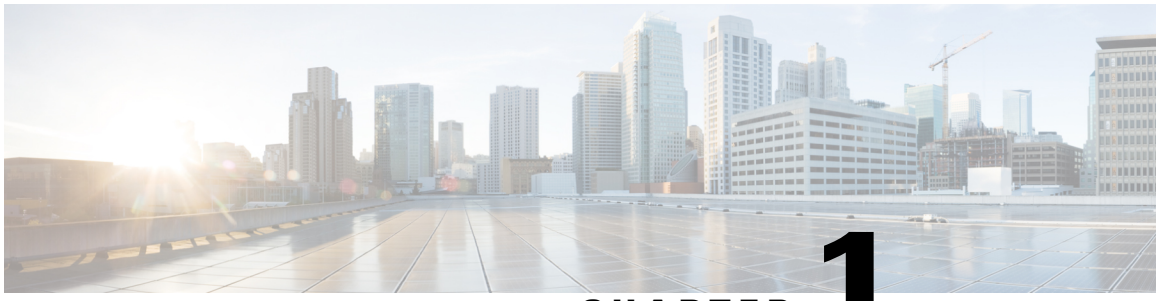
Backup Solution Testing on UCS B-Series Server for Small-Medium Range Customers (Disk to Tape) – Acronis Advanced Backup 11.5

First Published: September 25, 2014

Last Modified: October 07, 2014

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883



CHAPTER 1

Backup Solution Testing

Overview

This program (Backup Testing - Backup to Disk and Replicate to Tape/Acronis Cloud) validates data backup from the Windows and Linux operating systems on the Cisco UCS environment and the backup data stored in the HP StoreEver LTO-5 Ultrium 3280, HP StoreEver LTO-6 Ultrium 6650, HP StoreEver LTO-6 Ultrium 6250 SAS External Tape Drives and Acronis Cloud. The objective of Backup Testing is to verify the Backup and Restore of Data, Entire Disks of Linux RHEL/SLES, Full Virtual machines, P2V, LVM, ASZ by the backup software (Acronis Backup Software Advanced Edition) with the data repository models, which are covered in the features Tested section.

Acronyms

Acronym	Description
10GbE	10 Gigabit Ethernet
ABR	Acronis Backup and Recovery
AES	Advanced Encryption Standards
AMS	Acronis Management System
ASN	Acronis Storage Node
ASZ	Acronis Secure Zone
CNA	Converged Network Adapter
HDD	Hard Disk Drive
JOS	Japanese Operating System
LVM	Logical Volume Manager
MS	Microsoft

Acronym	Description
OS	Operating System
P2V	Physical To Virtual
PCI	Peripheral Component Interface
PCIe	Peripheral Component Interface Express
RAID	Redundant Array of Independent Disks
RHEL	Red Hat Enterprise Linux
SLES	SUSE Linux Enterprise Server
UCS	Unified Computing System
UCSM	Unified Computing System Manager
VIC	Virtual Interface Card
VM	Virtual Machine
XFS	Extended File System

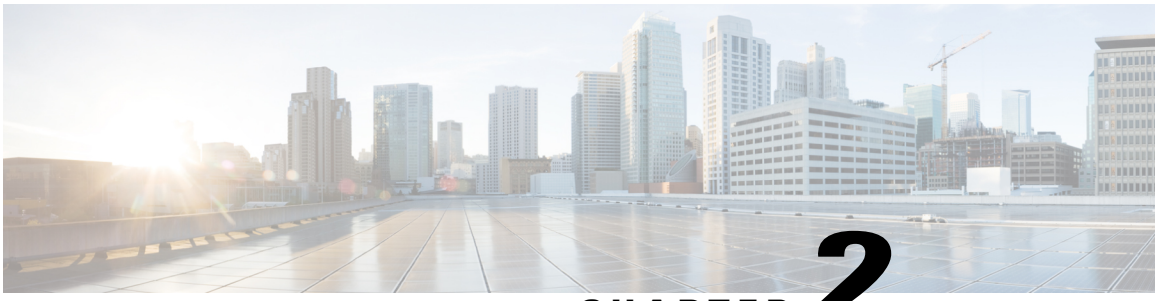
Backup Testing Strategy

The requirements gathered for Backup Testing (Backup to Disk and Replicate to Tape/Acronis Cloud) are specific to the Japanese usage and market.

The following requirements are derived based on the inputs and prioritization given by Cisco Japan Solution Engineers:

- Virtual Machines are available on ESXi 5.5, which is installed in the Cisco UCS B Series Servers(B200 M3, B22 M3, B260 M4)
- Japanese SUSE Linux Enterprise Server 11.3 installed directly on the Cisco UCS B Series Server(B200 M3, B22 M3, B260 M4) for Disaster Recovery
- Japanese RHEL 6.5 (x64) installed directly on the Cisco UCS B Series Server(B200 M3, B22 M3, B260 M4) for Disaster Recovery
- Acronis Backup & Recovery 11.5 Update 5 Advanced Version is used as Backup software.
- Acronis Backup & Recovery 11.5 Advanced Version installed on top of the Windows Server 2012 R2 Japanese Operating System, which is installed on the local HDD of C Series Server. The Server also acts as AMS (Acronis Management Server)
- Backup server is connected to HP StoreEver LTO-5 Ultrium 3280, HP StoreEver LTO-6 Ultrium 6650 , HP StoreEver LTO-6 Ultrium 6250 SAS External Tape Drive by SAS connectivity using External LSI 9286 CV-8e MegaRAID Controller Card.
- The internal RAID controller used on Cisco UCS C Series Server is LSI 9271 MegaRAID Controller Card.

- Backup data is stored in C Series Server local disk and then Replicated to HP StoreEver LTO-5 Ultrium 3280, HP StoreEver LTO-6 Ultrium 6650 , HP StoreEver LTO-6 Ultrium 6250 SAS External Tape Drives using Acronis Advanced Backup & Recovery 11.5 .
- Backup the Full Virtual Machines from the ESXi 5.5 Server which is installed on UCS B Series server(B200 M3, B22 M3, B260 M4). Virtual Machines are installed with Windows 7 , Linux Operating System RHEL 6.5 .
- Data backup from the Windows 7 and RHEL 6.5 Japanese Operating Systems that are installed as Virtual machines. Data files include Microsoft Excel, Microsoft Word and PDF of size 500 MB.
- Select files from Windows or Linux operating system and schedule a backup job from AMS (Acronis Management Server) to the managed Backup server.
- Backup job is done from Windows/Linux Operating systems to Disk location(1st location) and replicate it to Acronis Cloud(2nd Location).



CHAPTER 2

Test Topology and Environment Matrix

Test Topology

Figure 1: Topology in Use

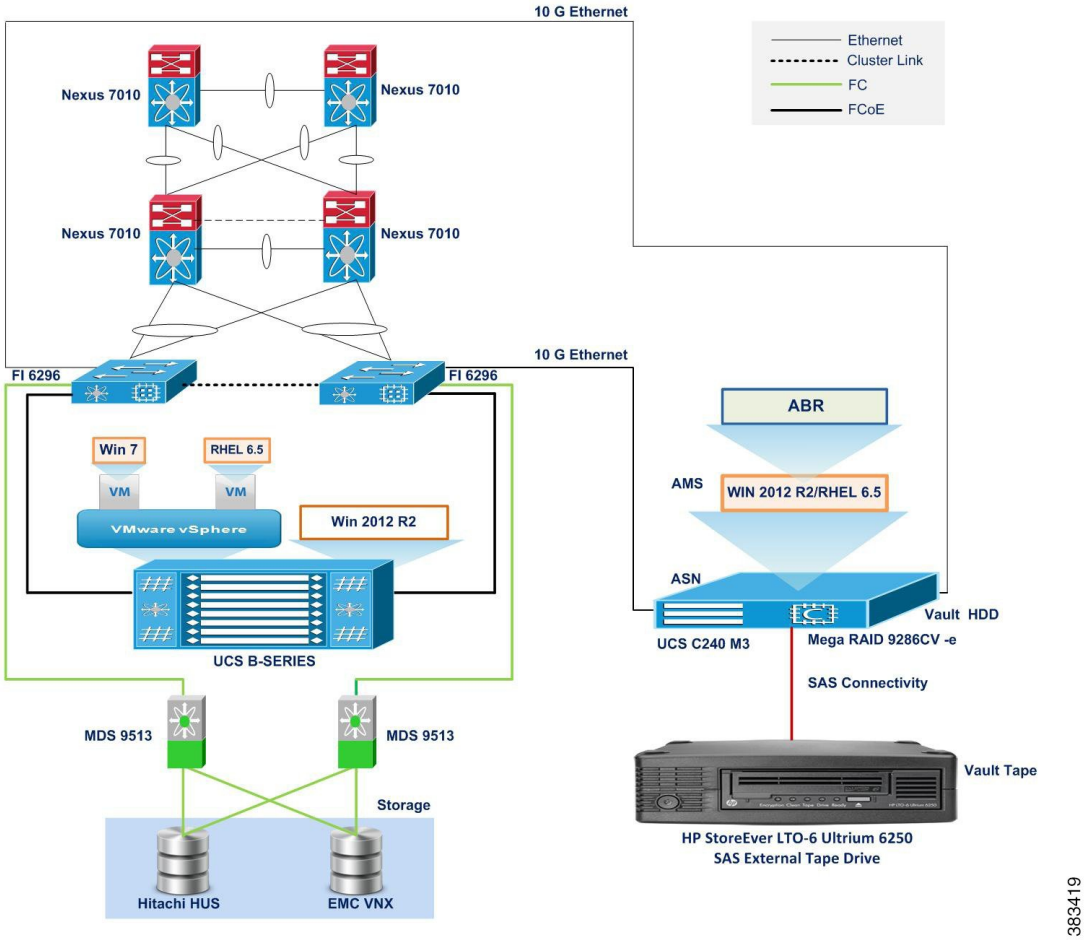


Figure 2: Topology in Use

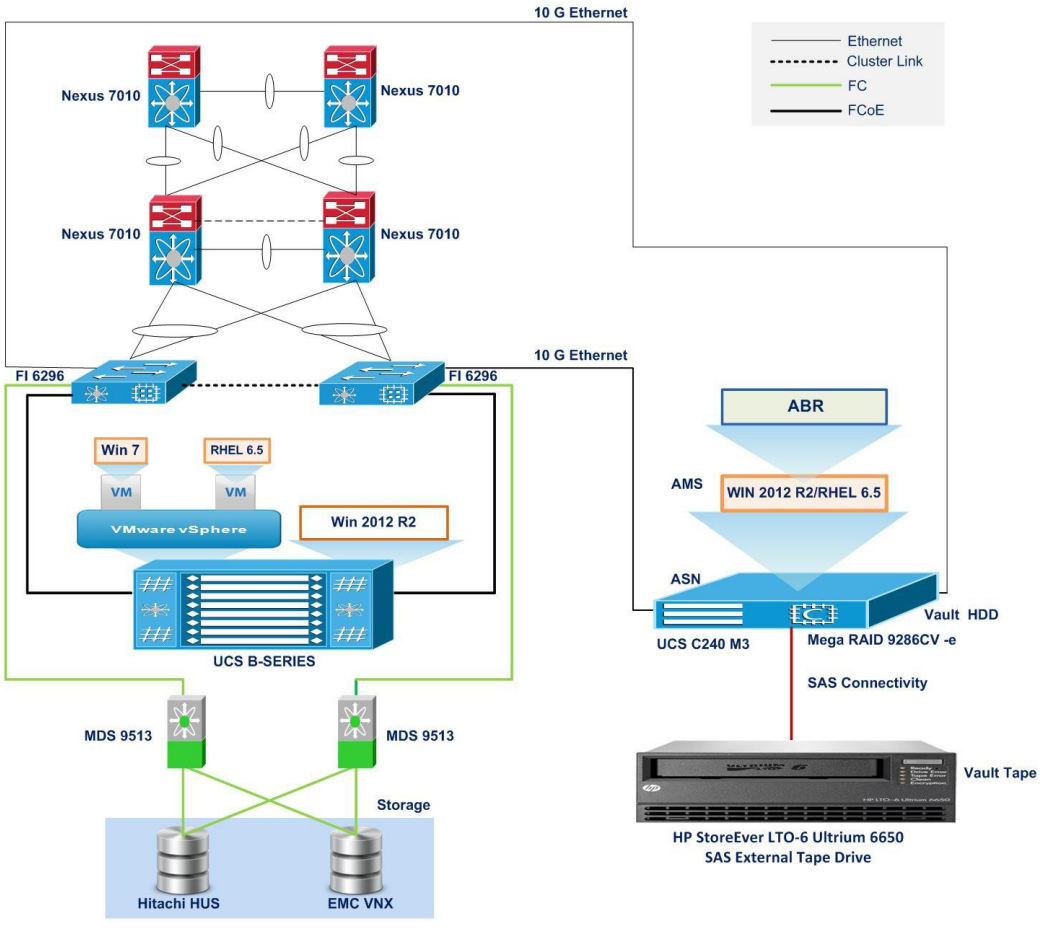
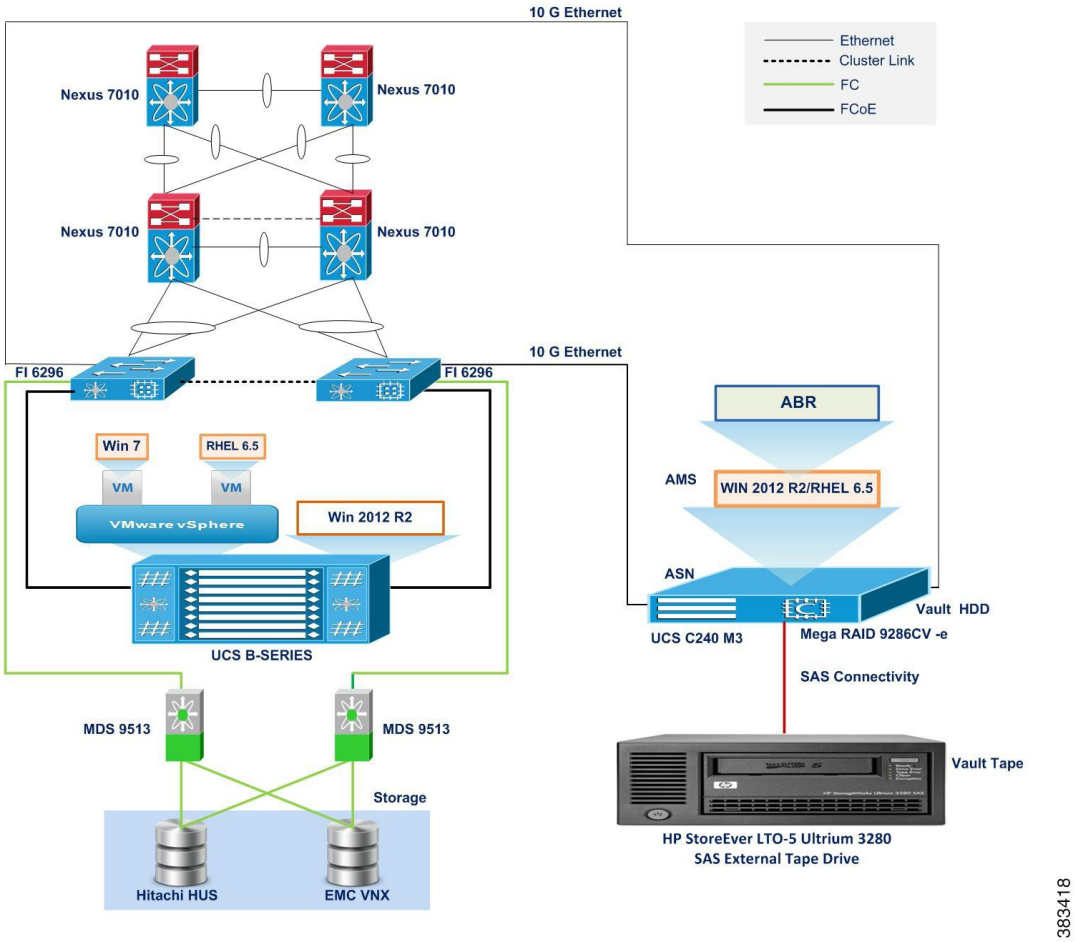


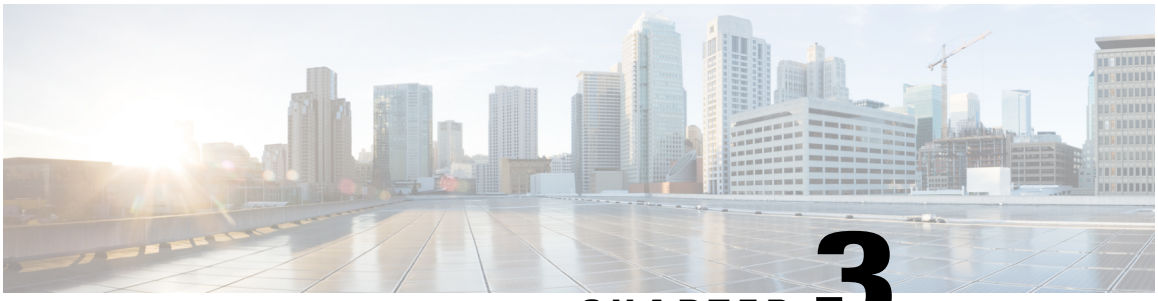
Figure 3: Topology in Use



Environment Matrix

Component	Version
UCS	
Blade servers	B200 M3, B22 M3, B260 M4
UCSM	2.2(2c)
Infra	
Nexus 7010	6.2(2)
Backup Software	
Advanced Acronis Backup & Recovery	11.5 Update 5
Operating Systems	

Component	Version
Windows OS	Windows 7 Enterprise SP1 x64 (Japanese)
Windows Server OS	Windows Server 2012 R2 x64 (Japanese)
RHEL	Redhat Enterprise Linux 6.5 x64 (Japanese)
SLES	SUSE Linux Enterprise Server 11.3 (Japanese)
Hypervisor	
ESXi	VMware ESXi 5.5 1331820
Tape Library	
HP StoreEver LTO-5 Ultrium 3280	NA
HP StoreEver LTO-6 Ultrium 6650	NA
HP StoreEver LTO-6 Ultrium 6250	NA
PCI Adapter	
Cisco P81E VIC	1.5(4) 3
Cisco UCS VIC 1225	2.2(2c)



CHAPTER 3

Implementation and Features Tested

Design and Implementation

This program verifies and validates the functionality of Acronis Backup & Recovery 11.5 features on Cisco UCS Servers for Japanese environment.

Backup Server components (Server and Client) are installed on JOS and backup scheduled from Cisco UCS B Series Server to the C Series Server and replicate to Tape Library/Acronis Cloud.

The following activities were involved in the Implementation phase:

- Installed VMware ESXi 5.5 on the UCS B Series Servers(B200 M3/B22 M3/B260 M4) that are configured to boot from Local HDD.
- Installed the Windows Server 2012 R2 Japanese operating system in the C Series Server on a Local HDD that is configured with RAID 5 (single parity). This C Series Server acts as a Backup Server and AMS (Acronis Management System), which is the Centralized Management console for taking the Backup and Restore of machines.
- Installed the Linux RHEL 6.5 Japanese Operating System in the C Series Server on a Local HDD that is configured with RAID 5 (single Parity). This C Series Server with RHEL 6.5 also acts as a Backup Server for taking the Backup and Restore of machines. Acronis Secure Zone is configured using the Local HDD of the RHEL 6.5 operating system as Backup Location. Windows Network Share(NFS) containing the backup data is connected to the RHEL 6.5 Server.
- On the B Series Server installed with ESXi 5.5, two virtual machines were created and installed with the following Japanese Operating Systems respectively:
  - Windows 7 Enterprise SP1 x64
  - Red Hat Enterprise Linux 6.5 x64
- Cisco UCS C Series Server is directly connected to Fabric Interconnect and managed through UCS Manager. Cisco UCS VIC 1225 PCIe Adapter is used for direct connectivity.

- LSI 9286CV-8e MegaRAID Controller External Card is used for SAS Connectivity between Backup Servers and HP StoreEver LTO-5 Ultrium 3280, HP StoreEver LTO-6 Ultrium 6650, HP StoreEver LTO-6 Ultrium 6250.
- C Series Server installed with Windows Server 2012 R2 x64 Japanese Operating System and Acronis Advanced Backup & Recovery 11.5.
- Acronis Backup & Recovery 11.5 Agent for Core, Agent for Windows, Agent for Management Console are Installed on the Windows 7 Virtual Machines.
- Acronis Backup & Recovery 11.5 Agent is also installed on RHEL 6.5 Virtual Machines by installing the Required Packages such as (kernel, kernel-devel and GCC).
- Acronis Backup & Recovery 11.5 Agent for VMware vSphere ESXi enables backup and recovery of ESXi virtual machines without installing agents into the guest systems. The Agent for VMware vSPhere ESXi (Virtual Appliance) is deployed directly to the VMware ESXi host.
- C Series Server installed With RHEL 6.5 x64 Japanese Operating System and Acronis Advanced Backup & Recovery 11.5 (Linux Agent, Management Console and Bootable Media).
- Linux Operating System RHEL 6.5 and SLES 11.3 are installed on the UCS B Series Blades (UCS B200 M3, UCS B22 M3 and UCS B260 M4) for Bare Metal Disaster Recovery using Acronis Advanced Backup & Recovery 11.5.
- Backup data is stored on RHEL 6.5 machine with XFS Partition.

Features Tested

Data Backup was tested with the following backup methods:

Full Backup

Full backup is the starting point for all other types of backup and contains all the data in the folders and files that are selected to be backed up. Because full backup stores all files and folders, frequent full backups resulting faster and simpler restore operations.

Differential Backup

Differential backup contains all files that have changed since the last FULL backup. The advantage of a Differential backup is that it shortens restore time compared to a full backup or an incremental backup. However, if you perform the differential backup too many times, the size of the differential backup might grow to be larger than the baseline full backup.

Incremental Backup

Incremental backup stores all files that have changed since the last FULL, DIFFERENTIAL, or Incremental backup. The advantage of an incremental backup is that it takes the least time to complete. However, during a restore operation, each incremental backup must be processed, which could result in a lengthy restore job.

Archive protection

This option defines whether the archive will be protected with a password and whether the archive's content will be encrypted. This option is effective for both Windows and Linux Operating System

Do not encrypt - the archive will be protected with the password only

AES 128 - the archive will be encrypted using the Advanced Encryption Standard (AES) algorithm with a 128-bit key

AES 192 - the archive will be encrypted using the AES algorithm with a 192-bit key

AES 256 - the archive will be encrypted using the AES algorithm with a 256-bit key

The larger the key size, the longer it will take for the program to encrypt the archive and the more secure data will be. The encryption key is then encrypted with AES-256 using a SHA-256 hash of the password as a key. The password itself is not stored anywhere on the disk or in the backup file; the password hash is used for verification purposes. With this two-level security, the backup data is protected from any unauthorized access, but recovering a lost password is not possible.

Backup priority

The Following Priority are mentioned while creating the Backup Plan

- **High** - to maximize the backup process speed by taking resources from other processes.

Compression level

The option defines the level of compression applied to the data being backed up. This applies to both Windows & Linux Operating System. The optimal data compression level depends on the type of data being backed up.

- **None** - the data will be copied as is, without any compression. The resulting backup size will be maximal.
- **Normal** - recommended in most cases.
- **High** - the resulting backup size will typically be less than for the **Normal** level.
- **Maximum** - the data will be compressed as much as possible. The backup duration will be maximal. You may want to select maximum compression when backing up to removable media to reduce the number of blank disks required

Volume Shadow Copy Service

These options are effective only for Windows operating systems.

The option defines whether a Volume Shadow Copy Service (VSS) provider has to notify VSS-aware applications that the backup is about to start. This ensures the consistent state of all data used by the applications; in particular, completion of all database transactions at the moment of taking the data snapshot by Acronis Backup & Recovery 11.5.

Bootable media

Bootable media is physical media (CD, DVD, USB flash drive or other removable media supported by a machine BIOS as a boot device) that boots on any PC-compatible machine and enables you to run Acronis Backup & Recovery 11.5 Agent either in a Linux-based environment or Windows Pre-installation Environment (WinPE), without the help of an operating system. Bootable media is most often used to:

- recover an operating system that cannot start
- access and back up the data that has survived in a corrupted system
- deploy an operating system on bare metal
- create basic or dynamic volumes on bare metal
- back up sector-by-sector a disk with an unsupported file system
- backup offline any data that cannot be backed up online because of restricted access, being permanently locked by the running applications or for any other reason.

Virtual Appliance for ESXi Host

Acronis believes that virtualization and transition to the cloud are not only a better way of doing computing, but also allow for achieving less downtimes and faster recoveries while reducing costs.

Acronis is firmly committed to helping its customers and channel partners get most of virtualization, and intend to set a new standard of backup and recovery in virtualized environments through:

- Reducing IT operating and maintenance costs to help business performance by providing technology that is easy to use and easy to implement.
- Minimizing overhead and getting most benefits from VMware vSphere environments by providing a backup and recovery solution specially designed for virtualized environments.
- Minimize risk of data loss by storing backup offsite in Acronis Cloud Storage.

Acronis Backup for VMware software could be installed directly on an ESX(i) host. Specify the desired ESX(i) server or vCenter access credentials. Set your Appliance (VM) name, choose the ESX(i) host and datastore as a target for deploying the Acronis Backup for VMware software.

P2V

Convert/migrate a disk image, created with the program (.tib image file), to a virtual disk file of the type you select (.vmdk, .vhd, .hdd). You will then be able to add the disk to a virtual machine of compatible type (VMware, MS Hyper-V or Virtual Server, Citrix XenServer, Parallels virtual machine).

LVM

This option is effective only for Linux operating systems when you back up volumes managed by Linux Logical Volume Manager (LVM). Such volumes are also called logical volumes. Acronis Backup & Recovery 11 will use Linux Logical Volume Manager to take the snapshot and to work with it during backup. This way, backing up the volume may be less efficient than when using Acronis's mechanism.

ASZ

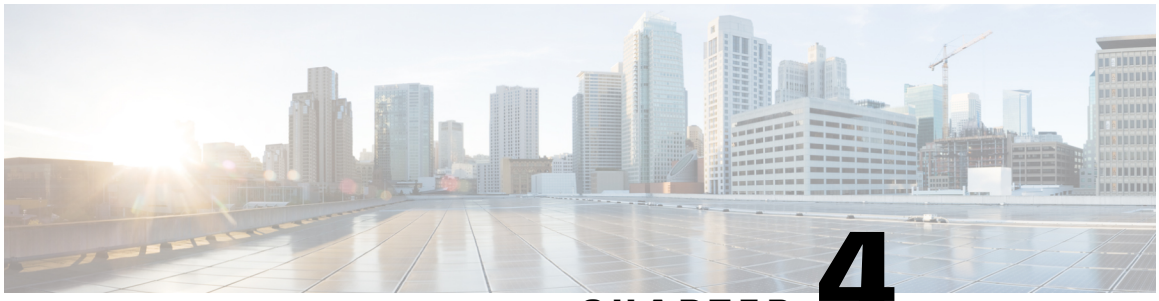
The ASZ is a secure partition that lets you keep backups on a managed machine disk space. This lets you recover a disk where the disk backup resides.

The ASZ is available as a location to store backup files as long as it has free space. If there is not enough space, older backups will be deleted to create free space.

Acronis Cloud

Acronis Cloud provides Encryption, Redundant Power and Networks, Availability, Data Transfer Security, Fire Detection and Suppression, onsite monitoring and security.

The Cloud high-level data privacy is critical, by using AES-256 encryption as a standard feature. We can also create a unique password, ensuring authorized access only. For maximum availability, your backup data is split between multiple servers similar to RAID, with additional Reed-Solomon error correction.

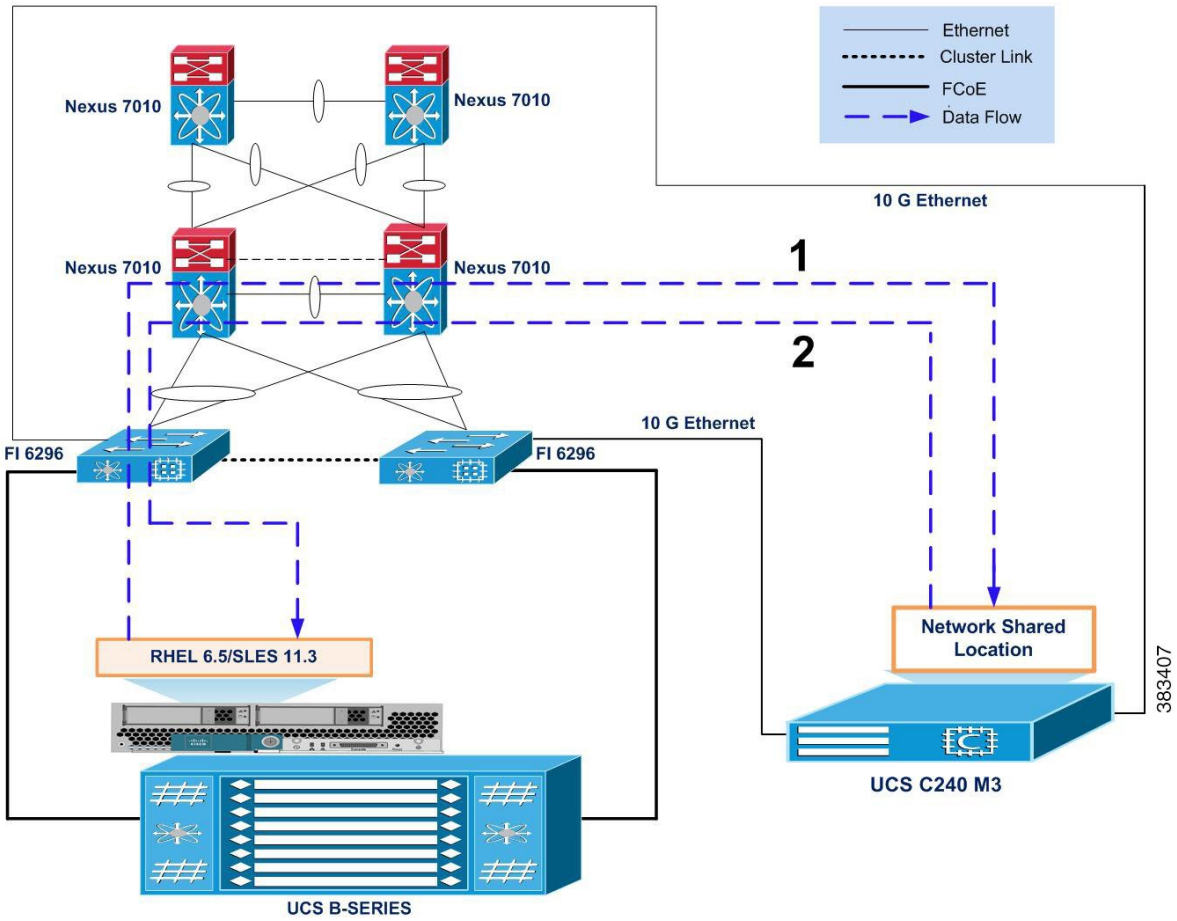


CHAPTER 4

Test Scenario for UCS with Advanced Acronis11.5

Disaster Recovery for Similar Hardware

Figure 4: Topology in Use



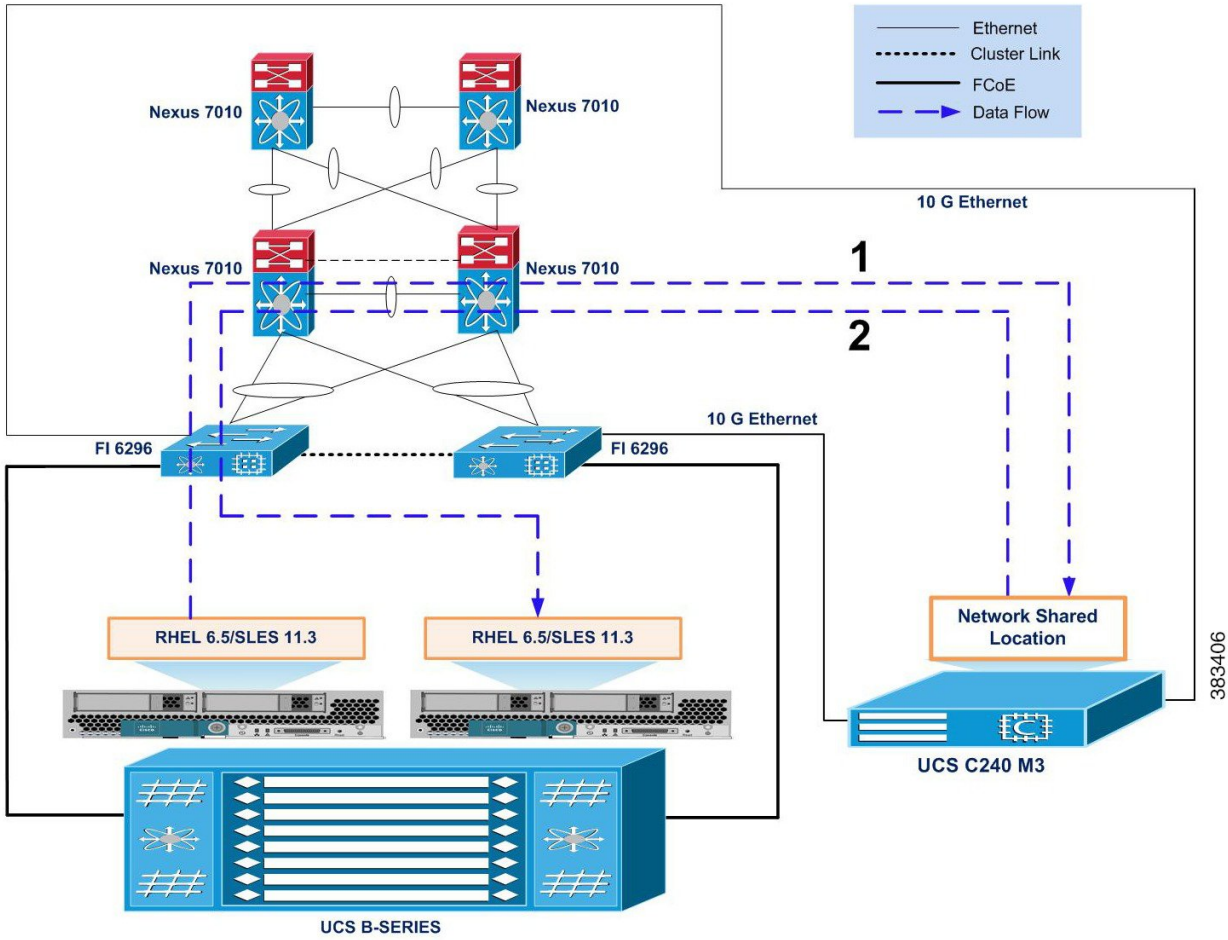
Backup data flows:		
Step	**From**	**To**
1	Backup of B Series Server(Entire Disks)	Network Share
2	Network Share	B Series Server

Description

- Backup of Entire Disks from SLES 11.3 Japanese and RHEL 6.5 Japanese Operating System to Network Share Location
- Restore the Entire Disks from Network Share location to the Similar hardware from Acronis Advanced Server 11.5 Recover Option

Disaster Recovery for Dissimilar Hardware

Figure 5: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Backup of B Series Server(Entire Disks)	Network Share
2	Network Share	Restore of Entire Disks of B Series Server

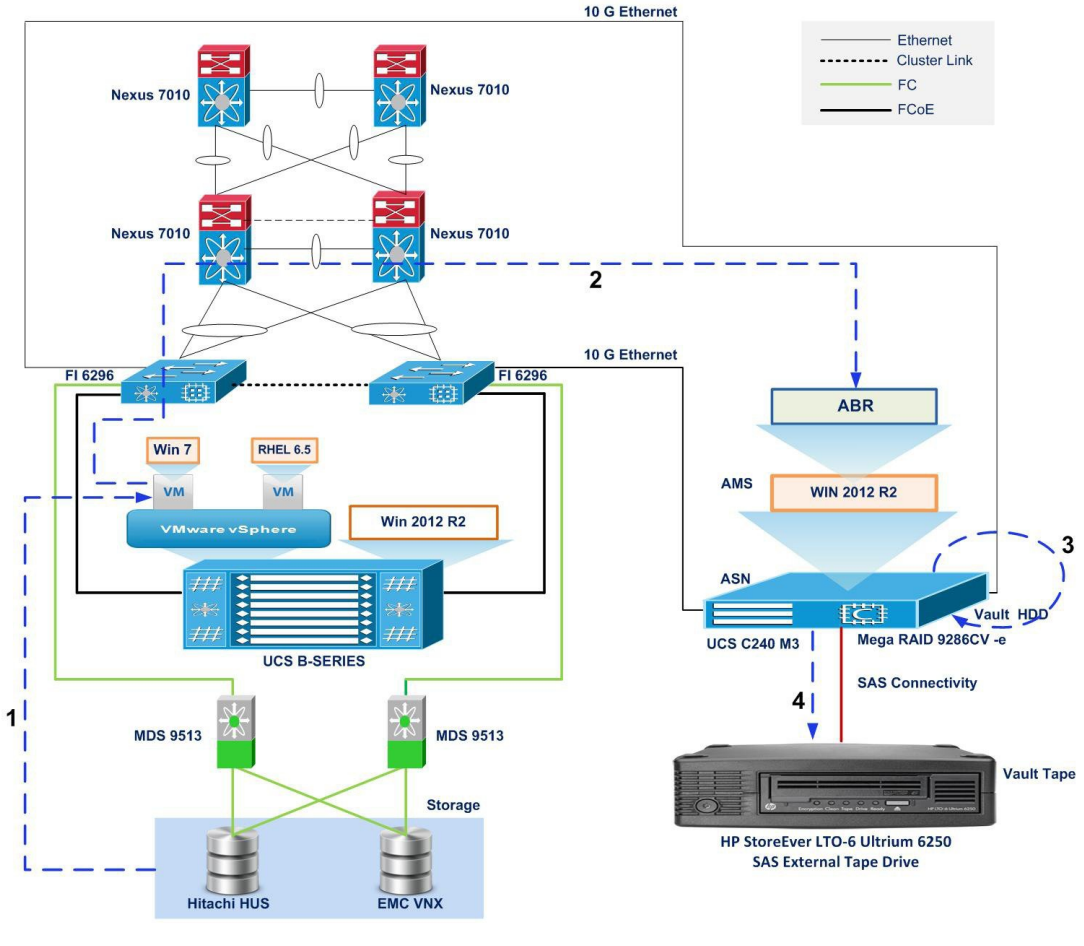
Description

- Install the Required Agent and Bootable Media on the Machines to be Backed up.
- Create the Bootable Media (ISO or CD/DVD) . Boot the Server using the media created (ISO or CD/DVD)

- Perform Full Backup of Entire Disks and store the Archive to Network Location.
- Boot the Media Created to the Different Hardware, and select Recover Option.
- Select the Archive from the Network Location and Apply Raid/LVM to automatically assemble all LVM or Raid volumes
- Once Recover is Completed, Reboot the Server

VM Backup

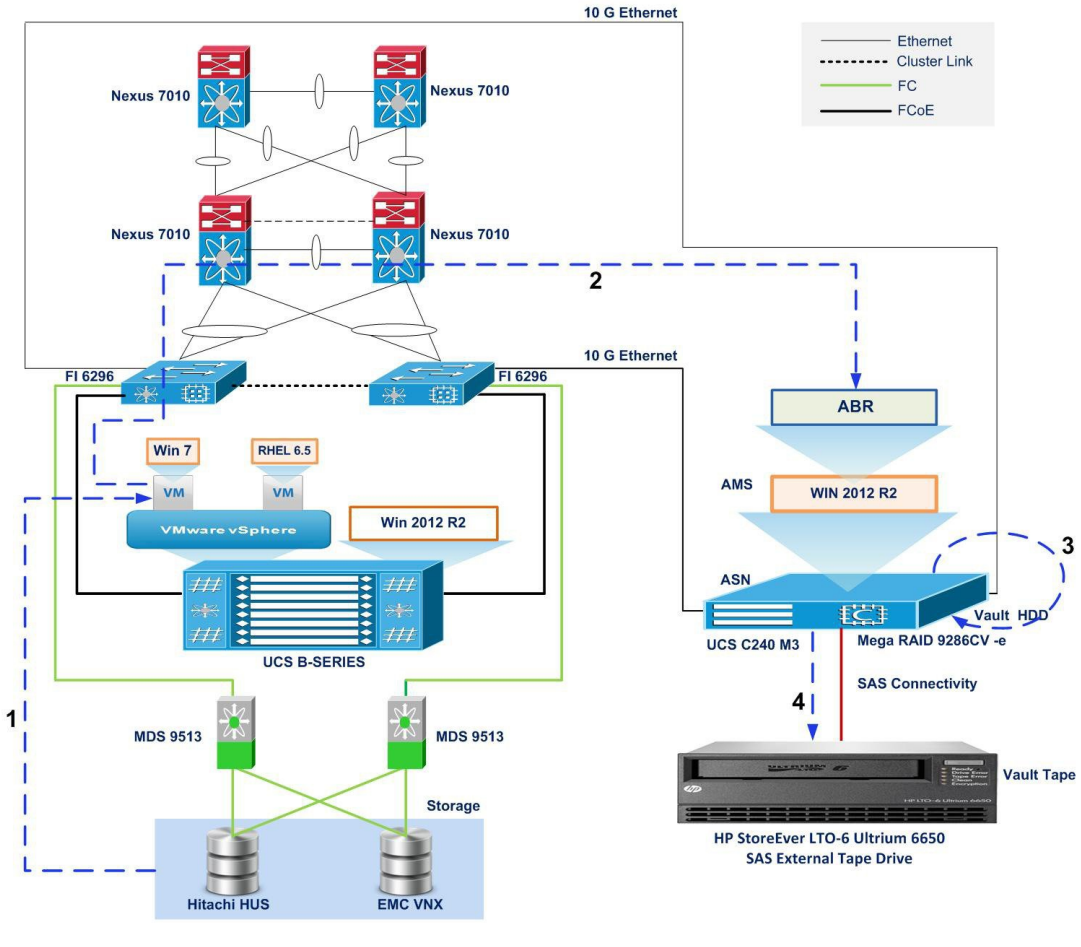
Figure 6: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)

Backup data flows:		
Step	**From**	**To**
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6250

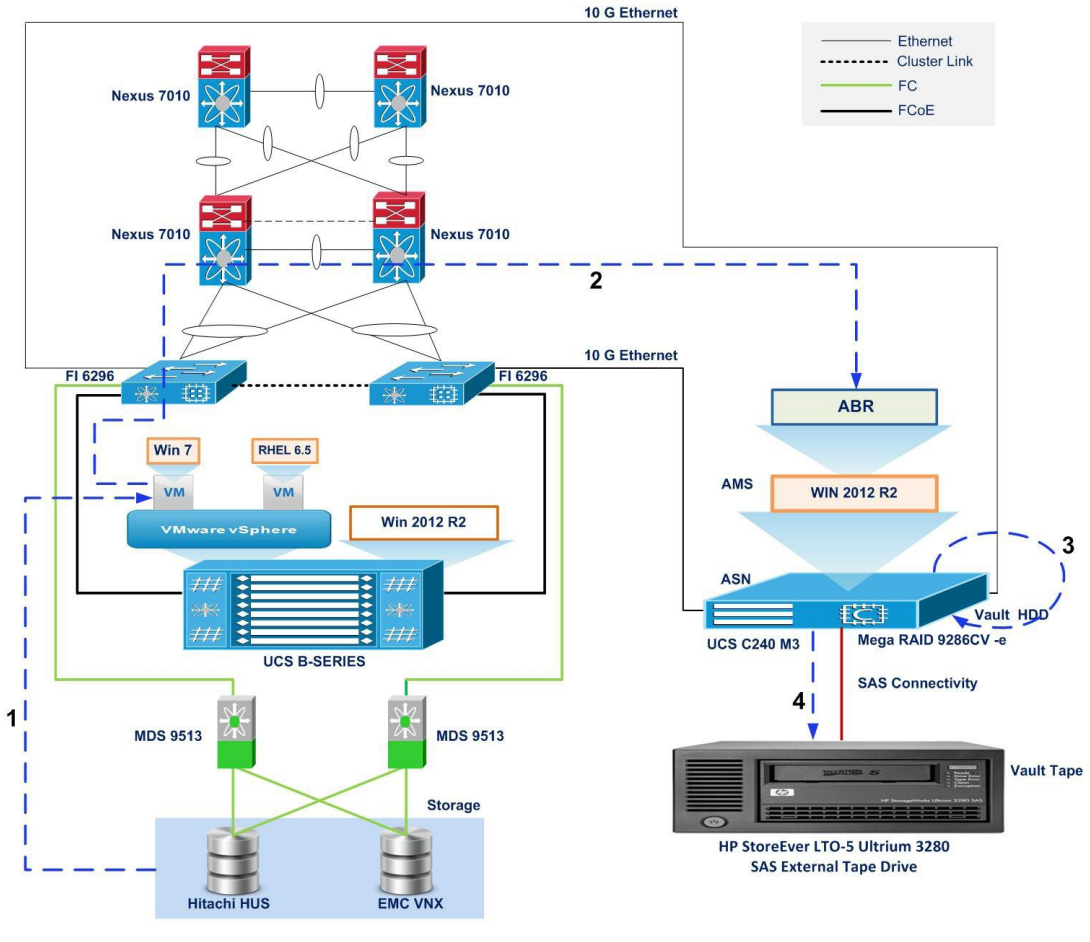
Figure 7: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server

Backup data flows:		
Step	**From**	**To**
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6650

Figure 8: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk

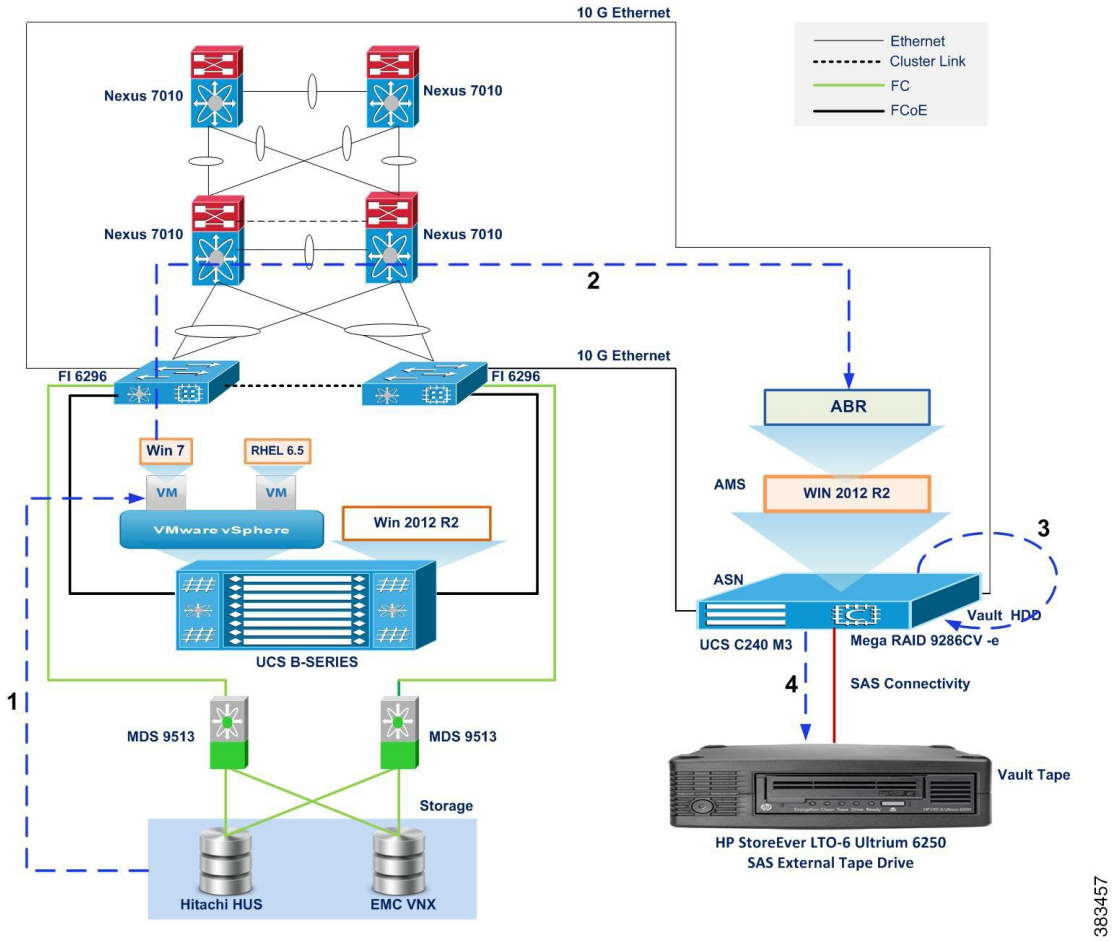
Backup data flows:		
Step	**From**	**To**
4	Backup Server Disk	HP StoreEver LTO-5 Ultrium 3280

Description

- Select the Virtual Machine to be backed up using Acronis Advanced Backup and Recovery 11.5.
- Run the Backup Job and Backup of Virtual Machine is Successful.
- Select the Archive and create Recovery Plan.
- Specify where to recover as "New Virtual Machine "in Recovery Plan.
- Run the Recovery Job and the Restore of Virtual Machine is successful.
- Restored Virtual Machine possesses different VM Version.

Windows File / Folders Backup

Figure 9: Topology in Use

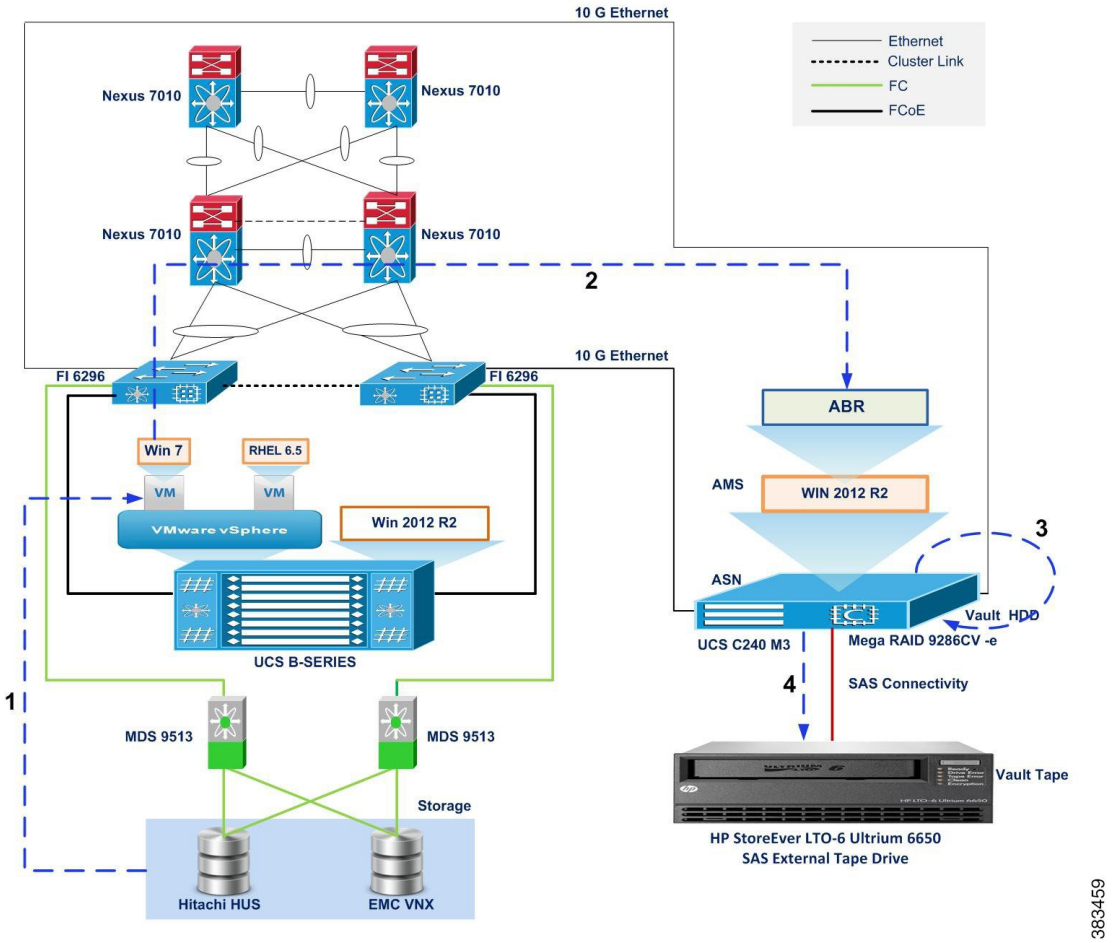


Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6250

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-6 Ultrium 6250 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6250 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 10: Topology in Use

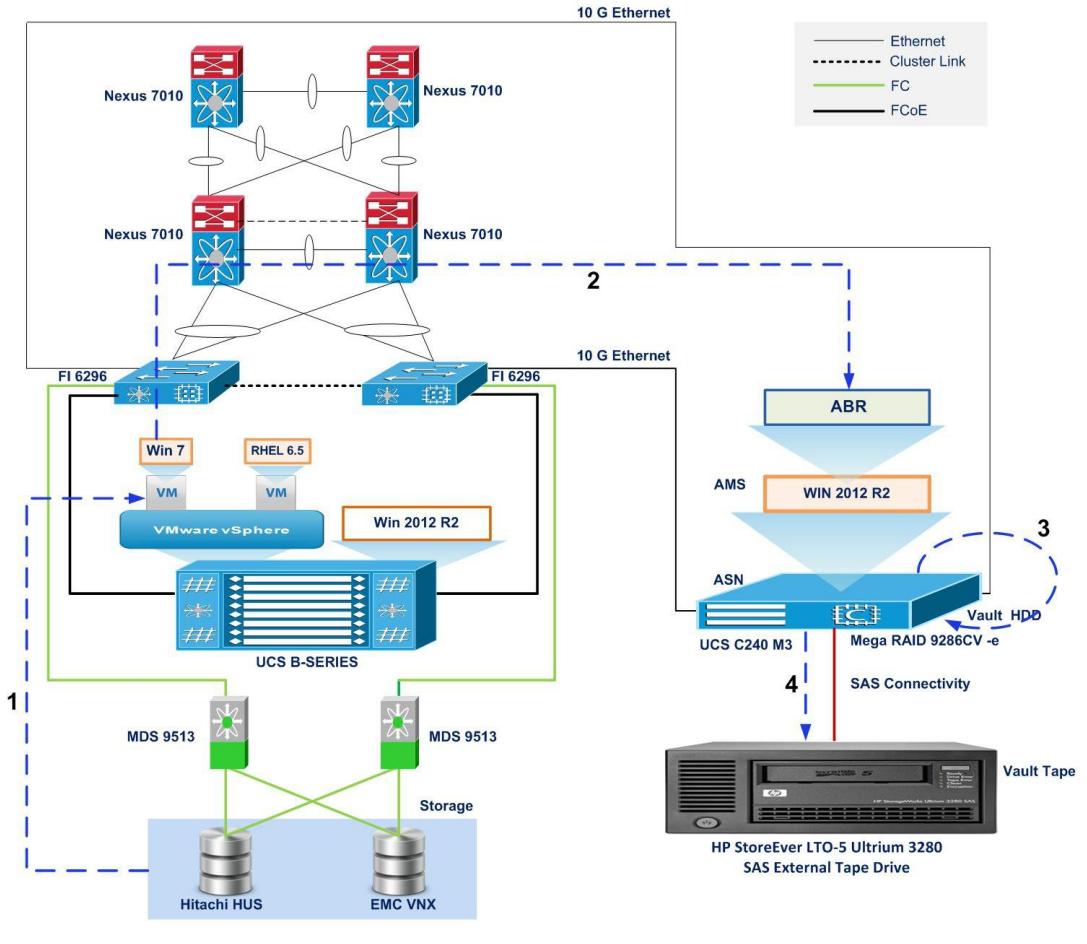


Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6650

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-6 Ultrium 6650 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6650 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 11: Topology in Use



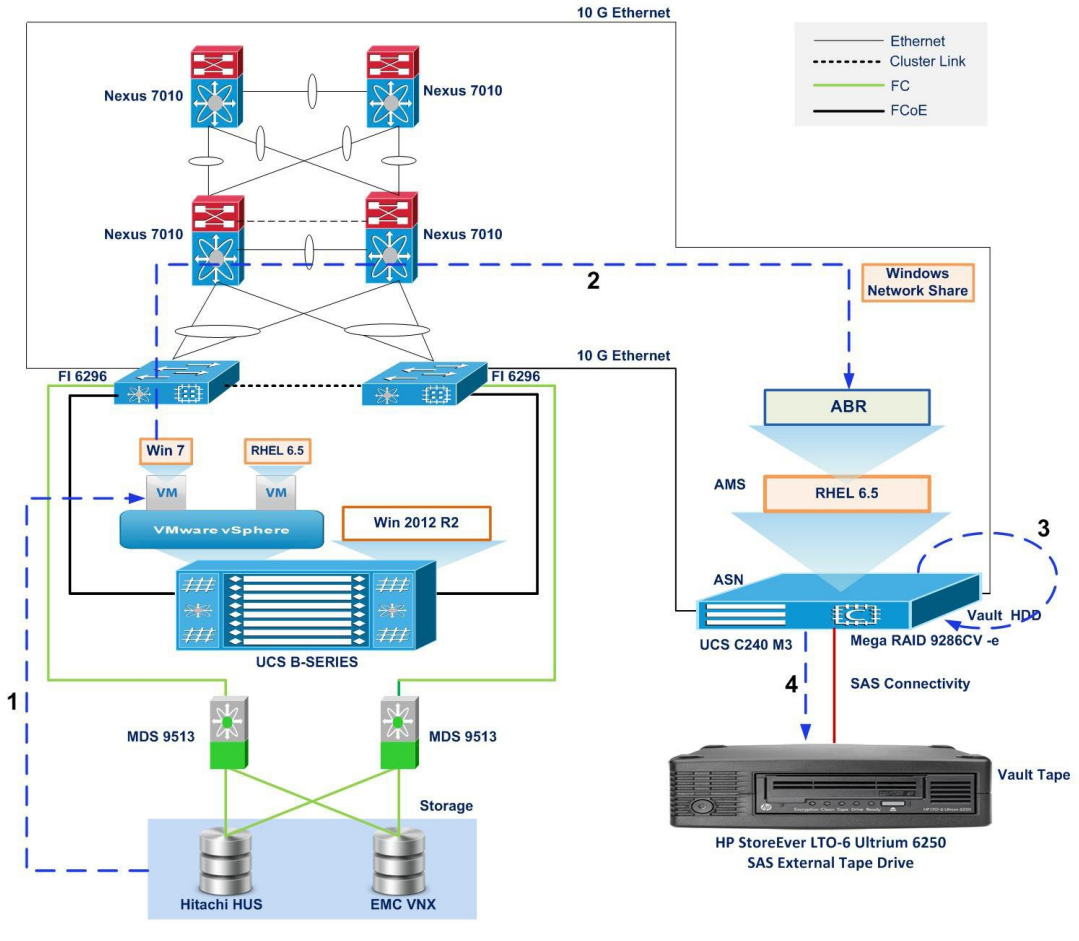
Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk

Backup data flows:		
Step	**From**	**To**
4	Backup Server Disk	HP StoreEver LTO-5 Ultrium 3280

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-5 Ultrium 3280 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-5 Ultrium 3280 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 12: Topology in Use

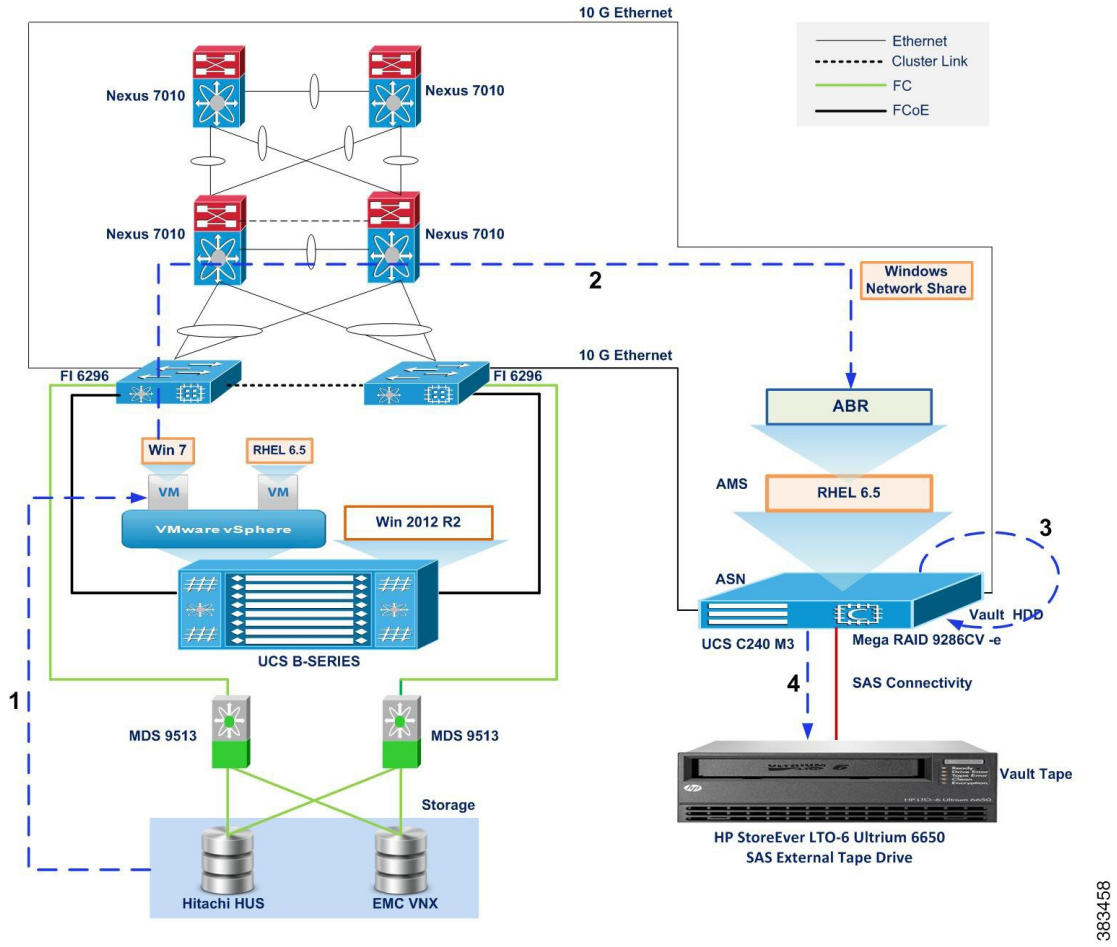


Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6250

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-6 Ultrium 6250 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6250 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 13: Topology in Use



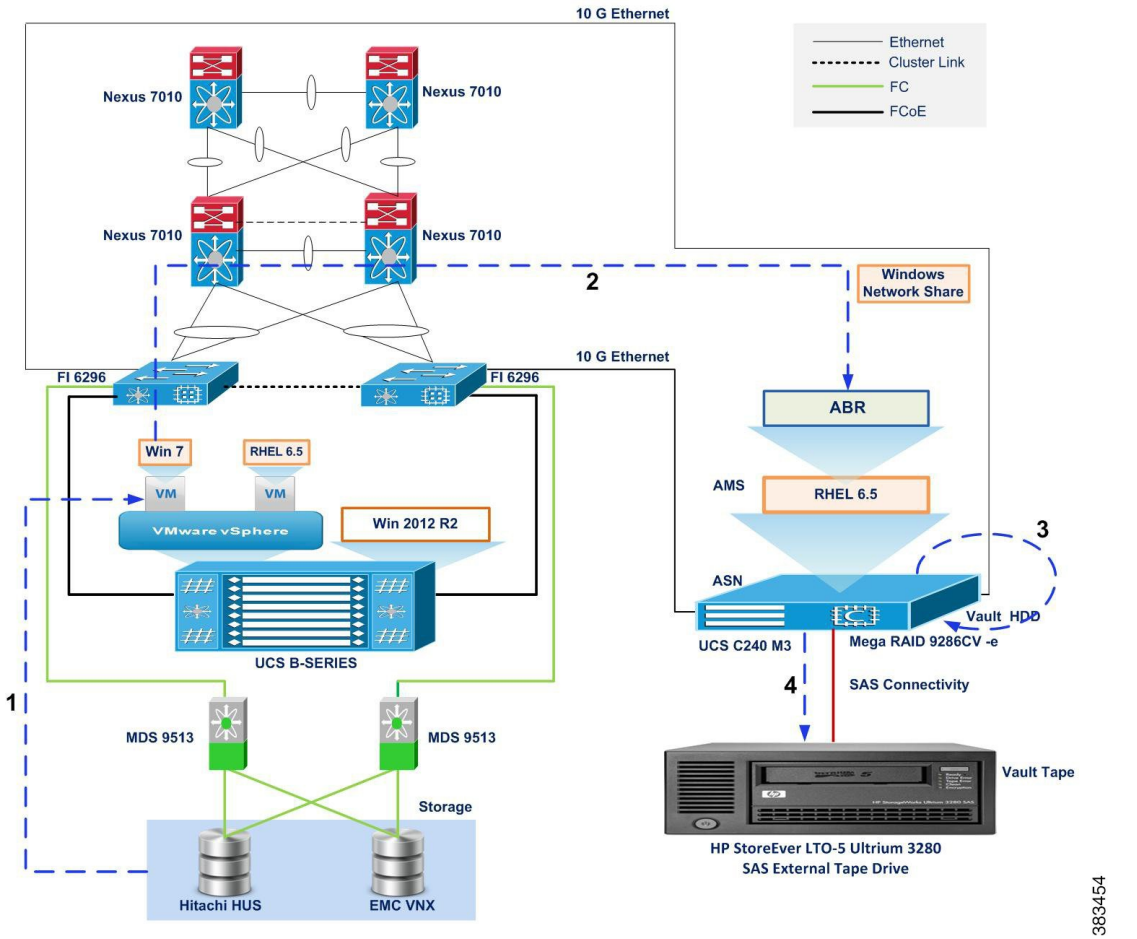
Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6650

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-6 Ultrium 6650 using Acronis Advanced Backup and Recovery 11.5 software.

- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6650 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 14: Topology in Use



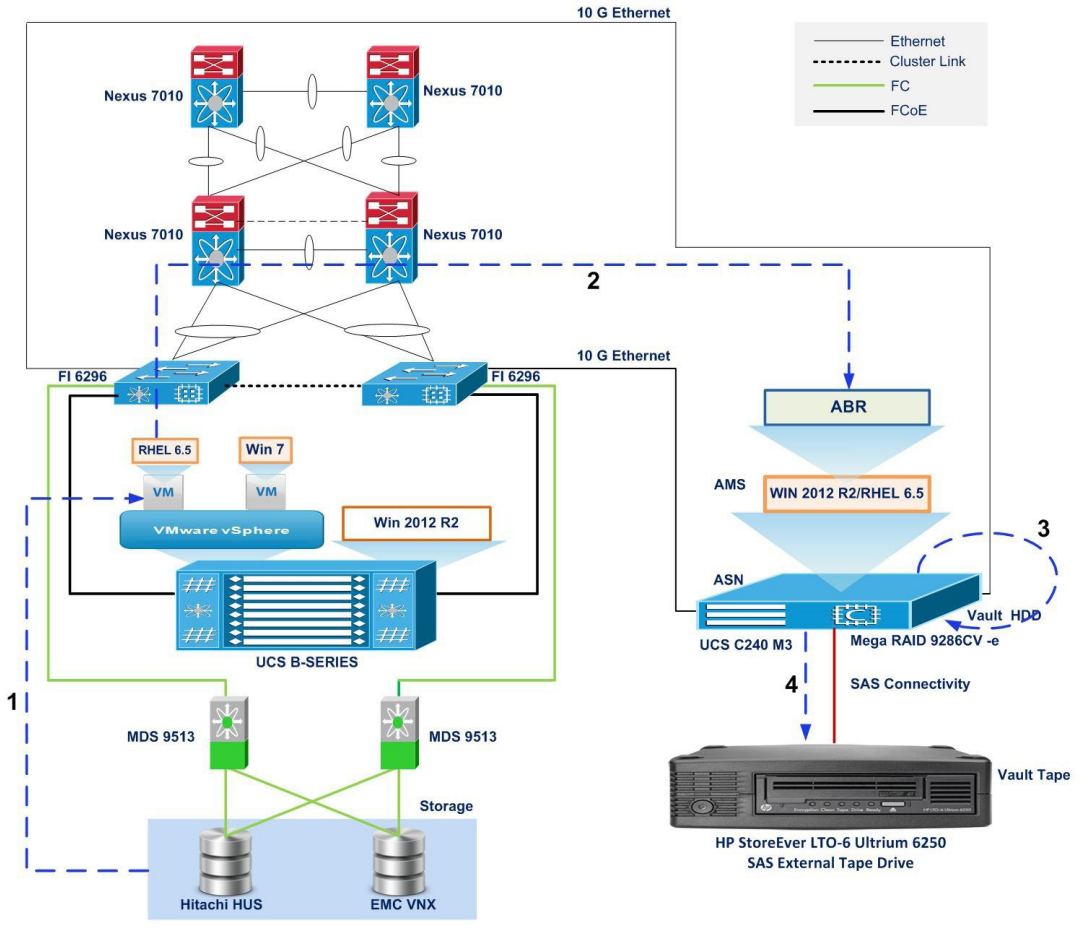
Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-5 Ultrium 3280

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-5 Ultrium 3280 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-5 Ultrium 3280 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Linux File / Folders Backup

Figure 15: Topology in Use



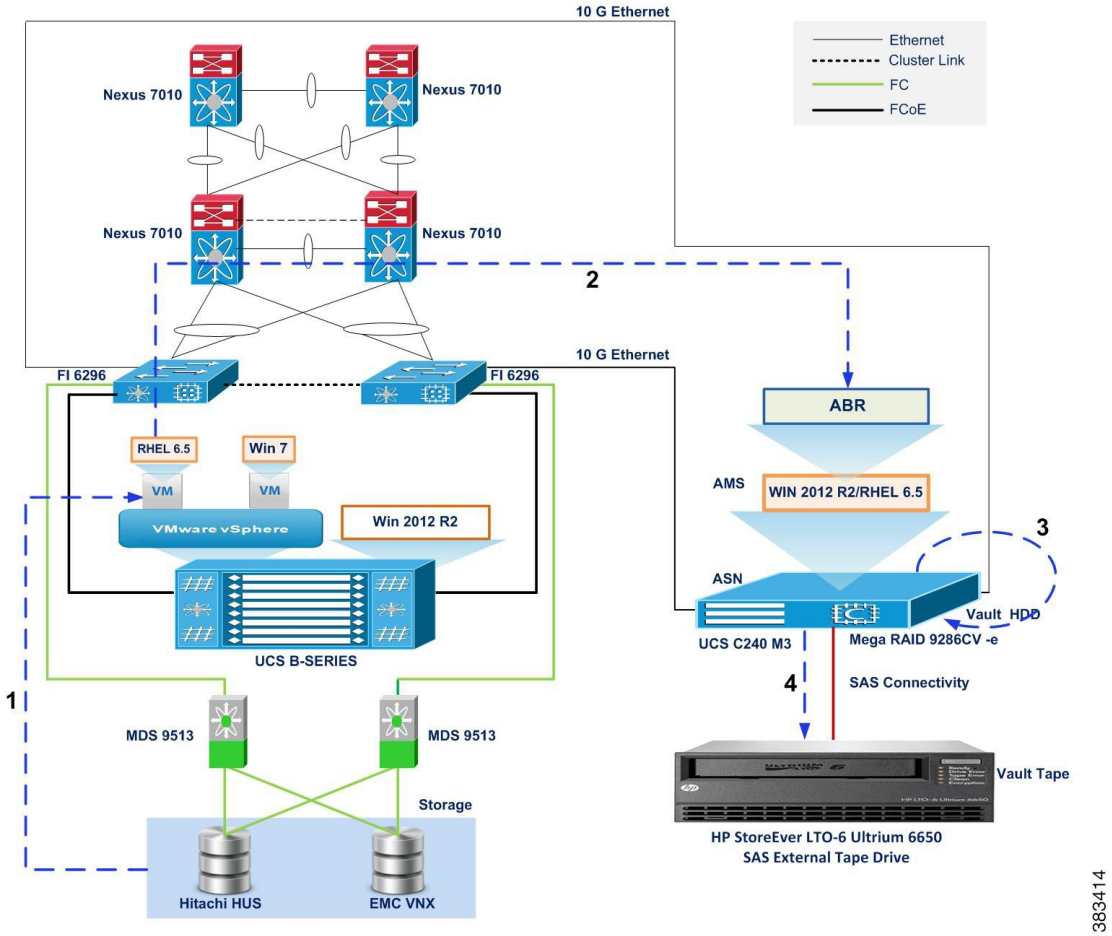
Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server

Backup data flows:		
Step	**From**	**To**
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6250

Description

- Backup of data files (Word, PDF, and Excel) from Linux System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-6 Ultrium 6250 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6250 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 16: Topology in Use

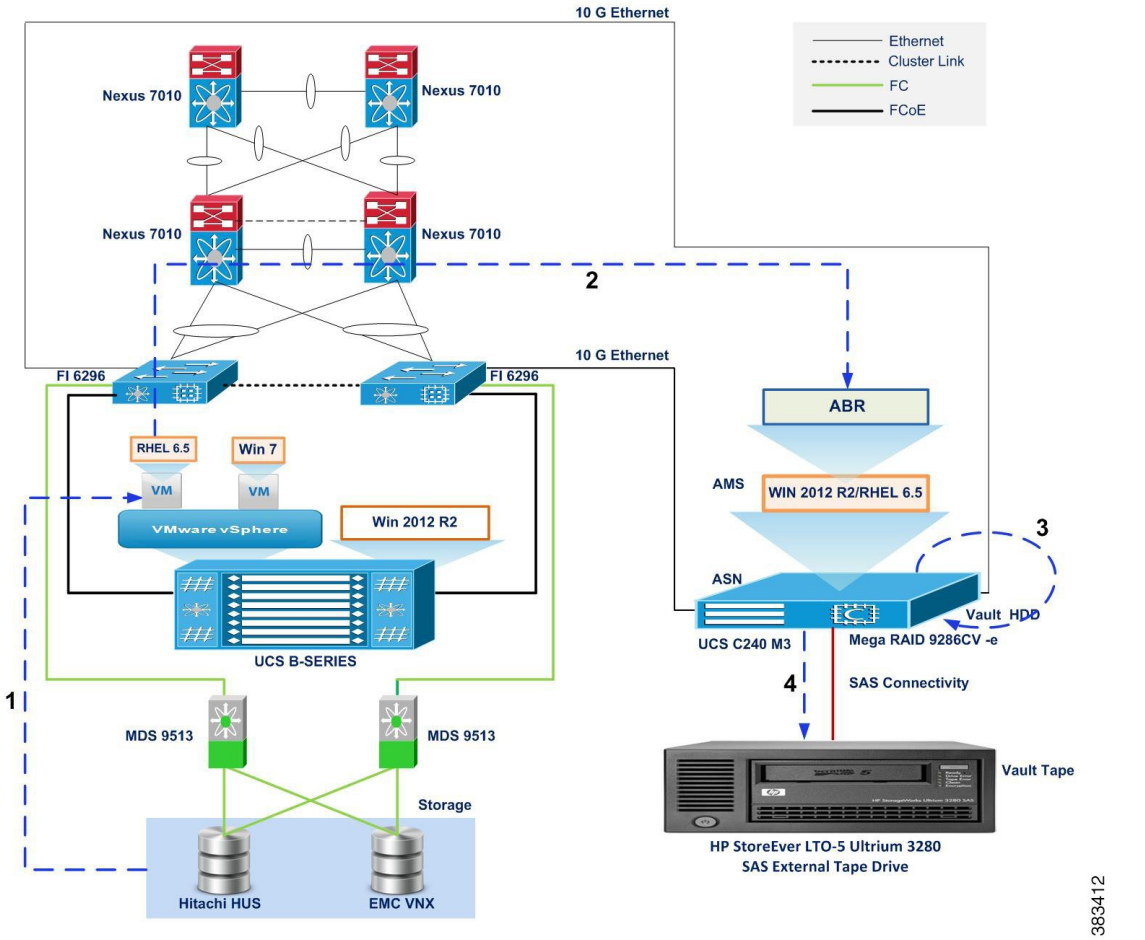


Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-6 Ultrium 6650

Description

- Backup of data files (Word, PDF, and Excel) from Linux System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-6 Ultrium 6650 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6650 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 17: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	HP StoreEver LTO-5 Ultrium 3280

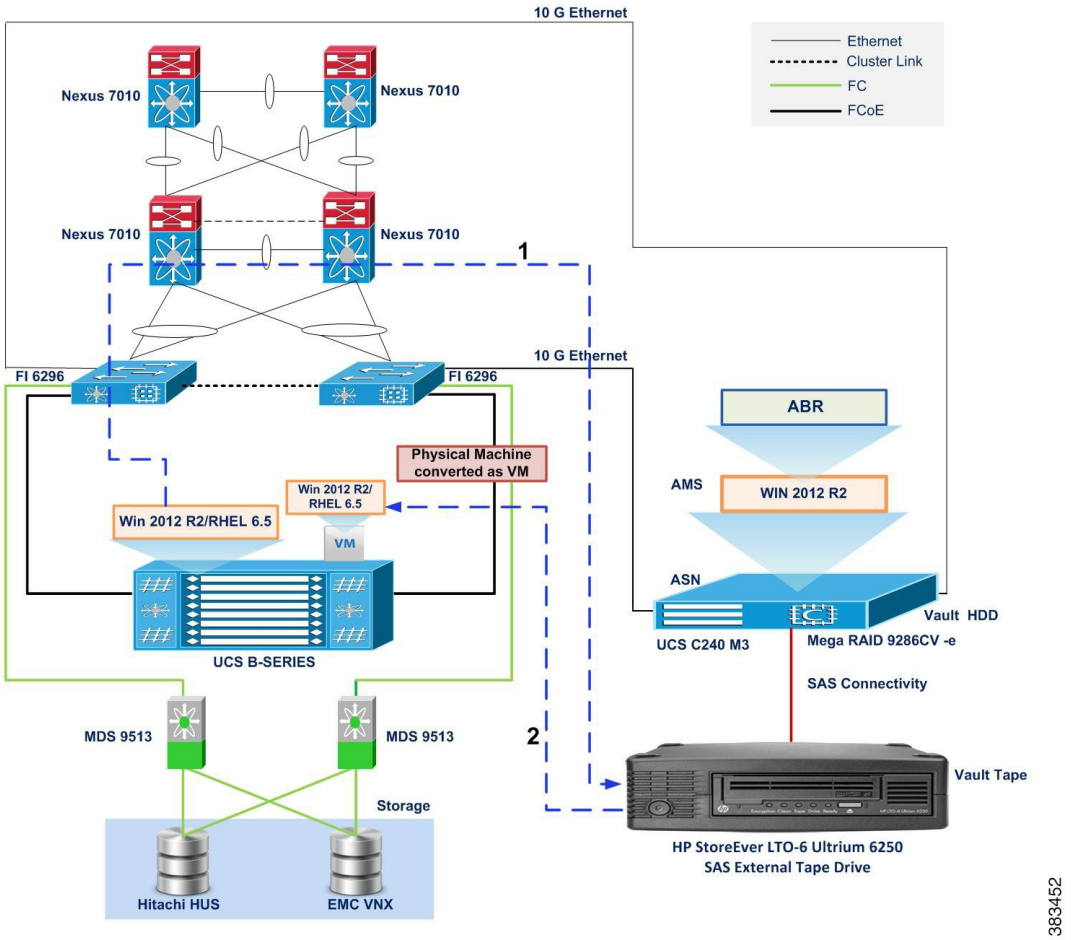
Description

- Backup of data files (Word, PDF, and Excel) from Linux System to C Series Server Local HDD and then Replicate the same to HP StoreEver LTO-5 Ultrium 3280 using Acronis Advanced Backup and Recovery 11.5 software.

- Recover the Files either from Local HDD or HP StoreEver LTO-5 Ultrium 3280 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

P2V

Figure 18: Topology in Use

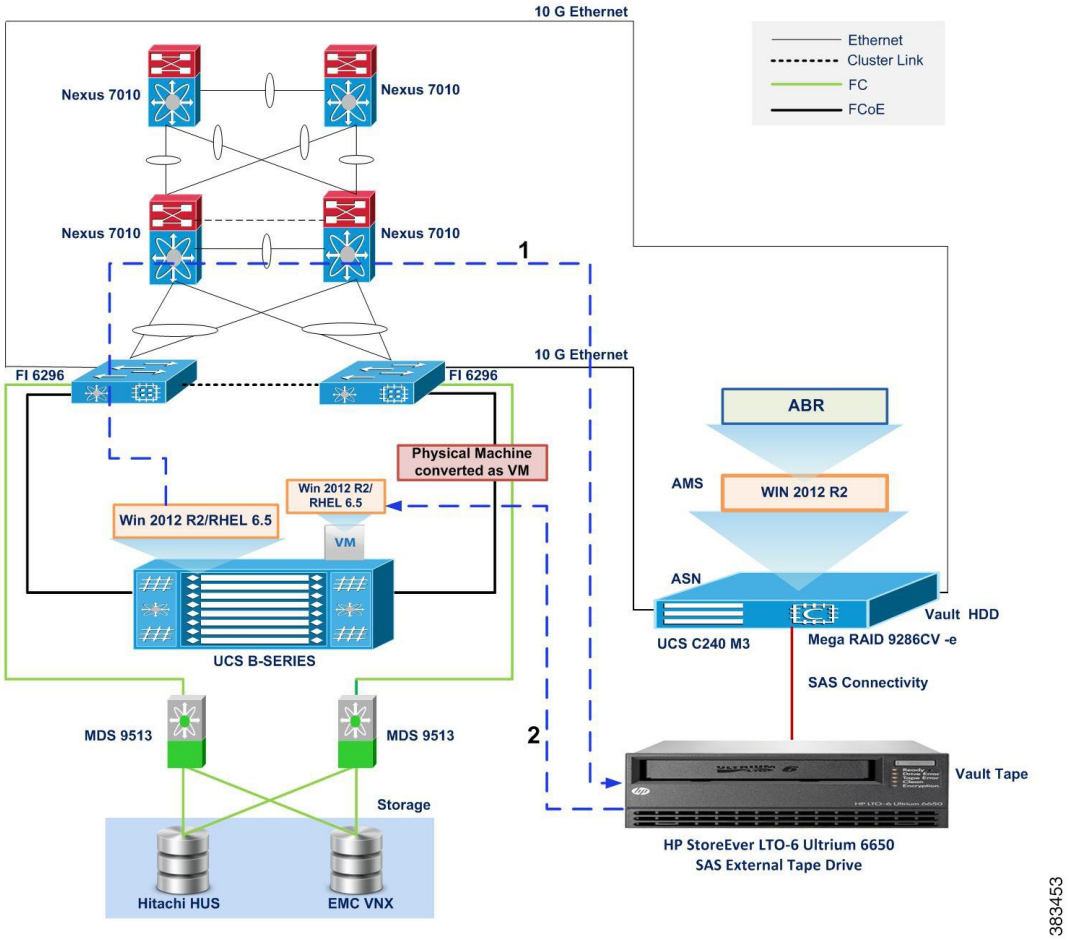


Backup data flows:		
Step	**From**	**To**
1	Bare Metal Windows 2012 R2 server/ RHEL 6.5 server (Backup Client)	HP StoreEver LTO-6 Ultrium 6250
2	HP StoreEver LTO-6 Ultrium 6250	Converted as VM and Restored in an ESXi Host

Description

- Backup a physical server to HP StoreEver LTO-6 Ultrium 6250 and while restoring convert the same to Virtual machine using Acronis Advanced Backup and Recovery 11.5 software.

Figure 19: Topology in Use

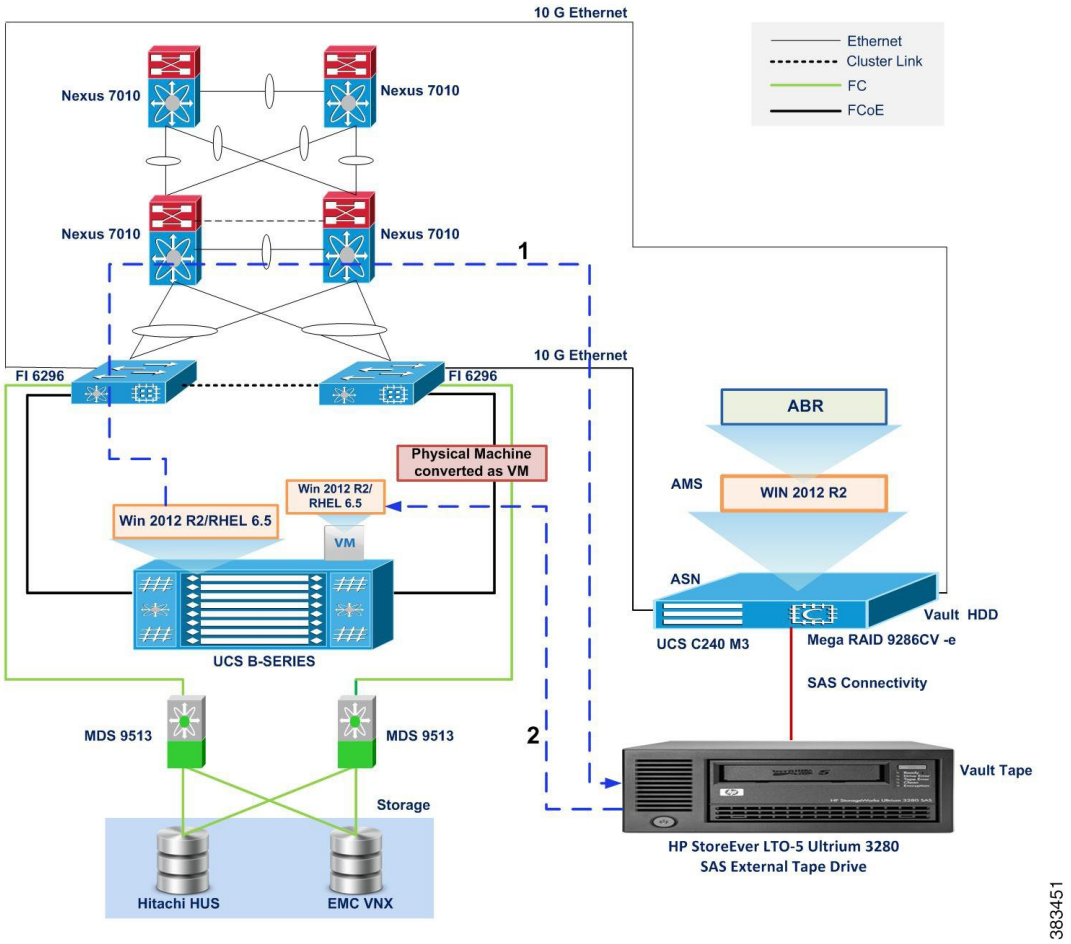


Backup data flows:		
Step	**From**	**To**
1	Bare Metal Windows 2012 R2 server/ RHEL 6.5 server (Backup Client)	HP StoreEver LTO-6 Ultrium 6650
2	HP StoreEver LTO-6 Ultrium 6650	Converted as VM and Restored in an ESXi Host

Description

- Backup a physical server to HP StoreEver LTO-6 Ultrium 6650 and while restoring convert the same to Virtual machine using Acronis Advanced Backup and Recovery 11.5 software.

Figure 20: Topology in Use



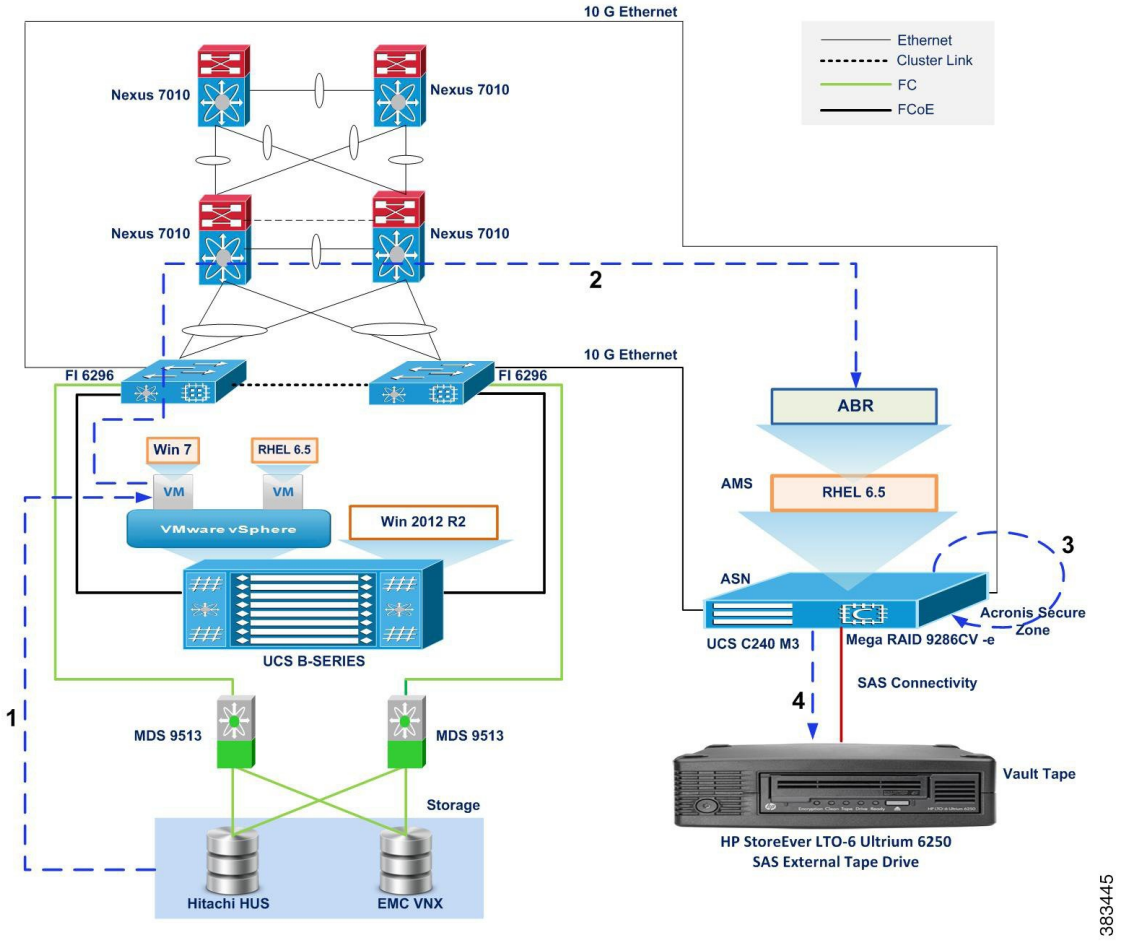
Backup data flows:		
Step	**From**	**To**
1	Bare Metal Windows 2012 R2 server/ RHEL 6.5 server (Backup Client)	HP StoreEver LTO-5 Ultrium 3280
2	HP StoreEver LTO-5 Ultrium 3280	Converted as VM and Restored in an ESXi Host

Description

- Backup a physical server to HP StoreEver LTO-5 Ultrium 3280 and while restoring convert the same to Virtual machine using Acronis Advanced Backup and Recovery 11.5 software.

ASZ

Figure 21: Topology in Use

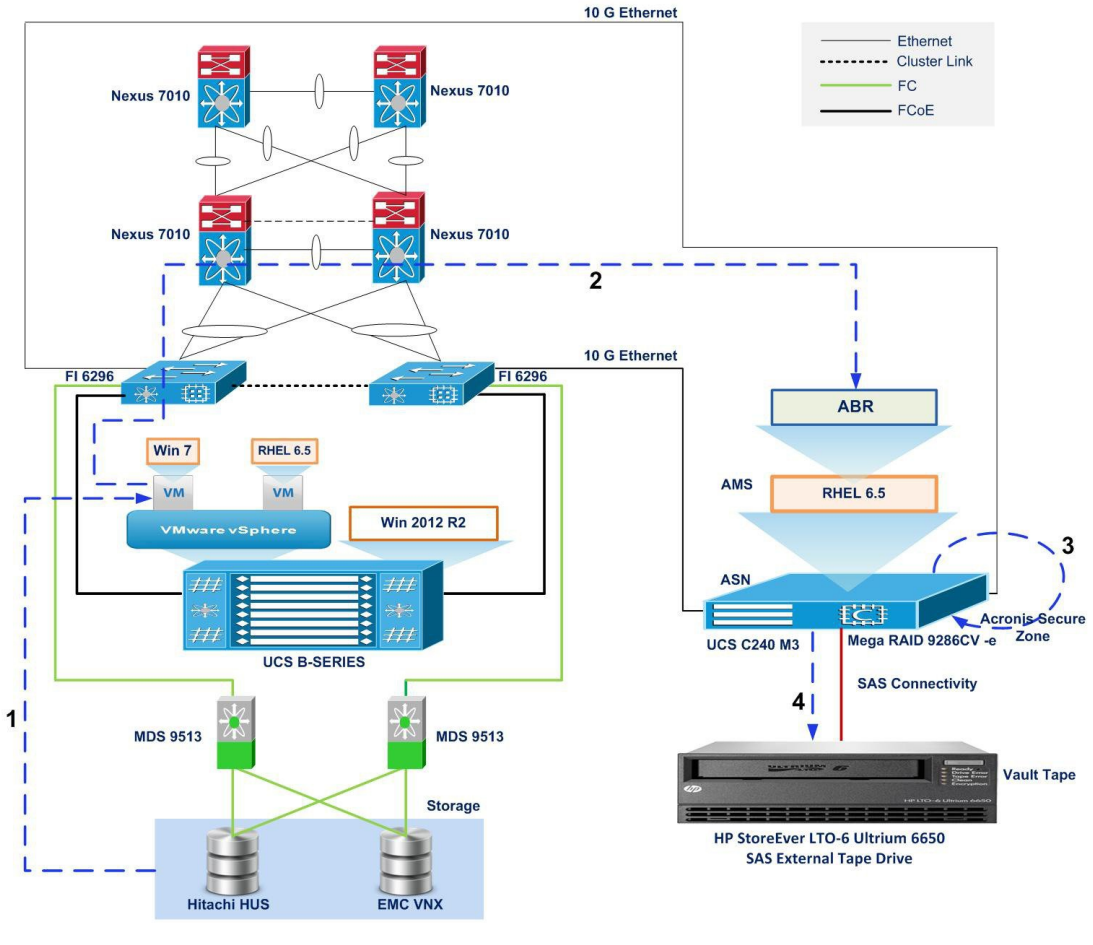


Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Acronis Secure Zone
4	Acronis Secure Zone	HP StoreEver LTO-6 Ultrium 6250

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to Acronis Secure Zone and then Replicate the same to HP StoreEver LTO-6 Ultrium 6250 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6250 by using various Recover Options available on Acronis Advanced Backup and Recovery 11.5

Figure 22: Topology in Use

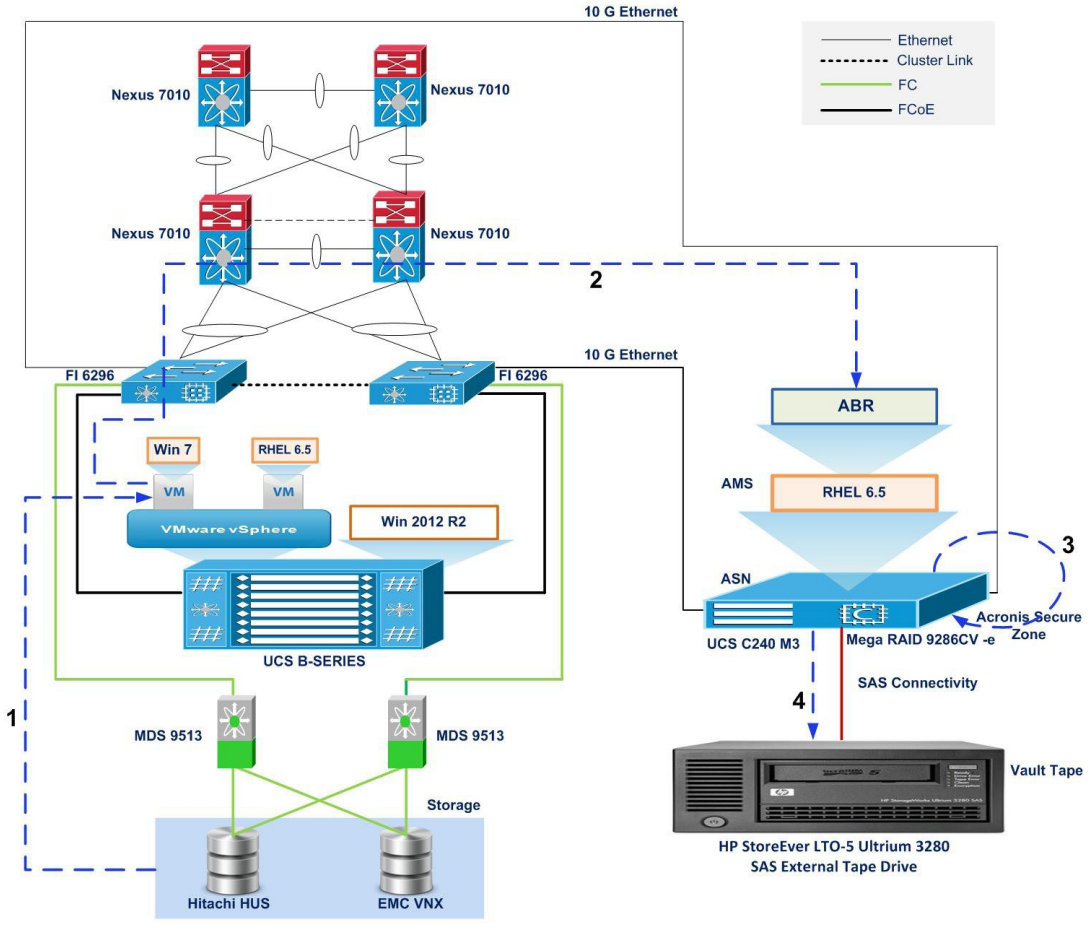


Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Acronis Secure Zone
4	Acronis Secure Zone	HP StoreEver LTO-6 Ultrium 6650

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to Acronis Secure Zone and then Replicate the same to HP StoreEver LTO-6 Ultrium 6650 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-6 Ultrium 6650 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Figure 23: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Acronis Secure Zone

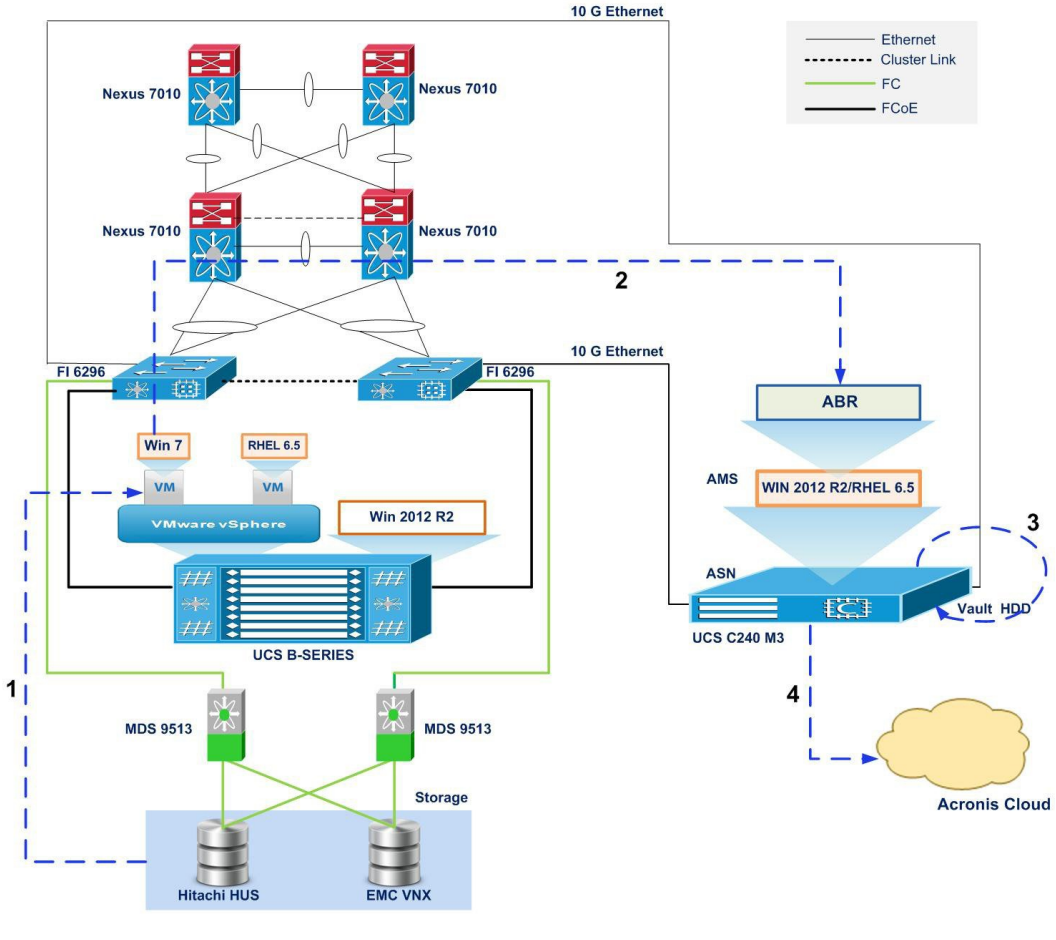
Backup data flows:		
Step	**From**	**To**
4	Acronis Secure Zone	HP StoreEver LTO-5 Ultrium 3280

Description

- Backup of data files (Word, PDF, and Excel) from Windows7 Japanese Operating System to Acronis Secure Zone and then Replicate the same to HP StoreEver LTO-5 Ultrium 3280 using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or HP StoreEver LTO-5 Ultrium 3280 by using various Recover Option available on Acronis Advanced Backup and Recovery 11.5

Open Issue (Acronis Cloud)

Figure 24: Topology in Use



Backup data flows:		
Step	**From**	**To**
1	Disk Array (Hitachi HUS & EMC VNX)	VM in B series SAN based server (Backup client)
2	VM in B series SAN based server (Backup client)	Acronis Management server
3	Acronis Management server	Backup Server Disk
4	Backup Server Disk	Acronis Cloud

Description

- Backup of data files (Word, PDF, and Excel) from Windows/Linux System to C Series Server Local HDD and then Replicate the same to Acronis Cloud using Acronis Advanced Backup and Recovery 11.5 software.
- Recover the Files either from Local HDD or from Acronis Cloud using various Recover Option available on Acronis Advanced Backup and Recovery 11.5.

Acronis Case Number - 02269499

Related Documentation

Cisco Servers -Unified Computing

http://www.cisco.com/en/US/products/ps10265/index.html

LSI MegaRAID SAS 9286-8e

http://www.lsi.com/products/storagecomponents/Pages/MegaRAIDSAS9286-8e.aspx

Acronis Backup & Recovery 11.5 Advanced Version for Windows

http://www.acronis.com/en-us/business/backup-advanced/windows-server/

Acronis Backup & Recovery 11.5 Advanced Version for Linux

http://www.acronis.com/en-us/business/backup-advanced/linux-server/

Acronis Backup & Recovery 11.5 Advanced Version for VMware

http://www.acronis.com/en-us/business/backup-advanced/vmware/

Acronis Backup to Cloud

http://www.acronis.com/en-us/cloud/backup/