

Oracle® Enterprise Manager Ops Center

Oracle Enterprise Manager Ops Center Creating and Managing Network Domains

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This guide provides an end-to-end example for how to use Oracle Enterprise Manager Ops Center.

Introduction

A network domain is a container for managed networks and handles the relationship between the physical fabrics that support the networks and the virtualization hosts or server pools that use the networks. The fabrics provide network resources such as links and IP subnets to the network domain. Within the network domain, networks that have been discovered or specified are available for assignment. These are called public networks. Their network resources have been defined. Another type of network is dynamic, that is, the network is created when it is needed, using an IP address space available to the network domain. Because they exist only for a specific purpose and only within a specific network domain, they are called private networks.

A fabric can be a member of more than one network domain. A network domain must be supported by at least one fabric. The type of fabric defines the capabilities of networks in the network domain. To use virtual datacenters, the network domain provides private networks to the server pool. For dynamic private networks, include a fully-managed fabric or a host-managed fabric in the network domain. To use existing public networks for a virtual datacenter, you must add each network to the network domain, making it a static private network. These networks are for the exclusive use of that network domain. Because existing public networks already have an IP subnet addresses and VLAN IDs or partition keys, they are static and cannot be assigned or attached to any other object.

The Oracle Enterprise Manager Ops Center software always has a Default Network Domain and all public networks are members of it. If you have upgraded your product software, the existing managed networks are now in the Default Network Domain. A new public network becomes a member of the default network domain. If you direct the new network to a user-defined network domain, the network is also a member of that network domain. Like the default network domain, a user-defined network domain provides network resources to a server pool or virtualization host.

In this document, you create a new network domain that supports virtual datacenters.

See [Related Articles and Resources](#) for links to related information and articles.

What You Will Need

To create a network domain that supports a virtual datacenter, you need either a fully-managed fabric or a host-managed fabric to provide its network resources.

To see the available fabrics, expand Networks in the Assets pane. Select Fabrics. For each fabric, the Dashboard in the center pane includes a Management Capability field.

If you do not have a fully-managed fabric or a host-managed fabric, you can change an unmanaged Ethernet fabric to a host-managed fabric, using the Manage Ethernet Fabric action to assign a name and VLAN IDs.

Hardware and Software Configuration

Although the network domain is providing the networks to the server pools, this is a logical association using VLAN IDs or partition keys. To use the network resources, each physical server that supports the virtualization hosts in the server pool must have a physical connection to each fabric in the network domain.

Creating a User-Defined Network Domain

- [Create a New Network Domain](#)
- [Associating a Network Domain with a Server Pool](#)

Create a New Network Domain

This task defines the new network domain and includes the fabrics that support its networks.

1. Expand Networks in the Navigation pane.
2. In the Standard Views, select Networks.
The Default Network Domain is selected.
3. Click Create Network Domain in the Actions pane.
4. In the Identify Network Domain pane, enter the name and description of the network domain. You can also add tags.

Identify Network Domain * Indicates Required Field

Specify the name, description, tags, physical fabric, and maximum number of networks for the network domain. Ops Center will automatically assign P-keys/VLAN IDs for the selected physical fabric.

* Domain Name:

Description:

Tags: Search

Tag Name	Value
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5. In the Add Fabrics step, choose at least one fully-managed fabric or a host-managed fabric.

Add Fabrics

The network domain is implemented upon a set of fully and unmanaged switched fabrics. The public and private networks will be drawn from this set (and specified in later steps). Including at least one fully managed or host managed fabric here will enable private networks to be created dynamically upon demand. If such a fabric is not included then private networks must be drawn from existing managed networks.

Fabric Name	Management Capability
PHYSICAL INFINIBAND fabric - 6	Fully Managed

Networks associated with Fabric

Networks

- NORM-192.168.0.0
- NORM-192.168.1.0
- NORM-192.168.2.0
- NORM-192.168.3.0

- In this step, you set the maximum number of dynamic private networks in use simultaneously. A new private network uses an IP address from the pool of available IP addresses in the network domain. To exclude IP addresses that your organization is using for other purposes, specify them in the Reserved IP addresses. These addresses will not be available to dynamic private networks.

It is not possible to decrease the number of networks in a network domain but you can increase it. Enter a low number.

Specify Dynamic Private Networks

* Indicates Required Field

Specify the resources Ops Center uses to dynamically and autonomously create private networks on this managed network domain. Resources include the fabric that will carry the networks, limit on number of networks that can be created and any IP address spaces that should not be used.

* Fabric Name:

Network Creation Limit:

Reserved IP Address Ranges

+ ×

From IP Address	To IP Address

- In the Associate Networks step, you can add existing networks to the new network domain.

Associate Networks

A network domain consists of fabrics that carry networks and which can be used to create new networks as well as existing networks that are already known to the system. The associate networks step allows the selection of just those existing networks which are required to be part of the domain. The table lists all the existing networks on the fabrics selected in step 2. Use the associate tick box to choose which of these are included in the domain.

Network Name	Network Address	Associate
Fabric Name: PHYSICAL INFINIBAND fabric - 6 (4 Items)		
NORM-192.168.0.0		<input checked="" type="checkbox"/>
NORM-192.168.1.0		<input type="checkbox"/>
NORM-192.168.2.0		<input type="checkbox"/>
NORM-192.168.3.0		<input checked="" type="checkbox"/>

8. Review and click Finish.

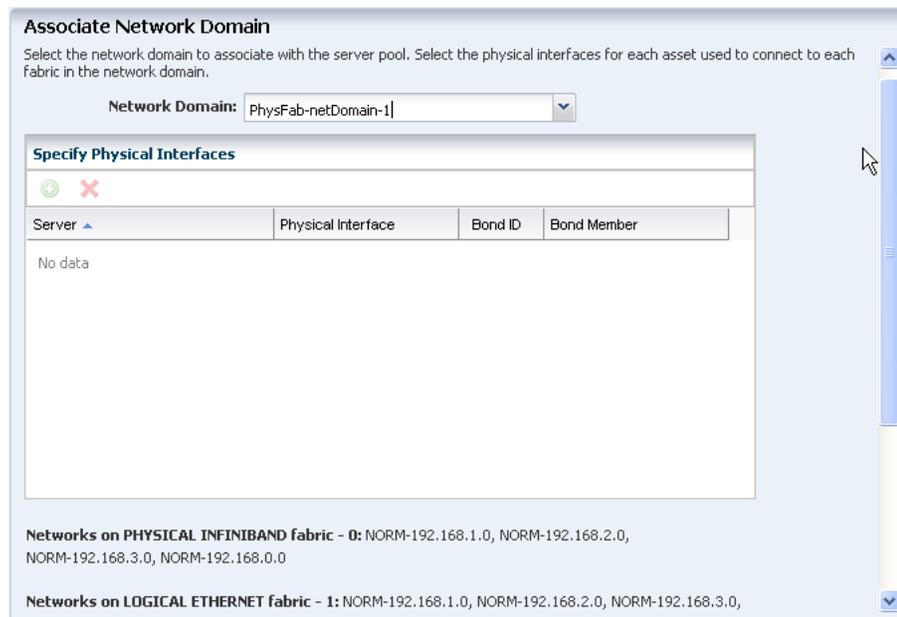
When the job is completed, the new network domain is listed in the Navigation pane.

Associating a Network Domain with a Server Pool

1. Expand Networks in the Navigation pane.
2. Select the server pool.
3. Click Associate Network Domain in the Actions pane.
4. Select a network domain from the drop-down list.



5. When you select a network domain, the Specify Physical Interfaces table is displayed with each server in the server pool. For each one, select its physical interface to the fabric in the network domain.



6. If the physical interface is an IPMP group or a link aggregation, specify the name and the member that the server uses.
7. Review the summary and click Finish.

When the job is completed, the server pool is associated with the network domain and, through the network domain, its fabrics.

What's Next?

If a virtual datacenter that relies on this network domain is unable to create vnets, you can increase the limit of private networks it can provide simultaneously.

If your organization uses this network domain for a specific purpose, for example, to support the server pool used exclusively by one department, you can edit the attributes of the network domain to identify this purpose.

Related Articles and Resources

The following chapters in the *Oracle Enterprise Manager Ops Center Features Guide* contain more information:

- [Networks](#)
- [Server Pools](#)
- Procedures for virtualization hosts and virtual datacenters in the [How To library](#)

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