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Introducing Oracle Solaris 11 on the Cloud

Lesson Objectives

After completing this lesson, you should be able to:

- Explain Oracle Compute Cloud Service
- Subscribe to Oracle Compute Cloud Service
- Create an Oracle Solaris Instance on the Cloud
- Create an SSH-enabled User on an Oracle Solaris Instance
- Create a Virtualized Topology Using Orchestration JSONs

Agenda

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Compute Cloud Service

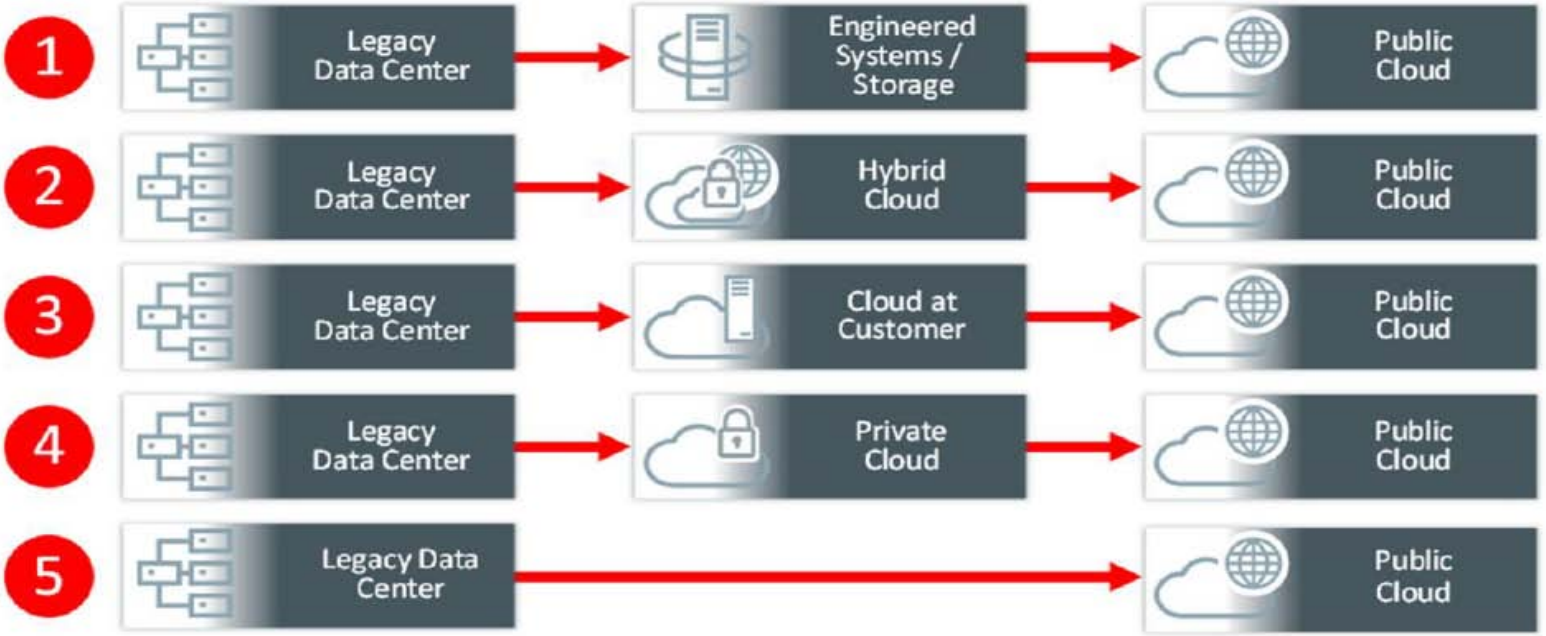
Oracle Cloud is the industry's broadest and most integrated public cloud. It offers the following services:

- Software as a service (SaaS)
- Platform as a service (PaaS)
- Infrastructure as a service (IaaS)

IaaS Compute Cloud Service

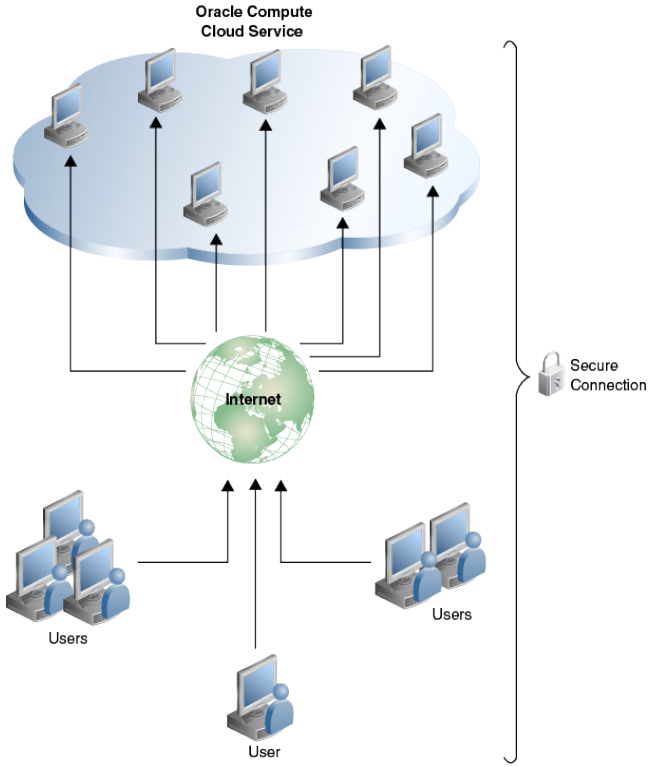
- Provides infrastructure services over the Internet.
- Enables users to perform the following:
  - Provision and monitor virtual machines quickly.
  - Create and attach block storage to virtual machines.
  - Capture virtual machines as reusable templates.
  - Attach virtual machines to multiple networks.
- Can be accessed through:
  - Graphical User Interface
  - Command line interface or REST API

Five Oracle Journeys to the Public Cloud

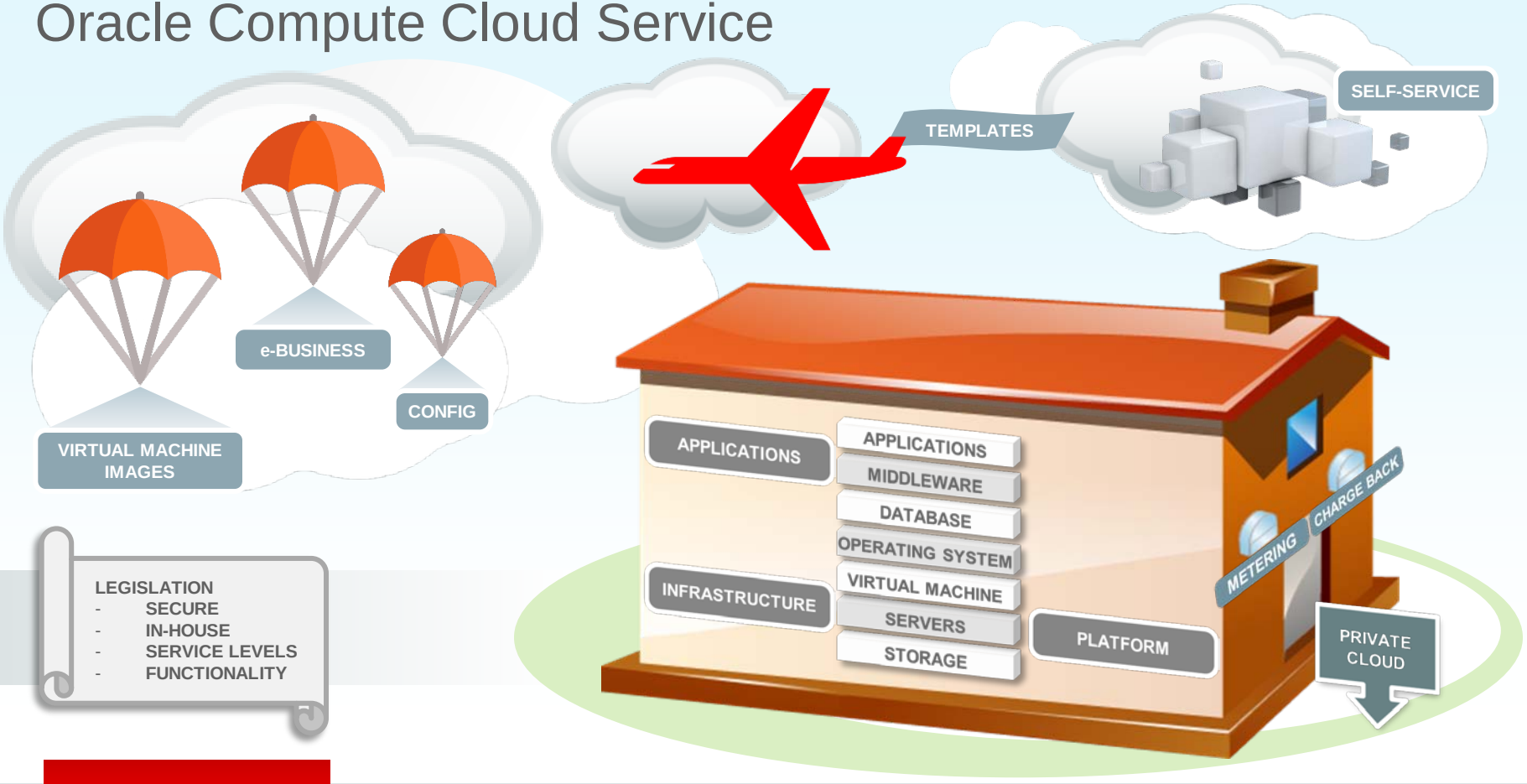


What is Oracle Compute Cloud Service?

- Oracle Compute Cloud Service is a secure, reliable, low cost, infrastructure service.
- You can use Oracle Compute Cloud Service to do the following:
  - Rapidly provision virtual machines on Oracle Cloud with all the necessary storage and networking resources.
  - Manage and scale your virtual machine topology in the cloud easily.
  - Migrate your Oracle and third-party applications to Oracle Cloud.



Oracle Compute Cloud Service



LEGISLATION
- SECURE
- IN-HOUSE
- SERVICE LEVELS
- FUNCTIONALITY

Features of Oracle Compute Cloud Service

- Create virtual machines using Oracle-provided or custom machine images.
- Assign processor and memory resources from a range of resource profiles.
- Use persistent boot disks to start your instance.
- Attach high-capacity block storage to your instance.
- Practice fine-grained control over network traffic.
- Reserve a persistent public IP address and assign it to your instance.
- Ensure secure access to your instance.
- Monitor and manage your resources using a web console.
- Automate provisioning and management workflows using orchestrations.
- Migrate on-premise workloads and applications to the cloud.

Oracle Compute Cloud Service Terminology

Term	Definition
Image List	An **image list** is a collection of Oracle Compute Cloud Service machine images.
Instance	An **instance** is a virtual machine in Oracle Compute Cloud Service.
Instance Snapshot	An **instance snapshot** captures the current state of the non-persistent boot disk of an instance and creates a corresponding machine image.
IP Network	An **IP network** allows you to define an IP subnet in your account.
IP Network Exchange	An **IP network exchange** enables access between IP networks that have non-overlapping addresses, so that instances on these networks can exchange packets with each other without NAT.
IP Reservation	An **IP reservation** is a public IP address that you can attach to an Oracle Compute Cloud Service instance that requires access to or from the internet.
Launch Plan	A **launch plan** is a JavaScript Object Notation (JSON) script that defines the properties of one or more instances in Oracle Compute Cloud Service.

Oracle Compute Cloud Service Terminology

Term	Definition
Machine Image	A **machine image** is a template of a virtual hard disk of a specific size with an installed operating system.
Orchestration	An **orchestration** defines the attributes and interdependencies of a collection of compute, networking, and storage resources in Oracle Compute Cloud Service.
Route	A **route** specifies the IP address of the destination as well as a vNICset which provides the next hop for routing packets.
Security Application	A **security application** allows you to specify the protocol and port that you want to use to enable traffic between a source and a destination using security rules.
Security IP List	A **security IP list** is a list of IP subnets (in the CIDR format) or IP addresses that are external to instances in Oracle Compute Cloud Service.
Security List	A **security list** is a group of Oracle Compute Cloud Service instances that you can specify as the source or destination in one or more security rules.
Security Rule	A **security rule** is a firewall rule that you can define to control network access to Oracle Compute Cloud Service instances over a specified security application.

Oracle Compute Cloud Service Terminology

Term	Definition
Shape	A **shape** is a resource profile that specifies the number of OCPUs and the amount of memory to be allocated to an instance in Oracle Compute Cloud Service. The shape determines the type of disk drive that your instance uses.
Site	A **site** is a set of physical servers and the associated storage and networking resources in an Oracle Cloud data center. Each site has a distinct REST API endpoint.
Storage Volume	A **storage volume** is a virtual disk that provides persistent block storage space for instances in Oracle Compute Cloud Service.
Storage Volume Snapshot	A **storage volume snapshot** is a backup of all the data currently stored on a storage volume.
Virtual NIC	A **Virtual NIC**, or vNIC, is a virtual network interface card that enables an instance to be associated with a network.
Virtual NIC Set	A **Virtual NIC Set**, or **vNICset**, is a collection of one or more vNICs.
VPN Endpoint	A **VPN endpoint** represents a VPN tunnel between your data centre and your Oracle Compute Cloud Service site.

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Subscribing to Oracle Compute Cloud Service

1. Create and configure your account on Oracle Cloud
2. Request a trial or purchase a subscription
3. Activate the service
4. Verify activation
5. Create users and assign appropriate roles to each user

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About Oracle-Provided Solaris Images on the Cloud

- Oracle provides machine images for **Oracle Solaris 11.3 (x86, 64-bit).**
- Oracle-provided images include the essential packages for getting started using the instance that you create in Oracle Compute Cloud Service.
- Instances created by using any of the Oracle-provided Oracle Solaris images, a user named `opc` is preconfigured.
- The `opc` user is configured for remote access over the SSH v2 protocol using RSA keys.
- The images include a single disk that is mapped to the root ZFS storage pool (`rpool`).
- If you create instances by using an Oracle-provided Oracle Solaris image, then you can update packages from the support repository, file service requests to get support, and so on.

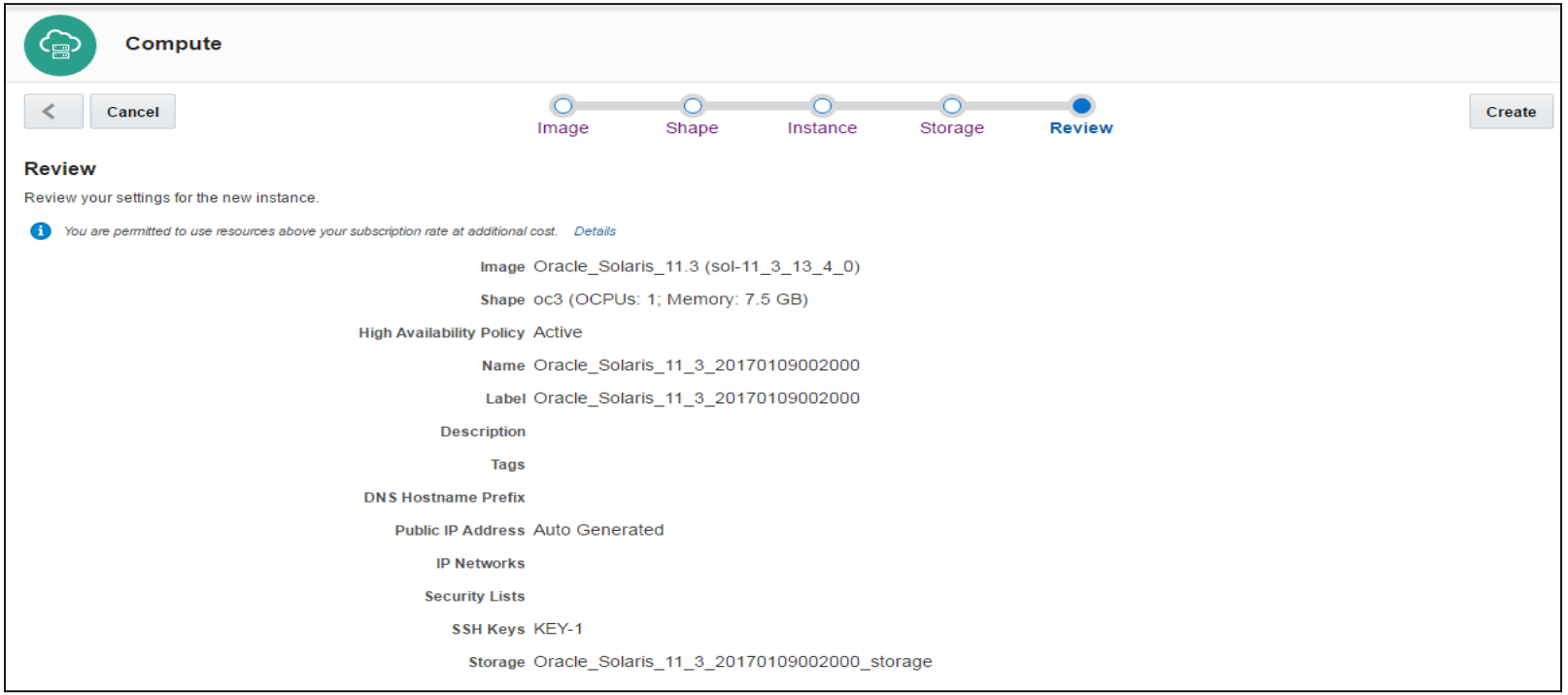
What is an Instance?

- An instance is a virtual machine running a specific operating system and having specified CPU and memory resources.
- An instance is defined by its machine image and shape.
  - **Machine image:** Is a virtual hard disk that has a specific operating system installed
  - **Shape:** Defines the number of CPUs and RAM available to an instance
- When you create an instance, the initial status is **Preparing.**
- After the image is installed and the instance starts, the status changes to **Running.**
- When an instance is in the **Running** status, you can connect to it, attach or detach storage volumes and security lists.

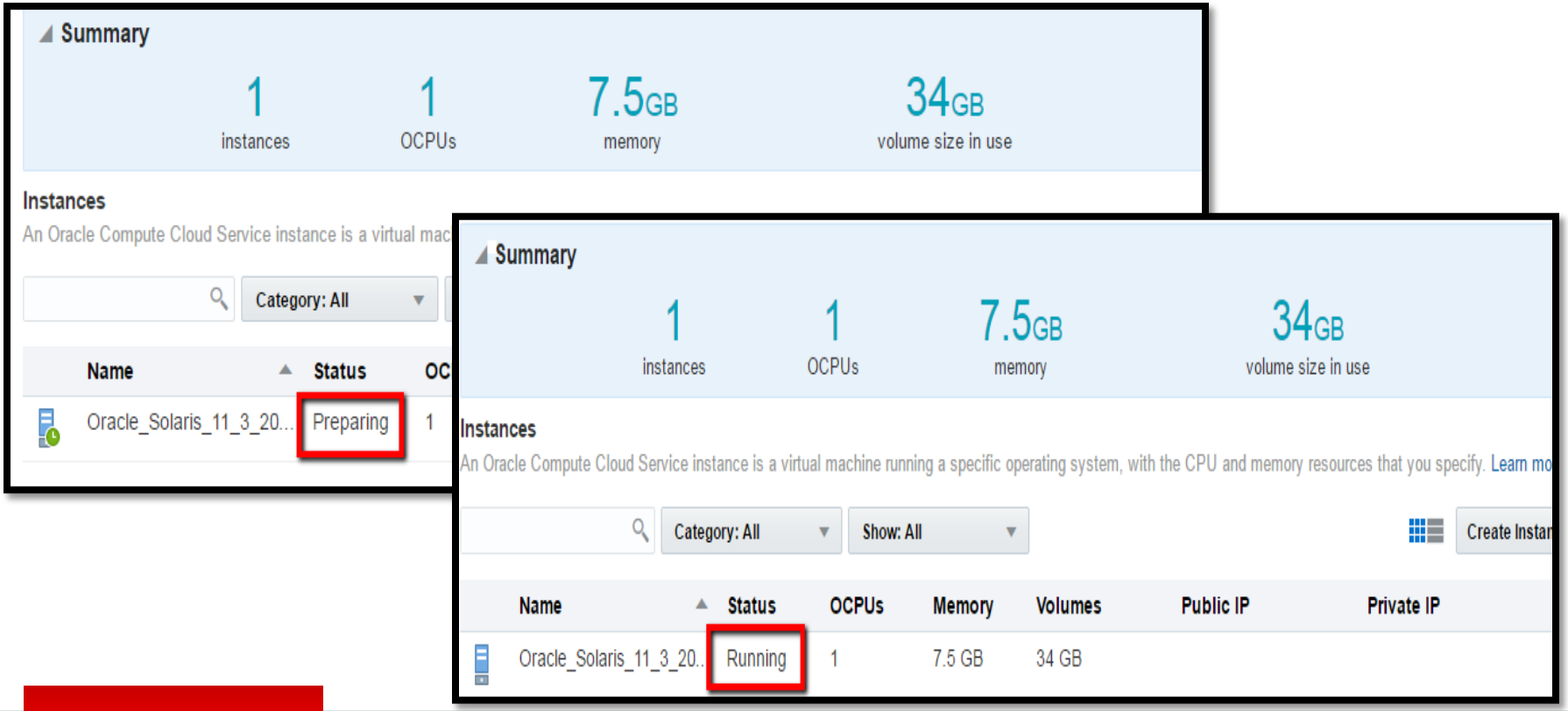
Workflow for Creating Your First Oracle Solaris 11.3 Instance on the Cloud

1. Generate SSH key pairs
2. Sign in to Oracle Compute Cloud Service
3. Add the SSH public keys
4. Create an instance using the web console
5. After creating the instance, you can do the following:
    a. Create and attach storage volumes
    b. Add your instance to a security list to control network access to the instance
6. Access your instance securely by using SSH

Create Instance Wizard



View Oracle Solaris Instance Status



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Creating an SSH-enabled User on an Oracle Solaris Instance

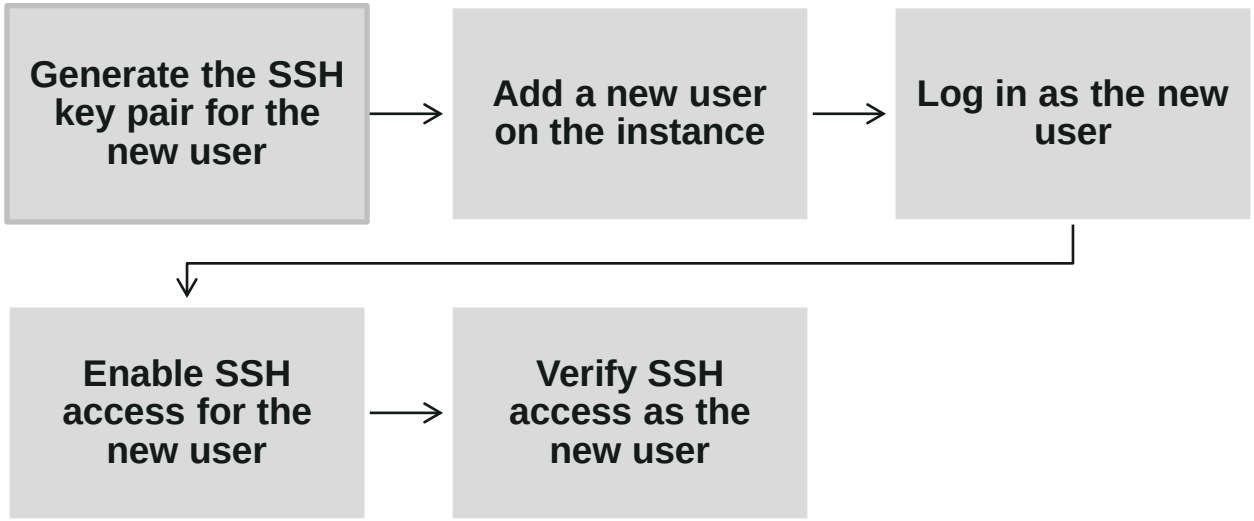
What Do You Need?

- An Oracle Compute Cloud Service Solaris instance
- Public IP address of the Oracle Compute Cloud Service Solaris instance on which you want to create new users.
- Your SSH private key to log in to the Oracle Compute Cloud Service Solaris instance.
- Root password for the Oracle Compute Cloud Service Solaris instance

Note:

Use `ssh` to log in to your instance as the `opc` user, with the SSH private key that corresponds to the SSH public key that you specified while creating the instance.

Workflow for Creating an SSH-Enabled User on an Oracle Solaris Instance



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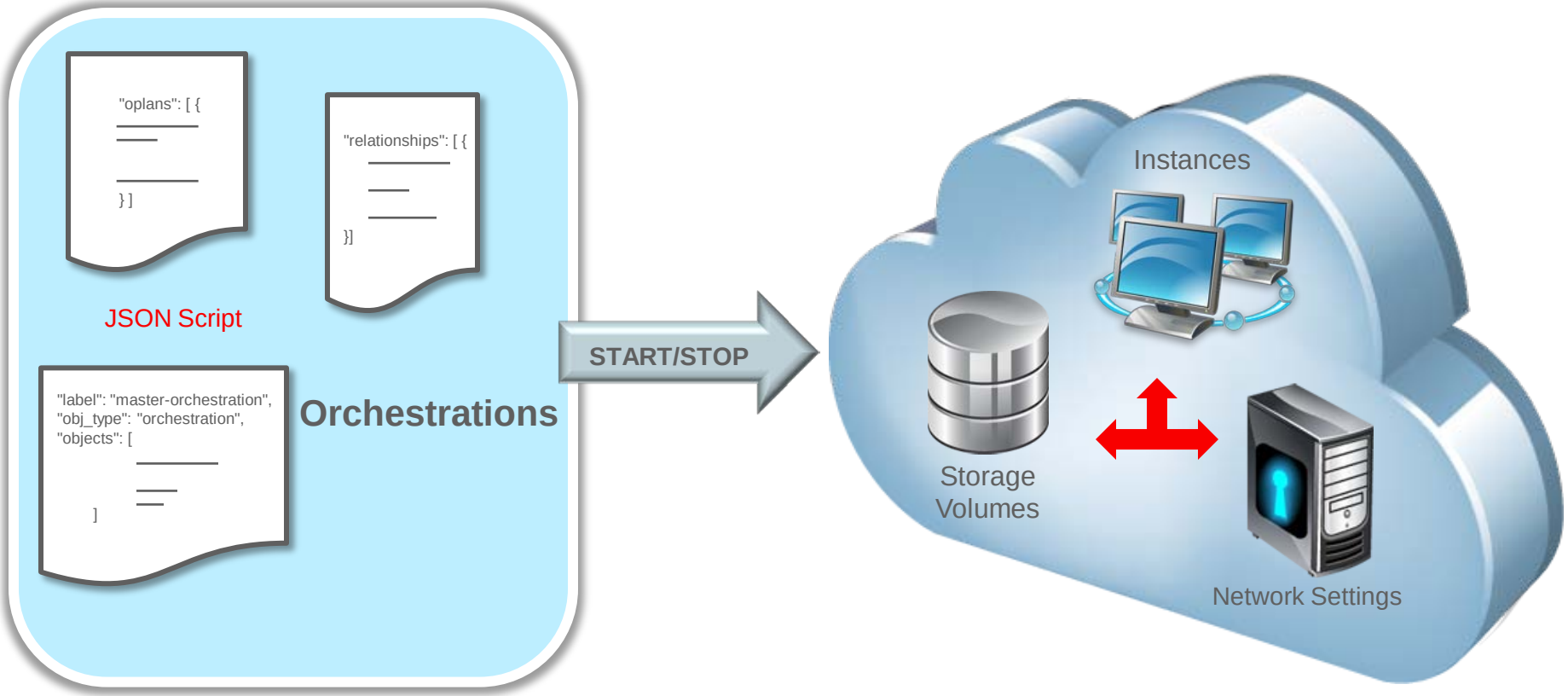
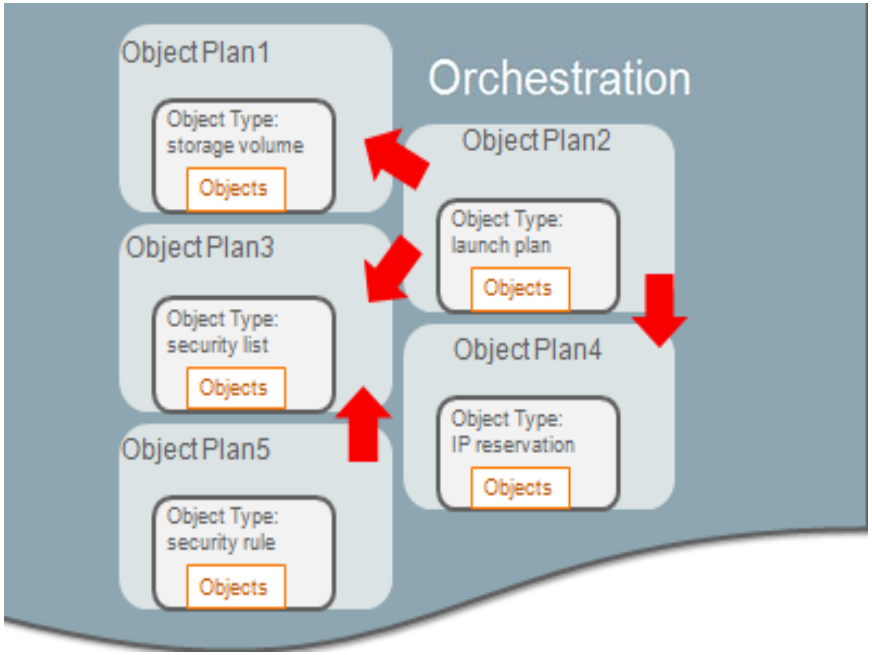
What Is an Orchestration?



What Does an Orchestration Look Like?

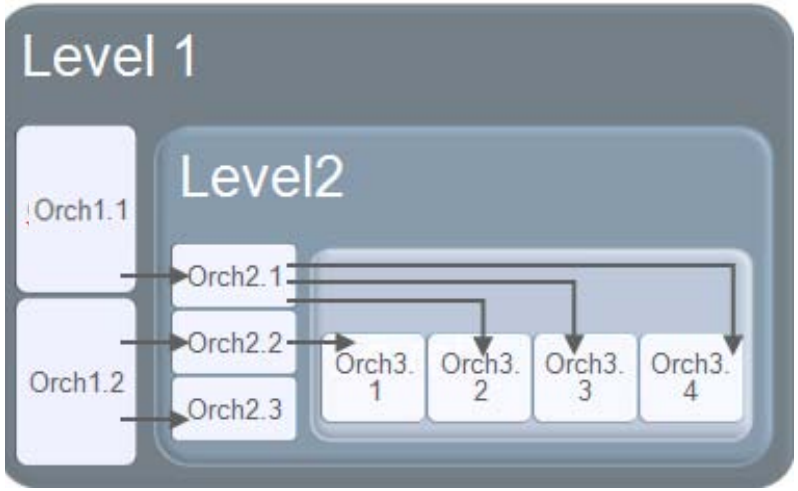


Why Should I Use Orchestrations?

- Simplify the process of provisioning and removing objects.
- Assign specified objects to specified instances.
- Define dependencies between objects.
- Specify a high availability policy for instances.

Which Objects Can I Create and How Can I Use them in My Orchestration?

Object Types	Description
`ip/reservation`	Reserves an IP address
`launchplan`	Creates an instance
`orchestration`	Starts a set of orchestrations
`storage/volume`	Creates a storage volume
`secapplication`	Creates a security application
`seciplist`	Creates a security IP list
`seclist`	Creates a security list
`secrule`	Creates a security rule



Creating an Instance Using Orchestration

1. Build your orchestration using JSON
2. Upload the orchestration to Oracle Compute Cloud Service
3. Check that the prerequisite objects are available
4. Start the orchestration

Refer to Oracle Cloud Computing Resources

Refer the following resources for further information on Oracle Cloud Computing:

- https://www.oracle.com/cloud
- https://docs.oracle.com/cloud/latest/stcomputecs/index.html
- https://education.oracle.com/cloud

Summary

In this lesson, you have learned how to:

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