Multihoming on OpenManage Enterprise 3.3.1

Abstract

This white paper describes the multihoming implementation for OpenManage Enterprise 3.3.1.

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Revisions

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Executive summary

OpenManage Enterprise provides for centralized management and monitoring of IT hardware resources. For a given target device such as a server or chassis, this is accomplished by connecting to the out of band service processor of the target over the network. Access control and security concerns make it advisable that you segregate the service processor or management network from other networks, particularly from corporate or externally accessible networks.

To address this issue, OpenManage Enterprise 3.3.1 enables you to add multiple network interfaces that allow for the configuration of a more secure management network. Transitioning from one to many network interfaces presents other problems for appliance access and device management. A greater level of security is required for the external-facing network interface. Also, static routing is necessary to enable access to routable networks on the secondary interface.

This document describes configuration options for OpenManage Enterprise 3.3.1 that enable multihoming and the current limitations of these options.

1 Addition of the secondary network interface

All OpenManage Enterprise-supported hypervisors allow the addition of multiple network interfaces to a given virtual machine. Prior to OpenManage Enterprise version 3.3.1, only one network interface was supported, and all managed devices were connected to this network or routable to the same. In version 3.3.1 you can provide a secondary interface that allows for a segregated management network. Configuration of the secondary network at the hypervisor level varies depending on the type of implementation that is involved, VMware, Hyper-V, and KVM, for example, and is beyond the scope of this document. OpenManage Enterprise 3.3.1 does allow for the inclusion of multiple additional network interfaces, but the only supported configuration is one primary interface and one secondary interface.

To check that the appliance recognizes a secondary interface added to the hypervisor, do the following:

1. Log in to the Text User Interface (TUI) hypervisor console.
2. Select the **Set Networking Parameters** menu option.
3. Select the new network interface.
4. Configure the new network interface as necessary.

Sometimes, addition of the secondary interface requires that you shut down the appliance, add the interface, and restart the appliance. This is typical for an appliance that has been upgraded from versions lower than 3.1.

When doing a fresh installation of OpenManage Enterprise 3.3.1, it is recommended that you bring up the appliance and configure it initially with a single network interface as the primary or public facing interface. After initial configuration, add the secondary interface for your managed network.

2   Configuration using the TUI

The Text User Interface (TUI) is used for configuring OpenManage Enterprise. Access it through the hypervisor console. Two new items have been added to the main menu for multihoming: **Select Primary Network Interface** and **Configure Static Routes**.
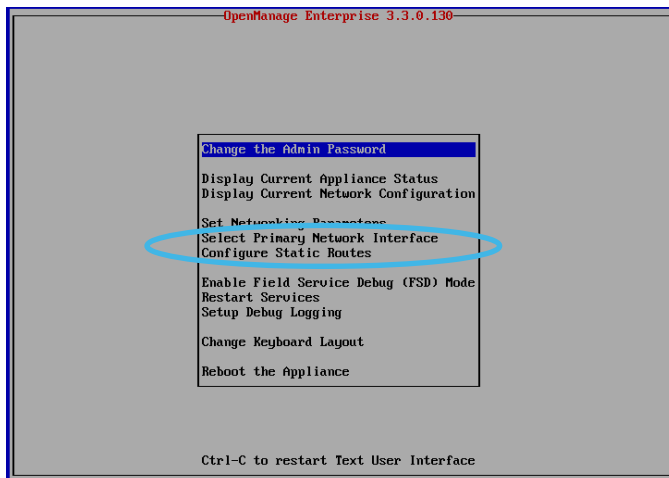

Figure 1   Accessing the TUI

2.1   Select a Primary Network Interface

The primary interface is expected to be the public facing interface that allows for corporate network and Internet connectivity. Primary interface selection also gives priority to the selected interface in terms of routing. In other words, the primary interface owns the default route and has routing priority in the event of ambiguity. Different firewall rules are applied to the primary interface as well, which allow for tighter access control such as UI access restriction by IP range. The secondary interface has full access to the appliance but may require a static route be defined for connectivity.

2.2   Routing

An appliance with a single network interface has no need for static routes, since the only interface owns the default route. All requests for which a specific route cannot be determined are sent on the default route. For example, consider an appliance with an IP address of 100.10.10.70/24 and a gateway address of 100.10.10.1. If a request is made to a system on another network, 110.11.11.8 for instance, the system consults its routing table and attempt to derive the appropriate route. If no route is found, it uses the default route and the request is forwarded to the gateway at 100.10.10.1.

When a second network interface is added, the primary interface will own the default route. Expanding on the example above, assume the appliance has a secondary interface with an IP address of 173.10.1.33 on subnet 173.10.1.0/24. To discover and manage a system on subnet 173.10.3.0/24 that is only routable on the secondary network, a static route must be provided. In this case, the static route 173.10.3.0/24 to 173.10.1.1 is added, directing traffic for 173.10.3.0/24 to the router at 173.10.1.1. Without this additional route, the appliance would direct network traffic intended for this subnet to the default route, and systems on the 173.10.3.0/24 network would be unreachable. This example is illustrated below.
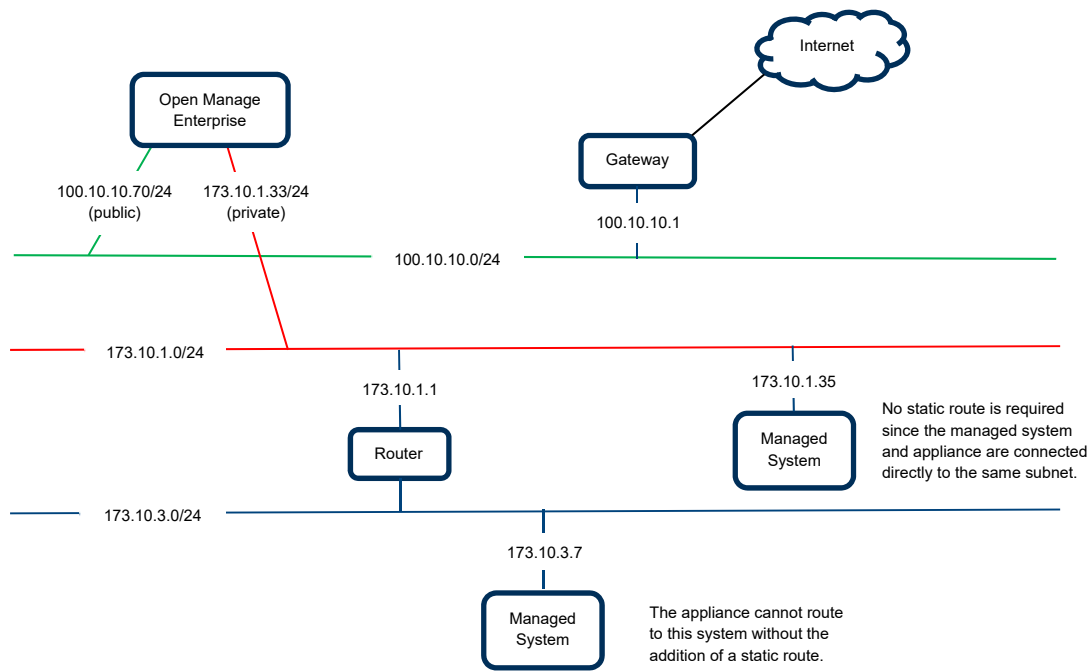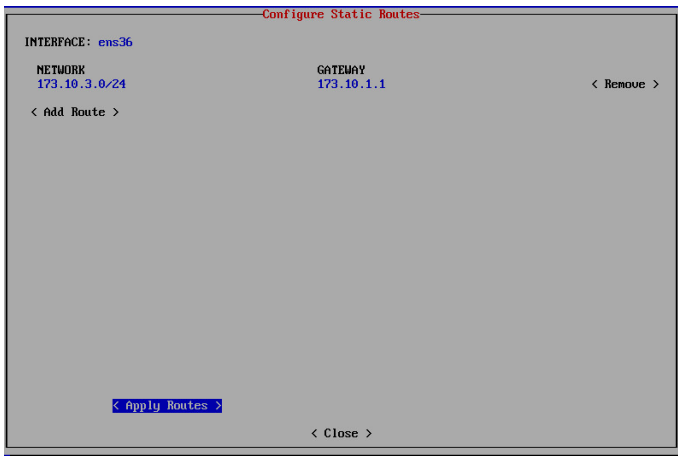
Figure 2   Multihomed Appliance

Figure 3   Configure Static Routes window

To add a static route, do the following:

1. Select **Configure Static Routes** from the TUI menu.
2. Select the interface to which the routes should be applied.

    The configure static routes dialog box is displayed.

3. Enter the **NETWORK** address in CIDR format.
4. Enter the **GATEWAY** address, then select **Apply Routes**.

To remove a static route, highlight the **Remove** option beside the route to be removed and press enter. After removing routes, select **Apply Routes** to apply the new settings.

2.2.1   Routing limitations

OpenManage Enterprise 3.3.1 supports both IPv4 and IPv6 static routes. The maximum number of static routes that can be assigned to a single interface is 20.

3   DNS configuration and restrictions

DNS configuration is only available on the primary network interface. To achieve DNS resolution on the secondary network, all host names must be resolvable by the DNS server provided on the primary interface. This is due to a limitation in the Linux DNS resolver.

A Technical support and resources

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Manuals and Documents for OpenManage Enterprise 3.3.1