



# Do This, Not That: Top 10 Tips to Monitor Oracle Database, WebLogic, and More

**Ana McCollum**

**Aaron Rimel**

Product Management

Observability & Management

**ORACLE**  
Cloud

 Microsoft  
Azure

**aws**

  
On-premises

## Observability and Management Services



Application Performance  
Monitoring



Stack  
Monitoring



Logging  
Analytics



Database and  
OS Management



Capacity Planning  
SQL Insights

## Telemetry Types



Metrics



Events



Logs



Traces



SQL

## OCI Infrastructure



Compute



Storage

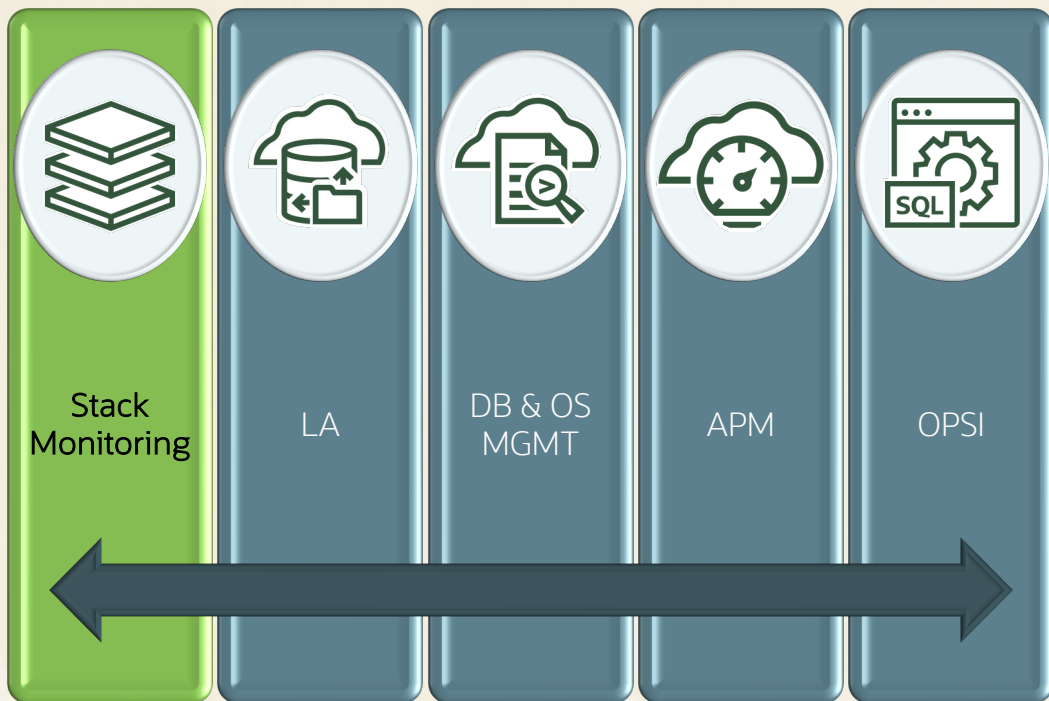


Network



Security

# Start with monitoring essentials



## Monitoring questions

- What's in my environment?
- Are my resources up?
- How do I know if there are performance problems?
- Am I running out of CPU, memory or storage?

# OCI Stack Monitoring

## Get started monitoring in minutes

- Single UI discovery for multi-component apps (EBS, PSFT, WebLogic Domain...)
- Monitoring starts after discovery
- Automatic host monitoring with agent deployment

## Built-in domain expertise

- Application topology auto-created and maintained
- Curated metrics for each resource type

## Built-in monitoring UIs

- Monitoring at scale (Enterprise Summary, fleet dashboards)
- Application Stack Views
- Troubleshooting workflows, leveraging topology

\*coming soon

## Baselines and Anomalies

- Auto-detect baselines for key performance metrics
- Performance anomalies shown in charts

## Extensibility – monitor anything

- Metric extensions
- Prometheus\*
- Process monitoring\*

## Alarms

- Alarm rule recommendations

## Hybrid environment

- Monitor resources on OCI, on-premises or other cloud providers



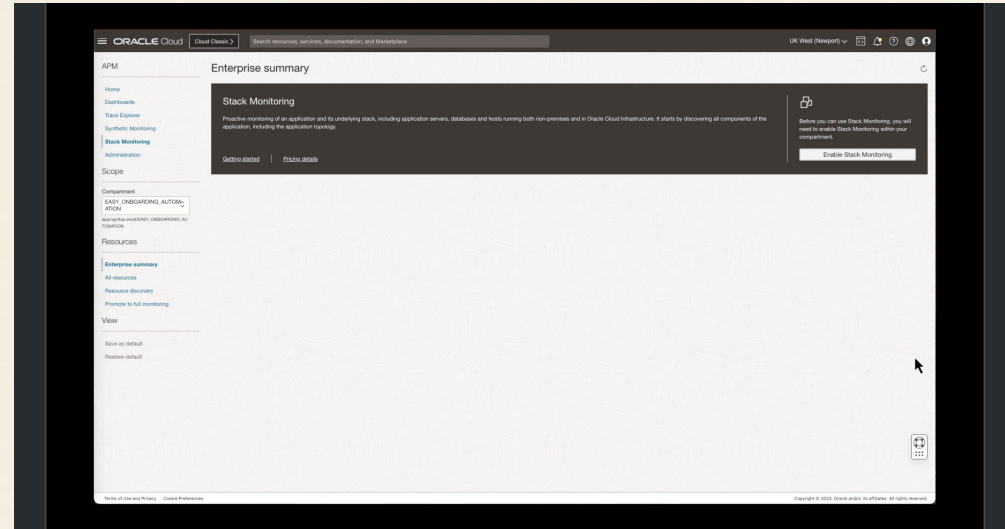
# Tip 1: Enable Stack Monitoring with easy onboarding

## One-click service onboarding

- Perform as a tenant administrator
- Enable for each compartment

## After service onboarding completes:

- Policies are set up
- User groups are created:
  - **StackMonitoringAdminGrp** – assign users who perform discovery and alarm set up
  - **StackMonitoringViewerGrp** – assign users who monitor status, health and performance of resources



One-click Stack Monitoring service onboarding





# Tip 2: Know the prerequisites

## Host

- OCI: Enable the Management Agent plugin of Oracle Cloud Agent (automatic if OCI compute is enabled for OS Management service)
- On-premises/other clouds: Install management agent
- Enable host monitoring through one-click promotion step and use FQDN as resource name or use host auto-promotion

## Oracle Database System

- Install agent on every host of the database system (e.g., all hosts of 2 node-RAC) and enable host monitoring
- Grant execute to Management Agent user
  - Policy – allow agent to upload data to OCI Monitoring namespace `oci_oracle_database_cluster`
- Database monitoring credentials: DBSNMP or create custom user (refer to [MOS Note: 2857604.1](#))

## WebLogic Domain

- Install agent on every host of WebLogic Domain and enable host monitoring
- Prerequisites: SSL setup, Activate MBeans
- Auto-discovers: SOA, OHS, OIM, OAM. If WebLogic is already discovered, you can discover these other resources through WebLogic Domain refresh
- Discover MFT independently

## E-Business Suite (EBS)

- Enable host monitoring on every EBS host
- Discover Oracle Database before EBS discovery
- Prerequisites: Grant access to EBS schema to database monitoring user then Activate MBeans, verify Forms session data
- Don't discovery WebLogic, it will be part of EBS discovery
- When EBS systems are patched, use the refresh procedure



# Tip 3: Follow discovery best practices

Discover in recommended order:

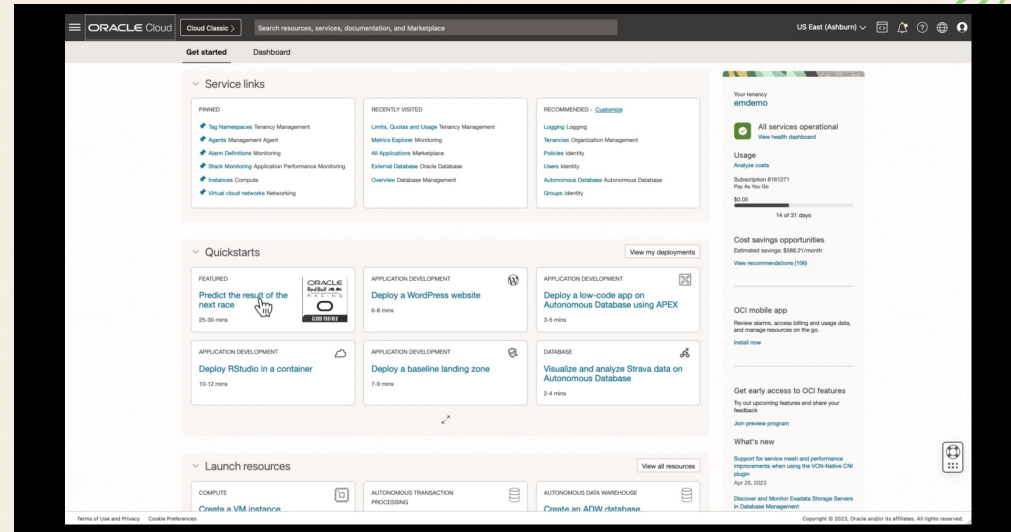
- Host
- Oracle Database System (DB, ASM, Cluster, and Listener)
- Pluggable DBs
- Application server tier (WebLogic, Tomcat) (if applicable)
- Packaged Apps (E-Business Suite, PeopleSoft)
  - Includes WebLogic discovery

Specify appropriate tags (e.g., Environment)

Complete discovery workflow

- Track status of job, it discovers all components and builds application topology
- Use the UI or CLI to complete association with host

Monitor resource when discovery completes



Single-click discovery for E-Business Suite



# Tip 4: Define an access model, not everyone is an admin

## Use Case:

- Prod DBA\_ADMINS: manage all databases, view on middleware
- Prod MW\_ADMINS: view on databases, manage all middleware

## Create policies with tags to control access

### PROD DBA\_ADMINS

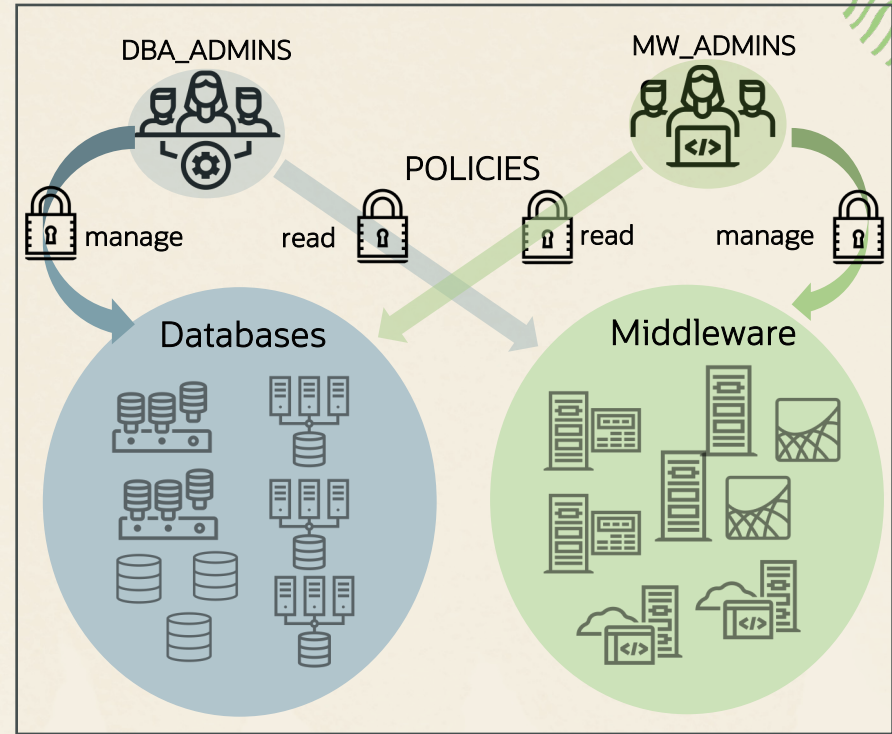
ALLOW GROUP **DBA\_ADMINS** to **manage** stack-monitoring-family in compartment My\_Compartment where target.resource.tag.Oracle-Standard.Environment="Prod" AND target.resource.tag.<My\_Company\_Standard>.Tier="Database"

ALLOW GROUP **DBA\_ADMINS** to **read** stack-monitoring-family in compartment My\_Compartment where target.resource.tag.Oracle-Standard.Environment="Prod" AND target.resource.tag.<My\_Company\_Standard>.Tier="Middleware"

### PROD MW\_ADMINS

ALLOW GROUP **MW\_ADMINS** to **read** stack-monitoring-family in compartment My\_Compartment where target.resource.tag.Oracle-Standard.Environment="Prod" AND target.resource.tag.<My\_Company\_Standard>.Tier="Database"

ALLOW GROUP **MW\_ADMINS** to **manage** stack-monitoring-family in compartment My\_Compartment where target.resource.tag.Oracle-Standard.Environment="Prod" AND target.resource.tag.<My\_Company\_Standard>.Tier="Middleware"



Policies with tags enable control of resources



# Tip 5: Start with your host, don't wait for an incident to occur

Use the host homepage

Check availability status

- If Not Reporting, agent status is shown with drilldown to details

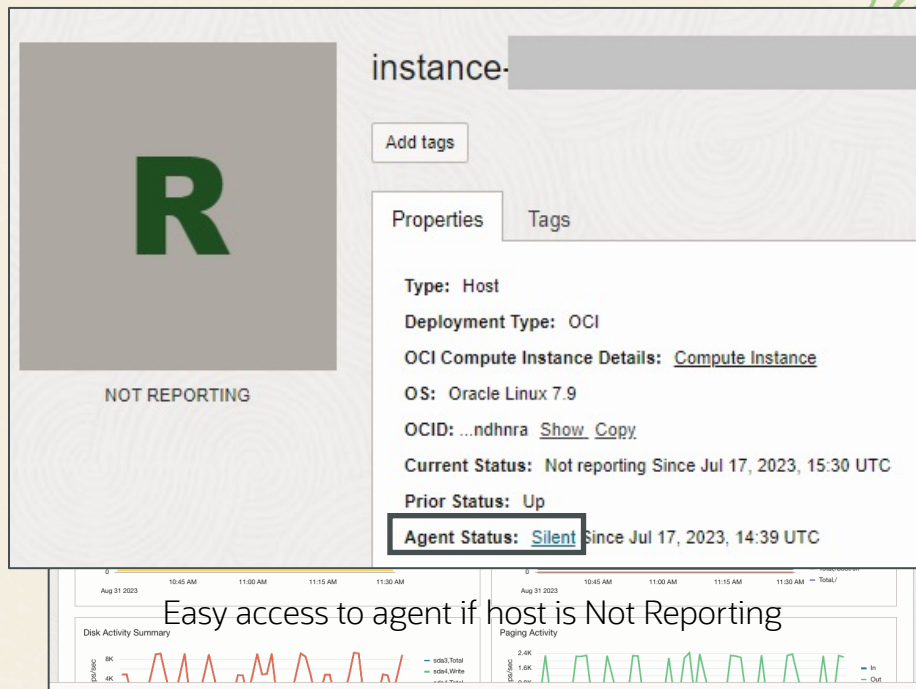
Review open alarms and drilldown to details

Assess resource usage

- Fine-grained metric collections eliminate blind spots
- Adjust time periods to identify trends
- Identify filesystems running out of space

Understand what is running on a host

- Navigational topology: Quickly access to resource running on the host



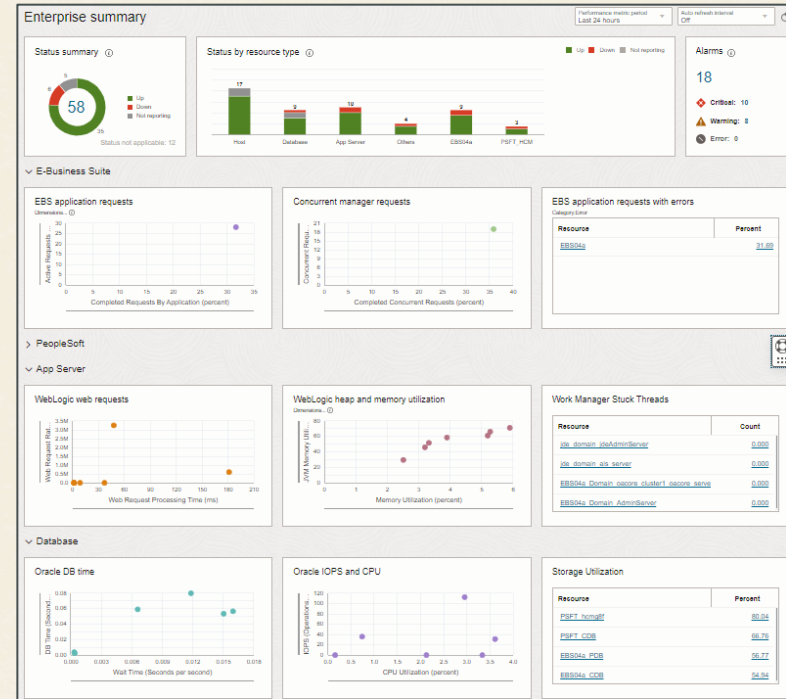
Easy access to agent if host is Not Reporting

Host homepage enables holistic monitoring of status, performance and alarms

# Tip 6: Focus on vital signs, don't review random metrics all at once

## Monitor vital signs

- Vital signs for each resource type: curated metrics from domain experts covering **Availability, Load, Response, Utilization, Error**
- Examples:
  - **E-Business Suite**: Active Requests, Completed Requests, Concurrent Requests By Status, Hourly Completed Concurrent Requests Rate, EBS Application Requests with Errors
  - **WebLogic Server**: Monitoring Status, Web Request Rate, Web Request Processing Time, Heap Utilization, Stuck Threads
  - **Oracle Database**: Monitoring Status, DB Time, IOPS, CPU Utilization, Storage Utilization By Tablespace, Process Limit Utilization, Blocking Sessions
- **Enterprise Summary**
  - For each tier (app, app server, db, host): correlate load and response, show top utilization, errors



Enterprise Summary shows vital signs for each tiers



# Tip 7: When investigating an event, start with the Stack View (big picture)

Review the entire application stack...

- To assess overall health (vital signs)
- When investigating an issue

## Example: EBS Stack View

- EBS, Concurrent Manager, WebLogic (oacore), Database, Host
- Compare spikes/lulls in performance across the stack
- Issues at the top of the stack, check status of dependent components
  - JVM memory maxed out?
  - Any hogging threads?
  - Issues with JDBC Connections?
  - High DB wait times?
  - Maxed out host CPU or Memory?



# Tip 8A: Understand OCI Monitoring metric namespaces and resource groups

All Stack Monitoring metrics are stored in OCI Monitoring. Use OCI Monitoring for alarms.

Resource type*	Metric namespace	Resource group
Host (OCI Compute / on-premises / other clouds)	oracle_appmgmt	host
Oracle WebLogic Server	oracle_appmgmt	weblogic_j2eeserver
Oracle Managed File Transfer (MFT)	oracle_appmgmt	oracle_mft
Non-Container DB, Container DB, Pluggable DB	oracle_oci_database	N/A
ASM	oracle_oci_database_cluster	oracle_asm
Listener	oracle_oci_database_cluster	oracle_lsnr
Cluster	oracle_oci_database_cluster	oracle_cluster
Oracle E-Business Suite	oracle_appmgmt	ebs_instance
EBS Concurrent Processing, etc.	oracle_appmgmt	oracle_ebs_conc_mgmt_service
Oracle PeopleSoft	oracle_appmgmt	N/A
Application Server Domain, etc.	oracle_appmgmt	oracle_psft_appserv
Microsoft SQL Server	oracle_appmgmt	sql_server
Apache Tomcat	oracle_appmgmt	apache_tomcat

\* For a full list of resource types and namespaces see documentation

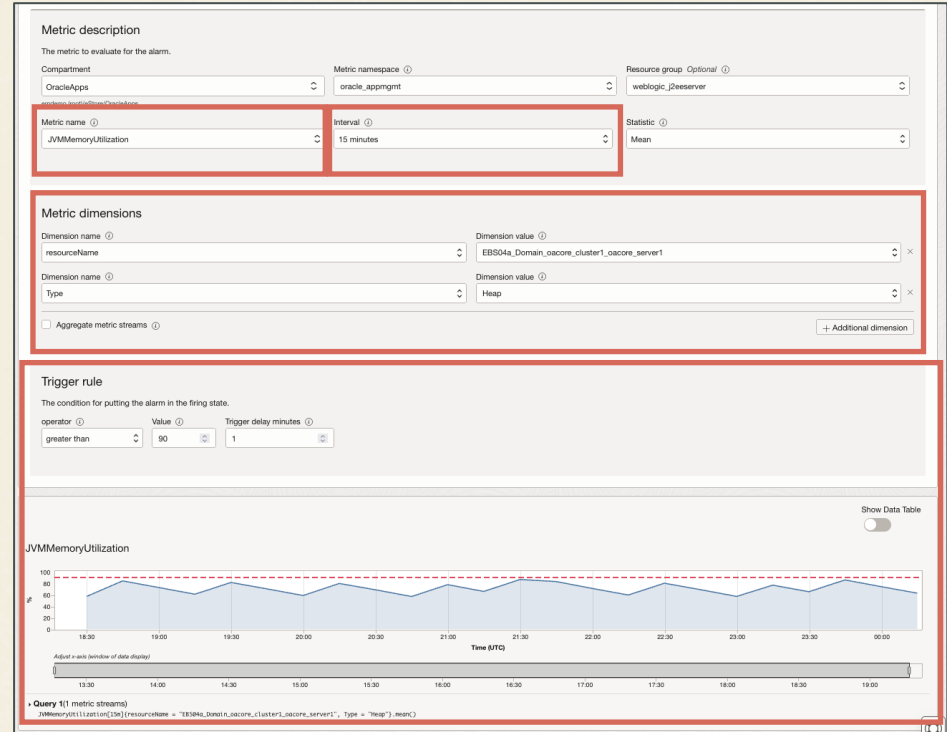




# Tip 8B: Understand Alarm Rules in OCI Monitoring

## Recommendations:

- **Metric name:** Filter by metric namespace and resource group
- **Interval:** Value  $\geq$  the metric collection interval (refer to documentation)
- **Metric dimensions:** Include resource name to trigger one alarm per resource
- **Trigger rule:** see documentation for recommended starting thresholds, then adjust to meet your needs
- Review threshold line against metric in graph



Sample alarm rule for WebLogic heap usage

# Tip 8C: Recommended Alarm Rules

Recommended metrics and thresholds for alarms. Sample list provided, refer to documentation for full list.

Resource Type	Metric	Metric name or MQL	Interval	Warning threshold	Critical threshold
Host	Availability Status	MonitoringStatus[1m].mean() != 1    MonitoringStatus[1m].absent()	1m	N/A	N/A
Host	Filesystem	FilesystemUtilization	5m	> 80	> 90
Oracle Database	Availability Status	MonitoringStatus[1m].mean() != 1    MonitoringStatus[1m].absent()	1m	N/A	N/A
Oracle Database	Tablespace Utilization	StorageUtilizationByTablespace	30m	> 85	> 90
Oracle Database	Process Limit	ProcessLimitUtilization	5m	> 60	> 75
Oracle Database	Blocking Sessions	BlockingSessions	15m	> 1	> 5
Oracle Database	Usable Fast Recovery Area (%)	UsableFRA	15m	< 20	< 10
WebLogic Server	Availability Status	MonitoringStatus[1m].mean() != 1    MonitoringStatus[1m].absent()	1m	N/A	N/A
WebLogic Server	JVM Memory Utilization	JVMMemoryUtilization[15m]{Type = "Heap"}.mean()	15m	> 80	> 90
WebLogic Server	Work Manager Stuck Threads	WorkManagerStuckThreads	15m	> 5	> 10
EBS Concurrent Manager	Concurrent Manager Availability Status	MonitoringStatus[1m].mean() != 1    MonitoringStatus[1m].absent()	1m	N/A	N/A



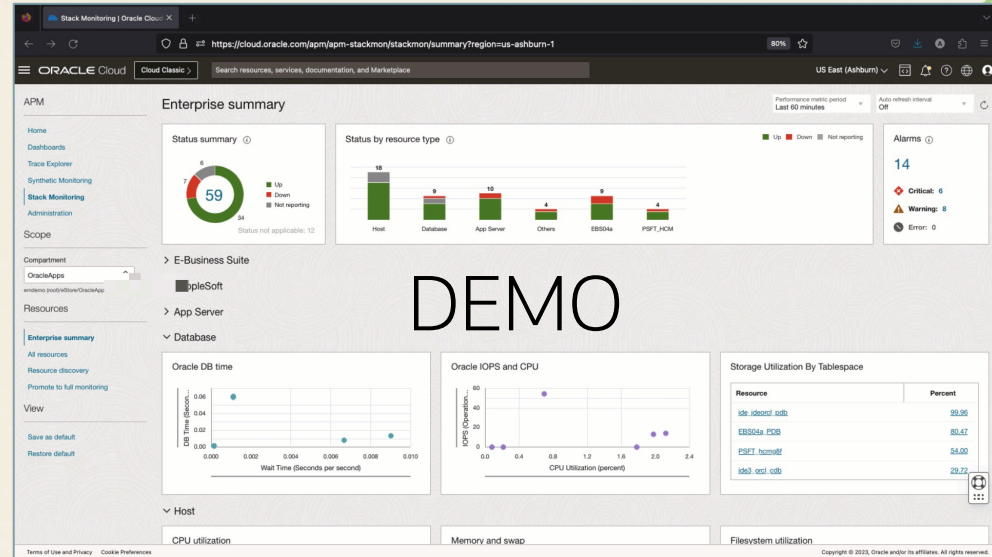
# Tip 9A: Monitor by exception, don't get lost in the data

Identify resources that are down or not reporting

Review all open alarms

Use each tier (App, App Server, Database, Host, etc.) to identify problem areas:

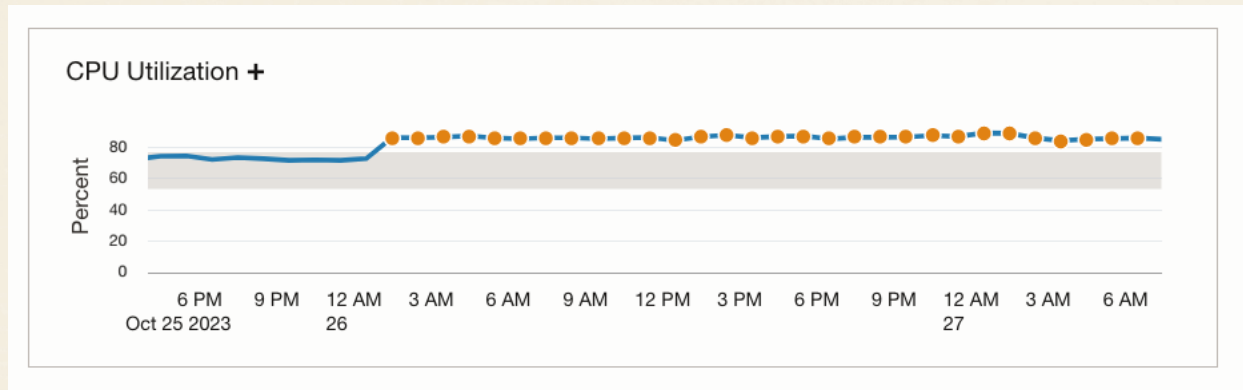
- Resources with slow performance (outliers in charts)
- Resources operating at full capacity (CPU, memory, storage...)
- Click data point to see historical performance



## Tip 9B: Monitor by exception using anomaly detection

ML-driven baselines automatically  
calculated to determine normal behavior

Anomalies visually shown in performance  
charts



Anomalies shown in performance charts



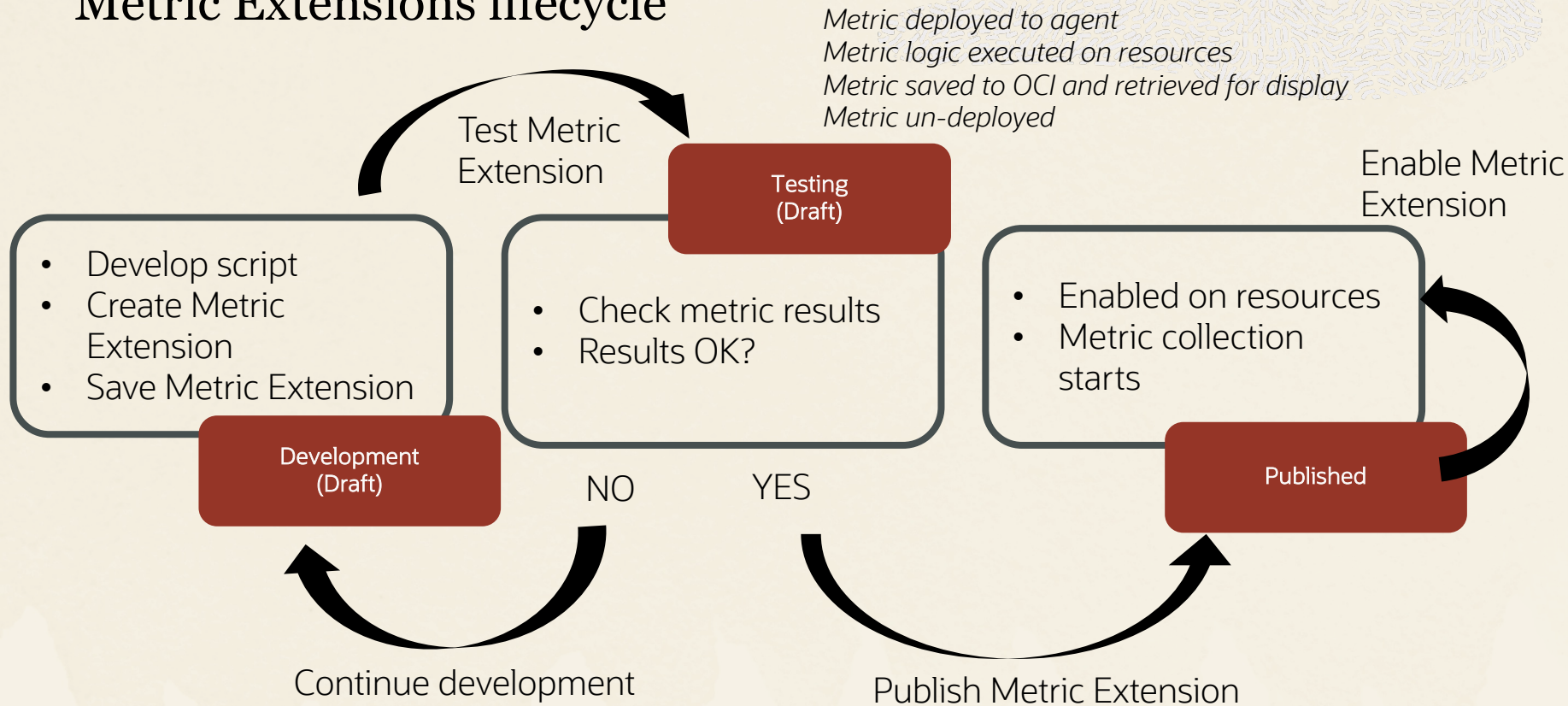
# Tip 10A: (Extensibility) Identify app-specific metrics using Metric Extensions

Extend the out-of-the-box metric set to monitor conditions specific to your environment.

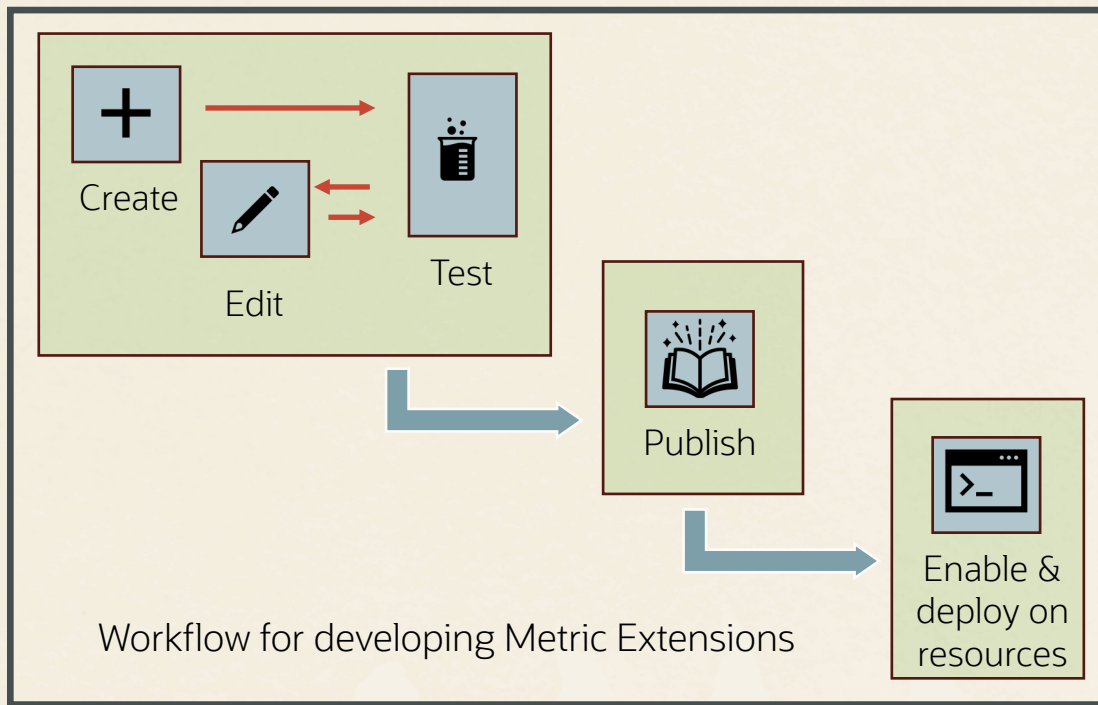
Easy to create with a simple fill in the blank UI

- Meet custom monitoring requirements
- Leverages collection method supported for that resource type
- Simple fill-in-the-blank UI user specifies:
  - Resource type: Host, WebLogic Server, Pluggable DB, etc.
  - Collection method: OS Script, SQL query, JMX
  - Collection frequency
  - Command or Script (based on collection mechanism)
  - Metrics and dimensions returned by the script
- Metric Extensions use the credentials that agent is using for monitoring the resource
- Metrics stored in OCI Monitoring and can be used to create alarm rules
- Metrics can be viewed in resource homepage, Enterprise Summary and dashboards

# Metric Extensions lifecycle



# Metric Extensions Demo



# Tip 10: (Extensibility) Enriching application topology with other resources

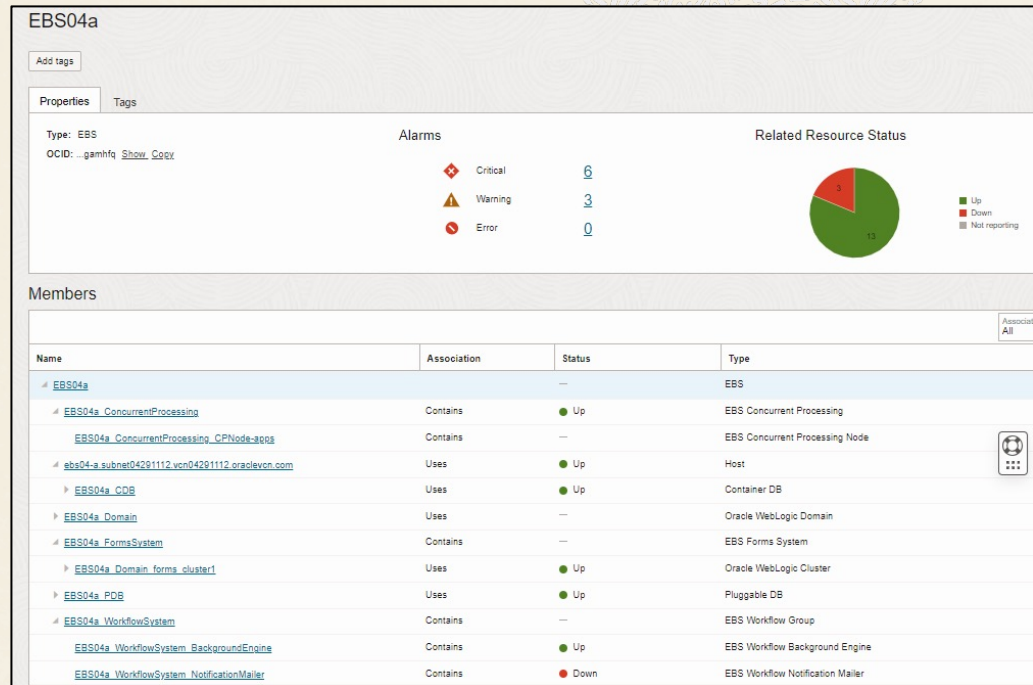
Background:

Stack Monitoring auto-discovers and creates application topology (i.e., associations) as part of resource discovery

- Example: E-Business Suite

Application topology...

- Used to understand overall health in Stack View
- Used to navigate across related components when troubleshooting



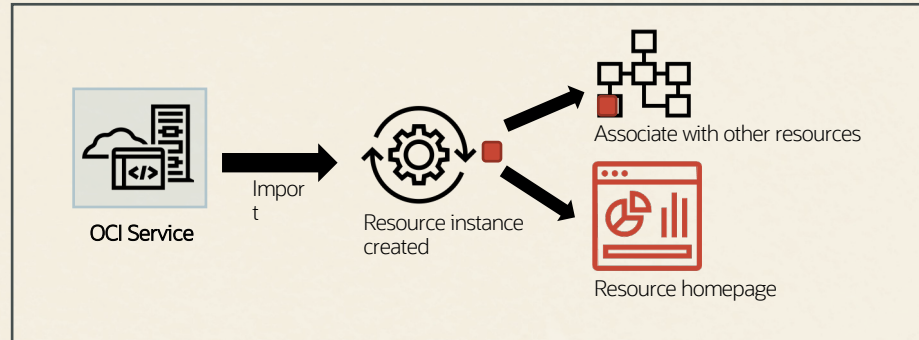
Oracle E-Business Suite application topology



# Tip 10A: (Extensibility) Extend application topology with OCI Services

Use Extensibility features to integrate OCI Services with other resources in Stack Monitoring

- Other OCI Services used as part of application tech stack
- Import OCI Service as a resource instance in Stack Monitoring to complete application topology, correlate its performance with others in the stack, easy navigation to its homepage



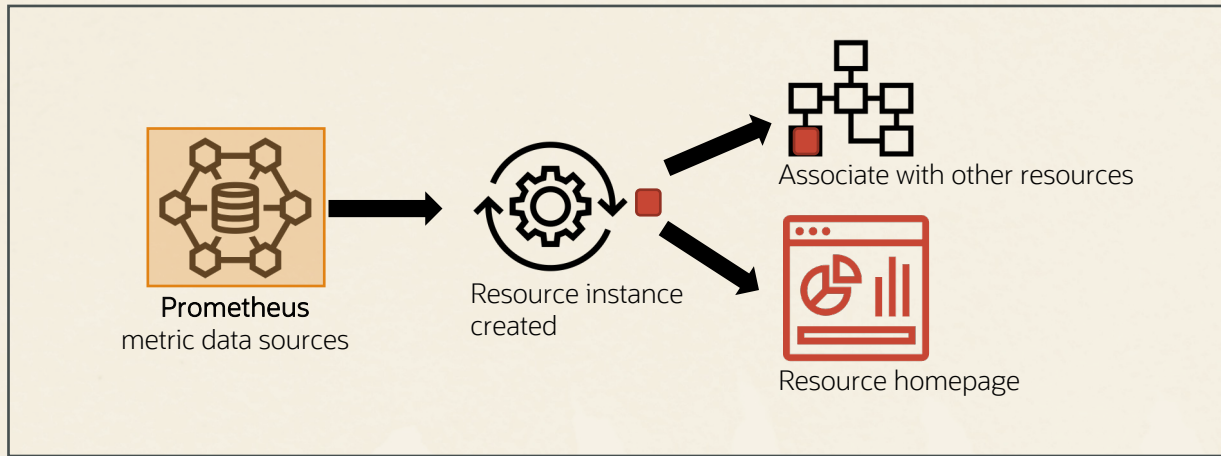
Importing OCI Service in Stack Monitoring creates a new resource instance that can be associated with other resources

## Tip 10B: (Extensibility) Integrate with Prometheus\* metric sources

Create resources instances from Prometheus metric sources

Built-in homepage unifying status, performance and alarms

Can be associated with other resources and shown in topology views for performance correlation across the stack



Prometheus integration creates new resource instances that can be associated with other resources

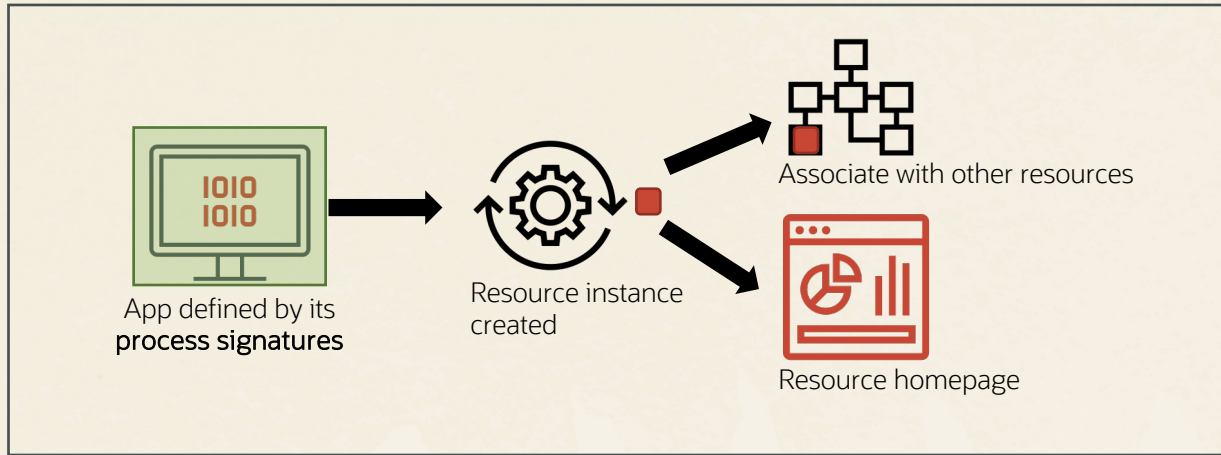
\*coming soon

# Tip 10C: (Extensibility) Monitor custom apps using process monitoring\*

Identify custom apps by their process signatures (process name, owner, etc.)

Built-in homepage unifying status, performance and alarms

Can be associated with other resources and shown in topology views for performance correlation across the stack



Process-based custom app monitoring creates new resource instances that can be associated with other resources

\*coming soon

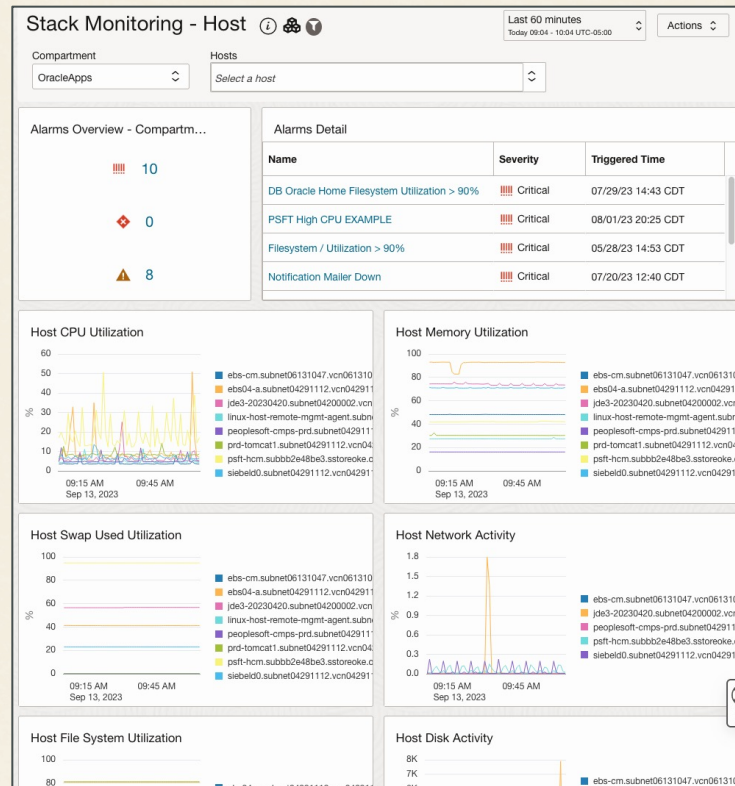
# Tip 10D: (Extensibility) Create dashboards for different stakeholders

Create dashboards unifying data across metrics, traces, logs

Start with built-in dashboards; clone and customize as needed

Stack Monitoring built-in dashboards

- EBS app
- PSFT app
- Host fleet



Stack Monitoring Host fleet dashboard





# Follow us



[Oracle.com/observability](https://blogs.oracle.com/observability/)

<https://blogs.oracle.com/observability/>



[@Oracle\\_Mgmt](https://twitter.com/Oracle_Mgmt) (Oracle Observability and Management)

[https://twitter.com/Oracle\\_Mgmt](https://twitter.com/Oracle_Mgmt)



[Oracle Observability and Management](https://www.linkedin.com/groups/2688744/)

<https://www.linkedin.com/groups/2688744/>



# Be in the know, new releases and learning

Scan the QR for links to:

Documentation

Resources

- LiveLabs (self guided workshop for Stack Monitoring)
- Stack Monitoring blog home
  - Blogs on new features
- Observability and Management **blog** home (subscribe via RSS!)
- Keeping up with what's new, **Release Notes**



Scan Me!

# Thank you

Happy Monitoring!

Ana McCollum, Sr Director Product Management

Aaron Rimel, Principal Product Manager