IBM

IBM ServerGuide Scripting Toolkit

Hardware Configuration and Installation of the Solaris 10 OS on IBM Blade Servers

A White Paper

October 13, 2006

Notes:

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Contents

1 Preface

This white paper outlines configuring the hardware and installing the Solaris 10 operating system on IBM BladeCenter servers. This white paper will cover the following:

- Using the ServerGuide Scripting Toolkit to update the system BIOS prior to an OS installation.
- Using the ServerGuide Scripting Toolkit to configure RAID prior to an OS installation.
- Using the ServerGuide Scripting Toolkit to configure fibre prior to an OS installation.
- Performing a Solaris 10 OS JumpStart installation.
- Creating and deploying Solaris images using Altiris Deployment Solution.

1.1 Intended Audience

This document is intended for Systems Administrators who wish to install the Solaris OS on IBM BladeCenter x86 architecture based servers. This guide covers intermediate and advanced systems administration tasks. For additional information on the products discussed in this document, please see in the Further References section below.

1.2 Further References

Solaris 10 Installation Guides:

Solaris 10 1/06 Installation Guides	Web Link
Basic Installations	http://docs.sun.com/app/docs/doc/817-0544?a=load
Network-Based Installations	http://docs.sun.com/app/docs/doc/817-5504?a=load
Custom JumpStart and Advanced Installations	http://docs.sun.com/app/docs/doc/817-5506
Installation Guide for IBM BladeCenter Servers	http://docs.sun.com/app/docs/doc/819-5455?a=load

ServerGuide Scripting Toolkit:
    http://www-03.ibm.com/servers/eserver/xseries/systems_management/sgstk.html

1.3 Supported Systems

The following IBM BladeCenter servers support the Solaris 10 1/06 release or later:

- IBM BladeCenter HS20, machine type 7981
- IBM BladeCenter HS20, machine type 8843, 1883
- AMD Opteron LS20 for IBM BladeCenter, machine type 8850

For the latest Solaris OS support information for systems and options, see the ServerProven compatibility information at:

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/index.html

2 Using the ServerGuide Scripting Toolkit to Configure the Target Server

The ServerGuide Scripting Toolkit can be used to configure the target server prior to OS installation. The Scripting Toolkit provides the ability to perform system BIOS updates to the target BladeCenter server and to configure RAID.

2.1 Downloading and Installing the ServerGuide Scripting Toolkit

The ServerGuide scripting toolkit can be downloaded from the following link:

http://www-307.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-53564

Once the ServerGuide Scripting Toolkit has been downloaded, launch the installation application (on Windows) to install the Scripting Toolkit. Once the installer is launched the following screen appears:
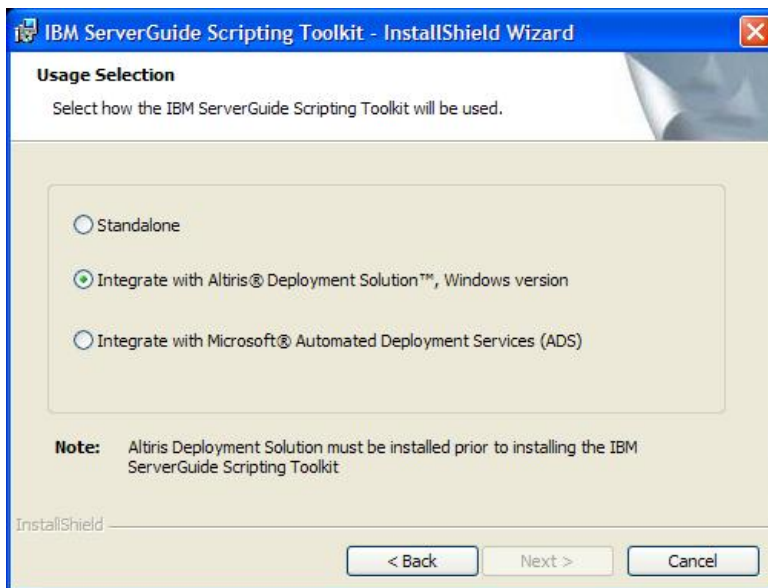
Select "Integrate with Altiris Deployment Solution" from the list if the pre-installation configuration tasks are to be performed from Altiris Deployment Solution. Otherwise, select the "Standalone" option to perform the pre-installation configuration tasks via removable bootable media.

Once the installation of the Scripting Toolkit has been completed, the following screen appears:
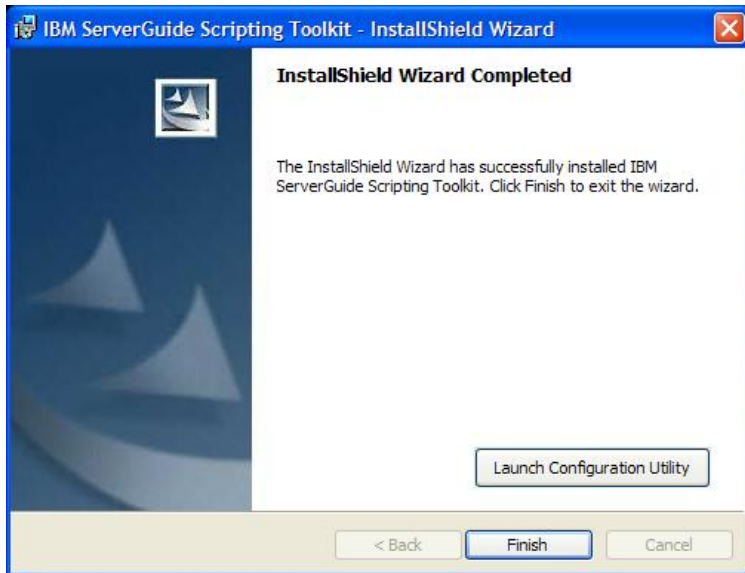
This screen gives the option for launching the Scripting Toolkit Configuration Utility. Click 'Finish' instead of launching the configuration utility. This utility is not required for Solaris 10 installations.

Once the ServerGuide Scripting Toolkit is installed, the Scripting Toolkit User's Reference (UserGuide.pdf) and Readme (readme.htm) files are located under the installation path (e.g. sgdeploy\sgtk\docs\).

2.2 Adding System BIOS Updates to the Scripting Toolkit Installation

In order to use the ServerGuide Scripting Toolkit to perform system BIOS updates you must first copy these updates to the appropriate directories within the Scripting Toolkit installation path. The best method for acquiring the update files is to download them from the IBM Support Web site.

2.2.1 Downloading BIOS updates from the IBM Support Web site

Complete the following steps to incorporate server BIOS code updates from the IBM Support web site:

1. For IBM BIOS updates you will need to create a directory in sgdeploy\updates for each machine type that you are updating. Use the machine type of the IBM server as the name of the directory, for example, 8843 for an IBM BladeCenter HS20, machine type 8843.
2. Create a directory called **BIOS** beneath all of the directories created in step 1.
3. Obtain the latest level of server BIOS code from the IBM Support Web site:
   http://www.ibm.com/pc/support/ .   Be sure to download the Windows Package.
4. The DOS update files need to be extracted to a diskette from the Windows Package. Double-click the Windows executable file that you downloaded.
5. Select "Extract to Floppy".
6. Select the "Next" button.
7. Insert a floppy diskette into the A: drive and select the "OK" button.
8. The diskette created is the DOS BIOS update diskette. Select the "OK" button to continue.
9. Select the "Exit" button.
10. Copy the entire contents of the floppy diskette, including any readme.txt files, into the directory you created in the Scripting Toolkit directory for that particular server, e.g. sgdeploy\updates\8843\bios\
11. Repeat steps 4-10 for each server you wish to update.

For additional information on integrating BIOS updates into the Scripting Toolkit source tree, please reference Appendix B of the Scripting Toolkit user's guide, Enhancing deployment scenarios.

Once you have copied the BIOS updates into the Scripting Toolkit source tree, you are then able to perform updates using a standalone network boot diskette, or Altiris Deployment Solution. The next two sections outline performing these updates with both methods.

2.3 Performing Hardware Configuration with a Standalone Installation

In order to perform hardware configuration with the Standalone Scripting Toolkit installation, you are required to create a network boot diskette, and modify the diskette to perform the desired actions.

2.3.1 Creating a Scripting Toolkit Network Boot Diskette

To create a Scripting Toolkit network boot diskette, perform the following steps:

1. Insert a floppy diskette into the source server.
2. Browse to the Scripting Toolkit installation directory.
3. Double-click the batch script file named MakeDisk-Windows-Network-Install.bat located in sgdeploy\sgtk\boot\
4. A DOS window will appear indicating the process of the diskette creation. Once it is completed your diskette is ready to be modified.

You may receive the following error message when creating the network boot diskette:

```
        99 percent written
 Error while writing the disk data

 An error occurred while creating the requested disk.


 Press any key to continue . . .
```

If you receive this error, press any key to continue, the floppy diskette has been created properly.

For additional information on creating a network boot diskette, please see the "Using helper batch files and creating diskette images" section in Chapter 3, "Customizing Toolkit scenarios" of the ServerGuide Scripting Toolkit User's Reference.

2.3.2 Configuring the Network Boot Diskette

Once the network diskette has been created, it needs to be modified to work in your networking environment. To do this, you must modify the netvars.bat file located on the diskette. To modify the netvars.bat file perform the following steps:

1. Insert the Scripting Toolkit standalone diskette you created, into the source server.
2. Browse to the Scripting Toolkit installation directory.
3. Double-click the batch script file named Customize-netvars.bat located in sgdeploy\sgtk\boot\
4. A notepad window will be displayed showing the contents of the netvars.bat file on the floppy diskette.
5. Modify the values in the netvars.bat file to match your current network configuration. For information on the values please see the "Modifying NETVARS.BAT" section in Chapter 3, Customizing Toolkit Scenarios in the Scripting Toolkit User's Reference.
6. Once the modifications have been completed, close the notepad window and the batch file will process the networking changes and modify the diskette accordingly.

For additional information on configuring networking on the network boot diskette see the "Modifying NETVARS.BAT" section in Chapter 3, "Customizing Toolkit scenarios" of the ServerGuide Scripting Toolkit User's Reference.

2.3.3 Configuring Network Boot Diskette for Hardware Configuration

Once the networking has been configured on the network boot diskette, the diskette can then be configured to perform updates and hardware configuration by modifying the usrvars.bat file located on the diskette.

2.3.3.1 Modifying usrvars.bat for BIOS updates

To modify the usrvars.bat file so that the diskette will update the system BIOS, perform the following steps:

1. Insert the floppy diskette into the source server.
2. Browse to the Scripting Toolkit source directory.
3. Double-click the batch script file named Customize-usrvars.bat located in sgdeploy\sgtk\boot\
4. A notepad window will be displayed showing the contents of the usrvars.bat file on the floppy diskette.
5. Scroll to the following section of the usrvars.bat file:

```
REM [Toolkit_Updates]
    rem ***********************************************************
    rem * Determine whether to perform ANY updates or not.
    rem * Valid values:
    rem *    N - No, do not perform any updates.
    rem *    Y - Yes, perform any updates.
    rem ***********************************************************
    set DO_UPDS=N

    rem ***********************************************************
    rem * Defines whether to perform system BIOS updates or not.
    rem * Valid values:
    rem *    N - No, do not perform system BIOS updates.
    rem *    Y - Yes, perform system BIOS updates.
    rem ***********************************************************
    set UPD_BIOS=N
```

6. Change the values of DO_UPDS and UPD_BIOS to Y.
7. Close the notepad window saving the changes made to the file. Now the diskette will perform bios updates when it is used in a scenario.

For additional information on customizing the network boot diskette for BIOS updates see the "Modifying USRVARS.BAT" section in Chapter 3, "Customizing Toolkit scenarios" of the ServerGuide Scripting Toolkit User's Reference.

2.3.3.2 Modifying usrvars.bat for configuring RAID

To modify the usrvars.bat file so that the network boot diskette will configure RAID, perform the following steps:

1. Insert the floppy diskette into the source server.
2. Browse to the Scripting Toolkit source directory.
3. Double-click the batch script file named Customize-usrvars.bat located in sgdeploy\sgtk\boot\

4. A notepad window will be displayed showing the contents of the usrvars.bat file on the floppy diskette.
5. Scroll to the following section of the usrvars.bat file:

```
REM [RAID_Configuration]
 rem *************************************************************
 rem * Defines whether to perform ANY type of RAID configuration.
 rem * Valid values are:
 rem *   N - No, do not perform any RAID configuration.
 rem *   Y - Yes, Perform RAID configuration.
 rem *************************************************************
 set CFG_RD=N

 rem *************************************************************
 rem * Defines the fully qualified path to the RAID configuration files.
 rem *************************************************************
 set RD_PATH=%TK_PATH%\examples\raid

 rem *************************************************************
 rem * Defines the RAID configuration file name (the PRAID policies
file)
 rem * to use when configuring the RAID controllers.
 rem * Valid values:
 rem *    "" (blank) - Configure the RAID using default values
 rem *                 (PRAID '/d' parameter).
 rem *    Filename   - Configure the RAID using a PRAID policies file.
 rem *************************************************************
 set RD_FILE=
```

6. Change the value of CFG_RD to Y.
7. If you have a RAID policy file that you have created, change the RD_PATH to the location of the policy file and then set the value of RD_FILE to the name of the policy file you have created.
8. Close the notepad window saving the changes made to the file.

For additional information on using the network boot diskette to configure RAID see the "Modifying USRVARS.BAT" section in Chapter 3, "Customizing Toolkit scenarios" of the ServerGuide Scripting Toolkit User's Reference.

For additional information on creating RAID policy files, see the "Sample PRAID policies files for RAID configuration" section in Chapter 4, "Configuring RAID and Fibre Channel" of the ServerGuide Scripting Toolkit User's Reference.

2.3.3.3 Modifying usrvars.bat for configuring Fibre

To modify the usrvars.bat file so that the network boot diskette will configure fibre as the boot device, perform the following steps:

1. Insert the floppy diskette into the source server.
2. Browse to the Scripting Toolkit source directory.
3. Double-click the batch script file named Customize-usrvars.bat located in sgdeploy\sgtk\boot\
4. A notepad window will be displayed showing the contents of the usrvars.bat file on the floppy diskette.
5. Scroll to the following section of the usrvars.bat file:

```
REM [Fibre_Configuration]
 rem *************************************************************
 rem * Defines whether to configure a fibre host adapter as a boot
 rem * device or not.
 rem *   N - No, do not configure a fibre host adapter as a boot device.
 rem *   Y - Yes, configure a fibre host adapter as a boot device.
 rem *************************************************************
 set DO_FIB=N
```

```
rem ****************************************************************
rem * Defines the I/O address of the fibre host adapter that you
rem * want to configure as the boot device.
rem * Valid values are:
rem *   xxxx - where 'xxxx' is a 4-digit I/O address of a fibre host
rem *          adapter in the system.
rem *   0000 - to automatically select the first adapter in the system
rem *          scan order as the boot device.
rem ****************************************************************
set FIB_IO=0000

rem ****************************************************************
rem * Defines the 16-digit hexadecimal world-wide name of the storage
rem * device where the boot LUN is located (case-insensitive).
rem ****************************************************************
set FIB_WWN=0000000000000000

rem ****************************************************************
rem * Defines the LUN number on the storage device where the OS should
rem * be deployed.
rem ****************************************************************
set FIB_LUN=0
```

6. Change the value of DO_FIB to Y.
7. Change the value of FIB_IO to the I/O address of the fibre host adapter.
8. Change the value of FIB_WWN to the hexadecimal world-wide name of the storage device.
9. Change the value of FIB_LUN to the LUN number on the storage device you wish to make bootable.
10. Close the notepad window saving the changes made to the file.

For additional information on using a network boot diskette to configure fibre see the "Fibre Channel configuration" section in Chapter 4, "Configuring RAID and Fibre Channel" of the ServerGuide Scripting Toolkit User's Reference.

2.3.4 Launching Toolkit Scenarios

Once you've configured your network bootable floppy diskette, you can then use this diskette to boot the target server. This diskette can be booted locally using the BladeCenter media tray, or can be mounted remotely via the BladeCenter Management Module. Once you boot the target server with the network boot diskette, the following menu will be displayed:

```
PC DOS 7.1 Startup Menu
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    1. Load Broadcom NetXtreme network driver    [eg. x3850, see readme.htm]
    2. Load Broadcom NetXtreme II network driver [eg. x3650, see readme.htm]
    3. Load IBM Gigabit (E1000) network driver   [eg. x306, see readme.htm]

Enter a choice: 1
```

Select the network driver corresponding to your server:

Machine Name	Machine Type	Network Adapter
IBM BladeCenter HS20	7981	Broadcom NetXtreme
IBM BladeCenter HS20	8843, 1883	Broadcom NetXtreme
AMD Opteron LS20 for IBM BladeCenter	8850	Broadcom NetXtreme

The following menu will then be displayed:

```
PC DOS 7.1 Startup Menu
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    1. Run complete ServerGuide Scripting Toolkit process
    2. Perform RAID configuration only
    3. Perform BIOS updates only
    4. Perform IBM ServeRAID BIOS and firmware updates only
    5. Boot to command prompt

Enter a choice: 1
```

To perform RAID configurations only, select option 2 and press Enter. The ServerGuide Scripting Toolkit will then configure RAID on the server and restart the server when the configuration has been completed.

To perform Fibre configurations only, select option 3 and press Enter. The ServerGuide Scripting toolkit will then configure your fibre adapter and restart the server when the configuration has been completed.

To perform BIOS updates only, select option 4 and press Enter. The ServerGuide Scripting toolkit will then perform the BIOS update for the server and restart the server when the BIOS update has completed.

Note: Menu options 1 and 5 above do not apply to installing the Solaris 10 OS on a BladeCenter server.

For additional information on the network boot diskette menus see the "Automating Scenarios" section in Chapter 3, "Customizing Toolkit Scenarios" of the ServerGuide Scripting Toolkit User's Reference.

2.4   Performing Updates with an Integrated Altiris Deployment Solution Installation

If you installed the ServerGuide Scripting Toolkit integrated with Altiris Deployment Solution then you are able to remotely install BIOS updates, configure RAID, and configure fibre adapters.

In order for Altiris to recognize the server you must PXE boot the server with Altiris one time. Once you've done this, the initial deployment job will run and the server will then appear in the devices list of Altiris Deployment Solution.

### 2.4.1 Using Scripting Toolkit Altiris Jobs for BIOS Updates

In order to perform BIOS updates on the remote server, you must first copy the BIOS update files into the Scripting Toolkit source tree. For information on how to do this, reference section 2.2 Adding System BIOS Updates to the Scripting Toolkit Installation above.

Once the BIOS update files have been added to the source tree perform the following steps to update the BIOS of the target server:

1. Open the Altiris Deployment Solution console.
2. Expand the "IBM BladeCenter / xSeries / eServer Support" tree in the jobs window so that you see the "System Update" folder.
3. Expand the "System Update" folder to show the jobs underneath, as shown in the following image:
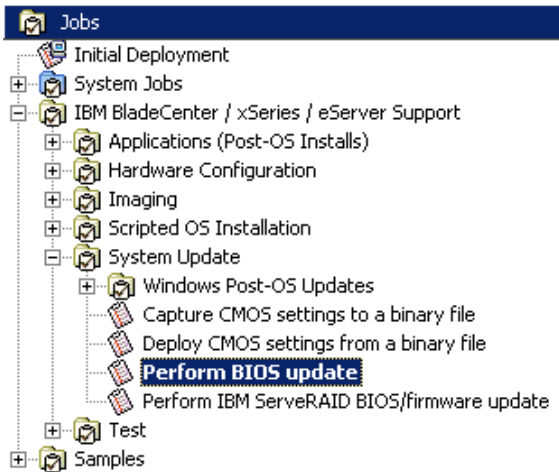
4. Drag the "Perform BIOS update" job to the target server listed under Computers. You are then presented with the following screen:
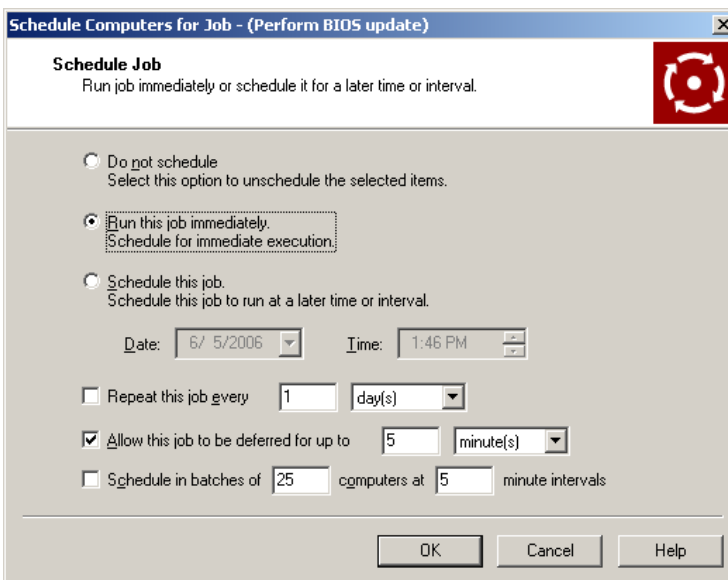
5. Make sure that "Run this job immediately" is selected and click OK.
6. If the remote server is powered off, Altiris Deployment Solution will remotely power it on using Wake-On LAN and execute the BIOS update job on the remote server. Once the job has completed the server will restart.

For additional information on updating the server BIOS using Altiris Deployment Solution, see the "Updating server BIOS code" section in Chapter 8, "Altiris Deployment Solution Support" of the ServerGuide Scripting Toolkit User's Reference.

## 2.4.2 Using Scripting Toolkit Altiris Jobs for RAID Configuration

You can use the pre-created jobs in Altiris Deployment Solution to configure RAID on the remote server. In order to do that you need to perform the following steps:

1. Open the Altiris Deployment Solution console.
2. Expand the "IBM BladeCenter / xSeries / eServer Support" tree in the jobs window so that you see the "Hardware Configuration" folder.

3. Expand the "Hardware Configuration" folder to show the jobs underneath, as shown in the following image:
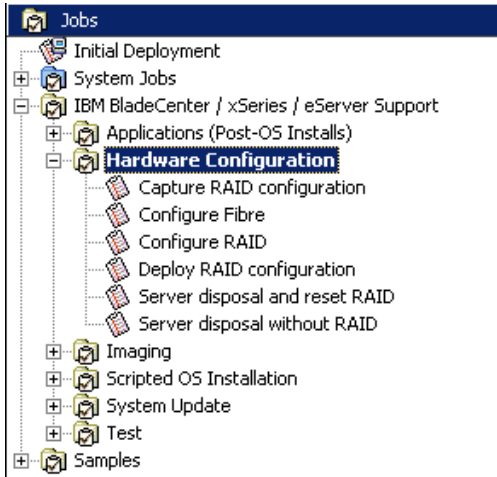
4. If you want to configure the RAID on the server using defaults, skip to step 9 below, If you want to configure the RAID on the server using a RAID policy file then double-click the job labeled "Configure RAID" to open the job properties as shown in the following image:
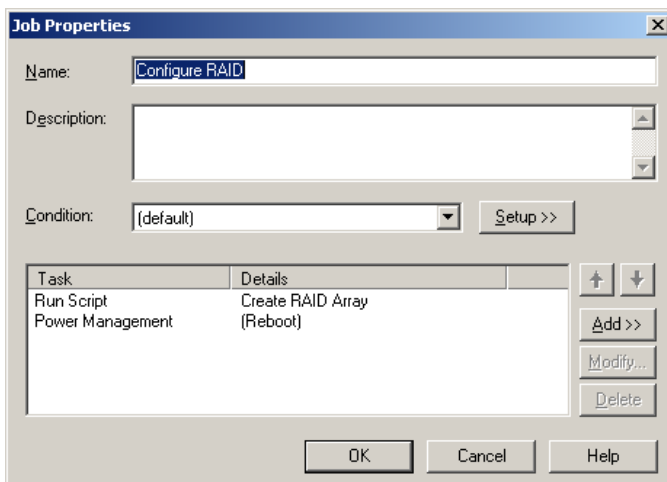

5. Next, double-click on the "Create RAID Array" script. The following screen is then displayed:
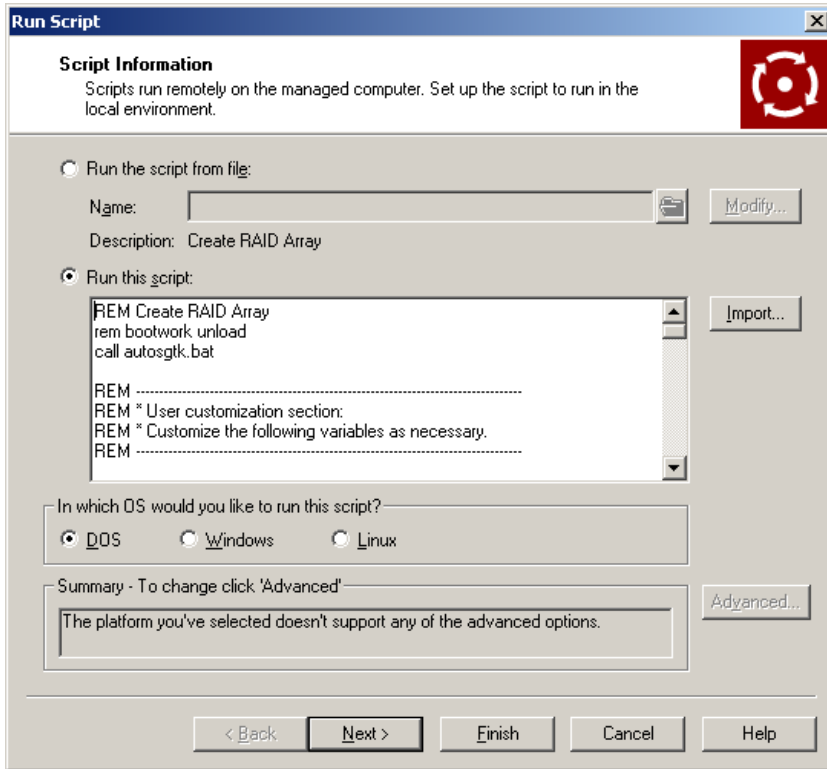
6. In the "Run this script" window, scroll down to the following text:

```
rem *****************************************************************
rem * Defines the RAID configuration file name (the PRAID policies file)
rem * to use when configuring the RAID controllers.
rem * Valid values:
rem *    "" (blank) - Configure the RAID using default values
rem *                 (PRAID '/d' parameter).
rem *    Filename   - Configure the RAID using a PRAID policies file.
rem *****************************************************************
set RD_FILE=
```

7. Set RD_FILE to the name of the RAID policy file you wish to use, then click the Finish button on that screen.
8. Click OK on the "Job Properties" window to save the job configuration.
9. Drag the "Configure RAID" job to the target server listed under Computers. The following screen is then displayed:
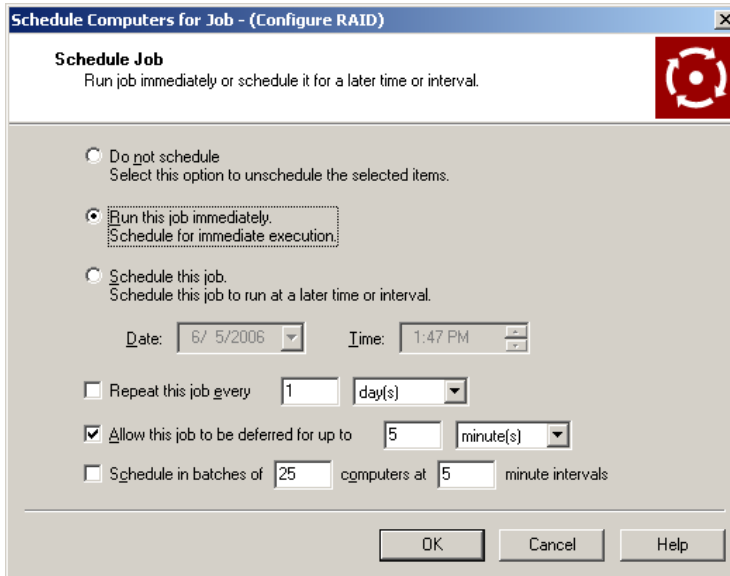
10. Make sure that "Run this job immediately" is selected and click OK.
11. If the remote server is powered off, Altiris Deployment Solution will remotely power it on using Wake-On LAN and execute the RAID configuration job on the remote server. Once the job has completed the server will restart.

For additional information on configuring RAID using Altiris Deployment Solution, see the "Configuring RAID" section in Chapter 8, "Altiris Deployment Solution Support" of the ServerGuide Scripting Toolkit User's Reference.

2.4.3 Using Scripting Toolkit Altiris Jobs for Fibre Configuration

You can use the pre-created jobs in Altiris Deployment Solution to configure fibre on the remote server. In order to do that you need to perform the following steps:
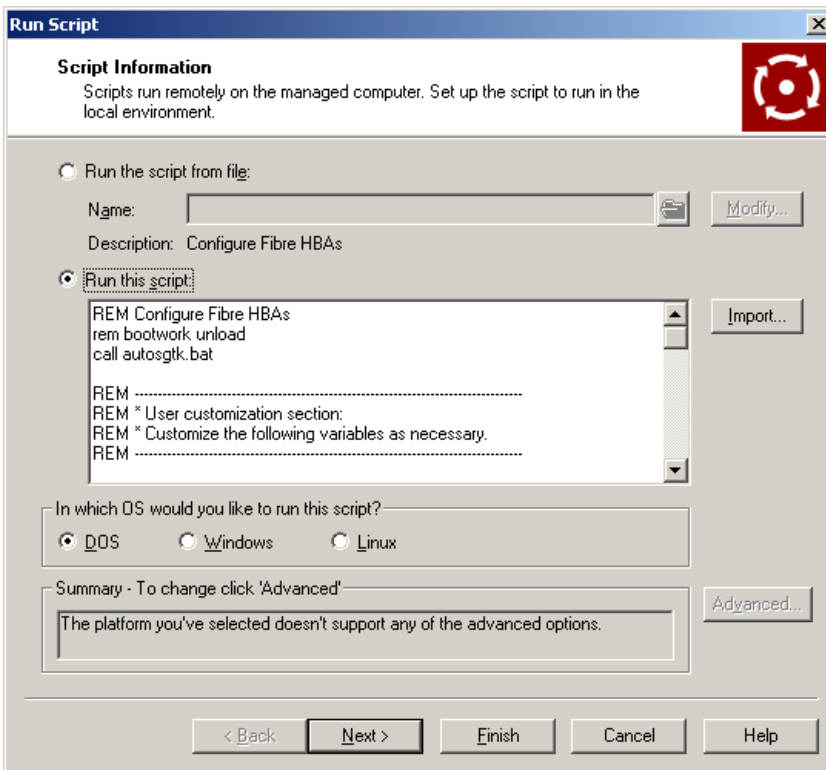
1. Open the Altiris Deployment Solution console.
2. Expand the "IBM BladeCenter / xSeries / eServer Support" tree in the jobs window so that you see the "Hardware Configuration" folder.
3. Expand the "Hardware Configuration" folder to show the jobs underneath, as shown in the following image:
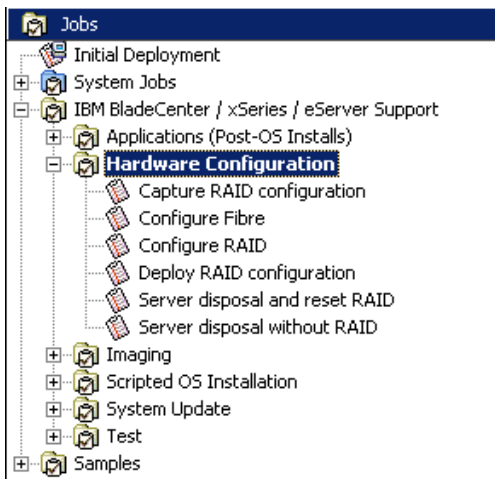
4. In order to configure fibre on the remote system, the pre-created job must be modified. To modify the fibre configuration job, double-click the job labeled "Configure Fibre" to open the job properties as shown in the following image:
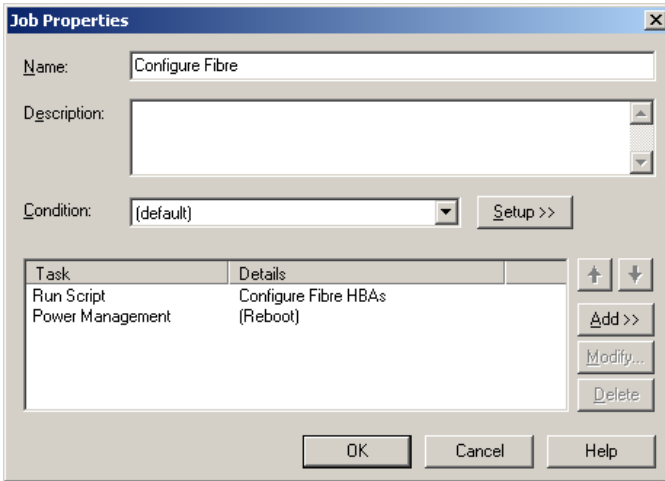
5. Next, double-click on the "Configure Fibre HBAs" script. The following screen is then displayed:

6. In the "Run this script" window, scroll down to the following text:

```
rem **************************************************************
rem * Defines the I/O address of the fibre host adapter that you
rem * want to configure as the boot device.
rem * Valid values are:
rem *    xxxx - where 'xxxx' is a 4-digit I/O address of a fibre host
rem *           adapter in the system.
rem *    0000 - to automatically select the first adapter in the system
```

```
rem *          scan order as the boot device.
rem ************************************************************
set FIB_IO=0000

rem ************************************************************
rem * Defines the 16-digit hexadecimal world-wide name of the storage
rem * device where the boot LUN is located (case-insensitive).
rem ************************************************************
set FIB_WWN=0000000000000000

rem ************************************************************
rem * Defines the LUN number on the storage device where the OS should
rem * be deployed.
rem ************************************************************
set FIB_LUN=0
```

7. Change the value of FIB_IO to the I/O address of the fibre host adapter.
8. Change the value of FIB_WWN to the hexadecimal world-wide name of the storage device.
9. Change the value of FIB_LUN to the LUN number on the storage device you wish to make bootable.
10. Click Finish to save the changes that you've made.
11. Click OK on the "Job Properties" window to save the job configuration.
12. Drag the "Configure Fibre" job to the target server listed under Computers. The following screen is then displayed:
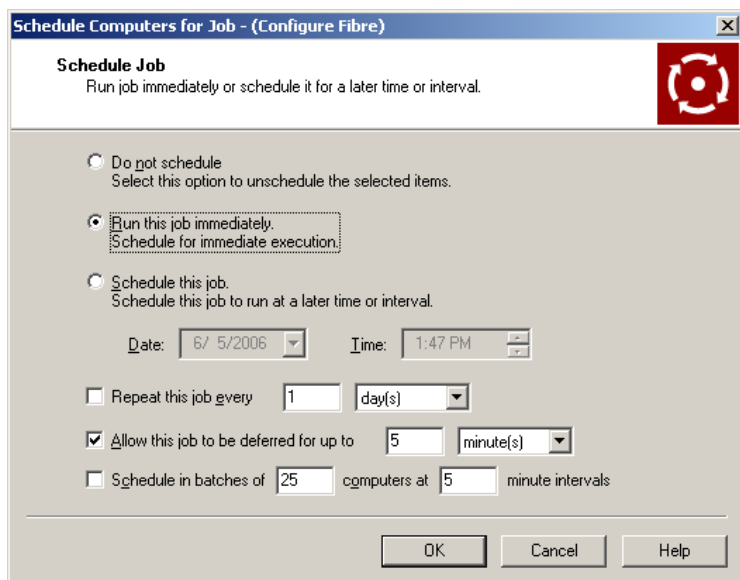
13. Make sure that "Run this job immediately" is selected and click OK.
14. If the remote server is powered off, Altiris Deployment Solution will remotely power it on using Wake-On LAN and execute the fibre configuration job on the remote server. Once the job has completed the server will restart.

For additional information on configuring fibre using Altiris Deployment Solution, see the "Configuring Fibre" section in Chapter 8, "Altiris Deployment Solution Support" of the ServerGuide Scripting Toolkit User's Reference.

3 Performing a Solaris 10 JumpStart installation

After configuring the target server with the ServerGuide Scripting Toolkit, the Solaris 10 OS may now be installed on the target system.

To install the Solaris 10 OS the following steps are required:
1. Create a Solaris installation server.
2. Create a profile diskette containing a profile, a rules.ok file, and a sysidcfg file.
3. Insert the profile diskette and Solaris 10 CD 1 into the BladeCenter diskette and CDROM drives respectively, and boot the Blade to be installed.

3.1 Solaris Installation Server

A Solaris installation server is a system which is running the Solaris OS and is sharing the installation files via NFS. For instructions on installing and configuring a Solaris installation server, please see the "Creating an Installation Server with CD Media" section or the "Creating an Installation Server with DVD Media" section in the "Solaris 10 1/06 Installation Guide for IBM BladeCenter Servers."   Note that client systems do not need to be added via the add_install_client command for the installation scenario documented here.

3.2 Creating a Profile Diskette

In order to install the Solaris 10 OS, a profile diskette containing a profile, a rules.ok file, and a sysidcfg file is required. For instructions to create a profile diskette with examples that can be modified please see the "Creating a Profile Diskette for Standalone Systems" section in the "Solaris 10 Installation Guide: Custom JumpStart and Advanced Installations."

The following three sections contain examples of a profile, a rules file required to generate the rules.ok file, and a sysidcfg file.

3.2.1 Creating JumpStart profile files

For the definition and syntax of a JumpStart profile file as well as instructions to create a profile, please see the "Creating a Profile" section in the "Solaris 10 Installation Guide: Custom JumpStart and Advanced Installations."

The following is an example profile file "x86_full" which can be used to install the Solaris 10 OS on x86 architecture based systems as a server with all software groups installed:

```
#
# profile filename: x86_full
#
# Performs an initial installation as a server with all
# packages installed and default partitioning.
#
install_type initial_install  #Perform an Initial Install
system_type server            #installs the Solaris 10 OS as a server
boot_device any update        #automatically selects the boot device
client_root 25                #allocates 25Mb to the system root
cluster SUNWCall              #installs entire Solaris software group
partitioning default          #sets partitioning to defaults
geo N_America                 #sets the geography to North America
```

Once the profile has been completed, copy it to the root directory on the profile diskette.

3.2.2 Creating JumpStart rules files

For the definition and syntax of a JumpStart rules file as well as instructions to create a rules file, please see the "Creating the rules File" section in the "Solaris 10 Installation Guide: Custom JumpStart and Advanced Installations."

The following is an example rules file for installing the Solaris 10 OS on systems in the i86pc platform group with the profile documented in the previous section:

```
#
# Sample rules file for x86 architecture installations
#
karch i86pc – x86_full -
```

Once the rules file has been created it must be validated. For instructions to validate the rules file please see the "Validating the rules File" section in the "Solaris 10 Installation Guide: Custom JumpStart and Advanced Installations."

The validation process will create a rules.ok file. Copy the rules.ok file to the root directory of the profile diskette. Optionally, the rules file may also be copied to the profile diskette but it is not required.

3.2.3 Creating a sysidcfg File

For the definition and syntax of a sysidcfg file as well as instructions to create a sysidcfg file, please see the "Preconfiguring With the sysidcfg File" section in the "Solaris 10 Installation Guide: Network-Based Installations."

The following is an example sysidcfg file which will preconfigure all of the specified options during the Solaris installation program:

```
security_policy=none
system_locale=en_US
timezone=US/Eastern
terminal=ibm-pc
name_service=none
root_password=gvGviIPh6ajUA
network_interface=PRIMARY {dhcp protocol_ipv6=no}
```

Thus the corresponding Solaris installation program prompts for the information will be eliminated. The above root_password value is the encrypted string corresponding to the following password value: "passw0rd."

Once the sysidcfg file has been created, copy it to the root directory of the profile diskette. The profile diskette is now complete.
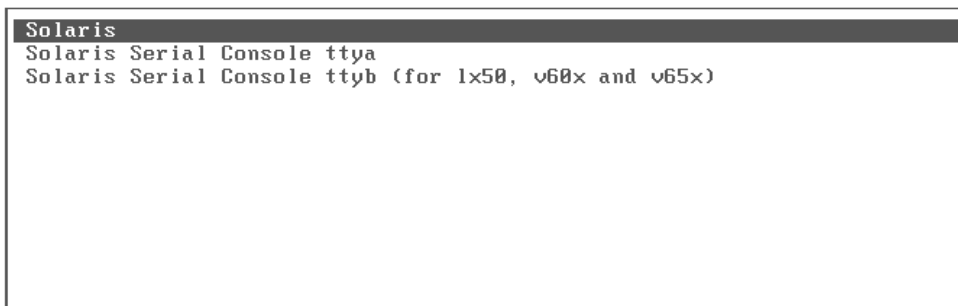
3.3   Installing the Solaris 10 OS

The first step in installing the Solaris 10 OS is to insert the profile diskette into the BladeCenter diskette drive, and Solaris 10 CD 1 into the BladeCenter CDROM drive. The profile diskette must be present in the floppy diskette drive prior to the Solaris installation program loading. This allows the installation program to scan the floppy diskette for the configuration files on the diskette.

Note that in order to boot with a Solaris CD and a profile diskette, the boot order in the BIOS of the Blade server must be configured so that the CD drive is first in the primary boot sequence followed by the floppy diskette and then the hard disk. This boot sequence is the default boot order.

The next step is to assign the BladeCenter display and media trays to the Blade system to be installed. Now, power on the server and allow the CD to boot. Once the CD has booted, you will be prompted by the Grub menu that appears similar to the following screen:

```
    GNU GRUB  version 0.95  (638K lower / 522176K upper memory)

 ┌──────────────────────────────────────────────────────────────────┐
 │ Solaris                                                            │
 │ Solaris Serial Console ttya                                        │
 │ Solaris Serial Console ttyb (for lx50, v60x and v65x)             │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 │                                                                    │
 └──────────────────────────────────────────────────────────────────┘

      Use the ↑ and ↓ keys to select which entry is highlighted.
      Press enter to boot the selected OS, 'e' to edit the
      commands before booting, or 'c' for a command-line.


    The highlighted entry will be booted automatically in 17 seconds.
```

Press enter to boot Solaris. The following menu will be displayed:

```
SunOS Release 5.10 Version Generic_118844-26 32-bit
Copyright 1983-2005 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
Configuring devices.
/

    1.      Solaris Interactive (default)
    2.      Custom JumpStart
    3.      Solaris Interactive Text (Desktop session)
    4.      Solaris Interactive Text (Console session)
    5.      Apply driver updates
    6.      Single user shell

Enter the number of your choice.
Automatically continuing in 5 seconds         _
```

Press 2 to perform a custom JumpStart installation. This will cause the Solaris installer to launch the JumpStart installation program. After the system reboots, remove the Solaris 10 CD from the

CD-ROM drive and the profile diskette from the diskette drive. The system will then boot from the hard disk to continue the installation.

To instruct the Solaris installation program to obtain the remaining required files from the installation server, perform the following steps:

1. When the Solaris installation program prompts for the media location for Solaris 10 Software CD 2, select the "Network File System" radio button and select "Next".
2. The Solaris installation program will then prompt for the network file system path. Specify the installation server IP address and directory path containing the installation files and select "Next".
3. The Solaris installation program will then display the items which will be installed. Select "Install Now" to continue. The Solaris installation program will then obtain the remaining required files from the installation server.

4 Cloning the Solaris 10 OS with Altiris Deployment Solution

4.1 Preparing for Altiris Cloning

4.1.1 Placing the remote server into Altiris

In order for you to run an Altiris cloning job, Altiris must know about this server in advance. In order for Altiris to recognize the server you must PXE boot the server with Altiris one time. Once you've done this, the initial deployment job will run and the server will then appear in the devices list of Altiris Deployment Server.

4.1.2 Rebooting the server

Altiris Deployment Solution 6.5 does not have support for an x86 version of the Solaris Altiris Agent. As a result, if the remote system is currently running, the remote system must be restarted manually to run Altiris Deployment Solution jobs. There are two ways to accomplish this task:

1. Logon to the server remotely through telnet and initiate a system reboot as the superuser using the following command:

        # reboot

2. Remotely access the console of the system through the BladeCenter management module and initiate the reboot process from the local console.

Once you are able to remotely reboot the system then you will be able to run any Altiris job that you have created for the system.

If the system is powered off when you initiate the Altiris job, then the Altiris Deployment Solution will send a Wake on LAN signal to the remote system to power it on.

4.2 Creating the Altiris Image Creation Job

In order to create an Altiris image creation job, open the Altiris Deployment Solution console. Once the console is open, follow these steps to create a job for capturing Solaris images:

1. Right-click on the pre-installed job folder and select New Job.
2. Name the job a suitable name.
3. On the job configuration screen on the right, click the Add button.
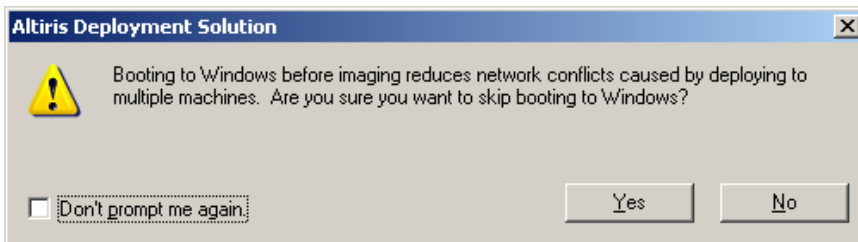4. Select 'Create Disk Image'. The following screen is then displayed:
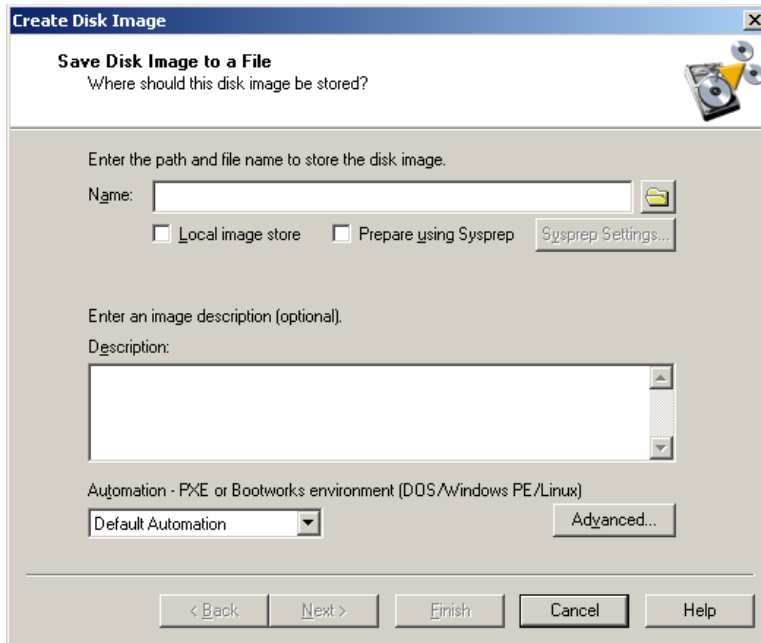
5. Select the Browse folder to the right of the name and you are presented with the following screen:
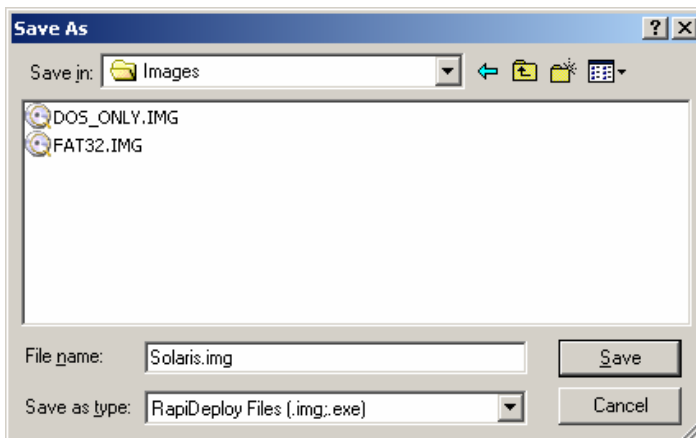

6. Typically images are stored in the images directory of the Deployment server. For this example the image file will be named Solaris.img and stored in the images directory.
7. Select Save on this window to go back to the original window.
8. On the Create Disk Image Window, select the Advanced button. The following screen is then displayed:
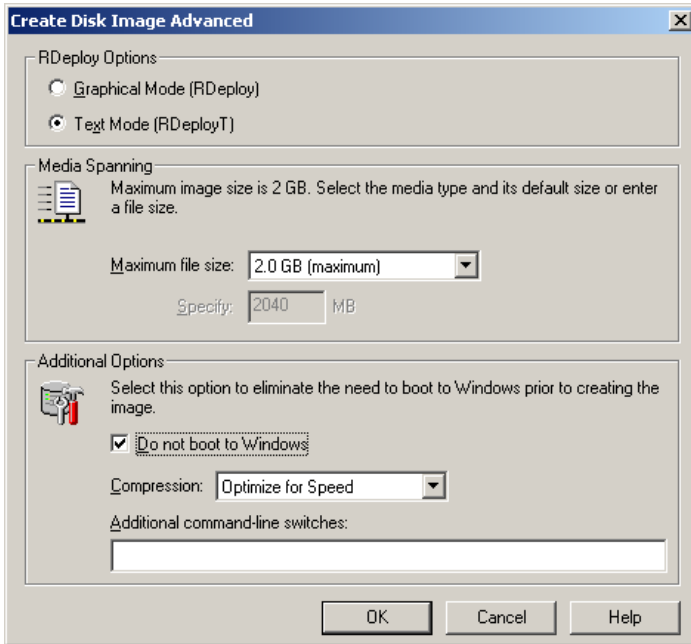
9. On this screen, make certain that the "Do not boot to Windows" checkbox is checked and select OK.
10. You may be presented with the following error message when selecting OK. If so, then select yes, and continue.

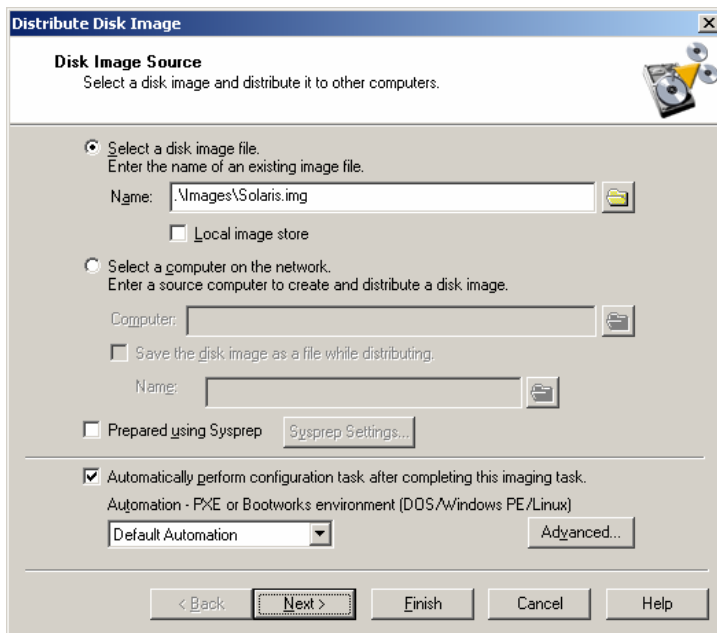11. Select next on the Create Disk Image window. The following screen is then displayed:
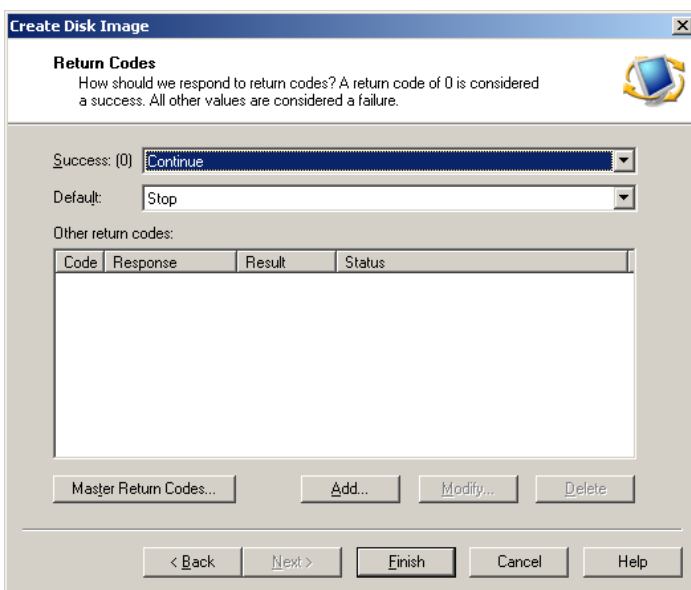
12. Select Finish to successfully create the job.

Once this job is created, to capture the image of the remote Solaris system, drag the job to the system, and select Run Now from the options listed and click OK.

4.3   Creating the Altiris Image Deployment Job

The Altiris Image deployment job is very similar to the Image Creation job that was created earlier. The following steps outline how to create an image deployment job with Altiris.

1. Right-click on the pre-installed job folder and select New Job.
2. Name the job a suitable name.
3. On the job configuration screen on the right, select the Add button.
4. Select 'Distribute Disk Image'. The following screen is displayed:

5. Select the Browse folder to the right of the name. The following screen is displayed:
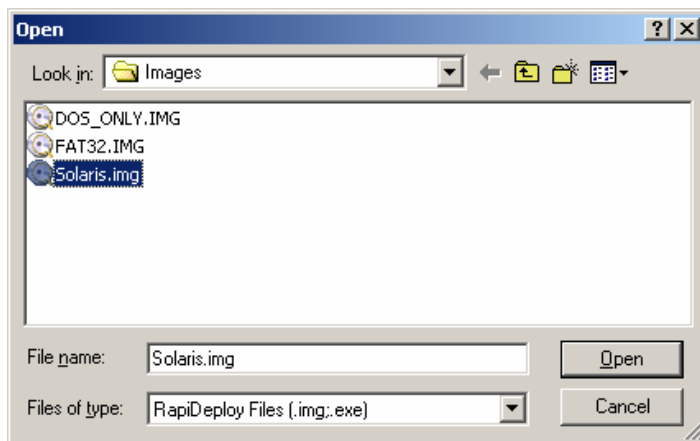
6. Select the Solaris.img file created earlier in the images directory of the Deployment Server.

7. Select Open on this window to go back to the original window.
8. Select next on the Distribute Disk Image window. The following screen is displayed:
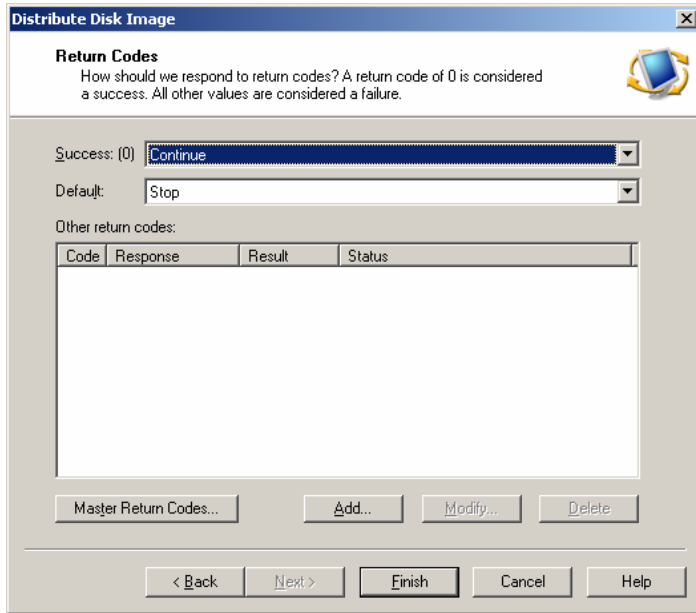
9. Click Finish to successfully create the job.

Once this job is created, to deploy the image you've created to a remote system, drag the job to the system, and select Run Now from the options listed and click OK.

5 Known Limitations & Bugs

The following section outlines known limitations and bugs when installing the Solaris 10 OS on IBM BladeCenter servers.

Symptom:

HS20 Servers model 8843, 1883 & 7981 fail to reboot when the reboot routines are called during the installation process.

Resolution:

This problem only exists in the 01/06/06 Release of Solaris 10. There is a patch available to resolve this issue. The patch can be found on the Sun Systems website: www.sun.com

For additional bugs and issues, please see the "Bugs and Issues Encountered When Installing the Solaris 10 1/06 OS on IBM BladeCenter Servers" section in the "Solaris 10 1/06 Installation Guide for IBM BladeCenter Servers."

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