

IM L05 Hands-on Lab:

Backup Exec 2012 Simplified Disaster Recovery

Lab Description:	Backup Exec 2012 Simplified Disaster Recovery Hands-on Lab			
	his hands-on lab will introduce you to the integrated bare metal and issimilar hardware recovery features of Backup Exec 2012. No rerequisites are required to successfully complete the lab exercises elow.			

This lab will help you:	 Describe the new bare metal and dissimilar hardware recovery features included in Backup Exec 2012
	 Understand the basic bare metal recovery process and the steps involved
	 Perform a bare metal recovery of a server using the Backup Exec 2012 recovery disk

Lab Notes:	 A brief presentation will introduce this lab session and discuss key concepts.
	Feel free to perform this lab at your own pace.
	Be sure to ask your instructor(s) any questions you may have.
	 Thank you for coming to our lab session.

Lab Configuration

Virtual Machine Configuration

The virtual environment that we will use for the Backup Exec 2012 Simplified Disaster Recovery hands-on lab consists of five virtual machines as shown in the diagram below:



Note: The virtual machines that make up our lab environment are made available to lab attendees strictly for the purposes of the Backup Exec 2012 Simplified Disaster Recovery handson lab session and may not be copied or transferred to any other location or portable device.

For reference, infrastructure information for each of the virtual machines in our lab, such as host name and IP address, can be found in the chart below. Feel free to refer to this chart at any time while moving through the lab exercises outlined in this document.

Virtual Machine Name	Guest Host Name	•Purpose	IP Address
1	CAS-DC	•Domain Controller •Backup Exec Central Administration Server	192.168.1.11
2	FS-MMS	•File Server •Backup Exec Managed Server	192.168.1.12
3	P2V	•File Server •Backup Exec Agent for Windows	192.168.1.13
4	ESXI 5	•VMware ESXi version 5.0	192.168.1.14
5	Sharepoint	•Sharepoint Server •Backup Exec Agent for Windows	192168.1.15

Virtual Machine Account Information

For reference, username and password information for each of the virtual machines in our lab can be found in the chart below. Feel free to refer to this chart at any time while moving through the lab exercises outlined in this document.

Name	Username	Password
CAS-DC.DEMO.COM		
FS-MMS.DEMO.COM	adminiatrator	aumadaau
P2V.DEMO.COM	administrator	S y IIIC 4110 w
SHAREPOINT.DEMO.COM		

Backup Exec CAS Server

VMware ESX						
Name	Username	Password				
ESXv5.DEMO.COM	Root	symc4now				

Overview: Simplified Disaster Recovery

Simplified Disaster Recovery

Simplified Disaster Recovery (SDR) is the technology used by the new Backup Exec 2012 product to enable advanced recovery capabilities for physical servers. These capabilities include the following:

Recovery Features Enabled by Simplified Disaster Recovery				
Bare Metal Recovery	\checkmark			
Dissimilar Hardware Recovery	\checkmark			
On-line Server Recovery	\checkmark			
Physical to Virtual Conversions (P2V)	\checkmark			
Backup to Virtual (B2V)	\checkmark			
Point in Time (Ad Hoc) Conversion	\checkmark			

Enabling Simplified Disaster Recovery

Within Backup Exec 2012, a backup workflow can be identified as SDR-enabled by the presence of the following ribbon, located at the top of the 'Browse' tab in the 'Backup Selections' section when creating a backup workflow, as in the screenshot below:

Backup Selections	×
Browse Selection Details	
Simplified Disaster Recovery: ON	Name 🔺
	V 🖻 E:
 ▷ ♥ ♥ ■ E: ▷ ♥ ⑦ Microsoft SQL Server Instances ▷ ♥ ⑦ Surtam State 	✓ in Microsoft SQL Server Instances ✓ in Microsoft SQL Server Instances ✓ in Microsoft SQL Server Instances
System State	
L	
Help	OK Cancel

Elements Captured by Simplified Disaster Recovery

SDR technology captures critical system elements required for performing bare metal and dissimilar hardware recovery operations, as well as virtual conversion operations. Some of these critical elements include the following:

- System volume
- Boot volume
- Services volumes

• System state components

By default, every new backup job for a protected physical server is SDR-enabled. If desired, SDR protection can be disabled by unselecting the SDR feature directly or by unselecting critical system components from a backup workflow that are required for SDR operations.

The Backup Exec 2012 Recovery Disk

The Backup Exec 2012 recovery disk is the tool used by administrators to perform bare metal and dissimilar hardware recovery operations. The Backup Exec 2012 recovery disk is based on the powerful Microsoft WinPE operating system, and includes a robust driver database leveraged for both runtime tasks and dissimilar hardware recovery operations.



Recovery Disk Versions

Two basic versions of the Backup Exec 2012 recovery disk are available. They are:

- 32-bit
- 64-bit

These two versions of the recovery disk are included, on separate DVDs, with Backup Exec 2012. Depending on the platform being restored, the correct version of the recovery disk should be used. Each recovery disk boots and operates in an identical manner. When creating a custom version of the recovery disk, the corresponding source version of the default recovery disk must be used.

Recovery Disk Language Support

The recovery disk supports all languages supported by Backup Exec 2012. During the recovery disk boot process, a language selection screen is displayed from which the administrator can select a language version to use:

Choose an opera	ating syst	tem to sta	art	t:		
(Use the arrow	keys to b	hiahliaht	v	our choice, then press	FNTFR)
(ooo ano an on			,,,			
Simplified	Disaster	Recovery	-	English		>
Simplified	Disaster	Recovery		Spanish		
Simplified	Disaster	Recovery		German		
Simplified	Disaster	Recovery		French		
Simplified	Disaster	Recovery		Italian		
Simplified	Disaster	Recovery		Russian		
Simplified	Disaster	Recovery		Portuguese		
Simplified	Disaster	Recovery		Japanese		
Simplified	Disaster	Recovery		Simplified Chinese		
Simplified	Disaster	Recovery		Traditional Chinese	[♥]	

After a language has been selected, the recovery disk boot process continues and the corresponding language-version of the recovery environment is loaded.

Recovery Environment Interface

After entering the recovery environment, the administrator can navigate between three tabs:

• **Recovery** – "Home" screen of the recovery environment, used to launch recovery wizard and perform bare metal and dissimilar hardware recovery operations



• **Network** – Used to manage the server's network configuration while in the recovery environment, such as IP address settings

💈 Simplified Disaster Rec	zovery Disk	×
🔒 Simplified D	bisaster Recovery 2012	Symantec.
	Networking Tools	
Recovery Network Utilities	 Start My Networking Services Map a Network Drive Configure Network Connection Settings Run IP Config Utility Ping a Remote Computer 	25
<u>H</u> elp	(UTC-08:00) Pacifi	ic Time (US & Canada) E <u>x</u> it

• Utilities – Used for additional recovery environment operations, such as execution of the support tool, dynamic loading of drivers, and accessing a command prompt



Lab Exercise 1: Create an SDR-enabled Backup of Server "P2V"

Step 1: Locate Server P2V in the Server List

- In VMware Workstation, navigate to the CAS-DC virtual machine console.
- If necessary, log onto the CAS-DC server (username: administrator, password: symc4now).
- On the CAS-DC virtual machine, launch the Backup Exec Central Administration Server console.
- Notice the system "P2V" in the server list; this is the server that is the focus of today's lab.

Home Backup ar	nd Restore Storage Repor	ts					
Compact Sort and Filter	Backup One-Time Backup Backup Backup Calence	up Restore Search	Convert A	d Add VMware Server	Remove Update	Hold Job Queue	Run Next Backup Now
Views	Backups	Restores	Virtualization	Serv	ers	Jo	obs
	_	_	_	_	Servers	_	_
Server 🛋 🛛 🗛	ctive Alerts Status		Last 7 Days of	Backup Jobs	Last Backup		Next Backu
192.168.1.14 ESX v5	Backed up		We Th Fr 3	Sa Su Mo Tu	2/12/2012 8:20	5:06 PM	
CAS-DC.demo.com	Backed up		We Th Fr 3	Sa Su Mo Tu	2/13/2012 3:1	5:49 PM	
FS-MMS.demo.com	Never backed up	p	We Th Fr 1	Sa Su Mo Tu			
P2V.demo.com	Backed up		We Th Fr :	Sa Su Mo Tu	2/13/2012 3:0	5:17 PM	
Server Farm 1	Never backed up	p	We Th Fr :	Sa Su Mo Tu			
sharepoint.demo.com	Backed up		We Th Fr :	Sa Su Mo Tu	2/12/2012 8:20	5:06 PM	
18			we in Fr :	sa su mo <mark>nu</mark>			

Step 2: Create a Disk Storage Device on the Backup Exec Central Administration Server

• Select the 'Storage' tab in the Backup Exec 2012 console.

6	A Home Ba	kup and Res	tore Storage Repo	prts			
Compa	ct Sort and Filter *	Pause Disable Offline	Configure Delete Share	Inventory and Catalog			
	Views	State	Configure	Storage Operations			
_	_	_	_	_	_	All Storage	
Name			State	Active Alerts	Storage Trending	Capacity	
	CAS-DC Central Administration	Server	Online				
	FS-MMS Managed Backup Exec S	Server	Online				

- In the tob ribbon, select the option to 'Configure Storage'.
- When prompted, select to create a storage device on the 'CAS-DC' server (this server).
- Select 'Disk-based Storage'.
- Select Disk Storage.
- Enter a name and description for your disk storage device.
- Select a local path for the disk storage device on volume E:\ (should be the default).
- Select Finish.

Step 3: Create a Full Backup of Server "P2V"

- Navigate back to the 'Backup and Restore' tab.
- In the top ribbon, select the option for 'Backup' and then 'Backup to Disk'.

Home Backup and Re	store Storage Reports			
Compact Sort and Filter •	ckup Gup Backup · Backup Backup · Backup Calendar	Convert Add Ad	dd VMware Server	Hold Job Queue Backup Nor
Views	Back Up to Disk	-	Servers	Jobs
			Servers	
Server 🔺 Activ	Back Up to Disk and then Convert to Virtual Machine		obs Last Backup	Next Bac
192.168.1.14 ESX v5	Back Up to Disk and Simultaneously Convert to Virtual Machin	ne 🗕 🔿 🕂 🤔	2/12/2012 8:2	6:06 PM
CAS-DC.demo.com	Create a New Backup Using the Settings from an Existing Bac	kup	2/13/2012 3:1	6:49 PM
FS-MMS.demo.com	Never backed up	We Th Fr Sa Su	Mo Tu	
P2V.demo.com	Backed up	We Th Fr Sa Su	Mo Tu 2/13/2012 3:0	5:17 PM
Server Farm 1	Never backed up	We Th Fr Sa Su	Mo Tu	
sharepoint.demo.com	Backed up	We Th Fr Sa Su	Mo Tu 2/12/2012 8:2	6:06 PM

- In the lower right-hand corner, select the 'Edit' button.
- Select the option to 'Run now with no recurring schedule'.

Backup Options		×
Schedule	Full	
Storage Network Notification Test Run Verify	Schedule: Recurrence: Run Now Run now with no recurring schedule Submit job on hold	
Security Pre/Post Commands Files and Folders	P Incremental ×	
Exclusions	Schedule: At 11:00 PM, then every 1 day	
	Add Backup Jobs By Mathod 🔻	

• The status of the "P2V" server should change to 'Backing up' in the 'Backup and Restore' tab.

Compact Sort and Filter +	roups Backup One- Backup Backup Backu	Time Edit Backup kup • Backups Calendar	Restore Search	Convert A	dd Add VMware Server	Remove Update	Hold Job Queue	Run Next Backup Now
Views		Backups	Restores	Virtualization	Serv	ers	Jo	obs
_	_	_	_	_	_	Servers	_	_
Server 🔺	Active Alerts	Status		Last 7 Days of	Backup Jobs	Last Backup		Next Back
192.168.1.14 ESX v5		Backed up		We Th Fr	Sa Su Mo Tu	2/12/2012 8:20	5:06 PM	
CAS-DC.demo.com		Backed up		We Th Fr	Sa Su Mo Tu	2/13/2012 3:10	5:49 PM	
FS-MMS.demo.com		Never backed up		We Th Fr	Sa Su Mo Tu			
P2V.demo.com		Backing up	00:00:53	≪ We Th Fr	Sa Su Mo Tu	2/13/2012 3:0	5:17 PM	3/28/201
Server Farm 1		Never backed up			Sa Su Mo Tu			
sharepoint.demo.com		Backed up			Sa Su Mo Tu	2/12/2012 8:20	5:06 PM	

• You can view additional details on backup progresss by right-clicking the "P2V" server and selecting 'Details'.



• The backup operation should take approximately 5 minutes to complete.

Lab Exercise 2: Prepare for Recovery

Step 1: Boot the P2V Virtual Machine with the Backup Exec 2012 Recovery Disk

- In VMware Workstation, navigate to the console of the P2V virtual machine.
- Restart the P2V virtual machine using the standard restart method within Windows.
- As the virtual machine reboots, press the 'ESC' key to access the system boot menu.
- Select the option to boot from the CD-ROM device.

Note: An ISO file of the 32-bit recovery disk should already be mounted to the virtual CD-ROM device for the virtual machine.

- When the message "Press any key to boom from CD..." appears, quickly press a keyboard key such as the spacebar to continue the CD-ROM boot process.
- A language menu appears. Select your desired language from the list.

Windows Boot Manager	
Choose an operating system to start: (Use the arrow keys to highlight your choice, then press ENTER.)	
Simplified Disaster Recovery - English >	
Simplified Disaster Recovery - Spanish	
Simplified Disaster Recovery - German	
Simplified Disaster Recovery - French	
Simplified Disaster Recovery - Italian	
Simplified Disaster Recovery - Russian	
Simplified Disaster Recovery - Portuguese	
Simplified Disaster Recovery – Japanese	
Simplified Disaster Recovery - Simplified Chinese	
Simplified Disaster Recovery - Traditional Chinese $\left[m{ extsf{v}} ight]$	
To specify an advanced option for this choice, press F8. Seconds until the highlighted choice will be started automatically: 15	

- Aaccept the license agreement to continue.
- You should now see the Simplified Disaster Recovery main menu.



Step 2: Configure Recovery Environment IP Address

• Select the 'Network' tab on the left side of the screen.

💈 Backup Exec™ 2012 5	implified Disaster Recovery Disk	×
Simplified	Disaster Recovery	Symantec.
Recovery Network Utilities	Networking Tools Start My Networking Services Map a Network Drive Configure Network Connection Settings Sun IP Config Utility Ping a Remote Computer	25
<u>H</u> elp	(UTC-08:00) Pacifi	ic Time (US & Canada) E <u>x</u> it

- Select the option to 'Configure Network Connection Settings'.
- Confingure the network adapter settings to use the IP address 192.168.1.13, to use the subnet mask 255.255.255.0, and the default gateway of 192.168.1.11. If you receive an error after entering these values, it can be ignored.

l(R) PRO/1000 MT Network	Connection					
Address						
Obtain an IP address auto	omatically	📀 Obtain DNS server a	ddress autor	natically		
Use the following IP addre	255:	C Use the following DN	IS server add	resses:		
IP Address:	192 . 168 . 1 . 13	Preferred:				
Subnet Mask:	255 . 255 . 255 . 0	Alternate:	1	- 377	- 114	
Default Gateway:	0.0.0.0					

Lab Exercise 3: Perform a Bare Metal Recovery of Server "P2V"

Step 1: Complete the 'Recover This Computer' Wizard

- Navigate back to the Simplified Disaster Recovery main screen by selecting the 'Recovery' tab on the left.
- Select the option to 'Recover This Computer'.
- Select the option 'The data is located on devices attached to a remote Backup Exec server.'

	The data is located on devices attached to a remote Backup Exec server.	
J	Use this option if the backup data for this computer is located on backup devices that are attached to a remote Backup Exec server.	5
	The data is located on devices locally attached to this computer.	
-	Use this option to recover this computer if it was backed up to locally attached devices such as tape drivi	es,
	autoloaders, disk storage devices, or disk cartridge devices.	
	autoloaders, disk storage devices, or disk cartridge devices.	
	autoloaders, disk storage devices, or disk cartridge devices.	

• The Backup Exec server we need to connect to is "CAS-DC". The domain is "demo.com". The user name is "administrator". The password is "symc4now".

To which Bac	Kup Exec server do you want to connect?
Backup <u>E</u> xec server:	CAS-DC
omain:	demo.com
Jser Name:	administrator
assword:	•••••
	Configure network adapter settings

• Select the latest backup set available for server "P2V" (should be the default selection).

Recove	er This Compu	ter Wizard				
Whic	ch backup	o sets d	o you want to use	e to rec	over the c	omputer?
Gelect a	Comp <u>u</u> ter: P2	V.DEMO.COM				•
oint in	time:	👂 Latest (Yest	erday 11:57:42 PM) Disk	P2	V.demo.com Backu	up 00028-Full 👻
Reco	over the entire of	omputer with t	his point-in <mark>-ti</mark> me backup set			
	Cathlana	Madia Labal	Paulum Data Mina	ſ		
Requ	uired Backup S	ets	Backup Date/Time			
08	C:	B2D000008	3/27/2012 11:58:02 PM			
28	System State	B2D000009	3/27/2012 11:59:51 PM			
hat if Lo	don't want to recr	over the entire	computer?	< Back	Next >	Cancel
ISAN II I S				- Each	Lienty	

• You may change the target volume layout, or select the available defaults.

🛓 Recover Th	is Computer Wizard			x
Do you sets?	want to use this volu	me layout for the	selected backup	
Volume	Туре	Original Volume Size	New Volume Size	
C:	Boot Drive, System Drive, Active,	9.98GB	9.98 GB 💌	
Erase hard Existing da	d disks and recreate the volume layout sl ta on these disks will be lost.	nown above.	Load Storage controller drivers Advanced Disk Configuration	
Should I chang	e the volume layout?	< Back	Next Cancel	

- Select the option to 'Recover'.
- The recovery process should take approximatel 10 minutes.

Step 2: Monitor the Boot Progress of the "P2V" Server After Recovery

- After the recovery process has completed, the "P2V" server can be rebooted.
- During the reboot, allow the server to boot normally into Windows.
- A few automated driver installation processes will run to ensure additional drivers are loaded for the system, such as for the mouse, keyboard, etc.
- During the boot process, you may be prompted to rejoin the domain DEMO.COM. Use the username "administrator" and the password "symc4now" to add the server back to the domain.
- Recovery of server "P2V" is now complete.

Congratulations! You have successfully completed the Backup Exec 2012 Simplified Disaster Recovery hands-on lab. If you have finished early, feel free to take advantage of the extra time by trying other features and capabilities of Backup Exec 2012 in the lab environment.

Please feel free to take this lab guide with you as you leave the lab area, if you desire.