Integrating Symantec Backup Exec™ System Recovery and Altiris® Deployment Solution™

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Executive Summary

Now that Altiris is part of the greater Symantec family, the integration of products from both companies is well underway. This document targets a specific aspect of that integration; namely, the ability to leverage the strengths of Symantec Backup Exec™ System Recovery with Altiris® Deployment Solution™ for Dell Servers.

These two products are very complementary. Deployment Solution's strengths are centered in its ability to automate a complete server build, including the bare-metal provisioning of hardware (including BIOS, DRAC, RAID and BMC configuration), laying down an operating system, deploying popular software titles such as VMware ESX, SQL Server, Oracle, and so on.

Backup Exec System Recovery offers the ability to quickly and easily take system snapshots and recover those snapshots to the same or dissimilar hardware. Combining the strengths of these products with some simple Deployment Solution jobs is the focus of this document.

Using the jobs provided with this document, a server that has been fully provisioned with Altiris Deployment Solution can automatically and remotely install Backup Exec System Recovery and then trigger a backup of the newly deployed server.

In the event of a catastrophic hardware failure, Deployment Solution can help provision the new computer's hardware in a matter of minutes and then leverage Backup Exec System Recovery to restore not only the critical business data, but the entire operating system from the last recovery point that was captured.

Finally, Backup Exec System Recovery's ability to restore recovery points to dissimilar hardware or even virtual environments with P2V, V2P and even V2V functionality provides added value for Deployment Solution users. For more information about this functionality, refer to the "Additional Resources" section later in this document.

In short, the jobs discussed in this document allow you to:

- Deploy Backup Exec System Recovery onto Altiris-managed servers
- Perform backups of the System Volume (SysVol) and file/folder levels
- Schedule a SysVol restore leveraging the System Recovery Disk (SRD)
- Convert Backup Exec System Recovery points to VMware and Microsoft virtualization formats

Although this document addresses the integration of Deployment Solution and Backup Exec System Recovery on Dell hardware, the provided jobs work with any type of hardware and versions of Backup Exec System Recovery (retail or OEM).

With the combined strengths of both Deployment Solution and Backup Exec System Recovery, IT administrators can more effectively manage server builds, rebuilds, and full system recovery from a central console.

Note: These jobs are provided "as is" and are not supported by Altiris or Symantec Technical Support. The jobs are currently under review by Symantec Product Management for potential inclusion in future product releases.

Altiris® Deployment Solution™ for Dell Servers Overview

Altiris Deployment Solution for Dell Servers is a combination of Deployment Solution (the core product) and a free add-on that incorporates Dell's OpenManage Tool Kit and other Dell-specific extensions to the core product.

This tool kit—referred to as the Dell Tool Kit or DTK—enables the bare-metal provisioning of hardware components such as the BIOS, Dell Remote Access Controller (DRAC), Baseboard Management Controller (BMC), and RAID. In addition to being able to provision the hardware, Deployment Solution can also assist with the scripted- or image-based deployment of operating systems and performs remote software installations such as OpenManage Server Administrator (OMSA). Deployment Solution can also be used to patch the Dell hardware in either a pre- or post-OS environment to leverage Dell Update Packages (DUP). This helps ensure that every Dell server placed into production has been patched with the latest firmware updates. For the ongoing management of firmware updates after the server has been placed in production, Altiris offers another free solution, Altiris Patch Management Solution™ for Dell Servers, which is optimized for identifying and installing applicable driver and firmware updates in product environments.

Once Deployment Solution is installed the Altiris agent can be remotely pushed to all servers to be managed. Servers can also be deployed from bare metal without requiring any prior Altiris agent to be installed. As part of the server operating system deployment, the Altiris agent is deployed to facilitate post OS configuration tasks.

Jobs in the Altiris console are dragged and dropped onto managed computers to execute 1:many deployment and configuration tasks. The jobs provided with this paper will deploy Backup Exec System Recovery onto Altiris-managed servers and then execute specific Backup Exec System Recovery functions.

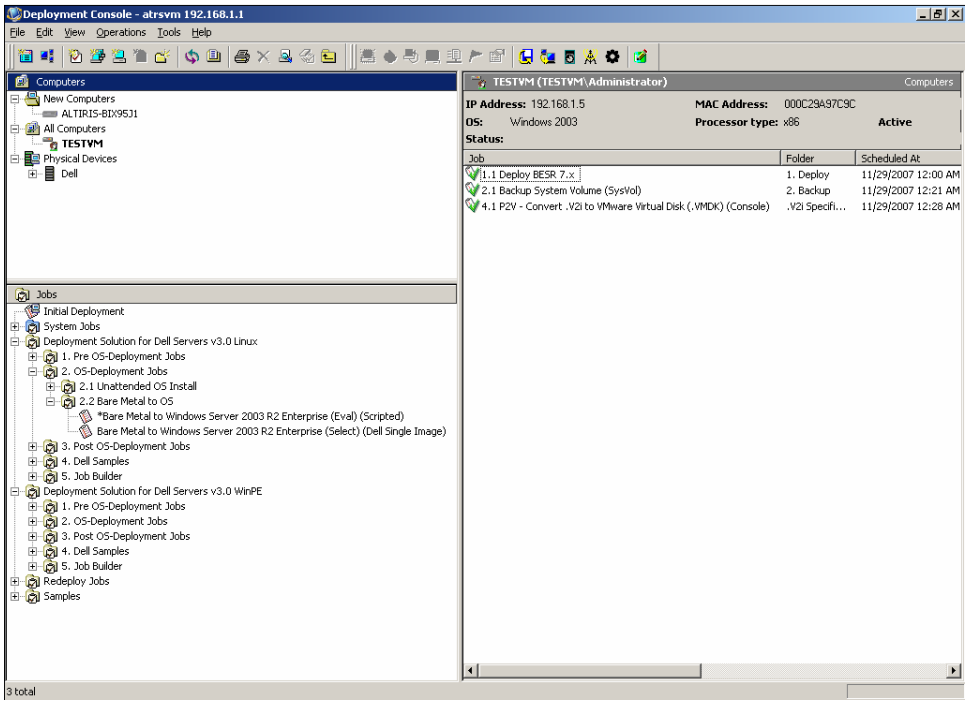

Figure 1: Deployment Solution console shows predefined Dell jobs. To learn more about Deployment Solution for Dell Servers, visit www.altiris.com/delldeploy.

Symantec Backup Exec™ System Recovery Overview

Symantec Backup Exec System Recovery 7.0 is a comprehensive disk-based system recovery solution for servers, desktops, and notebooks running Microsoft Windows operating systems. The solution allows enterprises to quickly recover from system failures or disasters, even when restoring to dissimilar hardware platforms, virtual environments, or unattended remote locations. It is designed to capture recovery points for live Windows based systems, including the OS, applications, system settings, configurations, and files, without affecting productivity. Administrators can easily save these recovery points to media or disk storage devices—including storage area networks, network attached storage, direct attach storage, RAID volumes, CD/DVD drives, and so on—and then quickly restore them without requiring lengthy and error-prone manual processes.

A key feature of Backup Exec System Recovery 7.0 is the Restore Anyware™ technology. The Restore Anyware feature of Backup Exec System Recovery is designed to provide flexible hardware-independent recovery, enabling administrators to easily recover or migrate systems to dissimilar hardware platforms, virtual environments, or unattended remote locations. It can help administrators:

- Reduce recovery times and the need to deploy and maintain identical hardware
- Easily migrate end-user systems without requiring a complete reinstallation
- Convert system recovery points into virtual machines (VMs) for the VMware or Microsoft Virtual Server virtualization platforms and vice versa, allowing administrators to test patches, applications, and other software in a virtual environment

ALTIRIS NOTIFICATION SERVER™ INTEGRATION

Further enhancing the integration between Altiris and Symantec, the Symantec Backup Exec System Recovery Integration Component for Altiris is a revolutionary new solution designed to add rapid Windows system backup and recovery protection to the Altiris Notification Server™ framework. Backup Exec System Recovery 7.0, the gold standard in complete Windows system recovery, enables Altiris administrators to recover from unplanned downtime or system disaster in minutes, not hours or days. Helping IT administrators meet recovery time objectives, Backup Exec System Recovery provides fast, easy-to-use system restoration or full bare-metal recovery to dissimilar hardware and even virtual environments for servers, desktops or notebooks. To learn more about Backup Exec System Recovery's integration with Notification Server, visit http://www.altiris.com/Products/BESRintegration.aspx.

Integration Points

The Deployment Solution jobs provided with this document are in the form of a .bin file, as shown in Figure 2. These jobs, when imported, will be stored in the Jobs pane of the Deployment Solution console in the Samples folder with all other sample jobs. For instructions on how to import the .bin file and use the predefined jobs, follow the instructions below.

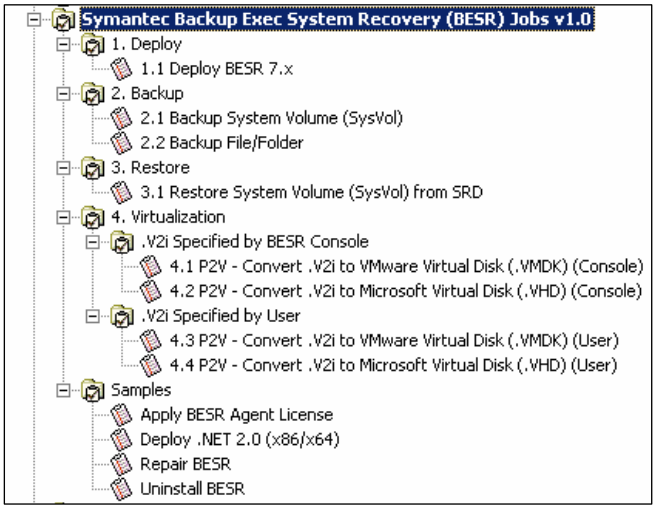

Figure 2: Backup Exec System Recovery sample jobs.

PREPARING DEPLOYMENT SOLUTION TO USE SAMPLE JOBS

There are some initial configuration steps that must be completed before the Backup Exec System Recovery predefined jobs can be used to their fullest extent. The steps below assume you have already installed Deployment Solution and any pertinent add-ons. For more information about where to obtain Deployment Solution, how to install, configure, etc., refer to the “Additional Resources” section at the end of this document.

Follow the steps below to set up integration between Deployment Solution and Backup Exec System Recovery.

1. Copy the entire contents of the Backup Exec System Recovery CD to the .\Program Files\Altiris\eXpress\Deployment Server\Deploy\BESR directory of the Deployment Server, as shown in Figure 3.

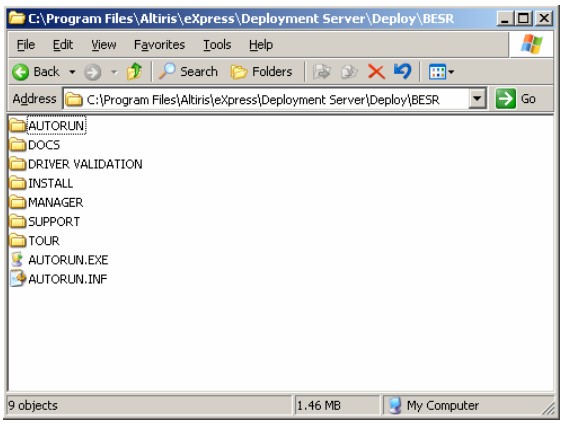

Figure 3: Contents of Backup Exec System Recovery CD.

2. Copy your Backup Exec System Recovery license file to the .\Program Files\Altiris\eXpress\Deployment Server\Deploy\BESR\Install directory. There are two forms of licenses depending on which version of Backup Exec System Recovery you've purchased, retail or OEM. If you've purchased the retail version, you will have a license file with a .SLF extension. If that's the case, rename the file to LICENSE.SLF, copy to the directory noted above, and then continue to the next step. If you've purchased the OEM version, the license file will be in the form of a product key. If that's the case, follow the directions below.

3. Open Notepad.exe.

4. Enter the product key in Notepad and then remove all hyphens. For example, if your product key was 12-3456-7890-123456, it would be entered in Notepad as 1234567890123456.

5. Save the text file as **LICENSE.SLF**. Ensure that there is no .TXT extension.

6. Copy the license file to .\Program Files\Altiris\eXpress\Deployment Server\Deploy\BESR\Install.

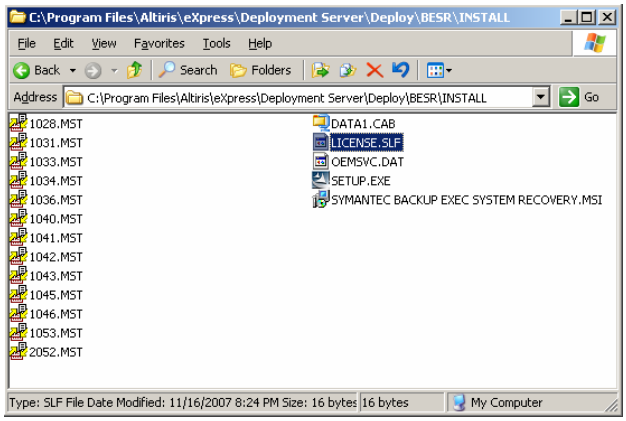

Figure 4: Install directory shows license file.

7. Obtain the accompanying support files for this document by clicking this link and following the directions below: http://ibase.altiris.com/resources/dell/besr/besrjobs.zip.

8. Extract the .zip file to the .\Program Files\Altiris\eXpress\Deployment Server\Deploy\BESR directory. You should now have a .\SCRIPTS folder and a BESRJOBS.BIN file in the root. See Figure 5.

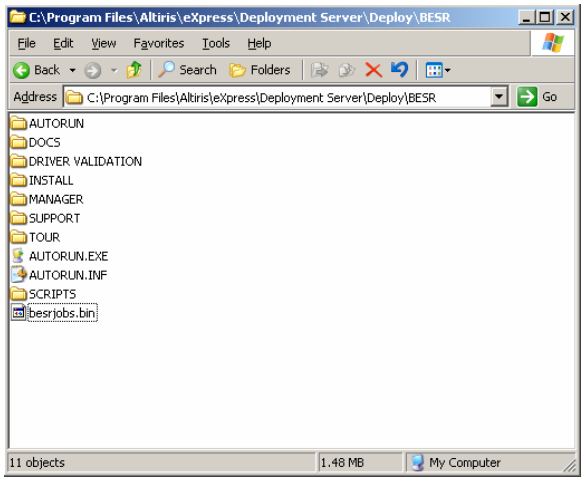

Figure 5: Backup Exec System Recovery directory with supporting files copied.

9. Import the .bin file into the Deployment Solution console.

10. Launch the Deployment Solution console if it's not already launched.

11. From the Jobs pane, right-click on the **Samples** folder and then click **Import**.

12. Browse to the C:\Program Files\Altiris\eXpress\Deployment Server\Deploy\BESR directory and select **BESRJOBS.BIN**.

13. Click **OK**.

You should now see the Backup Exec System Recovery jobs as shown previously in Figure 2. If you accidentally imported the jobs to the root of the jobs folder, simply drag and drop them to the Samples folder or whichever folder you prefer.

USING THE PROVIDED SAMPLE JOBS

Before continuing, make sure you have completed all the steps outlined in the "Preparing Deployment Server to Use Sample Jobs" section above.

This section describes the functionality of the provided jobs, specifies any user modifications that may be required to help ensure a successful execution, describes technical caveats when using the jobs, and more.

Some of the jobs provided use Deployment Solution "conditions" that function like "IF THEN" statements in a batch file. For example, the Backup Exec System Recovery deployment job will check for conditions such as: Is .NET 2.0 installed or not, is the system running x86 or x64 hardware, and is the system running a Windows operating system? The job will go through the defined conditions in sequence from top to bottom and look for the first complete match. When a complete match is found, the tasks contained within that condition are then executed.

In order for the conditions to work properly, the hardware and software inventory of that managed computer must be reported back to the Altiris Deployment Server database. Hardware inventory is automatically recorded in the database the first time the system loads the network stack and communicates back to the Deployment Server in a pre-OS environment. The software inventory of the system is reported back when the Deployment Server agent is loaded in a post-OS environment.

If no conditions are met, any tasks defined within the "Default" condition will execute. In this case, the default task will simply pass status messaging to the Deployment Server console indicating that the system is unsupported and that Backup Exec System Recovery was NOT installed on the remote server.

Accurate inventory must be present in the database for conditional jobs to function properly. In the unlikely event that you suspect a conditional job is not functioning properly, you can force Deployment Solution to collect new inventory by right-clicking on the managed computer and then selecting **Advanced > Get Inventory**. See Figure 6. This will pull current inventory data from the managed server into the Deployment Solution database.

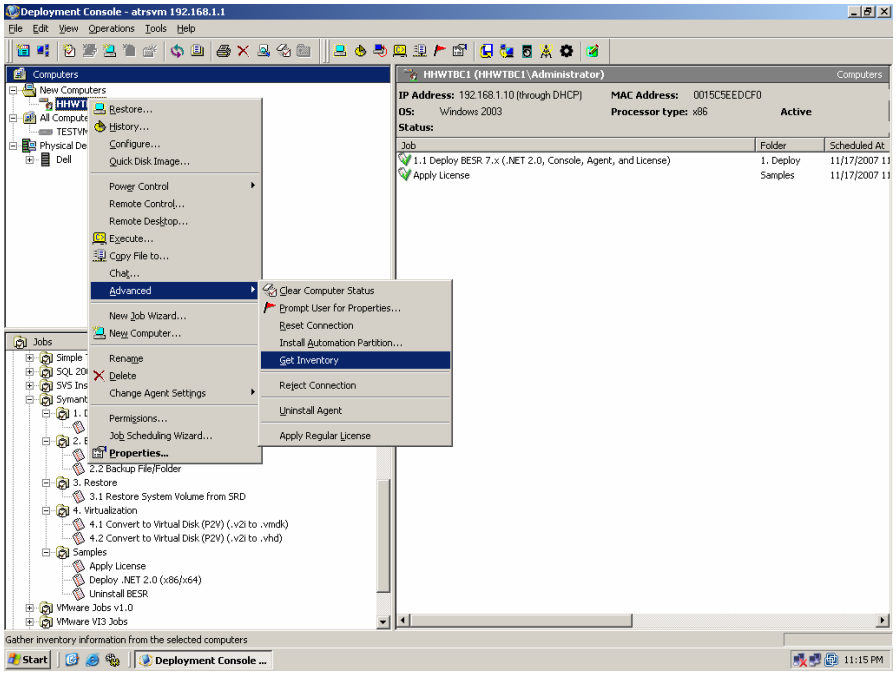

Figure 6: Deployment Solution console and manually updating the computer's inventory.

Note that all of the provided jobs are designed to report status messaging to the Deployment Server console to help indicate which part of the job(s) is being executed. This status messaging does not currently include extensive error handling. Therefore, the console could indicate that a job completed successfully even though Backup Exec System Recovery may have reported an error message. Always defer to the Backup Exec System Recovery interface on the managed server as the "source of truth" for status messaging.

If you follow the directions in the previous section and perform the prerequisite steps necessary for preparing the Deployment Server for Backup Exec System Recovery deployments and management, you should not encounter any issues. As further development continues with these integrated jobs, additional error handling will likely be added.

The next section discusses the functionality of each provided job.

Deploy Backup Exec System Recovery 7.x (with .NET 2.0)

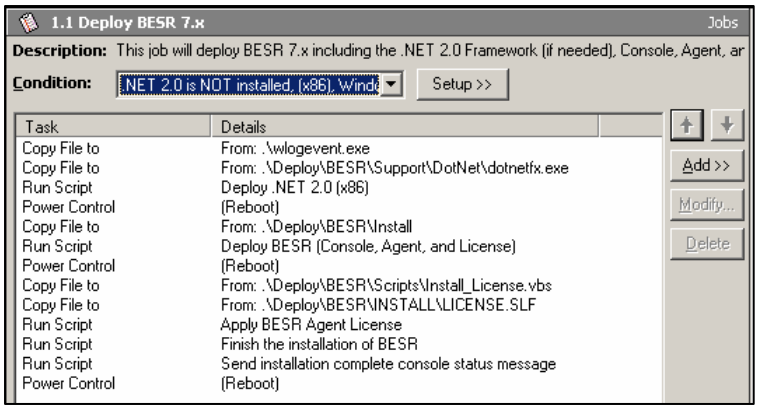

Figure 7: Backup Exec System Recovery deployment job with the ".NET 2.0 is NOT installed, (x86), Windows OS" condition shown.

This job consists of four Deployment Solution conditions as discussed previously in this section. The conditions are designed to check for the following:

- Is .NET 2.0 installed on the system? The .NET 2.0 Framework is required to launch the Backup Exec System Recovery GUI console. If .NET 2.0 is installed, the job continues by only deploying Backup Exec System Recovery. If .NET 2.0 is NOT installed, the correct version will be installed automatically based on the type of hardware (x86) or (x64) that exists on the managed computer.
- Is the hardware running (x86) or (x64) hardware?
- Is the managed computer running a Windows operating system? Because Backup Exec System Recovery will only install to a Windows based system, this condition will help validate if the managed computer is supported or not.

Depending on which condition is met, this job will deploy the following:

- .NET 2.0 Framework (if not already installed on managed computer)
- Backup Exec System Recovery Console
- Backup Exec System Recovery Agent
- Backup Exec System Recovery Agent License

If no conditions are met, the task defined in the "Default" condition is executed and passes status messaging to the Deployment Server console indicating that the system is unsupported and Backup Exec System Recovery was NOT installed.

User Modifications

If your goal is to install .NET 2.0 (if needed), the Backup Exec System Recovery console, agent, and license, there should be no user modifications necessary to run this job as-is. However, you may find it necessary to modify the command line arguments that are passed to the managed computer to install select components. For example, you may just want to install the agent and license, but not the console. Listed below are the various command line arguments and their definitions that can be passed to the managed computer.

If making changes to a job, always make a copy first and work from the duplicate. To copy the job, right-click on the job and select **Copy**, then paste to the same or desired folder. In addition, Backup Exec System Recovery jobs can always be re-imported into the Deployment Server console. The following lists all of the command line arguments and their definitions for installing Backup Exec System Recovery:

Console = BESR GUI
Browser = Recovery Point Browser - Allows you to mount a v2i and explore it
LiveUpdate = LiveUpdate utility for the console and agent
BESRConsoleShortcut = Shortcut for the GUI
BESRSecurityShortcut = Shortcut for the BESR permissions
Gear = Installs the Gear technology, which is for the CD/DVD burning capabilities
BESRBrowserShortcut = Shortcut for the Recovery Point Browser
Shared = Installs the program folder in the All Users group accessible to anyone
Agent = BESR Agent

To make changes to the command line arguments, follow these directions:

1. From the Deployment Server console, in the lower left quadrant of the console, highlight the job from the Jobs pane.
2. In the upper-right quadrant of the console, select a condition from the drop-down list.
3. Double-click the Deploy BESR (Console, Agent, and License) run script.
4. Make the necessary changes to the command line.
5. To save the job, click **Next > Finish**.

Depending on the circumstances, it may be necessary to duplicate your changes to each task in each condition of the job. If so, the Deployment Server console offers the ability to copy and paste individual or multiple tasks. Simply make the change to the task, right-click and select **Copy**, then paste the job to the other conditions. From there you can delete the old task and use the up and down arrows to the side to re-order the task back to where it should be for proper execution.

Technical Caveats

User intervention is required when logging into the managed computer for the first time after remotely installing Backup Exec System Recovery. Upon successful installation, the “Welcome to Symantec Backup Exec System Recovery” screen appears, prompting the user to click **Next** or **Cancel**. See Figure 8.

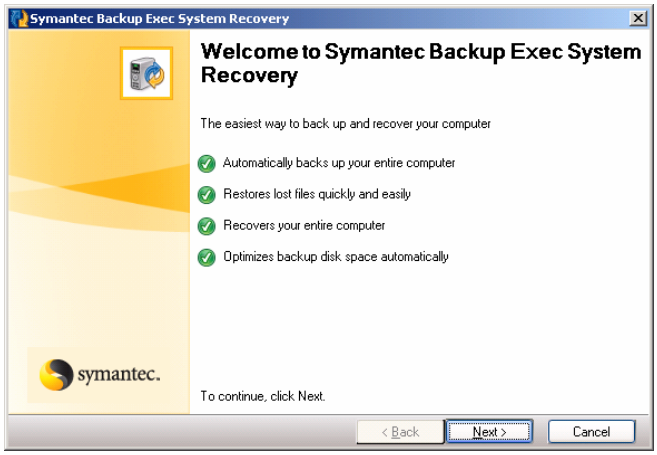

Figure 8: Welcome to Symantec Backup Exec System Recovery dialogue.

Although you can click Cancel at this point and return to the desktop, you will not be able to launch the Backup Exec System Recovery console nor will you receive pop-up status messaging from the Backup Exec System Recovery Agent notifying you if the Deployment Server sample job you’ve executed is working properly or not.
By clicking **Next**, you will be prompted to accept the EULA to continue.

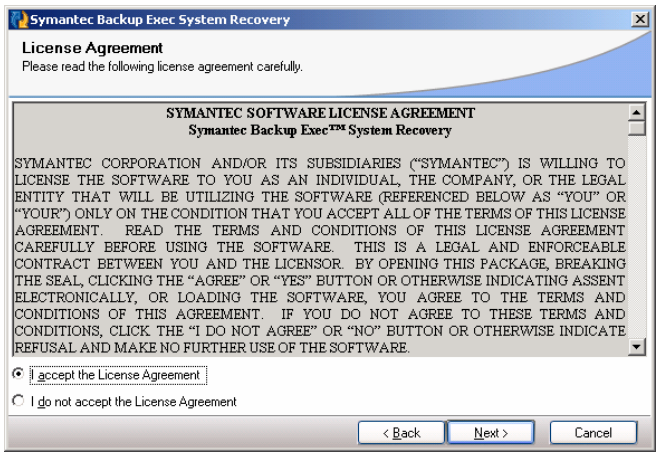

Figure 9: Accept EULA dialogue.

If the product has completed successfully and the license has been applied, a Thank You screen appears, as shown in Figure 10. Click **Finish**.

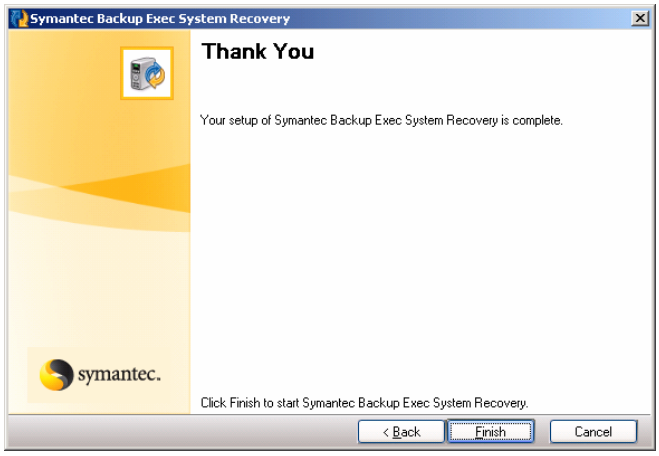

Figure 10: Thank You dialogue.

The final screen in this sequence is the Backup Status dialogue, as shown in Figure 11. At this point, you can either manage the system from the Backup Exec System Recovery console manually or continue to use the remaining sample jobs to manage the computer remotely from the Deployment Server console.

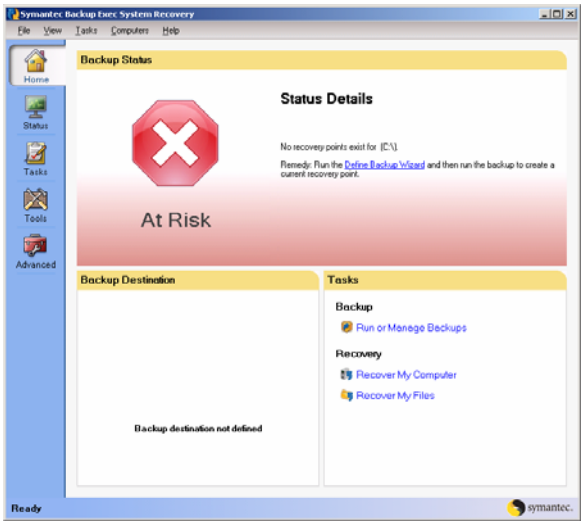

Figure 11: Backup Status dialogue.

Symantec Development is currently working to find the best way possible to suppress these dialogues after installation. The remaining sample jobs should execute without incident if the managed computer has not been logged on remotely and initially presented with these dialogues.

If after installing the OEM version of Backup Exec System Recovery the screen shown in Figure 12 appears, this is an indication that the hyphens were not removed from the product key when creating the LICENSE.SLF file during the preparation of Deployment Server. To correct, follow the steps outlined in this section and run the **Apply BESR Agent License** job located in the Samples folder on the managed computer.

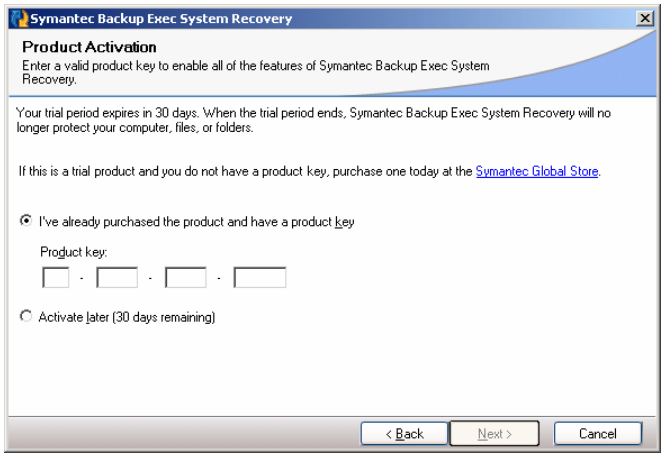

Figure 12: Product Activation dialogue for OEM version.

2.1 Backup System Volume (SysVol)

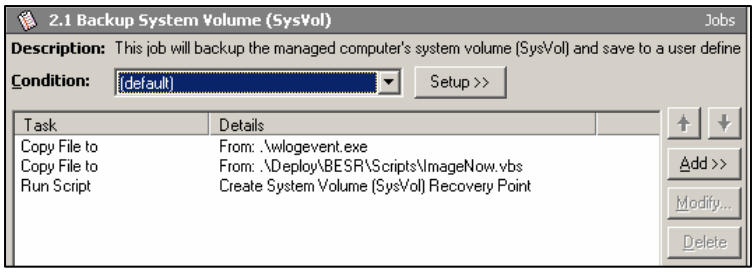

Figure 13: Backup System Volume (SysVol) job.

This job is designed to immediately back up the System Volume (SysVol) of the managed computer without first defining a schedule in the Backup Exec System Recovery console. The purpose is to eliminate the need to manually launch the Backup Exec System Recovery console and use the wizard to define and schedule the backup. Deployment Solution allows you to run the job in real time or through its built-in scheduling service. The end result is a .V2i file named after the hostname of the managed computer and stored in a directory of your choice driven by the embedded script; for example, G:\BACKUPS\AUSFILESRVR.V2I.

User Modifications

The user modification for this job requires editing the Run Script task by double-clicking and specifying the destination for the backed up data in the form of a .V2i file in the “User Modification” section of the script. The destination can be provided as a drive letter only, or drive letter and directory.

```
REM Create System Volume (SysVol) Recovery Point
REM Define user modification section below
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------------
set DESTINATION="G:\BACKUPS"
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------------
```

Example:

```
set DESTINATION="G:\"
```

OR

```
set DESTINATION="G:\BACKUPS"
```

In addition to the .V2i file being created, another file will be created with the same prefix but a different file extension of .sV2i. This is simply accompanying metadata that is used by the Backup Exec System Recovery console. Do not delete these files as they will be used with the physical to virtual (P2V) sample jobs introduced later in this document.

Technical Caveats

System drivers may not install correctly after Backup Exec System Recovery is installed. One indication of this is the NT System Event error message (shown in Figure 14) that appears when trying to perform a remote backup of the SysVol. This link describes the problem: http://seer.entsupport.symantec.com/docs/293860.htm.

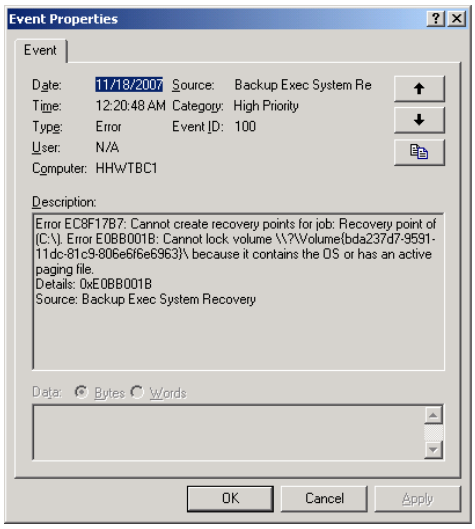

Figure 14: "Can't create recovery points" error message displayed in NT System Event Log.

To correct the problem, drag and drop the Repair BESR located in the Samples folder to the managed computer(s) that needs to be repaired. Upon reboot, run the backup job again.

Note that the Repair BESR job remotely executes the steps of resolution as defined in the Symantec knowledge base article automatically. Experiencing this issue is rare. As a precaution, we've incorporated this step into the Backup Exec System Recovery deployment job.

2.2 Backup File/Folder

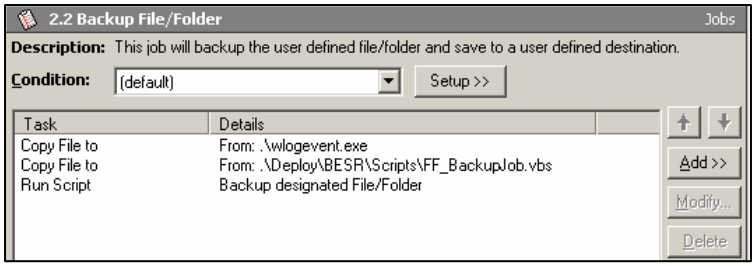

Figure 15: Backup File/Folder job.

This job is designed to immediately back up a user-defined file or folder of the managed computer, save the data to a user-defined location, and create an open-ended schedule in the Backup Exec System Recovery console, allowing this job to be executed from there if desired. This eliminates the need to manually launch the Backup Exec System Recovery console, use the wizard to define the data, schedule the backup, and execute. Deployment Solution allows you to run either the job in real time or through its scheduling service, which eliminates the need to maintain backup schedules from the Backup Exec System Recovery console.

User Modifications

The user modification for this job requires editing the Run Script task by double-clicking on it and specifying the source of the file/folder on the managed computer and the destination for the backed up data in the form of .FBF files. The destination can be provided as a drive letter only, or drive letter and directory.

```
REM Backup designated File/Folder
REM Define user modification section below
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------------
set SOURCE="C:\Documents and Settings\Administrator"
set DESTINATION="G:\"
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------------
```

Example:

```
set SOURCE="C:\Documents and Settings\Administrator"
```

OR

```
set SOURCE="C:\DOCS\FILENAME.DOC
set DESTINATION="G:\"
```

OR

```
set DESTINATION="G:\FILE_FOLDER
```

Technical Caveats

None.

3.1 Restore System Volume (SysVol) from SRD

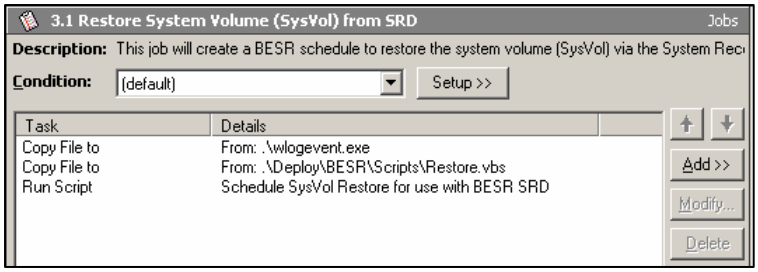

Figure 16: Restore System Volume (SysVol) from SRD job.

This job is designed to create a schedule within the Backup Exec System Recovery console to restore the System Volume (SysVol) of the managed computer. To complete the restoration, the Backup Exec System Recovery Disk (SRD) must be booted in a pre-OS environment so that the operating system and all critical business data can be restored.

The SRD is provided in the form of a CD and bundled with the Backup Exec System Recovery installation CD. The Dell OEM version of Backup Exec System Recovery should have the storage and network drivers needed for your systems to boot from and restore the data. In the event that the drivers are not included on the Dell OEM SRD, you can create a custom SRD from within the Backup Exec System Recovery console by clicking **File > Create Recovery Disk**. For more information about the Dell OEM SRD integration, visit http://dell.altiris.com/portals/0/WP_Fast_and_Easy_Server_Migration_with_BESR.pdf.

As further development continues, the goal is to fully integrate the SRD with Deployment Solution and provide the ability to remotely boot the SRD through Altiris PXE Services. This will eliminate the need to manually insert and swap CDs.

User Modifications

The user modification for this job requires editing the Run Script task by double-clicking on it and specifying the source location of the backed up SysVol data in the form of a .V2i file. The source can be provided as a drive letter only, or drive letter and directory.

```
REM Schedule SysVol Restore for use with BESR SRD
REM Define user modification section below
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------------
set SOURCE="G:\BACKUPS\"
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------------
```

Example:
set DESTINATION="G:\BACKUPS\"

OR

set DESTINATION="G:\"

Technical Caveats

The SRD CD must be manually inserted into computer where the SysVol data will be restored to. If the SRD CD does not contain the mass storage and network drivers needed to load the network stack and restore the data to the hard drives, you may need to create a custom SRD. Refer to the Backup Exec System Recovery documentation for more information.

4.1 P2V: Convert .V2i to VMware Virtual Disk (.VMDK) (Console)

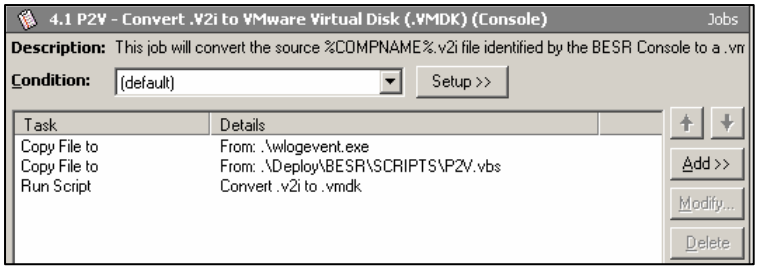

Figure 17: Convert .V2i to VMware Virtual Disk (.VMDK) (Console) job.

The next series of virtualization jobs have similar functionality with a variation. The P2V jobs with (Console) at the end of the name will convert the .V2i files that are recognized by the Backup Exec System Recovery console and automatically convert them to a virtual disk. The console already knows the .V2i filename and simply performs the conversion and copies the virtual disk, named after the hostname of the managed computer, to a user-defined destination. This is where the aforementioned .sV2i file becomes necessary. If this file does not exist and the Backup Exec System Recovery console does not know of the .V2i file's existence, the job will not execute properly.

This is where the second set of P2V jobs becomes necessary. The P2V jobs with (User) at the end of the name will allow the user to specify the source location and name of the .V2i file to be converted to a virtual disk without the Backup Exec System Recovery console knowing of its existence. This is very helpful for situations where the .sV2i file was accidentally deleted, the .V2i file's history was removed from the Backup Exec System Recovery console by accident, or you want to perform a disk conversion as a one-off.

This job is designed to convert the managed computer's SysVol data in the form of a .V2i file to a VMware Virtual Disk with a .VMDK file extension. As discussed previously, if the accompanying .sV2i file does not exist and if the .V2i file history does not reside in the Backup Exec System Recovery console, this job will fail. If that's the case, use the second set of P2V jobs with (User) in the name.

User Modifications

The user modification for this job requires editing the Run Script task by double-clicking on it and specifying the destination to where the converted virtual disk will be copied. The destination can be provided as a drive letter only, or drive letter and directory.

```
REM Convert .v2i to .vmdk
REM Define user modification section below
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------------
set DESTINATION="G:\VM"
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------------
```

Example:
set DESTINATION="G:\VM"

OR

set DESTINATION="G:\"

Technical Caveats

See the introduction to the P2V jobs for more information about what's required for these jobs to execute properly.

4.2 P2V: Convert .V2i to Microsoft Virtual Disk (.VHD) (Console)

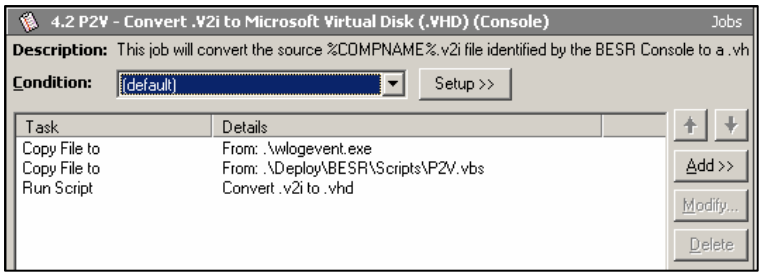

Figure 18: Convert .V2i to Microsoft Virtual Disk (.VHD) (Console) job.

This job is designed to convert the managed computer's SysVol data in the form of a .V2i file to a Microsoft Virtual Server Virtual Disk with a .VHD file extension. As discussed previously, if the accompanying .sV2i file does not exist and if the .V2i file history does not reside in the Backup Exec System Recovery console, this job will fail. If that's the case, use the second set of P2V jobs with (User) in the name.

User Modifications

The user modification for this job requires editing the Run Script task by double-clicking on it and specifying the destination to where the converted virtual disk will be copied. The destination can be provided as a drive letter only, or drive letter and directory.

```
REM Convert .v2i to .vhd
REM Define user modification section below
:: ------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------
set DESTINATION="G:\VM"
:: ------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------
```

Example:
set DESTINATION="G:\VM"

OR

set DESTINATION="G:\"

Technical Caveats

See the introduction to the P2V jobs for more information about what's required for these jobs to execute properly.

4.3 P2V: Convert .V2i to VMware Virtual Disk (.VMDK) (User)

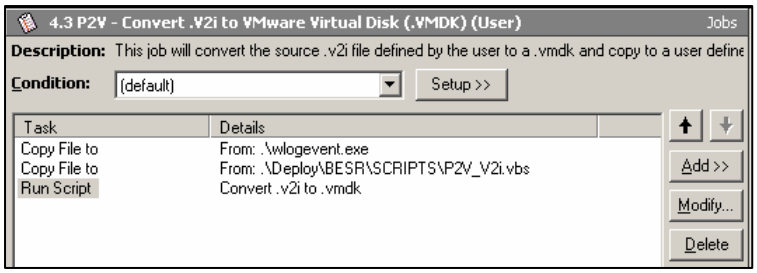

Figure 19: Convert .V2i to VMware Virtual Disk (.VMDK) (User) job.

This job is designed to convert the managed computer's SysVol data in the form of a .V2i file to a VMware Virtual Disk with a .VMDK file extension. As discussed previously, the existence of the .sV2i file and job history in the Backup Exec System Recovery console is NOT needed for this Deployment Server job to successfully execute.

User Modifications

The user modification for this requires editing the Run Script task by double-clicking on it and specifying the source location and name of the .V2i file to be converted and the destination to where the converted virtual disk will be copied. The source must be provided as a full path to the .V2i filename. The source can use Deployment Server tokens if you want to inject data that resides in the Altiris CMDB to the embedded script. For example, in the example shown, the %COMPNAME% token is used to pass the managed computer's hostname to the path of the source location. If the .V2i file is not named after the hostname of the managed computer or the filename deviates in any way, simply specify the name of the .V2i file in the field provided. The destination can be provided as a drive letter only, or drive letter and directory. For more information about Deployment Server tokens, refer to the Deployment Solution documentation.

```
REM Convert .v2i to .vmdk
REM Define user modification section below
:: ------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------
set SOURCE="G:\BACKUPS\%COMPNAME%.V2I"
set DESTINATION="G:\VM"
:: ------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------
```

Example:

```
set SOURCE="G:\BACKUPS\%COMPNAME%.V2I"
```

OR

```
set SOURCE="G:\BACKUPS\AUSFILESRVR.V2I"
```

```
set DESTINATION="G:\VM"
```

OR

```
set DESTINATION="G:\"
```

Technical Caveats

See the introduction to the P2V jobs for more information about what's required for these jobs to execute properly.

4.4 P2V: Convert .V2i to Microsoft Virtual Disk (.VHD) (User)

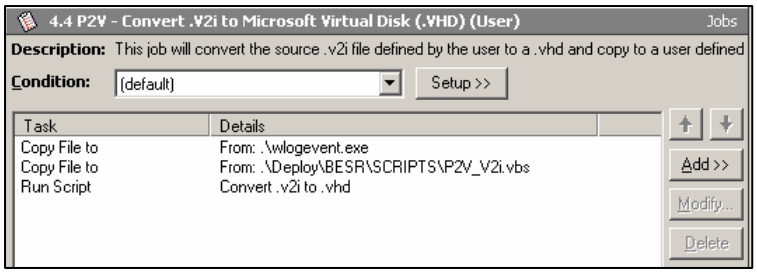

Figure 20: Convert .V2i to Microsoft Virtual Disk (.VHD) (User) job.

This job is designed to convert the managed computer's SysVol data in the form of a .V2i file to a VMware Virtual Disk with a .VMDK file extension. As discussed previously, the existence of the .sV2i file and job history in the Backup Exec System Recovery console are NOT needed in order for this Deployment Server job to successfully execute.

User Modifications

The user modification for this job requires editing the Run Script task by double-clicking on it and specifying the source location and name of the .V2i file to be converted and the destination to where the converted virtual disk will be copied. The source must be provided as a full path to the .V2i filename. The source can use Deployment Server tokens to inject data that resides in the Altiris CMDB to the embedded script. For example, in the example shown, the %COMPNAME% token is used to pass the managed computer's hostname to the path of the source location. If the .V2i file is not named after the hostname of the managed computer or the filename deviates in any way, simply specify the name of the .V2i file in the field provided. The destination can be provided as a drive letter only, or drive letter and directory. For more information about Deployment Server tokens, refer to the Deployment Solution documentation.

```
REM Convert .v2i to .vhd
REM Define user modification section below
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - BEGIN
:: ------------------------------------------------------------------
set SOURCE="G:\BACKUPS\%COMPNAME%.V2I"
set DESTINATION="G:\VM"
:: ------------------------------------------------------------------
:: -- USER MODIFICATION - END
:: ------------------------------------------------------------------
```

Example:

```
set SOURCE="G:\BACKUPS\%COMPNAME%.V2I"
```

OR

```
set SOURCE="G:\BACKUPS\AUSFILESRVR.V2I"

set DESTINATION="G:\VM"
```

OR

set DESTINATION="G:\"

Technical Caveats

See the introduction to the P2V jobs for more information about what's required for these jobs to execute properly.

Apply Backup Exec System Recovery Agent License

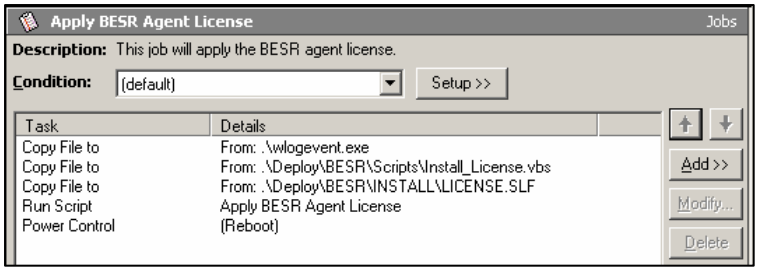

Figure 21: Apply Backup Exec System Recovery Agent License job.

This job is designed to apply the Backup Exec System Recovery agent license. As discussed previously in the "Preparing Deployment Server to Use Sample Jobs" section, depending on which version you are deploying (Retail or OEM), the license file is available in two forms. Follow the directions in the "Preparing Deployment Server to Use Sample Jobs" section to properly stage the successful application of this license. Note that the application of the license file is included by default in the Backup Exec System Recovery deployment job. You should not have to reapply the license file unless it has expired or needs to be updated; it has been provided as a convenience.

User Modifications

Follow the directions discussed previously in the "Preparing Deployment Server to Use Sample Jobs" section to properly stage the Deployment Server for the application of this license.

Technical Caveats

None.

Deploy .NET 2.0 (x86 / x64)

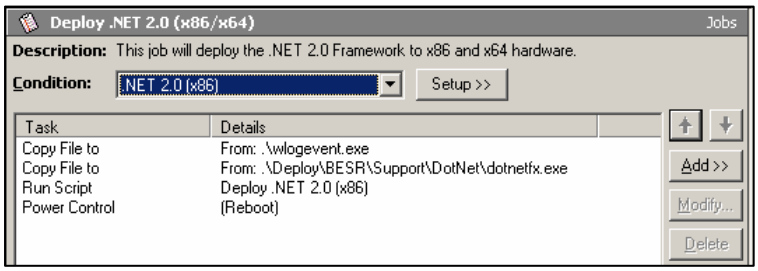

Figure 22: Deploy .NET 2.0 (x86 / x64) job.

This job is designed to force the .NET 2.0 Framework to be installed on the managed computer regardless of whether it's installed or not. Note that the installation of the .NET 2.0 Framework has been included by default with the Backup Exec System Recovery deployment job. This job should not have to be run, unless you want to install or re-install the .NET 2.0 Framework; it has been provided as a convenience.

This job consists of two Deployment Solution conditions as discussed previously in this section. The conditions are designed to check for the following:

- Is the hardware running (x86) or (x64) hardware?
- Is the managed computer running a Windows operating system?

If no conditions are met, the task defined in the "Default" condition is executed, which passes status messaging to the Deployment Server console stating that the system is unsupported and that .NET 2.0 was NOT installed.

User Modifications

Follow the directions described previously in the "Preparing Deployment Server to Use Sample Jobs" section to properly stage the Deployment Server for the application of this license.

Technical Caveats

None.

Repair Backup Exec System Recovery

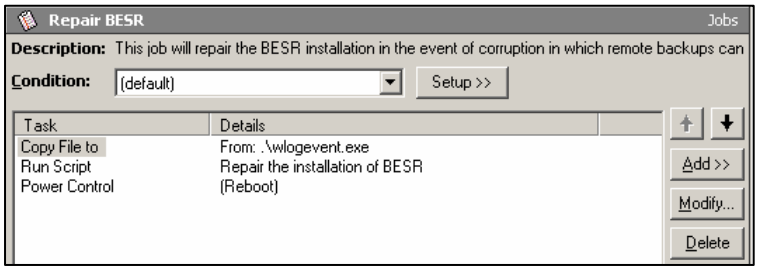

Figure 23: Repair Backup Exec System Recovery job.

This job is designed to remotely execute the steps of resolution provided in the Symantec Knowledgebase article found here at http://seer.entsupport.symantec.com/docs/293860.htm. The steps outlined in the KB have been performed by default as part of the Backup Exec System Recovery deployment job as a precaution. This job should not have to be run unless you are experiencing issues as described in the "Technical Caveats" section below.

User Modifications

None.

Technical Caveats

An indication that Backup Exec System Recovery may need to be repaired are the NT System Event error messages that may appear in the log (as shown in Figure 14) when trying to perform a remote backup of the SysVol for example. Simply drag and drop this job to the affected managed computers.

Uninstall Backup Exec System Recovery

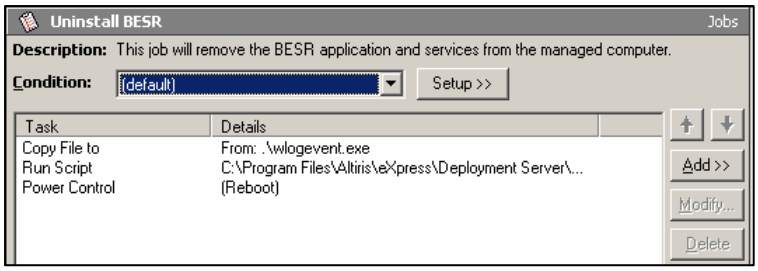

Figure 24: Uninstall Backup Exec System Recovery job.

This job is designed to uninstall Backup Exec System Recovery from the managed computer and remove all services. Use this job with caution as there are no safety mechanisms in place to prevent an IT administrator with privileges from executing this job. You can, however, set up role-based security in the Deployment Server console to specify granular security rights for other console users.

User Modifications
None.

Technical Caveats
None.

Conclusion

The purpose of this document is to help you leverage the strengths of Symantec Backup Exec System Recovery in an Altiris Deployment Solution environment. The combined feature sets of these two products offer server administrators a very powerful set of tools for automating server builds and rebuilds.

To learn about the value these solutions can offer your environment, consult resources in the next section.

Additional Resources

Backup Exec System Recovery information:
http://www.backupexec.com
http://www.backupexec.com/besr
http://dell.altiris.com/portals/0/WP_EasySystemMigrationInVirtualEnvironmentsWithSymantecBESR.pdf
http://dell.altiris.com/portals/0/WP_Fast_and_Easy_Server_Migration_with_BESR.pdf

Deployment Solution for Dell Servers Installation and Configuration Resources:
http://www.altiris.com/delldeploy

Dell Juice: A community for Altiris Dell branded product enthusiasts:
http://juice.altiris.com/dell

Altiris Dell Alliance information:
http://www.altiris.com/dell

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