# Oracle® Advanced Support Gateway Installation Guide

**Part No: E40642-39**
March 2024

Oracle Advanced Support Gateway Installation Guide

**Part No: E40642-39**

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Oracle Advanced Support Gateway Installation Guide

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# Preparing for Installation

This document details how to build Oracle Advanced Support Gateway (hereafter referred to as Gateway/the Gateway) both in the Cloud (using Oracle Cloud Infrastructure, or OCI) and in an on-premises configuration:

- To deploy the Gateway in the Cloud, see "Deploying the Gateway on Oracle Cloud Infrastructure" on page 45.
- To install an on-premises Gateway, review the following multi-step process:
  - "Review Host System Requirements for On-Premises Installation" on page 11
  - "Collect Registration Information" on page 18
  - "Obtain the ISO Image From Oracle" on page 19

## Changes to the Installation Guide Since the Last Release

This section outlines the principal changes made to *Oracle Advanced Support Gateway Installation Guide* (this guide) since the last release (E40642-38; December 2023):

- Gateways running Oracle Linux 6.*x* (that is, Gateways at version 14.*x*) are no longer supported.
- The `RA` Gateway type (for remote access) is no longer supported. During installation, you are now presented with two Gateway options as follows:
  - `STANDARD`: This is the standard Gateway.
  - `BASIC`: This Gateway replaces the Monitoring Gateway.

## Review Host System Requirements for On-Premises Installation

This section applies to an on-premises Gateway installation. To review the requirements for deploying the Gateway on the Cloud, see "Deploying the Gateway on Oracle Cloud Infrastructure" on page 45.

The software gateway can be installed directly onto a server (bare metal install) or within a supported virtual machine. The gateway includes a modified version of Oracle Linux 8. It can be installed in any environment which supports Oracle Linux 8 and meets the minimum specifications outlined in the following sections.

**Note -** Visit the Oracle Linux certified hardware page to see a list of hardware servers that have been certified to run this version of Oracle Linux.

The following topics are covered in this section:


- "Minimum System Requirements" on page 12
- "Network Requirements" on page 14
- "Gateway Storage Options" on page 15
- "Supported Internet Browsers" on page 18


# Minimum System Requirements

If you would like to order a server from Oracle for the purpose of running the gateway, Oracle recommends the Gateway Server X9-2. The gateway software has been certified on this server and has undergone extensive testing and tuning to ensure this configuration achieves the best performance and availability for your service offerings.

This server can be ordered through your Oracle sales representative or Oracle-authorized distributor.

To order the Gateway Server X9-2, contact Sales Assistance at +1-888-672-2534.

If you do not wish to purchase the certified server from Oracle, you can use a server or Virtual Machine (VM) that meets the following requirements:

**TABLE 1** Advanced Support Gateway Minimum Host System Installation Requirements

| Category | On-premises Minimum | On-premises Recommended | Additional Details |
|---|---|---|---|
| CPU | 4 cores | 8 cores | The CPU must be 64-bit, x86 architecture (x64 or x86-64). The most common vendors for these processors are Intel and AMD. |
| Memory | 48 GB | 64 GB | The recommended configuration supports up to eight (8) full-rack Oracle Engineered Systems (or equivalent products.)<br><br>The minimum configuration is acceptable for a small installation that provides service for one (1) or (2) full rack Oracle Engineered Systems (or equivalent products.) |

| Category | On-premises Minimum | On-premises Recommended | Additional Details |
|---|---|---|---|
| | | | The Gateway supports a maximum of 90 agents or up to 900 targets with status whichever is lower. |
| Storage | 1 disk >=1 TB (if using local storage)<br><br>Assume that 15% of a local boot disk will be unusable. That will leave a safe margin of error. See "Gateway Storage Options" on page 15 for more information about usable space. | 6 disks >= 1 TB each | Multiple disks are recommended to provide fault tolerance using RAID, which is supported by software. Hardware RAID is also supported but not necessary.<br><br>All disks must be of equal size. A mixture of differently sized disks in the same system is not supported. |
| Network | One logical interface.<br><br>Firewall ports opened. | One logical interface.<br><br>Firewall ports opened. | Refer to Oracle Advanced Support Gateway Security Guide for details of the specific port and firewall requirements for the gateway to function properly. |
| Network Bandwidth | 10 Mb/s connection to the internet.<br><br>Optimally, 100 Mb/s is required between the Gateway and the supported systems. | 10 Mb/s connection to the internet.<br><br>Optimally, 100 Mb/s is required between the Gateway and the supported systems. | |

- The Gateway can be installed in **one of the following ways**:
  - Directly onto any server hardware that is supported by Oracle Linux 8.*x* and Unbreakable Enterprise Kernel (UEK) 5.4 (or later), *or*
  - On Oracle VM, *or*
  - On a VM that supports installation of Oracle Linux 8.*x* and Unbreakable Enterprise Kernel (UEK) 5.4 or later. For further information, see MOS Note 417770.1.

    To review the Oracle Support position for Oracle products running on virtualized environments, see MOS Note 249212.1.

  You can view a list of servers that have been certified to run on Oracle Linux from the Oracle Linux certified hardware page at:

  `http://linux.oracle.com/pls/apex/f?p=117:1:489726292744914`

**Note -** Due to incompatibility issues associated with installing the Gateway software on Cisco UCS servers, it is recommended that Cisco UCS servers not be used for the Gateway hardware.

If the configuration shown in the table is not available, then email acsdirect_us@oracle.com or contact your Oracle sales representative.

If the gateway is required for more than two full rack systems per site, then a custom configuration with more cores, disks, or memory is required and can be configured on the Oracle Store or ordered through your Oracle sales representative or Oracle-authorized distributor. The recommended configuration will support up to eight (8) Oracle Engineered Systems.

## Network Requirements

The Gateway server must have at least one interface configured with an IPv4 address that is used to communicate to the Internet and the Oracle endpoints. You can add more interfaces to the Gateway to support systems that are not accessible from the primary interface. These interfaces can support either IPv4 or IPv6.

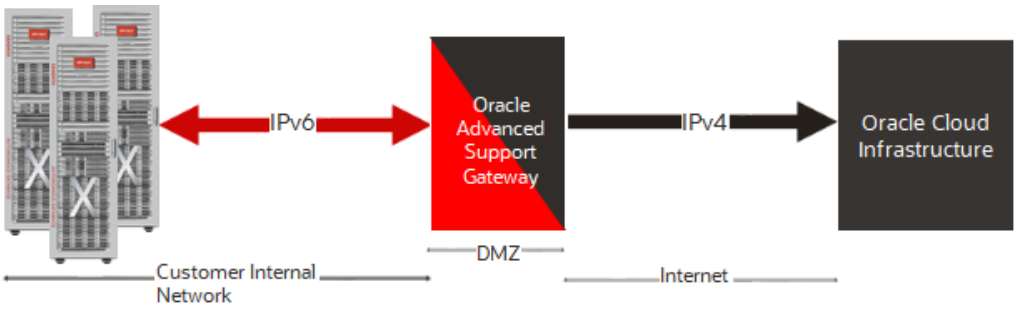
---

**Note -** When IPv6 addresses are added to the primary interface, *you are not required to add a physically separate cable* to support internal IPv6 networks and IPv4 communication to the Oracle endpoints.

---

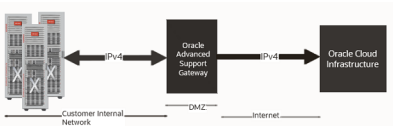
The diagram below depicts an example network configuration featuring an internal customer network and Oracle that incorporates both IPv4 and IPv6.

**FIGURE 1** High Level Network Configuration and IPv4/IPv6 Distribution




The diagram below depicts an example network configuration featuring an internal customer network and Oracle that uses only IPv4.

**FIGURE 2** High Level Network Configuration and IPv4 Distribution




# Gateway Storage Options

The software gateway automated installation process can work with a wide variety of different disk configurations and make intelligent choices about how to utilize those disks. This topic explains the logic that is used for disk selection, volume creation, and partition creation.

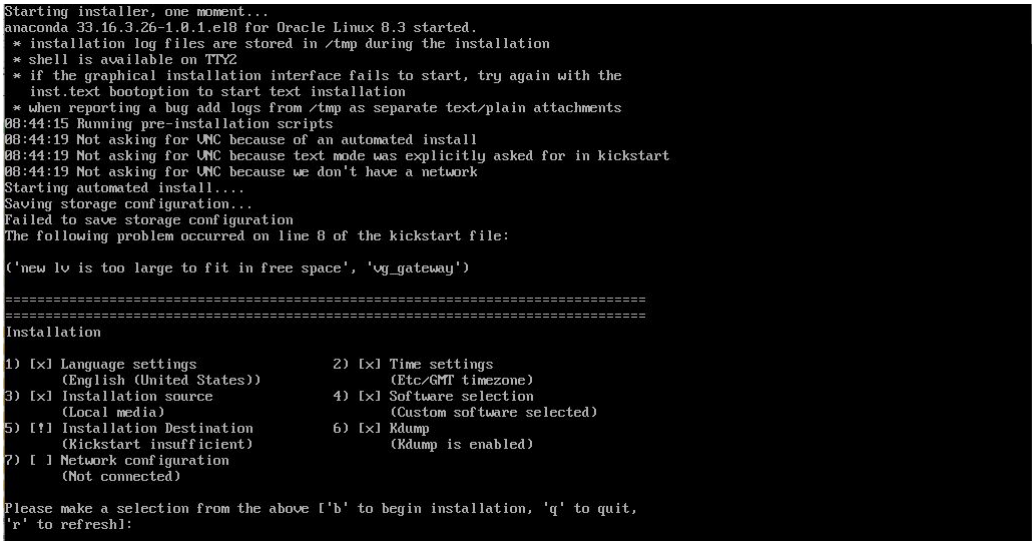
## Disk Selection Logic

The installation process makes certain assumptions when choosing the appropriate disk drives to use for installation of the operating system. The assumptions are as follows:

- Any device which is smaller than 100 GB in size is excluded. These are assumed to be removable storage such as USB drives.
- Any device that does not start with one of the following is excluded because they are assumed to not be a disk drive:
  - `/dev/vd`
  - `/dev/sd`
  - `/dev/xvd`
  - `/dev/mpath`
  - `/dev/cciss`
  - `/dev/nvme`

In the vast majority of cases, these assumptions are correct and the installation proceeds normally. But in certain configurations, the assumptions might be wrong, and the installation fails with a miscellaneous disk error.

If you see an error like the one below during installation, it is likely that your disks are different sizes and this is causing issues trying to setup the RAID. Check to make sure all your disks are the same size and then restart the install process.




## Supported Local Disk Configurations

The software gateway supports systems with 1 to 6 disks. The number of disks available during installation affects the level of fault tolerance and performance that can be obtained. The table below describes the way the installer provisions storage for each of the supported disk configurations.

**Note -** The installer automatically sets up a software RAID configuration if it detects more than one disk. If your system is using a hardware RAID controller, then the RAID volume should appear to the installer as a single disk device to avoid two levels of mirroring, which would negatively affect write performance.

| Number of Drives | Minimum Size (Each Drive) | Disk Configuration | Fault Tolerance | Storage Capacity (s = size of each disk) |
|---|---|---|---|---|
| 1 | 1 TB | All storage on a single disk | None | s |
| 2 | 1 TB | RAID 1 (mirror) | Can survive a single drive failure. | s |
| 3 | 1 TB | RAID 1 (mirror or disks 1 and 2) plus disk 3 used for backups | Can survive a single drive failure. | s |
| 4 | 1 TB | RAID 10 (mirror on disks 1 and 2, mirror on disks 3 and 4, striped across the 2 mirrored sets) | Can survive 1 disk failure in each mirror set. For example: this configuration can survive a failure | 2 x s |

| Number of Drives | Minimum Size (Each Drive) | Disk Configuration | Fault Tolerance | Storage Capacity (s = size of each disk) |
|---|---|---|---|---|
| | | | of disks 1 or 2 and 3 or 4, but not 1 and 2 or 3 and 4. | |
| 5 | 1 TB | RAID 10 (mirror on disks 1 and 2, mirror on disks 3 and 4, striped across the 2 mirrored sets) plus disk 5 used for backups. | Can survive one disk failure in each mirror set and one additional failure. | 2 x s |
| 6 | 1 TB | RAID 10 (mirror on disks 1 and 2, mirror on disks 3 and 4, striped across the 2 mirrored sets) plus RAID 1 (mirror on disk 5 and 6) for backups. | Can survive one disk failure in each mirror set. Backup disk can be used to recover database should an entire mirror fail. | 2 x s |

## Filesystem Sizes on the ISO

Filesystem sizes on the ISO are set to the following values:

- The `/var` partition is 100 GB.

  This value should provide ample space for diagnostic uploads to Oracle Support for SRs.
- The `/var/tmp` partition is 60 GB.

  This value should provide ample space for patch downloads and software upgrades.
- The `/var/log` partition is 20 GB.

  This value should provide ample space for application logging.
- The `/var/log/audit` partition is 5 GB.

  This value should provide ample space for audit specific logs.
- The `/home` partition is 32 GB.

  This value should provide ample space for users' home directories for data collection and analysis within the environment.
- The `/boot` partition is 2 GB.

  This value should provide ample space for future kernel updates.
- The `/(root)` partition is 50 GB.

  This value should prevent any issues with running out of `/` partition space given that many `tmp` files are created on the `/` filesystem.
- *ORAHOME_MAX* (with its value set to 256 GB) has been added.

  If additional disk space is available (beyond the 1 TB minimum requirement specified in "Supported Local Disk Configurations" on page 16), the *ORAHOME_MAX* partition size will be set to the maximum value to provide more space for updates, upgrades, and so on.

### Usable Space

This section provides some information on the amount of usable space on the gateway (a 300 GB disk does not have 300 GB of usable space.)

Use the `fdisk` command to view the partition table. There are other unmounted partitions that do not show up in `df` output (perhaps `/swap`, for example). For example, the file system uses some of the disk partition for metadata. Metadata consists of entities like file names, file permissions, which parts of the partition belong to which files, and which parts of the partition are free. This might account for 2% of the partition. Space is also reserved for root and for the master boot record.

For example, on a sample gateway, the `df -k` command shows:

```
Filesystem Size Used Avail Use% Mounted on ----- /dev/mapper/vg_gateway-lv_root
12385456 5556096 6200216 48% /.
```

But the `fdisk -l` command shows:

```
Disk /dev/mapper/vg_gateway-lv_root: 12.9 GB, 12884901888 bytes.
```

**Note -** Approximately 4% of the disk storage is not usable. By allocating 15% of the disk as not usable, this should allow sufficient margin of error.

## Supported Internet Browsers

The Gateway supports the following internet browsers:

- Mozilla Firefox and Mozilla Firefox ESR (current version; current version-1)
- Google Chrome (current version; current version-1)
- Microsoft Edge
- Safari (on macOS)

# Collect Registration Information

In addition to providing a system that meets the above specifications, collect the information listed in the following table before starting the installation. This information is used during the post-install registration process.

| Information Needed | Notes | Your Information |
|---|---|---|
| Oracle Single Sign On (SSO) account | The person doing the installation must have an Oracle SSO account to complete the registration. Upon registration, the account name is stored within Oracle's audit logs to provide a record of the user who performed the gateway registration.<br><br>Following installation, access the Gateway using the console to perform network configuration and registration using SSO authentication. | |
| Oracle gateway activation code | The activation code is generated after completion of the Service Implementation Worksheet (SIW). The gateway automatically downloads the gateway hostname, UUID, and other required details during the registration process. | |
| Primary interface IP address and subnet mask in CIDR notation, for example: 192.0.2.0/24 | This is the IP address for the primary interface that is used to manage the gateway. This is provided by the customer's network administrator. | |
| Default gateway IP address | This is the default gateway IP of the primary interface. This is provided by the customer's network administrator. | |
| HTTP proxy settings | If http-proxy is required for outbound communication, details of the server IP address and port number, as well as the proxy user name and password, can be entered during gateway installation.<br><br>These details are provided by the customer's network administrator. | |

# ▼ Obtain the ISO Image From Oracle

You can obtain the ISO image from My Oracle Support by following these steps:

1. **Login to My Oracle Support at `https://support.oracle.com`.**
2. **Click the Patches & Updates tab.**
3. **In the Patch Search box, click Product or Family (Advanced).**
4. **Fill in Product = Oracle Advanced Support Gateway.**

5. **In the Release field, enter** *21.12* **or greater.**
6. **Click Search.**
7. **From the drop-down list in the Release field, select the required** *Advanced Support Gateway* **release.**
8. **On the search results page, you will be presented with a link that takes you to the download page.**
9. **Click Download on the right side of the page.**

# Prepare the ISO Image Install Media

An ISO image is an archive file (also known as a disk image) of an optical disc, composed of the data contents of every written sector of an optical disc, including the optical disc file system. To install the software gateway, you must make the contents of the ISO image available to the machine (physical or virtual) that hosts the gateway.

There are several ways to achieve this, including burning the contents of the ISO image to a DVD drive, which is the Oracle recommended solution as it requires no modifications to the downloaded ISO image.

If you're using Windows 10 or Windows 8, double-click the ISO image file to mount the file as a virtual disc. If you're using Windows 7, you can right-click or tap-and-hold the ISO file and then choose **Burn disc image** to open the Windows Disc Image Burner window.

To burn an ISO image to a DVD for the Windows platform, use a commercial DVD burning utility such as Roxio or Nero or search for a free utility on the internet.

You can also prepare the ISO image using ILOM storage redirection. Refer to Oracle ILOM Administrator's Guide for Configuration and Maintenance Firmware for further information.

# Installing and Activating the Gateway

Follow these procedures to install and activate the Gateway:


- "Installing the Operating System Using the ISO Image" on page 21
- "Registering the Gateway With Oracle" on page 22
- "Activating the Gateway" on page 37
- "Replacing an Existing Gateway and Migrating Its Data " on page 41


## ▼ Installing the Operating System Using the ISO Image

Follow this procedure to install the Oracle Linux operating system and all the necessary software to establish connections outbound from the Gateway to Oracle through Data Transport Services (DTS), and inbound from Oracle to the Gateway through Oracle Continuous Connection Network (OCCN) VPN connectivity. The steps are the same for a server or virtual machine, so the term "server" is used to represent both options in the following instructions.

**Note -** If you are using a proxy to establish the TLS VPN tunnel, the proxy cannot require authentication.

**Note -** If you are using the alternative IPSec connectivity option, the IPSec tunnel must be established *prior* to the ISO install. Contact your implementation engineer for further information.

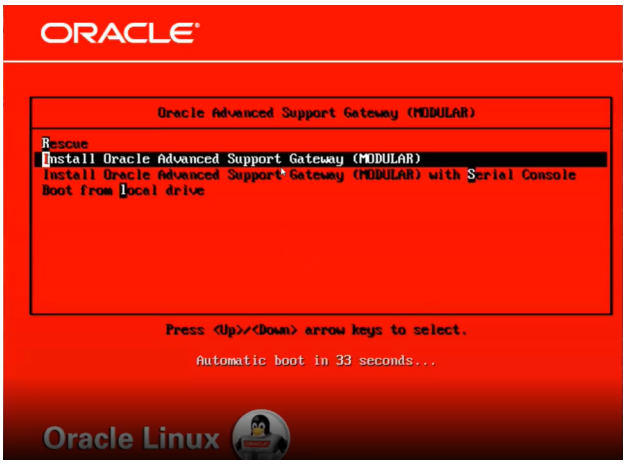
To complete the ISO installation, follow these steps:

**Before You Begin** Back up your data before re-initializing the disks.

**Caution - Possible data loss.** Make sure to back up any data currently on the disks before re-initializing the disks.

1. **Boot the server with the ISO image.**

A screen similar to the one shown below appears.




2. **To start the installation process, choose the default option, Install Oracle Advanced Support Gateway (MODULAR).**

   The initial installation process takes a number of minutes to complete.

3. **Before rebooting the server, eject or unmount the install media so that the server boots the newly installed operating system.**

4. **Press Enter to reboot the server.**

5. **Once the server has rebooted, proceed to the Gateway configuration in the following section.**

# ▼ Registering the Gateway With Oracle

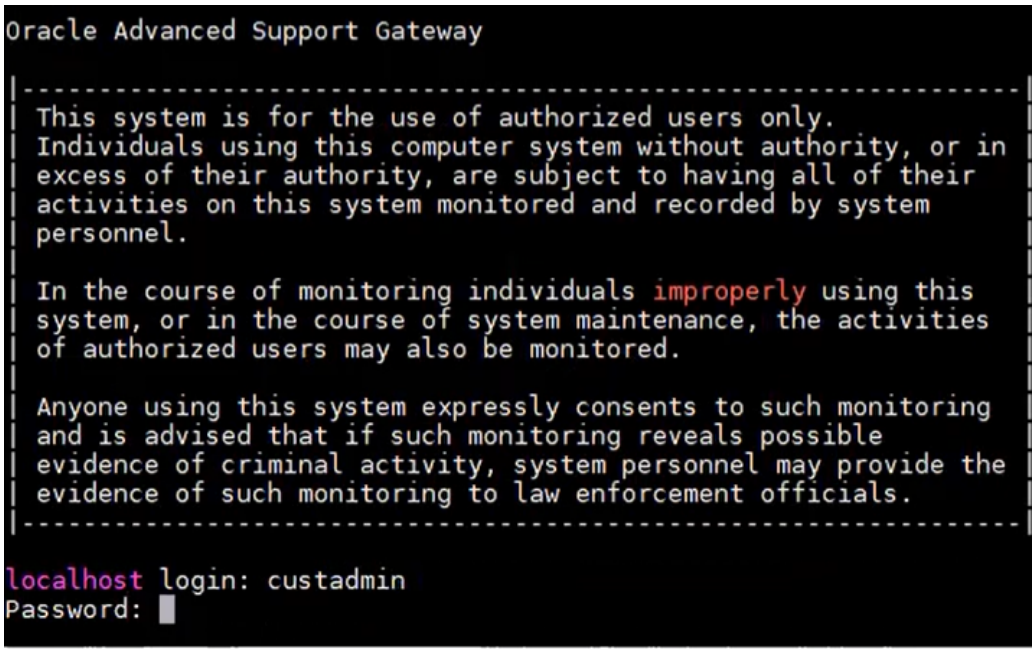
During this portion of the installation process, you are guided through a series of menus to collect the necessary information to connect to Oracle and register the Gateway. In addition, you can also configure the network by:

- Adding multiple network interfaces
- Assigning IPv4 or IPv6 addresses
- Adding VLAN tags to interfaces
- Adding bonded interfaces.

You will need console access to complete the following steps.

1. **Reboot the server as instructed in the previous section.**

   The login screen appears.




2. **Log in using the default administrator account:**

   - Login: **`custadmin`**
   - Password: **`install`**

Upon successful login, a screen displaying a message asking whether you wish to migrate an existing Gateway appears (*OASG* means Oracle Advanced Support Gateway).

3. **Select one of the following options:**

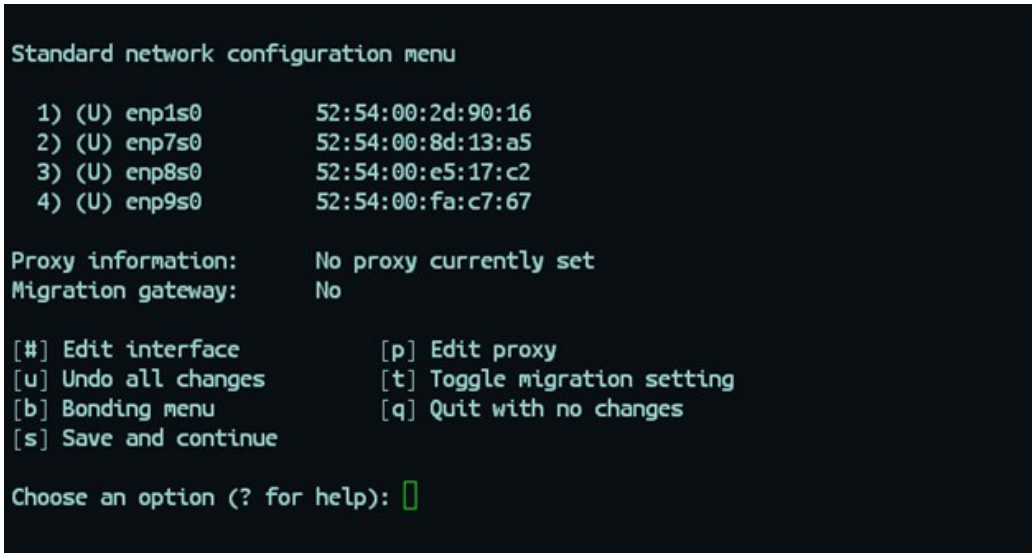
   - Enter **y** to use this Gateway to replace an existing Gateway and migrate its data. Refer to "Replacing an Existing Gateway and Migrating Its Data " on page 41.
   - Enter **n** to set up a new gateway. Continue with the next step.

**Note -** Enter **?** for a complete list of options and symbols.

4. **Select one of the following options:**

   - Enter **b** to switch to the bonding configuration menu. Refer to *Step 7* below.
   - Enter the digit corresponding to the interface you wish to configure.

So, for example, in the screen shot below, the user enters `1` which corresponds to `enp1s0`.

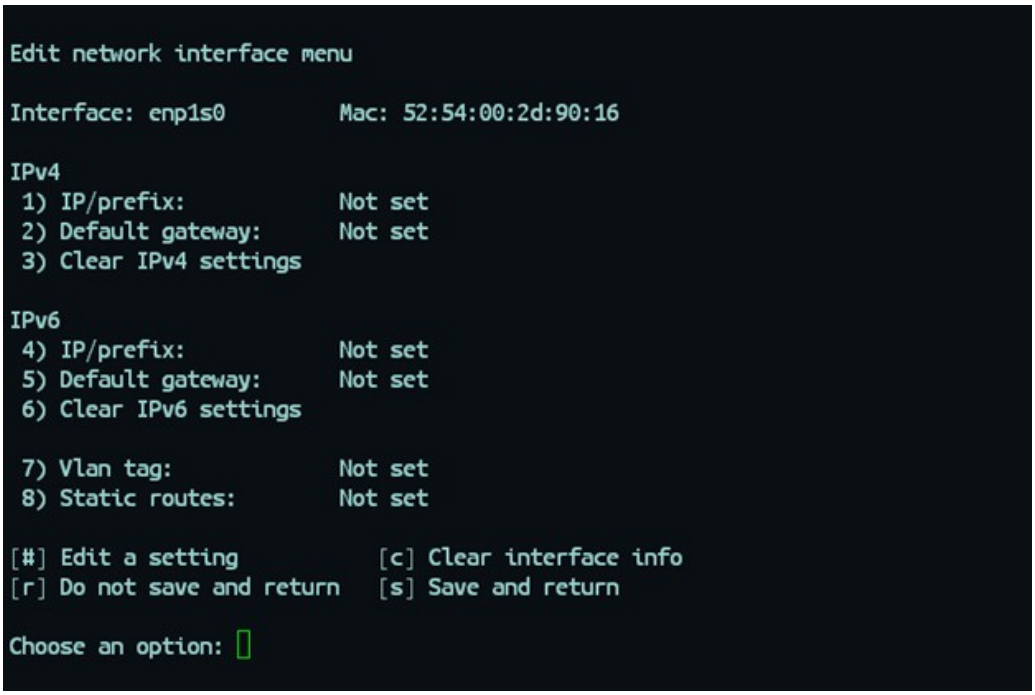



5. **Enter the property number to edit the corresponding property, or enter `a` to add all of the required configuration information.**

   The configuration information might include:

   - The IP address and CIDR (IPv4 and IPv6 if enabled);
   - The default Gateway of the interface;
   - A VLAN tag;
   - Static routes.

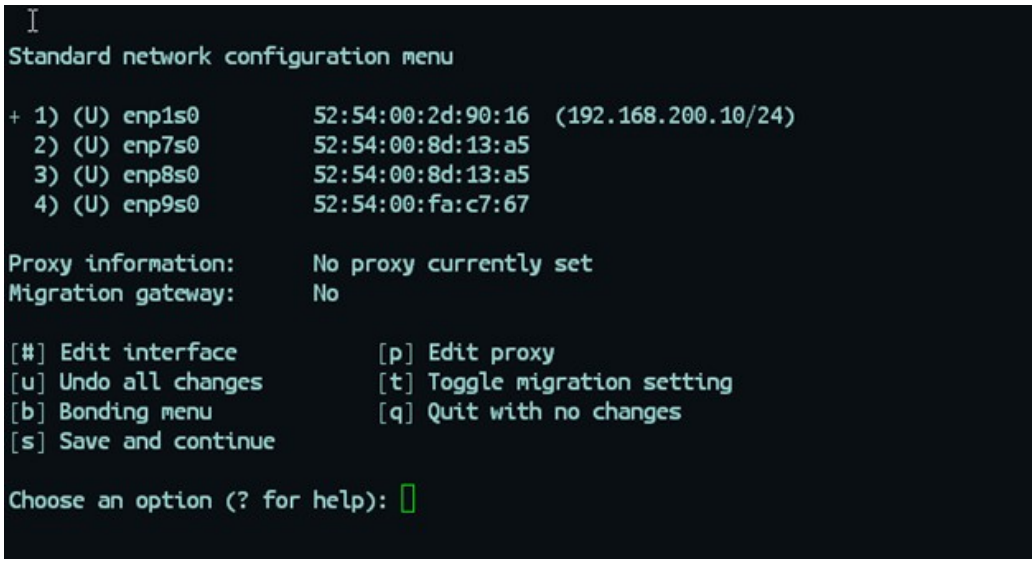
There can be only *one* IPv4 and *one* IPv6 default Gateway defined per system. There must be *at least one* IPv4 default Gateway defined. The IPv4 and IPv6 default Gateways can be on two different interfaces.



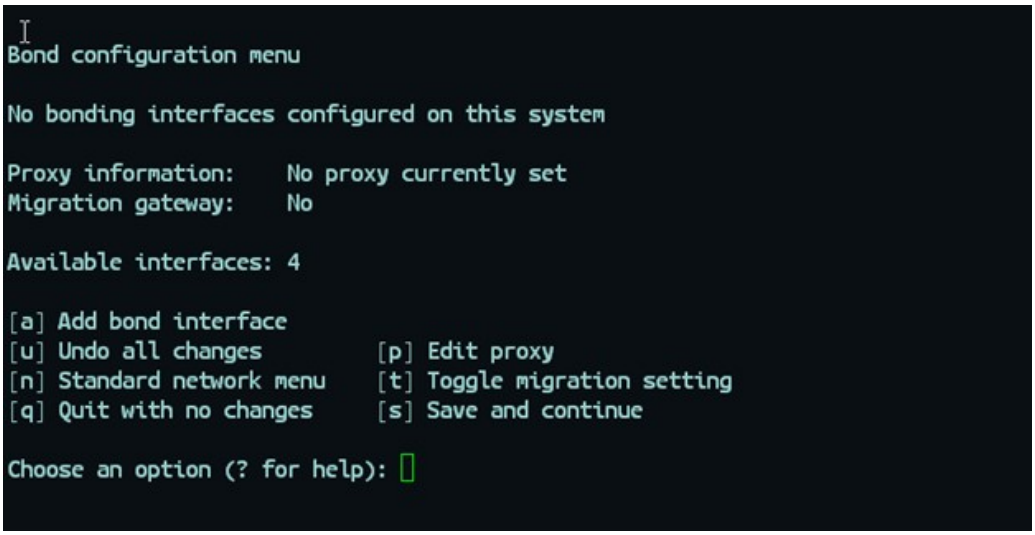

6. **Review the information and enter `s` to save the configuration.**

   If you entered enough information to configure the interface you will notice a “+” next to the interface, as with `enp1s0` in the screen shot below .

**Note -** A “!” indicates there is some information missing.



7. **(Optional) To configure a bonding interface, enter `b` from the standard network configuration menu to display the bonding configuration menu.**




Enter **`a`** to add a new bonding interface. You will be prompted for:

The type of bond:

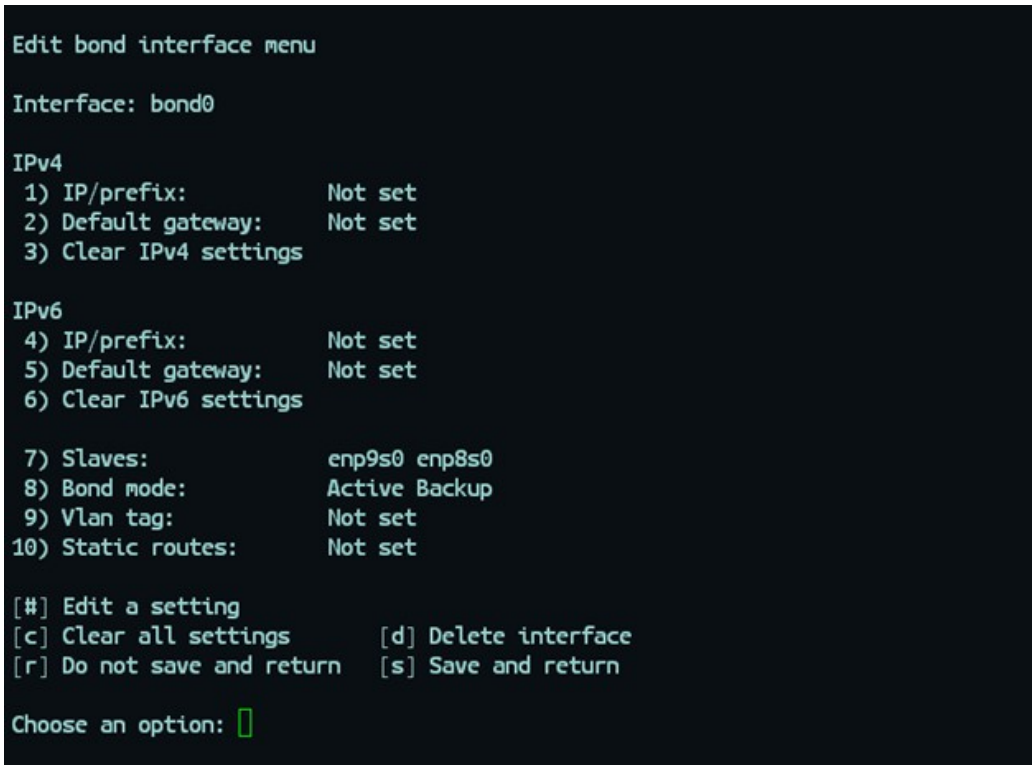
- The type of bond:
  - Active Backup, *or*
  - Link Aggregation

- The slaves for the bond (enter the corresponding number of the interface to select or deselect.

After entering the information, the main bond configuration menu appears.

**Note -** In this case, a “!” is displayed because the bond is only partially configured at this point.

Select the new bond number, **1**, to edit it.



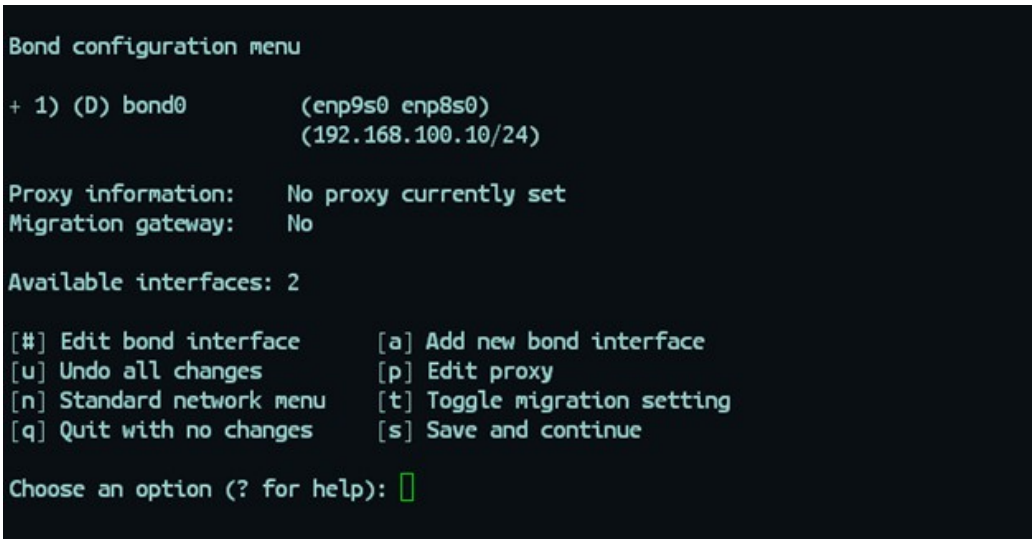

The configuration information includes:

- The IP address and CIDR for the bonding interface (IPv4 and IPv6 if enabled);
- The default gateway of the bonding interface;
- Bonding mode (active backup or link aggregation);
- Slave interfaces for the bonds;
- A VLAN tag for the interface;
- Static routes.

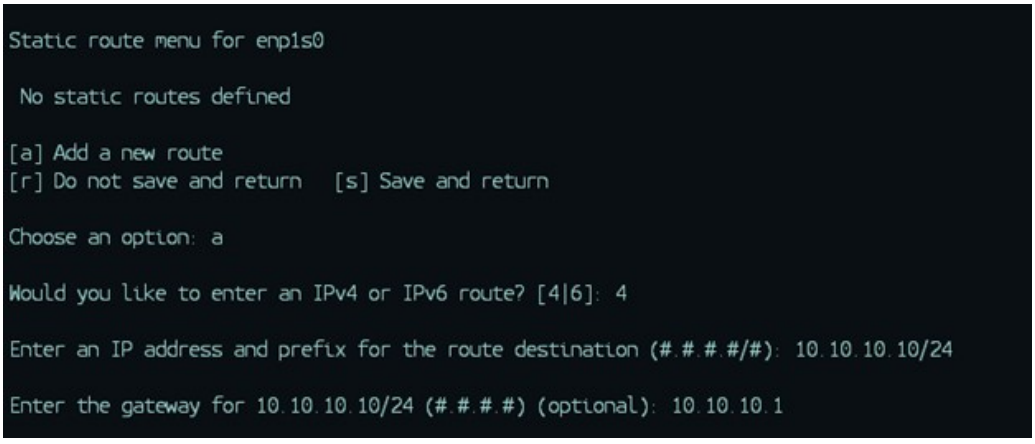
Review the information, edit as required, and enter **s** to save the configuration.

The main bond configuration menu containing your saved information is now displayed.

**Note -** The “+” next to the bond denotes that It is now correctly configured.

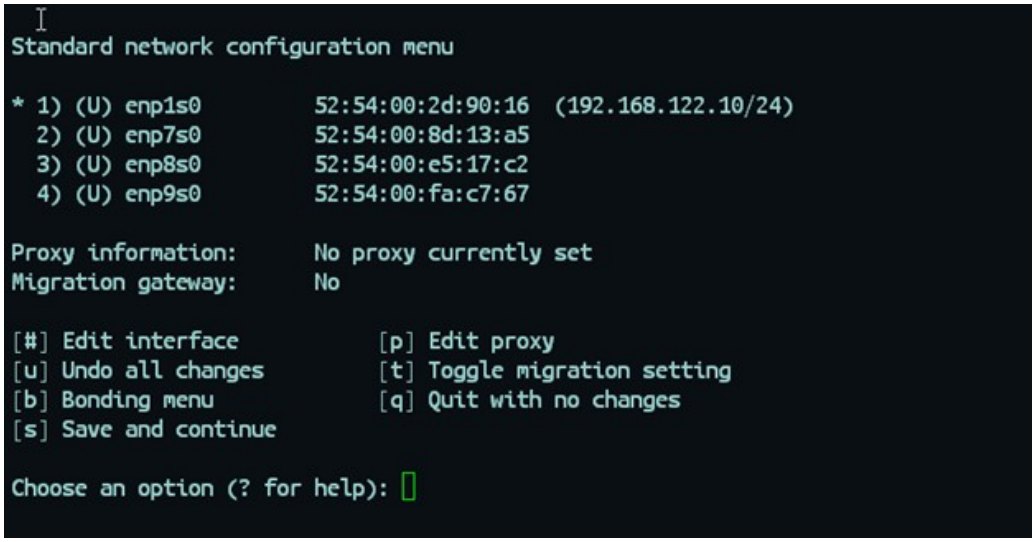



8. **When configuring both standard and bonded network interfaces, you have the option to add any number of static routes for each interface.**

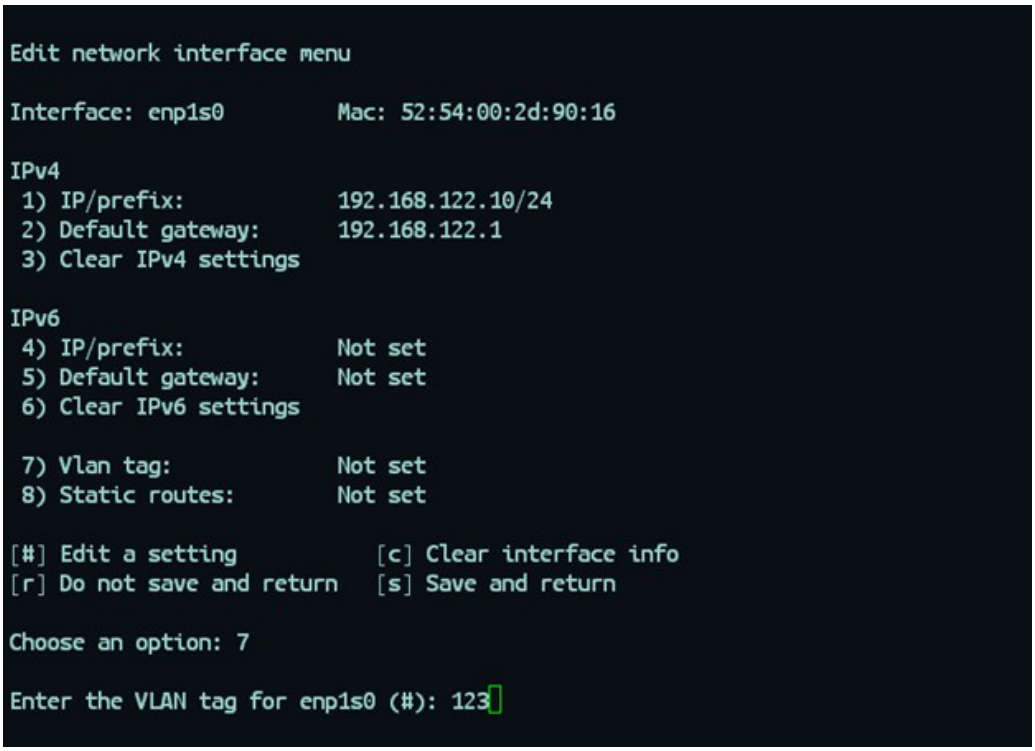


9. **When configuring both standard and bonded network interfaces, you can assign VLAN tags.**

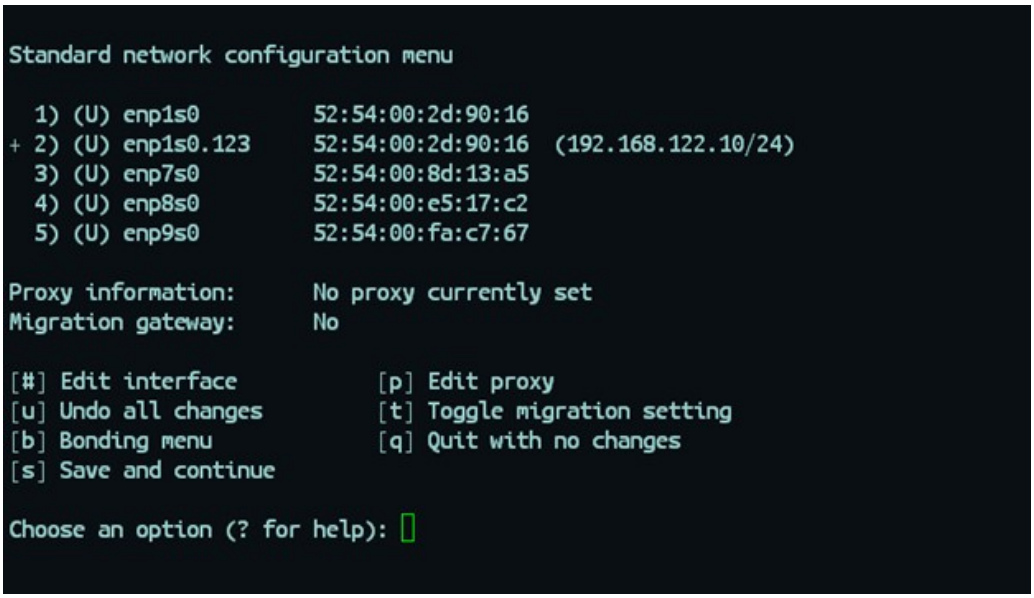
   When you edit a non-tagged interface and add a new VLAN tag, the script transfers all the current information for that interface to a new interface with the same name and an extension represented by the VLAN tag you chose. For example, refer to the sample screen shots below:



**(Optional)** Enter **1** to edit *enp1s0* and then add a VLAN tag.



When you save and return to the standard network menu, you can see that the information from *enp1s0* is now associated to *enp1s0.123*.




**Note -** You can assign multiple, different, VLAN tags to the same interface. Each tagged interface has different network address information.

10. **(Optional) After the network configuration has been completed, you can opt to add proxy settings.**

    To add proxy settings, enter **p** from either the standard configuration menu or the bonding configuration menu to display the proxy configuration menu.

Enter the proxy IP address and port number if required. Enter the proxy username and password and then confirm the password. Refer to the following screen shot.

**Note -** NTLM authentication is not supported.

11. **Confirm the network information for all the interfaces you added.**

    Review the network information and select **s** to save the configuration details.

    Any unconfigured interfaces are deleted. All configured interfaces are first deleted (to remove artifacts) and then recreated.

12. **After all configuration has been completed, the Gateway performs a test against the default network IP address.**

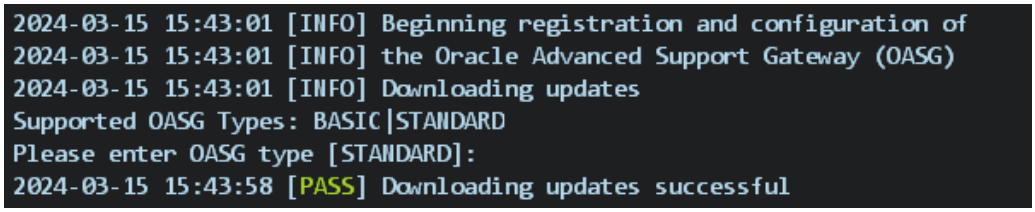
    Once this test is successful, the Gateway completes the initial configuration. This operation takes a number of minutes. The most recent packages and configuration parameters are downloaded automatically. Do not restart the Gateway during this step.

13. **After the latest packages have been downloaded and applied, you are prompted to select the Gateway type.**

    The Gateway types are outlined as follows:

    - `BASIC`: This Gateway replaces the Monitoring Gateway.
    - `STANDARD`: This is the standard Gateway.

The following screen shot shows sample answers. In this installation, the `STANDARD` Gateway is selected.




Installation of the updates required takes a number of minutes.

# Activating the Gateway

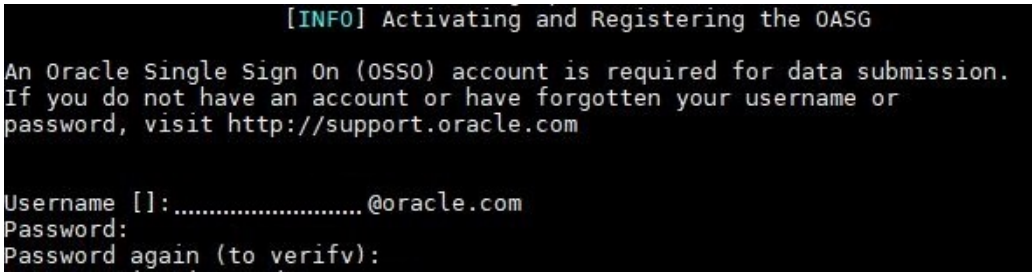
This section provides information about activating the Gateway.

During this activation process, you are guided through a series of prompts to collect the necessary information to activate the Gateway.

1. **You are prompted to register your username and password.**

**Note -** You require an Oracle Single Sign-on account to register.

Enter your user name and password. Confirm the password.




2. **Use the activation code to configure the Gateway.**
Enter your Gateway activation code to configure the Gateway.

The Gateway activation code is provided after you complete the Service Implementation Worksheet (SIW), and is sent by email. Activation codes are Gateway-specific and are generated only for new Gateways. Each new Gateway requires a new activation code.

---

**Tip -** For more information about the Service Implementation Worksheet (SIW), refer to the SIW guide for Platinum Services on the Gateway documentation page.

---

During this activation process, you are guided through a series of prompts to verify the external connections to Oracle.

### 3. Test the VPN connection to Oracle.

The Gateway generates the VPN password and attempts to establish the VPN connection. Typically, if using SSL/VPN, this process should take a few minutes. The Gateway tries continuously until the VPN becomes active. If it fails, the user should determine whether the Gateway is able to communicate with Oracle VPN infrastructure, or test network connectivity.

---

**Note -** If this is an IPSec configuration, this step will fail. To continue this installation, please contact your Oracle representative. For example, contact your Platinum Implementation Engineer using the Platinum Implementation Service Request.

---

When prompted to test the VPN connection, enter **`r`**.

### 4. Create a new user password.

In this step, you change the *custadmin* password from the default value **`install`**.

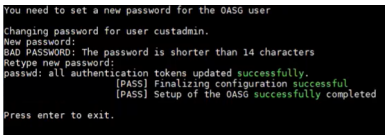
- In the **New Password** field, enter the password associated with the user.

---

**Note -** Ensure the new password is a minimum of 14 characters long.

---

The following screen shot shows the new password prompt:



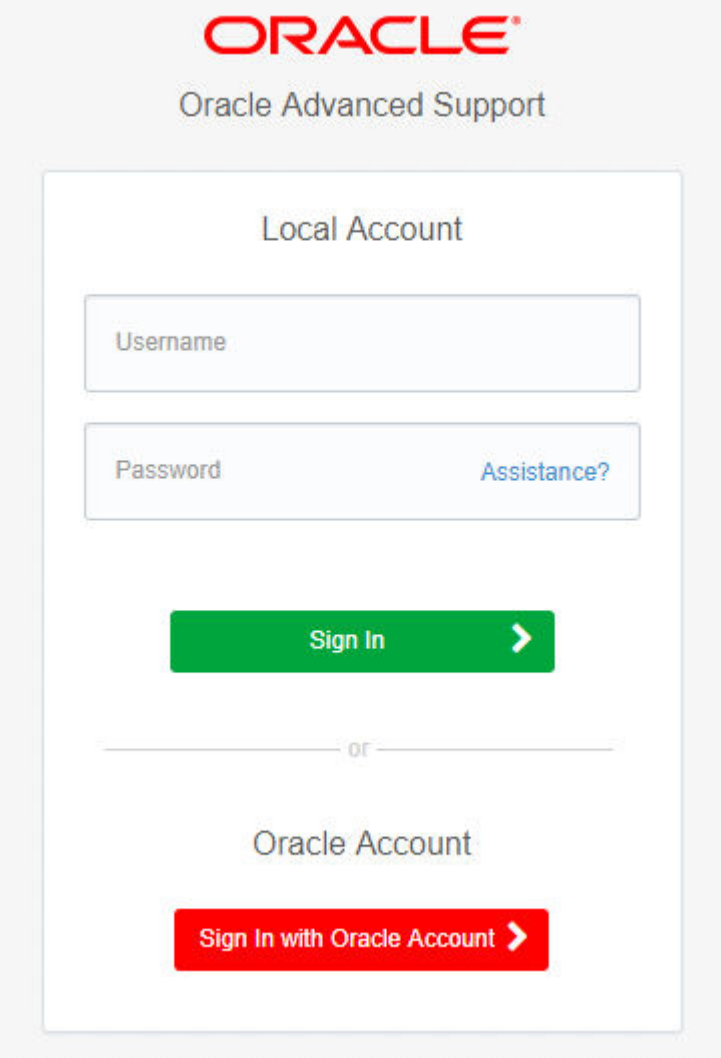

The user input for the gateway installation is complete. The final software configuration is executed in the background.

5. **Access the Gateway user interface (UI).**

   Use a browser to navigate to https://*GATEWAY_IP_ADDRESS* where *GATEWAY_IP_ADDRESS* is the IP address assigned to the physical interface of the Gateway. Where two interfaces are used, you need to reference the internal interface. This is the IP address which communicates internally.

   If the software is still being configured, the following screen shot is displayed. Please navigate to the Gateway UI at a later time when configuration is complete.

If the software has been configured, the Gateway login screen appears.




To log on to the Gateway, use one of the following methods:

- Enter the username and password for your local account and click **Sign In**, *or*
- Click **Sign In with Oracle Account** to be logged in using your Oracle login account

**Note -** In order to access the Gateway, your Web browser must be able to log in to `http://www.oracle.com` to enable access to the Gateway user interface (UI) using your Oracle Single Sign-on (SSO) authentication.

Then, perform the following tasks:

- Navigate to https://*GATEWAY_IP_ADDRESS* where *GATEWAY_IP_ADDRESS* is the IP address assigned to the physical interface of the Gateway. Where two interfaces are used, you need to reference the internal interface. This is the IP address which will communicate internally.
- Log on to the portal. Use the customer administrator account configured at installation time (see the *Gateway user account* in "Collect Registration Information" on page 18) or any other user with the customer administrator role.

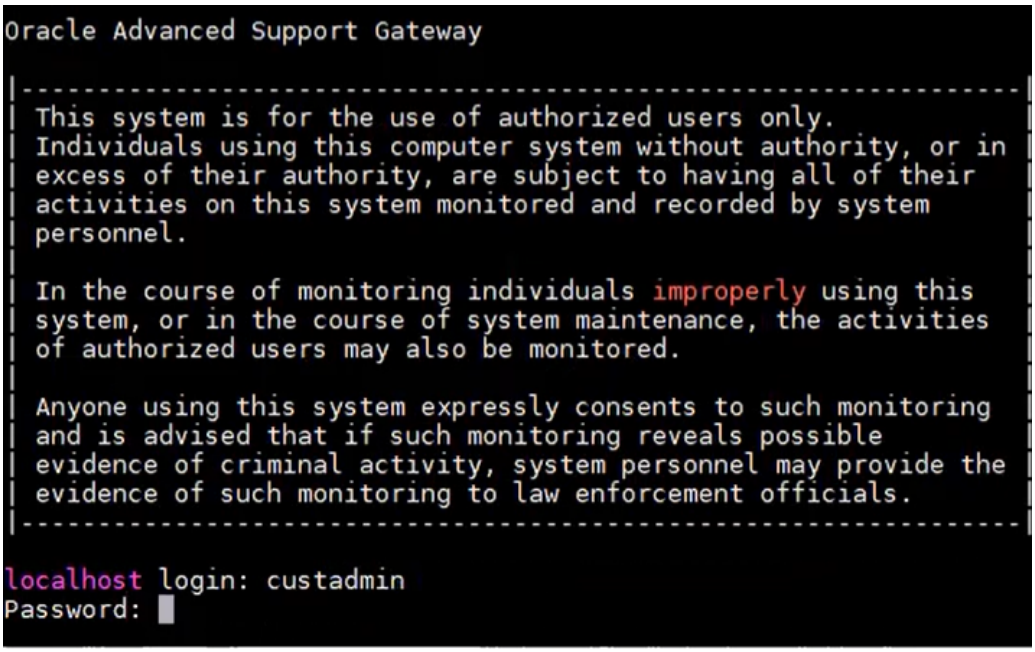
The All Services page appears.

# ▼ Replacing an Existing Gateway and Migrating Its Data

During this portion of the installation process, you are guided through a series of questions to collect the necessary information to use this Gateway to replace an existing one and to migrate its data. You will need console access to complete the following steps.

1. **Reboot the server as instructed in the previous section.**

The login screen appears.




2. **Log in using the default administrator account:**

   - Login: **`custadmin`**
   - Password: **`install`**

Upon successful login, a screen displaying a message asking whether you wish to migrate an existing Gateway appears (*OASG* means Oracle Advanced Support Gateway).

3. **Select one of the following options:**

- Enter **y** to use this Gateway to replace an existing Gateway and migrate its data. Continue with the next step.

  The script executes a migration script on the system which automates the process. It first uses saved information to restore the Gateway's network configuration, and then completely restores the rest of the Gateway, including the activation phase.
- Enter **n** to set up a new gateway. Refer to "Registering the Gateway With Oracle" on page 22.

---

**Note -** Enter **?** for a complete list of options and symbols.

---

# Deploying the Gateway on Oracle Cloud Infrastructure

This section applies to deployment of the Gateway on Oracle Cloud Infrastructure (OCI.)

To deploy the Gateway on OCI, review the following multi-step process:

- “System Requirements for Cloud Deployment” on page 45
- “Customer Requirements for Deploying the Gateway on Oracle Cloud Infrastructure” on page 46
- “Configuring the Gateway on Oracle Cloud Infrastructure” on page 50.

To review the requirements for installing the Gateway in an on-premises Gateway configuration, see “Review Host System Requirements for On-Premises Installation” on page 11.

## System Requirements for Cloud Deployment

The server must meet the minimum host system requirements for Advanced Support Gateway deployment on Oracle Cloud Infrastructure shown in the following table:

| Category | Cloud (Oracle Cloud Infrastructure) Recommended | Additional Details |
|---|---|---|
| CPU | 4 OCPU | |
| Memory | 60 GB<br>**Note -** This corresponds to *VM.Standard2.4*. For more information on this VM shape, see this document. | The recommended configuration supports up to eight (8) full-rack Oracle Engineered Systems (or equivalent products.)<br><br>The minimum configuration is acceptable for a small installation that provides service for one (1) or (2) full rack Oracle Engineered Systems (or equivalent products.) |
| Storage | 1 TB minimum, 2 TB recommended. | |

| Category | Cloud (Oracle Cloud Infrastructure) Recommended | Additional Details |
|---|---|---|
| Network | 1 logical interface. Firewall ports opened. | Refer to Oracle Advanced Support Gateway Security Guide for details of the specific port and firewall requirements for the gateway to function properly. |

# Customer Requirements for Deploying the Gateway on Oracle Cloud Infrastructure

Before setting up the Gateway to connect to and monitor your assets on Oracle Cloud Infrastructure (OCI), you will need to consider which of the following deployment scenarios best applies to your network configuration. Each customer has a unique network topology, specific security requirements, particular access control policies, and so on. Consequently, Oracle needs to understand prior to deployment what specific information is required from the customer based on their configuration requirements.

**Note -** Deployment of the Gateway on Oracle Cloud Infrastructure (OCI) is not supported for Platinum Services.


- "Scenario 1: Deploying the Gateway Using Shared Services on a Customer-Managed Network" on page 46
- "Scenario 2: Deploying the Gateway Using Shared Services on an Oracle-Managed Network" on page 47
- "Scenario 3: Deploying the Gateway on a Wholly Customer-Managed Network" on page 49


## Scenario 1: Deploying the Gateway Using Shared Services on a Customer-Managed Network

This deployment scenario is defined as follows:

**TABLE 2** Deploying the Gateway Using Shared Services on a Customer-Managed Network

| | |
|---|---|
| **Gateway location**: | Customer tenant |
| **Gateway compartment**: | Shared services |

| | |
|---|---|
| **Network managed by**: | Customer |
| **VCN location**: | Customer compartment |
| **Customer compartment**: | Shared services compartment |

## ▼ Scenario 1 Deployment Requirements

Make sure you meet the following requirements for successfully deploying the gateway in this scenario:

1. **Import the gateway image to the customer tenant using the instructions provided below.**
2. **Allocate a new compartment for Oracle shared services (if this step is not already completed.)**
3. **Create a new subnet in the customer VCN in the shared services compartment where the gateway will reside (/29 will suffice.)**
4. **Configure the customer VCN to allow traffic to the specified addresses by generating a security list based on the firewall requirements listed in Oracle Advanced Support Gateway Security Guide.**
5. **Set up an internet gateway or NAT gateway to allow traffic to the internet on the customer VCN.**

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**Note -** If you opt to use a NAT gateway, Oracle assumes that the customer is responsible for building and activating the gateway up to the point when SSLVPN is connected.

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6. **Generate a route table incorporating rules pointing the required traffic to the internet on the customer VCN.**
7. **(Optional) Set up a local peering gateway and establish a peering connection if the customer has assets in a separate VCN.**

# Scenario 2: Deploying the Gateway Using Shared Services on an Oracle-Managed Network

This deployment scenario is defined as follows:

**TABLE 3** Deploying the Gateway Using Shared Services on an Oracle-Managed Network

| | |
|---|---|
| **Gateway location**: | Customer tenant |
| **Gateway compartment**: | Shared services |
| **Network managed by**: | Oracle |
| **VCN location**: | Shared services compartment |
| **Gateway subnet location**: | Shared services compartment |
| **Location of customer subnet(s)**: | Customer compartment(s) |

## ▼ Scenario 2 Deployment Requirements

Make sure you meet the following requirements for successfully deploying the gateway in this scenario:

1. **Import the gateway image to the customer tenant using the instructions provided below.**
2. **Allocate a new compartment for Oracle shared services (if this step is not already completed.)**
3. **Create a new subnet in the shared services VCN where the gateway will reside (/29 will suffice.)**
4. **Place customer assets in other subnets on the shared services VCN and/or in the customer 's own VCN.**
5. **Configure the customer VCN to allow traffic to the specified addresses by generating a security list based on the firewall requirements listed in Oracle Advanced Support Gateway Security Guide.**
6. **Set up an internet gateway or NAT gateway to allow traffic to the internet on the customer VCN.**

**Note -** If you opt to use a NAT gateway, Oracle assumes that the customer is responsible for building and activating the gateway up to the point when SSLVPN is connected.

7. **Generate a route table incorporating rules pointing the required traffic to the internet on the customer VCN.**

8. **(Optional) Set up a local peering gateway and establish a peering connection if the customer has assets in their own VCN.**

# Scenario 3: Deploying the Gateway on a Wholly Customer-Managed Network

This deployment scenario is defined as follows:

**TABLE 4** Deploying the Gateway on a Wholly Customer-Managed Network

| | |
|---|---|
| **Gateway location**: | Customer tenant |
| **Gateway compartment**: | Provided by the customer |
| **Network managed by**: | Customer |
| **VCN location**: | Customer compartment |
| **Gateway subnet location**: | Customer compartment |

## ▼ Scenario 3 Deployment Requirements

Make sure you meet the following requirements for successfully deploying the gateway in this scenario:

1. **Import the gateway image to the customer tenant using the instructions provided below.**

2. **Create a new subnet in the customer compartment where the gateway will reside (/29 will suffice.)**

3. **Configure the customer VCN to allow traffic to the specified addresses by generating a security list based on the firewall requirements listed in Oracle Advanced Support Gateway Security Guide.**

4. **Set up an internet gateway or NAT gateway to allow traffic to the internet on the customer VCN.**

**Note -** If you opt to use a NAT gateway, Oracle assumes that the customer is responsible for building and activating the gateway up to the point when SSLVPN is connected.

5. **Generate a route table incorporating rules pointing the required traffic to the internet on the customer VCN.**

6. **(Optional) Set up a local peering gateway and establish a peering connection if the customer has assets in a separate VCN.**

# Configuring the Gateway on Oracle Cloud Infrastructure

This section provides instructions on setting up the Gateway on Oracle Cloud Infrastructure (OCI). The configuration procedure consists of the following sequential tasks:


- "Import the Gateway Custom Image" on page 50
- "Create the OCI Compartment Where the Gateway Will Reside" on page 51
- "Create the VCN" on page 52
- "Create the Subnet" on page 53
- "Create an Internet Gateway to Allow Traffic to the Internet" on page 54
- "Update the Default Route Table for the VCN" on page 55
- "Update the Default Security List for the VCN" on page 56
- "Create a New Compute Instance Using the Gateway Custom Image" on page 57
- "Connect to the Gateway Web Portal" on page 58


## ▼ Import the Gateway Custom Image

Follow this procedure to import the gateway custom image from Oracle using the URL provided. By importing the image in this way, you copy the required *.vmdk* image directly from the Oracle OCI tenant using a secure URL created by Oracle in OCI.

**Tip -** The URL is in a format look similar to the following: *https://objectstorage.us-phoenix-1.oraclecloud.com/p/gnoqkwdxaVhUTJ1KB5-p6kZD5BHzqtADVZfYFdMOawY/n/oracleacs/b/newoasgbucket/o/GW11.1.1-985-b288.UEFI-UEK4.vmdk.*

To import the custom image using the OCI console, perform the following steps in the OCI web user interface:

1. **Open the navigation menu.**

   Under **Core Infrastructure**, go to **Compute** and click **Custom Images**.

   **Note -** For more information, refer to the relevant OCI documentation here.

2. **Click Import Image.**

3. **Select the compartment name you want to import the image to.**

4. **Enter a name for the image.**

5. **Specify the Object Storage URL where the image is stored. You need to specify the pre-authenticated request URL provided.**

6. **Select the image format, .*vmdk*.**

7. **Select EMULATED MODE.**

8. **Ignore the other fields (there is no requirement to add tags.)**

9. **Click Import Image.**

   Once you click **Import Image**, you'll see the imported image in the **Custom Images** list for the compartment, with a status of **IMPORTING**. Once the import completes successfully, the status will change to **AVAILABLE**. If the status does not change, or no entry appears in the **Custom Images** list, the import failed. If the import failed, make sure you have read access to the Object Storage object, and that the object contains a supported image.

# ▼ Create the OCI Compartment Where the Gateway Will Reside

(Optional) Follow this procedure to create the OCI compartment where the gateway will reside.

**Note -** This procedure may not be required for certain customers. For example, customers may opt to use an existing compartment rather than create a new instance.

To create the OCI compartment, perform the following steps in the OCI web user interface:

1. **Open the navigation menu.**

   Under **Governance and Administration**, go to **Identity** and click **Compartments**.

**Note -** For more information, refer to the relevant OCI documentation here.

2. **Click Create Compartment.**

3. **Enter the following:**

   **Name**: Enter a name for the gateway compartment.

   **Description**: Enter a description (required), for example: "Compartment for deploying the gateway".

4. **Click Create Compartment.**

   Your compartment is displayed in the list.

5. **Switch to your new compartment by selecting it from the Compartment list on the left side of the Console.**

## Create the VCN

(Optional) Follow this procedure to create the VCN.

**Note -** This procedure may not be required for certain customers. For example, customers may opt to use an existing VCN rather than create a new instance.

To create the OCI VCN, perform the following steps in the OCI web user interface:

1. **Open the navigation menu.**

   Under **Networking**, go to **Virtual Cloud Networks**.

**Note -** For more information, refer to the relevant OCI documentation here.

2. **Click Create Virtual Cloud Network.**

3. **Enter the following:**

   **Name**: Enter a name for your cloud network. Avoid entering confidential information.

   **Create in Compartment**: This field defaults to your current compartment. Select the compartment you want to create the VCN in, if not already selected.

   Select **Create Virtual Cloud Network Only**.

**Specify the CIDR block**.

**Note -** The selected CIDR block must not overlap with any of your customer's networks.

**Leave the remaining options alone**.

4. **Select Create Virtual Cloud Network.**
   A confirmation page displays the details of the cloud network that you just created.

# Create the Subnet

(Optional) Follow this procedure to create the subnet. This procedure follows from "Create the VCN" on page 52.

**Note -** This procedure may not be required for certain customers. For example, customers may opt to use an existing subnet rather than create a new instance.

To create the OCI subnet, perform the following steps in the OCI web user interface:

1. **While viewing the VCN, click Create Subnet.**

**Note -** For more information, refer to the relevant OCI documentation here.

2. **Enter the following:**
   **Name**: Enter a name for the gateway VCN subnet. The name doesn't have to be unique, and it cannot be changed later in the Console (but you can change it with the API). Avoid entering confidential information.
   **Regional or Availability Domain-Specific**: Select **Regional** (recommended), which means the subnet spans all availability domains in the region. Later when you launch an instance, you can create it in any availability domain in the region.
   **CIDR Block**: A single, contiguous CIDR block within the VCN's CIDR block. For example: *172.16.0.0/24*. You cannot change this value later.
   **Route Table**: Select the default route table.
   **Private or public subnet**: Select **Public Subnet**, which means instances in the subnet can optionally have public IP addresses.
   **Use DNS Hostnames in this Subnet**:This option is available only if you provided a DNS label for the VCN during creation. If you want this subnet's instances to have DNS hostnames (which

can be used with the built-in DNS capability in the VCN), select the check box for **Use DNS Hostnames in this Subnet**. Then you may specify a DNS label for the subnet, or the Console will generate one for you. The dialog box will automatically display the corresponding DNS Domain Name for the subnet.

**DHCP Options**: Select the default set of DHCP options.

**Security Lists**: Make sure the default security list is selected (the default).

**Tags**: Leave as is. You can add tags later if you want.

3. **Click Create Subnet.**

   Your compartment is then created and displayed on the **Subnets** page.

# ▼ Create an Internet Gateway to Allow Traffic to the Internet

(Optional) Follow this procedure to create an internet gateway to allow traffic to the internet.

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**Note -** This procedure may not be required for certain customers. Some customers may opt to use a NAT gateway instead (but there can then be no inbound connectivity from the Internet until SSLVPN is connected.)

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To create the internet gateway, perform the following steps in the your new compartment:

1. **While viewing the VCN, under Resources, click Internet Gateways.**

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**Note -** For more information, refer to the relevant OCI documentation here.

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2. **Click Create Internet Gateway.**

3. **Enter the following:**

   **Name**: Enter a name for the internet gateway. The name doesn't have to be unique, and it cannot be changed later in the Console (but you can change it with the API). Avoid entering confidential information.

   **Create in Compartment**: Leave as is.

   **Tags**: Leave as is. You can add tags later if you want.

4. **Click Create Internet Gateway.**

Your compartment is then created and displayed on the **Internet Gateways** page. It's already enabled, but you must add a route rule that allows traffic to flow to the gateway.

# ▼ Update the Default Route Table for the VCN

Follow this procedure to update the default route table for the VCN to direct traffic to:

- Other subnets containing customer assets;
- The internet.

The default route table starts out with no rules. In this procedure you add a rule that routes all traffic destined for addresses outside the VCN to the internet gateway. The existence of this rule also enables inbound connections to come from the internet to the subnet, through the internet gateway. You use security list rules to control the types of traffic that are allowed in and out of the instances in the subnet (see the next task).

No route rule is required in order to route traffic within the VCN itself.

To update the default route table for the VCN, perform the following steps in the your new compartment:

1. **While viewing the VCN, under Resources, click Route Tables.**

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**Note -** For more information, refer to the relevant OCI documentation here.

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2. **Click Add Route.**

3. **Enter the following:**

   **Target Type**: Internet Gateway.

   **Destination CIDR block**: *0.0.0.0/0* (which means that all non-intra-VCN traffic that is not already covered by other rules in the route table goes to the target specified in this rule.)

   **Compartment**: The compartment where the internet gateway is located.

   **Target**: The internet gateway you created.

4. **Click Add Route Rule.**

   The default route table now has a rule for the internet gateway. Because the subnet was set up to use the default route table, the resources in the subnet can now use the internet gateway. The next step is to specify the types of traffic you want to allow in and out of the instances you later create in the subnet.

# Update the Default Security List for the VCN

Follow this procedure to update the default security list for the VCN to allow necessary traffic.

Earlier you set up the subnet to use the VCN's default security list. Now you add security list rules that allow the types of connections that the instances in the VCN will need.

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**Note -** Some customers may wish to explicitly allow only the protocols/ports listed in Oracle Advanced Support Gateway Security Guide.

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To update the default security list for the VCN, perform the following steps in the your new compartment:

1. **While viewing the VCN, under Resources, click Security Lists.**

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**Note -** For more information, refer to the relevant OCI documentation here.

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2. **Click the default security list to view its details. By default, you land on the Ingress Rules page.**

3. **Click Add Ingress Rule.**

4. **To enable inbound connections for HTTPS (TCP port 443), enter the following:**

   **Stateless**: Unselected (this is a stateful rule.)

   **Source Type**: *CIDR*.

   **Source CIDR**: 0.0.0.0/0

   **IP Protocol**: TCP

   **Source Port Range**: All

   **Destination Port Range**: 443

5. **Click Add Ingress Rule.**

6. **Use the above steps to add a stateful ingress rule for any subnets with customer assets for the protocols/ports listed in Oracle Advanced Support Gateway Security Guide.**

7. **Add a stateful ingress rule for Oracle's JumpGate Host for TCP Ports 22 and 443.**

# Create a New Compute Instance Using the Gateway Custom Image

Follow this procedure to create a new compute instance using the Gateway custom image.

To create a new compute instance using the Gateway custom image, perform the following steps in the OCI web user interface:

1. **Open the navigation menu.**

   Under **Core Infrastructure**, go to **Compute** and click **Instances**. Choose the Compartment you require for the gateway and then click **Create Instance**.

   **Note -** For more information, refer to the relevant OCI documentation here.

2. **Specify the resources.**

   In the **Create Compute Instance** dialog box, you specify the resources to use for your instance. By default, your instance launches in the current compartment, and the resources you choose also come from the current compartment.

   In the **Create Compute Instance** dialog box, specify the following:

   - **Name your instance**: The name for the instance. You can add or change the name later. The name doesn't need to be unique; an Oracle Cloud Identifier (OCID) uniquely identifies the instance.
   - **Select an availability domain for your instance**: Select an Availability Domain based on current AD usage in your tenancy.
   - **Choose an operating system or image source**: The source of the image to use for booting the instance. When you click Change Image Source, the Browse All Images dialog box opens with the operating system or image source options.

     Choose **Custom Images**, then **Select your image**, and choose the image from the saved location.
   - **Choose instance type**: Select **Virtual Machine**.
   - **Choose instance shape**: Choose the instance shape based on the standard gateway requirements (VM.Standard2.4.)

     See “Minimum System Requirements” on page 12 for more information about the gateway requirements.
   - **Configure boot volume**: Select the default.
   - **Add SSH key**: Do not choose an SSH key.
   - **Configure networking**: The network details for the instance. In this section, you configure the following:

- **Virtual Cloud Network Compartment**: The compartment containing the network in which to create the instance.
- **Virtual Cloud Network**: The VCN created for the gateway.
- **Subnet Compartment**: The subnet compartment created for the gateway.
- **Subnet**: The subnet created for the gateway.

- **Show Advanced Options**: Advanced networking and management options.
  - On the **Networking** tab, select **Private IP Address**.

    Choose a private IP address for the gateway from the subnet (this will be the static IP of the Gateway used for monitoring.)
  - On the **Networking** tab, select **Assign public IP address:**.

3. **Click Create.**

   After the instance is provisioned, details about it appear in the instance list. To view additional details, including public and private IP addresses, click the instance name.

# Connect to the Gateway Web Portal

Once the Gateway instance is up and running, you can see its public and private IP addresses in the OCI web console as outlined in the previous section.

Follow this procedure to obtain the IP address of the gateway and connect to the gateway web portal. The IP address you use (public/private) depends on whether you are connecting from the internet or somewhere within the customer's OCI tenant.

To connect to the gateway web portal:

1. **Open the navigation menu.**

   Under **Core Infrastructure**, go to **Compute** and click **Instances**.

**Note -** For more information, refer to the relevant OCI documentation here.

2. **Select your gateway instance.**

   The *custadmin* section of the Gateway installation has already been completed.

3. **Navigate to the IP address of the gateway (in the format https://<IP address>) to complete the Gateway activation and software installation.**

   See “Installing and Activating the Gateway” on page 21.