

StorWatch™



# StorWatch Expert Installation Guide

*Version 1 Release 2*



StorWatch™



# StorWatch Expert Installation Guide

*Version 1 Release 2*

**Note:**

Before using this information and the product it supports, read the general information under “Notices” on page 199.

**Third Edition (September 2000)**

This edition applies to Version 1 Release 2 of IBM StorWatch Expert (product number 5648-SWV) and to all subsequent releases and modifications until otherwise indicated in new editions. This edition replaces GC26-7319-01.

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## About This Book

This publication is for the system administrator, system programmer, or user who is responsible for installing and configuring the IBM StorWatch Expert. This publication assumes that you understand the general concepts of the operating systems, networking capabilities, Internet capabilities, and databases for your enterprise. This publication provides information to help you install the StorWatch Expert.

The following table indicates which Web site to access for additional information.

*Table 1. Product Web Sites*

Product	Web Site
StorWatch ESS Expert overview	<a href="http://www.storage.ibm.com/software/storwatch/ess/expertover.htm">http://www.storage.ibm.com/software/storwatch/ess/expertover.htm</a>
StorWatch ESS Expert technical support documents database	<a href="http://SSDDOM01.storage.ibm.com/techsup/storwtechdoc.nsf/webviewess?OpenView">http://SSDDOM01.storage.ibm.com/techsup/storwtechdoc.nsf/webviewess?OpenView</a>
StorWatch ESS Expert technical support	<a href="http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain">http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain</a>
StorWatch family technical support	<a href="http://SSDDOM01.storage.ibm.com/techsup/wtechsup.nsf/support/storwatchmain">http://SSDDOM01.storage.ibm.com/techsup/wtechsup.nsf/support/storwatchmain</a>
StorWatch ESS Expert trouble shooting problems	<a href="http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/esscomm">http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/esscomm</a>
How to report ESS Expert problems, worldwide contact numbers, IBM Software Support Handbook	<a href="http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/esscomm">http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/esscomm</a>
IBM WebSphere Application Server	<a href="http://www.software.ibm.com/webervers/">http://www.software.ibm.com/webervers/</a>
IBM JDK	<a href="http://www.ibm.com/java/jdk/">http://www.ibm.com/java/jdk/</a>
IBM HTTP Server	<a href="http://www.software.ibm.com/webervers/">http://www.software.ibm.com/webervers/</a>
Viador SpaceSQL	<a href="http://www.viador.com/">http://www.viador.com/</a>
IBM DATABASE 2 Universal Database (UDB)	<a href="http://www.software.ibm.com/data/db2/udb/">http://www.software.ibm.com/data/db2/udb/</a>
Netscape Navigator or Communicator	<a href="http://www.netscape.com/">http://www.netscape.com/</a>
Microsoft Internet Explorer	<a href="http://www.microsoft.com/">http://www.microsoft.com/</a>

The following table lists the publications you can use for additional information.

*Table 2. Related Publications*

<b>Product</b>	<b>Order Number</b>
IBM DB2 Universal Database for Windows NT Quick Beginnings	GC09-2835
IBM DB2 Universal Database for UNIX Quick Beginnings	GC09-2836
IBM DB2 Universal Database SQL Reference	S10J-8165



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## Summary of Changes

This section summarizes changes made for this edition of the book.

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### Third Edition, September 2000

The updates include:

- The addition of a new chapter, “Chapter 8. Getting Started” on page 155, to provide information on setting up your StorWatch Expert.
- The addition of a two new chapters, “Chapter 3. Upgrading StorWatch Expert from R1 to R2 on Windows NT” on page 37, and “Chapter 6. Upgrading StorWatch Expert from R1 to R2 on AIX” on page 121. These chapters provide information on how to upgrade StorWatch Expert to version 1.2.
- Updated information that includes installing the Enterprise Tape Library (ETL) component.



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## Chapter 1. Introducing the StorWatch Expert

The IBM® StorWatch Expert (StorWatch Expert) gathers and presents information that can significantly help you manage the performance, asset, and capacity potential of your Enterprise Storage Server. You can find more information about StorWatch Expert at the following web sites:

You can find useful information and product support at the following web sites:

For information about StorWatch Expert:

<http://www.storage.ibm.com/software/storwatch/ess/index.htm>

For service information:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain>

StorWatch Expert gathers performance, asset, and capacity information from Enterprise Storage Servers, 3494 Library Managers, and 3494 Peer-to-Peer Virtual Tape Controllers and stores it in a relational database.

The softcopy version of this manual, StorWatch Expert Installation Guide, is located on the CD-ROM and is called **installguide81400.pdf**. You will need the Adobe Acrobat Reader 4.0 to read the .pdf file. If you do not have the Adobe Acrobat Reader 4.0 or higher, some text and graphics may not display or print correctly. You can find the Adobe Acrobat Reader (a free download) at the following web site:

<http://www.adobe.com/products/acrobat/readstep.html>

The most current version of the StorWatch Installation Guide is always available on the IBM StorWatch Expert Web site:

<http://www.storage.ibm.com/software/storwatch/ess/index.htm>

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### Performance Management

You can generate and view reports of performance information to help make informed decisions about volume placement and capacity planning.

#### ESS Expert

StorWatch Expert can also help isolate I/O performance bottlenecks in the Enterprise Storage Server. The kind of performance data that StorWatch Expert gathers and produces as useful information includes the following items:

- Number of I/O requests for the entire subsystem, for each array, and for each adapter
- Number of tracks transferred
- Read and write response time
- Cache hit percentages

### **ETL Expert**

With the writing of scratch volumes or copying and recalling virtual volumes onto physical stacked volumes, resources are shared by the tasks that run on the ETL controller. When there is contention for open resources caused by heavy throughput demands on the ETL subsystem, overall performance of the ETL can be impacted significantly. This can involve any or all of the following shared resources:

- Processor cycles
- Managing Tape Volume Cache (TVC)
- Allocating physical drives
- Logical volume fragmenting
- Throttling
- Physical stacked volumes

You can use this information to determine where bottlenecks are, make decisions about where to allocate new space, and identify time periods of heavy usage.

---

## **Asset Management**

When you have to manage multiple storage subsystems, it can be time consuming to track the following information:

### **ESS Expert**

- Subsystem names
- Microcode levels
- Model numbers

### **ETL Expert**

The manage asset function for the Enterprise Tape Library (ETL) Expert allows you to selectively collect data from the set of IBM Magstar 3494 Tape

Libraries that have been discovered during the node discovery task. Information that helps manage this asset includes:

- Library name
- Type
- Composite
- Model
- Physical drives installed
- Physical drives mounted

StorWatch Expert provides the following Asset functions:

- Discovering (in the enterprise network) all of the Enterprise Storage Server subsystems, and identifying them by serial number, name, and model number
- Identifying the number of clusters and expansion features on each
- Tracking the microcode level of each cluster

This information can save you time in keeping track of your storage subsystem hardware environment.

---

## Capacity Management

StorWatch Expert provides information that you can use to manage capacity. Some of the information that StorWatch Expert provides is listed below:

- For ESS, you can identify when additional space must be added or data must be moved to free up space for higher-priority files.
- For ETL, you can identify when additional logical or physical capacity must be added and ensure that reclamation of physical capacity is operating optimally.

Those capabilities can help to avoid application outages due to out-of-space conditions.

### ESS Expert

- Storage capacity that includes the following:
  - Storage that is assigned to application server hosts
  - Storage that is free space
- Capacity assigned to each open system attached application server and capacity shared with other SCSI-attached application servers. StorWatch Expert also provides the names and types of each application server host that can access the Enterprise Storage Server.
- A view of volumes-per-host. This view lists the volumes accessible to a particular SCSI-attached host for each Enterprise Storage Server.

- A volume capability that provides information about a particular volume. This function also identifies all the application SCSI-attached server hosts that can access it.
- Trends and projections of total, assigned, and free space over time for each Enterprise Storage Server.
- Trends in growth.

### **ETL Expert**

The manage capacity function for the Enterprise Tape Library (ETL) Expert allows you to view active data information and how stacked cartridges are allocated or in use. You can view a summary of this information by tape library. Information that helps manage capacity includes:

- Average size of virtual volume
- Stacked cartridges in scratch
- Stacked cartridges in use
- Stacked cartridges inserted

---

## **Year 2000 Readiness**

StorWatch Expert, when used in accordance with its associated documentation, is capable of correctly processing, providing, and receiving date data within and between the twentieth and twenty-first centuries. This assumes that all products (for example, hardware, software, and firmware) that are used with this IBM program properly exchange accurate date data within it.

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## **StorWatch Expert Platforms**

StorWatch Expert can be installed on the following platforms:

- Windows NT 4.0 with Service Pack 6
- AIX 4.3.3

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## **StorWatch Expert Components**

StorWatch Expert provides two basic components, the StorWatch Expert and the StorWatch Expert Database.

### **StorWatch Expert**

This is a multithreaded Java<sup>®</sup> servlet that runs under the IBM HTTP Server and performs the following:

- Works with other web user interfaces
- Builds all HTML pages that appear in the web user interface
- Checks the user IDs to make sure that users can only access functions they are authorized to use

- Interfaces with the ESS Specialist component of each Enterprise Storage Server that is defined to the StorWatch Expert

### **StorWatch Expert Database**

The StorWatch Expert database is an IBM DB2 Universal Database (UDB). StorWatch Expert accesses information in DB2 through Java Database Connectivity (JDBC). JDBC provides an application program interface for Java applications to access the database.

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## **Products StorWatch Expert Uses**

The other products that StorWatch Expert uses are identified in this section. These products are included on the StorWatch Expert CD-ROM and are automatically installed when you install StorWatch Expert.

### **IBM WebSphere Application Server**

The IBM WebSphere Application Server is a Java-based application environment for building, deploying, and managing Internet and intranet web application server needs. These needs might range from the simple to the advanced, or to the enterprise level. This product provides advanced services to a web server such as servlet (a Java program that runs as part of a network service) support, compiled HTML pages, pooled database connections, and many more.

For more information about WebSphere Application Server, see the following web site: <http://www.software.ibm.com/webservers/>

### **IBM HTTP Server**

The IBM HTTP Server is based on the Apache HTTP Server. IBM has enhanced the server with secure sockets layer support for secure transactions. IBM offers full technical support, as it would with any other IBM product.

IBM supplies the Apache-powered HTTP server both separately and with products that run on AIX, Windows NT, and other platforms. The HTTP Server works with the WebSphere Application Server to process the web user interface requests.

For more information about the HTTP Server, see the following web site: <http://www.software.ibm.com/webservers/>

### **Viador Sage**

The Viador Sage is a program that extracts data from a database and provides report generation and charting functions for data collected from the nodes managed by the StorWatch Expert.

For more information about Viador Sage, see the following web site: <http://www.viador.com/>

### IBM DB2 Universal Database (UDB)

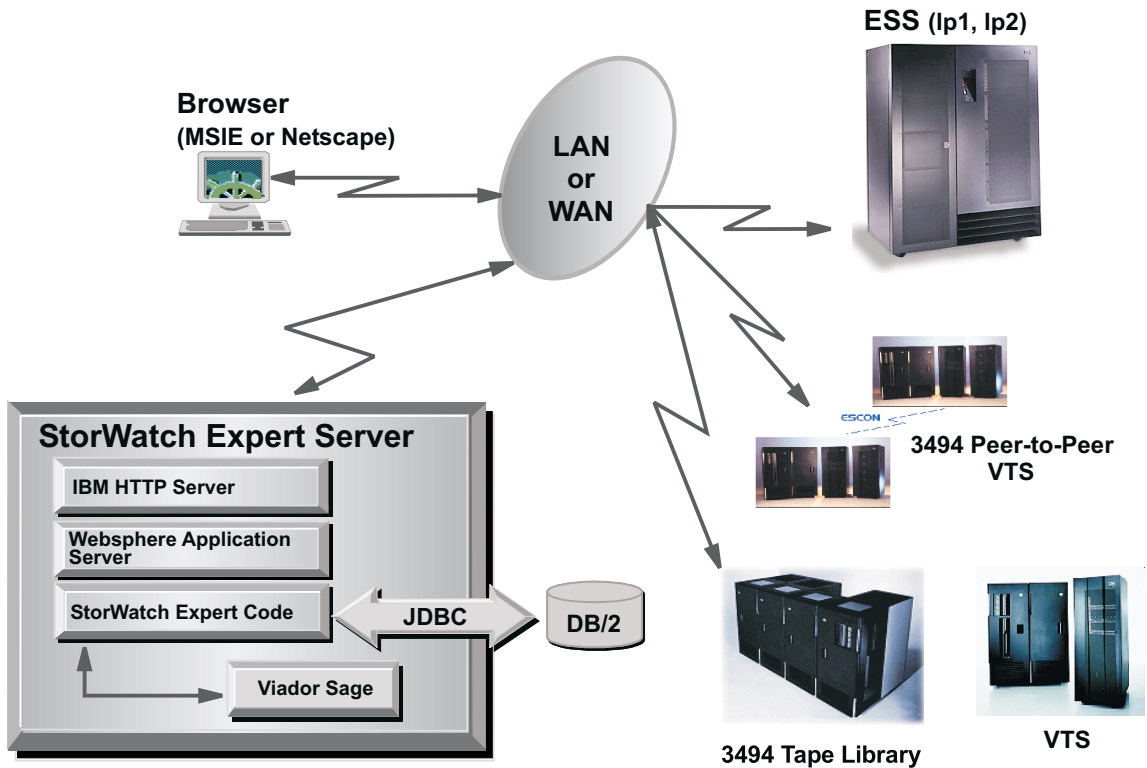
The IBM DB2 Universal Database (UDB) is a relational database that is used by StorWatch Expert.

For more information about DB2, see the following web site:  
<http://www.software.ibm.com/data/db2/udb/>

### IBM Java Development Kit (JDK)

JDK is a product which provides the environment required for programming in Java.

For more information about JDK, see the following web site:  
<http://www.ibm.com/java/jdk/>



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Figure 1. Overview of the StorWatch Expert Architecture

See Figure 1 for an overview of how the products interact.



StorWatch Expert uses TCP/IP to communicate with the Enterprise Storage Servers (ESS) and the Enterprise Tape Libraries (ETL) workstations.

Before you can capture data and view reports from the ESS and ETL, you must perform steps to identify the ESS or ETL to StorWatch Expert by providing IP addresses.

You must also provide an ESS Specialist user ID and password to collect data from the ESS. To collect performance data, this user ID must have **Configurer** access authority. This is not necessary for ETL at this time.

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## Accessing StorWatch Expert

StorWatch Expert provides a Java-enabled web browser interface which allows you to configure and then use the product to capture and view Enterprise Storage Server data. The web user interface can be viewed using either the Netscape Navigator, Netscape Communicator, or Microsoft Internet Explorer. You are responsible for installing the web browser. Your web browser profile must also be Java enabled.

The web browser interface can be installed on the same workstation as the StorWatch Expert server or on a different workstation.

For more information about StorWatch Expert, see the following web site:  
<http://www.storage.ibm.com/software/storwatch/ess/expertover.htm>



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## Chapter 2. Installing StorWatch Expert R2 on Windows NT

This section provides instructions about how to install and set up StorWatch Expert on the Windows NT platform. The StorWatch Expert installation code is distributed on the product installation CD-ROM.

This installation method installs both StorWatch Expert and several other required products (e.g. IBM DB2 UDB, IBM HTTP Server, IBM WebSphere, IBM JDK, Viador Sage) from the same CD-ROM.

**Note:** Before beginning the installation, perform the following steps:

1. You can find useful information and product support at the following web sites:

For information about StorWatch Expert:

<http://www.storage.ibm.com/software/storwatch/ess/index.htm>

For service information:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain>

2. It is important that the StorWatch Expert and the I/O Subsystems, which it manages, such as Enterprise Storage Servers and 3494, be at compatible maintenance levels. Select **Fixes** to verify the compatibility of your system, see the StorWatch Maintenance Compatibility Matrix at the web site listed above.

---

### Installation Requirements

This section contains hardware and software requirements for the installation of StorWatch Expert R2.

#### Hardware and Space Requirements

StorWatch Expert requires the following hardware:

- A personal computer, workstation, or server with Pentium<sup>®</sup> II class or better processor
- A CD-ROM drive for installation
- VGA display or better

StorWatch Expert requires the following random access memory (RAM) and disk space:

- 256 megabytes (MB) of RAM
- 395 MB of disk space for StorWatch Expert and its installed programs. The total space available on the hard drives might need to be more if StorWatch Expert and other required products are split among more than one logical drive.
- Disk space for StorWatch Expert database (this depends on the number of nodes managed and the customer-defined data retention policy). A minimum of 260 MB is recommended.
- Up to 25 MB of disk space on the system drive (usually the C: drive) for new and updated drivers, dynamic link library files (.dll), and so forth. This number depends on the products that are already installed and the latest level of service pack applied to the Windows NT 4.0 operating system.
- Up to 50 MB of temporary disk space on the system drive at installation time for the setup utility.

## Software Requirements

The following table shows the programs that are required by StorWatch Expert.

*Table 3. Previously Installed Programs Required by StorWatch Expert for Windows NT*

Program	Level	Note
Windows NT operating system	Version 4.0 with Service Pack 6	To be installed before installing StorWatch Expert
TCP/IP with Domain Name System (DNS) host name		To be installed before installing StorWatch Expert

## Web Browser Access to StorWatch Expert

StorWatch Expert includes a web-based user interface that is designed to operate with web browsers.

### Web Browsers Supported

Make sure you have at least one of the following web browsers and version levels:

- Netscape 4.7 for Windows NT 4.0 with Service Pack 6
- Microsoft Internet Explorer 5.0 for Windows NT 4.0 with Service Pack 6

---

## Before You Install StorWatch Expert

**Note:** You should have some knowledge of Windows NT administration. StorWatch Expert must be installed from an account that has local administrator privileges.

### Command Conventions

The description of commands in this chapter have the convention of putting optional and substitution parameters between "<" (less than) and ">" (greater than) symbols. The explanation of the optional or substitution parameters follow a "Where" indicator. You should review the explanation before entering the command.

The steps involved are:

1. Prepare for installation
2. Install from CD-ROM
3. Reboot to activate new services
4. Validate individual products and create database
5. Use your browser to do StorWatch Expert configuration
6. Restart StorWatch Expert engine and sign on to the StorWatch Expert

Follow the instructions in "Prepare for Installation" before you install StorWatch Expert.

## Prepare for Installation

**Note:** A system for installation must be a "clean" machine. This means that none of the following products have been previously installed on the machine:

- Any StorWatch application (including previous releases of StorWatch Expert, see Chapter 3 "Upgrading StorWatch Expert from R1 to R2 on Windows NT" to upgrade)
- IBM HTTP Server (or other types of HTTP servers)
- IBM WebSphere Application Server
- Any DB2 product (or other types of relational databases)
- Viador Sage, or the related product Viador E-Portal
- JDK

If any of the products that are listed above have been installed, you must uninstall them first.

If you have uninstalled or choose to uninstall the products, review the section about uninstallation for recommendations about renaming paths and files, removing registry entries, restoring environment variables to their pre-installation state, and returning data from previous releases. Some of these recommended steps are necessary before the installation can complete successfully. See “Chapter 4. Uninstalling StorWatch Expert in Windows NT” on page 81.

Perform the following steps before starting the installation:

1. Verify that the system where the StorWatch Expert is to be installed meets the “Installations Requirements” on page 7.
2. Choose the destination paths for the four major StorWatch Expert program cluster areas:
  - StorWatch Expert and Viador Space SQL Executables
  - Web server cluster: IBM HTTP server, IBM WebSphere, and IBM JDK
  - DB2 Executables
  - DB2 database

*Table 4. Space Requirements for StorWatch Expert Components*

Component	Space Required in MB
StorWatch Expert and Viador Space SQL	70
Web server cluster: IBM HTTP server, IBM WebSphere, and IBM JDK	60
DB2 Executables	265
DB2 database	Space for StorWatch Expert data (a minimum of 260 MB is recommended for StorWatch Expert data)

During the InstallShield installation of StorWatch Expert, you will be prompted for the target location for the above component clusters. An analysis of the current available space will be provided as well as the default installation location. You can override this by using the InstallShield browse function. When you click **Next**, an analysis will be made of the available space for the location you provide. If there is not enough space, you will not be able to proceed to the next panel in the installation.

3. If the user name **db2admin** exists on the system, its password must also be **db2admin** for the period of installation and validation. If the user name **db2admin** does not exist on your NT system, DB2 creates it during the install.

IBM HTTP Server, IBM WebSphere and DB2 provide system services on Windows NT requiring an association with the user name on your system

with special attributes. A default DB2 user name **db2admin** will be associated with all products. After the installation and validation, you can create new user names and change passwords with the products as described in “Appendix C. Changing the Passwords in Windows NT” on page 189.

4. **For DB2:** During the installation process, DB2 attempts to create the **db2admin** user ID. Unless a **db2admin** user ID was created before the installation, the installation fails with a DB2 error. The following message is displayed:

Installation failed: IBM DB2 UDB 5.2 installation failed.  
Press OK to exit the setup program.

This occurs on a Windows NT server that is running as a backup domain controller (BDC).

## **Insert the StorWatch Expert R2 CD-ROM**

The StorWatch Expert R2 setup program can appear within 15 – 30 seconds if you have autorun set on your system. The setup program checks for evidence of the installation of parts of the StorWatch Expert R1. If it finds such evidence, it will issue **Severe Error** messages because it will find the **db2.mif** file and the other software installed by StorWatch Expert R1. You should choose the option to press **OK** to exit the setup program.

Check for a **readme.txt** file located in the **root** folder on the StorWatch Expert R2 CD-ROM. This **readme.txt** can provide additional information which supersedes information in this guide.

## **Install from CD-ROM**

The StorWatch Expert depends on the services of several other products which are installed from the provided CD-ROM. The use of these products is for the purposes of the StorWatch Expert only. The StorWatch Expert InstallShield installation program is an umbrella installation which imbeds the installation programs for other products.

The specific installation dependent customization information necessary to install StorWatch Expert and each of the imbedded products is collected through an InstallShield dialog at the beginning of the umbrella installation. The umbrella installation program prepares response files for each of the imbedded installation programs. Finally, the umbrella installation program successfully calls each of the embedded installation programs in silent mode.

In order to activate the code, a one-time reboot will be required after all the products are installed from the CD-ROM.

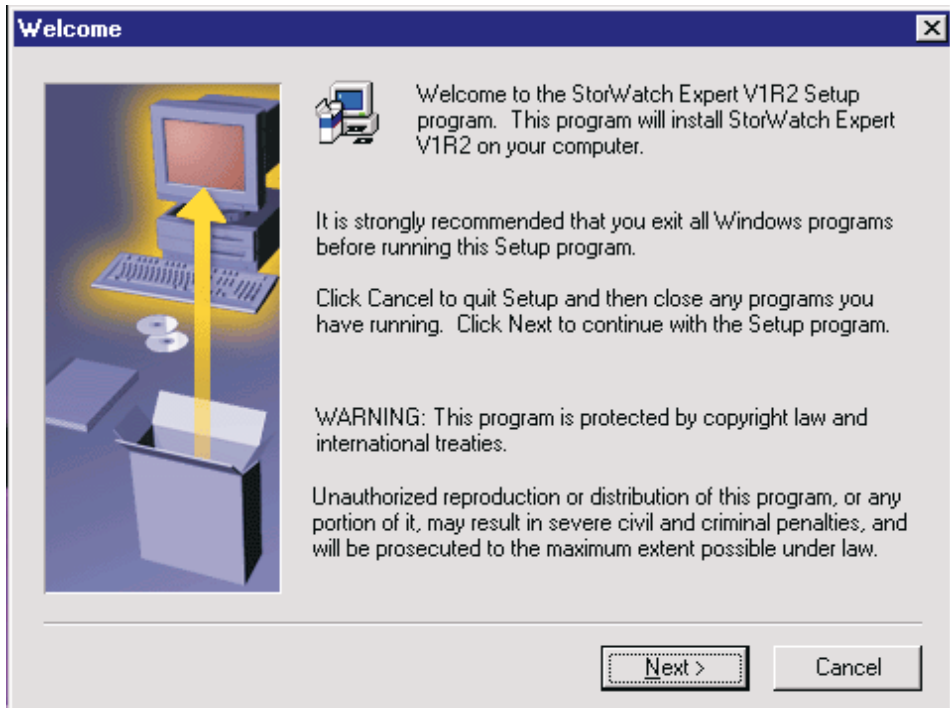
**Perform the following steps to run the StorWatch Expert installation program from the CD-ROM:**

1. By this time you should have inserted the StorWatch Expert CD-ROM into the CD-ROM drive.
2. The StorWatch Expert setup program should appear within 15 – 30 seconds if you have autorun set on your system. If it does not, use a command window or Windows Explorer to make the CD-ROM drive's **root** directory the current directory. Then type

setup.exe

or double-click it as appropriate to start the StorWatch Expert setup program.

3. The StorWatch Expert **Welcome** window displays (see Figure 2). Click **Next** to continue.

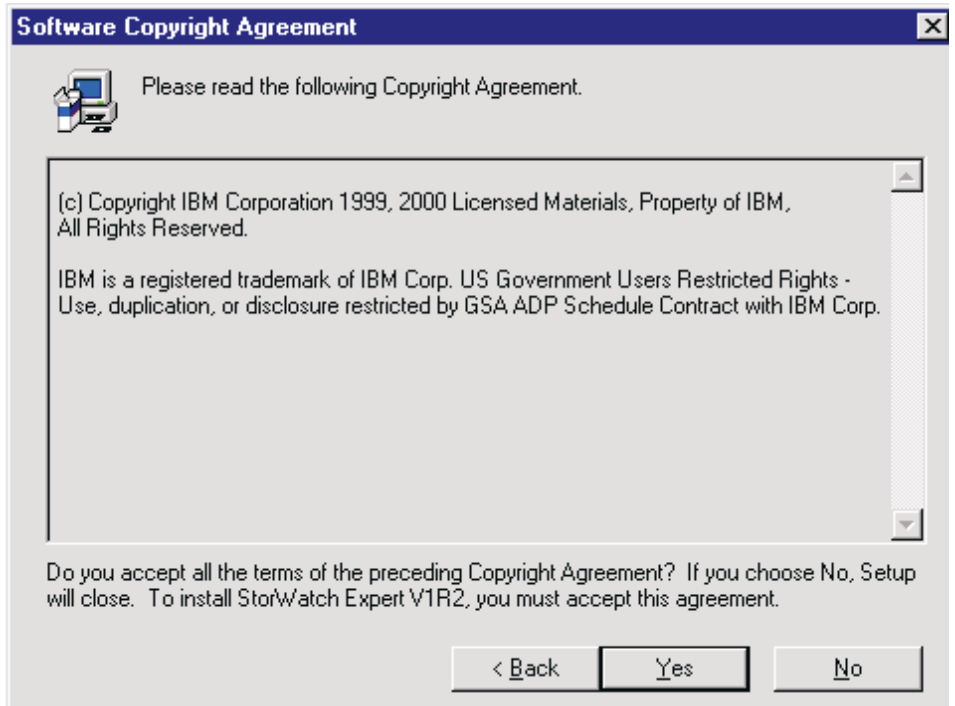


SWE00023

Figure 2. Welcome Window



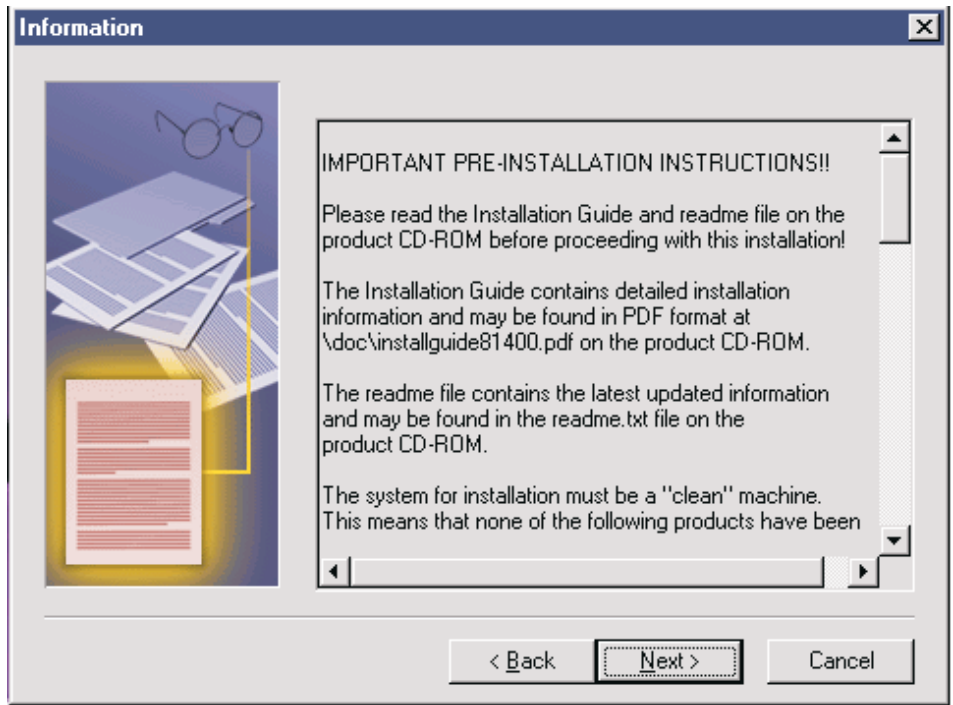
4. If the **Welcome** window does not appear and an error message window appears saying that the pre-installation evaluation failed, click **OK** to exit the StorWatch Expert setup program. Correct the indicated problem or problems and restart the setup program.
5. The **Software Copyright Agreement** window opens (see Figure 3). If you accept the terms of the agreement, click **Yes** to continue. If you select **No**, the installation program will end without installing StorWatch Expert.



SWE00006

Figure 3. Software Copyright Agreement Window

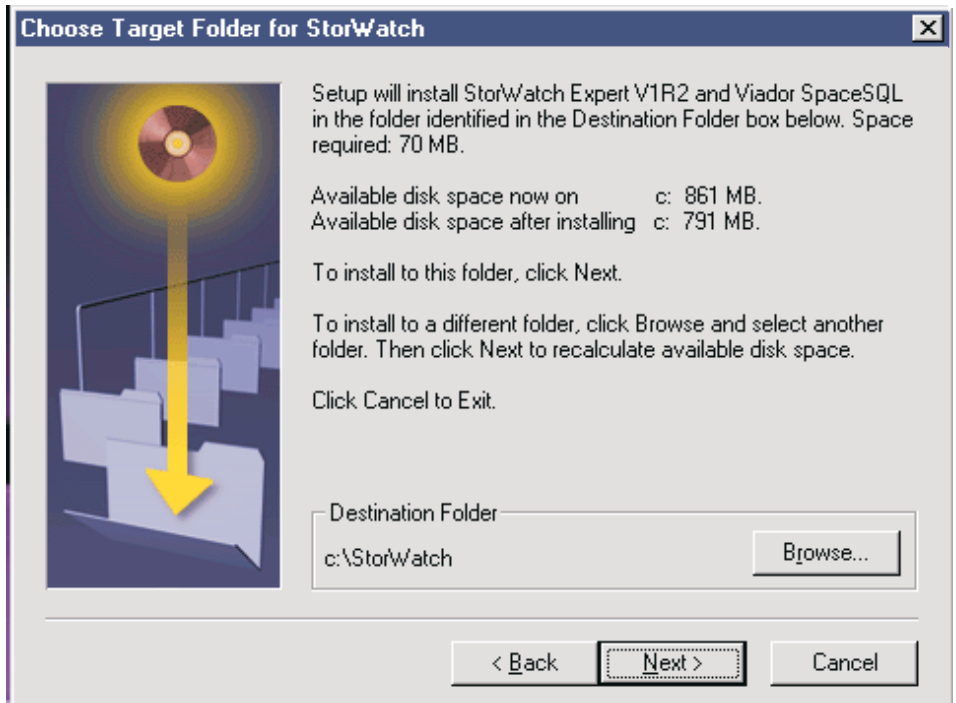
6. The **Information** window appears (see Figure 4). Read this information, then click **Next** to continue.



SWE00011

Figure 4. Information Window

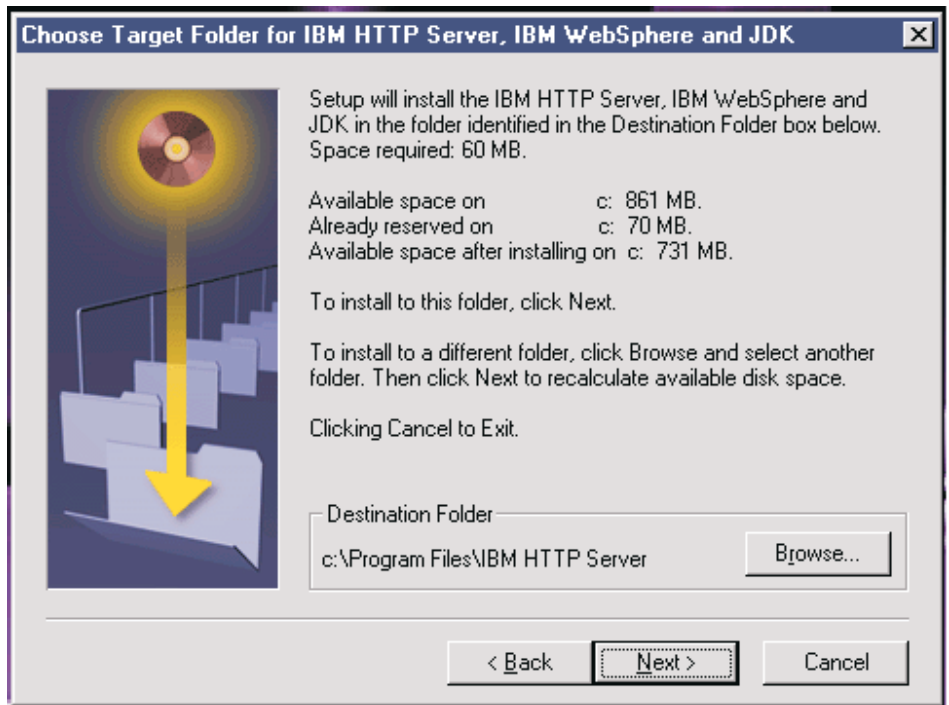
7. The **Choose Target Folder for StorWatch** window opens (see Figure 5 ). You can select **Browse** to select another destination for StorWatch Expert code or use the default location. Click **Next** to continue. You can exit the setup program by clicking **Cancel**.



SWE00001

Figure 5. Choose Target Folder for StorWatch Window

8. The **Choose Target Folder for IBM HTTP Server, IBM WebSphere and JDK** window opens (see Figure 6). You can select **Browse** to select another destination for the IBM HTTP Server or use the default location. Click **Next** to continue. You can exit the setup program by clicking **Cancel**.

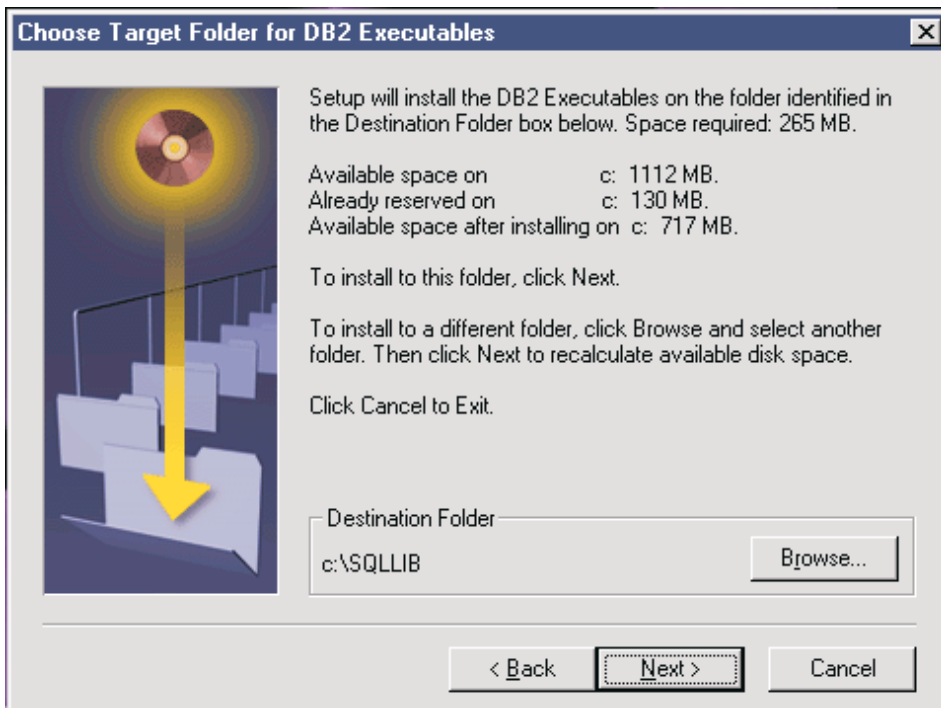


SWE00002

Figure 6. Choose Target Folder for IBM HTTP Server, IBM WebSphere and JDK Window

9. The **Choose Target Folder for DB2 Executables** window opens (see Figure 7). You can select **Browse** to select another destination for the database or use the default location. Click **Next** to continue. You can exit the setup program by clicking **Cancel**.

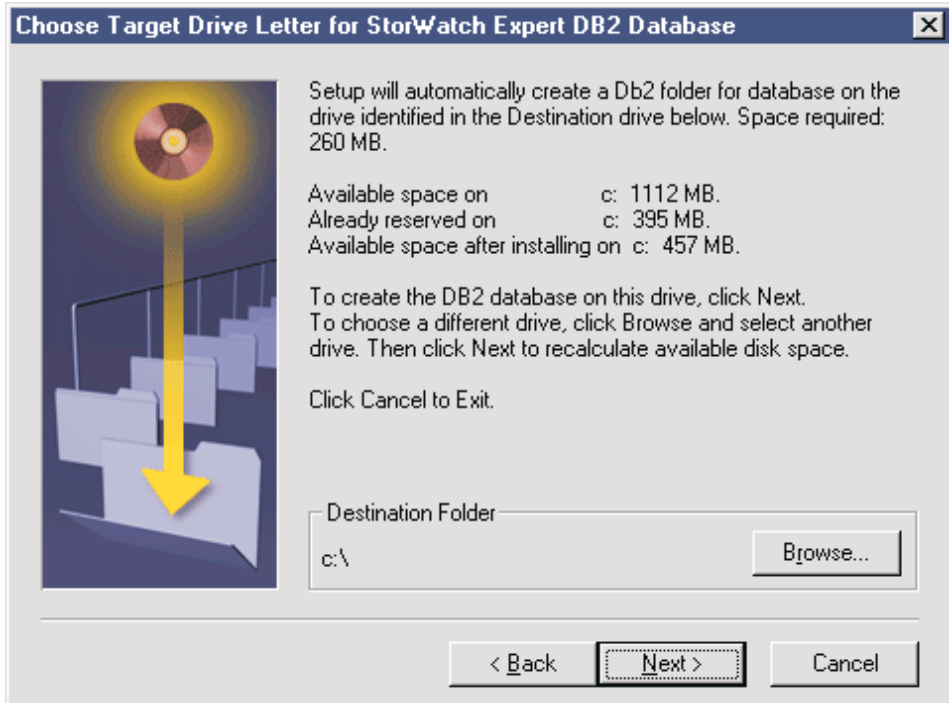
**Note:** The destination path name **cannot** contain a space.



SWE00003

Figure 7. Choose Target Folder for DB2 Executables Window

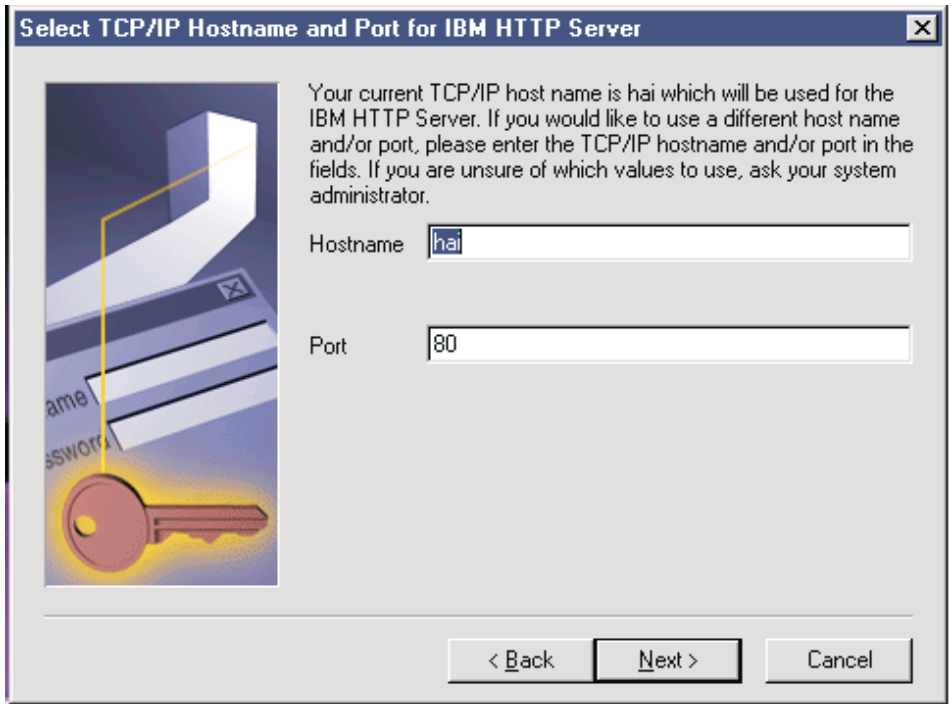
10. The **Choose Target Drive Letter for StorWatch Expert Database** window displays. You can select **Browse** to select another destination for the database or use the default location. Click **Next** to continue. You can exit the setup program by clicking **Cancel**.



SWE00008

Figure 8. Choose Target Drive Letter for StorWatch Expert Database Window

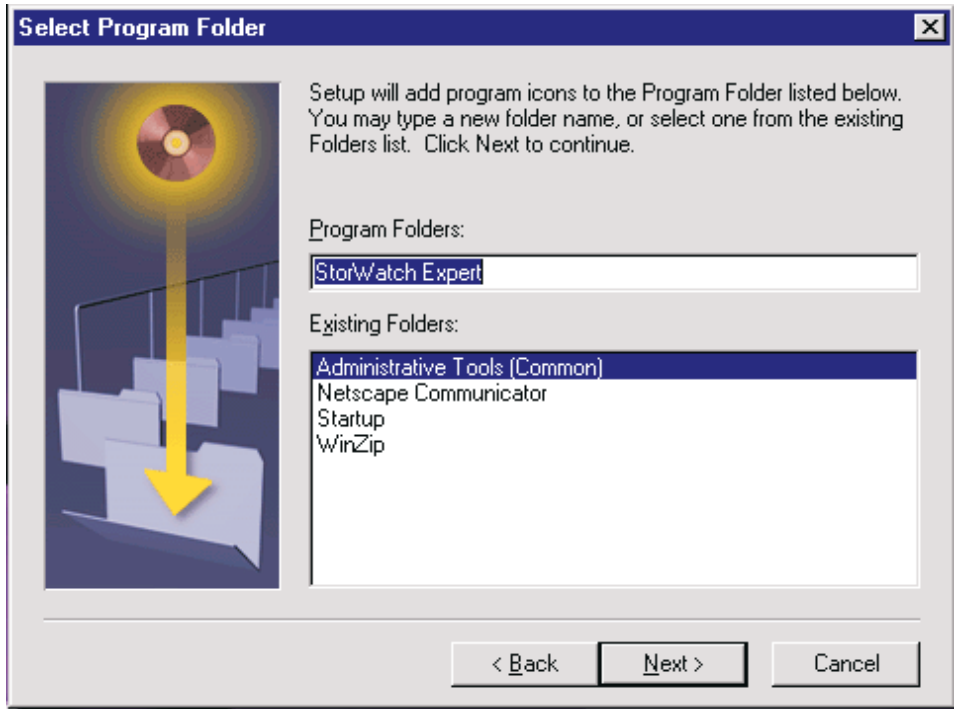
11. The **Select TCP/IP Hostname and Port for the IBM HTTP Server** window displays (see Figure 9 on page 21). Your current primary TCP/IP hostname is displayed and Port 80 is provided as the default webserver port number. If you are an advanced installer and know you have other reasons to change the hostname (such as multiple NIC cards are installed) or you already have another application using Port 80, you can revise these values. Choose any port number between 1024 and 65535. Do **not** use the following port numbers:
  - 6789 (reserved for use by Viador Sage)
  - 8081 (reserved for use by the IBM WebSphere Application Server)
  - 9527 (reserved for use by the WebSphere Administration utility)Click **Next** to continue.



SWE00009

Figure 9. Select TCP/IP Hostname and Port for IBM HTTP Server Window

12. The **Select Program Folder** window displays (see Figure 10). You can enter a new folder name or use the default name. Click **Next** to continue.

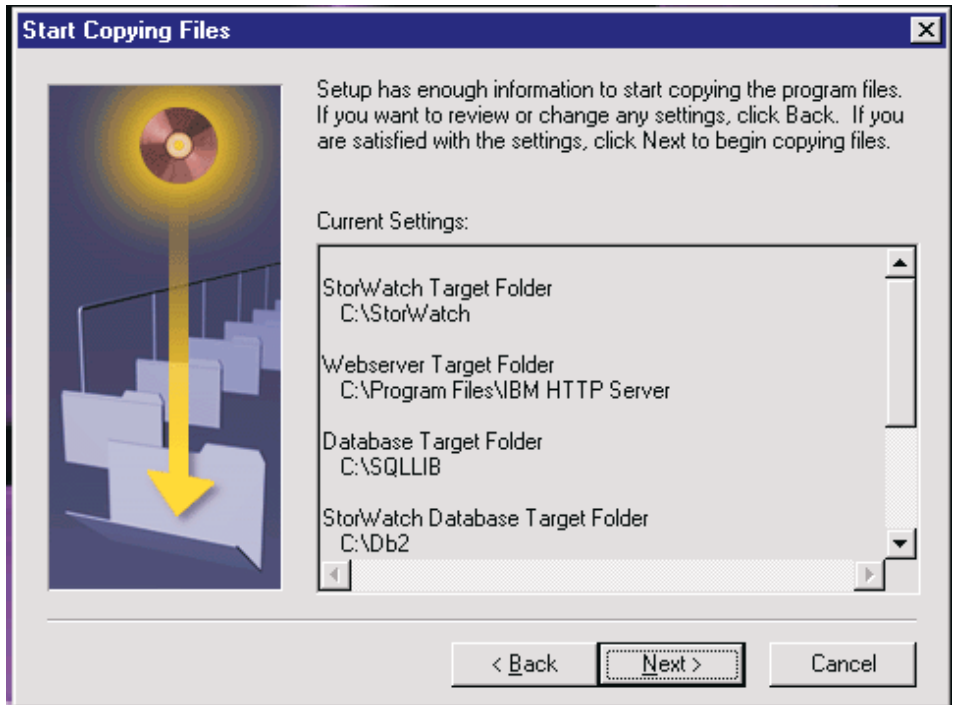


SWE00017

Figure 10. Select Program Folder Window



13. The **Start Copying Files** window displays (see Figure 11). This window allows you to check the current settings and to change them if you desire. If you want to change the settings, click **Back**, perform the desired alterations and then continue on with the installation process. Click **Next** to begin copying the files. The StorWatch Expert software and prerequisite products are installed. This process takes an average of 10 – 16 minutes depending on your processor.



SWE00007

Figure 11. Start Copying Files Window

14. The **Copy Status** window opens while StorWatch Expert and its prerequisite products are being installed. This window indicates the status of the copy operation. You can cancel the copy operation at any time by clicking on **Cancel**.

15. The **Setup Complete** window opens (see Figure 12). If you want to reboot your system at this time, select **Yes**. If you do not want to reboot your system at this time, select **No**. You will not be able to finish the installation or configure StorWatch Expert until the system is rebooted. Click **Finish** to complete the CD-ROM setup procedures. Remember, when you reboot your system, you should log on as **db2admin** with password **db2admin** to complete installation.

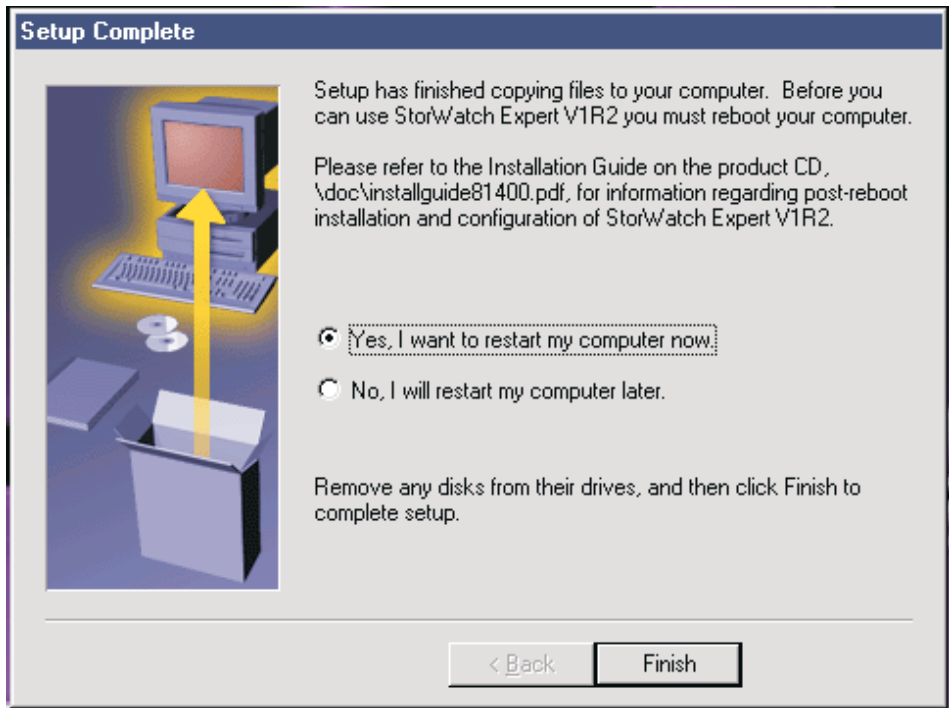


Figure 12. Setup Complete Window

## Reboot to Activate New Services

At this point, you have completed installing from the CD-ROM, have rebooted and logged on with user name **db2admin** and password **db2admin**. If you have not logged on as **db2admin**, press **Ctrl+Alt+Delete**, and choose **logoff** and log on as **db2admin**.

Before proceeding further, you should review the primary installation log **swsetup.log** which is in the destination path where the StorWatch Expert code is installed. You can find the primary installation log by going to **Start->Run->C:/StorWatch/swsetup.log** (default). The next to last line in the StorWatch log **swsetup.log** will have the message **Installation failed** if a problem was detected.

If you find a problem indicated, consult the specific product log for an error indication and possible remedy. The individual product log files are created by the InstallShield software (the environment used to create the setup programs).

**Note:** If you are using Windows NT Explorer to view your files, you may have the file viewing option to hide well-known file extensions selected. If you wish to reverse this option, select

View->  
Options

and deselect "Hide file extensions for known file types".

Table 5 shows where the individual installation log files are stored during the installation.

*Table 5. Log Files*

Product	File Name	Default Location
Complete Installation Summary	swsetup.log	<storwatch-dest-path>
DB2 UDB	db2.mif	<db2udb-dest-path> (a duplicate copy is found in C:\WINNT)
DB2 UDB	db2.log	<db2udb-log.path>
IBM HTTP Server	setup.log	<httpserver-dest-path>\websphere
IBM WebSphere	setup.log	<httpserver-dest-path>\websphere
IBM WebSphere	wsetup.log	<httpserver-dest-path>\websphere
Viador SpaceSQL	setup.log	<storwatch-dest-path>\infospc

Where:

<db2udb-dest-path> is the destination path where the DB2 UDB Executables were installed.

<db2udb-log.path> is the place DB2 puts its logs, for example:  
c:\Db2log\db2.log.

<httpserver-dest-path> is the destination path where the IBM HTTP Server was installed.

<storwatch-dest-path> is the destination path where the StorWatch Expert was installed

## Validate Individual Products and Create Database

1. **Validate the install of DB2 UDB**– You should have logged into Windows NT as **db2admin** with password **db2admin**. If you have not done this, do this now before proceeding. This step validates the DB2 installation by creating the database required for the StorWatch Expert.

**Note:** Because you have logged onto Windows NT for the first time with the new user name **db2admin**, Windows NT may prompt you for user account customization settings.

Open a Command Prompt (e.g. **Run->command.com**) and change the directory into the folder where the DB2 UDB executables are installed (C:\SqlLib). There you will find a batch command file which will run DB2 to create the StorWatch database. The batch command file has been set up for you according to the input you gave during the CD-ROM phase of installation.

To invoke the database creation at this time type:

```
swmakedb
```

and press **Enter**.

A new window opens which is a DB2 CLP window. Wait until the CLP window displays the following message before closing the window:



DB200001 The TERMINATE command completed successfully.

Figure 13 on page 28 shows a successful run in the DB2 CLP window.

```
DB2 CLP
start database manager
SQL1026N The database manager is already active.

attach to db2 user db2admin using

Instance Attachment Information

Instance server      = DB2/NT 7.1.0
Authorization ID     = DB2ADMIN
Local instance alias = DB2

create database SWDATA on c: alias SWDATA
DB20000I The CREATE DATABASE command completed successfully.

update database configuration for SWDATA using APPLHEAPSZ 512
DB20000I The UPDATE DATABASE CONFIGURATION command completed successfully.
DB21026I For most configuration parameters, all applications must disconnect
from this database before the changes become effective.

update database configuration for SWDATA using LOGFILSIZ 1024
DB20000I The UPDATE DATABASE CONFIGURATION command completed successfully.
DB21026I For most configuration parameters, all applications must disconnect
from this database before the changes become effective.

detach
DB20000I The DETACH command completed successfully.

terminate
DB20000I The TERMINATE command completed successfully.

C:\SQLLIB>_
```

SWE00014

Figure 13. DB2 CLP Window

2. **Validate the installation of IBM JDK** — The installation of the IBM JDK from the CD-ROM and subsequent reboot of your system will make the JDK accessible through your *path* environment setting. In a Command Prompt enter:  
**java -fullversion** and hit Enter.  
You should see the response:

```
D:\SQLLIB>java -fullversion
java full version "JDK 1.1.8 IBM build n118p-20000322 <JIT enabled: ibmjtc U3.5
-IBMJDK1.1-20000322>"
D:\SQLLIB>
```

SWE00012

Figure 14. Checking your JDK

If you do not see the response illustrated in Figure 14 then your Windows NT system originally had some other JDK installed and therefore is not a

clean machine. If you do not see the JDK 1.1.8 indicated as in the example, you should check your path environment variable setting.

To check your IBM JDK environment setting, go to

```
Start->  
  Settings ->  
    Control Panel ->
```

and click on the **System** icon. Click on the **Environment** tab and search the System Variables, then highlight the Environment variable called **path**. When you highlight **path**, look for the input windows at the bottom labeled **Value**, and check for the JDK path, for example  
C:\PROGRAMS\IBMHTTP\jdk\bin

### 3. Validate the installation of IBM HTTP Server

From the windows **Services** panel, check that the IBM HTTP server is started.

Go to the **Windows Services** panel by clicking:

```
Start->  
  Settings ->  
    Control Panel ->  
  Services
```

Search through the list to the IBM HTTP Server, the status column should be marked **Started** and the Startup volume should be marked **automatic**. You will also find an entry for the IBM HTTP Administration which will have the same settings. Note the IBM HTTP Administration component is not necessary for running the StorWatch Expert component.

### 4. Validate the install of IBM WebSphere

a. Start up the Control Panel and choose Services. If you are not already there:

```
Start->  
  Settings ->  
    Control Panel ->  
  Services
```

Search through the list to the WebSphere Servlet Services. If it is not started, start it now by highlighting the WebSphere Servlet Service entry and click the **Start** button. When you see the status change to "started", you can close the **Services** panel. Although the status is marked "started", WebSphere will continue loading for a little longer to prepare to serve your StorWatch Expert pages. This may take a little time. You can monitor your system through the Windows NT Task Manager.

- b. Start up a browser and point it at:

`http://localhost/servlet/snoop`

This may take a few minutes depending on your processor and the system load. During this time, the IBM WebSphere Application Server should be starting. If you see the following in your browser window, it means WebSphere has not finished initializing. Wait a little longer and re-enter the URL:

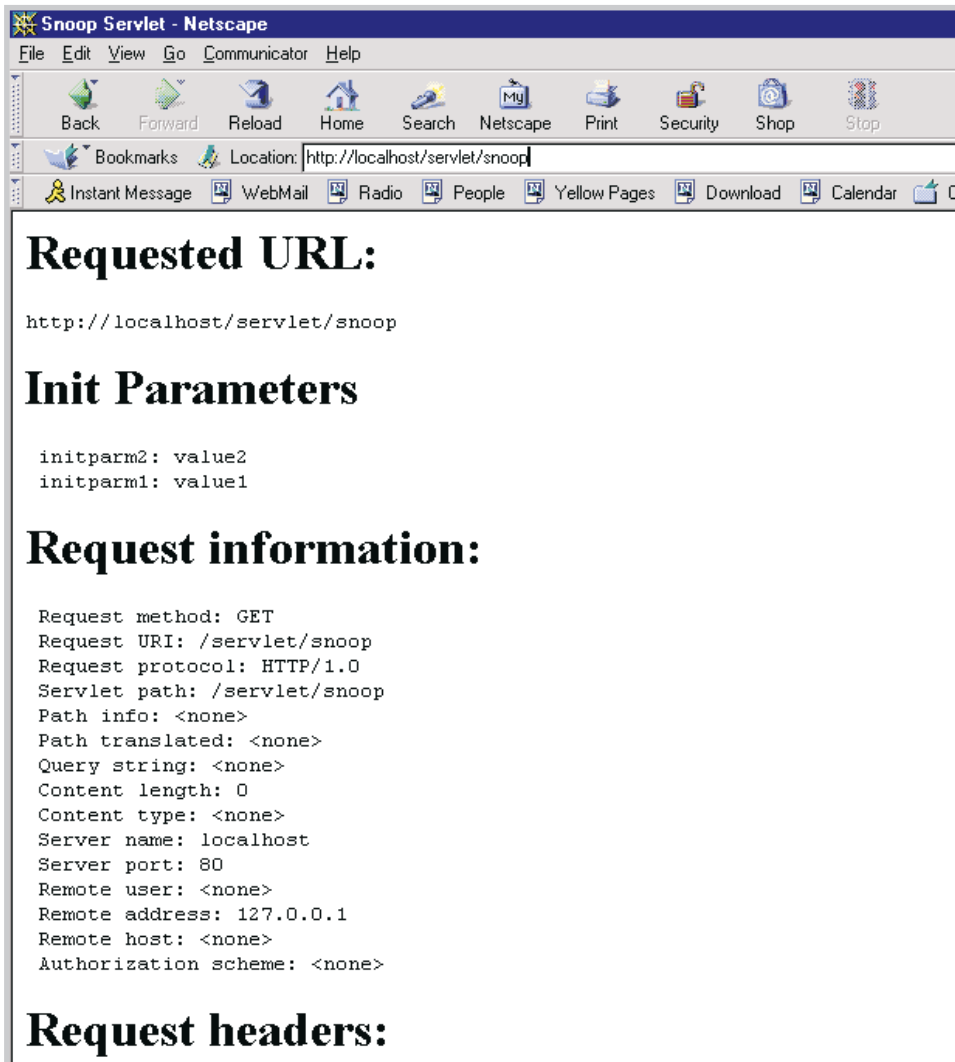
`http://localhost/servlet/snoop`

**Attention:** If you see the WebSphere application is starting a message, the browser location URL will change to `http://localhost/unavailable`, you must re-enter the URL:

`http://localhost/servlet/snoop`

When WebSphere has finished initializing, you should see the following response:





SWE00019

Figure 15. IBM WebSphere Application Server

## Use Your Browser to do StorWatch Expert Configuration

The StorWatch Expert is comprised primarily of two servlets which run under the WebSphere Services and the IBM HTTP Server. You will use the StorWatch Configuration Servlet at this point to prime the StorWatch Expert for everyday usage.

Follow the steps below to configure StorWatch Expert

1. Launch a web browser and enter the following URL to access the StorWatch Configuration Utility:

**Note:** URL is case sensitive.

`http://<tcpip-host-name>:<port-number>/StorWatchConfig/start.html`

Where:

tcpip-host-name is the TCP/IP hostname that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name, bring up a Command Prompt and type **hostname** and press **Enter**.

port-number is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify it in the URL.

2. The default user name and password will be **admin** in *both* fields.
3. If you see a message that says "WebSphere is Loading StorWatch Configuration Utility", wait 1–2 minutes until the "IBM StorWatch Expert Configuration Utility Introduction" page displays. On the left hand side is a navigation menu that links to tasks you can perform using the Configuration Utility. These tasks are listed in the order they should be performed.
4. Follow these steps to set up the basic configuration.
  - a. Click on **Basic Configuration** in the navigation menu. The "Basic Configuration" page displays.
    - You should see the database user name field filled in with **db2admin** and the password field already filled in (the password is masked for security purposes). You will also see the database alias of SWDATA. This database alias refers the database you created when you validated DB2.
    - Click **Finish**. After the values are saved, you should see the message in the megaphone area under the banner:

HSWC1902I StorWatch properties were successfully updated

- b. Perform the following steps to create the StorWatch Expert database tables:
  - 1) Click the **Database Setup** link in the navigation menu. The **Database Setup** page displays. It should contain the following words:

Your database does not seem to contain the StorWatch database tables.

- 2) Click the **Create Tables** button to create the database tables that are required by StorWatch Expert. This may take a few minutes. After the tables are created, you should see the message in the megaphone area:

HSWC1909I Setup script successfully executed.

- c. Perform the following steps to define a StorWatch Administrator:

- 1) Click the **Define Administrators** link in the navigation menu. The **Define Administrator** page displays. It should contain the words:

There do not appear to be any administrators currently defined.

- 2) Click **Add**. An **Edit** window opens.
- 3) Fill in the Userid and other fields. The userid is authenticated by StorWatch Expert software; it does not need to be a local Windows NT user account. All fields in the dialog window are required except the e-mail field.
- 4) Click **Finish** in the **Edit** window. After the information is saved, you should see the following message in the megaphone area:

HWSC1918I Userid xxxxx added successfully.

- d. Perform the following steps to enter your StorWatch Expert R2 license key(s):

- 1) Click **Enter License Key** in the navigation menu. The **Enter License Key** page displays. Enter your customer name, then use the key information sheet you received in the StorWatch installation package to:

- Enter the customer number. Use the number shown as **Customer Number** on the key information sheet. It may differ from your own customer number.
- Select StorWatch feature using the **Item Number** selection. This number may be shown under a heading **Program Number** on the key information sheet.
- Enter the key from the **Access Key/Password** column of the key information sheet.

- 2) The next processing depends on whether you have ordered one or two StorWatch Expert R2 features:
  - If you have only ordered one StorWatch Expert R2 feature, click the **Finish** button. When processing of the key is completed, you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

- If you have ordered a second StorWatch Expert R2 feature, click the **More** button instead of the **Finish** button. This will trigger the processing of the first key and you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

The **Enter License Key** page is reshown. Provide the following information for the second key:

- Select the second feature in the **Item Number** selection menu.
- Enter the key to go with the second feature from your license key information sheet.

Click the **Finish** button.

When the key processing is completed, you should see the message in the megaphone area:

HSWC1944I 2 license keys are currently recorded, for.....

5. Perform the following steps to restart StorWatch Expert:
  - a. Click the **Restart StorWatch** link in the navigation menu. The **Restart StorWatch Server** page opens.
  - b. Click the **Restart** button to force the server to restart and read in the new configuration values. You should see the following message in the megaphone area:

HSWC1937I The StorWatch server is restarting

should appear. Wait 1 – 6 minutes for the restart to complete.

**Note:** You can watch the progress of the WebSphere initialization by monitoring the processor usage through the Windows NT task manager.

**Note:** The message in the megaphone area will not indicate that the server has restarted.

6. Perform the following steps to sign on to StorWatch Expert:
  - a. Click the **Sign On** link in the navigation menu. This may take a few minutes. The **Sign On** page opens. Enter the StorWatch Administrator user ID and password that were defined previously. Then select a language. Click the **Sign On** button.

- b. The **IBM StorWatch Expert** page displays with the navigation menu on the left side. Refer to the on-line help for information on defining nodes, node groups, data collection tasks, scheduling tasks, defining non-administrative user IDs, and other pertinent topics.

At this point, initial configuration is complete. Refer to “Chapter 8. Getting Started” on page 155 to set up your StorWatch Expert.

**Note:** You can find instructions on how to change the default user names/passwords which are used during the installation in “Appendix C. Changing the Passwords in Windows NT” on page 189. Remember, if you change the password for the DB2 user name, this value must be input to the StorWatch configuration web page.



---

## Chapter 3. Upgrading StorWatch Expert from R1 to R2 on Windows NT

This section provides instructions about how to *upgrade* your IBM StorWatch Enterprise Storage Server Expert R1 (StorWatch Expert R1) system software to the IBM StorWatch Expert R2 software level. This assumes you already have an operational StorWatch Expert R1 on your Windows NT system. During this software *upgrade*, you will migrate your StorWatch Expert R1 database to be supported by DB2 version 7.1.

If you do not need to maintain your database data across this software *upgrade*, it may be easier for you to uninstall your StorWatch Expert R1 “Chapter 4. Uninstalling StorWatch Expert in Windows NT” on page 81 and then install StorWatch Expert R2 “Chapter 2. Installing StorWatch Expert R2 on Windows NT” on page 9.

This upgrade procedure installs both StorWatch Expert R2 including maintenance upgrades to the cluster of support software programs which were delivered on the StorWatch Expert R1 CD-ROM (IBM DB2 UDB, IBM HTTP Server, IBM WebSphere, IBM JDK, Viador Sage).

**Note:** Before beginning the *upgrade* installation, perform the following steps:

1. You can find useful information and product support at the following web sites:

For information about StorWatch Expert:

<http://www.storage.ibm.com/software/storwatch/ess/index.htm>

For service information:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain>

2. It is important that the StorWatch Expert and the I/O Subsystems, which it manages, such as Enterprise Storage Servers and 3494, be at compatible maintenance levels. Select **Fixes** to verify the compatibility of your system, see the StorWatch Maintenance Compatibility Matrix at the web site listed above.

---

### The IBM StorWatch Expert R2 Upgrade Installation

**Note:** You should have some knowledge of Windows NT administration. StorWatch Expert R2 upgrade can only be done after logging on with the **DB2 user name** from your StorWatch Expert R1 installation, for example **db2admin**.

Because you are upgrading your system and wish to maintain your database data from the StorWatch Expert R1, you will be installing the software upgrades in two stages and validating with the browser that your data continues to display. Stage I involves upgrading to DB2 version 7.1 using the DB2 installation program and migrating your database to be usable by DB2 version 7.1. Stage II involves upgrading the remaining *non-DB2* products installed with StorWatch Expert R1: IBM HTTP Server, IBM WebSphere, IBM JDK, Viador Sage, and StorWatch Expert R1.

### Command Conventions

The description of commands in this chapter have the convention of putting optional and substitution parameters between "<" (less than) and ">" (greater than) symbols. The explanation of the optional or substitution parameters follow a "Where" indicator. You should review the explanation before entering the command.

## Hardware, Software, and System Space Requirements

Verify that the system where the StorWatch Expert R2 is to be installed meets the hardware, software, and space requirements.

### Hardware Requirements

StorWatch Expert requires the following hardware:

- A personal computer, workstation, or server with Pentium II class or better processor
- A CD-ROM drive for installation
- VGA display or better

StorWatch Expert requires a minimum of 256 MB of random access memory (RAM).

### Software Requirements

The following table shows the system software requirements:

*Table 6. Previously Installed Programs Required by StorWatch Expert for Windows NT*

Program	Level	Note
Windows NT operating system	Version 4.0 with Service Pack 6	To be installed before installing StorWatch Expert
TCP/IP with Domain Name System (DNS) host name		To be installed before installing StorWatch Expert



## Web Browser Access to StorWatch Expert

StorWatch Expert includes a web-based user interface that is designed to operate with web browsers.

### Web Browsers Supported

Make sure you have at least one of the following web browsers and version levels:

- Netscape 4.7 for Windows NT 4.0 with Service Pack 6
- Microsoft Internet Explorer 5.0 for Windows NT 4.0 with Service Pack 6

## System Space Requirements

StorWatch Expert R1 disk space is organized into four major software clusters:

- DB2 executables, for example **C:\SqlLib**
- DB2 database, for example **C:\Db2**
- Web server cluster, (IBM HTTP Server, IBM WebSphere, and IBM JDK), for example **C:\Program Files\IBM HTTP Server**
- StorWatch Expert R1 including Viador Sage, for example **C:\StorWatch**

Table 7. Space Requirements for StorWatch Expert Components

Component	Space Required for Release 1 in MB	Space Required for Release 2 in MB	Net Additional Space in MB	StorWatch Expert R1 default install location
DB2 Executables	150	265	115	C:\SqlLib
DB2 database	installation dependent	installation dependent	3*	C:\Db2
Webserver cluster: IBM HTTP server, IBM WebSphere, IBM JDK	50	60	10	C:\Program Files\IBM HTTP Server
StorWatch Expert, Viador Sage	60	70	10	C:\StorWatch
Total	260 + database	395 + database	138	

\*Note: The DB2 migration utility will temporarily use +15 MB during execution and yield +3 MB increased database size after migration utility completion.

**Note:** You *will not* be able to relocate the DB2 executables and the database during Stage I. You *will*, however be able to relocate the web server cluster and the StorWatch Expert cluster during Stage II.

## User Names

Review the current StorWatch Expert R1 user names and passwords for the various software components.

*Table 8. User Names and Associated Products*

Product	Authentication	Other	StorWatch Expert R1 Default
DB2 UDB	Windows NT	Administrator Group, DB2 user name restrictions	db2admin/ db2admin**
IBM HTTP Server	Windows NT	logon as a service, administrator	you defined during R1 installation*
IBM WebSphere	Windows NT	logon as a service, administrator group	you defined during R1 installation*
WebSphere Administrator	WebSphere	WebSphere port 9527 – WAS administration web page	admin/ admin
StorWatch Configuration	IBM HTTP Server	htpasswd tool changes this	admin/ admin (Webserver acl)
StorWatch Basic Configuration	Windows NT	database userid password	db2admin/ db2admin**
StorWatch Expert Administrator	StorWatch Expert	defined from StorWatch Config	you defined during installation
<p>*Note: When you install StorWatch Expert R2, you will override these user names and passwords and will use the default db2admin/db2admin user name/password combination. It is not necessary to find these values for the upgrade.</p> <p>**Note: The password for the db2 user name must be the same as the StorWatch Basic Configuration.</p>			

## Insert the StorWatch Expert R2 CD-ROM

Insert the StorWatch Expert R2 CD-ROM.

Remember that you are doing the *upgrade* installation path and not the *new* installation path. Therefore, since the *new* StorWatch Expert R2 appears by default (if you have the autorun set on your system), you should exit the *new* StorWatch Expert R2 installation program at the first opportunity to do so.

The StorWatch Expert R2 setup program can appear within 15 – 30 seconds if you have autorun set on your system. The setup program checks for evidence of the installation of parts of the StorWatch Expert R1. If it finds such evidence, it will issue **Severe Error** messages because it will find the **db2.mif**

file and the other software installed by StorWatch Expert R1. You should choose the option to press **OK** to exit the setup program.

Check for a **readme.txt** file located in the **root** folder on the StorWatch Expert R2 CD-ROM. This **readme.txt** can provide additional information which supersedes information in this guide.

---

## Stage I: Upgrading DB2 version 5.2 to version 7.1 and migrating your database

### Collect Information From StorWatch Expert R1

1. Write down your StorWatch Expert R1 database userid and database alias

You will be required to enter your StorWatch Expert R1 database userid and database alias during this DB2 upgrade stage.

**Note:** Your database userid is also a Windows NT user name.

If you are unsure about these items you can review them again by going to the StorWatchConfig web site which is where you configure StorWatch (the URL is case sensitive):

`http://<tcp-host-name>:<port-number>/StorWatchConfig/start.html`

Where:

<tcpip-host-name> is the TCP/IP host name that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name bring up a Command Prompt and type **hostname** and press **Enter**.

<port-number> is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify the URL.

The StorWatch browser web pages are divided into three frames. The left-hand vertical frame is known as the "Navigation Frame" and provides browser links to navigate through the StorWatch Expert. Use the Navigation Frame to bring up a report and print it using your browser print facility, for example to access the Manage Assets-> View Recent Data Report:

When you access the StorWatch configuration web page, your browser will prompt you for a user name and password known to the webserver access control list (acl) protection facility. Unless you changed it, the default user name and password for the StorWatch Expert R1 webserver acl for the StorWatch configuration web page was **admin/admin**. If the default acl user name and password do not work, you can log onto Windows NT with Administration authority and use the information in "Changing IBM HTTP Server Protection for the StorWatchConfig Servlet" on page 193 to rediscover and/or reset these values.

Once you have the StorWatch Configuration web page accessible, you can choose **Basic Configuration** in the **Navigation** frame. There you will see the DB2 user name and the database alias.

## 2. Sign onto StorWatch Expert R1

Use your StorWatch Expert R1 Administrator userid and password to access StorWatch Expert R1. Point your browser at your StorWatch Expert R1 webserver and sign on.

`http://<tcp-host-name>:<port-number>`

Where:

<tcpip-host-name> is the TCP/IP host name that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name bring up a Command Prompt and type **hostname** and press **Enter**.

<port-number> is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify the URL.

- Print a StorWatch Expert R1 report to use to validate the upgrade to StorWatch Expert R2:

```
Navigation Frame→  
  Manage Assets →  
    View Recent Data
```

- Sign off StorWatch Expert R1 and close the browser access to StorWatch Expert R1.

## Prepare Your Database for DB2 Upgrade

### 1. Make sure the db2admin user name has a password of db2admin

If you already have a **db2admin** user name on your Windows NT system, make sure it has a password of **db2admin** for the duration of the upgrade stages.

The DB2 version 7.1 installation program will use the Windows NT user name of **db2admin**, it must have the password of **db2admin** during the DB2 version 7.1 upgrade. "Appendix C. Changing the Passwords in Windows NT" on page 189 tells you how to change the Windows NT password. After the upgrade, you can reset this and other passwords by using the instructions in "Appendix C. Changing the Passwords in Windows NT" on page 189.

### 2. Log onto Windows NT with the DB2 user name from the StorWatch Expert R1 installation

Log onto Windows NT with the DB2 user name from StorWatch Expert R1 which has the required authority to perform the upgrade procedure of StorWatch Expert R2, for example **db2admin**.

3. **Use DB2 utilities to prepare database before DB2 upgrade:**

- a. If you have not done so, insert the StorWatch Expert R2 CD-ROM, open a Command Prompt and change the directory into the **db2udb** folder, for example **cd E:\db2udb**

**Note:** Remember that you are doing the *upgrade* installation path and not the *new* installation path. Therefore, since the new StorWatch Expert R2 appears by default (if you have the autorun set on your system), you should exit the *new* StorWatch Expert R2 installation program at the first opportunity to do so.

In the **db2udb** folder on the CD-ROM where you will find some **.bat** batch files to help you with the following steps.

- b. Prepare Backup Space

Decide where to put the backup file for your database. Create the target folder for the DB2 backup.

**Note:** DB2 has the following rules when naming a target folder:

The folder name can include (these are not case sensitive):

- A through Z
- 0 through 9
- @, #, \$, and \_ (underscore)

The folder name must begin with:

- A through Z
- @, #, and \$

The folder name cannot contain a blank character.

To get an idea of the size requirement, open the **Windows NT Explorer**, then find and highlight the following folder:

```
<db2udb-database-drive>:\Db2\Node0000
```

Where:

<db2udb-database-drive> is the drive where the DB2 version 5.2 database is located, for example **C**.

If you right click the **Node0000** folder and choose **Properties**, you can see the current size. The backup copy of the database can take from 75 – 110% of that space. Create the target folder for the backup, for example **D:\Dbbackup**.

**Note:** If you have multiple disks available, it is recommended that you put the backup database folder on a different drive than the DB2 executables. The DB2 executables are in a folder called **Sqllib**, for example **C:\Sqllib**.

- c. Stop the StorWatch Expert R1 programs (WebSphere Servlet Services, Viador Information Center, IBM HTTP Server, and Netfinity Support Program – if present).
  - 1) Sign off StorWatch Expert R1 if you are using it; close the browser access to StorWatch Expert R1.
  - 2) Stop all services related to StorWatch Expert R1 except DB2 in the following order:
    - a) WebSphere Servlet Services
    - b) Viador Information Center
    - c) IBM HTTP Server
    - d) Netfinity Support Program – if present

Start->  
Settings ->  
Control Panel ->  
Services

**Note:** Do not stop any of the DB2 services and leave the **Services** window open.

- d. Check your database
  - 1) Go back to the Command Prompt, you should be in the **db2udb** folder on the CD-ROM. Issue the command:

ckdb
  - 2) You should see a list of databases. For each of your StorWatch databases (if you have more than one for analysis or test purposes), you should perform the following steps to check whether your database can be migrated, and backup your database. After DB2 version 7.1 is installed, you should run the step to migrate each of your databases.

```
Command Prompt
E:\db2udb> ckdb

System Database Directory

Number of entries in the directory = 1

Database 1 entry:

Database alias           = SWDATA
Database name           = SWDATA
Database drive          = C:\DB2
Database release level  = 8.00
Comment                 =
Directory entry type    = Indirect
Catalog node number     = 0
```

SWE00064

Figure 16. Check Database

- e. Check migration: check whether your database can be migrated by DB2 version 7.1
  - 1) You should be in the **db2udb** folder on the CD-ROM. Issue the command:

```
ckmig <SWDATA>
```

Where:

<SWDATA> is your StorWatch Expert database name.

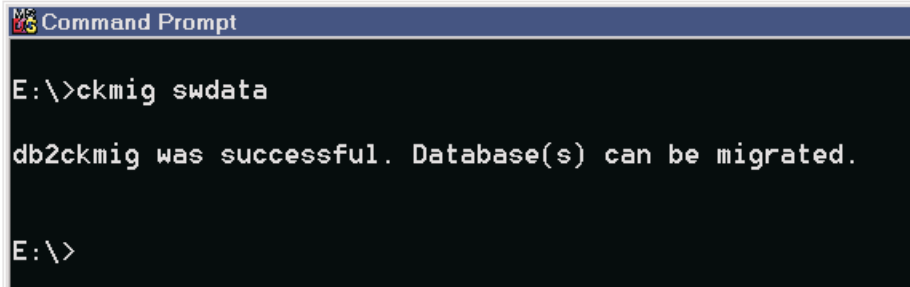
The <SWDATA> operand is optional. If you do not specify it, the default value is **swdata**.

- 2) You should see the following message:

```
db2ckmig was successful. Database(s) can be migrated.
```

If you do not see this message, check “Appendix B. Troubleshooting Problems” on page 179





```
MS-DOS Command Prompt
E:\>ckmig swdata
db2ckmig was successful. Database(s) can be migrated.
E:\>
```

SWE00061

Figure 17. Check Migration Run

f. Backup your database

- 1) In the Command Prompt issue the command:

```
bkup <driveletter:\BACKUP-directory> <SWDATA>
```

Where:

<driveletter:\BACKUP-directory> is the folder you prepared for the database backup.

<SWDATA> is your StorWatch Expert database name.

The <BACKUP-directory> operand is optional. If you do not specify it, the default value is: **D:\**

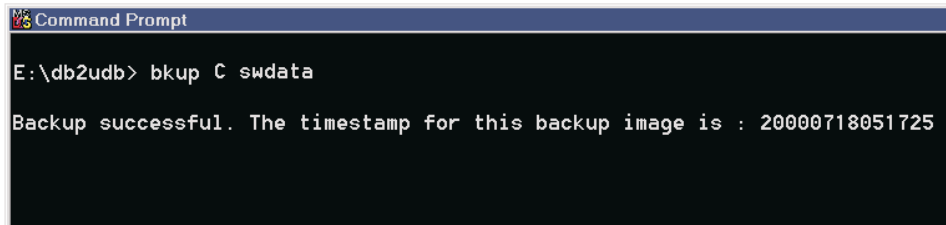
The <SWDATA> operand is optional. If you do not specify it, the default value is **swdata**.

- 2) You should see the following message:

```
Backup successful. The timestamp for this backup image is: <20000411220213>
```

**Note:** The number value in the message varies.

If you do not see this message, check “Appendix B. Troubleshooting Problems” on page 179 of this document.



```
MS-DOS Command Prompt
E:\db2udb> bkup C swdata
Backup successful. The timestamp for this backup image is : 20000718051725
```

SWE00066

Figure 18. Backup Database

## Upgrade to IBM DB2 UDB Version 7.1 from the StorWatch Expert R2 CD-ROM

At this time you should have logged onto Windows NT with your DB2 user name, for example **db2admin**. The CD-ROM should be mounted and a Command Prompt is open.

The DB2 version 7.1 upgrade installs on top of the DB2 version 5.2 software. You should *not* uninstall DB2 version 5.2 before you install DB2 version 7.1. The data in the database created under DB2 version 5.2 will become usable by DB2 version 7.1 after you install the new DB2 executables and run the DB2 version 7.1 migration tool.

### 1. Stop all DB2 services.

- Check the DB2 services from the **Services** window and stop any of the following which are in started status in the following order:
  - a. DB2 Security Server
  - b. DB2 JDBC Applet Server
  - c. DB2 Governor
  - d. DB2-DB2DAS00
  - e. DB2-DB2
- You can also stop the DB2 HTML Search Server:

```
Start->
  Programs ->
    DB2 for Windows NT ->
      Stop HTML Search Server
```

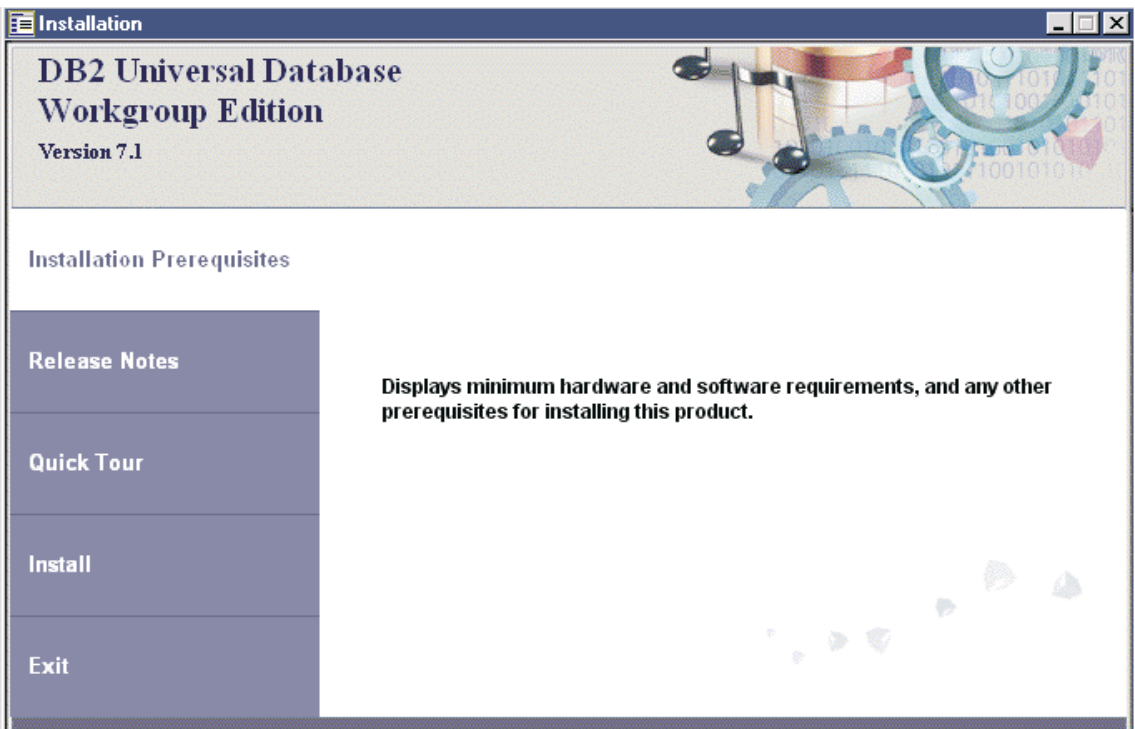
- ### 2. Run the DB2 version 7.1 setup installation program from the DB2 UDB folder.
- Close all windows except for the Command Prompt and return to the Command Prompt and change the directory to the **db2udb** folder on the CD-ROM root, for example **E:\db2udb**, and enter:

setup

or use the Window NT Explorer to double click the **setup.exe** in the CD-ROM **db2udb** folder.

The DB2 version 7.1 installation wizard will lead you through the upgrade installation of DB2 version 7.1. The following steps show the DB2 installation panels and discuss your appropriate responses.

- a. The DB2 version 7.1 installation program will present an Installation panel. Click the **Install** button.

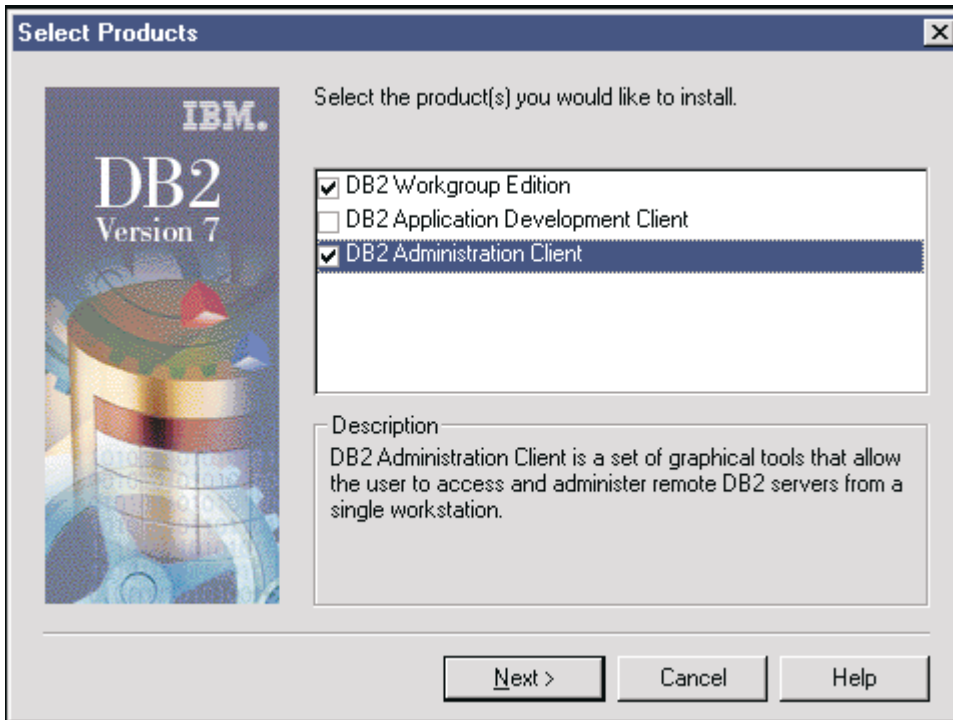


SWE00049

Figure 19. Installation Panel

- b. A panel indicating DB2 version 7.1 has detected an earlier version of IBM DB2 will appear and include a warning to run the migration check tool. You have already done this, so click **Yes** to continue with the installation of DB2 version 7.1.

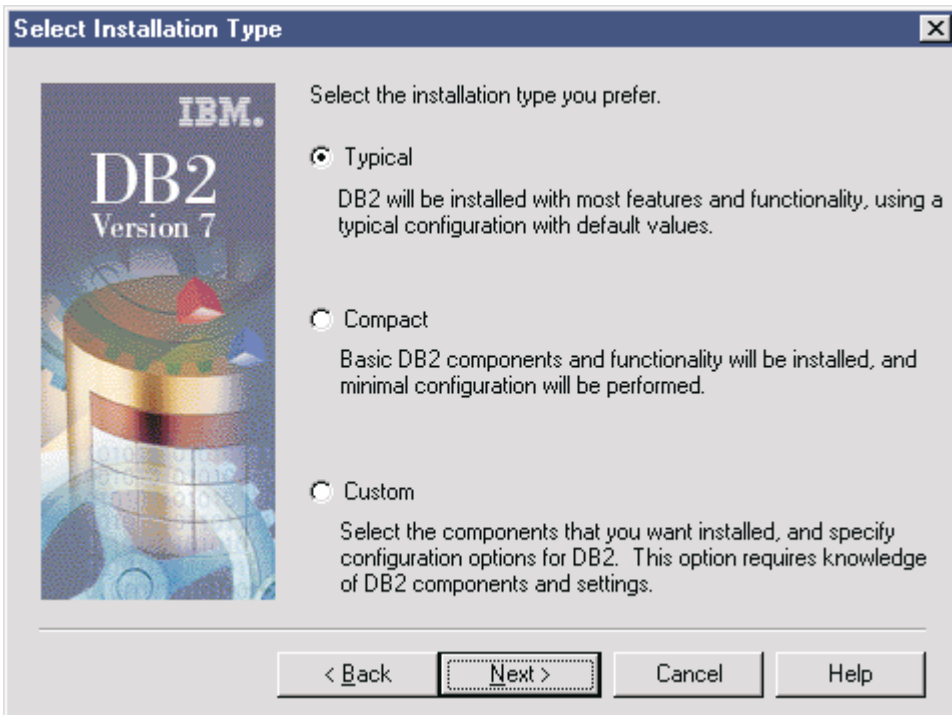
- c. Choose **DB2 Workgroup Edition** (the first one) and **DB2 Administration Client** (the third one) on the **Select Products** panel, then click the **Next** button.



SWE00050

Figure 20. Select Products Window

- d. Choose **Typical** on the **Select Installation Type** panel. Click the **Next** button to continue.



SWE00051

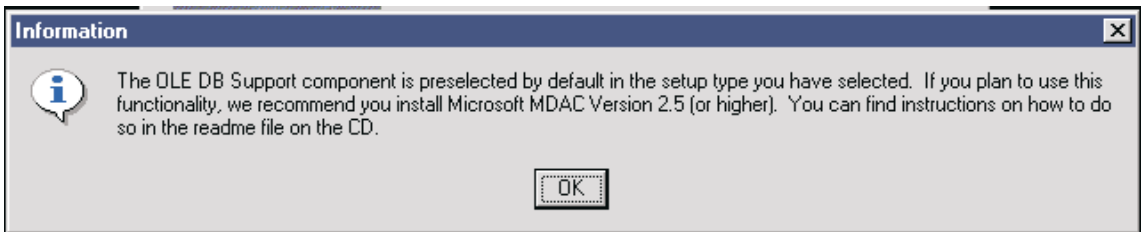
Figure 21. Installation Type Window

- e. If you see an informational warning about the OLAP type function which requires you be at Windows NT service pack 5 or greater, click the **OK** button .

**Note:** StorWatch Expert has a prerequisite of service pack 6. If you see this message, you will need to install a more recent Windows NT service pack.

- f. Click **OK** to continue when you see an information message indicating the setup type has preselected the OLE DB support by default.

**Attention:** The informational message warns that if you plan on using the OLE DB functionality, you should install MDAC Version 2.5 (or higher), and that you can find instructions in a README file on the CD-ROM. Since you will not be using this functionality for StorWatch Expert, the README with the instructions is *not* on the CD-ROM.



SWE00074

Figure 22. OLE DB support informational message

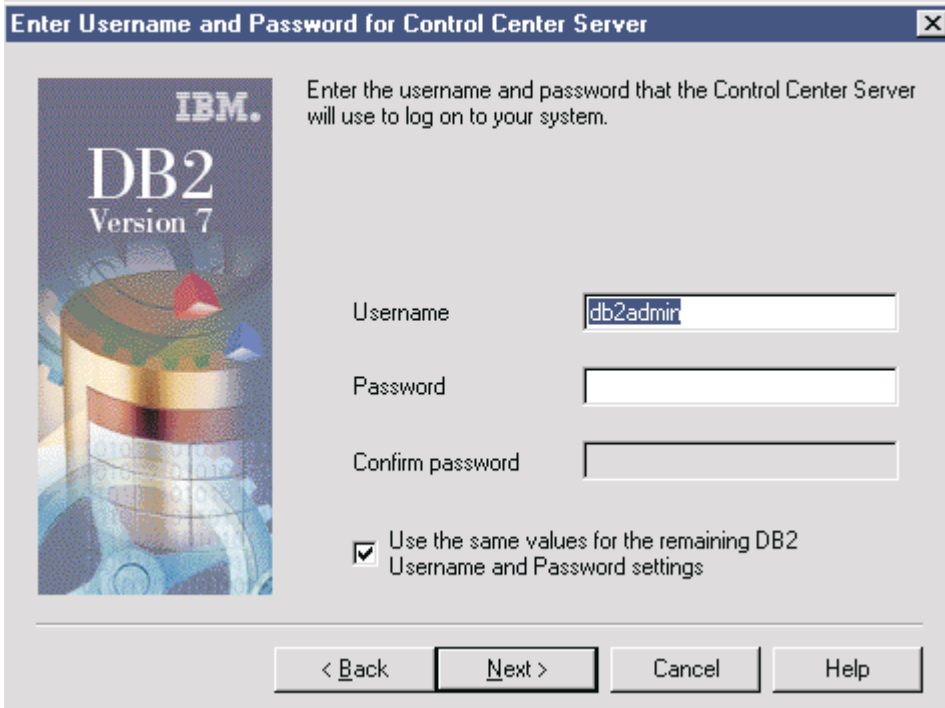
- g. Click **Next** to continue when you see the DB2 installation panel **Choose Destination Location**. The panel shows you the location where it will install the DB2 version 7.1 upgrade on top of the original DB2 version 5.2 installation, for example `C:\sqllib`. DB2 has grayed out the "Browse" button intentionally because you cannot change the destination location of the DB2 executables when you upgrade.



SWE00060

Figure 23. Choose Destination Location Window

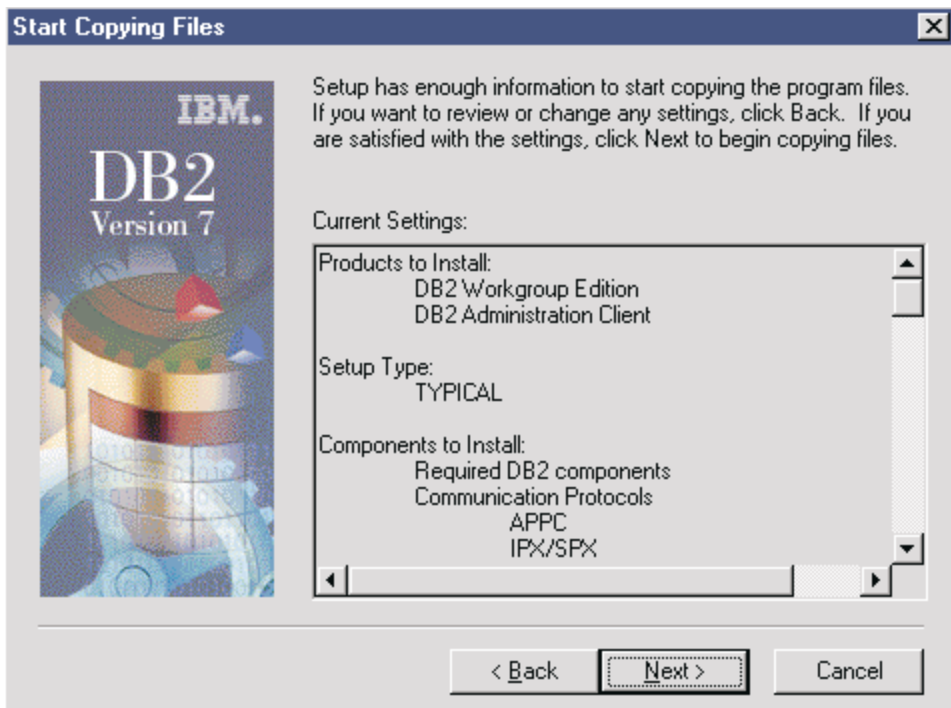
- h. Enter the DB2 user name and password which you reviewed during the preparation to install DB2 version 7.1, for example **db2admin** in the **Enter Username and Password for Control Center Server** panel. Be sure to check the box that says "Use the same values for the remaining DB2 Username and Password settings". Click the **Next** button.



SWE00043

Figure 24. Enter Username and Password for Control Center Server Window

- i. Click the **Next** button to start copying the files. From this point on, the DB2 installation program is in control.

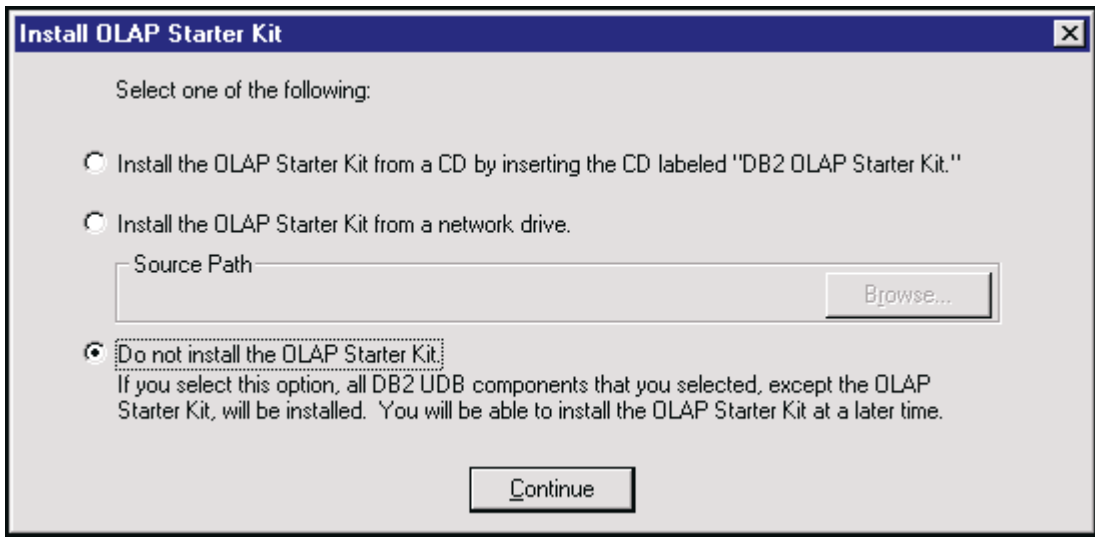


SWE00044

Figure 25. Start Copying Files Window

- Note:** You will see an indicator showing the progress while the files are copying. You will also see informational panels indicating that the DB2 Setup is configuring your system and creating a new database DWCTRLDB. This database is for DB2 purposes, it is *not* a substitute for your StorWatch Expert database.
- j. You will see a panel to **Install OLAP Starter Kit**. StorWatch Expert will not need this support. Select the **Do not install the OLAP Starter Kit** button. Click the **Continue** button.

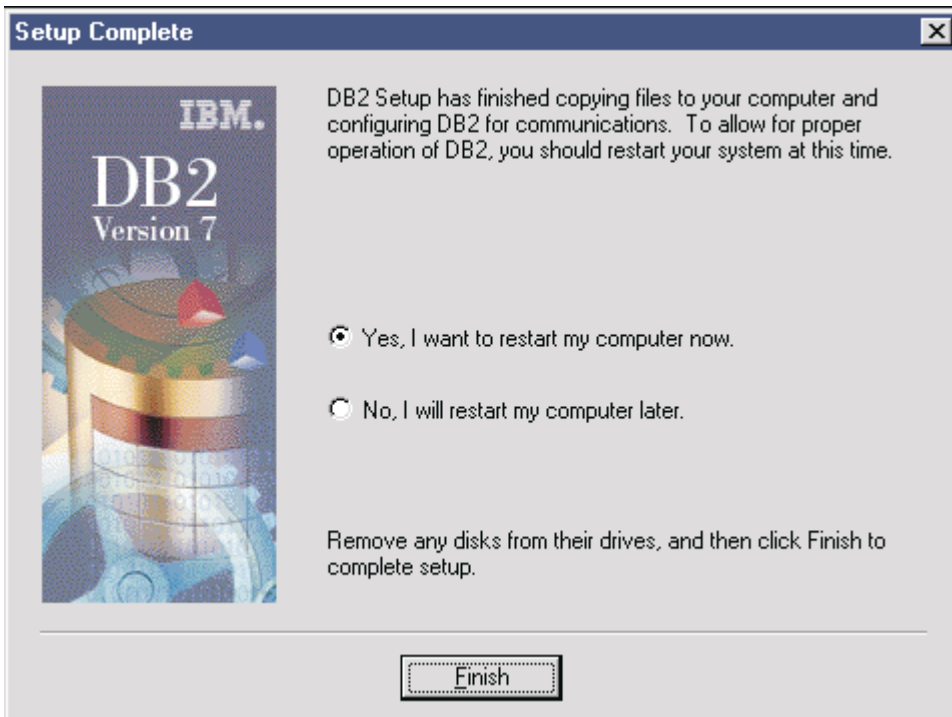




SWE00070

Figure 26. Install the OLAP Starter Kit Window

- k. When you see the **Finish** button, the DB2 version 7.1 installation is complete. It is time to shut down and restart Windows NT to activate the new DB2 version 7.1 services. Click the **Finish** button.

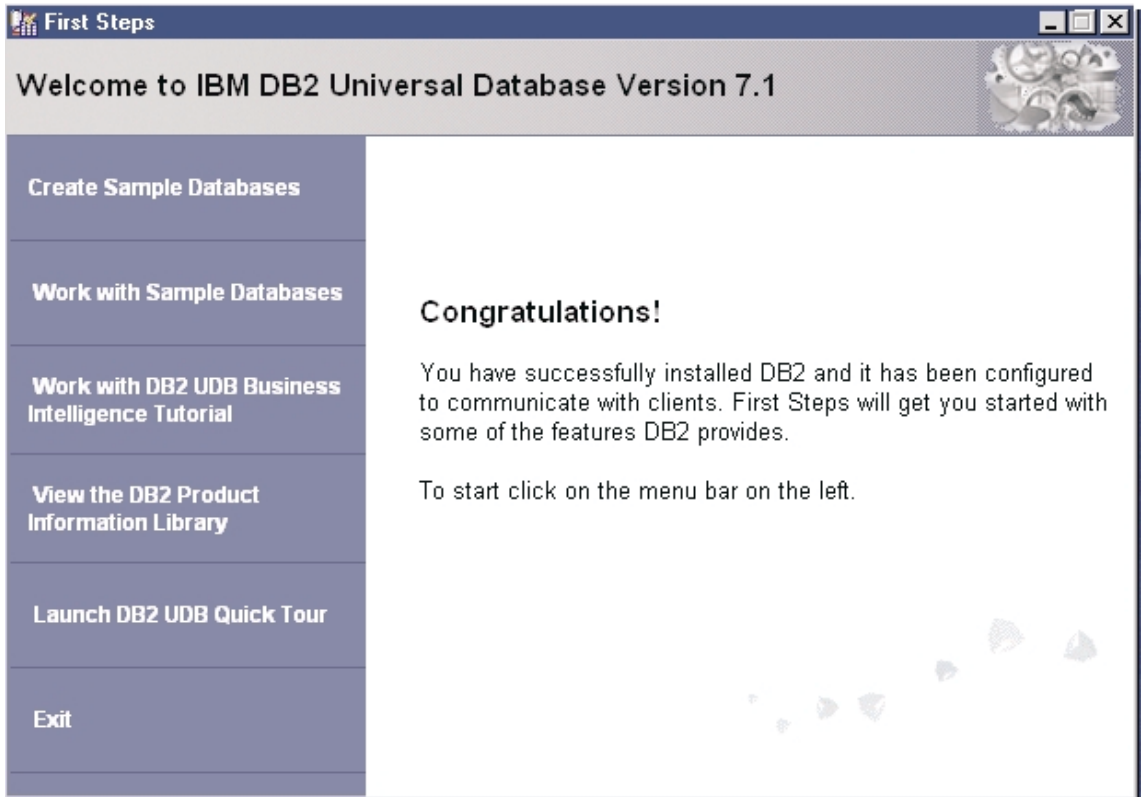


SWE00046

Figure 27. Setup Complete Window

## Migrate Your Database

1. Logon as the DB2 user name, for example **db2admin**.
2. Close the DB2 version 7.1 Welcome window by clicking the **Exit** button.



SWE00047

Figure 28. DB2 Welcome Window

3. Submit the **IBM Product Registration** if you wish to do so. Submission of this form is optional.
4. Stop the StorWatch Expert R1 support services. From the **Services** window, stop WebSphere Servlet Service, Viador Information Center, and IBM HTTP Server.  
 Start→  
     Settings →  
         Control Panel →  
         Services
5. Run the DB2 version 7.1 migration utility
  - a. If you have not yet inserted the StorWatch Expert R2 CD-ROM, it is time to do so. Open a Command Prompt and change the directory to the **db2udb** folder on the CD-ROM, for example **cd E:\db2udb**.
6. Issue the command:

```
mig <SWDATA>
```

Where:

<SWDATA> is your StorWatch Expert database name.

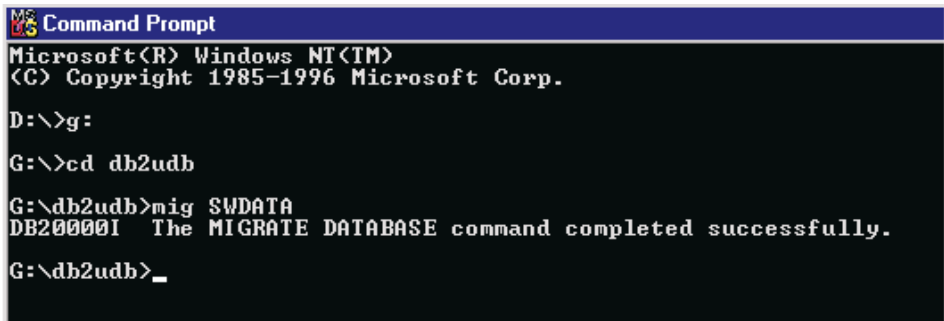
The <SWDATA> operand is optional. If you do not specify it, the default value is **swdata**.

7. You should see the following message:

```
DB20000I the MIGRATE DATABASE command completed successfully.
```

**Note:** You should not migrate the DWCTRLDB database created by DB2 version 7.1 during the upgrade installation.

If you do not see this message, check “Appendix B. Troubleshooting Problems” on page 179



```
Microsoft Windows [Version 5.00.4779.0131] Copyright (c) 2009 Microsoft Corporation
C:\> cd db2udb
G:\db2udb> mig SWDATA
DB20000I The MIGRATE DATABASE command completed successfully.
G:\db2udb>
```

SWE00071

Figure 29. Migrate Database

## Validate Your StorWatch Expert Database Runs Successfully Under DB2 Version 7.1

1. Restart StorWatch Expert R1 services.

Using the **Services** window, start IBM HTTP Server which automatically starts the WebSphere Servlet Service.

```
Start->
  Settings ->
    Control Panel ->
      Services
```

Also start Viador Information Center under **Services**.

2. Sign onto StorWatch Expert R1.

Point your browser at your StorWatch Expert R1 web page and sign on:

`http://<tcpip-host-name>:<port number>`

Where:

<tcpip-host-name> is the TCP/IP hostname that is specified for the IBM HTTP Server. If you do not know your TCP/IP hostname, bring up a Command Prompt, type **hostname** and press **Enter**.

<port number> is the port number specified for the IBM HTTP Server during installation. If you are using the default port 80 for your webserver, you do not have to specify it in the URL.

3. Check your sample report to validate the database.

When WebSphere is finished loading and you can sign onto StorWatch Expert R1, check that you can still see the sample report you printed before the migration of the DB2 software to version 7.1. for example:

```
Navigation Frame->
  Manage Assets ->
    View Recent Data ->
```

4. Having validated you database migration under DB2 version 7.1, it is now safe to delete your database backup if you wish.

---

## Stage II: Upgrading the remaining StorWatch Expert R1 products to StorWatch Expert R2

### Uninstall Non-DB2 StorWatch Expert R1 Products

#### 1. Stop all services related to StorWatch Expert R1

- a. Sign off the StorWatch Expert R1 if you are using it, close the browser access to that page.
- b. Using the **Services** window, stop all services related to StorWatch Expert R1 in the following order:
  - 1) WebSphere Servlet Service
  - 2) IBM HTTP Server
  - 3) Viador Information Center
  - 4) Netfinity Support Program (if present)
  - 5) DB2 Security Server
  - 6) DB2 License Server
  - 7) DB2 JDBC Applet Server-Control Center
  - 8) DB2 JDBC Applet Server
  - 9) DB2-DB2DAS00
  - 10) DB2-DB2

Start->  
  Settings ->  
    Control Panel ->  
      Services

- c. Also stop the DB2 HTML Search Server:

Start->  
  Programs ->  
    IBM DB2->  
      Information ->  
      Stop HTML Search Server

#### 2. Use Windows NT to remove selected programs

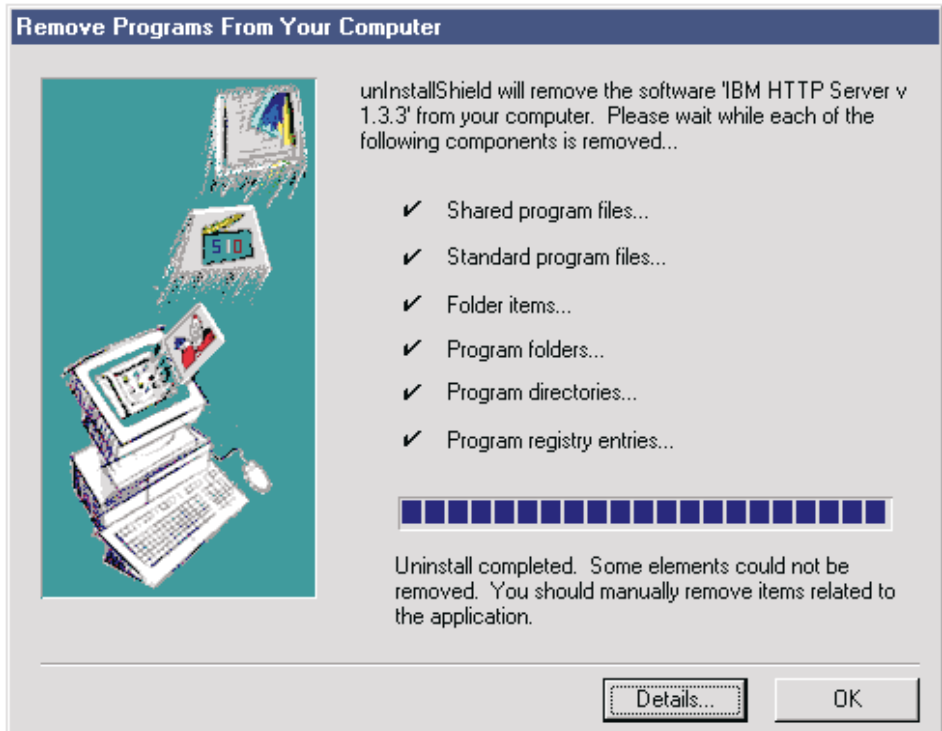
Remove the following programs in the order listed from your Windows NT system:

- a. WebSphere Application Server
- b. IBM HTTP Server
- c. Viador SpaceSQL (Viador Sage)
- d. StorWatch ESS Expert 1.1.0

**Note:** Be sure to **not** to remove DB2 services since you already finished the upgrade to DB2 version 7.1

Start→  
Settings →  
Control Panel →  
Add/Remove Programs

Highlight the program you wish to remove and click the **Add/Remove** button. Although you may be reminded to reboot your computer, wait until after you have removed all four programs. If you are prompted to back up files it is not necessary to do so.



SWE00056

Figure 30. Remove Program

### 3. Close all windows and reboot the computer

Log onto Windows NT with the DB2 user name from StorWatch Expert R1 that has the required authority to perform the upgrade procedure of StorWatch Expert R2, for example **db2admin**.

### 4. Remove the IBM HTTP Server folder

Using the Windows NT Explorer or the Command Prompt, remove the **IBM HTTP Server** folder and all contents, for example **C:\Program Files\IBM HTTP Server**.

## 5. Remove the StorWatch folder

Using the Windows NT Explorer or the Command Prompt, remove the **StorWatch** folder and all contents, for example **C:\StorWatch**.

## 6. Other Windows NT profile considerations:

- Go to the following in Windows NT Explorer

```
<winnt-path>\profiles\<username>\startmenu
```

Where:

<winnt-path> is the Windows NT system executables path and <username> is user name under which StorWatch Expert R1 was installed. For example this path could be **c:\WINNT\profiles\db2admin\startmenu**.

- Under **Programs** folder, delete Viador SpaceSQL folder.

## Install StorWatch Expert R2 Upgrade Programs from the CD-ROM

If you have not yet inserted the StorWatch Expert R2 CD-ROM, it is time to do so.

Open a Command Prompt and change the directory into the **upgrade** folder, for example **E:\upgrade**.

**Note:** Remember that you are doing the *upgrade* installation path and not the *new* installation path. Therefore, since the new StorWatch Expert R2 appears by default (if you have the autorun set on your system), you should exit the *new* StorWatch Expert R2 installation program at the first opportunity to do so.

Run the **upgrade.exe** program from the CD-ROM **upgrade** folder:

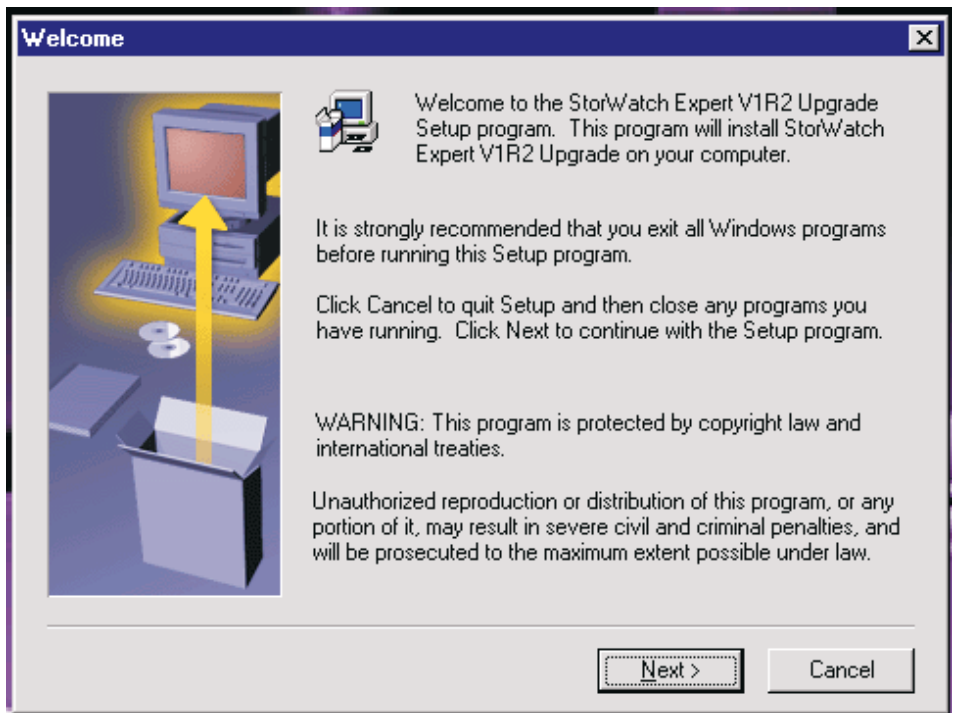
```
upgrade
```

or use the Windows NT Explorer to double click the **upgrade.exe** in the CD-ROM, **upgrade** folder.

The StorWatch Expert R2 **upgrade** installation program wizard will lead you through the upgrade installation of the remaining StorWatch Expert R2 support software.

1. The StorWatch Expert **Welcome** window displays (see Figure 31 on page 63). Click **Next** to continue.



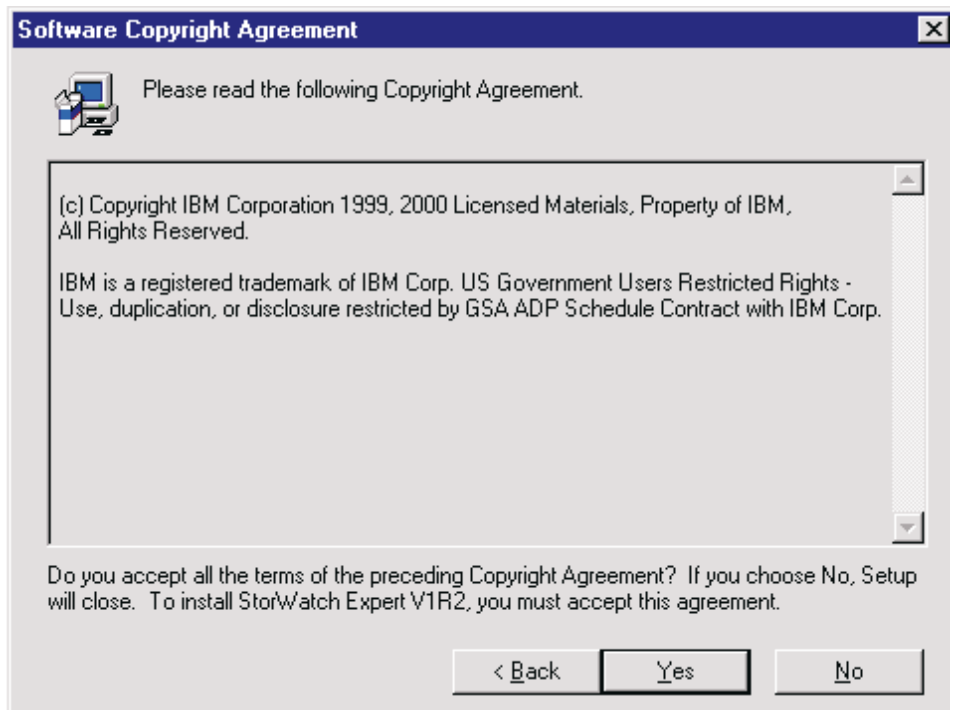


SWE00069

Figure 31. Welcome Window

**Note:** If the **Welcome** window does not appear and instead an error message window appears saying that the pre-installation evaluation failed, click **OK** to exit the StorWatch Expert upgrade program. Correct the indicated problem or problems and restart the upgrade program.

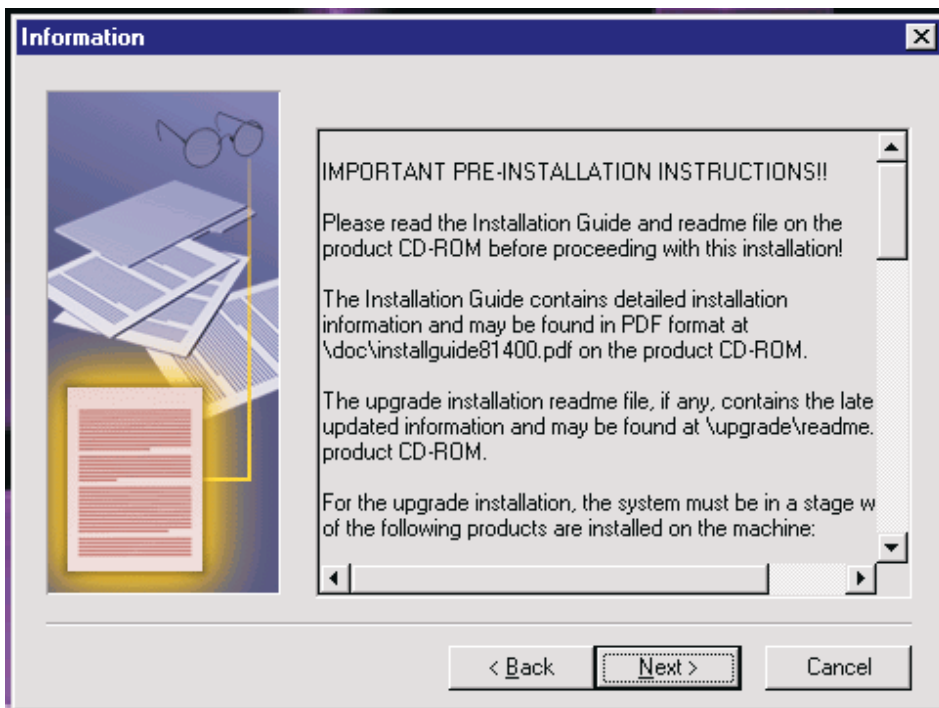
2. The **Software Copyright Agreement** window opens (see Figure 32 on page 64). If you accept the terms of the agreement, click **Yes** to continue. If you click **No**, the installation program will end without installing StorWatch Expert.



SWE00006

Figure 32. Software Copyright Agreement Window

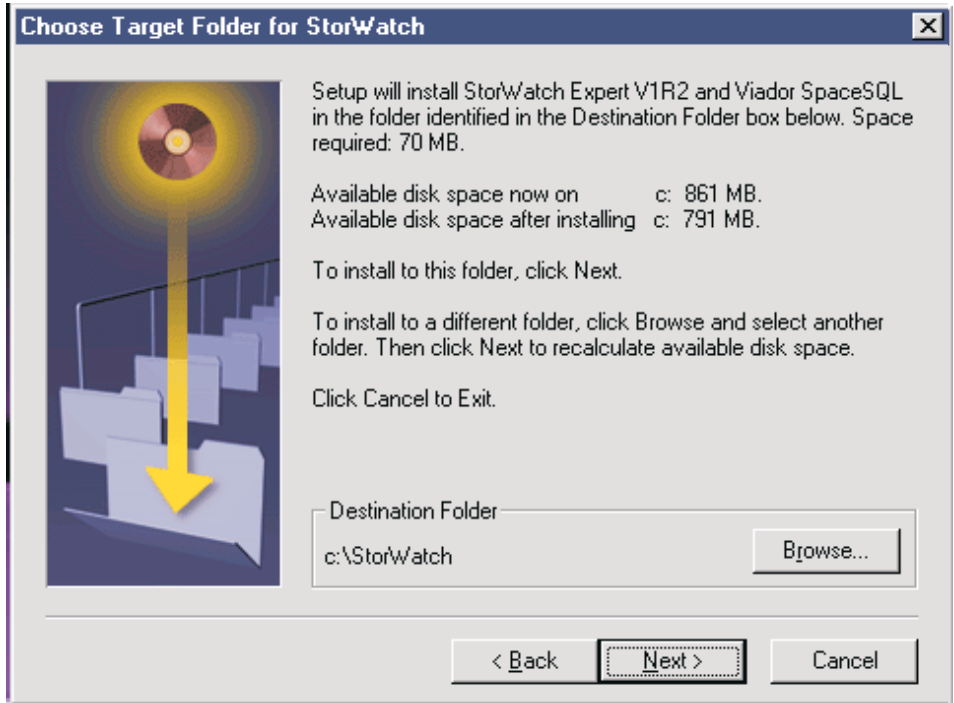
3. The **Information** window appears (see Figure 33). Read this information, then click **Next** to continue.



SWE00082

Figure 33. Information Window

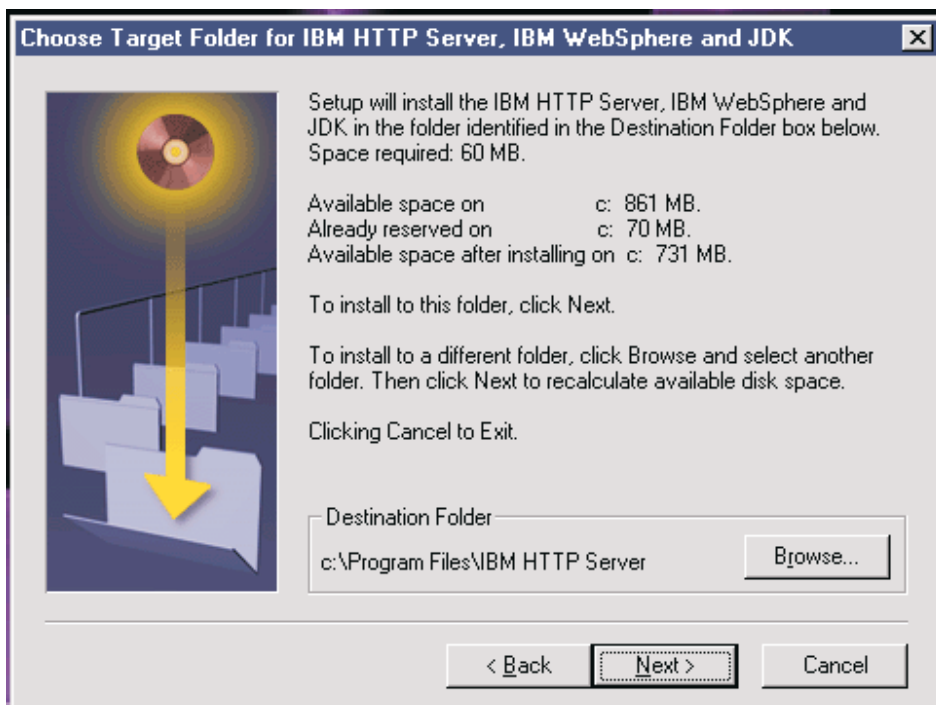
4. The **Choose Target Folder for StorWatch** window opens (see Figure 34 ). You can select **Browse** to select another destination for StorWatch Expert code or use the default location. Click **Next** to continue. You can exit the setup program by clicking **Cancel**.



SWE0001

Figure 34. Choose Target Folder for StorWatch Window

5. The **Choose Target Folder for IBM HTTP Server, IBM WebSphere and JDK** window opens (see Figure 35). You can select **Browse** to select another destination for the IBM HTTP Server or use the default location. Click **Next** to continue. You can exit the setup program by clicking **Cancel**.



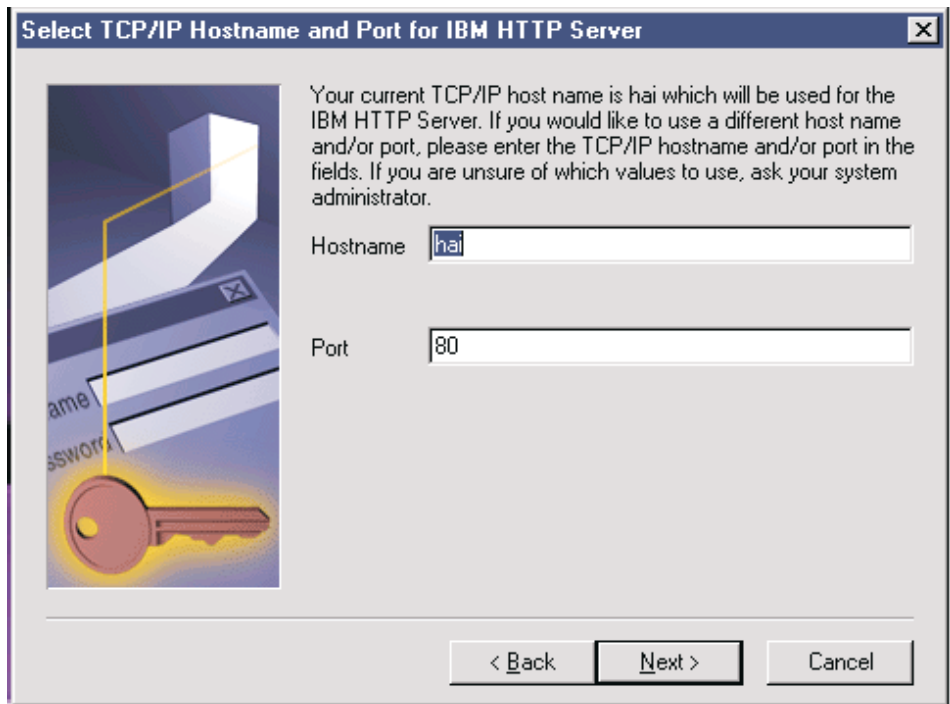
SWE00002

Figure 35. Choose Target Folder for IBM HTTP Server, IBM WebSphere and JDK Window

6. The **Select TCP/IP Hostname and Port for the IBM HTTP Server** window displays (see Figure 36 on page 68). Your current primary TCP/IP hostname is displayed and Port 80 is provided as the default webserver port number. If you are an advanced installer and know you have other reasons to change the hostname (such as multiple NIC cards are installed) or you already have another application using Port 80, you can revise these values. Choose any port number between 1024 and 65535. Do **not** use the following port numbers:

- 6789 (reserved for use by Viador Sage)
- 8081 (reserved for use by the IBM WebSphere Application Server)
- 9527 (reserved for use by the WebSphere Administration utility)

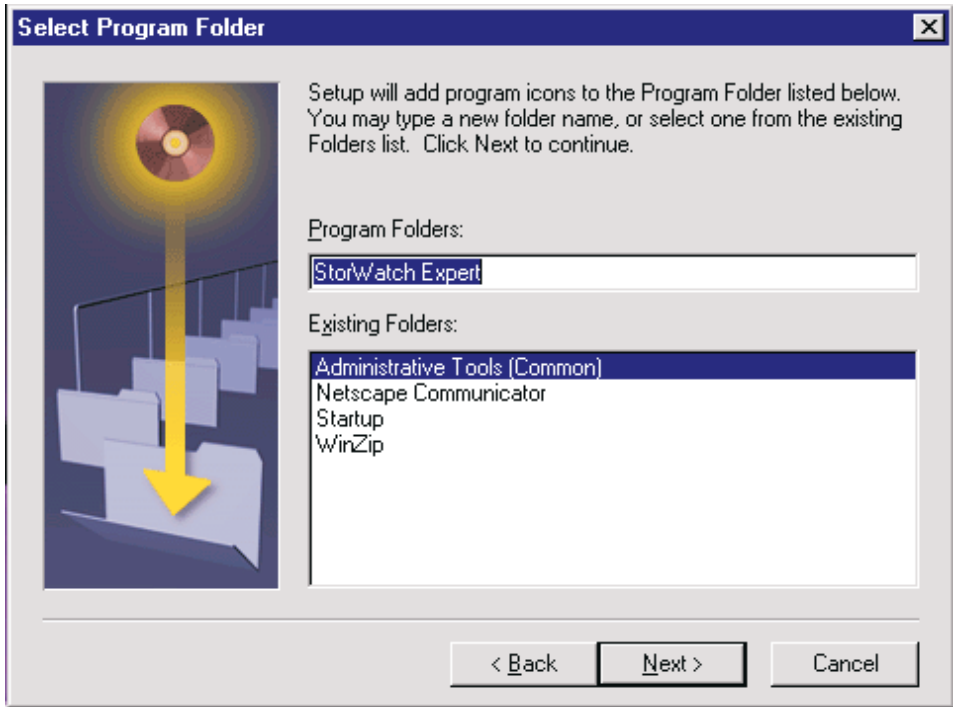
The default port is **80**. Click **Next** to continue.



SWE00009

Figure 36. Select TCP/IP Hostname and Port for IBM HTTP Server Window

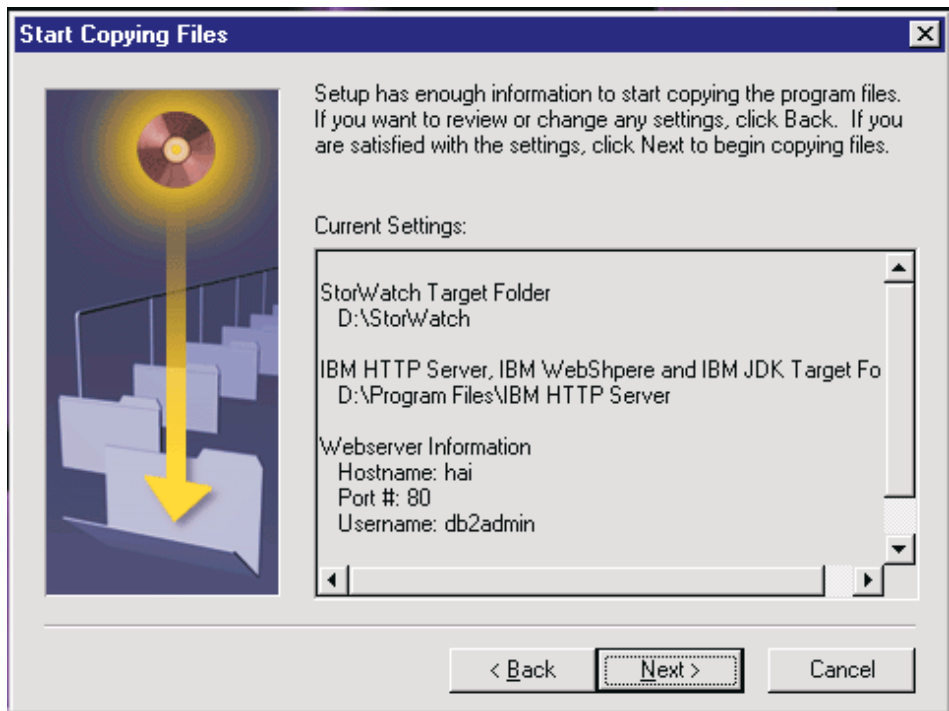
7. The **Select Program Folder** window displays (see Figure 37). You can enter a new folder name or use the default name. Click **Next** to continue.



SWE00017

Figure 37. Select Program Folder Window

8. The **Start Copying Files** window displays (see Figure 38). This window allows you to check the current settings and to change them if you desire. If you want to change the settings, click **Back**, perform the desired alterations and then continue on with the installation process. Click **Next** to begin copying the files. The StorWatch Expert software and prerequisite products are installed. This process takes an average of 10 – 16 minutes depending on your processor.



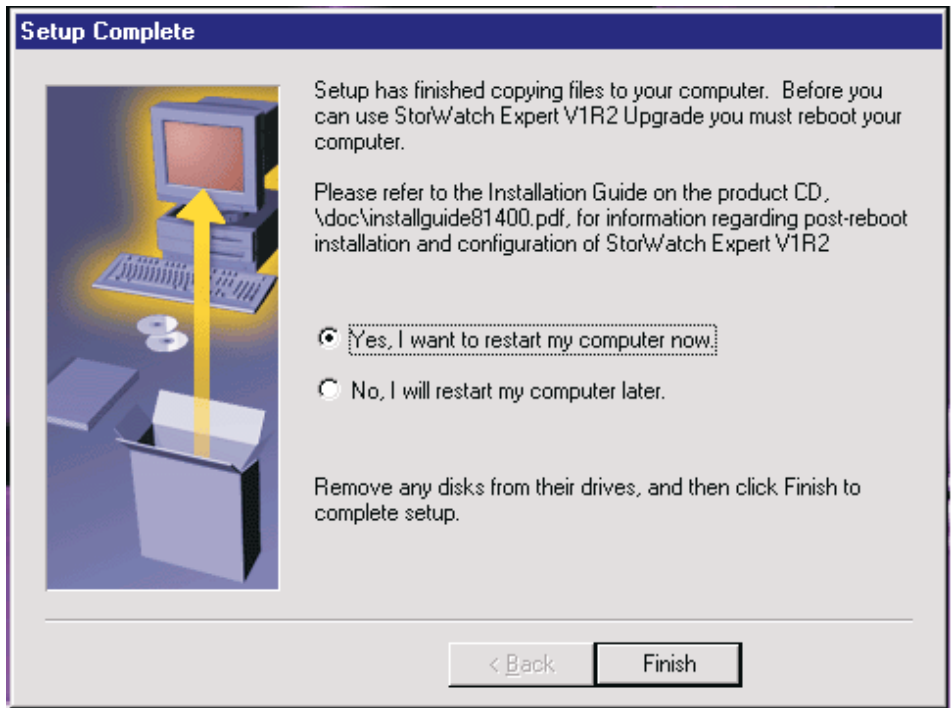
SWE00072

Figure 38. Start Copying Files Window

9. The **Copy Status** window opens while StorWatch Expert and its prerequisite products are being installed. This window indicates the status of the copy operation. You can cancel the copy operation at any time by clicking on **Cancel**. The typical installation time for StorWatch Expert and its prerequisite products is 6 – 7 minutes depending on your system.



10. The **Setup Complete** window displays (see Figure 39). If you want to reboot your system at this time, select **Yes**. If you do not want to reboot your system at this time, select **No**. You will not be able to finish the installation or configure StorWatch Expert until the system is rebooted. Click **Finish** to complete the CD-ROM setup procedures. Remember, when you reboot your system, you should log on as **db2admin** with password **db2admin** to complete the installation.



SWE00068

Figure 39. Setup Complete Window

## Reboot to Activate New Services and Validate the Upgraded Products

At this point, you have completed installing from the CD-ROM, have rebooted and logged on with user name **db2admin** and password **db2admin**. If you have not logged on as **db2admin**, press **Ctrl+Alt+Delete**, and choose **logoff** and log on as **db2admin**.

Review the primary installation log **swsetup.log** which is in the destination path where the StorWatch Expert code is installed, for example **C:/StorWatch/swsetup.log**. The next to last line in the StorWatch log **swsetup.log**, should give the installation summary statement **Installation successful!** If it has the summary statement **Installation failed**, a problem was detected.

If you find a problem indicated, you can then consult the specific product log for an error indication and possible remedy. The individual product log files are created by the InstallShield software (the environment used to create the setup programs).

**Note:** If you are using Windows NT Explorer to view your files, you may have the view option to hide well-known file extensions selected. If you wish to reverse this option, select:

View->  
Options

and deselect "Hide file extensions for known file types".

Table 9 shows where the individual installation log files are stored during the installation.

*Table 9. Log Files*

Product	File Name	Default Location
Complete Installation Summary	swsetup.log	<storwatch-dest-path>
IBM HTTP Server	setup.log	<httpserver-dest-path>\websphere
IBM WebSphere	setup.log	<httpserver-dest-path>\websphere
IBM WebSphere	wssetup.log	<httpserver-dest-path>\websphere
Viador Sage	setup.log	<storwatch-dest-path>\infospc

Where:

<httpserver-dest-path> is the destination path where the IBM HTTP Server was installed.

<storwatch-dest-path> is the destination path where the StorWatch Expert was installed

1. **Validating the upgrade of IBM JDK** — The installation of the IBM JDK from the CD-ROM and subsequent reboot of your system will make the JDK accessible through your **path** environment setting. Pull up a Command Prompt in any directory location and type:

**java -fullversion** and press **Enter**.

You should see the response:

```
D:\SQLLIB>java -fullversion
java full version "JDK 1.1.8 IBM build n118p-20000322 <JIT enabled: ibmjtc U3.5
-IBMJDK1.1-20000322>"
D:\SQLLIB>
```

SWE00012

Figure 40. Checking your JDK

If you do not see the response illustrated in Figure 40, then your NT system originally had some other JDK installed and therefore is not a clean machine. If you do not see the JDK 1.1.8 indicated as in the example, you should check your path environment variable setting.

To check your JDK environment setting, go to

```
Start->
  Settings ->
    Control Panel ->
```

and click on the **System** icon. Click on the **Environment** tab and search the System Variables, then highlight the Environment variable called **path**. When you highlight **path**, look for the input windows at the bottom labeled **Value**, and check for the JDK path, for example  
C:\PROGRA~1\IBMHTTP~1\jdk\bin

## 2. Validating the upgrade of IBM HTTP Server

From the windows services panel, check that the IBM HTTP server is started.

Go to the **Windows Services** panel by clicking

```
Start->
  Settings ->
    Control Panel ->
  Services
```

Search through the **Services** list for the IBM HTTP Server. The **Status** column should be marked "Started" and the **Startup** column should be marked "Automatic". You will also find an entry for the IBM HTTP Administration which will have the same settings. The IBM HTTP Administration component is not necessary for running the StorWatch Expert component.

## 3. Validating the upgrade of IBM WebSphere

a. Start up the Control Panel and choose Services. To get there choose:

Start->  
  Settings ->  
    Control Panel ->  
      Services

Search through the list for the WebSphere Servlet Service. If it is not started (indicated by **Status** column entry being blank), start it now by highlighting the WebSphere Servlet Service entry and click the **Start** button. When you see the status change to "Started", you can close the **Services** panel. Although the status is marked "Started", WebSphere will continue loading as it prepares to serve your StorWatch Expert pages. This may take some time. You can monitor your system through the Windows NT Task Manager for completion.

- b. Start up a browser and point it to:

`http://<tcpip-host-name><port-number>/servlet/snoop`

Where:

<tcpip-host-name> is the TCP/IP host name that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name bring up a Command Prompt and type **hostname** and press **Enter**.

<port-number> is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify it in the URL.

This may take a few minutes depending on your processor and the system load, see Figure 41 on page 76 for an example of a successful run. During this time, the "IBM WebSphere Application Server is starting". If you see the following message in your browser window, it means WebSphere has not finished initializing. Wait a little longer and re-enter the URL:

`http://<tcpip-host-name><port-number>/servlet/snoop`

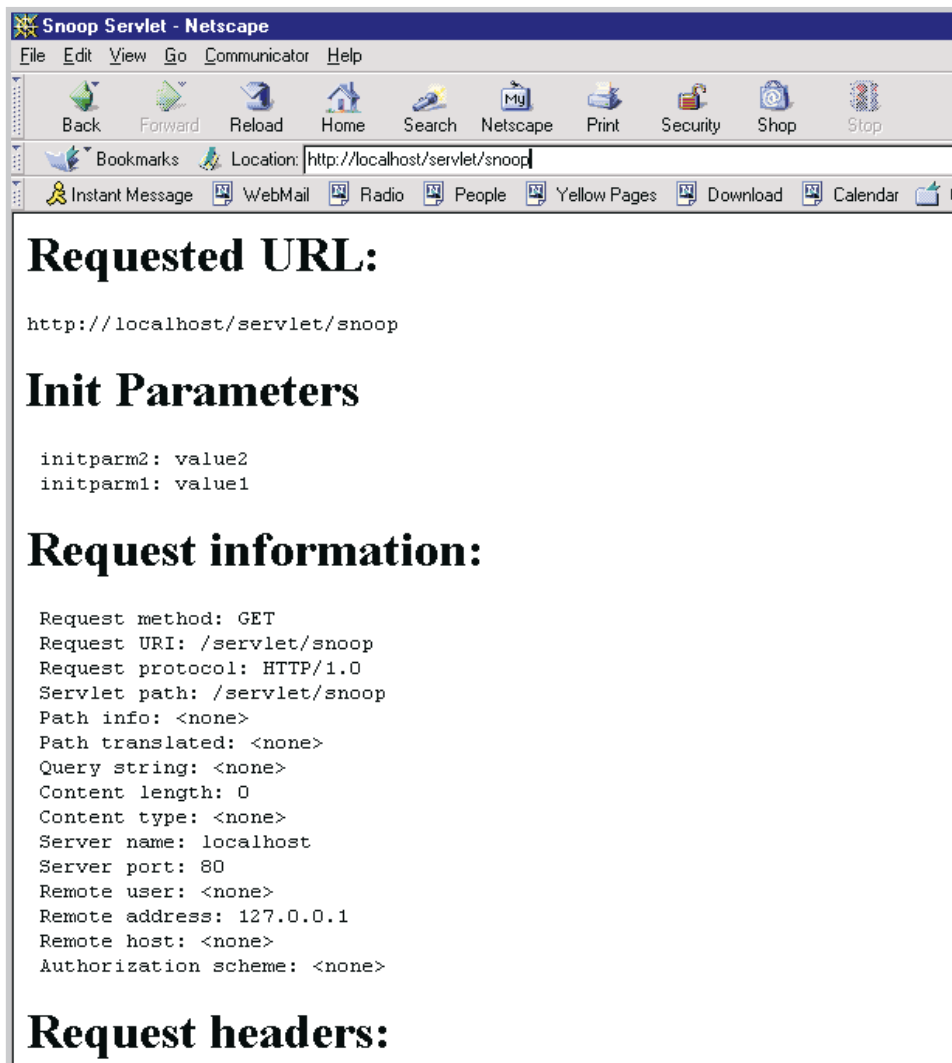
**Attention:** If you see the WebSphere application is starting message, the browser location URL will change to:

```
http://<tcpip-host-name><port-number>/unavailable
```

you must re-enter the URL:

```
http://<tcpip-host-name><port-number>/servlet/snoop
```

When WebSphere has finished initializing, you should see the following response:



SWE00019

Figure 41. IBM WebSphere Application Server

## Use your browser to do StorWatch Expert R2 configuration

The StorWatch Expert is comprised primarily of two servlets which run under the WebSphere Services and the IBM HTTP Server. You will use the StorWatch Configuration Servlet at this point to prime the StorWatch Expert for everyday usage.

**Attention:** Your Windows NT browser may have cached the StorWatch Expert R1 web pages, and you will not be able to see the revised StorWatch Expert R2 web pages. To fix that clear your browser disk cache, close *all* browser windows and restart the browser:

1. Clear your browser cache.

- From your Netscape taskbar:

```
Edit->
  Preferences ->
    Advanced ->
Cache->
Clear Memory Cache->
Clear Disk Cache
```

- From your Microsoft Internet Explorer taskbar:

```
Tools->
  Internet Options ->
    General->
Temporary Internet Files->
Delete all offline content (check this box)->
OK->
OK
```

2. Close *all* browser windows and restart the browser.

Follow the steps below to configure StorWatch Expert:

1. Launch a web browser and enter the following URL to access the StorWatch Configuration Utility:

**Note:** URL is case sensitive.

```
http://<tcpip-host-name>:<port-number>/StorWatchConfig/start.html
```

Where:

<tcpip-host-name> is the TCP/IP host name that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name bring up a Command Prompt and type **hostname** and press **Enter**.

<port-number> is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify it in the URL.

2. A box will appear that asks for a user name and password  
The default user name and password will be **admin** in *both* fields.
3. If you see a message that says "Loading StorWatch Configuration Utility", wait 1–2 minutes until the "IBM StorWatch Expert Configuration Utility Introduction" page displays. On the left hand side is a navigation menu

that links to tasks you can perform using the Configuration Utility. These tasks are listed in the order they should be performed.

4. Follow these steps to upgrade the basic configuration.
  - a. Click on **Basic Configuration** in the navigation menu. The "Basic Configuration" page displays.
    - 1) Fill in the database user name field and the database alias that you wrote down in preparation for the StorWatch Expert upgrade installation, for example **db2admin** and **swdata**. You must also enter the password for the database user name, for example, **db2admin** (the password is masked for security purposes).
    - 2) Click **Finish**. After the values are saved, you should see the message in the megaphone area under the banner:

HSWC1902I StorWatch properties were successfully updated
  - b. Perform the following steps to create the StorWatch Expert database tables:
    - 1) Click **Database Setup** in the navigation menu. The **Database Setup** page displays. The web page should contain the words:

Your database appear to contain StorWatch database tables....
    - 2) Click the **Update Tables** button to update the database tables that are required by StorWatch Expert. This may take a few minutes. When the tables are updated, you should see the message in the megaphone area:

HSWC1909I Setup script successfully executed.
  - c. Click on **Define Administrators** to review your StorWatch Administrator userid(s) which you originally defined in StorWatch Expert R1. The StorWatch Administrator userid is authenticated by StorWatch Expert; it does not have to be known to the operating system where the StorWatch Expert is installed. You can Add, Remove or Edit these userids at this time if you wish.
  - d. Perform the following steps to enter your StorWatch Expert R2 license key(s):
    - 1) Click **Enter License Key** in the navigation menu. The **Enter License Key** page displays. Enter your customer name, then use the key information sheet you received in the StorWatch installation package to:
      - Enter the customer number. Use the number shown as **Customer Number** on the key information sheet. It may differ from your own customer number.



- Select StorWatch feature using the **Item Number** selection. This number may be shown under a heading **Program Number** on the key information sheet.
  - Enter the key from the **Access Key/Password** column of the key information sheet.
- 2) The next processing depends on whether you have ordered one or two StorWatch Expert R2 features:
- If you have only ordered one StorWatch Expert R2 feature, click the **Finish** button. When processing of the key is completed, you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

- If you have ordered a second StorWatch Expert R2 feature, click the **More** button instead of the **Finish** button. This will trigger the processing of the first key and you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

The **Enter License Key** page is reshown. Provide the following information for the second key:

- Select the second feature in the **Item Number** selection menu.
- Enter the key to go with the second feature from your license key information sheet.

Click the **Finish** button.

When the key processing is completed, you should see the message in the megaphone area:

HSWC1944I 2 license keys are currently recorded, for.....

5. Perform the following steps to restart StorWatch Expert:
- a. Click **Restart StorWatch** in the navigation menu. The **Restart StorWatch Server** page opens.
  - b. Click the **Restart** button to force the server to restart and read in the new configuration values. The message

HSWC1937I The StorWatch server is restarting

should appear. Wait 1 – 6 minutes for the restart to complete.

**Note:** You can watch the progress of the WebSphere initialization by monitoring the processor usage through the Windows NT task manager.

**Note:** The message in the megaphone area will not indicate that the server has restarted.

6. Perform the following steps to sign on to StorWatch Expert:
  - a. Click **Sign On** in the navigation menu. This may take a few minutes. The **Sign On** page opens. Enter the StorWatch Administrator user ID and password that were defined previously. Then select a language. Click **Sign On**.
  - b. The **IBM StorWatch Expert** page displays with the navigation menu on the left side. Refer to the on-line help for information on defining nodes, node groups, data collection tasks, scheduling tasks, defining non-administrative user IDs, and other pertinent topics.

At this point, initial configuration is complete. Refer to “Chapter 8. Getting Started” on page 155 to set up your StorWatch Expert.

**Note:** You can find instructions on how to change the default user names/passwords which are used during the installation in “Appendix C. Changing the Passwords in Windows NT” on page 189. Remember, if you change the password for the DB2 user name, this value must be input to the StorWatch configuration web page.

---

## Chapter 4. Uninstalling StorWatch Expert in Windows NT

This chapter describes the complete procedure to remove StorWatch Expert from the Windows NT operating system.

**Note:** The description of commands in this chapter have the convention of putting optional and substitution parameters between "<" (less than) and ">" (greater than) symbols. The explanation of the optional or substitution parameters follow a "Where" indicator. You should become familiar with the explanation before entering the command.

---

### Pre-uninstallation Preparation

Perform the following steps before starting the uninstallation:

1. If the Windows NT system has not been restarted since StorWatch Expert was installed, restart it now.
2. Log on to the system where StorWatch Expert is installed with a user name that is a local system administrator.

**CAUTION:**

**Do not log on as db2admin because you will be deleting that user name.**

3. To complete the uninstallation of StorWatch Expert you will have to reboot (see "Completing the Uninstallation Process" on page 87).

---

### Using Windows Add/Remove Services to Uninstall StorWatch Expert

Perform the following steps to uninstall StorWatch Expert and its complimentary products:

1. From the Windows menu bar, click  
Start ->  
Settings ->  
Control Panel
2. From the **Control Panel** dialog window, you will open 2 additional dialog windows which should remain open while you delete the list of components.
  - a. In the **Control Panel** dialog window, double-click on the **Services** icon. The Services dialog window opens (Figure 42 on page 82).

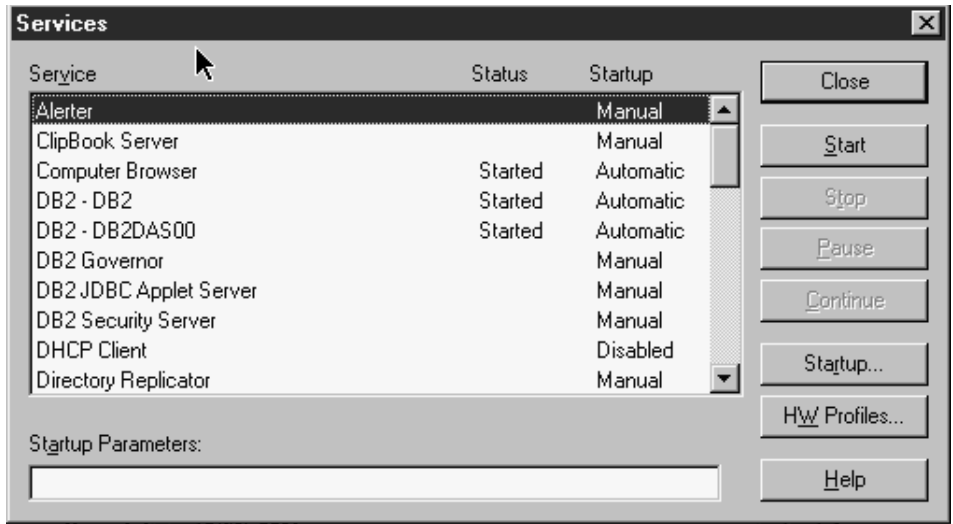


Figure 42. Example of Services Window

In the **Control Panel** dialog window, double-click the **Add-Remove Programs** icon. The Services dialog window opens (Figure 43 on page 83)

**Note:** The **Services** and **Add/Remove Programs Properties** dialog windows will both be open at the same time.

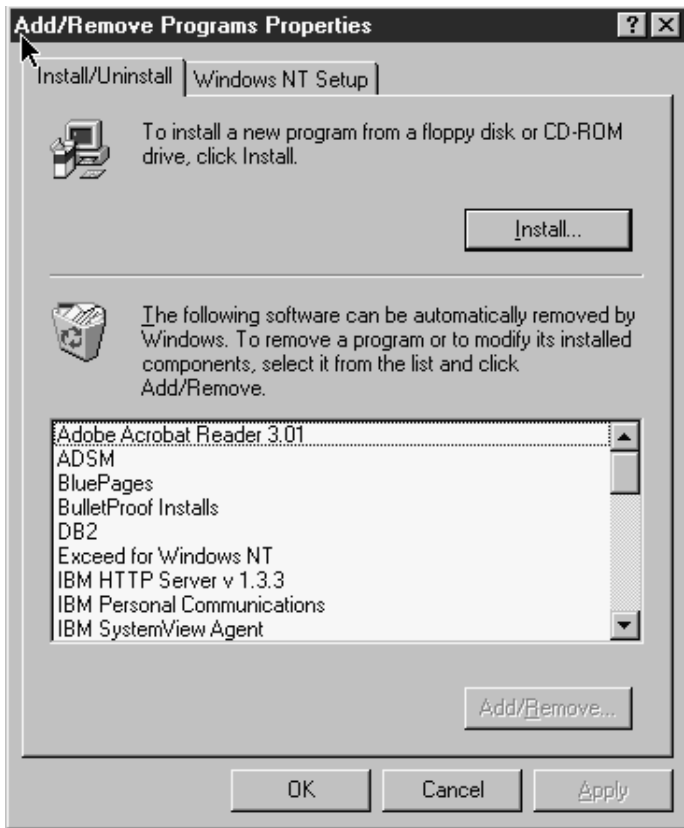


Figure 43. Example of Add/Remove Programs Properties Window

### 3. Uninstall Viador Sage:

- a. Stop the Viador Information Center:
  - 1) In the **Services** dialog window, scroll to **Viador Information Center**. Click on the service to select it.
  - 2) If it is running (its status column shows **started**), click **Stop** and click **Yes** in the confirmation dialog window. Wait for the service to stop.
  - 3) Leave the **Services** dialog window open (do not close it).
- b. Change the server startup type:
  - 1) In the **Services** window, select the Viador Information Center service, click **Startup....**
  - 2) Change the startup type to **Manual**.
  - 3) Click **OK** to close the dialog window.
- c. Remove Viador Sage:

- 1) In the **Add/Remove Programs Properties** dialog window, scroll to **Viador SpaceSQL**. Click on it to select it.
  - 2) Click **Add/Remove** and click **Yes** in the confirmation dialog window.
  - 3) Wait for the program to be removed by UNInstallShield, then click **OK** on the **Remove Programs From Your Computer** dialog window. This will take several minutes, depending on your processor speed. You will see the message: "Uninstall completed. Some elements could not be removed. You should manually remove items related to the application".
  - 4) Click **OK** to close message window.
  - 5) Leave the **Add/Remove Programs Properties** dialog window open.
4. **Uninstall IBM WebSphere Application Server:**
- a. Stop the WebSphere Servlet Service:
    - 1) In the **Services** dialog window, scroll to **WebSphere Servlet Service**. Click on the service to select it.
    - 2) If it is running (its status column shows **started**), click **Stop** and click **Yes** in the confirmation dialog window. Wait for the service to stop.
    - 3) Leave the **Services** dialog window open (do not close it).
  - b. Remove IBM WebSphere Application Server:
    - 1) In the **Add/Remove Programs Properties** dialog window, scroll to **IBM WebSphere Application Server**. Click on it to select it.
    - 2) Click **Add/Remove** and click **Yes** in the confirmation dialog window.
    - 3) If you want to back up the configuration, log, and user files (recommended as a precautionary measure), click **Yes** in the dialog window that appears next, and select a backup directory. Otherwise, click **No**.
    - 4) Wait for the program to be removed by UNInstallShield, then click **OK** on the **Remove Programs From Your Computer** dialog window.
    - 5) Click **OK** in the **IBM WebSphere Application Server Uninstall** dialog window. You will see the message: "Uninstall completed. Some elements could not be removed. You should manually remove items related to the application".
    - 6) Leave the **Add/Remove Programs Properties** dialog window open.
  - c. You will get a prompt reminding you to restart the system to remove temporary files. Click **OK** to dismiss the prompt.
5. **Uninstall IBM HTTP Server:**
- a. Stop the IBM HTTP Server:

- 1) In the **Services** dialog window, scroll to **IBM HTTP Server**. Click on the service to select it.
  - 2) If it is running (its status column shows **started**), click **Stop** and click **Yes** in the confirmation dialog window. Wait for the service to stop.
  - 3) Leave the **Services** dialog window open.
- b. Stop the IBM HTTP Administration:
- 1) In the **Services** dialog window, scroll to **IBM HTTP Administration**. Click on the service to select it.
  - 2) If it is running (its status column shows **started**), click **Stop** and click **Yes** in the confirmation dialog window. Wait for the service to stop.
  - 3) Leave the **Services** dialog window open.
- c. Remove the IBM HTTP Server:
- 1) In the **Add/Remove Programs Properties** dialog window, scroll to **IBM HTTP Server v 1.3.6.2**. Click on it to select it.
  - 2) Click **Add/Remove** and click **Yes** in the confirmation dialog window.
  - 3) Wait for the program to be removed, then click **OK** in the **Remove Programs From Your Computer** dialog window. You will see the message: "Uninstall completed. Some elements could not be removed. You should manually remove items related to the application".
  - 4) Leave the **Add/Remove Programs Properties** dialog window open.
6. **Uninstall IBM DB2 Universal Database:**
- a. Stop the DB2 Administration Server:
- 1) In the **Services** dialog window, scroll to **DB2-DB2DAS00**. Work in the following order for these DB2 elements:
    - a) DB2 Security Server
    - b) DB2 JDBC Applet Server
    - c) DB2 Governor
    - d) DB2 – DB2DAS00
    - e) DB2 – DB2
- Repeat the following process for each of the DB2 elements:
- If it is running (its status column shows **started**), click **Stop** and click **Yes** in the confirmation dialog window. Wait for the service to stop.
- 2) Leave the **Services** dialog window open.

- b. If there any other DB2 services (those beginning with DB2) are started, stop them using the same procedure as above.
- c. Close the Services dialog window.
- d. Stop the HTML search server:
  - Start →
  - Programs →
  - DB2 for Windows NT →
  - Stop HTML Search Server
- e. Remove DB2:
  - 1) In the **Add/Remove Programs Properties** dialog window, scroll to **DB2**. Click on it to select it.
  - 2) Click **Add/Remove** and click **Yes** in the confirmation dialog window. You will see a window with the message "Uninstall is removing DB2 and all of its components. Please wait...".
  - 3) After a few minutes, you will see the message "The IBM DB2 product has been successfully removed". Click **OK** to close the dialog window.

**Note:** IBM DB2 will continue to appear in the **Add/Remove** program list, but it has been *removed*.

- 4) Leave the **Add/Remove Programs Properties** dialog window open.

#### 7. Uninstall StorWatch Expert:

- a. In the **Add/Remove Programs Properties** dialog window, scroll to **StorWatch Expert 1.2.0**. Click on it to select it.
- b. Click **Add/Remove** and click **Yes** in the confirmation dialog window.
- c. Wait for the program to be removed. Click **OK** in the **Remove Programs From Your Computer** dialog window.
- d. You can now close the **Add/Remove Programs Properties** dialog window.

**Note:** You may have noticed that the program name IBM DB2 has now been removed from the program list.

- 8. Reboot the system (now or later) to complete the uninstallation steps.



---

## Completing the Uninstallation Process

Perform the following uninstallation steps:

1. If the system has not been restarted since StorWatch Expert was uninstalled, do so now.
2. Log on as a local administrator.
3. Other considerations for Viador Sage:
  - If the Viador Sage 4.2 shortcuts still exist on the **Start** menu (**Start → Programs → Windows NT Explorer → Viador SpaceSQL**), remove them now as follows:
    - a. Right click on the shortcut folder (Viador SpaceSQL).
    - b. Click **Delete**, then click **Yes** to confirm the delete operation.

If you have trouble removing the shortcuts, see “Unable to Remove Shortcut Folders for SpaceSQL 4.2 or License Use Runtime (for Windows NT)” on page 187 of this document.

- The Viador uninstallation process does not remove configuration files, logs, etcetera created during and after the installation. They are located under the destination path where Viador was installed:

**<storwatch-dest-path>\infospc**

Where: .

<storwatch-dest-path> is the StorWatch destination path specified during the StorWatch Expert installation. For example the default destination path is c:\StorWatch\infospc.

You might also want to remove the **\infospc** destination path, especially if you plan to reinstall StorWatch Expert.

4. Other considerations for IBM DB2 Universal Database:
  - If the **db2admin** user name was created during the StorWatch Expert installation, you might want to remove it now using the User Manager.
    - a. From the Windows menu bar, click
      - Start →
      - Programs →
      - Administrative Tools →
      - User Manager
    - b. In the **User Manager** dialog window, select the **db2admin** user name.
    - c. In the dialog window menu bar, click **User → Delete** and then click **OK** in the confirmation dialog window.

**CAUTION:**  
**DB2 Error Message**

**If you get this message when you attempt to delete the user name db2admin, you are logged on as db2admin and therefore need to log off and log on again as another user who is a member of the administrator's group and redo this step to remove the db2admin user name.**

- The DB2 uninstallation process does not remove database data or metadata that has been created by StorWatch Expert. It is stored in the **\Db2** path usually on the same drive where DB2 was installed, for example c:\Db2. If you want to remove this data, delete the db2 folder and all of its contents.
- The DB2 uninstallation process does not remove the event log that is created during or after the installation. It is located in the **\Db2log** path on the system drive (usually the C:\ drive). If you want to remove this data, delete the Db2log folder and all of its contents.
- The system CLASSPATH variable might contain the paths of two DB2 java class files after uninstallation. If it does, you might want to remove them, especially if you plan to reinstall StorWatch Expert. They are:

**<db2udb-dest-path>\java\db2java.zip**

**<db2udb-dest-path>\java\runtime.zip**

where <db2udb-dest-path> is the database destination path specified during the StorWatch Expert installation, for example c:\Db2\java\db2java.zip.

**Note:**

Start ->  
    Settings ->  
    Control Panel ->  
    Double-click System icon->  
    Select Environment tab->  
    Highlight CLASSPATH in list->  
    Delete db2 CLASSPATH character string from system CLASSPATH->  
    Click Set->  
    Click Apply->  
    Click OK

- The DB2 uninstallation process does not remove configuration files, logs, etcetera created during and after the installation. They are located in the destination path where DB2 was installed (C:\SQLLIB by default). You might want to back up this data. You might also want to remove this data and the destination path, especially if you plan to reinstall StorWatch Expert.

5. Other considerations for IBM WebSphere Application Server:

- The WebSphere Application Server uninstallation process does not remove configuration files, logs, etcetera created during or after the installation. They are located in the destination path where WebSphere Application Server was installed:

**<httpserver-dest-path>\WebSphere**

where <httpserver-dest-path> is the destination path where IBM HTTP Server was installed. For example the default destination path is c:\Program Files\IBM HTTP Server\WebSphere.

You might also want to remove this folder and all of its contents, especially if you plan to reinstall StorWatch Expert.

6. Other considerations for the IBM HTTP Server:

- The IBM HTTP Server uninstallation process does not remove configuration files, logs, etcetera created during or after the installation. They are located under the destination path where the HTTP Server was installed:

**<httpserver-dest-path>** where **<httpserver-dest-path>** is the destination path where the IBM HTTP Server was installed. For example the default destination path is `c:\Program Files\IBM HTTP Server\`.

You might also want to remove this folder and all of its contents, especially if you plan to reinstall StorWatch Expert.

**Note:** Removing this folder also removes the JDK.

7. Other considerations for StorWatch Expert:

- The StorWatch Expert uninstallation process does not remove configuration files, logs, etcetera created during or after the installation. They are located in the destination path where StorWatch Expert was installed:

**<storwatch-dest-path>**

Where:

**<storwatch-dest-path>** is the destination path where StorWatch Expert was installed. For example the default destination path is `c:\StorWatch`.

You might also want to remove this folder and all of its contents, especially if you plan to reinstall StorWatch Expert.

- The system Path variable might contain the path of the JDK java class files after uninstallation. If it does, you might want to remove them, especially if you plan to reinstall StorWatch Expert. They are:

**<httpserver-dest-path>\jdk\bin**

Where:

**<httpserver-dest-path>** is the IBM HTTP Server destination path specified during the StorWatch Expert installation. For example the default destination path is `c:\PROGRAM FILES\IBM HTTP SERVER\jdk\bin`.

**Note:**

```
Start ->
  Settings ->
    Control Panel ->
      Double-click System icon->
        Select Environment tab->
          Highlight Path in list->
            Delete jdk Path character string from system Path->
              Click Set->
                Click Apply->
                  Click OK
```

8. Other Windows NT profile considerations:

- Go to the following in Windows NT Explorer  
`<winnt-path>\profiles\<user name>\startmenu`  
 Where: .  
`<winnt-path>` is the Windows NT system executables path and `<user name>` is **db2admin**. For example this path could be  
`c:\WINNT\profiles\db2admin\startmenu`
  - Under **Programs** folder, delete Viador SpaceSQL folder.
9. Other considerations:
- If you have not yet closed both the **Services** and the **Add/Remove Program Properties** dialog window, you can do so now.
  - You might want to empty your Windows NT Recycle Bin to reclaim the disk space that was freed during the uninstallation process. To empty the recycle bin:
    - Right click on the **Recycle Bin** icon on the desktop.
    - Select the **Empty Recycle Bin** option from the drop menu list.



---

## Chapter 5. Installing StorWatch Expert on AIX

This section provides instructions on how to install and set up StorWatch Expert on the AIX operating system platform. The StorWatch Expert installation code is distributed on the product installation CD-ROM.

The StorWatch Expert installation is performed through a UNIX<sup>®</sup> Korn shell script. The shell script installs StorWatch Expert and other necessary products included on the CD-ROM. The shell script also performs the configuration that is needed for StorWatch Expert to run properly.

**Note:** Before beginning the installation, perform the following steps:

1. You can find useful information and product support at the following web sites:

For information about StorWatch Expert:

<http://www.storage.ibm.com/software/storwatch/ess/index.htm>

For service information:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain>

2. It is important that the StorWatch Expert and the I/O Subsystems which it manages, such as Enterprise Storage Servers and 3494 Tape Servers, be at compatible maintenance levels. Select **Fixes** to verify the compatibility of your system, see the StorWatch Maintenance Compatibility Matrix at the Web site listed above.

---

### Installation Requirements

This section contains hardware and software requirements for the installation of StorWatch Expert.

#### Hardware and Space Requirements

StorWatch Expert requires the following hardware:

- RS/6000<sup>®</sup> workstation with AIX installed
- CD-ROM drive for installation

StorWatch Expert requires 512 MB of random access memory (RAM).

The disk space requirements are as follows:

Component	Space Required in MB
DB2 Executables	282

Component	Space Required in MB
DB2 Database	260
IBM HTTP server, IBM WebSphere, IBM JDK	87
StorWatch Expert, Viador Sage	72
Total	701

**Note:** If you are unaware of current space utilization, type **df -k** on the command line and press **Enter** to see your available kilobytes (KB).

## Software Requirements

Table 10 shows the programs that are required to run StorWatch Expert in the AIX operating system environment.

*Table 10. Required Programs for StorWatch Expert in AIX*

Program	Level	Note
AIX operating system	4.3.3	Installed separately
TCP/IP with Domain Name System (DNS) host name		Included with AIX 4.3.3
JDK	1.1.8.0	Included with AIX 4.3.3

## Web Browser Access to StorWatch Expert

StorWatch Expert includes a Web-based user interface that is designed to operate with the following Web browsers on Windows NT.

### Supported Web Browsers

Make sure you have one of the following levels of these Web browsers:

- Netscape 4.7 for Windows NT 4.0 with Service Pack 6
- Microsoft Internet Explorer 5.0 for Windows NT 4.0 with Service Pack 6

---

## Installing StorWatch Expert

**Note:** You should have some knowledge of AIX system administration before you install StorWatch Expert.



### Command Conventions

The description of commands in this chapter have the convention of putting optional and substitution parameters between "<" (less than) and ">" (greater than) symbols. The explanation of the optional or substitution parameters follow a "Where" indicator. You should review the explanation before entering the command.

## Mount the StorWatch Expert R2 CD-ROM

1. Login as a user with root authority.
2. Unmount any inactive Network File System (NFS) mount points before proceeding with the installation. The installation can fail if the CD-ROM mount point shares the same mount table with an inactive NFS mount point. Consult with your AIX administrator if you are not sure about the mount points. To make sure enter the following command:

```
# mount
```

3. Create a mount point or choose an existing mount point. To create a mount point called **/cdrom**, enter the following command:

```
# mkdir /cdrom
```

4. Mount the CD-ROM file system at the desired mount point. For example, to mount a compact disk inserted in a CD-ROM drive known as **/dev/cd0** at mount point **/cdrom**, enter the following command:

```
# mount -o ro -v cdrfs /dev/cd0 /cdrom
```

5. Check for a **readme** file located in the **root** folder on the StorWatch Expert R2 CD-ROM. This **readme** can provide additional information which supersedes information in this guide.
6. You can also find this installation guide on the StorWatch Expert R2 CD-ROM under the file name **installguide81400.pdf**.

## Preparing for Installation

The system for installation must be a "clean" machine. This means that none of the following products have been installed on the machine:

- Any StorWatch application (including previous releases of StorWatch Expert, see Chapter 6 "Upgrading StorWatch Expert from R1 to R2 on AIX" to upgrade)
- IBM HTTP Server (or other types of HTTP servers)
- IBM WebSphere Application Server
- Any DB2 product (or other types of relational databases)
- Viador Sage, or the related product Viador E-Portal

If any one of the products listed above has been installed, you must uninstall it first.

**Note:** It is OK to have another Web server (which is not the IBM HTTP Server) installed on your machine, but this Web server and the IBM HTTP Server *should not run on the same port*. The default port used by most Web servers is 80. It is *very important* to make sure that the port entered for the IBM HTTP Server during installation time is not used by another Web server.

The recommended steps described in the uninstallation section are necessary before the automatic installation can complete successfully. See “Chapter 7. Uninstalling StorWatch Expert on AIX” on page 147.

Perform the following steps before starting the installation:

1. Custom select a directory for StorWatch Expert database, for example `/swdb`. The permissions on the database directory should be the same as those on the `/home` directory. After running `StorWatchConfig` you can change the database directory owner to `db2inst1` and permission to 755 for security purposes. Some additional suggestions regarding the database directory are:
  - It should be a standard Journal File System
  - It should mount automatically
2. Choose a TCP/IP port to be used by the HTTP Server. Select a port that is not used by another service. We recommended using a port between 1024 and 65535. The default port is **80**. Do **not** use the following ports:
  - 6789 (reserved for use by the Viador Sage)
  - 8081 (reserved for use by the IBM WebSphere Application Server)
  - 9527 (reserved for use by the WebSphere Administration utility)

You can review the list of ports that are used by some well-known services. These ports can be found in the file `/etc/services`. Consult with your AIX administrator if you are not sure what port to select.

3. Choose a TCP/IP host name to be used by the IBM HTTP Server. Usually this will be the host name by which the system is known to the network. Type **hostname**.

**Note:** Some AIX systems can have multiple IP addresses assigned to them and connect to multiple Network Interface Cards (NIC). This results in multiple TCP/IP hostnames for your system. Choose a TCP/IP hostname to which your browser system has access. Consult your network administrator if you need help.

4. Choose a user and a group to be used by the IBM HTTP Server to start the processes to handle incoming requests. The user and group are also used to start the IBM WebSphere Application server. The user and group can be one of the following:
  - a. An existing user ID and an existing group
  - b. A non-existing user ID and a non-existing group
  - c. The default user **swadmin** and the default group **swadmin**
  - d. Any combination of the values described in steps a through c above

If the user and the group that are chosen are in category b or c, the installation script creates this new user and new group at installation time.

5. The installation script creates a new user **db2inst1** to be the instance owner of the database that is used by StorWatch Expert.

This newly created user **db2inst1** must be assigned an initial password by the root user. After setting the initial password for user **db2inst1**, you will need to change the password again as user **db2inst1**. This password can consist of a maximum of 18 characters according to the DB2 password rules. Choose a password that conforms to this rule for a successful database connection. Perform the following steps at the prompt:

- a. Enter a temporary password for **db2inst1**.
- b. Enter this temporary password as the old password of **db2inst1** and then enter the new password.

**Note:** This password is used to configure the database connection from the StorWatch Configuration Utility.

## Performing the Installation

The **swinstall** shell script is provided on the CD-ROM to install StorWatch Expert and all its prerequisite products on the AIX operating system platform.

The installation script installs StorWatch Expert and its and the other necessary products in the following order:

Order	Product	Install Root
1	JDK 1.1.8.7 patches	/usr/lpp/Java.rte/
2	IBM HTTP Server	/usr/HTTPServer/
3	IBM WebSphere Application Server	/usr/WebSphere//
4	IBM DB2 UDB	/usr/lpp/DB2_07_01/
6	StorWatch Expert	/usr/lpp/StorWatch/
7	Viador Sage (formerly InfoSpace SpaceSQL)	/usr/lpp/StorWatch/infospc/

**Note:** See Table 12 on page 114 and Table 13 on page 114 for the log files for each product.

The table below provides an overview of the installation steps.

*Table 11. Overview of Installation Steps for AIX*

Steps	Description	Notes	Your input
1 – 3	Setting up the StorWatch Expert for installation		
4	Run the installation script, selecting the hostname and port for the HTTP Server	The default port is 80. Do <i>not</i> use ports 6789, 8081, or 9527.	<ul style="list-style-type: none"><li>• Enter your TCP/IP host name and port for the IBM HTTP Server.</li><li>• Enter the user and group IDs to be used for the configuration.</li><li>• Enter the temporary and permanent password for new DB2 user <b>db2inst1</b> (created by the installation script).</li></ul>
5	Verify the installation.		

Table 11. Overview of Installation Steps for AIX (continued)

Steps	Description	Notes	Your input
6	Configure StorWatch Expert using the Configuration Utility.		
7		Before capturing data and viewing reports from the ESS, see the steps for setting up StorWatch Expert on the Web browser.	Enter the ESS IP addresses, the ESS Specialist user ID, and the password.

**Follow these steps to install StorWatch Expert:**

1. Log on as a user with root authority.
2. Unmount any inactive network file system (NFS) mount points before proceeding with the installation. The installation can fail if the CD-ROM mount point shares the same mount table with an inactive NFS mount point. Consult with your AIX administrator if you are not sure about the mount points. Type **mount** to make sure there is no Network File System (NFS).

```
# mount
```

3. Change the current directory to the mount point for the CD-ROM. If the CD-ROM was mounted at **/cdrom**, enter the following command:

```
# cd /cdrom
```

4. Run the installation script (**swinstall**) to install ESS Expert and its prerequisite products. The time needed for **swinstall** to run is approximately 1/2 hour to an hour depending on the system where StorWatch Expert is being installed.

During the phase where the IBM WebSphere product is installed, the WebSphere installation GUI will be in control. Do not change any of the settings in the WebSphere GUI panels.

The installation script will prompt you to enter the information you prepared according to the instructions in 96. The following screens illustrate the interruption in the console dialog where you will be prompted for input. In some cases the illustrated screens contain only excerpts of the full dialog.

Begin the installation script, **swinstall** from the root directory of the CD-ROM. The console dialog will stop at a prompt to allow you to enter the directory for the StorWatch database.

```
# ./swinstall
StorWatch Expert Pre-installation Evaluation
-----
```

Pre-install evaluation passed.

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5648-SWV

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```
+-----+
+                                             +
+ Welcome to StorWatch Expert Installation on AIX!!           +
+                                             +
+ This script will install all the prerequisite products needed by +
+ StorWatch Expert. The products which will be installed are:  +
+ 1. JDK 1.1.8 ptf 7                                           +
+ 2. IBM HTTP Server 1.3.6.2                                   +
+ 3. IBM WebSphere Application Server 2.031 Standard Edition   +
+ 4. IBM DB2 UDB 7.1 Workgroup Edition                         +
+ 5. Viador Sage 4.1                                           +
+ 6. IBM StorWatch Expert 1.2.0.0                             +
+ NOTE:                                                         +
+ Please read the readme file for information about software and hardware +
+ requirements.                                                 +
+-----+
```

WARNING!!

-----  
PLEASE UNMOUNT ANY INACTIVE NFS MOUNT POINTS BEFORE PROCEEDING WITH THE INSTALLATION.  
INSTALLATION CAN FAIL IF THE CD-ROM MOUNT POINT SHARES THE SAME MOUNT TABLE THAT NFS  
USES.

IF YOU ARE NOT SURE ABOUT THIS, PLEASE CONSULT THE AIX ADMINISTRATOR.

```
+-----+
+                                             +
+ Custom select directory for creating Database                +
+ -----+
+ DB2 execution code will be installed in /usr/lpp (fixed)    +
+ The default StorWatch database directory is /home (selectable) +
+ Note: Permission on a directory is required. When you select +
+ a directory other than the /home directory to create a StorWatch +
+ database, 777 permission is required. After running StorWatchConfig +
+ you can change the owner to db2inst1 and make the permission 755 +
+ for security purposes.                                       +
+ To use the default values, simply press ENTER at the prompt. +
+-----+
```

Testing to be able to open dtterm window.  
Test to be able to open dtterm window passed  
Estimate disk space required to install StorWatch Expert 415104 Kb in /usr directory  
Free space in file system /usr = 555896 KB

Please ENTER the directory to create your StorWatch Database :  
(Press ENTER to use the default directory: /home)

The install script will pause to ask for the directory where you would like to create your StorWatch database. Press **Enter** if you want to accept the default directory: **/home**.

After you answer the prompt, the install script will continue. It will check the amount of space in the directory you selected, then stop at a prompt to request confirmation to continue.

```
/swdata
Free space in file system /swdata = 336168 KB
Free space in file system /home = 692764 KB
/swdata directory was selected to create your StorWatch Database

StorWatch is now going to install the prerequisite products and Expert on your machine.

Would you like to continue (y/n)?
```

The install script will pause to ask if you would like to continue. Enter **y** or **n**.

After you answer the prompt, the install script will complete the pre-installation evaluation. Next, the install script dialog will present a prompt for you to input the port number to be used by the IBM HTTP Server.

StorWatch Expert Pre-installation Evaluation

-----  
Pre-install evaluation passed.

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+-----+  
+  
+ Welcome to StorWatch Expert Installation on AIX!! +  
+  
+  
+ This script will install all the prerequisite products needed by +  
+ StorWatch Expert. The products which will be installed are: +  
+ 1. JDK 1.1.8 ptf 7 +  
+ 2. IBM HTTP Server 1.3.6.2 +  
+ 3. IBM WebSphere Application Server 2.031 Standard Edition +  
+ 4. IBM DB2 UDB 7.1 Workgroup Edition +  
+ 5. Viador Sage 4.1 +  
+ 6. IBM StorWatch Expert 1.2.0.0 +  
+  
+ NOTE: +  
+ Please read the readme file for information about software and hardware +  
+ requirements. +  
+-----+

WARNING!!

-----  
PLEASE UNMOUNT ANY INACTIVE NFS MOUNT POINTS BEFORE PROCEEDING WITH THE INSTALLATION.  
INSTALLATION CAN FAIL IF THE CD-ROM MOUNT POINT SHARES THE SAME MOUNT TABLE THAT NFS

+-----+  
+  
+ Webservice Configuration Information +  
+ ----- +  
+ Some information about your webservice needs to be gathered here before +  
+ proceeding with the installation. The specified port and the TCP/IP +  
+ hostname will be used to configure the IBM HTTP Server and the Infospace +  
+ server. You can choose to use the default values or enter your own +  
+ values. +  
+  
+ The following contains information about a valid port and hostname: +  
+ ----- +  
+ For the port value, you may use any value between 1024 and 65535 EXCEPT +  
+ port 8081 which is reserved for use by WebSphere and port 6789 +  
+ which is reserved for use by Infospace. It is highly recommended that +  
+ you use a large port number. To find out about ports that are already +  
+ used by other services, see file /etc/services or consult the AIX +  
+ administrator for the unused ports. +  
+  
+ For the TCP/IP hostname, you cannot enter an arbitrary name, the hostname +  
+ must be a registered one. +  
+  
+ The default values are: port=80, hostname=w40risc01. +  
+  
+ To use the default values, simply press ENTER at the prompt.



```
+ Please enter the port to be used by the IBM HTTP Server:  
(Press ENTER to use the default port: 80)
```

The script pauses to request the port number you would like to use. Either enter the port number or press **Enter** to use the default port 80.

After you answer the prompt, the install script dialog will present the next prompt requesting the TCP/IP host name for the IBM HTTP Server.

```
Please enter the TCP/IP hostname:  
(Press ENTER to use the default host: w40risc01)
```

Either enter the host name or press **Enter** to use the default host.

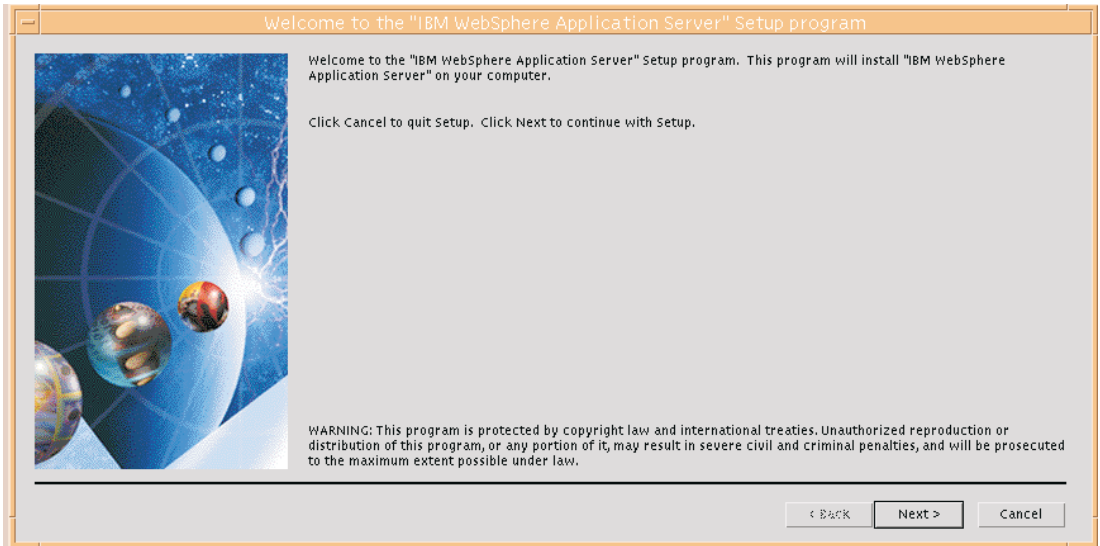
After you answer the prompt, the installation script will check and install IBM JDK 1.1.8.7 if needed. The installation script will also install IBM HTTP Server 1.3.6.2.

In order to install WebSphere, the install script will turn over control to the IBM WebSphere 2.031 installation GUI.

```
Java.rte.bin 1.1.8.7 already installed.  
Java.rte.classes 1.1.8.7 already installed.  
Java.rte.lib 1.1.8.7 already installed.  
  
Installing IBM HTTP Server 1.3.6.2 ...  
Installation of IBM HTTP Server 1.3.6.2 completed successfully.  
  
Installing IBM WebSphere 2.031 ...  
About to Install...
```

For the duration of the WebSphere installation, you will be led through the WebSphere installation which will run under the control of the WebSphere installation GUI.

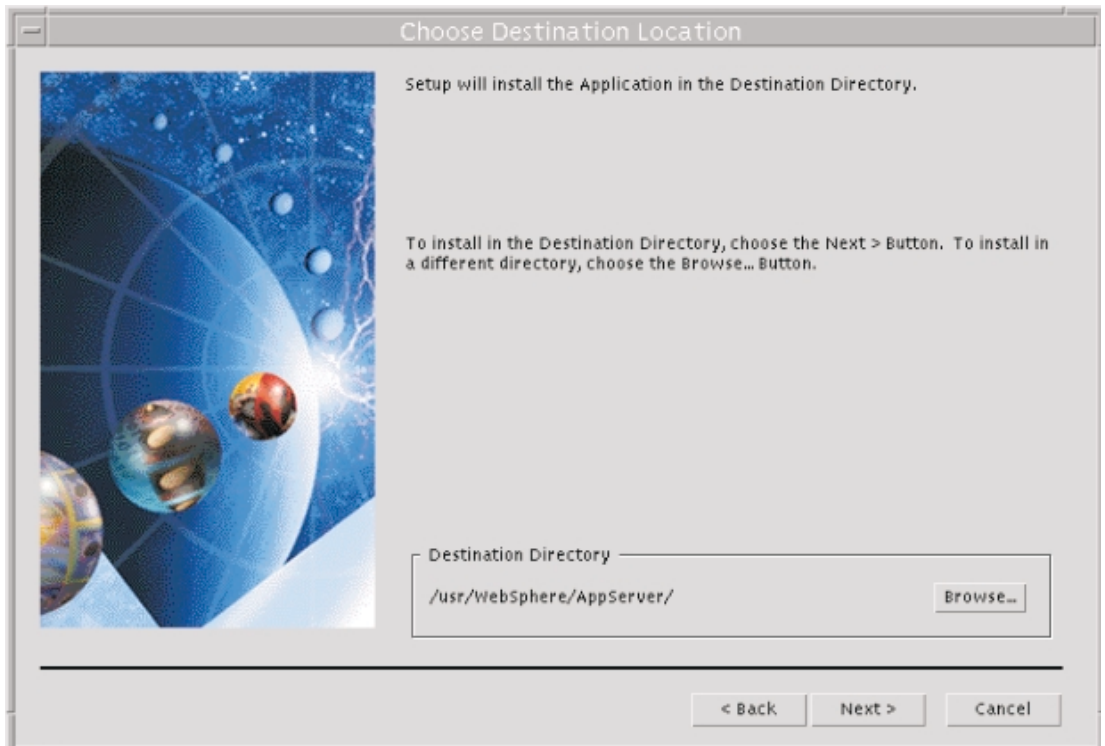
- a. When the Welcome to "IBM WebSphere Application Server" Setup program panel appears, click **Next**.



- b. When the "Choose Destination Location" panel appears, click **Next**.

**Do not change settings**

It is very important that you do not change the setting of the destination directory.

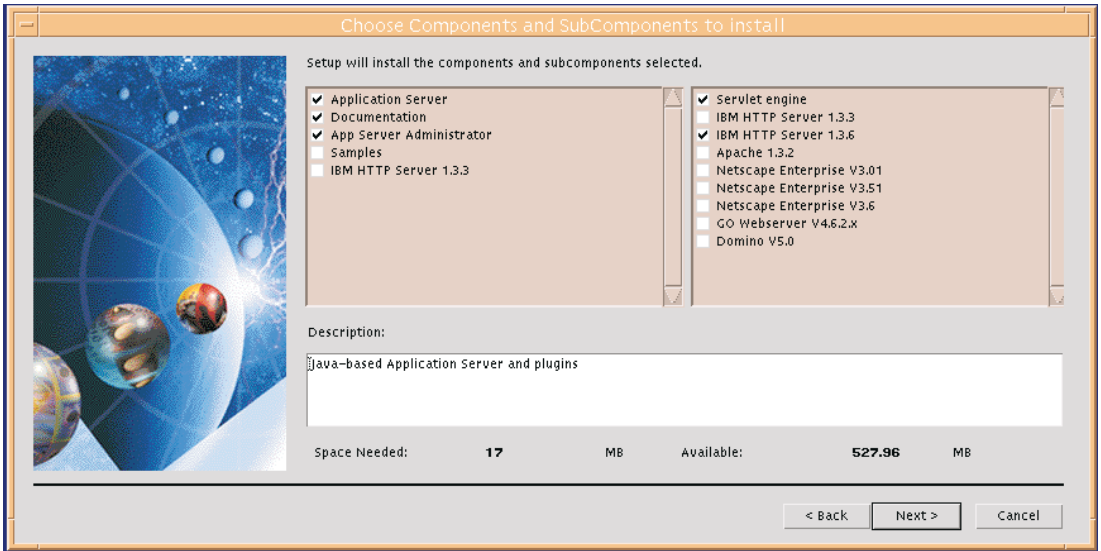


SWE00032

- c. When the "Choose Components and Subcomponents to Install" panel appears, click **Next**.

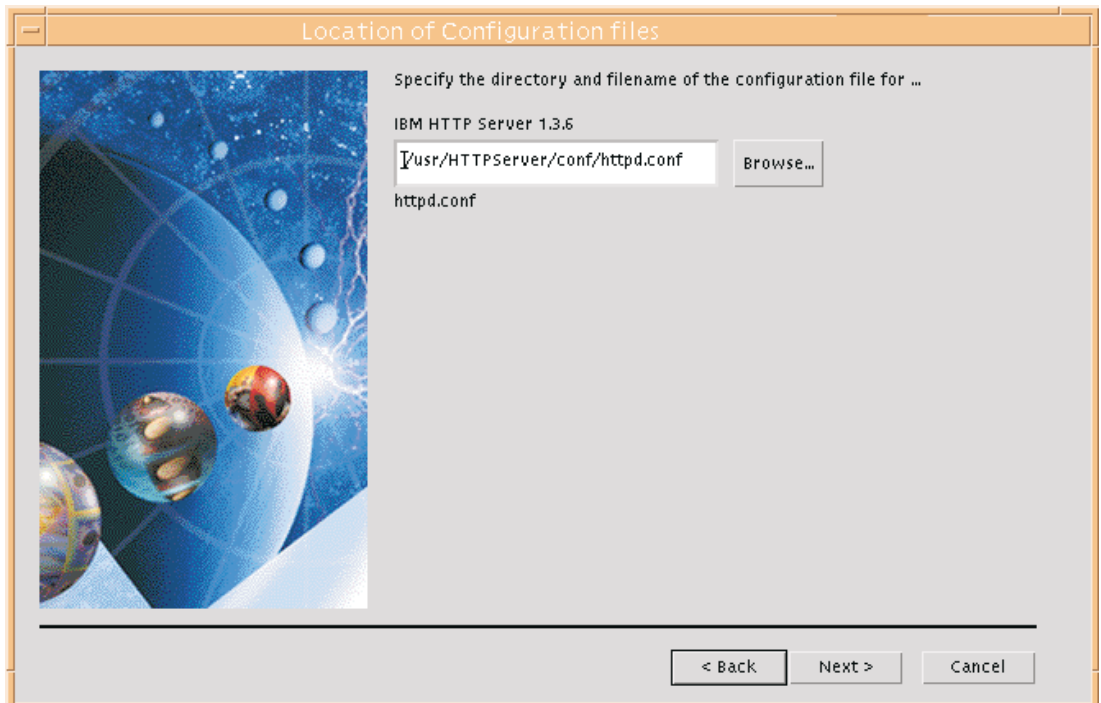
**Do not change settings**

It is very important that you do not change any of the settings of the check boxes as presented to you in this panel.



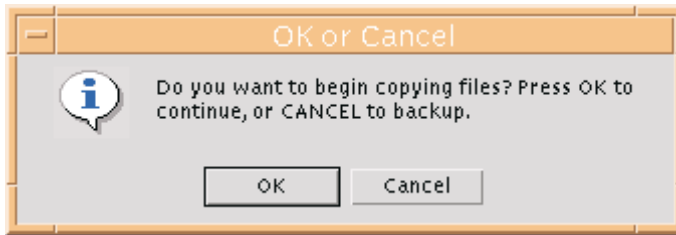
SWE00030

d. When the "Location of Configuration Files" panel appears, click **Next**.



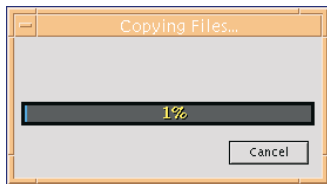
SWE00034

e. Click on **OK** on the "OK or Cancel" panel.



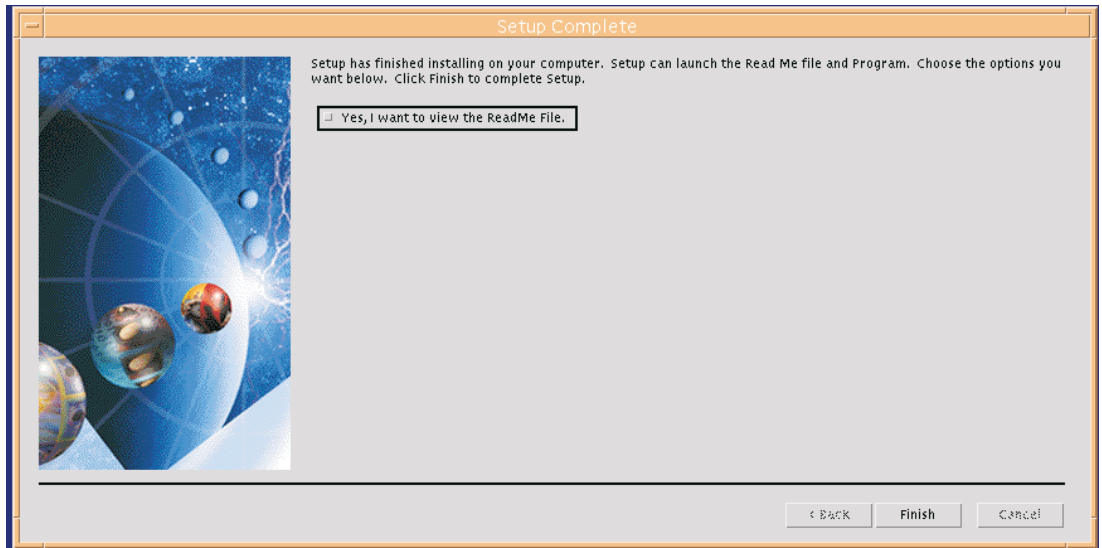
SWE00035

f. You will see a "Copying Files" panel indicating the files are being copied to your system.



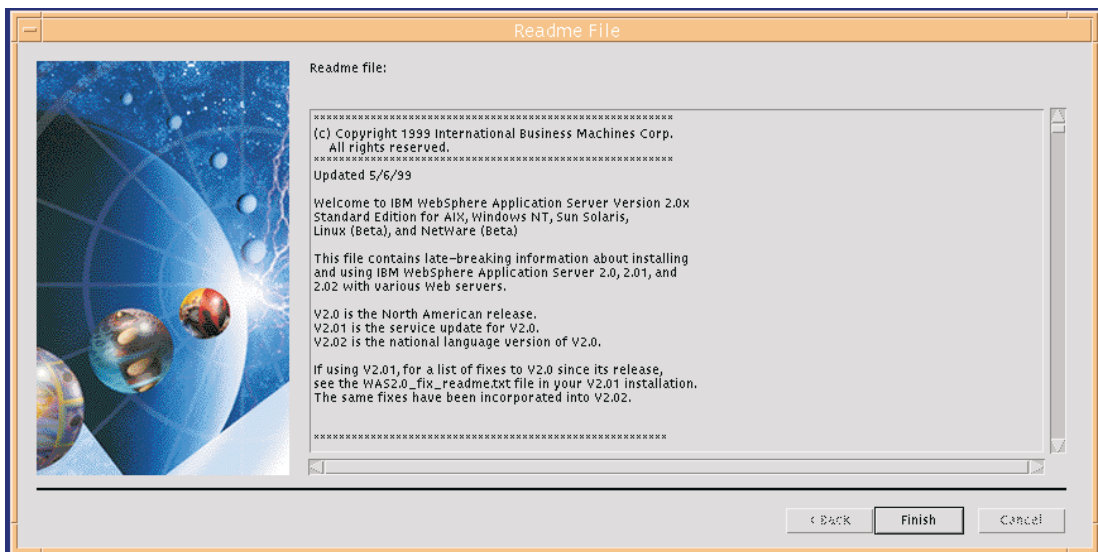
SWE00031

g. Click on **Finish** at the "Setup Complete" panel.



SWE00080

h. Click on **Finish** to close the "Readme File" panel to conclude the WebSphere installation.



SWE00081

After the installation of WebSphere, the WebSphere installation GUI will return control to the installation script. The installation script will next install the remaining products:

- DB2 UDB version 7.1
- StorWatch Expert R2
- Viador Sage

After the products are installed, the installation script dialog will pause to prompt you to enter the default userid for IBM WebSphere and IBM HTTP Server.

Installation of IBM WebSphere Application 2.031 completed successfully.  
Verifying IBM HTTP Server and IBM WebSphere Application Server installed.  
IBM HTTP Server 1.3.6.2 passed verification.  
IBM WebSphere Application Server 2.031 passed verification..

Installing DB2 UDB Workgroup Edition 7.1 ...  
Installation of IBM DB2 UDB Workgroup Edition 7.1 completed successfully.

Installing StorWatch Expert 1.2.0.0 ...  
Installation of StorWatch Expert 1.2.0.0 completed successfully.

Installing Viador Sage 4.1 ...  
Installation of Viador Sage 4.1 completed successfully.

=====  
NOTE: The output below is also saved in the log file /usr/lpp/StorWatch/server.config.log

Configure IBM HTTP Server, IBM WebSphere, Viador Sage  
-----

Starting configuration for IBM HTTP Server, IBM WebSphere, and Viador Server ...

Editing /usr/HTTPServer/conf/httpd.conf ... Done  
Updated /usr/HTTPServer/conf/httpd.conf.

Editing /usr/WebSphere/AppServer/properties/bootstrap.properties ... Done  
Updated /usr/WebSphere/AppServer/properties/bootstrap.properties.

Editing /usr/WebSphere/AppServer/properties/server/servlet/servletservice/servlets.properties ... Done  
Updated /usr/WebSphere/AppServer/properties/server/servlet/servletservice/servlets.properties.

Editing /usr/WebSphere/AppServer/properties/server/servlet/servletservice/session.properties ... Done  
Updated /usr/WebSphere/AppServer/properties/server/servlet/servletservice/session.properties.

Editing /usr/WebSphere/AppServer/properties/server/servlet/servletservice/connmgr.properties ... Done  
Updated /usr/WebSphere/AppServer/properties/server/servlet/servletservice/connmgr.properties.

Editing /usr/lpp/StorWatch/infospc/server/infosrv ... Done  
Updated /usr/lpp/StorWatch/infospc/server/infosrv.

Configuration completed successfully.

=====  
NOTE: The output below is also saved in the log file /usr/lpp/StorWatch/storwatch.config.log

+-----  
+  
+ Give write permission to StorWatch User  
+ -----  
+ StorWatch will give permission to a specified user to write to the  
+ StorWatch directory. This user and group will also be used to  
+ start the IBM HTTP Server and IBM WebSphere Application Server.  
+ You can choose to use the default values, enter an existing user and  
+ group, or enter a new user and group. StorWatch will create the user  
+ and group if they do not already exist.  
+ The default values are: user=swadmin, group=swadmin.  
+  
+ To use the default values, simply press ENTER at the prompt.  
+  
+-----

Please enter the user:  
(Press ENTER to use the default user: swadmin)

The installation script pauses to ask the userid which will start the IBM HTTP Server and IBM WebSphere Application Server. You can enter a userid or press **Enter** to use the default userid: **swadmin**.

After you answer this prompt, the installation script proceeds to the next prompt to ask for the groupid.

Please enter the group:  
(Press ENTER to use the default group: swadmin)

The installation script pauses to ask the group name which will start the IBM HTTP Server and IBM WebSphere Application Server. You can enter a group name or press **Enter** to use the default group name: **swadmin**.

After you answer the prompt, the installation script will configure IBM HTTP Server, IBM WebSphere, and DB2. The console log will repeat the installation output messages including your input.

The following screens are excerpts from the full console log. The various logs are stored on your system, see Table 12 on page 114.

**Attention:** The most important panel is the very last one which appears just before the script completes. The console displays instructions describing how to do the manual steps to give passwords to the DB2 userid and StorWatch userid. This step must be done to permit the automatic start of the software.



```
////////////////////////////////////  
          Console log lines omitted  
////////////////////////////////////  
Configure DB2  
-----  
  
Starting configuration for IBM DB2 UDB 7.1 ...  
  
Create group 'db2fadm1' and user 'db2fenc1'  
-----  
Group 'db2fadm1' created.  
User 'db2fenc1' created.  
  
Create group 'db2iadm1' and user 'db2inst1'  
-----  
Group 'db2iadm1' created.  
User 'db2inst1' created.  
  
Create DB2 instance db2inst1  
-----  
DBI1070I Program db2icrt completed successfully.  
  
DB2 instance db2inst1 created.  
  
Update dbm configuration with service name db2cdb2inst1  
-----  
DB20000I The UPDATE DATABASE MANAGER CONFIGURATION command completed  
successfully.  
DB21025I Client changes will not be effective until the next time the  
application is started or the TERMINATE command has been issued. Server  
changes will not be effective until the next DB2START command.  
  
DB20000I The TERMINATE command completed successfully.  
  
Set DB2 auto start db2inst1  
-----  
DB2AUTOSTART has been set to TRUE.  
  
Install DB2 License  
-----  
DBI1402I License added successfully.
```

Start db2inst1

```
+-----+
+
+ Summaries StorWatch swinstall
+ -----+
+
Date time swinstall start
Mon Aug 14 15:33:11 PDT 2000
+-----+
+
+ This script will install all the prerequisite products needed by
+ StorWatch Expert. The products which will be installed are:
+ 1. JDK 1.1.8 ptf 7
+ 2. IBM HTTP Server 1.3.6.2
+ 3. IBM WebSphere Application Server 2.031 Standard Edition
+ 4. IBM DB2 UDB 7.1 Workgroup Edition
+ 5. Viador Sage 4.1
+ 6. IBM StorWatch Expert 1.2.0.0
+
+ NOTE:
+ Please read the readme file for information about software and hardware
+ requirements.
+-----+
Pre-install evaluation passed.
Test to be able to open dterm window passed
Estimate disk space required to install StorWatch Expert 415104 Kb in /usr directory
/swdata directory was selected to create your StorWatch Database
Port selected 80.
Hostname selected w40risc01.
StorWatch Expert installation
-----
Java.rte.bin 1.1.8.7 already installed.
Java.rte.classes 1.1.8.7 already installed.
Java.rte.lib 1.1.8.7 already installed.
Installation of IBM HTTP Server 1.3.6.2 completed successfully.
Installation of IBM WebSphere Application 2.031 completed successfully.
Verifying IBM HTTP Server and IBM WebSphere Application Server installed.
IBM HTTP Server 1.3.6.2 passed verification.
IBM WebSphere Application Server 2.031 passed verification..
Installation of IBM DB2 UDB Workgroup Edition 7.1 completed successfully.
Installation of StorWatch Expert 1.2.0.0 completed successfully.
Installation of Viador Sage 4.1 completed successfully.
Config server done.
Config StorWatch done.
Update inittab file done.
Start StorWatch done.
Date time swinstall end
Mon Aug 14 15:59:32 PDT 2000
```

```

+-----+
+-----+
+
+ Change password for db2inst1
+-----+
+ Expert 1.2 installation completed. You need to run these AIX commands
+ to change the password for the db2inst1 user.
+
+     1. Assign a temporary password to the db2inst1 user
+
+         /usr/bin/passwd db2inst1
+
+     2. Switch the user to db2inst1 and change the password
+
+         /usr/bin/su db2inst1 -c passwd
+
+ NOTE: This new password will be used to configure the database
+ connection from the StorWatch Configuration Utility.
+ If the password is not changed, error message
+ H SVC1905S Unexpected error during dbsetup processing SQLException:.
+ will appear at the top of the frame.
+
+
+ Change password for StorWatch user
+-----+
+ This user and group will be used to start the IBM HTTP Server and the
+ IBM WebSphere Application Server, and write to the StorWatch directory.
+ The default values are: user=swadmin, group=swadmin.
+ ( or by your values entered in the prior installation step )
+
+ Repeat steps 1 and 2 in 'Change password for db2inst1'
+
+ For example assume user is swadmin
+     /usr/bin/passwd swadmin
+     /usr/bin/su swadmin -c passwd
+-----+
#

```

## Set Passwords for DB2 and StorWatch User

If you have not yet changed the passwords for the DB2 or StorWatch user, do so at this time. The instructions are located in 113.

## Verify that the StorWatch Expert Installation was Successful

1. Verify that the StorWatch Expert installation was successful.

There are various ways to verify the AIX installation process of the StorWatch Expert:

- a. **Study the console log output:**

The installation script provides the status of the StorWatch Expert installation on the console, whether it was completed successfully or not. If an error occurred during the installation of any product, the installation script uninstalls all the products that are installed previously.

The earlier screens in this manual illustrate excerpts from a successful installation script.

Below is a sample of output from an incomplete installation:

```
Installing IBM WebSphere Application Server 2.301 ...
ERROR: Installation of IBM WebSphere Application Server 2.301 cannot be
       completed.

Undo previous installations ...
Previous installations were undone successfully.
```

**b. Read the log file for each product:**

The installation script saves the installation details and the configuration details of StorWatch Expert and the prerequisite products in a log file for each product. The log file is saved in the root directory of each product. The created installation log files are shown in Table 12. To verify that the installation of StorWatch Expert and its prerequisite products completed successfully, make sure that the result in the Installation Summary session is SUCCESS. (this is at the end of the log file.) If the result is FAILURE, read through the log file for more information. Table 13 shows what happens when the DB2 Configuration does not succeed.

*Table 12. Installation Log Files for AIX*

File Name	Location
jdkpatch.inst.log	/usr/lpp/Java.rte/
httpserver.inst.log	/usr/HTTPServer/
db2.inst.log	/usr/lpp/db2_07_01/
db2fix.inst.log	/usr/lpp/db2_07_01/
viador.inst.log	/usr/lpp/StorWatch/infospc/
storwatch.inst.log	/usr/lpp/StorWatch/

The created configuration log files are shown in Table 13:

*Table 13. Configuration Log Files for AIX*

File Name	Location	Notes
db2.config.log	/usr/lpp/db2_07_01/	Check for DB2 out of space conditions, or DB2 did not start
server.config.log	/usr/lpp/StorWatch/	
storwatch.config.log	/usr/lpp/StorWatch/	

**c. Verify that the servers are installed:**

The installation script (**swinstall**) starts all the servers automatically after all the necessary configuration is complete.

**Note:** The installation script updates the **/etc/inittab** file on your system to enable an automatic start on all the services required by StorWatch to run at startup time. This means that the IBM HTTP Server, the IBM WebSphere Application Server, and Viador should be up and running after a system restart.

To verify that all the services required by StorWatch have been started successfully, enter the following commands at the command line.

**Note:** There should be an explanation of where the problem is occurring in the log file. You must correct the problem before proceeding.

If all products have been installed successfully, you will see the following log file found at **/usr/lpp/StorWatch/storwatch.swstart.log**

```
Date: Wed Jul 5 12:36:48 PDT 2000
User: swadmin

Stopping HTTP Server ...
/usr/HTTPServer/bin/apachectl stop: httpd (no pid file) not running
HTTP Server stopped.

Stopping WebSphere ...
WebSphere stopped.

Starting Viador Sage Server ...
Viador Sage Server started.

Starting HTTP Server and WebSphere ...
/usr/HTTPServer/bin/apachectl start: httpd started
HTTP Server and WebSphere started.
```

Using **grep**, verify that the IBM HTTP Server is running:

An example of the output is shown below:

```
# ps -ef | grep httpd | grep -v grep
swadmin 25524 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
imnadm 26574 1 0 Jun 2 - 0:00 /usr/IMNSearch/httpdLite/httpdLite -r
/etc/IMNSearch/httpdLite/httpdLite.conf
swadmin 27132 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 28542 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 29276 50716 0 Jul 12 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 43434 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 44122 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 45630 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 50284 50716 0 Jul 12 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 50716 1 0 Jul 11 - 1:44 /usr/HTTPServer/bin/httpd
swadmin 53562 50716 0 Jul 11 - 0:00 /usr/HTTPServer/bin/httpd
swadmin 60318 50716 0 Jul 12 - 0:00 /usr/HTTPServer/bin/httpd
```

If you do not see this output, then enter the following commands for each unsuccessful application:

Using **grep**, verify that the IBM WebSphere Application Server is running:

An example of the output is shown below:

```
# ps -ef | grep WebSphere | grep -v grep
swadmin 48338 1 0 Jul 11 - 18:26 java com/ibm/servlet/engine/outofproc
/OutOfProcEngine -nativelogfile /usr/WebSphere/AppServer/logs/oop_native.log
-nativeLogLevel 14 -linktype local -port 8081 -queueName ibmappserve -stblib
/usr/WebSphere/AppServer/plugins/aix/libosetub.so -serverlib /usr/WebSphere/AppServer
/plugins/aix/libasouts.so
```

Using **grep**, verify that Viador is running:

An example of the output is shown below:

```
# ps -ef | grep infospc | grep -v grep
swadmin 6730 1 0 12:17:56
- 0:06 java infospc/ServerCore/InfoSrv
/usr/lpp/StorWatch/infospc/server/infosrv.conf
```

Using **grep**, verify that DB2 is running:

```
# ps -ef | grep db2agent | grep -v grep
db2inst1 22206 29412 0 Jun 27 - 0:09 db2agent (instance)
db2inst1 28726 29412 0 Jun 28 - 0:01 db2agent (idle)
db2inst1 34326 29412 0 Jun 27 - 0:25 db2agent (SWDATA)

Check this file if db2 did not start
/usr/lpp/db2_07_01/db2.config.log
```

## Use Your Browser to do StorWatch Expert Configuration

The StorWatch Expert is comprised primarily of two servlets which run under the WebSphere Services and the IBM HTTP Server. You will use the StorWatch Configuration Servlet at this point to prime the StorWatch Expert for everyday usage.

Follow the steps below to configure StorWatch Expert

1. Launch the web browser and enter the following URL to access the StorWatch Configuration Utility:

**Note:** URL is case sensitive.

`http://<tcpip-host-name>:<port-number>/StorWatchConfig/start.html`

Where:

`<tcpip-host-name>` is the TCP/IP hostname that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name, bring up a command prompt and type **hostname** and press **Enter**.

`<port-number>` is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify it in the URL.

2. The default user name and password will be **admin** in *both* fields.
3. If you see a message that says "WebSphere is Loading StorWatch Configuration Utility", wait 1–2 minutes until the "IBM StorWatch Expert Configuration Utility Introduction" page displays. On the left hand side is a navigation menu that links to tasks you can perform using the Configuration Utility. These tasks are listed in the order they should be performed.
4. Follow these steps to set up the basic configuration.
  - a. Click on **Basic Configuration** in the navigation menu. The "Basic Configuration" page displays.
  - b. You should see the database user name field filled in with **db2inst1** and the password field already filled in (the password is masked for security purposes). You will also see the database alias of SWDATA. This database alias refers the database you created when you validated DB2.
  - c. Click **Finish**. After the values are saved, you should see the message in the megaphone area under the banner:

HSWC1902I StorWatch properties were successfully updated

**Note:** If you get an error message, check to see if your permissions are the same between **/home** and the file system in which the StorWatch database resides, for example **/swdb**. If the permissions are not the same then perform the following steps:

- 1) Give them the same permissions.
- 2) Go to **/usr/lpp/db2\_07\_01/db2.config.log** and follow the instructions in the log file. The instructions should be exercised by the userid with **root** authority

d. Perform the following steps to create the StorWatch Expert database tables:

- 1) Click **Database Setup** in the navigation menu. The **Database Setup** page displays. It should contain the words:

Your database does not seem to contain the StorWatch database tables.

The DB2 userid and password (which you entered in the Basic Configuration step) are checked at this point. If there is an error, you will automatically be sent back to the **Basic Configuration** web page, and an error will appear in the megaphone area. You should check 113 for instructions on setting passwords for the DB2 and StorWatch userids.

HSWC1905S Unexpected error during dbsetup processing SQLException:  
SQLException: [IBM][CLI Driver]  
SQL1403N The username and/or password supplied is incorrect. SQLSTATE=08004.

- 2) Click **Create Tables** to create the database tables that are required by StorWatch Expert. This may take a few minutes. When the tables are created, you should see the message in the megaphone area:

HSWC1909I Setup script successfully executed.

e. Perform the following steps to define a StorWatch Administrator:

- 1) Click the **Define Administrators** link in the navigation menu. The **Define Administrator** page displays. It should contain the words:

There do not appear to be any administrators currently defined.

- 2) Click **Add**. An **Edit** window opens.
- 3) Fill in the Userid and other fields. The userid is authenticated by StorWatch Expert software; it does not need to be an AIX userid. All fields in the dialog window are required except the e-mail field.
- 4) Click **Finish** in the **Edit** window. After the information is saved, you should see the following message in the megaphone area:



HWSC1918I Userid xxxxx added successfully.

- f. Perform the following steps to enter your StorWatch Expert R2 license key(s):
- 1) Click **Enter License Key** in the navigation menu. The **Enter License Key** page displays. Enter your customer name, then use the key information sheet you received in the StorWatch installation package to:
    - Enter the customer number. Use the number shown as **Customer Number** on the key information sheet. It may differ from your own customer number.
    - Select StorWatch feature using the **Item Number** selection. This number may be shown under a heading **Program Number** on the key information sheet.
    - Enter the key from the **Access Key/Password** column of the key information sheet.
  - 2) The next processing depends on whether you have ordered one or two StorWatch Expert R2 features:

- If you have only ordered one StorWatch Expert R2 feature, click the **Finish** button. When processing of the key is completed, you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

- If you have ordered a second StorWatch Expert R2 feature, click the **More** button instead of the **Finish** button. This will trigger the processing of the first key and you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

The **Enter License Key** page is reshown. Provide the following information for the second key:

- Select the second feature in the **Item Number** selection menu.
- Enter the key to go with the second feature from your license key information sheet.

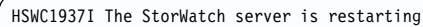
Click the **Finish** button.

When the key processing is completed, you should see the message in the megaphone area:

HSWC1944I 2 license keys are currently recorded, for.....

5. Perform the following steps to restart StorWatch Expert:

- a. Click **Restart StorWatch** in the navigation menu. The **Restart StorWatch Server** page opens.
- b. Click **Restart** to force the server to restart and read in the new configuration values. The message



HSWC1937I The StorWatch server is restarting

should appear. Wait 2 – 3 minutes for the restart to complete.

**Note:** The message in the megaphone area will not indicate that the server has restarted.

6. Perform the following steps to sign on to StorWatch Expert:
  - a. Click the **Sign On** link in the navigation menu. This may take a few minutes. The **Sign On** page opens. Enter the StorWatch Administrator user ID and password. Then select a language. Click the **Sign On** button.
  - b. The **IBM StorWatch Expert** page displays with the navigation menu on the left side. Refer to the on-line help for information on defining nodes, node groups, data collection tasks, scheduling tasks, defining non-administrative user IDs, and other pertinent topics.

At this point, initial configuration is complete. Refer to “Chapter 8. Getting Started” on page 155 to set up your StorWatch Expert.

**Note:** You can find instructions on how to change the default userids/passwords which are used during the installation in “Appendix D. Changing Passwords in AIX” on page 195. Remember, if you change the password for the DB2 userid, this value must be input to the StorWatch configuration web page.

---

## Chapter 6. Upgrading StorWatch Expert from R1 to R2 on AIX

This section provides instructions about how to *upgrade* your IBM StorWatch Enterprise Storage Server Expert R1 (StorWatch Expert R1) system software to the IBM StorWatch Expert R2 software level. This assumes you already have an operational StorWatch Expert R1 on your AIX system. During this software *upgrade*, you will migrate your StorWatch Expert R1 database to be supported by DB2 version 7.1.

If you do not need to maintain your database data across this software *upgrade*, it may be easier for you to uninstall your StorWatch Expert R1 “Chapter 7. Uninstalling StorWatch Expert on AIX” on page 147 and then install StorWatch Expert R2 “Chapter 5. Installing StorWatch Expert on AIX” on page 93.

This upgrade procedure installs StorWatch Expert R2 including maintenance upgrades to the cluster of support software programs which were delivered on the StorWatch Expert R1 CD-ROM (IBM DB2 UDB, IBM HTTP Server, IBM WebSphere, IBM JDK, Viador Sage).

Before beginning the *upgrade* installation, perform the following steps:

You can find useful information and product support at the following web sites:

<http://www.storage.ibm.com/software/storwatch/ess/index.htm>

For service information:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/essmain>

---

### The IBM StorWatch Expert R2 Upgrade Installation

In order to do the StorWatch Expert R2 upgrade installation, you should have some knowledge of AIX administration.

Because you are upgrading your system and wish to maintain your database data from the StorWatch Expert R1, you will be installing the software upgrades in two stages and validating with the browser that your data continues to display. Stage I involves upgrading to DB2 version 7.1 using the DB2 installation program and migrating your database to be usable by DB2

version 7.1. Stage II involves upgrading the remaining *non-DB2* products installed with StorWatch Expert R1: IBM HTTP Server, IBM WebSphere, IBM JDK, Viador Sage, and StorWatch Expert R1.

### Command Conventions

The description of commands in this chapter have the convention of putting optional and substitution parameters between "<" (less than) and ">" (greater than) symbols. The explanation of the optional or substitution parameters follow a "Where" indicator. You should review the explanation before entering the command.

## Hardware, Software, and System Space Requirements

Verify that the AIX system where the StorWatch Expert R2 is to be installed meets the hardware, software, and system space requirements.

### Hardware Requirements

StorWatch Expert requires the following hardware:

- RS/6000 workstation with AIX installed
- CD-ROM drive for installation

### Software Requirements

The following shows the programs that are required to run StorWatch Expert in the AIX operating system environment for upgrade installation.

*Table 14. Required Programs for StorWatch Expert in AIX*

Program	Level	Note
AIX operating system	4.3.3 or 4.3.2 (4.3.2 for upgrade only)	Installed separately
TCP/IP with Domain Name System (DNS) host name		Included with AIX 4.3.3
JDK-this JDK level will be installed from CD-ROM if not present	1.1.8	Included with AIX 4.3.3

**Note:** The upgrade installation of StorWatch Expert R2 will install JDK 1.1.8 on the target AIX system even if the system is at 4.3.2.

### System Space Requirements

StorWatch Expert R1 disk space is organized into four major clusters:

1. DB2 executables, for example `/usr/lpp/db2_05_00`
2. DB2 database, for example `/home/db2inst1`

3. Web server cluster, (IBM HTTP Server, IBM WebSphere, and IBM JDK), for example `/usr/lpp/IBMWebAS`
4. StorWatch Expert R1 and Viador Sage, for example `/usr/lpp/StorWatch`

*Table 15. Space Requirements for StorWatch Expert Components*

Component	Space Required for StorWatch ExpertRelease 1 in MB	Temporary Cummulative - both DB2 v. 5.2 + v. 7.1* MB	Space Required for StorWatch ExpertRelease 2 in MB	Net Additional Space in MB after uninstall of DB2 v. 5.2
DB2 Executables	110	392*	282	172
DB2 Database	installation dependent	**	+3 additional after migration	+3 additional after migration
IBM HTTP server, IBM WebSphere, IBM JDK	54		87	33
StorWatch Expert, Viador Sage	65		72	7
Total	229		444	212
<p>*Note: During the upgrade there will be a period when both DB2 version 5.2 and DB2 version 7.1 are present for migration purposes, you will need an additional 282 MB for this purpose. After DB2 version 5.2 is uninstalled, you will recover space.</p> <p>** The DB2 migration utility will temporarily use +15 MB during execution and yield +3 MB increased database size after migration utility completion.</p>				

**Note:** You will be instructed to create a DB2 database backup which should persist until after you have validated the upgrade to DB2 version 7.1 is working. The space requirement for the backup is from 75 – 110% of the size of the original database.

### **Web Browser Access to StorWatch Expert**

StorWatch Expert includes a Web-based user interface that is designed to operate with the following Web browsers on Windows NT.

### Supported Web Browsers

Make sure you have one of the following levels of these Web browsers:

- Netscape 4.7 for Windows NT 4.0 with Service Pack 6
- Microsoft Internet Explorer 5.0 for Windows NT 4.0 with Service Pack 6

These are more recent browser levels than those required for StorWatch Expert R1. It is recommended that you upgrade your browser level at this time.

Perform the following steps before starting the upgrade installation:

### Userids/Authorities

Review the current StorWatch Expert R1 userids and passwords for the various software components. During the upgrade installation, you will need to know the AIX userid/password combinations:

- root authority, for example **root**.
- authority to stop and start StorWatch, for example **swadmin**
- authority to access the StorWatch database, for example **db2inst1**

In addition, you need to know the StorWatch Expert Administrator userid/password registered uniquely with StorWatch Expert.

Facility	Authentication	Other	StorWatch Expert R1 Default
DB2 UDB*	AIX	instance owner and database owner	dbinst1/db2inst1
IBM HTTP Server	AIX	identified in httpd.conf	swadmin/ swadmin
IBM WebSphere	AIX		swadmin/ swadmin
WebSphere Administrator	WebSphere	WebSphere port 9527 – WAS administration web page	admin/ admin
StorWatch Configuration	IBM HTTP Server	htpasswd tool changes this	admin/ admin (Webserver acl)
StorWatch Basic* Configuration-Database userid	AIX	database userid password	db2inst1/db2inst1

StorWatch Expert Administrator	StorWatch Expert	defined from StorWatchConfig	you define from the StorWatchConfig web page
*Note: The AIX DB2 userid/password must be inputted to StorWatch Expert through the StorWatchConfig web page.			

## Mount the StorWatch Expert R2 CD-ROM

1. Login as a user with root authority.
2. Unmount any inactive Network File System (NFS) mount points before proceeding with the installation. The installation can fail if the CD-ROM mount point shares the same mount table with an inactive NFS mount point. Consult with your AIX administrator if you are not sure about the mount points. To make sure enter the following command:

```
# mount
```

3. Create a mount point or choose an existing mount point. To create a mount point called **/cdrom**, enter the following command:

```
# mkdir /cdrom
```

4. Mount the CD-ROM file system at the desired mount point. For example, to mount a compact disk inserted in a CD-ROM drive known as **/dev/cd0** at mount point **/cdrom**, enter the following command:

```
# mount -o ro -v cdrfs /dev/cd0 /cdrom
```

5. Check for a **readme** file located in the **root** folder on the StorWatch Expert R2 CD-ROM. This **readme** can provide additional information which supersedes information in this guide.
6. You can also find this installation guide on the StorWatch Expert R2 CD-ROM under the file name **installguide81400.pdf**.

---

## Stage I: Upgrading DB2 Version 5.2 to Version 7.1 and Migrating Your Database

### Collect Information From StorWatch Expert R1

**Attention:** In order to do this step you need to know the StorWatch Expert administrator userid/password which is registered with StorWatch Expert R1.

Use your Windows NT browser to sign onto StorWatch Expert R1 and print a sample report for validation purposes.

Use your browser to access the following URL and sign onto StorWatch Expert R1. You will need the StorWatch Administrator userid/password to do this task.

`http://<tcpip-host-name>:<port-number>`

Where:

`<tcpip-host-name>` is the TCP/IP hostname you have been using to get to the StorWatch Expert.

`<port-number>` is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify the URL.

The StorWatch browser web pages are divided into three frames. The left-hand vertical frame is known as the "Navigation Frame" and provides browser links to navigate through the StorWatch Expert. Use the Navigation Frame to bring up a report and print it using your browser print facility, for example to access the Manage Assets→ View Recent Data Report:

```
Navigation Frame→  
  Manage Assets →  
    View Recent Data
```

### Prepare the Database Before DB2 Upgrade

**Attention:** Do the following under the userid with root authority.

#### 1. Prepare Backup Space

Decide where to put the backup file for your database. Create the target directory for the DB2 backup.

To get an idea of the size requirement, issue the following command:

```
# du -sk /home/db2inst1/db2inst1
```

The backup copy of the database will take approximately 75 – 110% of that space. Pick a file system which has enough available space and does not conflict with the space requirements for StorWatch Expert components



from Table 15 on page 123 For example, if you had sufficient available space in the root file system, create the target directory for the backup, **/swdata/db2\_bak**.

```
mkdir /swdata
mkdir /swdata/db2_bak
```

```
# chmod 777 /swdata
# chmod 777 /swdata/db2_bak
```

2. Stop StorWatch Expert R1 programs. Do *not* stop any DB2 services.

Enter the following command:

```
# /cdrom/swUtils swstop
SwUtils running option swstop ...
Detected StorWatch Expert version 1.1.0.0 stop all services..
Stop Info server
Stopping HTTP Server ...
Stopping WebSphere ...
WebSphere stopped.
Checking IBM HTTP Server 1.3.3.1 still alive wait 3 seconds.
  imnadm 10322   1   0   Jul 17   - 0:00 /usr/IMNSearch/httpd-lite/httpd-lite
                                     -r /etc/IMNSearch/httpd-lite/httpd-lite.conf
Done all services stopped
#
```

3. List your database(s).

**Attention:** Do the following under the userid with database authority, for example **db2inst1**.

Enter the following commands:

```
# su - db2inst1
$ ./home/db2inst1/sqllib/db2profile
$ db2 list database directory

System Database Directory

Number of entries in the directory = 1

Database 1 entry:

Database alias           = SWDATA
Database name           = SWDATA
Local database directory = /home/db2inst1
Database release level  = 8.00
Comment                  =
Directory entry type     = Indirect
Catalog node number     = 0
```

4. Use the DB2 **list application** command to check whether any applications are using DB2 services.

```
$ db2 list application
SQL1611W No data was returned by Database System Monitor
```

The above example shows a system where no DB2 applications are running. If the DB2 **list application** output indicates DB2 applications are running, force all DB2 applications. Enter the following command:

```
$ db2 list application
Auth Id  Application  Appl.  Application Id          DB   # of
         Name      Handle                *LOCAL.db2inst1.000721185329  SWDATA  1
-----
DB2INST1 java          9
DB2INST1 java          10                *LOCAL.db2inst1.000721185331  SWDATA  1

$ db2 force application all
DB20000I The FORCE APPLICATION command completed successfully.
DB21024I This command is asynchronous and may not be effective immediately.
```

5. Use the DB2 **backup** command to backup your database.

Enter the following command:

```
$ db2 backup db SWDATA to /swdata/db2_bak
Backup successful. The timestamp for this backup image is : 20000721155706
```

**Note:** The number value in the message varies.

6. Use the DB2 **db2stop** command to stop the DB2 services.

Enter the following command:

```
$ db2stop
SQL1064N DB2STOP processing was successful.
$ exit
```

## Upgrade to IBM DB2 UDB Version 7.1 From the StorWatch Expert R2 CD-ROM

**Attention:** Do the following under the userid with root authority.

1. Change the current directory to the mount point for the CD-ROM. If the CD-ROM was mounted at **/cdrom**, enter the following command:

```
# cd /cdrom/DB2
```

2. Run the db2setup script (**db2setup**) to install DB2. Enter the following command:

```
# ./db2setup -r swdb2udbwe.rsp
```

The DB2 console log will be saved in **/tmp/db2setup.log**. After the script completes and control is returned, you should see the end of the console log which displays summary report:

**Note:** The following are excerpts from the continuous AIX console log. Only the significant portions are illustrated here.

```

# cd /cdrom/DB2
# ./db2setup -r swdb2udbwe.rsp

////////////////////////////////////
                Console log lines omitted
////////////////////////////////////

+-----+
                Summaries:
+-----+

Installation Summary
-----
Name                        Level        Part      Event      Result
-----
db2_07_01.wlic              7.1.0.0     USR       APPLY      SUCCESS

Command completed successfully.

Elapsed time is 0 minutes and 5 seconds.

=====

The log file can be found in /tmp/db2setup.log.

Installation
-----

DB2 Client                                SUCCESS
Code Page Conversion Support - Uni Code Support    SUCCESS
Java Support                                SUCCESS
Common Jar Files                            SUCCESS
DB2 Run-time Environment                    SUCCESS
DB2 Engine                                  SUCCESS
DB2 Communication Support - TCP/IP           SUCCESS
DB2 Communication Support - SNA             SUCCESS
DB2 Communication Support - DRDA Application Server    SUCCESS
DB2 Communication Support - IPX/SPX        SUCCESS
Administration Server                       SUCCESS
Replication                                 SUCCESS
DB2 Sample Database Source                  SUCCESS
Local Warehouse Control Database           SUCCESS
Distributed Join for DB2 Data Sources      SUCCESS
Getting Started                             SUCCESS
Light-weight Directory Access Protocol     SUCCESS
Product Signature for DB2 UDB Workgroup Edition    SUCCESS
#

```

**Note:** At this stage, DB2 versions 7.1 and 5.2 actually coexist. We cannot remove version 5.2 since StorWatch Expert R1 has an installp technical dependency on it. Removal of DB2 version 5.2 will be delayed until the end of Stage II.

## Migrate Your Database

1. Use the DB2 **db2imgr** command to migrate the database *instance*.

**Attention:** Do the following under the userid with root authority.

- a. Enter the following command:

```
# /usr/lpp/db2_07_01/instance/db2imigr db2inst1
db2ckmig was successful. Database(s) can be migrated.
DB2I1070I Program db2imgr completed successfully.
```

This will migrate the database *instance* used by StorWatch Expert, including your Administration Server instance, to a format usable by DB2 Version 7.1.

2. Use the DB2 **migrate** command to migrate the database(s).

**Attention:** Do the following under the userid with database authority, for example **db2inst1**.

- a. Enter the following command:

```
# su - db2inst1
$ . /home/db2inst1/sqllib/db2profile
$ db2start

SQL1063N DB2START processing was successful.
```

- b. For each of your StorWatch databases (if you have more than one), run the DB2 migrate database command as follows:

**Note:** During the DB2 migration step, the database will increase in size to +15 additional MB. At the completion of the DB2 migration step, your database net size will be +3 MB.

```
$ db2 migrate db SWDATA
DB20000I The MIGRATE DATABASE command completed successfully.
```

This will migrate each StorWatch Expert database to a format usable by DB2 Version 7.1.

3. Start StorWatch, IBM HTTP Server, IBM WebSphere by entering:

**Attention:** Do the following under the userid with authority to start StorWatch, for example **swadmin**.

```
$ exit
# su - swadmin
$ /usr/lpp/StorWatch/StorWatchConfig/swstart
$ exit
```

**Note:** This will take 1 - 3 minutes.

## Validate Your StorWatch Expert Runs Successfully Under DB2 Version 7.1

Validate your StorWatch Expert database runs successfully under DB2 version 7.1.

**Note:** StorWatch Expert R2 only supports Windows NT browsers. This step must be done from a Windows NT system.

1. Use your Windows NT browser to access and sign onto StorWatch Expert R1. You will need the StorWatch Administrator userid/password to do this task.

`http://<tcpip-host-name>:<port number>`

Where:

`<tcpip-host-name>` is the TCP/IP hostname that is specified for the IBM HTTP Server.

`<port number>` is the port number specified for the IBM HTTP Server during installation. If you are using the default port 80 for your webserver, you do not have to specify it in the URL.

2. Check your sample report to validate the database.

When WebSphere is finished loading and you can sign onto StorWatch Expert R1, check that you can still see the sample report you printed at the beginning of Stage I in preparation for the migration of the DB2 software to version 7.1.

## Stage II: Upgrading the Non-DB2 StorWatch Expert R1 Products to StorWatch Expert R2

### Uninstall StorWatch Expert R1 Products

**Attention:** Return to your AIX system. The following steps will be done from the userid with root authority.

1. Copy your three StorWatch configuration files for backup purposes. This is done as a precaution.

For Example:

```
# mkdir /usr/temp
# mkdir /usr/temp/r1save
# cp -p /usr/lpp/StorWatch/storwatch.properties /usr/temp/r1save
# cp -p /usr/lpp/HTTPServer/passwd /usr/temp/r1save
# cp -p /usr/lpp/HTTPServer/etc/httpd.conf /usr/temp/r1save
```

2. Use **swUtils** script with the **uinstR1** option to remove the IBM HTTP Server, IBM WebSphere and StorWatch products
  - a. During the running of the **swUtils** script, you will need to confirm continuation on two occasions.

Enter the following commands:

```
# cd /cdrom
# ./swUtils uinstR1
SwUtils running option uinstR1 ...
+++++
+
+   Uninstall StorWatch Expert R1 and all software requirements.   +
+   1.  IBM StorWatch Expert 1.1.0.0                               +
+   2.  IBM WebSphere Application Server 2.0.2.0 Standard Edition  +
+   3.  IBM HTTP Server 1.3.3.1                                   +
+
+   Directories will be removed:                                   +
+   /usr/lpp/IBMWebAS                                             +
+   /usr/lpp/HTTPServe                                           +
+ Release 1 configuration files will be saved in:                 +
+   /usr/lpp/StorWatch/swupgrade                                 +
+
+
+
+++++
Would you like to continue (y/n)?
y
```

StorWatch Expert Pre-upgrade Evaluation

-----  
Detected existing version of IBM HTTP Server.  
Detected existing version of IBM WebSphere Application Server.  
Detected existing version of IBM DB2 UDB.  
Detected existing version of StorWatch Expert.

Pre-upgrade evaluation passed!

Would you like to continue (y/n)?  
y

- b. Verify that the uninstall has been successful. After the command completes and control is returned, you should see the end of the console log which displays the following summary reports:

**Note:** The following are excerpts from the continuous AIX console log. The significant portions are illustrated here.

```
Summaries:
+-----+
Installation Summary
-----
Name                Level      Part      Event      Result
-----
storwatch.esse      1.1.0.0   USR       DEINSTALL  SUCCESS
completed successfully.
Uninstall IBMWebAs..
```

```
Summaries:
+-----+
Installation Summary
-----
Name                Level      Part      Event      Result
-----
IBMWebAS.base.IBMApache  2.0.2.0   USR       DEINSTALL  SUCCESS
IBMWebAS.base.admin    2.0.2.0   USR       DEINSTALL  SUCCESS
IBMWebAS.base.core     2.0.2.0   USR       DEINSTALL  SUCCESS
Uninstall IBM HTTP..
```



```

Summaries:
-----+
Installation Summary
-----
Name                Level      Part      Event      Result
-----
gskrf301.base       3.0.1.30  USR       DEINSTALL  SUCCESS
http_server.base.core 1.3.3.1   USR       DEINSTALL  SUCCESS
http_server.modules.ssl 1.3.3.1   USR       DEINSTALL  SUCCESS
Uninstall StorWatch - IBMWebAS - IBM HTTP completed successfully.

```

## Upgrade to StorWatch Expert R2 Programs from the CD-ROM

Use `swUtils` script with the `ugdToR2` option to upgrade to StorWatch Expert R2 programs from the CD-ROM. During the running of the `swUtils` script, you will need to confirm continuation.

While still in the `/cdrom` directory, enter the following command:

You will see the following screen:

```

# ./swUtils ugdToR2
. . . . . << Copyright Notice >>. . . . .

5648-SWW
(C) Copyright IBM Corporation 1999,2000 Licensed Materials, Property of IBM,
All Rights Reserved.

IBM is a registered trademark of IBM Corp.
US Government Users Restricted Rights - Use, duplication or disclosure
restricted by GSA ADP Schedule Contract with IBM Corp.

. . . . . << End of Copyright Notice >>. . . . .

+-----+
+
+ Welcome to StorWatch Expert upgrade R2 on AIX!!
+
+
+ This script will upgrade all the prerequisite products needed by
+ StorWatch Expert. The products which will be upgraded are:
+ 1. IBM HTTP Server 1.3.6.2
+ 2. IBM WebSphere Application Server 2.031 Standard Edition
+ 3. Viador Sage 4.1
+ 4. IBM StorWatch Expert 1.2.0.0
+
+
+ Dictectories to be installed:
+
+ /usr/HTTPServer
+ /usr/WebSpher
+ /usr/lpp/StorWatch
+
+
+-----+

WARNING!!
-----
PLEASE UNMOUNT ANY INACTIVE NFS MOUNT POINTS BEFORE PROCEEDING WITH THE INSTALLATION.
INSTALLATION CAN FAIL IF THE CD-ROM MOUNT POINT SHARES THE SAME MOUNT TABLE
THAT NFS USES.
IF YOU ARE NOT SURE ABOUT THIS, PLEASE CONSULT THE AIX ADMINISTRATOR.

Testing to be able to open dtterm window.
Test to be able to open dtterm window passed
Estimate disk space required to install StorWatch Expert 133120 Kb in /usr directory
Free space in file system /usr = 277692 KB

Would you like to continue (y/n)?
y

```

During the running of the script you will see an indication that the IBM HTTP Server is being installed.

```

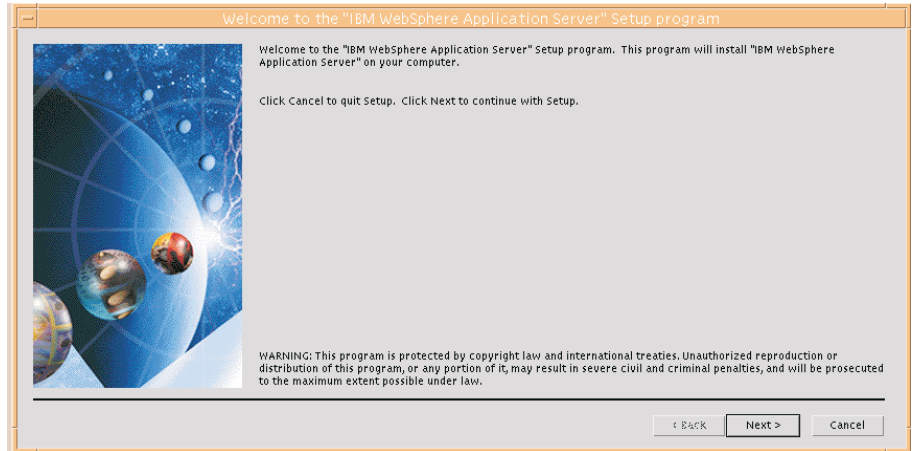
Installing IBM HTTP Server 1.3.6.2 ...
Installation of IBM HTTP Server 1.3.6.2 completed successfully.

```

You will then be led through the WebSphere installation which will run under the control of the IBM WebSphere installation GUI.

**Attention:** Do not change the default settings presented in the WebSphere installation GUI. The StorWatch Expert depends on the WebSphere default settings.

1. When the "Welcome to IBM WebSphere Application Server Setup" program panel appears, click **Next**.

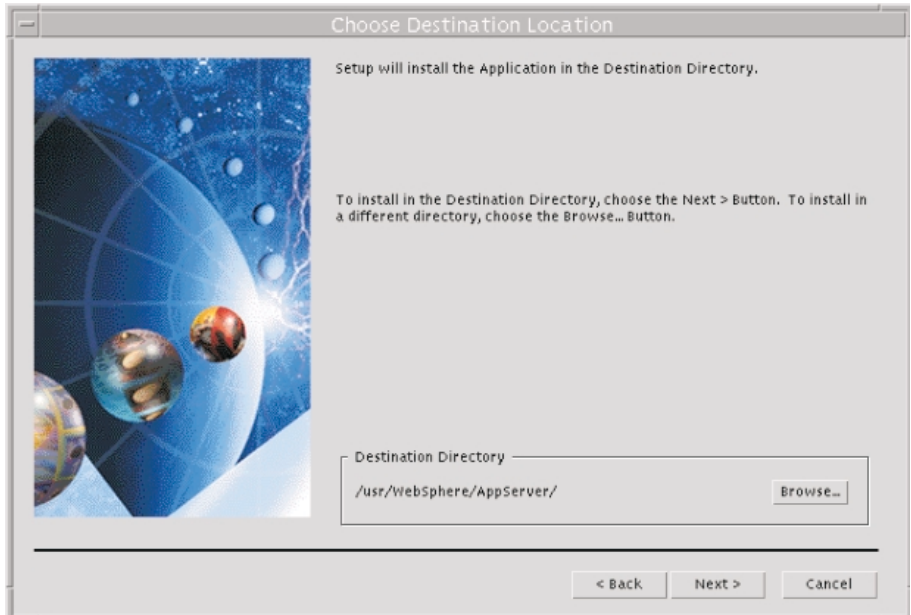


SWE00079

2. When the "Choose Destination Location" panel appears, click **Next**.

**Do not change settings**

Do not change the destination location from the default because the space allocation provided in Table 15 on page 123 assumes the default location.

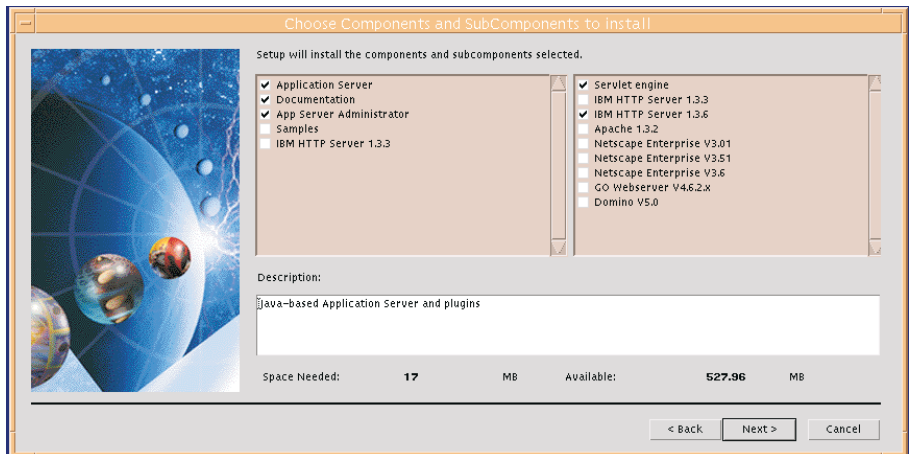


SWE00032

3. When the Choose Components and Subcomponents to Install panel appears, click **Next**.

**Do not change settings**

It is very important that you do not change any of the settings of the check boxes as presented to you in this panel.

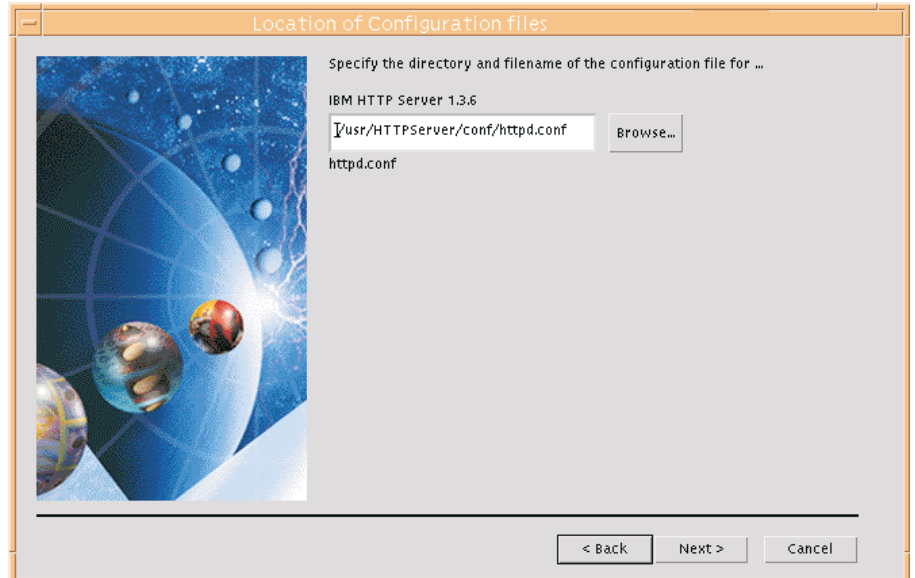


SWE00032

4. When the "Location of Configuration Files" panel appears, click **Next**.

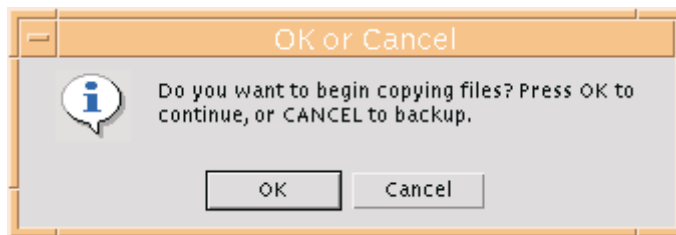
**Do not change settings**

It is very important that you do not change the directory and file name of the configuration file for the HTTP Server presented to you in this panel.



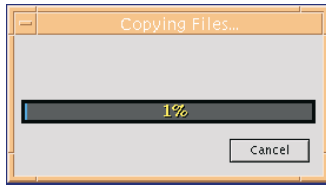
SWE00034

5. Click on **OK** at the "OK or Cancel" panel.



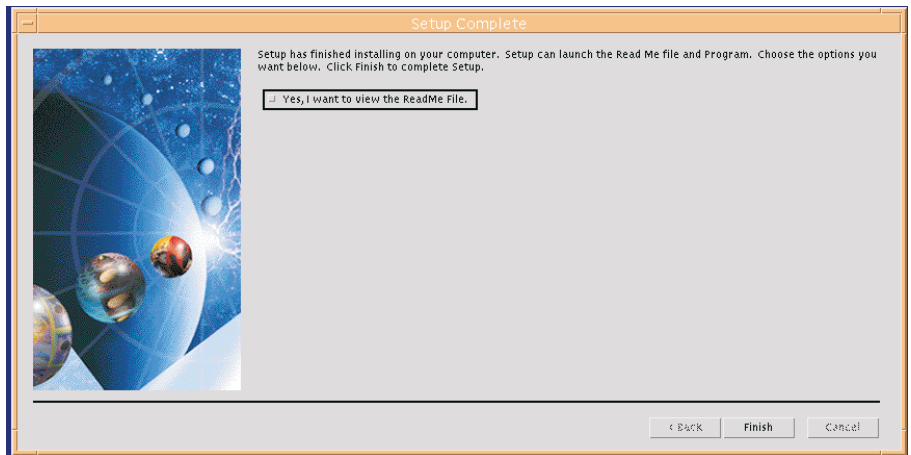
SWE00035

- You will see a "Copying Files" panel indicating the files are being copied to your system.



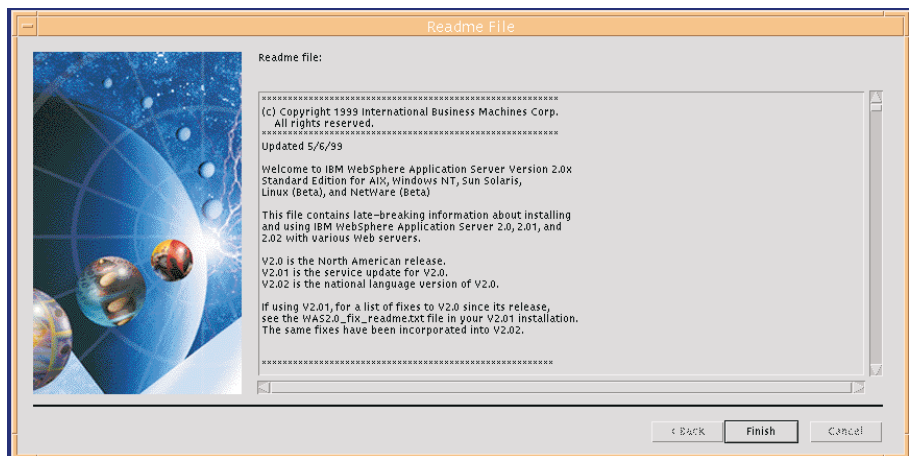
SWE00031

- Click on **Finish** at the "Setup Complete" panel.



SWE00080

- Click on **Finish** to close the "Readme File" panel and conclude the WebSphere installation.



SWE00081

9. The remaining products are installed. You will then see the following screens:

**Note:** The following are excerpts from the continuous AIX console log. The significant portions are illustrated here.

```

////////////////////////////////////
          Console log lines omitted
////////////////////////////////////
Installing IBM WebSphere 2.031 ...
About to Install...
Installation of IBM WebSphere Application 2.031 completed successfully.

Installing StorWatch Expert 1.2.0.0 ...
Installation of StorWatch Expert 1.2.0.0 completed successfully.

Installing Viador Sage 4.1 ...
Installation of Viador Sage 4.1 completed successfully.

```

```

Starting configuration for IBM HTTP Server, IBM WebSphere, and Viador Server ...

Editing /usr/HTTPServer/conf/httpd.conf ... Done
Updated /usr/HTTPServer/conf/httpd.conf.

Editing /usr/WebSphere/AppServer/properties/bootstrap.properties ... Done
Updated /usr/WebSphere/AppServer/properties/bootstrap.properties.

Editing /usr/WebSphere/AppServer/properties/server/servlet/servletservice/servlets.properties ... Done
Updated /usr/WebSphere/AppServer/properties/server/servlet/servletservice/servlets.properties.

Editing /usr/WebSphere/AppServer/properties/server/servlet/servletservice/session.properties ... Done
Updated /usr/WebSphere/AppServer/properties/server/servlet/servletservice/session.properties.

Editing /usr/WebSphere/AppServer/properties/server/servlet/servletservice/connmgr.properties ... Done
Updated /usr/WebSphere/AppServer/properties/server/servlet/servletservice/connmgr.properties.

Editing /usr/lpp/StorWatch/infospc/server/infosrv ... Done
Updated /usr/lpp/StorWatch/infospc/server/infosrv.

Configuration completed successfully.
Config server done.

```

```

/usr/HTTPServer/bin/apachectl stop: httpd stopped
Config StorWatch done.
Stop then start db2
SQL1032N No start database manager command was issued.
SQL1063N DB2START processing was successful.
Updating the /etc/inittab file ...
The /etc/inittab file has been updated to autostart the HTTP Server, WebSphere, and Viador
required to run StorWatch at boot time.
Update inittab file done.
Start StorWatch Expert
-----
StorWatch is going to start all the servers required by StorWatch Expert to run.
Please wait ...
/usr/HTTPServer/bin/apachectl stop: httpd stopped
Removed /tmp/.asibmappserve file was left from previous WebSphere installed.
user swadmin
*****
*
* All the services have been started for StorWatch.
* You can restart the services anytime by running this script:
*
*   /usr/lpp/StorWatch/StorWatchConfig/swstart
*
* Please use the StorWatch Configuration Utility to create database tables used
* by StorWatch and define StorWatch administrators.
*
* The StorWatch Configuration Utility is located at the following URL:
*
*   http://w40risc01:80/StorWatchConfig/start.html
The upgrade of StorWatch Expert has completed successfully.

```



## Do StorWatch Expert Configuration

The StorWatch Expert is comprised primarily of two servlets which run under the WebSphere Services and the IBM HTTP Server. You will use the StorWatch Configuration Servlet at this point to prime the StorWatch Expert for everyday usage.

**Attention:** Your Windows NT browser may have cached the StorWatch Expert R1 web pages, and you will not be able to see the revised StorWatch Expert R2 web pages. To fix that clear your browser disk cache, close *all* browser windows and restart the browser:

1. Clear your browser cache.

- From your Netscape taskbar:

```
Edit->
  Preferences ->
    Advanced ->
Cache->
Clear Memory Cache->
Clear Disk Cache
```

- From your Microsoft Internet Explorer taskbar:

```
Tools->
  Internet Options ->
    General->
Temporary Internet Files->
Delete all offline content (check this box)->
OK->
OK
```

2. Close *all* browser windows and restart the browser.

Follow the steps below to configure StorWatch Expert

1. Launch the web browser and enter the following URL to access the StorWatch Configuration Utility:

**Note:** The URL is case sensitive.

```
http://<tcpip-host-name>:<port-number>/StorWatchConfig/start.html
```

Where:

<tcpip-host-name> is the TCP/IP hostname that is specified for the IBM HTTP Server.

<port-number> is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify it in the URL.

2. A box will appear that asks for a user name and password. The StorWatch Expert R1 default userid and password will be **admin** in *both* fields.
3. If you see a message that says "WebSphere is Loading StorWatch Configuration Utility", wait 1–2 minutes until the "IBM StorWatch Expert Configuration Utility Introduction" page displays. On the left hand side is a navigation menu with browser links to tasks you can perform using the Configuration Utility. These tasks are listed in the order they should be performed.
4. Follow these steps to upgrade the basic configuration.
  - a. Click on **Basic Configuration** in the navigation menu. The "Basic Configuration" page displays.
    - 1) You should see the database userid field filled in with the DB2 userid, for example **db2inst1**. The password field is already filled in and the password is masked for security purposes. You will also see the database alias of **SWDATA** (this is not case sensitive). This database alias refers to the database you migrated when you upgraded DB2 in Stage I.
    - 2) Click **Finish**. After the values are saved, you should see the message in the megaphone area under the banner:

HSWC1902I StorWatch properties were successfully updated

- b. Perform the following steps to upgrade the StorWatch Expert database tables:
  - 1) Click **Database Setup** in the navigation menu. The **Database Setup** page displays. It should contain the words:
- 2) Click the **Update Tables** button to update the database tables that are required by StorWatch Expert. This may take a few minutes. When the tables are updated, you should see the message in the megaphone area:

Your database appears to contain StorWatch Expert tables.....

HSWC1909I Setup script successfully executed.

- c. Click on **Define Administrators** to review your StorWatch Administrator userid(s) which you originally defined in StorWatch Expert R1. The StorWatch Administrator userid is authenticated by StorWatch Expert; it does not have to be known to the operating system where the StorWatch Expert is installed. You can Add, Remove or Edit these userids at this time if you wish.
- d. Perform the following steps to enter your StorWatch Expert R2 license key(s):

- 1) Click **Enter License Key** in the navigation menu. The **Enter License Key** page displays. Enter your customer name, then use the key information sheet you received in the StorWatch installation package to:
  - Enter the customer number. Use the number shown as **Customer Number** on the key information sheet. It may differ from your own customer number.
  - Select StorWatch feature using the **Item Number** selection. This number may be shown under a heading **Program Number** on the key information sheet.
  - Enter the key from the **Access Key/Password** column of the key information sheet.
- 2) The next processing depends on whether you have ordered one or two StorWatch Expert R2 features:
  - If you have only ordered one StorWatch Expert R2 feature, click the **Finish** button. When processing of the key is completed, you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

- If you have ordered a second StorWatch Expert R2 feature, click the **More** button instead of the **Finish** button. This will trigger the processing of the first key and you should see the following message in the megaphone area:

HSWC1944I 1 license key is currently recorded, for.....

The **Enter License Key** page is reshown. Provide the following information for the second key:

- Select the second feature in the **Item Number** selection menu.
- Enter the key to go with the second feature from your license key information sheet.

Click the **Finish** button.

When the key processing is completed, you should see the message in the megaphone area:

HSWC1944I 2 license keys are currently recorded, for.....

5. Perform the following steps to restart StorWatch Expert:
  - a. Click **Restart StorWatch** in the navigation menu. The **Restart StorWatch Server** page opens.
  - b. Click the **Restart** button to force the server to restart and read in the new configuration values. The message

```
HSWC1937I The StorWatch server is restarting
```

should appear. Wait 1 – 3 minutes for the restart to complete.

**Note:** The message in the megaphone area will not indicate that the server has restarted.

Perform the following steps to sign on to StorWatch Expert:

- a. Click the **Sign On** link in the navigation menu. This may take a few minutes. The **Welcome to IBM StorWatch Expert** page opens. Enter the StorWatch Administrator user ID and password. Then select a language. Click the **Sign On** button.
- b. The **IBM StorWatch Expert** page displays with the navigation menu on the left side. Refer to the on-line help for information on defining nodes, node groups, data collection tasks, scheduling tasks, defining non-administrative user IDs, and other pertinent topics.
- c. Check your sample validation report which you printed in preparation for the upgrade to StorWatch Expert R2.

6.

At this point, initial configuration is complete and you have validated your database runs successfully with StorWatch Expert R2. You can now uninstall DB2 version 5.2 (see “You can now uninstall DB2 version 5.2.”) and refer to “Chapter 8. Getting Started” on page 155 to set up your StorWatch Expert.

**Note:** You can find instructions on how to change the default userids/passwords which are used during the installation in “Appendix D. Changing Passwords in AIX” on page 195. Remember, if you change the password for the DB2 userid, this value must be input to the StorWatch configuration web page.

### You can now uninstall DB2 version 5.2.

At this point, you have been using your original StorWatch database with the services of DB2 version 7.1, you can now uninstall DB2 version 5.2.

1. Use **installp** to uninstall DB2 version 5.2.

```
# /usr/sbin/installp -u -V2 db2_05_00
```

2. Remove the DB2 version 5.2 directory.

```
# rm -r /usr/lpp/db2_05_00
```

---

## Chapter 7. Uninstalling StorWatch Expert on AIX

This section describes the process of removing the StorWatch Expert from your AIX operating system environment.

### Command Conventions

The description of commands in this chapter have the convention of putting optional and substitution parameters between "<" (less than) and ">" (greater than) symbols. The explanation of the optional or substitution parameters follow a "Where" indicator. You should review the explanation before entering the command.

---

### Preparing to Remove the StorWatch Expert

All the processes needed for running *must* be stopped before uninstalling StorWatch Expert and its prerequisite products. This is because StorWatch Expert deletes the default user and default group from the system if any are created at installation time. Therefore, if the IBM HTTP Server and the IBM WebSphere Application Server are configured to use user **swadmin** and group **swadmin** to start its processes, any running process started by the servers *if not stopped before uninstalling StorWatch Expert* will be left running in the background after StorWatch Expert is uninstalled.

Perform the following steps to stop all the processes:

1. From a login session, as a user with root authority stop StorWatch.

```
# /usr/lpp/StorWatch/StorWatchConfig/swstop  
/usr/HTTPServer/bin/apachectl stop: http stopped
```

2. Use **grep** to verify the IBM HTTP Server has been stopped successfully:

```
# ps -ef | grep httpd  
imnadm 10322 1 0 Jul 17 - 0:00 /usr/IMNSearch/httpd-lite/httpd-lite -r  
/etc/IMNSearch/httpd-lite/httpd-lite.conf  
root 13132 12696 3 16:45:39 pts/0 0:00 grep httpd  
#
```

3. Perform the following steps to clean up DB2:
  - a. Switch to the user **db2inst1** and stop the DB2 instance by entering the following commands:

```
# su - db2inst1
$ ./home/db2inst1/sqlllib/db2profile
$ db2 force application all
DB20000I The FORCE APPLICATION command completed successfully.
DB21024I This command is asynchronous and may not be effective immediately.
$ db2stop
SQL1064N DB2STOP processing was successful.
$ db2 terminate
DB20000I The TERMINATE command completed successfully.
$ exit
```

- b. Drop the DB2 instance by entering the following command:

```
# /usr/lpp/db2_07_01/instance/db2idrop db2inst1
DBI1070I Program db2idrop completed successfully.
```

- c. Remove users that are created by DB2 by entering the following commands:

```
# rmuser '-p' db2inst1
# rmuser '-p' db2fenc1
```

Repeat this step for all users created for DB2 usage.

- d. Remove groups that are created by DB2 by entering the following commands:

```
# rmgroup 'db2iadm1'
# rmgroup 'db2fadm1'
```

- e. Remove directories that are created by DB2 by entering the following commands:

```
# rm -r /home/db2inst1
# rm -r /home/db2fenc1
```

- f. Remove all DB2 log files by entering the following command:

```
# rm /tmp/db2*
```

- g. If you created a new file system specifically for the StorWatch database, you may want to remove that file system.

---

## Uninstalling StorWatch Expert and its Prerequisite Products

Perform the following steps to uninstall StorWatch Expert and its prerequisite products :

**Note:** All commands are case sensitive.

### 1. Uninstall StorWatch Expert:

**Note:** StorWatch Expert must be uninstalled before other prerequisite products can be uninstalled. Uninstalling StorWatch Expert on AIX automatically uninstalls Viador Sage.

- a. Log on as a user with root authority.
- b. Enter the following command:

```
# /usr/sbin/installp -u -V2 storwatch.esse
```

The following is an excerpt from the StorWatch Expert uninstallation log:

```
installp: DEINSTALLING software for:
storwatch.esse 1.2.0.0

Checking if Group 'swadmin' and User 'swadmin' created by StorWatch exist...

User 'swadmin' removed.
Group 'swadmin' removed.

Finished processing all filesets. (Total time: 1 mins 24 secs).

+-----+
Summaries:
+-----+

Installation Summary
-----
Name                Level      Part      Event      Result
-----
storwatch.esse      1.2.0.0   USR       DEINSTALL  SUCCESS
#
```

## 2. Uninstall DB2:

- a. Log on as a user with root authority.
- b. Enter the following command:

```
# /usr/sbin/installp -u -V2 db2_07_01
```

The following is an excerpt from the DB2 uninstallation log:

```

+-----+
Summaries:
+-----+

Installation Summary
-----
Name                               Level      Part      Event      Result
-----
db2_07_01.cdb                      7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.cj                       7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.cnvucs                   7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.cs.drda                  7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.cs.ipx                   7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.cs.rte                   7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.cs.sna                   7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.das                      7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.db2.engn                 7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.db2.samples              7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.dj                       7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.gs                       7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.jdbc                     7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.ldap                     7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.rep1                     7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.wlic                     7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.db2.rte                  7.1.0.0   USR       DEINSTALL  SUCCESS
db2_07_01.client                    7.1.0.0   USR       DEINSTALL  SUCCESS
#

```



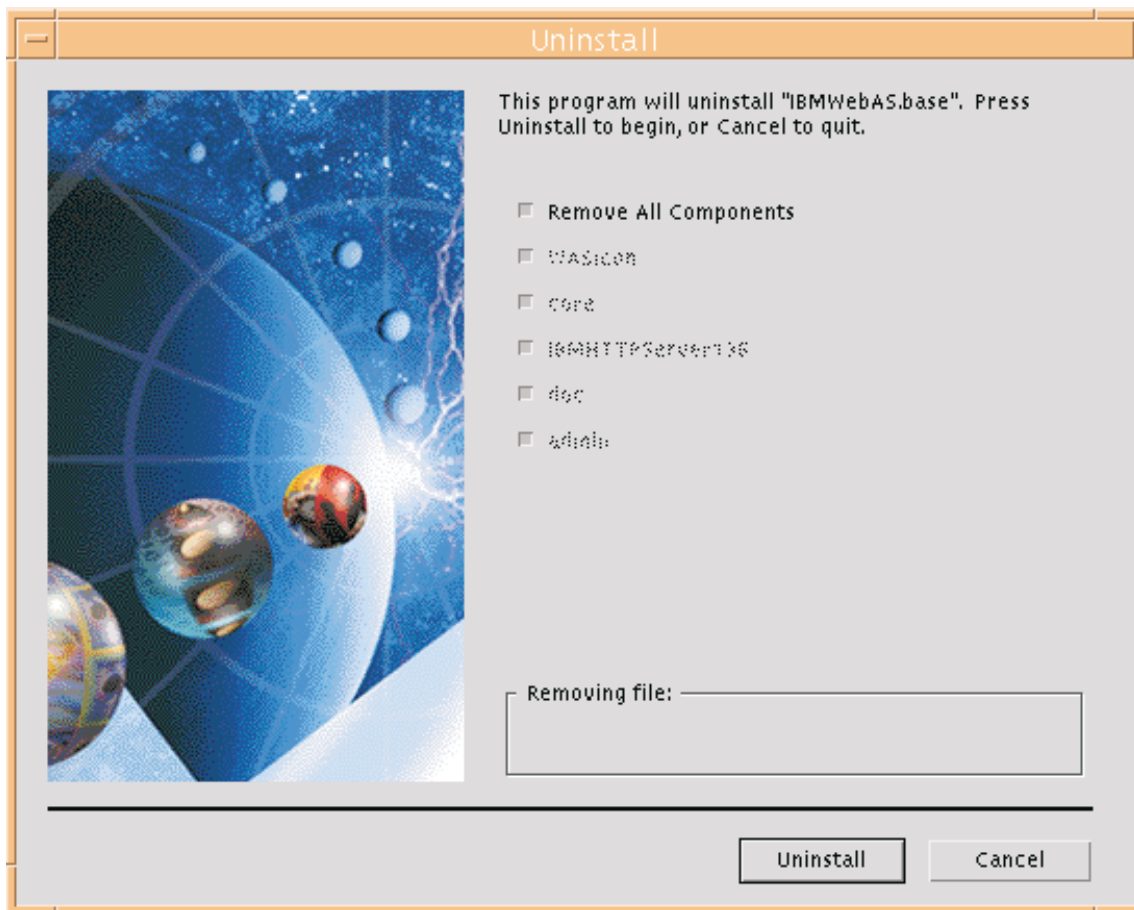
### 3. Uninstall the IBM WebSphere Application Server:

- a. Log on as a user with root authority.
- b. Enter the following command:

```
# /usr/sbin/installp -u -V2 IBMWebAS.base
```

The IBM WebSphere uninstall GUI will appear. Click the **Uninstall** button.

**Attention:** The IBM WebSphere uninstall program determines correctly the components to be uninstalled. This is reflected in the Uninstall panel. Do not change the settings.



SWE00078

Figure 44. WebSphere Uninstall GUI

The following is an excerpt from the IBM WebSphere uninstallation log:

```
+-----+
Summaries:
+-----+

Installation Summary
-----
Name                    Level      Part      Event      Result
-----
IBMWebAS.base.ITJ.Info  1.0.0.0   USR       DEINSTALL  SUCCESS
IBMWebAS.base.doc      2.0.3.1   USR       DEINSTALL  SUCCESS
#
```

- c. Remove the IBM WebSphere directory by entering the following command:

```
# rm -r /usr/WebSphere
```

#### 4. Uninstall the IBM HTTP Server:

- a. Log on as a user with root authority.  
b. Remove the IBM HTTP Server by entering the following command:

```
# /usr/sbin/installp -u -V2 http_server.* gskrf301.base
```

- c. Remove the IBM HTTP Server directory by entering the following command:

```
# rm -r /usr/HTTPServer
```

The following is an excerpt from the IBM HTTP Server uninstallation log:

```
+-----+
Summaries:
+-----+

Installation Summary
-----
Name                    Level      Part      Event      Result
-----
gskrf301.base           3.0.1.96   USR       DEINSTALL  SUCCESS
http_server.admin       1.3.6.2    USR       DEINSTALL  SUCCESS
http_server.base.source 1.3.6.2    USR       DEINSTALL  SUCCESS
http_server.base.rte    1.3.6.2    ROOT     DEINSTALL  SUCCESS
http_server.base.rte    1.3.6.2    USR       DEINSTALL  SUCCESS
#
```

- d.

#### Remove Hidden Files

This file was created by IBM WebSphere during the installation and needs to be deleted. To do this, enter:

```
# rm /tmp/.asibmapserve
```



---

## Chapter 8. Getting Started

You can log on to the StorWatch Expert by performing the following steps:

1. Launch the web browser and enter the following URL to access the StorWatch Expert:

**Note:** URL is case sensitive.

http://<tcpip-host-name>:<port-number>

Where:

**<tcpip-host-name>**

This is the TCP/IP hostname that is specified for the IBM HTTP Server. If you do not know your TCP/IP host name, bring up a command prompt and type **hostname** and press **Enter**.

**<port-number>**

This is the port number specified for the web server during installation. If you are using default port 80 for your web server, you do not have to specify it in the URL.

2. If you see a message that says "WebSphere is Loading StorWatch Expert", wait 1–2 minutes until the "IBM StorWatch Expert Configuration Utility Introduction" page displays. On the left hand side is a navigation menu that links to tasks you can perform using the StorWatch Expert. These tasks are listed in the order they should be performed.
3. Enter your **userid**. This is the id you specified during the configuration step of installation.
4. Enter your **password** as specified during the configuration.
5. Click **Sign On** to enter the **Introduction** page.

**Note:** Once you are in StorWatch Expert, you can find information that will help you understand what each of the fields in database tables mean by clicking on the following:

Index->  
"R"->  
Reference ->  
Database Table Definitions

---

## Node Discovery

To find subsystems in the network from which data can be collected, StorWatch Expert must search through a set of IP addresses and ports defined by the user. This process is called Node Discovery. The following steps will guide you to your first node discovery and data collection:

1. Log onto the StorWatch Expert

Enter your **Userid** and **password**. Remember that they are case sensitive.

2. Define Nodes panel

The Define Nodes panel will help you enter your list of IP addresses, service type, and ports for your selected service type.

In the **StorWatch Applications** frame, choose:

```
Manage StorWatch ->
  Management Scope->
    Define Nodes
```

Use the **List of IP Addresses** table to add or remove IP addresses. The IP address is a unique address that identifies a node on a network. Specifying IP addresses or ranges of addresses allows you to quickly define the entire scope of machines, or management scope that you want to manage using StorWatch Expert.

- Enter an IP address or IP address range that you want to include. Although one or more IP addresses can be entered, at least one IP address or range must be entered.

**Note:** You need to add both cluster IP addresses when referring to an ESS.

- The "\*" character is used to specify ranges of addresses. For example, "9.113.10.\*". Using "\*" is a shorthand way of expressing "0-255".
- Also, a range of addresses may be expressed using nn-mm. For example, specifying 9.113.10.112-115 is equivalent to specifying the following range of IP addresses:
  - 9.112.10.112
  - 9.113.10.113
  - 9.114.10.114
  - 9.115.10.115
- Limitations: the first three parts of the four-part address field cannot contain an asterisk or a range.

3. Click the **Add** button after every IP entry.
4. Click the **Next** button when finished entering the IP addresses for you enterprise.
5. On the **List of Service Types** table:

- a. Select a service type from the List of Service Types, or the type of Specialist that you wish to discover and collect data from. The **Default Ports** box then displays the default port for this service type. If you wish to keep the default port, add it to the Selected Ports list by selecting it, then clicking the right arrow between the Default Ports box and the Selected Ports box. It will then be added to the Selected Ports list. The following are lists of service types for StorWatch Expert:
  - Magstar 3494 Tape Library Specialist
  - Magstar 3494 Peer-to-Peer VTS Specialist
  - IBM StorWatch Enterprise Storage Server Specialist

**Note:** If you are only going to use the ESS Expert component, you only have to select the IBM Enterprise Storage Server Specialist service type. If you are only going to use the Enterprise Tape Library Expert component, you only have to select the Magstar 3494 Tape Library or Magstar Peer-to-Peer VTS Specialist. You can also select from the other service types such as Tivoli Storage Manager (ADSTAR Distributed Storage Manager) or 3466 Network Storage Manager, if you plan to use the **Launch Web Interfaces** facility.

- b. If you wish to add a port to the Selected Ports list, enter a port number in the New Ports box.
  - c. Click **Add**. The added port is now in the Selected Port list.
  - d. Repeat steps b and c for each port you wish to add
  - e. Repeat steps a through d for each service type selected.
  - f. To remove a port number for a service type, click the port number in the Selected Ports list, then click **Remove**.
  - g. Click **Next** to go to the Management Scope Selection Verification tables. If the values are correct, click **Finish**.
6. Schedule Node Discovery panel:
- a. The Schedule Node Discovery panel will help you enter calendar and timing information.

Enter the appropriate information in the following entry fields:

    - **Task ID:** *Required*. A name or identifier associated with the node discovery task, such as NDT1. The Task ID field can contain:
      - 1 to 10 contiguous characters
      - Blanks are not allowed
      - A single (\_) can only be used with 2 or more characters.

**Note:** The first time you define a node discovery task, you must input the task id of your choice. After the first node discovery task is defined, you cannot change the task id.

- **Description:** *Required.* A brief statement to describe the node discovery task, such as Node Discovery Task: Weekly. The Description field can contain:
  - 1 to 40 characters
- **Schedule takes effect on:** *Required.* Select a start date from the calendar provided at the down arrow. The default is today's date.
  - You can only select a start date that is the current day or later.
  - If you enter a start date that is the current day, the run time must be the current time or later
- **Never Expire:** *Default.* The node discovery task will not have an expiration date associated with it and the job will continue to run indefinitely as scheduled. If this check box is selected (the default), the Expiration Date input field cannot be updated. If you desire to end this task, uncheck this check box and enter a schedule expiration date in the Expiration Date input field.
- **Schedule repeats:** *Required.* Check one of the radio boxes:
  - **one time only:** *Default.* When this radio button is selected, the data collection task is run only once on the date specified in the Start Date input field.
  - **every:** Specify a number from 1 to 366 in the number of days input field. This determines that the data collection task will be run on the start date and then every n number of days after that. For example, if the number 3 is specified, the data collection task will be run on the start date and then every 3 days after the specified start date.
  - **day of week:** The data collection task is run on the day of the week you select from the pull-down menu that appears when you select the day of the week radio button.
  - **day of month:** The data collection task is run on the day of the month you select from the pull-down menu that appears when you select the day of the month radio button.
- **Run task at:** *Required.* Enter a start time in hh:mm format, using a 24-hour clock (example: 20:38). For a scheduled task being defined for the first time, the initial value is the current time. For a scheduled task being edited, the start time is a residual value.
- The Never Expire check box must be unchecked before you can enter an expiration date. Select an expiration date from the calendar provided at the down arrow. This field is required, unless Never Expire is selected.
  - The expiration date must be later than the start date
  - The task is not run on the expiration date (task expiration is at 00:00 on the expiration date).



- **Task Output is Private:** *Optional.* When this box is checked, the output generated from the node discovery task is private and can be viewed only by authorized users.
- **Set Trace On:** *Optional.* When this box is checked, a trace of the node discovery operation is performed. Do not set trace on unless requested to do so by the support organization.

b. Click **Finish** to save and schedule the node discovery task. A message will confirm it is saved.

## 7. Task Status panel:

After you schedule your node discovery, you can check the task status. This panel allows you to select a date and view the status of completed, aborted, canceled, and active tasks submitted for performance on and after the date specified. Additionally you can choose to view information on tasks that are scheduled to be performed. In the StorWatch Applications frame, choose:

```
Manage StorWatch ->
  View Status->
    Task Status
```

The following information must be provided to view the specified tasks:

### Show Tasks Since

This date determines which tasks are displayed in the status window. All completed, aborted, canceled, and active tasks submitted on and after the specified date are displayed. The date can be selected from the calendar that displays when the down arrow is clicked, or it can be manually entered in the input field in MM/DD/YYYY format. This field is required to view status information on all but scheduled tasks. The previous day's date is the default.

**Go** This task button sends the **Show Tasks Since (mm/dd/yyyy)** request to the server for processing. This button must be clicked to view the specified status information.

### View Scheduled Tasks

This button displays the Scheduled Task panel, which provides detailed information on tasks that are scheduled to be performed. For more information on this panel, see Scheduled Tasks. This is an optional task button.

### Task Status table

If a date is indicated in the **Show Tasks Since** input field and the **Go** task button is clicked, the following information is displayed in the Task Status table for you to see each completed, aborted, canceled, and active task submitted on and after the specified date.

**Cancel**

For any active tasks displayed, a **cancel** button is displayed next to them in the Cancel column. This allows a user to cancel an active task prior to completion. Only one task can be canceled at a time. Canceling a task is not an immediate action. It may take a few moments for the cancel to complete. The Cancel column does not pertain to any tasks other than active tasks.

**Task ID**

A name or identifier associated with the task. If the status of a task is completed, aborted, or canceled you can click directly on the associated Task ID to display a detailed activity report (task log) of any information gathered and messages generated during the task performance. If the Task Status is active, or if the task output is private and you are not the task owner or the administrator, you will not be able to click the Task ID.

**User** The name or identifier of the person who submitted the task to perform.

**Task Status**

The current state of the task. Valid status states are:

- *Active* - the task is currently being performed.
- *Completed* - the task has finished running.
- *Aborted* - the task has ended prematurely due to an abend or the server being down.
- *Canceled* - the task has been stopped prior to its completion by a user.

**Start Date**

The date the task started running on the server.

**Start Time**

The time of day that the task started running on the server. The format for Start Time is HH:MM:SS (for example, 24:59:00).

**End Date**

The date that the task completed or was canceled. The format for this field is MM/DD/YYYY.

**End Time**

The time of day when the task completed or was canceled. The format for this field is HH:MM:SS (for example, 24:59:00).

---

## Collecting and preparing data for the ESS Expert

This step is only required for the ESS Expert. The ETL expert collects data and prepares data as soon as Node Discovery is completed. Due to the complexity, it is necessary to schedule the data collection for capacity, asset, and performance reports.

### Scheduling and Viewing Capacity Information for the ESS Expert

The manage capacity function for ESS Expert allows you to selectively collect data from the set of IBM servers that have been discovered during the node discovery task. You can request that ESS Expert provide this information as a summary of capacity, in gigabytes (GB) by server type, or detailed information on a specific server. ESS Expert can also provide this summary by server model type or provide a summary of the capacity of each host system to which you have assigned space on a storage server.

The top view recent data manage capacity reports give you the following data for each storage server by nickname/serial number.

- Type of storage (Raid, Non-Raid, undefined) in GB
- Total raw capacity in GB
- Formatted storage (fixed block, CKD, unformatted) in GB
- Number of logical control units
- A list of SCSI attached hosts that summarizes the capacity in GB for each host having assigned space on one or more servers.

### Schedule Data Collection for Capacity Panel

The schedule data collection panel will help you create a new data collection task for capacity.

In the StorWatch Applications frame choose:

```
Manage ESS->  
  Manage Capacity->  
    Schedule Data Collection
```

First click **Create** in the **Lists of Data Collection Tasks** table unless there is already a task on the list of data collection tasks that you would like to view, delete, or edit. In which case you should skip ahead to "Viewing, Deleting, and Editing Data Collection Tasks for Capacity" on "Viewing, Deleting, and Editing Data Collection Tasks for Capacity" on page 165

1. To define a new Data Collection task, first review the List of Storage Servers which have been discovered during the Node Discovery task. (If the storage server in which you are interested is not in the list, you must schedule the Node Discovery task for its IP address.) The default is to perform data collection for all listed storage servers or you can optionally select specific storage server(s).

### **Serial Number**

*Optional.* Check the box(es) to the left of the serial number(s) to select the storage server(s) for which you want to collect data. If you check no box, the default is taken and data will be collected for all storage servers.

### **Nickname**

*Optional.* A name or identifier which the ESS Expert will associate with the storage server serial number in reported information. Only one nickname is possible per storage server and the nickname becomes effective for all subsequent Data Collection tasks and the Performance reports when you finish defining the Data Collection task. The nickname can contain:

- 1 to 16 contiguous characters
- Space (blank) characters are not allowed
- ISO-LATIN-1 Letters: A-Z, a-z
- Digits: 0-9
- Symbols: @ # \$ \_

### **IP Address**

*Required.* Make a selection in the IP Address field. The values presented are those discovered by the ESS Expert during the Node Discovery task. These IP addresses correspond to the ESS Specialist IP addresses which, in turn, correspond to each of the clusters in the storage server. So the choice of IP address determines which cluster does data collection. Ensure that you choose a cluster which is not going to be impacted by service during the data collection task.

### **ESS Specialist Configurer User Name Password**

*Required.* Provide the ESS Specialist user name and password which the ESS Expert will use to connect to the ESS Specialist on the storage server. The ESS Specialist user name must have "Configurer" or higher authority level. Although "Configurer" authority is required, Performance Data Collection will not modify the ESS configuration. When the Performance Data Collection Task is scheduled, it will modify the ESS to trigger the periodic sending of performance data to the ESS Expert system and turn that trigger off at the end of the data collection time period. The ESS Specialist user name and password which the ESS Expert will use to connect becomes effective when you finish defining the Data Collection task. You can revise the ESS Specialist user name and password which the ESS Expert will use to connect for this and all subsequently scheduled Data Collection tasks through any Data Collection Task definition.

- For the ESS Specialist user name, you can use up to 64 characters.
- For the ESS Specialist password, you can use up to 64 characters.

### **Verify User Name and Password with ESS Specialist**

Select Yes if you want the provided ESS Specialist user name and password to be verified with the ESS Specialist at this time. (ESS Expert will attempt to sign on with the ESS Specialist on the selected server to verify that the user name and password are valid and have "Configurer" authority.) It is recommended that you verify the ESS Specialist user name and password the first time you provide or change the ESS Specialist user name and password.

2. Click next to move to the next entry field.
3. Enter the appropriate information in the Task ID, Calendar, and Timing fields:

#### **Task ID**

*Required.* A name or identifier associated with the data collection task, such as ser1cpcty. The Task ID field can contain:

- 1 to 10 contiguous characters.
- Blanks are not allowed.
- A single (\_) can only be used with 2 or more characters.

#### **Description**

*Required.* A brief statement to describe the data collection task, for example, capacity growth, April-June. The Description field can contain

- 1 to 40 characters.

#### **Schedule Takes Effect On**

*Required.* Select a start date from the calendar provided at the down arrow. The default is today's date.

- You can only select a start date that is the current day or later.
- If you enter a start date that is the current day, the run time must be the current time or later.

#### **Schedule Expiration Date**

The Never Expire check box must be unchecked before you can enter an expiration date. Select an expiration date from the calendar provided at the down arrow. This field is *required*, unless Never Expire is selected.

- The expiration date must be later than the start date.
- The task is not run on the expiration date (task expiration is at 00:00 on the expiration date).

### Never Expire

*Default.* The data collection task will not have an expiration date associated with it and the job will continue to run indefinitely as scheduled. If this check box is selected (the *default*), the Expiration Date input field cannot be updated. If you desire to end this task, uncheck this check box and enter a schedule expiration date in the Expiration Date input field.

### Schedule repeats:

*Required.* Check one of the radio buttons:

- **one time only:** *Default.* When this radio button is selected, the data collection task is run only once on the date specified in the Start Date input field.
- **every:** Specify a number from 1 to 366 in the number of days input field. This determines that the data collection task will be run on the start date and then every n number of days after that. For example, if the number 3 is specified, the data collection task will be run on the start date and then every 3 days after the specified start date.
- **day of week:** The data collection task is run on the day of the week you select from the pull-down menu that appears when you select the day of the week radio button.
- **day of month:** The data collection task is run on the day of the month you select from the pull-down menu that appears when you select the day of the month radio button.

### Run Task At

*Required.* Enter a start time in hh:mm format, using a 24-hour clock (example: 20:38). The initial value is the current time.

### Task Output is Private

*Optional.* When this box is checked, the output generated from the data collection task is private and can be viewed only by authorized users.

### Set Trace On

*Optional.* When this box is checked, a trace of the data collection operation is performed. Do not set trace on unless requested to do so by the support organization.

4. Click **Next** to display the task settings you have defined.
5. If you are satisfied with the settings, click **Finish**
6. If you want to change the settings, click **Back**
7. To clear the settings, click **Cancel**.

### **Viewing, Deleting, and Editing Data Collection Tasks for Capacity**

Use this panel to define, edit, view, or delete a data collection task that has already been created:

1. If you haven't already created a data collection task, see "Schedule Data Collection for Capacity Panel" on page 161.
2. Go to the **Schedule Data Collection** panel if you are not already there.
3. Check the box next to the User ID of the data collection task that you want to view, edit, or delete.
4. You can now view, delete, or edit the data collection task that you have chosen.
5. Click **View** to view a data collection task that already exists.
6. Click **Edit** to change a data collection task that already exists. This function allows you to change the parameters for the task you select.
7. Click **Delete** to delete a data collection task that already exists.

### **View Historical Data on Capacity Panel**

To see historical data on capacity, click **View Historical Data Capacity** located on the bottom of the **Schedule Data Collection** panel. You can also get there by choosing:

```
Manage ESS ->  
  Manage Capacity->  
    View Historical Data
```

Enter information about the data you want to see in the fields:

1. Select the type of capacity growth report you want to see. Use the drop-down menu in the **Capacity Growth Report Type** field to click either **Growth by Storage Servers**, or **Growth by Open System Attached Host**.
2. Enter the starting date, as mm/dd/yyyy, in the Show capacity growth since field.
3. Enter the ending date, as mm/dd/yyyy, in the Stop reporting growth on field.
4. Use the drop-down menu to select a period interval (week, month, quarter) in the Show capacity growth by field.
5. After you have filled in the fields, click Show Report. The historical report is displayed.

## **Scheduling and Viewing Performance Information for the ESS Expert**

### **Special Considerations for Performance Data Collection**

Because of the close interactions between the ESS Expert and the ESS Specialist, there are some considerations you need to think about when you are doing performance data collection.

1. Make sure the ESS Specialist is active for each cluster on the target storage server.

There are several considerations here:

- In order to collect accurate data, ESS Expert must be able to communicate with the ESS Specialist. The basic requirements for communication are that the ESS Specialist is available, and that a network connection is possible.
  - In order to obtain complete information about the storage server, the ESS Specialist on both clusters must be active. If the ESS Specialist on one cluster is inactive, incomplete data will be returned.
  - The userid and password to access the ESS Specialist must be valid. Without a valid userid and password a connection to the ESS Specialist cannot occur.
- .
2. If a network or ESS Specialist problem occurs after a connection is established, the ESS Expert remains connected until the scheduled period expires.
    - Once the connection between ESS Expert and ESS Specialist takes place and performance data is being transferred, the ESS Expert has a network port opened and is essentially listening for data from ESS Specialist. If a problem in the network, storage server, or ESS Specialist occurs while ESS Expert is in this listening mode, the ESS Expert will remain connected to the port, waiting for data, until the end of the specified period of data collection. If you notice that this happened, you can cancel the ESS Expert task by opening the Status folder, clicking **Task Status**, and canceling the associated active task.
  3. When volumes are added or deleted from the ESS, you must restart the performance task to reflect the changes, and to enable it to gather the statistics accurately.
    - If volumes are added to, or deleted from, an ESS after the performance collection starts, the statistics for the new volumes will be unresolved, and the displays will show a configuration change occurred.
    - To prevent this from happening, restart the performance collection task after volumes are added or deleted in the ESS. That way, the new set of arrays and volumes will be used, and all the proper statistics will be collected and summarized.
    - Messages that might contain additional information are in the Log.
      - To access the Log, open the **Status** folder, and click **Logs**. You can find more detailed information on individual log messages by clicking the message number link.

### **Schedule Data Collection for ESS Performance Panel**

This panel allows you to set the time frame and sampling interval within the time frame over which you want the ESS Expert to collect raw data on performance. When the Performance Data Collection task begins, the storage



server is modified to trigger the periodic sampling of performance statistics and the sending of that data to the ESS Expert. You control the duration of the periodic sampling interval by setting the input field labeled "Sample Interval". When the Performance Data Collection task is scheduled to stop, the storage server is modified to stop sending performance statistics.

In the StorWatch Applications frame, choose:

Manage ESS->  
  Manage Performance->  
    Schedule Data Collection

1. Click **Create** in the list of data collection tasks table unless there is already a task on the list of data collections tasks that you would like to view, edit, or create in which case you should skip ahead to "Viewing, Deleting, and Editing Data Collection Tasks for Performance" on "Viewing, Deleting, and Editing Data Collection Tasks for Performance" on page 170
2. To define a new Data Collection task, first review the List of Storage Servers which have been discovered during the Node Discovery task. (If the storage server in which you are interested is not in the list, you must schedule the Node Discovery task for its IP address.) The default is to perform data collection for all listed storage servers or you can optionally select specific storage server(s).

#### **Serial Number**

*Optional.* Check the box(es) to the left of the serial number(s) to select the storage server(s) for which you want to collect data. If you check no box, the default is taken and data will be collected for all storage servers.

#### **Nickname**

*Optional.* A name or identifier which the ESS Expert will associate with the storage server serial number in reported information. Only one nickname is possible per storage server and the nickname becomes effective for all subsequent Data Collection tasks and the Performance reports when you finish defining the Data Collection task. The nickname can contain:

- 1 to 16 contiguous characters
- Space (blank) characters are not allowed
- ISO-LATIN-1 Letters: A-Z, a-z
- Digits: 0-9
- Symbols: @ # \$ \_

#### **IP Address**

*Required.* Make a selection in the IP Address field. The values presented are those discovered by the ESS Expert during the Node Discovery task. These IP addresses correspond to the ESS Specialist IP addresses which, in turn, correspond to each of the

clusters in the storage server. So the choice of IP address determines which cluster does data collection. Ensure that you choose a cluster which is not going to be impacted by service during the data collection task.

### **ESS Specialist Configurer User Name Password**

*Required.* Provide the ESS Specialist user name and password which the ESS Expert will use to connect to the ESS Specialist on the storage server. The ESS Specialist user name must have "Configurer" or higher authority level. Although "Configurer" authority is required, Performance Data Collection will not modify the ESS configuration. When the Performance Data Collection Task is scheduled, it will modify the ESS to trigger the periodic sending of performance data to the ESS Expert system and turn that trigger off at the end of the data collection time period. The ESS Specialist user name and password which the ESS Expert will use to connect becomes effective when you finish defining the Data Collection task. You can revise the ESS Specialist user name and password which the ESS Expert will use to connect for this and all subsequently scheduled Data Collection tasks through any Data Collection Task definition.

- For the ESS Specialist user name, you can use up to 64 characters.
- For the ESS Specialist password, you can use up to 64 characters.

### **Verify User Name and Password with ESS Specialist**

Select Yes if you want the provided ESS Specialist user name and password to be verified with the ESS Specialist at this time. (ESS Expert will attempt to sign on with the ESS Specialist on the selected server to verify that the user name and password are valid and have "Configurer" authority.) It is recommended that you verify the ESS Specialist user name and password the first time you provide or change the ESS Specialist user name and password.

3. Click next to move to the next panel.
4. Enter the appropriate information in the Task ID, Calendar, and Timing fields:

#### **Task ID**

*Required.* A name or identifier associated with the data collection task, such as ser1cpcty. The Task ID field can contain:

- 1 to 10 contiguous characters.
- Blanks are not allowed.
- A single ( ) can only be used with 2 or more characters.

## Description

*Required.* A brief statement to describe the data collection task, for example, capacity growth, April-June. The Description field can contain

- 1 to 40 characters.

## Schedule Takes Effect On

*Required.* Select a start date from the calendar provided at the down arrow. The default is today's date.

- You can only select a start date that is the current day or later.
- If you enter a start date that is the current day, the run time must be the current time or later.

## Never Expire

The Never Expire check box must be unchecked before you can enter an expiration date. Select an expiration date from the calendar provided at the down arrow. This field is *required*, unless Never Expire is selected.

- The expiration date must be later than the start date.
- The task is not run on the expiration date (task expiration is at 00:00 on the expiration date).

## Schedule Expiration Date

*Default.* The data collection task will not have an expiration date associated with it and the job will continue to run indefinitely as scheduled. If this check box is selected (the *default*), the Expiration Date input field cannot be updated. If you desire to end this task, uncheck this check box and enter a schedule expiration date in the Expiration Date input field.

## Schedule repeats:

*Required.* Check one of the radio buttons:

- **one time only:** *Default.* When this radio button is selected, the data collection task is run only once on the date specified in the Start Date input field.
- **every:** Specify a number from 1 to 366 in the number of days input field. This determines that the data collection task will be run on the start date and then every n number of days after that. For example, if the number 3 is specified, the data collection task will be run on the start date and then every 3 days after the specified start date.
- **day of week:** The data collection task is run on the day of the week you select from the pull-down menu that appears when you select the day of the week radio button.

- **day of month:** The data collection task is run on the day of the month you select from the pull-down menu that appears when you select the day of the month radio button.

#### **Run Task At**

*Required.* Enter a start time in hh:mm format, using a 24-hour clock (example: 20:38). The initial value is the current time.

#### **Stop Sampling At**

*Required.* Enter a stop time in hh:mm format, using a 24-hour clock (example: 20:38). The initial value is the current time.

#### **Sample Interval Length**

*Required.* Enter a number of minutes value from 5 to 60. The storage server will take a performance statistics sample approximately every x number of minutes (the sample interval). This raw data will then be sent to the ESS Expert.

#### **Task Output is Private**

*Optional.* When this box is checked, the output generated from the data collection task is private and can be viewed only by authorized users.

#### **Set Trace On**

*Optional.* When this box is checked, a trace of the data collection operation is performed. Do not set trace on unless requested to do so by the support organization.

5. Click **Next** to display the task settings you have defined.
6. If you are satisfied with the settings, click **Finish**
7. If you want to change the settings, click **Back**
8. To clear the settings, click **Cancel**.

#### **Viewing, Deleting, and Editing Data Collection Tasks for Performance**

Use this panel to define, edit, view, or delete a data collection task that has already be created:

1. Go to the **Schedule Data Collection** panel if you are not already there.
2. Check the box next to the User ID of the data collection task that you want to view, edit, or delete.
3. You can now view, delete, or edit the data collection task that you have chosen.
4. Click **View** to view a data collection task that already exists.
5. Click **Edit** to change a data collection task that already exists. This function allows you to change the parameters for the task you select.
6. Click **Delete** to delete a data collection task that already exists.

## Schedule Data Preparation (Roll Up) for ESS Performance Panel

The Create function for the Data Preparation task applies to data collected for ALL servers for all data collection tasks. Therefore there is no need to select servers. Perform the following steps to prepare performance data for performance reports.

### Notes:

1. If you schedule a time to purge performance sample data (for example, every 3 days) be sure the Data Preparation task is run ahead of this purge task (and, in this example, at least every 3 days) to ensure you process all sample data before it is removed from the database. See Defining and Scheduling the Purge Database Task for more information.
2. If multiple data preparation tasks are scheduled and run at the same time, only the first report will be of value.
3. The time associated with performance sample data is based on the clock associated with each source Enterprise Storage Server. A storage server's clock could be hours ahead of the ESS Expert system's clock. In other words, the timestamp from the ESS, when converted to the StorWatch Expert times zone, results in future time. The data preparation task will process all recent data stored in the database. The task will also resummarize one or two hours of data associated with its prior runtime. This allows updating of hourly statistics even before the current hour is complete.

In the StorWatch Applications frame, choose:

```
Manage ESS  ->  
  Manage Performance->  
    Schedule Data preparation
```

1. First click **Create** in the **List of Data Preparation Tasks** table.
2. Enter the appropriate information in the Task ID, Calendar, and Timing fields.

### Task ID

Required. A name or identifier associated with the data collection task, such as ser1cpcty. The Task ID field can contain:

- 1 to 10 contiguous characters.
- Blanks are not allowed.
- A single (\_) can only be used with 2 or more characters.

### Description

Required. A brief statement to describe the data collection task, for example, capacity growth, April-June. The Description field can contain

- 1 to 40 characters.

### Start Date

Required. Select a start date from the calendar provided at the down arrow. The default is today's date.

- You can only select a start date that is the current day or later.
- If you enter a start date that is the current day, the run time must be the current time or later.

### Begin At (Start Time)

Required. Enter a start time in hh:mm format, using a 24-hour clock (example: 20:38). The initial value is the current time.

### Expiration Date

The Never Expire check box must be unchecked before you can enter an expiration date. Select an expiration date from the calendar provided at the down arrow. This field is required, unless Never Expire is selected.

- The expiration date must be later than the start date.
- The task is not run on the expiration date (task expiration is at 00:00 on the expiration date).

### Never Expire

Default. The data collection task will not have an expiration date associated with it and the job will continue to run indefinitely as scheduled. If this check box is selected (the default), the Expiration Date input field cannot be updated. If you desire to end this task, uncheck this check box and enter an expiration date in the Expiration Date input field.

### Choose Schedule Interval

Required. Check one of the radio boxes:

- **one time only:** *Default.* When this radio button is selected, the data collection task is run only once on the date specified in the Start Date input field.
- **every** Specify a number from 1 to 366 in the number of days input field. This determines that the data collection task will be run on the start date and then every n number of days after that. For example, if the number 3 is specified, the data collection task will be run on the start date and then every 3 days after the specified start date.
- **day of week** The data collection task is run on the day of the week you select from the pull-down menu that appears when you check the check box.
- **day of month** The data collection task is run on the day of the month you select from the pull-down menu that appears when you check the check box.

### **Task Output is Private**

*Optional.* When this check box is marked, the output generated from the Data Preparation task is private and can be viewed only by authorized users.

### **Set Trace On**

*Optional.* When this check box is marked, a trace of the Data Preparation is performed. Do not set trace on unless requested to do so by the support organization.

3. Click on **Finish** to save and schedule the data preparation task. A message will confirm it is saved.

### **Additional Information about your StorWatch Database**

Once you are in StorWatch Expert, you can find information that will help you understand what each of the fields in your StorWatch database tables mean by clicking on the help icon in the upper right corner and following links in the help system:

Index->

"R"->

Reference ->

Database Table Definitions





---

## Appendix A. Starting and Stopping the Servers

You can start and stop the servers at any time. These procedures are used when you need to stop and start the servers manually. For example, if you need to apply a PTF (program service), you can stop and start the servers manually. The sections below describe how to start and stop the servers on the Windows NT and AIX operating systems.

---

### Starting and Stopping the Servers in Windows NT

To run StorWatch Expert, its prerequisite products must be running. The installation program configures these products to automatically start when the machine is restarted. The following table lists the prerequisite products and their associated services that must be running to run StorWatch Expert. See Table 16 for information on checking and starting these services.

*Table 16. Required Prerequisite Products and Related Services for StorWatch Expert*

Product	Services
DB2	DB2 – DB2 DB2 – DB2DAS00
IBM HTTP Server	IBM HTTP Server
Viador Sage	Viador Information Center
WebSphere Application Server	WebSphere Servlet Services

### Starting the Servers in Windows NT

StorWatch Expert is configured to start automatically when the system is restarted. If you have stopped StorWatch Expert, you can restart it using the following steps:

1. Make sure that the DB2 and Viador processes are started. You can use the **Services** window to check their status and start them if necessary. See Figure 42 on page 82.
2. Make sure both the WebSphere and the IBM HTTP Server services are stopped. If one of these services is running, stop it.
3. Restart the IBM HTTP Server service. This will automatically restart the WebSphere service and the StorWatch Expert servlet.

If you used the **stopWAS.bat** file to stop StorWatch Expert (see “Stopping the Servers in Windows NT” on page 176), you can use the

```
<storwatch-dest-path>\StorWatchConfig\startWAS.bat
```

file to start the IBM HTTP Server service. When this service begins, it automatically starts StorWatch Expert.

## Stopping the Servers in Windows NT

To stop the StorWatch Expert servlet, you must stop the IBM HTTP Server and the WebSphere Application Server by stopping the WebSphere and IBM HTTP Server services. You can stop these two services from the **Services** window. See Figure 42 on page 82.

You can also stop both services by running the **stopWAS.bat** file which is in the **StorWatchConfig** directory under the StorWatch installation directory. You can run this batch file using the following steps:

1. Click **Start**, then click **Run**. The **Run** dialog window opens.
2. Enter the following command in the **Run** dialog window:

```
<storwatch-dest-path>\StorWatchConfig\stopWAS.bat
```

Where:

<storwatch-dest-path> is the directory where StorWatch Expert was installed.

3. Click **OK**.

## Stopping and Restarting StorWatch Expert Using the Configuration Utility

To stop and restart StorWatch Expert from the StorWatch Configuration Utility, go to the following web site:

```
http://<hostname>:<port>/StorWatchConfig/start.html
```

Where:

<hostname> is the name of the machine where StorWatch Expert is installed, and <port> is the port on which the HTTP Server is running.

From the StorWatch Configuration page, perform the following steps:

1. Click **Restart StorWatch** on the navigation menu.
2. On the **Restart StorWatch Server** page, click **Restart**.

---

## Starting and Stopping the Servers in AIX

This section describes how to start and stop the servers on AIX.

### Starting the Servers in AIX

You can restart the servers at any time using one of the following methods:

1. To restart all services from the command line, enter the following commands:

```
# su <storwatch-user> (for example: su swadmin)
# /usr/lpp/StorWatch/StorWatchConfig/swstart
```

Where:

<storwatch-user> is the user ID chosen to start the IBM HTTP Server and IBM WebSphere Application Server.

2. To restart all the services from the StorWatch Configuration Utility, go to the following Web site:

```
http://<hostname>:<port>/StorWatchConfig/start.html
```

Where:

<hostname> is the name of the machine where StorWatch Expert is installed, and <port> is the port on which the HTTP Server is running.

From the StorWatch Configuration page, perform the following steps:

- a. Click **Restart StorWatch** on the navigation menu.
- b. On the **Restart StorWatch Server** page, click **Restart**.

### Stopping the Servers in AIX

To stop all services from the command line, enter the following commands:

```
# su <storwatch-user> (for example: su swadmin)
# /usr/lpp/StorWatch/StorWatchConfig/swstop
```

Where:

<storwatch-user> is the user ID chosen to stop the IBM HTTP Server and IBM WebSphere Application Server.



## Appendix B. Troubleshooting Problems

This chapter describes problems you might encounter when installing, uninstalling, or configuring StorWatch Expert. To check for the latest updates on troubleshooting problems, go to the following Web site:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/esscomm>

For information about how to report a StorWatch StorWatch Expert problem, worldwide contact numbers, and the IBM Software Support Handbook, go to the following Web site:

<http://SSDDOM01.storage.ibm.com/techsup/swtechsup.nsf/support/esscomm>

Problem	Type	See
Errors occurred in the database setup script execution during the <b>Completing the Installation Process</b> section (for Windows NT)	Installation	"Errors Occurred in Database Setup Script Execution (for Windows NT)" on page 180
Dynamic link library file (IMNAPI.dll) was not found during installation (for Windows NT)	Installation	"Dynamic Link Library IMNAPI.dll Not Found (for Windows NT)" on page 182
IBM HTTP Server cannot be started after StorWatch Expert has been installed (for Windows NT)	Installation	"Cannot Start IBM HTTP Server (for Windows NT)" on page 183
DB2 attempts to create the <b>db2admin</b> user ID and fails on the Windows NT server that is acting as a backup domain controller	Installation	"DB2 and HTTP Server Fails on a Windows NT Server Acting as a Backup Domain Controller" on page 184
HTTP Server is not installed properly and the HTTP Server needs to be reinstalled on a Windows NT server that is acting as a backup domain controller. The setup utility fails because it cannot find any valid user ID.	Installation	"DB2 and HTTP Server Fails on a Windows NT Server Acting as a Backup Domain Controller" on page 184
The HSWC1905S error occurs during the StorWatch configuration	Configuration	"HSWC1905S Error During StorWatch Configuration" on page 184
DB2 migration problems	Migration	"DB2 Migration Problems" on page 185

Problem	Type	See
You cannot uninstall DB2, due to certain DB2 services or processes that are still running (for Windows NT)	Uninstallation	"Cannot Uninstall DB2 (for Windows NT)" on page 186
You are unable to remove shortcut folders for <b>SpaceSQL 4.2</b> or <b>License Use Runtime</b> (for Windows NT)	Uninstallation	"Unable to Remove Shortcut Folders for SpaceSQL 4.2 or License Use Runtime (for Windows NT)" on page 187

---

## Errors Occurred in Database Setup Script Execution (for Windows NT)

Some errors are reported in the **DB2 CLP command** window during step Figure 13 on page 28. Those error messages will be recorded in the **swmakedb.log** file. The database setup script that is run is **swmakedb.db2**, which is located in the same directory as the log file. Errors can occur during this step because the user name that was used for logging in after installation (step "DB2 User Name Restrictions" on page 190) does not meet the DB2 requirements.

To correct this problem, log out (if you are not already logged in as db2admin), then log back in as the **db2admin** user. The password should be **db2admin** unless you have changed it. Inspect the **swmakedb.log** for errors. It will be necessary to rerun the database setup script if the log indicates that the user ID or password used to attach to the database was invalid. An example of an error message is as follows:

```
create database SWDATA alias SWDATA
SQL 1092N "ADMINIST" does not have the authority to perform the requested command.
```

If the log contains the following error message, it will be necessary to first remove the old database data or metadata and then rerun the script :

```
create database SWDATA alias SWDATA
SQL1005N The database alias "SWDATA" already exists in either the local
database directory or system database directory.
```

This message indicates that either the StorWatch database named **SWDATA** already exists or data for this database still exists from a previous installation of DB2.

To remove database data or metadata from a previous installation of DB2, delete the **\DB2** directory which is usually on the same drive where DB2 was installed. You might want to back up this data before deleting the directory.

To rerun the database setup script, **swmakedb.db2**, first check the script to verify that the password specified in the script is valid. If you have changed

the password for the **db2admin** user, you must update the script with the new password. You might want to back up the original script file.

The password is the last word in line 2 of the script shown as follows:

```
attach to db2 user db2admin using db2admin;
```

In the example above, the password is **db2admin**.

You will then have to execute the script with the following command from a command prompt:

```
db2cmd db2 -z <db2udb-dest-path>:\makedb2.log -tvf <db2udb-dest-path>:\swmakedb.db2
```

This output will be appended to the **makedb2.log** file. If you updated the script file with the new **db2admin** user's password, you might want to change the **db2admin** user's password again, because the current password is exposed in that script file.

---

## Dynamic Link Library IMNAPI.dll Not Found (for Windows NT)

During the DB2 installation process, a message window opens with the following information:

```
C:\WINNT40\SYSTEM\CMD.EXE
Configuring Net Question, please wait
```

Another message window appears to inform you that the dynamic link library file **IMNAPI.dll** was not found in the specified path. This behavior appears to be a result of DB2 not being able to install **Net Question**. The reason for this is because the DB2 setup program indicates that this product was already installed. Actually, the DB2 setup program is detecting a partially installed Net Question product. The CD-ROM installation continues without the required support files for the **Net Question** product when installing StorWatch Expert.

Symptoms of this problem occur when you login after a restart. A startup entry called **Start HTML Search Server** is defined by the installation process. The startup executable **C:\SQLLIB\bin\db2nq.exe** depends on the **C:\IMMNQ\_N\httpdl.exe**. A message window appears, indicating **httpdl.exe** encountered an application error. This error probably occurred because **C:\IMMNQ\_NT\IMNAPI.dll** was not installed. The reason why it was not installed by the installation process was because **Net Question** already exists during the installation.

For the CD-ROM installation to be successful, you must:

1. Remove the **Net Question** environment variables (IMNINST and IMNINSTSRV)
2. Remove the **Net Question** directory (C:\IMMNQ\_NT)
3. Remove the **Start HTML Search Server** startup entry (C:\WINNT40\{Profiles\All Users\Start Menu\Startup\Start HTML Search Server)
4. Remove the Net Question register entry (H\_LOCAL\_KEY -> SOFTWARE -> IBM -> NetQuestion)
5. Follow the directions for "Chapter 4. Uninstalling StorWatch Expert in Windows NT" on page 81.
6. Follow the installation directions for the operating system you are using.



---

## Cannot Start IBM HTTP Server (for Windows NT)

During the installation process, you must specify the information that the IBM HTTP Server will use to log into the system to start the WebSphere servlet as a service.

Perform the following steps to correct this problem:

1. From the Windows menu bar, select the following:
  - Start →
  - Programs →
  - Administrative Tools →
  - User Manager
2. In the **User Manager** dialog window, double-click on the user name used by the IBM HTTP Server to log on to the system. The default user name used by the IBM HTTP Server is **db2admin** unless you have changed it. Modify the password in the **User Properties** dialog window. Click **OK**. Close the **User Manager** dialog window.
3. From the Windows menu bar, select the following:
  - Start →
  - Settings →
  - Control Panel
4. Double-click on **Services** and select **IBM HTTP Server**. Click **Startup**. In the **Service** dialog window, make sure the **This Account** radio button is selected and the user name next to that radio button is the one used in step 2. Update the password in the **Service** dialog window to match the new password used in step 2. Click **OK** to start the HTTP Server service and close the **Service** dialog window.

---

## DB2 and HTTP Server Fails on a Windows NT Server Acting as a Backup Domain Controller

**For DB2:** During the installation process, DB2 attempts to create the **db2admin** user ID. Unless a **db2admin** user ID was created before the installation, the installation fails with a DB2 error. The following message is displayed:

```
Installation failed: IBM DB2 UDB 5.2 installation failed.  
Press OK to exit the setup program.
```

This occurs on a Windows NT server that is running as a backup domain controller (BDC).

To correct this problem for DB2, the **db2admin** user name should be created on the primary domain controller (PDC) with administration rights:

```
-userid:    db2admin  
-password:  db2admin
```

Once the **db2admin** user ID has been created, follow the procedures in “Chapter 4. Uninstalling StorWatch Expert in Windows NT” on page 81 to uninstall any components that might have been installed successfully. Then reinstall StorWatch Expert using the normal installation procedure.

**For the HTTP Server:** If during the installation of StorWatch Expert, the HTTP Server is not properly installed, the HTTP Server will need to be reinstalled using its own setup utility. When the HTTP Server is running on a Windows NT Server that is running as a Backup Domain Controller, the setup utility will not be able to find any valid user ID when you are asked to specify a valid user ID and password.

For the HTTP Server, the Windows NT Server needs to be promoted to a Primary Domain Controller. Once the Windows NT Server is running as the primary domain controller, the IBM HTTP Server can be successfully installed. The Windows NT Server can then be changed back to a backup domain controller.

---

## HSWC1905S Error During StorWatch Configuration

During the configuration of StorWatch Expert, after clicking **Database setup** on the navigation menu, an error message is displayed in the status field. The message is similar to the following:

```
HSWC1905S Unexpected error during dbsetup processing  
SQLException: [IBM][CLI Driver] SQL1013N  
The database alias name or database name SWDATA could not be found.  
SQLSTATE=42705
```

This error occurs because the DB2 database used by StorWatch Expert was not properly created during the installation process.

To correct this problem, follow the instructions in “Errors Occurred in Database Setup Script Execution (for Windows NT)” on page 180.

## DB2 Migration Problems

1. While running the check migration utility, the following error appears:

Possible DB2CKMIG Error Conditions

A database is in backup pending state

2. Perform a backup of the database.

A database is in roll-forward pending state

Recover the database and table space as required. Perform or resume a roll-forward database to end of logs and stop.

Table space ID is not in normal state

Recover the database and table space as required. Perform or resume a roll-forward database to end of logs and stop.

A database is in an inconsistent state

Restart the database to return it to a consistent state.

Structured type and function have the same name

A structured type and function (with no arguments) belonging to the same schema cannot have the same name. The type or function, and objects using the type or function, must be dropped and recreated using another name. To correct this error:

- a. Back up the database.
- b. Export the data from any tables that are dependent on the structured types or functions.
- c. Drop any tables dependent on the structured types or functions, and drop the structured types or functions. These drops may drop other objects such as views, indexes, triggers, or functions.
- d. Create structured types or functions with different type or function names and recreate the tables using the new structured type or functions names. Recreate any dropped views, indexes, triggers, or functions.
- e. Import or load the data into the object.

3. When backing up a database, the following error message appears:

```
SQL1035N The database is currently in use. SQLSTATE=57019
```

When this happens, make sure all the database applications (StorWatch, DB2 command center, DB2 control center) have stopped.

4. The following message appears when backing up a database:

```
The path for the file or device "<folder name>" is not valid.
```

Make sure that folder exists with the right permission. If not, create one.

5. StorWatch database is lost during the upgrade and needs to be recovered. In the DB2 command center, issue the following command:

```
restore db <SWDATA> from <BACKUP-directory> replace existing
```

The result should be the following:

```
SQL2539W Warning! Restoring to an existing database that is the same as the backup image database. The database f: SQL2517W The restored database was migrated to the current release. And the database is restored and migrated, ready for use.
```

6. When trying to access a database the following message appears:

```
[IBM] [CLI Driver] SQL5035N The database requires migration to the current release. SQLSTATE=55001
```

The database has not yet been migrated. Log on as **db2admin**, and go to section 5 on page 57.

---

## Cannot Uninstall DB2 (for Windows NT)

This error occurs while attempting to uninstall DB2:

```
DB2 is currently running and therefore cannot be uninstalled.  
Please stop all DB2 processes and/or services and try again.
```

This error message appears after you have performed the following steps:

1. Stopped all DB2 services from the **Services** window
2. Selected DB2 from the **Add/Remove Programs** window
3. Clicked on **Add/Remove** to uninstall DB2

Some other program might have a DLL file locked that DB2 also uses; therefore, DB2 cannot be uninstalled. One such program is the **Netfinity® Support Program** service. To determine if that service is installed, double-click on the **Services** icon in the **Control Panel**. Scroll down the list of services to find **Netfinity Support Program**. If that service exists and is running, it is

necessary to stop it before uninstalling DB2. If the service does not exist, some other process or service might be using DLL files that DB2 requires.

---

## **Unable to Remove Shortcut Folders for SpaceSQL 4.2 or License Use Runtime (for Windows NT)**

The description for removing Viador SpaceSQL and License Use Runtime shortcut folders in “Using Windows Add/Remove Services to Uninstall StorWatch Expert” on page 81 does not always work correctly. There might be a case when no response occurs when you right click on the shortcut folder. As a result, the folders cannot be removed as described in the uninstallation procedures.

To delete the shortcuts, Windows NT Explorer must be used to delete the following path names that are associated with the shortcut folders.

```
C:\WINNT40\Profiles\xxxxxxx\Start Menu\Viador SpaceSQL 4.2  
C:\WINNT40\Profiles\All Users\Start Menu\License Use Runtime
```

where xxxxxx is the user name of the user that installed the Viador SpaceSQL 4.2 product.



---

## Appendix C. Changing the Passwords in Windows NT

For ease of installation, you installed StorWatch Expert using the user name **db2admin** which was defined to Windows NT by DB2, if not defined before installation. Additionally, you had to have a password of **db2admin** to complete the installation. This section is about changing the user name/password for each of the products installed with StorWatch Expert.

When you install the StorWatch Expert, you install a collection of products, some of which run as services. The authentication of the user name and password ultimately comes to Windows NT so the user name and password must conform to the user name and password rules of your Windows NT system. Windows NT will also verify that the user name has the special right to log on as a service. IBM HTTP Server, WebSphere, and DB2 provide the webserver and database engines for StorWatch Expert.

**Note:** DB2 UDB also has user name rules which it imposes in addition to the Windows NT user name rules.

Both WebSphere and StorWatch Expert provide user names and passwords which are authenticated by that software and not authenticated by Windows NT. These user names do not have to be defined by Windows NT. The IBM HTTP Server software has a user name/password protection scheme in place for the StorWatchConfig servlet which is not authenticated by Windows NT.

Table 17 lists the user names and associated products that are installed.

*Table 17. User Names and Associated Products*

Product	Authentication	Other	Default
DB2 UDB	Windows NT	Administrator Group, DB2 user name restrictions	db2admin/ db2admin
IBM HTTP Server	Windows NT	logon as a service, administrator	db2admin/ db2admin
IBM WebSphere	Windows NT	logon as a service, administrator group	db2admin/ db2admin
WebSphere Administrator	WebSphere	WebSphere port 9527 – WAS administration web page	admin/ admin

Table 17. User Names and Associated Products (continued)

Product	Authentication	Other	Default
StorWatch Configuration	IBM HTTP Server	htpasswd tool changes this	admin/ admin (Webserver acl)
StorWatch Basic Configuration	Windows NT	database userid password	db2admin/ db2admin
StorWatch Expert Administrator	StorWatch Expert	defined from StorWatch Config	you define

---

## DB2 User Name Restrictions

The user name you use for DB2 purposes is authenticated by Windows NT and must conform to DB2 user name rules.

A DB2 user ID (default authentication mode) must be a Windows NT user name and conform to the following rules:

- A DB2 user ID must be 1 to 8 characters (bytes) long.
- A DB2 user ID *cannot* be any of the following reserved words:
  - USERS
  - ADMINS
  - GUESTS
  - PUBLIC
  - LOCAL
  - or any IBM SQL reserved word (see *IBM DB2 Universal Database SQL Reference*, order number S10J-8165)
- A DB2 user ID cannot begin with: SQL, SYS, or IBM.
- A DB2 user ID *can* contain the following characters:
  - A – Z
  - a – z
  - 0 – 9
  - @
  - #
  - \$
  - \_ (underscore)
- A DB2 user ID cannot include accented characters.
- A DB2 user ID cannot include blanks or space characters (spaces).
- The first character cannot be a digit (0 – 9) or underscore (\_).
- A DB2 user ID is case-sensitive (lowercase characters are automatically converted to uppercase by the DB2 database manager).



---

## Creating a New Windows NT User Name

Defining a User Name with the Required Authority

**Note:** You must be logged on as an Administrator to create user accounts and change passwords.

To define a user name with the required authority, follow these steps:

1. From the Windows menu bar, click:  
Start ->  
  Programs ->  
    Administrative Tools ->  
      User Manager
2. In the User Manager dialog on the menu bar click:  
  User ->  
    New User
3. In the **New User** dialog, enter the user name and associated information in the text fields.
4. Click on the **Groups** button in the lower left-hand corner of the dialog.
5. In the **Group Membership** dialog, click on **Administrators** in the list that is labeled **Not Member of:**. Click the **Add** button followed by the **OK** button to add the user to the Administrators group.
6. Click the **OK** button on the **New User** dialog. Close the **New User** dialog.

---

## Windows NT "Log on as a service" Advanced User Rights

The user names you use for the IBM HTTP Server and IBM WebSphere engines must be members of the Administrators Group and have the special attribute "Logon as a service." Here is a method to define a user name with such attributes:

Defining a User Name with the Required Authority

1. From the Windows menu bar, click:  
Start ->  
  Programs ->  
    Administrative Tools ->  
      User Manager
2. In the User Manager dialog on the menu bar, click:  
  User ->  
    New User
3. In the **New User** dialog, enter the user name and associated information in the text fields.
4. Check the box marked **Password Never Expires**.
5. Uncheck the box marked **User Must Change Password at Next Logon**
6. Click on the **Groups** button in the lower left-hand corner of the dialog.

7. In the **Group Membership** dialog click on **Administrators** in the list labeled **Not Member of:**. Click on the **Add** button on the **New User** dialog. Close the **New User** dialog.
8. Click **OK** on the **New User** dialog. Close the **New User** dialog.
9. In the **User Manager** dialog, click on the newly defined user name to select it.
10. Click the following on the top menu bar:  
Policies →  
User Rights
11. Click on the **Show Advanced User Rights** check box in the lower left-hand corner of the **User Rights Policy** dialog.
12. Click the down arrow on the drop-down list that is labeled **Right:** to display the list of user rights.
13. Scroll to **Log on as a Service** and click to select it.
14. Click the **Add** button, then click **OK**.
15. Click the **OK** button on the **User Rights Policy** dialog.
16. Close the **User Manager** dialog.

---

## Changing IBM WebSphere Administrator User Name and/or Password

Perform the following steps to change the WebSphere Application Server Administration Utility password:

1. Enter the following Web address in Netscape Navigator or Communicator or Microsoft Internet Explorer browser:  
`http://<hostname>:9527`

This brings up the logon page for the WebSphere Administration Utility.

2. Logon by entering **admin** as the user name and **admin** as the password.
3. Click **Setup** in the navigation frame on the left-hand side.
4. Click on **Administration**.
5. Select the **Password** tab.
6. The **Administration Setting** page appears.
7. Enter and verify the new password.
8. Click **Save**.
9. Confirm the **Property Changes** by clicking **Yes**.
10. Click **Log Off** in the navigation frame.

---

## Changing User Name and/or Password for IBM HTTP Server or WebSphere Servlet Service

Once you have defined user names with "Logon as a Service" advanced user right or you have changed a password for those user names already associated with the IBM HTTP Server and the WebSphere services, you can make those changes using the Windows NT Control Panel/Services dialog. You must stop WebSphere Servlet Service services and IBM HTTP Server before making the change.

Check that the IBM WebSphere is registered in the Services panel. Start up the Control Panel and choose Services:

Start ->  
Settings ->  
Control Panel ->  
Services

1. Find the IBM HTTP Server and stop it with the button on the right.
2. Click on the **Startup** button on the right. A **Service** dialog appears, click on **This Account**. Click on the button on the right side to be presented with a list of user names.
3. Highlight the user name you want to use, and click the **Add** button.
4. You will see a user name in a format "machine/user name" (e.g. HAIT\Valerie), click the **Add** button, then **OK**.
5. Enter the new password, enter the confirm password, then click **OK**.

---

## Changing IBM HTTP Server Protection for the StorWatchConfig Servlet

Username:

The IBM HTTP Server uses the .htaccess file stored in the c:/StorWatchConfig/ directory to decide which user name to use for this function. If you wish to change the user name required to access the StorWatch Expert configuration, you should copy this file to a backup name and proceed to edit the file to change **admin** to the user name of choice. The authentication is done by the IBM HTTP Server so the user name does not have to be a Windows NT name.

Password:

Open a **Command Prompt** and change directory into the **IBM HTTP Server** directory (e.g. c:\Program Files\IBM HTTP Server). Use the **htpasswd** utility to change the password for the default admin userid: **htpasswd passwd admin**

You will be prompted to type and retype the new password. The **htpasswd** utility automatically encrypts the password on Windows NT systems.

The IBM HTTP Server uses the .htaccess file stored in the StorWatchConfig/Start directory to decide which user name to use for this function. You can copy this file to a backup name and proceed to edit it to change the user name.

**Note:** If you reaccess the HTML in the StorWatchConfig directory after changing your password, you might have to delete the cache in your web browser to delete the old passwords.

---

## Appendix D. Changing Passwords in AIX

For ease of installation, you installed StorWatch Expert using the root userid and provided a minimal set of new userids/passwords to permit the cluster of products installed from the CD-ROM to be authenticated by AIX. The userids associated with DB2, IBM HTTP Server, and IBM WebSphere are created with the "COMPAT" option because authentication is provided by AIX. You can control the passwords using SMIT or the password command. The following table summarizes the default userid/passwords for the various products installed with the StorWatch Expert.

Product	Authentication	Other	Default
DB2 UDB	AIX	instance owner and database owner	dbinst1/db2inst1
IBM HTTP Server	AIX	identified in httpd.conf	swadmin/ swadmin
IBM WebSphere	AIX		swadmin/ swadmin
WebSphere Administrator	WebSphere	WebSphere port 9527 – WAS administration web page	admin/ admin
StorWatch Configuration	IBM HTTP Server	htpasswd tool changes this	admin/ admin (Webserver acl)
StorWatch Basic Configuration	AIX	database userid password	db2inst1/db2inst1
StorWatch Expert Administrator	StorWatch Expert	defined from StorWatchConfig	you define

You may remember that the SWSTOP and SWSTART scripts are provided to stop and start the StorWatch Expert. The SWSTART script must be run from the **swadmin** userid not the root userid.

WebSphere provides a unique userid/password combination for its Administration facility which is authenticated by the WebSphere software and is not authenticated by AIX. Section "Appendix C. Changing the Passwords in Windows NT" on page 189 tells you how to change the password for the default WebSphere Administrator.

The IBM HTTP Server is configured to provide access control for the StorWatchConfig directory. This protection scheme is under control of the IBM

HTTP Server software. Section “Changing IBM HTTP Server Protection for the StorWatchConfig Servlet” on page 193 tells you how to change the userid/password for the protection of the StorWatchConfig directory.

### Changing the IBM HTTP Server Protection for the StorWatchConfig Servlet

#### Userid:

The IBM HTTP Server uses the **.htaccess** file stored in the **/user/lpp/StorWatch/StorWatchConfig** directory to control user access to the StorWatchConfig services. If you wish to change the userid required to access the StorWatch Expert configuration, you should copy this file to a backup name and proceed to edit the file to change **admin** to your userid of choice.

**Note:** The authentication is done by the IBM HTTP Server software, so the userid does not have to be an AIX name.

#### Password:

Open a Command Prompt and change the directory to the **IBM HTTP Server Executables** directory (e.g. **/user/HTTPServer/bin**).

Use the **htpasswd** utility to change the password for the default admin userid:

```
./htpasswd -m /user/lpp/HTTPServer/passwd admin
```

You will be prompted to type and retype the new password. The **htpasswd** utility encrypts the new password in the password file.

The IBM HTTP Server uses the **.htaccess** file stored in the **/user/lpp/StorWatch/StorWatchConfig** directory to control which userids will be permitted to access the files in the directory which include the parts needed to run the StorWatch Configuration utility. You can copy this file to the backup name and then proceed to edit the file to identify the permitted userids and the name and location of the relevant password file.

---

## Changing IBM WebSphere Administrator User Name and/or Password

Perform the following steps to change the WebSphere Application Server Administration Utility password:

1. Enter the following Web address in Netscape Navigator or Communicator or Microsoft Internet Explorer browser:

```
http://<hostname>:9527
```

This brings up the logon page for the WebSphere Administration Utility.

2. Logon by entering **admin** as the user name and **admin** as the password.
3. Click **Setup** in the navigation frame on the left-hand side.
4. Click on **Administration**.
5. Select the **Password** tab.
6. The **Administration Setting** page appears.
7. Enter and verify the new password.
8. Click **Save**.
9. Confirm the **Property Changes** by clicking **Yes**.
10. Click **Log Off** in the navigation frame.

---

## Changing Passwords for DB2 and StorWatch users

The following is an excerpt from the AIX StorWatch installation script which tells you how to change the passwords for the DB2 and StorWatch users.

```
+-----+
+-----+
+
+ Change password for db2inst1
+ -----+
+ Expert 1.2 installation completed. You need to run these AIX commands
+ to change the password for the db2inst1 user.
+
+     1. Assign a temporary password to the db2inst1 user
+
+         /usr/bin/passwd db2inst1
+
+     2. Switch the user to db2inst1 and change the password
+
+         /usr/bin/su db2inst1 -c passwd
+
+     NOTE: This new password will be used to configure the database
+     connection from the StorWatch Configuration Utility.
+     If the password is not changed, error message
+     HSVC1905S Unexpected error during dbsetup processing SQLException:.
+     will appear at the top of the frame.
+
+
+ Change password for StorWatch user
+ -----+
+ This user and group will be used to start the IBM HTTP Server and the
+ IBM WebSphere Application Server, and write to the StorWatch directory.
+ The default values are: user=swadmin, group=swadmin.
+ ( or by your values entered in the prior installation step )
+
+ Repeat steps 1 and 2 in 'Change password for db2inst1'
+
+ For example assume user is swadmin
+     /usr/bin/passwd swadmin
+     /usr/bin/su swadmin -c passwd
+
+-----+
#
```





---

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*Figure 45. Java Compatibility Logo*

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## Glossary

The terms in this glossary are defined as they pertain to IBM StorWatch Enterprise Storage Server Expert. If you do not find a term you are looking for, you can refer to the *IBM Dictionary of Computing*, McGraw-Hill, 1994. In the United States and Canada you can order this publication by calling McGraw-Hill at 1-800-2MC-GRAW.

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- The *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC2/SC1).

### A

**AIX operating system.** IBM's implementation of the UNIX operating system. The RISC System/6000<sup>®</sup> computer, among others, runs on the AIX operating system.

**Advanced Interactive Executive (AIX).** Advanced Interactive Executive. See *AIX operating system*.

**allocation.** Generically, the entire process of obtaining a volume and unit of external storage and setting aside space on that storage for a data set.

**APAR.** See *authorized program analysis report*.

**applet.** A Java program designed to be run within a client's browser.

**authentication.** In secure communications, a means of verifying the identity of a server or browser (client) with whom you wish to communicate. A sender's authenticity is demonstrated by the digital certificate that is issued to the sender.

**authorized program analysis report (APAR).** A report of a problem that is caused by a suspected defect in a current unaltered release of a program.

**availability.** For a storage subsystem, the degree to which a data set can be accessed when requested by a user.

### B

**backup.** The process of creating a copy of a data set or object to be used in case of accidental loss.

**browser.** A Web client application for accessing text and images. The Web browser uses an HTTP server across a TCP/IP communication stream.

### C

**CA.** See *certification authority (CA)*.

**capacity planning.** The process of projecting future storage requirements for expanded storage, cache, disk, and tape.

**certificate.** In electronic commerce, a digital document that binds an encryption key to the identity of the certificate owner, so that the certificate owner can be authenticated. A certificate is issued by a certification authority (CA).

**certification authority (CA).** In electronic commerce, a trusted third party or a designated internal authority who issues certificates.

**CGI.** Common gateway interface.

**CGI program.** A computer program that runs on a Web server and uses the Common Gateway Interface (CGI) to perform tasks. These tasks are not usually done by a Web server. For example, CGI programs are used for form processing and database access. A CGI script is a CGI program that is written in a scripting language such as Perl.

**class.** A class in Java is like a template for an object. A class contains data and function and is called a method. Both the data and methods can be public, or private, which determines whether program code outside the class can access the data. Usually, data values are private. Public methods are used to store data and retrieve data from the class. This keeps programs from changing these internal data values accidentally. Each Java class is an object which can have many instances.

**client.** (1) A function that requests services from a server, and makes them available to the user. (2) An address space in MVS™ that is using TCP/IP services. (3) A term used in an environment to identify a machine that uses the resources of the network.

**client-server relationship.** Any process that provides resources to other processes on a network is a server. Any process that employs these resources is a client. A machine can run client processes and server processes at the same time.

**compress.** (1) To reduce the amount of storage required for a given data set by having the system replace identical words, phrases, or data patterns with a shorter token associated with that word, phrase, or data pattern. (2) To reclaim the unused and unavailable space in a partitioned data set that results from deleting or modifying members by moving all unused space to the end of the data set.

## D

**data collection task.** A long-running, asynchronous task which is scheduled to run at specific times. This task collects inventory and storage capacity data from machines within the customer's network that is managed by StorWatch Expert.

**database maintenance task.** A long-running, asynchronous task which is scheduled to run at specific times. This task allows you to consolidate and delete data from the database. You can specify a date for when data should be deleted. For example, you can specify that all data that is two years old or older is deleted.

You can also specify a date when monthly data should be rolled up. For example, if you specify 6 months, any data that is older than 6 months will be rolled up. This means that if you collected data on a weekly basis, only one set of data for each month is saved.

**DB2.** A relational database management system. DB2 Universal Database is the relational database management system that is Web-enabled with Java support.

**digital certificate.** A file used to identify the authenticity of a person or organization. A certificate is made up of the following:

- The public key of the person who is being certified
- The name and address of the person who is being certified
- The digital signature of the certification authority
- The issue date
- The expiration date

**digital signature.** A unique mathematically computed signature that ensures accountability.

**disk volume.** Logical storage space on disk. A volume is known as a *drive* on OS/2® and Windows NT platforms, a *file system* on UNIX platforms, and a *volser* on OS/390® platforms.

**dynamic link library (DLL).** A file containing executable code and data bound to a program at load or run time. The code and data in a

dynamic link library can be shared by several applications simultaneously.

## E

**encryption.** In secure communications, a means of scrambling data to prevent the data from being read by anyone other than the intended recipient. The sender uses a key to encrypt the message. The recipient uses the decryption key.

**enterprise storage resource management (ESRM).** A family of products that provides a single view of storage hardware and software resources within an enterprise. This single view across different platforms provides a single point of control for managing and monitoring hardware and software. ESRM includes:

- **Asset management** - identifies storage resources by parameters that include, type, model, serial number, features, location, acquisition date, price, and maintenance information.
- **Capacity management** - provides a view of common capacity metrics (total capacity, utilization percentage and trends, fragmentation, and efficiency) across a variety of storage subsystems.
- **Configuration management** - provides a way to view and change hardware configurations for host adapters, caches, and storage devices. This can be done at the licensed internal code, operating system, and software application level.
- **Data, device, and media migration** - simplifies the movement of data to new device technologies and perform outboard data movement and replication with a storage subsystem.
- **Event and alert management** - monitors events, receives notification of exception conditions (such as thresholds), initiates exception handlers, and logs information.
- **Performance management** - monitors current and historical performance information such as path, device, cache utilization, and I/O operations per second.
- **Policy management** - ensures that enterprise-wide storage management policies

are consistently followed. This support extends policies to all platforms and locations from a central repository.

## F

**File Transfer Protocol (FTP).** An application protocol used for transferring files to and from host computers. FTP requires a user ID, and a password to allow access to files on a remote host system.

**filtering.** The process of selecting data for reporting.

**frame.** A separate page in a window that can be scrolled independently of other frames in a window.

**FTP.** File Transfer Protocol.

## H

**HP-UX.** Hewlett-Packard UNIX operating system.

**HTML.** See *Hypertext markup language (HTML)*.

**HTTP.** HyperText Transfer Protocol.

**Hypertext markup language (HTML).** An interpreted markup language used to create hypertext documents. Hypertext documents can include links to other related documents. HTML controls the format of text and position of form input areas, for example, as well as the navigable links.

**Hypertext Transfer Protocol (HTTP).** The primary protocol in use on the Web.

## I

**Internet.** A wide area network that connects thousands of disparate networks in industry, education, government, and research. The Internet network uses TCP/IP as the standard for transmitting information.

**Internet Protocol (IP).** A protocol used to route data from its source to its destination in the Internet computing network environment.

**IP address.** A group of four decimal numbers that provides a unique address for the computer.

## J

**.jar file.** A .jar file is a collection of Java classes and other files that are packaged into a single file. By using a .jar file, the browser makes only one connection to the server rather than several. By reducing the number of files the browser has to load from the server, you can download and run your applet that much faster. .jar files can also be compressed, making the overall file size smaller and therefore faster to download.

**Java.** A programming language that enables application developers to create object-oriented programs that are very secure and portable across different machine and operating system platforms. Java is also dynamic enough to allow for easy expandability.

**Java applet.** Java code that is compiled into a compact and optimized program.

**Java Developers Kit (JDK).** The Java Developers Kit is provided free of charge from the JavaSoft division of Sun Microsystems. The Java Developers Kit provides a convenient framework for writing and debugging Java code.

**Java runtime environment (JRE).** The underlying, invisible system on your computer that runs applets the browser passes to it.

**Java Virtual Machine (JVM).** The Java runtime environment is known as the Java Virtual Machine (JVM). The browser passes applets to the Java Virtual Machine. The Java Virtual Machine then runs the applets.

**JDBC.** Java Database Connectivity. Part of the Java Development Kit which defines an application program interface for Java to provide standard SQL access to databases from Java programs.

## K

**key ring.** In secure communications, a file that contains public keys, private keys, trusted roots, and certificates.

## L

**locate and launch.** An action that is performed by StorWatch Services from the user interface. This action discovers and launches a service type (such as ADSM's Web Administration interface) in a separate Web browser window.

## M

**managed node.** In Internet communications, a workstation, server, or router that contains a network management agent. In the Internet Protocol (IP), the managed node usually contains a Simple Network Management Protocol (SNMP) agent.

**management scope.** The definition of storage resources that StorWatch Expert requires before performing tasks. This consists of ranges of Internet Protocol (IP) addresses and port numbers that StorWatch Expert checks for the presence of an StorWatch Expert agent.

**migration.** The process of moving unused data to lower cost storage in order to make space for high-availability data. The data must be recalled to be used again.

## N

**node.** A machine (such as a file server) which is managed by StorWatch Expert. The machine must have a TCP/IP port so an StorWatch Expert service type can be accessed.

**node discovery task.** A long-running, asynchronous task responsible for discovering the machines in a customer's network which are within the StorWatch Expert management scope. The machine will also have a service running on it which is recognized by StorWatch Expert (such



as the Tivoli® Storage Manager Web Administration interface).

**node group.** A definition of nodes in StorWatch Expert that allows an administrator another level of granularity in reporting. When you assign a name to the group and you use that name when generating reports, it restricts the reports to the nodes defined to the group.

For example, if you specify group **DEPTA** for the storage resources that are associated with a specific department, this provides the ability to report on that department.

## O

**object.** An object contains both data and code. The principle feature of an object is that the data is kept privately inside the object structure. Any calculations on that data are also private so it does not matter how that data is stored or how the computations are carried out. It only matters that the object's data and routines are internally consistent and any access to the data in an object always provides consistent results.

## P

**path.** A statement that indicates where a file is stored on a particular drive. The path consists of all the directories that must be opened to get to a particular file. The directory names are separated by the slash (/).

**port.** An end point for communication between applications that are generally referring to a logical connection. A port provides queues for sending and receiving data. Each port has a port number for identification. When the port number is combined with an Internet address, it is called a socket address.

**protocol.** The set of rules that govern the operation of functional units of a communication system. This allows communication to take place. Protocols can determine low-level details of machine-to-machine interfaces, such as the order in which bits from a byte are sent. They can also determine high-level exchanges between application programs, such as file transfer.

**proxy server.** A server that can retrieve documents from other servers for its clients.

**public access.** Accessible by anyone who has access to StorWatch Expert. If you schedule a task to run and specify public access, all StorWatch Expert users can view the results. If you do not specify public access, only you have access to the results.

## R

**report generation task.** A long-running, asynchronous task which is scheduled to run at specific times. Its purpose is to generate inventory and storage capacity reports that use data from the StorWatch Expert database as its input.

## S

**scheduled task.** A long-running, asynchronous task which is scheduled to run at specific times. See also *node discovery task*, *data collection task*, *database maintenance*, and *report generation task*.

**Secure Sockets Layer (SSL).** A protocol that provides secure communications on the Internet. SSL is layered above the connection protocol TCP/IP and beneath application protocols such as HTTP, SMTP, Telnet, FTP, and Gopher.

**server.** (1) A function that provides services for users. (2) A machine that provides resources to the network. It provides a network service, such as disk storage and file transfer, or a program that uses such a service.

**service type.** A program or disk drive with a Web interface that allows communication with StorWatch Expert. StorWatch Expert can then manage these resources.

**servlet.** A servlet is like a server-side applet except that it does not have a user interface. Servlets are persistent. Although a servlet's `service()` method is run for each request, servlets are instantiated and initialized just once: when they are loaded. This allows servlets to create dynamic output.

**silent mode.** A program(s) that installs automatically due to specific installation dependent customization information inputted by the user during an umbrella installation.

**SQL.** Structured Query Language.

**SSL.** Secure Sockets Layer.

**storage administrator.** A person in the data processing center who is responsible for defining, carrying out, and maintaining storage management policies.

**storage class.** A named list of storage attributes that identify performance goals and availability requirements. This list is used to select a device that can meet those goals and requirements. These attributes are defined by the storage administrator.

**storage group.** A collection of storage volumes and attributes, that are defined by the storage administrator. The collections can be a group of DASD volumes or tape volumes, or a group of DASD volumes and optical volumes. These groups are treated as a single object storage hierarchy.

**storage management.** The task of using storage, such as DASD, tape, or optical devices, to keep and deliver data to applications.

**storage subsystem.** A storage control and its attached storage devices.

**Structured Query Language (SQL).** A standardized language for defining and manipulating data in a relational database.

## T

**TCP/IP.** Transmission Control Protocol/Internet Protocol.

**thread.** The smallest unit of operation performed within a process.

**Transmission Control Protocol/Internet Protocol (TCP/IP).** A set of communication protocols that support peer-to-peer connectivity functions for both local and wide area networks.

**trusted root.** In secure communications, the public key and associated Distinguished Name of a certification authority (CA).

## U

**Uniform Resource Locator (URL).** The address convention that indicates the location of an item on the World Wide Web. It includes the protocol followed by the fully-qualified host name, and the request. The server typically maps the request portion of the URL to a path and file name. For example:  
**<http://www.ibm.com/index.html>**.

## V

**volume.** Logical storage space on disk. A volume is known as a **drive** on Windows NT platforms and a **file system** on UNIX platforms.

## W

**Web.** The World Wide Web. The network of HTTP servers that contain programs and files, such as hypertext documents that contain links to other documents on HTTP servers.

**Web server.** A server on the World Wide Web.

**Windows NT.** A Microsoft distributed operating system that is used for client/server systems.

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StorWatch Expert  
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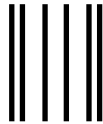
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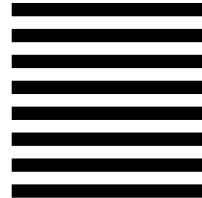
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