



ORACLE

# Smarter Ways to Manage Incidents with Event Compression and Dynamic Runbooks

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Enterprise and Cloud Manageability

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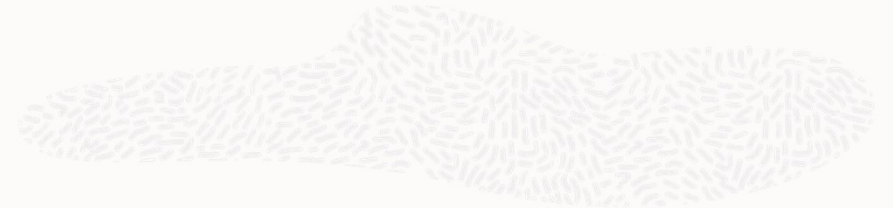


# Agenda

Overview: Managing incidents

Event Compression

Dynamic Runbooks

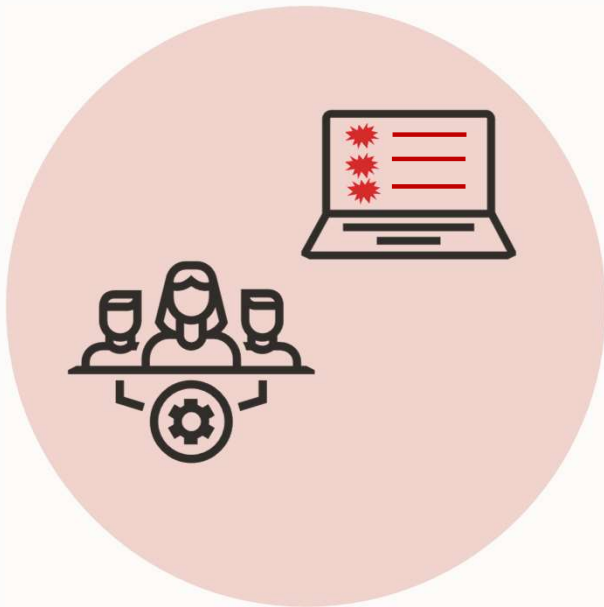


# Managing Incidents

Features to address event fatigue

IT environments grow over time

- Volume and variety of events increase
- More important to implement solutions to manage events at scale



## Incidents

- Create incidents for actionable events
- Open tickets, send notifications on incidents

## Event Compression Policies

- Reduce incidents by correlating and combining related events into an incident

## Dynamic Runbooks

- Capture expertise in diagnosing and resolving an incident into an executable runbook

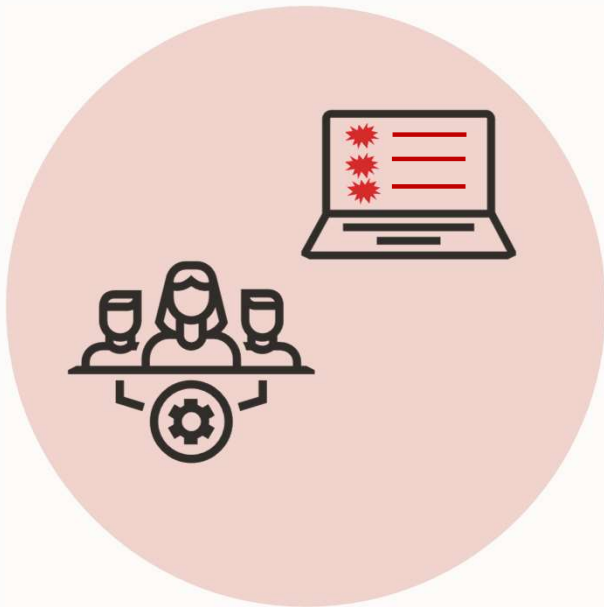


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# Event Compression Policies

Reduces incident volume by compressing related events into incidents

## Event Compression Policy

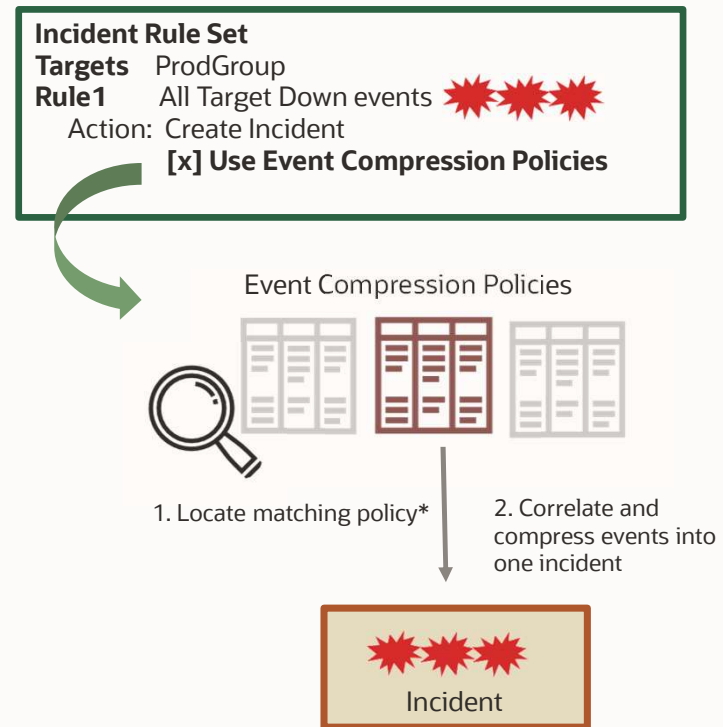
- States the condition under which multiple correlated events are grouped together in 1 incident

Oracle provides a library of event compression policies for you to use

## Applies to all incident-creating rules

- During incident creation in a rule, applicable policy will be located and applied

## How do I use it?



\*Policy = compress Target Down events from all WebLogic Servers that are part of the same WebLogic Cluster



# Event Compression Policies

Use Oracle-provided policies or create your own

**ORACLE** Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup Search SYSMAN

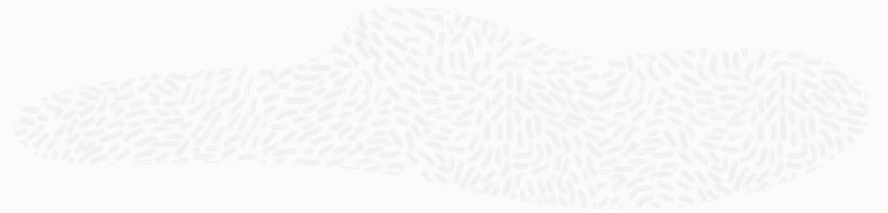
### Event Compression Policies

Event Compression reduces event noise by automatically compressing, or grouping, sets of related events into a smaller number of actionable incidents. Event compression policies specify the different types of events and criteria by which they are compressed together. These policies work with your incident rule sets. Use [Event Compression Analysis](#) to see how much incident reduction can be achieved using event compression policies.

[Create New Policy](#)

Policy Name	Description	Enabled	Order	Created By	Status	Actions
<a href="#">Target down events for a cluster database and its members</a>	Compress target-down events for a cluster database and its member instances occurring within the 60-minute time window.	<input checked="" type="checkbox"/>	1	Oracle	Published	⋮
<a href="#">Target down events for a DB High Availability Cluster and its members</a>	Compress target-down events for a DB High Availability Cluster and its member instances occurring within the 60-minute time window.	<input checked="" type="checkbox"/>	2	Oracle	Published	⋮
<a href="#">Availability events from all components of Exadata Database Machine</a>	Availability events for Exadata Database Machine and its member instances occurring within 30 minute time window	<input checked="" type="checkbox"/>	3	Oracle	Published	⋮
<a href="#">Availability events for System Infrastructure Targets</a>	Availability events for Access Points of System Infrastructure targets	<input checked="" type="checkbox"/>	4	Oracle	Published	⋮
<a href="#">Target availability (i.e. down and error) events for the Weblogic cluster and its members</a>	Compress target availability (i.e. down and error) events for the Weblogic cluster and its members occurring within 5-minute time window.	<input checked="" type="checkbox"/>	5	Oracle	Published	⋮
<a href="#">Metric evaluation error events for a target</a>	Compress Metric collection error events for a target occurring within a 1-hour time window	<input checked="" type="checkbox"/>	6	Oracle	Published	⋮
<a href="#">Agent unreachable events for targets monitored by the same agent</a>	Compress agent unreachable events for targets monitored by the same agent occurring within 1-hour time window.	<input checked="" type="checkbox"/>	7	Oracle	Published	⋮





## Demo: Creating Event Compression Policies





# Event Compression Analysis

How effective are the event compression policies?

Allows you to test new (draft) policies and verify effectiveness of existing policies

Shows results of event compression policies via simulation

Report of incidents for your actual events if event compression were enabled

Input:

- Group of targets
- Timeframe of analysis
- Option to include 'draft' policies

### Compression Policy Analysis

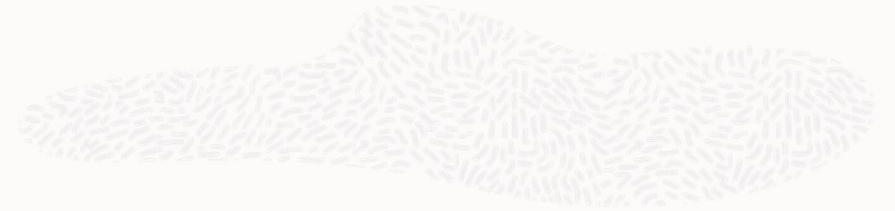
Specify the group or system target whose events you would like to analyze and the range of time these events occurred. Using a group or system target from your incident rulesets is recommended. You can specify a maximum date range up to 31 days.

Name Analysis of Coherence event compression policy	Description Test new event policy with other policies
Analyze events from these targets Select target type Group	Select a Group Coherences
Events occurred within this time range From 03/26/2023	To 04/26/2023

Include Draft Policy

Start Analysis





## **Demo: Testing Event Compression with *Event Compression Analysis***

## ***New in EM 13.5 RU18: Event Compression across multiple event types***

Prior to this feature, you can compress events that are the same event type

- All *Target Availability* events OR all *Metric Alert* events etc.

Now you can compress events across multiple event types

- Example: Database down may cause connectivity-related metric alerts on dependent applications. You want to compress “database down” *Target Availability* event with *Metric Alerts*

Two steps:

- Step 1: In Event Compression Policy – specify event types to compress (e.g., *Target Availability* and *Metric Alert* events)
- Step 2: In Incident Rule Set – choose option for Ruleset Level Compression



# Event Compression across multiple event types

## Step 1: Create event compression policy for multiple event types

**Create Compression Policy**  
Create Compression Policy of your own that will compress related events together into one incident based on the criteria you specify for compression.

Name \*  
Metric alert and target availability events for database instance and weblogic server targets

Description  
Compress metric alert and target availability events for database instance and weblogic server targets occurring within a 60 minute time window

**Event Compression Logic**

Do you want to pre-populate the events from an event rule? Yes No

When these events occur  
Events of type  
Metric Alert × Target Availability ×

On targets of type  
Database Instance × Oracle WebLogic Server ×

With event severity  
Fatal × Critical ×

Within this time window  
60 minutes

Compress into One Incident by  
select event type \*  
same generic system

**Incident Message**  
The incident message will follow this format.

For Non Clear State  
There are %EVENT\_COUNT% %EventType% events on members of %PARENT\_TARGET\_NAME%

For Clear State  
%EventType% events on members of %PARENT\_TARGET\_NAME% are cleared

## Step 2: In Incident Rules, choose event compression from multiple rules (Ruleset Level Compression)

**Incident Rules - All Enterprise Rules**

**Rules**

A rule contains a set of automated actions to be taken on specific events, incidents or problems. For example, individual rules can respond to incoming or updated events, incidents, or problems, and then take actions such as sending e-mails, creating incidents, updating incidents, and creating tickets. You can enable or disable a rule using the actions menu. Rules are evaluated and applied in the order specified. You can change the order using the Reorder Rule action. Any changes made to the rules are not saved until the 'Save' button is clicked.

Actions View Create... Edit... Remove

Name	Description	Applies To	Action Summary
Create incident for metric alert events		All Metric Alert events	• Create Incident ◦ Use Event Compress
Create incident for target availability events		All Target Availability events	• Create Incident ◦ Use Event Compress

**Event Compression**

If your rules are using event compression policies when creating an incident:

Allow policies to compress events within the same rule (Rule Level Compression)

Allow policies to compress events across event types from multiple rules in the rule set (Ruleset Level Compression)

These options will not apply if your rules create a new incident for each event or if you define compression logic inside the rule definition.

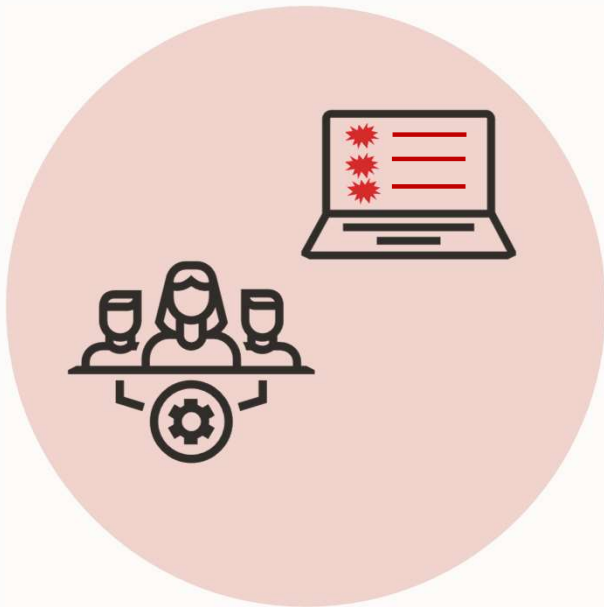


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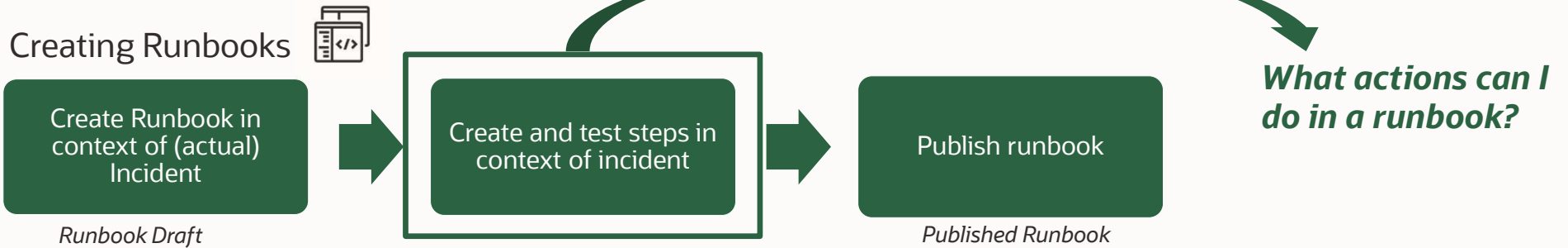
- Reduce incidents by correlating and combining related events into an incident

## Dynamic Runbooks

- Capture expertise in diagnosing and resolving an incident into an executable runbook

# Dynamic Runbooks

Enables subject matter experts to capture standard operational procedures in the form of executable runbooks



## Using Runbooks



# Runbook Steps



Runbook Step Type	Used for...
➔ Note	Providing instructions, can use markdown syntax Add link to MOS note [MOS Link Text](MOS:MOS ID) Add link to anywhere [Link Text](http://www.somesite.com) Add link to any EM page* [Link Text](relative link to EM page)
➔ Target SQL	Run queries, DML, DDL against a target database Uses Named Credentials (including PAM-integrated credentials)
➔ Repository SQL	Run queries against repository views
➔ Metric Data	Show metric data in a chart
➔ OS Command	Run synchronous OS command or script against: <ul style="list-style-type: none"><li>• Host target</li><li>• Target's host</li></ul> Uses Named Credentials (including PAM-integrated credentials)



# What's the difference between a Corrective Action and Dynamic Runbook?

Both can be used to respond to alerts

## Corrective Actions

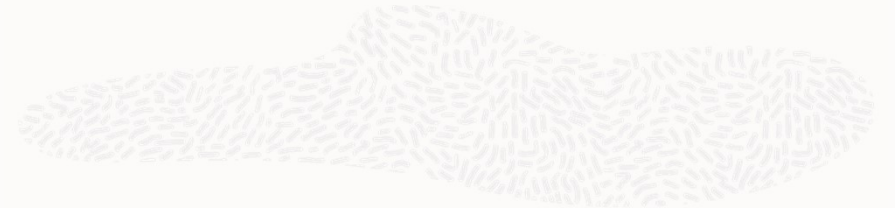
- Used to script an automated response
  - Example: Add space when tablespace is full OR Start listener when it is down

## Dynamic Runbooks

- Used for multi-step procedures that require human decision making
- Run through each step, analyze the output and then take different subsequent actions
- Used for incidents, metrics, jobs (future)...

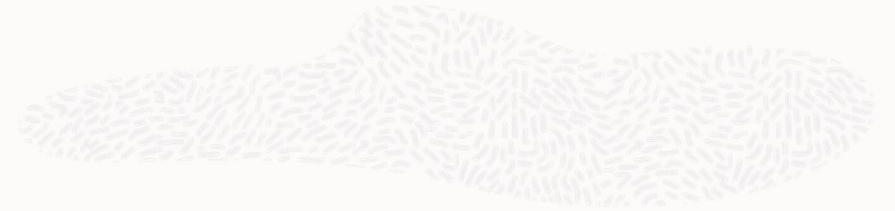






## **Demo: Using Dynamic Runbooks for FRA (Fast Recovery Area) full incident**



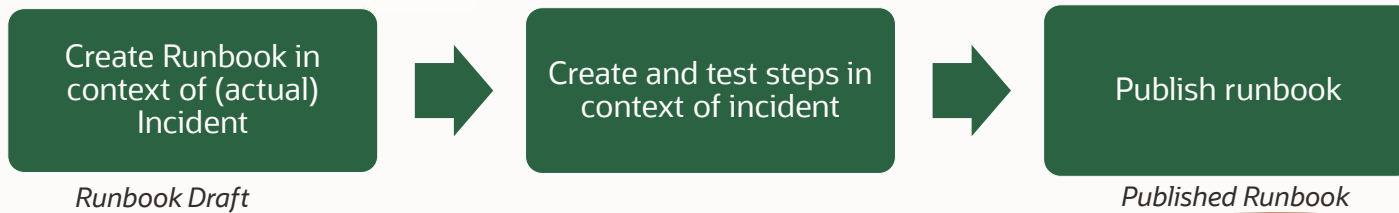


## Demo: Creating Dynamic Runbooks

# Dynamic Runbooks

Enables subject matter experts to capture standard operational procedures in the form of executable runbooks

## Creating Runbooks



## Using Runbooks



***How do I designate a specific runbook to use?***



# Designating runbooks for incidents

Incident Rule set → Event Rule

- Add Actions: Associate Runbook

**Add Actions**

**Add Conditional Actions**

Define actions to be taken when an event matches this rule.

► **Conditions for actions (Always execute the actions)**

▲ **Create Incident or Update Incident**

If there is no incident associated with the event, you could create one and optionally, set the incident details.

Create Incident (If not associated with one)

Use Event Compression Policies (Recommended) ⓘ

Each event creates a new incident

Compress events into an incident

► **Initial Setup**

▲ **Runbook Setup**

Associate Runbook

FRA Runbook

Incident Manager → Runbook Sessions

- Associated runbook: Recommended by Incident Rule

**The value of Fast Recovery Area % Used is 70.273**

Unassigned, Not acknowledged

General Events Notifications My Oracle Support Knowledge All Updates Related Events Related Metrics

▲ **Incident Details**

ID 1479

Metric FRAPercentUsed

Metric Group MESFRA\_TEST\_METRIC

Target (Database Instance) ⓘ

Incident Created Mar 9, 2023 12:27:06 AM GMT

Last Updated Mar 9, 2023 9:42:23 PM GMT

Summary The value of Fast Recovery Area % Used is 70.273

Internal Event Name MESFRA\_TEST\_METRIC:FRAPercentUsed

Event Type Metric Alert

Category Capacity

Show internal values for attributes ...

▲ **Tracking**  Acknowledged

Escalated No

Priority None

Status New

Owner Acknowledged

Last Incident created by rule (Name = FRA Ruleset, Create incident and associated incident) : on Mar 9, 2023 12:27:06 AM GMT

Comment policy (Name=null; Owner=null) : on Mar 9, 2023 12:27:06 AM GMT

This incident will be automatically cleared when the underlying issue is resolved.

▲ **Guided Resolution**

Diagnostics Problem Analysis

Actions Reevaluate Alert Edit Thresholds Manage Metric Extension

Corrective Actions ⓘ No corrective action defined. Add corrective action

▲ **Runbook Sessions**

Start Runbook Session

FRA Runbook [Recommended By Incident Rule]

All Relevant Runbooks...

## Runbook Sessions

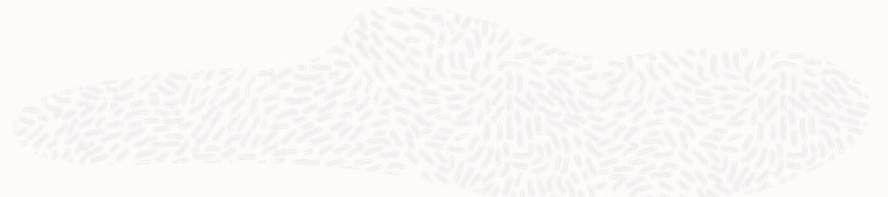
Start Runbook Session

FRA Runbook [Recommended By Incident Rule]

All Relevant Runbooks...



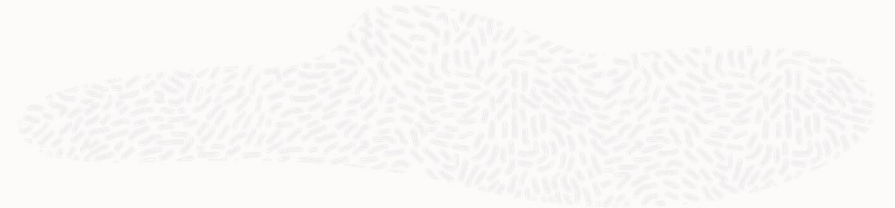
## Oracle-provided Dynamic Runbooks



Provides Oracle engineering and Support expertise to resolve and triage issues in Enterprise Manager

- DB Tablespace Used Metric Time Out Error
- Loader issues causing Agent backoff requests
- Job Suspended Agent Not Ready





**Dynamic Runbooks also work with Metrics\*  
(Accessible from target's *All Metrics* page)**



# Managing incidents even more effectively



## Incidents

- Create incidents for actionable events
- Open tickets, send notifications on incidents

## Event Compression Policies

- Leverage out-of-box policies or create your own
- Use Event Compression Analysis to evaluate effectiveness of policies on your events

## Dynamic Runbooks

- New enhancements enable more types of runbooks to be created
- Leverage Oracle provided runbooks

# Resources



## Enterprise Manager Documentation

- Event Compression Policies  
<https://docs.oracle.com/en/enterprise-manager/cloud-control/enterprise-manager-cloud-control/13.5/emmon/using-incident-management.html#GUID-377026F5-13BB-41F0-9854-15D2E44FC81E>
- Using Dynamic Runbooks  
<https://docs.oracle.com/en/enterprise-manager/cloud-control/enterprise-manager-cloud-control/13.5/emmon/using-runbooks.html#GUID-05F14B96-43E4-4F3A-A821-DD7B339045A3>

## Blogs

- Reducing alert fatigue with Event Compression Policies in Oracle Enterprise Manager  
<https://blogs.oracle.com/observability/post/reduce-alert-fatigue-with-event-compression-enterprise-manager>
- Triage and resolve incidents more efficiently in Enterprise Manager using Dynamic Runbooks  
<https://blogs.oracle.com/observability/post/triage-resolve-incidents-in-em-using-dynamic-runbooks>

## Enterprise Manager Fundamentals: Monitoring Quick Tour (LiveLabs)

- Includes Enterprise Monitoring hands-on exercises  
<https://apexapps.oracle.com/pls/apex/r/dbpm/livelabs/view-workshop?wid=3144&clear=RR,180&session=119091356163145>





## Learn More

1. [Oracle.com/manageability](https://www.oracle.com/observability/)
2. Videos: [A New Platform for Multicloud Observability and Management](#) | [Channel](#)
3. <https://blogs.oracle.com/observability/>
4. [Observability and Management Webinars](#)
5. Documentation: [EM 13.5](#) | [OCI](#)
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  - Next meeting May 21-23, 2024, Oracle Redwood Shores
  - Quarterly virtual CAB sessions
  - opportunities to work with Oracle Product Management to influence product development
- Interested? [ent-mgr\\_us@oracle.com](mailto:ent-mgr_us@oracle.com)
- [Customer Advisory Board \(oracle.com\)](#)

### Check out our new Observability Insights series sessions

- March 20, 2024, 9 am PT - 10 am PT
- Flexible monitoring that meets your unique business requirements with OCI Stack Monitoring
- [Register](#)
  
- April 10, 2024, 9 am PT - 10 am PT
- Elevating Multicloud Database Monitoring with Observability & Management
- [Register](#)



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