



Avaya Virtualization Provisioning Service (VPS) 1.1 Release Notes

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Issue 2

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Introduction

Purpose

This document provides procedures for deploying and using the Avaya Virtualization Provisioning Service (VPS). This document includes:

- What's new in VPS r1.1
- General Release Notes including changes & Bug Fixes (Including GRIPs)
- Supported operating systems, hardware requirements and browser clients
- Known issues and limitations

Intended Audience

The primary audience for this document is anyone who is involved with deployment & upgrade of Avaya VPS r1.1. The audience includes, but is not limited to, implementation engineers, field technicians, business partners, solution providers, and customers. This document does not include optional or customized aspects of a configuration.

Avaya Virtualization Provisioning Service (VPS)

The Avaya Virtualization Provisioning Service is a management tool that automatically synchronizes the network to react to changes in the compute environment - increasing IT efficiency, reducing time to service and ensuring consistent application performance - in a highly dynamic, virtualized data center environment.

Highlights of VPS:

- Automates service provisioning within the data center
- Provides insight into the entire Virtual Machine (VM) lifecycle from activation, to mobility, to deletion
- Gives an end-to-end view of the virtualized data center including applications, servers and network devices across both physical and virtual environments
- Provisions network devices to “follow” VMs as they migrate between servers
- Applies connectivity services and port profiles (QoS, ACLs) to edge devices at an individual VM level
- Provides historical reporting and tracking on VM moves and network provisioning
- Enables network and server teams to work more efficiently and smarter together

Terminology

Term	Description
Appliance	A single hardware server that can contain one or more virtual machines.
Avaya Application	A software solution developed by Avaya that includes a guest operating system. This may be provided on an appliance/blade/server.
COM	Configuration and Orchestration Manager
DRS	Distributed Resource Scheduler. VMware feature to intelligently place workloads based on available resources.
HA	High Availability. VMware High Availability is for failover of ESXi hosts. Since the entire host fails over, it might involve several applications or VMs.
Migration	A migration consists of a specific subset of upgrades you perform when you move a customer from one product to another. Migration may also require the customer to obtain new hardware.
OVA	Single-file version of an OVF
OVF	Open Virtualization Format
SMGR	System Manager
SSH	Secure Shell Protocol
Upgrade	The process of taking a product from one release to a higher release.
vAppliance	A VMware based hypervisor supporting a single software Application, where the hypervisor is VMware ESXi. It supports a single virtual machine running the single virtualized software Application instance, such as CM and the guest OS.
vApplication	A logical entity comprising one or more virtual machines, which uses the industry standard Open Virtualization Format (OVF) to specify and encapsulate all components of a multi-tier Application as well as the operational policies and service levels associated with it. The vApplication is sometimes referred to as a vApp. For example, the first single virtualized software Application instance may include Avaya Communication Manager (CM) and the guest OS, and a second single virtualized software Application instance may include Session Manager (SM) and the guest OS.
vCenter	vCenter is an administrative interface from VMware for the entire virtual infrastructure or datacenter, including VMs, ESXi hosts, deployment profiles, distributed virtual networking, hardware monitoring, etc.
VM	Virtual Machine
vMotion	A VMware feature that allows moving of a workload to another compute resource without losing connectivity.
VMware Fault Tolerance (FT)	A VMware feature that provides for automatic and non-service-affecting failover when the primary compute resource (host) fails.
VMware High Availability (HA)	A high availability feature of VMware's vCenter that restarts an application on another host automatically if the original host system fails.
VPS	Virtualization Provisioning Service

Server and Client Requirements

The following table displays the hardware and software requirements for the Avaya VPS.

Hardware:

Following hardware/VM configuration is recommended for COM-VPS primary server setup.

HW Component	Critical	Minimum	Recommended
CPU	Quad-core 2GHz	Quad-core 2GHz	Quad-core 2GHz
Memory	6 GB	8 GB	10 GB
Free Disk Space	80 GB	80 GB	100 GB

In case of Virtual Machine, COM-VPS requires ESXi 5.0 or later. Support for ESXi 4.x is now discontinued.

Operating System:

Operating system	Version
Windows	Windows 2008 R2 Server (available only as 64-bit OS)
Linux	64-bit RHEL v5.6 / v5.7

Client Requirements

Browser	Version
Internet Explorer (IE)	Versions 8, 9 and 10
Firefox (FF)	Versions 19, 20 and 21

Avaya Virtualization Provisioning Service (VPS) Release Notes

Release Content

VPS r1.1 is a Service Pack which contains:

❖ **Device support for:**

- ERS 4500/4800 v5.6.3 and v5.7
- ERS 5500/5600 v6.2.7, v6.3.1, and v6.6
- VSP 7000 v10.2.1, v10.3, and v10.3.1
- VSP 4000 v3.0.1 and v3.1
- VSP 9000 v4.0

❖ **Platform upgrade**

- COM & VPS has been migrated to the Aura Systems Manager (v6.3) platform from the UCM platform
- New platform uses JBoss 6.1.0 (old one was using JBoss 4.2.3).
- VPS 1.1 is a 64-bit application (older versions of VPS were 32-bit).

❖ **Vmware vSphere 5.5 Updates**

VmWare Components	Supported Version
Vmware VCenter Server	5.0x, 5.1, 5.5
Hypervisor – ESXi	5.0x, 5.1, 5.5

Support for ESX 4.x & ESXi 4.x is now discontinued.

❖ **New Features**

- Enhancements to support VMware Events:
 - Support for handling Port Group Events
 - Changes to Standard Switch and Distributed Switch are reported in VPS.
- COM & VPS is now available as a VMware Appliance (OVA) [SMGR Primary Server mode only]

Issues Resolved in this release

Customer Defects		
ID	SR ID	Summary
wi01130374	1-4352693457-ZF	Resize column in Inventory View affects size of another column
wi01130377	1-4551349788-ZF	VPS1.0.3-loading prompt does not display when applying filter in Inventory View
wi01133444	1-4551349891-ZF	VPS-main window does not display all datacenters
wi01133474	1-4551349663-ZF	VPS1.0.3-Hypervisor Inventory view does not display all rows
wi01135316	1-4551349530-ZF	VPFM1.0.3-Virtual Context does not show all datacenters
wi01110701	1-4551349891-ZF	VPS1.0.2-Device Management takes a long time to open

Customer Enhancements		
ID	WI	Summary
GRIP-12031		VPS displays only IP-Adresses of devices in the different views

Following are the enhancements taken up:

Product Enhancements	
ID	Summary
wi01102780	Provide "Information" in Applied config table for VM to template operation
wi01124623	VPS does not handle profile assignments across network with different STG modes
wi01046276	More meaningful error message required
wi00930992	VPS_Trials: enhancement in VPS to show available VLAN's and ISID's
wi01109519	Unable to manage links in the DUI on VSP9000
wi01102838	VPS fails to configure a VM when a VSP9000 is connected as Edge/Core
wi01102109	Unable to manage multiple MLT's from the Edge device connected to VSP 9000 in the DUI.
wi01102140	Device discovery fails to establish the connectivity between the Edge/Core device and ESXi server.
wi01062951	Provide option to multiple delete profiles, rules
wi01031519	Filter based on OR operation

wi01011470	device management list is empty, because admin account not assigned to the devices
wi00930174	VPS_Trials: enhancement to show VM's, vnics, vSwitches, physical nics and server attached ERS
wi00930170	VPS_Trials: enhancement to show ESX server in COM map
wi01062565	VPS should have the Device Name along with the Switch IP in the Server Information Table
wi01062261	Feedback from PLM(Ravi) - VPS Dashboard Event Monitor lacks real estate and is unusable
wi00899376	RBS for Port group should consider the port group name not just ID

Software Distribution

The Avaya Virtualization Provisioning Service is delivered in two forms:

1. VPS Installer

- Windows 64-bit installer: For Windows 64-bit operating system.

Name	vps-installer-1.1-20140803.234210-37.windows.exe
Checksum	d1b1fef2966f2aa9bf7166b368b3ad3248e4c319 (SHA1SUM)
Size	76 MB

- Linux installer: For Linux 64-bit operating system.

Name	vps-installer-1.1-20140803.234210-37.linux
Checksum	8f4724b4b530ada3dcaa25f34ffd9488a521f8cd (SHA1SUM)
Size	103 MB

2. COM-VPS OVA

The COMVPS Appliance is available as VMware OVA:

Name	COM-3.1-B68-20140811-21.ova
Checksum	88746a389f7f5db4a06dc2928f814a0381d3cb0e (SHA1SUM)

3079905032 2515015680 (cksum)

Size	2.3 GB
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VPS over COM Compatibility Matrix:

VPS Project	COM Project
1.0	2.3.1
1.0.1	2.3.2
1.0.2	3.0.1
1.0.3	3.0.2
1.1	3.1

For more information about the environment in which it can be installed, see [Avaya VPS Server & Client Requirements](#)

Licensing

VPS r1.1 would use the same license as in VPS r1.0.3.

Fresh installation of VPS Release r1.1

Fresh installation of VPS 1.1 requires a license. A trial license (valid usually for one-month) can be obtained either from Avaya Support website (in the Products -> Network Management section) or by sending email to ucmtrial@avaya.com.

Supported Manual Upgrade Scenarios in COM 3.1 / VPS 1.1

The following table shows how existing COM installations can be moved to COM 3.1 / VPS 1.1.

Current installation	Upgraded?	Migrated?	Procedure for Migration
COM 3.0.2 / VPS 1.0.3 Running on 32-bit Windows OS (any supported flavor)	No, this cannot be upgraded	Yes, COM/VPS data needs to be migrated	<i>See the manual migration section for windows</i>
COM 3.0.2 / VPS 1.0.3 Running on 32-bit RHEL (any supported flavor)	No, this cannot be upgraded.	Yes, COM/VPS data needs to be migrated	<i>See the manual migration section for RHEL</i>
COM 3.0.2 / VPS 1.0.3 Running on Windows 2008 R2 OS	Yes, this can be upgraded.	Yes. In case need to install COM 3.1 / VPS 1.1 on a new setup.	<i>See the manual migration section for windows</i>
COM 3.0.2 / VPS 1.0.3 Running on 64-bit RHEL v5.6	Yes, this can be upgraded.	Yes. In case need to install COM 3.1 on a new host.	<i>See the manual migration section for RHEL</i>
VPS 1.0 / 1.0.1 / 1.0.2	No, this cannot be upgraded.	No, data migration is not supported.	<i>N/A</i>

Data migration from existing COM 3.0.2 / VPS 1.0.3 installation

When the older version of COM (r3.0.2 / VPS r1.0.3) exists on a server with 32-bit OS or on a 64-bit OS that is incompatible with COM 3.1 (e.g. 64-bit Windows Server R or 64-bit RHEL 5.4), then there is a need to migrate the UCM/COM/VPS data from the older server to a new installation of COM 3.1 / VPS 1.1. This section explains how this can be done.

The following two scenarios are possible.

- 1) Moving to COM 3.1 / VPS 1.1 from COM 3.0.2 / VPS 1.0.3 running on 32bit OS
- 2) Moving to COM 3.1 / VPS 1.1 from COM 3.0.2 / VPS 1.0.3 running on 64bit OS incompatible with COM 3.1 / VPS 1.1.

Following steps describe the workflow for migrating from older version of COM/VPS to COM 3.1 / VPS 1.1

Pre-requisite: Older version (release COM 3.0.2 / VPS 1.0.3) of COM running as UCM Primary.

Steps for Windows servers:

1. Download the ucm-to-smgr-migration-windows.zip file from the same FTP server from which you downloaded COM 3.1 / VPS 1.1 installer.
 - a. The tool is present in the `/ADStrial/COM-Rel3.1/beta-1/Migration_From_32Bit_UCM_To_SMGR-CS/` folder of the FTP server. Please go through the Readme file present in the zip file, before proceeding further.
2. Back up the data on COM 3.0.2 / VPS 1.0.3.
 - a. Take back up on UCM by running the script `backupDataMigration.bat`.
 - b. Upon successful completion, it will generate a jar file (like `2013-11-06_13.06.jar`) and a zip file (as `JbossQuantumMigration.zip`) in the backups folder of UCM.
3. Install COM 3.1 / VPS 1.1 on a 64-bit Windows 2008 R2.
4. **Obtain new COM 3.1 / VPS 1.1 License and install the license.**
5. Now Copy the backup data jar file to backups folder in SMGR-CS and zip file to the **<install-path>/core/tmp folder on windows.**
6. To restore the data on SMGR-CS, run `restoreDataMigration.bat` present in `<install-path>/bin`.
7. Upon successful completion, login to SMGR-CS and verify if the app is functioning as expected and that the data has been restored from UCM. The default username is "admin" and default password is "admin123" (both without quotes).
8. This completes the data migration from COM 3.0.2 / VPS 1.0.3 on UCM Primary to COM 3.1 / VPS 1.1 on SMGR-CS Primary.

Steps for RHEL servers:

1. Download the `ucm-to-smgr-migration-linux.zip` file from the same FTP server from which you downloaded COM 3.1 / VPS 1.1 installer.

The tool is present in the `/ADStrial/COM-Rel3.1/beta-1/Migration_From_32Bit_UCM_To_SMGR-CS/` folder of the FTP server. Please go through the README file present in the zip file before proceeding further.
2. Please, follow the instructions in it to back up the data on COM 3.0.2 / VPS 1.1.
 - a. Take back up on UCM using **`backupDataMigration.sh`**.
 - b. Upon successful completion, it will generate a jar file (like `2013-11-06_13.06.jar`) and a zip file (as `JbossQuantumMigration.zip`) in the backups folder of UCM.
3. Install COM 3.1 / VPS 1.1 on a 64-bit RHEL v5.6/v5.7 host.
4. **Obtain new COM 3.1 / VPS 1.1 License and install the license.**
5. Now Copy the backup data jar file to backups folder in SMGR-CS and zip file to the **`/tmp`** folder.
6. To restore the data on SMGR-CS, run **`restoreDataMigration.sh`** present in `<install-path>/bin`.
7. Upon successful completion, login to SMGR-CS and verify if the app is functioning as expected and that the data has been restored from UCM. The default username is "admin" and default password is "admin123" (both without quotes).
8. This completes the data migration from COM 3.0.2 / VPS 1.0.3 on UCM Primary to COM 3.1 / VPS 1.1 on SMGR-CS Primary.

Limitations and Known Issues

1. If there are changes to the virtual network topology regarding the ESX/i server, including vSwitch, dvSwitch, and port group configuration, you need to complete the following tasks:
 - a. perform an inventory audit from the VPS Dashboard
 - b. run the vMAC Tool (if applicable)
 - c. perform a Hypervisor Connectivity from the VPS Dashboard
2. The virtual topology data in the VPS database is synchronized with the virtual topology managed by the vCenter using the inventory audit of VPS. The Inventory audit uses an algorithm to populate the Virtual MAC address of the ESX/ESXi server physical adaptor, based on the OUI format (00:50:56:5x:xx:xx). If the vCenter is assigned a different OUI format for the VMACs, then currently the algorithm does not recognize this and the operator has to manually run a tool (VMAC Parser tool) to update the Virtual MAC address of the physical adaptors. The procedure for using this tool is available in the *Avaya Virtualization Provisioning Service Interface Guide* (NN46500–300).
3. When the inventory audit is in progress, all events received by VPS from vCenter are logged only in the audit log.
4. The changes to the device hardware (adding/removing devices from the network, adding/removing units from a stackable) need a COM rediscovery. A COM rediscovery is followed by a device reassignment (manage/unmanage) in VPS.
5. VPS Release 1.1 does not support virtual machine configurations involving vApp.
6. VPS supports the following options of Port Group VLAN IDs:
 - vSwitch Port group

- None (0) — You can define a rule using PortGroup VLAN ID of 0 for this port group.
 - 1-4094 — You can define a rule using the specific VLAN ID as the PortGroup VLAN ID for this port group.
- dvSwitch Port group
 - None — You can define a rule using PortGroup VLAN ID of 0 for this port group.
 - VLAN — You can define a rule using the specific VLAN ID as the PortGroup VLAN ID for this port group
7. VPS, in this release, will not configure the network for EST mode settings. The network administrator must do it manually. If some of the VMs are designated to use EST mode, then the network administrator must manually configure the ports on both source and destination switches.
 8. There is no direct way to export a report to an HTML format using the “export report” feature. However, you can save the report in a HTML format using the “Print Report” feature. For more information, see the *Avaya Virtualization Provisioning Service — Interface* (NN46500–500).
 9. The provisioning of a Traffic profile can fail in the following cases:
 - Failure during apply or unapply (device time out, device or configuration failure on VPS).
 10. The VPS Topology report does not provide details about the following attributes about the Discovery Protocol for the Virtual Switches:
 - Type
 - Status
 - Operation
 11. Refer to *Avaya Virtualization Provisioning Service Fundamentals* (NN46500–100) for information about the vCenter events that VPS manages in release 1.1. Unsupported vCenter events that VPS does not manage can appear in the Dashboard Monitor and report an incorrect status. In some scenarios, VPS records these unsupported event types in the audit log to help the operator troubleshoot the network. Refer to the audit log for correct status information.
 12. A virtual machine migration event has two subevents: pre-notify and post-notify. VPS first handles the pre-notify event, during which the virtual machine being migrated is created at its destination with a newly matched network profile. Next, VPS handles the post-notify event, during which the virtual machine being migrated is deleted from its original location and its existing network profile (the profile that was originally used to create this virtual machine) is unapplied. You can view this information in the Dashboard Monitor. When both the pre-notify and post-notify events are complete, the whole virtual machine migration is complete, as long as there are no errors. In the event of migration errors during the pre- or post-notify events, you must make manual corrections.
 13. If the core device or a BEB is not SPBm supported or is SPBm supported but SPBm is not enabled on the core device, then the link between the edge and the core device is disabled.” to “The Device Management UI shows the link from Edge to Core as disabled when the Core Device in the following cases:
 - a. Device does not support SPBm or is not SPBm capable
 - b. Device is SPBm capable but SPBm is not globally enabled
 14. VPS block the network traffic for a VM when used in EST mode
 15. Topology Report does not have the details about the Discovery Protocol for the Virtual Switches
 16. [LLDP] Event shown as Failed even if 1 NIC is disconnected

- 17. Unused uplink port added to VLAN by VPS
- 18. If one uplink of the 2 is down, VPS shows Failed in Monitor table
- 19. RBS for Port group should consider the port group name not just ID
- 20. VPS Hot Migrate of VM is not being detected by VPS after HA-DRS as a result of Host shutdown / physical failure.

Known Issues

WI	Headline	Workaround
wi01176656	[Auto Upgrade] Error related to Java path reported while trying to upgrade from COM 3.0.2 to COM 3.1	Not Available
wi01160201	Data migration from VPS103 to VPS1.1 does not restore the data in the topology and inventory view	Perform VPS Network Discovery post restore of the data manually.

Miscellaneous Information

General Info

- **Default User ID and Password** for accessing newly installed Aura System Manager based COM is **admin / admin123**
- The landing page of new Aura System Manager based COM/VPS is different from older versions of UCM based COM.

Installing COM / VPS License

- From the Aura System Manager home page, navigate to Services->License
- Click on FlexLM link on the left Navigation. You will see the familiar “License Administration” UI.
- Install FlexLM license

User and Role Management

User management can be done using one of the following menus –

- Aura System Manager home page → Administrators
- COM → Admin → User Management

Roles can be managed using the following menus –

- Aura System Manager home page → Groups & Roles

Device Credentials Management

Device Credentials UI can be accessed using one of the following menus -

- Aura System Manager home page → Elements – Inventory → Device and Server Credentials

COM → Admin → Device Credentials

Recommendations for Improved Network Discovery


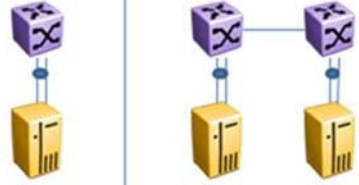
Please refer to the COM Release note as the same is applicable for VPS Network Discovery too.

Supported Deployments

Avaya Virtualization Provisioning Service (VPS) is an application deployed on the Configuration and Orchestration Manager (COM) that you can use to manage data center virtualization. You can use the following deployment recommendations to optimize product operations.

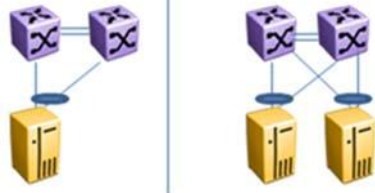
Criteria	Deployment 1	Deployment 2	Deployment 3
Does a COM campus deployment exist?	Yes	Yes	No
How many COM- managed device nodes exist between the campus and the data center?	Fewer than 200 managed devices.	More than 200 managed devices.	N/A
Do you need a separate COM installation for your data center?	No; use the existing COM application to install VPS.	Yes; install a new COM application on a separate server for the VPS application.	Yes

The following table presents the configuration types that VPS 1.0.3 supports.

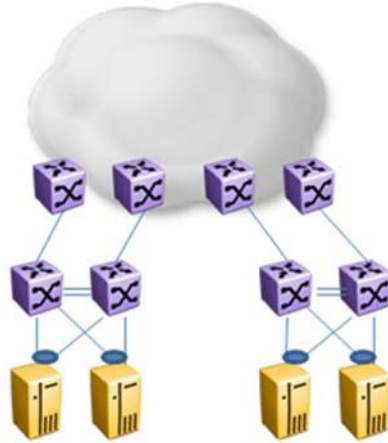
Type	Configuration	Options	Switch types
Non-redundant intra-DC		vSwitch dvSwitch Single link/LAG/ SMLT	TOR: 5xxx EOR: ERS8800, VSP9000
DMLC intra-DC			

Supported network configurations

SMLT intra-DC



SMLT with inter-DC



SPB Dual homing
VLAN spanning
backbone/SMLT

The following figures provide five example of the configurations that VPS supports. These configuration examples are based on the configuration types shown in Table 1.

- Configuration example 1 shows a non-clustered network configuration, in which there is no clustering between network devices. An ESX server is connected to multiple stackable devices.
- Configuration examples 2 and 3 show clustered network configurations, where clustering configured between network devices.
- Configuration example 4 is an example of a network configuration using shortest path bridging MAC (SPBm) devices.
- Configuration example 5 also shows a clustered network.

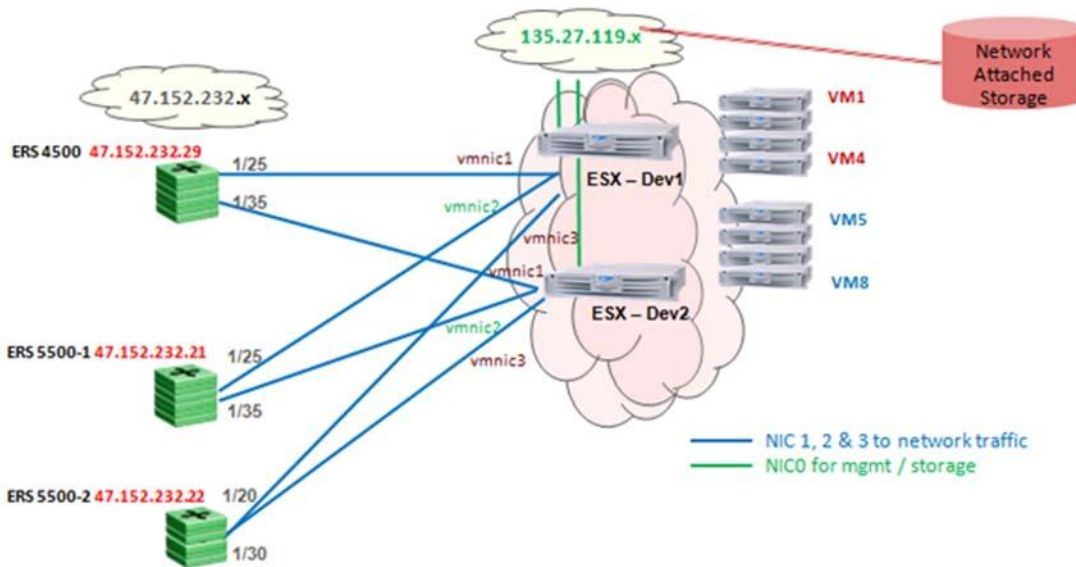


Figure 1: Configuration example 1: non-clustered network configuration

Table 1: Details of configuration example 1

Virtual switch	ESX server	Physical adaptors
vSwitch	esx-dev1 (vSwitch1) esx-dev2 (vSwitch1)	vmnic3 (on both servers)
dvSwitch with multiple PGs	esx-dev1 (dvSwitch1) esx-dev2 (dvSwitch1)	vmnic1 & vmnic2 (on both servers)

Supported network configurations

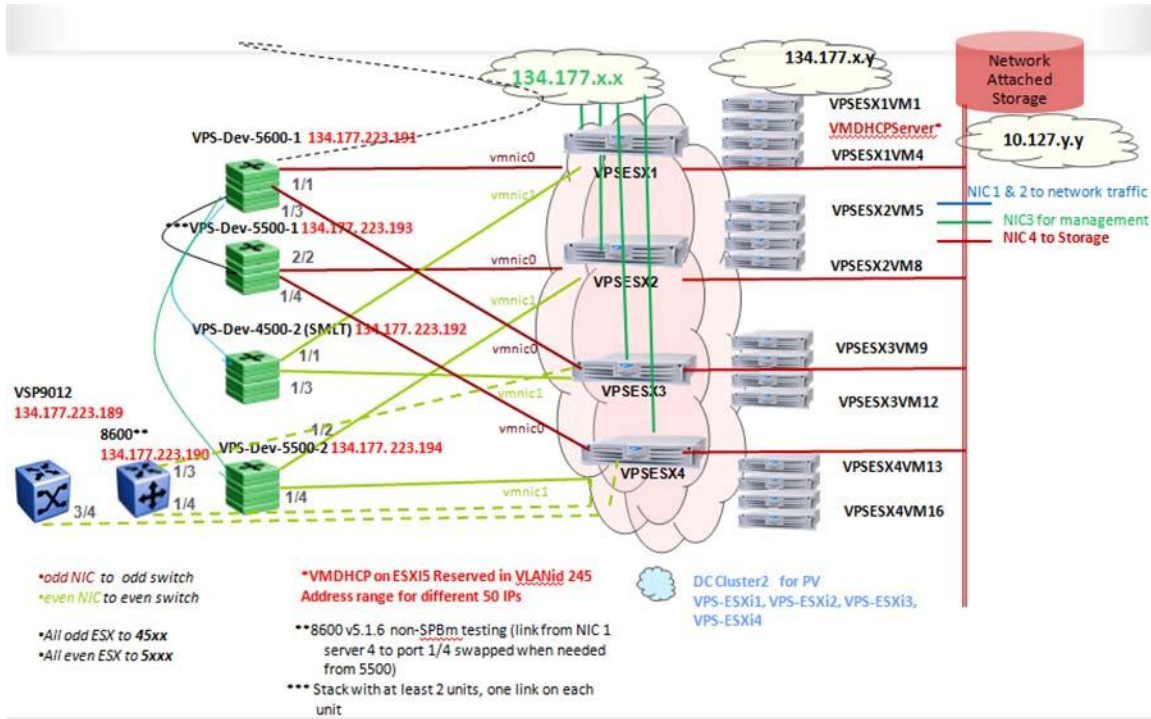


Figure 2: Configuration example 2: clustered network configuration

Table 2: Details of configuration example 2: clustered network configuration

Virtual switch	ESX server	Physical adators	Network topology	Switch IP/port/slot
vSwitch with single/multiple PG	vps-esxi1	vmnic0, vmnic1	Topology1,3 (Topology 2 N/a in vSwitch)	4500-1 134.177.245.15 1/1 4500-2 10.127.245.17 1/1
dvSwitch with multiple PG	vps-esxi2 vps-esxi3	vmnic0, vmnic1 (vps-esxi2), vmnic0 (vps-esxi3)	Topology 1, Topology 3	5500-1 134.177.245.16 1/2 5500-2 134.177.245.18 1/2 4500-1 134.177.245.15 1/3
dvSwitch with multiple PG	vps-esxi3 vps-esxi4	vmnic1 (vps-esxi3) vmnic0 (vps-esxi4)	Topology 2	4500-2 134.177.245.17 1/3 5500-1 134.177.245.16 1/4
vSwitch with single PG	vps-esxi4	vmnic1(vps-esxi4)	Topology1, (2/3 N/a)	5500-2 134.177.245.18 1/4

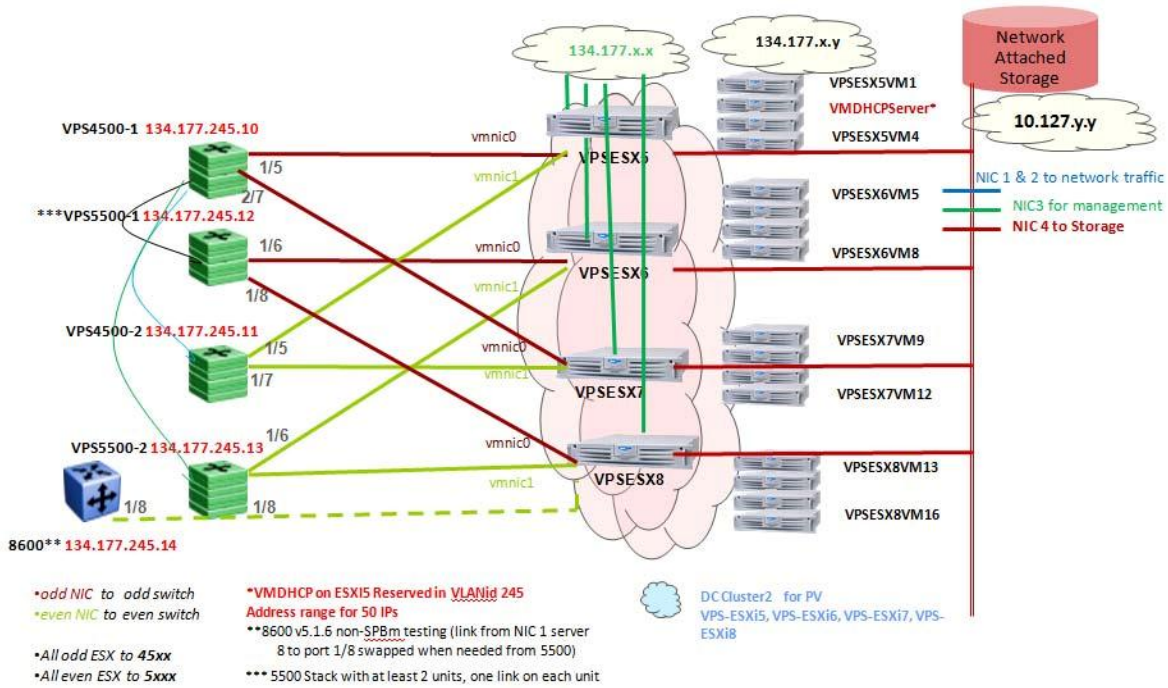


Figure 3: Configuration example 3: clustered network configuration

Table 3: Details of configuration example 3: clustered network configuration

Virtual switch	ESX server	Physical adators	Network topology	Switch IP/port/slot
vSwitch with single/multiple PG	vps-esxi5	vmnic0, vmnic1	Topology1,3 (Topology 2 N/a in vSwitch)	4500-1 134.177.245.10 1/5 4500-2 10.127.245.11 1/5
dvSwitch with multiple PG	vps-esxi6 vps-esxi7	vmnic0, vmnic1 (vps-esxi6), vmnic0 (vps-esxi7)	Topology 1, Topology 3	5500-1 134.177.245.12 1/6 5500-2 134.177.245.13 1/6 4500-1 134.177.245.10 1/7
dvSwitch with multiple PG	vps-esxi7 vps-esxi8	vmnic1 (vps-esxi7) vmnic0 (vps-esxi8)	Topology 2	4500-2 134.177.245.11 1/7 5500-1 134.177.245.12 1/8
vSwitch with single PG	vps-esxi8	vmnic1 (vps-esxi8)	Topology1, (2/3 N/a)	5500-2 134.177.245.13 1/8

Supported network configurations

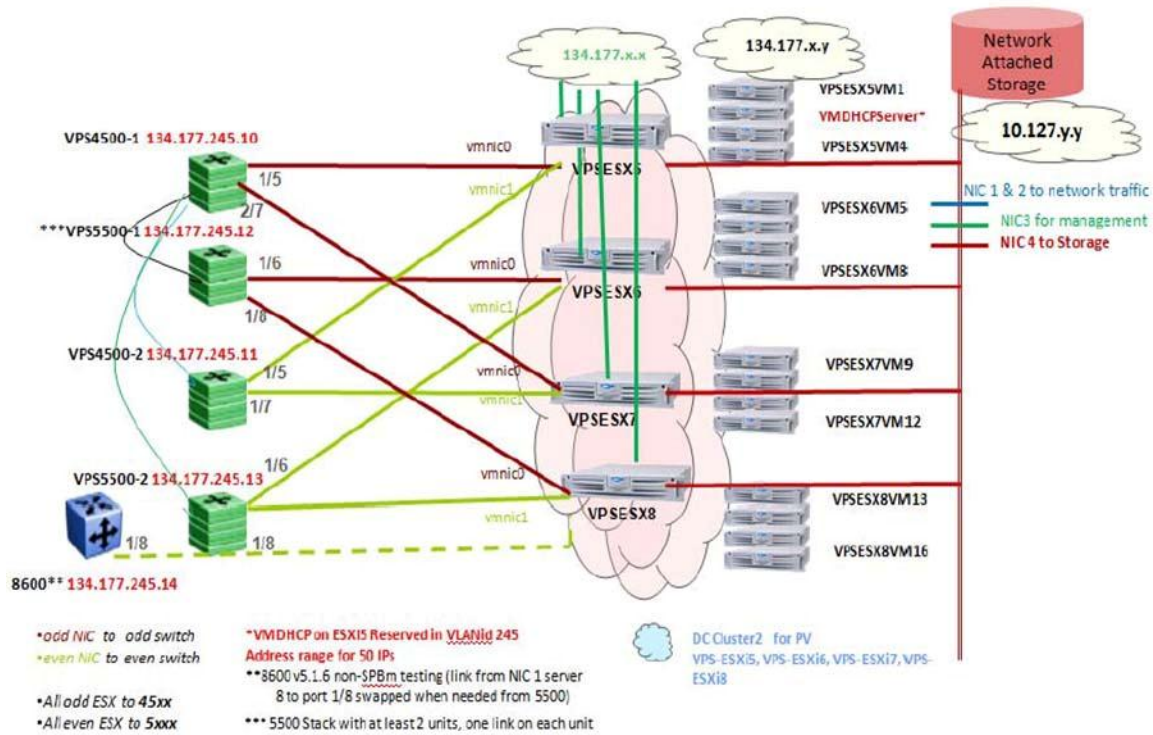


Figure 4: Configuration example 4: configuration with SPBm devices

Table 4: Details of configuration example 4: configuration with SPBm devices

Virtual switch	ESX server	Physical adators	Network topology	Switch IP/port/slot
vSwitch with multiple PG	vps-esxi9 vps-esxi10	vmnic0, vmnic1 (vps-esxi9), vmnic0 (vps-esxi10)	Topology 1, Topology 3	BEB#5 10.127.120.50 1/9 BEB#5 10.127.120.50 2/9 BEB#1 10.127.120.10 1/10
dvSwitch with single PG	vps-esxi10	vmnic1 (vps-esxi10)	Topology1, (2/3 N/a)	5500-2 10.127.120.10 2/10

Supported configurations between Edge and Core (BEB) devices

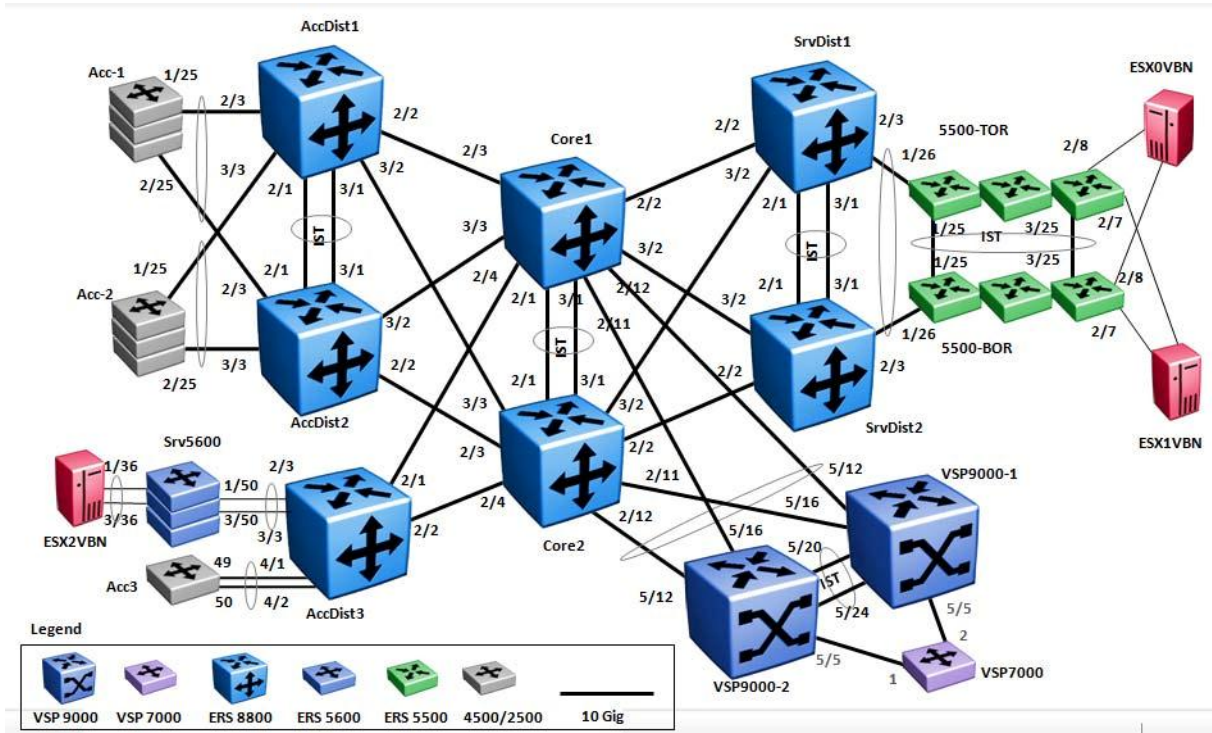


Figure 5: Configuration example 5: clustered network

Supported configurations between Edge and Core (BEB) Devices

The following diagrams show supported configurations between Edge and Core Backbone Edge Bridge (BEB) devices.

Supported network configurations

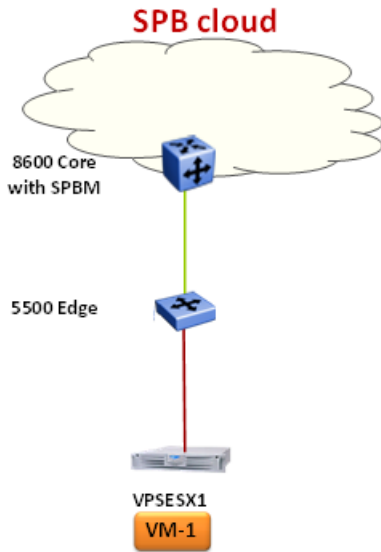


Figure 6: Configuration example 6: Single link between edge and core

Supported configurations between Edge and Core (BEB) devices

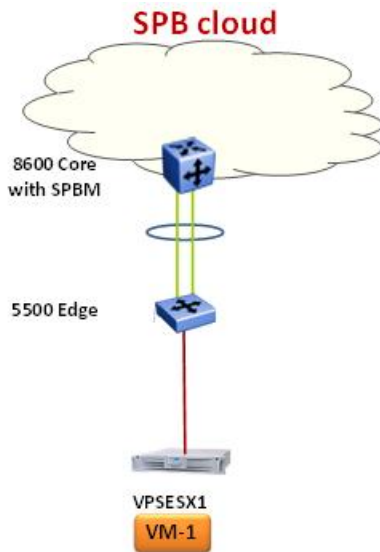
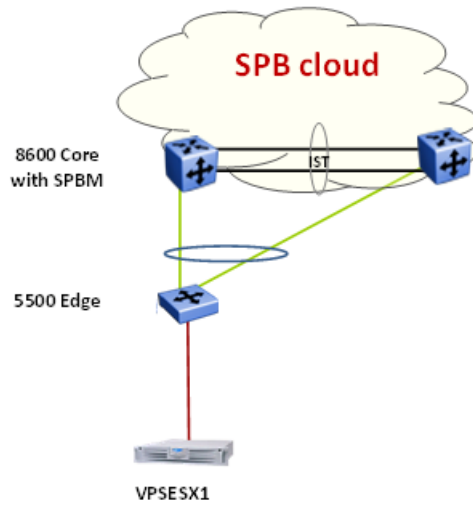


Figure 7: Configuration example 7: Edge and Core MLT

Figure 8: Configuration example 8: Edge-Core Single Link SMLT Dual Home



Supported network configurations

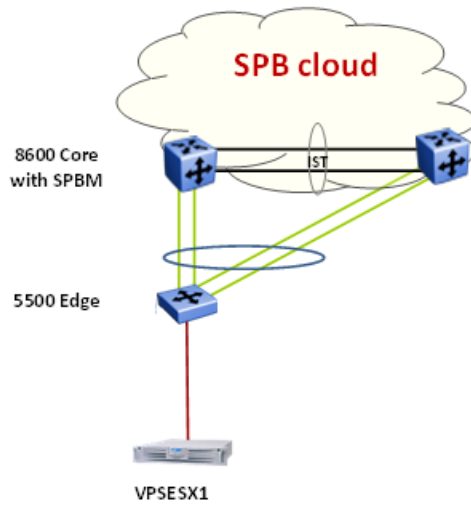


Figure 9: Configuration example 9: Edge-Core SMLT Dual Home

Figure 10: Configuration example 10: TOR Edge-Core SMLT

