

Best Practices for Linux and Windows IaaS Instances in Oracle Cloud Infrastructure

Learn best practices for creating and managing instances and their associated resources in OCI-Classical and OCI

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Program Agenda

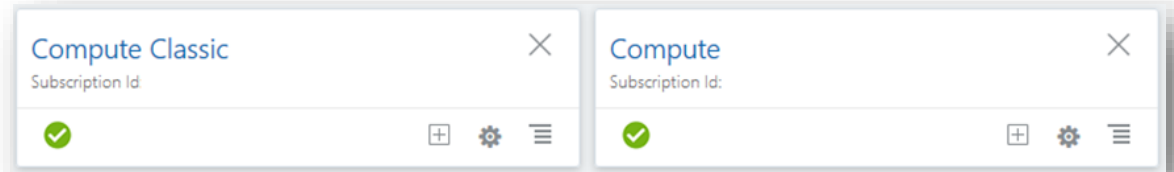
- 1 OCI-C and OCI Differences for IaaS
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OCI-C and OCI Compute

Key Differentiators



- OCI provides Bare Metal Shapes
- OCI provides GPU Instances for compute-intensive workloads
- OCI provides serial console access for Virtual Machine (VM) and Bare Metal instances, and VNC console access for VMs
- OCI provides comprehensive Virtual Network with Off-box Virtualization

OCI-C and OCI Compute

Key Differentiators - continued

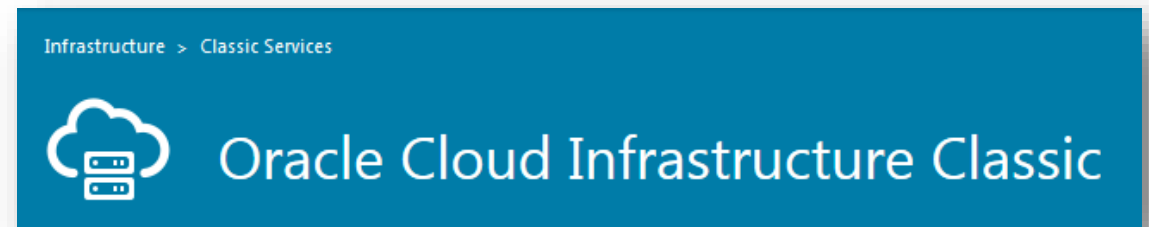


- OCI provides additional services such as Edge and DNS Services
- OCI allows BYOH on Bare Metal shaped instances
- OCI provides robust Security, Governance and Audit capabilities
- OCI provides high scale, high performance network

OCI-C and OCI Compute

Oracle Cloud Infrastructure Classic (OCI-C) Highlights

- IaaS offerings on OCI Classic include Compute, Network (Shared & IP Networks), Storage, FastConnect (all Classic services)
- OCI Classic provides only Virtual Machines running on Oracle VM Server (Xen) Hypervisor
- The largest shape allows for up to 32 OCPUs and 480 GB of memory
- Up to 20 block storage volumes can be attached, each having a maximum size of 2TB
- OCI Classic can be deployed as:
 - Elastic Compute
 - Dedicated Compute



OCI-C and OCI Compute

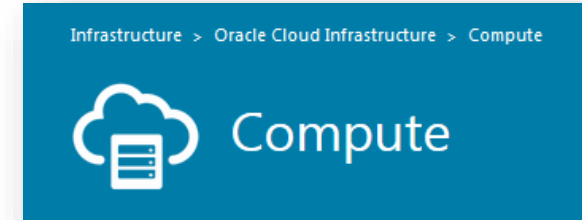
Oracle Cloud Infrastructure (OCI) Highlights



- On OCI the Core Infrastructure offerings include Compute, Block Volume, Object Storage, File Storage and Network services, and additionally Edge Services like Email, DNS, Load Balancer etc.
- OCI provides both Bare Metal machines & Virtual Machines
- OCI uses KVM as the hypervisor to run the VM shape instances
- OCI allows creating VMs with up to 24 cores and Bare Metal instances with up to 52 cores and 768 GB of RAM

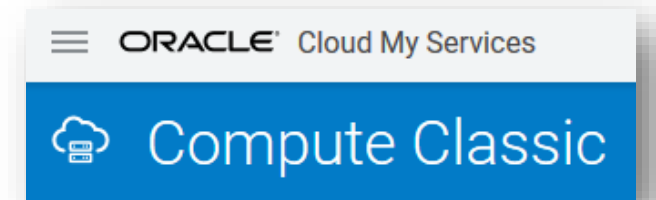
OCI-C and OCI Compute

Oracle Cloud Infrastructure (OCI) Highlights - continued



- On OCI instances can have up to 32 block volumes attached, each block volume having a size that can range from 50GB to 32TB
- Floating IP addresses are possible on OCI, either secondary private IP addresses or the reserved public IP address
- One or two physical NICs for Bare Metal instances (depending on whether they're running on X5 servers or respectively, X7 servers) - the exact network bandwidth and maximum number of VNICs are detailed in the [Compute Shapes](#) documentation section

Best Practices for All OCI-C Compute



- [Best Practices Documentation for OCI-C](#)
- IaaS Compute Cloud Classic Information Center ([Doc ID 2307436.1](#))
 - Securing PaaS/IaaS Instances in Cloud ([Doc ID 2405384.1](#))
 - Oracle Cloud Performance and Tuning Best Practices ([Doc ID 2216869.1](#))
 - IaaS Action Required: Critical Fixes for Linux Servers on Oracle Cloud Infrastructure (OCI) Classic ([Doc ID 2328882.1](#))
 - Action Required: Critical Fixes for Windows Servers on Oracle Cloud Infrastructure (OCI) Classic ([Doc ID 2319584.1](#))
 - Snapshots Are Taking Too Long To Complete And Failed Snapshots Are Not Cleaning Up ([Doc ID 2387004.1](#))

OCI-C Windows

Critical Fixes

Ensure all OCI-C Windows instances have implemented critical fixes ([Doc ID 2319584.1](#))

1. Ensure the PV Driver is Updated
2. Set Disk Timeout to a Higher Value
3. Disable SIPS (Power Management) in PV Driver
4. Check Boot Storage
5. Ensure RDP Access Through Windows Firewall Is Enabled and Check AD Group Policies
6. Ensure Administrator Account Access
7. Remove Guest Account Access
8. Poor Performance in SMB Protocol File Sharing
9. Please Check Disk Health After Applying all Changes
10. Run Audit Script After Applying all Changes

Support will likely ask for a copy of the script output in Service Requests



OCI-C Linux

Critical Fixes

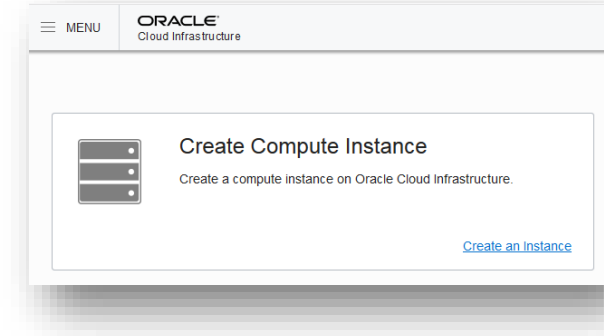


Ensure all OCI-C Linux Compute instances have implemented critical fixes ([Doc ID 2328882.1](#))

- These fixes are implemented in Oracle Linux (OL) Compute Classic machine images version 17.3.4 and newer (current version is 18.3.6 at this time)
- 1. Use OL versions later than 6.6 when creating new OL OCI-C Compute instances
- 2. Update the kernel-uek to the latest available version. Regularly upgrade the kernel to assure you have the latest bug fixes and patches for optimum stability
- 3. Apply ring buffer fix to improve IO and stability for UEK3 and UEK4 based images

Demo: Verify machine image version for an existing OL instance via Orchestration and Compute Classic REST API and CLI

Best Practices for All OCI Compute



Best Practices Documentation for OCI

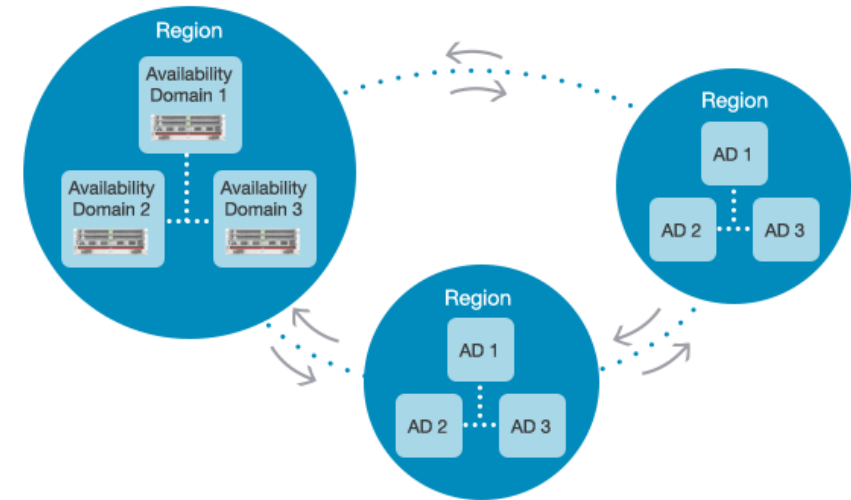
- Design your system with redundant compute nodes in different availability domains and fault domains to support fail-over capability
- Create a [custom image](#) of your system drive each time you change the image
 - Managing Custom Images on Oracle Cloud Infrastructure (OCI) ([Doc ID 2447882.1](#))
- [Back up](#) your data drives, or sync to spare drives, regularly
- Ensure DHCP client is running so you can always access the instance

IaaS Oracle Cloud Infrastructure (OCI) Information Center ([Doc ID 2385634.1](#))

Demo: Create new instance, boot volume backup and create custom image

Best Practices for All OCI Compute - continued

- [OCI Security Best Practices](#)
- [Oracle Cloud Infrastructure Security](#)
- [OCI Technical White Papers](#)
 - [Oracle Cloud Infrastructure Virtual Cloud Network Overview and Deployment Guide](#)
 - [Best Practices for Deploying High Availability Architecture on Oracle Cloud Infrastructure](#)



OCI Instance Console Connections

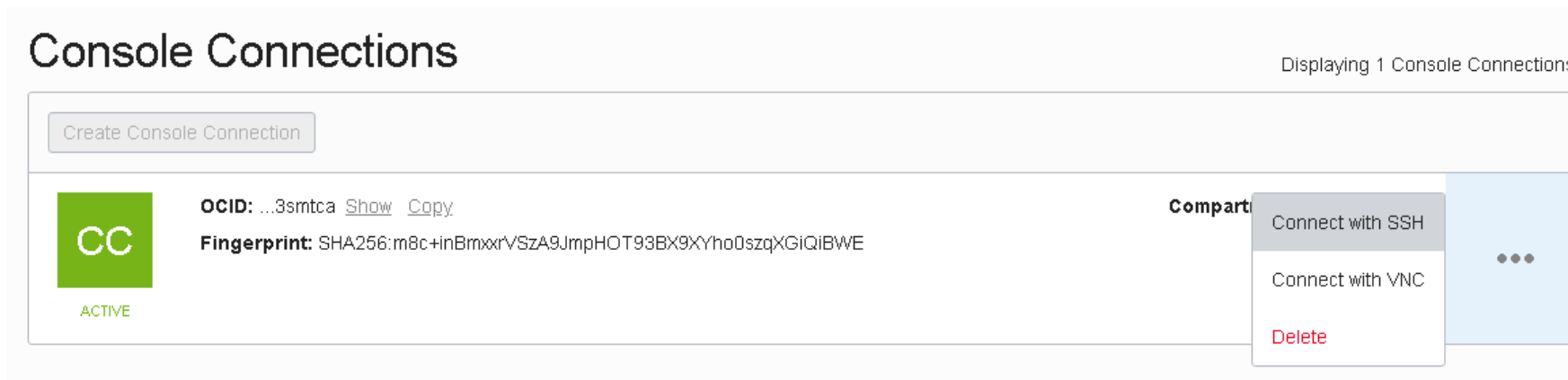
- Unique to OCI: [Console Connections](#) provide connection to the hypervisor
 - Diagnose boot issues
 - Fix ssh key issues
 - Edit system configuration files
- Can setup either Serial Console (Linux) or VNC Console (Windows)
- *Backup or make a custom image prior to any changes!*
- Console Connections should be closed after your task is completed
- Console Connections will expire automatically after 24 hours if not deleted

Create Console Connection

OCI Linux

Setup Serial Console

- Serial console connections only work for VM instances launched in September 2017 or later.
- Serial console connections only work for Bare Metal instances launched in November 2017 or later.
- OCI - How to Connect to the Serial Console of OCI Linux instance from windows workstation? ([Doc ID 2419637.1](#))



The screenshot displays the 'Console Connections' interface in the OCI console. At the top, it says 'Console Connections' and 'Displaying 1 Console Connections'. Below this is a 'Create Console Connection' button. A single connection is listed with a green 'CC' icon and the status 'ACTIVE'. The connection details include an OCID and a SHA256 fingerprint. A context menu is open over the connection, showing options: 'Connect with SSH', 'Connect with VNC', and 'Delete'.

Icon	OCID	Fingerprint	Actions
CC ACTIVE	...3smtca Show Copy	SHA256:m8c+inBmxxrVSZA9JmpHOT93BX9XYho0szqXGIQIBWE	Connect with SSH Connect with VNC Delete

OCI Windows

Setup VNC Console

- VNC console connections only work for VM instances launched on October 13th, 2017 or later. Not supported on Bare Metal Instances (yet)
- OCI Compute Instance: Tips for Running Windows PowerShell Commands While Connecting to the VNC Console ([Doc ID 2432060.1](#))

The screenshot displays the 'Console Connections' interface in the OCI console. At the top right, it indicates 'Displaying 1 Console Connections'. A 'Create Console Connection' button is visible in the top left. The main area shows one connection with a green 'CC' icon and the status 'ACTIVE'. The connection details include an OCID and a SHA256 fingerprint. A context menu is open over the connection, showing options: 'Connect with SSH', 'Connect with VNC' (highlighted), and 'Delete'. The word 'Compartment' is partially visible to the left of the menu.

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Best Practices In Summary

- *Backup, backup, backup and then backup!*
- When making OS changes, create custom images
- Check the Best Practices section of the Documentation regularly
- Check for Technical White Papers regularly
- Check the Information Center for new MOS notes
- Ensure your OCI-Classic compute instances have Critical Fixes applied
- Use OCI Console Connections to troubleshoot boot issues



Questions:



Integrated Cloud

Applications & Platform Services

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