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Deploying the OCI Observability & Monitoring Platform within an Oracle Distributed Cloud Environment

A step-by-step guide to deploying the OCI Observability & Management Platform to provide a common monitoring and alerting framework across multiple Oracle Distributed Cloud deployments

Purpose statement

This document outlines the steps necessary for using the OCI Observability & Monitoring Platform services to provide a single, central, and common, observability, monitoring and alerting framework across multiple Oracle Distributed Cloud deployments.

It is intended solely to help you assess the business benefits of using such an approach and to plan your information technology projects accordingly.

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Introduction

Oracle Distributed Cloud allows customers to consume Oracle Cloud services anywhere they require.

The Oracle Public Cloud offerings provide Oracle Cloud Infrastructure (OCI) services from multiple locations, or Oracle Public Cloud Regions, around the world.

The Oracle Distributed Cloud portfolio includes Dedicated Region (OCI in the customer's data center), Exadata Cloud@Customer (to provide dedicated cloud-based database services within the customer's own data center) and Oracle Compute Cloud@Customer (OCI compute, networking, and storage services within the customer's data center) in a 'connected' mode of operation.

Oracle Private Cloud Appliance (PCA) and the OCI Roving Edge Infrastructure provide identical OCI services but operate in a 'disconnected' mode.

Advantages of the Oracle Compute Cloud@Customer

Oracle Compute Cloud@Customer is fully managed, rack-scale infrastructure that lets organizations consume common OCI services anywhere. Remotely managed by Oracle, it lets customers gain cloud automation and economic benefits, while meeting data residency requirements by controlling their data's location.

Compute Cloud@Customer systems can be paired with Oracle Exadata to create an ideal infrastructure for scalable, multitier applications.

Advantages of Oracle Private Cloud Appliance

Oracle Private Cloud Appliance (PCA) is an Oracle Engineered System designed for implementing the application and middleware tiers. PCA is an integrated hardware and software system that reduces infrastructure complexity and deployment time for virtualized workloads in private clouds. It is a complete platform for a wide range of application types and workloads, with built-in management, compute, storage, and networking resources. PCA provides excellent performance and other system properties for hosting a broad range of applications.

Oracle Private Cloud Appliance X10-2 is the latest member of the Oracle Private Cloud Appliance product family. PCA provides cloud and administrative services for a supporting range of workloads including cloud native applications. It makes use of a modern microservices architecture, Kubernetes, and related technologies, for a future-proofed software stack.

A key new feature of Oracle Private Cloud Appliance X10-2, compared to previous versions, is that it delivers private cloud infrastructure and architecture consistent with Oracle Cloud Infrastructure (OCI). Oracle Private Cloud Appliance brings APIs and SDKs compatible with Oracle Cloud Infrastructure (OCI) to an on-premises implementation at rack scale, making workloads, user experience, tool sets and skills portable between private and public clouds. Oracle Private Cloud Appliance can be paired with Oracle Exadata to create an ideal infrastructure for scalable, multi-tier applications.

Customers preferring or requiring an on-premises solution can realize the operational benefits of public cloud deployments using Oracle Private Cloud Appliance X10-2.

Advantages of OCI Roving Edge Infrastructure

Oracle Cloud Infrastructure (OCI) Roving Edge Infrastructure accelerates deployment of cloud workloads outside the data center. Ruggedized devices deliver cloud computing and storage services at the edge of networks in disconnected locations, allowing faster processing close to the data source and enabling faster insights into the data.

Roving Edge devices provide faster processing close to the data source enabling faster insights into the data collected. Leverage Roving Edge Infrastructure devices with powerful computing capabilities for ingesting and processing large amounts of streaming data from sensors in remote locations. Enable seamless deployment of applications for organizations such as embassies and consulates, government offices, forward operating bases,

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and remote campuses. Use built-in GPUs or attached VPU/TPU accelerators for faster processing of AI and ML workloads without relying on network connectivity to Oracle Cloud Infrastructure.

Existing OCI compute images and object storage can be synchronized to Oracle Roving Edge devices using the same portal and tenancy tooling as our public regions.

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Monitoring & Alerting within an Oracle Distributed Cloud Environment

Multiple Monitoring & Alerting options are available.

The Compute Cloud@Customer operates in a fully 'connected' mode, with a permanent communications channel back to the parent OCI Region. Use of the standard Oracle Cloud Agent can provide centralized monitoring & alerting through the parent OCI Region Oracle Management Cloud services. But this option requires additional services to be configured within both the parent OCI Region and the Compute Cloud@Customer system.

The Private Cloud Appliance X10-2, operating in a 'disconnected' mode, provides monitoring and alerting capabilities through a fully integrated Grafana service. Each Private Cloud Appliance maintains its own, independent Grafana service. Use of the OCI Oracle Cloud Agents can be considered but requires additional services to be made available.

The OCI Roving Edge Infrastructure, like the Private Cloud Appliance, operates in a 'disconnected' mode, but has no in-built monitoring & alerting service.

The OCI Observability & Management Platform provides a common framework that can be utilized across both OCI Tenancies and any associated Oracle Distributed Cloud systems.

Scope and content

This document describes how Virtual Machine instances across multiple Oracle Distributed Cloud deployments can be configured to provide system resource metrics for observability, monitoring and alerting purposes centrally to the designated parent OCI region.

Detailed step-by-step guides are provided to cover two key areas:

• The configuration of the Observability & Management Platform (OMP) services within the parent OCI region

• The installation & configuration of 'local' OMP services within each Oracle Distributed Cloud platform

Each area is covered in a specific section below, along with a description of the tools used for the collection, collation, and visualization of the VM Instance system & stack metrics captured.

OCI Observability and Management Platform

OMP Overview

The Observability and Management Platform (OMP) within Oracle Cloud Infrastructure (OCI) provides a suite of services that support cross stack visibility and rapid performance insights for any technology, deployed anywhere. These services can be used to track the performance of the resources in an OCI tenancy, Oracle Compute Cloud@Customer, Oracle Private Cloud Appliance, or Roving Edge Infrastructure.

OCI observability and management services are designed to meet the challenges of modern applications and solutions consisting of many components that use different technologies. This collection of services provides visibility and insight across cloud native and traditional technology, cloud providers, and on-premises environments, in addition to broad standards-based ecosystem support.

OCI OMP Services

The platform is designed to help manage increasingly diverse and distributed IT portfolios, while reducing troubleshooting time, preventing outages, and enabling IT to manage applications from a business perspective. The services include metrics, events, logs, and beyond, providing flexibility depending on any needs for customization. Services and features include:

- **Monitoring:** Enables OCI services and customers to emit metrics about OCI customer resources. Monitoring capabilities include service metrics, Metrics Explorer, and alarm status and definition. You can configure alarms with thresholds to detect and respond to infrastructure and application anomalies.

- **Health Checks:** Provides high frequency external monitoring to determine the availability and performance of any publicly facing service, including hosted websites, API endpoints, or externally facing load balancers.

- **Application Performance Monitoring (APM):** Provides deep visibility into the performance of applications and enables DevOps professionals to diagnose issues quickly. APM is compatible with OpenTracing and OpenMetrics for distributed tracing and combines end user monitoring with synthetic monitoring. It can also ingest telemetry from microservices deployed in Kubernetes or Docker containers.

- **Database Management:** Provides comprehensive database performance and management capability for each type of Oracle Database, including OCI and on-premises. This capability significantly reduces the burden on database administrators by providing a full-lifecycle solution encompassing monitoring, performance management, tuning, and database administration.

- **Java Management Service:** Can discover, monitor and manage your Java environment. Once deployed, the service discovers which versions of Java you have running and where, which ones require updates, and which applications are using them. This service is included with your Java SE Subscription.

- **Logging:** Provides easy ingestion of log data and analysis to diagnose issues. You can integrate Logging with OCI services such as Streaming, Monitoring, OCI Functions, and Notifications. Logging uses the CloudEvents standard by the CNCF and uses CNCF Fluentd to ingest logs from hundreds of sources.

- **Logging Analytics:** Machine learning-based cloud solution that monitors, aggregates, indexes, and analyzes all log data from your on-premises and multi-cloud environments.

- **Notifications:** Highly available, low latency, publish and subscribe (pub/sub) service that sends alerts and messages to OCI Functions, email, and message delivery partners, including Slack and PagerDuty.

- **Operation Insights:** Capacity planning tool that enables administrators to uncover performance issues, forecast consumption, and plan capacity by using machine learning-based analytics on historical and SQL data. Use these capabilities to make data-driven decisions to optimize resource use, proactively avoid outages, and improve performance.

- **Resource Manager:** Terraform-based cloud infrastructure automation tool that provides infrastructure-as-code service capability.

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- **Service Connector Hub:** Helps cloud engineers manage and move data between OCI services and from OCI to third-party services.

- **Stack Monitoring:** Enables proactive monitoring of applications and their underlying stack, including application servers and databases.

- **Governance:** Provides a comprehensive array of services to help you optimize costs, maximize utilization, and ensure adherence with corporate standards and legislative compliance for assets deployed in OCI.

OCI OMP Deployment Patterns

For the deployment of the Observability and Management Platform within an Oracle Distributed Cloud environment requires two components.

Management Agent

A Management Agent (agent) allows the specified OMP service plug-ins to collect data from the host upon which the Management Agent is installed. The Management Agent monitors and collects data from the sources that reside on hosts or virtual hosts.

Management Gateway

The Management Gateway provides a single point of communication between the Management Agents (or any other customer-side products) and the Oracle Cloud Infrastructure.
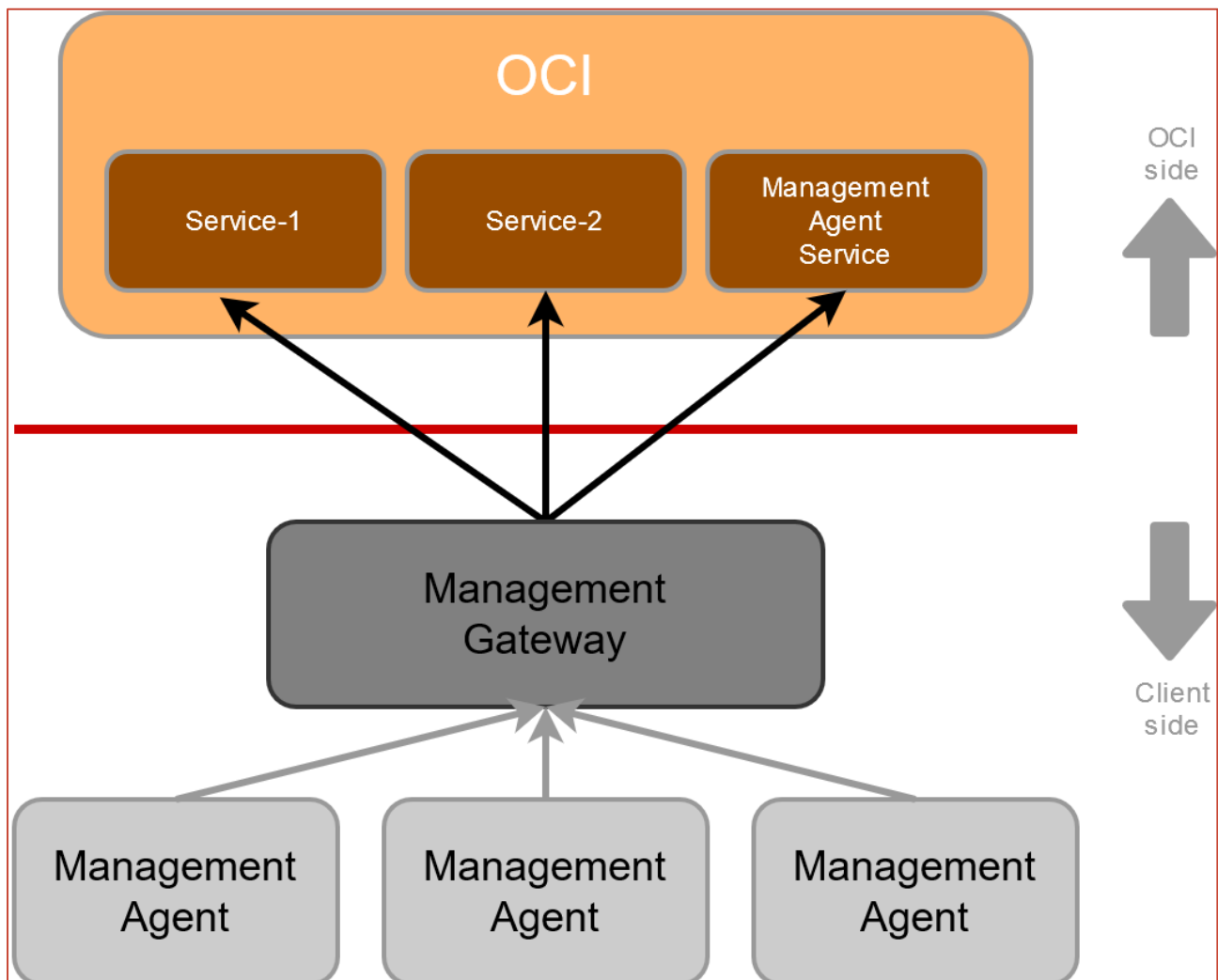
Using the Management Gateway as the single point for traffic to and from the Oracle Cloud Infrastructure means that the enterprise firewall only needs to allow HTTPS communication from the host where the Management Gateway resides.

This scenario allows installing Management Agent on the remaining hosts which do not need to have direct access to the internet. Oracle recommends configuring the Management Gateway first and then the Management Agent on the other hosts.

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Configuration

The following section provides a step-by-step guide for the initial configuration of the following components: -

- OCI Region / Tenancy
- ODC deployed Management Gateway
- ODC deployed Management Agents

The Observability and Management platform in Oracle Cloud Infrastructure (OCI) provides a suite of services that support cross stack visibility and rapid performance insights for any technology, deployed anywhere. These services can be used to track the performance of the resources in an OCI Tenancy, Oracle Compute Cloud@Customer, Oracle Private Cloud Appliance, or Roving Edge Infrastructure.

The links below provide more detailed information as to the capabilities of this platform: -

- Architecture Center Solution Playbook: (https://docs.oracle.com/en/solutions/implement-oci-observability-monitoring/index.html)
- Oracle Documentation Library: (https://docs.oracle.com/en-us/iaas/Content/cloud-adoption-framework/monitoring-and-observability.htm#observability-and-management-platform)

The deployment of the Observability & Management Platform services within an OCI tenancy to provide centralized services for any Oracle Distributed Cloud system requires a few simple steps to be completed.

OCI Region Configuration

Preparation work within the parent OCI Region needs to be completed as part of the initial phase. This consists of a number of elements.

IAM Groups

The access rights for any given individual to the Observability & Management Platform Gateway and Agent services requires membership of a designated IAM Group. Depending on the required Security and Access model required, this could be as simple as permitting an existing IAM Group to control access to these services.

Optionally, the creation of a dedicated IAM Group within the OCI Tenancy would permit more granular control of permissions and access to manage and monitor the Management Gateway and Management Agent services.

For the purposes of this example scenario, a new IAM Group, 'scasg03-agent-mgmt' has been created.

IAM Dynamic Groups & Policies

Three new OCI tenancy policies need to be enabled.

This is best accomplished using an 'admin' level OCI tenancy administrator account. The OCI Marketplace contains applications that create these policies for the designated tenancy / compartment.

These are: -

- Management Gateway Quick Start
- Management Agent Policy Advisor
- Default Alarms for Management Agents

The following screen shot shows these Applications within the OCI Marketplace: -
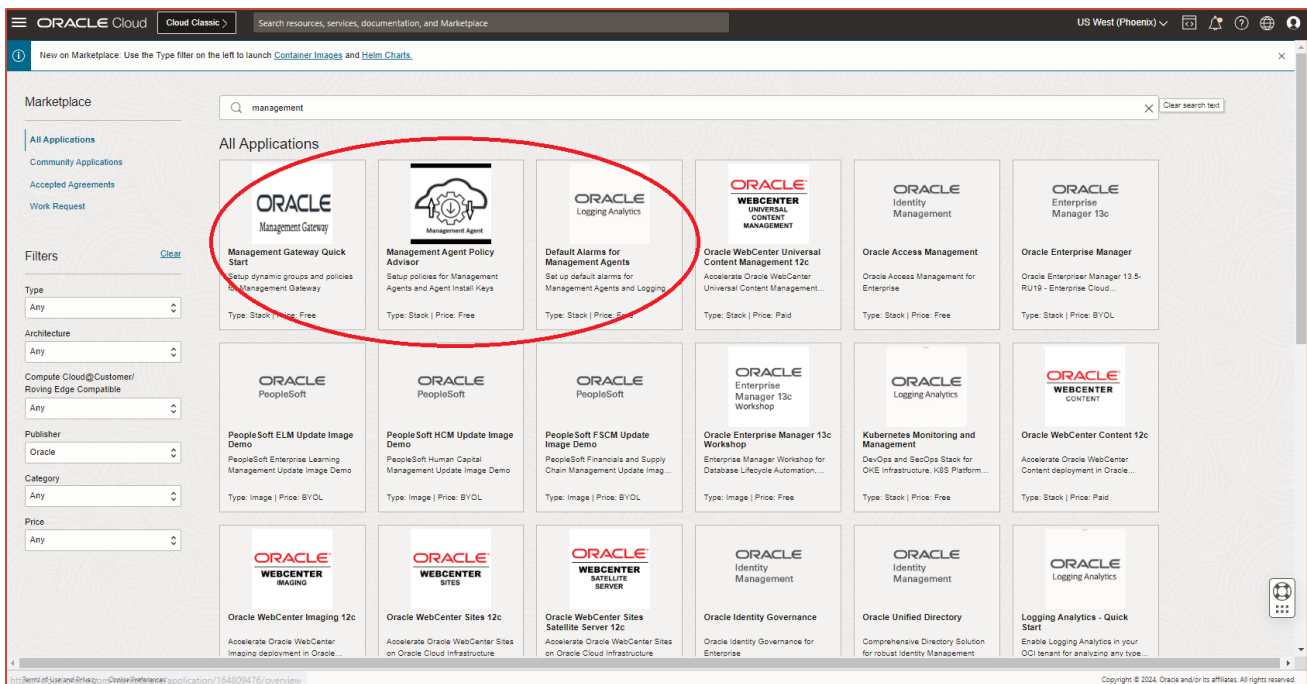
OCI Region – Marketplace Applications

Launch each application in turn, to start the OCI Resource Manager Terraform Stack deployment process for that application. These workflows will provide: -

- Management Gateway Quick Start

  - Setup dynamic groups and policies for Management Gateway

  - This OCI marketplace app creates OCI IAM resources required for using Oracle Management Gateway

- Management Agent Policy Advisor

  - Setup policies for Management Agents and Agent Install Keys

  - Setup policies for management agent

- Default Alarms for Management Agents

  - Set up default alarms for Management Agents and Logging Analytics metrics

  - This OCI marketplace app sets up default alarms for Management Agents and Logging Analytics metrics, to continuously monitor the application and avoid any business impact.

Each individual application is now described in more detail.

Management Gateway Quick Start

The Management Gateway enables secure tunnelling from the customer environment to the Parent Oracle OCI region to aggregate and transmit Observability & Management data.

It required signed certificates for encrypting data and stored in OCI Credential Service. Management Gateway software automatically creates and maintain the lifecycle of certificates within the OCI Credential Service.

This app creates the following IAM resources for Management Gateway to function properly:

- Dynamic Group for Management Agents & policy to allow creation of OCI Credential Resources

- Dynamic Group for OCI Credential Service Resources & required policies

This Resource Manager Stack makes it easy to configure the groups and policies which avoids any kind of manual mistakes. The user will not have to perform separate task to create dynamic groups and policies manually before installation.

Prerequisites:
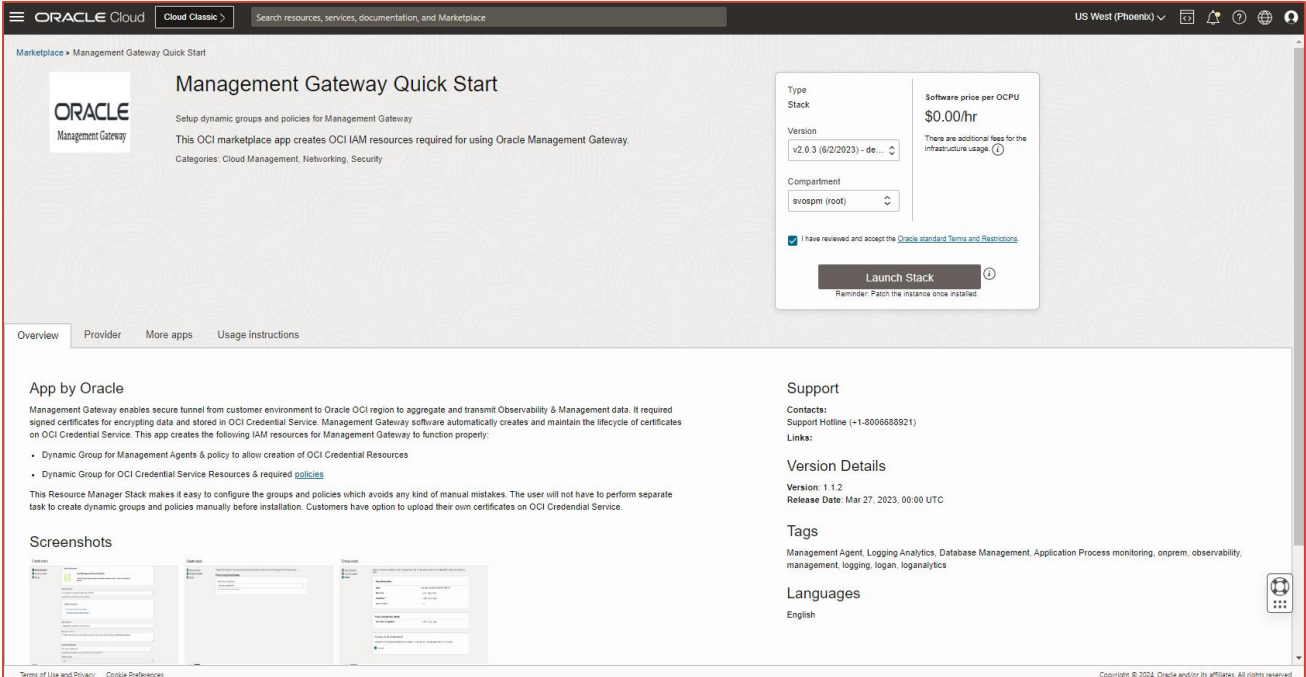
• User must have permissions to invoke the Resource Manager stack and create policies in compartment

• User must have permissions to create IAM dynamic groups

Steps:

The IAM Resources created can be targeted to specific Compartments, to enable separation of access where multiple Management Gateways are deployed or can be applied to the Root Compartment to enable visibility of the collected Observability & Management data within a 'single pane of glass'.

For this example scenario, the IAM Resources were created within the Root Compartment, allowing these services to be deployed across the whole Tenancy.

Select the required compartment: -

OCI Region – Management Gateway - Compartment

Launch the Stack and provide the optional Description and Tag information: -

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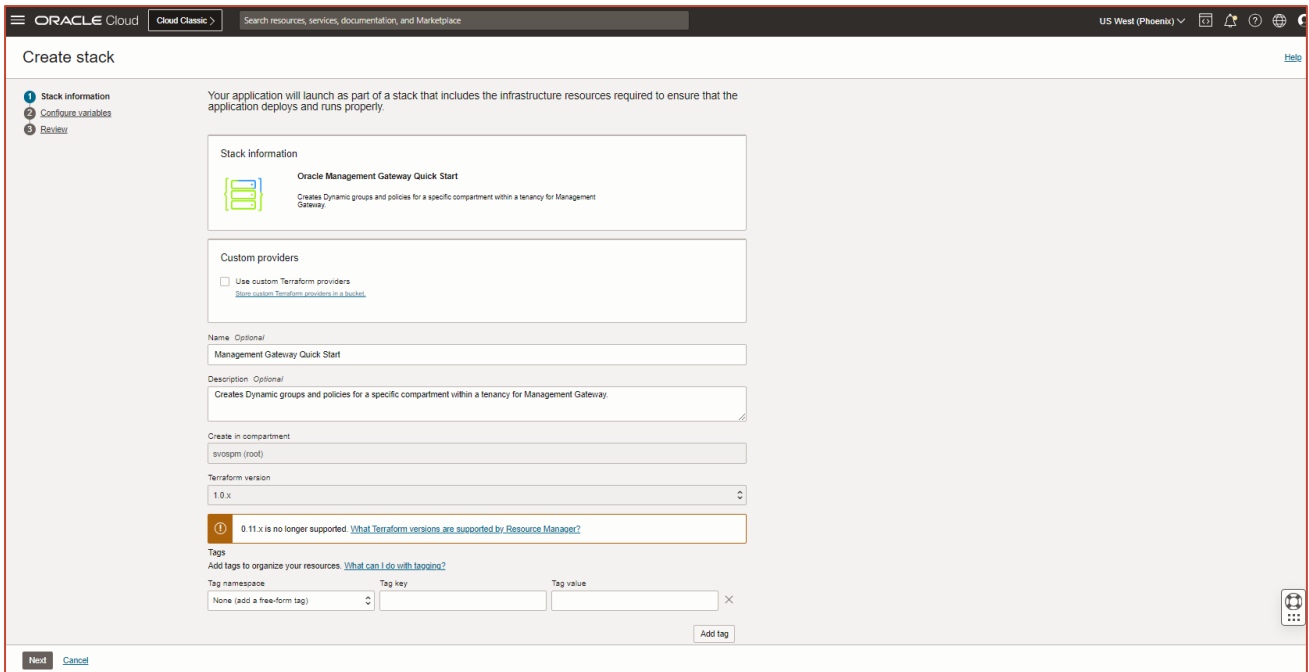
OCI Region – Management Gateway – Description & Tags

Confirm the compartment into which the IAM Policies will be created: -
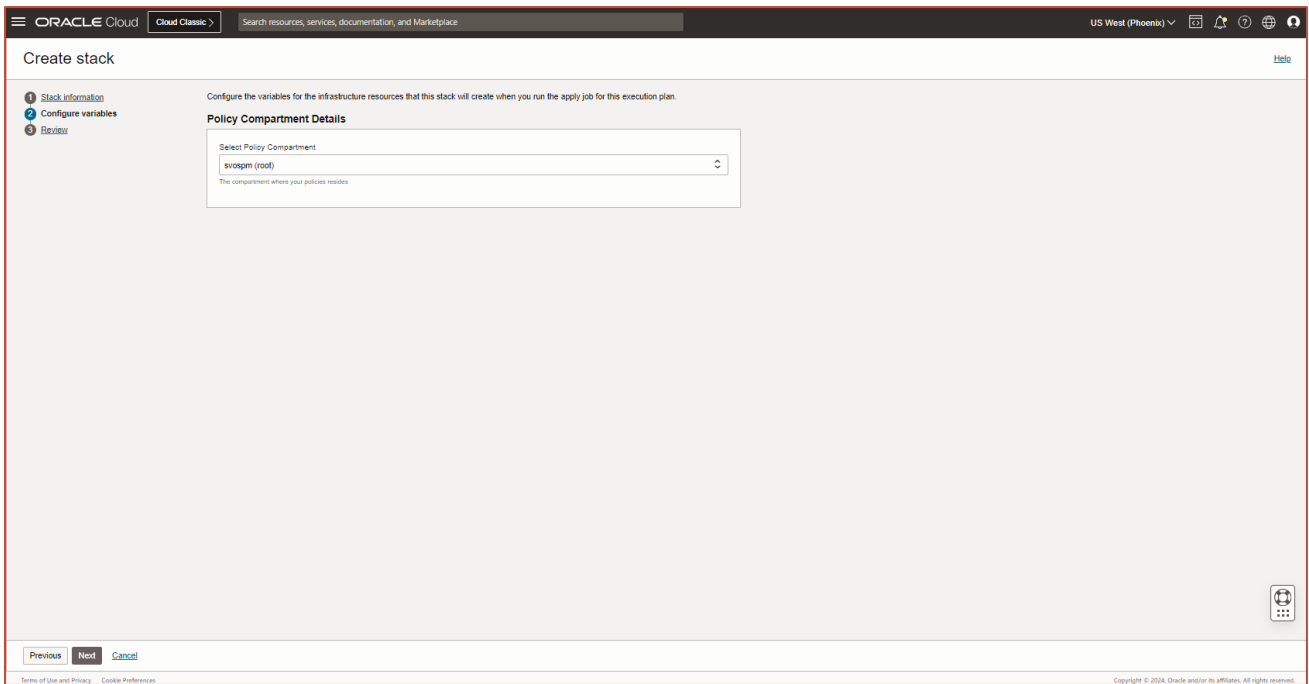
OCI Region – Management Gateway – Policy Compartment

Then Confirm and Create the required IAM Components: -
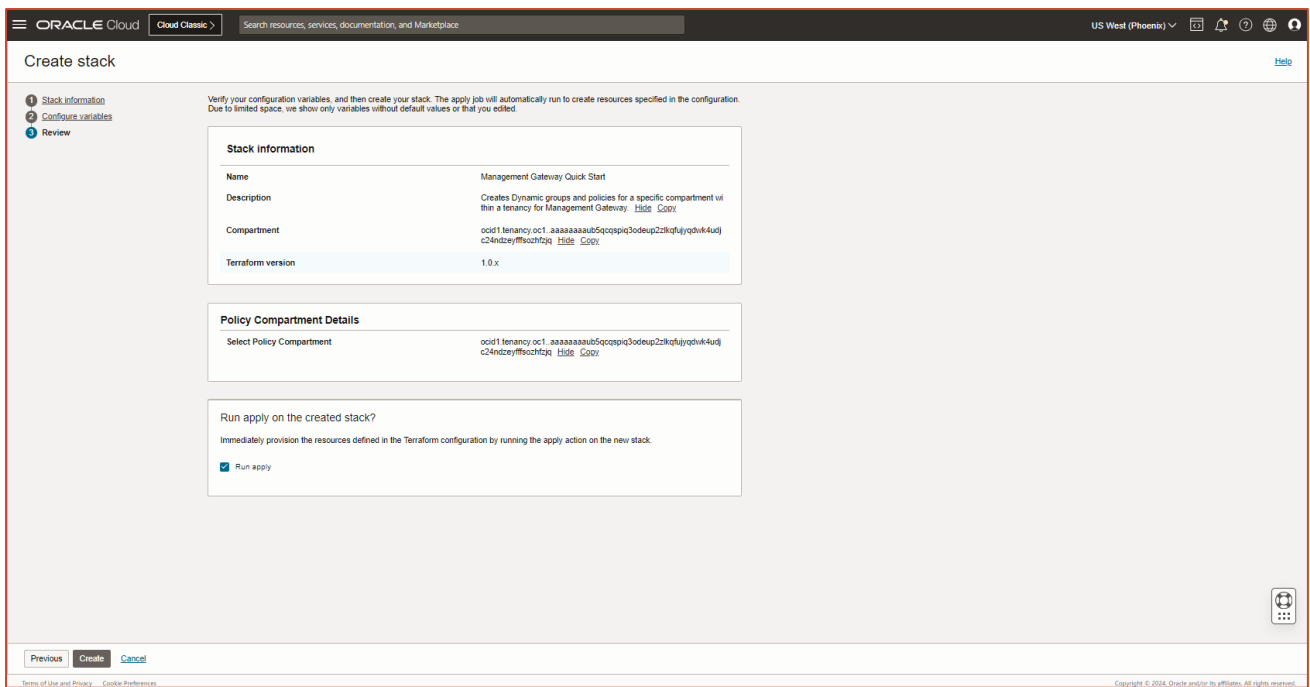
OCI Region – Management Gateway – Confirmation & Create

A Terraform job will be submitted to the OCI Resource Manager and will execute.

Check that the job completes successfully, without any errors

```
2024/05/02 12:33:46[TERRAFORM_CONSOLE] [INFO] Getting providers from hashicorp registry and/or custom terraform providers
2024/05/02 12:33:47[TERRAFORM_CONSOLE] [INFO] Initializing modules...
2024/05/02 12:33:47[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:47[TERRAFORM_CONSOLE] [INFO] Initializing provider plugins...
2024/05/02 12:33:47[TERRAFORM_CONSOLE] [INFO] - Finding hashicorp/oci versions matching ">= 4.21.0"...
2024/05/02 12:33:47[TERRAFORM_CONSOLE] [INFO] - Installing hashicorp/oci v5.38.0...
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] - Installed hashicorp/oci v5.38.0 (unauthenticated)
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] Terraform has created a lock file .terraform.lock.hcl to record the provider
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] selections it made above. Include this file in your version control repository
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] so that Terraform can guarantee to make the same selections by default when
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] you run "terraform init" in the future.
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] Terraform has been successfully initialized!
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] You may now begin working with Terraform. Try running "terraform plan" to see
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] any changes that are required for your infrastructure. All Terraform commands
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] should now work.
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] If you ever set or change modules or backend configuration for Terraform,
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] rerun this command to reinitialize your working directory. If you forget, other
2024/05/02 12:33:48[TERRAFORM_CONSOLE] [INFO] commands will detect it and remind you to do so if necessary.
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO] Terraform used the selected providers to generate the following execution
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO] plan. Resource actions are indicated with the following symbols:
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   + create
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO] Terraform will perform the following actions:
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   #
module.create_mgmt_gateway_credential_dynamicgroup.oci_identity_dynamic_group.dynamic_group will be created
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   + resource "oci_identity_dynamic_group" "dynamic_group" {
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + compartment_id =
"ocid1.tenancy.oc1..aaaaaaaaub5qcqspiq3odeup2zlkqfujyqdwk4udjc24ndzeyfffsozhfzjq"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + defined_tags   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + description    = "This is the credential dynamic group created by Gateway stack"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + freeform_tags  = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + id             = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + inactive_state = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + matching_rule  = "ALL {resource.type='certificateauthority',
resource.compartment.id = 'ocid1.compartment.oc1..aaaaaaaanj2tq5pwiz7vy7w27n2x5lfiw6gdezts6rcha7v46z7q5l4l6iia'}"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + name           = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + state          = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + time_created   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]     }
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   # module.create_mgmt_gateway_dynamicgroup.oci_identity_dynamic_group.dynamic_group will
be created
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   + resource "oci_identity_dynamic_group" "dynamic_group" {
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + compartment_id =
"ocid1.tenancy.oc1..aaaaaaaaub5qcqspiq3odeup2zlkqfujyqdwk4udjc24ndzeyfffsozhfzjq"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + defined_tags   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + description    = "This is the dynamic group created by Gateway stack"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + freeform_tags  = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + id             = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + inactive_state = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + matching_rule  = "ALL {resource.type='managementagent', resource.compartment.id =
'ocid1.compartment.oc1..aaaaaaaanj2tq5pwiz7vy7w27n2x5lfiw6gdezts6rcha7v46z7q5l4l6iia'}"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + name           = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + state          = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + time_created   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]     }
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   # module.create_mgmt_gateway_policies.oci_identity_policy.policies will be created
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]   + resource "oci_identity_policy" "policies" {
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + ETag           = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + compartment_id =
"ocid1.compartment.oc1..aaaaaaaanj2tq5pwiz7vy7w27n2x5lfiw6gdezts6rcha7v46z7q5l4l6iia"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + defined_tags   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + description    = "This policy allows to manage Management Gateways"
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + freeform_tags  = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + id             = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + inactive_state = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + lastUpdateETag = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + name           = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + policyHash     = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + state          = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + statements     = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + time_created   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]       + version_date   = (known after apply)
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]     }
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:54[TERRAFORM_CONSOLE] [INFO] Plan: 3 to add, 0 to change, 0 to destroy.
2024/05/02 12:33:55[TERRAFORM_CONSOLE] [INFO]
module.create_mgmt_gateway_credential_dynamicgroup.oci_identity_dynamic_group.dynamic_group: Creating...
2024/05/02 12:33:55[TERRAFORM_CONSOLE] [INFO] module.create_mgmt_gateway_dynamicgroup.oci_identity_dynamic_group.dynamic_group:
Creating...
2024/05/02 12:33:56[TERRAFORM_CONSOLE] [INFO]
module.create_mgmt_gateway_credential_dynamicgroup.oci_identity_dynamic_group.dynamic_group: Creation complete after 1s
[id=ocid1.dynamicgroup.oc1..aaaaaaaahcrmtwxemk3x3wk3ax2mrmhlzgvvzrtuwz4qtzzaqp3qvsynq4sq]
```

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```
2024/05/02 12:33:56[TERRAFORM_CONSOLE] [INFO] module.create_mgmt_gateway_dynamicgroup.oci_identity_dynamic_group.dynamic_group: Creation
complete after 1s [id=ocid1.dynamicgroup.oc1..aaaaaaaaiib6rypczlmphtps7x2qselv7eogon7u2lzdadrs5uhknoqz2eea]
2024/05/02 12:33:56[TERRAFORM_CONSOLE] [INFO] module.create_mgmt_gateway_policies.oci_identity_policy.policies: Creating...
2024/05/02 12:33:57[TERRAFORM_CONSOLE] [INFO] module.create_mgmt_gateway_policies.oci_identity_policy.policies: Creation complete after
0s [id=ocid1.policy.oc1..aaaaaaaafltmpajag6qmhhd3vrsfjrz1ppl3eptfjbywudouz7pulwkwoi2a]
2024/05/02 12:33:57[TERRAFORM_CONSOLE] [INFO]
2024/05/02 12:33:57[TERRAFORM_CONSOLE] [INFO] Apply complete! Resources: 3 added, 0 changed, 0 destroyed.
2024/05/02 12:33:57[TERRAFORM_CONSOLE] [INFO]
```

OCI Region – Management Gateway – Terraform Log

The log file can be downloaded for future reference.

Management Agent Policy Advisor

The OCI Marketplace App (Management Agent Policy Advisor) allows the configuration of the required policy setup to work with management agents.

This provides an easier way to setup policies by choosing the required compartment and available user groups.

This app gives a single screen setup where you can select the policy compartment, resource compartment and also can the desired user group from the available list of user groups.

Prerequisites:

• User must have permissions to invoke the Resource Manager stack and create policies in compartment

• User must have the required IAM user group created

Steps:

• On launching the stack, under 'Configure variables' page, input the details and create the stack. Further perform Plan & Apply actions on the stack to have the policies created.

  • Under Required Policy Configuration:

    • Policy Compartment → This is the compartment where the policy is created

    • Policy Name → Name of the policy

  • Under Management Agent Policies:

    • User group → Select from the available list of user groups

    • Management Agent Resource Compartment → This is the management agent resource compartment where the policies are applied

Select the required compartment: -

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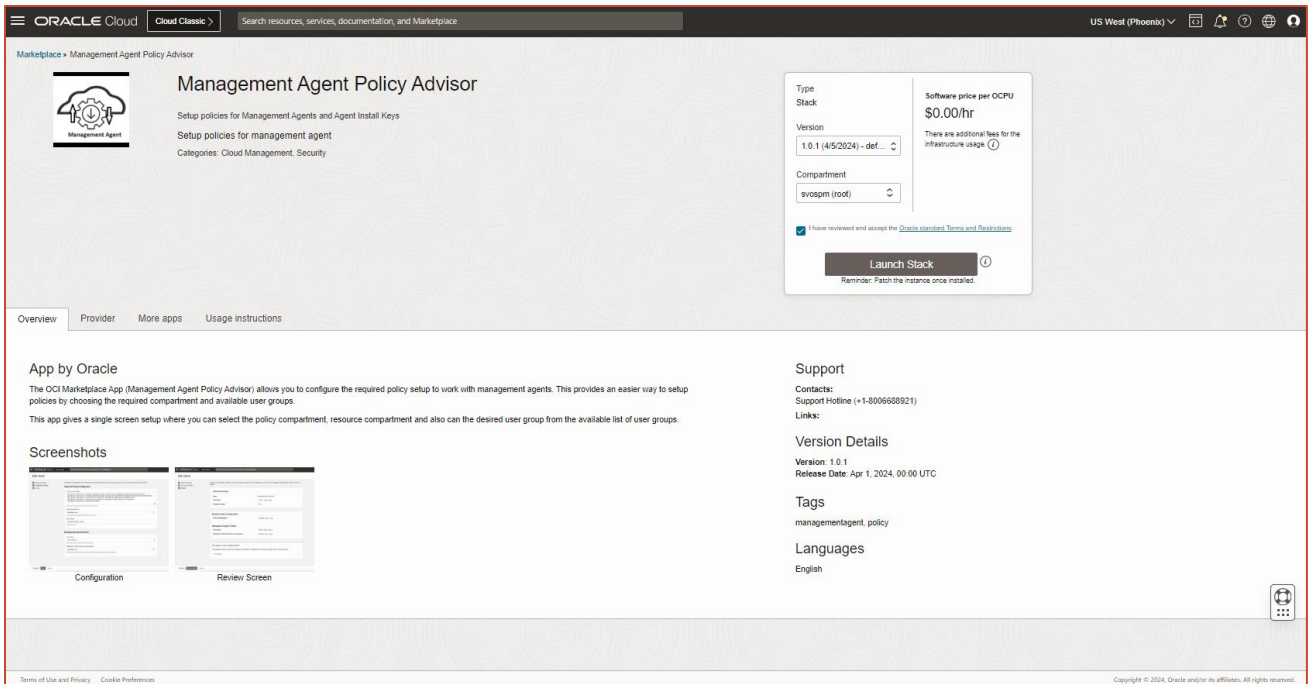
OCI Region – Management Agent Policy – Compartment

Launch the Stack and provide Policy Name, optional Description and Tags: -
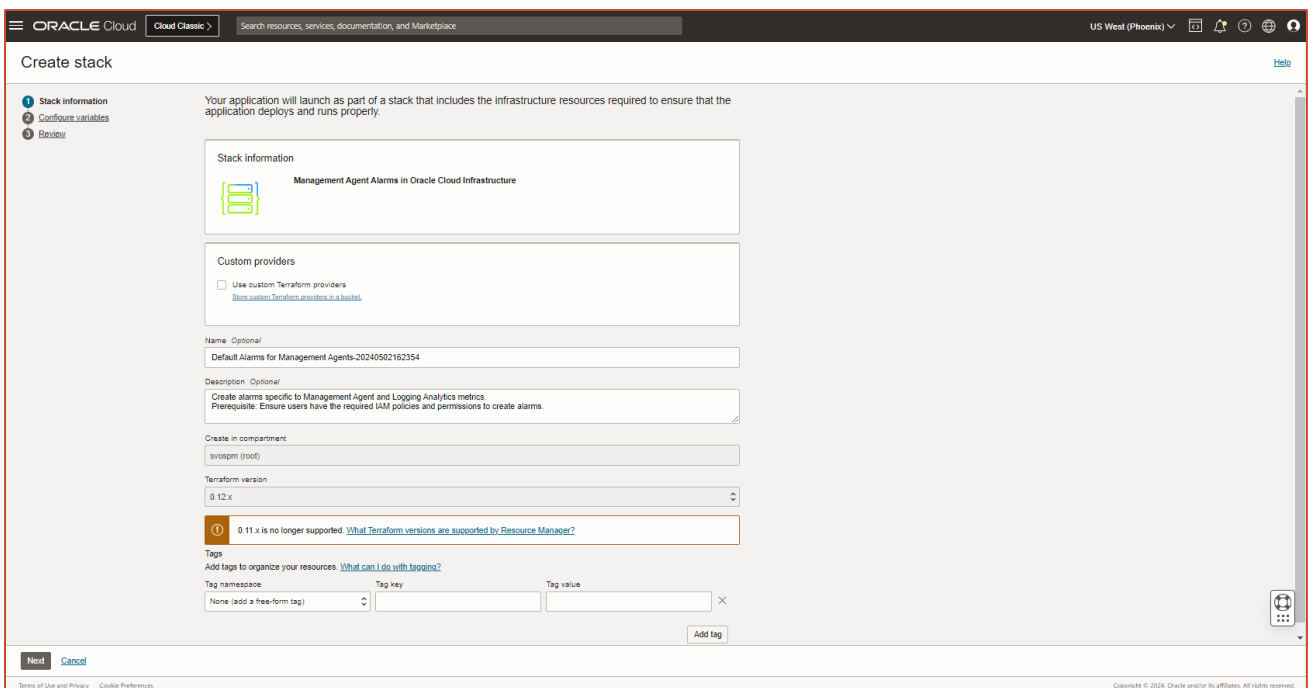
OCI Region – Management Agent Policy – Configure

Review and confirm the User Group that can make use of the Policy: -
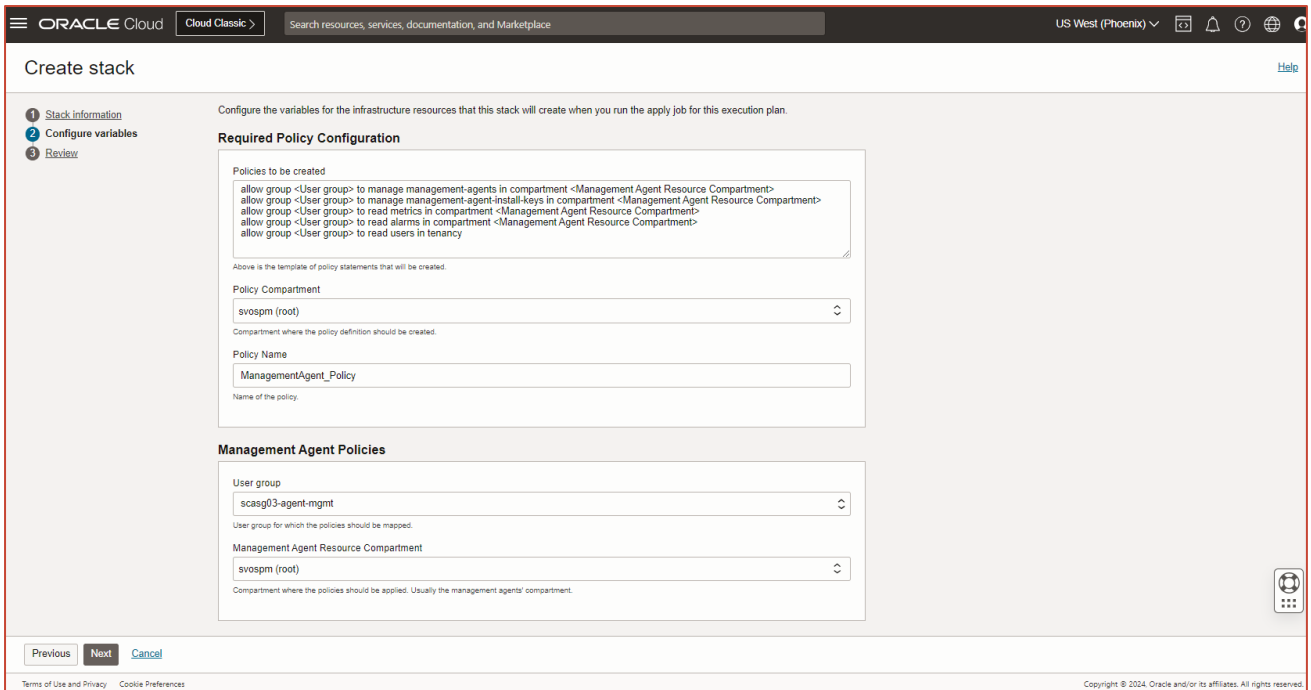
OCI Region – Management Agent Policy – User Group

Then Confirm and Create the required IAM Components: -

OCI Region – Management Agent Policy – Confirm & Create

A Terraform job will be submitted to the OCI Resource Manager and will execute.

Check that the job completes successfully, without any errors

```
2024/05/02 13:07:27[TERRAFORM_CONSOLE] [INFO] Getting providers from hashicorp registry and/or custom terraform providers
2024/05/02 13:07:28[TERRAFORM_CONSOLE] [INFO] Initializing modules...
2024/05/02 13:07:28[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:28[TERRAFORM_CONSOLE] [INFO] Initializing provider plugins...
2024/05/02 13:07:28[TERRAFORM_CONSOLE] [INFO] - Finding hashicorp/oci versions matching ">= 4.21.0"...
2024/05/02 13:07:28[TERRAFORM_CONSOLE] [INFO] - Installing hashicorp/oci v5.40.0...
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] - Installed hashicorp/oci v5.40.0 (unauthenticated)
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] Terraform has created a lock file .terraform.lock.hcl to record the provider
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] selections it made above. Include this file in your version control repository
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] so that Terraform can guarantee to make the same selections by default when
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] you run "terraform init" in the future.
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] Terraform has been successfully initialized!
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] You may now begin working with Terraform. Try running "terraform plan" to see
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] any changes that are required for your infrastructure. All Terraform commands
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] should now work.
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] If you ever set or change modules or backend configuration for Terraform,
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] rerun this command to reinitialize your working directory. If you forget, other
2024/05/02 13:07:29[TERRAFORM_CONSOLE] [INFO] commands will detect it and remind you to do so if necessary.
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO] Terraform used the selected providers to generate the following execution
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO] plan. Resource actions are indicated with the following symbols:
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]   + create
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO] Terraform will perform the following actions:
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]   # module.mgmtagent_policy_creation.oci_identity_policy.create_policy will be created
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]   + resource "oci_identity_policy" "create_policy" {
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + ETag          = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + compartment_id = =
"ocid1.tenancy.oc1..aaaaaaaaub5qcqspiq3odeup2zlkqfujyqdwk4udjc24ndzeyfffsozhfzjq"
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + defined_tags  = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + description   = "This policy allows to manage management agents"
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + freeform_tags = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + id            = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + inactive_state = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + lastUpdateETag = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + name          = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + policyHash    = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + state         = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + statements    = [
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]           + "ALLOW GROUP scasg03-agent-mgmt TO MANAGE management-agents IN TENANCY",
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]           + "ALLOW GROUP scasg03-agent-mgmt TO MANAGE management-agent-install-keys IN
TENANCY",
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]           + "ALLOW GROUP scasg03-agent-mgmt TO READ METRICS IN TENANCY",
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]           + "ALLOW GROUP scasg03-agent-mgmt TO READ ALARMS IN TENANCY",
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]           + "ALLOW GROUP scasg03-agent-mgmt TO READ USERS IN TENANCY",
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]         ]
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + time_created  = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]       + version_date  = (known after apply)
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]     }
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO] Plan: 1 to add, 0 to change, 0 to destroy.
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO] Changes to Outputs:
2024/05/02 13:07:33[TERRAFORM_CONSOLE] [INFO]   + policy_name = (known after apply)
2024/05/02 13:07:34[TERRAFORM_CONSOLE] [INFO] module.mgmtagent_policy_creation.oci_identity_policy.create_policy: Creating...
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO] module.mgmtagent_policy_creation.oci_identity_policy.create_policy: Creation complete after
0s [id=ocid1.policy.oc1..aaaaaaaacaweiqwhoepl6sxahtngne4l4kdb7lrwbhipzvpgtm5inznxtupa]
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO] Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO] Outputs:
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO] policy_name = "ManagementAgent_Policy_20240502110733"
2024/05/02 13:07:35[TERRAFORM_CONSOLE] [INFO]
```
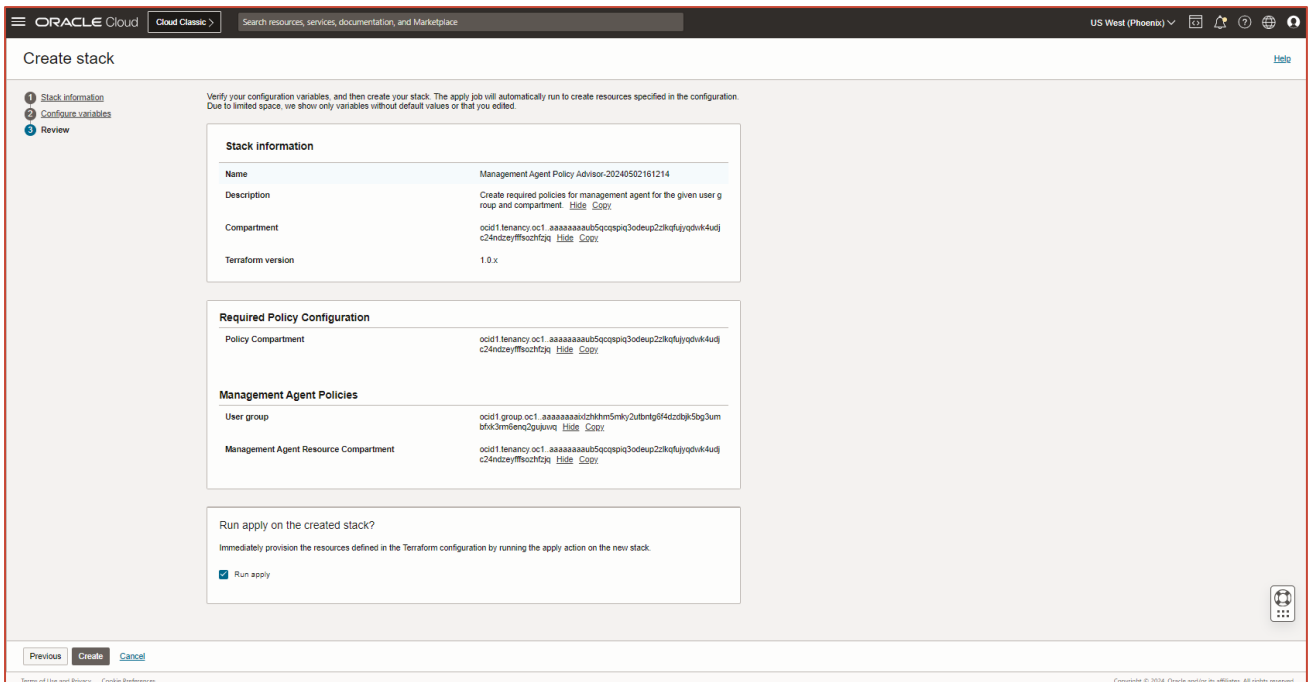
OCI Region – Management Agent Policy – Terraform Log

The log file can be downloaded for future reference

Management Agent Default Alarms

The OCI Marketplace App for configuring out of the box alarms allows you to configure default alarms with pre-defined metrics threshold in just few clicks. Though there can be multiple metrics that need to be monitored regularly, still there are a couple of metrics that play an important role in the smooth functioning of the applications and their dependent infrastructure. Based on the various resource utilization by management agents and logging analytics, we analyzed and identified couple of metrics that may be considered for configuring the default out-of-the-box alarms through this Marketplace App and start monitoring the critical resources immediately.

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This OCI App makes it easy to configure the Management Agent alarms . With the non-traditional approach, the app allows you to set up the alarms for all the management agents under the given compartments and sub-compartments in the same step. The user will not have to perform separate task to configure management agent alarms for each compartment where respective management agents reside.

Prerequisites:

- The user must be part of the Admin group or have the necessary permissions to invoke the Resource Manager stack.

- The user must have necessary permissions or policies to manage management agents, metrics and notification topics.

Stack Details:

This stack creates alarms for Management Agent and Logging Analytics metrics in the selected compartment.

- Under Stack Information, update the name and description of the stack as required. Also users can select the desired compartment to where the stack gets created.

- Under Required Configuration section, select the desired compartment of where the management agents reside.

- This stack creates a new notification topic by default without any subscription. Users can then navigate to the notification topic and bind necessary subscriptions. Users can also specify existing notification topic ID, by deselecting the 'Create new topic' checkbox.

- Under Management Agent Alarms Configuration section, this stack creates four critical alarms by default :

  - Agent availability alarm

  - CPU usage alarm

  - Disk space alarm

  - JVM memory usage alarm

- Users have the option to disable any of the four alarms by selecting 'Customize management agent alarms' checkbox. The alarm settings (interval, threshold, severity) can also be modified for each of the alarms.

- Under Logging Analytics Alarms Configuration, this stack creates two critical alarms by default:

  - Logging analytics upload data size alarm

  - Logging analytics upload failure alarm

- Alarms for Logging Analytics metrics are enabled by default which can be disabled by deselecting 'Add logging analytics metrics' checkbox.

- Similarly, users also have the option to disable or modify the alarm settings (interval, threshold, or severity) for any of the above alarms, by selecting 'Customize logging analytics alarms' checkbox.

Select the required compartment: -

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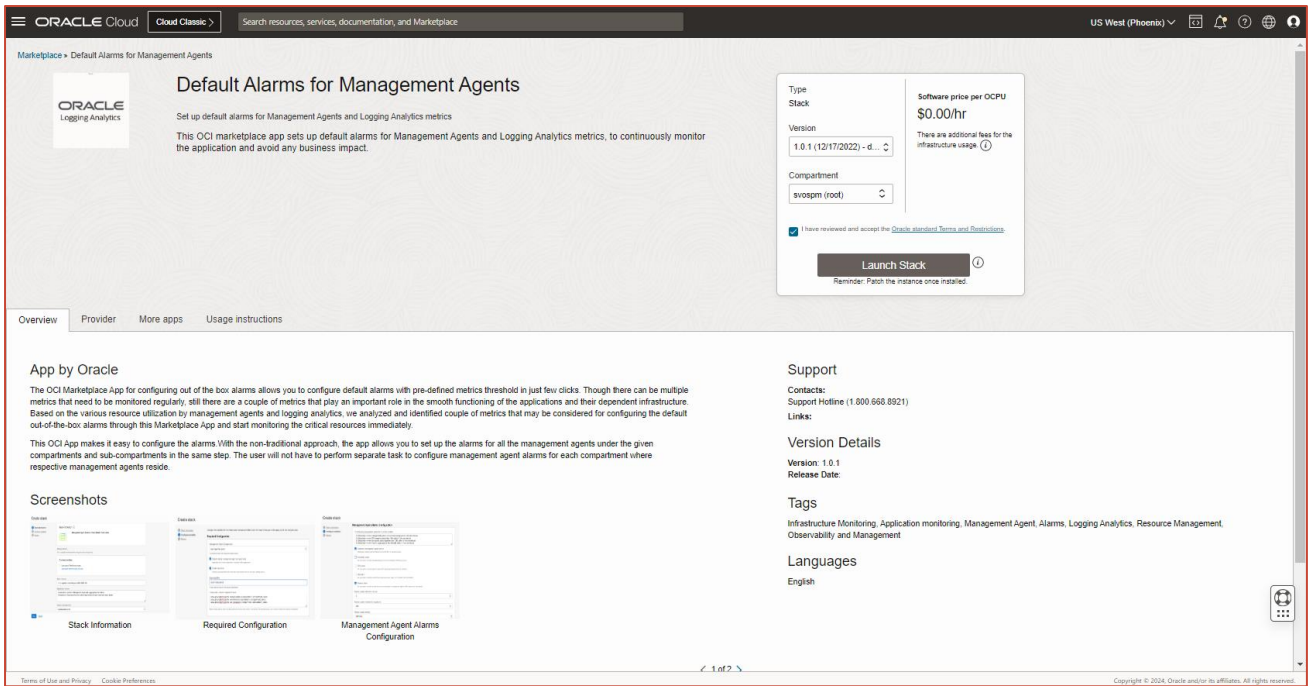
OCI Region – Management Agent Alarms – Compartment

Launch the Stack and provide the optional Description and Tag information: -
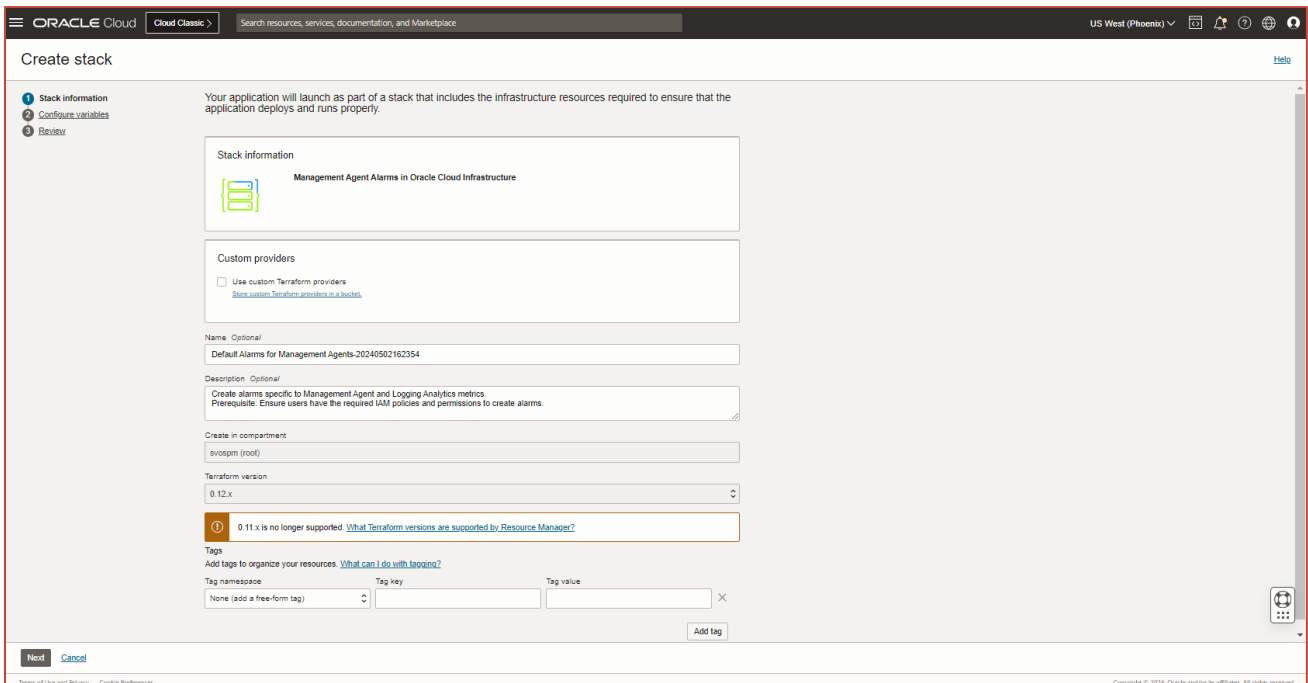
OCI Region – Management Agent Alarms – Configure

Confirm the compartment into which the Management Agent Alarms will be created: -
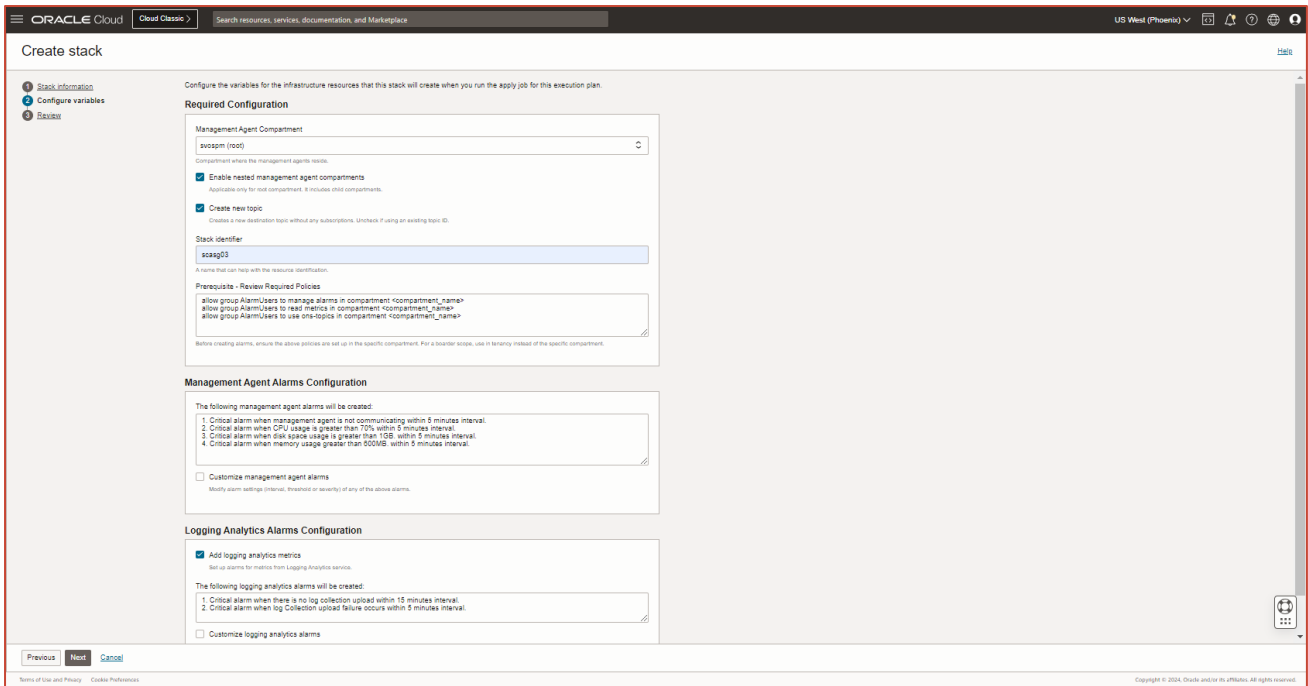
OCI Region – Management Agent Alarms – Customise

Then Confirm and Create the required Management Agent Alarms: -
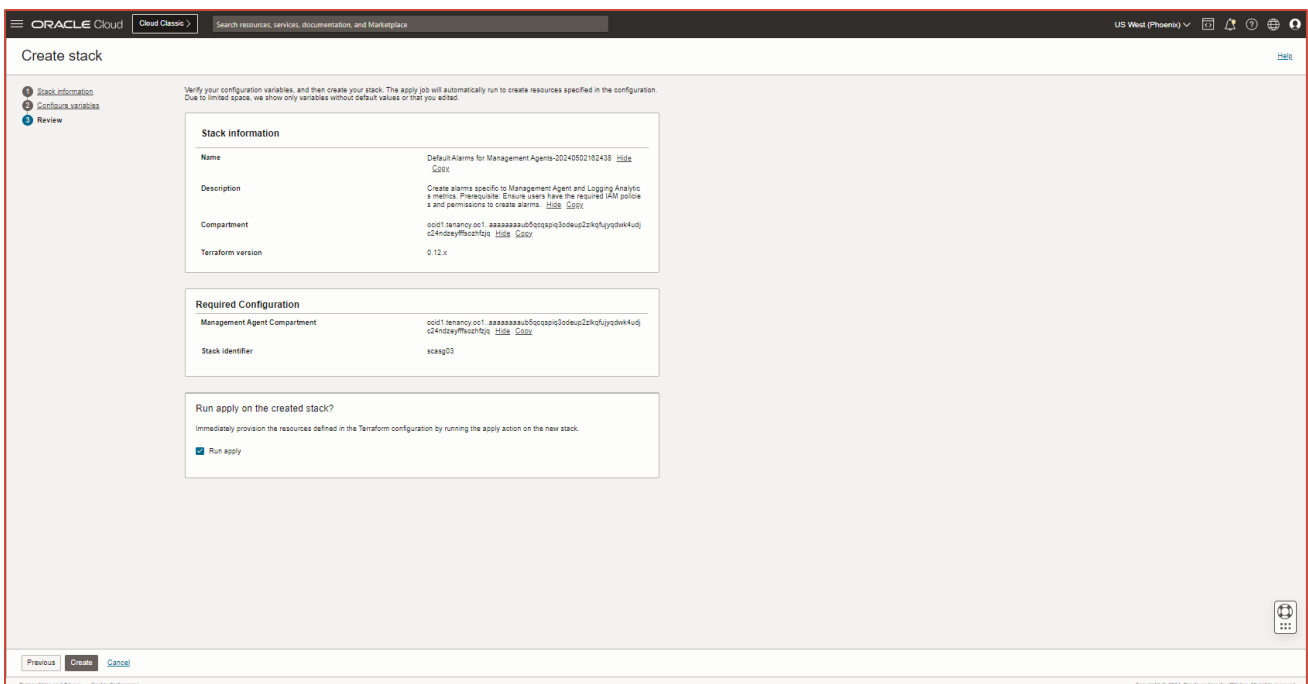
OCI Region – Management Agent Alarms – Confirm & Create

A Terraform job will be submitted to the OCI Resource Manager and will execute.

Check that the job completes successfully, without any errors

```
2024/05/02 13:36:47[TERRAFORM_CONSOLE] [INFO] Getting providers from hashicorp registry and/or custom terraform providers
2024/05/02 13:36:48[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:48[TERRAFORM_CONSOLE] [INFO] Initializing provider plugins...
2024/05/02 13:36:48[TERRAFORM_CONSOLE] [INFO] - Checking for available provider plugins...
2024/05/02 13:36:48[TERRAFORM_CONSOLE] [INFO] - Downloading plugin for provider "oci" (hashicorp/oci) 5.37.0...
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] The following providers do not have any version constraints in configuration,
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] so the latest version was installed.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] To prevent automatic upgrades to new major versions that may contain breaking
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] changes, it is recommended to add version = "..." constraints to the
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] corresponding provider blocks in configuration, with the constraint strings
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] suggested below.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] * provider.oci: version = "~> 5.37"
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] Warning: registry.terraform.io: For users on Terraform 0.13 or greater, this provider has
moved to oracle/oci. Please update your source in required_providers.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] Terraform has been successfully initialized!
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] You may now begin working with Terraform. Try running "terraform plan" to see
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] any changes that are required for your infrastructure. All Terraform commands
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] should now work.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] If you ever set or change modules or backend configuration for Terraform,
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] rerun this command to reinitialize your working directory. If you forget, other
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] commands will detect it and remind you to do so if necessary.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO] 2024/05/02 13:36:49 [WARN] Log levels other than TRACE are currently unreliable, and are
supported only for backward compatibility.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]   Use TF_LOG=TRACE to see Terraform's internal logs.
2024/05/02 13:36:50[TERRAFORM_CONSOLE] [INFO]   ----
2024/05/02 13:36:54[TERRAFORM_CONSOLE] [INFO] oci_ons_notification_topic.this_notification_topic[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_ons_notification_topic.this_notification_topic[0]: Creation complete after 1s
[id=ocid1.onstopic.oc1.phx.amaaaaaa2x5puciavgtwzg5pfxbucdevpsy4cj6e6fos4rerzon2ou5n573a]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_disk_alarm[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_cpu_alarm[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_logan_upload_failure_alarm[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_logan_upload_data_size_alarm[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_availability_alarm[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_memory_alarm[0]: Creating...
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_disk_alarm[0]: Creation complete after 0s
[id=ocid1.alarm.oc1.phx.aaaaaaaamcoqfubdwg67xhz3frzpqqrjhqbohugobmqkaqp24pznafg65ifq]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_availability_alarm[0]: Creation complete after 0s
[id=ocid1.alarm.oc1.phx.aaaaaaaawzybqqxgxwhuty3owflq667grtih2kahebqq5kgsmeu3x254pnwq]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_logan_upload_data_size_alarm[0]: Creation complete after 0s
[id=ocid1.alarm.oc1.phx.aaaaaaaaojtqtqu3kvzredmxvlqkuafywet7rtswbxjfi3fdlesjbp3z7qya]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_logan_upload_failure_alarm[0]: Creation complete after 0s
[id=ocid1.alarm.oc1.phx.aaaaaaaa6erordojafp6rw3pqw6gfmqbnhv4yqkpyjgtfrxhzwa3fwkquava]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_memory_alarm[0]: Creation complete after 0s
[id=ocid1.alarm.oc1.phx.aaaaaaaay5teixuumfi57rvqgigs3lluyda4pnsj5inguvgatlzqcxguopzq]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] oci_monitoring_alarm.this_cpu_alarm[0]: Creation complete after 0s
[id=ocid1.alarm.oc1.phx.aaaaaaaaabp7i7ptpbjbfmv7e7um3s4ogzpdcmi356esgd6y3dfuwhq4zkka]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] Apply complete! Resources: 7 added, 0 changed, 0 destroyed.
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] Outputs:
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] availability_alarm_id = [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.alarm.oc1.phx.aaaaaaaawzybqqxgxwhuty3owflq667grtih2kahebqq5kgsmeu3x254pnwq",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] cpu_alarm_id = [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.alarm.oc1.phx.aaaaaaaaabp7i7ptpbjbfmv7e7um3s4ogzpdcmi356esgd6y3dfuwhq4zkka",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] disk_alarm_id = [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.alarm.oc1.phx.aaaaaaaamcoqfubdwg67xhz3frzpqqrjhqbohugobmqkaqp24pznafg65ifq",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] logan_upload_data_size_alarm_id = [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.alarm.oc1.phx.aaaaaaaaojtqtqu3kvzredmxvlqkuafywet7rtswbxjfi3fdlesjbp3z7qya",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] logan_upload_failure_alarm_id = [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.alarm.oc1.phx.aaaaaaaa6erordojafp6rw3pqw6gfmqbnhv4yqkpyjgtfrxhzwa3fwkquava",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] memory_alarm_id = [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.alarm.oc1.phx.aaaaaaaay5teixuumfi57rvqgigs3lluyda4pnsj5inguvgatlzqcxguopzq",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] notification_topic_id = [
```

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```
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   [
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]     "ocid1.onstopic.oc1.phx.amaaaaaa2x5puciavgtwzg5pfxbucdevpsy4cj6e6fos4rerzon2ou5n573a",
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO]   ],
2024/05/02 13:36:55[TERRAFORM_CONSOLE] [INFO] ]
2024/05/02 13:36:56[TERRAFORM_CONSOLE] [INFO]
```

OCI Region – Management Agent Alarms – Terraform Log

The log file can be downloaded for future reference.

This completes the initial OCI Region configuration steps.

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Basic Oracle Management Gateway Create & Configure

A VM Instance needs to be created within the source Oracle Distributed Cloud system to act as the central Management Gateway. This VM Instance can be based on one of the available Platform Images available and will require both Internal and External networking connectivity.

Create Management Gateway VM Instance on target ODC System

A dedicated Compute Instance (VM) will need to be created on the target ODC system. In this example, an Oracle Cloud@Customer system, SCASG03, will be used.

The following Compute Instance, ocm-mgmtgw-ol9, will be used: -

ODC System – Management Gateway – Compute Instance Information

ODC System – Management Gateway – Compute Instance Configuration

ODC System – Management Gateway – Compute Instance Networking

This Compute Instance is based on the OL9 Platform Image and is based on an VM.PCAStandard.E5.Flex flexible shape with 1 OCPU, 10GB Memory, and a default Boot Volume of 50GB.

Networking connectivity is presented using an Internet Gateway (IGW) with external networking access. Both a Private and Public IP address have been allocated.

The Compute Instance has been updated to the latest rpm packages available with a 'dnf update' command.

Install pre-requisite packages

The Oracle Management Gateway requires that a Java jdk is available.

This can be installed using the 'dnf install java-1.8.0-openjdk' command. For the Management Gateway Compute Instance 'ocm-mgmtgw-ol9', this required a significant number of additional packages to be installed: -

```
[ROOT@OCM-MGMTGW-OL9 ~]# DNF INSTALL JAVA-1.8.0-OPENJDK
LAST METADATA EXPIRATION CHECK: 1:50:52 AGO ON FRI 31 MAY 2024 09:23:39 AM GMT.
DEPENDENCIES RESOLVED.
================================================================================================
 PACKAGE                    ARCHITECTURE  VERSION                  REPOSITORY            SIZE
================================================================================================
INSTALLING:
 JAVA-1.8.0-OPENJDK          X86_64        1:1.8.0.412.B08-2.0.1.EL9  OL9_APPSTREAM       453 K
INSTALLING DEPENDENCIES:
 MODEMMANAGER-GLIB           X86_64        1.20.2-1.EL9             OL9_BASEOS_LATEST     334 K
 ADWAITA-CURSOR-THEME        NOARCH        40.1.1-3.EL9             OL9_APPSTREAM         686 K


 TRACKER-MINERS             X86_64        3.1.2-4.EL9_3            OL9_APPSTREAM         1.0 M

 XDG-DESKTOP-PORTAL-GTK      X86_64        1.12.0-3.EL9            OL9_APPSTREAM         162 K


TRANSACTION SUMMARY
================================================================================================
INSTALL  127 PACKAGES


TOTAL DOWNLOAD SIZE: 96 M
INSTALLED SIZE: 304 M
IS THIS OK [Y/N]: Y
DOWNLOADING PACKAGES:
(1/127): BLUEZ-LIBS-5.64-2.EL9.X86_64.RPM                        503 KB/S |  83 KB    00:00
(2/127): BUBBLEWRAP-0.4.1-6.EL9.X86_64.RPM                       288 KB/S |  50 KB    00:00

(126/127): XKEYBOARD-CONFIG-2.33-2.EL9.NOARCH.RPM                27 MB/S | 1.1 MB    00:00
(127/127): XORG-X11-FONTS-TYPE1-7.5-33.EL9.NOARCH.RPM            14 MB/S | 526 KB    00:00
------------------------------------------------------------------------------------------------
TOTAL                                                           47 MB/S |  96 MB    00:02
RUNNING TRANSACTION CHECK
TRANSACTION CHECK SUCCEEDED.
RUNNING TRANSACTION TEST
TRANSACTION TEST SUCCEEDED.
RUNNING TRANSACTION
  RUNNING SCRIPTLET: COPY-JDK-CONFIGS-4.0-3.EL9.NOARCH                                  1/1
  RUNNING SCRIPTLET: JAVA-1.8.0-OPENJDK-HEADLESS-1:1.8.0.412.B08-2.0.1.EL9.X86_64       1/1
  PREPARING        :                                                                   1/1
  INSTALLING       : LIBXI-1.7.10-8.EL9.X86_64                                        1/127
  INSTALLING       : LIBOGG-2:1.3.4-6.EL9.X86_64                                      2/127


  VERIFYING        : XORG-X11-FONTS-TYPE1-7.5-33.EL9.NOARCH                       127/127

INSTALLED:
  MODEMMANAGER-GLIB-1.20.2-1.EL9.X86_64                ADWAITA-CURSOR-THEME-40.1.1-3.EL9.NOARCH

COMPLETE!
```

ODC System – Management Gateway – java jdk installation

Some 126 dependency packages were installed alongside the 'java-1.8.0-openjdk' rpm package.

Install & Configure the OCI CLI toolset

The installation and configuration of the standard oci-cli toolset will simplify the long-term management and maintenance of the Oracle Management Gateway VM Instance.

Install the appropriate Oracle Linux RPM packages for the oci-cli toolset: -

ORACLE

```
DNF --ENABLEREPO=OL9_DEVELOPER INSTALL PYTHON39-OCI-CLI PYTHON39-OCI-SDK
ORACLE LINUX 9 DEVELOPMENT PACKAGES (X86_64)                                         80 MB/S |  86 MB    00:01
LAST METADATA EXPIRATION CHECK: 0:00:15 AGO ON FRI 31 MAY 2024 09:42:10 AM GMT.
PACKAGE PYTHON39-OCI-SDK-2.93.1-1.EL9.X86_64 IS ALREADY INSTALLED.
DEPENDENCIES RESOLVED.
=================================================================================================================
 PACKAGE                              ARCHITECTURE      VERSION              REPOSITORY                    SIZE
=================================================================================================================
INSTALLING:
 PYTHON39-OCI-CLI                     NOARCH            3.42.0-1.EL9         OL9_DEVELOPER                 39 M
UPGRADING:
 PYTHON39-OCI-SDK                     X86_64            2.127.0-1.EL9        OL9_DEVELOPER                 75 M
INSTALLING DEPENDENCIES:
 PYTHON3-ARROW                        NOARCH            1.1.0-2.EL9          OL9_DEVELOPER                 153 K
 PYTHON3-IMPORTLIB-METADATA           NOARCH            4.12.0-2.EL9         OL9_ADDONS                    75 K
 PYTHON3-JMESPATH                     NOARCH            0.10.0-4.EL9         OL9_DEVELOPER                 78 K
 PYTHON3-PROMPT-TOOLKIT               NOARCH            3.0.38-4.EL9         OL9_APPSTREAM                 1.0 M
 PYTHON3-TERMINALTABLES               NOARCH            3.1.10-8.0.1.EL9     OL9_DEVELOPER                 60 K
 PYTHON3-WCWIDTH                      NOARCH            0.2.5-8.EL9          OL9_APPSTREAM                 65 K
 PYTHON3-ZIPP                         NOARCH            0.5.1-1.EL9          OL9_ADDONS                    24 K

TRANSACTION SUMMARY
=================================================================================================================
INSTALL  8 PACKAGES
UPGRADE  1 PACKAGE

TOTAL DOWNLOAD SIZE: 115 M
IS THIS OK [Y/N]: Y
DOWNLOADING PACKAGES:
(1/9): PYTHON3-IMPORTLIB-METADATA-4.12.0-2.EL9.NOARCH.RPM                            869 KB/S |  75 KB    00:00
(2/9): PYTHON3-WCWIDTH-0.2.5-8.EL9.NOARCH.RPM                                        722 KB/S |  65 KB    00:00
(3/9): PYTHON3-ARROW-1.1.0-2.EL9.NOARCH.RPM                                          6.4 MB/S | 153 KB    00:00
(4/9): PYTHON3-ZIPP-0.5.1-1.EL9.NOARCH.RPM                                           608 KB/S |  24 KB    00:00
(5/9): PYTHON3-JMESPATH-0.10.0-4.EL9.NOARCH.RPM                                      3.8 MB/S |  78 KB    00:00
(6/9): PYTHON3-PROMPT-TOOLKIT-3.0.38-4.EL9.NOARCH.RPM                                7.5 MB/S | 1.0 MB    00:00
(7/9): PYTHON3-TERMINALTABLES-3.1.10-8.0.1.EL9.NOARCH.RPM                            3.0 MB/S |  60 KB    00:00
(8/9): PYTHON39-OCI-CLI-3.42.0-1.EL9.NOARCH.RPM                                      48 MB/S  |  39 MB    00:00
(9/9): PYTHON39-OCI-SDK-2.127.0-1.EL9.X86_64.RPM                                     77 MB/S  |  75 MB    00:00
-----------------------------------------------------------------------------------------------------------------
TOTAL                                                                                103 MB/S | 115 MB    00:01
RUNNING TRANSACTION CHECK
TRANSACTION CHECK SUCCEEDED.
RUNNING TRANSACTION TEST
TRANSACTION TEST SUCCEEDED.
RUNNING TRANSACTION
 PREPARING       :                                                                                        1/1
 UPGRADING       : PYTHON39-OCI-SDK-2.127.0-1.EL9.X86_64                                                   1/10
 INSTALLING      : PYTHON3-TERMINALTABLES-3.1.10-8.0.1.EL9.NOARCH                                          2/10
 INSTALLING      : PYTHON3-JMESPATH-0.10.0-4.EL9.NOARCH                                                    3/10
 INSTALLING      : PYTHON3-ARROW-1.1.0-2.EL9.NOARCH                                                        4/10
 INSTALLING      : PYTHON3-ZIPP-0.5.1-1.EL9.NOARCH                                                         5/10
 INSTALLING      : PYTHON3-IMPORTLIB-METADATA-4.12.0-2.EL9.NOARCH                                          6/10
 INSTALLING      : PYTHON3-WCWIDTH-0.2.5-8.EL9.NOARCH                                                      7/10
 INSTALLING      : PYTHON3-PROMPT-TOOLKIT-3.0.38-4.EL9.NOARCH                                              8/10
 INSTALLING      : PYTHON39-OCI-CLI-3.42.0-1.EL9.NOARCH                                                    9/10
 CLEANUP         : PYTHON39-OCI-SDK-2.93.1-1.EL9.X86_64                                                    10/10
 RUNNING SCRIPTLET: PYTHON39-OCI-SDK-2.93.1-1.EL9.X86_64                                                   10/10
 VERIFYING       : PYTHON3-PROMPT-TOOLKIT-3.0.38-4.EL9.NOARCH                                              1/10
 VERIFYING       : PYTHON3-WCWIDTH-0.2.5-8.EL9.NOARCH                                                      2/10
 VERIFYING       : PYTHON3-IMPORTLIB-METADATA-4.12.0-2.EL9.NOARCH                                          3/10
 VERIFYING       : PYTHON3-ZIPP-0.5.1-1.EL9.NOARCH                                                         4/10
 VERIFYING       : PYTHON3-ARROW-1.1.0-2.EL9.NOARCH                                                        5/10
 VERIFYING       : PYTHON3-JMESPATH-0.10.0-4.EL9.NOARCH                                                    6/10
 VERIFYING       : PYTHON3-TERMINALTABLES-3.1.10-8.0.1.EL9.NOARCH                                          7/10
 VERIFYING       : PYTHON39-OCI-CLI-3.42.0-1.EL9.NOARCH                                                    8/10
 VERIFYING       : PYTHON39-OCI-SDK-2.127.0-1.EL9.X86_64                                                   9/10
 VERIFYING       : PYTHON39-OCI-SDK-2.93.1-1.EL9.X86_64                                                    10/10

UPGRADED:
 PYTHON39-OCI-SDK-2.127.0-1.EL9.X86_64
INSTALLED:
 PYTHON3-ARROW-1.1.0-2.EL9.NOARCH            PYTHON3-IMPORTLIB-METADATA-4.12.0-2.EL9.NOARCH  PYTHON3-JMESPATH-0.10.0-4.EL9.NOARCH
 PYTHON3-PROMPT-TOOLKIT-3.0.38-4.EL9.NOARCH  PYTHON3-TERMINALTABLES-3.1.10-8.0.1.EL9.NOARCH  PYTHON3-WCWIDTH-0.2.5-8.EL9.NOARCH
 PYTHON3-ZIPP-0.5.1-1.EL9.NOARCH             PYTHON39-OCI-CLI-3.42.0-1.EL9.NOARCH

Complete!
```

ODC System – Management Gateway – oci-cli installation

Configure the oci-cli toolset to connect to, and authenticate with, the parent OCI Region & Tenancy: -

30 Technical Brief / Deploying the OCI Observability & Monitoring Platform within an Oracle Distributed Cloud Environment / Version 0.2

ORACLE

```
OCI SESSION AUTHENTICATE --NO-BROWSER
ENTER A REGION BY INDEX OR NAME(E.G.
1: AF-JOHANNESBURG-1, 2: AP-CHIYODA-1, 3: AP-CHUNCHEON-1, 4: AP-DCC-CANBERRA-1, 5: AP-DCC-GAZIPUR-1,
6: AP-HYDERABAD-1, 7: AP-IBARAKI-1, 8: AP-MELBOURNE-1, 9: AP-MUMBAI-1, 10: AP-OSAKA-1,
11: AP-SEOUL-1, 12: AP-SINGAPORE-1, 13: AP-SYDNEY-1, 14: AP-TOKYO-1, 15: CA-MONTREAL-1,
16: CA-TORONTO-1, 17: EU-AMSTERDAM-1, 18: EU-DCC-DUBLIN-1, 19: EU-DCC-DUBLIN-2, 20: EU-DCC-MILAN-1,
21: EU-DCC-MILAN-2, 22: EU-DCC-RATING-1, 23: EU-DCC-RATING-2, 24: EU-DCC-ZURICH-1, 25: EU-FRANKFURT-1,
26: EU-FRANKFURT-2, 27: EU-JOVANOVAC-1, 28: EU-MADRID-1, 29: EU-MADRID-2, 30: EU-MARSEILLE-1,
31: EU-MILAN-1, 32: EU-PARIS-1, 33: EU-STOCKHOLM-1, 34: EU-ZURICH-1, 35: IL-JERUSALEM-1,
36: ME-ABUDHABI-1, 37: ME-ABUDHABI-3, 38: ME-DCC-DOHA-1, 39: ME-DCC-MUSCAT-1, 40: ME-DUBAI-1,
41: ME-JEDDAH-1, 42: MX-MONTERREY-1, 43: MX-QUERETARO-1, 44: SA-BOGOTA-1, 45: SA-SANTIAGO-1,
46: SA-SAOPAULO-1, 47: SA-VALPARAISO-1, 48: SA-VINHEDO-1, 49: UK-CARDIFF-1, 50: UK-GOV-CARDIFF-1,
51: UK-GOV-LONDON-1, 52: UK-LONDON-1, 53: US-ASHBURN-1, 54: US-CHICAGO-1, 55: US-GOV-ASHBURN-1,
56: US-GOV-CHICAGO-1, 57: US-GOV-PHOENIX-1, 58: US-LANGLEY-1, 59: US-LUKE-1, 60: US-PHOENIX-1,
61: US-SALTLAKE-2, 62: US-SANJOSE-1): 60
ERROR: COULD NOT FIND CONFIG FILE AT /ROOT/.OCI/CONFIG
DO YOU WANT TO CREATE A NEW CONFIG FILE? [Y/N]: Y
DO YOU WANT TO CREATE YOUR CONFIG FILE BY LOGGING IN THROUGH A BROWSER? [Y/N]: N
    THIS COMMAND PROVIDES A WALKTHROUGH OF CREATING A VALID CLI CONFIG FILE.

    THE FOLLOWING LINKS EXPLAIN WHERE TO FIND THE INFORMATION REQUIRED BY THIS
    SCRIPT:

    USER API SIGNING KEY, OCID AND TENANCY OCID:

        HTTPS://DOCS.CLOUD.ORACLE.COM/CONTENT/API/CONCEPTS/APISIGNINGKEY.HTM#OTHER

    REGION:

        HTTPS://DOCS.CLOUD.ORACLE.COM/CONTENT/GENERAL/CONCEPTS/REGIONS.HTM

    GENERAL CONFIG DOCUMENTATION:

        HTTPS://DOCS.CLOUD.ORACLE.COM/CONTENT/API/CONCEPTS/SDKCONFIG.HTM


ENTER A LOCATION FOR YOUR CONFIG [/ROOT/.OCI/CONFIG]:
ENTER A USER OCID: OCID1.USER.OC1..AAAAAAAAVHG7Z6BL62ZUKK5AFYQ4OLK3CCDOOKYIBTMJDA5CSAEKMTYOKU6Q
ENTER A TENANCY OCID: OCID1.TENANCY.OC1..AAAAAAAAUB5QCQSPIQ3ODEUP2ZLKQFUJYQDWK4UDJC24NDZEYFFFSOZHFZJQ
ENTER A REGION BY INDEX OR NAME(E.G.
1: AF-JOHANNESBURG-1, 2: AP-CHIYODA-1, 3: AP-CHUNCHEON-1, 4: AP-DCC-CANBERRA-1, 5: AP-DCC-GAZIPUR-1,
6: AP-HYDERABAD-1, 7: AP-IBARAKI-1, 8: AP-MELBOURNE-1, 9: AP-MUMBAI-1, 10: AP-OSAKA-1,
11: AP-SEOUL-1, 12: AP-SINGAPORE-1, 13: AP-SYDNEY-1, 14: AP-TOKYO-1, 15: CA-MONTREAL-1,
16: CA-TORONTO-1, 17: EU-AMSTERDAM-1, 18: EU-DCC-DUBLIN-1, 19: EU-DCC-DUBLIN-2, 20: EU-DCC-MILAN-1,
21: EU-DCC-MILAN-2, 22: EU-DCC-RATING-1, 23: EU-DCC-RATING-2, 24: EU-DCC-ZURICH-1, 25: EU-FRANKFURT-1,
26: EU-FRANKFURT-2, 27: EU-JOVANOVAC-1, 28: EU-MADRID-1, 29: EU-MADRID-2, 30: EU-MARSEILLE-1,
31: EU-MILAN-1, 32: EU-PARIS-1, 33: EU-STOCKHOLM-1, 34: EU-ZURICH-1, 35: IL-JERUSALEM-1,
36: ME-ABUDHABI-1, 37: ME-ABUDHABI-3, 38: ME-DCC-DOHA-1, 39: ME-DCC-MUSCAT-1, 40: ME-DUBAI-1,
41: ME-JEDDAH-1, 42: MX-MONTERREY-1, 43: MX-QUERETARO-1, 44: SA-BOGOTA-1, 45: SA-SANTIAGO-1,
46: SA-SAOPAULO-1, 47: SA-VALPARAISO-1, 48: SA-VINHEDO-1, 49: UK-CARDIFF-1, 50: UK-GOV-CARDIFF-1,
51: UK-GOV-LONDON-1, 52: UK-LONDON-1, 53: US-ASHBURN-1, 54: US-CHICAGO-1, 55: US-GOV-ASHBURN-1,
56: US-GOV-CHICAGO-1, 57: US-GOV-PHOENIX-1, 58: US-LANGLEY-1, 59: US-LUKE-1, 60: US-PHOENIX-1,
61: US-SALTLAKE-2, 62: US-SANJOSE-1): 60
DO YOU WANT TO GENERATE A NEW API SIGNING RSA KEY PAIR? (IF YOU DECLINE YOU WILL BE ASKED TO SUPPLY THE PATH TO AN EXISTING KEY.)
[Y/N]: Y
ENTER A DIRECTORY FOR YOUR KEYS TO BE CREATED [/ROOT/.OCI]:
ENTER A NAME FOR YOUR KEY [OCI_API_KEY]: PHX_SVOSPM_OCI_API_KEY
PUBLIC KEY WRITTEN TO: /ROOT/.OCI/PHX_SVOSPM_OCI_API_KEY_PUBLIC.PEM
ENTER A PASSPHRASE FOR YOUR PRIVATE KEY ("N/A" FOR NO PASSPHRASE):
REPEAT FOR CONFIRMATION:
PRIVATE KEY WRITTEN TO: /ROOT/.OCI/PHX_SVOSPM_OCI_API_KEY.PEM
FINGERPRINT: 49:09:59:22:82:CD:6F:0D:CA:DC:76:F1:5B:BB:14:90
DO YOU WANT TO WRITE YOUR PASSPHRASE TO THE CONFIG FILE? (IF NOT, YOU WILL NEED TO ENTER IT WHEN PROMPTED EACH TIME YOU RUN AN OCI
COMMAND) [Y/N]: Y
CONFIG WRITTEN TO /ROOT/.OCI/CONFIG


    IF YOU HAVEN'T ALREADY UPLOADED YOUR API SIGNING PUBLIC KEY THROUGH THE
    CONSOLE, FOLLOW THE INSTRUCTIONS ON THE PAGE LINKED BELOW IN THE SECTION
    'HOW TO UPLOAD THE PUBLIC KEY':

        HTTPS://DOCS.CLOUD.ORACLE.COM/CONTENT/API/CONCEPTS/APISIGNINGKEY.HTM#HOW2


SUCCESSFULLY CREATED CONFIG FILE WITH YOUR NEW CLI USER PROFILE
Once your public key is uploaded in the console, you can re-run your command to use your new config file and user profile
```

ODC System – Management Gateway – oci-cli authentication

With the example above, a new API key pair was used to authenticate the session. Other Authentication options are available. See the relevant OCI documentation for more details.

Confirm connectivity to the parent OCI Region / Tenancy

Once the oci cli has been configured, confirm connectivity by issuing a simple 'oci iam compartment list' command: -

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```
OCI IAM COMPARTMENT LIST | GREP DESCRIPTION
    "DESCRIPTION": "PROJECT - C3 SIMULATOR TESTING",
    "DESCRIPTION": "PROJECT LEVEL COMPARTMENT FOR C3 SIMULATOR TESTING",
    "DESCRIPTION": "PROJECT - DISTRIBUTED CLOUD MANAGEMENT",
    "DESCRIPTION": "PROJECT LEVEL COMPARTMENT FOR TESTING OF DISTRIBUTED CLOUD MANAGEMENT",
    "DESCRIPTION": "PROJECT - OKE CONTAINER TESTING",
    "DESCRIPTION": "PROJECT - RH OPENSHIFT TESTING",
    "DESCRIPTION": "PROJECT LEVEL COMPARTMENT FOR RH OPENSHIFT TESTING",
    "DESCRIPTION": "COMPARTMENT FOR TESTING OF SIEBEL MARKETPLACE IMAGE FOR C3",
    "DESCRIPTION": "PROJECT - TELECOM PROTOCOL TESTING",
    "DESCRIPTION": "PROJECT LEVEL COMPARTMENT FOR TELECOM PROTOCOL TESTING",
    "DESCRIPTION": "PROJECT - VIRTUAL FIREWALL TESTING",
    "DESCRIPTION": "PROJECT LEVEL COMPARTMENT FOR VIRTUAL FIREWALL TESTING",
    "DESCRIPTION": "SHARED RESOURCES FOR THE TENANCY",
    "DESCRIPTION": "PERMANENT - SYSTEMS PRODUCT MANAGEMENT LEADERSHIP TEAM",
    "DESCRIPTION": "PERMANENT COMPARTMENT FOR SYSTEMS PRODUCT MANAGEMENT LEADERSHIP TEAM",
    "DESCRIPTION": "IDCS-EA3A61214CA7438E9B971537AA5324E5|23654458|ORACLE AMERICA, INC. - INTERNAL",
    "DESCRIPTION": "THIS COMPARTMENT WAS AUTOMATICALLY CREATED WHEN YOU SET UP INGESTION FOR LOGGING ANALYTICS.",
    "DESCRIPTION": "PROJECT - RH OPENSHIFT TESTING",
    "DESCRIPTION": "PERMANENT - PRODUCT MANAGEMENT TEAM",
    "DESCRIPTION": "PERMANENT - ROVING EDGE INFRASTRUCTURE TEAM",
    "DESCRIPTION": "PERMANENT COMPARTMENT FOR ROVING EDGE INFRASTRUCTURE TEAM",
    "DESCRIPTION": "PERMANENT COMPARTMENT FOR SOLARIS & ORACLE SECURE DESKTOP TEAM",
    "DESCRIPTION": "PERMANENT - SOLARIS & ORACLE SECURE DESKTOP TEAM",
    "DESCRIPTION": "PERMANENT - ENGINEERED SOLUTIONS TEAM",
    "description": "Devops Authorizations",
```

ODC System – Management Gateway – oci-cli connectivity confirmation

In the example above, the resulting oci output has been piped through the Linux 'grep' command to display a single row (description) for each compartment found.

Download the OMP Oracle Linux RPM packages

With oci connectivity confirmed to the parent OCI tenancy, it is now possible to display the available management gateway and agent packages and download locally to the Management Gateway Compute Instance.

First, list the available Gateway packages, using the command 'oci management-agent agent-image list --install-type GATEWAY': -

```
oci management-agent agent-image list --install-type GATEWAY
{
  "data": [
    {
      "checksum": "d60c2cba960479aba6efce4ce7cb0a11ff9a02996e22e3ce94403da3701cabaa",
      "id": "ocid1.managementagentimage.oc1.phx.amaaaaaa4zy67iaawuixkt4lt7onoo42w7xn5gso43unfrvj6gzbabufin4q",
      "image-object-storage-details": {
        "checksum": "d60c2cba960479aba6efce4ce7cb0a11ff9a02996e22e3ce94403da3701cabaa",
        "object-bucket": "agent_images",
        "object-name": "Windows-x86_64/latest/oracle.mgmt_gateway.zip",
        "object-namespace": "idtskf8cjzhp",
        "object-url": "https://objectstorage.us-phoenix-1.oraclecloud.com/n/idtskf8cjzhp/b/agent_images/o/Windows-
x86_64/latest/oracle.mgmt_gateway.zip"
      },
      "lifecycle-state": "ACTIVE",
      "object-url": "https://objectstorage.us-phoenix-1.oraclecloud.com/n/idtskf8cjzhp/b/agent_images/o/Windows-
x86_64/latest/oracle.mgmt_gateway.zip",
      "package-architecture-type": "X86_64",
      "package-type": "ZIP",
      "platform-name": "Windows-x86_64",
      "platform-type": "WINDOWS",
      "size": 102712814.0,
      "version": "240508.1440.1715517696"
    },
    {
      "checksum": "14f2524d3619e255cf2b8d50a00d2aaf13348db3977a09efcb377d7d750854a6",
      "id": "ocid1.managementagentimage.oc1..aaaaaaaawsmdi5q27iddhat3fwlhotzhuxgumkb5dem5yqzdk2r4peckzbra",
      "image-object-storage-details": {
        "checksum": "14f2524d3619e255cf2b8d50a00d2aaf13348db3977a09efcb377d7d750854a6",
        "object-bucket": "agent_images",
        "object-name": "Linux-Aarch64/latest/oracle.mgmt_gateway.rpm",
        "object-namespace": "idtskf8cjzhp",
        "object-url": "https://objectstorage.us-phoenix-1.oraclecloud.com/n/idtskf8cjzhp/b/agent_images/o/Linux-
Aarch64/latest/oracle.mgmt_gateway.rpm"
      },
      "lifecycle-state": "ACTIVE",
      "object-url": "https://objectstorage.us-phoenix-1.oraclecloud.com/n/idtskf8cjzhp/b/agent_images/o/Linux-
Aarch64/latest/oracle.mgmt_gateway.rpm",
      "package-architecture-type": "AARCH64",
      "package-type": "RPM",
      "platform-name": "Linux-Aarch64",
      "platform-type": "LINUX",
      "size": 102099704.0,
```

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```
        "version": "240508.1440.1715517696"
    },
    {
        "checksum": "d84585f4d399dae4c0ab279f821eb44dfb71a9f2a6682d1e036d8cbdf7ea335b",
        "id": "ocid1.managementagentimage.oc1..aaaaaaaajeky4y5lxkh7zcu6wk4br4k7qqpb3d5ov6gdgno4ljsretvgf5yq",
        "image-object-storage-details": {
            "checksum": "d84585f4d399dae4c0ab279f821eb44dfb71a9f2a6682d1e036d8cbdf7ea335b",
            "object-bucket": "agent_images",
            "object-name": "Linux-x86_64/latest/oracle.mgmt_gateway.rpm",
            "object-namespace": "idtskf8cjzhp",
            "object-url": "https://objectstorage.us-phoenix-1.oraclecloud.com/n/idtskf8cjzhp/b/agent_images/o/Linux-x86_64/latest/oracle.mgmt_gateway.rpm"
        },
        "lifecycle-state": "ACTIVE",
        "object-url": "https://objectstorage.us-phoenix-1.oraclecloud.com/n/idtskf8cjzhp/b/agent_images/o/Linux-x86_64/latest/oracle.mgmt_gateway.rpm",
        "package-architecture-type": "X86_64",
        "package-type": "RPM",
        "platform-name": "Linux-x86_64",
        "platform-type": "LINUX",
        "size": 102137376.0,
        "version": "240508.1440.1715517696"
    }
  ]
}
```

ODC System – Management Gateway – oci-cli list gateway packages

Three different gateway packages are displayed. Identify the correct Management Gateway package to be used, in this example the rpm package for "Linux-x86_64", and download locally: -

```
OCI OS OBJECT GET --NAMESPACE IDTSKF8CJZHP --BUCKET-NAME AGENT_IMAGES --NAME LINUX-X86_64/LATEST/ORACLE.MGMT_GATEWAY.RPM  --FILE ORACLE.MGMT_GATEWAY.RPM
Downloading object  [##################################]  100%
```
ODC System – Management Gateway – oci-cli download gateway

Now repeat for the available Agent packages using the command 'oci management-agent agent-image list --install-type AGENT: -

```
OCI MANAGEMENT-AGENT AGENT-IMAGE LIST --INSTALL-TYPE AGENT
{
  "DATA": [
    {
      "CHECKSUM": "1A75054356BF8E7460475A04D81797CEF916483CB00AAC4847C0D645B1EB2842",
      "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAAWNWWSTBLQBJT4NFQCJT24NKDNJO5WGMTQMAENZVOHQGTWTQL4VHQ",
      "IMAGE-OBJECT-STORAGE-DETAILS": {
        "CHECKSUM": "1A75054356BF8E7460475A04D81797CEF916483CB00AAC4847C0D645B1EB2842",
        "OBJECT-BUCKET": "AGENT_IMAGES",
        "OBJECT-NAME": "WINDOWS-X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP",
        "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
        "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/WINDOWS-X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP"
      },
      "LIFECYCLE-STATE": "ACTIVE",
      "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/WINDOWS-X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP",
      "PACKAGE-ARCHITECTURE-TYPE": "X86_64",
      "PACKAGE-TYPE": "ZIP",
      "PLATFORM-NAME": "WINDOWS-X86_64",
      "PLATFORM-TYPE": "WINDOWS",
      "SIZE": 100837953.0,
      "VERSION": "240508.1440"
    },
    {
      "CHECKSUM": "BCBE5853B9C334195FBDCC467E5B86583E8FCE07EC73728AFF5A7E5EBAB56AA5",
      "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAADYGF5N3T6A66HOW7SJQDKN6WV3VBYXFUHXGG65GV4Z6Q44JEGHBA",
      "IMAGE-OBJECT-STORAGE-DETAILS": {
        "CHECKSUM": "BCBE5853B9C334195FBDCC467E5B86583E8FCE07EC73728AFF5A7E5EBAB56AA5",
        "OBJECT-BUCKET": "AGENT_IMAGES",
        "OBJECT-NAME": "WINDOWS-X86/LATEST/ORACLE.MGMT_AGENT.ZIP",
        "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
        "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/WINDOWS-X86/LATEST/ORACLE.MGMT_AGENT.ZIP"
      },
      "LIFECYCLE-STATE": "ACTIVE",
      "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/WINDOWS-X86/LATEST/ORACLE.MGMT_AGENT.ZIP",
      "PACKAGE-ARCHITECTURE-TYPE": "X86",
      "PACKAGE-TYPE": "ZIP",
      "PLATFORM-NAME": "WINDOWS-X86",
      "PLATFORM-TYPE": "WINDOWS",
      "SIZE": 100445400.0,
```

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```
            "VERSION": "240508.1440"
        },
        {
            "CHECKSUM": "D20FBEFCA0B0440016A9C389F00DE9A9046F9C646612C026D76B68EFDBE3EB84",
            "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAAEHNXPNZPG3CN2YBZB7NAOESRXU3S72JTI5JHD7VCVS6KCQJGG4IQ",
            "IMAGE-OBJECT-STORAGE-DETAILS": {
                "CHECKSUM": "D20FBEFCA0B0440016A9C389F00DE9A9046F9C646612C026D76B68EFDBE3EB84",
                "OBJECT-BUCKET": "AGENT_IMAGES",
                "OBJECT-NAME": "SOLARIS-SPARC64/LATEST/ORACLE.MGMT_AGENT.ZIP",
                "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
                "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/SOLARIS-
SPARC64/LATEST/ORACLE.MGMT_AGENT.ZIP"
            },
            "LIFECYCLE-STATE": "ACTIVE",
            "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/SOLARIS-
SPARC64/LATEST/ORACLE.MGMT_AGENT.ZIP",
            "PACKAGE-ARCHITECTURE-TYPE": "SPARC",
            "PACKAGE-TYPE": "ZIP",
            "PLATFORM-NAME": "SOLARIS-SPARC64",
            "PLATFORM-TYPE": "SOLARIS",
            "SIZE": 100335486.0,
            "VERSION": "240508.1440"
        },
        {
            "CHECKSUM": "A24BD7E2B16883D56B4F71534C9802585B144AA4DBA89DAF2791848AE7477ADB",
            "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAAUZMTJNNTW5SED7IQIKKYWHSCA55TOBRG3IBO4GEE2J3ORLKT4PMQ",
            "IMAGE-OBJECT-STORAGE-DETAILS": {
                "CHECKSUM": "A24BD7E2B16883D56B4F71534C9802585B144AA4DBA89DAF2791848AE7477ADB",
                "OBJECT-BUCKET": "AGENT_IMAGES",
                "OBJECT-NAME": "MACOS-X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP",
                "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
                "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/MACOS-
X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP"
            },
            "LIFECYCLE-STATE": "ACTIVE",
            "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/MACOS-
X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP",
            "PACKAGE-ARCHITECTURE-TYPE": "X86_64",
            "PACKAGE-TYPE": "ZIP",
            "PLATFORM-NAME": "MACOS-X86_64",
            "PLATFORM-TYPE": "MACOSX",
            "SIZE": 100487775.0,
            "VERSION": "240508.1440"
        },
        {
            "CHECKSUM": "1B31EEB6428FA79201BE6851DDC6D2AC5A21CEDCFE07005C49ECCE77638C6C46",
            "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1.PHX.AMAAAAAA4ZY67IAAK6MBGT3PEMXTJMHY2SFGMB6UMXVHGQQVPCTPIMKOB23Q",
            "IMAGE-OBJECT-STORAGE-DETAILS": {
                "CHECKSUM": "1B31EEB6428FA79201BE6851DDC6D2AC5A21CEDCFE07005C49ECCE77638C6C46",
                "OBJECT-BUCKET": "AGENT_IMAGES",
                "OBJECT-NAME": "MACOS-AARCH64/LATEST/ORACLE.MGMT_AGENT.ZIP",
                "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
                "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/MACOS-
AARCH64/LATEST/ORACLE.MGMT_AGENT.ZIP"
            },
            "LIFECYCLE-STATE": "ACTIVE",
            "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/MACOS-
AARCH64/LATEST/ORACLE.MGMT_AGENT.ZIP",
            "PACKAGE-ARCHITECTURE-TYPE": "AARCH64",
            "PACKAGE-TYPE": "ZIP",
            "PLATFORM-NAME": "MACOS-AARCH64",
            "PLATFORM-TYPE": "MACOSX",
            "SIZE": 100271606.0,
            "VERSION": "240508.1440"
        },
        {
            "CHECKSUM": "21C60D45E539E4885029C7354A02829DAC2CDB4843FE01A02354E6537D2B2712",
            "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAA7WYP7TPZ4BNJJ4TBU5PEJY44RYDG7LE6NSDKS7DPCU2JW5YE5JHQ",
            "IMAGE-OBJECT-STORAGE-DETAILS": {
                "CHECKSUM": "21C60D45E539E4885029C7354A02829DAC2CDB4843FE01A02354E6537D2B2712",
                "OBJECT-BUCKET": "AGENT_IMAGES",
                "OBJECT-NAME": "LINUX-AARCH64/LATEST/ORACLE.MGMT_AGENT.RPM",
                "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
                "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
AARCH64/LATEST/ORACLE.MGMT_AGENT.RPM"
            },
            "LIFECYCLE-STATE": "ACTIVE",
            "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
AARCH64/LATEST/ORACLE.MGMT_AGENT.RPM",
            "PACKAGE-ARCHITECTURE-TYPE": "AARCH64",
            "PACKAGE-TYPE": "RPM",
            "PLATFORM-NAME": "LINUX-AARCH64",
            "PLATFORM-TYPE": "LINUX",
            "SIZE": 100289148.0,
            "VERSION": "240508.1440"
        },
        {
            "CHECKSUM": "618B2021BCB1E499A6F69E38613F37030F1582488D2F24F579BA7B3BA5AD8352",
            "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAAYDSOVQAX7B467MXDIOUED2IFQEOF4GHS2GFN35LAOV2TY5KXS2MA",
            "IMAGE-OBJECT-STORAGE-DETAILS": {
                "CHECKSUM": "618B2021BCB1E499A6F69E38613F37030F1582488D2F24F579BA7B3BA5AD8352",
```

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```
          "OBJECT-BUCKET": "AGENT_IMAGES",
          "OBJECT-NAME": "LINUX-AARCH64/LATEST/ORACLE.MGMT_AGENT.ZIP",
          "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
          "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
AARCH64/LATEST/ORACLE.MGMT_AGENT.ZIP"
        },
        "LIFECYCLE-STATE": "ACTIVE",
        "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
AARCH64/LATEST/ORACLE.MGMT_AGENT.ZIP",
        "PACKAGE-ARCHITECTURE-TYPE": "AARCH64",
        "PACKAGE-TYPE": "ZIP",
        "PLATFORM-NAME": "LINUX-AARCH64",
        "PLATFORM-TYPE": "LINUX",
        "SIZE": 100262457.0,
        "VERSION": "240508.1440"
      },
      {
        "CHECKSUM": "BA3FA13886F5C606744768CAEDB280EB29896AC69D6149F2D9E105A81D7DBCC2",
        "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAAD226QEUK2NHNU6EXDMOZEK3O6EYJZ5ZZF45VMGSVONW6NPZDGJDQ",
        "IMAGE-OBJECT-STORAGE-DETAILS": {
          "CHECKSUM": "BA3FA13886F5C606744768CAEDB280EB29896AC69D6149F2D9E105A81D7DBCC2",
          "OBJECT-BUCKET": "AGENT_IMAGES",
          "OBJECT-NAME": "LINUX-X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP",
          "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
          "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP"
        },
        "LIFECYCLE-STATE": "ACTIVE",
        "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
X86_64/LATEST/ORACLE.MGMT_AGENT.ZIP",
        "PACKAGE-ARCHITECTURE-TYPE": "X86_64",
        "PACKAGE-TYPE": "ZIP",
        "PLATFORM-NAME": "LINUX-X86_64",
        "PLATFORM-TYPE": "LINUX",
        "SIZE": 100301527.0,
        "VERSION": "240508.1440"
      },
      {
        "CHECKSUM": "02DAFC5CFEB0B272EB551BB092C6E9281BD8CC26B054D19F7C6139813D981D35",
        "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAAUAYOTCFIEZ3YJZ45LJESCCWECSYUCSP4N4DVB5PA7NMGFGUI3ICA",
        "IMAGE-OBJECT-STORAGE-DETAILS": {
          "CHECKSUM": "02DAFC5CFEB0B272EB551BB092C6E9281BD8CC26B054D19F7C6139813D981D35",
          "OBJECT-BUCKET": "AGENT_IMAGES",
          "OBJECT-NAME": "LINUX-X86_64/LATEST/ORACLE.MGMT_AGENT.RPM",
          "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
          "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
X86_64/LATEST/ORACLE.MGMT_AGENT.RPM"
        },
        "LIFECYCLE-STATE": "ACTIVE",
        "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/LINUX-
X86_64/LATEST/ORACLE.MGMT_AGENT.RPM",
        "PACKAGE-ARCHITECTURE-TYPE": "X86_64",
        "PACKAGE-TYPE": "RPM",
        "PLATFORM-NAME": "LINUX-X86_64",
        "PLATFORM-TYPE": "LINUX",
        "SIZE": 100328133.0,
        "VERSION": "240508.1440"
      },
      {
        "CHECKSUM": "E57B37D13FE7E13DD30D3A531E24C6264B277FBDC31FBC542FEAA8ACCB00484C",
        "ID": "OCID1.MANAGEMENTAGENTIMAGE.OC1..AAAAAAAANQQFZNYOVVNO2KPSVQYHBWGXX6WJWCARU2G6VRSWRYKVDRNOLFVA",
        "IMAGE-OBJECT-STORAGE-DETAILS": {
          "CHECKSUM": "E57B37D13FE7E13DD30D3A531E24C6264B277FBDC31FBC542FEAA8ACCB00484C",
          "OBJECT-BUCKET": "AGENT_IMAGES",
          "OBJECT-NAME": "AIX-PPC64/LATEST/ORACLE.MGMT_AGENT.ZIP",
          "OBJECT-NAMESPACE": "IDTSKF8CJZHP",
          "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/AIX-
PPC64/LATEST/ORACLE.MGMT_AGENT.ZIP"
        },
        "LIFECYCLE-STATE": "ACTIVE",
        "OBJECT-URL": "HTTPS://OBJECTSTORAGE.US-PHOENIX-1.ORACLECLOUD.COM/N/IDTSKF8CJZHP/B/AGENT_IMAGES/O/AIX-
PPC64/LATEST/ORACLE.MGMT_AGENT.ZIP",
        "PACKAGE-ARCHITECTURE-TYPE": "UNKNOWN_ENUM_VALUE",
        "PACKAGE-TYPE": "ZIP",
        "PLATFORM-NAME": "AIX-PPC64",
        "PLATFORM-TYPE": "UNKNOWN_ENUM_VALUE",
        "SIZE": 100457171.0,
        "VERSION": "240508.1440"
      }
    ]
  }
```

ODC System – Management Gateway – oci-cli list agent packages

Ten different agent packages are displayed. Identify the correct Management Agent package to be used, in this example the rpm package for "Linux-x86_64", and download locally: -

```
OCI OS OBJECT GET --NAMESPACE IDTSKF8CJZHP --BUCKET-NAME AGENT_IMAGES --NAME LINUX-X86_64/LATEST/ORACLE.MGMT_AGENT.RPM  --FILE
ORACLE.MGMT_AGENT.RPM
Downloading object  [##################################]  100%
```

ODC System – Management Gateway – oci-cli download agent

Gateway Firewall Rule Changes

One final step needs to be completed, where the Compute Instance has its local firewall daemon service running. Custom services need to be created to permit the Oracle Management Agents to connect to the Oracle Management Gateway over port 4480 (default): -

```
FIREWALL-CMD --GET-ACTIVE-ZONE
 PUBLIC
  INTERFACES: ENS3
FIREWALL-CMD --LIST-SERVICES
 DHCPV6-CLIENT SSH
FIREWALL-CMD --PERMANENT --NEW-SERVICE=CUSTOM-OCI-MGMT-AGENT-4480
 SUCCESS
FIREWALL-CMD --PERMANENT --SERVICE=CUSTOM-OCI-MGMT-AGENT-4480 --SET-DESCRIPTION="CUSTOM SERVICE FOR ORACLE MANAGEMENT AGENT ON TCP
PORT 4480"
 SUCCESS
FIREWALL-CMD --PERMANENT --SERVICE=CUSTOM-OCI-MGMT-AGENT-4480 --ADD-PORT=4480/TCP
 SUCCESS
FIREWALL-CMD --PERMANENT --ZONE=PUBLIC --ADD-SERVICE=CUSTOM-OCI-MGMT-AGENT-4480
 SUCCESS
SYSTEMCTL RESTART FIREWALLD
FIREWALL-CMD --LIST-SERVICES
 CUSTOM-OCI-MGMT-AGENT-4480 DHCPV6-CLIENT SSH
FOR S IN $(FIREWALL-CMD --LIST-SERVICES); DO FIREWALL-CMD --PERMANENT --SERVICE "$S" --GET-PORTS; DONE;
 4480/TCP
 546/UDP
 22/TCP
```

ODC System – Management Gateway Firewall Changes

This completes the configuration steps for the Management Gateway Compute Instance.

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Basic Oracle Management Agent Configuration

For each Compute Instance that will have the Oracle Management Agent configured ensure that each Compute Instance has been updated to the latest rpm packages available with a 'dnf update' command.

Install pre-requisite packages

The Oracle Management Agent requires that a Java jdk is available.

This can be installed using the 'dnf install java-1.8.0-openjdk' command. For the Management Gateway Compute Instance 'ocm-mgmtgw-ol9', this required a significant number of additional packages to be installed: -

```
[ROOT@OCM-MGMTGW-OL9 ~]# DNF INSTALL JAVA-1.8.0-OPENJDK
LAST METADATA EXPIRATION CHECK: 1:50:52 AGO ON FRI 31 MAY 2024 09:23:39 AM GMT.
DEPENDENCIES RESOLVED.
=================================================================================================================
PACKAGE                        ARCHITECTURE  VERSION                        REPOSITORY            SIZE
=================================================================================================================
INSTALLING:
 JAVA-1.8.0-OPENJDK            X86_64        1:1.8.0.412.B08-2.0.1.EL9      OL9_APPSTREAM         453 K
INSTALLING DEPENDENCIES:
 MODEMMANAGER-GLIB             X86_64        1.20.2-1.EL9                   OL9_BASEOS_LATEST     334 K
 ADWAITA-CURSOR-THEME          NOARCH        40.1.1-3.EL9                   OL9_APPSTREAM         686 K


 TRACKER-MINERS                X86_64        3.1.2-4.EL9_3                  OL9_APPSTREAM         1.0 M

 XDG-DESKTOP-PORTAL-GTK        X86_64        1.12.0-3.EL9                   OL9_APPSTREAM         162 K


TRANSACTION SUMMARY
=================================================================================================================
INSTALL  127 PACKAGES


TOTAL DOWNLOAD SIZE: 96 M
INSTALLED SIZE: 304 M
IS THIS OK [Y/N]: Y
DOWNLOADING PACKAGES:
(1/127): BLUEZ-LIBS-5.64-2.EL9.X86_64.RPM                               503 KB/S |  83 KB   00:00
(2/127): BUBBLEWRAP-0.4.1-6.EL9.X86_64.RPM                              288 KB/S |  50 KB   00:00

(126/127): XKEYBOARD-CONFIG-2.33-2.EL9.NOARCH.RPM                        27 MB/S | 1.1 MB   00:00
(127/127): XORG-X11-FONTS-TYPE1-7.5-33.EL9.NOARCH.RPM                    14 MB/S | 526 KB   00:00
-----------------------------------------------------------------------------------------------------------------
TOTAL                                                                    47 MB/S |  96 MB   00:02
RUNNING TRANSACTION CHECK
TRANSACTION CHECK SUCCEEDED.
RUNNING TRANSACTION TEST
TRANSACTION TEST SUCCEEDED.
RUNNING TRANSACTION
  RUNNING SCRIPTLET: COPY-JDK-CONFIGS-4.0-3.EL9.NOARCH                                             1/1
  RUNNING SCRIPTLET: JAVA-1.8.0-OPENJDK-HEADLESS-1:1.8.0.412.B08-2.0.1.EL9.X86_64                  1/1
  PREPARING       :                                                                               1/1
  INSTALLING      : LIBXI-1.7.10-8.EL9.X86_64                                                    1/127
  INSTALLING      : LIBOGG-2:1.3.4-6.EL9.X86_64                                                  2/127


  VERIFYING       : XORG-X11-FONTS-TYPE1-7.5-33.EL9.NOARCH                                    127/127

INSTALLED:
  MODEMMANAGER-GLIB-1.20.2-1.EL9.X86_64                          ADWAITA-CURSOR-THEME-40.1.1-3.EL9.NOARCH

COMPLETE!
```

ODC System – Management Agent – java jdk installation

Some 126 dependency packages were installed alongside the 'java-1.8.0-openjdk' rpm package

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Agent Firewall Rule Changes

One final step needs to be completed, where the Compute Instance has its local firewall daemon service running. Custom services need to be created to permit the Oracle Management Agents to connect to the Oracle Management Gateway over port 4480 (default): -

```
firewall-cmd --get-active-zone
 public
   interfaces: ens3
firewall-cmd --list-services
 dhcpv6-client ssh
firewall-cmd --permanent --new-service=custom-OCI-Mgmt-Agent-4480
 success
firewall-cmd --permanent --service=custom-OCI-Mgmt-Agent-4480 --set-description="custom service for Oracle Management Agent on TCP
port 4480"
 success
firewall-cmd --permanent --service=custom-OCI-Mgmt-Agent-4480 --add-port=4480/tcp
 success
firewall-cmd --permanent --zone=public --add-service=custom-OCI-Mgmt-Agent-4480
 success
systemctl restart firewalld
firewall-cmd --list-services
 custom-OCI-Mgmt-Agent-4480 dhcpv6-client ssh
for s in $(firewall-cmd --list-services); do firewall-cmd --permanent --service "$s" --get-ports; done;
 4480/tcp
 546/udp
 22/tcp
```

ODC System – Management Agent Firewall Changes

This completes the steps for the Compute Instance Management Agent configuration.

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Installation

Once the configuration steps have been completed within the parent OCI Region, the Management Gateway Compute Instance and the Compute Instances that will have the Oracle Management Agents deployed, the installation stages can be completed.

As before this will require actions across all three component areas: -

- OCI Region / Tenancy

- ODC deployed Management Gateway Compute Instance

- ODC deployed Management Agent Compute Instances

OCI Region Installation

Preparation work within the parent OCI Region needs to be completed as part of the initial phase. This consists of creating the keys that will be used to validate both the Management Gateway and the Management Agents as they connect.

Connecting to the OCI Console, navigate to the Observability & Management -> Management Agent -> Downloads & Keys screen: -
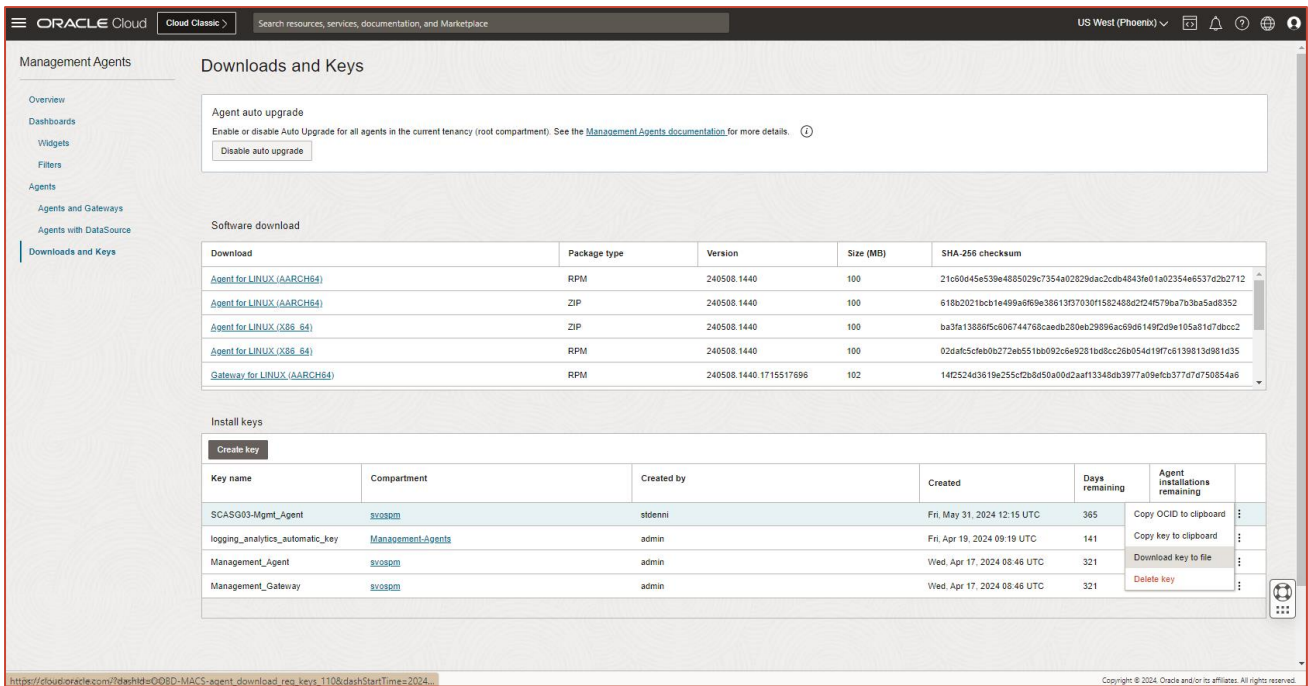

OCI Region – Management Agent Keys

Create a new Install Key: -
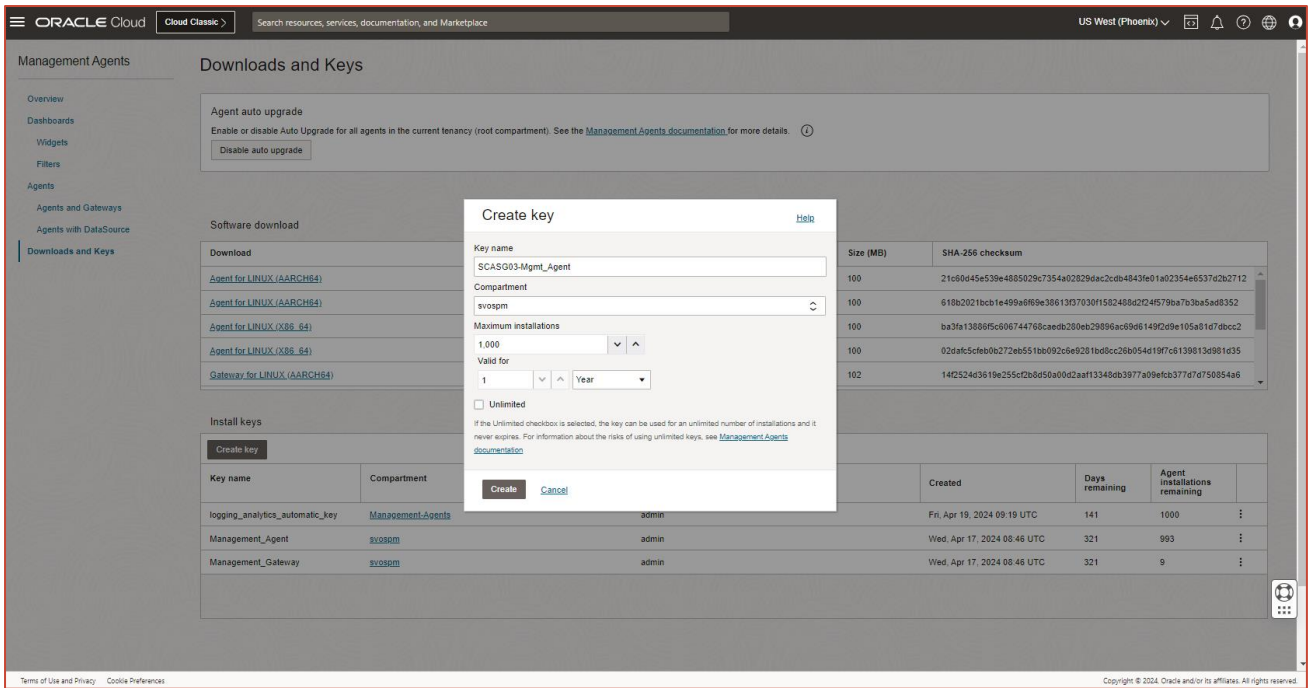
OCI Region – Management Agent Key Create

And the download the response file for this new Install Key: -

OCI Region – Management Agent Key Download

The downloaded key file had the following contents: -

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```
########################################################################
# PLEASE REFER THE FOLLOWING MANAGEMENT AGENT INSTALLATION GUIDE FOR MORE DETAILS.
#
# HTTPS://DOCS.CLOUD.ORACLE.COM/IAAS/MANAGEMENT-AGENTS/INDEX.HTML
#
# SINCE THIS FILE HAS SENSITIVE INFORMATION, PLEASE MAKE SURE THAT AFTER
# EXECUTING SETUP.SH YOU EITHER DELETE THIS FILE OR STORE IT IN A SECURE
# LOCATION.
#
########################################################################
MANAGEMENTAGENTINSTALLKEY =
MI4WLHVZLXBOB2VUAXGTMSXVY2LKMS50ZW5HBMN5LM9JMS4UYWFHYWFHYWF1YJVXY3FZCGLXM29KZXVWMNPSA3FMDWP5CWR3AZR1ZGPJMJRUZHPLEWZMZNNVEMHMEMPXLG
9JAWQXLM1HBMFNZW1LBNRHZ2VUDGLUC3RHBGXRZXKUB2MXLNBOEC5HBWFHYWFHYTJ4NXB1Y2LHCHJYDWLWNZVXDWK0ETRPZGE3BNQ3NXRIA2NXYM02NMZWEDVYN3RYDMRO
EMESSVFGZJZUQ2LXYNHQVNFQWKHWTKPILURNZUPXCG9XBJVIYMP0EKNSBW==
AGENTDISPLAYNAME =
#PLEASE UNCOMMENT THE BELOW TAGS PROPERTIES AND PROVIDE VALUES AS NEEDED
#FREEFORMTAGS = [{"<KEY1>":"<VALUE1>"}, {"<KEY2>":"<VALUE2>"}]
#DEFINEDTAGS = [{"NAMESPACE1":{"<KEY1>":"<VALUE1>"}}, {"NAMESPACE2":{"<KEY2>":"<VALUE2>"}}]
CREDENTIALWALLETPASSWORD =
#SERVICE.PLUGIN.LOGAN.DOWNLOAD=TRUE
#SERVICE.PLUGIN.APPMGMT.DOWNLOAD=TRUE
#SERVICE.PLUGIN.JM.DOWNLOAD=TRUE
#SERVICE.PLUGIN.DBAAS.DOWNLOAD=TRUE
#SERVICE.PLUGIN.JMS.DOWNLOAD=TRUE
#SERVICE.PLUGIN.OSMH.DOWNLOAD=TRUE
#SERVICE.PLUGIN.OPSIHOST.DOWNLOAD=TRUE
```

ODC System – Management Agent Response File

Some customizations of this file will be required to provide improved visibility of the resulting Gateway and Agent installations.

As bare minimum, provide: -

- an AgentDisplayName
- defined FreeFormTags

In addition, for the Management Agents, add two new entries

- GatewayServerHost
- GatewayServerPort

The resulting response (rsp) files need now to be copied across to the Management Gateway Compute Instance.

This completes the OCI Region Installation steps.

ORACLE

Oracle Management Gateway Installation

Having completed the Management Gateway Compute Instance configuration steps, all that remains is to install the management gateway rpm package and configure with the correct response file.

Install Management Gateway rpm package

Run the command 'dnf localinstall oracle.mgmt_gateway.rpm' to install the Management Gateway package downloaded previously: -

```
DNF LOCALINSTALL ORACLE.MGMT_GATEWAY.RPM
LAST METADATA EXPIRATION CHECK: 0:06:16 AGO ON FRI 31 MAY 2024 12:32:25 PM GMT.
DEPENDENCIES RESOLVED.
==============================================================================================================
 PACKAGE                          ARCHITECTURE          VERSION                       REPOSITORY              SIZE
==============================================================================================================
=====
INSTALLING:
 ORACLE.MGMT_GATEWAY              X86_64                240508.1440.1715517696-1      @COMMANDLINE            97 M

TRANSACTION SUMMARY
==============================================================================================================
INSTALL  1 PACKAGE

TOTAL SIZE: 97 M
INSTALLED SIZE: 97 M
IS THIS OK [Y/N]: Y
DOWNLOADING PACKAGES:
RUNNING TRANSACTION CHECK
TRANSACTION CHECK SUCCEEDED.
RUNNING TRANSACTION TEST
TRANSACTION TEST SUCCEEDED.
RUNNING TRANSACTION
  PREPARING        :
1/1
  RUNNING SCRIPTLET: ORACLE.MGMT_GATEWAY-240508.1440.1715517696-1.X86_64
1/1
CHECKING PRE-REQUISITES
        CHECKING IF ANY PREVIOUS GATEWAY SERVICE EXISTS
        CHECKING IF OS HAS SYSTEMD OR INITD
        CHECKING AVAILABLE DISK SPACE FOR GATEWAY INSTALL
        CHECKING IF /OPT/ORACLE/MGMT_AGENT DIRECTORY EXISTS
        CHECKING IF 'MGMT_AGENT' USER EXISTS
        CHECKING JAVA VERSION
                JAVA_HOME IS NOT SET OR NOT READABLE TO ROOT
                TRYING DEFAULT PATH /USR/BIN/JAVA
                JAVA VERSION: 1.8.0_412 FOUND AT /USR/BIN/JAVA
        CHECKING AGENT VERSION

  INSTALLING       : ORACLE.MGMT_GATEWAY-240508.1440.1715517696-1.X86_64
1/1
  RUNNING SCRIPTLET: ORACLE.MGMT_GATEWAY-240508.1440.1715517696-1.X86_64
1/1

EXECUTING INSTALL
        UNPACKING SOFTWARE ZIP
        COPYING FILES TO DESTINATION DIR (/OPT/ORACLE/MGMT_AGENT)
        INITIALIZING SOFTWARE FROM TEMPLATE
        CHECKING IF JAVASCRIPT ENGINE IS AVAILABLE TO USE
        CREATING 'MGMT_GATEWAY' DAEMON
        GATEWAY INSTALL LOGS: /OPT/ORACLE/MGMT_AGENT/INSTALLER-LOGS/INSTALLER.LOG.0

        SETUP GATEWAY USING INPUT RESPONSE FILE (RUN AS ANY USER WITH 'SUDO' PRIVILEGES)
        USAGE:
                SUDO /OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/SETUPGATEWAY.SH OPTS=[FULL_PATH_TO_INPUT.RSP]

GATEWAY INSTALL SUCCESSFUL


  VERIFYING        : ORACLE.MGMT_GATEWAY-240508.1440.1715517696-1.X86_64
1/1

INSTALLED:
  ORACLE.MGMT_GATEWAY-240508.1440.1715517696-1.X86_64

Complete!
```

ODC System – Management Gateway package install

The installation of this package creates a new user & group 'mgmt_agent' and installs the package contents into the 'opt/oracle/mgmt_agent' directory.

Copy the required Management Gateway response file across to the 'opt/oracle/mgmt_agent' directory and change ownership to 'mgmt_agent and check the response file contents: -

ORACLE

```
CD /OPT/ORACLE/MGMT_AGENT/
LS -L
TOTAL 0
DRWXR-X---. 6 MGMT_AGENT MGMT_AGENT 128 MAY 31 12:38 240508.1440
DRWXR-X---. 9 MGMT_AGENT MGMT_AGENT  99 MAY 31 12:38 AGENT_INST
DRWXR-X---. 2 MGMT_AGENT MGMT_AGENT 105 MAY 31 12:38 INSTALLER-LOGS
DRWXR-X---. 4 MGMT_AGENT MGMT_AGENT  86 MAY 31 12:38 ZIP
CP -P /ROOT/FILES/MANAGEMENT_GATEWAY.RSP .
CHOWN MGMT_AGENT:MGMT_AGENT MANAGEMENT_GATEWAY.RSP
LS -L
TOTAL 4
DRWXR-X---. 6 MGMT_AGENT MGMT_AGENT  128 MAY 31 12:38 240508.1440
DRWXR-X---. 9 MGMT_AGENT MGMT_AGENT   99 MAY 31 12:38 AGENT_INST
DRWXR-X---. 2 MGMT_AGENT MGMT_AGENT  105 MAY 31 12:38 INSTALLER-LOGS
-RW-R--R--. 1 MGMT_AGENT MGMT_AGENT 1401 MAY 31 12:29 MANAGEMENT_GATEWAY.RSP
DRWXR-X---. 4 MGMT_AGENT MGMT_AGENT   86 MAY 31 12:38 ZIP
CAT MANAGEMENT_GATEWAY.RSP
########################################################################
# PLEASE REFER THE FOLLOWING MANAGEMENT AGENT INSTALLATION GUIDE FOR MORE DETAILS.
#
# HTTPS://DOCS.CLOUD.ORACLE.COM/IAAS/MANAGEMENT-AGENTS/INDEX.HTML
#
# SINCE THIS FILE HAS SENSITIVE INFORMATION, PLEASE MAKE SURE THAT AFTER
# EXECUTING SETUP.SH YOU EITHER DELETE THIS FILE OR STORE IT IN A SECURE
# LOCATION.
#
########################################################################
MANAGEMENTAGENTINSTALLKEY =
MI4WLHVZLXBOB2VUAXGTMSXVY2LKMS50ZW5HBMN5LM9JMS4UYWFHYWFHYWF1YJVXY3FZCGLXM29KZXVWMNPSA3FMDWP5CWR3AZR1ZGPJMJRUZHPLEWZMZNNVEMHMEMPXLG
9JAWQXLM1HBMFNZW1LBNRHZ2VUDGLUC3RHBGXRZXKUB2MXLNBOEC5HBWFHYWFHYTJ4NXB1Y2LHYME1N2LOMMU1C3PYAXNUNWFWDZN2D29IAMZXEHLIBXJSNTQ3D3UYD3F6
AWESSVPHUMHQADF0BFJEOE9QMEXFT09JV1PMDKVMWVP2EWLYCZNWY2IXMW==
AGENTDISPLAYNAME = SCASG03-OCM-MGMTGW-OL9
#PLEASE UNCOMMENT THE BELOW TAGS PROPERTIES AND PROVIDE VALUES AS NEEDED
FREEFORMTAGS = [{"GATEWAYGROUP":"SCASG03"}]
#FREEFORMTAGS = [{"<KEY1>":"<VALUE1>"}, {"<KEY2>":"<VALUE2>"}]
#DEFINEDTAGS = [{"NAMESPACE1":{"<KEY1>":"<VALUE1>"}}, {"NAMESPACE2":{"<KEY2>":"<VALUE2>"}}]
CREDENTIALWALLETPASSWORD =
#SERVICE.PLUGIN.LOGAN.DOWNLOAD=TRUE
#SERVICE.PLUGIN.APPMGMT.DOWNLOAD=TRUE
#SERVICE.PLUGIN.JM.DOWNLOAD=TRUE
#SERVICE.PLUGIN.DBAAS.DOWNLOAD=TRUE
#SERVICE.PLUGIN.JMS.DOWNLOAD=TRUE
#SERVICE.PLUGIN.OSMH.DOWNLOAD=TRUE
#SERVICE.PLUGIN.OPSIHOST.DOWNLOAD=TRUE
```

ODC System – Management Gateway package checks

Management Gateway Setup

With the correct AgentDisplayName and FreeFormTags settings in place, the gateway setup can now be completed: -

ORACLE

```
/OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/SETUPGATEWAY.SH OPTS=/OPT/ORACLE/MGMT_AGENT/MANAGEMENT_GATEWAY.RSP
VALIDATING RESPONSE FILE
VALIDATING CERTIFICATE PROPERTIES
SUCCESSFULLY VALIDATED RESPONSE FILE
/OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/SETUPAGENT.SH OPTS=/OPT/ORACLE/MGMT_AGENT/MANAGEMENT_GATEWAY.RSP

EXECUTING CONFIGURE

        PARSING INPUT RESPONSE FILE
        VALIDATING INSTALL KEY
        GENERATING COMMUNICATION WALLET
        GENERATING SECURITY ARTIFACTS
        REGISTERING MANAGEMENT GATEWAY
                FOUND SERVICE PLUGIN(S): [GATEWAYPROXY]

STARTING GATEWAY...
GATEWAY STARTED SUCCESSFULLY

STARTING PLUGIN DEPLOYMENT FOR: [GATEWAYPROXY]
DEPLOYING SERVICE PLUGIN(S)...DONE.
        GATEWAYPROXY : SUCCESSFULLY DEPLOYED EXTERNAL PLUGIN

GATEWAY SETUP COMPLETED AND THE GATEWAY IS RUNNING.
IN THE FUTURE GATEWAY CAN BE STARTED BY DIRECTLY RUNNING: SUDO SYSTEMCTL START MGMT_GATEWAY
PLEASE USE OCI CLI OR OCI MANAGEMENT AGENT CONSOLE TO VALIDATE THE SUCCESSFUL ACTIVATION OF YOUR AGENT.

PLEASE MAKE SURE THAT YOU DELETE /OPT/ORACLE/MGMT_AGENT/MANAGEMENT_GATEWAY.RSP OR STORE IT IN SECURE LOCATION.

CHECKING FOR PLUGIN TO BE DEPLOYED
PLUGIN DEPLOYED SUCCESSFULLY
SETTING UP GATEWAY
CREATING GATEWAY SYSTEM PROPERTIES FILE
CREATING PROPERTIES FILE
CREATING OR VALIDATING CERTIFICATES
WAITING FOR MANAGEMENT GATEWAY TO CREATE OR VALIDATE CERTIFICATES ...
WAITING FOR MANAGEMENT GATEWAY TO CREATE OR VALIDATE CERTIFICATES ...
WAITING FOR MANAGEMENT GATEWAY TO CREATE OR VALIDATE CERTIFICATES ...
CREATING WALLETS
WAITING FOR MANAGEMENT GATEWAY TO SETUP ...
MANAGEMENT GATEWAY PLUGIN SET UP SUCCESSFULLY.
```

ODC System – Management Gateway Setup

This completes the Management Gateway Compute Instance installation steps.

ORACLE

Oracle Management Agent Installation

The following steps needs to be completed for each Compute Instance where the Oracle Management Agent will be deployed.

Check Internal network connectivity

A simple ping test will be sufficient. The Agent Compute Instances need to be able to 'see' the Management Gateway Compute Instance

- This can be accomplished by having the Management Gateway VM Instance (target) within the same VCN / Subnet constructs as the VM Instance(s) to which the Oracle Management Agent is to be deployed

- Or by having the necessary networking constructs in place to permit such inter VCN traffic (e.g. Local Peering Gateway)

```
PING OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM
PING OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM (172.20.0.3) 56(84) BYTES OF DATA.
64 BYTES FROM OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM (172.20.0.3): ICMP_SEQ=1 TTL=64 TIME=2.10 MS
64 BYTES FROM OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM (172.20.0.3): ICMP_SEQ=2 TTL=64 TIME=0.435 MS
64 BYTES FROM OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM (172.20.0.3): ICMP_SEQ=3 TTL=64 TIME=0.430 MS
64 BYTES FROM OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM (172.20.0.3): ICMP_SEQ=4 TTL=64 TIME=0.292 MS
^C
--- OCM-MGMTGW.EXT.SVOSPM-VCN1.ORACLEVCN.COM PING STATISTICS ---
4 PACKETS TRANSMITTED, 4 RECEIVED, 0% PACKET LOSS, TIME 3005MS
RTT MIN/AVG/MAX/MDEV = 0.292/0.814/2.100/0.744 MS
```

ODC System – Management Agent Connectivity

Copy Management Agent rpm and response file from Gateway

The Management Gateway Compute instance has local copies of the Management Agent rpm and the Management Agent response file. These need to be copied across to each Compute Instance for local installation and setup: -

```
SCP ROOT@OCM-MGMTGW-OL9.EXT.SVOSPM-VCN1.ORACLEVCN.COM:/ROOT/FILES/ORACLE.MGMT_AGENT.RPM .
ROOT@OCM-MGMTGW-OL9.EXT.SVOSPM-VCN1.ORACLEVCN.COM'S PASSWORD:
ORACLE.MGMT_AGENT.RPM                                                         100%   96MB 230.4MB/S
00:00

[ROOT@OCM-AGENT04-OL9 ~]# SCP ROOT@OCM-MGMTGW-OL9.EXT.SVOSPM-VCN1.ORACLEVCN.COM:/ROOT/FILES/MANAGEMENT_AGENT.RSP .
ROOT@OCM-MGMTGW-OL9.EXT.SVOSPM-VCN1.ORACLEVCN.COM'S PASSWORD:
MANAGEMENT_AGENT.RSP                                                          100% 1488     1.1MB/S
00:00
```

ODC System – Management Agent File Copy

Customize the Management Agent Response File

A number of Compute Instance specific values need to be amended for each individual Management Agent deployment. These are highlighted in **BOLD** below: -

```
#########################################################################
# please refer the following management agent installation guide for more details.
#
# https://docs.cloud.oracle.com/iaas/management-agents/index.html
#
# since this file has sensitive information, please make sure that after
# executing setup.sh you either delete this file or store it in a secure
# location.
#
#########################################################################
managementagentinstallkey =
mi4wlhvzlxbob2vuaxgtmsxvy2lkms50zw5hbmn5lm9jms4uywfhywfhywf1yjvxy3fzcglxm29kzxvwmnpsa3fmdwp5cwr3azr1zgpjmjruzhplewzmznnvemhmempxlg
9jawqxlm1hbmfnzw11bnrhz2vudgluc3rhbgxrzxkub2mxlnboec5hbwfhywfhytj4nxb1y2lhchjydwlwnzvxdwk0etrpzge3bnq3nxria2nxym02nmzwedvyn3rydmro
emessvfgzjzuq2lxynhqvnfqwkhwtkpilurnzupxcg9xbjviymp0eknsbw==
agentdisplayname = scasg03-ocm-agent04-ol9
#please uncomment the below tags properties and provide values as needed
freeformtags = [{"gatewaygroup":"scasg03"}]
#freeformtags = [{"<key1>":"<value1>"}, {"<key2>":"<value2>"}]
#definedtags = [{"namespace1":{"<key1>":"<value1>"}}, {"namespace2":{"<key2>":"<value2>"}}]
credentialwalletpassword =
#service.plugin.logan.download=true
#service.plugin.appmgmt.download=true
#service.plugin.jm.download=true
#service.plugin.dbaas.download=true
#service.plugin.jms.download=true
#service.plugin.osmh.download=true
#service.plugin.opsihost.download=true
gatewayserverhost = ocm-mgmtgw-ol9.ext.svospm-vcn1.oraclevcn.com
gatewayserverport = 4480
```

ODC System – Management Agent Customization

Ensure that the correct AgentDisplayName, GatewayServerHost, and GatewayServerPort are in place within the Management Agent response file before running the Management Agent setup.

Install Management Agent rpm package

Run the command 'dnf localinstall oracle.mgmt_agent.rpm' to install the Management Agent package downloaded previously: –

ORACLE

```
DNF LOCALINSTALL ORACLE.MGMT_AGENT.RPM
LAST METADATA EXPIRATION CHECK: 0:46:08 AGO ON FRI 31 MAY 2024 01:23:31 PM GMT.
DEPENDENCIES RESOLVED.
=========================================================================================================
 PACKAGE                        ARCHITECTURE           VERSION          REPOSITORY                  SIZE
=========================================================================================================
INSTALLING:
 ORACLE.MGMT_AGENT              X86_64                 240508.1440-1    @COMMANDLINE                96 M

TRANSACTION SUMMARY
=========================================================================================================
INSTALL  1 PACKAGE

TOTAL SIZE: 96 M
INSTALLED SIZE: 96 M
IS THIS OK [Y/N]: Y
DOWNLOADING PACKAGES:
RUNNING TRANSACTION CHECK
TRANSACTION CHECK SUCCEEDED.
RUNNING TRANSACTION TEST
TRANSACTION TEST SUCCEEDED.
RUNNING TRANSACTION
  PREPARING        :
1/1
  RUNNING SCRIPTLET: ORACLE.MGMT_AGENT-240508.1440-1.X86_64
1/1
CHECKING PRE-REQUISITES
        CHECKING IF ANY PREVIOUS AGENT SERVICE EXISTS
        CHECKING IF OS HAS SYSTEMD OR INITD
        CHECKING AVAILABLE DISK SPACE FOR AGENT INSTALL
        CHECKING IF /OPT/ORACLE/MGMT_AGENT DIRECTORY EXISTS
        CHECKING IF 'MGMT_AGENT' USER EXISTS
        CHECKING JAVA VERSION
                JAVA_HOME IS NOT SET OR NOT READABLE TO ROOT
                TRYING DEFAULT PATH /USR/BIN/JAVA
                JAVA VERSION: 1.8.0_412 FOUND AT /USR/BIN/JAVA
        CHECKING AGENT VERSION

  INSTALLING       : ORACLE.MGMT_AGENT-240508.1440-1.X86_64
1/1
  RUNNING SCRIPTLET: ORACLE.MGMT_AGENT-240508.1440-1.X86_64
1/1

EXECUTING INSTALL
        UNPACKING SOFTWARE ZIP
        COPYING FILES TO DESTINATION DIR (/OPT/ORACLE/MGMT_AGENT)
        INITIALIZING SOFTWARE FROM TEMPLATE
        CHECKING IF JAVASCRIPT ENGINE IS AVAILABLE TO USE
        CREATING MGMT_AGENT DAEMON
        AGENT INSTALL LOGS: /OPT/ORACLE/MGMT_AGENT/INSTALLER-LOGS/INSTALLER.LOG.0

        SETUP AGENT USING INPUT RESPONSE FILE (RUN AS ANY USER WITH 'SUDO' PRIVILEGES)
        USAGE:
                SUDO /OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/SETUP.SH OPTS=[FULL_PATH_TO_INPUT.RSP]

AGENT INSTALL SUCCESSFUL


  VERIFYING        : ORACLE.MGMT_AGENT-240508.1440-1.X86_64
1/1

INSTALLED:
  ORACLE.MGMT_AGENT-240508.1440-1.X86_64

COMPLETE!
```

ODC System – Management Agent package install

The installation of this package creates a new user & group 'mgmt_agent' and installs the package contents into the 'opt/oracle/mgmt_agent' directory.

Copy the required Management Agent response file across to the 'opt/oracle/mgmt_agent' directory and change ownership to 'mgmt_agent and check the response file contents: -

ORACLE

```
CD /OPT/ORACLE/MGMT_AGENT/
[ROOT@OCM-AGENT04-OL9 MGMT_AGENT]# CP -P /ROOT/MANAGEMENT_AGENT.RSP .
[ROOT@OCM-AGENT04-OL9 MGMT_AGENT]# LS -L
TOTAL 4
DRWXR-X---. 6 MGMT_AGENT MGMT_AGENT  107 MAY 31 14:09 240508.1440
DRWXR-X---. 9 MGMT_AGENT MGMT_AGENT   99 MAY 31 14:09 AGENT_INST
DRWXR-X---. 2 MGMT_AGENT MGMT_AGENT  105 MAY 31 14:09 INSTALLER-LOGS
-RW-R--R--. 1 ROOT       ROOT       1492 MAY 31 14:11 MANAGEMENT_AGENT.RSP
DRWXR-X---. 4 MGMT_AGENT MGMT_AGENT   86 MAY 31 14:09 ZIP
[ROOT@OCM-AGENT04-OL9 MGMT_AGENT]# CHOWN MGMT_AGENT:MGMT_AGENT MANAGEMENT_AGENT.RSP
[ROOT@OCM-AGENT04-OL9 MGMT_AGENT]# LS -L
TOTAL 4
DRWXR-X---. 6 MGMT_AGENT MGMT_AGENT  107 MAY 31 14:09 240508.1440
DRWXR-X---. 9 MGMT_AGENT MGMT_AGENT   99 MAY 31 14:09 AGENT_INST
DRWXR-X---. 2 MGMT_AGENT MGMT_AGENT  105 MAY 31 14:09 INSTALLER-LOGS
-RW-R--R--. 1 MGMT_AGENT MGMT_AGENT 1492 MAY 31 14:11 MANAGEMENT_AGENT.RSP
DRWXR-X---. 4 MGMT_AGENT MGMT_AGENT   86 MAY 31 14:09 ZIP
[ROOT@OCM-AGENT04-OL9 MGMT_AGENT]# CAT MANAGEMENT_AGENT.RSP
########################################################################
# PLEASE REFER THE FOLLOWING MANAGEMENT AGENT INSTALLATION GUIDE FOR MORE DETAILS.
#
# HTTPS://DOCS.CLOUD.ORACLE.COM/IAAS/MANAGEMENT-AGENTS/INDEX.HTML
#
# SINCE THIS FILE HAS SENSITIVE INFORMATION, PLEASE MAKE SURE THAT AFTER
# EXECUTING SETUP.SH YOU EITHER DELETE THIS FILE OR STORE IT IN A SECURE
# LOCATION.
#
########################################################################
MANAGEMENTAGENTINSTALLKEY =
MI4WLHVZLXBOB2VUAXGTMSXVY2LKMS50ZW5HBMN5LM9JMS4UYWFHYWFHYWF1YJVXY3FZCGLXM29KZXVWMNPSA3FMDWP5CWR3AZR1ZGPJMJRUZHPLEWZMZNNVEMHMEMPXLG
9JAWQXLM1HBMFNZW1LBNRHZ2VUDGLUC3RHBGXRZXKUB2MXLNBOEC5HBWFHYWFHYTJ4NXB1Y2LHCHJYDWLWNZVXDWK0ETRPZGE3BNQ3NXRIA2NXYM02NMZWEDVYN3RYDMRO
EMESSVFGZJZUQ2LXYNHQVNFQWKHWTKPILURNZUPXCG9XBJVIYMP0EKNSBW==
AGENTDISPLAYNAME = SCASG03-OCM-AGENT04-OL9
#PLEASE UNCOMMENT THE BELOW TAGS PROPERTIES AND PROVIDE VALUES AS NEEDED
FREEFORMTAGS = [{"GATEWAYGROUP":"SCASG03"}]
#FREEFORMTAGS = [{"<KEY1>":"<VALUE1>"}, {"<KEY2>":"<VALUE2>"}]
#DEFINEDTAGS = [{"NAMESPACE1":{"<KEY1>":"<VALUE1>"}}, {"NAMESPACE2":{"<KEY2>":"<VALUE2>"}}]
CREDENTIALWALLETPASSWORD =
#SERVICE.PLUGIN.LOGAN.DOWNLOAD=TRUE
#SERVICE.PLUGIN.APPMGMT.DOWNLOAD=TRUE
#SERVICE.PLUGIN.JM.DOWNLOAD=TRUE
#SERVICE.PLUGIN.DBAAS.DOWNLOAD=TRUE
#SERVICE.PLUGIN.JMS.DOWNLOAD=TRUE
#SERVICE.PLUGIN.OSMH.DOWNLOAD=TRUE
#SERVICE.PLUGIN.OPSIHOST.DOWNLOAD=TRUE
GATEWAYSERVERHOST = OCM-MGMTGW-OL9.EXT.SVOSPM-VCN1.ORACLEVCN.COM
GATEWAYSERVERPORT = 4480
```

ODC System – Management Agent package checks

Management Agent Setup

With the correct AgentDisplayName, FreeFormTags, GatewayServerHost, and GatewayServerPort settings in place, the agent setup can now be completed: -

```
/OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/SETUP.SH OPTS=/OPT/ORACLE/MGMT_AGENT/MANAGEMENT_AGENT.RSP

EXECUTING CONFIGURE

        PARSING INPUT RESPONSE FILE
        VALIDATING INSTALL KEY
        GENERATING COMMUNICATION WALLET
        GENERATING SECURITY ARTIFACTS
        REGISTERING MANAGEMENT AGENT
        SETTING PROXY FOR AGENT COMMUNICATION

STARTING AGENT...
AGENT STARTED SUCCESSFULLY


AGENT SETUP COMPLETED AND THE AGENT IS RUNNING.
IN THE FUTURE AGENT CAN BE STARTED BY DIRECTLY RUNNING: SUDO SYSTEMCTL START MGMT_AGENT
PLEASE USE OCI CLI OR OCI MANAGEMENT AGENT CONSOLE TO VALIDATE THE SUCCESSFUL ACTIVATION OF YOUR AGENT.

PLEASE MAKE SURE THAT YOU DELETE /OPT/ORACLE/MGMT_AGENT/MANAGEMENT_AGENT.RSP OR STORE IT IN SECURE LOCATION.
```

ODC System – Management Agent Setup

This completes the Management Agent Compute Instance installation steps.

ORACLE

Verification

The verification of the successful configuration, installation & setup for the Oracle Management Gateway and Agents can be shown at three separate levels.

OCI Region Confirmation

Two OCI Console screens show the status of the Management Gateway and Agent deployments: -
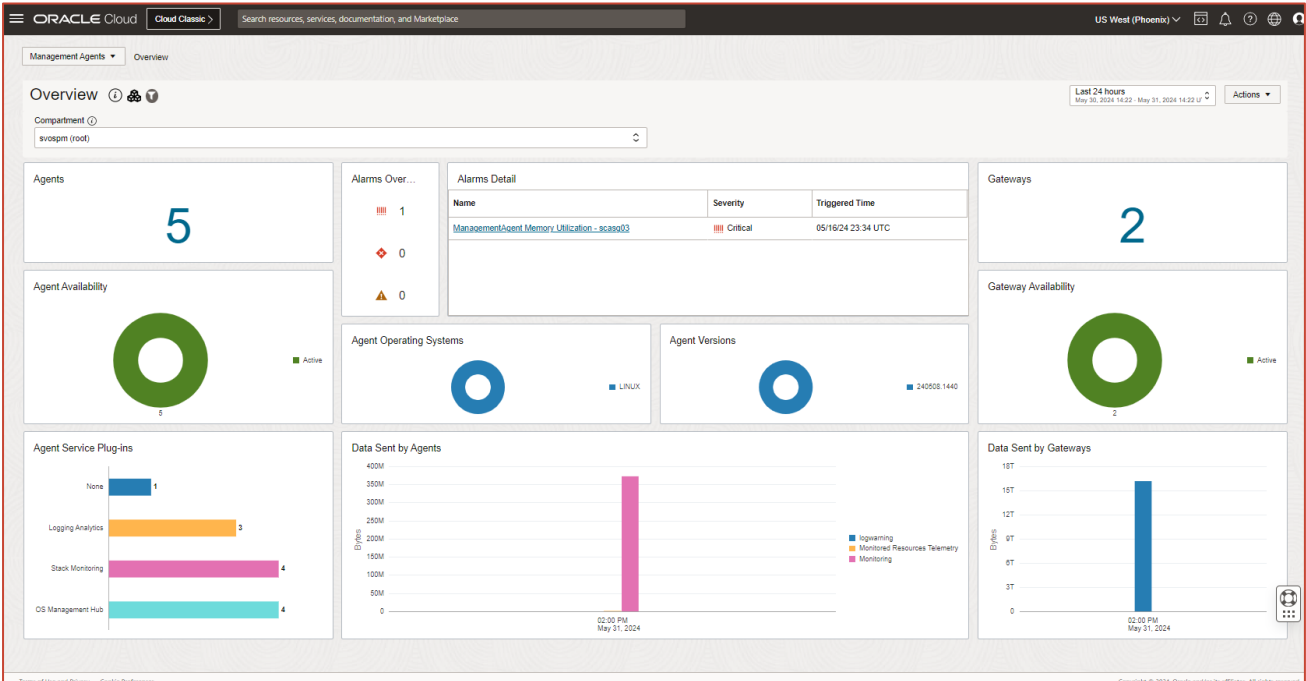
OCI Region – Management Agent Overview

The Management Agents Overview dashboard shows the number and status of the Oracle Management Agents and the Oracle Management Gateways.

OCI Region – Management Agent List

The Management Agents 'Agents & Gateway' screen shows individual Management Agents and Gateways in a tabular format.

Management Gateway Confirmation

A simple 'systemctl status mgmt_gateway.service' command displays the local status for the Oracle Management Gateway daemon: –

```
SYSTEMCTL STATUS MGMT_GATEWAY.SERVICE
● MGMT_GATEWAY.SERVICE - MGMT_GATEWAY
     LOADED: LOADED (/ETC/SYSTEMD/SYSTEM/MGMT_GATEWAY.SERVICE; ENABLED; PRESET: DISABLED)
     ACTIVE: ACTIVE (RUNNING) SINCE FRI 2024-05-31 13:52:57 GMT; 10S AGO
    PROCESS: 1544 EXECSTART=/OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/AGENTCORE START SYSD (CODE=EXITED, STATUS=0/SUCCESS)
   MAIN PID: 1687 (WRAPPER)
      TASKS: 96 (LIMIT: 60122)
     MEMORY: 725.4M
        CPU: 15.093S
     CGROUP: /SYSTEM.SLICE/MGMT_GATEWAY.SERVICE
             ├─1687 /OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/./WRAPPER /OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/../CONFIG/WRAPPER.CONF
WRAPP>
             ├─1931 /USR/LIB/JVM/JAVA-1.8.0-OPENJDK-1.8.0.412.B08-2.0.1.EL9.X86_64/JRE/BIN/JAVA -
DORG.TANUKISOFTWARE.WRAPPER.WRAPPERSI>
             └─4557 /USR/LIB/JVM/JAVA-1.8.0-OPENJDK-1.8.0.412.B08-2.0.1.EL9.X86_64/JRE/BIN/JAVA -XMX512M -
DORACLE.GATEWAY.FIPS.APPROVE>

MAY 31 13:52:44 OCM-MGMTGW-OL9 SYSTEMD[1]: STARTING MGMT_GATEWAY...
MAY 31 13:52:44 OCM-MGMTGW-OL9 AGENTCORE[1544]: STARTING MGMT_GATEWAY...
MAY 31 13:52:52 OCM-MGMTGW-OL9 AGENTCORE[1544]: WAITING FOR MGMT_GATEWAY..........
MAY 31 13:52:57 OCM-MGMTGW-OL9 AGENTCORE[1544]: .....RUNNING: PID:1687
MAY 31 13:52:57 OCM-MGMTGW-OL9 SYSTEMD[1]: STARTED MGMT_GATEWAY.
```

ODC System – Management Gateway Status

Management Agent Confirmation

A simple 'systemctl status mgmt_agent.service' command displays the local status for the Oracle Management Agent daemon: –

```
SYSTEMCTL STATUS MGMT_AGENT.SERVICE
● MGMT_AGENT.SERVICE - MGMT_AGENT
     LOADED: LOADED (/ETC/SYSTEMD/SYSTEM/MGMT_AGENT.SERVICE; ENABLED; PRESET: DISABLED)
     ACTIVE: ACTIVE (RUNNING) SINCE FRI 2024-05-31 14:14:12 GMT; 1MIN 13S AGO
    PROCESS: 9178 EXECSTART=/OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/AGENTCORE START SYSD (CODE=EXITED, STATUS=0/SUCCESS)
   MAIN PID: 9256 (WRAPPER)
      TASKS: 44 (LIMIT: 60121)
     MEMORY: 215.9M
        CPU: 9.065S
     CGROUP: /SYSTEM.SLICE/MGMT_AGENT.SERVICE
             ├─9256 /OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/./WRAPPER /OPT/ORACLE/MGMT_AGENT/AGENT_INST/BIN/../CONFIG/WRAPPER.CONF
WRAPPER.SYSLOG.IDENT=>
             └─9271 /USR/LIB/JVM/JAVA-1.8.0-OPENJDK-1.8.0.412.B08-2.0.1.EL9.X86_64/JRE/BIN/JAVA -
DORG.TANUKISOFTWARE.WRAPPER.WRAPPERSIMPLEAPP.MAXSTART>

MAY 31 14:14:00 OCM-AGENT04-OL9 SYSTEMD[1]: STARTING MGMT_AGENT...
MAY 31 14:14:00 OCM-AGENT04-OL9 AGENTCORE[9178]: STARTING MGMT_AGENT...
MAY 31 14:14:07 OCM-AGENT04-OL9 AGENTCORE[9178]: WAITING FOR MGMT_AGENT.........
MAY 31 14:14:12 OCM-AGENT04-OL9 AGENTCORE[9178]: .....RUNNING: PID:9256
MAY 31 14:14:12 OCM-AGENT04-OL9 SYSTEMD[1]: STARTED MGMT_AGENT.
```

ODC System – Management Agent Status

This completes the verification steps for the Oracle Management Agent and Gateway services within an Oracle Distributed Cloud environment .

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