ORACLE

Streamline Database Monitoring with Remote Agents

Sumesh Balakrishnan

Product Management

Ana McCollum

Senior Director of Product Management

Agenda

1. Admin Challenges with Agent Lifecycle Management
2. Remote Target Monitoring Overview
3. Remote Monitoring Topology and Remote Agent Deployment Setup
4. Remote Host Addition and Monitoring
5. Database Target Discovery and Monitoring

Agent Lifecycle Management Challenges

Complexity

Thousands of agents deployed across regions

Multiple agent versions on heterogeneous platforms

Security risks if agents are not properly secured and configured

Configuration Sprawl

Lack of centralized agent increases deploying agents on every single database server

Agents deployed across infrastructure has its own unique configuration

Maintenance Challenges

Admin spend bulk of their time on agent maintenance – Patching to keep agents on latest patch, JDK Update

Maintaining agent health across environments for better monitoring, data collection, and overall performance

Monitor and manage your fleet of databases, Exadata – Remote Agent

New simplified model: use smaller set of core agents

No need to deploy and manage an agent on every single host

Resource reduction and increase productivity

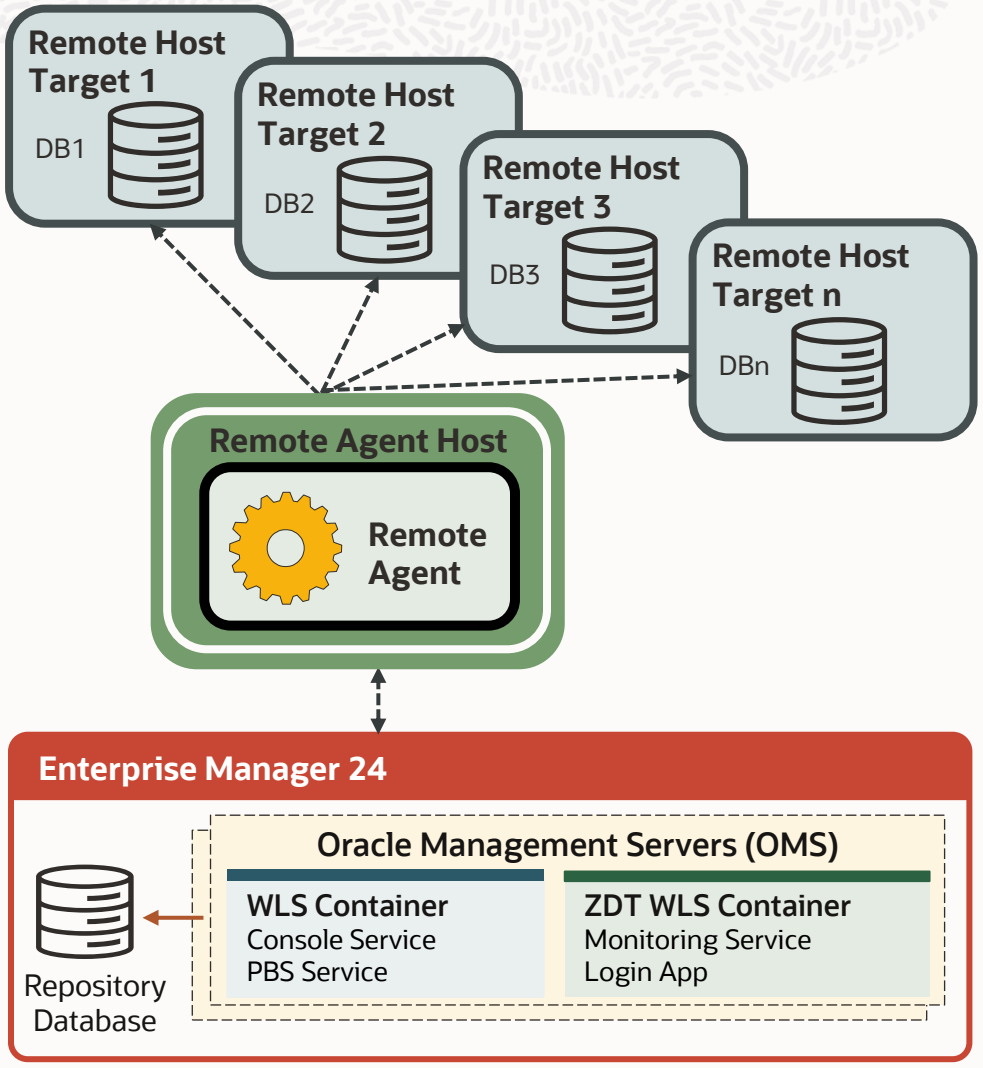
- Reduce agent footprint for easy agent lifecycle and manageability
- With less agents to manage, frees up administrator time to focus on database monitoring and management

Streamline Monitoring and Management

- Remote discovery, monitoring and management of Oracle Database and its related targets, Exadata using remote agent
- All database monitoring and management features that you already use with locally monitored targets will work the same way as remotely monitored targets

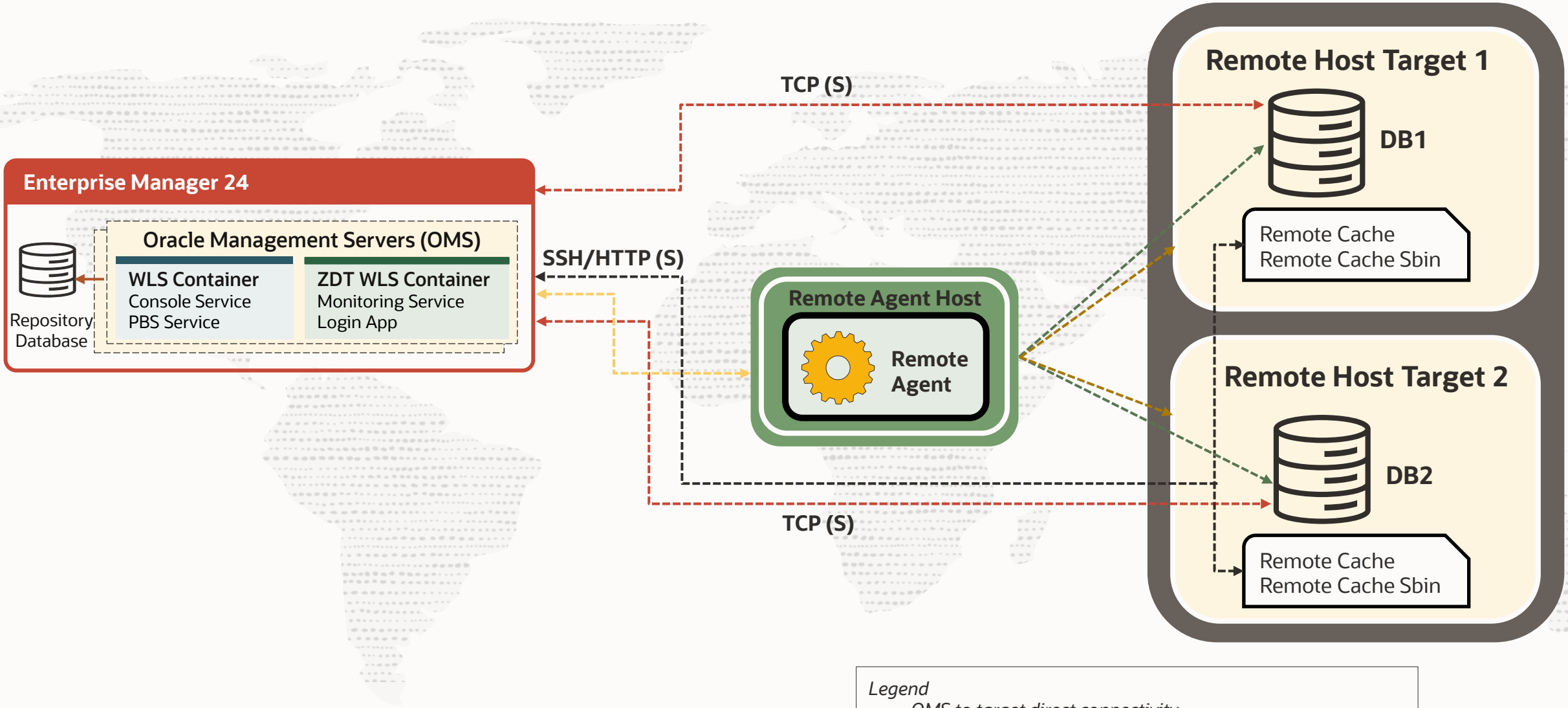
Highly available Remote Agents*

- Remote agents are highly available with primary and standby support to continue monitoring for mission-critical targets



** Coming in 24.1 RUs*

Remote target monitoring topology overview



Legend
----- *OMS to target direct connectivity*
----- *SSH connection from OMS for next gen agent deployment*
------ *SSH/HTTPS connection from OMS to next gen agent*

Simplified monitoring with remote agent

Embrace remote target monitoring with confidence

1 Deploy Remote Agent

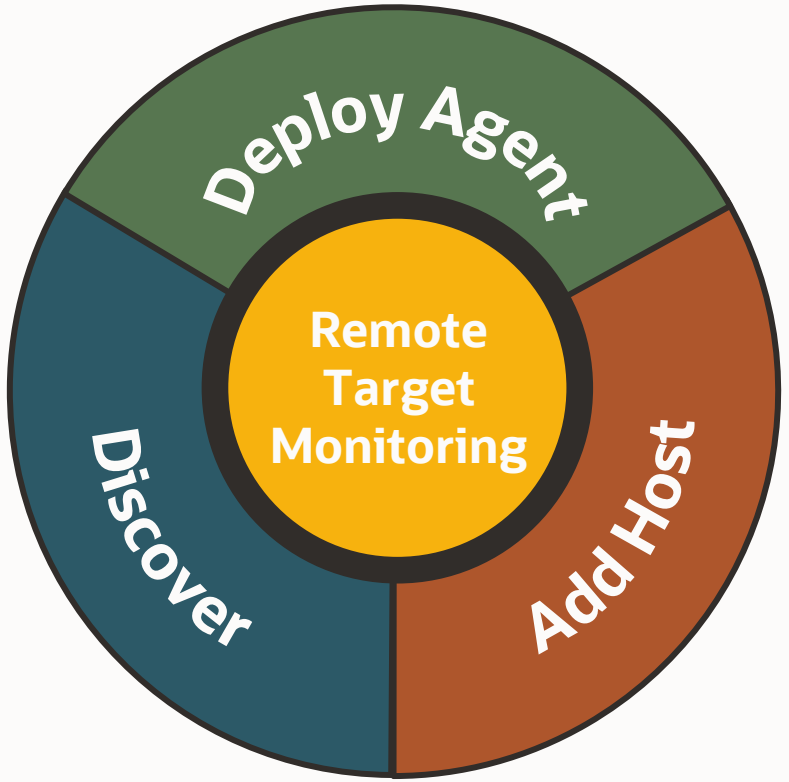
Agent push, pull and emcli methods are available to deploy remote agent on a host for remote target monitoring

2 Add Host Targets

Simplified flow for adding target hosts to the remote agent for monitoring through console and emcli

3 Discover and Monitor Targets

Discover and promote the database and its related targets to remote agent for monitoring



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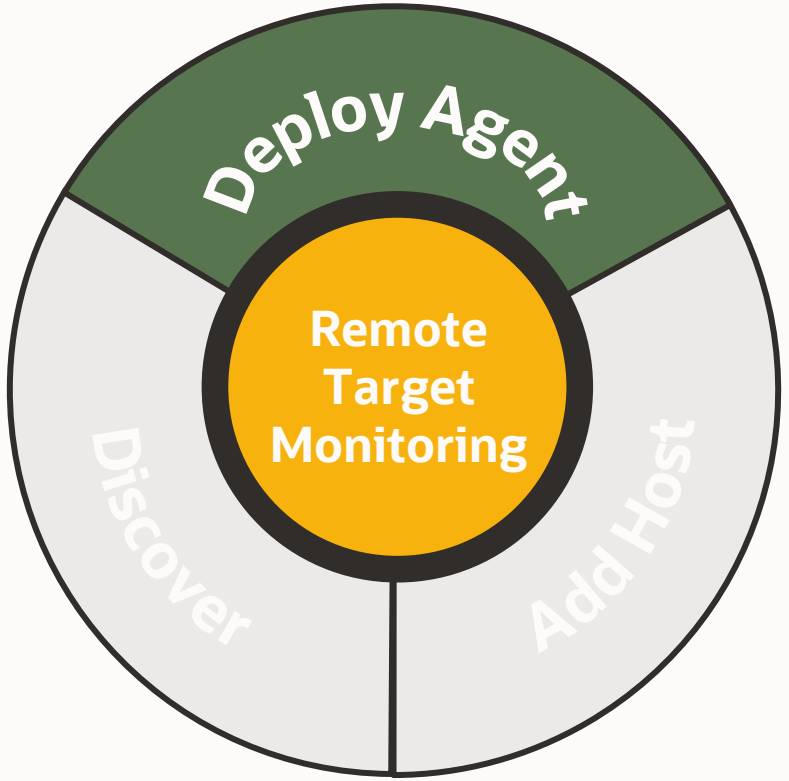


Remote Agent – deployment setup (1/2)

Prerequisites

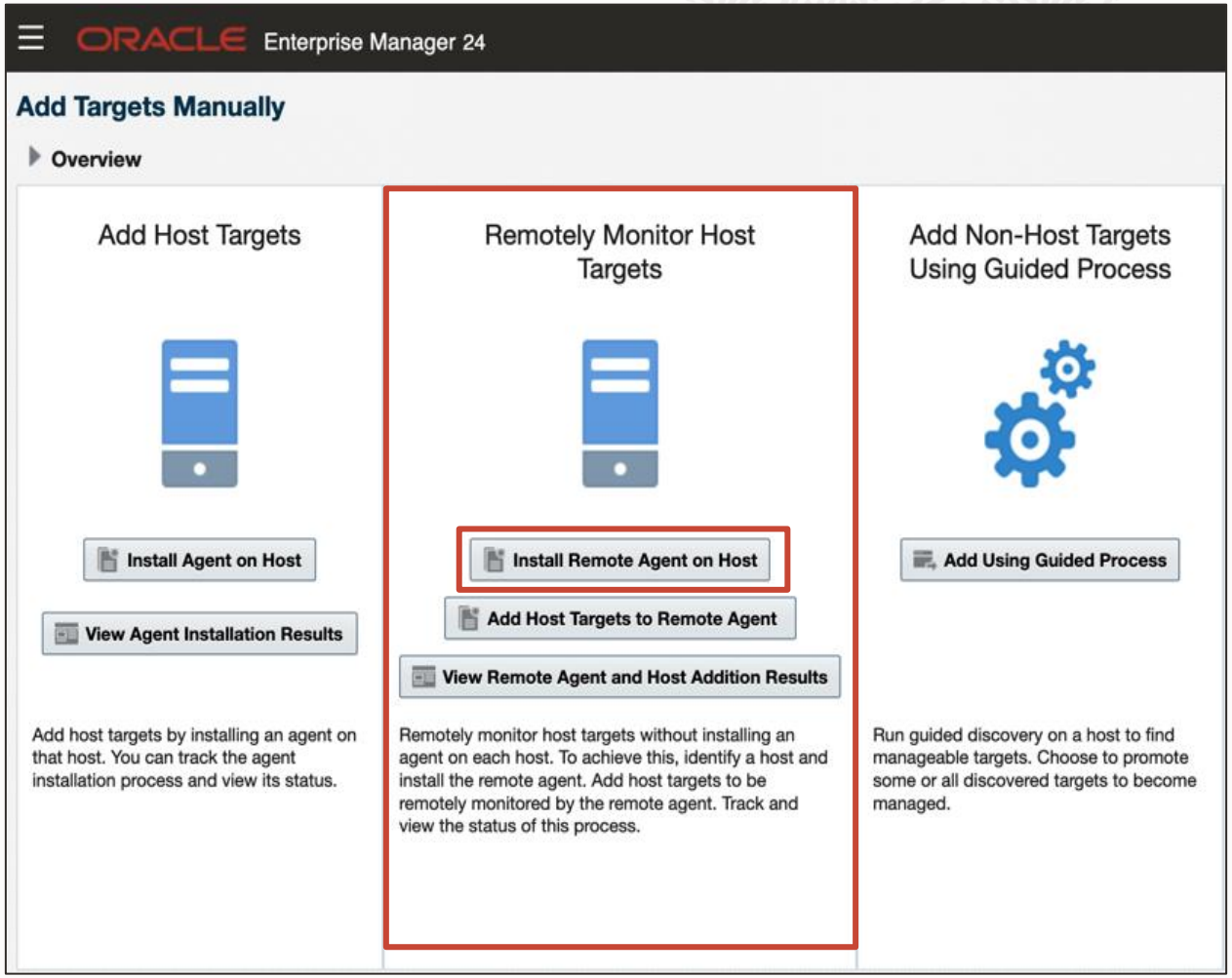
- Platform - LinuxX64 is supported for remote agent deployment
- Dedicated host for remote agent deployment
  - Remote agent host should not contain any local targets other than internal targets - Host, Oracle_emd

Best Practices

- Remote agent supports database and its family of targets - SI, RAC, CDB/PDB for monitoring and management
- Remote agent patching support through agent patch plan method
- Always deploy fresh remote agent for remote target monitoring
- Existing local agents cannot be converted to remote agents*
- Sizing guidelines Small, Medium, Large, Extra-Large will be available as deployment options for remote agent

Remote Agent – deployment setup (2/2)

- Supported deployment methods
  - Agent Push
  - Agent Pull
  - Silent agent deployment (agentDeploy.sh)
- Add targets manually page will have new option to deploy remote agent and view the deployment results
- Same agent push console experience for deploying remote agent
- User inputs for agent base directory, host credentials etc. are same like normal agent push
- Command line option to deploy remote agent
  - `emcli submit_add_host -host_names=<hostname> -platform=226 -credential_name=<credential name> -installation_base_directory=<agent base dir> -remote_agent`



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Simplified flow for adding remote hosts to the remote agent for monitoring through console and emcli

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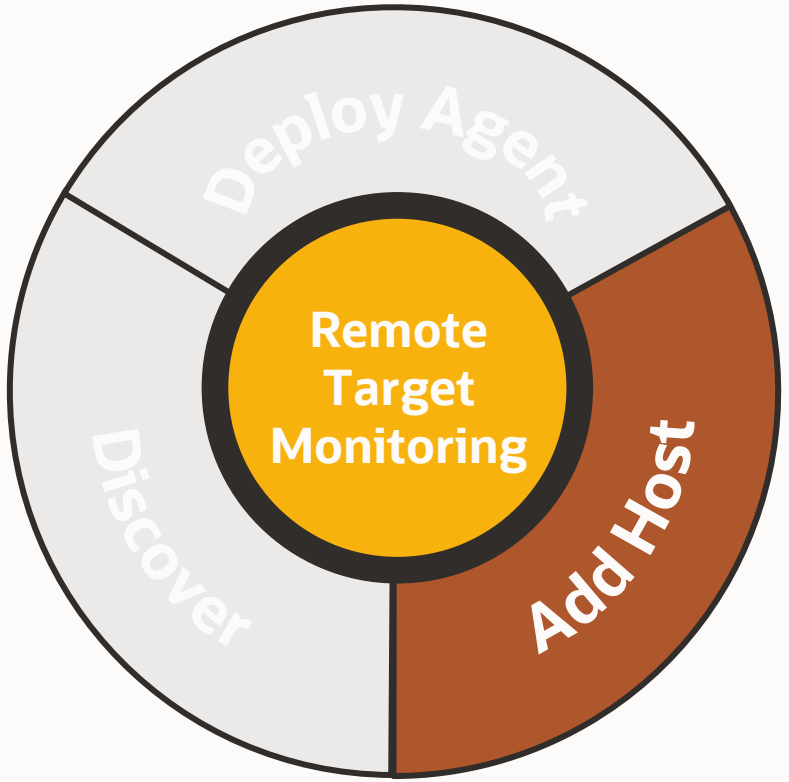
Discover and promote the database and its related targets to remote agent for monitoring



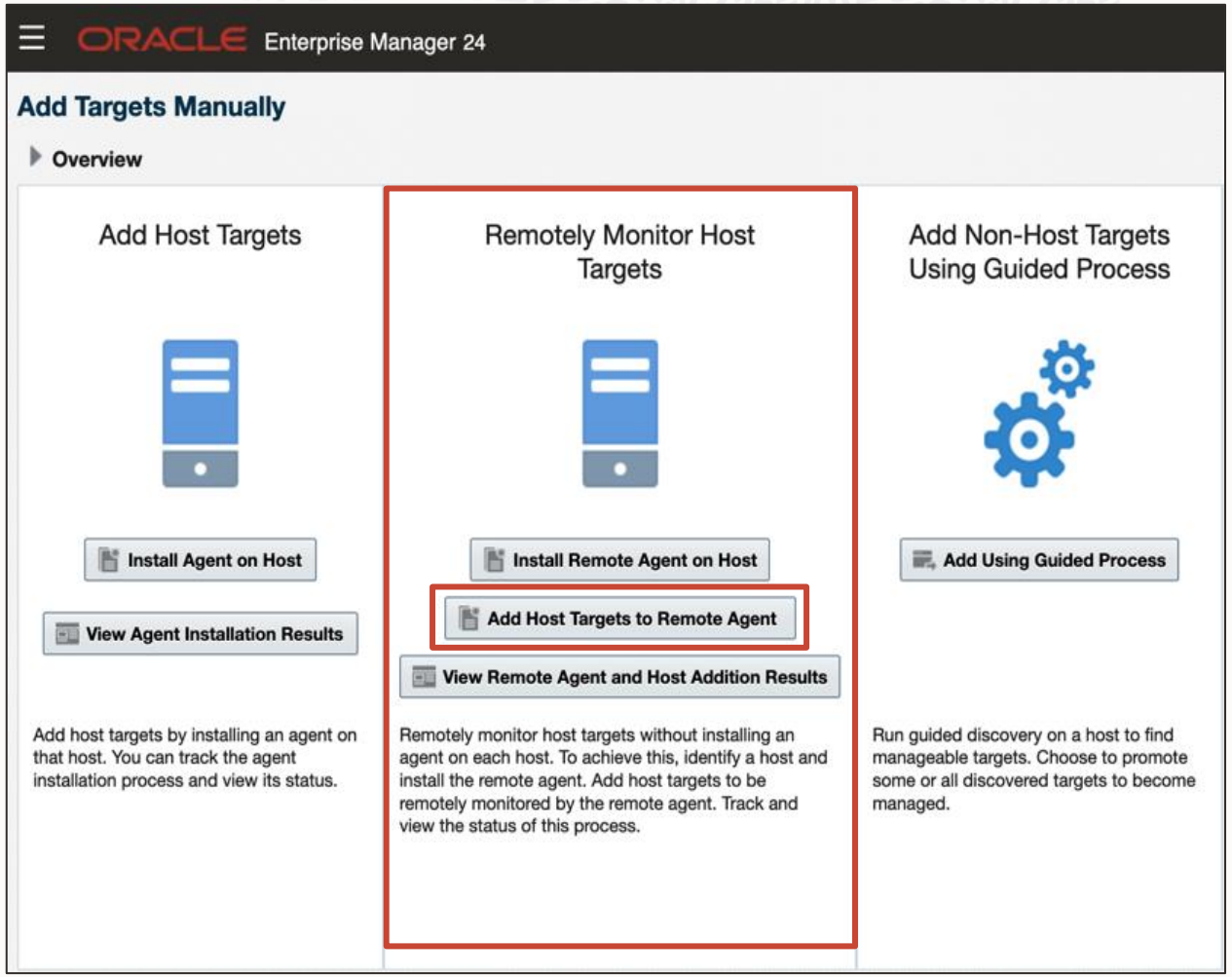
Add host target to remote agent for monitoring (1/3)

Prerequisites

- LinuxX64 platform only supported for remote host addition to remote agent
- Ensure SSH connection is enabled from remote agent host to all remote hosts
- Password-less sudo configuration is required for the remote host target

Limitation

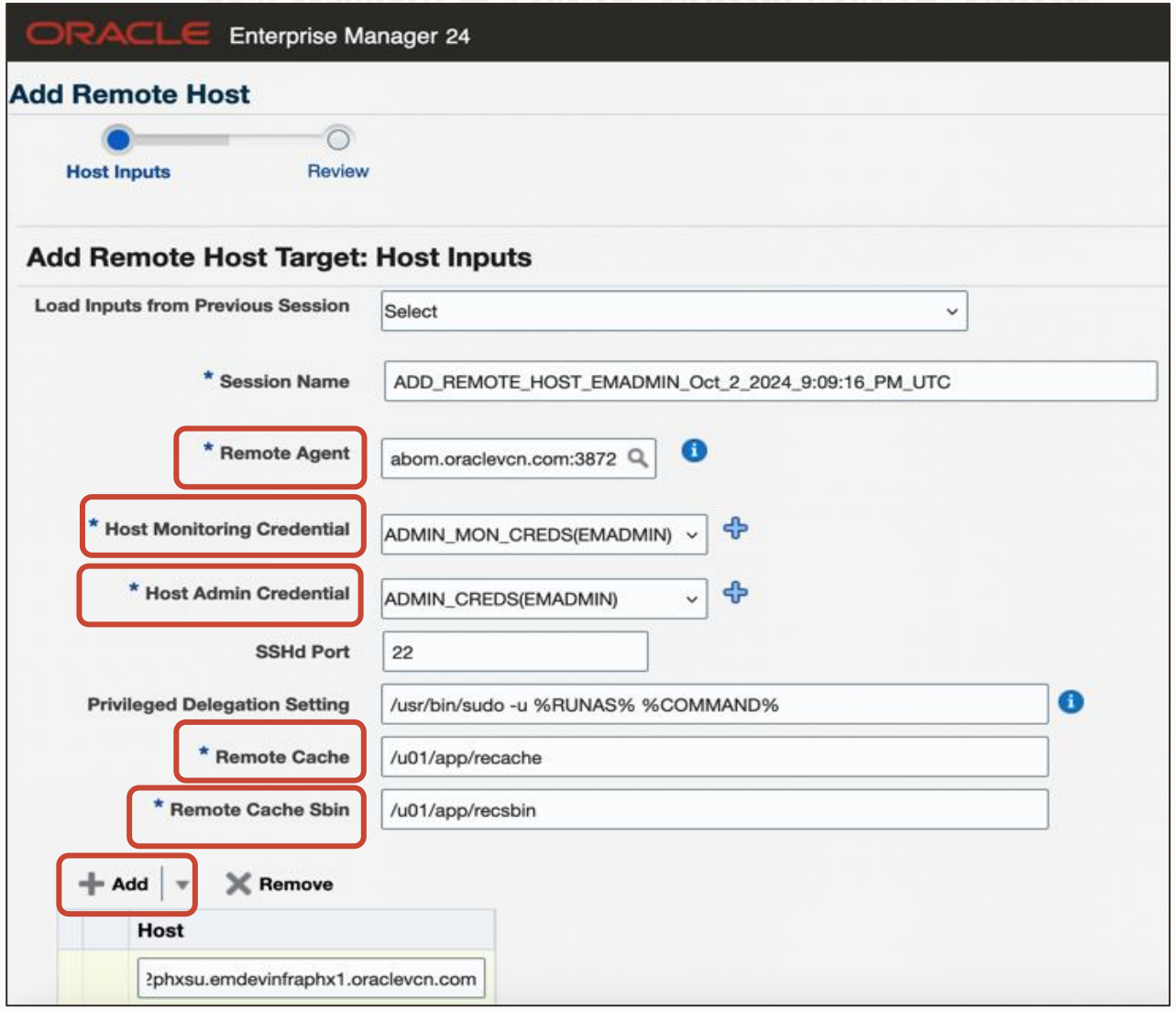
- Powerbroker* option is not supported for adding remote host target to remote agent



** Initial phase*

Add host target to remote agent for monitoring (2/3)

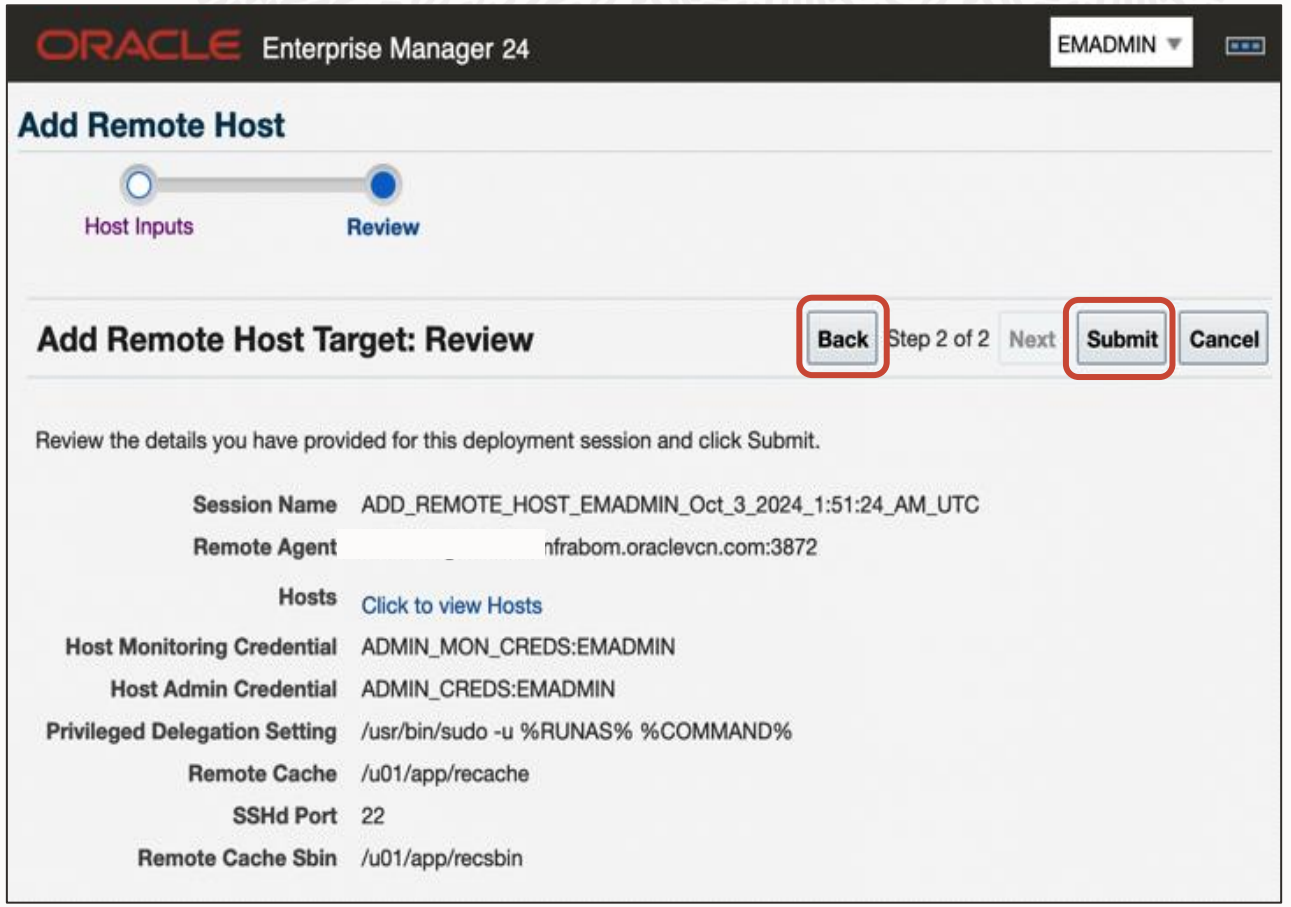
- **Host Monitoring Credential**
  - Used for monitoring and will not need escalation to root. All metric collections will use this credential
  - Supports SSH keys and username/password
- **Host Admin Credential**
  - Root credentials used for pushing sbin content as part of Cache Maintenance operations
  - Require ability of escalating to root without a password using PDP settings (sudo)
- **Remote Cache**
  - Cache of scripts, archives, monitoring utilities and application metadata maintained on remote host. Minimum 1 GB space required on remote host
- **Remote Cache Sbin**
  - Cache contains utilities like nmosudo and nmgsshe root owned contents on remote host. Remote agent may need certain root owned executables for monitoring



Remote Agent – add remote host (3/3)

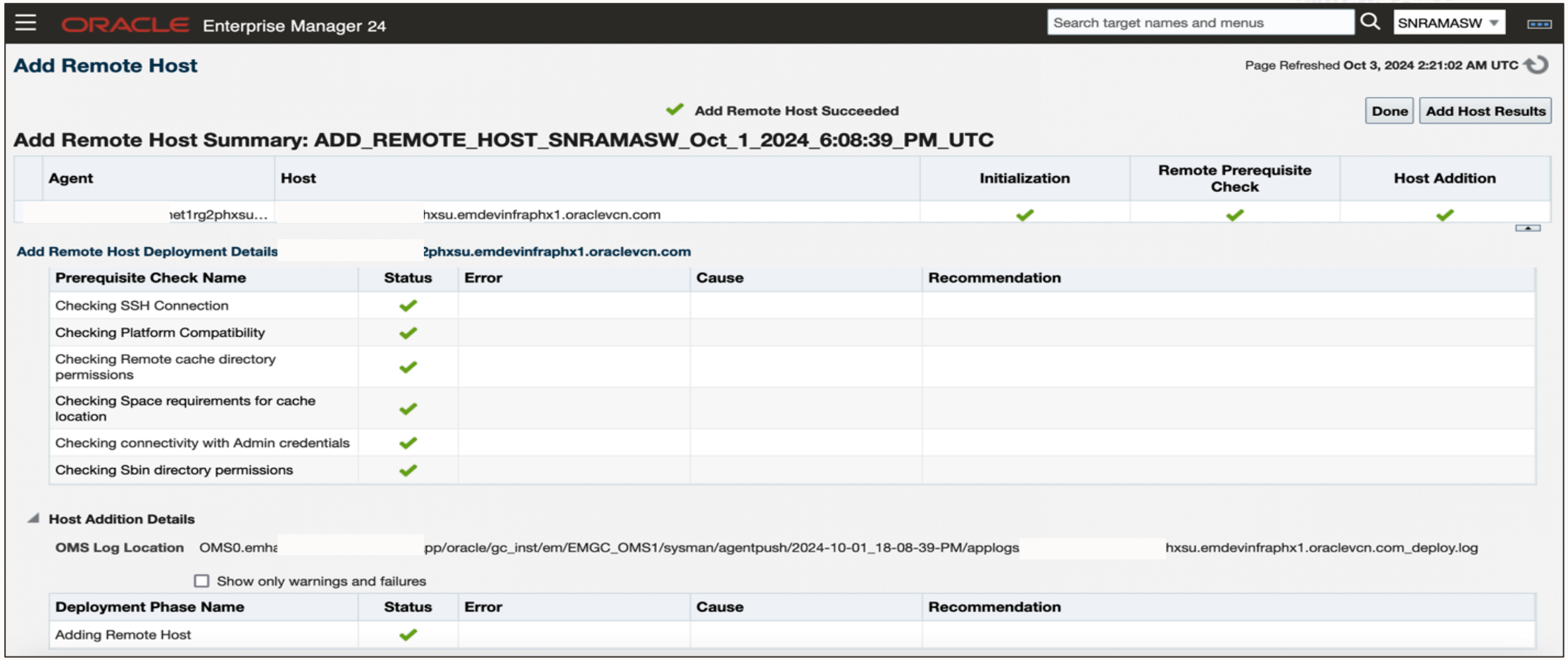
- Review screen to verify the user inputs to add remote host to the remote agent
- Flexible option to go back and modify the inputs before submitting the add host job
- Command line option to add remote host to remote agent

```
$emcli submit_add_remote_host
-host_names=slc.oracle.com
-remote_cache_root=/u01/app/rcache
-remote_cache_sbin_root=/u01/app/rcacheroo
 -agent=02.oracle.com:1838
-host_cred_mon=SSH
-host_cred_admin=SSH_ROOT
-
privilege_delegation_setting="/usr/bin/sudo
-u %RUNAS% %COMMAND%" -wait_for_completion
```



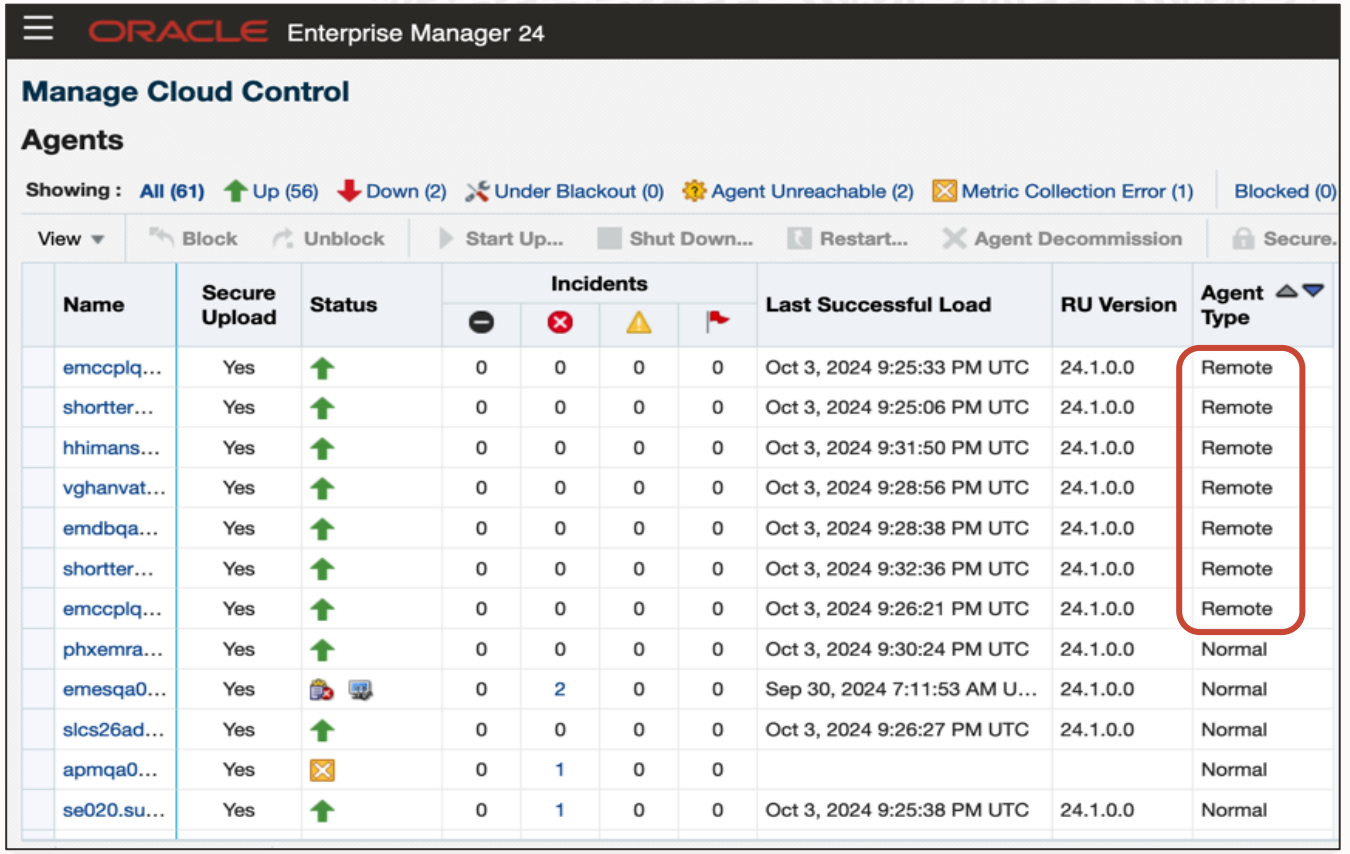
Remote Agent – add remote host job execution

Remote host addition to remote agent results page showing the complete execution of the job



Remote Agent lifecycle management

- Agents page will have indication to distinguish between normal agent and remote agent in the system
- Remote agents can be patched with release updates using agent patch plan or using standalone patching (agentpatcher)
- Remote agents can be updated with JDK updates and all secure configuration like importing custom certificates, updating cipher suites can be updated like normal operation



Name	Secure Upload	Status	Incidents				Last Successful Load	RU Version	Agent Type
emccplq...	Yes		0	0	0	0	Oct 3, 2024 9:25:33 PM UTC	24.1.0.0	Remote
shortter...	Yes		0	0	0	0	Oct 3, 2024 9:25:06 PM UTC	24.1.0.0	Remote
hhimans...	Yes		0	0	0	0	Oct 3, 2024 9:31:50 PM UTC	24.1.0.0	Remote
vghanvat...	Yes		0	0	0	0	Oct 3, 2024 9:28:56 PM UTC	24.1.0.0	Remote
emdbqa...	Yes		0	0	0	0	Oct 3, 2024 9:28:38 PM UTC	24.1.0.0	Remote
shortter...	Yes		0	0	0	0	Oct 3, 2024 9:32:36 PM UTC	24.1.0.0	Remote
emccplq...	Yes		0	0	0	0	Oct 3, 2024 9:26:21 PM UTC	24.1.0.0	Remote
phxemra...	Yes		0	0	0	0	Oct 3, 2024 9:30:24 PM UTC	24.1.0.0	Normal
emesqa0...	Yes		0	2	0	0	Sep 30, 2024 7:11:53 AM U...	24.1.0.0	Normal
slcs26ad...	Yes		0	0	0	0	Oct 3, 2024 9:26:27 PM UTC	24.1.0.0	Normal
apmqa0...	Yes		0	1	0	0			Normal
se020.su...	Yes		0	1	0	0	Oct 3, 2024 9:25:38 PM UTC	24.1.0.0	Normal

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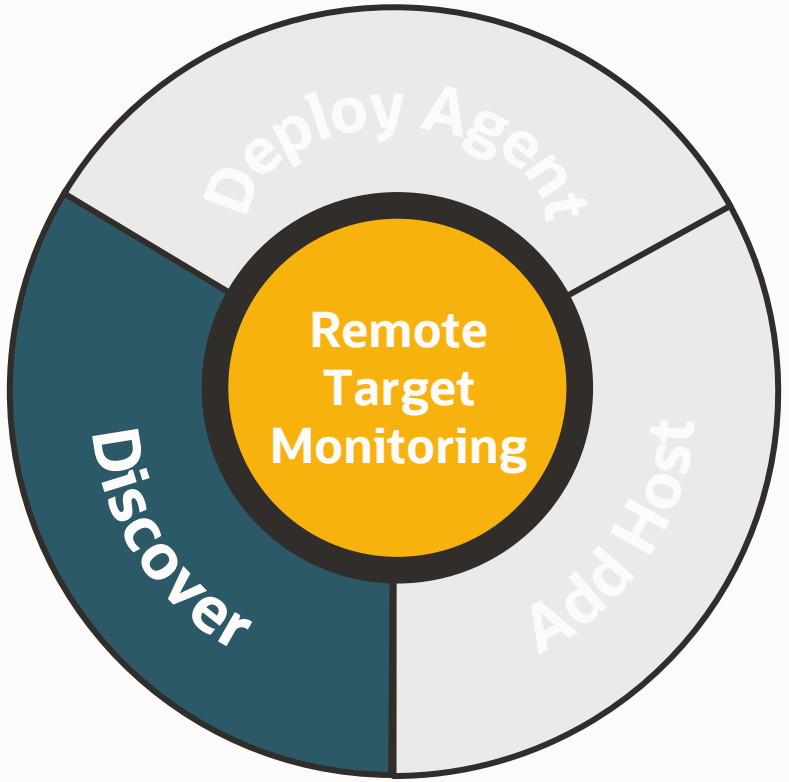
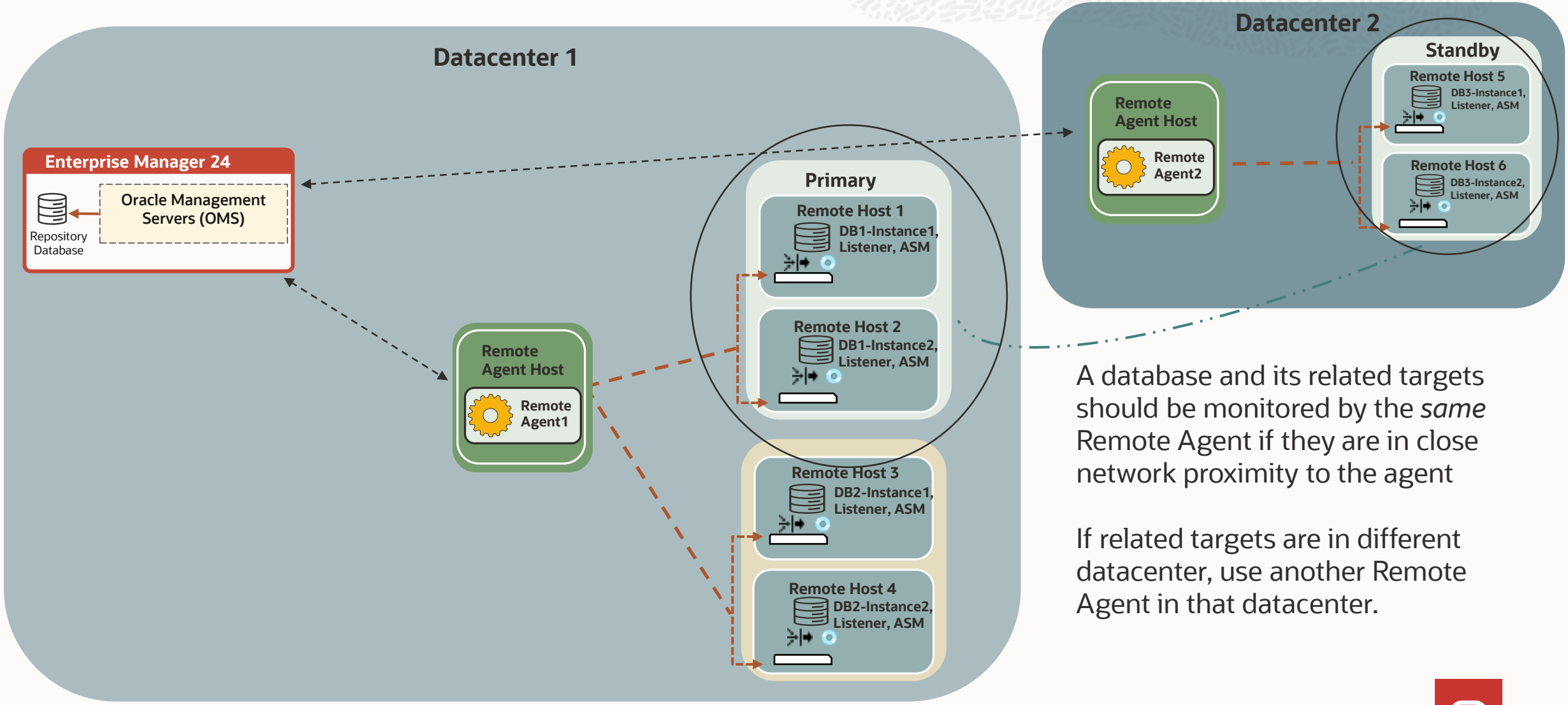


Remote database monitoring topology overview



A database and its related targets should be monitored by the *same* Remote Agent if they are in close network proximity to the agent

If related targets are in different datacenter, use another Remote Agent in that datacenter.

Discover and monitor targets (1/5)

For each set of database and related targets:

1. **Determine the agent(s) to be used** for the database and its related targets
   - Needs to be close in network proximity to the agent
   - If all the targets are close to the agent, use that same agent

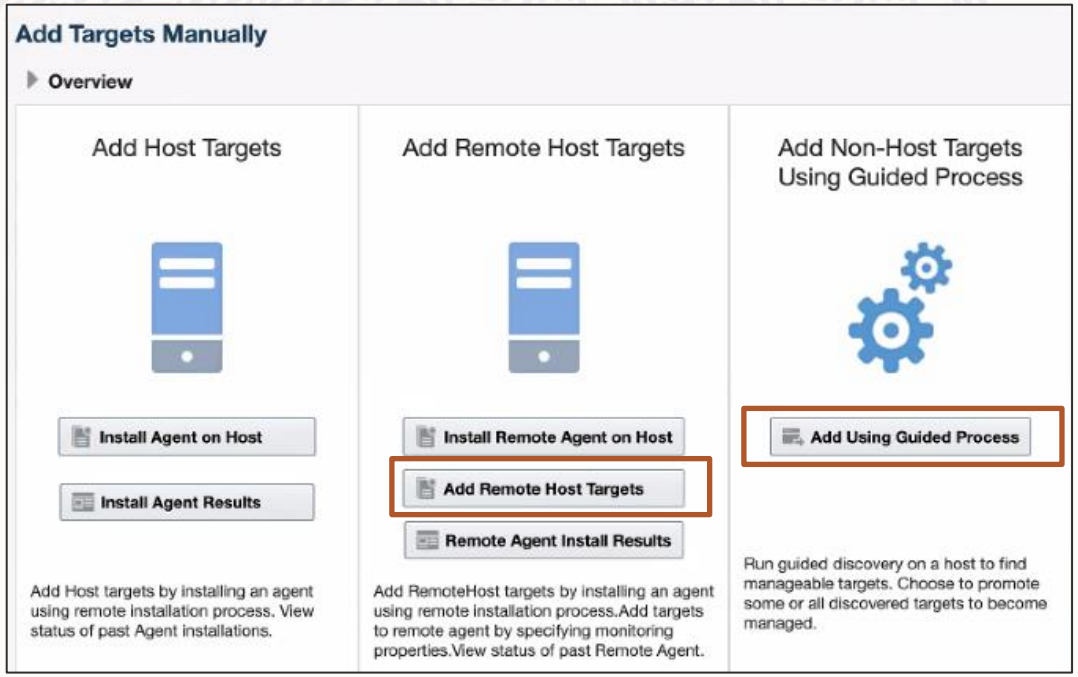
2. **Add ALL of the hosts** of the database and its related targets to the *same agent* (best practice)

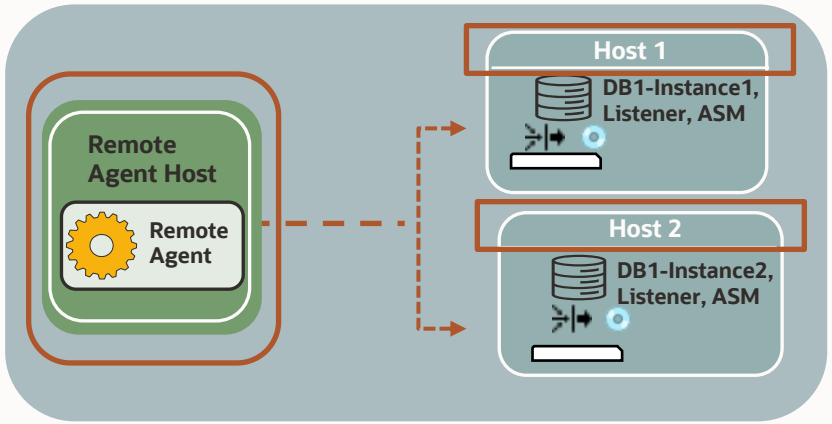
3. **Add database targets** using the *same discovery workflow that you would use if you were using a local agent*

All database discovery options are supported

- Auto-discovery, guided discovery, manual discovery, emcli add_target, emcli discover_db, etc.

As an example, we'll walkthrough the Guided Process discovery

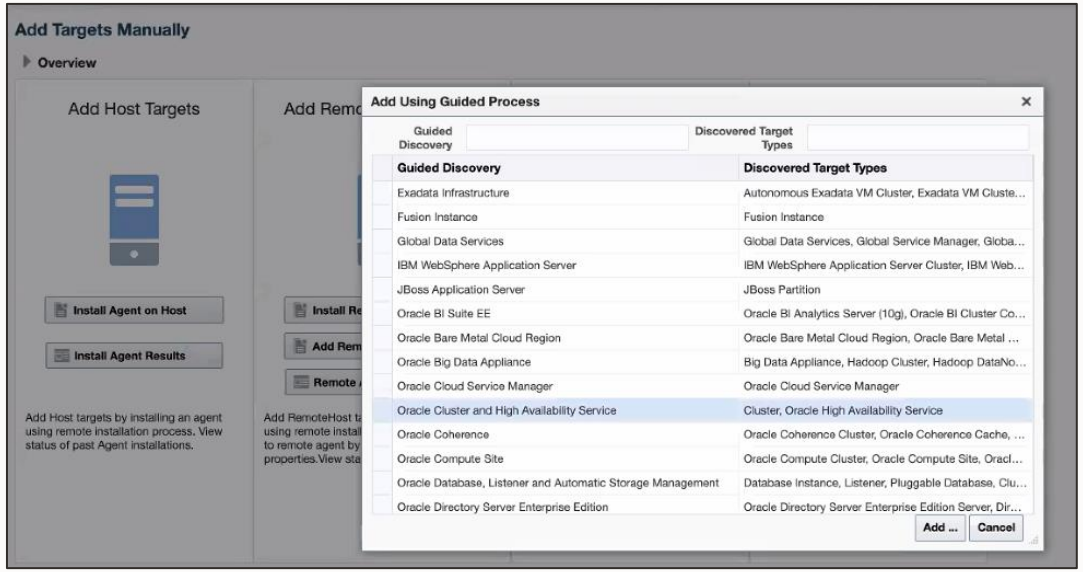




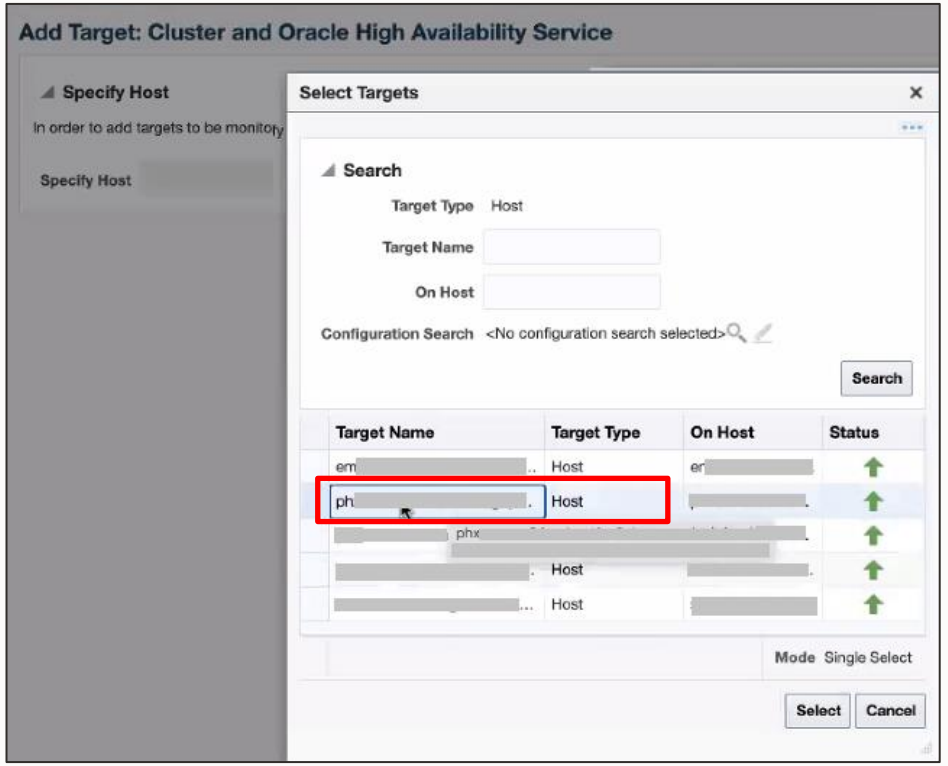
Discover and monitor targets (2/5)

Oracle Cluster and High Availability Service

Choose *Oracle Cluster and High Availability Service*



Select the host on which the cluster resides (remotely monitored host)

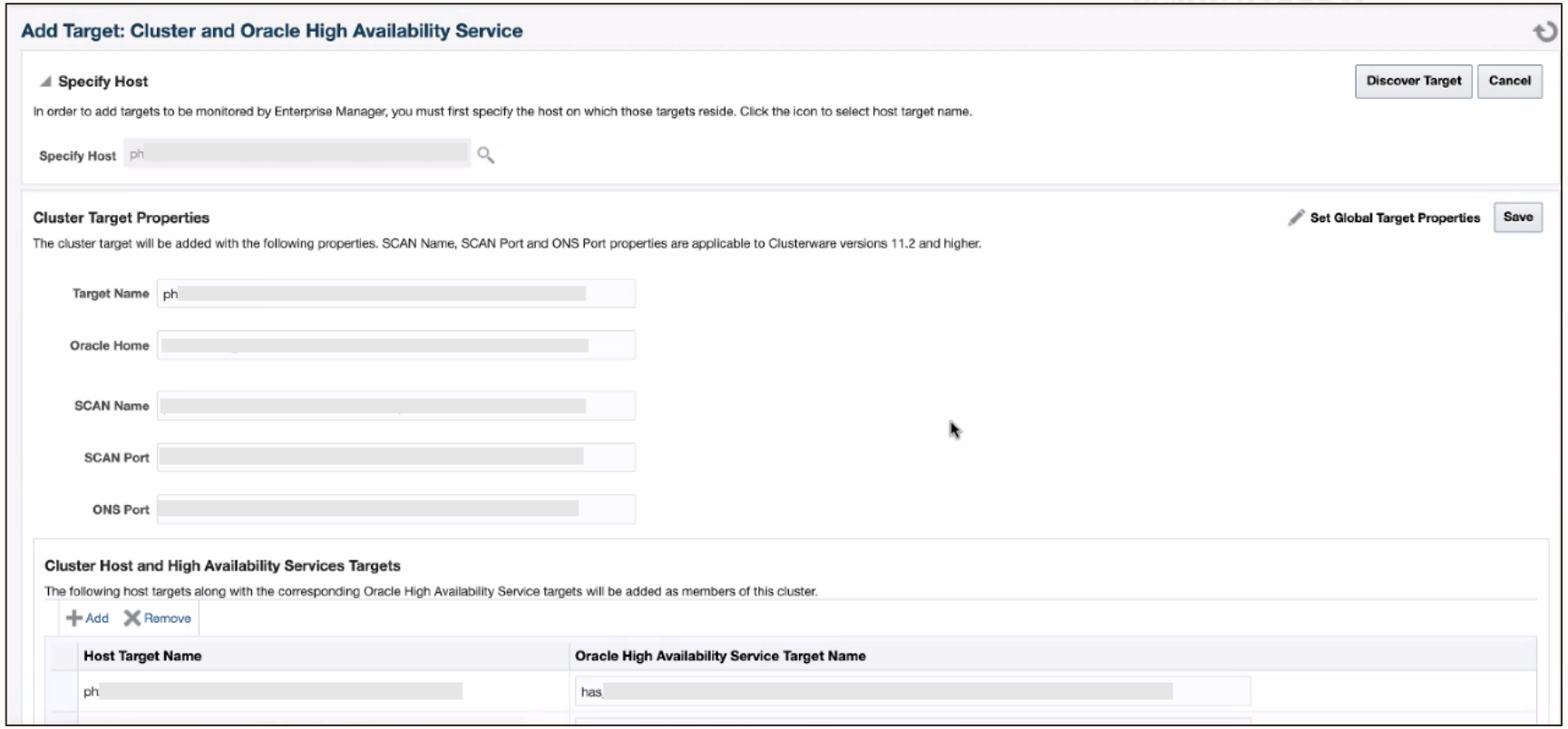


Discover and monitor targets (3/5)

Oracle Cluster and High Availability Service

Remaining workflow is the same:

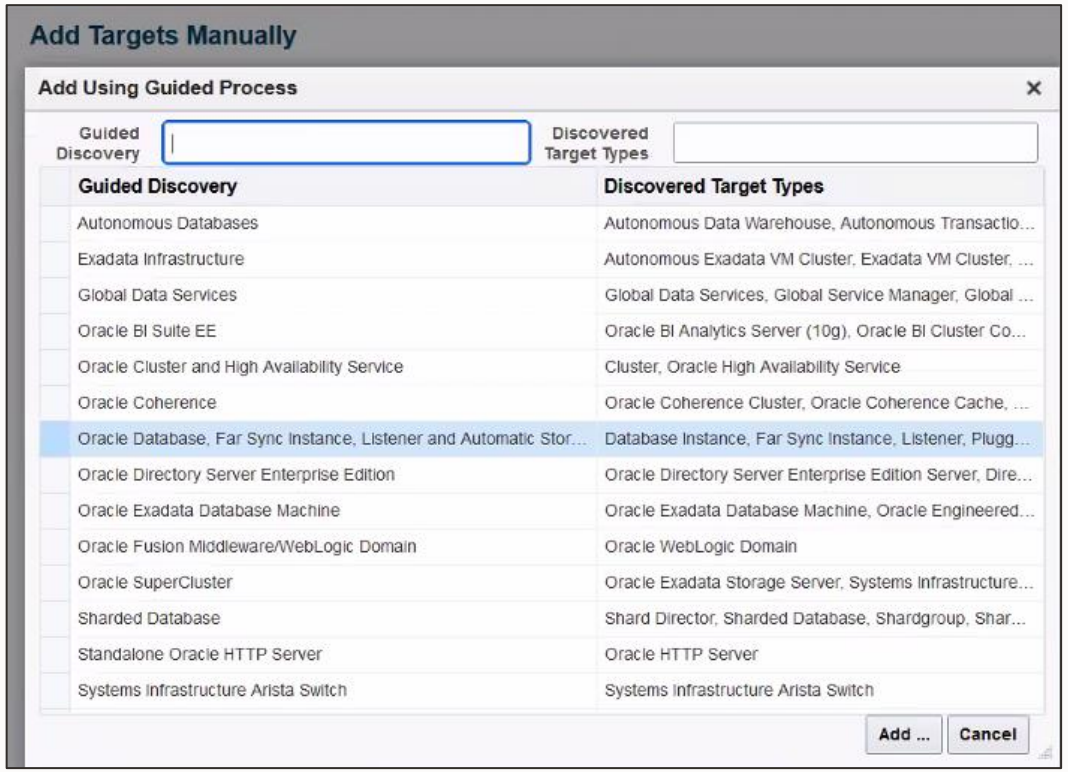
fill in cluster target properties such as SCAN Name, SCAN Port, etc.



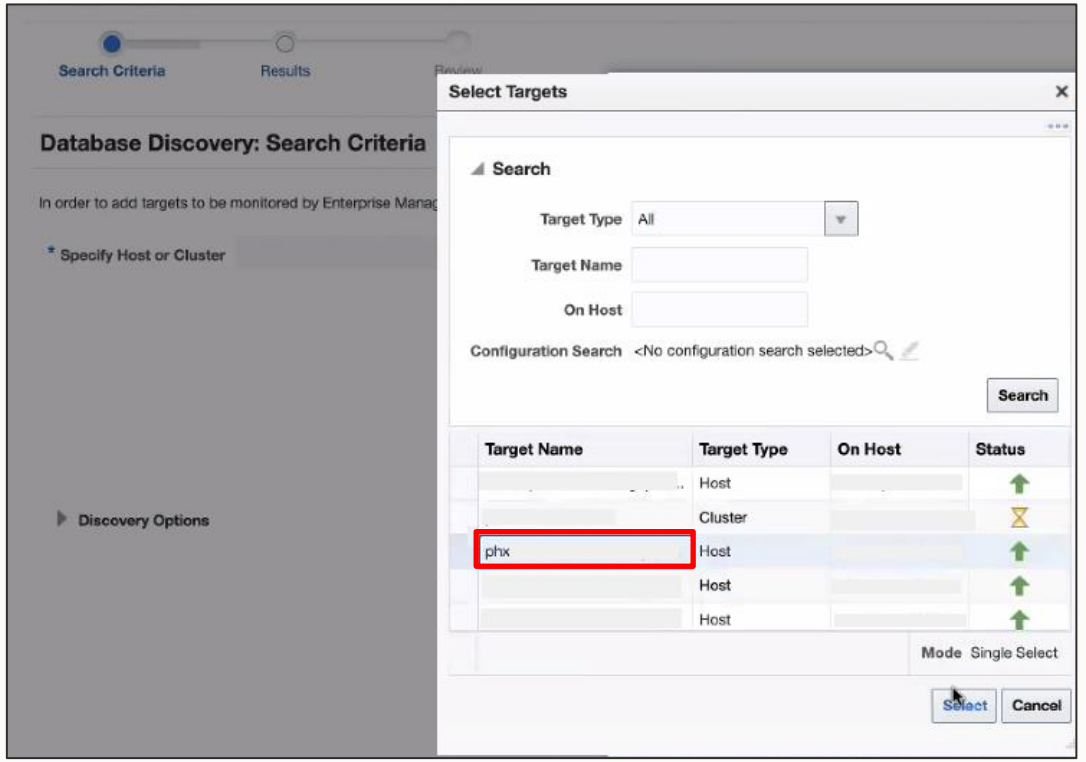
Discover and monitor targets (4/5)

Oracle Database, Far Sync, Listener and Automatic Storage Management

Choose *Oracle Database, Far Sync Instance, Listener and Automatic Storage Management*



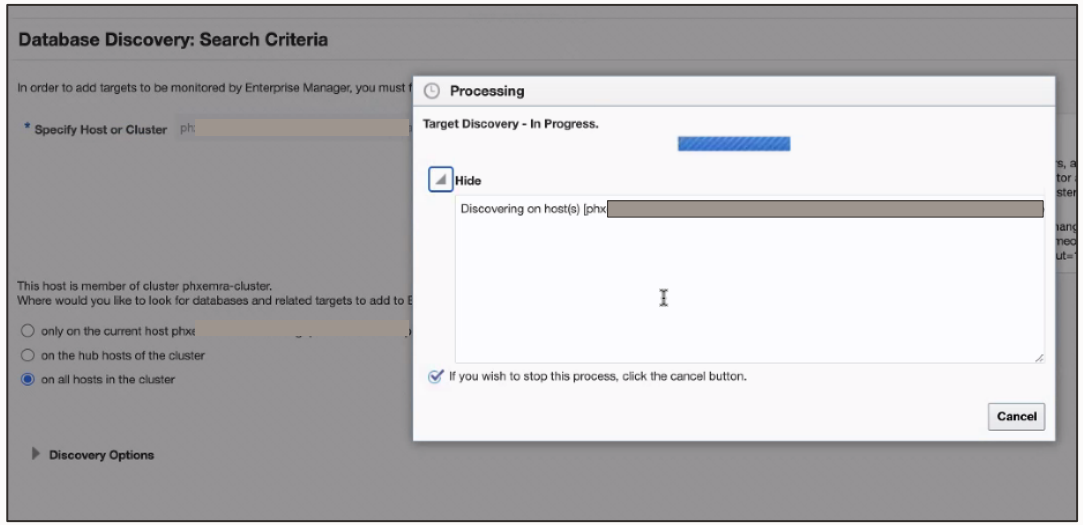
Choose the host on which these targets reside. (host is remotely monitored)



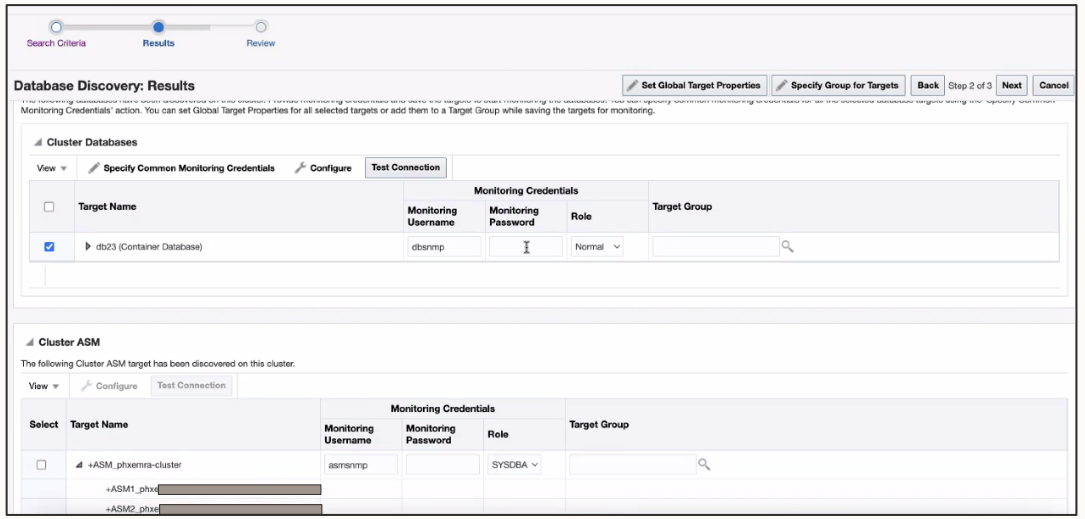
Discover and monitor targets (5/5)

Oracle Database, Far Sync, Listener and Automatic Storage Management

Same discovery process for discovering databases, ASM, etc.



Same process for choosing the targets to promote



Monitoring is the same with the Remote Agent

- After discovery, all database monitoring features *work in the same way*
  - Metrics and thresholds
  - Monitoring Templates
  - Metric Extensions
  - Corrective Actions
  - Blackouts
  - Notifications / Connectors
  - Alerts and Incidents
  - Incident Management
  - Event Compression
  - Dynamic Runbooks

- Your existing monitoring set up (monitoring templates, metric extensions, corrective actions, etc.) will automatically work with remotely monitored database targets

Supported host and database-related target types

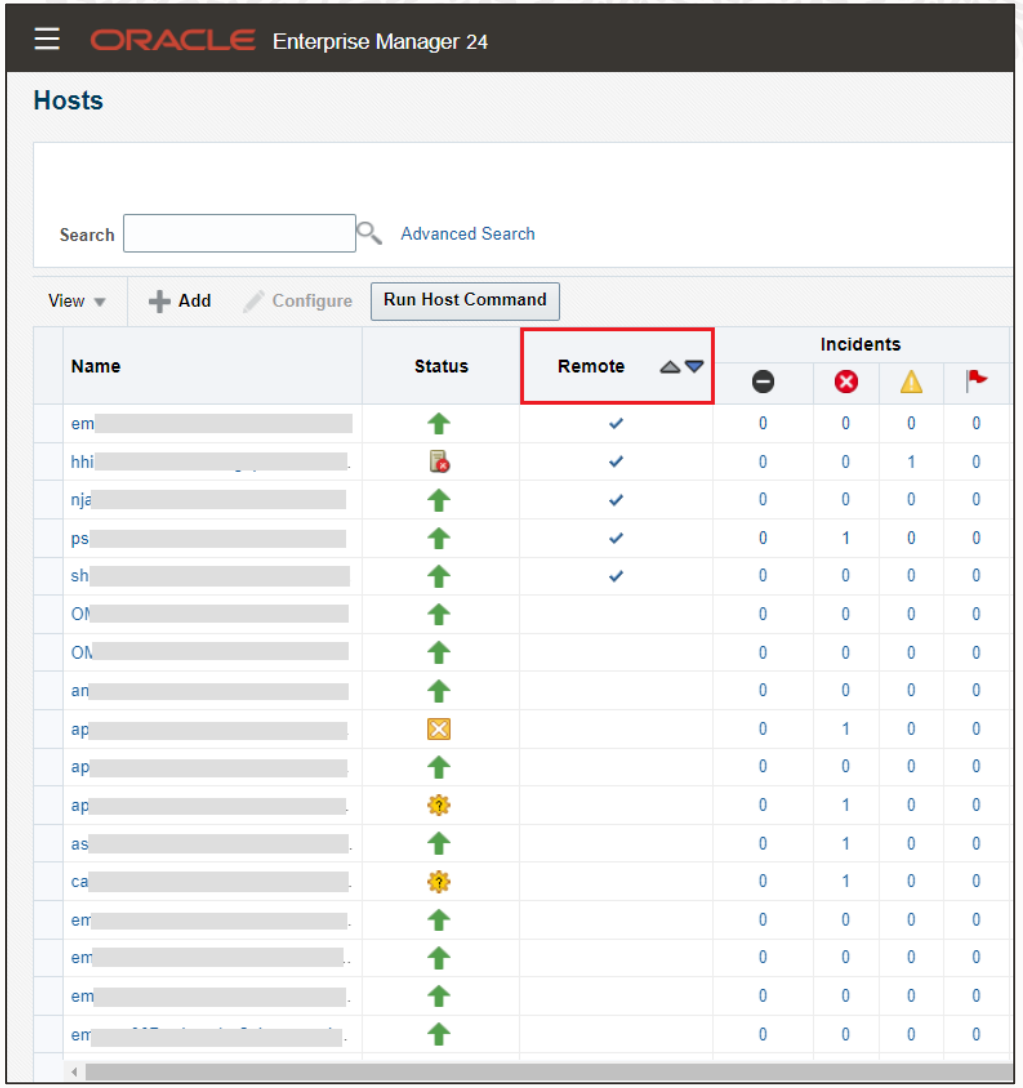
These target types will work with the Remote Agent for remote monitoring, performance diagnostics, jobs, management operations (e.g., backup, Data Guard failover/switchover, etc.).

- Host* (host)
- Listener (oracle_listener)
- Database Instance (oracle_database)
- Pluggable Database (oracle_pdb)
- Oracle Database Service (oracle_dbsvc)
- Cluster (cluster)
- Cluster (RAC) Database (rac_database)
- Oracle High Availability Service (has)
- Cluster ASM (osm_cluster)
- ASM (Automatic Storage Management) (osm_instance)
- ASM IO Server (osm_ioserver)
- ASM Proxy (osm_proxy)
- Oracle Autonomous Data Warehouse (oracle_cloud_adw)
- Oracle Autonomous Transaction Processing (oracle_cloud_atp)
- Oracle Connection Manager (oracle_cman)
- Far Sync Instance (oracle_farsync)
- Global Data Services (gds_cloud)
- Global Service Manager (gds_gsm)
- Global Data Services Pool (gds_pool)
- Shard Director (gds_shard_director)
- Sharded Database (gds_sharded_database)
- Shardgroup (gds_shardgroup)
- Shardspace (gds_shardspace)

* LinuxX64 (initial phase)

Host availability monitoring

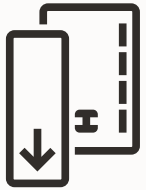
- Remote host monitoring begins when Remote Agent receives a host target that has the remote monitoring credentials
- **Hosts page** identify hosts that are remotely monitored
- **If host goes down and is monitored by local Agent**
  - Agent, Host, and its targets go into Agent Unreachable status
- **If host goes down and is monitored by Remote Agent** (which is up)
  - Host goes into Host Unreachable status
  - Monitored targets status will be in error
  - All jobs for the host/monitored targets will be auto-retried and set to failed if not successfully executed
  - Create incident, send notifications for Host Unreachable on host targets
- **If Remote Agent or its host go down**
  - Monitored targets go into Agent Unreachable status



Benefits: Remote target management with remote agent

Streamline Monitoring

Remote Agent supports monitoring and managing targets at scale with reduced overall agent footprint and lifecycle management tasks



Resource Reduction

Reduced hardware resource consumption on all managed target hosts that no longer require co-located agent

Better Manageability

Detailed auditing and reporting capabilities, making it easier to track remote agents in the system for ease of lifecycle management

Increased Productivity

With less agents to manage, frees up administrator time to focus on database monitoring and management

Q&A
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