Overview

FlexPod

NetApp
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Overview

This document provides details for configuring a fully redundant, highly available FlexPod Express system. To reflect this redundancy, the components being configured in each step are referred to as either component A or component B. For example, controller A and controller B identify the two NetApp storage controllers that are provisioned in this document. Switch A and switch B identify a pair of Cisco Nexus switches.

In addition, this document describes steps for provisioning multiple Cisco UCS hosts, which are identified sequentially as server A, server B, and so on.

To indicate that you should include information pertinent to your environment in a step, `<<text>>` appears as part of the command structure. See the following example for the `vlan create` command:

```
Controller01> network port vlan create –node <<var_nodeA>> -vlan-name
<<var_vlan-name>>
```

This document enables you to fully configure the FlexPod Express environment. In this process, various steps require you to insert customer-specific naming conventions, IP addresses, and virtual local area network (VLAN) schemes. The following table describes the VLANs required for deployment, as outlined in this guide. This table can be completed based on the specific site variables and used to implement the document configuration steps.

If you use separate in-band and out-of-band management VLANs, you must create a layer- 3 route between them. For this validation, a common management VLAN was used.

VLAN name	VLAN purpose	VLAN ID	
Management VLAN	VLAN for management interfaces	3437	vSwitch0
NFS VLAN	VLAN for NFS traffic	3438	vSwitch0
VMware vMotion VLAN	VLAN designated for the movement of virtual machines (VMs) from one physical host to another	3441	vSwitch0
VM traffic VLAN	VLAN for VM application traffic	3442	vSwitch0
iSCSI-A-VLAN	VLAN for iSCSI traffic on fabric A	3439	iScsiBootvSwitch
iSCSI-B-VLAN	VLAN for iSCSI traffic on fabric B	3440	iScsiBootvSwitch
Native VLAN	VLAN to which untagged frames are assigned	2	

The VLAN numbers are needed throughout the configuration of FlexPod Express. The VLANs are referred to as `<<var_xxxx_vlan>>`, where `xxxx` is the purpose of the VLAN (such as iSCSI-A).

There are two vSwitches created in this validation.

The following table lists the solution vSwitches.

vSwitch name	Active adapters	Ports	MTU	Load balancing
vSwitch0	Vmnic2, vmnic4	default (120)	9000	Route based on IP hash
iScsiBootvSwitch	Vmnic3, vmnic5	default (120)	9000	Route based on the originating virtual port ID.

The IP hash method of load balancing requires proper configuration for the underlying physical switch using SRC-DST-IP EtherChannel with a static (mode on) port-channel. In the event of intermittent connectivity due to possible switch misconfiguration, temporarily shut down one of the two associated uplink ports on the Cisco switch to restore communication to the ESXi management vmkernel port while troubleshooting the port-channel settings.

The following table lists the VMware VMs that are created.

VM description	Host name
VMware vCenter Server	FlexPod-VCSA
Virtual Storage Console	FlexPod-VSC