



Scalar DLC™

Scalar® Distributed Library Controller

Installation Guide

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Version 2.4

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About this Guide

This document cover the install and upgrade instructions for the release of Scalar Distributed Library Controller¹, Version 2.4.

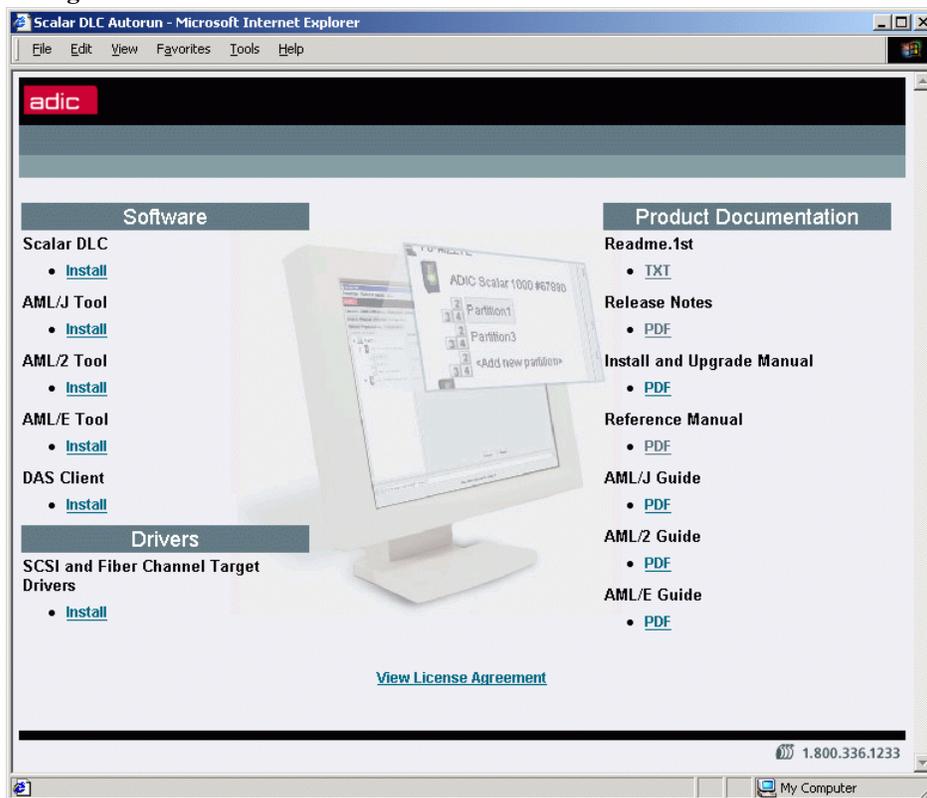
Scalar DLC CD-ROM Contents

To launch the autostart program, load the CD-ROM in the CD-ROM drive. If the autostart program does not launch, use the *Run* option from the **Start** button on the task bar to execute the *autorun.exe* program.

NOTE: If autostart does not run, locate *autorun.exe* on the CD-ROM and execute the program.

See the figure below for the autostart screen.

Figure 1 Autostart Screen



1. Scalar Distributed Library Controller is a trademark of ADIC. Throughout the remainder of this document, we refer to the Scalar Distributed Library Controller software as Scalar DLC.

Table 1 describes the options that are available from the *Autostart Screen*.

Table 1 Autorun Selection

Link	Action	Explanation
Install software packages	Supplied	Launch the installation of appropriate software package.
Scalar DLC	Click-to-install	Start <i>Installing the Scalar DLC Software</i> on page 42.
AML/J Tools	Click-to-install	Start installation of Scalar DLC AML/J software.
AML/2 Tools	Click-to-install	Start installation of Scalar DLC AML/2 software.
AML/E Tools	Click-to-install	Start installation of Scalar DLC AML/E software.
DAS Client	Click-to-install	Start installation of DAS Client (dasadmin) software. Refer to <i>Installing DAS Client</i> on page 63.
Install Drivers	Supplied	Launch the installation of appropriate drivers.
SCSI and Fiber Channel Target drivers	Click-to-install	Start the installation of Target drivers for SCSI and Fibre Channel adapters. Refer to <i>Installing the SCSI/FC Target Drivers</i> on page 68.
View product documentation	Supplied	Open the product documentation.
Readme.1st	Click-to-open (txt)	The last-minute-information about current release of Scalar DLC software.
Release Notes	Click-to-open (PDF)	The notes on current Scalar DLC release. Refer to <i>Release Notes</i> .
Install and Upgrade Manual	Click-to-open (PDF)	The manual on install and upgrade the Scalar DLC.
Reference Manual	Click-to-open (PDF)	The main Scalar DLC document. Refer to <i>Reference Manual</i> .
AML/J Guide	Click-to-open (PDF)	The manual on AML/J Tools. Refer to <i>Scalar DLC AML/J Guide</i> .
AML/2 Guide	Click-to-open (PDF)	The manual on AML/2 Tools. Refer to <i>Scalar DLC AML/2 Guide</i> .
AML/E Guide	Click-to-open (PDF)	The manual on AML/E Tools. Refer to <i>Scalar DLC AML/E Guide</i> .

Table 1 Autorun Selection

Link	Action	Explanation
View License Agreement	Click-to-open (htm)	The ADIC- Scalar DLC license agreement.

NOTE: AML/J Tools, AML/2 Tools, or AML/E Tools installation can be launched only after the Scalar DLC software is installed properly.

NOTE: Only one AML Tool (AML/J, AML/2, or AML/E, but not two or three of them) can be installed on a single PC. The Scalar DLC software cannot work with two AML tape devices.

The Adobe Acrobat Reader ver. 4.0 or higher is required to view the documentation in PDF form. The most recent version of the required software can be downloaded from the Adobe web site at <http://www.adobe.com>.

Because of the browser security restrictions, the documents should open immediately, but the installation packages will be launched only after the warning screen associated with the file download (see figures below for the examples. The screen appearance depends on the browser currently installed.).

Figure 2 Warning Before Launching (example 1)

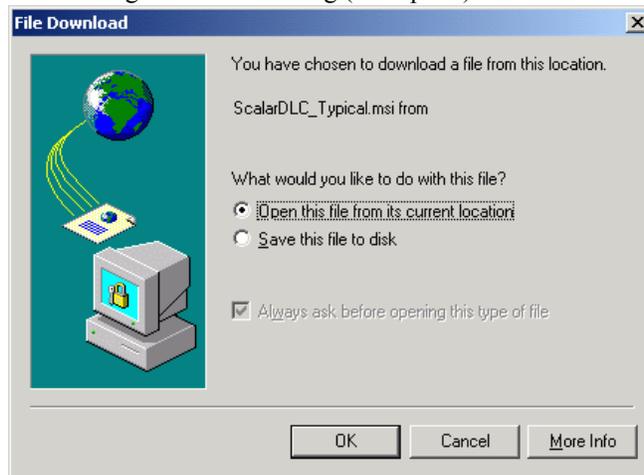
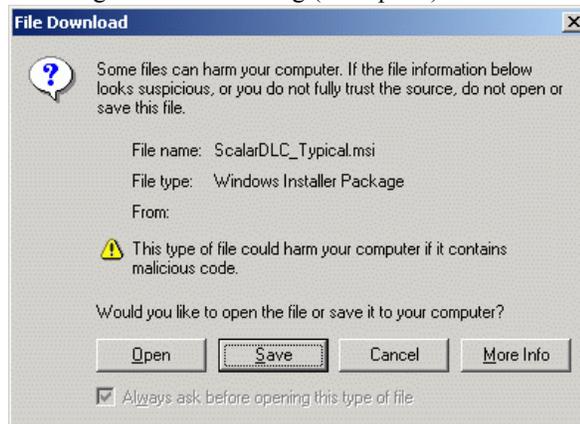


Figure 3 Warning Before Launching (example 2)

Select “Open the file from its current location“ and click **OK** (or click **Open**), and proceed. The installation package launches (refer to *Installing the Scalar DLC Software* on page 42).

Scalar DLC System Overview

The Scalar DLC software runs as a service under Windows 2000. It serves as a centralized library management tool that simplifies and automates the tracking and management of all system resources for optimal performance and maximum availability. The Scalar DLC software provides network and Systems Administrators with a Java-based interface that allows library monitoring from anywhere on the Web¹. It also allows administrators to select parameters that define which library events provide notifications to customers and ADIC Technical Assistance Center (ATAC) via email and Simple Network Management Protocol (SNMP) alerts.

The main working tool of the Scalar DLC software is the Management GUI. All the actions of management and configuration are executed via this tool. Refer to the *Scalar DLC Reference Manual* for the details.

Figure 4 on page 5 and Figure 5 on page 5 illustrate the structure of Scalar DLC system.

1. If a firewall is being used, outside access by Web browsers might be denied.

Figure 4 Scalar DLC Structure

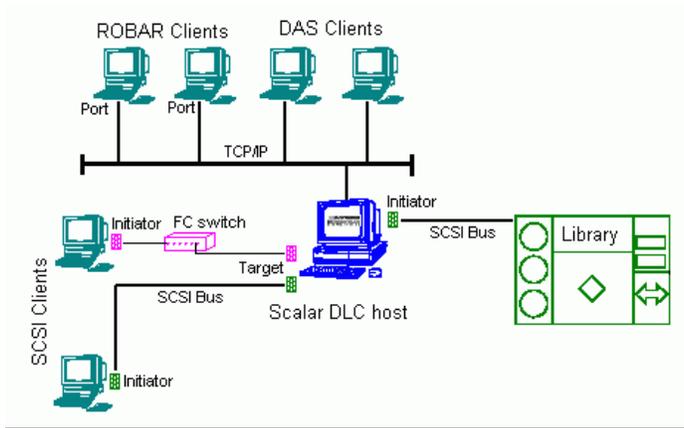
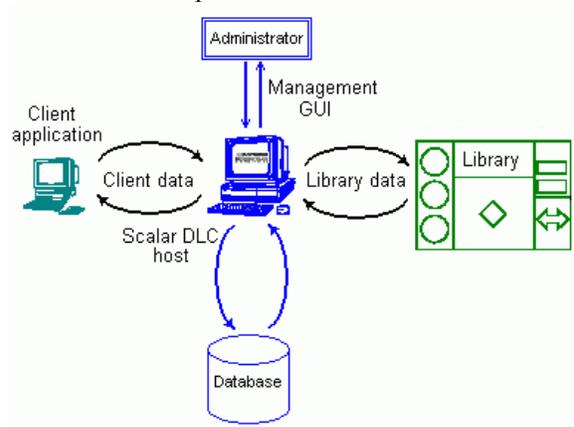


Figure 5 Scalar DLC Components



The *client* (user/backup application) sends the request/command to the *Scalar DLC host* (server) via the client interface. Depending on the request, the Scalar DLC either should search the information in the *database* and send the response back to the client, or transfer the command to the *library* via the library interface. After the library has executed the requested operation, the response is sent back to the Scalar DLC indicating that the operation was executed. The Scalar DLC server updates the database according to the information received from the library and transfers the response (operation executed) back to the client. The *Management GUI* serves as the configuration tool to create a working configuration for clients, and also as the monitoring tool for the *Administrator* when it is necessary to watch the system activity.

The details for using Management GUI and other tools of the Scalar DLC software are described in the *Scalar DLC Reference Manual*.

Scalar DLC Solutions

According to the customer requirements, the Scalar DLC can provide a basic (standard) solution or a cluster (failover) solution. Depending on the library used by the customer, the solution and system configuration should be selected, as shown in Table 2.

Table 2 Libraries and Solutions

Library	Scalar DLC Solution
Scalar 1000	Basic, Cluster
Scalar 10K	Basic, Cluster
Scalar 10K DA	Cluster (Basic is possible only as an exception)
AML/J	Basic
AML/2 (single-aisle only)	Basic
AML/E	Basic

Basic Solution

The Scalar DLC Basic (standard) solution keeps all Scalar DLC components (server, database) on a single PC that is connected to the library and both client(s). The client can work with the library when the Scalar DLC software is started and the library is online.

The Scalar DLC standard solution requires a single PC, the library, and the interface cables to provide the connection between PC (Scalar DLC host) and library.

For requirements and instructions, refer to *Setting Up the Basic Solution* on page 7.

Cluster Solution

The Scalar DLC Cluster (failover) solution is provided for the clients using the Microsoft Cluster service. This solution allows the user to have a shared disk with the Scalar DLC database and two hosts containing the installed components of Scalar DLC software; for the redundancy reasons, one host is online and the other is offline. If an error occurs and the online Scalar DLC host turns offline, the other host should immediately go online, so the user may not even notice there has been a problem with the host, and the customer engineer can work under the problem host without stopping the work of Scalar DLC software.

The Scalar DLC failover solution requires two identical PCs, a RAID system, the library, and the interface cables to provide the connections between PCs (Scalar DLC hosts), RAID (shared database), and library.

NOTE: The failover solution currently is implemented for Scalar libraries only.

For the requirements and installation instructions, refer to *Setting Up the Cluster Solution* on page 12.

Setting Up the Basic Solution

The Scalar DLC standard solution can be installed on any Windows 2000-based system.

NOTE: The current realization of the Scalar DLC basic (standard) solution supports Scalar 1000, Scalar 10K, AML/J, AML/2, and AML/E libraries. Using the Scalar 10K DA library with the Scalar DLC standard solution is also possible but not recommended.

Single-aisle Requirements

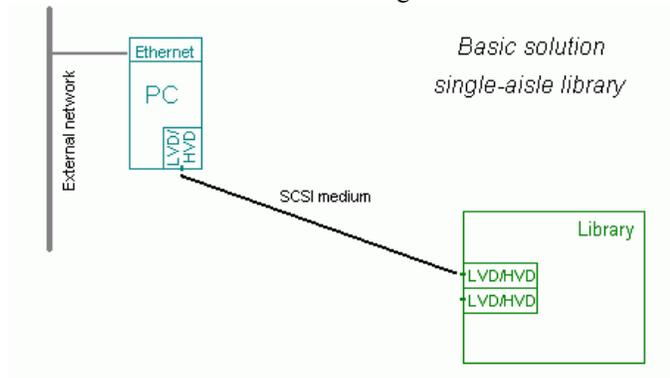
The following is a list of hardware requirements.

- A single PC required the Microsoft PC 2000 System Design Guide Specifications:
 - 800 MHz or faster Inter Pentium™ or equivalent CPU (minimum 4 free PC slots in chassis).
 - 256K L2 Cache.
 - 256 MB RAM.
 - Dual matched Hard Drives (10GB or more).
 - CD ROM.
 - 3.5" Diskette Drive.
 - 15" or greater SVGA Display.
 - Standard keyboard & mouse.
 - 1 Ethernet 100Mb adapter (network connection).
 - NT/2000 compliant LVD/HVD SCSI initiator adapter (library connection).

NOTE: Do not use anteries (brand) SCSI adapters that do not allow setting reset on startup.

- 1 middle length (2-3 m) SCSI cable (68 pins) for the library connection.
- TCP/IP subnet mask and network name. Contact the local network administrator for the details.

NOTE: For the AML requirements and the detailed instructions on how to connect AML devices to the PC, refer to either the *AML/J Operator Guide*, the *AML/2 Operator Guide*, or the *AML/E Operator Guide*.

Figure 6 Scalar DLC Basic Solution: Single-aisle

NOTE: The following hardware (not shown on the scheme) is optional.

- SCSI/FC target adapter(s)
- Appropriate SCSI/FC cable(s)
- Fibre Channel switch

Dual-aisle Requirements

NOTE: Although it is not recommended to use DA libraries in a Scalar DLC standard solution, this configuration is possible.

The following is a list of hardware requirements.

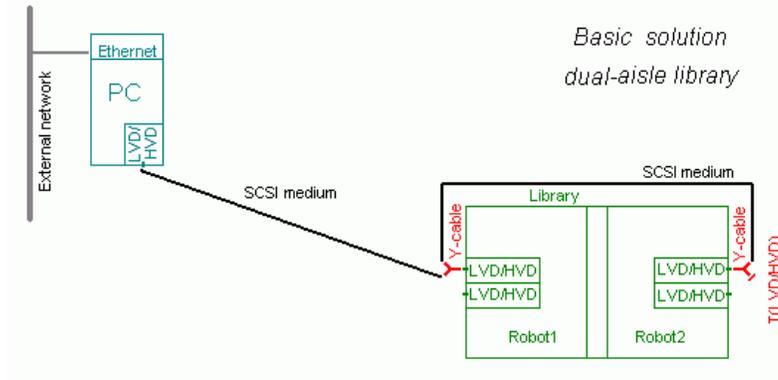
- A single PC required the Microsoft PC 2000 System Design Guide Specifications:
 - 800 MHZ or faster Inter Pentium™ or equivalent CPU (minimum 4 free PC slots in chassis).
 - 256K L2 Cache.
 - 256 MB RAM.
 - Dual matched Hard Drives (10GB or more).
 - CD ROM.
 - 3.5" Diskette Drive.
 - 15" or greater SVGA Display.
 - Standard keyboard & mouse.
 - 1 Ethernet 100Mb adapter (network connection).
 - NT/2000 compliant LVD/HVD SCSI initiator adapter (library connection).

NOTE: Do not use anteries (brand) SCSI adapters that do not allow setting reset on startup.

- 1 middle length (2-3 m) SCSI cable (68 pins) for the library connection.

- 1 middle length (4-5 m) SCSI cable (68 pins) for the aisle connection.
The total length of two SCSI cables required for the dual-aisle library connection (see Figure 7) must not exceed 12 m for LVD adapters and 25 m for HVD adapters.
- 2 SCSI Y-block connectors to terminate the SCSI Bus.
- 1 SCSI Terminator, LVD/HVD for the library connection.
- TCP/IP subnet mask and network name. Contact the local network administrator for the details.

Figure 7 Scalar DLC Basic Solution: Dual-aisle



NOTE: The following hardware (not shown on the scheme) is optional.

- SCSI/FC target adapter(s)
- Appropriate SCSI/FC cable(s)
- Fibre Channel switch

Setup Roadmap

Complete the following steps to set up the basic solution.

- 1 *Set Up the PC* on page 10.
- 2 *Set Up the Library* on page 10.
- 3 *Install the Scalar DLC Software* on page 11.
- 4 *Configure the Logical Library* on page 11.

Set Up the PC

Step 1 Connect the PC to a local network. Install Windows 2000. Resolve the network name and TCP/IP. Join the PC to the domain, if required.

Step 2 Install all required services. Install all required device drivers (e.g. all initiator drivers for SCSI). Install Microsoft Service Pack 3. When the operation system is installed successfully, reboot and be sure all services work correctly.

NOTE: Unplug the target card SCSI cable if the server has trouble booting (may be a termination problem).

Set Up the Library

NOTE: For the detailed instructions on how to set up the AML and connect it to the PC, refer either to the *AML/J Operator Guide*, the *AML/2 Operator Guide*, or the *AML/E Operator Guide*.

Step 1 Set up the library according to the media that will be used.

- For the 6-symbols barcode, set the Media ID to *disabled*. The library cannot determine different media of a single domain (e.g. DLT IV or SDLT) and the media type-default-by-domain will be set (e.g. all DLT media will be recognized as DLT IV). Refer to the library *Operator Guide* for the details.

CAUTION Do not use different media of a single domain in this type of library. A hardware crash is otherwise possible.

A hardware crash is also possible if the default media type is not properly resolved (e.g. DLT media resolved as DLT IV, but the real cartridges are DLT III).

- For the 7-symbols barcode, set the Media ID to *enabled*. The library scanner will read the media type directly from barcode. Use the library Operator panel, *Main > Setup > Library > Media*, then set:
 - Volser: MEDIA ID
 - Add ID: N
 - Mixed: Y
 - Extend: N
 - ASCQ: N

Step 2 Connect the library and resolve the SCSI ID

- For single-aisle (Scalar 1000, Scalar 10K):
 1. Connect the SCSI cable to the respective LVD/HVD controller 1 of the library and to the Scalar DLC SCSI HBA card.

CAUTION Make sure to install the proper voltage SCSI connections (refer to Table 16 on page 71).

2. Set the SCSI ID: On the library Operator panel, *Main > Setup > Library > SCSI > Target ID*, then set the SCSI ID.
The adapter SCSI ID must not overlap with library SCSI ID.
 3. On the PC, launch *My Computer > Manager > Device Manager* to verify that the Windows 2000 machine can see the Library "Media Changer".
- For Dual-aisle (Scalar 10K DA):
 1. Plug Y-block connector with LVD/HVD-terminator to LVD/HVD controller 1 of the Robot2.
 2. Plug the Y-block connector to LVD/HVD controller 1 of the Robot1.
 3. Connect two Y-block connectors of Robot1 and Robot2 with the medium SCSI cable.
 4. Connect the free connector of Y-block connector at Robot1 and the Scalar DLC SCSI HBA card with the medium SCSI cable.

CAUTION Make sure to install the proper voltage SCSI connections (refer to Table 16 on page 71).

5. Set the SCSI ID for Robot1 using the Operator panel on Robot1 (*Main > Setup > Library > SCSI > Target ID*), then set the SCSI ID).
6. Set the SCSI ID for Robot2 using the Operator panel on Robot2 (*Main > Setup > Library > SCSI > Target ID*), then set the SCSI ID).
The adapter SCSI ID must not overlap with library SCSI IDs.
7. On the PC, launch *My Computer > Manager > Device Manager* to verify that the Windows 2000 machine can see two Library "Media Changers".

Step 3 Make sure that the created scheme matches the example (Figure 6 on page 8 for a single-aisle library, and Figure 7 on page 9 for a dual-aisle library).

Install the Scalar DLC Software

- Step 1** Log in as administrator or as a domain user with the local administration rights.
- Step 2** Install the Scalar DLC software using the Typical installation (refer to *Installing the Scalar DLC Software* on page 42). When the installation of the Scalar DLC completes, restart the PC and return to this procedure.
- Step 3** If the AML is used, install the appropriate AML Tool and configure the AML library to work with Scalar DLC software. Refer either to the *Scalar DLC AML/J Guide*, the *Scalar DLC AML/2 Guide*, or the *Scalar DLC AML/E Guide*.

Configure the Logical Library

- Step 1** Log in as administrator or as a domain user with the local administration rights and start the Scalar DLC software if it is not started automatically.

- Step 2** Double click the **Scalar DLC Manager** icon to start the Scalar DLC Management GUI from a local computer. From a remote computer, use **http://ScalarDLC-machine-name** in current browser.
- Step 3** The first start of the Scalar DLC Management GUI launches the configuration engine. Select either the Automatic or Manual configuration option to configure the logical library automatically, or Advanced configuration option in case of more than one logical library should be created. Refer to the *Configuration* chapter of the *Scalar DLC Reference Manual* for instructions.

Setting Up the Cluster Solution

The Scalar DLC cluster solution can be installed only on a Windows 2000 Advanced Server because it uses the Microsoft Cluster Service that is not available under Windows 2000 Professional or Windows 2000 Server.

NOTE: The current realization of the Scalar DLC cluster (failover) solution supports only Scalar libraries (both single- and dual-aisle). The library hardware realization does not allow using a cluster with the AML devices.

Single-aisle Requirements

The minimum PC system hardware requirements are based on Microsoft PC 2000 System Design Guide Specifications.

- Two PC with identical hardware and software:
 - 800 MHZ or faster Inter Pentium™ or equivalent CPU (minimum 4 free PC slots in chassis).
 - 256K L2 Cache.
 - 256 MB RAM.
 - Dual matched Hard Drives (10GB or more).
 - CD ROM.
 - 3.5" Diskette Drive.
 - 15" or greater SVGA Display.
 - Standard keyboard & mouse.
 - 2 Ethernet 100Mb adapters.
 - NT/2000 compliant LVD SCSI initiator adapter, RAID connection
 - NT/2000 compliant LVD/HVD SCSI initiator adapter, library connection.

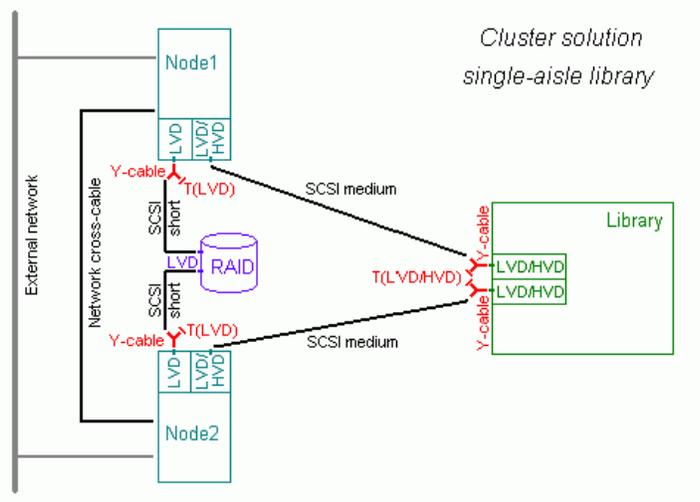
NOTE: Do not use anteries (brand) SCSI adapters that do not allow setting reset on startup.

- 1 ArrayMasStor J or G Series ADTX RAID System.

- 1 Network cross cable (twisted-pair) (~1 m), for the internal cluster network.
- 2 short (~1 m) SCSI cables (68 pins), for the RAID connections.
- 2 middle length (2-3 m) SCSI cable (68 pins), for the library connections.
- 2 Y-Cables to terminate the SCSI Bus on RAID.
- 2 Y-Block connectors to terminate the SCSI Bus on library.
- 2 LVD SCSI Terminators for the RAID connections.
- 2 LVD/HVD SCSI Terminators for the library connections.
- TCP/IP subnet masks and network names for both cluster nodes and the cluster itself. Only the *static* IP can be used for the cluster. Contact the local network administrator for the details.

NOTE: The hardware configuration of both cluster nodes must be identical, and they must remain identical. For example, all cards/adapters must be identical and need to be placed in identical slots.

Figure 8 Scalar DLC Cluster Solution: Single-aisle



NOTE: The following hardware (not shown on the scheme) is optional.

- SCSI/FC target adapter(s)
- Appropriate SCSI/FC cable(s)
- Fibre Channel switch

Dual-aisle Requirements

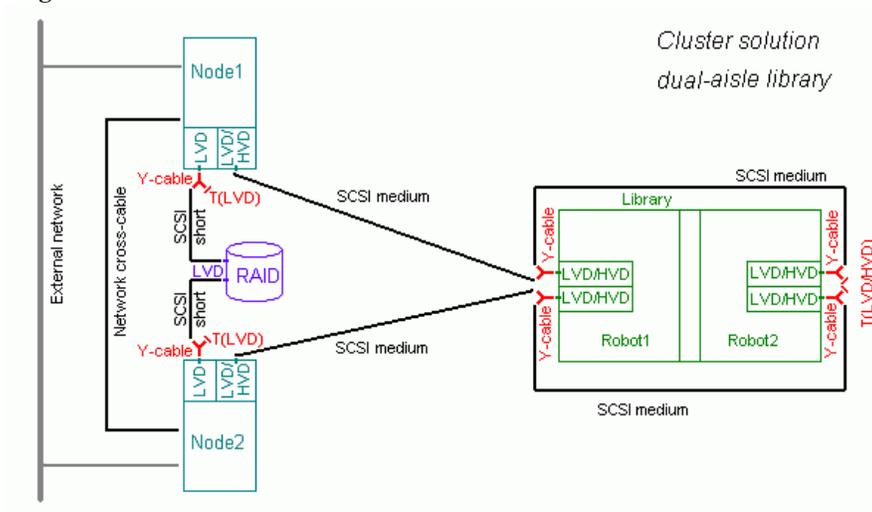
The minimum PC system hardware requirements are based on Microsoft PC 2000 System Design Guide Specifications.

- Two PCs with identical hardware and software:
 - 800 MHz or faster Inter Pentium™ or equivalent CPU (minimum 4 free PC slots in chassis).
 - 256K L2 Cache.
 - 256 MB RAM.
 - Dual matched Hard Drives (10GB or more).
 - CD ROM.
 - 3.5" Diskette Drive.
 - 15" or greater SVGA Display.
 - Standard keyboard & mouse.
 - 2 Ethernet 100Mb adapters.
 - NT/2000 compliant LVD SCSI initiator adapter, RAID connection.
 - NT/2000 compliant LVD/HVD SCSI initiator adapter, library connection.

NOTE: Do not use anteries (brand) SCSI adapters that do not allow setting reset on startup.

- 1 ArrayMasStor J or G Series ADTX RAID System.
- 1 Network cross cable (twisted-pair) (~1m), for the internal cluster network.
- 2 short (~1 m) SCSI cables (68 pins), for the RAID connections.
- 2 middle length (2-3 m) SCSI cable (68 pins), for the library connections.
- 2 middle length (4-5 m) SCSI cable (68 pins), for the aisle connections.
The total length of two SCSI cables required for the dual-aisle library connection (see Figure 9 on page 15) must not exceed 12 m for LVD adapters and 25 m for HVD adapters.
- 2 Y-Cables to terminate the SCSI Bus on RAID.
- 4 Y-Block connectors to terminate the SCSI Bus on library.
- 2 LVD SCSI Terminators for the RAID connections.
- 2 LVD/HVD SCSI Terminators for the library connections.
- TCP/IP subnet masks and network names for both cluster nodes and the cluster itself. Only the *static* IP can be used for the cluster. Contact the local network administrator for the details.

NOTE: The hardware configuration of both cluster nodes must be identical and they must remain identical. For example, all cards/adapters must be identical and need to be placed in identical slots.

Figure 9 Scalar DLC Cluster Solution: Dual-aisle

NOTE: The following hardware (not shown on the scheme) is optional.

- SCSI/FC target adapter(s)
- Appropriate SCSI/FC cable(s)
- Fibre Channel switch

Setup Roadmap

Complete the following steps to set up the cluster solution.

- 1 *Set Up the PCs* on page 16.
- 2 *Set Up the Library* on page 16.
- 3 *Install OS and Configure RAID* on page 18.
- 4 *Configure the Cluster* on page 27.
- 5 *Install the Scalar DLC Software* on page 37.
- 6 *Configure the Logical Library* on page 39.

For the optional additional activity, refer also to *Use Old Database* on page 40, *Build Client Connections* on page 40, and *Install SCSI/FC Target Cards on a Live Machine* on page 42.

Set Up the PCs

Step 1 Build the RAID SCSI connection.

- a. Plug Y-cable with LVD-terminator to the LVD adapter of Node1.
- b. Link the free connector of the Y-cable and the SCSI connector of the RAID disk with the short SCSI cable.
- c. Plug the Y-cable with the LVD-terminator to the LVD adapter of Node2.
- d. Link the free connector of the Y-cable and the another SCSI connector of the RAID disk with short the SCSI cable.

CAUTION Make sure to install the proper voltage SCSI connections (refer to Table 16 on page 71).

Step 2 Resolve the RAID SCSI IDs.

- a. Determine the RAID adapter SCSI ID by using the operation buttons (up/down) on the RAID front panel (for example, SCSI ID 0).
- b. Launch the BIOS Setup for the LVD SCSI adapters for the RAID (adapter AHA-29160 as an example):
 - Set *termination* mode to *disabled* for both adapters.
 - Set *Reset SCSI Bus* parameter *off* for both adapters.
 - Set “Start Unit” command to *off* for both adapters.

NOTE: Both adapters must have different SCSI IDs (e.g. SCSI ID 1 for Node1 and SCSI ID 2 for Node2), and these IDs must not overlap with the RAID adapter SCSI ID.

- For the adapter with the lower SCSI ID (in the example - 1), the parameter “Include in BIOS Scan” must be *yes*; the other adapter (2) must not be included in BIOS scan.

Step 3 Connect both PCs (Node1 and Node2) to a local network.

- a. For Internal (cluster) network - connect the Ethernet network adapters (for internal network) of Node1 and Node2 with the network cross-cable (twisted pair).
- b. External network - connect the remaining network adapters to the external network. Both Cluster nodes must be connected to a domain server.

Set Up the Library

Complete the following steps to connect both PCs (Node1 and Node2) to the library.

Step 1 Set up the library according to the media that will be used.

- For the 6-symbols barcode, set the Media ID to *disabled*. The library cannot determine different media of a single domain (for example, DLT III or SDLT) and the media type-default-by-domain will be set (for example, all DLT media will be recognized as DLT III). Refer to the library *Operator Guide* for the details.

CAUTION Do not use different media of a single domain in this type of library. A hardware crash is otherwise possible.
A hardware crash is also possible if the default media type is not properly resolved (e.g. DLT media resolved as DLT IV, but the real cartridges are DLT III).

- For the 7-symbols barcode, set the Media ID to *enabled*. The library scanner will read the media type directly from barcode. Use the library Operator panel, *Main > Setup > Library > Media*, then set:
 - Volser: MEDIA ID
 - Add ID: N
 - Mixed: Y
 - Extend: N
 - ASCQ: N

Step 2 Build the SCSI connection

- Single-aisle (Scalar 1000, Scalar 10K)
 1. Plug the Y-block connector with the LVD/HVD-terminator to the LVD/HVD controller 1 of the library.
 2. Link the free end of the Y-block connector and the LVD/HVD adapter of Node1 with the medium SCSI cable.
 3. Plug the Y-block connector with the LVD/HVD-terminator to the LVD/HVD controller 2 of the library.
 4. Link the free end of the Y-block connector and the LVD/HVD adapter of Node2 with the medium SCSI cable.

CAUTION Make sure to install the proper voltage SCSI connections (refer to Table 16 on page 71).

- Dual-aisle (Scalar 10K)
 1. Plug the Y-block connector with the LVD/HVD-terminator to the LVD/HVD controller 1 of the Robot2.
 2. Plug the Y-block connector to the LVD/HVD controller 1 of the Robot1.
 3. Link the two Y-block connectors of Robot1 and Robot2 with the medium SCSI cable.
 4. Link the free end of the Y-block connector at Robot1 and the LVD/HVD adapter of Node1 with the medium SCSI cable.
 5. Plug the Y-block connector with the LVD/HVD-terminator to the LVD/HVD controller 2 of the Robot2.
 6. Plug the Y-block connector to the LVD/HVD controller 2 of the Robot1.
 7. Link the two Y-block connectors of Robot1 and Robot2 with the medium SCSI cable.
 8. Link the free end of the Y-block connector at Robot1 and the LVD/HVD adapter of Node1 with the medium SCSI cable.

CAUTION Make sure to install the proper voltage SCSI connections (refer to Table 16 on page 71).

Step 3 Resolve the library SCSI IDs:

- Set the single-aisle SCSI ID:
 1. On the library Operator panel, *Main > Setup > Library > SCSI > Target ID*, then set the SCSI IDs.
 2. Restart the library so that the SCSI IDs take affect.
- Set the dual-aisle SCSI IDs:
 1. Set the SCSI ID for Robot1 using the Operator panel on Robot1 (*Main > Setup > Library > SCSI > Target ID*, then set the SCSI ID).
 2. Set the SCSI ID for Robot2 using the Operator panel on Robot2 (*Main > Setup > Library > SCSI > Target ID*, then set the SCSI ID).
 3. Restart the library so that the SCSI IDs take affect.

Step 4 Launch the BIOS Setup for the LVD/HVD adapters on both cluster nodes.

- a. Resolve the SCSI IDs that must be different (e.g. ID=5 for Node1 and ID=6 for Node2).
- b. For both adapters, set *termination* mode to *automatic*.
- c. For both adapters, make the *Reset SCSI Bus* parameter *off*.

NOTE: The adapter SCSI IDs in both cluster nodes must not overlap with library SCSI IDs. The SCSI IDs for the library controllers must also be different. On both robots, too, in case of dual-aisle library.

Step 5 On any cluster node, launch *My Computer > Manager > Device Manager* to verify that the Windows 2000 machine can see the Library "Media Changer". Two "Media Changer" must be visible for dual-aisle library.

Step 6 Make sure that the created scheme matches the example (see Figure 8 on page 13 for a single-aisle library, and Figure 9 on page 15 for dual-aisle library).

Install OS and Configure RAID

Follow the steps below to install the Operating System and configure RAID disk for both PCs (Node1 and Node2).

Step 1 Install the Operating System on Node2.

- a. Power Node1 off. Power Node2 on.
- b. Install the Windows 2000 Advanced Server.
- c. Resolve the network name and TCP/IP. Join the PC to the domain.
- d. Install all required services. Install all required device drivers (e.g. initiator SCSI and RAID). Install Microsoft Service Pack 3.

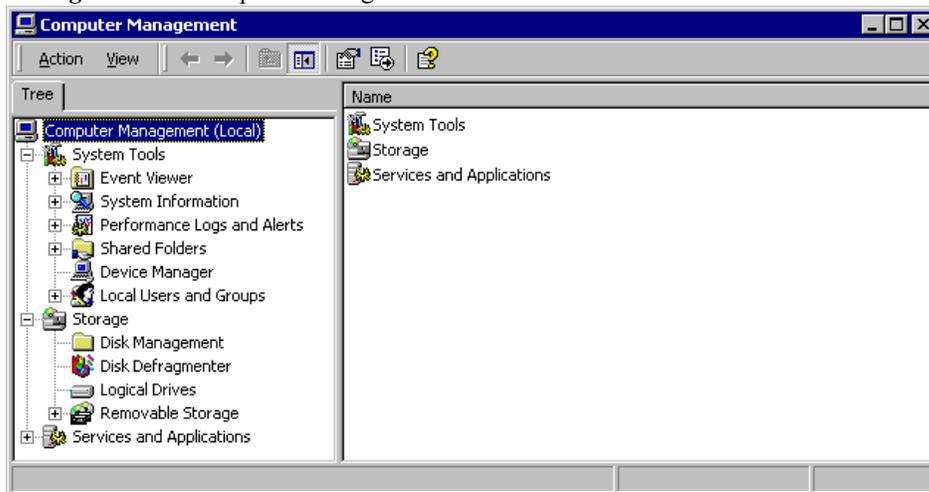
- e. When the operation system is installed successfully, reboot and be sure all services work satisfactorily.

NOTE: Unplug the target card SCSI cable if the server has trouble booting (may be a termination problem).

Step 2 Configure the RAID Disk.

- a. Log on under the domain account.
- b. Disable the write cache for the RAID.
 - Use **Start > Settings > Control Panel > Computer Management > Device Manager > Disk Drives > RAID** (see the figure below).

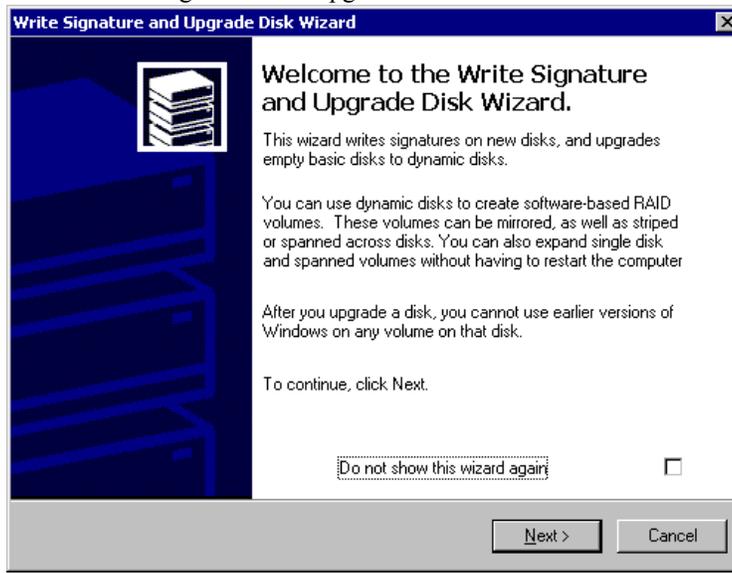
Figure 10 Computer Management



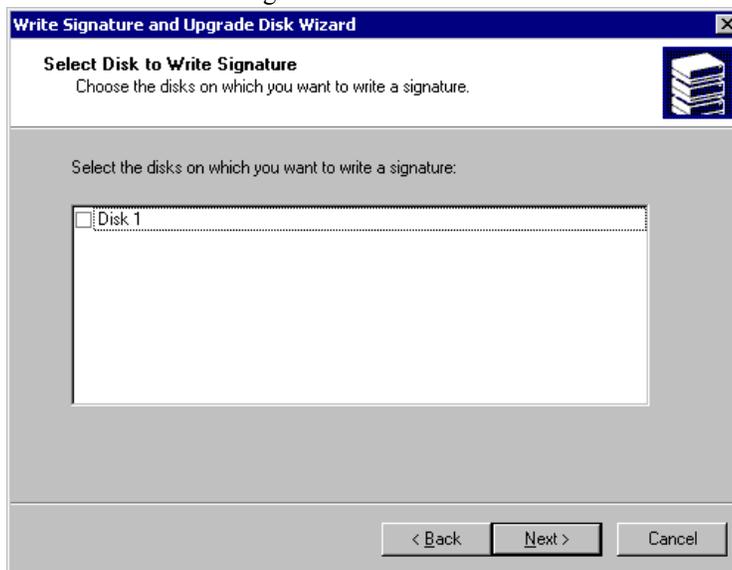
- Open the Disk Properties pane (see the figure below).

Figure 11 Disable write cache

- Disable write caching and click **OK**.
- c. Upgrade the RAID disk.
- Select disk management for write signature and upgrade disk wizard. The wizard will auto start (see the figure below).

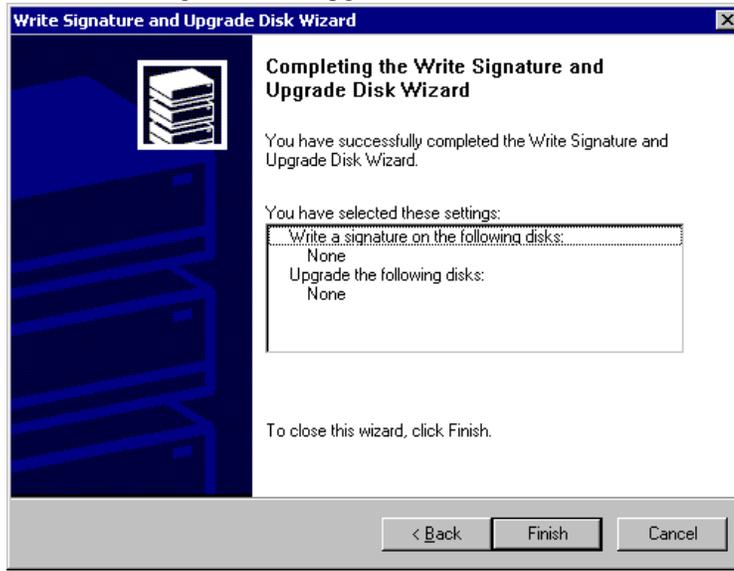
Figure 12 Write Signature and Upgrade Disk Wizard: Start

- Click **Next** and proceed to the figure below.

Figure 13 Disk to Write Signature

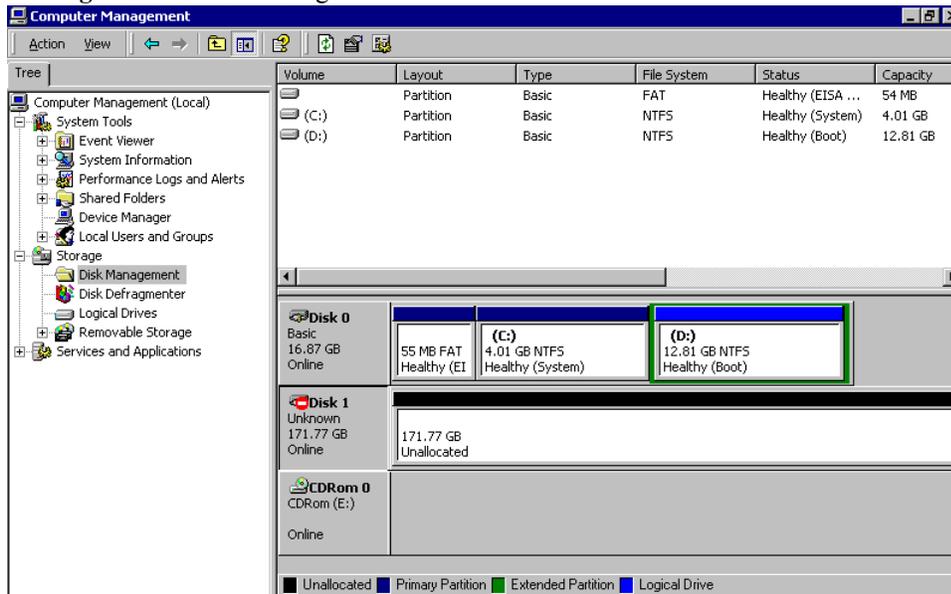
- Leave the field blank and click **Next** to proceed to the following figure.

Figure 14 Write Signature and Upgrade Disk Wizard: Finish



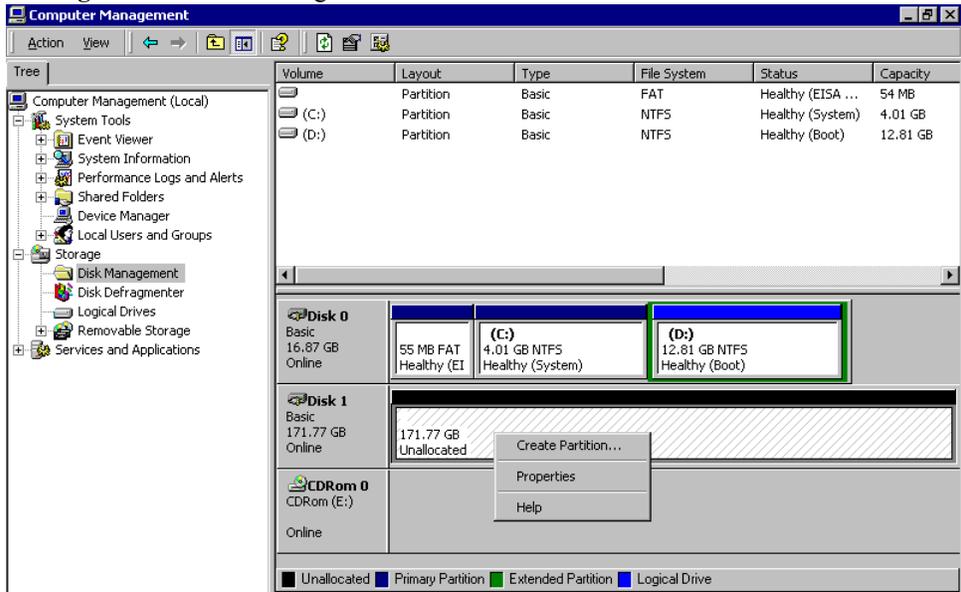
- Click **Finish** to complete the Disk Upgrade.
- d. Format the RAID disk (for Node2) or connect the formatted disk (for Node1).
- Open *Disk Management* (see the figure below).

Figure 15 Disk Management



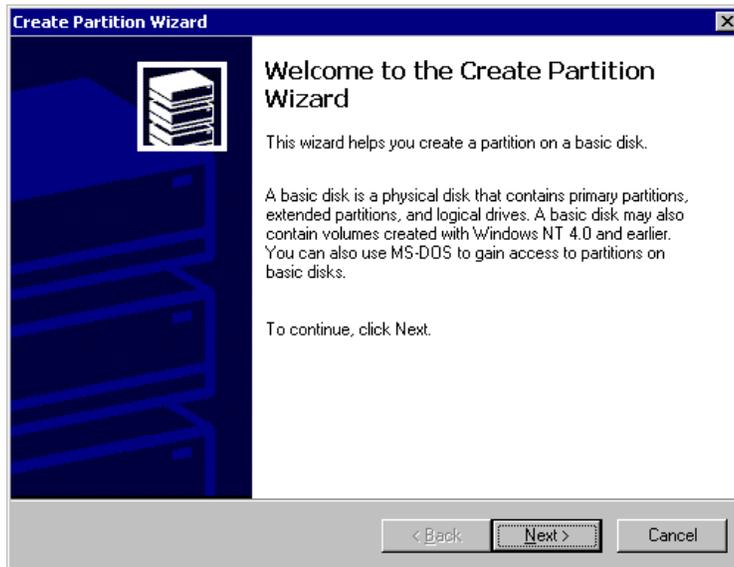
- Right-click RAID (in the example Disk 1) and change it to *Basic* (see the figure below).

Figure 16 Disk Management: Basic Disk



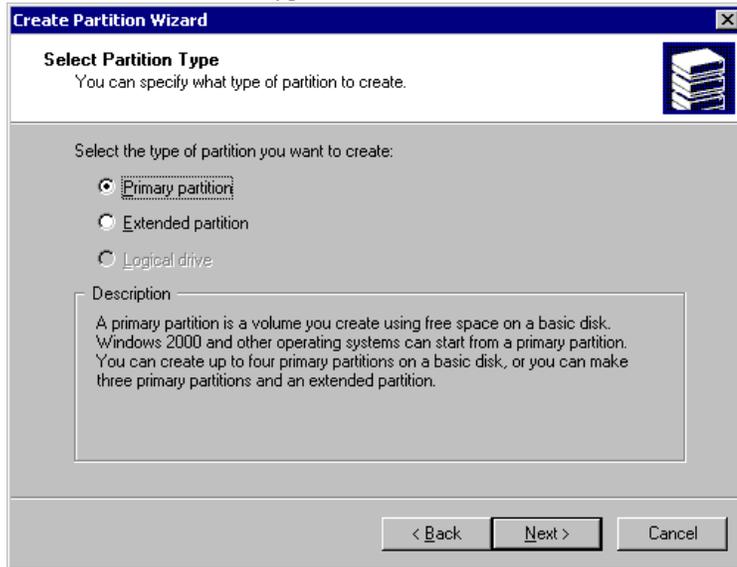
- Right-click “Unallocated space”. Select "Create Partition" (see figure below).

Figure 17 Create Partition Wizard: Start



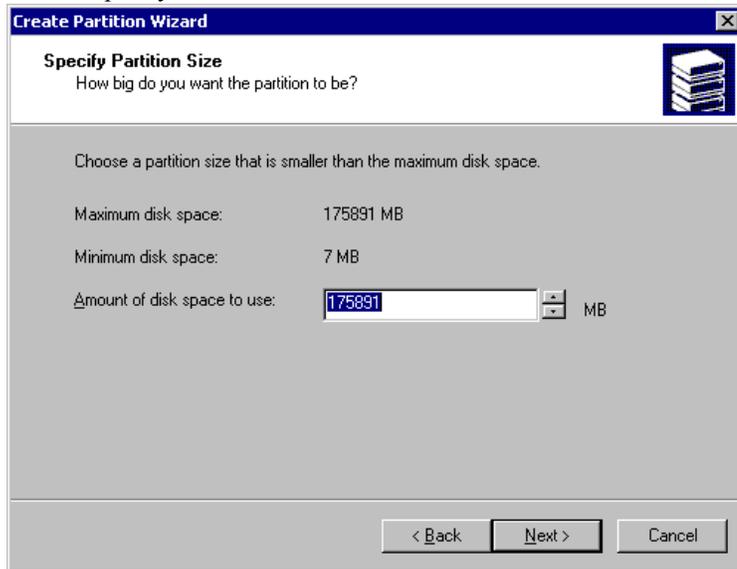
- Click **Next** and proceed to the figure below.

Figure 18 Select Partition Type



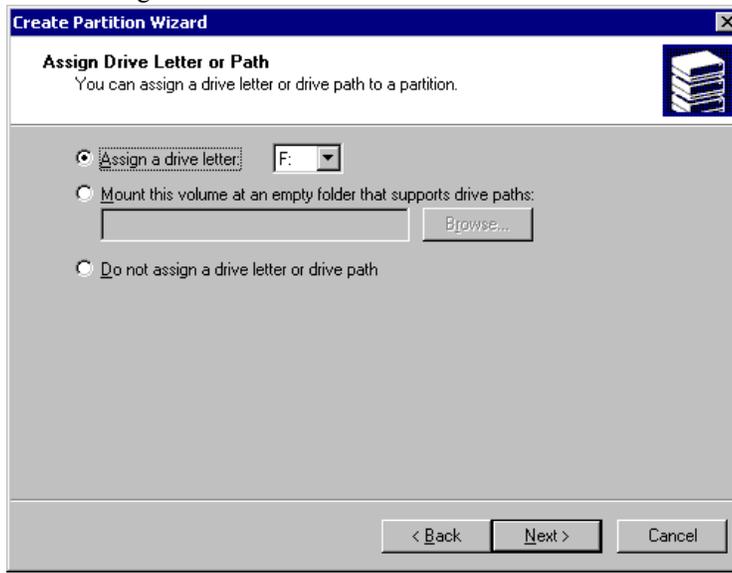
- Select "Primary partition" and click **Next** to proceed to the following figure.

Figure 19 Specify Partition Size



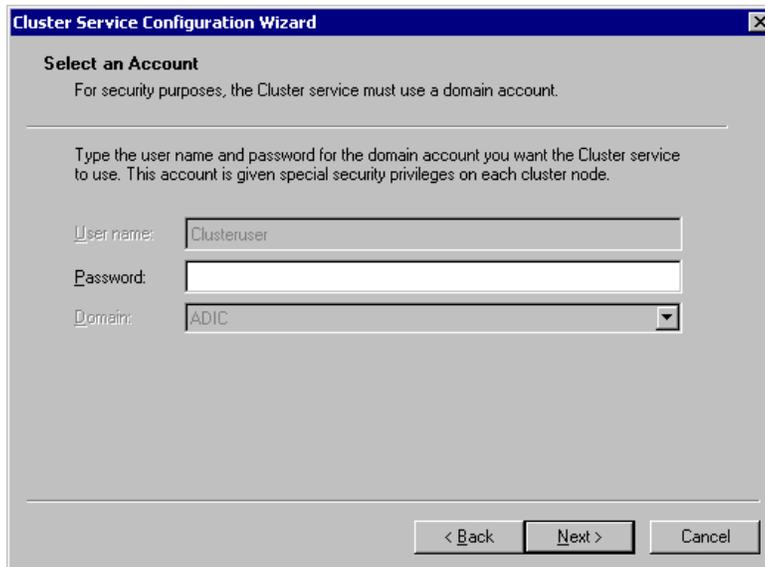
- Select Max disk space as amount of space to use and click **Next** to proceed to the following figure.

Figure 20 Assign a Drive Letter



- Specify a drive letter that will identify the RAID disk. This letter must be identical on both cluster nodes. Then click **Next** to proceed to the figure below.

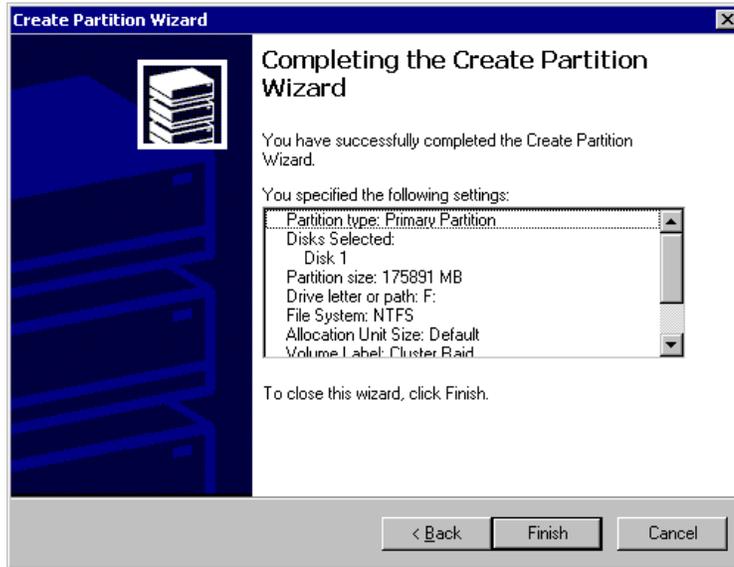
Figure 21 Format Partition



- (Node2) Select "Format Partition". Specify "Cluster Raid" as a volume label. The file system should be NTFS. Click **Next** to proceed to the following figure.

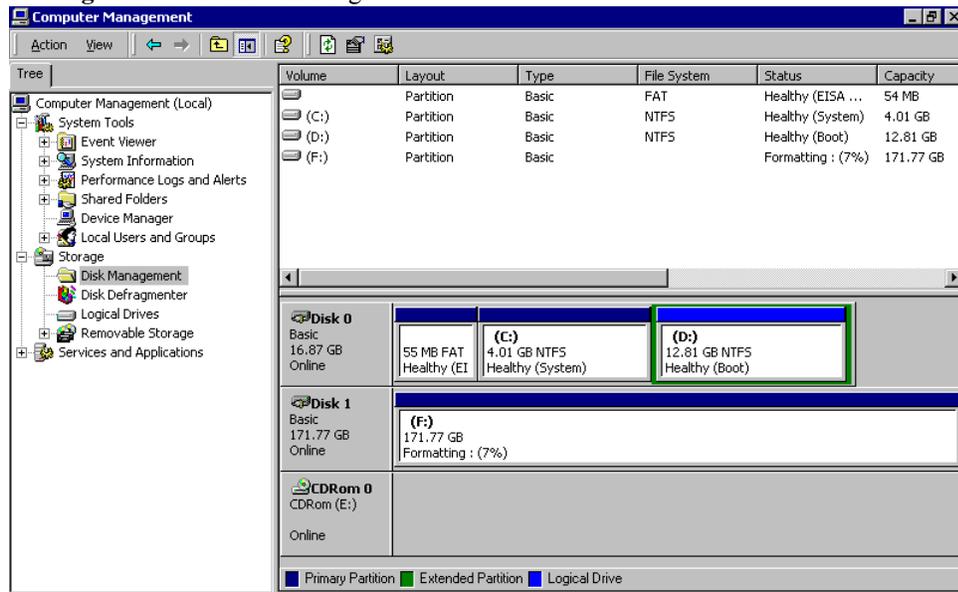
- (Node1) Select “Do not format the partition“, as it is already formatted. Click **Next** to proceed to the following figure.

Figure 22 Create Partition Wizard: Finish



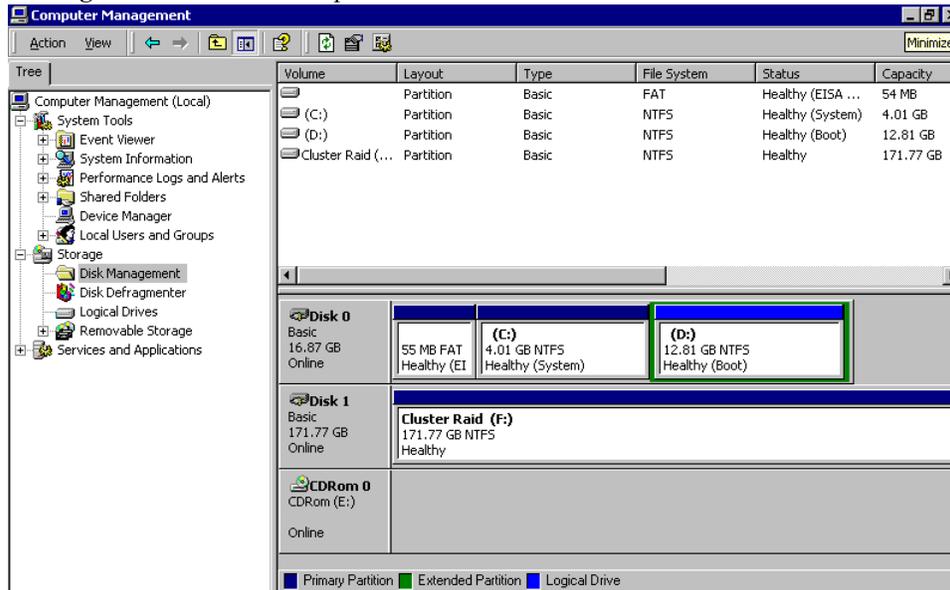
- Click **Finish** to start the disk format (see Figure 23 for Node2) or just finish the partition wizard (see Figure 24 on page 27 for Node1).

Figure 23 Format in Progress



- Node2: Wait for format to complete (see Figure 24).

Figure 24 Format Complete



Step 3 Install the Operating System on Node1.

- Power Node2 off. Power Node1 on.
- Install the Windows 2000 Advanced Server.
- Resolve the network name and TCP/IP. Join the PC to the domain.
- Install all required services. Install all required device drivers (e.g. initiator SCSI and RAID). Install Microsoft Service Pack 3.
- When the operation system is installed successfully, reboot and be sure all services work satisfactorily.

NOTE: Unplug the target card SCSI cable if the server has trouble booting (may be a termination problem).

Step 4 Plug the RAID disk for the Node1.

- Power Node2 on. Power Node1 on.
- Repeat Step 2 on page 19 for Node1.

Step 5 Ensure that the RAID disk is now completely accessible from both nodes.

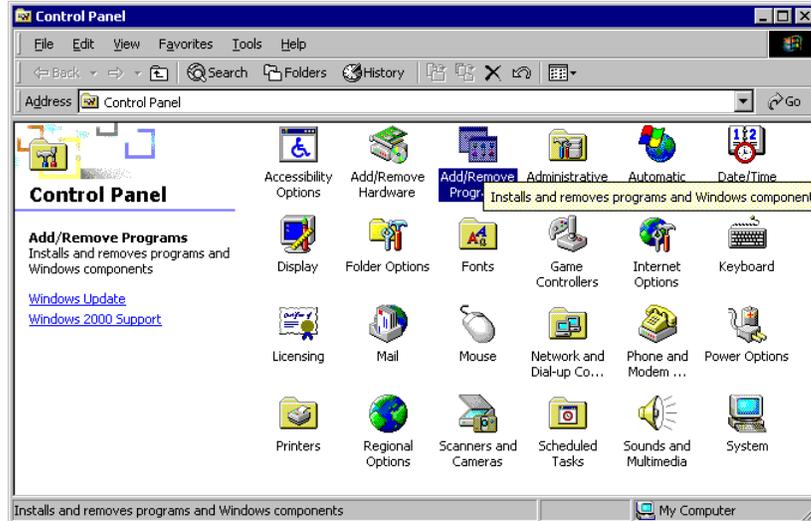
Configure the Cluster

Step 1 Configure the Cluster service on Node1.

- a. Start Windows 2000 Advanced Server on the Node1. Log on as a domain user with the rights of local admin.
- b. Configure the Cluster Service.

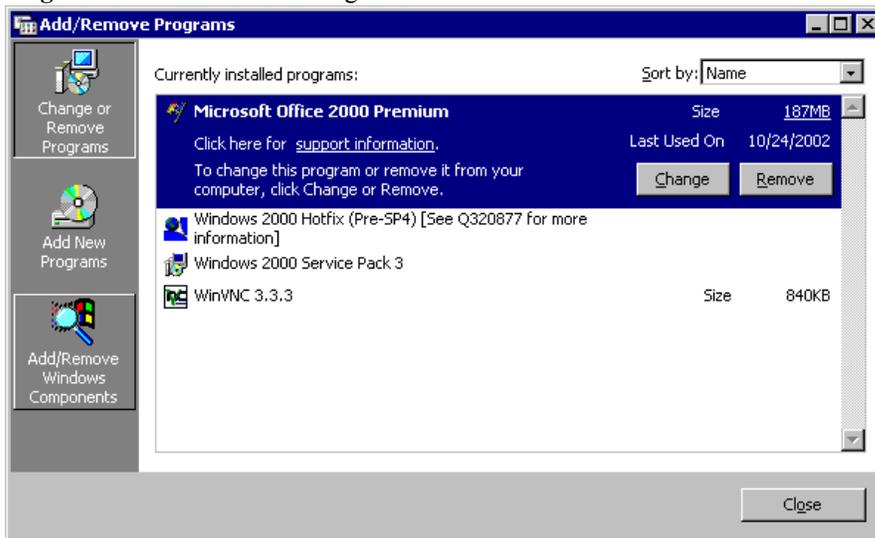
- Open **Control Panel**. See the figure below.

Figure 25 Control Panel

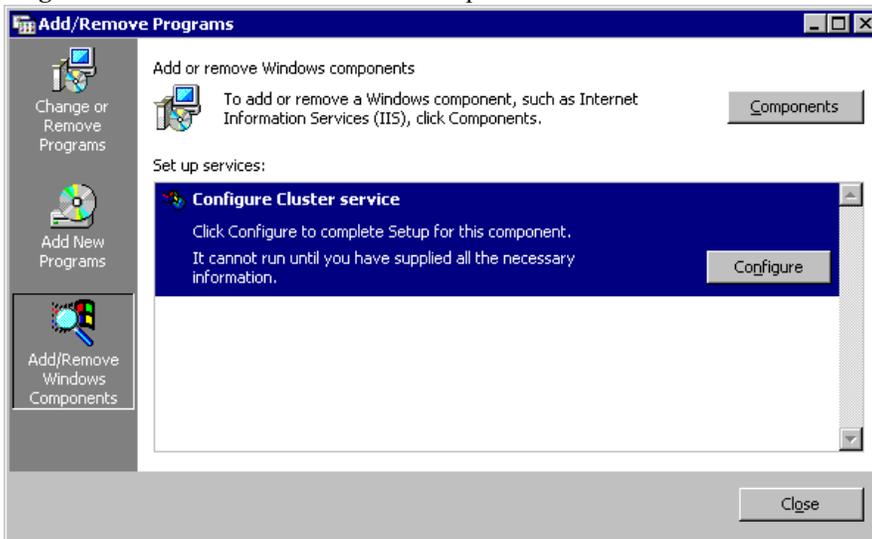


- Open **Add/Remove Programs**. See the figure below.

Figure 26 Add/Remove Programs



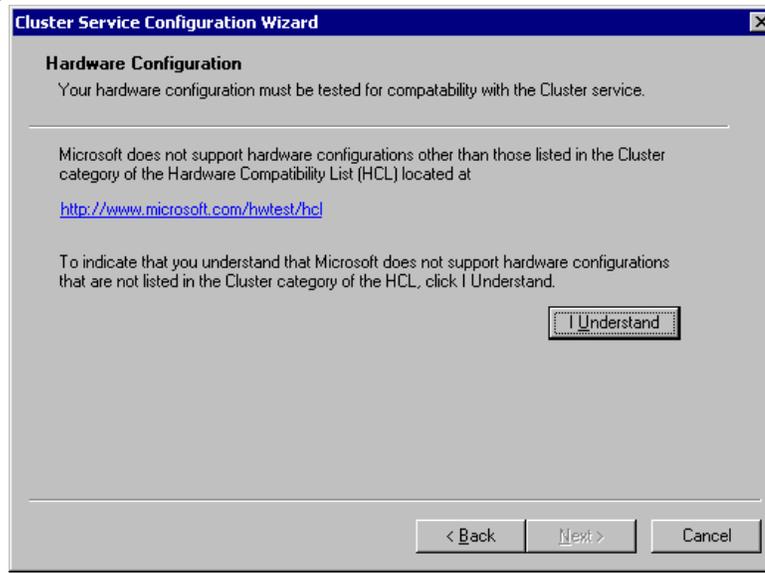
- Click **Add/Remove Windows Components**. See the following figure.

Figure 27 Add/Remove Windows Components

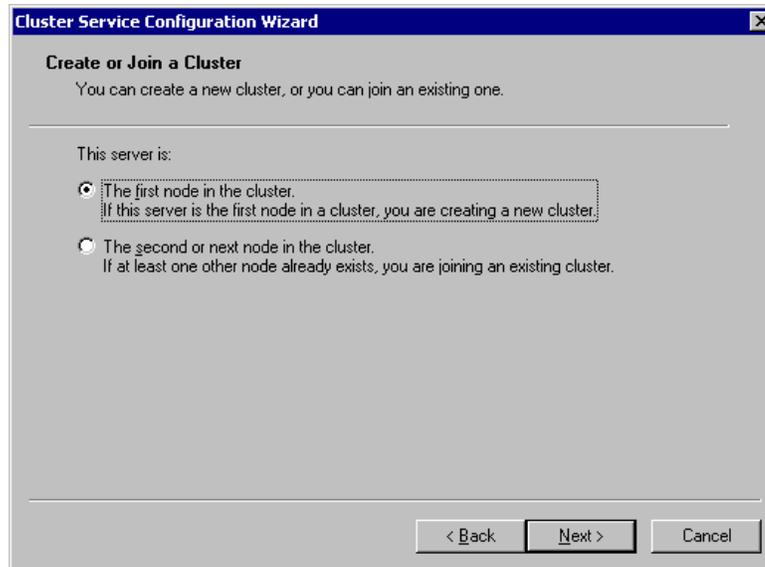
- Select “Configure Cluster service” and click **Configure**. See the figure below.

Figure 28 Cluster Configuration Wizard: Start

- Click **Next** to proceed to the following figure.

Figure 29 Test Hardware

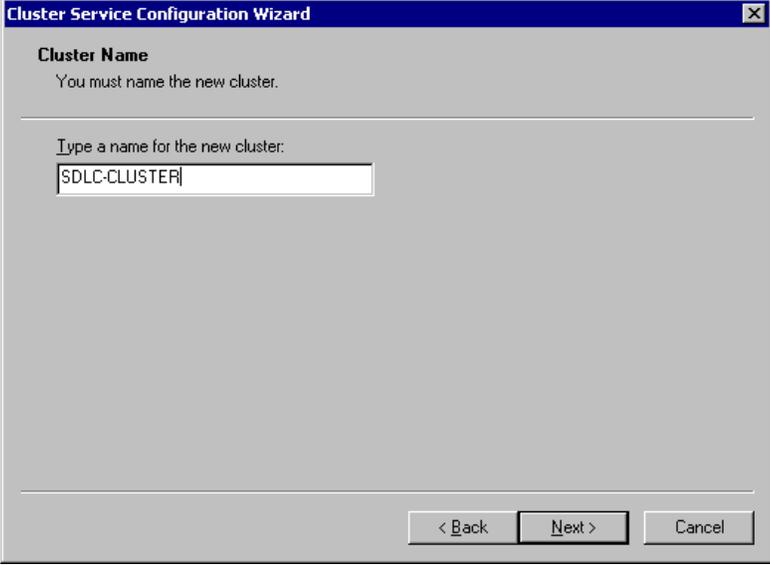
- Press **I Understand**, and click **Next** to proceed to the figure below.

Figure 30 Create/Join a Cluster

- Specify the Create/Join operation type.
 - (Node1) Specify the server is the first cluster node and click **Next** to proceed to Figure 31.

- (Node2) specify the server is the second/next cluster node and proceed to Figure 33 on page 32.

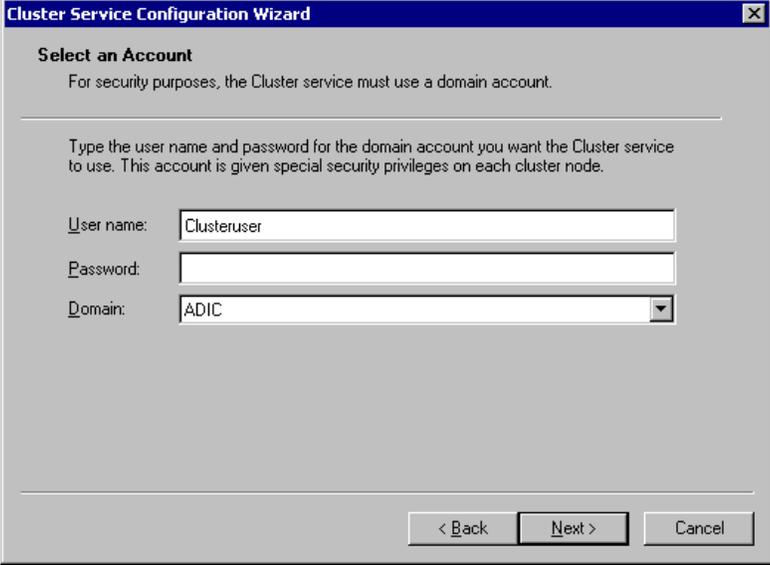
Figure 31 Create a Cluster



The screenshot shows the 'Cluster Service Configuration Wizard' window. The title bar reads 'Cluster Service Configuration Wizard'. The main heading is 'Cluster Name'. Below it, the text says 'You must name the new cluster.' There is a horizontal line, followed by the instruction 'Type a name for the new cluster:'. A text input field contains the text 'SDLC-CLUSTER'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- (Node1) Specify a cluster network name and click **Next** to proceed to the figure below.

Figure 32 Cluster Service Account: Create



The screenshot shows the 'Cluster Service Configuration Wizard' window. The title bar reads 'Cluster Service Configuration Wizard'. The main heading is 'Select an Account'. Below it, the text says 'For security purposes, the Cluster service must use a domain account.' There is a horizontal line, followed by the instruction 'Type the user name and password for the domain account you want the Cluster service to use. This account is given special security privileges on each cluster node.' There are three input fields: 'User name:' with the text 'Clusteruser', 'Password:' (empty), and 'Domain:' with a dropdown menu showing 'ADIC'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- (Node1) Specify domain user name and password for the cluster account. Click **Next** to proceed to the Figure 35 on page 33.

Figure 33 Join a Cluster

The screenshot shows a dialog box titled "Cluster Service Configuration Wizard" with a close button (X) in the top right corner. The main heading is "Cluster Name" with a sub-heading "To join a cluster, you must provide the cluster name." Below this is a text input field containing "SDLC-CLUSTER". A checkbox labeled "Connect to cluster as:" is checked. Underneath are three fields: "User name:" with "Clusteruser", "Password:" (empty), and "Domain:" with a dropdown menu showing "ADIC". At the bottom right are three buttons: "< Back", "Next >", and "Cancel".

- (Node2) Enter the cluster name. Check “connect to cluster as” and specify user name/password/domain. Click **Next** to proceed to the following screen.

Figure 34 Cluster Service Account: Confirm

The screenshot shows a dialog box titled "Cluster Service Configuration Wizard" with a close button (X) in the top right corner. The main heading is "Select an Account" with a sub-heading "For security purposes, the Cluster service must use a domain account." Below this is a text input field containing "Clusteruser". A checkbox labeled "Connect to cluster as:" is checked. Underneath are three fields: "User name:" with "Clusteruser", "Password:" (empty), and "Domain:" with a dropdown menu showing "ADIC". At the bottom right are three buttons: "< Back", "Next >", and "Cancel".

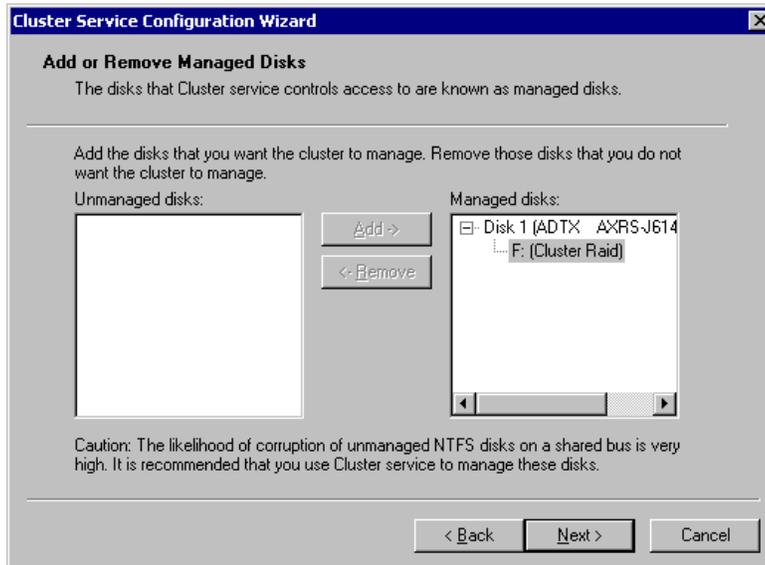
- (Node2) Confirm cluster account password. Proceed to the following screen.

Figure 35 Add an Account to the Administrators Group



- Click **Yes** to proceed.
 - (Node1) See Figure 36.
 - (Node2) See Figure 41 on page 36

Figure 36 Select Cluster Disk



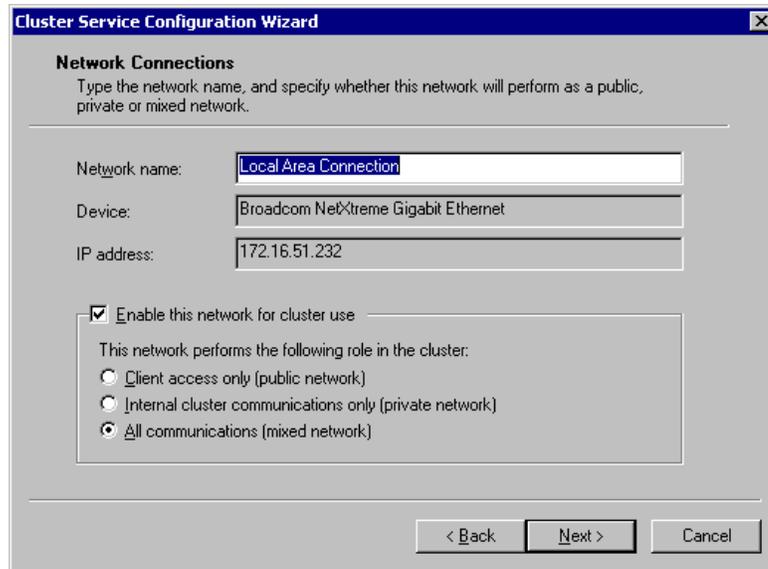
- (Node1) Select the cluster disk (RAID) as the cluster file storage, press **Add** and click **Next** to proceed to the following figure.

Figure 37 Cluster File Storage



- (Node1) Click **Next** to proceed to the following figure.

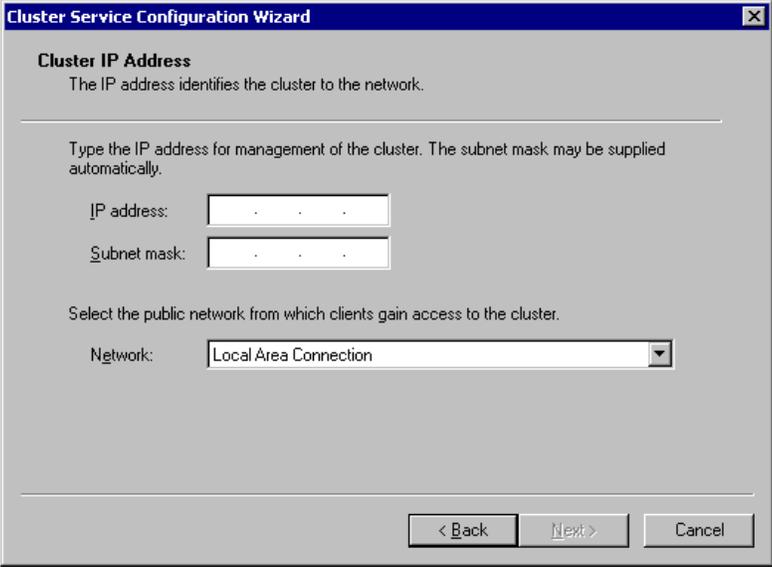
Figure 38 Cluster Network Connection



- (Node1) Set the cluster network type and click **Next** to proceed to Figure 39 on page 35.
Public network (LAN) is a common network that is used by all system services.

A private (internal) cluster network is used only by cluster services. The signals are moving faster via the private network, so it is preferable to use it in order to decrease the cluster down time.

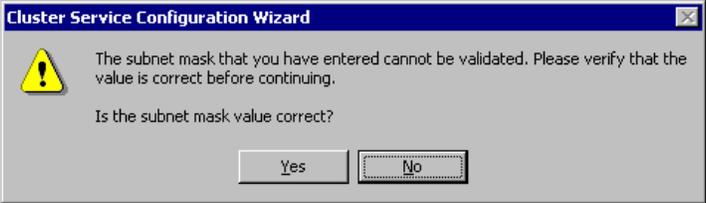
Figure 39 Cluster TCP/IP



The screenshot shows the 'Cluster Service Configuration Wizard' window. The title bar reads 'Cluster Service Configuration Wizard'. The main heading is 'Cluster IP Address' with a sub-heading 'The IP address identifies the cluster to the network.' Below this, there is a text box for 'IP address' and another for 'Subnet mask'. A dropdown menu for 'Network' is set to 'Local Area Connection'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- (Node1) Configure TCP/IP subnet mask for the Cluster and click **Next** to proceed to Figure 40. Only *static* IP can be used for the cluster. Contact the local network administrator for the details.

Figure 40 Verify Cluster Subnet Mask



The screenshot shows a dialog box titled 'Cluster Service Configuration Wizard'. It features a yellow warning icon on the left. The text reads: 'The subnet mask that you have entered cannot be validated. Please verify that the value is correct before continuing.' Below this, it asks 'Is the subnet mask value correct?' and provides two buttons: 'Yes' and 'No'.

- (Node1) Click **Yes**. See the following figure.

Figure 41 Cluster Configuration Wizard: Finish

- Click **Finish** to complete the cluster service configuration.
- c. When the service is installed, restart PC. The Cluster service should start now. See Figure 42.

Figure 42 Cluster service is started successfully**Step 2** Configure the Cluster service on Node2.

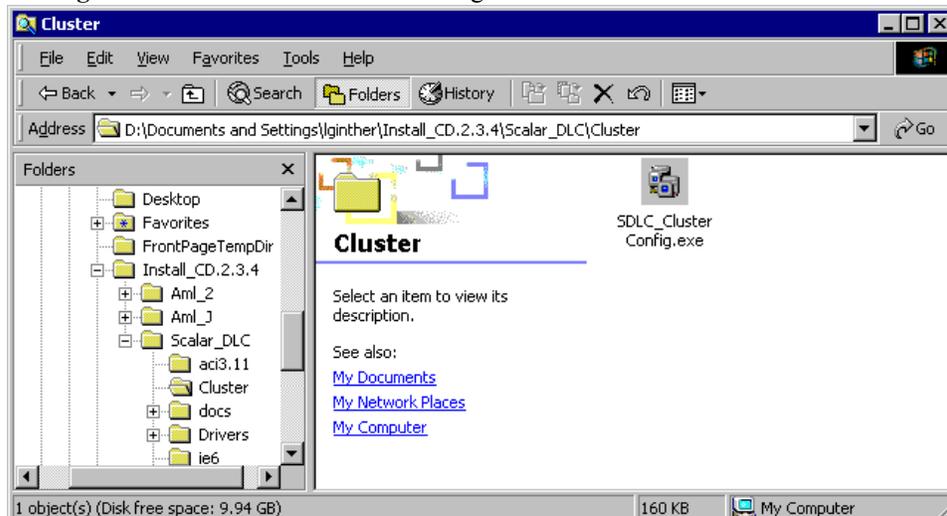
- a. Shut down Node 1 to release the shared disk and allow Node 2 access to the RAID.
- b. Turn Node2 on. Start Windows 2000 Advanced Server. Log on as a domain user with the local admin rights.
- c. Start Node1.
- d. Repeat Step 1 b. on page 28 to configure the Cluster service on the Node2 using the appropriate notes.

Step 3 Ensure the Cluster service is successfully started on both nodes.

Install the Scalar DLC Software

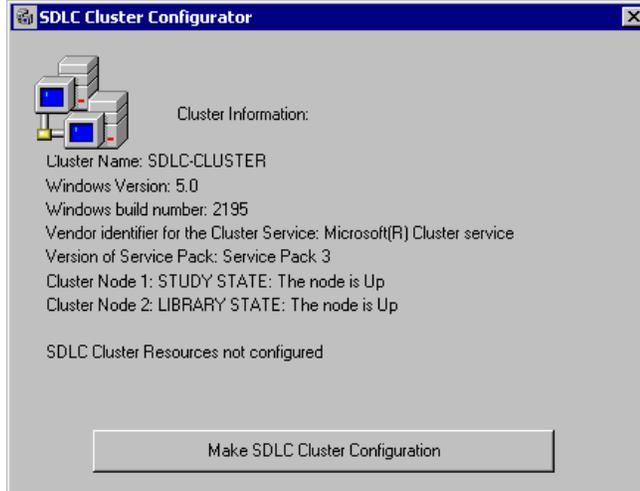
- Step 1** Install Scalar DLC at Node1. Refer to *Installing the Scalar DLC Software* on page 42.
- Launch Scalar DLC Typical installation at Node1 following the noted changes. Do not choose a *silent* mode.
 - Install MSDE 2000 in any shared folder on external (RAID) disk (e.g. F:\Program Files\Microsoft SQL Server). Restart when it is required.
 - When the installation of Scalar DLC is finished, power on the Node2. After Node2 booted up, stop cluster service on Node1 using **Control Panel > Administrative Tools > Cluster Administrator** applet.
- Step 2** Install Scalar DLC at Node2. See *Installing the Scalar DLC Software* on page 42.
- Launch Scalar DLC Typical installation at Node2. Do not choose the *silent* mode.
 - Install MSDE 2000 in the same folder on external (RAID) disk (e.g. F:\Program Files\Microsoft SQL Server).
 - Specify “Use existing database” during the installation of Scalar DLC software.
 - When the installation of Scalar DLC is finished, restart Node2.
- Step 3** Configure the Scalar DLC software for the Cluster mode.
- Make sure that cluster services are running on both cluster nodes.
 - Using any node, launch the cluster utility for automatically configuration of all necessary common resources. It can be found at Scalar DLC Installation CD by the following path: Scalar_DLC\Cluster\SDLC_ClusterConfig.exe (see the figure below).

Figure 43 Start SDLC Cluster Configuration



- c. Launch the cluster configurator tool. See the following figure.

Figure 44 SDLC Cluster Configuration: no configuration



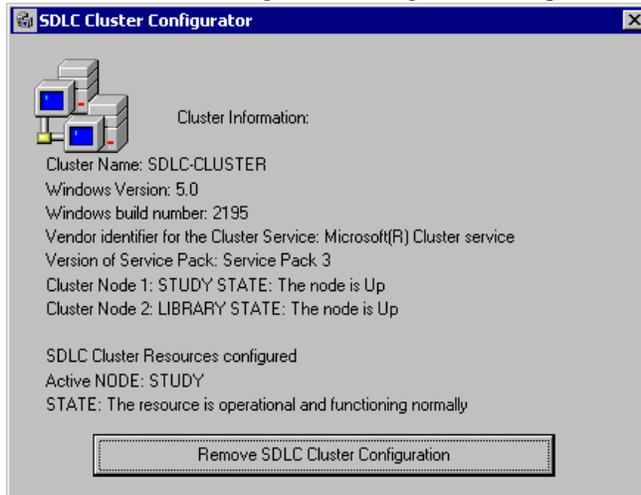
- d. Click **Make SDLC Cluster Configuration**. When the configuration completes, the pop-up window opens. See the figure below.

Figure 45 SDLC Cluster Configured



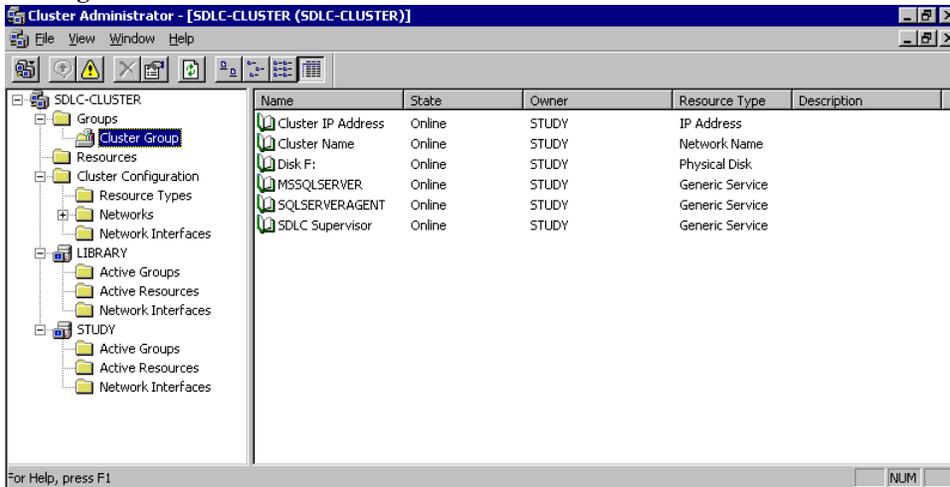
- e. Click **OK** to return to the SDLC Cluster Configurator (see the figure below).

Figure 46 SDLC Cluster Configurator: configuration complete



- f. Close the Scalar DLC Cluster configurator tool (X-button).
- g. Open **Start > Settings > Control Panel > Administrative Tools > Cluster Administration** (see the following figure) and make sure that the SDLC Supervisor service is a part of a Cluster group.

Figure 47 Cluster Administration



Configure the Logical Library

- Step 1** Using any node, log in as administrator or as a domain user with the local administration rights and start the Scalar DLC software if it is not started automatically.

Step 2 Double click the **Scalar DLC Manager** icon to start the Scalar DLC Management GUI from a local computer. From a remote computer, use **http://ScalarDLC-machine-name** in current browser.

NOTE: It is strongly recommended to use the virtual Cluster name here (e.g. **SDLC-CLUSTER**).

Step 3 The first start of the Scalar DLC Management GUI launches the configuration engine. Select either the Automatic or Manual configuration option to configure the logical library automatically, or Advanced configuration option in case of more than one logical library should be created. Refer to the *Configuration* chapter of the *Scalar DLC Reference Manual* for instructions.

NOTE: The operating system and its service packs on both cluster nodes must be identical and they must remain identical. Otherwise it may cause cluster service malfunctions.

NOTE: If the network parameters are changed, the cluster service will not function and should be repaired or re-configured manually.

NOTE: Never turn the RAID shared disk off. Otherwise, the Scalar DLC will not work.

Use Old Database

The old versions of Scalar DLC software were not intended to operate in a cluster mode. However, an old Scalar DLC database can be upgraded to the required standards. Refer to *Advanced Upgrade* on page 85.

Build Client Connections

Additional activity may be required for the clients to connect to the Scalar DLC software installed as the cluster solution.

DAS

Use the common Cluster name (e.g. SDLC-CLUSTER) as DAS_SERVER value on the client host. Refer to *Installing DAS Client* on page 63.

If a firewall exist between client and Cluster, the DAS/ACI Firewall should be installed either on PC in cluster domain or on both cluster nodes; in the second case, the DAS-ACI Firewall server name must be specified as common Cluster name (e.g. SDLC-CLUSTER), too.

ROBAR

No additional actions are required. Everything is the same as for the basic solution.

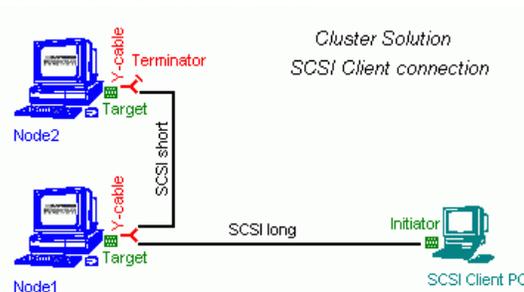
SCSI

In the Cluster configuration, additional hardware requirements exist for the SCSI clients:

- 2 SCSI Target Adapters, as described in Table 16 on page 71.
- 2 SCSI Y-cables (Adapter) to terminate the SCSI Bus.
- 1 SCSI Terminator.
- 1 short (~1 m) SCSI cable (68 pins) (in-cluster connection)
- 1 middle length (2-3 m) SCSI cable (68 pins) (client connection)

Be sure that the client connection scheme matches the example (see Figure 48).

Figure 48 Cluster: SCSI Client Connection

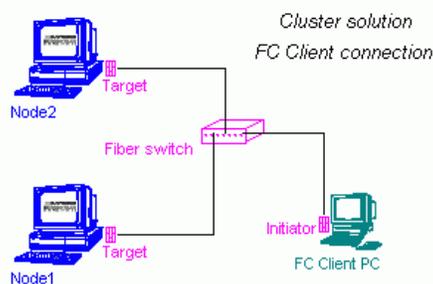


In the Cluster configuration, additional hardware requirements exist for the Fibre Channel clients:

- 2 FC Target Adapters, as described in Table 16 on page 71.
- 2 FC cables (68 pins) (client connection)

Be sure that the client connection scheme matches the example (see Figure 49). The fibre channel target adapters on both cluster nodes should operate in the failover (cluster) mode; this option is set up via the SCSI Target Port tool.

Figure 49 Cluster: Fiber Channel Client Connection



Install SCSI/FC Target Cards on a Live Machine

Although ADIC recommends to install and set up all required hardware before starting the work, it is possible to make some changes later, too.

- Step 1** Make Node1 inactive, Node2 active. The Scalar DLC will operate on Node2.
- Step 2** Shutdown Node1. Install the new SCSI/FC card into a free PCI slot (note what slot it is).
- Step 3** Start Node1. The Windows Device Manager will find a new device and install the SCSI/FC initiator driver (or request the user to install it from a manufacturer disk). Refer to *Initiator Driver* on page 72.
- Step 4** Restart Node1. Install Target driver for a new card. Refer to *Installing the SCSI/FC Target Drivers* on page 68.
- Step 5** Restart Node1. Launch Scalar DLC SCSI Target Port Tool and enable the new SCSI card as Target. For the FC card, resolve the WWN.
- Step 6** Restart Node1. Make Node1 active, Node2 inactive. The Scalar DLC will operate on Node1.
- Step 7** Repeat steps 2-6 for Node2. The SCSI/FC cards should be identical, and they should be installed in the identical PCI slots.
- Step 8** Now launch Scalar DLC Management GUI at any node and configure the SCSI targets for the client.

The down time for the Scalar DLC software is only during changing the cluster nodes. All startup/shutdown operations are executed on the un-active node.

Installing the Scalar DLC Software

The Scalar DLC software must be installed on a PC running Windows 2000. The Management GUI is installed as a part of the Scalar DLC software. After the software is installed, a remote user can connect to the Scalar DLC host.

NOTE: To install the Scalar DLC software and all required components, local administrator rights are required.

During the *typical installation* process, all required components are installed. System restart may be necessary after the installation of certain components. The system will warn the user that the restart is required, and the installation process will continue until all files have been installed.

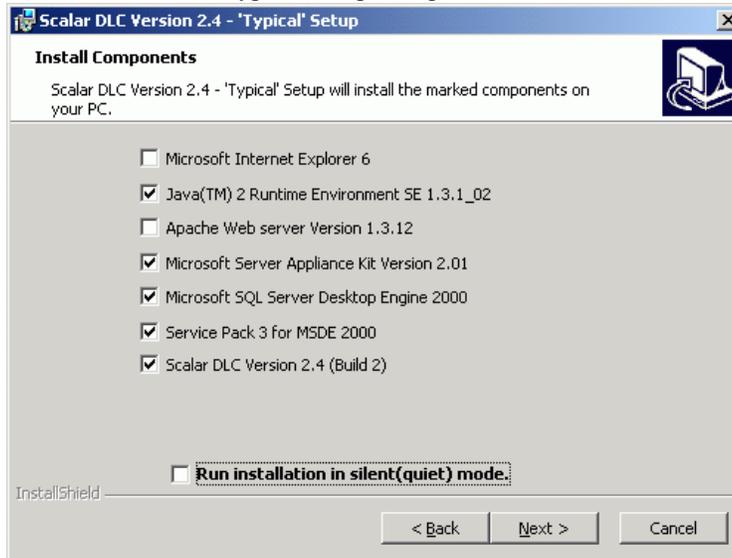
Solution Checkup

Make sure the appropriate solution is set up before installing the Scalar DLC. See *Setting Up the Basic Solution* on page 7 or *Setting Up the Cluster Solution* on page 12.

Software Components

The following figure shows the components that are to be installed during Scalar DLC Typical installation. The required components that are currently not installed are marked automatically for the installation.

Figure 50 Scalar DLC Typical Setup Components



The typical installation that is running in a *silent* mode installs all software components in the default folders without asking the user for anything except the restart.

NOTE: When the Cluster solution is to be installed, the *silent* mode must not be checked.

The following components must be present on the system for the Scalar DLC software service to perform properly:

- Microsoft Internet Explorer ver. 6.0 or newer, optional
- Java™ 2 Runtime Environment (Java 2)
- Apache Web Server ver.1.3.12, optional
- Microsoft Internet Information Server (IIS), optional
- Microsoft Server Appliance Kit (SAK) 2.01, optional
- Microsoft SQL Server 2000 Desktop Engine (MSDE 2000)

- MSDE 2000 Service Pack 3

NOTE: At least one Web Server (Apache or IIS) is required. Otherwise the Scalar DLC software will not install.

Internet Information Service (IIS)

NOTE: The installation of this package is not provided by ADIC because it is an optional part of the Microsoft Windows 2000 installation kit. It should be installed manually.

To install IIS:

Step 1 Launch **Control Panel > Add/Remove Programs**. Open the *Add/Remove Windows Components* tab. If Windows Component wizard does not start, select *Add/Remove Windows Components* and click **Configure**.

Figure 51 shows the starting page of the Windows Component wizard.

Figure 51 Windows Components: IIS



Step 2 Select IIS and proceed. The wizard requests the MS Windows 2000 Installation, so be sure the MS Windows 2000 Installation CD is accessible.

Step 3 After IIS is installed, return to the Scalar DLC typical installation.

NOTE: At least one Web Server (Apache or IIS) is required. Otherwise the Scalar DLC software cannot be installed.

Microsoft Internet Explorer

The Scalar DLC software is compatible with the MS IE browser 6.0 or newer version. ADIC offers the MS IE 6.0 installation kit. After the MS IE is installed, a restart is required. After rebooting, the system continues to configure the installed Internet Explorer tools and services.

NOTE: The installation of MS IE 6.0 under Windows 2000 is recommended but not required.

Java 2 Runtime Environment

The Java2 component installs over an existing Java runtime environment without producing a warning message. By default, the Java2 is installed in the <%SystemDrive%>\Program Files\JavaSoft\JRE\1.3.1_02\ directory. An advanced user can install the Java2 to any directory desired, but ADIC recommends against this action.

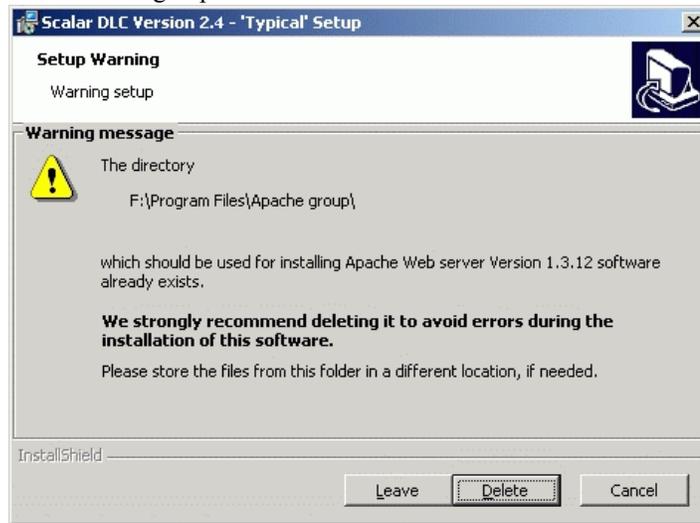
NOTE: If the installation proceeds on a clean PC, the Java2 installation asks for a restart. ADIC recommends rebooting the PC.

Apache Web Server

ADIC does not recommend installing the Scalar DLC software on a machine with a previously installed copy of Apache Web Server. During installation, the configuration file overwrites any configuration file present on the hard drive without providing a warning message. By default, the Apache Web Server is installed in the <%SystemDrive%>\Program Files\Apache Group\Apache\ directory. An advanced user can install the Apache Web Server in any desired directory.

If the default Apache directory exists, the typical installation provides a warning message. See Figure 52.

Figure 52 Warning: Apache



NOTE: At least one Web Server (Apache or IIS) is required. Otherwise the Scalar DLC software cannot be installed.

Microsoft Server Appliance Kit (SAK)

NOTE: The Internet Information Service is required to install the MS SAK. Refer to *Internet Information Service (IIS)*. If the IIS is not installed, the MS SAK software installation cannot be launched.

SAK 2.01, when installed, provides much more wide access to the Scalar DLC functions comparing with the usual browser applet or application-based Management GUI. It includes:

- Remote access to Scalar DLC Tools (SCSI Target, Database, Trace Manager).
- Remote access to the Scalar DLC supervisor to execute startup/shutdown operations.
- Remote access to the Scalar DLC licensing.
- All standard SAK functionality including user management, network management, etc. Additional information is provided in the SAK help accessible directly from browser.

However, the advanced SAK functionality is provided for the PC administrators only. For the other users, only the browser-based Management GUI and the html-based Reference Manual are accessible.

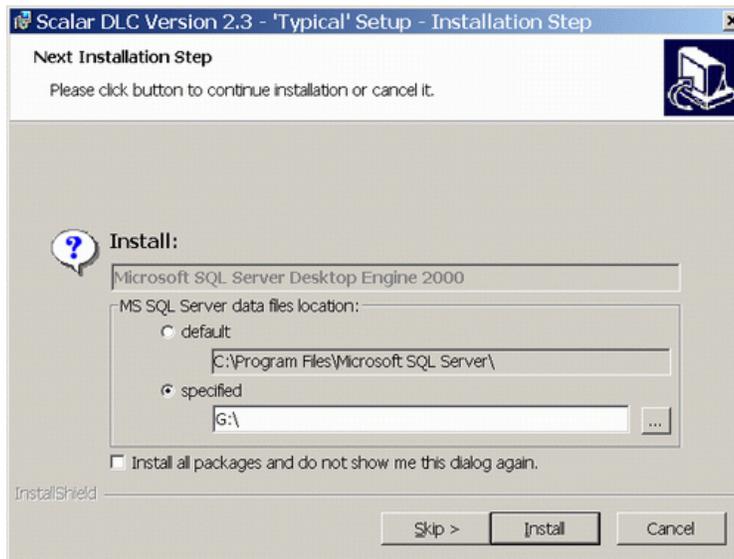
Microsoft SQL Server Desktop Engine 2000

If the Microsoft SQL Server 2000 is installed already, it is not required to install the MSDE 2000. If there is either MSDE 7.0, or MS SQL Server 7.0 installed on the PC, the installation upgrades it for the MS SQL system service remains workable.

By default, the MSDE 2000 is installed in the <%SystemDrive%>\Program Files\Microsoft SQL Server\ directory. An advanced user can install the MSDE 2000 in any desired directory. After the MSDE 2000 installation is completed, re-start the system if required.

If the Scalar DLC should be installed as a Cluster solution, the MS SQL 2000 should be installed on a shared disk to the specified folder that must be shared, too. See Figure 53 on page 47.

Figure 53 MSDE 2000 Installation



NOTE: This selection is not accessible when the Typical Installation is launched in the silent mode.

MSDE 2000 Service Pack 3

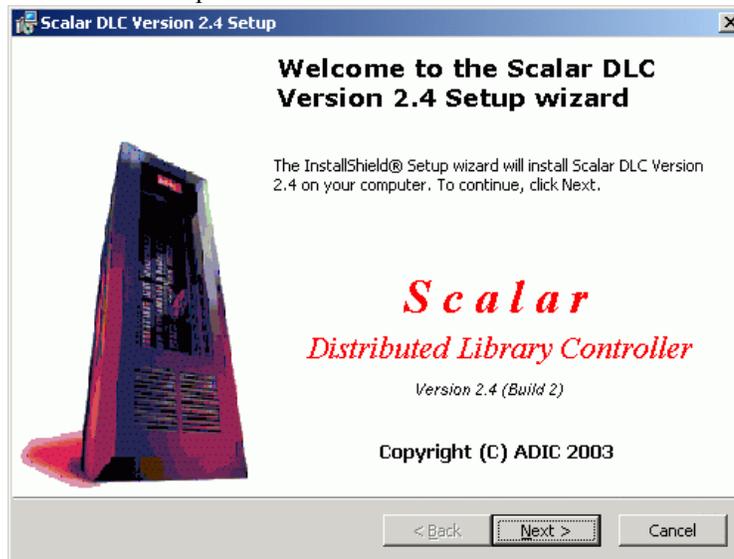
CAUTION ADIC recommends installing Service Pack 3 for MSDE 2000. Otherwise a security hole in MSDE 2000 remains open and could be used by internet viruses or worms (for example, Slammer).

NOTE: If there is no MSDE 2000 but complete MS SQL 2000 installed, do not install this service pack. Go to the <http://www.microsoft.com> instead, download the Service Pack 3 for MS SQL 2000, and install it manually.

Install the Scalar DLC Software

Follow the directions on the Setup Start window to install the Scalar DLC software.

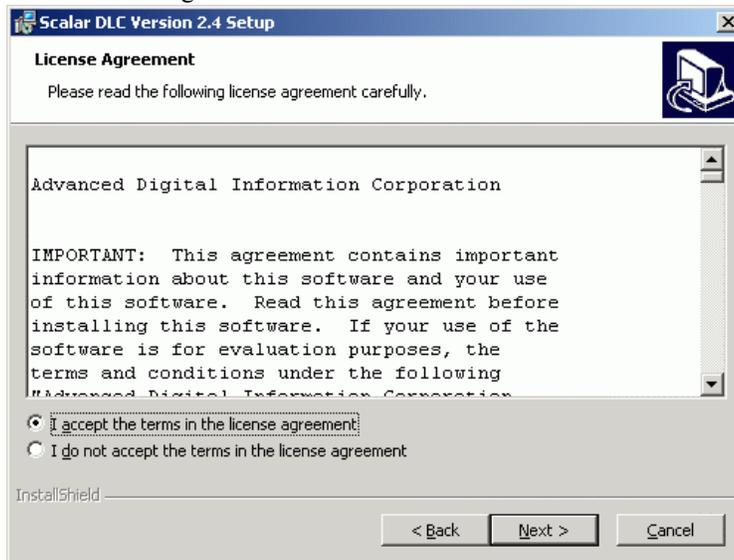
Figure 54 Start Setup



All Setup windows contain the following buttons:

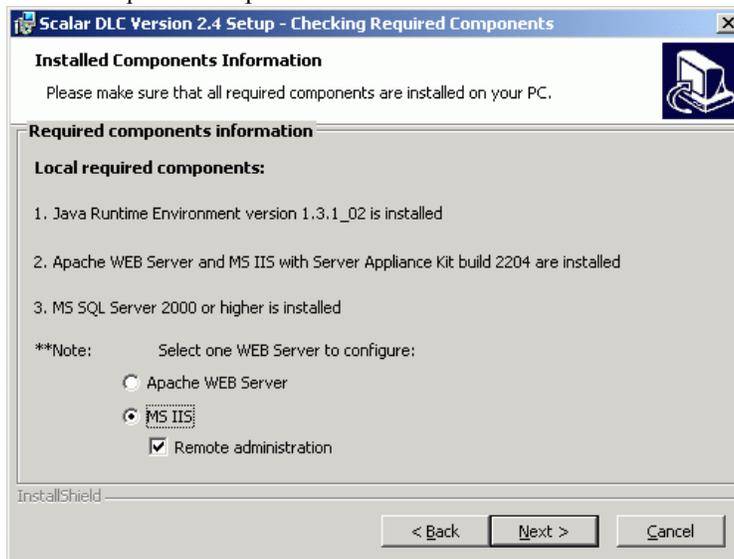
- Back
- Next
- Cancel

Figure 55 Licensing



To continue the Scalar DLC Installation, accept the ADIC License Agreement. Click **Next** to proceed to the next screen.

Figure 56 Required Components



Proceed only after all of the required components are installed. Otherwise, the Scalar DLC Installation must be cancelled and launched again after the missing software is installed.

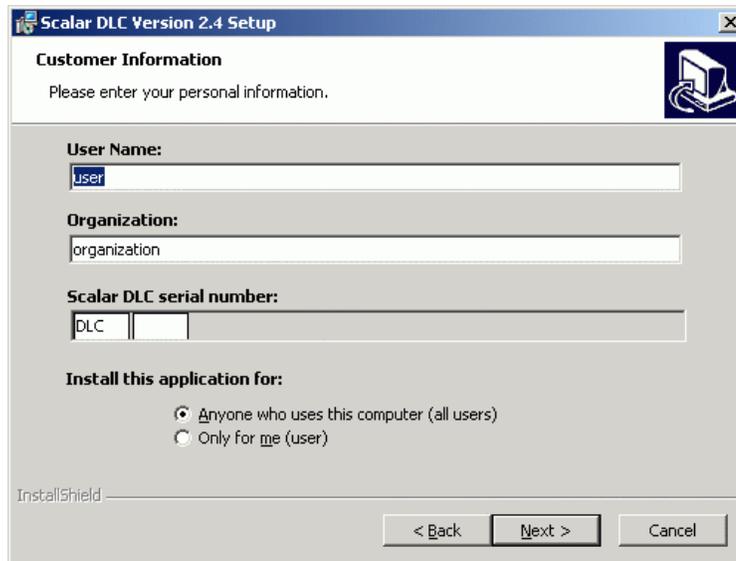
If only one Web Server (either Apache or IIS) is installed on the PC, the installation configures it to work with the Scalar DLC software. If there are both, select the server that should be used for the Scalar DLC.

Note that the Remote Administration feature based on MS SAK component can be used only with the IIS.

If the Remote Administration feature will not be installed, the Scalar DLC will work as usually, without SAK.

Click **Next** to proceed to the following screen.

Figure 57 Personal Information



Enter the customer’s personal information. Refer to Table 3 for the meaning and required operation of the fields.

Table 3 Personal Information

Name	Operation	Description
User name	Enter	The user name. By default, it is the person registered as the PC owner.
Organization	Enter	The organization name. By default, it is the organization registered as the PC owner
Scalar DLC serial number	Enter	The Scalar DLC serial number (5 digits). This number is shown on the back of the Scalar DLC Installation CD.

Next, the installation process creates an account and registers the Scalar DLC internal components. See Figure 58 on page 51 for the local account, see Figure 59 on page 52 for the domain account, and see Figure 61 on page 53 for the registration.

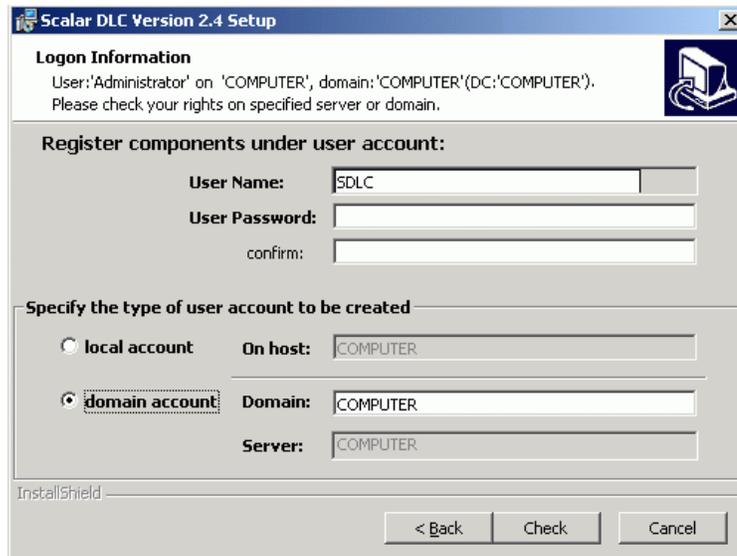
Figure 58 Create Local User Account



Enter the user account settings. Refer to Table 4 for the meanings and operations.

Table 4 Create User Account

Name	Operation	Description
User name	Enter	User account name, 'SDLC' by default
User password	Enter	User account password.
Confirm	Enter	Password must be confirmed.
User account to be created	Select	<i>Local</i> specifies the account type as local (default).
		<i>Domain</i> specifies the account type as domain.
On host	Supplied	Local host name.
Domain	Supplied	The domain name (not editable for the local account).
	Enter	The domain name (editable for the domain account).
Server	Supplied	The domain server name, not editable.
Check (for domain account only)	Click	Check the rights on the domain. For a domain admin, the Next button appears; otherwise, domain account installation is not available.

Figure 59 Create Domain User Account

The screenshot shows the 'Scalar DLC Version 2.4 Setup' dialog box. It has a title bar with the application name and standard window controls. The main content is divided into several sections:

- Logon Information:** Displays 'User: Administrator on COMPUTER, domain: COMPUTER (DC:COMPUTER)' and a warning to check rights.
- Register components under user account:** Contains three text input fields: 'User Name' (with 'SDLC' entered), 'User Password', and 'confirm'.
- Specify the type of user account to be created:** Features two radio buttons: 'local account' (unselected) and 'domain account' (selected). To the right are three text input fields: 'On host' (with 'COMPUTER' entered), 'Domain' (with 'COMPUTER' entered), and 'Server' (with 'COMPUTER' entered).

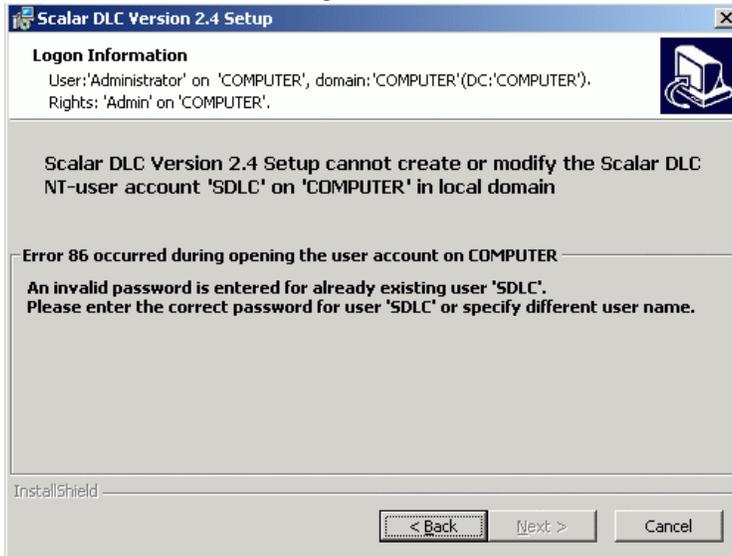
At the bottom, there is a status bar with 'InstallShield' and three buttons: '< Back', 'Check', and 'Cancel'.

The user account should be entered in this window. Refer to Table 4 on page 51 for the details. Click **Next** to proceed.

NOTE: Domain administrator rights are required to install Scalar DLC under a domain account.

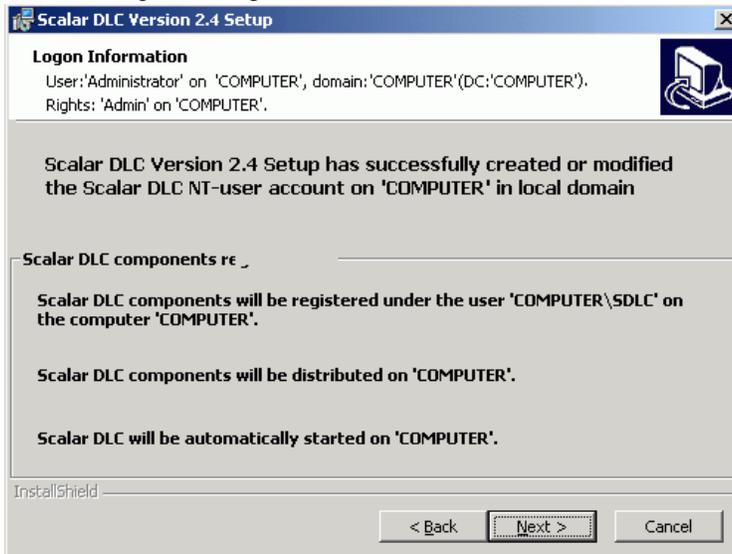
If the account name already exists and the password does not match the existing account's password, the User Account warning appears. See Figure 60 on page 53. Otherwise, if the user account is created successfully, the Component Registration window appears. See Figure 61 on page 53.

Figure 60 User Account Warning



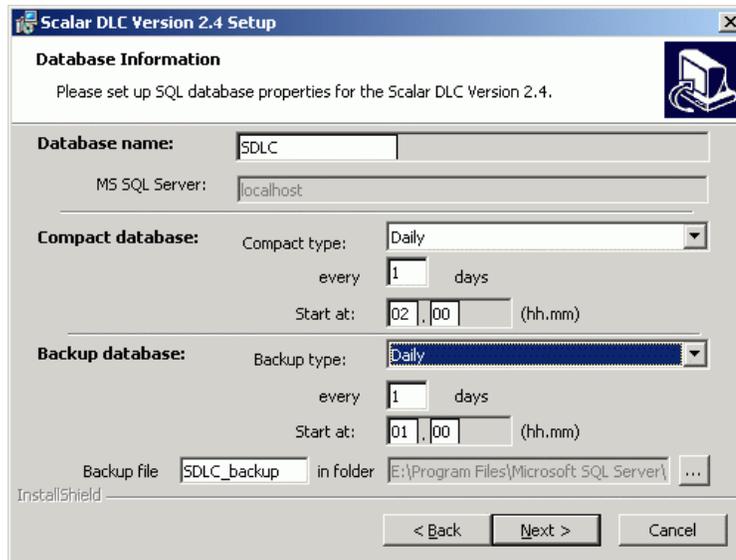
Go back and specify another user account or enter the correct password.

Figure 61 Component Registration



NOTE: Do not use system tools to change the Scalar DLC user account created during installation. If a change is made, the Scalar DLC system will not start. To correct this situation, launch the Scalar DLC Add/Remove engine in the *Repair* mode.

Figure 62 Database Information



Refer to Table 5 for the additional information.

Table 5 Database Information

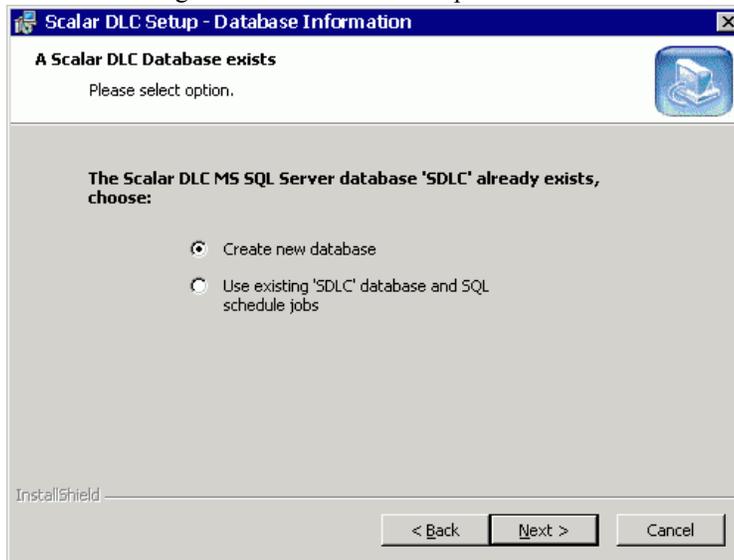
Name	Operation	Description
SDLC Database name	Enter	The default Scalar DLC database name, 'SDLC', will be used unless the user specifies another name.
MS SQL Server	Supplied	The default host name where the database should be created.
Compact	Select	The Compact Database schedule can be set here.
Backup	Select	The Backup Database schedule can be set here.

NOTE: The schedules for Backup and Compact jobs are described in more detail in the *Database Utility* section of the *Scalar Distributed Library Controller Reference Manual*. The backup and compact schedules can be changed later, the database name cannot be changed.

Specify the database name and backup/compact schedules, and press **Next** to proceed.

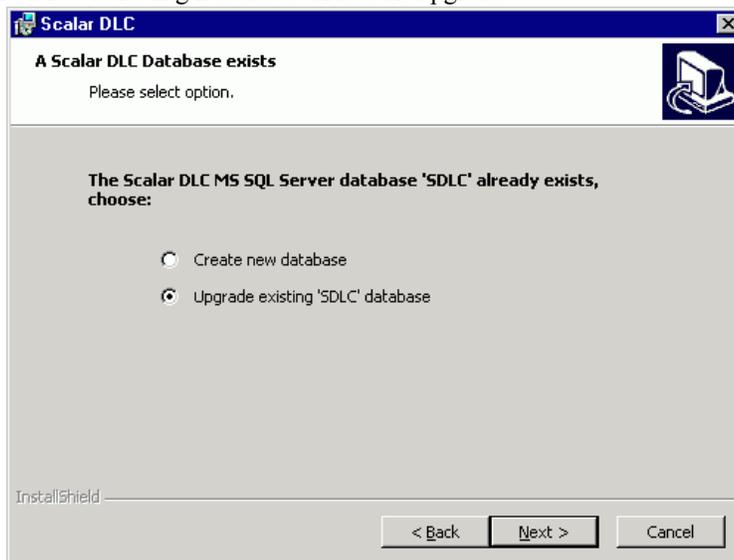
If the specified Scalar DLC database already exists, either keep it or create a new, clean database. See Figure 63 on page 55. If the database was created by an older version of Scalar DLC software, either update it or create a new, clean database. See Figure 64 on page 55.

If a new database is installed, the next window, Email Notifications settings, appears. See Figure 65 on page 56.

Figure 63 Selecting Database: Create or Keep

NOTE: The old database may be used only with the same version of the Scalar DLC.

If a new database is created, click **Next** to proceed to the Figure 65 on page 56; otherwise, proceed to the final screen.

Figure 64 Selecting Database: Create or Upgrade

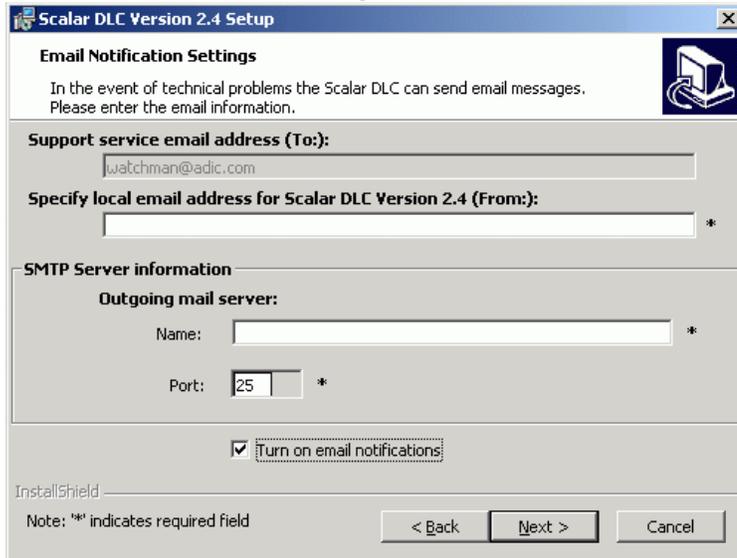
Refer to Table 6 for the additional information.

Table 6 Database Upgrade

Old Scalar DLC Version	Additional activity
2.1	Reconfigure SCSI Target manually after the database upgrade. Refer to <i>Upgrading the Scalar DLC</i> on page 79.
2.2	Upgrade database.
2.3	Upgrade database.
2.4	Use existing database.

If a new database is created, click **Next** to proceed to Figure 65; otherwise, proceed to the final screen.

Figure 65 Email Notification Settings



Enter the email settings. Refer to Table 7 for details.

Table 7 Email Notification Settings

Name	Operation	Description
Support service email address (To:)	Supplied	The email address for ADIC Scalar DLC technical support: 'watchman@adic.com'. Not changeable.
Local email address (From:)	Enter	The email address shown in the From: field of emails.

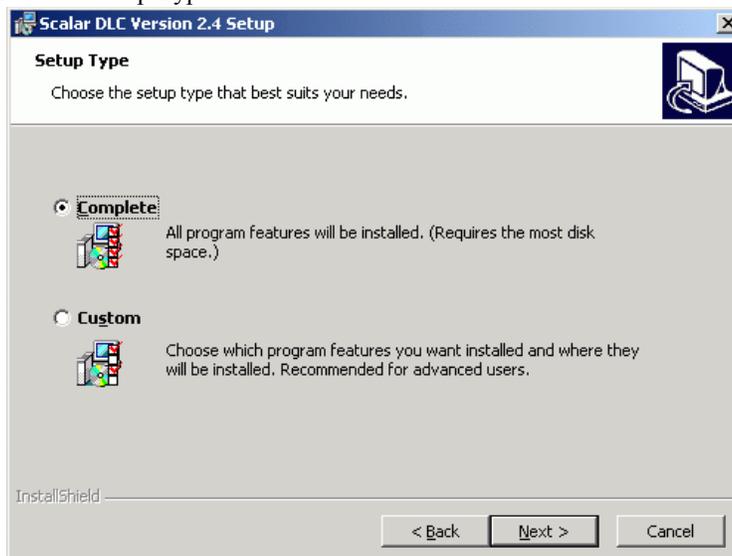
Table 7 Email Notification Settings

Name	Operation	Description
Outgoing mail server: Name	Enter	The SMTP mail server name.
Outgoing mail server: Port	Enter	The SMTP mail server port.
Turn on email notifications	Check	Turn the email notifications on if the box is checked. This can be changed later via the Management GUI (<i>Main Menu > Extended service > Registration information</i>).

NOTE: If the email settings are not properly configured, notifications will not be sent via email. The email parameters cannot be changed after the Scalar DLC is installed.

Click **Next** to proceed to the figure below.

Figure 66 Setup Type



There are two types of Scalar DLC software installations: *Complete* and *Custom*.

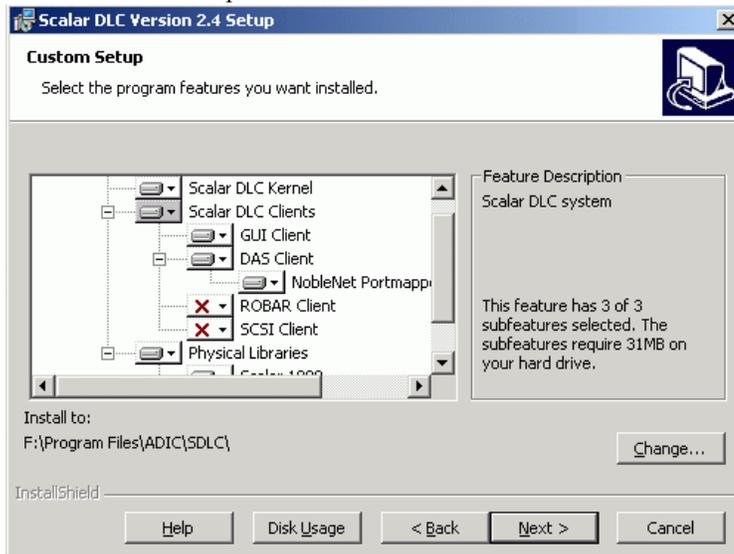
The *Complete Setup* requires more disk space than various types of custom installs and places all Scalar DLC software components in the default directory:

<%SystemDrive%>\Program Files\ADIC\SDLC\.

The *Custom Setup* allows to choose both the destination directory and the internal Scalar DLC software features that will be installed (if some features are not required, for example, Scalar DLC SCSI Client support). See Figure 67 on page 58 for details.

Specify the installation type and click **Next** to proceed.

Figure 67 Custom Setup



Refer to Table 8 for details.

Table 8 Custom Setup

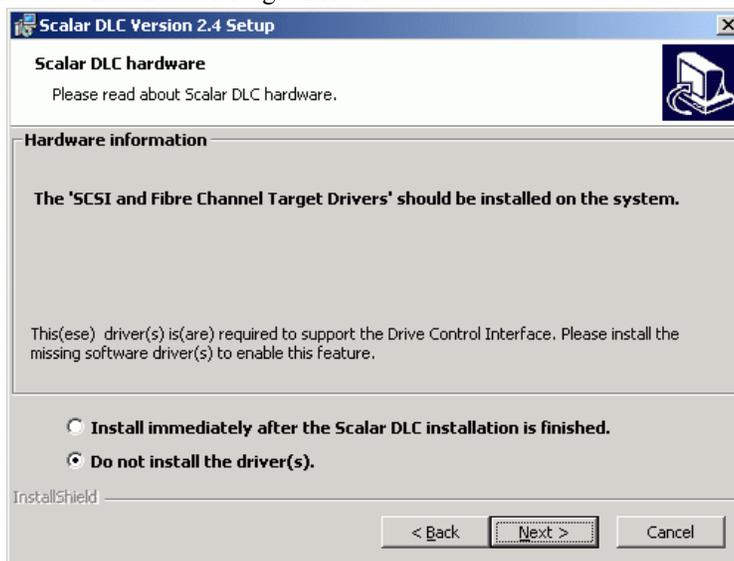
Name	Operation	Description	
Scalar DLC Components	Supplied	Mark/unmark the component for installation.	
Kernel	Supplied	The kernel of Scalar DLC software. Installed always.	
Clients	Supplied	GUI	The Scalar DLC Management GUI, main administrator tool. Installed always.
	Check	DAS and NobleNet	The DAS Client support. Installed optionally.
	Check	ROBAR	The ROBAR Client support. Installed optionally.
	Check	SCSI	The SCSI Client support. Installed optionally.
Physical Libraries	Supplied	Scalar 10K	The support of Scalar 10K single-aisle. Installed always.
	Supplied	Scalar 10K DA	The support of Scalar 10K dual-aisle. Installed always.
	Supplied	Scalar 1000	The support of Scalar 1000. Installed always.

Table 8 Custom Setup

Name	Operation	Description
Feature Description	Supplied	The component name and disk space requirements.
Install to	Supplied	The current destination folder where the Scalar DLC should be installed. The default is %SystemDrive%\Program Files\ADIC\SDLC\.
Change	Click	Change the destination folder.

Specify the components to install and the destination folder, and click **Next** to proceed.

Figure 68 Install SCSI Target Driver



When the SCSI Client component is selected for installation in either the *Complete* or *Custom Setup*, the installation process requests to install the SCSI and Fibre Channel Target driver. If this option is accepted, the SCSI Target Mode Driver installation proceeds after the Scalar DLC software is installed successfully. Otherwise the Scalar DLC software installation proceeds but the SCSI Target software features remain not operable if no SCSI Target driver is present in the system (for example, from a previous installation).

NOTE: The SCSI/Fibre Channel Target driver is needed to operate additional hardware (the SCSI card or FC card) required for using the Scalar DLC SCSI Target features. If this card is physically absent, the driver can be installed, but the Scalar DLC SCSI Target features will not work.

This request is shown every time the Scalar DLC SCSI Client component is selected for the installation. ADIC recommends accepting the option and installing the drivers. If the drivers are installed already, decline this option. The drivers may be installed later manually as well.

For the details on SCSI Target Mode Driver installation and configuration process, refer to *Installing the SCSI/FC Target Drivers* on page 68.

After the Scalar DLC components are installed, enter the registration information. See Figure 69.

Figure 69 Registration Form

For licensing purposes, enter the registration information. Refer to Table 9. Fields marked with the asterisk must contain valid information.

Table 9 Registration Form

Name	Operation	Description
Company name	Enter	The company's name.
Company address	Enter	The company's mailing address.
Contact name	Enter	The contact person's name.
Contact email *	Enter	The contact email address.
SMTP Server *	Enter	The SMTP server name.

Table 9 Registration Form

Name	Operation	Description
Port *	Enter	The SMTP server port.
Contact telephone	Enter	The contact phone number.
Contact fax	Enter	The contact fax number.
Service contract	Check	Marks the service contract feature as 'signed' if checked.
Site ID	Enter	The site ID (for the signed service contract).
Scalar DLC S/N	Supplied	The Scalar DLC serial number.
Scalar DLC location	Enter	The Scalar DLC location.
Scalar DLC dial-in number	Enter	The Scalar DLC dial-in number.
ATAC contact	Select	The Scalar DLC ATAC contact region (North America or Europe)

NOTE: The registration information can be changed later via the Management GUI (*Main Menu > Extended service > Registration information*).

After entering the data, click **Next** to proceed. Review the information and make changes if necessary. See the following figure.

Figure 70 Review Registration Form

Scalar DLC Version 2.4 Setup

Registration Information
Please check your registration data.

Scalar DLC registration data

Customer information

Company name: organization
Company address: address

Contact name: user
Contact email: contact email
SMTP server: smtp server port:25
Contact telephone: phone Fax: fax
Service contract: Yes site ID: site id

Scalar DLC information

Serial number: DLC12345
Location: location
Dial-in number: dial-in number
ATAC contact: North America

Send license request to ADIC now.

Print Send email

< Back Next >

The request form can be printed out and/or send via email to ADIC customer support to obtain a license. Refer to Table 10 for additional information.

Table 10 Review Registration Form

Name	Operation	Description
Send license request	Check	If checked, sends license request to ADIC.
Print now	Click	Print the registration form for mail or fax delivery.
Send email	Click	Send the registration form via email (see Figure 71 on page 63).

Figure 71 Email Registration Form



The email can be sent to any number of recipients. Refer to Table 11 for details.

Table 11 Email Registration Form

Name	Operation	Description
From:	Enter	'From' email address
To:	Enter	'To' email address (list of addresses)
Subject	Supplied	Not changeable. Email 'Subject'.
SMTP Server	Enter	The SMTP server name must be set here
Port	Enter	The SMTP server port must be set here.
Send	Click	Send email.
Exit	Click	Return to the previous dialog without sending email.

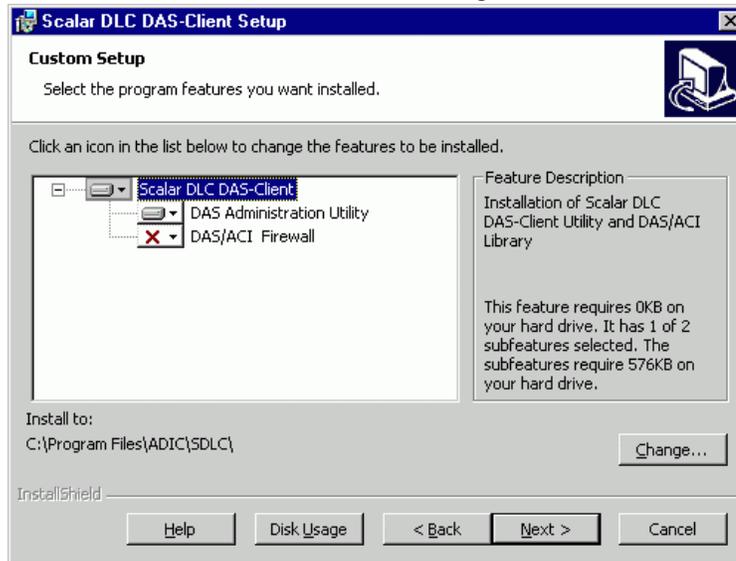
The Scalar DLC software is installed successfully. If no additional configuration steps are required, re-start the computer.

Installing DAS Client

The DAS Client software will be completely functional after the following configuration steps.

- Step 1** Install the Scalar DLC software with the DAS support on the server PC. Refer to *Install the Scalar DLC Software* on page 48. The server PC requires a restart.
- Step 2** Start the Management GUI. Create the library configuration that the client requires. Create the required mailboxes and clean/scratch pools. Create a DAS client and assign it to the created library. Refer to the *Scalar Distributed Library Controller Reference Manual, Configuration* chapter.
- Step 3** Install the client application on the client PC.
 1. Figure 72 on page 64 shows the DAS Client components selection during the installation of Scalar DLC DAS Client software.

Figure 72 Select Scalar DLC DAS Client Components

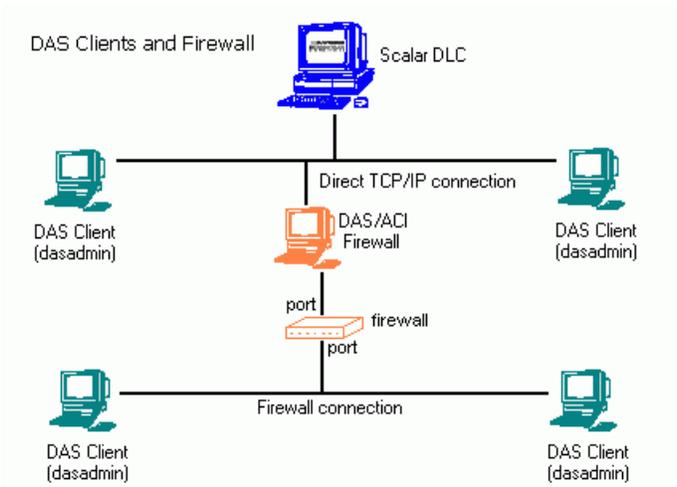


2. The installation will place the selected components in the <%SystemDrive%>\Program Files\ADIC\SDLC\ directory. Change the destination folder if it is required.
3. The DAS Administration Utility should be installed on a PC that will run the DAS Client software. Refer to *Install the DAS Administration Utility* on page 66.
4. If there is a firewall between the Scalar DLC (server) host and the client host, the DAS/ACI firewall software should be installed on a PC *inside* the firewall. Refer to *Install the DAS/ACI Firewall* on page 67.

NOTE: The DAS/ACI firewall software can be installed directly on Scalar DLC host. In case of the cluster solution, it should be installed on both cluster nodes.

5. Figure 73 on page 65 illustrates the typical network structure.

Figure 73 Scalar DLC DAS Client Network



- The installation configures appropriate server, client, and media type (refer to Table 12).

Table 12 Environment Variable for DAS

Variable	Explanation
DAS_SERVER	Network names (TCP/IP) of the server which are accessed by the <i>dasadmin</i> program. Both names are entered separated by a comma, only when installing dual DAS. The names must be resolvable on the computer into TCP/IP addresses. For the firewall connection, the DAS/ACI Firewall PC name is used here.
DAS_PORT	A port being used to send DAS commands (for the firewall connection only).
DAS_CLIENT	Name of the client under which the DAS PC is to access the server. The name must be defined in the Scalar DLC database.
ACI_MEDIA_TYPE	Default media type selected when using <i>dasadmin</i> if the parameter <i>-t</i> is omitted from the command.

NOTE: These variables can be also set manually. This is very useful when several DAS Clients have to share one client host.

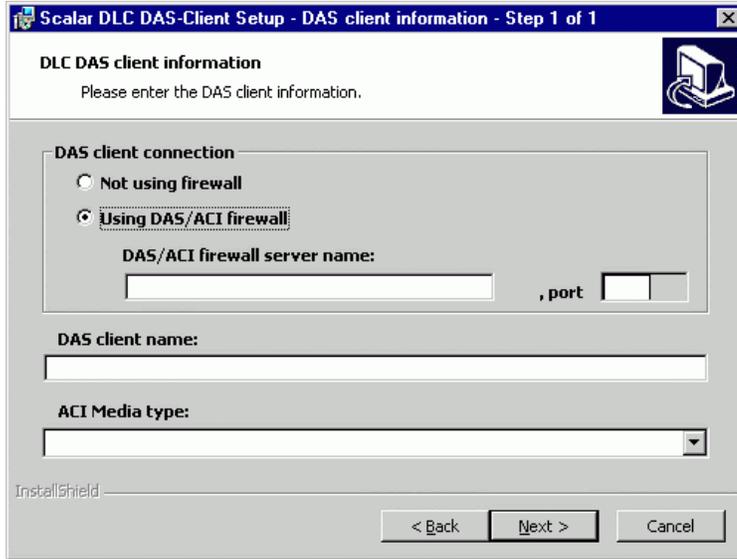
- Once the variables are set, the restart is requested. ADIC recommends accepting the restart so that the Scalar DLC DAS-Client software works properly.

Step 4 After the configuration is complete, the Scalar DLC software is ready to accept commands from a DAS client.

Install the DAS Administration Utility

The connection settings must be entered during the installation of the *dasadmin* software. See Figure 74 for a firewall-based connection and see Figure 75 on page 67 for a direct (firewall-free) connection.

Figure 74 DAS Client Connections Using Firewall



Refer to Table 13 for details.

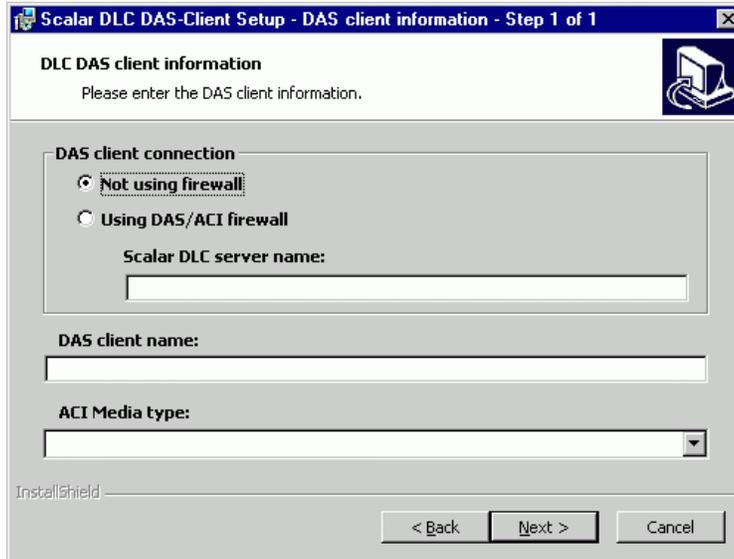
Table 13 DAS Client Connection Parameters

Property	Operation	Description
DAS Client connection	Select	<i>Not using firewall</i> should be selected if there is no firewall between the client host and the Scalar DLC host.
		<i>Using DAS/ACI firewall</i> should be selected if a firewall exists between the client host and the Scalar DLC host.
DAS/ACI firewall server name	Enter	Name of the PC where the DAS/ACI Firewall software is installed (shown for <i>Using DAS/ACI firewall</i> selection only).
Port	Enter	The firewall port (shown for <i>Using DAS/ACI firewall</i> selection only).
Scalar DLC server name	Enter	The Scalar DLC server name (shown for <i>Not using firewall</i> selection only).
DAS Client name	Enter	The default DAS Client name. Refer to Table 12 on page 65.

Table 13 DAS Client Connection Parameters

Property	Operation	Description
ACI Media type	Select	The default ACI media type. Refer to Table 12 on page 65.

Figure 75 DAS Client Connection without Firewall



NOTE: If the connection type is specified incorrectly, the DAS Client software will install successfully but the connection with the Scalar DLC host cannot be established.

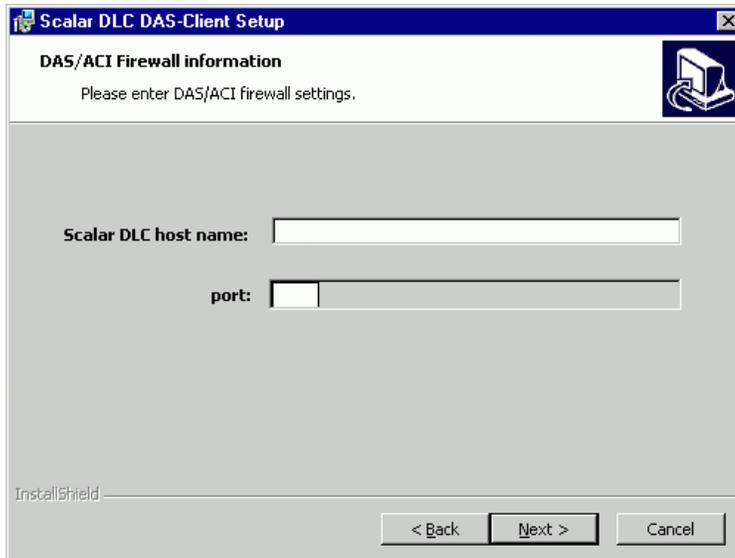
Install the DAS/ACI Firewall

If there is a firewall between the Scalar DLC host and the client host, the DAS/ACI firewall software should be installed on the PC *inside* the firewall; this PC can be the Scalar DLC host itself. See Figure 73 on page 65.

NOTE: The DAS/ACI firewall software can be launched only under Windows or OS/2 platforms.

Launch the DAS Client installation and when the component selection screen appears (see Figure 72 on page 64), select a DAS/ACI Firewall component. See Figure 76 on page 68 for a DAS/ACI Firewall settings screen.

Figure 76 DAS/ACI Firewall



Refer to Table 14 for details.

Table 14 DAS/ACI Firewall Parameters

Property	Operation	Description
Scalar DLC host name	Enter	The Scalar DLC server name.
Port	Enter	The firewall port to receive client commands.

After the DAS/ACI firewall is installed, the restart is requested. A new software service **DAS-ACI Firewall** appears in system services list.

Installing the SCSI/FC Target Drivers

The SCSI Target Mode Driver installation installs the Target driver for the SCSI/Fibre Channel Adapter(s) present on PC.

NOTE: If there is a Virtual SCSI Target Mode Driver installed, it should be removed before the SCSI Target Mode Driver installation. This can be done from **Control Panel >> Add-Remove Programs**.

NOTE: There should be the Initiator driver(s) activated in the system before the Target driver(s) are installed. Refer to *Initiator Driver* on page 72 for the details.

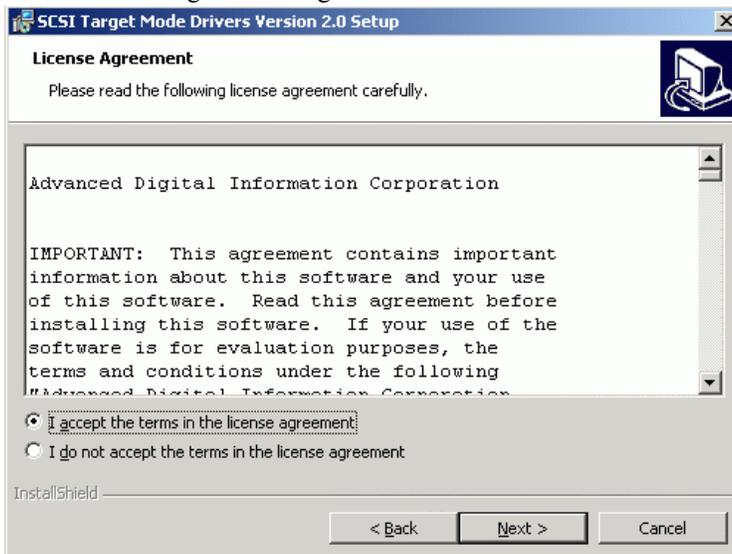
Figure 77 shows the Setup Start window of the SCSI Target software.

Figure 77 SCSI Target Start Setup



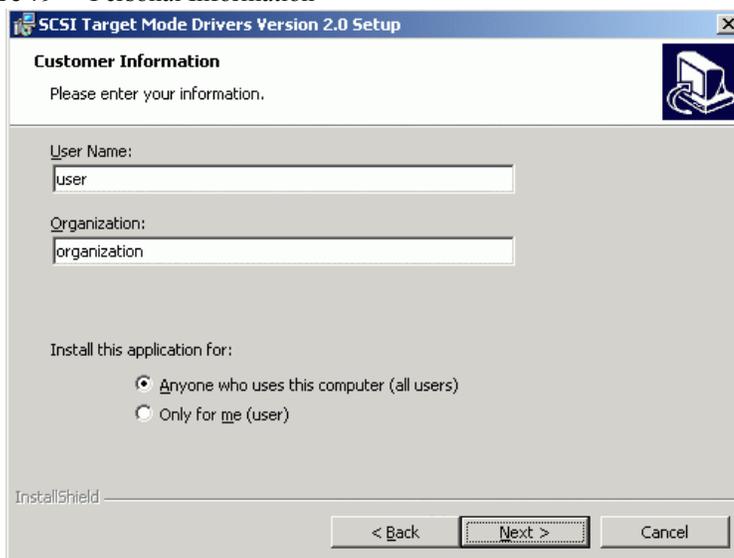
Click **Next** to proceed.

Figure 78 SCSI Target Licensing



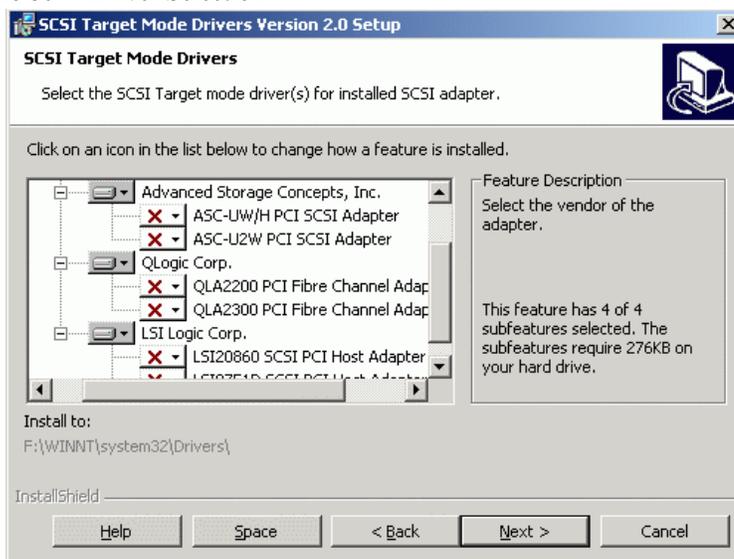
Accept the ADIC License Agreement and click **Next** to proceed.

Figure 79 Personal Information



Enter the customer’s personal information. Refer to Table 3 on page 50 for the meaning and required operation of the fields. Click **Next** to proceed.

Figure 80 Driver Selection



Click the driver to select it. Refer to Table 15 for driver selection details and Table 16 for SCSI and Fibre Channel adapters.

Table 15 Driver Selection

Name	Operation	Description
Drivers	Check	Mark/unmark the driver for installation. Refer to Table 16 for a description of SCSI and Fibre Channel adapters that could be used in the system.
Feature Description	Supplied	Shows the driver name and disk requirements.

Table 16 SCSI and Fibre Channel Adapters

Adapter	Type	Connection (external)	Max targets	Max SCSI ID	Max cable length, m
ASC-UW/H	SCSI	68-pin high density HVD	15	15	25
ASC-U2W	SCSI	68-pin very high density LVD/SE	15	15	12(LVD) 5(SE)
LSI 20860	SCSI	50-pin high density SE	7	7	5
LSI 8751D	SCSI	68-pin high density HVD	15	15	25
LSI 8951U	SCSI	68-pin very high density LVD/SE	15	15	12(LVD) 5(SE)
QLA 2200	Fibre Channel	SC duplex multi-mode	31	127	-
QLA 2300	Fibre Channel	Small form factor multi-mode optic LC	31	127	-

NOTE: The Local SCSI Target driver (powered by ADIC) is added for emulation the SCSI Target features on a PC without appropriate SCSI adapter. In the Management GUI, under the SCSI Target tab, the Local SCSI Target port appears, the Target objects can be created and assigned to the SCSI Clients. However, this port is not reflected in the SCSI Target Port Tool because this utility shows only adapters that could operate either as Initiators or as Targets. And the created SCSI Client objects under a Local SCSI Target Port only emulate the real clients, so they cannot accept commands from initiator host.

After the successful installation, if no additional configuration steps are required, the computer must be restarted.

NOTE: After rebooting, the adapters that should operate in Target mode are disabled. To enable them, use the SCSI Target Port Tool.

To remove, modify, or repair the installed Target drivers, use the Add/Remove build-in system engine (**Control Panel > Add/Remove Programs >> SCSI Target Mode Drivers**).

NOTE: Before removing Target drivers, return the appropriate SCSI adapters to the Initiator mode, that is, disable them as Targets via the SCSI Target Port Tool. Refer to SCSI Target Port Tool section in the *Utilities* chapter of the *Reference Manual*.

SCSI and Fibre Channel Hardware

The SCSI and/or Fibre Channel adapters must be installed into the PCI-type slots.

CAUTION Connecting two adapters that do not match will cause hardware damage.

Before connecting SCSI Initiator (client host) and Target (Scalar DLC host) adapters with the SCSI cable, be sure that they match each other. Refer to Table 16 on page 71 for a description of adapters that are currently supported and refer to Table 17 for a match description.

Table 17 Parallel SCSI Match

Adapter Class	Matched
Single-ended (SE)	SE, SE/LVD
Low voltage differential (LVD)	LVD, SE/LVD
SE/LVD	SE, LVD, SE/LVD
High voltage differential (HVD)	HVD

The supported Fibre Channel adapters do match each other.

Initiator Driver

The Initiator driver can be installed before installing Scalar DLC software or after this operation as well. However, it should be done before installing SCSI Target drivers.

For each SCSI adapter found during the Windows setup and/or startup, the operating system usually installs the Initiator mode driver. However, for the newest adapter models, there can be trouble finding an appropriate driver because they are not present in a standard driver library. If such a problem encountered, follow the steps below.

NOTE: Follow the instructions only if there is no proper Initiator mode driver(s) present in the system. When everything works, there is no need to re-install the drivers manually.

Step 1 Be sure that you have a manufacturer disk with the appropriate software driver for your adapter, or you have downloaded this driver from the manufacturer’s web-site to the temporary folder. ADIC also offers the required drivers at the <%Scalar DLC Install_CD%>\Drivers\Initiator folder.

- Step 2** During setup/startup, the Win2000 system opens Found New Hardware wizard. Follow the wizard steps. Specify a driver location (disk or temporary folder) so that the system can install it.
- Step 3** After Win2000 startup, right-click on **My Computer** desktop icon, select **Manage** and launch **Device Manager** system tool. Locate the *Other Devices* group and the SCSI adapter. Open the properties for the required device, select *Driver* tab and click **Update Driver**. Follow the Upgrade Device Driver Wizard steps. Specify a driver location (disk or temporary folder) so that the system can update it.
- Step 4** Repeat the steps above for each SCSI and FibreChannel adapter that is not properly configured by the system.
- Step 5** Re-start the PC if it is required.

The Target mode drivers now can be installed. Refer to *Installing the SCSI/FC Target Drivers* on page 68.

PCI Slot Troubles

In some cases, the SCSI Adapter installed in the PCI slot operates improperly or does not operate at all. The main symptoms are:

- Windows hangs on starting or works slowly.
- the installed SCSI Target driver does not start
- the driver is installed but the Management GUI does not see the Target port
- the logical library visible from the initiator side is unstable (bus errors, target disappears, and so forth)

This situation is sometimes encountered when the PC has more than one used PCI slot, and the SCSI card that should operate in Target mode is installed in this slot.

The problem can be solved by swapping the SCSI Target Adapter with another PCI card in an occupied slot.

The last way is to temporarily remove any unused PCI devices to avoid possible problems with the system interrupts.

SNC Troubles

If the SCSI Clients do use SNC as an interface between Initiator (client) and Target (Scalar DLC) host, and the command is send when the Scalar DLC is down, the Target objects mapped on SNC will disappear so the client cannot send the commands later even after the Scalar DLC software is up again.

This is the SNC mapping trouble. To fix this situation, either execute the 'ScsiRescan' issue from client side or reboot the SNC. If the Scalar DLC is up, the targets will be re-mapped.

Add/Remove Scalar DLC Software

NOTE: Local administrator rights are required to execute this procedure. Domain administrator rights are required if the Scalar DLC is installed under domain account.

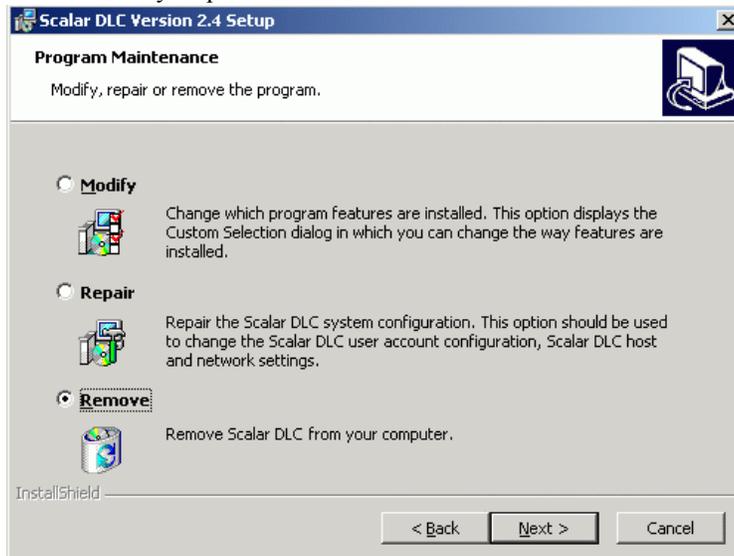
To add/remove the Scalar DLC software components launch: **Control panel > Add-Remove Programs > Scalar DLC**. This will run the Scalar DLC Add/Remove engine used to repair, modify, or remove the Scalar DLC software components installed on the PC. See Figure 81.

Figure 81 Starting the Scalar DLC Add/Remove



Click **Next** to proceed to the following screen.

Figure 82 Modify/Repair/Remove

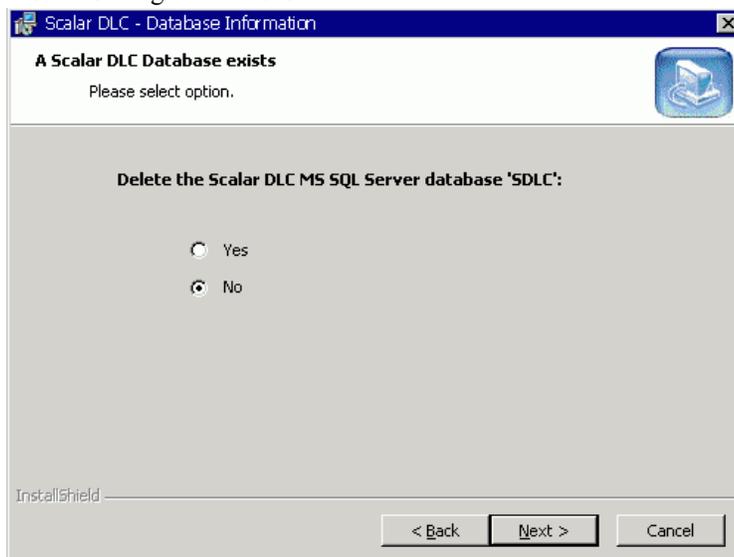


Specify the activity type and click **Next** to proceed.

Remove

The *Remove* process deletes all of the Scalar DLC software features except for the Scalar DLC account name and password that were set up during installation. See Figure 83.

Figure 83 Saving the Database



The Scalar DLC database can be either removed, or saved for future use. Click **Next** to proceed.

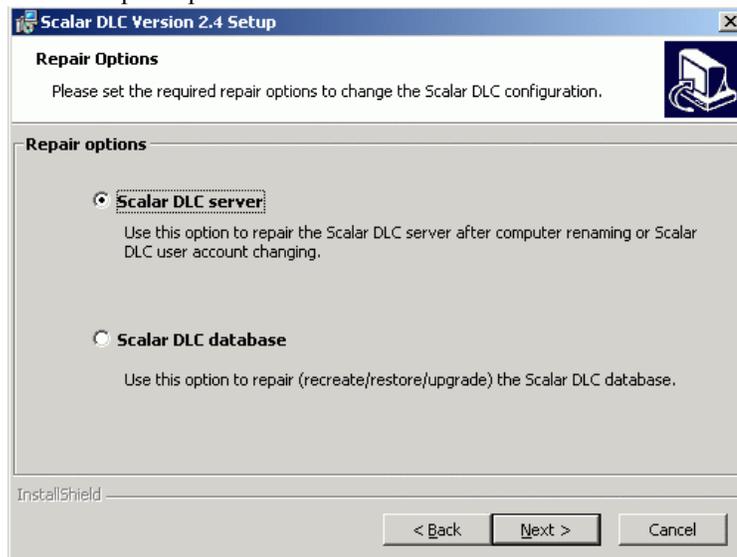
Software programs such as Java2, Apache, MS IE, MSDE 2000, and so forth, are not removed and should continue to function normally. The *Remove* process also restores the old web server configuration software.

NOTE: To remove the software packages that are required by the Scalar DLC, use **Control panel > Add-Remove Programs**.

Repair

The Repair process allows the user to repair the damaged Scalar DLC configuration without re-installing the software. See Figure 84 for the repair options.

Figure 84 Repair Options

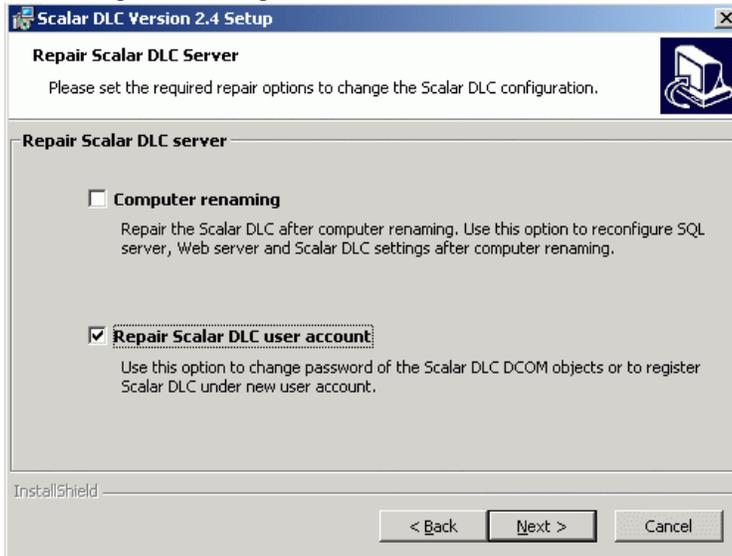


Choose either the Server option to repair damaged Scalar DLC software components (refer to *Server*), or Database option to repair the damaged Scalar DLC database (refer to *Database* on page 78). Click **Next** to proceed.

Server

The *Repair Scalar DLC Server* process allows to re-register the Scalar DLC software components under new user account without re-installing them. This section has been added to avoid problems concerning the changes of user account name/password. This section also allows to repair the installed Scalar DLC software after the PC is renamed. See Figure 85 on page 77.

Figure 85 Repair Server Options



Select the repair options and click **Next** to proceed. Refer to Table 18 for details.

Table 18 Repair Options

Name	Operation	Description
Computer renaming	Check	Repair the Scalar DLC software after the computer has been renamed. The Scalar DLC user account is also repaired.
Repair user account	Check	Repair the damaged Scalar DLC user account. Refer to <i>User Account</i> .

If the *Computer renaming* mode is selected, the *Repair* checks all needed software components. If no software upgrade needed, the *Repair* process proceeds to the user account section. Refer to *User Account*.

User Account

The repair user account screens look exactly the same as the user account creation screens appear during the Scalar DLC installation. See Figure 58 on page 51 for the local account, see Figure 59 on page 52 for the domain account, and see Figure 61 on page 53 for the registration.

Refer to Table 4 on page 51 for the user account settings.

NOTE: To repair the Scalar DLC installed under a domain account, the domain administrator rights are required.

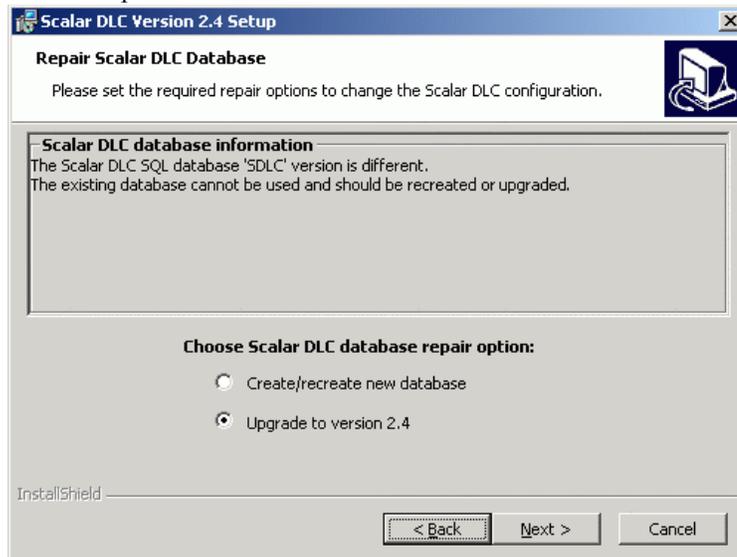
If the account name already exists and the password does not match the existing account's password, the User Account warning appears. See Figure 60 on page 53. Go back and specify correct password, or another user account.

If the account is repaired successfully, the Component Registration window appears. See Figure 61 on page 53.

Database

The *Repair Scalar DLC Database* process allows the user to repair the damaged Scalar DLC database. It contains the same database upgrade engine as the Scalar DLC installation and offers the same functionality. See Figure 86.

Figure 86 Repair Database

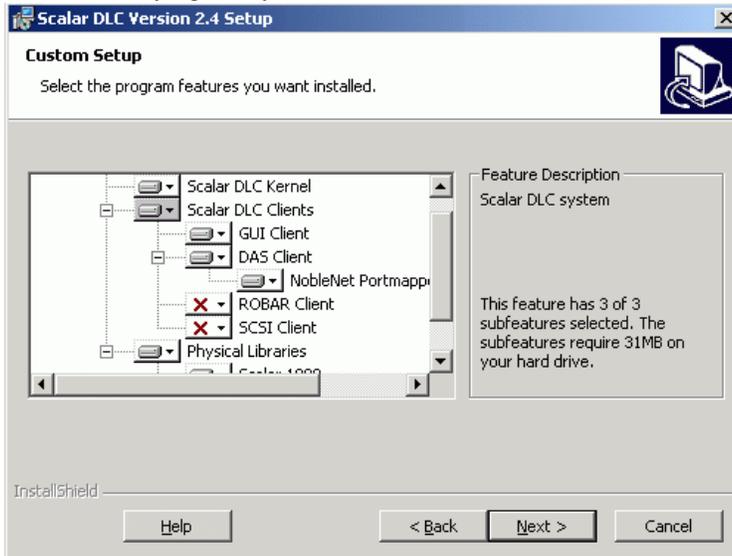


Choose either the “recreate database” option to acquire the new, clean database, or “upgrade” option to update existing database according to current standards (the upgrade details are described at Table 6 on page 56). Click **Next** to proceed.

Modify

The *Modify* process allows to add or remove a number of Scalar DLC software features and to install the necessary software drivers. All changes will be applied only after system restart. See Figure 87 on page 79.

Figure 87 Modifying the System



During the installation process, all files are written to the hard drive but do not appear at startup on the configuration list. All of these files can be accessed and activated in the *Modify* process mode. It is allowed to add, register, or un-register the Scalar DLC software features that are the parts of the SCSI, or ROBAR, or DAS-interface. The un-register procedure leaves the software written on the hard drive but makes it inaccessible to the user.

NOTE: The SCSI Client software feature cannot be installed completely without SCSI hardware (the SCSI card) being present on the PC.

After Add/Remove process is finished, ADIC recommends restarting the PC.

Upgrading the Scalar DLC

Although the upgrade engine is a part of Scalar DLC installation, some additional information may be required.

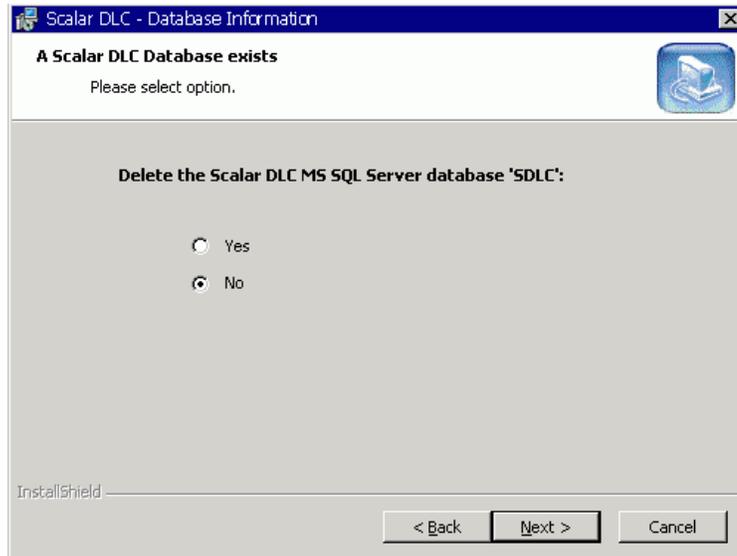
Simple Upgrade

Follow these sequence to install the Scalar DLC ver. 2.4 on the PC where the older version of the Scalar DLC software is working.

Step 1 (only for the Scalar DLC ver. 2.1). Verify the current SCSI Target assignment. Log into the Scalar DLC Manager GUI (**Start > Programs > ADIC Distributed Library Controller > Scalar DLC Manager**) and look under *SCSI Target > SCSI Management*. Note which SCSI target cards are assigned to SCSI target IDs.

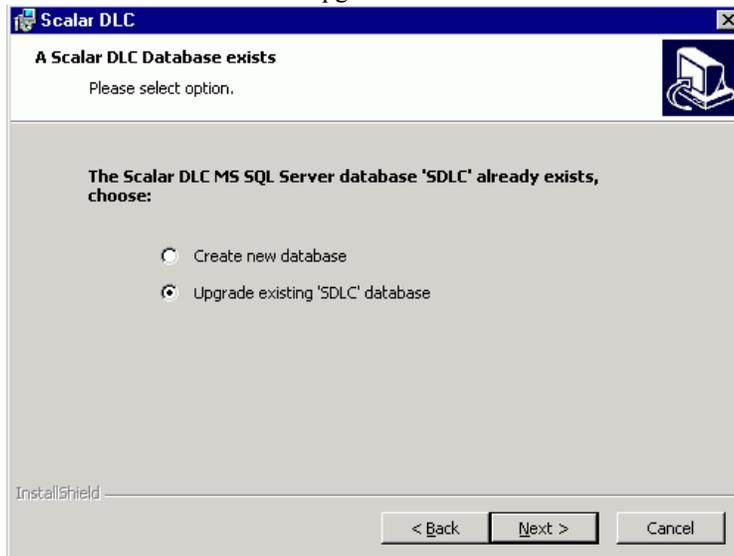
- Step 2** Initiate the install process for Scalar DLC Release 2.4. This will start by removing old release. During this process the system prompts, “Delete the Scalar DLC MS SQL Server database ‘SDLC’.” Select “No.” (see Figure 88). This will preserve the configuration currently running on the Scalar DLC machine. Be sure to save the database so that it can be applied to the new release.

Figure 88 Remove old Scalar DLC: do not delete the database



- Step 3** During the installation of Release 2.4 the system informs that a database exists and asks whether the existing ‘SDLC’ database should be upgraded. Select “Upgrade” (see Figure 89 on page 81) and proceed.

Figure 89 Install Scalar DLC: Upgrade database



Step 4 Follow the Scalar DLC installation sequence. Install the required SCSI Target drivers (refer to *Installing the SCSI/FC Target Drivers* on page 68). After the Release 2.4 installation is complete reboot the machine. Then activate the SCSI cards by enabling the Target ports (if this is already done, skip step 5)

Step 5 Configure/activate the SCSI/FC Target cards via SCSI Target Port Tool.

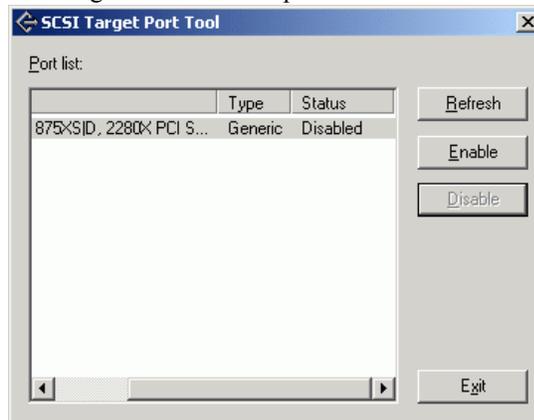
- a. On the toolbar there will be a small three-penguin icon. Right click this icon and select **Tools > Scalar DLC SCSI Target Port Tool** (see Figure 90).

Figure 90 Access to SCSI Target Port Tool



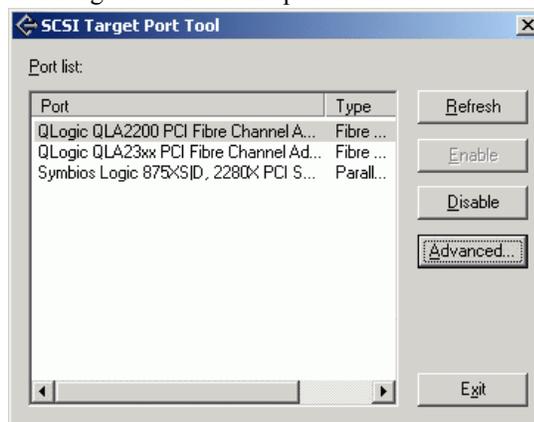
- b. The SCSI Target Port tool opens (see Figure 91).

Figure 91 SCSI Target Port Tool: the port is disabled



- c. Click **Enable** to enable the required SCSI port(s) (as in Figure 92).

Figure 92 SCSI Target Port Tool: the port is enabled



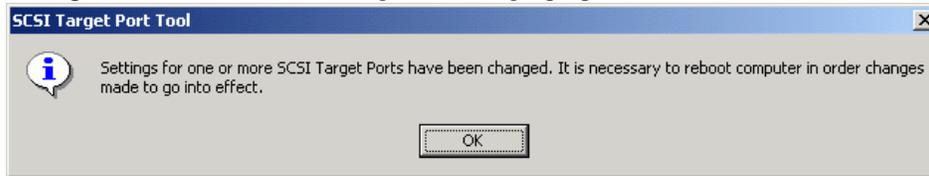
- d. (only for the Fibre Channel) Click **Advanced** to resolve the virtual World-Wide Name (WWN) and make the adapter available for the Cluster (failover) mode work if it is required. See Figure 93.

Figure 93 FC Adapter Advanced properties



- e. After enabling the cards (ports) and exiting the SCSI Target Port Tool, reboot if it is prompted (see Figure 94).

Figure 94 Reboot after change SCSI Target properties

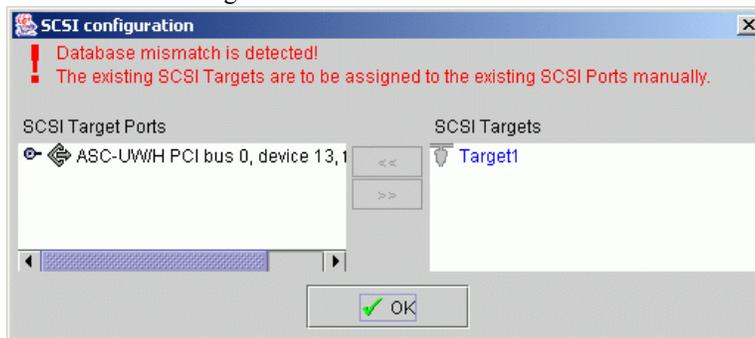


Step 6 After a successful reboot launch the Scalar DLC Manager (**Start > Programs > ADIC Distributed Library Controller > Scalar DLC Manager**).

Step 7 (only for the upgrade from Scalar DLC ver. 2.1) Resolve Port-Target assignment.

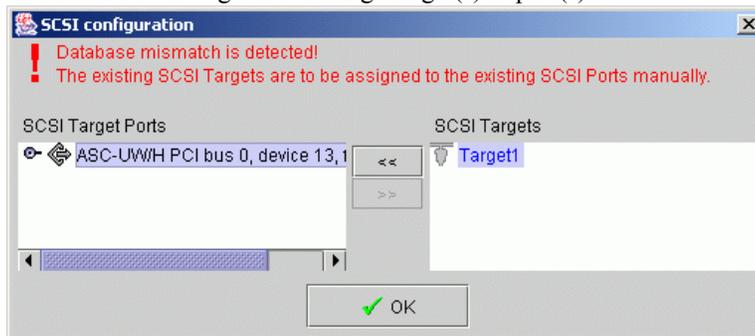
- a. Log on as 'admin'. Above the main Management GUI the SCSI configuration pop-up screen appears (see Figure 95).

Figure 95 SCSI Configuration Screen



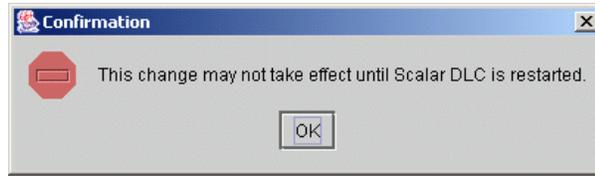
- b. Set the associations between Targets and Ports. Use the << button to associate Target with Target port. Remember that the customer may have multiple SCSI Targets. See Figure 96.

Figure 96 SCSI configuration: assign target(s) to port(s)



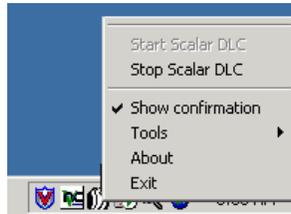
- c. After this is completed, click **OK**. A pop-up confirmation window opens. See Figure 97.

Figure 97 Confirmation to Restart Scalar DLC



- d. Close the Scalar DLC Manager. Right-click on the three-penguin icon on the toolbar (see Figure 98) and select 'Stop Scalar DLC'.

Figure 98 Access to Stop Scalar DLC



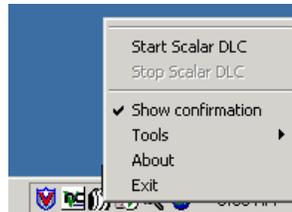
- e. The Scalar DLC software service will be stopped (see Figure 99).

Figure 99 Scalar DLC is successfully stopped



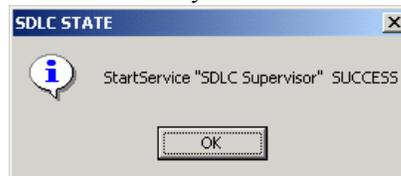
- f. Re-start Scalar DLC using the Scalar DLC icon on the toolbar (see Figure 100).

Figure 100 Access to Start Scalar DLC



- g. After a successful start an appropriate message displays (see Figure 101).

Figure 101 Scalar DLC is successfully started



Step 8 When the upgrade is complete verify that all target cards are correctly assigned and work ok.

Advanced Upgrade

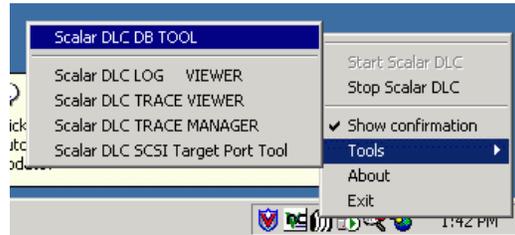
Follow these steps to perform the upgrade of the Scalar DLC software on any PC and/or to restore the Scalar DLC configuration from an old version of the software.

NOTE: Only the Advanced upgrade procedure can restore the Scalar DLC configuration from standard (basic) to failover (cluster) solution.

Step 1 Before removing the old release: backup an old database and keep it.

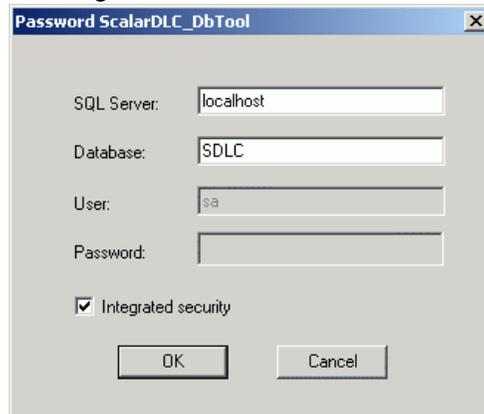
- a. On the toolbar there will be a small Three Penguin ICON. Right click this ICON and select **Tools > Scalar DLC DB Tool** (see Figure 102).

Figure 102 Access to DB Tool



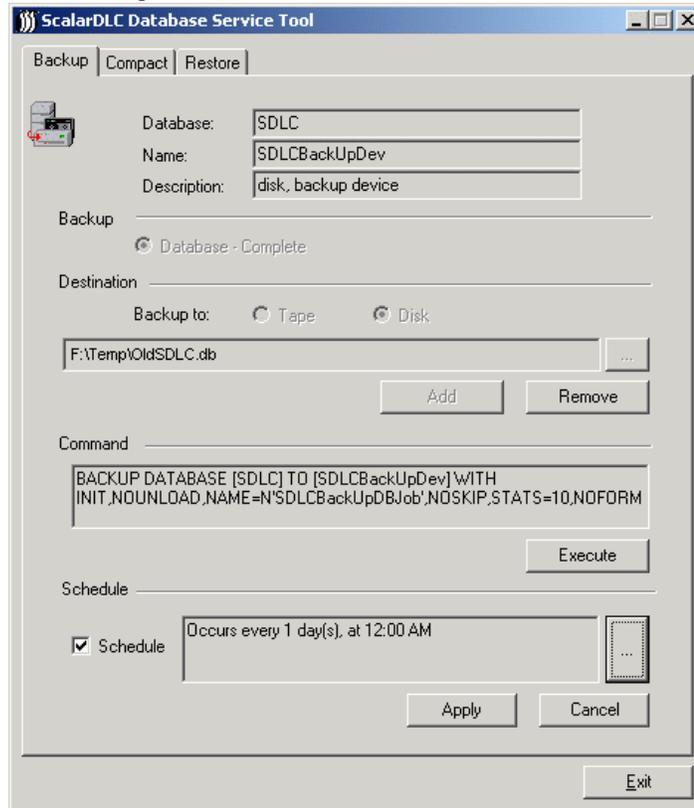
- b. Launch Scalar DLC DB Tool and log on (see Figure 103). If the Scalar DLC database has been installed under Trusted connection, only the local admin rights are required. If the Scalar DLC database has been installed under user account, either the SQL administrator logon name/password, or the Scalar DLC SQL user name/password are required.

Figure 103 DB Tool Log On



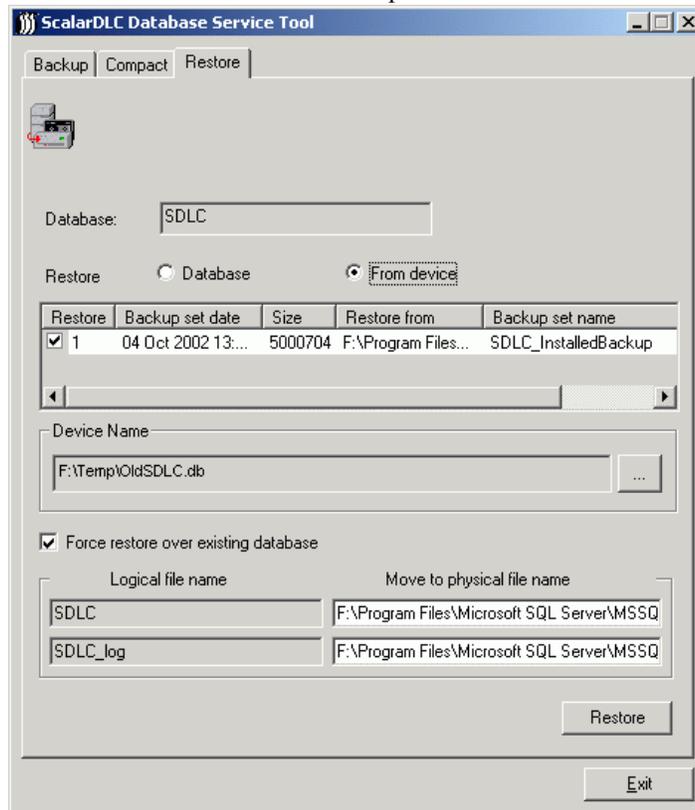
- c. Backup the database to file (for example, "OldSDLC.db"). Keep this file in any temporary folder. See Figure 104.

Figure 104 Backup Database



- Step 2** Remove the old release of Scalar DLC with the database. Remove MS SQL 7.0 if it is installed. Restart the PC.
- Step 3** Launch Scalar DLC Typical. Install MSDE 2000 and Service Pack 3 for MSDE2000. Install Scalar DLC with new, clean database. Restart the PC. Enable the SCSI/FC Target cards if required.
- Step 4** Stop Scalar DLC supervisor (see Figure 98 on page 84). Launch Scalar DLC DB Tool (see Figure 102 on page 85).
- Step 5** Log on the DB Tool (see Figure 103 on page 85). Open *Restore* tab and restore database from backup file "OldSDLC.db". Use *Force restore over existing database* checkbox, as shown in Figure 105 on page 87.

Figure 105 Restore Database from Backup file



NOTE: Do not start Scalar DLC software at this time. It will not be functional.

Step 6 Launch **Add/Remove Scalar DLC > Repair > Repair database** mode. Select "Upgrade". When upgrade is finished, restart PC.

Step 7 Launch Scalar DLC Management GUI. If required, re-configure SCSI targets (see Figure 95 on page 83 and Figure 96 on page 83).

AML/J Library Support

The Scalar DLC AML/J software cannot be updated and should be removed and installed again. However, if the user worked with the AML/J library in Scalar DLC ver. 2.1 (or later) and saved the database, all the required information about this library is stored in the Scalar DLC database.

For the steps on upgrading the Scalar DLC database, refer to *Upgrading the Scalar DLC* on page 79.

AML/2 Library Support

The AML/2 single-aisle library support has been added in the Scalar DLC ver. 2.3.

The Scalar DLC AML/2 software cannot be updated and should be removed and installed again. However, if the user worked with the AML/2 library in Scalar DLC ver. 2.3 and saved the database, all the required information about this library is stored in the Scalar DLC database.

For the steps on upgrading the Scalar DLC database, refer to *Upgrading the Scalar DLC* on page 79.

AML/E Library Support

The AML/E library support has been added in the Scalar DLC ver. 2.4.

The Scalar DLC AML/E software cannot be updated and should be removed and installed again. However, if the user worked with the AML/E library in Scalar DLC ver. 2.4 and saved the database, all the required information about this library is stored in the Scalar DLC database.

For the steps on upgrading the Scalar DLC database, refer to *Upgrading the Scalar DLC* on page 79.