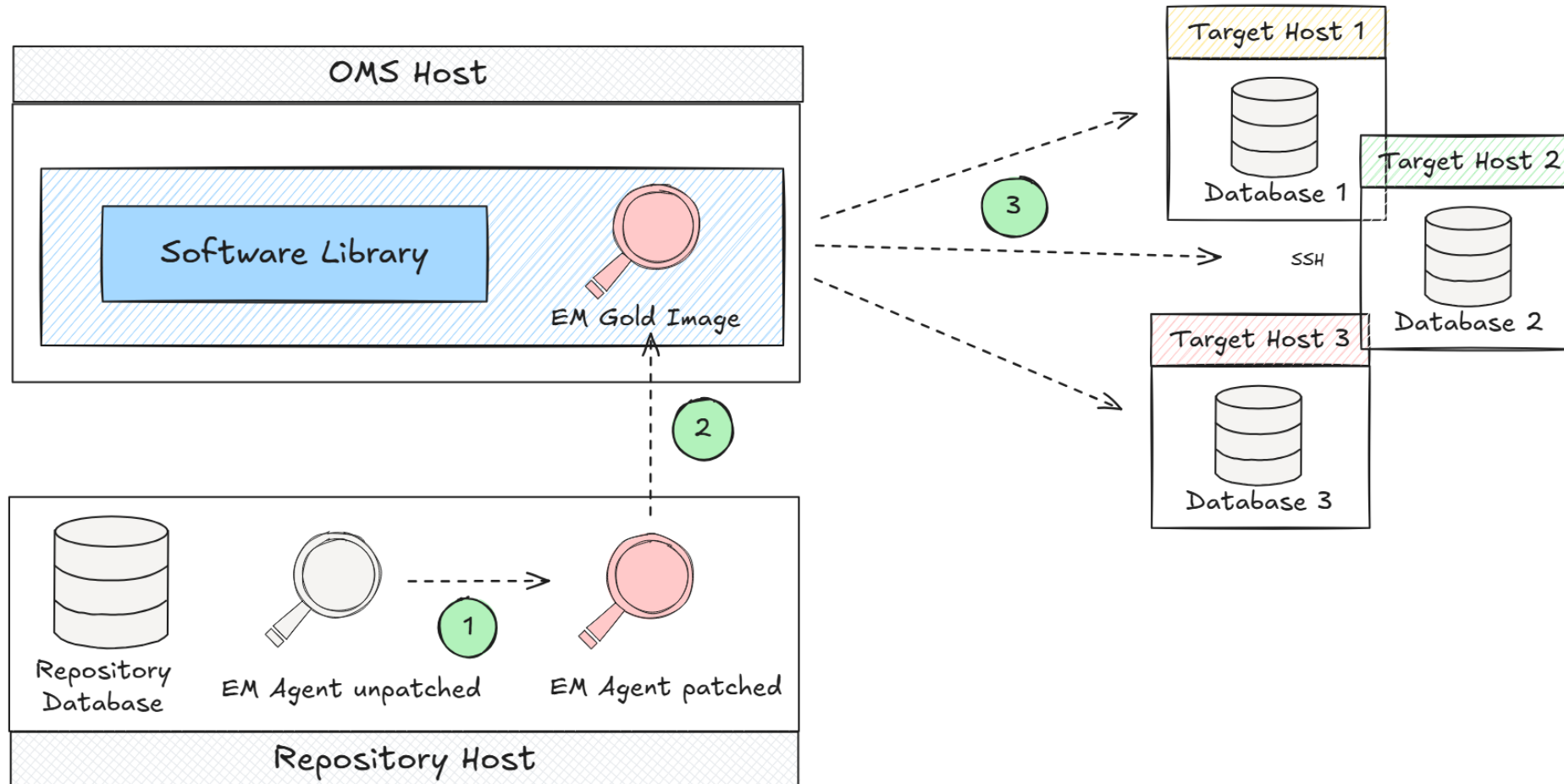


# Oracle Management Agent – Offline Patching



*This is a perfect method for later usage of Agent Gold Images.*

# Management Agent Patching with Gold Image



Not valid for Remote or  
OMS Agents!



# Gold Image EM24ai Dashboard

## Gold Agent Images


Gold Agent Images > em24ai\_agent\_x64 (Image) > Manage Image : em24ai\_agent\_x64

### Manage Image : em24ai\_agent\_x64

Subscribed Agents 3      Agents on Gold Image 0  
Number of deployed Gold Image versions 0      Platform Name Linux x86-64


Versions And Drafts    **Subscriptions**

#### Deployments



■ V1 Current (0)  
■ Drifters (0)  
■ No Version Deployed (3)

100.0%

View ▾     Detach    **Subscribe**    **Unsubscribe**    **Update** ▾    **Add H**

Target Name	Agent Version	Status	Image Version	Updated Status	Drifters
dbengine-dorna...	24.1.0.0.0	↑	No Version Deployed	Pending	—
dbengine-grenc...	24.1.0.0.0	↑	No Version Deployed	Pending	—
repo-solothurn.i...	24.1.0.0.0	↑	No Version Deployed	Pending	—



# Gold Agent Home Naming

## Agent Directory List ls -latr

```
$ ls -latr
total 4
drwxrwxr-x. 13 oracle oinstall 171 Sep  4 22:29 ..
-rw-r--r--.  1 oracle oinstall 579 Sep  4 22:32 agentInstall.rsp
drwxr-xr-x.  4 oracle oinstall  70 Nov 12 20:11 .
drwxr-xr-x.  3 oracle oinstall 148 Nov 12 20:12 GoldImage_RU05
drwxr-xr-x. 11 oracle oinstall 154 Nov 12 20:12 agent_inst
```

# Exclude Logs in Gold Images

## Exclude Logs

```
$ emcli create_Gold_agent_image -image_name="Linux_x86_64" -  
version_name="RU07" -source_agent= "oms-allinone.internal:3872" -  
exclude_files="agent_24.1.0.0.0/cfgtoollogs/*"
```

# Update Agent JDK - 3084500.1

EM 24.1 AI: How to Use the Latest Certified JDK 8 Update with 24.1 Agents - KB518379

## BEFORE

```
$ $AGENT_HOME/oracle_common/jdk/bin/java -version  
java version "1.8.0_431"  
Java(TM) SE Runtime Environment (build 1.8.0_431-b10)  
Java HotSpot(TM) 64-Bit Server VM (build 25.431-b10, mixed mode)
```

## AFTER

```
$ $AGENT_HOME/jdk/bin/java -version  
java version "1.8.0_471"  
Java(TM) SE Runtime Environment (build 1.8.0_471-b26)  
Java HotSpot(TM) 64-Bit Server VM (build 25.471-b26, mixed mode)
```



# Offline Plan Patching via Software Library

- Upload patch and metadata XML file to Saved Patches
- Create patch plan
- Apply patch
- Always initiated from OMS
- One single point of view

### Saved Patches

Use this page to view a list of patches stored in the Software Library, search patches of your interest, upload these patches to Oracle products monitored in Enterprise Manager, create a [patch plan](#). For information available in the Enterprise Manager [Documentation Library](#).

**TIP** To upload batches of patches or to upload a multi-part patch, use the EM CLI verb "upload\_patch"

View ▾ **+ Upload** **✕ Delete** Search Patch Name

Patch Name	Description	Release
<a href="#">33355570</a>	AgentPatcher patch of version 13.9.25.1.0 for Enterprise Manager 24.1.0.0.0 (Patch)	24.1.0.0.0
<a href="#">38155875</a>	Oracle Enterprise Manager 24ai Release 1 Update 5 (24.1.0.5) for Oracle Management Agent (Patch)	24.1.0.0.0

### Create New Plan

Plan Name \*

**+ Add**

Target Name	Target Type	Oracle Home	Host Name
oms-allinone.in...	Agent	/u01/app/oracle/...	oms-allinone.internal



# Plug-Ins

# Plug-In Self-Update

## Example OMS Plugin List RU 01

```
$ emcli list_plugins_on_server
```

```
OMS name is oms-allinone.internal:4889_Management_Service
```

Plug-in Name [revision]	Plugin-id	Version
Oracle Cloud Framework	oracle.sysman.cfw	24.1.1.0.0
Oracle Database	oracle.sysman.db	24.1.1.0.0
Oracle Fusion Middleware	oracle.sysman.emas	24.1.1.0.0
Systems Infrastructure	oracle.sysman.si	24.1.1.0.0
Oracle Exadata	oracle.sysman.xa	24.1.1.0.0



*They are always included in RU. (other) Plugins must be updated manually or by Self-Update portal.*



# Self Update - Email Me

ORACLE Enterprise Manager 24ai Search target names and

## Incident Rules - All Enterprise Rules

A rule set is collection of rules that applies to a common set of objects, for example, targets, jobs, and templates. A rule contains a set of automated actions to be taken on specific events, incidents or problems.

▶ Event Compression Policies are enabled

Actions ▾ View ▾ 📄 Create Rule Set... 🔍 View ✎ Edit... ✕ Delete... **E-mail ▾** 📥 Import... 📤 Export... 🧪 Simulate Rules 🔃 Reorder Rule Sets... S

Name	Description	Enterprise Rule Set	Owner	Enabled	Use Event Compression Policy
▶ Incident management rule set for all targets 🔒	Rule set to create and manage inci	✓	System Generated	Yes	Rule Level Compres
▾ Event Management Rule set for Self Update 🔒	Rule set to manage Self Update ev	✓	System Generated	Yes	Rule Level Compres
Notification Rule for New Updates	Rule to notify on availability of new updates.			Yes	Yes



# Misc

# Notes and Patches Good to Know

- **KB410267**

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13.5,24ai: How to Upgrade AgentPatcher to the Latest Version

- **KB371380**

---

EM 24ai: How To Upgrade Enterprise Manager 24.1 OMSPatcher Utility to the Latest Version

- **KB410267**

---

13.9.4.2.22 FOR EM 13.5/24.1 AND FMW/WLS 12.2.1.4.0, 14.1.1.0.0, 14.1.2.0.0 AND IDM 14.1.2.1 (Patch)



# Offline - Catalog

- To get patch recommendations in offline mode, upload the latest catalog file in OEM.

### Offline Patching

**Information**  
Success: Connection is saved as offline mode.

Go online for optimal usability. Allow Enterprise Manager to connect to My Oracle Support to download patches, get the latest health checks, download self-updates and more. This is a one-way connection and outside services cannot connect to Enterprise Manager. No customer data is sent from Enterprise Manager to Oracle.

Connection  Online  
 Offline

Upload the catalog to keep Enterprise Manager up-to-date with patch recommendations.

Catalog  No file selected.

[https://updates.oracle.com/download/em\\_catalog.zip](https://updates.oracle.com/download/em_catalog.zip)

## EMCLI Method

```
$ emcli upload_catalog -from_host= "oms-allione-internal" -  
file="/u01/app/oracle/stage/em_catalog.zip"  
-cred_name="OMS_HOST_CRED" -cred_owner="SYSMAN"
```

# Check Product Certification Matrix

▼ Linux x86-64	SLES 15, SLES 12, Red Hat Enterprise Linux 9, Red Hat Enterprise Linux 8, Red Hat Enterprise Linux 7, Oracle Linux 9, Oracle Linux 8.x, Oracle Linux 7	Operating Systems		Primary
Linux x86-64	SLES 15	Operating Systems	Certified	Primary
Linux x86-64	SLES 12	Operating Systems	Certified	Primary
Linux x86-64	Red Hat Enterprise Linux 9	Operating Systems	Certified	Primary
Linux x86-64	Red Hat Enterprise Linux 8	Operating Systems	Certified	Primary
Linux x86-64	Red Hat Enterprise Linux 7	Operating Systems	Certified	Primary
Linux x86-64	Oracle Linux 9	Operating Systems	Certified	Primary
Linux x86-64	Oracle Linux 8.x	Operating Systems	Certified	Primary
Linux x86-64	Oracle Linux 7	Operating Systems	Certified	Primary
▼ Microsoft Windows x64 (64-bit)	2022, 2019, 2016	Operating Systems		Primary
Microsoft Windows x64 (64-bit)	2022	Operating Systems	Certified	Primary
Microsoft Windows x64 (64-bit)	2019	Operating Systems	Certified	Primary
Microsoft Windows x64 (64-bit)	2016	Operating Systems	Certified	Primary



# Classic Error Messages

1

**OMSPatcher supports only System patch. Please check patch location input**

Check Path where you run patch command.

2

**Before proceeding with the release update patch, you must first apply the mandatory one-off patch bundled with the OMSPatcher utility**

Happens by first RU apply, command is provided, stop OMS first as mentioned.

3

**This command deploy is not the supported operation in the online patching. Execute either ('lspatches', 'update', 'rollback deploy') command ...**

Already run omspatcher deploy and OMS is ready for update command.

# Takeaways

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Know your Versions

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Prefer ZDT, always.

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Backup. Analyze. Patch.

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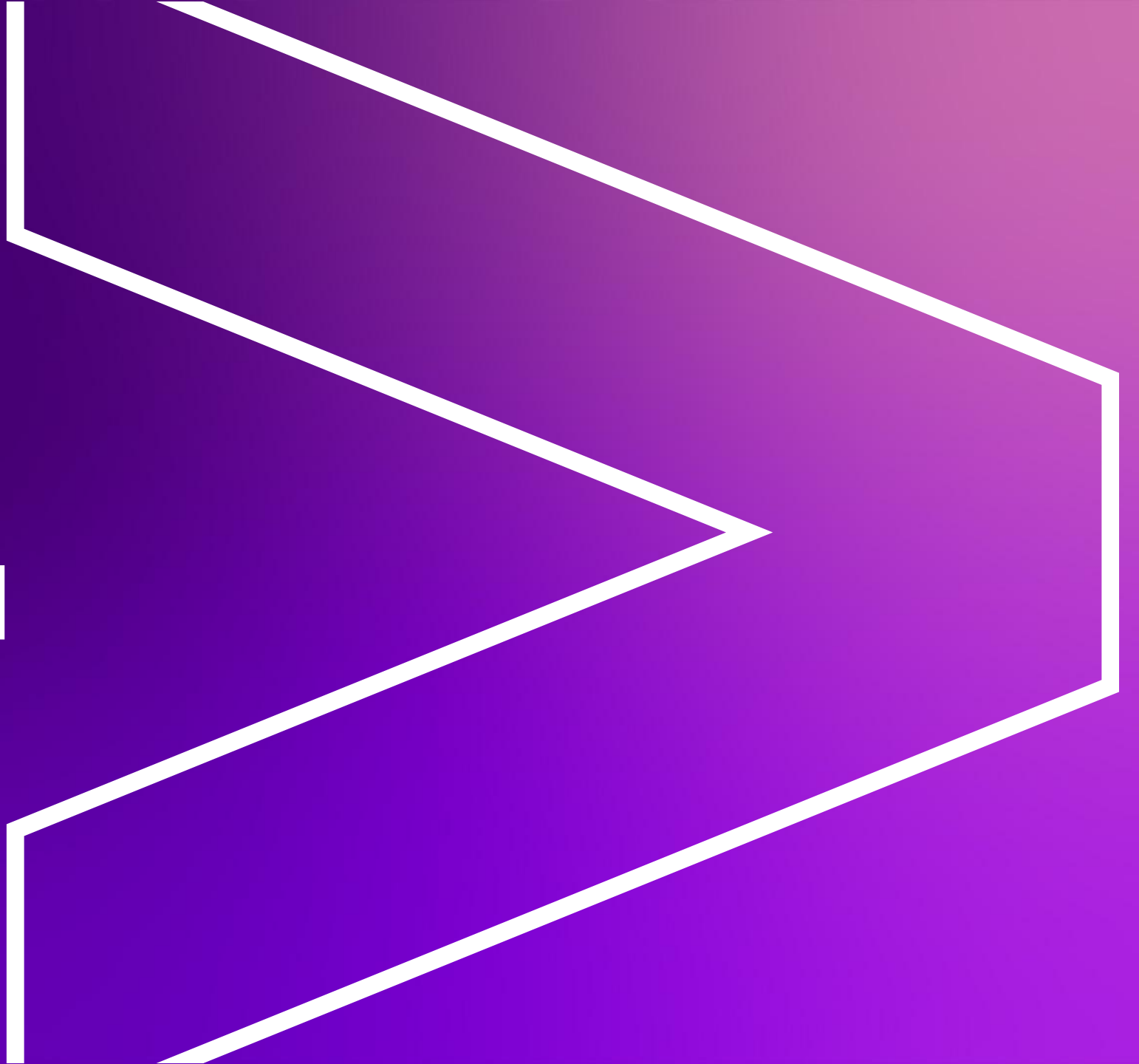
Use Gold Images.

---

Never lose Monitoring.



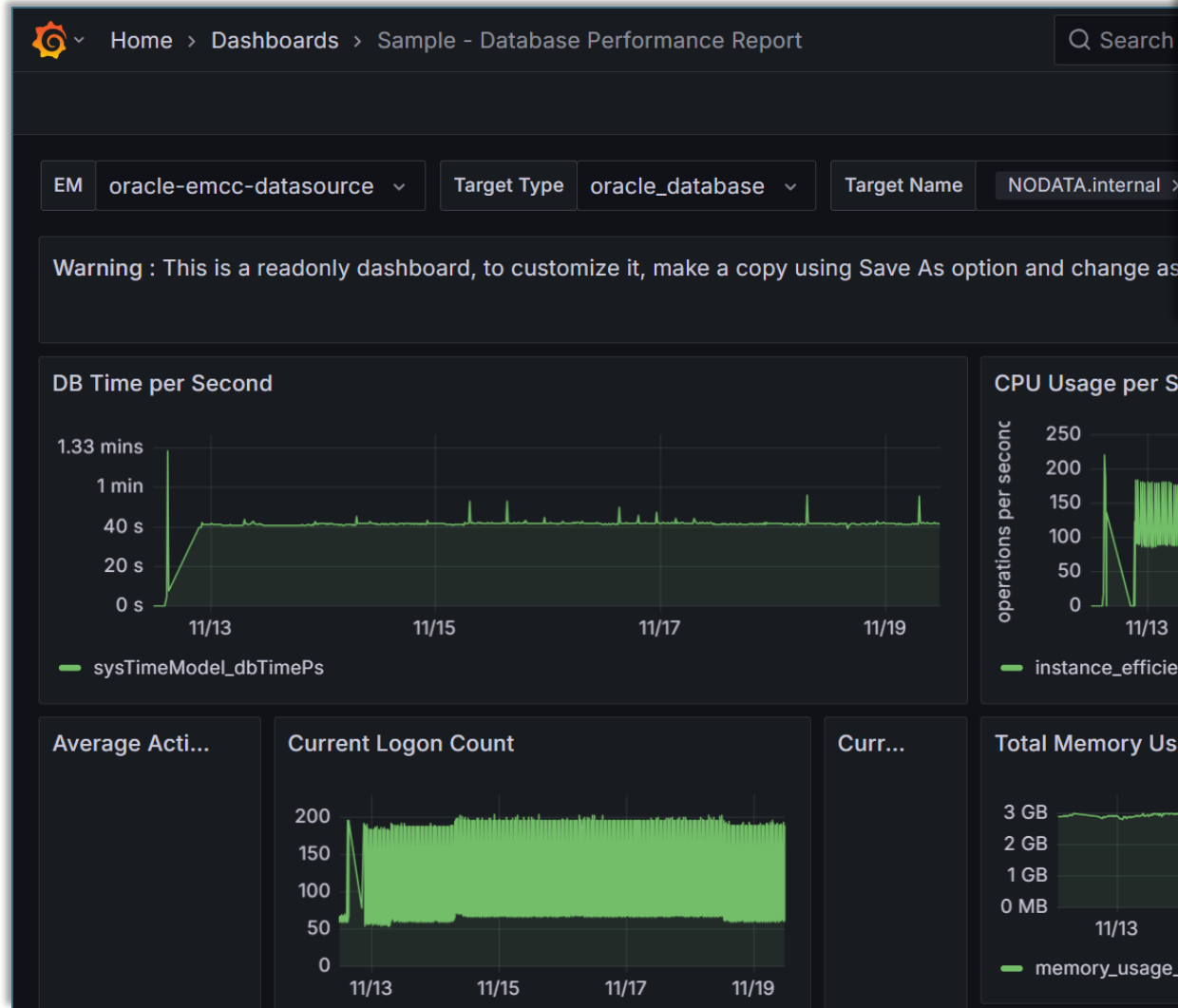
**Merci  
vöuomou**



# Features



# Grafana - OEM App



The image shows a portion of the Oracle website. At the top, the Oracle logo is visible. Below it is a navigation menu with links: Products, Industries, Resources, Customers, Partners, Developers, and Company. A search icon is located in the top right corner. Below the navigation menu, there is a section for 'Downloads / Grafana Download page'. A large blue banner with white text reads 'Oracle Enterprise Manager App for Grafana'. Below the banner, the text 'App Overview' is partially visible.



# REST API – Grab your Data

The screenshot displays the Bruno REST client interface. The top bar shows the user 'bruno', the workspace 'EM24ai', and a 'Safe Mode' indicator. The main area is divided into three sections: a left sidebar with a 'Collections' panel, a central request configuration panel, and a right response view panel.

**Request Configuration:**

- Method: GET
- URL: `https://oms-kestenholz.internal:7803/em/api/targets/AA2DA3D2AE3FF245BC13794B2DF9C0/metricGroups/memory_usage/latestData`
- Params: A table with columns 'Name' and 'Value'.
- Path: A table with columns 'Name' and 'Value'.

**Response View:**

- Status: 200 OK, 5.43s, 348B
- Response Body (JSON):

```
1 {
2   "targetName": "NODATA.internal",
3   "targetTypeName": "oracle_database",
4   "targetId": "AA2DA3D2AE3FF245BC13794B2DF9C0",
5   "metricGroupName": "memory_usage",
6   "timeCollected": "2025-11-19T10:29:55.000Z",
7   "items": [
8     {
9       "total_memory": 3053.44
10    }
11  ],
12  "links": {
13    "self": {
14      "href": "/em/api/targets/AA2DA3D2AE3FF245BC13794B2DF9C0/metricGroups/memory_usage/latestData"
15    }
16  },
17  "count": 1
```

The response body is a JSON object with a 'count' of 1 and an 'items' array containing one object with 'total\_memory' of 3053.44. This object is highlighted with a red box in the original image.

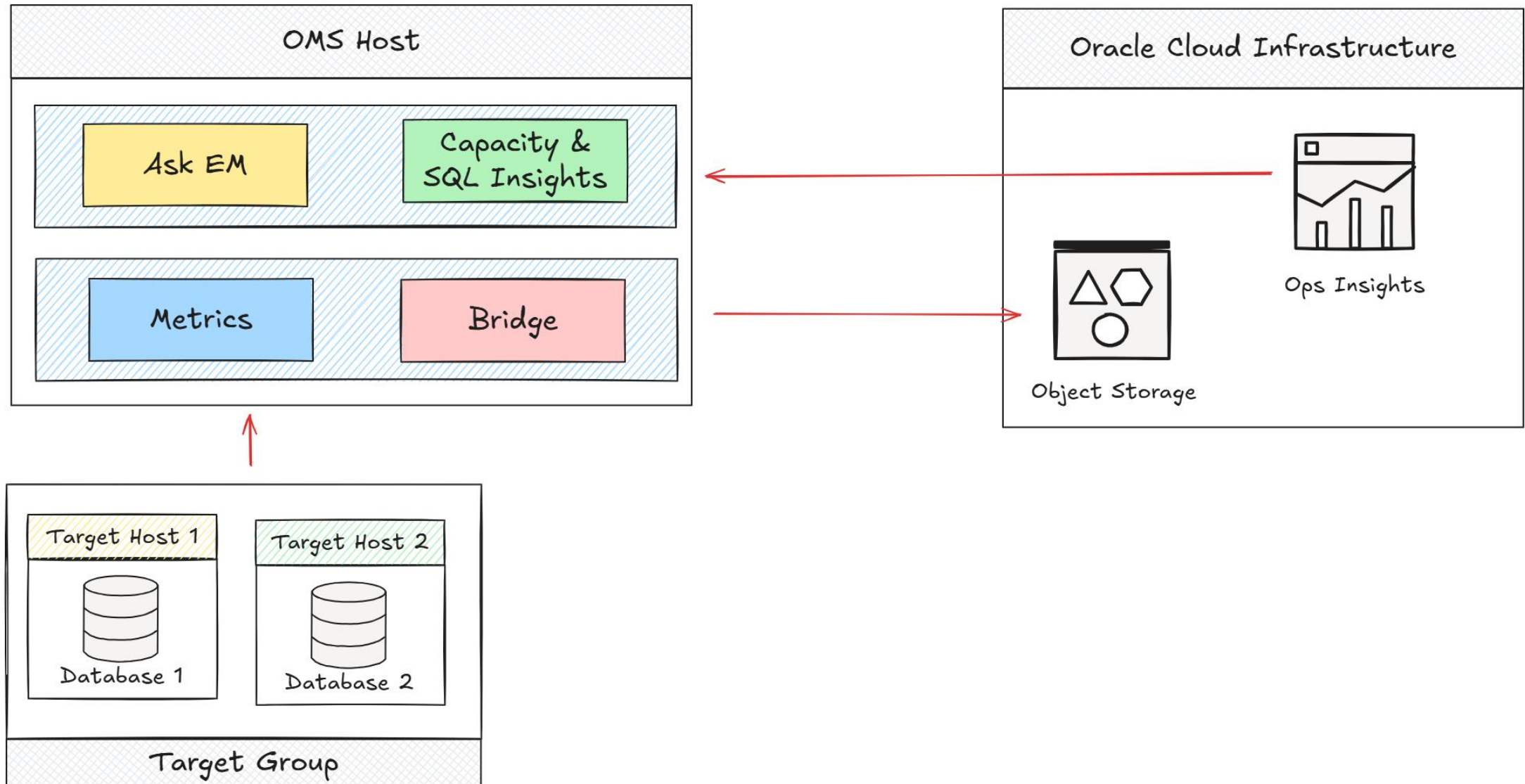


# Oracle AutoUpgrade & EMCLI Blackouts

upgrade.config

```
# Global Settings
global.autoupg_log_dir=/u01/app/oracle/cfgtoollogs/autoupgrade
upg1.log_dir=/u01/app/oracle/cfgtoollogs/autoupgrade
upg1.sid=ORANGE
upg1.source_home=/u01/app/oracle/product/19.0.0/dbhome_1
upg1.target_home=/u01/app/oracle/product/19.0.0/dbhome_2
upg1.start_time=NOW
upg1.upgrade_node=dbengine02.internal
upg1.emcli_path=/u01/app/oracle/emcli
upg1.em_target_name=ORANGE.internal
upg1.em_blackout_suffix=snc1724o195
```

# Ask EM & OCI Operation Insights



# EM-Bridge – The OCI Integration

ORACLE Enterprise Manager 24ai

Search target names and menus

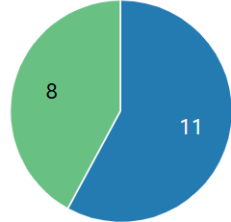
SYSMAN

Page Refreshed Nov 15, 2025 6:11:40 AM CET

## Cloud Bridge

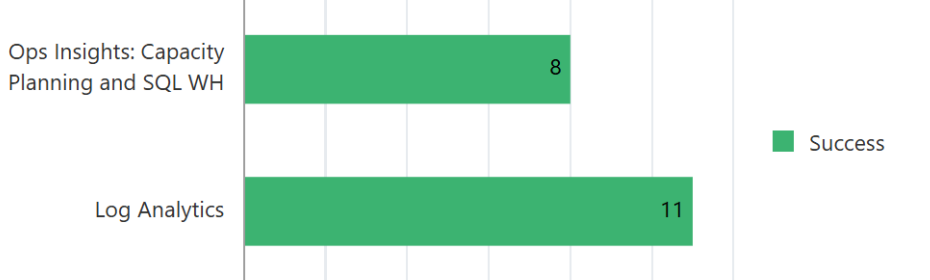
Enable Data Export Manage OCI Connectivity

### EM Target Summary



Log Analytics	11
Ops Insights: Capacity Planning and SQL WH	8

### Data Export Summary



Ops Insights: Capacity Planning and SQL WH	8
Log Analytics	11

### Upload Summary

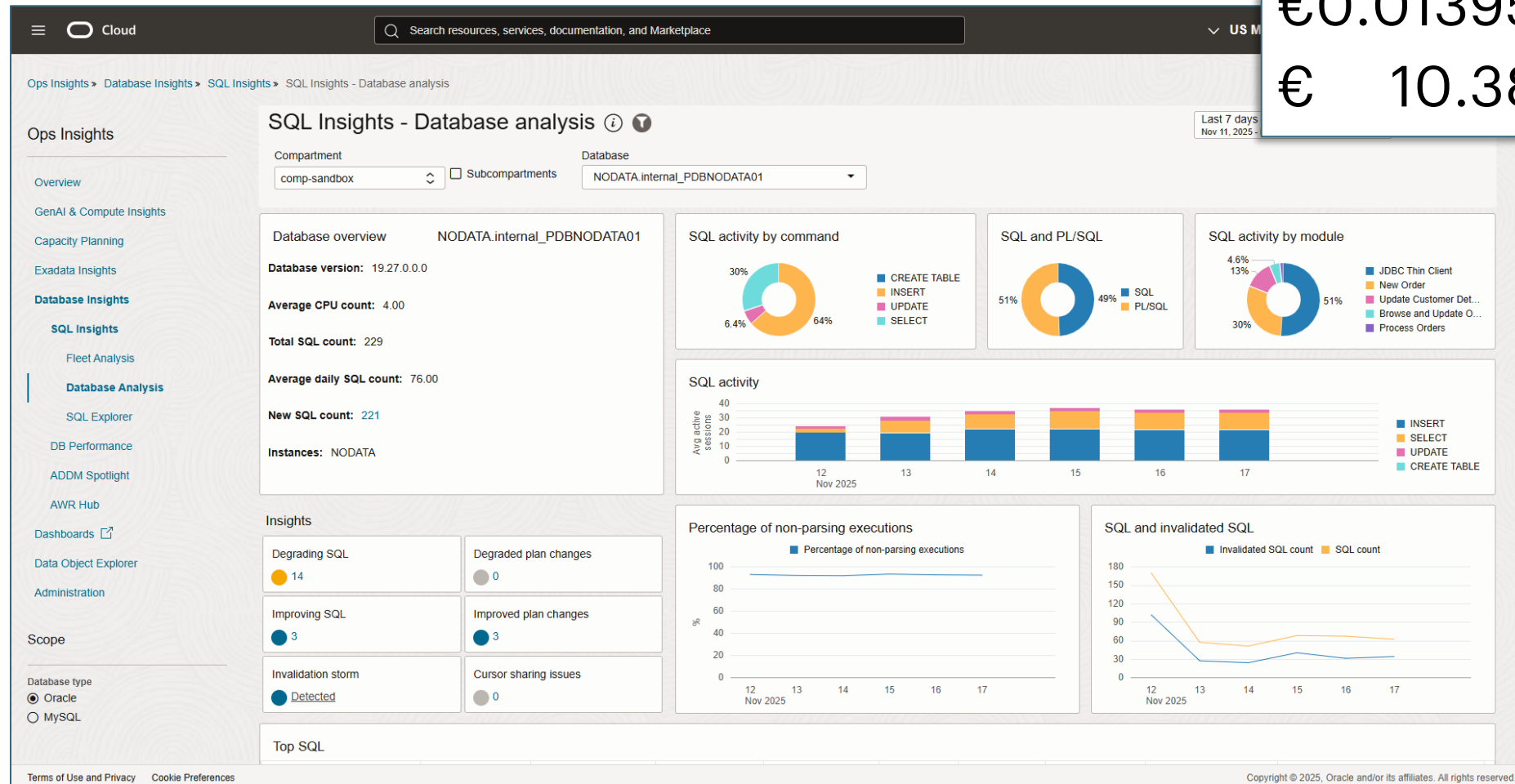
OCI Service	Size (MB)	Last Upload Date	Service Status
Ops Insights: Capacity Planning and SQL WH	65.35	NOV 15, 2025 06:04:51 AM GMT	✓
Log Analytics	0.93	NOV 15, 2025 06:04:08 AM GMT	✓



# OCI Operations Insights

Example for External Oracle Databases and Host

**Host CPU Core Per Hour**  
€0.01395 pro Stunde  
€ 10.38 pro Monat



# Ask EM

ORACLE Enterprise Manager 24ai Search target names and menus

Time Selector: Last 24 hours (Nov 17 17:11 - Tod...)

### Databases Incidents Last 7 Days

Sever	Summary	Target Name	Target Type	Status	Create	Last Updated	Own
⊖	The pluggable database H	HRDATA_S	Plu...	New	20...	20...	-
⊖	The pluggable database H	HRDATA_S	Plu...	New	20...	20...	-
⊗	The pluggable database is	HRDATA_S	Plu...	New	20...	20...	-
⊗	The pluggable database is	HRDATA_S	Plu...	New	20...	20...	-

### Databases Critical Incidents

Sever	Summary	Target Name	Target Type	Status	Create	Last Updated	Own
⊗	The pluggable database is	HRDATA_S	Plu...	New	20...	20...	-
⊗	The pluggable database is	HRDATA_S	Plu...	New	20...	20...	-
⊗	The database status is UNI	HRDATA_S	Dat...	New	20...	20...	-

### Databases Fatal Incidents ⓘ

Sever	↑ Summary	Target Name	Target Type	Status	Created	Last Updated	Owner	Acknov	Escala
⊖	The pluggable database HRDATA_SITE1.internal_PDBF	HRDATA_SITE1.internal_	Pluggable D...	New	2025-11-...	2025-11-...	-	No	No
⊖	The pluggable database HRDATA_SITE1.internal_CDBF	HRDATA_SITE1.internal_	Pluggable D...	New	2025-11-...	2025-11-...	-	No	No
⊖	Failed to connect to database instance: Failed to connec	HRDATA_SITE1.internal	Database Ins...	New	2025-11-...	2025-11-...	-	No	No

## Ask EM

Ask EM is in preview mode. We are constantly working to improve the accuracy and quality of our GenAI generated response.

Telemetry    Documentation

Today at 6:10 PM

Hi! I'm your GenAI-powered EM Digital Assistant. You can ask me any question about EM. I can provide answers from the EM telemetry and share references.

Do we have a problem with a database monitored by this instance?

Today at 6:11 PM

I have some findings for your review

Open

Enter message ↑



# Ask EM

ORACLE Enterprise Manager 24ai
 Search target names and menus

🔍
🔔
SYSMAN
🗨️

Time Selector

**Last 24 hours**

Nov 17 17:13 - To...

Autonomous Transaction Processing

RESTDB

Database Instance Storage Usage (GB)

Target Name	Target Type	Value (Latest)
NODATA.internal	Database Instance	35.92
EM24AI_SITE1.internal	Database Instance	24.07
ITAB01_A.sndatabasepubli.vcncompute.c	Database Instance	3.77
HRDATA_SITE1.internal	Database Instance	3.54
ITAB02_A.sndatabasepubli.vcncompute.c	Database Instance	3.26

Autonomous Transaction Processing Storage Usage (bytes)

Target Name	Target Type	Value (Latest)
RESTDB	Autonomous Transacti...	6,170,869,760

Autonomous Transaction Processi...

Autonomous Transaction Processing Storage Utilization (%)

Target Name	Target Type	Value (Latest)
RESTDB	Autonomous Transaction Proces...	28.74

**Ask EM**
⚙️ ↗️ ✕

Ask EM is in preview mode. We are constantly working to improve the accuracy and quality of our GenAI generated response.

Telemetry
Documentation

the EM telemetry and share references.

Connection established 6:10 PM

Do we have a problem with a database monitored by this instance?

👤

Today at 6:11 PM

I have some findings for your review

Open

Which database monitored by this instance has the highest storage usage?

👤

Today at 6:13 PM

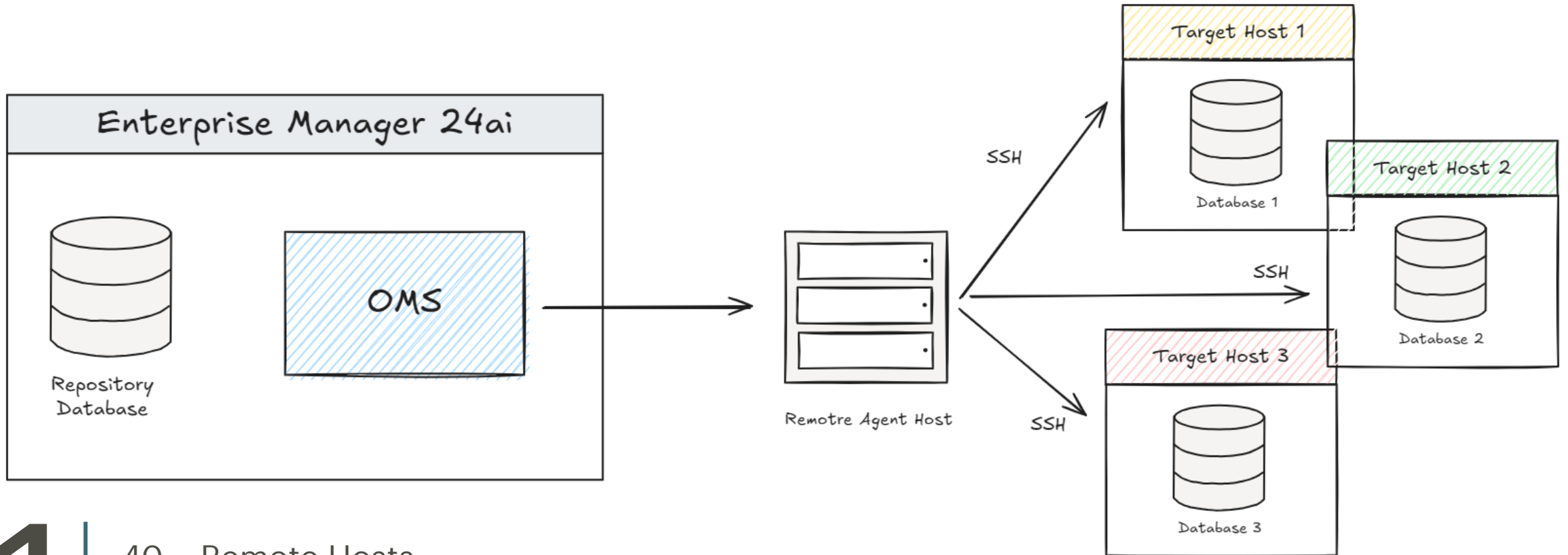
Some additional findings shown on the left

Enter message

⬆️



# Remote Agent



- 1 40 Remote Hosts
- 80 Single Instances (CDB)
- 480 Pluggable Databases (PDBs)
- 40 RAC Databases



# NON-SYS

- Performs Enterprise Manager installation, configuration and patching operations. (The SYS database user is no longer required during the installation, configuration and patching).
- User is created during the execution of the ConfigureGC script (Enterprise Manager configuration).
- Naming convention: **SYSMAN\_** is the username prefix.

createLCMUser.pl

```
$OMS_HOME/perl/bin/perl \  
createLCMUser.pl \  
-oh /u01/app/oracle/middleware/oms_home
```

# NON-SYS

- OMSPatcher Interactive

```
omspatcher

$ORACLE_HOME/OMSPatcher/omspatcher deploy -analyze -property_file
/u01/app/oracle/middleware/wlskeys/24ai.properties
OMSPatcher Automation Tool
Copyright (c) 2024, Oracle Corporation. All rights reserved.

OMSPatcher version : 13.9.24.8.0
<REDACTED>
<REDACTED>
Enter SYS or Non-SYS (Admin User) username: Enter SYS or Non-SYS (Admin User) username:
```



# sysman.mgmt\_oms\_parameters

sysman.mgmt\_oms\_parameters

```
SQL> SELECT name, value, timestamp
 2  FROM sysman.mgmt_oms_parameters
 3  WHERE name = 'last_oms_backup';
```

NAME	VALUE	TIMESTAMP
last_oms_backup	/u01/app/oracle/stage/backup/opf_ADMIN_20261116_195812.bka	16-NOV-25

# Backup Content - ZDT Included

emctl exportconfig - opf\_ADMIN\_20261116\_195812.bka

```
oracle@oms-kestenholz:/u01/app/oracle/stage/backup/ [oms24c1] tree -L 3
```

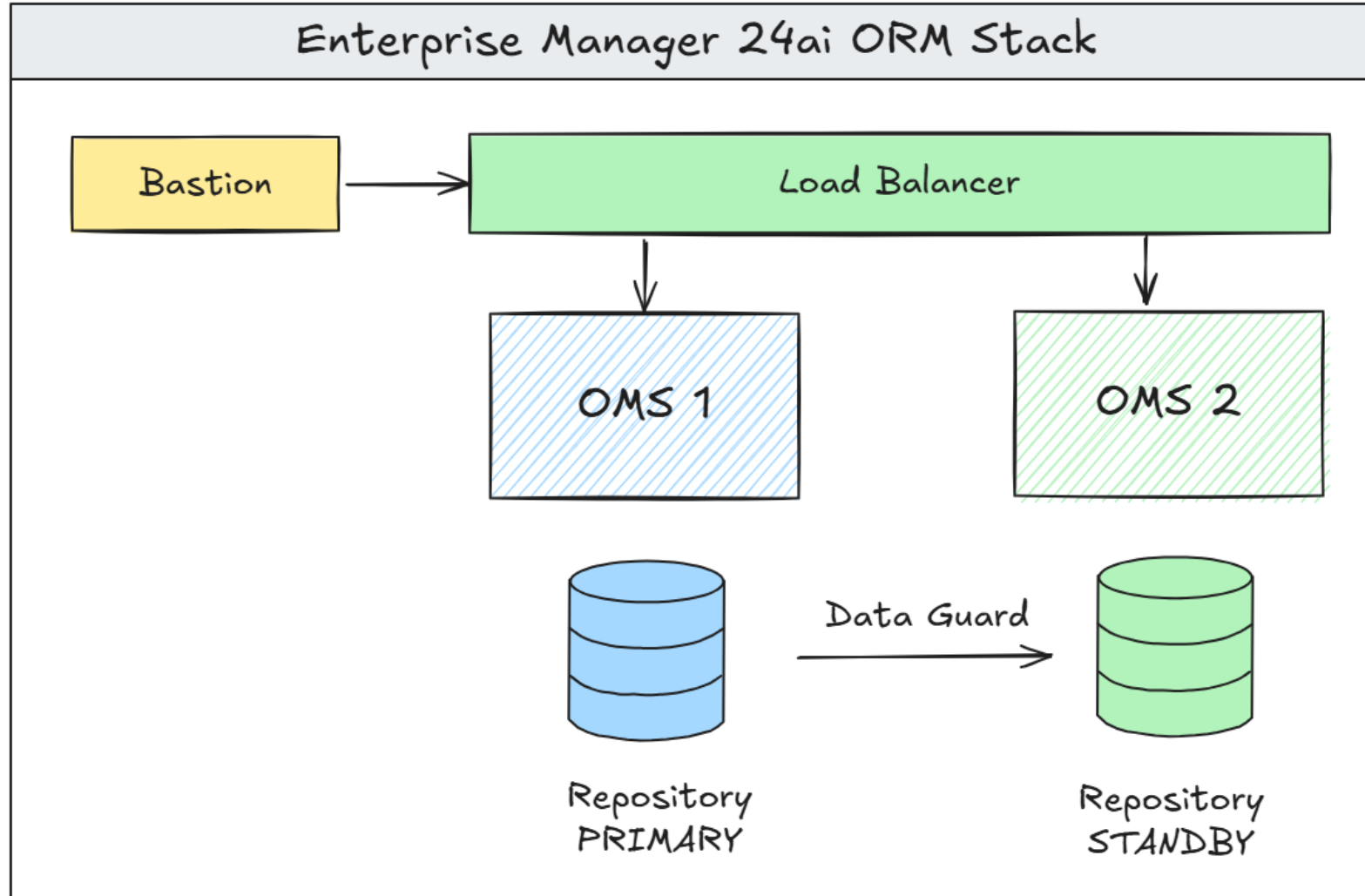
```
.
├── export.properties
├── GCDomain_backup.zip
├── omrWallets
│   └── cwallet.sso
├── opf_ADMIN_20261116_195812.bka
├── plugins.list
├── sysman
│   └── prov
│       └── agentpush
├── user_projects
│   └── domains
│       ├── EMExtDomain1
│       └── GCDomain
```

# Try it out – OCI Marketplace

The screenshot displays the OCI Marketplace interface. At the top, there is a navigation bar with a hamburger menu, the 'Cloud' logo, a search bar containing 'Search resources, services, docur', and a dropdown menu set to 'Switzerland North (Zurich)'. Below the navigation bar, the left sidebar shows 'Marketplace' and 'Publisher' sections. The main content area features a breadcrumb '← Marketplace', the title 'Oracle Enterprise Manager' with an 'Available' badge, and a 'Launch Stack' button. The description states: 'Oracle Enterprise Manager is a complete, integrated, and business-driven enterprise cloud management solution.' Below the description is a horizontal menu with tabs for 'Details', 'Overview', 'Provider', 'More apps', and 'Usage instructions'. At the bottom of the page, the Oracle logo and '24ai Enterprise Manager' are visible.

Pre-configured Oracle Enterprise Manager 24ai (version - 24.1RU05) with co-located Oracle database (version - 19.28.0.0) for single node configuration and OCI 2-node RAC DB system for Multi-node configuration as Oracle Management Repository (OMR).

# Try it out – OCI Marketplace



# Additional – Plugin Version Check

## Query Plugin

```
select epv.display_name,  
       epv.plugin_id,  
       epv.version,  
       ecp.dest_type  
  from em_plugin_version epv,  
       em_current_deployed_plugin ecp  
 where epv.plugin_type not in ( 'BUILT_IN_TARGET_TYPE',  
                                'INSTALL_HOME' )  
       and ecp.dest_type in ('1','2')  
       and epv.plugin_version_id = ecp.plugin_version_id  
 order by 1,2;
```

- 1=Agent / 2=OMS / 3=Both



# Additional – Plugin Version Check EMCLI

RU01

- Out of the Box

```
oracle@oms-allinone:~/ [oms24c1] emcli list_plugins_on_server
```

OMS name is oms-allinone.internal:4889\_Management\_Service

Plug-in Name	Plugin-id	Version [revision]
Oracle Cloud Framework	oracle.sysman.cfw	24.1.1.0.0
Oracle Database	oracle.sysman.db	24.1.1.0.0
Oracle Fusion Middleware	oracle.sysman.emas	24.1.1.0.0
Systems Infrastructure	oracle.sysman.si	24.1.1.0.0
Oracle Exadata	oracle.sysman.xa	24.1.1.0.0

-> Only when DB Plugin for Agent is deployed

```
oracle@oms-allinone:~/ [oms24c1] emcli list_plugins_on_agent
```

The Agent URL is https://oms-allinone.internal:3872/emd/main/ -

Plug-in Name	Plugin-id	Version [revision]
Oracle Home	oracle.sysman.oh	24.1.0.0.0
Oracle Beacon	oracle.sysman.beacon	24.1.0.0.0
Management Services and Repository	oracle.sysman.emrep	24.1.0.0.0
Oracle Fusion Middleware	oracle.sysman.emas	24.1.1.0.0



# Patch Upload

- File + Metadata is best!

### File Download ⓘ

**Click each file name to download the selected files.**  
Tip: Use a Download Manager [Learn More...](#)

Oracle Enterprise Manager 24ai Release 1 Update 5 (24.1.0.5) for Oracle Management Agent(Patch:Generic Platform)

[p38155875\\_241000\\_Generic.zip](#) (147.6 MB)

Total Size 147.6 MB

[Download File Metadata](#) [View Digest Details](#) [Close](#)

ORACLE Enterprise Manager 24ai Search target names and menus 🔍 🔔 SYSMAN ☰

**Confirmation**  
Successfully uploaded patch 33355570.

### Saved Patches

Page Refreshed **Mar 9, 2026 5:13:11 PM CET** 🔄

Use this page to view a list of patches stored in the Software Library, search patches of your interest, upload new patches to the Software Library, and remove unwanted patches from the Software Library. If you want to apply these patches to Oracle products monitored in Enterprise Manager, create a [patch plan](#). For information about creating patch plans, refer to Oracle Enterprise Manager Lifecycle Management Administrator's Guide available in the Enterprise Manager [Documentation Library](#).

**TIP** To upload batches of patches or to upload a multi-part patch, use the EM CLI verb "upload\_patches". For information on this verb, run the command "emcli help upload\_patches".

View + Upload ✕ Delete Search Patch Name  🔍 📄 Detach

Patch Name	Description	Release	Platform(Language)	Product/Family	Update	Size
38155875	Oracle Enterprise Manager 24ai Release 1 Update 5 (24.1.0.5) for Oracle Management Agent (Patch)	24.1.0.0.0	Generic Platform (American English)	Enterprise Manager Base Platform	5+ months ago	147.6 MB
33355570	AgentPatcher patch of version 13.9.25.1.0 for Enterprise Manager 24.1.0.0.0 (Patch)	24.1.0.0.0	Generic Platform (American English)	Enterprise Manager Base Platform	1+ month ago	823.8 KB



# RU08

```
oracle@oms-kestenholz:/u01/app/oracle/middleware/oms_home/cfgtoollogs/omspatcher/38735203/ [oms24c1] tail -  
20 omspatcher_2026-04-04_21-54-21PM_apply.log
```

```
Repository Creation Utility - ApplyRepositoryPatch : Operation Completed  
, return code= 0, exec. ok= true]
```

```
[Apr 4, 2026 10:40:17 PM] Executed zdtloademlcm sql successfully  
[Apr 4, 2026 10:40:17 PM] Checking if DB user 'sys' is allowed to perform patching operation.  
[Apr 4, 2026 10:40:17 PM] DB user name: SYSMAN is used for db connection  
[Apr 4, 2026 10:40:17 PM] Calling changeLCMEdition for edition:EM241RPU5  
[Apr 4, 2026 10:40:17 PM] Switched to patch edition EM241RPU5  
[Apr 4, 2026 10:40:17 PM] Checking if EMLCMPackageExist in repository.  
[Apr 4, 2026 10:40:18 PM] EMLCMPackageExist in the repository.  
[Apr 4, 2026 10:40:18 PM] The result code of is_lcm_adminuser ::: 1  
[Apr 4, 2026 10:40:18 PM] sys is a valid LCM ADMIN user.  
[Apr 4, 2026 10:40:18 PM] Create edition at db-level is successful !!  
[Apr 4, 2026 10:40:18 PM] DB user name: SYSMAN is used for db connection  
[Apr 4, 2026 10:40:18 PM] Setting the patching context for the new edition ....  
[Apr 4, 2026 10:40:18 PM] Calling changeLCMEdition for edition:EM241RPU5  
[Apr 4, 2026 10:40:18 PM] Switched to patch edition EM241RPU5  
[Apr 4, 2026 10:40:18 PM] The sql file  
:/u01/app/oracle/middleware/cloneOMSHome_24100/sysman/admin/emdrep/sql/core/latest/admin/admin_set_zdt_lcm_  
context.sql
```

```
[Apr 4, 2026 10:40:53 PM] Setting the patching context for the new edition at db-level is successful !!  
[Apr 4, 2026 10:40:53 PM] Executing the command : /u01/app/oracle/middleware/oms_home/OPatch/opatch  
napply /u01/app/oracle/stage/38735203 -oh /u01/app/oracle/middleware/cloneOMSHome_24100 -invPtrLoc  
/u01/app/oracle/middleware/cloneOMSHome_24100/oraInst.loc
```

```
[Apr 4, 2026 10:40:53 PM] Applying sub-patch(es) "38733813,38733818,38733821,38733833,38733839,38733850"
```

# Java Replacements

There are different options, depending on how much pressure you have with sec team. As the agent issue can be solved easily by replacing JDK, I recommend to do that now. For OMS stack, update it in same matter or wait for Holistic. Both methods are working.

## For Agent:

- Apply latest certified JDK in agent folder according **[EM 24.1 AI: How to Use the Latest Certified JDK 8 Update with 24.1 Agents \(Doc ID KB518379\)](#)**
  - This means just an replacement for the jdk folder
  - According to MOS: **JDK 1.8 Update 481 is the latest certified JDK version with EM 24.1 AI.**
- As RU08 is out since easter, I am currently working with Oracle PM team to offline update a Gold Image registered agent in an easy way. This means when we update to RU08 later this year, we ensure actual JDK is included in Gold Image and roll it out.

## For OMS:

- Apply latest certified JDK in OMS and EXT\_OMS folders ORACLE\_HOME/oracle\_common/jdk according **[\(KB470689\) EM 24.1 AI: How to Use the Latest Certified JDK 8 Update with OMS 24.1](#)**
  - This means just a replacement for the jdk folder
  - According to MOS: **JDK 1.8 Update 481 is the latest certified JDK version with EM 24.1 AI.**
- Wait for the Holistic Patch, I estimate it in later April/beginning May, it should include it

