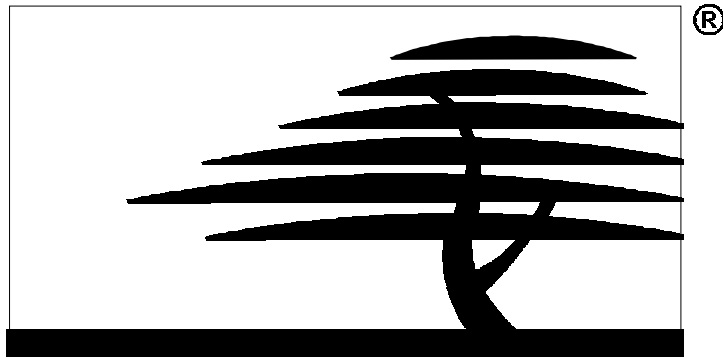




SCO

SCO Vision2K™ Administration

Course Release: 2.0

For Software: SCO Vision2K Version 2.0

© 1987–2000 The Santa Cruz Operation, Inc. All rights reserved.

This publication is protected under copyright laws and international treaties.

Information in this document is subject to change without notice and does not represent a commitment on the part of The Santa Cruz Operation, Inc.

SCO, The Santa Cruz Operation, the SCO logos, VP/ix, SCO OpenServer, UnixWare, dbXtra, Panner, SCO Global Access, SCO MPX, SCO Doctor, SCO Doctor for Networks, SCO Doctor Lite, SCO Premier Motif, SCO Visual Tcl, SCO VisionFS, SCO ToolWare, SCO TermLite, SCO Vision 97, SCO Vision2K, SCO CIFS Bridge, SCO WebTop, The Internet Way of Computing, and IWoC are trademarks or registered trademarks of The Santa Cruz Operation, Inc. in the USA and other countries. IXI, X.desktop, Deskworks, Wintif, IXI Panorama, Deskterm, and IXI Desktop are trademarks or registered trademarks of IXI Limited, a subsidiary of The Santa Cruz Operation, Inc. Visionware, Devkit.Vision, Esprit, Kodon, Super.Vision, Visionware Super.Vision, Term.Vision, Visionware Direction, the Visionware logo, Visionware SQL-Retriever, and XVision are registered trademarks of Visionware Limited, a subsidiary of The Santa Cruz Operation, Inc. SuperVision, TermVision, X-Visionware, SQL-Retriever, and Vision Builder are trademarks of Visionware Limited. UNIX is a registered trademark of The Open Group in the United States and other countries. Cheyenne and ARCServe are registered trademarks of Cheyenne Software, Inc. Netscape, Netscape Navigator, Netscape Communications Server, Netscape Commerce Server, Netscape Proxy Server, Netscape FastTrack Server, Netscape Enterprise Server, Netscape SuiteSpot, Netscape Catalog Server, Netscape News Server, Netscape Mail Server, and Netscape Navigator Gold are trademarks of Netscape Communications Corporation. NFS was developed by Legent Corporation (formerly Lachman Associates, Inc.) based on LACHMAN SYSTEM V NFS. LACHMAN is a trademark of Legent Corporation. NFS is a trademark of Sun Microsystems, Inc. TCP/IP was developed by Legent Corporation (formerly Lachman Associates, Inc.) based on LACHMAN SYSTEM V STREAMS TCP, a joint development of Lachman Associates and Convergent Technologies. MPX was developed by Corollary, Inc. VP/ix is a product developed and licensed by Phoenix Technologies, Ltd/INTERACTIVE Systems Corporation. XRemote is a registered trademark of Network Computing Devices, Inc. Oracle is a registered trademark of Oracle Corporation, Redwood City, California. Java is a trademark of Sun Microsystems, Inc. All other brand and product names are or may be trademarks of, and are used to identify products or services of, their respective owners.

The SCO software that accompanies this publication is commercial computer software and, together with any related documentation, is subject to the restrictions on US Government use as set forth below. If this procurement is for a DOD agency, the following DFAR Restricted Rights Legend applies:

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the US Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of Rights in Technical Data and Computer Software Clause at DFARS 252.227-7013. Contractor/Manufacturer is The Santa Cruz Operation, Inc., 400 Encinal Street, Santa Cruz, CA 95060.

If this procurement is for a civilian government agency, this FAR Restricted Rights Legend applies:

RESTRICTED RIGHTS LEGEND: This computer software is submitted with restricted rights under Government Contract No. _____ (and Subcontract No. _____, if appropriate). It may not be used, reproduced, or disclosed by the Government except as provided in paragraph (g)(3)(i) of FAR Clause 52.227-14 alt III or as otherwise expressly stated in the contract. Contractor/Manufacturer is The Santa Cruz Operation, Inc., 400 Encinal Street, Santa Cruz, CA 95060.

The copyrighted software that accompanies this publication is licensed to the End User only for use in strict accordance with the End User License Agreement, which should be read carefully before commencing use of the software.

Table of Contents

Lesson 1: Course Introduction	1-1
Introduction	1-3
Vision2K Overview	1-3
Course goal and purpose	1-4
Target audience	1-5
Course schedule	1-5
Training materials	1-5
Lesson plan	1-6
Lab Requirements and Preparation	1-7
Equipment	1-7
Software	1-8
System setup	1-8
SCO Vision2K documentation	1-9
Typographical Conventions	1-10
Sample exam items	1-12
 Lesson 2: Installing SCO Vision2K	 2-1
Preparing to Install SCO Vision2K	2-4
PC requirements	2-4
Installation Overview	2-5
Installing SCO VisionFS	2-7
Installing VisionFS on UnixWare 7	2-7
Installing VisionFS on SCO OpenServer Release 5	2-9
Running the password wizard	2-11
Starting the VisionFS server	2-15
Installing Vision2K components on the UNIX host	2-16
Configuring a VisionFS share on UnixWare 7	2-21
Installing Vision2K on a PC	2-23
Windows network configuration	2-23
Running Vision2K setup on the PC	2-29
Lesson Summary	2-32
Relevant Commands, Files, and Syntax	2-33
Answers to Review Questions	2-35

Lesson 3: SCO Vision2K Basics	3-1
Browsing Remote Hosts	3-7
The Unix Neighborhood browser.....	3-7
The Host Explorer browser	3-8
Browser features	3-8
Copying and Moving Files	3-10
File types	3-12
Printing.....	3-13
Printing to a remote UNIX printer from a PC	3-13
Printing to a PC from UNIX	3-21
Sending and Displaying Messages	3-24
Using Vision2K with a Modem	3-25
Configuring the Modem transport.....	3-27
Getting Help.....	3-30
Lesson Summary	3-31
Relevant Commands, Directories, Shares, and Packages	3-32
Answers to Review Questions	3-33
 Lesson 4: SCO TermVision	 4-1
SCO TermVision Overview	4-7
Opening a terminal connection	4-8
Copying and Pasting Data Between Applications	4-9
Creating a terminal icon on the desktop	4-11
Starting UNIX programs automatically	4-15
Executing programs remotely	4-17
Customizing a Terminal Emulator	4-21
Changing emulator attributes.....	4-21
Recording Keystrokes.....	4-25
Adding a button to the toolbar	4-29
Using actions and events.....	4-33
Setting up an OLE hot-link.....	4-35
Opening a terminal emulator from within a web browser	4-39
Recognizing document types	4-40
Configuring document types and associations.....	4-41
Lesson Summary	4-43
Relevant Commands, Directories, Shares, and Packages	4-45
Answers to Review Questions	4-46

Lesson 5: SCO XVision Eclipse	5-1
SCO XVision Overview.....	5-6
Running an X program	5-7
Creating an icon on the Desktop.....	5-9
Starting X programs automatically	5-11
Copying and pasting between windows.....	5-12
Stopping the X server	5-13
Customizing XVision.....	5-15
Server profiles	5-15
X window managers	5-17
The local Motif window manager.....	5-20
Using an X Display Manager.....	5-23
Using SCO Vision Resume to suspend and resume X sessions.....	5-25
Starting a session	5-25
Relocating a session.....	5-27
Using SCO Zones to organize your desktop.....	5-31
Using Zone Control	5-35
Modifying zone properties.....	5-36
Lesson Summary.....	5-38
Relevant Commands and Files	5-39
Answers to Review Questions	5-40
 Lesson 6: SCO SQL-Retriever	 6-1
SCO SQL-Retriever Overview	6-7
SCO SQL-Retriever architecture overview	6-9
Configuring Data Sources.....	6-11
Creating a Demonstration Database using SQL Gold	6-15
Accessing a Demonstration Database using SQL Gold.....	6-17
About SQL Exchange	6-19
Using the Security Manager	6-20
About JDBC.....	6-23
Lesson Summary.....	6-24
Relevant Commands and Files	6-25
Answers to Review Questions	6-26

Lesson 7: SCO SuperVision	7-1
SCO SuperVision Overview	7-6
Installing the Administration Workbench	7-7
Using the Administration Workbench	7-9
Configuring the administration database	7-12
Adding PCs to the administration database	7-12
Distributing files to PCs.....	7-13
Distributing objects to PCs	7-16
Using groups	7-18
Adding PCs to a group.....	7-19
Modifying group membership	7-20
Configuring SCO Vision2K Applications	7-21
Using SuperVision for Remote PC Management	7-24
Browsing PCs	7-24
Viewing programs running on PCs	7-27
Viewing the display on remote PCs.....	7-29
Using Scripts to Perform Administrative Tasks.....	7-30
Restricting SuperVision Access.....	7-35
Managing Licenses	7-36
Upgrading the demonstration license	7-38
Lesson Summary	7-39
Relevant Commands and Files	7-40
Answers to Review Questions	7-42
 Lesson 8: SCO VisionFS	 8-1
VisionFS Overview	8-5
VisionFS administration overview.....	8-7
Using the Profile Editor	8-9
Sharing files and directories using the Profile Editor	8-13
Default settings and the master shared folder	8-15
Username mapping	8-17
Limiting access to a shared folder	8-19
Sharing printers using VisionFS	8-23
Sharing UNIX printers.....	8-23
Setting access permissions on printers.....	8-25
Sharing workstation printers	8-25
Command-line administration	8-28
Adding users and changing passwords	8-31
TermLite.....	8-33
Lesson Summary	8-36
Relevant Commands, Directories, Shares, and Packages	8-37
Answers to Review Questions	8-38

Lesson 9: SCO Vision2K Troubleshooting Basics	9-1
Accessing Online Support Resources	9-4
Contacting Support by telephone.....	9-4
Contacting Support by e-mail and fax	9-5
World Wide Web support resources.....	9-5
Basic Network Troubleshooting	9-7
TCP/IP configuration information	9-7
Testing TCP/IP connectivity	9-9
Using Vision2K Diagnostic Tools	9-13
Problems Browsing	9-16
Microsoft networking configuration parameters	9-16
Passwords.....	9-17
Checking Vision2K UNIX processes.....	9-21
Problems Accessing Resources	9-22
Permission problems	9-22
License problems	9-22
Problems Printing	9-24
Enabling remote access to the UNIX host	9-24
Printer names	9-25
Problems with carriage return/line feed.....	9-25
Problems Sending and Displaying Messages	9-27
Problems with SuperVision	9-28
Problems with Transports	9-29
Lesson Summary	9-30
Relevant Commands	9-31
Answers to Review Questions	9-33

1

Course Introduction

Lesson 1

Course Introduction

1.1 Introduction

This **SCO Vision2K™ Administration** course is designed for technically-oriented individuals who already have a background in UNIX system administration and TCP/IP networking and need to connect Windows workstations to UNIX servers. After completing the course, you will be prepared for the applicable reseller certification exam.

1.1.1 Vision2K Overview

SCO Vision2K is a suite of products that integrates Microsoft Windows workstations with UNIX systems, making UNIX applications and data transparently accessible directly from the Windows desktop.

In addition to support for SCO UNIX operating systems, Vision2K products can be used with numerous other UNIX systems, including Data General DG/UK, DEC Digital UNIX, Hewlett Packard HP-UX, IBM AIX, ICL DRS/NX, Sequent DYNIX, Siemens Sinix, Silicon Graphics IRIX, Sun SPARC Solaris, and SunOS.

Vision2K includes these products:

SCO VisionFS

A high performance, server-based file and print sharing solution. SCO VisionFS installs purely on the server so all PCs on the network gain instant and transparent access to shared network files and printers.

SCO TermVision

A set of terminal emulators that give Windows users transparent access to UNIX character-based applications.

SCO XVision Eclipse

An X Server which enables PC users to access X Window System applications running on remote UNIX hosts. Also included is Vision Resume, a session manager for X sessions.

SCO SQL-Retriever

An Open Database Connectivity (ODBC) driver that allows Windows applications running on a PC to access data stored in remote UNIX databases.

SCO SuperVision

An administration tool that can be used to remotely manage, configure and control groups of Windows PCs.

1.1.2 Course goal and purpose

At the conclusion of this course, you will be able to install, configure, and use each of the SCO Vision2K Family products. You will be able to:

- Use the UNIX Neighborhood to browse UNIX hosts from a Windows PC
- Copy files between UNIX and Windows systems
- Print to remote UNIX printers from Windows; and print from a UNIX host to a PC printer
- Send and display messages from other PC users
- Configure a modem connection to a UNIX host
- Use and customize the ANSI terminal emulator to run programs on remote UNIX hosts
- Associate Windows file types with programs
- Run an X server on Windows to display X client programs running on the remote UNIX host
- Customize the X display, suspend and resume X sessions, and organize your desktop into zones
- Use SQL-Retriever to access databases on remote UNIX systems
- Use the **Administration Workbench** to distribute files, objects, and tasks to Windows users
- View the tasks and display running on a remote PC
- Manage SCO Vision2K licenses

1.1.3 Target audience

This class is aimed at SCO Resellers who operate in the SCO OpenServer or UnixWare 7 environment on a regular basis. You should have prerequisite skills equal to or exceeding those provided in the ***UnixWare 7 System Administration*** courses. In order to fully benefit from this course, you should also be familiar with Windows administration.

1.1.4 Course schedule

This course takes approximately two days to complete, including exercises. The labs included in the course should be completed to meet the course objectives.

1.1.5 Training materials

The following training materials are used in this course:

- ***Windows to UNIX Integration Reseller Course Guide*** (this book)
- ***UnixWare 7 Getting Started Guide and System Handbook***
- ***SCO OpenServer Release 5 Getting Started Guide and System Handbook***
- ***SCO Vision2K Installation Guide***
- ***SCO Vision2K Reference manual***
- ***Introducing SCO TermVision***
- ***Introducing SCO XVision Eclipse***
- ***Introducing SCO SQL-Retriever***
- ***Introducing SCO VisionFS***

1.1.6 Lesson plan

Each lesson follows a similar approach, or methodology, in the delivery of instruction:

- Suggested lab preparation notes are provided at the beginning of each lesson, when applicable.
- Exercises that allow you to practice discrete tasks, appear throughout the presentation.
- References appear where appropriate.
- The lesson content concludes with a summary. This is intended to reinforce the topics and tasks covered. The review questions allow you to determine how well you understood the content, and the labs allow you to apply the material presented.

1.2 Lab Requirements and Preparation

To receive to full benefit of this course, you should configure a set of test systems and perform the exercises and labs presented in the course materials.

1.2.1 Equipment

The following equipment is needed to perform the lab exercises:

- One Pentium or equivalent CPU computer for the server, with:
 - A minimum of 1.2GB hard disk or larger recommended)
 - A minimum of 64MB of RAM
 - One supported network adapter
 - One supported printer
- One Pentium or equivalent CPU computer for the workstation, with:
 - A minimum of 500MB hard disk or larger recommended
 - A minimum of 32MB of RAM
 - One supported network adapter
 - One supported printer
- Systems connected by a supported LAN technology, such as Ethernet or Token Ring
- One supported modem for the server and one for the workstation; a telephone line or simulated telephone line

1.2.2 Software

The following software is needed to perform the lab exercises:

- SCO OpenServer Release 5.05 or UnixWare 7.1, Enterprise Edition
- SCO Vision2K
- Windows 95 or 98
- Microsoft Excel

1.2.3 System setup

1. Install and configure the UNIX server:

- Install OpenServer Release 5.05 or UnixWare 7.1
- Configure TCP/IP
- Add an entry for the workstation(s) in the */etc/hosts* file
- Create one or more UNIX accounts for PC users
- Configure a modem for dial-in connections.
- Configure and test a printer

2. Install and configure the workstation:

- Install Windows 95 or 98—note that although Vision2K supports Windows NT, this course does not cover NT clients.
- Configure Microsoft Networking components:
 - Configure Microsoft TCP/IP
 - Enter an IP address and subnet mask using the same subnet as the server
 - Disable DNS
 - Edit *C:\Windows\Hosts* to add the server name and IP address

- Configure **Client for Microsoft Networks** and select “Logon and restore network connections”
 - Configure **File and Printer sharing for Microsoft Networks**; allow others access to files and printers
 - Configure a workgroup name in the **Identification** tab; all PCs should have the same workgroup name
 - Select “Share-level access control” in the **Access Control** tab
 - Reboot the PC
 - Install Microsoft Excel
 - Install and test a printer
3. Test TCP/IP from Windows using the **ping** and **telnet** commands with the name of the server.
 4. Test TCP/IP from UNIX using the **ping** commands with the name of the Windows workstation.

1.2.4 SCO Vision2K documentation

The Vision2K documentation is provided in Adobe Acrobat PDF format on the Vision2K installation CD-ROM. A general reference includes installation instructions and information about each product. In addition, a separate introductory guide is provided for each of the products in the Vision2K suite.

You can read the documentation on a PC directly from the SCO Vision2K CD-ROM by double-clicking on the *.pdf* file you wish to view in the *\Docs\User* directory. If you do not already have Adobe Acrobat Reader installed on your PC, install it from the Vision2K CD-ROM by running either the 16- or 32-bit version of the **setup** program. Acrobat installation directories are found in:

F:\Docs\Acrobat

where *F:* represents the CD-ROM drive on your PC.

1.3 Typographical Conventions

This publication presents commands, filenames, keystrokes, and other special elements as shown here:

lp or lp(1)	Commands, device drivers, programs, and utilities (names, icons, or windows); the number in parentheses indicates the reference manual section in which the command, driver, program, or utility is documented
<i>/new/client.list</i>	Files, directories, desktops (names, icons, or windows), system, network, and printer names
root	User names
<i>arg</i> or <i>arg</i>	Placeholders (replace with appropriate name or value)
[<i>arg</i>]	Surrounds an <i>option</i> or <i>cmdarg</i> that is not mandatory
<i>arg ...</i>	Indicates multiple occurrences of the <i>option</i> or <i>cmdarg</i>
\$	Command-line prompt for commands executable from the Bourne shell by any user
#	Command-line prompt for commands only executable by the root user from the root account
	Keyboard keys
 	Press  and  keys simultaneously
  	Press all three keys,  ,  , and  , simultaneously
 	Press  key. With  still depressed, press  .
 0240	Press  key. With  still depressed, press and release in sequence  ,  ,  , and  .
 Q + i	Press  key. With  still depressed, press  . Release both keys and press  .
 Q + I	Press  key. With  still depressed, press  . Release both keys and press   .
Exit program?	System output (prompts, messages)

tar tv	User input, such as on a command line
“Description”	Field names or column headings (on screen or in database)
Cancel	Button names
Edit	Menu names
Copy	Menu items
File ⇨ Find ⇨ Text	Sequences of menus and menu items
open or open(2)	Library routines, system calls, kernel functions, C keywords; the number in parentheses indicates the reference manual section in which the file is documented
\$HOME	Environment or shell variables
SIGHUP	Named constants, signals, and kernel parameters
“adm3a”	Data values
<i>employees</i>	Database names and tables
buf	C program structures
b_b.errno	Structure members

1.4 Sample exam items

These questions are representative exam items on the SCO Reseller certification exam for this course. Being able to correctly answer these questions does not guarantee that you will be able to pass the actual exam.

5. SCO TermVision provides precision terminal support for all but which of the following emulator types?
 - A. VT420
 - B. Wyse 60
 - C. IBM 5250
 - D. ANSI
6. SCO XVision Eclipse includes support for a new feature called SCO ZoneVision. Which of the following statements about ZoneVision is FALSE?
 - A. ZoneVision provides PC users with multiple virtual Windows desktops
 - B. ZoneVision allows you to move a user's display to a neutral zone for remote management purposes
 - C. ZoneVision allows applications to be started automatically when a zone is accessed
 - D. ZoneVision allows you organize your Windows desktop by grouping similar applications into their own workspace
7. SCO SuperVision allows you to create logical groups of PCs that can be managed together. Which of the following statements regarding SuperVision groups is FALSE?
 - A. A single PC can belong to multiple groups
 - B. All managed PCs must belong to the System group
 - C. Groups are configured using the **Administration Workbench**
 - D. Once a PC is placed in a group, it can no longer be managed individually

8. SCO VisionFS allows Windows PCs to transparently access UNIX servers in several ways. Which of these methods CANNOT be used to access files on a UNIX server using VisionFS?
- A. Using a terminal emulator
 - B. Through the **Network Neighborhood**
 - C. Through the **Windows Explorer**
 - D. Directly from Windows applications (such as MS Word)

Answers to sample exam items

- 1. C
- 2. B
- 3. D
- 4. A

2

Installing SCO Vision2K

Lesson 2

Installing SCO Vision2K

Pre-lesson preparation

Prepare the systems as described in Section 1.2, “Lab Requirements and Preparation,” on page 1-7. Unix hosts and PC systems should have TCIP/IP configured, including host files entries on both (all) systems. Test the network using commands such as **ping** or **telnet** with network names, rather than IP addresses.

Create one or more UNIX accounts, if you have not already done so.

Introduction

There are numerous options for installing the SCO Vision2K products to your server and PCs. This lesson focuses on server-based installation of both the host and PC components. This means that all software is installed on the UNIX host. The PC software is stored on the UNIX host in a shared directory. Software is then installed on each PC by connecting to the host over the network and running the Windows **setup** program.

There are some differences in the installation procedure for SCO OpenServer Release 5 and UnixWare 7, which are noted in the text.

Objectives

This lesson guides you through the installation of the SCO Vision2K suite of products. By the end of this lesson, you will be able to:

- Describe the hardware and software requirements for installing Vision2K
- Install server (host) components of Vision2K
- Install PC components of Vision2K

2.1 Preparing to Install SCO Vision2K

These minimum system configurations are required to install SCO Vision2K.

2.1.1 PC requirements

To configure and use Vision2K software, your PCs must meet these minimum requirements:

- Microsoft Windows 95, Windows 98, or Windows NT
- 16MB memory (32 recommended)
- 100MB free disk space
- VGA graphics adapter and monitor
- Mouse or other pointing device
- Network adapter and hardware needed to connect the PC to the server
- Microsoft TCP/IP, Network client, and file and print sharing software
- Serial port and modem

To install Vision2K host software, your UNIX server must meet these minimum requirements:

- UNIX version supported by Vision2K (see the **SCO Vision2K Reference** manual or the URL <http://www.sco.com/vision/eval/matrix.html>)
- Network adapter and hardware needed to connect the server and the PCs
- TCP/IP network software installed, configured, and working
- CD-ROM supporting ISO9660
- 500MB disk space

2.2 Installation Overview

SCO Vision2K contains products with both UNIX and PC components. If the UNIX software is not installed, some Vision 2K programs will work normally, but others will not work or will have restricted functionality.

There are several methods for installing the Vision2K software. The simplest procedure, and the one used in this course, is:

1. Install SCO VisionFS on the SCO UNIX server from the UNIX installation CD-ROM. For non-SCO UNIX systems, skip this step and install VisionFS from the SCO Vision2K CD-ROM with the other Vision2K products.

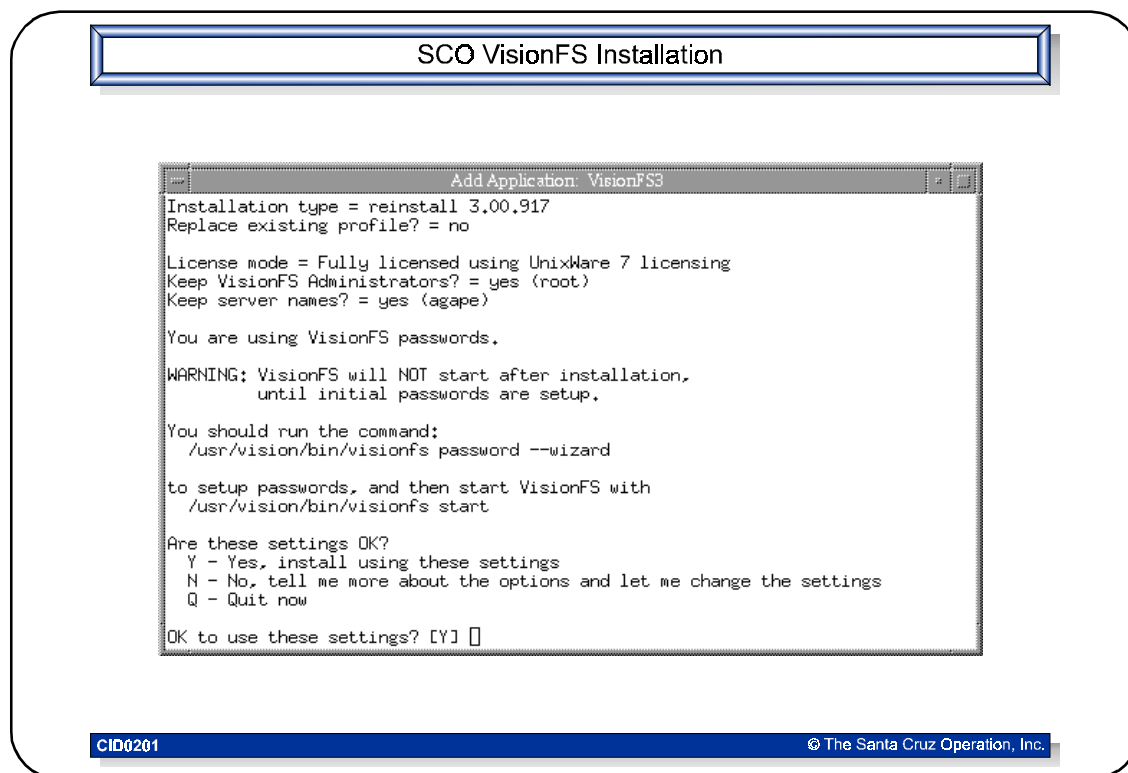
SCO VisionFS is provided free with SCO OpenServer Release 5 and UnixWare 7. Because the latest available versions are supplied with SCO operating systems, VisionFS should be installed on SCO systems from the operating system installation media, rather than from the SCO Vision2K CD-ROM.

2. Use the **setup** program to install all other Vision2K components onto the server. For UnixWare 7, you must manually create a VisionFS share from which the PC components are installed. This is done automatically for most versions of UNIX.
3. Install the PC components over the network from the shared folder on the UNIX server. This is referred to as *server-based setup*.

You can install all SCO Vision2K products without a license, which allows you to use evaluation versions of the products. The number of users allowed to connect simultaneously is the same number of concurrent users as your UNIX license. To upgrade to full licenses, see Section 7.10.1, “Upgrading the demonstration license,” on page 7-38.

Although this course focuses on installing SCO OpenServer and UnixWare 7 systems as UNIX hosts, the procedure is similar for other versions of UNIX. See the **SCO Vision2K Installation Guide** and the **SCO Vision2K Reference** manuals for information specific to your UNIX system. These guides are available on the SCO Vision2K installation CD-ROM in Adobe Acrobat PDF format in the */Docs* directory.

AV 2-1



2.3 Installing SCO VisionFS

SCO VisionFS is first installed on the UNIX server to allow creation of a shared folder for storing the PC components, which can then be installed over the network.

The basic installation procedure for installing VisionFS is:

1. Use the **Software Manager** or **Application Installer** to install VisionFS.
2. Run the VisionFS password wizard.
3. Start the VisionFS server.

2.3.1 Installing VisionFS on UnixWare 7

To install VisionFS on UnixWare 7 systems:

- | | |
|---------|---|
| Step 1. | Insert the UnixWare 7 Optional Services CD-ROM (Disk 3 of 3) |
| Step 2. | Start SCOadmin . |
| Step 3. | Select Software_Management ⇨ Application Installer . |
| Step 4. | Select the CD-ROM device from the Install From pull-down menu. |
| Step 5. | Click on Update View . |
| Step 6. | Select VisionFS3 . |
| Step 7. | Click on Install . |
| Step 8. | Tab to Apply in the Add Application: VisionFS3 window to install both VisionFS and TermLite. Press  to continue. |

AV 2-1: SCO VisionFS Installation

This slide shows the VisionFS installation default options.

- Step 9. Enter **y**  to accept the default installation settings. Press  to continue when the summary screen displays a successful installation.

Note that the default directory for VisionFS files is */usr/vision*.

When the installation procedure finishes, a **VisionFS3** icon appears in the lower window of the **Application Installer**.

- Step 10. Select **Actions** ⇒ **Exit** to exit the **Application Installer**.

Exercise: Installing VisionFS on UnixWare 7

Run the **Application Installer** to determine if VisionFS is installed on your system.

If it is not present, install VisionFS and accept the default configuration options.

2.3.2 Installing VisionFS on SCO OpenServer Release 5

To install VisionFS on SCO OpenServer Release 5:

- Step 1. Insert the SCO OpenServer Release 5 Optional Services CD-ROM.
- Step 1. Start the **Software Manager**.
- Step 2. Select **Software** ⇨ **Install New**.
- Step 3. Specify your machine as the host and click on **Continue**.
- Step 4. Specify “CD-ROM” as the media device and click on **Continue**.
- Step 5. Select “SCO VisionFS” when the list of products is displayed, and click on **Install**.
- Step 6. Enter **y** to accept the defaults. Press .

This sets the following:

Authentication	UNIX passwords are used to authenticate access to the server.
Administrator	The VisionFS administrator user name is set to root .
Server	The VisionFS server name is set to the UNIX server name.

- Step 7. Press to continue.
- Step 8. Enter **y** to accept the defaults. Press .

This will install a 30-day trial license. A full license can be installed later. The license number is provided with the License Kit.

- Step 9. Press to continue. The **Software Manager** copies the VisionFS files to the hard disk.
- Step 10. Press to continue.
- After the files are copied, the VisionFS setup screen displays a message indicating that a 30-day license has been installed.
- Step 11. Click on **Ok**.

Exercise: Installing VisionFS on SCO OpenServer Release 5

Run the **Software Manager** to determine if VisionFS is installed on your system.

If it is not present, install VisionFS and accept the default configuration options.

2.3.3 Running the password wizard

After VisionFS is installed, run the password wizard to set passwords for existing UNIX accounts. You cannot access the UNIX server until you have created the VisionFS password database. The password wizard creates an entry in the VisionFS password database for all existing UNIX accounts. NOTE: If you have not already done so, create the UNIX accounts that will be used to perform the exercises in this course. Then use this procedure to create the VisionFS password database.

Step 1. Start the password wizard. Enter:

```
/usr/vision/bin/visionfs password --wizard
```

Step 2. Press  at the “Continue or quit?” prompt to continue.

Step 3. Select a method for choosing passwords. NOTE: This does not affect the UNIX password. It creates a VisionFS password for users accessing the server from the network. Choose from these options:

- | | |
|---|--|
| B | Sets each user’s VisionFS password to be blank |
| F | Allows you to enter a single password which will be used for all VisionFS accounts |
| R | Generates a unique random password for each VisionFS account |
| U | Sets the VisionFS password to be the same as the UNIX user name. NOTE: This does not set the VisionFS password to the UNIX password. |

If you are unsure which option to choose, select **U** to set the VisionFS password to be the same as the UNIX account name. That is, the VisionFS password for the UNIX account **chris** is set to **chris**.

Step 4. Enter **n**  when prompted to edit passwords. This means you accept the passwords generated by the wizard.

Otherwise, enter **y**  to manually make *additional* changes to the VisionFS password database. This starts **vi** to modify the file, `/usr/vision/vfsprofile/password.default`. When finished, enter the **vi** command to write the changes to the file and quit, **:wq**.

- Step 5. Enter **r**  to overwrite (replace) the password database if this is the first time you have run the password wizard.
- If you have already run the wizard and created VisionFS passwords, enter **k** to keep existing passwords.
- Step 6. Enter **n**  to send mail to users notifying them of password changes. If you choose to send mail, you must respond to a series of prompts to configure the message and other mail information.
- Step 7. After noting or communicating password changes, remove the `/usr/vision/vfsprofile/password.default` file to prevent non-authorized users from obtaining VisionFS password information.

Exercise: Running the VisionFS password wizard

Create UNIX account(s) for users who will log onto the network from the workstation.

Run the password wizard and select the option to set passwords to the UNIX user name.

AV 2-2

Starting SCO VisionFS

```
# /usr/vision/bin/visionfs start
Starting SCO VisionFS 3.0 from /usr/vision/visionfs...
The server is running in fully enabled mode.
2000/02/02 17:07:18.830 3632 server/process/start
SCO VisionFS(3.0)
# /usr/vision/bin/visionfs status
SCO VisionFS 3.00.917 (Using UnixWare 7 licensing)
Server names: agape
Authentication: VisionFS (encrypted) passwords
VisionFS Administrators: root
The server is running.
Connected users:
No users are currently connected to the server.
#
```

CID0202

© The Santa Cruz Operation, Inc.

2.3.4 Starting the VisionFS server

After VisionFS is installed and you have created a VisionFS password database by running the password wizard, start the VisionFS server process. Enter:

```
/usr/vision/bin/visionfs start
```

To verify that the server is running, enter:

```
/usr/vision/bin/visionfs status
```

Exercise: Starting VisionFS

Start the VisionFS server and verify that it is running.

AV 2-2: Starting SCO VisionFS

This slide shows the **visionfs start** and **status** commands and sample output.

2.4 Installing Vision2K components on the UNIX host

Once SCO VisionFS is installed and running, install the host and PC components of SCO Vision2K on the UNIX server. On most UNIX systems, the Vision2K **setup** program automatically creates a VisionFS shared directory from which the PC components can be installed over the network.

The UnixWare 7 setup program does not automatically share the PC components, and an additional step is needed to share the mounted SCO Vision2K installation CD-ROM. If you have a UnixWare 7 host, complete this procedure to install SCO Vision2K and then manually create a share using the procedure in Section 2.4.1, “Configuring a VisionFS share on UnixWare 7,” on page 2-21.

Install all SCO Vision2K components by mounting the installation CD-ROM and running the UNIX **setup** program:

- Step 1. Create a UNIX directory on which the SCO Vision2K CD-ROM will be mounted. For example, */cdrom*.
- Step 2. Mount the SCO Vision2K CD-ROM using the command line appropriate for your system.

For SCO OpenServer Release 5, an example command line is:

```
mount -f HS -o ro /dev/cd0 /cdrom
```

For UnixWare 7, an example command line is:

```
mount -F cdfs -r /dev/cdrom/cdrom1 /cdrom
```

- Step 3. Change to the mount point directory. For example:

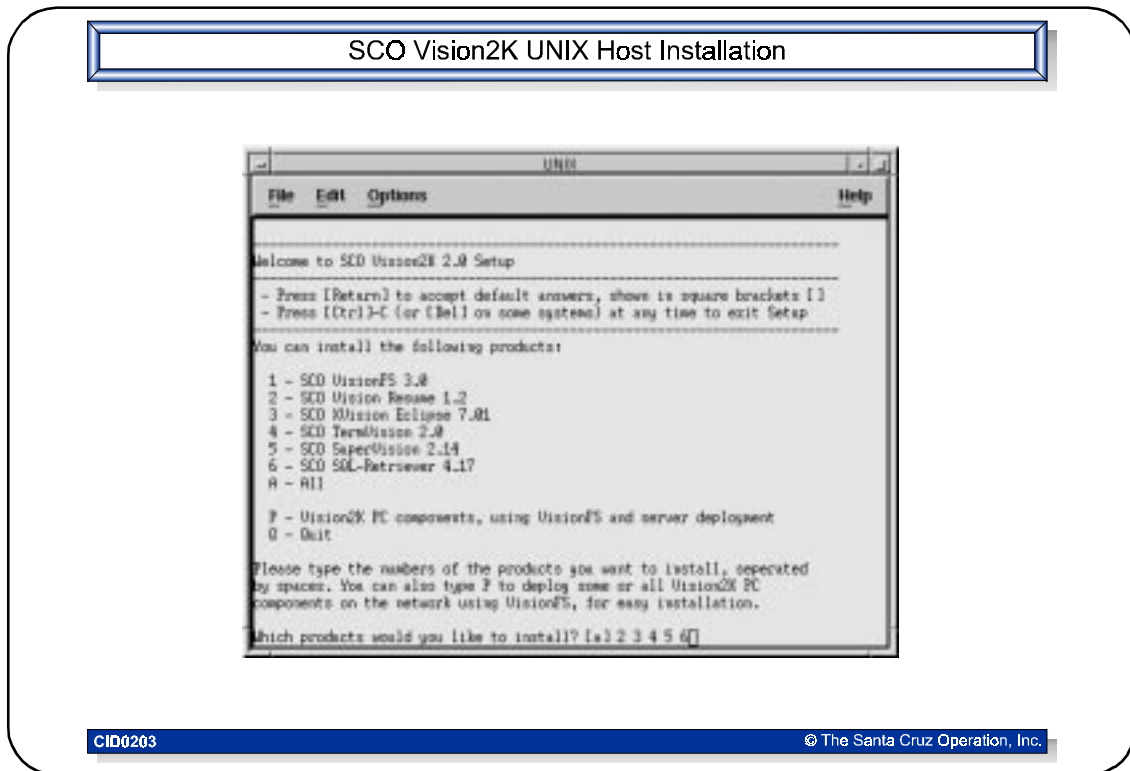
```
cd /cdrom
```

- Step 4. Start the **setup** program:

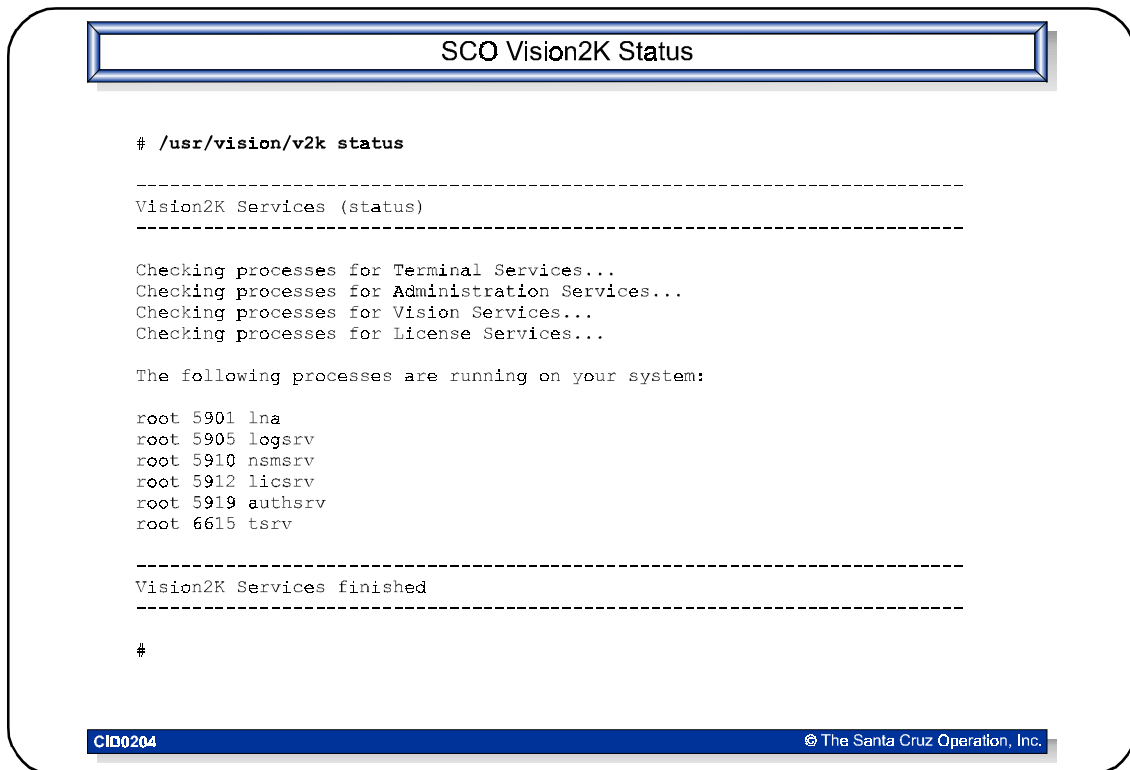
```
sh ./setup
```

NOTE: You might have to type **SETUP** as the command, depending on whether or not your operating system has mapped DOS upper case file names to lower case.

AV 2-3



AV 2-4



- Step 5. Enter the options to install each component listed, except SCO VisionFS. Enter the numbers separated by a space, and then press . This installs all SCO Vision2K components except SCO VisionFS.

Do not choose to install option 1 - SCO VisionFS, or option A - All. SCO VisionFS is already installed on your system.

AV 2-3: SCO Vision2K UNIX Host Installation

This slide shows the Vision2K installation options.

- Step 6. Enter **n** to select **None** when prompted to install SQL Services unless you have one of the listed database products installed on your server.

If you install an SQL service, you are prompted to enter configuration information specific to your database application.

- Step 7. Enter **y** to accept the license agreement terms.

- Step 8. Press to continue installing the Vision2K components listed.

- Step 9. Enter **y** to accept the default settings for License Services.

- Step 10. Enter your license number. If you do not have a license, press to accept the evaluation license.

- Step 11. Enter **y** to accept the default settings for SCO Vision Resume.

When the SCO Vision2K files have been copied, and installation finishes, use the **v2k** command to check the status of your server. For example:

/usr/vision/v2k status

AV 2-4: SCO Vision2K Status

This slide shows the output from the **v2k status** command.

Also view the files, directories, and processes now available on your system. These are the primary SCO Vision2K files and directories:

<i>/etc/vision.conf</i>	Master Vision2K configuration file
<i>/usr/vision</i> or <i>/usr/local/vision</i>	Primary directory containing SCO Vision2K programs and data files
<i>/etc/rc3.d/S90Vision2K</i>	Startup file for SCO Vision2K
<i>/etc/rc3.d/S90visionfs</i>	Startup file for SCO VisionFS
<i>/usr/vision/bin/nsmsrv</i>	The Name Space Manager daemon
<i>/usr/vision/bin/logsrv</i>	Vision2K-related event logger daemon

For a more complete list, see Section 2.6, “Lesson Summary,” on page 2-32.

Exercise: Installing SCO Vision2K on the UNIX host

Install all SCO Vision2K products except SCO VisionFS. Accept all defaults. The 30-day evaluation license is upgraded in a later exercise.

View the status of Vision2K using the **v2k** command.

View the files and directories created during the Vision2K installation. List running processes

AV 2-5

SCO Vision2K PC Files and Directories

```
# /usr/vision/bin/visionfs share --add vision2k
/cdrom/pc/win32
Share added: vision2k /cdrom/pc/win32
# lf /cdrom/pc/win32
app/          shared/      system/      vwmuapi.dll
scoreg.exe    sqlr/        tvision/     xvision/
setup32.exe   svision/     vfsetup.inf
#
```

CID0205

© The Santa Cruz Operation, Inc.

2.4.1 Configuring a VisionFS share on UnixWare 7

The UnixWare 7 installation script does not automatically create a VisionFS share with the PC components. In order to install SCO Vision2K on PCs using the network, you must manually create a share containing the PC components.

To determine whether your UNIX system has a *Vision2k* share, use the **share** option to the **visionfs** command to list existing shares. If the *Vision2k* share is listed, you do not need to manually create a share. In this example, the **visionfs** command shows that the */usr/vision/Vision2K* directory is shared as *Vision2k*.

```
# /usr/vision/visionfs/bin/visionfs share --list
```

The following shared folders are active:

```
config$ [Profile Editor only - do not delete] - /usr/vision/vfsprofile
Vision2K [SCO Vision2K product deployment] - /usr/vision/Vision2K
visiontools [SCO Vision2K tools and information] -
        /usr/vision/bin/pctools/en_US
```

If the *Vision2k* share does not exist, make the PC components available from the UnixWare 7 server by sharing the PC component directory on the mounted SCO Vision2K CD-ROM. PC components are located in the */pc/win32* directory on the CD-ROM.

To create a VisionFS share for the PC directory on the mounted Vision2K CD-ROM, enter:

```
/usr/vision/bin/visionfs share --add Vision2K /cdrom/pc/win32
```

When listing the files in this directory, you should see some combination of these files and directories on the Vision2K CD-ROM:

AV 2-5: SCO Vision2K PC Files and Directories

This slide shows the files and directories needed to install the PC components of SCO Vision2K. In this example, the Vision2K CD-ROM is mounted on the UNIX directory */cdrom*.

Exercise: Creating a *Vision2k* share

If your UNIX server is running UnixWare 7, create a share for the PC components and call it *Vision2K*.

List the files in the UNIX shared directory.

2.5 Installing Vision2K on a PC

After SCO Vision2K components have been installed on a UNIX host, install the PC components over the network. Your PC must have Microsoft networking configured.

If you have networking configured on your PC, the newly installed UNIX server will appear in the **Network Neighborhood**. It might take a few minutes for your PC's browse list to update to include the new server.

If you do not already have Microsoft Networking working on your PC, install and configure the networking components as described in the next section. Then proceed to Section 2.5.2, "Running Vision2K setup on the PC," on page 2-29.

2.5.1 Windows network configuration

Although all of the software needed to work with VisionFS is included with each Windows workstation (releases later than Windows 3.1), it might not be installed or correctly configured on every client system.

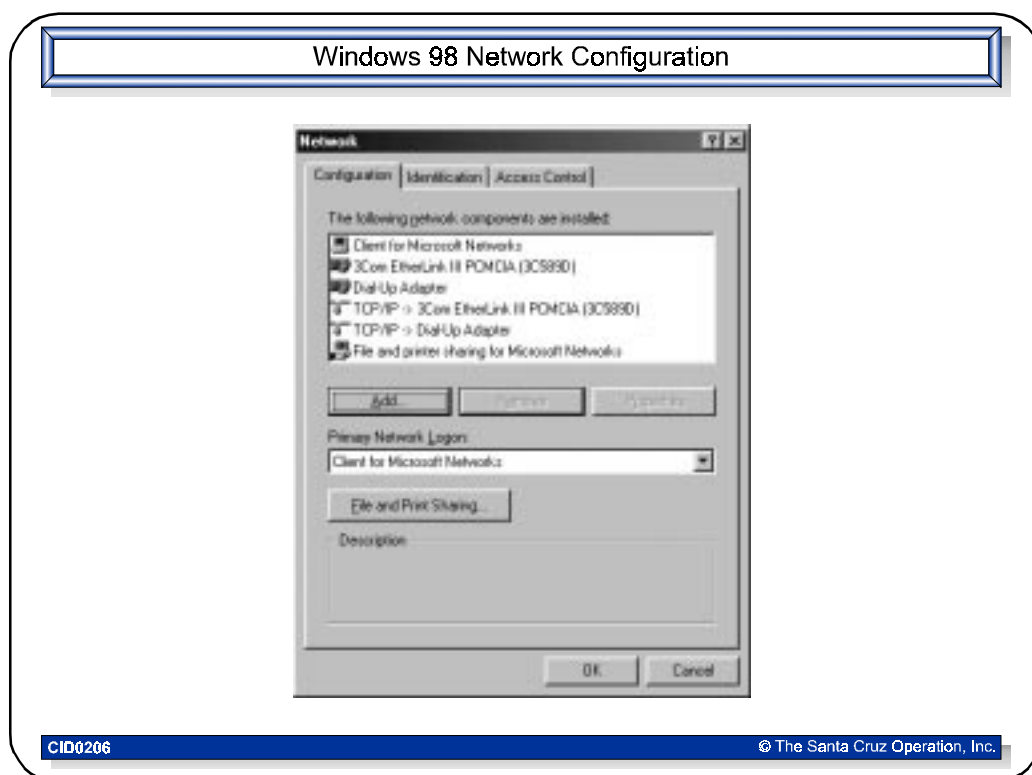
If your PC does not list the newly-installed Vision2K UNIX host in the **Network Neighborhood**, use this section to configure Microsoft networking.

There are four types of networking components that can be configured on a Windows workstation:

Adapter	Adds a driver for the network adapter hardware
Protocol	Configures protocol settings, such as IP address for TCP/IP
Client	Enables access to server resources
Service	Allows files on this computer to be shared

You must configure the Adapter, Protocol, and Client components to access a VisionFS server. Also configure the Service component if you want to share printers on your PC with UNIX users.

AV 2-6



This basic procedure outlines the configuration of a Windows workstation as a network client. The specific steps used depend on the version of Windows you are using.

- Step 1. Install a network adapter into the workstation, if not already present.
- Step 2. Boot Windows and log in as any Windows user (if prompted).

Your network adapter might be detected during system boot. If so, the adapter driver and several protocols are installed automatically and you can skip steps 4 and 5.
- Step 3. Select **Start** ⇒ **Control Panel** ⇒ **Network** to access network configuration screens. Any installed networking components will be listed.
- Step 4. Add the **Adapter** component to install a driver for your network card.
- Step 5. Add the **Microsoft TCP/IP Protocol** component and specify an IP address and subnet mask appropriate for your network. Note that this workstation should be on the same subnet as the server.
- Step 6. Add the **Client** component, **Client for Microsoft Networks**.
- Step 7. Add the **Service** component, **File and Print Share**.
- Step 8. Save the configuration and reboot the system.
- Step 9. Log onto the network using a UNIX account name and the corresponding VisionFS password.

AV 2-6: Windows 98 Network Configuration

This shows the **Configuration** tab on a Windows 98 workstation that has been configured as a network client.

You should now be able to access your VisionFS server by double-clicking on the **Network Neighborhood** icon on the desktop or mapping a network drive using the **File Manager**, depending on the Windows version you are using.

If your VisionFS server is not listed:

Step 1. Select **Start** ⇒ **Run** from the Windows menu.

Step 2. In the “Open” field, enter:

`\\servername`

where *servername* is the name of your VisionFS server.

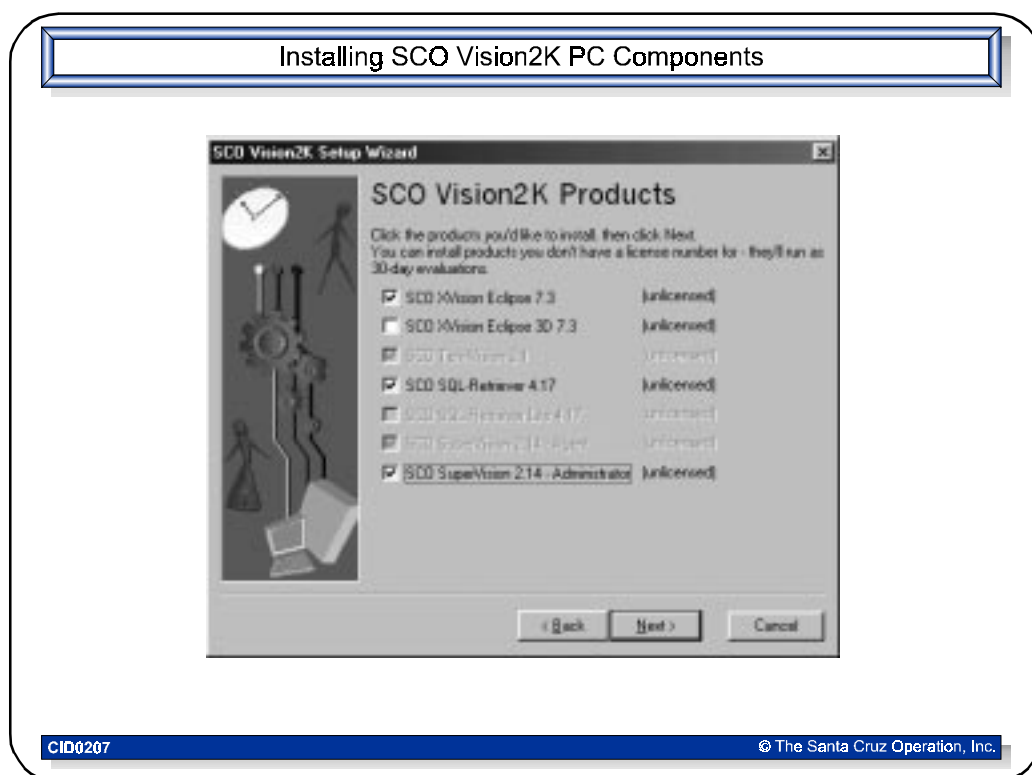
If prompted, enter the VisionFS password for the user name under which you are logged onto the network.

Exercise: Configure Windows for VisionFS

Configure your Windows system so that it can access your VisionFS server.

You should see the *visiontools* and *Vision2k* share (possibly among others) on the VisionFS server.

AV 2-7



2.5.2 Running Vision2K setup on the PC

Once your PC is configured to access your UNIX host on the network, install the SCO Vision2K PC components from the *Vision2k* share:

- Step 1. Double-click on the **Network Neighborhood** icon.
- Step 2. Double-click on the icon for the UNIX host which contains the *Vision2k* share.
- Step 3. Double-click on the *Vision2k* share.
- Step 4. Run the **setup** program. Double-click on the file called **setup** or **setup32**. A welcome window is displayed suggesting you stop other Windows applications before continuing.
- Close any other running Windows programs, if necessary.
- Step 5. Click on **OK** to continue setup.
- Step 6. Select the SCO Vision2K products you want to install. Click on the boxes for these products:
- SCO XVision Eclipse
 - SCO SQL-Retriever
 - SCO SuperVision

Note that selecting some products automatically includes other products. For example, SCO TermVision is automatically included when SCO XVision is selected.

AV 2-7: Installing SCO Vision2K PC Components

This slide shows the options for selecting which Vision2K products will be installed onto the PC.

- Step 7. Click on **Next**.
- Step 8. Select the “Typical” installation option. Click on **Next**.
- Step 9. Enter your SCO Vision2K license number(s), or select the option to evaluate SCO Vision2K products. The evaluation license period is 30 days.
- Step 10. Click on **Next**.



- Step 11. Select **Yes** to register your product licenses. Select **No** if you are evaluating SCO Vision2K.
- Step 12. Click on **Next**.
- Step 13. Click on **OK** to confirm your selections displayed in the **Summary** screen.
- The InstallShield Wizard starts and begins copying files to the PC hard disk. During the copy process, information about SCO Vision2K is displayed.
- Step 14. Click on **OK** when the **Results** window shows that the installation has completed.
- Step 15. Restart Windows. Select **Start** ⇒ **Shutdown** ⇒ **Restart the computer**.

When your system has rebooted, a series of pop-up screens will tell you the number of days remaining of your evaluation license. You are also asked to optimize XVision. This process takes several minutes.

Notice the new **Unix Neighborhood** icon on the desktop and the **XV** icon in the notification area of the Windows taskbar, shown in AV 2-8. In addition, a **Vision** menu has been added to **Programs**. To view the list of the new SCO Vision2K programs, select **Start** ⇒ **Programs** ⇒ **Vision**. Also notice the two new icons in the **Control Panel**, **Vision Services** and **Vision Communications**.

You are now ready to learn how to use the features of the SCO Vision2K suite of applications.

AV 2-8: SCO Vision2K PC Components

This slide shows the Desktop on a Windows 98 workstation after SCO Vision2K products have been installed.

2.6 Lesson Summary

This lesson described how to install the host and PC components of SCO Vision2K.

Review questions

1. What does the term *server-based* setup mean?
2. Why is SCO VisionFS installed from the operating system media for SCO OpenServer and UnixWare 7?
3. Do you have to manually create a VisionFS share to install PC components over the network?

2.7 Relevant Commands, Files, and Syntax

The following commands and files were presented in this lesson.

Relevant commands

ping	Sends packets to network hosts
setup32	SCO Vision2K installation program
telnet	Is the remote login client that connects your terminal on the current local host to a remote host system
v2k	Controls Vision2K services
visionfs	Controls VisionFS file and print services

Relevant files

<i>/etc/hosts</i>	Lists the host names and IP addresses of the hosts that share the network. See <i>hosts(4tcp)</i> .
<i>/etc/vision.conf</i>	Master SCO Vision2K configuration file
<i>/usr/vision</i> or <i>/usr/local/vision</i>	Primary directory containing SCO Vision2K programs and data files
<i>/usr/vision/bin/v2k</i>	SCO Vision2K configuration program
<i>/usr/vision/vfsprofile/password.default</i>	Password database for SCO VisionFS
<i>/etc/rc3.d/S90Vision2K</i>	Startup file for SCO Vision2K
<i>/etc/rc3.d/S90visionfs</i>	Startup file for SCO VisionFS
<i>/usr/bin/usputppxy</i>	Proxy services executable for dial-in connections
<i>/usr/bin/vwportmap</i>	Port mapper program for listening for dial-in connections
<i>/usr/vision/bin/authsrv</i>	Vision2K authentication server—listens for client requests

<i>/usr/vision/bin/licsrv</i>	Vision2K license server
<i>/usr/vision/bin/lna</i>	Vision2K local name agent—locates resources
<i>/usr/vision/bin/logsrv</i>	Logging process for Vision2K-related events
<i>/usr/vision/bin/nsmsrv</i>	Vision2K name space manager—resolves UNC names
<i>/usr/vision/bin/tsrv</i>	Vision2K terminal server
<i>/usr/vision/bin/sqlr.xxx40.d</i>	ODBC host component
<i>/usr/vision/etc/servers</i>	Configuration file that describes which processes are started

2.8 Answers to Review Questions

1. Server-based setup refers to a method of installation where all components of SCO Vision2K, both UNIX and PC, are installed onto the UNIX server. The PC components are then installed over the network from the PC by accessing the **setup** program in a share on the UNIX server.
2. SCO VisionFS is installed from the operating system CD-ROM for SCO systems only. This is necessary because SCO VisionFS is provided free with the operating system for SCO systems and the installation media for the operating system contain the latest versions of VisionFS.
3. On UnixWare 7 systems you must manually create a VisionFS share for the SCO Vision2K PC components. The share is created by default on other operating systems, including SCO OpenServer Release 5.

3

SCO Vision2K Basics

Lesson 3

SCO Vision2K Basics

Pre-lesson preparation

To complete the exercises in the lesson:

- Have a working network in place with at least one Windows workstation and one SCO UNIX host.
- Have SCO Vision2K products installed on both the UNIX host and a Windows workstation, according to the instructions in Lesson 2: “Installing SCO Vision2K.”
- Have at least one printer available for the printer sharing lab. To complete all exercises, you must connect a printer to both the server and a PC, but you can switch one printer between machines.
- Have modems installed on both the PC and UNIX systems. Configure the PC to dial out, and the UNIX host to accept an incoming modem connection. Test the configuration using HyperTerm or some other Windows dialing program.
- Have a Windows CD-ROM available to install printer or modem drivers.
- Have the SCO Vision2K installation CD-ROM available for accessing the **SCO Vision2K Reference** guide.

Introduction

SCO Vision2K provides facilities for accessing UNIX systems in a consistent way whether you are using SCO TermVision, XVision Eclipse, SQL-Retriever, or SuperVision. Browsing UNIX servers, moving, copying, and printing files, and sending messages to other users are tasks that are accomplished in a similar manner within each SCO Vision2K application.

In contrast, one SCO Vision2K component, SCO VisionFS, behaves differently. It allows workstation users to access UNIX file and print shares using built-in Windows networking facilities. When a server has SCO VisionFS installed, you can use the **Network Neighborhood**, as well as the drive and printer mapping features, to connect to server shares from a properly configured Windows workstation. Lesson 8: “SCO VisionFS,” describes SCO VisionFS in detail.

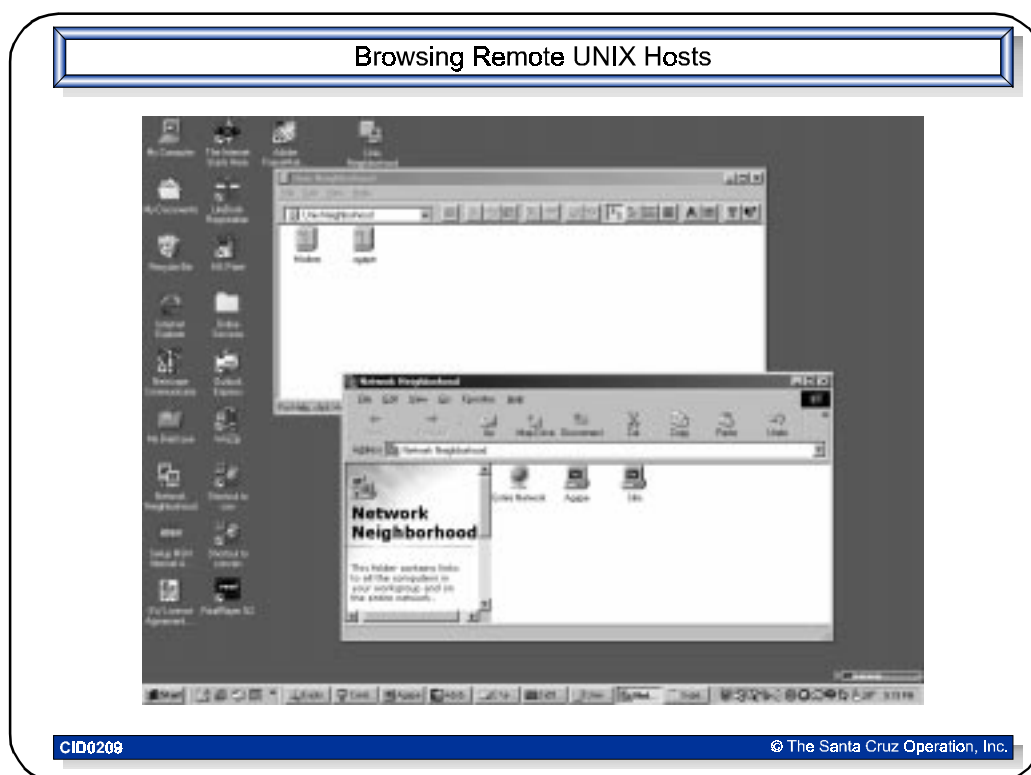
This lesson focuses on the tools used to access the UNIX server when Vision2K products (other than VisionFS) are installed on the workstation.

Objectives

This lesson describes how SCO Vision2K is used to connect Windows workstations to servers running SCO UNIX operating systems. By the end of this lesson, you will be able to:

- Browse UNIX servers
- Copy and move files
- Print to remote printers
- Send messages to other users
- Configure SCO Vision2K to use a modem

AV 3-1



3.1 Browsing Remote Hosts

SCO Vision2K provides facilities for browsing remote UNIX hosts as easily as browsing the local hard disk. Using the **Unix Neighborhood**, you can move and copy files between the workstation and the server; delete or rename files on the server; create shortcuts on the Windows desktop to UNIX programs and files; and register file types so you can start a UNIX program by double-clicking its icon.

The SCO Vision2K **Unix Neighborhood** browser provides a similar look and feel to the Windows **Network Neighborhood**. The other Vision2K browsing tool, the **Host Explorer**, is similar to the **Windows Explorer** which displays files and folders in a *tree* format.

By default, you can access any UNIX host on which you have an account and a home directory. You are only prompted for your user name and password when you first attempt to access a UNIX server.

AV 3-1: Browsing Remote UNIX Hosts

This slide shows the similarities between the SCO Vision **Unix Neighborhood** and Windows **Network Neighborhood**.

3.1.1 The Unix Neighborhood browser

To use the **Unix Neighborhood** to browse a UNIX host:

- Step 1. Double-click on the **Unix Neighborhood** icon on the desktop. Any hosts that are detected on the network are displayed. A program called the **Host Finder** automatically detects all UNIX hosts on the network.
- Step 2. Double-click on a host icon to browse that UNIX server.
- Step 3. Enter your UNIX user name and password for the selected host, if prompted.

Exercise: Using the Unix Neighborhood

Use the **Unix Neighborhood** to browse your home directory on the UNIX server.

Note that hidden files, such as *.login* or *.profile* are not displayed. To include hidden files in the display, select **View** ⇒ **Options**. In the **View** tab, select "Show all files" and click on **OK**.

3.1.2 The Host Explorer browser

To use the **Host Explorer**:

- Step 1. Select **Start** ⇒ **Program** ⇒ **Vision** ⇒ **Host Explorer**.
- Step 2. Double-click on a host in the left window to show the contents of your home directory.
- Step 3. Enter your UNIX user name and password, if prompted.

To create a desktop icon for the **Host Explorer**:

- Step 1. Select **Start** ⇒ **Program** ⇒ **Vision**
- Step 2. Right-click on **Host Explorer**, holding down the mouse button.
- Step 3. Drag the cursor to the desktop and release the right button.
- Step 4. Select **Create short-cut here** from the pop-up menu.

3.1.3 Browser features

The **Unix Neighborhood** and **Host Explorer** each have a toolbar with buttons that control the appearance of objects being displayed and provide shortcuts to commonly-used features.

Most buttons provide features common to many Windows applications, such as cut, copy, delete, list objects, show details, and so on. These additional buttons have unique features:



Displays the connection properties if a server is selected and the UNIX file permissions if a file or directory is selected.



Displays a folder for each directory in your UNIX path.



Displays the contents of your home directory.



Specifies that files to be transferred are ASCII text files. When copying or moving UNIX files to a PC, the line feed is replaced by carriage return/line feed.



Specifies that files to be transferred are data files. When copying or moving files between UNIX and a PC, the files are not modified.

Exercise: Changing permissions

Change permissions on one of the UNIX files in your home directory from either the **Unix Neighborhood** or **Host Explorer** using the **Properties** button

Log into UNIX and verify that the permissions have been changed.

3.2 Copying and Moving Files

The **Unix Neighborhood** and **Host Explorer** allow you to copy and move files:

- Within a UNIX file system
- From one UNIX file system to another
- Between your PC and UNIX hosts

If you are familiar with Windows procedures for moving files, you can apply those methods to Vision2K UNIX hosts—you can use drag-and-drop, or cut-and-paste to move and copy files and directories.

As an example, copy the *.login* or *.profile* file from a remote UNIX host to your PC using the drag-and-drop method between **Windows Explorer** and **Host Explorer**.

- Step 1. Start **Windows Explorer**. Select **Start** ⇨ **Program** ⇨ **Windows Explorer**.
- Step 2. Double-click on the target directory where the file will reside on your PC.
A list of files and directories is displayed in the right window.
- Step 3. Start **Host Explorer**. Select **Start** ⇨ **Program** ⇨ **Vision** ⇨ **Host Explorer**.
- Step 4. Double click on the UNIX host.
- Step 5. Enter your user name and password for the selected UNIX host, if prompted.
The contents of your home directory are displayed in the right window. Note, if you have not already done so, you must set the option to show hidden files.
- Step 6. Click on the file to be copied with the right button. Holding down the right button, drag the file to the right side of the **Windows Explorer** window.
- Step 7. Release the right button.
- Step 8. Select **Copy** from the pull-down list.

In this example, copy a file from your PC to a remote UNIX host to using cut-and-paste:

- Step 1. Start **Windows Explorer**. Select **Start** ⇒ **Program** ⇒ **Windows Explorer**.
- Step 2. Double-click on the target directory containing the file.
- Step 3. Single-click on the file to be copied.
- Step 4. Select **Edit** ⇒ **Copy**. Alternately, use the keyboard shortcut, **CTRL** c.
- Step 5. Start **Host Explorer**. Select **Start** ⇒ **Program** ⇒ **Vision** ⇒ **Host Explorer**.
- Step 6. Double click on the UNIX host.
- Step 7. Enter your user name and password for the selected UNIX host, if prompted.
The contents of your home directory are displayed in the right window.
- Step 8. Single-click in the right side of the **Host Explorer** window.
- Step 9. Select **Edit** ⇒ **Paste**. Alternately, use the keyboard shortcut, **CTRL** v.

Exercise: Copying files

Create a test directory on your PC. Copy your *.login* or *.profile* file to a test directory on the PC using the **Host Explorer**.

Copy a Windows file to your home directory on the UNIX host using the **Unix Neighborhood**.

Experiment with the data type settings and note the effect on files copied between UNIX and Windows.

3.2.1 File types

The **Unix Neighborhood** and **Host Explorer** use several icons to represent different file types. They recognize certain types of files and allow you to open programs or documents by double-clicking the icon.

The recognized file types and associated applications depend on which SCO Vision2K products are installed on your workstation. For example, when SCO TermVision is installed, these UNIX file types are recognized by default:



A directory



A program that runs in an ANSI terminal emulator



A program that runs in a VT420 terminal emulator



A program that runs in a Wyse 60 terminal emulator



A program executed without a terminal emulator, such as a daemon



An ASCII text document



An X client program



A file which does not have an associated type defined

When you double-click on a recognized file type, the appropriate SCO Vision2K application automatically starts and opens the selected file.

You can add your own icons to represent other file types and configure the **Unix Neighborhood** and **Host Explorer** to perform a specified action when you double-click on an icon.

Because the functionality you can associate with a file type depends on the SCO Vision2K programs installed on your PC, the procedures for creating file associations are included in the application-specific lessons.

3.3 Printing

SCO Vision2K allows Windows and UNIX applications to share printers. You can print from a UNIX application to a printer attached to a PC, or from a Windows application to a UNIX printer.

There are two protocols that can be used to enable remote printing, LPD and RPC. Because SCO UNIX operating systems support LPD, the examples in the section show how to configure remote printing using LPD. If your UNIX system does not support LPD, you can use RPC. You must also use RPC when you are connecting over a serial connection and need to print remotely. See the *SCO Vision2K Reference* manual for information about configuring RPC.

3.3.1 Printing to a remote UNIX printer from a PC

When printing to a remote UNIX printer, the Windows printer must send its output to a file instead of a physical printer port. The Vision2K **Print Server** runs on the PC to monitor this file and route print requests to the UNIX print spooler.

Once your PC is configured to access a network printer, you can print from Windows applications just as if the printer is attached to the PC.

If you have VisionFS installed on your UNIX server and the Microsoft network client software configured on your workstation, the steps to configure printing are different. This topic is covered in detail in Section 8.4, “Sharing printers using VisionFS,” on page 8-23.

Configuring access to a UNIX printer requires you to perform three basic tasks:

1. Configure a printer on the UNIX server that is able to accept remote print jobs.
2. Add a new Windows printer from the PC using the **Add Printer** wizard.
3. Configure this Windows printer as a remote printer within **Vision Services**.

3.3.1.1 Configuring UNIX to accept remote print jobs

To configure your UNIX printer on SCO OpenServer or UnixWare 7.1:

- Step 1. Log into the UNIX system as **root**.
- Step 2. Add a local printer using the **Printer Manager**. In these procedures, the example UNIX printer name is **Unixlp**.
- Step 3. On SCO OpenServer, enable the LPD print service in the **Printer Manager**.
- Select **System** ⇒ **Print** ⇒ **Services**.
 - Toggle “Remote UNIX Print Service Enabled.”
 - Click on **OK**.
- On UnixWare, enable remote systems to print to locally using the **Printer Setup Manager**.
- Select the printer that will accept remote jobs.
 - Select **Printer** ⇒ **Set User Access**.
 - Select “Allow” as the access mode. This is set by default.
 - Select the name of the remote Windows PC that is allowed to print to this printer.
 - Click on **Add**.
 - Click on **OK**.
- Step 4. Edit the `/etc/host.lpd` file. Enter the names of any remote Windows workstations that will print to this server.

Exercise: Configuring UNIX to accept remote print jobs

Add a printer on the UNIX server and configure it to accept remote print requests from your PC.

3.3.1.2 Adding a Windows printer configuration for remote printing

These steps show how to add a printer on a Windows 95 workstation to print to a remote UNIX printer:

Step 1. Select **Start** ⇨ **Settings** ⇨ **Printers**.

Step 2. Double-click on **Add Printer**.

Step 3. Select “Local printer” and click on **Next**.

Step 4. Choose a printer driver and click on **Next**.

Step 5. Select **LPT1** as the port.

This will be changed in the next procedure when configuring **Vision Services** for this remote printer.

Click on **Next**.

Step 6. Enter a printer name. An example name is **HPonUNIX**.

Step 7. Select “Yes” when asked to use this as your default printer.

Step 8. Click on **Next**.

Step 9. Select “No” when asked to print a test page.

Step 10. Click on **Finish**.

Step 11. Insert the Windows CD-ROM when prompted. If you already have a driver installed for this printer type, you can use the that driver.

When complete, a new icon appears in the *Printers* folder.

Step 12. Select the icon for the printer just created.

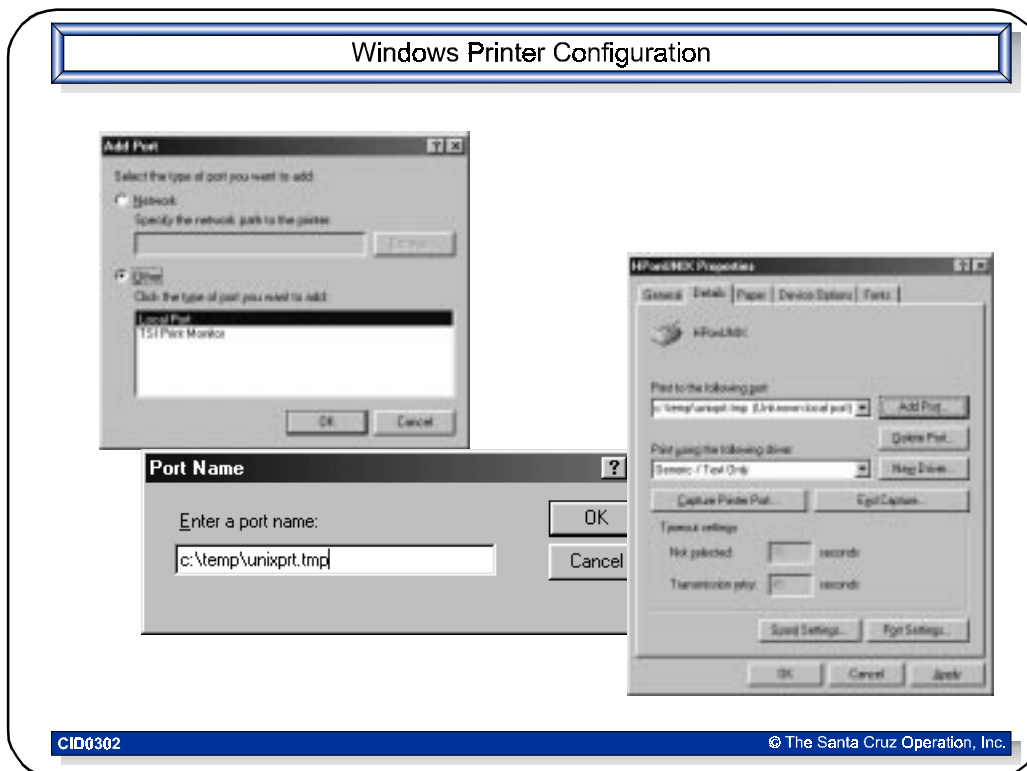
Step 13. Right-click with the mouse to bring up the pop-up menu.

Step 14. Select **Properties**.

Step 15. Click on the **Details** tab.

Step 16. Click **Add Port**.

AV 3-2



- Step 17. Select “Other” and “Local Port.” Click on **OK**.
- Step 18. Enter a file name as the port name. This is the name of a temporary file that is created on the workstation when a print job is created. An example is *c:\temp\unixprt.tmp*.
- NOTE: The directory must exist or printing will fail.
- Step 19. Click on **OK**.
- Step 20. Click **OK** again to close the printer **Properties** window.

Exercise: Adding a Windows printer configuration

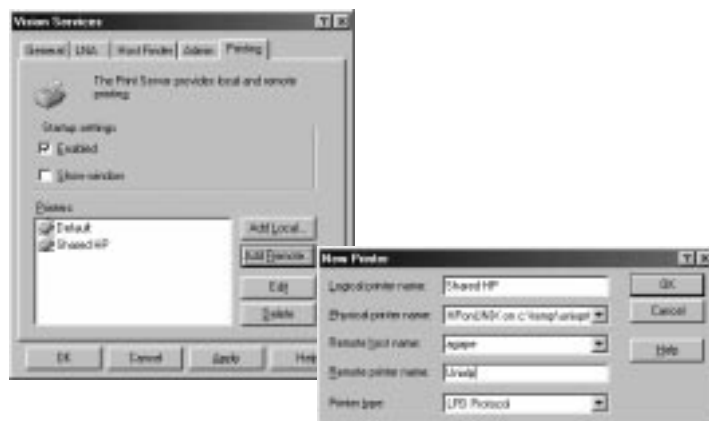
Add a printer configuration on your PC that will print to a temporary file.

AV 3-2: Windows Printer Configuration

This slide shows several of the printer configuration screens used to configure remote printing on a Windows 98 workstation.

AV 3-3

Configuring Vision Services for Remote Printing



CID0303

© The Santa Cruz Operation, Inc.

3.3.1.3 Configuring Vision Services to print remotely

Once a printer is added on the workstation, configure **Vision Services** to redirect its print jobs to the remote UNIX host.

Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **Vision Services**.

Step 2. Click on the **Printing** tab.

Step 3. Click **Add Remote**.

Step 4. Enter a new name in the “Logical printer name” field.

This can be any unique name; it does not need to match the printer name used when adding the printer with the wizard.

Step 5. Enter the Windows printer name in the “Physical printer name” box.

This field is usually filled in automatically. It is the name of the new Windows printer added in the procedure on page Section 3.3.1.2 on page 3-15. Following the example names used in these procedures, the entry is:

HPonUNIX on c:\temp\unixprt.tmp

Step 6. Enter the name of the remote host or select one from the pull-down list of detected hosts.

Step 7. Enter the remote printer name.

This is the name by which the printer is known on the UNIX system. In this example, the name by which the printer is known to the **lp** subsystem on UNIX is **Unixlp**.

Step 8. Select the communication protocol. For SCO UNIX systems and workstations connected using a TCP/IP-based LAN, the LPD protocol is appropriate.

Step 9. Click on **OK**.

Step 10. Click on **OK** to exit the **Vision Services** window.

AV 3-3: Configuring Vision Services for Remote Printing

This slide shows the printer configuration screens used to configure Vision2K to print to a remote UNIX host.

Exercise: Configuring Vision Print Services to print remotely

Configure **Vision Services** to print to a remote UNIX printer.

Test the printer configuration using a Windows application. If you use the **Notepad**, you must set this printer as the default. The **Wordpad** accessory allows you to select a printer.

3.3.2 Printing to a PC from UNIX

The **Vision Services Print Server** runs on the PC and listens for print requests, printing them on the local printer attached to the PC. To print files from a UNIX system to a printer attached to a PC:

1. Configure a local printer attached to a PC.
2. Configure the Vision **Print Server** on the PC to accept remote print requests.
3. Configure a remote UNIX printer to route print requests to the PC.

Detailed procedures are provided in the next sections.

3.3.2.1 Configuring a local Windows printer

If you have not already done so, install and configure a printer on your Windows PC. These steps show you how to add a local printer on a Windows 95 workstation:

- Step 1. Select **Start** ⇨ **Settings** ⇨ **Printers**.
- Step 2. Double-click on **Add Printer**.
- Step 3. Select “Local printer” and choose a printer driver.
- Step 4. Select “LPT1” if your printer is connected to the parallel port, or select the applicable device to which your printer is attached.
- Step 5. Enter a printer name. An example name might be **HPLaser**.
- Step 6. Select **Yes** to set this printer as the default.,
- Step 7. Select the option to print a test page.
- Step 8. Click on **OK**.

Exercise: Adding a local Windows printer configuration

Use the Windows **Add Printer** wizard to create a new printer attached to the PC. Test the printer from a Windows application.

3.3.2.2 Configuring Vision Services to accept remote print jobs

Once a local printer is added on the workstation, configure **Vision Services** to accept print jobs from remote UNIX hosts.

Step 1. Select **Start** ⇨ **Settings** ⇨ **Control Panel**.

Step 2. Double-click on the **Vision Servers** icon.

Step 3. Click on the **Printing** tab.

Step 4. Click **Add Local**.

Step 5. Enter a new name in the “Logical printer name” box.

This can be any unique name; it does not need to match the printer name used when adding the printer using the wizard. In this example, the printer name is **v2kprinter**.

Do not use non-numeric or -alphabetic characters in the printer name. Some UNIX systems do not allow them in printer names.

Step 6. Select the Windows printer added in Section 3.3.2.1 on page 3-21. Note that this must be a printer that is physically connected to the workstation

Step 7. Select **LPD Protocol** in the “Printer type” field.

Step 8. Select “Line printer mode.”

Step 9. Click on **OK** to close the **New Printer** window.

Step 10. Click on **OK** to exit the **Vision Services** window.

Step 11. Close the **Control Panel** window.

Exercise: Configuring Vision Services to accept remote print jobs

Configure **Vision Services** to accept remote print requests for the Windows printer just created.

3.3.2.3 Configuring the UNIX host to print to a PC

To configure a UNIX printer on SCO OpenServer or UnixWare 7 to print to a remote PC:

- Step 1. Log into the UNIX system as **root**.
- Step 2. Run the SCOadmin **Printer Manager**.
- Step 3. Select **Printer** ⇒ **Add Remote UNIX** on SCO OpenServer.
- Or
- Select **Printer** ⇒ **Add TCP/IP Printer** on UnixWare 7.
- Step 4. Enter a name by which this printer will be known on the UNIX system. For example, **unixtopc**.
- Step 5. Select “lpd(BSD)” as the protocol type.
- Step 6. On UnixWare 7, select “On Remote Server” as the printer connection type.
- Step 7. Enter the name of the PC in the “Host” or “Remote System” field.
- Step 8. Enter the name of the Vision Services PC printer in the “Printer” field.
- Use the name configured in Section 3.3.2.2, “Configuring Vision Services to accept remote print jobs,” on page 3-22. In this example, enter **v2kprinter**.
- Step 9. Click on **OK**.
- Step 10. Exit from the **Printer Manager**. Click on **Host** ⇒ **Exit**.

Test the printer configuration by sending a UNIX file to the PC printer using the **lp** command. For example:

lp -dunixtopc /etc/group

Exercise: Printing from UNIX to a remote PC printer

Configure a remote UNIX printer to route print requests to a PC printer. Test the configuration using the **lp** command from the UNIX command line.

3.4 Sending and Displaying Messages

SCO Vision2K provides a messaging facility that allows you to see other Vision2K users on the network, and enables you to send and receive messages.

To display a list of Vision2K users on your network and send a message:

Step 1. Select **Start** ⇨ **Programs** ⇨ **Vision** ⇨ **Accessories** ⇨ **User View**.

A list of users is displayed

Step 2. Double-click on the icon of a PC user.

A **Message Pad** is displayed.

Step 3. Type the contents of your message in the **Message Pad**.

Step 4. Click on **Send**.

Step 5. Click on **Close** to exit the **Send Text Message** window.

When you have been sent a message by another PC user, a small yellow “post-it” icon appears in the Windows taskbar. To read a message sent by another Vision2K PC user, double-click on the “post-it” icon.

If you have multiple messages, click in the lower right-hand corner of the message pad to scroll through your messages.

For a list of menu options for managing your messages, right click anywhere in the message pad.

Exercise: Sending messages

Send a message to another PC user on your network. If you have only one PC, send a message to yourself. Bring up the **Message Pad** to read your message.

3.5 Using Vision2K with a Modem

If your PC has a modem, and a UNIX host running SCO Vision2K has a modem configured to allow you to dial in, you can access your office network in much the same way you do when your PC is connected to the LAN. The Vision2K host and PC software provide services which allow you to take advantage of facilities such as browsing any UNIX host on the network.

To accomplish this, the **Vision Services** host component provides a Universal Session Protocol (USP) proxy server that runs on UNIX systems. The proxy server allows the PC to appear to the network as if it were directly connected. The PC has access to all hosts on the network and supports multiple sessions over the modem connection.

It is possible to dial into a UNIX server that is not running the Vision2K proxy service, but you will have limited functionality. You will only have access to the UNIX host to which you are directly connected.

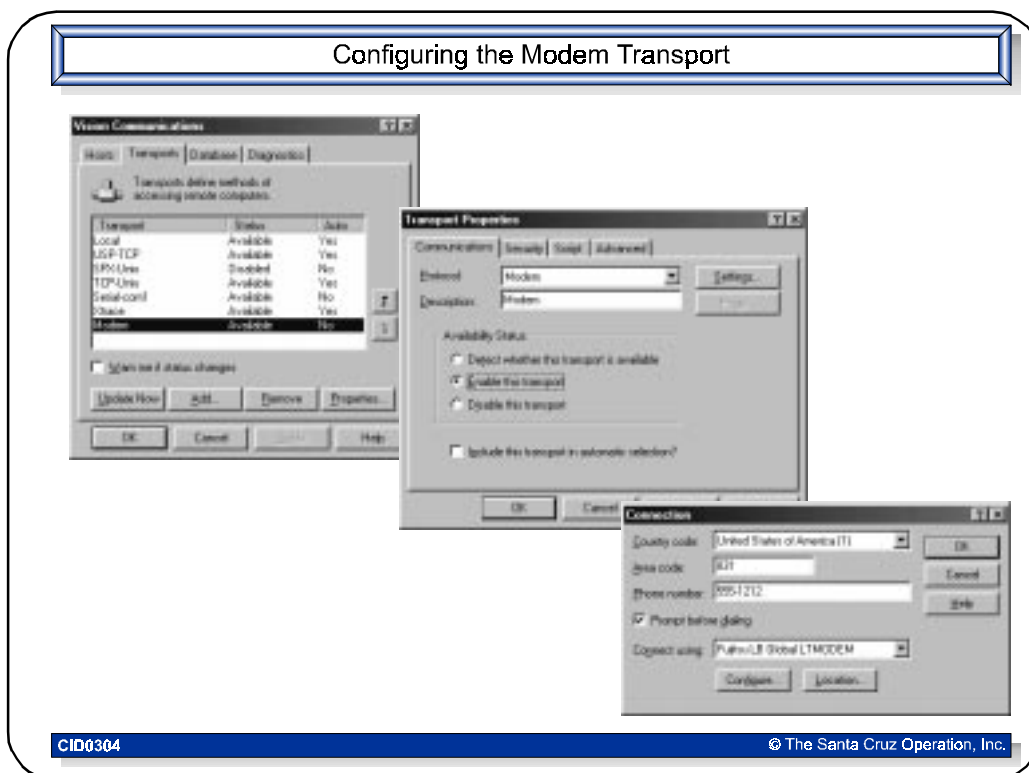
Vision2K products can be configured to use a serial or modem transport. If your PC has a modem configured at the time Vision2K is installed, the **Modem** transport is automatically created. The **Serial-Com1** transport is used when the serial port on your PC is connected directly to a UNIX host by an RS232C cable. It can also be used to bypass the Windows TAPI modem driver, or if your modem is not supported by Windows.

The procedure for configuring a PC to connect to a UNIX host using a modem assumes your PC has a TAPI modem which connects over a phone line. If you have configured your modem using the Windows wizard, then it is a TAPI modem.

The **Vision Communications** manager is used to perform these basic steps, detailed in the next section:

1. Configure the **Modem** transport properties.
2. Create a new transport that uses the USP protocol and proxy services.
3. Add a new host which uses the new transport.

AV 3-4



3.5.1 Configuring the Modem transport

SCO Vision2K automatically creates a transport called **Modem** if your PC has a modem device. Use the **Vision Communications** manager to configure the **Modem** transport with your specific system information:

- Step 1. Verify that your modem is configured under Windows. Test the configuration by dialing a phone number using **HyperTerminal** or **Phone Dialer**.
- Step 2. Select **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **Vision Communications**.
- Step 3. Click on the **Transports** tab.
- Step 4. Select **Modem**.
- Step 5. Click on **Properties**.
- Step 6. Click on **Settings** in the **Communications** window.
- Step 7. Enter the phone number for your UNIX host.
- Step 8. Click on **OK** to close the **Connection** window.
- Step 9. Select “Enable this transport.”
- Step 10. Click on **Apply** and **OK**.
- Step 11. Click on **Close** to exit the **Vision Communications** manager.

Now that the **Modem** transport is configured to dial your server, add a new transport that uses the USP protocol and specifies your host as a proxy server:

- Step 1. Select **Start** ⇒ **Control Panel** ⇒ **Vision Communications**.
- Step 2. Click on the **Transports** tab.
- Step 3. Click on **Add**.
- Step 4. Select the protocol **USP Via Proxy** from the pull-down list.
- Step 5. Enter a name in the “Description” field. An example name is **USP Modem**.
- Step 6. Select “Enable this transport.”
- Step 7. Click on **Proxy**. The **Host Properties** windows is displayed

- Step 8. Select **Modem** as the transport.
- Step 9. Enter the network name of the UNIX host as the host name. This is the name by which the UNIX system is known within DNS, or in the */etc/hosts* file.
- Step 10. Click on **OK** to exit the **Host Properties** window.
- Step 11. Click on **OK** to exit the **Transport Properties** window.
- Step 12. Click on **Close** to exit the **Vision Communications** manager.

Finally, create a new host configuration that uses these settings when a connection is initiated:

- Step 1. Select **Start** ⇒ **Control Panel** ⇒ **Vision Communications**.
- Step 2. In the **Hosts** tab, click on **Add**.
- Step 3. Enter a logical name for the connection. For example, **hostname-modem**.

Note any name can be used. It does not need to be the actual network node name for your UNIX host. Rather, this name is a way to identify the connection properties for the UNIX host. In this example, the logical name is **Spider1-modem**.
- Step 4. Click on **OK**. The **Add New Host** window closes and the new name is highlighted in the list of hosts.
- Step 5. Click on **Properties** with the new host name selected.
- Step 6. Select the new transport just added from the pull-down list. In this example, the new transport is named **USP Modem**.
- Step 7. Click on **Settings**.
- Step 8. Enter the network node name for the UNIX system configured as the proxy.
- Step 9. Click on **OK** to exit the **TCP/IP** settings window.
- Step 10. Click on **OK** to exit the **Host Properties** window.
- Step 11. Click on **Close** to exit the **Vision Communications** manager.

Use the **Unix Neighborhood** to test the connection:

- Step 1. Double click on the **Unix Neighborhood** icon. The host created in the last step, called **Spider1-modem**, appears as an icon.
- Step 2. Double-click the new host icon.
- Step 3. Enter your UNIX user name and password for the system acting as the proxy.
- Step 4. If prompted, verify the phone number is correct and click on **OK**.
- Step 5. The **Connection Manager** window displays the connection status and the modem dials the phone number.
- Step 6. If prompted again, enter your UNIX user name and password.

Once connected, the contents of your home directory on the UNIX proxy server are displayed by the **Unix Neighborhood**. The **Connection Manager** window is minimized and available from the task bar as long as the system is connected.

To disconnect, close the **Unix Neighborhood** or double-click on the **Connection Manager** window and click on **Disconnect**.

Exercise: Configuring a modem

Create a new transport that uses the USP protocol and a proxy server to connect to your UNIX host over a modem connection.

To initiate a connection, start the **Unix Neighborhood** and double-click on the new host created for the modem connection.

3.6 Getting Help

On-line help specific to each application is accessed from within a running application using the **Help** pull-down menu on the toolbar. Context-sensitive help is also available by clicking on the question mark button on the toolbar and dragging it to an area of the Vision2K application window.

General SCO Vision2K information is available from the Windows desktop by selecting **Start** ⇨ **Programs** ⇨ **Vision** ⇨ **Vision Help**.

In addition, these user guides are available on the SCO Vision2K CD-ROM in Adobe Acrobat PDF format:

- *SCO Vision2K Installation*
- *Introducing SCO TermVision*
- *Introducing SCO XVision*
- *Introducing SCO SQL-Retriever*
- *Introducing SCO VisionFS*
- *SCO Vision2K Reference*

The CD-ROM also includes 32- and 16-bit versions of the Adobe Acrobat reader for Windows. You can install a reader onto your PC from the SCO Vision2K CD-ROM.

Guides and Acrobat software are located in the */docs* directory on the CD-ROM.

Another source of help is the SCO Client Integration Services web site found at <http://www.sco.com/Support/ciservices>.

3.7 Lesson Summary

SCO Vision2K provides facilities for accessing UNIX systems in a way that is familiar to Windows users. The features common to Vision2K applications are browsing UNIX hosts, copying and moving files between systems, printing to local and remote printers, sending messages, and connecting using a modem.

VisionFS is an exception, as it uses built-in Windows network software to access shared resources on remote systems.

Review questions

1. Which SCO Vision2K programs are used to browse UNIX hosts? What are their Windows counterparts?
2. Is it possible to copy a file from one UNIX system to another from a PC? How could you do this?
3. What are the three basic steps for printing files from your PC to a UNIX server printer?
4. What are the three basic steps for printing files from your UNIX system to a PC?
5. What is the advantage of using a proxy server when configuring a PC to dial into a UNIX host?

3.8 Relevant Commands, Directories, Shares, and Packages

The following commands, directories, shares, and packages were presented.

Relevant commands

lp	Unix print command
-----------	--------------------

Relevant files and directories

<i>/etc/hosts.lpd</i>	UNIX LPD configuration file which specifies which remote systems are allowed to send print requests
<i>c:\temp\unixprt.tmp</i>	Example temporary file on the Windows system used to redirect print requests to a remote UNIX host
<i>docs\user\v2kref.pdf</i>	SCO Vision2K Reference manual in Acrobat format on the SCO Vision2K CD-ROM

Relevant Windows applications

HyperTerminal	Dial out and remote login application
Notepad	Text editor
Wordpad	Word processor

3.9 Answers to Review Questions

1. SCO Vision2K includes the **Unix Neighborhood** and **Host Explorer** browsers, which are used to access UNIX hosts from a PC. Their appearance and functionality compares to the Windows **Network Neighborhood** and **Windows Explorer** programs.
2. Files can be copied between UNIX hosts from with the **Unix Neighborhood** or **Host Explorer** programs using the same methods used for copying Windows files—drag-and-drop or cut-and-paste.
3. There are three basic steps to configure the PC and UNIX host to allow print jobs to be sent from a PC and printed to a printer connected to a UNIX host:
 - Configure a UNIX printer to accept remote print requests.
 - Add a remote printer on the PC which prints to a temporary file.
 - Configure the Vision **Print Server** on the PC to route print requests to the UNIX server.
4. There are three basic steps to configure a UNIX host to allow print jobs to be sent to a printer connected to a PC:
 - Add a local printer on the PC using the **Add Printer** wizard.
 - Configure the Vision **Print Server** on the PC to accept remote print requests.
 - Configure a remote UNIX printer which directs print requests to the PC.
5. A proxy server allows a PC that is connected to a server over a modem to view the network as if it were connected on the LAN. Without a proxy server, the remote PC would only have access to the server to which it was directly connected.

4

SCO TermVision

Lesson 4

SCO TermVision

Pre-lesson preparation

To complete the exercises in the lesson:

- Have a working network in place with at least one Windows workstation and one UNIX host.
- Have SCO Vision2K products installed on both the UNIX host and a Windows workstation, according to the instructions in Lesson 2: “Installing SCO Vision2K.”
- Have Microsoft Excel or Word running on the PC to perform the OLE exercise.
- Have the SCO Vision2K installation CD-ROM available for accessing the **SCO Vision2K Reference** guide and the on-line manual, ***Introducing SCO TermVision***.

Introduction

SCO TermVision is component of the SCO Vision2K suite of Windows-integration products that provides terminal emulation services.

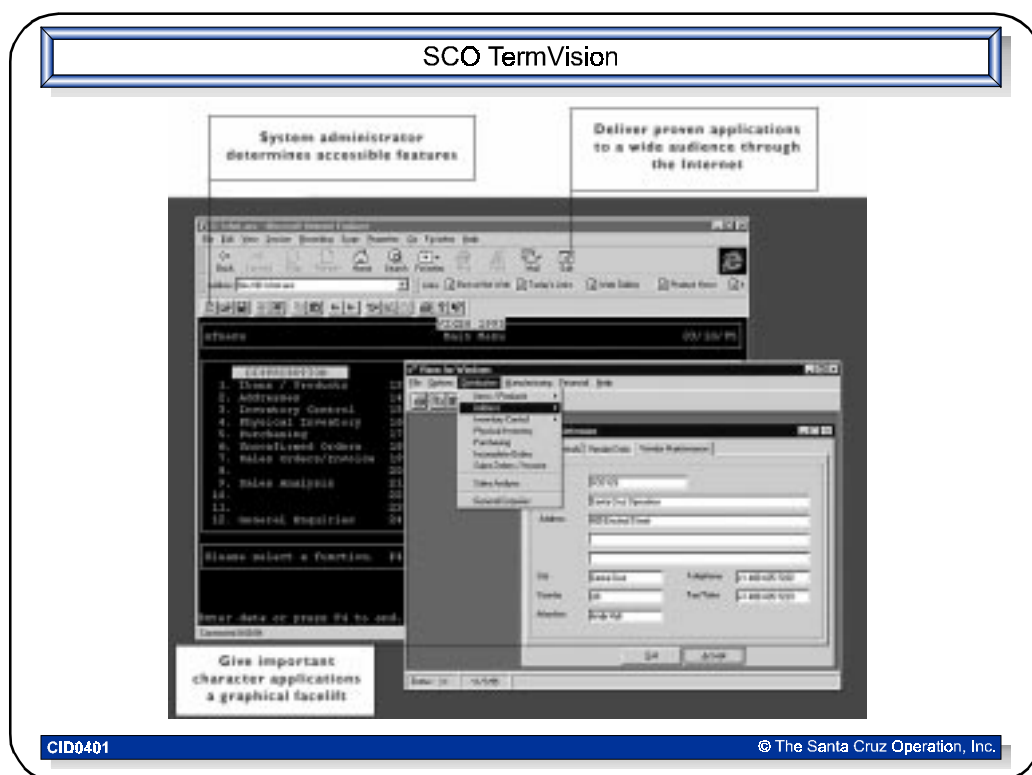
This lesson introduces you to TermVision features and provides procedures that demonstrate how to quickly and easily access the terminal emulation services available to connect your Microsoft Windows-based computers to UNIX servers.

Objectives

This lesson describes how SCO TermVision is used to connect Windows workstations to servers running SCO UNIX operating systems. By the end of this lesson, you will be able to:

- Open a terminal connection
- Create a terminal icon on the desktop
- Cut and paste text and data between UNIX and Windows applications
- Customize the emulator and record keystrokes
- Add a button to the toolbar
- Use actions and events
- Control remote program execution
- Configure document types and associations
- Start an emulator from a web browser

AV 4-1



4.1 SCO TermVision Overview

SCO® TermVision™ provides high-quality, 32-bit terminal emulation for Windows workstations. It is designed to make use of advanced Windows® 95 interface features and provide transparent access to UNIX character-based applications. Using Visual Basic or other development tools, a completely new graphical front-end can be built for legacy character applications, providing a cost-effective alternative to a total application rewrite.

With SCO TermVision you can even deliver character applications across the Internet by embedding and running applications from a web page. System administrators can support and manage users with the centralized administration tool, SCO SuperVision™.

With TermVision, you can:

- Access all the functionality described in Lesson 3: “SCO Vision2K Basics,” including browsing, copying and printing files on remote UNIX servers, sending messages to other network users, and connecting using a modem
- Run standard character-terminal applications on remote UNIX systems using one of three emulation types, VT420, WY60, or ANSI, including subset types, such as VT220
- Execute remote programs using standard Windows methods, such as double-clicking on program icons and **Start** ⇔ **Run**
- Create OLE-hot links between UNIX and Windows applications
- Customize terminal emulators by adding buttons, recording keystrokes, and writing scripts using Visual Basic or JavaScript
- Configure TermVision remotely using SuperVision

SCO TermVision can be purchased separately or as part of the Vision2K suite of products. If you have installed TermVision using the evaluation license, you can purchase a permanent license and upgrade your existing TermVision installation.

AV 4-1: SCO TermVision

This shows an example Windows desktop running several TermVision emulation windows.

4.2 Opening a terminal connection

When SCO TermVision is installed on your PC, several programs are added to the **Vision** program group. Among these are:

- ANSI Emulator
- VT420 Emulator
- WYSE60 Emulator

To open a terminal connection to a UNIX host using ANSI emulation:

Step 1. Select **Start** ⇒ **Programs** ⇒ **Vision** ⇒ **ANSI Emulator**.

A terminal emulation window starts running, but is not yet connected to a UNIX host.

Step 2. Select **Session** ⇒ **Connect**.

Step 3. Select the name of the remote UNIX host you want to access. The pull-down menu displays all hosts which have been detected on the network.

Step 4. Enter **ksh** in the “Command line” field.

Step 5. Click on **OK**.

Step 6. Enter your UNIX user name and password for this host, if prompted. You are only prompted to authenticate the first time you access a UNIX host.

When connected, you see the **ksh** command prompt displayed in the upper left corner of the **ANSI Emulator** window. A connection status is displayed in the lower left corner of the window.

Step 7. Type **exit** to log out of the UNIX system, when finished.

Step 8. Select **File** ⇒ **Exit** to close the emulator window.

Exercise: Opening a terminal connection

Use the ANSI terminal emulator to connect to a SCO UNIX host. Run the **setcolor** and **scosh** commands to check that ANSI emulation correctly displays these applications. Leave the emulator window open for the next exercise.

4.3 Copying and Pasting Data Between Applications

Data is easily transferred between UNIX and Windows applications using TermVision's cut-and-paste feature.

In this example, text from the UNIX calendar application, **cal**, is copied to the Windows **Notepad** application.

- Step 1. Start an ANSI emulator, connect to a UNIX host and run **ksh**.
- Step 2. At the **ksh** prompt, type the **cal** command. A three month calendar is displayed.
- Step 3. Select the calendar text using the mouse.
- Step 4. Select **Edit** ⇒ **Copy**. This copies the calendar text to the Windows clipboard.
- Step 5. Start the Windows **Notepad** application. Select **Start** ⇒ **Programs** ⇒ **Accessories** ⇒ **Notepad**.
- Step 6. In **Notepad**, select **Edit** ⇒ **Paste**. The calendar text appears in the **Notepad** document.
- Step 7. Exit **Notepad** and close the terminal emulator window.

Cutting and pasting from Windows applications to UNIX is just as easy.

Exercise: Cutting and pasting from UNIX to Windows

Copy the text from a TermVision emulator window running the UNIX **cal** command into the Windows **Notepad**.

Copy text from an emulator window into a Windows file.

AV 4-2



4.4 Creating a terminal icon on the desktop

Adding an icon to the desktop is a convenient way to access commonly-used commands and programs. SCO TermVision includes a wizard to create desktop items to start UNIX applications. For example, this procedure adds an icon that runs the ANSI terminal emulator, connects to a UNIX host, and starts the Korn shell with the **ksh** command.

- Step 1. Right-click on the Windows desktop.
- Step 2. Select **Start** ⇒ **New** ⇒ **Unix Program**. This starts the **Unix Application Wizard**.
- Step 3. Click on **Next**.
- Step 4. Select the UNIX host name from the pull-down list. Click on **Next**.
- Step 5. Enter the path name of the UNIX program to be executed, */bin/ksh*, in this example.
- Alternately, browse the UNIX host by clicking on the **Browse** button.
- Step 6. Select **ANSI Emulator** as the application type. Click on **Next**.
- Step 7. Select **Yes** to run the application now to verify the command and path names are correct. Click on **Next**.
- If the command is executed correctly, an emulation window is started with **ksh** running. Note you might have to press  to see the **ksh** prompt.
- If the command produces an error, the error message is displayed by the wizard. Click on the **Help** button to get more information about the problem.
- Step 8. Click on **Next** if the application executed. Otherwise, click on **Back** to enter a new command or path name.
- Step 9. Enter a name for the new desktop item. For example, **host ksh**, where *host* is the UNIX system name.
- Step 10. Click on **Finish**.
- Step 11. Double-click on the new desktop icon to connect to the server and execute the application.

AV 4-2: UNIX Application Wizard

This slide shows the first screen displayed when running the UNIX Application Wizard.

The **Unix Application Wizard** can also be run from the **Start** menu to create a program item that appears in the **Start** ⇒ **Unix Programs** menu, rather than on the desktop.

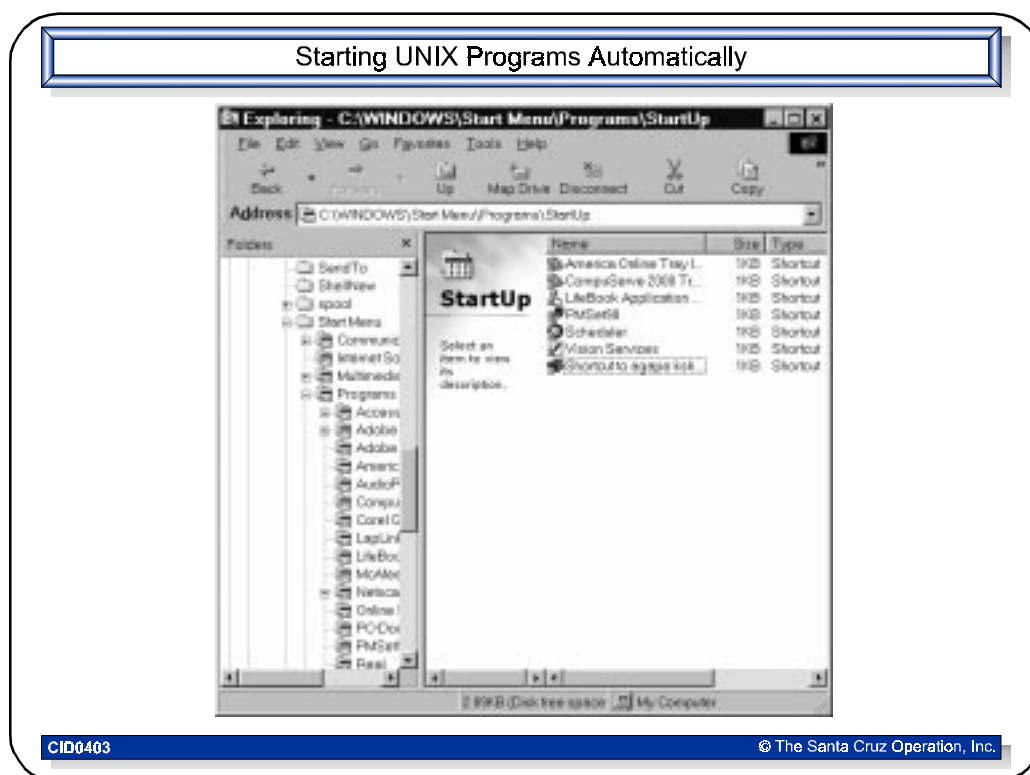
The wizard creates either a Remote Program Starter document with the extension *.rps*, or a terminal emulator document with the extension *.v42*, *.ans*, or *.w60*, depending on the type of emulator selected. File types are discussed in more detail in Section 4.8.1, “Configuring document types and associations,” on page 4-41.

Exercise: Creating a desktop item

Create an icon on the desktop to connect to a UNIX host and run **ksh**. Test the connection.

Create a shortcut in the **Unix Program** menu to run another remote program in an emulator. The **Unix Program** menu item appears after the first time you have run **Start** ⇒ **New Unix Program**.

AV 4-3



4.5 Starting UNIX programs automatically

The procedure for creating program icons is also useful for starting UNIX programs automatically when Windows starts.

To start a remote program automatically:

- Step 1. Use the steps described in Section 4.4 to create a new program icon on the desktop.
- Step 2. Start the **Windows Explorer**. Select **Start** ⇨ **Programs** ⇨ **Windows Explorer**.
- Step 3. Enter *C:\Windows\Start Menu\Programs\StartUp* in the “Address” field and press .
- Step 4. The right window of the **Windows Explorer** displays the items in the *StartUp* folder.
- Step 5. Right-click the new icon on the desktop, drag it into the right window of **Windows Explorer**, and release the right button.
- Step 6. Select the option **Create Shortcut(s) here**.

The icon is now listed in the *StartUp* folder.
- Step 7. Restart Windows to verify that the program starts automatically.

Exercise: Starting programs automatically

Configure Windows to automatically run **ksh** in the ANSI emulator window.

AV 4-3: Starting UNIX Programs Automatically

This slide shows how Desktop items can be dragged into the *StartUp* folder so the program is started automatically whenever Windows is started.



4.6 Executing programs remotely

TermVision allows you to transparently execute programs on remote UNIX servers. For example, you can double-click on an icon on your Windows desktop to start a program that runs on the remote UNIX host.

This example procedure shows how to create an icon for the UNIX **cal** program, and execute the program on a remote UNIX host:

- Step 1. Double-click on the **Unix Neighborhood** icon.
- Step 2. Double-click on the icon for the UNIX host on which the **cal** program will run.
- Step 3. Click on the **Paths Folder** button on the **Unix Neighborhood** toolbar.

A folder is displayed for each directory in your UNIX PATH environment variable.
- Step 4. Double-click on the **/usr/bin** icon.
- Step 5. Right-click on the **cal** icon.
- Step 6. Select **Associate With** ⇌ **ANSI Emulator**.
- Step 7. Right-click again on the **cal** icon.
- Step 8. Select **Properties**.
- Step 9. Select the **Program** tab.
- Step 10. Clear the selection “Close on disconnect.”
- Step 11. This will allow you to see the output of the **cal** command. Otherwise, the window closes too fast to be seen.
- Step 12. Click on **OK** to close the **Properties** window.
- Step 13. Right-click on the **cal** icon, drag it onto the Windows desktop, and create a shortcut.

AV 4-4: Executing Remote Programs

This slide shows the windows displayed by the sequence of steps used to create a Desktop icon that remotely executes a program.

- Step 14. Close all **Unix Neighborhood** and **ANSI Emulator** windows.
- Step 15. Double-click the **Shortcut to cal** icon to start the remote program.

Exercise: Running remote programs

Create shortcuts on the Windows desktop to `/bin/vi` and `/bin/mailx` on the remote UNIX host.

AV 4-5

Terminal Emulator Configuration Options



CID0405

© The Santa Cruz Operation, Inc.

4.7 Customizing a Terminal Emulator

A TermVision emulator can be customized in a number of ways. Some examples of common customizations are:

- Changing attributes, such as the color, size, and position of the emulator window
- Recording keystrokes
- Creating new toolbar buttons
- Associating actions with events

This section shows how these emulator properties can be changed. The new emulator created in the previous section, **host-ksh**, is used to demonstrate these types of customizations in the next set of exercises.

See on-line help, or the *SCO Vision2K Reference* manual, for documentation on the full complement of customizable TermVision properties.

AV 4-5: Terminal Emulator Configuration Options

This slide shows the type of attributes you can configure for a terminal emulator.

4.7.1 Changing emulator attributes

The examples in this section show how to change emulator properties. There are numerous other attributes you can modify using the same basic procedure.

To change the color of the terminal emulator background:

- Step 1. Open the **host-ksh** terminal emulator created in the previous exercise.
- Step 2. Select **Properties** ⇌ **Attributes**.
- Step 3. Select the item you want to change from the pull-down list. For example, the item **Normal** represents the default text and default background attributes.
- Step 4. Toggle “Color.”
- Step 5. Click on the pull-down list for the “Back” field.
- Step 6. Select a color from the color map. The model terminal window changes color to reflect your selection.

- Step 7. Click on **Apply**. Your real emulator window changes to the selected background color.
- Step 8. Click on **OK** when finished making changes.
- Step 9. Close the emulator window. Click on **File** ⇒ **Exit**.
- Step 10. Click on **Yes** to save changes.

Exercise: Changing the terminal background color

Set the background for the **Normal** item to green for the *host-ksh* terminal emulator.

To change the size and position of the emulator window:

- Step 1. Open the **host-ksh** terminal emulator. You should be running **ksh** on the remote UNIX host.
- Step 2. Select **Properties** ⇒ **Size and Position**.
- Step 3. Change the window size using the mouse to drag the borders of the emulator window on the mock-Windows screen in the **Size** tab.

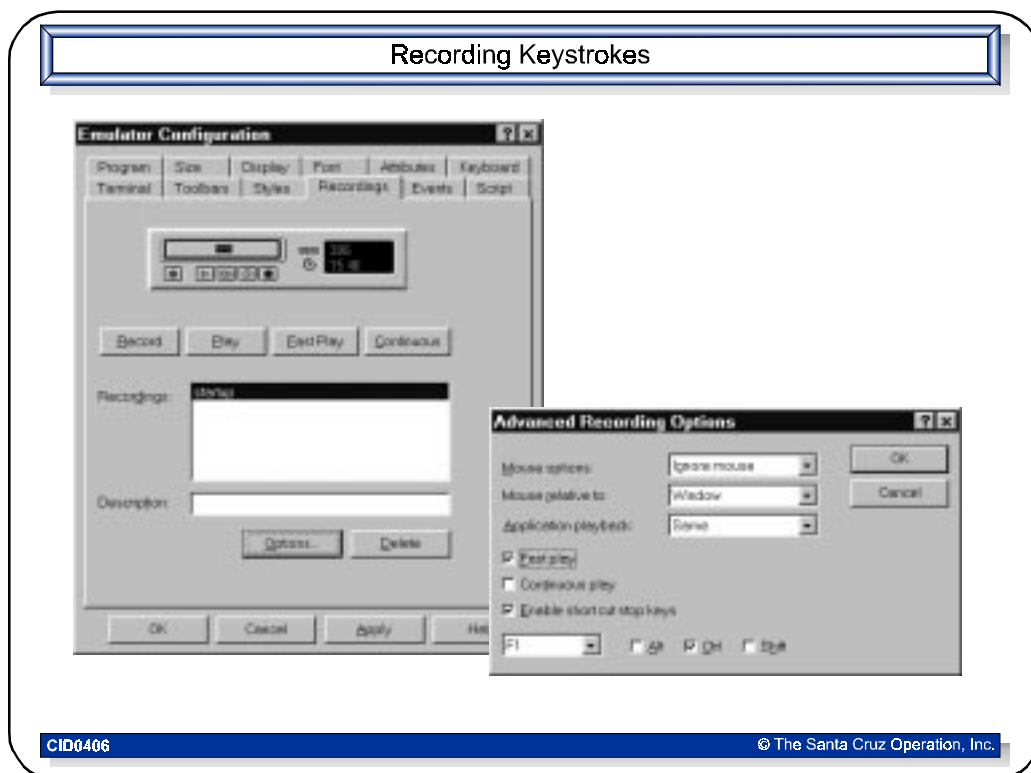
Alternately, change the size by specifying the width and height in pixels.
- Step 4. Move the window by clicking once on the model emulator window with the left mouse button and dragging the window to the desired location.
- Step 5. Click on **Apply** to see the changes reflected in the real emulator window.
- Step 6. Click on **OK** to close the **Emulator Configuration** window.
- Step 7. Close the emulator window. Click on **File** ⇒ **Exit**.
- Step 8. Click on **Yes** to save changes.

Exercise: Changing the emulator window size and position

Change the size and position of the **host-ksh** emulator window using the mouse.

While in the **Properties** window, view the other customization options available by clicking on the different tabs.

AV 4-6



CID0406

© The Santa Cruz Operation, Inc.

4.7.2 Recording Keystrokes

SCO TermVision allows you to record and playback keystrokes and mouse movements. This feature helps you save time and wear-and-tear from typing. It is also useful for simplifying complex tasks.

This example shows how an order entry application can be simplified by creating a recording.

Step 1. Open the **host-ksh** terminal emulator. You should be running **ksh** on the remote UNIX host.

Step 2. Select **Recording** ⇨ **Start**.

Step 3. Enter these commands at the UNIX **ksh** prompt:

```
cd /usr/vision/demos
./tvdemo
2 
3 
1 
```

Step 4. Select **Recording** ⇨ **Stop**.

Step 5. Enter **startup** as the recording name.

Step 6. Exit the **tvdemo** program. Press  or  \.

Step 7. Run the **clear** program at the UNIX prompt to clear the screen.

Step 8. Select **Recording** ⇨ **Play**.

Step 9. Select the recording called **startup**. Click on **Play**.

Notice that your recording plays back in real time, just as you entered it, including mouse movements and corrections.

Step 10. Click in the **tvdemo** application and enter  or  \ to exit.

Step 11. Clear the emulator screen with the clear command.

Step 12. Select **Properties** ⇨ **Recordings**.

AV 4-6: Recording Keystrokes

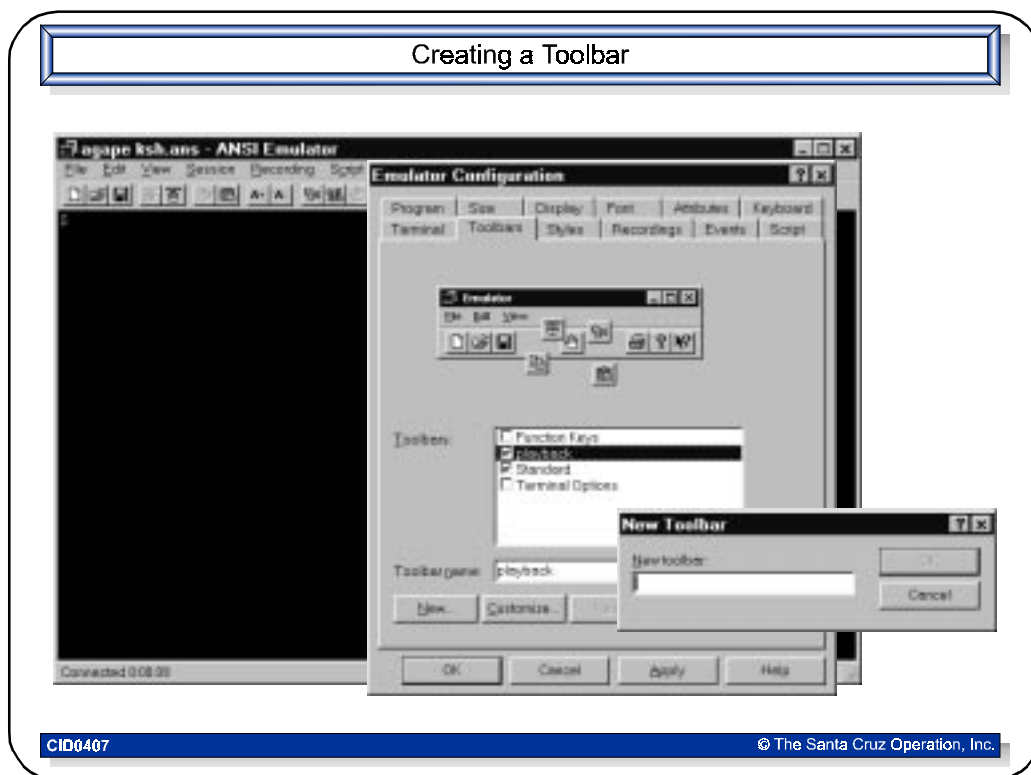
This slide shows the screens used to create keystroke recordings.

- Step 13. Select the **startup** recording. Click on **Options**.
- Step 14. Select **Ignore mouse** from the **Mouse options** pull-down list.
- Step 15. Select “Fast play.”
- Step 16. Click on **OK** to close the **Advance Recording Options** window.
- Step 17. Click on **OK** to close the **Emulator Configuration** window.
- Step 18. Play the **startup** recording again. Notice that it executes more quickly and ignores the mouse movements.
- Step 19. Exit the **tvdemo** application.
- Step 20. Clear the screen.
- Step 21. Close the emulator window. Click on **File** ⇒ **Exit**.
- Step 22. Click on **Yes** to save changes.

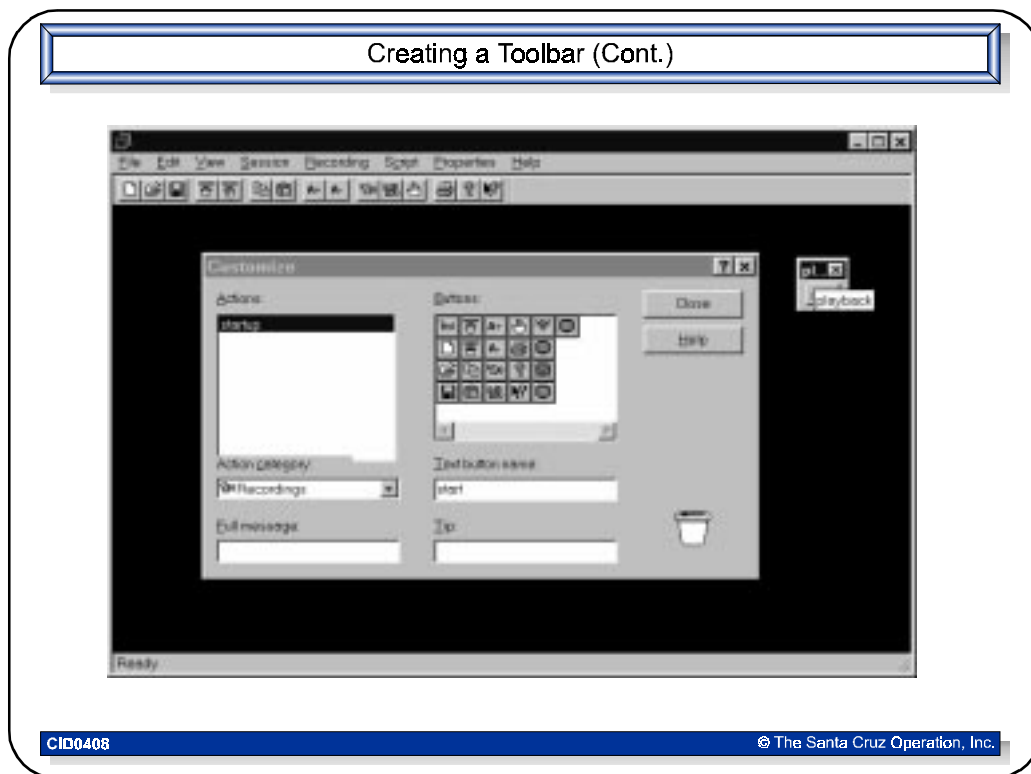
Exercise: Recording keystrokes

- Step 1. Open the **host-ksh** emulator window created in previous exercises.
- Step 2. Create a keystroke recording called **startup**, using the **tvdemo** program.
- Step 3. Play the recording.
- Step 4. Change the properties to ignore mouse movements and speed up keystrokes.
- Step 5. Replay the recording and note the differences.
- Step 6. Close the emulator and save the changes.

AV 4-7



AV 4-8



4.7.3 Adding a button to the toolbar

SCO TermVision allows you to easily customize the emulator toolbar. You can add buttons to quickly access often-used features.

In this example, a button is added to play the **startup** script created in Section 4.7.2, “Recording Keystrokes,” on page 4-25. Adding a button requires you to first create a new toolbar, create a button with an associated action, and then move that new toolbar onto the terminal emulator standard toolbar.

To create a new toolbar:

- Step 1. Open the **host-ksh** terminal emulator. You should be running **ksh** on the remote UNIX host.
- Step 2. Select **Properties** ⇨ **Toolbars**.
- Step 3. Click on **New**.
- Step 4. Enter a name for the toolbar. In this example, the name is **playback**.
- Step 5. Click on **OK**.

A small box appears just outside the **Emulator Configuration** window. This represents the new toolbar.

Note that you might have to move one or more windows to make the toolbar visible on the desktop.

AV 4-7: Creating a Toolbar

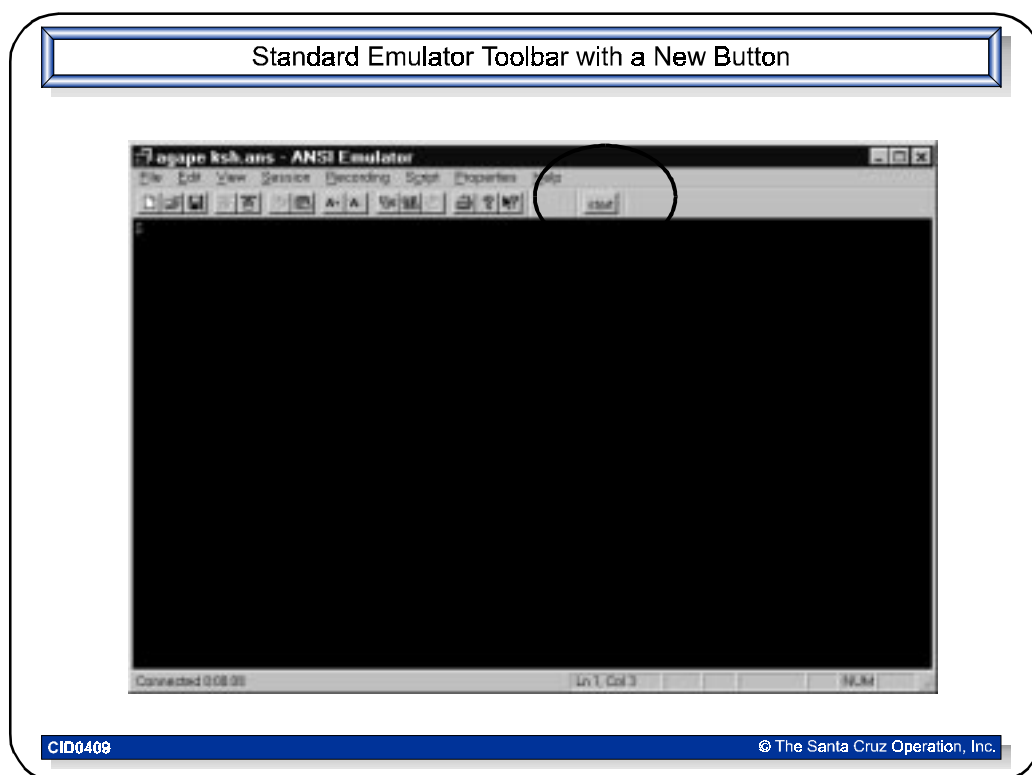
This slide shows the **Emulator Configuration** window displayed when you select **Properties** ⇨ **Toolbars** from an emulator window.

AV 4-8: Creating a Toolbar (Cont.)

This slide shows the new toolbar, **playback**.

- Step 6. In the **Emulator Configuration** window, select the new toolbar **playback** in the list of available toolbars.
- Step 7. Click on **Customize**.
- Step 8. Select **Recordings** in the “Action category” field.

AV 4-9



- Step 9. Select the recording called **startup** from the list in the “Actions” field. This recording was created in Section 4.7.2, “Recording Keystrokes,” on page 4-25.
- Step 10. Click the button labeled **Text** in the “Buttons” field.
- Step 11. Enter the name **start** in the “Text button name” field.
- Step 12. Drag the **Text** button onto the new **playback** toolbar (this is the small window to the right of the **Customize** window).
- To drag the text button, select it with the left mouse button, holding down the button, move the mouse to the toolbar, and release the left mouse button.
- You now have a new toolbar, **playback**, with a single button called **start**.
- Step 13. Close the **Customize** window.
- Step 14. Click on **OK** to close the **Emulator Configuration** window.
- Step 15. Drag the **playback** toolbar, which now has the **start** button, onto the standard toolbar of the terminal emulator. This is also called the docking bar.

AV 4-9: Standard Emulator Toolbar with a New Button

This slide shows the emulator window with the new **start** button on the standard toolbar

- Step 16. Press the new **start** button to play the recording.
- Step 17. Exit the **tvdemo** application and clear the screen.
- Step 18. Close the emulator window. Click on **File** ⇒ **Exit**.
- Step 19. Click on **Yes** to save changes.

Exercise: Creating a new toolbar button

Create a new toolbar button and move it to the emulator docking bar. Play the recording using the button.

AV 4-10

Associating an Action with an Event



CID0410

© The Santa Cruz Operation, Inc.

4.7.4 Using actions and events

SCO TermVision emulators can be configured to associate events with actions. When the event occurs, it automatically triggers the associated action.

Supported events include:

- The window becoming active
- A connection being opened
- Data arriving

Actions include:

- Sending a key
- Playing a recorded session
- Changing the current style
- Executing a menu command
- Sending a text string

This example shows how to configure the emulator used in previous exercises, **host-ksh**, to play a recording whenever the emulator window is restored. The procedure assumes you have created the **startup** recording as described in a previous exercise.

- Step 1. Open the **host-ksh** terminal emulator. You should be running **ksh** on the remote UNIX host.
- Step 2. Select **Properties** ⇌ **Events**.
- Step 3. Select **Recordings** from the pull-down list in the “Action category” field.
- Step 4. Click on **Restore** in the “Events” field.
- Step 5. Click on **startup** in the “Action” field.
- Step 6. Click on **OK** to close the **Emulator Configuration** window.

AV 4-10: Associating an Action with an Event

This slide shows the **Emulator Configuration** window.

Test the event and action configuration:

- Step 1. Type **clear** at the UNIX **ksh** prompt.
- Step 2. Minimize the emulator window by clicking on the **Minimize** (minus) button in the upper right corner of the terminal emulator window.
- Step 3. Restore the emulator window by clicking on the icon for the emulator window in the Windows Quick Launch toolbar (at the bottom of the Desktop).

 The recording begins to play when the window is restored.
- Step 4. Close the emulator window. Click on **File** ⇒ **Exit**.
- Step 5. Click on **Yes** to save changes.

Exercise: Using actions and events

Configure the **host-ksh** emulator to play the startup recording when the window is restored. Minimize and restore the emulator window to observe the recording being played.

4.7.5 Setting up an OLE hot-link

SCO TermVision terminal emulators support Object Linking and Embedding (OLE). OLE enables you to embed an emulator object in a document produced by a Windows application. For example, you could write a report in Microsoft Word that refers to stock levels, and embed an emulator document that options the stock inquiry program on a UNIX server.

OLE also allows you to create a link between text shown in an emulator window and a different document. For example, you could create links between an Excel spreadsheet and an emulator window displaying a UNIX stock inquiry program.

The emulators also provide the standard implementation of the OLE clipboard and OLE drag-and-drop features. This supports basic functionality common to all OLE applications, such as dragging and dropping text between a Windows application and an emulator window.

TermVision includes a simple demonstration program that runs on a UNIX host and displays data constantly being updated in a terminal window. This example procedure demonstrates how to create an OLE hot link from a UNIX character application to a Microsoft Windows application using the demonstration program, **hotlink**.

- Step 1. Start an ANSI emulator. Select **Start** ⇨ **Programs** ⇨ **Vision** ⇨ **ANSI Emulator**.
- Step 2. Select **Properties** ⇨ **Program**.
- Step 3. Select the UNIX host on which you will run the **hotlink** program from the “Host” pull-down list.
- Step 4. Enter this command line:

/usr/vision/demos/hotlink
- Step 5. Select “Connect on open.”
- Step 6. Click on the **Advanced** button.
- Step 7. Select “Paste links.”
- Step 8. Set “Paste update” to 0 seconds.
- Step 9. Click on **OK** to close the **Advanced Program Settings** window.

- Step 10. Click on **OK** to close the **Emulator Configuration** window.
- A message is displayed that the program will not run until the emulator file has been saved.
- Step 11. Exit the terminal emulator. Select **File** ⇒ **Exit**.
- Step 12. Select **Yes** to save the changes.
- Step 13. Enter **OLE Demo** as the name for the new emulator file.
- Step 14. Select the *Desktop* folder in the “Save in” field. This creates an icon on your desktop named **OLE Demo**.
- Step 15. Click on **Save**.
- Step 16. Start the **OLE Demo** emulator window. Double-click the icon on the desktop.
- Step 17. Click on **OK** when prompted with the host name and command.
- The **hotlink** program should automatically start running. It displays stock price information for several companies.
- If the program does not run, check to make sure you have the correct path name in the **Properties** window.
- Step 18. Start a Microsoft application such as Excel or Word.
- Step 19. Bring the **OLE Demo** window to the foreground. Click anywhere on the window.
- Step 20. Select one of the numeric fields using the mouse.
- Step 21. Select **Edit** ⇒ **Copy**.
- Step 22. Bring the Microsoft application window to the foreground. Click anywhere within the application document.
- Step 23. Select **Edit** ⇒ **Paste Special**.
- Step 24. Select **Paste Link**.
- Step 25. Select **Unformatted Text**.
- Step 26. Click on **OK** to close the **Paste Special** window.

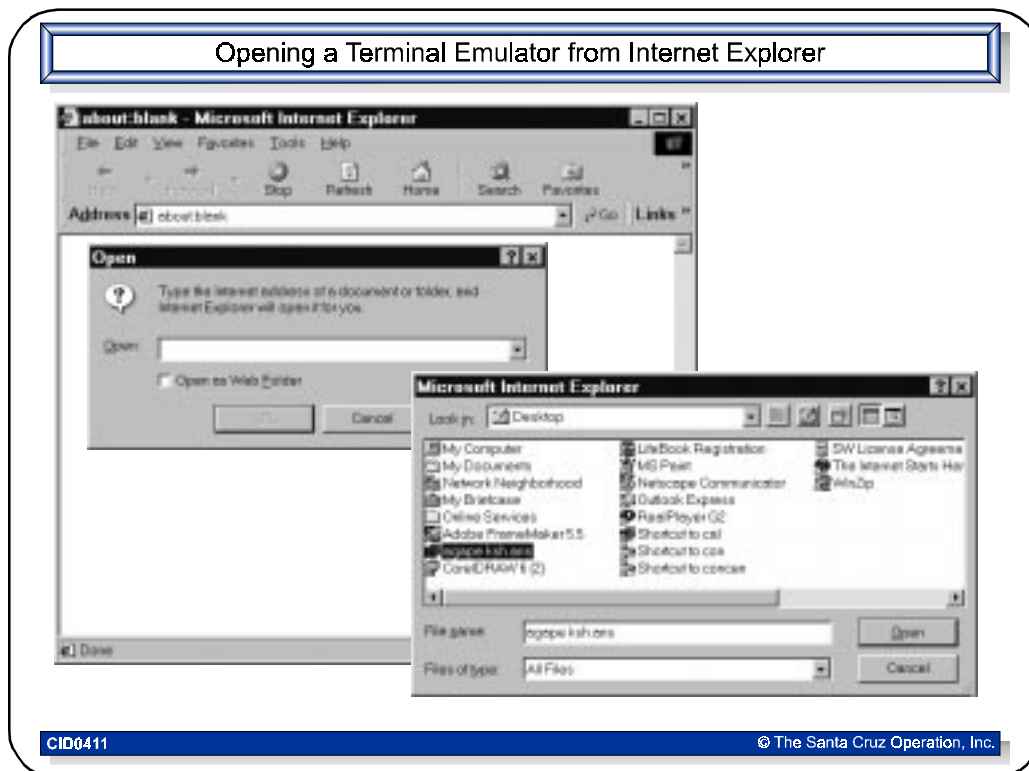
- Step 27. The field is displayed in the Microsoft application document. Observe the file and note that the data changes.
- Step 28. Exit the Microsoft application.
- Step 29. Exit the **OLE Demo** emulator window.

Exercise: Setting up an OLE hot-link

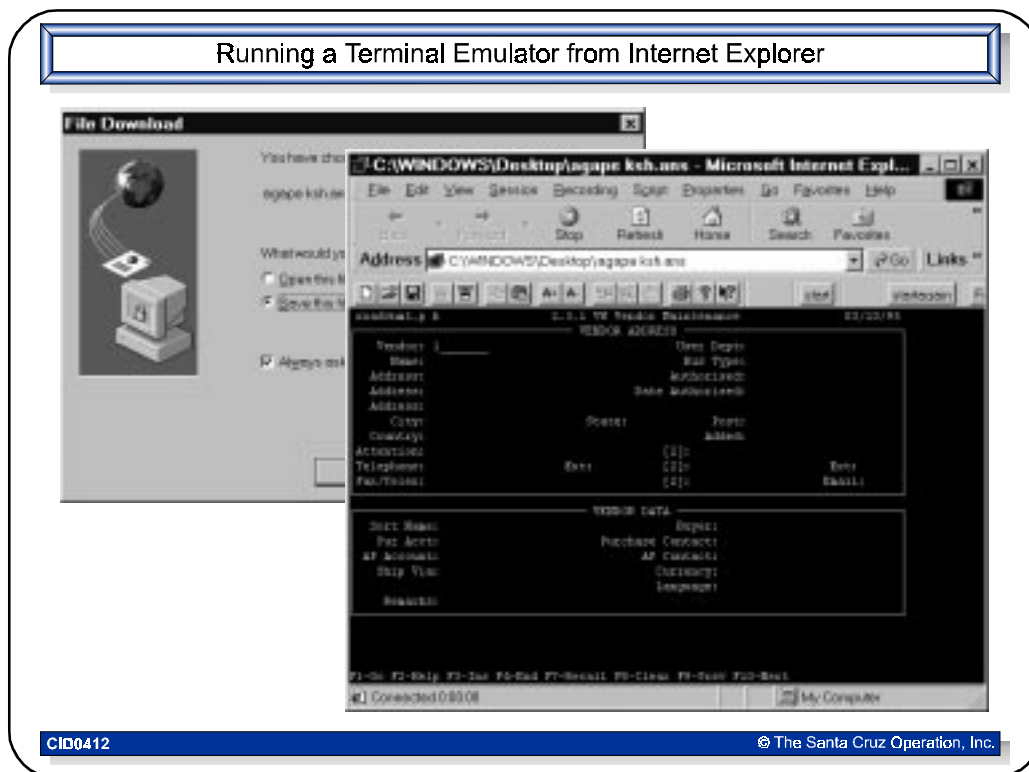
Set up an OLE hot link between an emulator window running the **hotlink** program on a UNIX system, and a Microsoft application running under Windows.

Observe that the linked data changes in the Microsoft application as the field is changed in the UNIX window.

AV 4-11



AV 4-12



4.7.6 Opening a terminal emulator from within a web browser

You can open a TermVision emulator from within an ActiveX-compatible web browser, such as Microsoft Internet Explorer or Netscape Navigator.

This example shows how to run the terminal emulator used in earlier exercises, **host-ksh**, from Internet Explorer:

- Step 1. Select **Start** ⇒ **Programs** ⇒ **Microsoft Internet Explorer**.
- Step 2. Select **File** ⇒ **Open**. Click on **Browse**.
- Step 3. Select **All files** in the “File type” field. Otherwise Internet Explorer will only recognize *.html* files.
- Step 4. Click on the arrow button in the “Look in” field and select **Desktop**.
- Step 5. Select the *host-ksh.ans* file. This is the TermVision file type for the ANSI emulator.
- Step 6. Click on **Open**.
- Step 7. The path to the *host-ksh.ans* file is displayed in the **Open File** window.
- Step 8. Click on **OK**.
- Step 9. Select **Open this file from its current location** if prompted whether to open or save the file.

The terminal emulator window is opened with the **ksh** running.

AV 4-11: Opening a Terminal Emulator from Internet Explorer

This slide shows how a terminal emulator can be started from a web browser.

AV 4-12: Opening a Terminal Emulator from Internet Explorer

This slide shows a terminal emulator running within Internet Explorer.

Exercise: Starting an emulator from a web browser

Open a TermVision file from within a web browser to start an emulator.

4.8 Recognizing document types

SCO TermVision supports several document types which are used to store all the configurable settings that have been specified for an emulator. These basic file types are recognized and perform the associated action when opened:

- `.ans` Opens the file and runs an ANSI emulator
- `.v42` Opens the file and runs an VT420 emulator
- `.w60` Opens the file and runs an Wyse 60 emulator
- `.rps` Executes the file on a remote UNIX host without opening a terminal emulator

When you make changes to an emulator, you are prompted to save the file when you close the emulator window. The document is given the appropriate extension and saved in the directory you specify. Then you can double-click on the new file to run the customized emulator.

The default directory for saving TermVision configuration file is *C:\Program Files\Vision\User*. You can save new files here as you create customized terminal emulators. For more convenient access, you can drag the file to the desktop. Alternately, you can save files directly on the desktop.

The ANSI emulator that was customized in the exercises in this lesson was saved as a file named *host-ksh.ans* in the *Desktop* folder.

Exercise: Viewing TermVision configuration files

Use the **Windows Explorer** to view the `.ans` files created by the exercises in this lesson.

4.8.1 Configuring document types and associations

TermVision allows you to define additional document types and create associations of actions that take place when the document is opened. Users can double-click on UNIX files and have appropriate applications start up automatically.

In this example, an association is created for files with the extension `.tar`. When a file of this type is opened by a Windows user from the **Unix Neighborhood**, the UNIX `tar` command is automatically executed with the file name as a command line option.

Step 1. Open a terminal emulator and run a shell on a remote UNIX host.

Step 2. Create a **tar** file on the UNIX host.

For example, to create a **tar** archive containing each file in your current directory, enter:

```
tar cvf myfiles.tar *
```

Step 3. Start the **Unix Neighborhood**.

Step 4. Select the UNIX host on which you created the `.tar` file.

Step 5. Select **View** ⇨ **Options** in the emulator window.

Step 6. Click on the **File Types** tab.

Step 7. Click on **Add Document**.

Step 8. Enter **Tar Archive Files** in the “Description” field.

Step 9. Click on **Add**.

Step 10. Select **ANSI emulator** in the “Based on” field.

Step 11. Enter this command line in the “Remote command” field:

```
tar tvf %1 | more
```

Note the vertical bar is the pipe symbol.

Step 12. Click on **OK** to close the **Add New Action** window.

Step 13. Click on **OK** to close the **Add New Document Type** window.

- Step 14. Click on **Add** in the “Patterns” area of the window.
- Step 15. Enter ***.tar** in the “Pattern” field.
- Step 16. Click on **OK**.
- Step 17. Click on **OK** to close the **Options** window.
- Step 18. Use the **Unix Neighborhood** to locate the UNIX directory containing *myfiles.tar*.
- Step 19. Double-click on *myfile.tar*.

A window appears with a list of the contents of the **tar** archive. It might take a minute to connect to the server.

Exercise: Adding a document type

Create a new document type with file extension *.tar* and associate it with the UNIX **tar** command.

Create a tar file containing the files in your UNIX home directory and test the new association from Windows.

4.9 Lesson Summary

SCO TermVision provides terminal emulation capabilities that allow you to run any host application intended for any of three types of terminals:

- ANSI
- VT420
- Wyse 60

In addition to a comprehensive set of emulation features, TermVision also offers advanced features and configuration options including:

- Shared data between UNIX and Windows applications using Windows-style cut-and-paste
- The ability to automatically open connections, log into hosts, and execute commands
- Customizable emulator sessions
- Configuration using standard Windows methods, such as the Properties window
- Associations between events and actions
- Keystroke recording and playback functions
- Associations between document types and commands

It is simple to use, easy to configure, and allows the user great flexibility. In addition, all the features described in Lesson 3: “SCO Vision2K Basics” are available when SCO TermVision PC and UNIX host components are installed.

Review questions

1. What are some of the ways you can open a terminal connection to a UNIX host?
2. How do you create an icon on the desktop to easily access a terminal emulation window?
3. How do you transfer data between UNIX and Windows applications?
4. List at least three ways you can customize a terminal emulation window.
5. What file extensions are used to store customizations for a terminal emulator window?

4.10 Relevant Commands, Directories, Shares, and Packages

The following commands, directories, shares, and packages were presented.

Relevant commands

/usr/vision/demos/hotlink	UNIX program for demonstrating the OLE hot-link feature
/usr/vision/demos/tvdemo	UNIX program for demonstrating the TermVision record and playback feature
ksh	UNIX command line interface
tar	UNIX tape archive command

Relevant files and directories

*.ans	ANSI emulator configuration files
*.rps	Remote program starter configuration files
*.v42	VT420 emulator configuration files
*.w60	WY60 emulator configuration files

4.11 Answers to Review Questions

1. These are some of the ways to open a terminal connection to a UNIX host from Windows:
 - Select **Start** ⇨ **Run**.
 - Select **Start** ⇨ **Programs** ⇨ **Vision** and select one of the emulator programs.
 - Double-click on a TermVision file type—.ans, .w60, .v42
2. To create a desktop icon to access a terminal emulator, right-click on the desktop and select **New** ⇨ **Unix Program** to start the **Unix Application** wizard.
3. You can use Windows cut-and-paste to transfer static data, or embed an OLE hot-link to transfer data and have it updated dynamically.
4. Some customizations to terminal emulator windows are:
 - Color settings
 - Size and location
 - Adding buttons
5. These file extensions are used for TermVision; .ans, .w60, .v42, and .rps.

5

SCO XVision Eclipse

Lesson 5

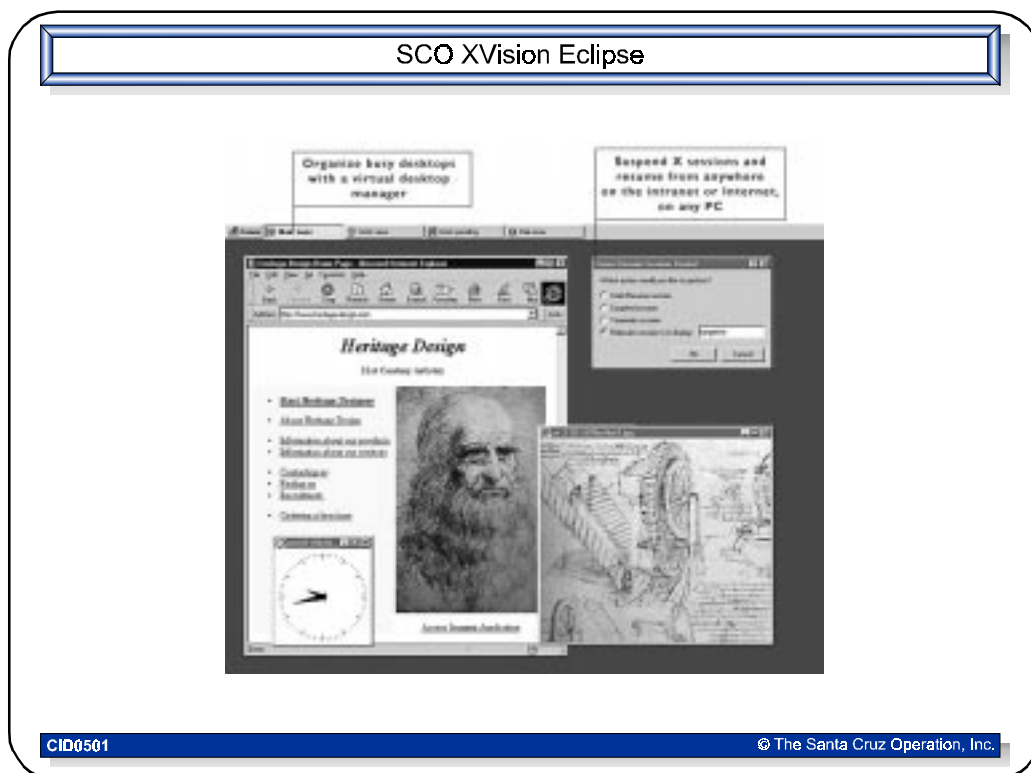
SCO XVision Eclipse

Pre-lesson preparation

To complete the exercises in the lesson:

- Have a working network in place with at least one Windows workstation and one SCO UNIX host.
- Have SCO Vision2K products installed on both the UNIX host and a Windows workstation, according to the instructions in Lesson 2: “Installing SCO Vision2K.”
- Have the SCO Vision2K installation CD-ROM available for accessing the **SCO Vision2K Reference** guide and the on-line manual, ***Introducing SCO XVision***.

AV 5-1



Introduction

SCO® XVision™ Eclipse is component of the SCO Vision2K suite of Windows-integration products that provides access to X Windows System applications running on remote UNIX® hosts. It also provides terminal emulation services for running character-based applications by including all the features of SCO TermVision.

This lesson introduces you to XVision Eclipse features and provides procedures that demonstrate how to quickly and easily access X Windows applications on UNIX servers.

Objectives

This lesson describes how SCO XVision Eclipse is used to connect Windows® workstations to servers running SCO UNIX operating systems. By the end of this lesson, you will be able to:

- Open an X Windows connection
- Create X Window icons on the desktop
- Cut and paste graphics between UNIX and Windows applications
- Suspend and resume X Windows sessions
- Organize your desktop into multiple zones

AV 5-1: SCO XVision Eclipse

This shows an example Windows desktop running several XVision emulation windows.

5.1 SCO XVision Overview

Unlike previous versions of XVision, XVision Eclipse is a full-32-bit Windows PC X server based on X11 release 6. It is designed to make use of advanced Windows® 95 interface features and provide transparent access to X Window System applications on UNIX hosts.

It also provides access to character-based applications. In fact, XVision Eclipse uses the same facilities for running and customizing X applications that were used with character-based applications, introduced in Lesson 4: “.”

For simplicity, SCO XVision Eclipse is referred to as XVision in this course, but it should not be confused with the 16-bit version of XVision.

With XVision Eclipse, you can:

- Access all the functionality described in Lesson 3: “SCO Vision2K Basics,” including browsing, copying and printing files on remote UNIX servers, connecting using a modem, and sending messages to other network users
- Run X Window applications on remote UNIX servers
- Run standard character-terminal applications on remote UNIX systems using one of these emulation types, VT420, WY60, or ANSI
- Execute remote programs using standard Windows methods, such as double-clicking on program icons and **Start** ⇔ **Run**
- Create OLE-hot links between UNIX and Windows applications
- Customize X windows by adding buttons, recording keystrokes, and writing scripts using Visual Basic or JavaScript
- Support and manage users running SCO XVision on their PCs with the centralized administration tool, SCO SuperVision™.

SCO XVision can be purchased separately or as part of the Vision2K suite of products. If you have installed XVision using the evaluation license, you can purchase a permanent license and upgrade your existing XVision installation.

5.1.1 Running an X program

The X server must be running on your PC to allow you to display X programs. Normally, the X server is configured to start automatically as part of the **setup** program, or it is started when you boot your PC.

When the X server is running, an **XV** icon is displayed in the taskbar in the lower right corner of your Windows screen. If you do not see the icon, start the server manually using **Start ⇒ Vision ⇒ XVision Server**. If the X server is already running, a pop-up window will display a message to that effect.

One method for running an X program is to use the **Remote Program Starter**. In this example, the **xterm** application, also referred to as the **xterm client**, is executed on the remote UNIX host.

- Step 1. Select **Start ⇒ Run Unix Program**.
- Step 2. Select your UNIX host from the pull-down list.
- Step 3. Enter **/usr/bin/X11/xterm** in the “Command” field.
- Step 4. Click on **Run**.
- Step 5. Enter your UNIX user name and password, if prompted. You are asked to authenticate only the first time you access a UNIX host.

A window labeled **xterm** is opened and a UNIX shell prompt is displayed.

Exercise: Running an X program

Run one of the X clients in the */usr/bin/X11* directory on your remote UNIX host. Experiment running different clients.

Another method for running X applications uses the **Unix Neighborhood**. You can browse the UNIX host and double-click on an X application. The X server displays the client on your workstation. You can also use this method to run character-based applications.

Exercise: Using the Unix Neighborhood

Run one of the X clients in the `/usr/bin/X11` directory by running the **Unix Neighborhood** and double-clicking on a file.

Run a character-based application by double-clicking on a file in the `/usr/bin` directory.

There are several other options for accessing X applications. These are basically the same as those described for SCO TermVision in Section 4.4, “Creating a terminal icon on the desktop,” on page 4-11 and Section 4.5, “Starting UNIX programs automatically,” on page 4-15. These methods are reviewed briefly in the next sections.

5.2 Creating an icon on the Desktop

The procedure for adding an icon to the Desktop to run an X application is basically the same as the one described for SCO Termvision in Section 5.2, “Creating an icon on the Desktop,” on page 5-9. This procedure adds an icon that runs the **Xterm** terminal emulator to connect to a remote UNIX host.

- Step 1. Right-click on the Windows desktop.
- Step 2. Select **Start** ⇒ **New** ⇒ **Unix Program**. This starts the **Unix Application Wizard**.
- Step 3. Click on **Next**.
- Step 4. Select the UNIX host name from the pull-down list. Click on **Next**.
- Step 5. Enter the path name of the UNIX program to be executed, */usr/bin/X11/xterm*, in this example.

Alternately, browse the UNIX host by clicking on the **Browse** button.
- Step 6. Select **X Application** as the application type. Click on **Next**.
- Step 7. Select **Yes** to run the application now to verify the command and path names are correct. Click on **Next**.

If the command is executed correctly, an **Xterm** window is started with **ksh** running.
- Step 8. Click on **Next** back in the **Unix Application Window** if the application executed. Otherwise, click on **Back** to enter a new command or path name.
- Step 9. Enter a name for the new desktop item. For example, *host xterm*, where *host* is the UNIX system name.
- Step 10. Click on **Finish**.
- Step 11. Double-click on the new desktop icon to connect to the server and execute the application.

The **Unix Application Wizard** can also be run from the **Start** menu to create a program item that appears in the **Start** ⇨ **Unix Programs** menu, rather than on the desktop.

The wizard creates a Remote Program Starter document with the extension *.rps* for X applications.

Exercise: Creating a Desktop item

Create an icon on the Desktop to connect to a UNIX host and run **xterm**. Test the connection.

Create a shortcut in the **Unix Program** menu to run another remote X program, such as **xclock**. The **Unix Program** menu item appears after the first time you have run **Start** ⇨ **New Unix Program**.

5.3 Starting X programs automatically

The procedure for creating program icons is also useful for starting X applications automatically when Windows starts.

To start a remote program automatically:

- Step 1. Use the steps described in Section 5.2 to create a new program icon on the desktop.
- Step 2. Start the **Windows Explorer**. Select **Start** ⇨ **Programs** ⇨ **Windows Explorer**.
- Step 3. Enter *C:\Windows\Start Menu\Programs\StartUp* in the “Address” field and press .
- Step 4. The right window of the **Windows Explorer** displays the items in the *StartUp* folder.
- Step 5. Right-click the new icon on the desktop, drag it into the right window of **Windows Explorer**, and release the right button.
- Step 6. Select the option **Create Shortcut(s) here**.

 The icon is now listed in the *StartUp* folder.
- Step 7. Restart Windows to verify that the program starts automatically.

Exercise: Starting programs automatically

Configure Windows to automatically run **xclock**.

5.4 Copying and pasting between windows

Text and graphics are easily transferred between UNIX and Windows applications using XVision's cut-and-paste feature.

This example shows how to copy the picture of the clock from the **xclock** X application into a Microsoft application, such as Word or WordPad.

- Step 1. Start the **xclock** client using one of the methods described in Section 5.1.1, "Running an X program," on page 5-7.
- Step 2. Click in the top left corner of the **xclock** window. A pull-down menu is displayed.
- Step 3. Select **Edit** ⇨ **Copy Area**. The mouse pointer changes shape.
- Step 4. Click and hold down the left-mouse button.
- Step 5. Drag the mouse to select an area of the display to be copied.
- Step 6. Release the mouse button. This copies the area to the clipboard.
- Step 7. Start a Microsoft application, such as Word or Wordpad.
- Step 8. Select **Edit** ⇨ **Paste**. This copies the clipboard into the Windows document.
- Step 9. Exit the windows application and close the X window.

Exercise: Copying and pasting from UNIX to Windows

Copy a portion of the **xclock** window into a Windows application, such as WordPad. Try copying graphics from other UNIX X applications.

5.5 Stopping the X server

You can stop the X server at any time and any open X windows will be closed. If you are running X clients and stop the X server, any files opened by the X application will not be saved.

To stop the X server:

- Step 1. Right-click on the **XV** icon in the Windows taskbar.
- Step 2. Select **Close** from the pull-down window.
- Step 3. Click **OK** in the XVision pop-up warning window.

Exercise: Stopping the X server

Stop the X server started in an earlier exercise. A new server is started in a later exercise.

AV 5-2



5.6 Customizing XVision

The X Window System was designed to be as flexible as possible to encourage its use on a wide-range of computers with different architectures. This means the X server is able to accommodate many different uses, and is able to take advantage of the functionality of the underlying operating system.

The SCO XVision **setup** program chooses appropriate settings for your PC during installation and your X server configuration might not require any further modification. If you need to make changes, they can be made while the X server is running or by configuring *server profiles*.

5.6.1 Server profiles

A profile is a set of configuration options that determine the appearance of X clients and control the appearance and behavior of the X server. Whenever the server is started, it runs a profile. If the X server is running over the LAN (TCP/IP), the default profile is called **XVision**. If the X server is running over a serial connection, default profile is called **XRemote**.

Using X server profiles, you can have multiple different X servers running concurrently with different properties. Profiles are saved as hidden files with the extension *.xfg* and are located in the *C:\Program Files\Vision\User\Profiles* folder.

The **XVision Profile** manager is used to modify, add, or delete profiles. The **XVision Profile** manager is also used to configure global settings that apply to all X servers.

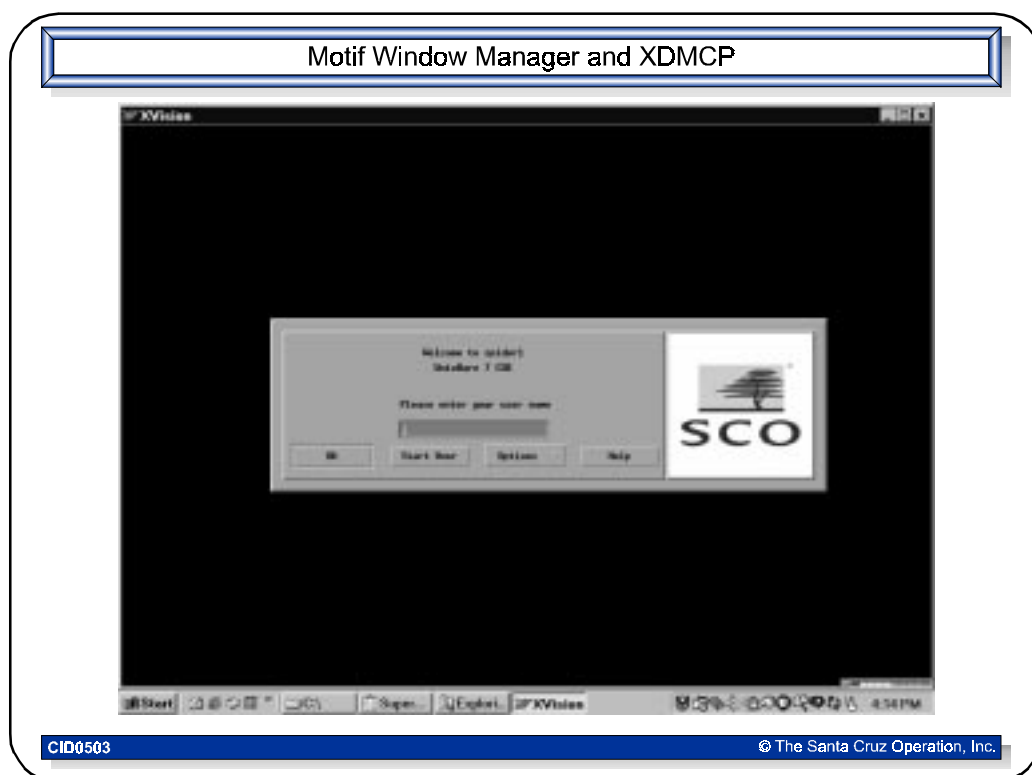
AV 5-2: XVision Profiles

This shows the XVision profile configuration window.

Exercise: Viewing the default XVision profile

- | | |
|---------|--|
| Step 1. | Start the XVision Profile manager from the Control Panel . |
| Step 2. | Select the XVision profile. |
| Step 3. | Click on Properties . |
| Step 4. | Note that “Display mode” is set to multiple windows. |

AV 5-3



5.6.2 X window managers

By default, the X server is used in *multiple-windows* mode, where each X client runs within its own Microsoft window and the *root* X window is hidden. This mode provides access to X windows applications while maintaining the Windows look and feel.

In *single-window* mode, the X server window contains the root window, which is always visible. All X clients appear in child windows within the server window. This mode provides the standard look and feel of an X terminal.

In multiple-windows mode, the Vision windows manager (VWM) runs locally on the Windows workstation and controls all X windows. In single-window mode, you can either use the local Motif window manager (MWM) provided with XVision, or a host-based X window manager of your choice. Using a local window manager improves performance by reducing network traffic and load on the host processor.

This example procedure shows how to create a new server profile that runs the X server in single-window mode. This is the first step in configuring XVision to make your PC look and act like an X terminal, as shown in AV 5-2. The next steps are to install and configure the local Motif window manager, and then configure XDMCP to provide an interface to allow the PC user to log into a remote UNIX host and start an X session.

To configure an X server to run in single-window mode:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**.
- Step 2. Double-click on **XVision Profiles**.
- Step 3. Click on **Add** in the **General** tab window.
- Step 4. Enter a name for the profile, For example **Single Window**.
- Step 5. Click on **OK**.
- Step 6. Select the new profile name.
- Step 7. Click on **Properties**.
- Step 8. Click on **Single Window** in the **Display** tab window.
- Step 9. Click on the **Server** tab.

AV 5-3: Motif Window Manager and XDMCP

This shows a Windows PC after XVision has been configured to give your Windows PC the appearance of an X terminal.

- Step 10. Select **1** in the “X Display number” field. This selects an alternate display. The first instance of the X server is configured to use display 0. When you add additional X server profiles, each must use a unique display number.
- Step 11. Click on **OK**.
- Step 12. Select “Prompt for a profile to be used.” Whenever an X server is started in the future, you are prompted to choose a profile.
- Step 13. Click on **OK**.
- Step 14. Start a new X server using this profile. Select **Start** ⇒ **Programs** ⇒ **Vision** ⇒ **XVision Server**.
- Step 15. Select the name of the new profile, **Single Window** in this example.
- Step 16. The X server starts an X window that takes up the entire screen area.
- Step 17. To access the Windows desktop, minimize the X Window.

Exercise: Creating a new profile

Step 1. Stop any running X servers. Right-click on the XV icon in the Windows Quick Launch taskbar (in the bottom right corner of the Desktop).

Step 1. Create a new profile to start an X server in single-windows mode.

Step 2. Start a new server that uses this profile.

Notice that the X server window is displayed using the entire screen and your desktop is obscured.

Step 3. Minimize the X server window so you can access your desktop.

Step 4. Use the icon created in a previous exercise to start the **xclock** client running.

You do not see the clock displayed because the X server window is minimized.

Step 5. Maximize the X server window. Click on the **XV** button in the task bar.

Notice that the **xclock** client does not have its own window in single-windows mode.

5.6.3 The local Motif window manager

If you installed SCO XVision on the PC using the “Typical” profile as shown in Section 2.5.2, “Running Vision2K setup on the PC,” on page 2-29, the local Motif window manager is not installed. You must run the XVision **setup** program either from the SCO Vision2K CD-ROM, or from the *vision2k* share on the UNIX host.

To install the local Motif Window Manager:

- Step 1. Close all open X server windows and other Windows applications.
- Step 2. Run the XVision **setup** program from the SCO Vision2K CD-ROM directory `\pc\win32\Xvision`, or from the *vision2k* share on the UNIX host.
- Step 3. Proceed through the installation as directed in Section 2.5.2, “Running Vision2K setup on the PC,” on page 2-29 until the **Setup Options** window is displayed.
- Step 4. Select “Custom” in the **Setup Options** window. Click on **Next**.
- Step 5. Click on **OK** when the pop-up window indicates that a previous installation of a Vision product has been found.
- Step 6. Click on **Next** in the Choose Folder window. The **Select Components** window is displayed.
- Step 7. Click on **Next**. The **Select Components** window is displayed.
- Step 8. Click on **Details** to the right of the “Server” component.
- Step 9. Select “Local Motif Window Manager” and click on **OK**.
- Step 10. Click on **Next** in the **Select Components** window.
- Step 11. The files are now copied to the PC.
- Step 12. Click on **Next** through the remaining prompts and restart your PC.

To configure your single-mode server to use the local Motif window manager:

- Step 1. Start the single-mode X server. The X server usually starts automatically when the system is rebooted.
- Step 2. Select the single-mode X server if prompted to choose a profile.
- Step 3. Right-click on the X server window title bar.
- Step 4. Select **Properties**.
- Step 5. Click on **Advanced** in the “Display” area of the **Display** tab.
- Step 6. Select “Launch local Motif window manager at startup.”
- Step 7. Click on **OK**.
- Step 8. Click on **OK** to close the **Properties** window.
- Step 9. Restart the X server. Right-click on the X server window title bar and click on **Restart**.
- Step 10. Click on **OK** to end the X session.

Note: You might be prompted to optimize your server. This takes several minutes. You are prompted again later if you choose not to optimize at this time.

Exercise: Using the Motif window manager

- Step 1. Start a single-mode X server.
- Step 2. Run an X client application and note its appearance within the root X server window before changing to use the Motif window manager.
- To minimize the X server window to access the desktop, right-click on the **XV** icon in the Windows Quick Launch toolbar and select **Minimize**. This allows you to use the **Unix Neighborhood** or shortcuts to start an X client application.
- Step 3. Close all Windows applications, including X Vision.
- Step 4. Install the Motif window manager using the XVision **setup** program.
- Step 5. Configure the single-mode X server to use the local Motif window manager.
- Step 6. Restart the X server.
- Step 7. Start an X client program. Notice how the window appearance is different.

5.6.4 Using an X Display Manager

A display manager is a program that runs on a UNIX host and provides a standard way for users to log into UNIX and start an X session. On SCO UNIX systems, the X Display Manager, **xdm**, runs as a daemon and uses the X Display Manager Control Protocol (XDMCP) to communicate with remote systems running the X server.

Its purpose is to prompt the user to log in, validate the user name and password, and then start an X session. The X windows desktop configured for your user account on the remote UNIX system is started when you successfully log in. This allows you to configure your Windows PC to appear as if it is an X terminal or a graphical monitor directly connect to the UNIX host.

To use **xdm**, you must enable XDMCP for an X server. In this example procedure, the server created in an earlier exercise, **Single Window**, is configured to use XDMCP. The procedure also demonstrates how to configure a running server.

- Step 1. Create a new profile for an X server running in single-windows mode, if you have not already done so.
- Step 2. Start the new server, if it is not running.
- Step 3. Right-click in the title bar of the new server.
- Step 4. Click on **Properties**.
- Step 5. Click on the **Security** tab.
- Step 6. Select "XDMCP."
- Step 7. Select "Direct" as the Mode.
- Step 8. Select your UNIX host from the pull-down list.
- Step 9. Click on **OK** to close the **Properties** window.
- Step 10. Click on **Yes** to restart the server.

When the server starts, the SCOLogin screen is displayed.

Step 11. Enter your UNIX user name and password and log into the UNIX host.

Step 12. The UNIX graphical desktop configured for your user account is displayed.

By default, the graphical desktop is called the X Desktop. The UNIX program is **/usr/bin/X11/xdt3**.

Exercise: Using xdm

Step 1. Configure your single-window X server to use XDMCP.

Step 2. Login into the remote UNIX host.

Step 3. Select **File** ⇒ **Exit** when the desktop is displayed.

Step 4. Log off the UNIX system and close the X server window.

5.7 Using SCO Vision Resume to suspend and resume X sessions

SCO Vision Resume allows you to suspend an X session and resume it at a later time. This enables users to move between XVision PCs, X terminals, or the UNIX graphical console display without having to stop and restart each X application. It also means users do not have to completely restart their X session if they are inadvertently disconnected because of an event such as a communications failure.

This is accomplished by running the X clients that are part of a Resume session on a proxy server on the UNIX host, rather than on the PC. The proxy server communicates with an X display to show output and receive user input.

A session can be suspended at any time, either by user action, or through an unscheduled event such as a communications failure. While a session is suspended, the X clients within that session continue to run on the proxy server.

Each UNIX user has only one Resume session, and it can be resumed on the same display, or another display.

5.7.1 Starting a session

Vision Resume is configured by changing properties in the X server profile. If the X server is running when you configure Vision Resume for that server, a Resume session is automatically started.

To configure and start Vision Resume:

- Step 1. Start a multi-window mode X server.
- Step 2. Right-click on the **XV** icon in the task bar, or in title bar of the X window.
- Step 3. Select **Properties**.
- Step 4. Click on the **Vision Resume** tab.
- Step 5. Select “Use Vision Resume.”
- Step 6. Choose the UNIX host on which the Vision Resume proxy server runs. Alternately, leave the host empty to be prompted for a host name each time Resume is started.

Step 7. Select the option to “Let XVision Automatically Manage My Resume Session.” This automatically starts a Resume session whenever the X server starts.

Step 8. Click on **OK**.

A Vision Resume pop-up menu shows the Resume session starting if your server was running.

Exercise: Starting a Vision Resume session

Configure SCO Resume for the multi-window mode X server. This is the X server with the profile called **XVision**.

Start the multi-window mode X server. A **Vision Resume** session is started automatically.

Start several X client applications, such as **xclock** and **scocal**.

5.7.1.1 Suspending a session

When an X session is suspended, all windows that are part of the X session are removed from the X display. The clients continue to run on the proxy server until they terminate or suspend waiting for the proxy server to process their requests.

To suspend a Vision Resume session:

Step 1. Start the Vision Resume **Session Manager**.

- Right-click on the **XV** icon in the Windows taskbar.
- Select **Vision Resume**. The **Session Control** window is displayed.

Step 2. Select “Suspend Session.”

Step 3. Click on **OK**.

X clients that are part of this Resume session are removed from the X display.

Exercise: Suspending a Vision Resume session

Suspend the current Vision Resume session started in the last exercise.

Notice that X clients that were are part of that session disappear from the X window display.

5.7.2 Relocating a session

A Vision Resume session can be relocated from the current X display to any X display that supports the Resume extension. The normal security mechanisms that control access to a display by X clients still apply. That is, the target system must be configured to accept the X display. The target system must also have an X server running.

Before you can relocate a session, configure another PC running SCO XVision to accept the display. On the target PC:

- Step 1. Start a multi-windows X server. Select **Start** ⇨ **Programs** ⇨ **Vision** ⇨ **XVision Server**.
- Step 2. Right-click on the **XV** icon in the Windows taskbar.
- Step 3. Select **Properties**.
- Step 4. Select the **Security** tab.
- Step 5. Select "Host access control."
- Step 6. Enter the name of the UNIX host which is the proxy server for the other PC.
- Step 7. Click on **OK**.

Exercise: Configure a PC to accept a Resume session

If you have more than one PC, configure one of the PCs to accept the Vision Resume session from the UNIX host acting as the proxy server.

The UNIX host was configured in Section 5.7.1, “Starting a session,” on page 5-25 in Step 6.

To relocate a Vision Resume session:

- Step 1. Start the Vision Resume **Session Manager**.
- Right-click on the **XV** icon in the Windows taskbar.
 - Select **Vision Resume**. The **Session Control** window is displayed.
- Step 2. Select "Relocate Session."
- Step 3. Enter the name of the host that will display the X clients using the standard X Windows format:
- `name : #`
- where name is the network host name of the remote system and # specifies a display number for that system. A display number is only required if the target system has more than one X server running and you need to specify a server other than the default server session.
- Step 4. Click on **OK**.

All X clients that are part of this Resume session are removed from the X display and reappear on the specified display.

Remember, the remote system to which the session is relocated must be running an X server and be configured to accept a X Windows connection. If the remote system is a PC running SCO XVision, configure the X server to accept remote display requests by modifying the server profile.

To relocate a Resume session to a UNIX host, you must configure the UNIX system accept the remote Resume session. This can be done with the **xhost** command. For example, to configure a UNIX host to accept a Resume session from a PC named **chris**, enter the command:

xhost +chris

NOTE: You cannot relocate the Vision Resume session to the UNIX host acting as the proxy server

To return the session to the original local X display, select "Start/Resume session" in the **Vision Resume Session Control** window.

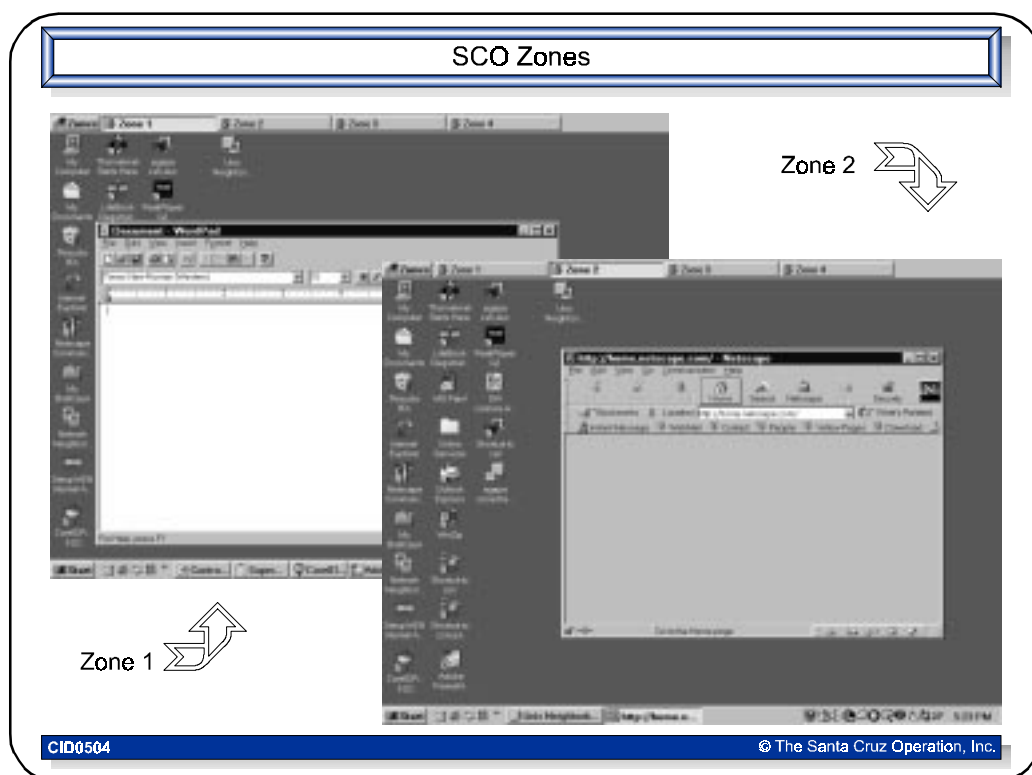
Exercise: Relocating a Vision Resume session

Relocate the Resume session to another display. If you have another PC on your network, enter its network (TCP/IP) host name and specify display number 0.

Alternately, relocate the Resume session to a UNIX host. Specify the UNIX host name and display 1, so that it doesn't conflict with the X session that runs on display 0 by default on SCO UNIX systems.

Return the session to the original local X display.

AV 5-4



5.8 Using SCO Zones to organize your desktop

SCO Zone is an application included with SCO XVision that allows you to organize windows into one or more zones. It creates a virtual desktop space, which is controlled by a toolbar, called zonebar, that allows you to switch between zones. Those familiar with the graphical desktop on SCO UNIX systems see the similarity with the X.Desktop Panner feature.

All programs running when you started SCO Zones are placed into Zone 1. Each zone also has a *Startup* folder that allows applications to start automatically when a zone is entered. The *Startup* folder can be different for each zone.

Applications can appear in multiple zones, and SCO Zones notifies you when you start another copy of an application in another zone. This reminder feature, called Zone Police, allows you to specify whether you want to start another copy of the application, move the program from another zone to the current zone, or move to the zone in which the application is already running. Some applications can only run once on a Windows system.

This example shows how to start programs in different zones:

Step 1. Select **Start** ⇨ **Programs** ⇨ **Vision Zones**.

The zonebar appears at the top of your screen.

Step 2. Click on **Zone 2** to switch to a new virtual desktop.

Step 3. Start Microsoft Notepad. Select **Start** ⇨ **Programs** ⇨ **Accessories** ⇨ **Notepad**.

Step 4. Click on **Zone 3**.

Step 5. Open an MS-DOS window. Click on **Start** ⇨ **Programs** ⇨ **MS-DOS Prompt**.

Step 6. Click on **Zone 4**.

Step 7. Start Notepad in Zone 4.

The **Zone Police** window is displayed by SCO Zones.

Step 8. Select an option to specify how to run a second copy of the application and click on **Yes**.

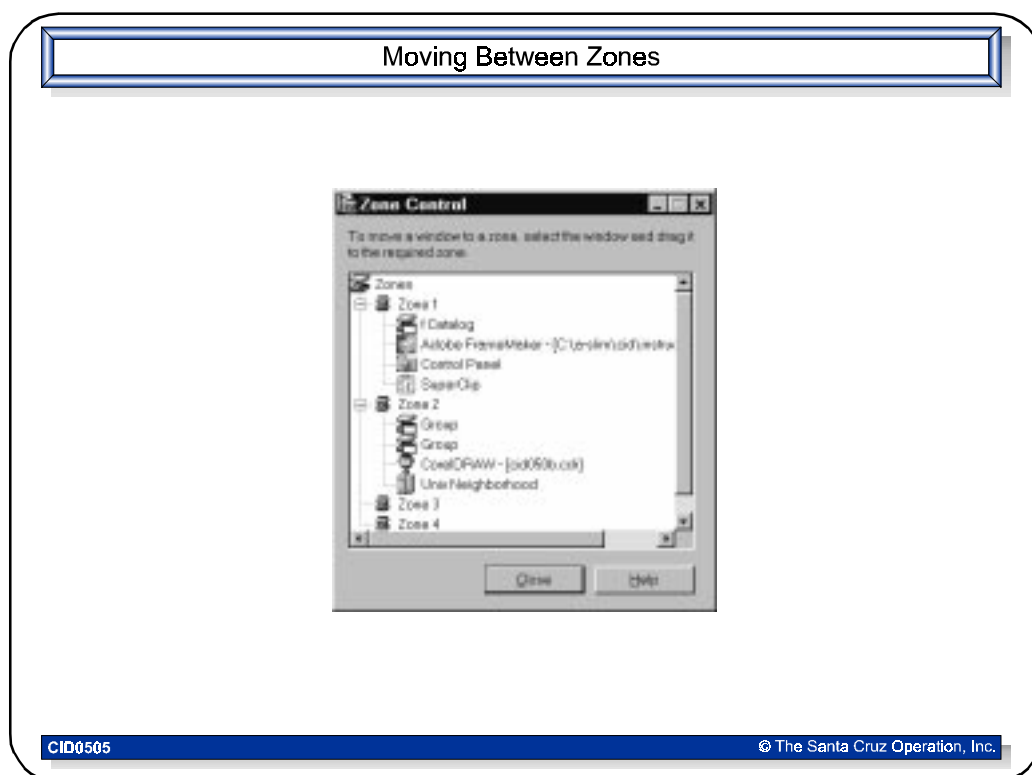
AV 5-4: SCO Zones

This shows the first two zones of a Windows desktop. Notice each zone has its own Desktop.

Exercise: Starting applications in zones

Start SCO Zones and run applications in the different zones. Choose to run an additional copy of the Notepad application in Step 8.

AV 5-5



5.8.1 Using Zone Control

The **Zone Control** window is used to create, delete, or rename zones. It also allows you to change zone properties, individually, or as a group. It can also be used to move applications between zones and specify startup options for zones.

To display the **Zone Control** window and perform basic zone operations:

- Step 1. Click on **Zones** in the zonebar.
- Step 2. Select **Control**.
- Step 3. Move an application from one zone to another using drag-and-drop.
- Step 4. Close an application. Select the icon in **Zone Control** window and enter c.
- Step 5. Click on **Yes** to confirm that you want to close the application window.

Exercise: Moving applications between zones

Select Zone 2 and start the Notepad accessory.

Move the Notepad window from Zone 2 to Zone 4 by dragging the icon from one zone to the other. Try moving another application using cut-and-paste in the **Zone Control** window.

AV 5-5: Moving Between Zones

This slide shows the **Zone Control** window used to move applications between zones.

5.8.2 Modifying zone properties

The **Zone Properties** window allows you to change zone names and icons, configure hot keys, and specify startup options.

In this example, the *Startup* folder for Zone 2 is modified to automatically start an ANSI terminal emulator window.

- Step 1. Start SCO Zones, if it is not running. Select **Start** ⇨ **Programs** ⇨ **Vision** ⇨ **Zones**.
- Step 1. Right-click on **Zone 2** in the zonebar.
- Step 2. Select **Properties**.
- Step 3. Click on the **Startup** tab.
- Step 4. Click on **Add**.
- Step 5. Enter **c:\Program Files\Vision\ANSITERM.exe** or click on the **Browse** button to find the executable.
- Step 6. Click on **Next**.
- Step 7. Enter a name for the program window.
- Step 8. Click on **Next**.
- Step 9. Select an icon, if prompted.
- Step 10. Click on **Finish**.
- Step 11. Click on **OK** to close the **Properties** window.
- Step 12. Close the zonebar. Select **Zones** ⇨ **Exit**.
- Step 13. Restart SCO Zones.
- Step 14. Click on **Zone 4**.
- Step 15. Select **Yes** when prompted to start the ANSITERM program.

Exercise: Modifying zone startup properties

Modify the *Startup* folder for Zone 4 to run a terminal emulator window.

5.9 Lesson Summary

SCO XVision Eclipse is a powerful and flexible 32-bit PC X server that exploits the strengths of Windows and the UNIX system to give fast, intuitive access to X applications. It delivers X applications across the enterprise via the intranet to windows PC, using either the native Windows look-and-feel, or an X terminal interface using XDMCP. The unique Vision Resume capability eliminates X session start-up time, allowing users to resume the session where they left and is ideal for mobile users.

Review questions

1. What is an X server profile? Can you have more than one server profile?
2. How do you access an X server's profile?
3. Explain why you might want to configure an X server to use single-window mode.
4. Can you relocate your Resume session to any other system on the network. Why or why not?
5. What happens if you try to start a Windows application in one zone that is already running in another zone?

5.10 Relevant Commands and Files

The following commands and files were presented in this lesson.

Relevant commands

scoadmin	SCO graphical administration tool
scocal	SCO graphical calendar application
xclock	X window client that displays a clock with the current time
xhost	UNIX program used to specify which users can display X applications on an X server
xterm	X window terminal emulator used to run a UNIX shell on a remote host

Relevant files

<i>/usr/bin/X11</i>	UNIX directory containing X applications
<i>C:\Program Files\Vision\User\Profiles</i>	Windows folder containing X Vision profiles which are hidden files with the extension <i>.xfg</i>
<i>C:\Windows\Start Menu\Programs\StartUp</i>	Windows folder containing programs which are run automatically when the PC is started

5.11 Answers to Review Questions

The answers to the review questions found in Section 5.9, “Lesson Summary,” on page 5-38 are provided in this section.

1. An X server profile is a set of options that control the appearance and behavior of an X server. Multiple X servers can run simultaneously on your PC, and each can use a different set of options, as specified in the profile associated with that X server.
2. There are several ways to access an X server’s profile. If the X server is currently running, right-click on the title bar of the X server window and select **Properties** from the pull-down menu. You can also right-click on the **XV** icon in the Windows taskbar.

If the server is not running, select **Start** ⇒ **Settings** ⇒ **Control Panel** and double-click on **XVision Profiles**.

3. In single-window mode, the X server takes up the entire PC display and any X clients that are started run within that root window. Using this mode in conjunction with the Motif window manager (mwm) and the X Display Manager (xdm) makes a PC look and behave like an X terminal. Users transitioning from X terminals to PCs can use a familiar interface to access a UNIX system.
4. You might not be allowed to relocate your Resume session to another system on the network. The target system must be configured to accept an X session from your PC before Resume is permitted to relocate the X display. Also, you cannot relocate a Resume session to the UNIX host functioning as the Vision Resume proxy server.
5. If you try to start a Windows application in one zone that is already running in another zone, the Zone Police window pops-up. The Zone Police monitor warns you that you are already running the application in another zone. Depending on the application, you have several options for continuing:
 - Run another copy of the application
 - Switch to the zone in which the application is currently running
 - Close the current instance of the application and start a new copy in this zone

6

SCO SQL-Retriever

Lesson 6

SCO SQL-Retriever

Pre-lesson preparation

To complete the exercises in the lesson:

- Have a working network in place with at least one Windows workstation and one SCO UNIX host.
- Have Vision2K products installed on both the UNIX host and a Windows workstation, according to the instructions in Lesson 2: “Installing SCO Vision2K.”
- Have a supported database product installed on a UNIX host, if you want to perform the procedures detailed in this lesson. Exercises in the lesson are optional.
- Have the SCO Vision2K installation CD-ROM available for accessing the **SCO Vision2K Reference** guide and the on-line manual, **Introducing SCO SQL-Retriever**.

AV 6-1



Introduction

SCO SQL-Retriever™ is component of the SCO Vision2K suite of Windows-integration products that provides access to database applications running on remote UNIX hosts.

This lesson introduces you to SQL-Retriever features and provides procedures that demonstrate how to quickly and easily access data on UNIX servers.

If you do not have a database product installed and working on a UNIX host, you can either download a demonstration version from one of the supported vendors, or choose to skip performing the procedures in this lesson. In any case, be sure to read through the lesson, including procedures, so you understand the services provided by SCO SQL-Retriever.

Objectives

This lesson describes how SCO SQL-Retriever is used to connect Windows workstations to servers running SCO UNIX operating systems. By the end of this lesson, you will be able to:

- Describe the basic architecture of ODBC and SQL-Retriever
- Explain how to configure a data source.
- Describe the procedure to connect to a data source.
- Explain how to use SQL Gold to open and close database connections
- Understand how to secure data using the Security Manager
- List examples of Windows applications that can use Dynamic Data Exchange (DDE) to access ODBC data sources using SQL Exchange

AV 6-1: SCO SQL-Retriever

This shows an example Windows desktop running SQL-Retriever.

6.1 SCO SQL-Retriever Overview

SCO[®] SQL-Retriever[™] is a complete Open Database Connectivity (ODBC) solution for accessing SQL databases on remote UNIX hosts. ODBC is Microsoft's strategic interface which was developed to standardize and simplify data access among different applications. SQL-Retriever has a unique architecture that lets Windows applications and developer tools, such as Microsoft Access, Excel, and Visual Basic, make concurrent connections to multiple databases, including Informix, Oracle, Ingres, and Progress.

This architecture allows you to use powerful Windows query-builder and report-writer applications to merge data from many different databases. Windows users can access corporate information transparently, without the need to learn the SQL language, how the data is structured, or where it is stored.

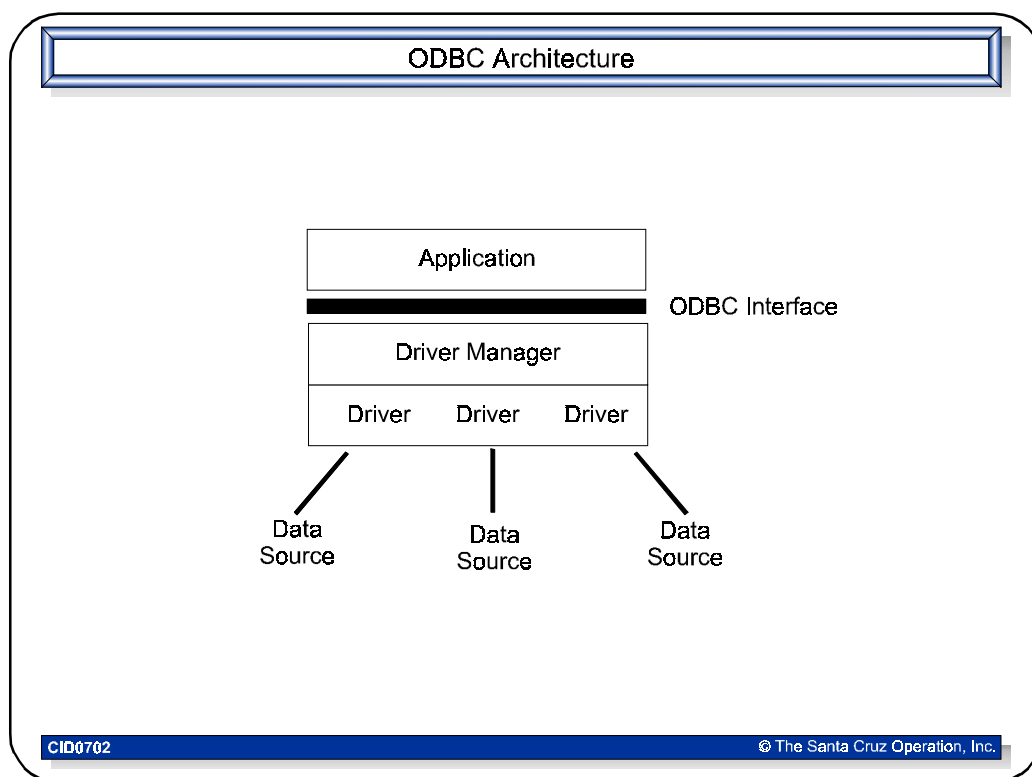
Developers can choose from a range of powerful Windows spreadsheet or database products and programming tools. Using SCO SQL-Retriever, developers can create distributed applications that work across multiple different UNIX operating systems, Windows versions, databases, and network connections.

With SQL-Retriever, you can:

- Take advantage of caching and pre-fetching mechanisms and tune them for optimal performance
- Secure data using the UNIX-based Security Manager
- Enable any application that supports Dynamic Data Exchange (DDE) to access ODBC data sources using SQL Exchange
- Use the Java Database Connectivity (JDBC) *bridge* to connect between UNIX system SQL databases and JDBC-aware Java applets and applications
- Use the SQL Gold Visual Basic client to easily open and close database connections
- Access all the functionality described in Lesson 3: "SCO Vision2K Basics," including browsing, copying and printing files on remote UNIX servers, connecting using a modem, sending messages to other network users
- Support and manage users running SCO SQL-Retriever on their PCs with the centralized administration tool, SCO SuperVision[™]

SCO SQL-Retriever can be purchased separately or as part of the Vision2K suite of products. If you have installed SQL-Retriever using the evaluation license, you can purchase a permanent license and upgrade your existing SQL-Retriever installation. See Section 7.10.1, "Upgrading the demonstration license," on page 7-38 for details.

AV 6-2



6.1.1 SCO SQL-Retrieve architecture overview

To quickly get started and take advantage of the power of SQL-Retrieve, you need to understand the basics of the ODBC architecture and how SQL-Retrieve is designed to work with ODBC. There are four major components of the ODBC interface:

Application	An ODBC application is a program that manipulates data. This might be a custom application or off-the-shelf applications such as spreadsheets, databases, or query tools. These applications generally create SQL statements and pass these to the ODBC <i>Driver Manager</i> . ODBC applications that work with SQL-Retrieve run on Windows, although generally speaking, an ODBC application can run on any platform. Examples of Windows ODBC applications are Microsoft Access, Excel, and Word.
Driver Manager	The Driver Manager loads ODBC drivers on behalf of applications and passes ODBC requests between applications and drivers. This is a Windows dynamically linked library (DLL) provided by Microsoft.
Driver	A driver processes ODBC function calls from the Driver Manager. It also submits SQL requests to a specific data source and returns results to the application. The driver typically maps these requests and related data to suitable form for the target data source.
Data Source	The data sources normally consist of some type of database management system (DBMS) and the infrastructure (communication mechanism) needed to access the data. These can be native Windows or UNIX databases.

AV 6-2: ODBC Architecture

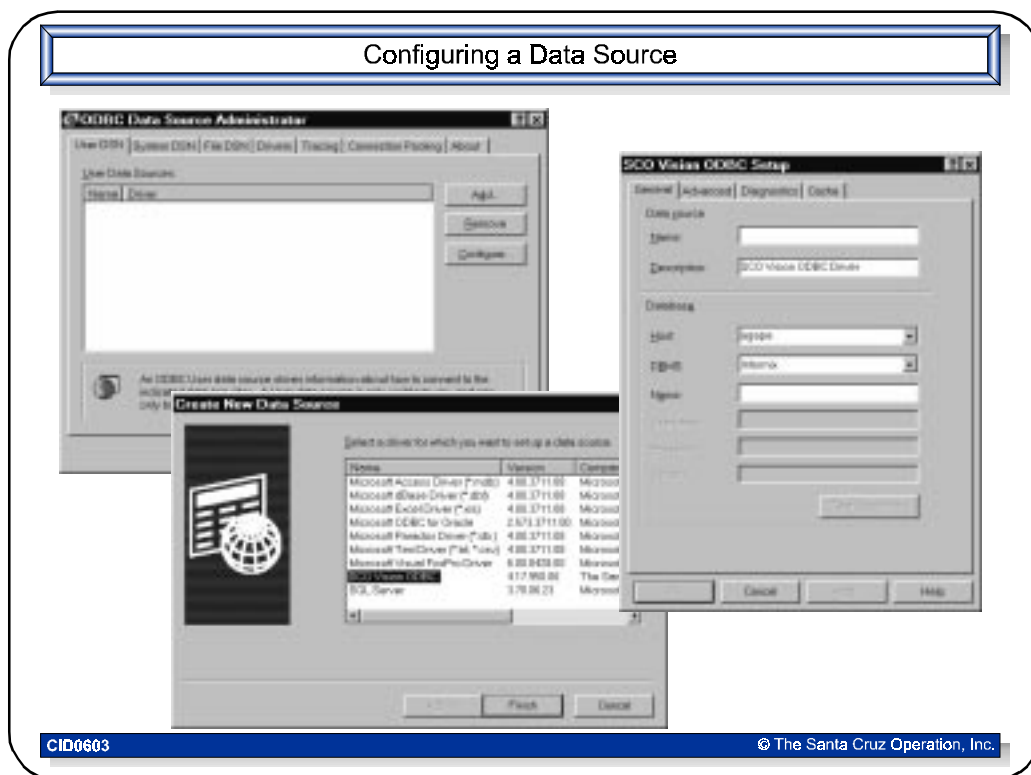
This slide shows the basic building blocks of the ODBC interface.

SCO SQL Retrieve provides the driver layer of this architecture. The ability to support such a wide range of environments is due to the unique architecture of SQL-Retrieve, in which the driver layer is comprised of two components. Part of the SQL-Retrieve ODBC driver runs on the PC, and part on the UNIX host. A single driver module, **vwodbc32.dll** runs on the PC. Server modules specific to each supported database product run on the UNIX host. The PC module can access multiple server modules on one or more UNIX hosts simultaneously.

There are two basic tasks you must perform to use SCO SQL-Retrieve:

1. Configure a data source.
2. Connect to a data source.

AV 6-3



6.2 Configuring Data Sources

An ODBC data source is a combination of a DBMS product, the remote operating system, and the network information necessary to access its data. For example, you might use an Ingres database called **Customers** on a UNIX host named **jupiter** running SCO OpenServer Release 5, which is accessible on a TCP/IP network. Before data is available to an application running on Windows using the SQL-Retrieve ODBC driver, you must add a data source that describes how and where to access the database.

To configure a data source for SQL-Retrieve:

- Step 1. Select **Start** ⇨ **Settings** ⇨ **Control Panel**.
- Step 2. Double-click on **ODBC Data Sources (32bit)**.

 The **ODBC Data Source Administrator** window is displayed.
- Step 3. Click on **Add**.
- Step 4. Select the **SCO Vision ODBC** driver.
- Step 5. Click on **Finish** to close the **Create New Data Source** window.

 The **General** tab of the **SCO Vision ODBC Setup** window is displayed.
- Step 6. Enter a name for the new data source, for example, **scodemo**.
- Step 7. Select the network node name for the UNIX system you want to access.
- Step 8. Select the DBMS running on the UNIX host.
- Step 9. Enter the name of the database to associate with this data source. The entry depends on the DBMS application and not all require a database name.

 Note that this name does not have to be the same as the data source name.
- Step 10. Enter a name in the “Username” field. This is the name of the database user account specified when the UNIX database product was installed. Some products do not require account information. In this case, this field is grayed out.

AV 6-3: Configuring a Data Source

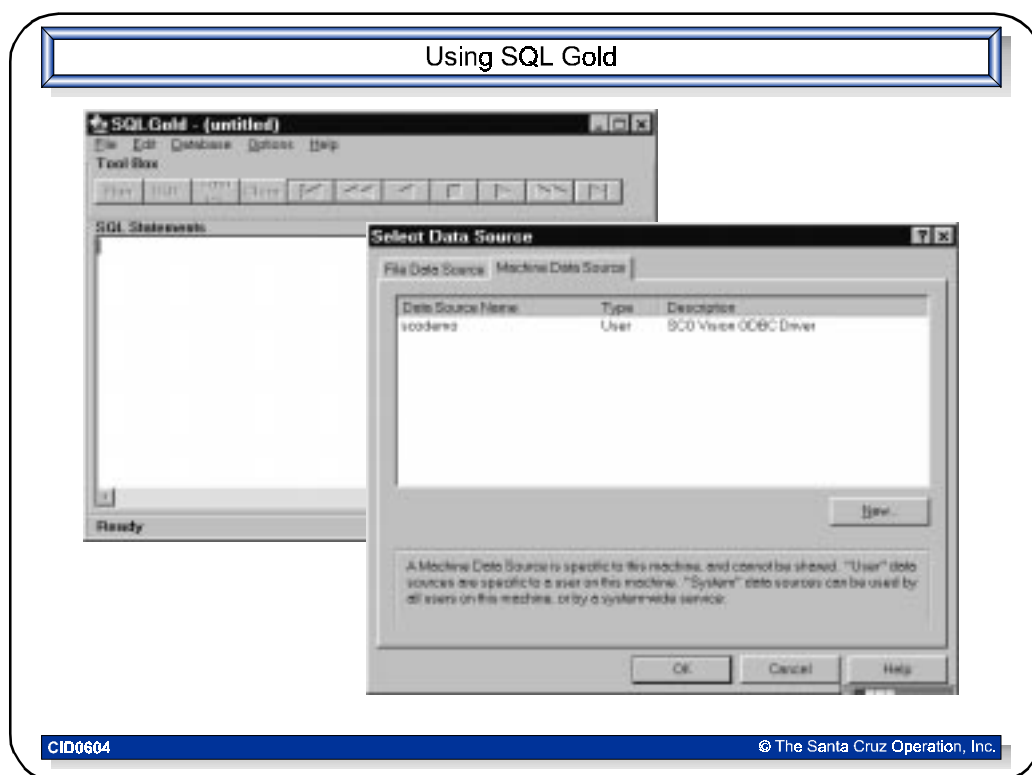
This slide shows the screens used to configure an ODBC data source.

- Step 11. Enter the password for the database account, if necessary.
- Step 12. Click on **OK**
- Step 13. Click on **OK** again to close the **ODBC Data Source Administrator** window.

Optional Exercise: Creating a data source

Create a data source called **scodemo**.

AV 6-4



6.3 Creating a Demonstration Database using SQL Gold

SCO SQL Gold is a Windows program that uses ODBC to provide a Windows interface to SQL databases that is independent of any specific DBMS product. SQL Gold is useful to demonstrate how databases can be accessed from Windows. It is particularly useful for ensuring SCO SQL-Retriever is installed and configured correctly, and that ODBC data sources have been correctly set up.

The query option of SQL Gold can be used by application developers to test that complex SQL queries return the correct data sets before committing them to application code. SQL Gold can also be used to perform maintenance work on databases, such as loading and unloading tables and creating indexes.

This example shows how to use SQL Gold to connect to a UNIX database and create a demonstration database.

Step 1. Start SQL Gold. Select **Start** ⇒ **Programs** ⇒ **Vision** ⇒ **SQL Gold**.

Step 2. Select **Database** ⇒ **Open Database**.

Step 3. Click on the **Machine Data Source** tab.

Step 4. Select **scodemo** in the “Select Data Name.”

Step 5. Click on **OK**.

The **Data Source Connection Information** window for **scodemo** is displayed.

Step 6. Click on **OK** to use the connection information shown in the form.

When the connection succeeds, the SQL Gold window shows **DB open** in the status bar.

Step 7. Select **File** ⇒ **Open**.

Step 8. Double-click on **Examples**.

Step 9. Select the **Scodemo.sql**. Click on **Open**.

The SQL statements are displayed in the window.

AV 6-4: Using SCO Gold

This slide shows the SCO Gold screens used to open a database.

Step 10. Select **Run**.

This builds a demonstration database on the Unix host. When SQL Gold has finished executing statements the **Ready** message is displayed in the status bar.

Step 11. Confirm that the database tables are created:

- Click on **Tables**. A list of tables should be displayed.
- Double-click on the **sales** table. An SQL query should be displayed.
- Click on **Run**. The contents of the **Sales** table should be displayed, confirming that the database tables exist.

Optional Exercise: Connecting to a database using SQL Gold

Connect to a database on a UNIX host using SQL Gold. Confirm that the **Sales** table has been created.

6.4 Accessing a Demonstration Database using SQL Gold

Now that you have created a demonstration database, use SQL Gold to query and modify the database.

These examples show how to use SQL Gold to perform some simple queries and changes to the **Sales** table created in the last section. If you did not exit from SCO Gold after the last procedure, skip steps 1 through 6.

Step 1. Start SQL Gold if it is not already running. Select **Start** ⇒ **Programs** ⇒ **Vision** ⇒ **SQL Gold**.

Step 2. Select **Database** ⇒ **Open Database**.

Step 3. Select **scodemo** in the "Select Data Source" field.

Step 4. Click on **OK**.

When the connection succeeds, the SQL Gold window shows **DB open** in the bottom left corner.

Step 5. Select **File** ⇒ **Open**.

Step 6. Double-click on **Examples**.

Step 7. Select the **Scodemo.sql**. Click on **Open**.

Step 8. Click on **SQL** in the SQL Gold toolbar.

Step 9. Enter an SQL statement to query the database. This example lists all salespeople whose revenue target is great than \$150,000:

```
select * from sales where target > 150000
```

Step 10. Click on **Run**. The results are displayed in a table.

Step 11. Click on **SQL**.

Step 12. Enter an SQL statement to modify the database. This example increases Greg's sales quota:

```
update sales set target = 225000 where lname = 'Parker'
```

Step 13. Click on **Run** to update the table.

Optional Exercise: Querying and updating the demonstration database using SQL Gold

Query and update the demonstration database using SQL statements such as those used in this procedure.

Query the **Sales** table again to check the results of your update.

6.5 About SQL Exchange

SCO Exchange enables any application that supports DDE to access ODBC data sources. It is a DDE server that can open multiple conversations with one or more client applications. SQL Exchange can be used in two ways; either through the use of hot links, known as *remote references*, or through macro programming languages which are supplied with many client applications.

These popular Windows applications support DDE and can be used to access a data source on a UNIX host using SQL-Retrieve's ODBC driver:

- Microsoft Access
- Microsoft Excel
- Microsoft Word
- Microsoft Visual Basic
- Borland Delphi
- Powersoft PowerBuilder

For more information about using these applications to access a data source on a UNIX host, see the SCO Vision2K Reference manual.

6.6 Using the Security Manager

The Security Manager is a component of the host module of the SCO Vision ODBC driver. It allows a system administrator to grant or revoke access to a database, or specific tables within the database.

Access can also be restricted or granted by the type of application. For example, a user might only be allowed to query a database from a particular application and perform updates from another application.

Access to databases is controlled by the SQL-Retriever security configuration file, */usr/vision/etc/sqlrsec.conf*. A sample configuration file, *sqlrsec.sample*, is provided with example entries illustrating the use of the Security Manager. The format of the file is:

```
GRANT | REVOKE   user database:reserved:owner:table:app = privilege
```

If a user is not specified either directly or as a member or a group, then no restrictions apply.

In this example, the first statement grants all users query access on all tables in the **VISION** database when using the SQL Gold application. The second statement revokes query access on the **Sales** table only when using SQL Gold.

```
GRANT  ALL VISION:ALL:ALL:ALL:gold32 = SELECT
REVOKE  ALL VISION:ALL:ALL:Sales:gold32 = SELECT
```

The host module of the ODBC driver must be started with the **-r** option to read the *sqlrsec.conf* file. This daemon is specific to the database. For example, the Oracle daemon is */usr/vision/bin/sqlr.ora40.d*. The complete list of database server daemons is:

- **sqlr.ora40.d**
- **sqlr.inf40.d**
- **sqlr.ing40.d**
- **sqlr.int40.d**
- **sqlr.pro40.d**
- **sqlr.syb40.d**

If you make changes to the *sqlrsec.conf* file, you must restart the appropriate daemon and force it to read the configuration file. Edit the */usr/vision/etc/servers* file to add the **-r** option every time the daemon starts.

This example is a simple illustration of the power of the Security Manager that shows how to revoke query access to the demonstration database created in previous sections. To learn more about the full power of the Security Manager, see the SCO Vision2K Reference manual.

Use this procedure to revoke query access to the **Sales** table of the demonstration database, **VISION**:

- Step 1. Log into UNIX as **root**.
- Step 2. Determine the process ID of the SQL-Retriever server daemon.
- Step 3. Kill the daemon.
- Step 4. Create the Security Manager configuration file by copying the sample file.
- Step 5. Edit `/usr/vision/etc/sqlrsec.conf` to configure these entries:


```
GRANT ALL VISION:ALL:ALL:ALL:gold32 = SELECT
REVOKE ALL VISION:ALL:ALL:Sales:gold32 = SELECT
```
- Step 6. Restart the SQL-Retriever server daemon with the **-r** option. For example, to start the Oracle daemon, enter:

`/usr/vision/bin/sqlr.ora40.d m -r`

To test the configuration, use SQL Gold to access the database:

- Step 1. Start SQL Gold if it is not already running. Select **Start** ⇒ **Programs** ⇒ **Vision** ⇒ **SQL Gold**.
- Step 2. Select **Database** ⇒ **Open Database**.
- Step 3. Select **scodemo** in the "Select Data Source" field.
- Step 4. Click on **OK**.

When the connection succeeds, the SQL Gold window shows **DB open** in the bottom left corner.
- Step 5. Select **File** ⇒ **Open**.
- Step 6. Double-click on **Examples**.
- Step 7. Select the **Scodemo.sql**. Click on **Open**.

- Step 8. Click on **Tables** in the SQL Gold toolbar.
- Step 9. Double-click on **VISION.CUSTOMER**.
- Step 10. Click on **Run**.
- The contents of the Customer table should be displayed, showing that you have query access to the table.
- Step 11. Click on **SQL** in the SQL Gold toolbar.
- Step 12. Click on **Tables**.
- Step 13. Double-click on **VISION.SALES**
- Step 14. Click on **Yes**.
- Step 15. Click on **Run**. You should be denied access to the **Sales** table.
- Step 16. Exit SCO Gold. Select **File** ⇒ **Exit**.

Optional Exercise: Using the Security Manager

Configure the Security Manager to revoke query access to the **sales** table of the **VISION** database when using SCO Gold.

Use SCO Gold to verify the restriction. Remember to restart the SQL Retriever server daemon.

6.7 About JDBC

The SCO JDBC driver allows Java applets (running within a web browser) or Java applications to access information from Oracle, Informix, Ingres, Sybase, Interbase and Progress databases on any UNIX platform.

The JDBC distribution supplied by SCO includes the SCO JDBC driver, the Sun JDBC driver manager, and a sample Java applet and application provided as JDBC demonstrators.

The SCO JDBC driver runs on the client device either being installed locally or downloaded from a web server. This communicates with a *server module* on the UNIX database server which is specific to a particular DBMS on a specific version of UNIX. The client device part of the SCO JDBC driver is provided inside the self-extracting file *sqlrjdbc.exe* for Windows, and the tar format file *sqlrjdbc.tar* for UNIX.

The server module (also contained in SCO SQL-Retriever) can also be installed from the CD. Refer to the appropriate installation instructions for further information.

Additional documentation is provided with the SCO JDBC driver and can be viewed once the driver is installed. The documentation can be accessed using the file *index.htm*, which located in the *doc* subdirectory.

6.8 Lesson Summary

This lesson described the SCO SQL-Retriever product, one of the SCO Vision2K Windows integration products.

Review questions

1. What are the four basic components of the ODBC interface? Which component does SCO SQL-Retriever provide?
2. What is SQL Gold? How might you use it?
3. What is SQL Exchange? Give an example of how it could be used.
4. How can you restrict access to a database?

6.9 Relevant Commands and Files

The following commands and files were presented in this lesson.

Relevant commands

sqlr.ing40.d	SQL-Retriever daemon which controls access to Ingres databases
sqlr.int40.d	SQL-Retriever daemon which controls access to Interbase databases
sqlr.ora40.d	SQL-Retriever daemon which controls access to Oracle databases
sqlr.pro40.d	SQL-Retriever daemon which controls access to Progress databases
sqlr.syb40.d	SQL-Retriever daemon which controls access to Sybase databases
vwodbc32.dll	SQL-Retriever ODBC driver module that runs on the PC

Relevant files

<i>cdrom\Jdbc\sqlrjdbc.exe</i>	Client part of the SCO JDBC driver provided on the SCO Vision2K installation CD-ROM as a self-extracting file for Windows
<i>cdrom\Jdbc\sqlrjdbc.tar</i>	Server module part of the SCO JDBC drivers provided on the SCO Vision2K installation CD-ROM as a tar format file for UNIX
<i>/usr/vision/etc/servers</i>	Configuration file for starting SCO Vision2K service daemons
<i>/usr/vision/etc/sqlrsec.conf</i>	Security configuration file for limiting database access
<i>/usr/vision/etc/sqlrsec.sample</i>	Sample security configuration file

6.10 Answers to Review Questions

The answers to the review questions found in Section 6.8, “Lesson Summary,” on page 6-24 are provided in this section.

1. The four major components of ODBC are Application, Driver Manager, Driver, and Data Source. SCO SQL-Retriever supplies the driver component.
2. SQL Gold is a Visual Basic application that provides a way to access a database on a remote UNIX host from a Windows PC. It is useful as a diagnostic tool—you can verify that your SQL Retriever PC and host components are properly installed. It is also useful for testing and debugging complex SQL statements when developing database applications.
3. SQL Exchange is a DDE server that allows you to dynamically link data from UNIX databases to Windows applications that support DDE.
4. To restrict access to a database, or specific tables within a database, you must edit the SQL-Retriever security configuration file, */usr/vision/etc/sqlrsec.conf*. The host module of the ODBC driver for the database must then be restarted with the **-r** option to force it to read the security configuration file.

7

SCO SuperVision

Lesson 7

SCO SuperVision

Pre-lesson preparation

To complete the exercises in the lesson:

- Have a working network in place with at least one Windows workstation and one SCO UNIX host. This lesson is most effective when you have at least two PCs on the network; one which will serve as the Administrator, and the other to act as the administered PC.
- Have SCO Vision2K products installed on both the UNIX host and a Windows workstation, according to the instructions in Lesson 2: “Installing SCO Vision2K.”
- Have the SCO Vision2K installation CD-ROM available for accessing the **SCO Vision2K Reference** guide. You also need the CD-ROM to run the **License Manager** from a PC.

AV 7-1



Introduction

SCO SuperVision™ is component of the SCO Vision2K suite of Windows-integration products that provides remote administration of PCs running the SCO Vision2K family of products.

This lesson introduces you to SuperVision features and provides procedures that demonstrate how to remotely configure and manage Windows PCs.

Objectives

This lesson describes how SCO SuperVision is used to manage groups of PCs. By the end of this lesson, you will be able to:

- Use the Administration Workbench
- Distribute files, objects, and tasks to PCs across the network
- Create PC groups
- Manage Windows desktops remotely
- Configure SCO Vision2K products
- Manage licenses

AV 7-1: SCO SuperVision

This shows an example Windows desktop running SuperVision.

7.1 SCO SuperVision Overview

The use of PCs has spread into every part of an organization and the cost of maintaining these workstations far exceeds the cost of the initial purchase.

SCO® SuperVision™ cuts the cost of managing and supporting a large group of PCs by providing centralized management. The System Administrator can monitor and configure PCs, control the user's desktop, and directly manipulate files and folders on the PC.

SuperVision has both UNIX and PC components. The UNIX software provides the same set of services available to all SCO Vision2K products, such as browsing, printing, and messaging. The administration database and the Administration Workbench Server, which carries out all operations on the database, are maintained on the UNIX host. The UNIX system running the SuperVision software is referred to as the Administration Host.

The PC components of SCO SuperVision include an Administration Agent which is installed on all PCs to be administered, and the Administration Workbench, which is installed on the PC used by the System Administrator. The Administration Agent is included with all Vision2K products and is installed by default when a Vision2K product is installed on a PC.

The Administration Workbench is a tool used by the System Administrator to maintain the administration database, and to obtain remote access to other PCs. The Administration Workbench works in conjunction with the Administration Workbench Server on the UNIX host to access the administration database, which contains the files and objects to be downloaded to the PCs.

7.2 Installing the Administration Workbench

The SCO SuperVision **Administration Workbench** is not installed when SCO Vision2K is installed using the “Typical” profile, since there is usually only one PC on the network that acts as the Administrator.

If you do not have the Admin Workbench entry in the **Start** ⇨ **Programs** ⇨ **Vision** menu, re-install SCO SuperVision from the network or the SCO Vision2K CD-ROM using the “Custom” profile to specific inclusion of the **Administration Workbench**.

To install SuperVision with the **Administration Workbench** on a PC from a network share:

- Step 1. Close all open Windows applications.
- Step 2. Run the SuperVision **setup** program from the SCO Vision2K CD-ROM directory `\pc\win32\Svision`, or from the *vision2k* share on the UNIX host.
- Step 3. Proceed through the installation as directed in Section 2.5.2, “Running Vision2K setup on the PC,” on page 2-29 until the **Setup Options** window is displayed.
- Step 4. Select “Custom” in the **Setup Options** window. Click on **Next**.
- Step 5. Click on **OK** when the pop-up window indicates that a previous installation of a Vision product has been found.
- Step 6. Click on **Next** in the **Choose Folder** window. The **Select Components** window is displayed.
- Step 7. Click on **Next**. The **Select Components** window is displayed.
- Step 8. Click on **Details** to the right of the “Administration & host browser” component.
- Step 9. Select “Administration Workbench” and click on **OK**.
- Step 10. Click on **Next** in the **Select Components** window.
- Step 11. The files are now copied to the PC.
- Step 12. Click on **Next** through the remaining prompts and restart your PC.

Exercise: Installing the Administration Workbench

Install SuperVision using the “Custom” profile. Select the option to include the **Administration Workbench**.

7.3 Using the Administration Workbench

The SCO SuperVision **Administration Workbench** runs on a Windows PC and allows the System Administrator to configure the administration database on the UNIX host. The **Administration Workbench** offers a graphical view of the database that is similar to the **Windows Explorer** browsing program.

The System Administrator uses **Administration Workbench** to create folders for PCs, organize PCs into groups, and specify the files and other objects to be distributed to the PCs.

The UNIX Administration Host allows access by only one PC at a time and that user must be registered on the UNIX host before access is allowed.

Before you can use the **Administration Workbench** to access the UNIX Administration Host, you must add the UNIX user name of the System Administrator to the */usr/vision/etc/visionpriv* file on the UNIX host and restart the server daemons.

Entries in the *visionpriv* file have the form:

`user : name : #`

The number after the user name indicates the level of authorization, where:

- 1 Allows the user access to SuperVision **Administration Workbench**
- 2 Allows the user to administer licenses
- 3 Grants both SuperVision and license administration privilege

To configure a user as a SuperVision System Administrator:

Step 1. Edit the */usr/vision/etc/visionpriv* file.

Step 2. Add a line with an entry with the UNIX user name of the System Administrator. For example:

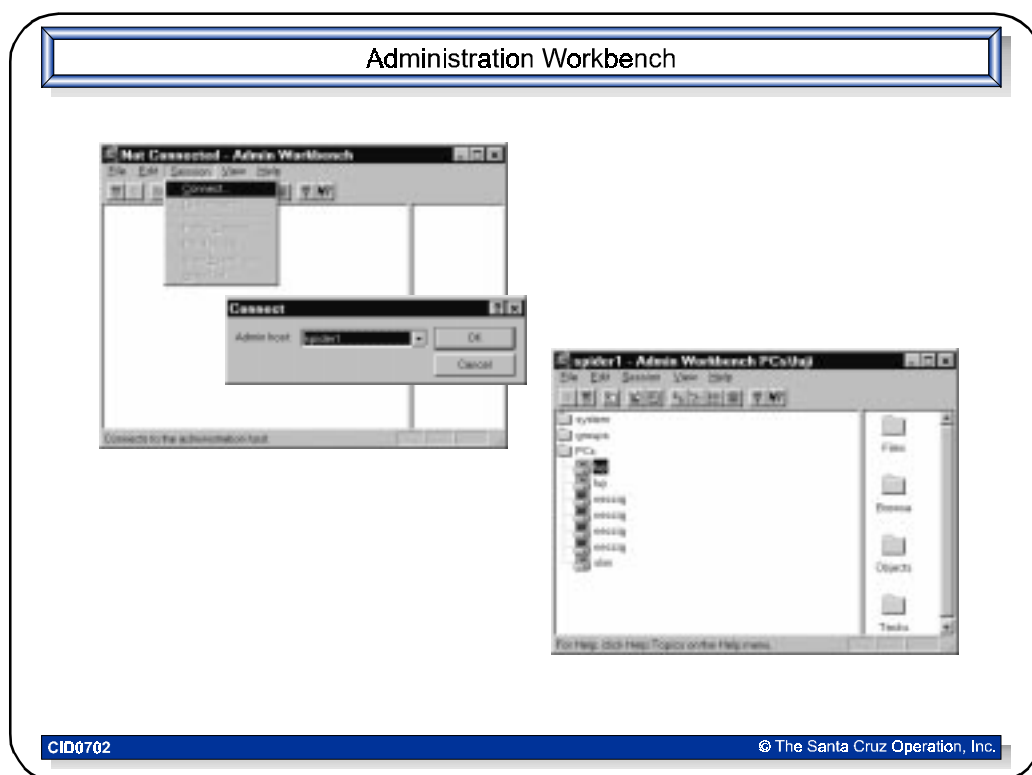
`user : chris : 3`

Step 3. Save the changes.

Step 4. Force the Authentication Server to re-read the authentication database:

`/usr/vision/bin/authsrv -r`

AV 7-2



Exercise: Authorizing a user as a SuperVision Administrator

Add the UNIX user name of the SuperVision Administrator to the */usr/vision/etc/visionpriv* file.

Run **authsrv** to re-read the *visionpriv* file.

To start the **Administration Workbench** and connect to the UNIX Administration Host:

Step 1. Select **Start** ⇨ **Program** ⇨ **Vision** ⇨ **Administration Workbench**.

Step 2. Select **Session** ⇨ **Connect**.

Step 3. Select the system that is the UNIX Administration Host. Click on **OK**.

The first time you connect a message displays indicating that no administration database is found. Select **Yes** to create a new database.

When connected, three folders are displayed in the left side of the **Admin Workbench** window, system, groups, and PCs. These are discussed further in the next section.

AV 7-2: Administration Workbench

This slide shows the series of screens used to connect to the Administration Host using the Administration Workbench.

Exercise: Connecting to the UNIX Administration Host

Step 1. Start the **Administration Workbench** and connect to the UNIX Administration Host.

Step 2. Create the administration database, if prompted.

Step 3. Double-click on the **system** folder icon. Note the sub-folders icons, **Files**, **Objects**, and **Tasks**.

7.4 Configuring the administration database

To understand how to use SuperVision to perform remote administration tasks, you must understand the administration database. The **Administration Workbench** is simply a tool to configure the database.

The structure of the administration database is most easily understood through the use of a few simple examples. Once you understand the basic structure and operation, you will see how to configure the database for more complex configurations.

The procedures for performing these basic tasks are used to show how to configure the administration database:

- Adding one or more PCs to the administration database
- Distributing files to PCs
- Distributing objects to PCs

After you have completed these exercises, more advanced configuration topics are covered.

7.4.1 Adding PCs to the administration database

Each PC must be added to the administration database before it can be administered by SuperVision. To add a PC on the local network to the administration database:

- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Click on the **PCs** icon folder in the left pane of the **Admin Workbench** window.
- Step 3. Select **File** ⇒ **New** ⇒ **PC**.
- A new PC icon is created in the right pane with the name **New PC** highlighted.
- Step 4. Enter the network node name of the PC to be administered. Press .
- Step 5. Repeat steps 3 and 4 to continue to add each PC that will be administered by this UNIX Administration Host.
- Step 6. Rebuild the database index. Select **Session** ⇒ **Build Index**.
- Step 7. Click on **OK** when finished.

Exercise: Adding PCs to the administration database

Add each PC on your network that will be administered by this database.

7.4.2 Distributing files to PCs

The default *system* folder is used to store files, objects, and tasks that are distributed to every PC in the administration database.

To distribute files to all PCs, create a structure within the *system* folder that mirrors the directory hierarchy on the PC. As a simple demonstration, this procedure distributes a new directory and several files to the C:\ drive on each PC added in Section 7.4.1 on page 7-12.

Step 1. Start the **Administration Workbench**, if it is not already running.

Step 2. Double-click on the **system** folder icon in the left pane of the **Admin Workbench** window.

Three sub-folder icons are displayed: **Files**, **Objects**, and **Tasks**.

Step 3. Double-click on the **Files** folder.

Step 4. Select **File** ⇒ **New** ⇒ **Drive**.

A new drive icon is created in the right pane with the name **C:** highlighted.

Step 5. Press to accept the default drive name, **C:**.

The **C:** icon appears under **Files** in the left pane.

Step 6. Click on the **C:** drive icon in the left pane.

Step 7. Select **File** ⇒ **New** ⇒ **Folder**.

Step 8. Enter a name, such as *testdir*, and press .

Step 9. Double-click on the new directory in the right pane.

The left pane is empty, since there are current no files in the new directory, *testdir*.

Step 10. Open **Windows Explorer**.

Step 11. Select a file from your administration PC to be copied to the remote PCs.

For example, select one of the TermVision or XVision files created in previous lessons, such as a *.ans or *.rps file located on the Windows desktop.

Step 12. Drag the selected file into the right pane of the **Admin Workbench** window and select **Copy** when the mouse button is released.

Step 13. Add other files to the new directory, if desired.

Step 14. Rebuild the database index. Select **Session** ⇨ **Build Index**.

Step 15. Click on **OK** when finished.

When you build a new index, the items added to the database are distributed automatically the next time the remote PC is rebooted. Alternately, you can force an update.

Step 16. Double-click on **PCs** in the left-frame of the **Admin Workbench** window.

Step 17. Select one or more PCs to be updated immediately.

Step 18. Force an update. Select **Session** ⇨ **Force Update**.

The folders and files are immediately copied to the selected PC(s).

Exercise: Distributing files and directories

- Step 1. Use the **Administration Workbench** to add a directory with several files to the *system* folder of the administration database.
- Step 2. Rebuild the index.
- Step 3. Select one or more PCs on your network to update immediately and force an update.
- Step 4. Use the **Windows Explorer** on one of the PCs to observe that the new files and directory have been distributed.

How could you distribute the TermVision or XVision icons created in previous lessons from the Administration PC's desktop directly to the desktop on remote PCs?

7.4.3 Distributing objects to PCs

In addition to distributing files, SuperVision also distributes objects, such as new menu items, to remote PCs.

This procedure shows how to add a new group to the **Start** ⇨ **Programs** menu.

Step 1. Start the **Administration Workbench**, if it is not already running.

Step 2. Double-click on the **system** folder icon in the left pane of the **Admin Workbench** window.

Three sub-folder icons are displayed: **Files**, **Objects**, and **Tasks**.

Step 3. Double-click on the **Objects** folder icon.

Step 4. Select **File** ⇨ **New** ⇨ **Program Manager Item**.

A new object icon is created in the right pane with the name **New Program Manager Item.pmi** highlighted.

Step 5. Enter the name calculator and press .

The **calculator.pmi Properties** window is displayed.

Step 6. Enter **SV-test** as the group. This is the name of the Program group where the object will appear.

Step 7. Enter **Calculator** as the Description.

Step 8. Click on **Browse**.

Step 9. Locate and select the file *C:\Windows\Calc*. Click on **Open**.

Step 10. Click on **OK**.

A pop-up menu shows the file being transferred and an icon labeled calculator.pmi appears in the right pane.

Step 11. Rebuild the database index. Select **Session** ⇨ **Build Index**.

Step 12. Click on **OK** when finished.

Step 13. Double-click on **PCs** in the left-frame of the **Admin Workbench** window.

Step 14. Select one or more PCs to be updated immediately.

Step 15. Force an update. Select **Session** ⇨ **Force Update**.

Exercise: Distributing objects

- | | |
|---------|---|
| Step 1. | Use the Administration Workbench to add a program manager item to the <i>system/Objects</i> folder of the administration database. |
| Step 2. | Rebuild the index. |
| Step 3. | Select one or more PCs on your network to update immediately and force an update. |
| Step 4. | View the desktop on the remote system and verify that the program group is created. |

Examples of SCO Vision2K configuration files that you might want to distribute are:

- Terminal emulator documents configured for specific UNIX applications
- Program Starter documents to run X Windows clients
- Fonts
- Keyboard configuration files
- Vision Communications files, such as transports, hosts, and scripts

You might also find SuperVision useful for distributing other Windows application configuration files.

7.5 Using groups

The task of administering a large number of PCs can be simplified by organizing them into groups. Operations, such as those described in Section 7.4.2, “Distributing files to PCs,” can then be carried out on an entire group and PCs within the group will have the same configuration. For example, all PCs within the Sales department could be grouped together and provided with pre-configured desktop items that allow access to the UNIX programs they need. Restrictions can be placed on the group to prevent users from altering the configuration.

A special group called System includes all administered PCs. This was used in previous exercises when files, tasks, and objects were distributed to PCs by placing the items in the **system** folder icon in the left pane of the **Admin Workbench** window.

The System Administration can create any number of groups and organize PCs by adding them to one or more groups.

To create a new group:

- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Click on the *groups* folder in the left pane of the **Admin Workbench** window.
- Step 3. Select **File** ⇨ **New** ⇨ **Group**.

A new group icon is created in the right pane with the name **New Group** highlighted.
- Step 4. Enter a group name and press .
- Step 5. Repeat steps 3 and 4 to add other groups.
- Step 6. Rebuild the database index. Select **Session** ⇨ **Build Index**.
- Step 7. Click on **OK** when finished.

Exercise: Creating groups

Create two new groups called **Sales** and **Marketing**.

7.5.1 Adding PCs to a group

To add PCs to a group:

- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Right-click on one of the new group folder icons in the right pane of the **Admin Workbench** window.
- Step 3. Select **Properties**.
- Step 4. Click on the **Membership** tab.
- Step 5. Select a name in the PCs box.
- Step 6. Click **Add**.
- Step 7. Continue to add PCs to the selected group.
- Step 8. Click on **OK** when finished.
- Step 9. Rebuild the database index. Select **Session** ⇨ **Build Index**.
- Step 10. Click on **OK** when finished.

Exercise: Adding PCs to groups

Add one or more PCs to the **Sales** group. Add one of the PCs in the **Sales** group to the **Marketing** group.

Send a message to all PCs in the **Sales** group using the **User Viewer**.

7.5.2 Modifying group membership

If a PC is a member of multiple groups, one group is designated as the *primary* group. The PC gets file and objects from each group in which it is a member. However, it will receive restrictions only from the primary group. Restrictions are discussed more in Section 7.6, “Configuring SCO Vision2K Applications,” on page 7-21.

To modify a PC’s group membership and set the primary group:

- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Double-click on **PCs** in the left pane.
- Step 3. Select a PC.
- Step 4. Select **File** ⇒ **Properties**.
- Step 5. Click on the **Membership** tab.
- Step 6. Click on **Add** or **Remove** and select a group.
- Step 7. Click on **Up** or **Down** to set the primary group. The group at the top of the list is the primary group.
- Step 8. Click on **OK** to save changes.
- Step 9. Close the **Properties** window.

Exercise: Changing group membership

Set **Marketing** as the primary group for one of the PCs that is a member of both **Sales** and **Marketing**.

7.6 Configuring SCO Vision2K Applications

SCO SuperVision can be used to remotely configure other SCO Vision2K programs. For example, you can change the default font for a terminal emulator, change the default keymap, or change the location of resources, such as help files.

The System Administrator can also restrict the actions of PC users of Vision2K applications. For example, a user can be restricted from changing the configuration of a program, or can be allowed to view, but not change, documents.

This example procedure shows how to restrict a PC from printing within the ANSI terminal emulator.

- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Select a PC on which you want to set a restriction.
- Step 3. Select **File** ⇒ **Properties**.

The **Restrictions** tab is displayed.
- Step 4. Select **ANSI emulator** from the **Applications** pull-down menu.
- Step 5. Check **Printing** in the “Application Settings” field.
- Step 6. Click on **OK**.
- Step 7. Close the **Properties** window.
- Step 8. Rebuild the database index. Select **Session** ⇒ **Build Index**.
- Step 9. Click on **OK** when finished.
- Step 10. Select a PC on which this restriction is enforced.
- Step 11. Force an update. Select **Session** ⇒ **Force Update**.

The **File** ⇒ **Print** selection is now grayed out and unavailable within an ANSI terminal emulator window.

Exercise: Setting restrictions

Select a PC and restrict the Printing function for the ANSI emulator.

Test the restriction by opening a new ANSI emulator on the PC. Verify that the **File** ⇨ **Print** selection is grayed out.

Look through the other global and application-specific restrictions that can be set for Vision2K applications.

AV 7-3: Setting Restrictions

This slide shows the **Administration Workbench Restrictions** window for the PC **slim**. When the ANSI emulator is started on slim, the **File** ⇨ **Print** option is not available.

7.7 Using SuperVision for Remote PC Management

SuperVision includes tools that assist the System Administrator in supporting large groups of PCs. Using the Administration Workbench, you can connect directly to an administered PC and manipulate folders and files. You can also monitor the programs running on a PC, take a screen shot of the PC's display, and see a pictorial representation of the active tasks.

7.7.1 Browsing PCs

You can use the Administration Workbench to browse through a PC's file system, including network drives. Files and folders can be copied or moved between the PC and the administration database, and between PCs. You can create, rename, and delete folders and files, and set properties.

To view the files and directories on a PC:

Step 1. Start the **Administration Workbench**, if it is not already running.

Step 2. Select a PC.

Step 3. Double-click on **Browse**.

The PC's drives are displayed.

Step 4. Click on the **C:** drive icon in the left pane.

The contents are displayed in the right pane. You can continue to browse any files and directories on the PC, just as you would using Windows Explorer on a local PC.

You can also view and modify file attributes on the remote PC. For example, to see which version of Microsoft Excel is running on the remote PC you are browsing:

Step 1. Start the **Administration Workbench**, if it is not already running.

Step 2. Double-click on the **C:** drive icon in the left pane.

Step 3. Locate the *excel.exe* file.

This might be found in *C:\Program Files\Microsoft Excel* or *C:\Program Files\Microsoft Office\Office*.

Step 4. Right-click on *Excel.exe* in the right pane.

Step 5. Select **Properties** from the pull-down menu.

Step 6. Click on the **Version** tab.

7.7.2 Viewing programs running on PCs

To view the programs running on a remote PC:

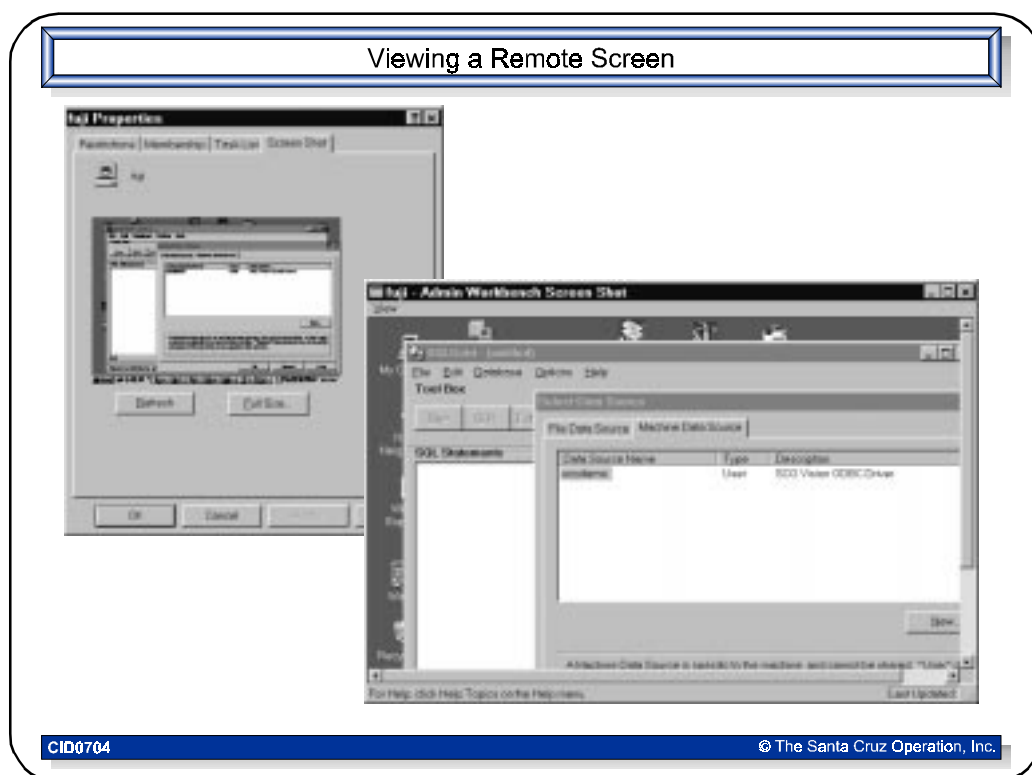
- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Select a PC.
- Step 3. Select **File** ⇒ **Properties**.
- Step 4. Click on the **Task List** tab.

A list of programs currently running on the remote PC is displayed.

Exercise: Configuring a remote PC

View the files on the C: drive of a remote PC and list the running programs.

AV 7-4



7.7.3 Viewing the display on remote PCs

To view the display of a remote PC:

- Step 1. Start the **Administration Workbench**, if it is not already running.
- Step 2. Select a PC.
- Step 3. Select **File** ⇒ **Properties**.
- Step 4. Click on the **Screen Shot** tab.

The remote PC's display appears.
- Step 5. Click on **Full Size** to increase the size of the display.

Exercise: Displaying a remote PC screen

View the display of a remote PC.

AV 7-4: Viewing a Remote Screen

This slide shows the **Administration Workbench** being used to view the screen on a remote PC.

7.8 Using Scripts to Perform Administrative Tasks

In addition to distributing files and objects, SuperVision can be used to specify a task to be performed on a PC or group of PCs during an update. Tasks are carried out by TCL scripts that run on the UNIX Administration Host and perform actions on a PC. Tool Command Language is a scripting language designed to be used by applications. SuperVision provides an interpretive shell called **admsh** that allows you to type TCL commands interactively or run script files.

A number of routines are included with the TCL interpreter to enable a script executing on a UNIX system to manipulate Vision2K PCs. You can use TCL commands to:

- Execute programs on PCs and monitor the results
- Display message boxes to obtain user input
- Mount and unmount network drives
- Get information about drives, folders and files
- Modify the Windows Registry or *.ini* files
- Get information about administered PCs
- Manipulate the administration database
- Copy files between PCs and UNIX hosts
- Reboot PCs

These TCL scripts are provided with SuperVision and are installed on the UNIX Administration Host in the */usr/vision/TCL/admtasks* directory:

checkxv	Checks whether the 16-bit version of XVision is installed on a PC running Windows 95 and if so, places an Xterm object on the Windows desktop.
pcinvent	Lists the Vision2K software installed on administered PCs
proccmd	Processes TCL commands
who	Lists all active PCs in the administration database
wingroups	Creates groups for different versions of Windows in the administration database and adds all active PCs to one of the groups

Most of these scripts are not intended to be run from **Administration Workbench**. However, they are useful as examples when creating your own customized scripts. TCL programming is beyond the scope of this course, but a simple script is created here to demonstrate the extensibility of SCO SuperVision when combined with TCL scripts. For further discussion of TCL, see the **SCO Vision2K Reference** manual.

This procedure shows how to create a TCL script on the UNIX administration host and test it by running it using the TCL interpreter. The script checks the free disk space on the C: drive and displays a message on the PC.

- Step 1. Log into the UNIX host as **root**.
- Step 2. Change to the `/usr/vision/TCL/admtasks` directory.
- Step 3. Create a TCL script called `checksp.TCL` with this content:

```
#!/usr/bin/admsh
#
# parse the command line
adm_parsecmdline "-p" $argv pcname
#
# connect to the pc
adm_connect $pcname
#
# get disk space
adm_drives $pcname -space "C:" space
set Msg "You have $space bytes free space on Drive C:"
#
# display the message
adm_messagebox $pcname -title "SuperVision" -msg $Msg
```

- Step 4. Test the script by starting the TCL interpreter and running the script. Enter:

```
# /usr/bin/admsh
admsh> checksp.TCL -p pc-name
```

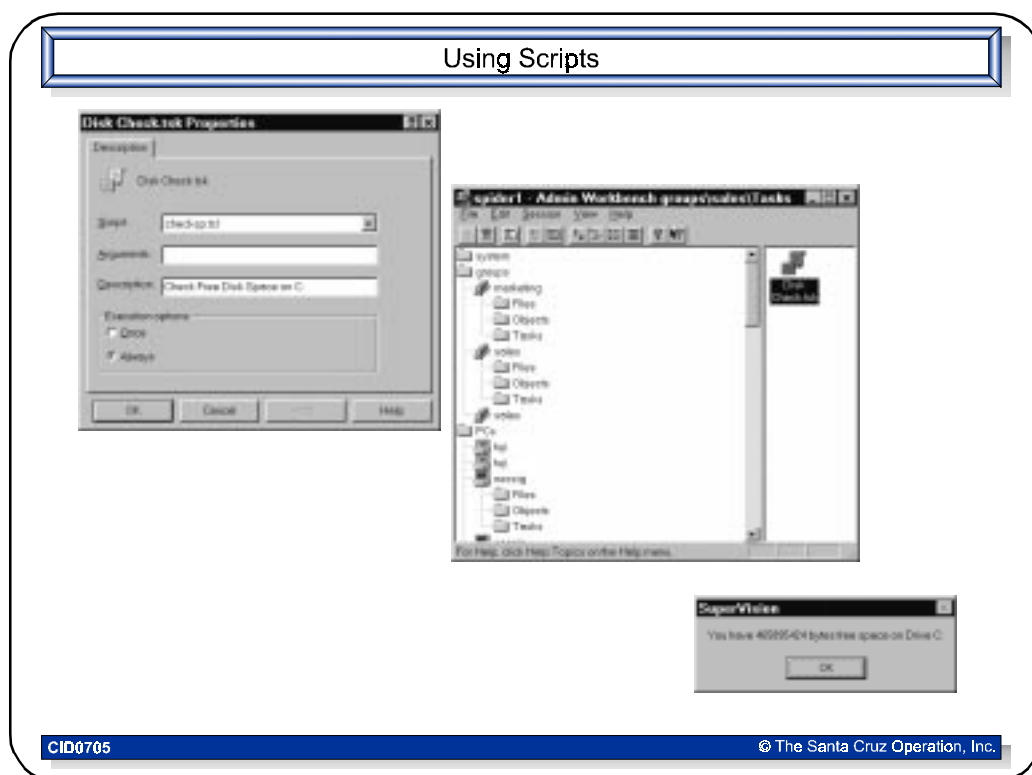
where **pc-name** is the network node name of one of the Vision2K PCs on your network.

A message box is displayed on the PC showing the number of free bytes of space on drive C:. When the PC user clicks on the **OK** button in the message box, the script completes.

AV 7-5: Using Scripts

This slide shows the **Administration Workbench** screen used to distribute a task. The pop-up is the result of running the **checksp** script. This is displayed on each screen in the group **sales**.

AV 7-5



Once it is working properly from the UNIX host, you can distribute the TCL script to a group of PCs, on which it will perform the specified operation, checking the free disk space on the C: drive.

- Step 1. Start the **Administration Workbench** on the Administration PC, if it is not already running.
- Step 2. Double-click on the **groups** folder icon in the left pane of the **Admin Workbench** window.
- Step 3. Double-click on the icon for one of the groups created in an earlier exercise, such as **sales**.
- Three sub-folder icons are displayed: **Files**, **Objects**, and **Tasks**.
- Step 4. Select the **Tasks** folder icon.
- Step 5. Select **File** ⇒ **New** ⇒ **Task**.
- A new object icon is created in the right pane with the name **New Task.tsk** highlighted.
- Step 6. Enter the name **Disk Check** and press .
- The **Disk Check.tsk Properties** window is displayed.
- Step 7. Select **checksp.TCL** as the “Script.”
- Step 8. Leave “Arguments” blank.
- Step 9. Enter **Check free disk space on C:** as the “Description.”
- Step 10. Select **Always** as the execution option.
- Step 11. Click on **OK**.
- An icon labeled **Disk Check.tsk** appears in the right pane.
- Step 12. Rebuild the database index. Select **Session** ⇒ **Build Index**.
- Step 13. Click on **OK** when finished.
- Step 14. Select the group name in the left frame. For example, **sales**.

Step 15. Force an update. Select **Session** ⇒ **Force Update**.

Each PC in the group displays a pop-up message. The pop-up will time out if the **OK** button is not pressed and an **Adminsrv** error message displays. Better error handling is an improvement you might want to attempt as an exercise in using TCL.

If the target PC is in a remote location, you can view the screen from the **Administration Workbench**:

Step 1. Select a PC.

Step 2. Select **File** ⇒ **Properties**.

Step 3. Click on the **Screen Shot** tab.

The screen on the remote PC is displayed.

Optional Exercise: Distributing a task

- | | |
|---------|--|
| Step 1. | Create the script called <i>checksp.TCL</i> , shown in the earlier procedure. |
| Step 2. | Test it from the UNIX command line using the TCL interpreter. |
| Step 1. | Use the Administration Workbench to distribute the script to a group of PCs. |
| Step 2. | Rebuild the index, select the group to which you are distributing the script, and force an update. |
| Step 3. | View the desktop on the remote system and verify that the program group is created. |

7.9 Restricting SuperVision Access

You can configure a PC to refuse to be administered by SuperVision, giving complete control over the PC's configuration to the user. This is important for users who have confidential information on their PC, for example.

To configure a PC to disallow administration by a remote administration PC:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**.
- Step 2. Double-click on **Vision Services**.
- Step 3. Click on the **Admin** tab.
- Step 4. Clear the check mark from the "Allow this PC to be administered by SuperVision."
- Step 5. Click on **OK**.

7.10 Managing Licenses

There are two types licensing that apply to SCO Vision2K products. There is a host-based license which is related to the number of concurrent users of a Vision2K product. There is also a PC-based license which determines whether a particular PC user is able to run a Vision2K product on the PC.

These two types of licenses are implemented using the single license number provided when a Vision2K product is purchased. The license is entered when the UNIX host portions are installed, and also when the PC products are installed.

The PC license controls whether a Vision2K application can be run on the PC. If a Vision2K product was installed on a PC without a license, it will run for some period of time, but once the evaluation period expires, the product can no longer be started from the PC. This is referred to as a *right to use* type of license.

The other type of license is related to the number of concurrent users of Vision2K products. The number of licensed users is tied to the number of UNIX user licenses by default. That is, if you have a 25-user UNIX license, you are allowed to have 25 concurrent users of a Vision2K product. It is the responsibility of the system or network administrator to ensure that Vision2K licenses are not being violated.

The UNIX host components of Vision2K include a **License Manager** to help administrators keep track of the Vision2K products in use on a network. By default, the License Manager is configured to use *soft* licensing. This means a user is permitted to use a software component even though the license request exceeds the number of licensed users. When all licenses are in use, additional programs are allowed to run but they display warning messages.

The **License Manager** can be used to strictly enforce licensing by preventing use of a Vision2K application if the number of concurrent users exceeds the license.

To run the **License Manager** from the UNIX command line, login as **root** and run the **licadmin** command in the `/usr/vision/bin` directory. For example, to display the configuration of the License Server, enter:

```
# /usr/vision/bin/licadmin -g
When all licenses are in use:
    Send email to: root
    Let programs run, with warnings
```

```
License logging:
    Log successful license requests: N
    Log failed license requests:    Y
    Log modification details:      N
```

It can also be run from the Administration PC. However, it is not installed on the PC by default when other SCO Vision2K products are installed. To run the **License Manager** from the SCO Vision2K CD-ROM from a PC:

- Step 1. Insert the SCO Vision2K CD-ROM.
- Step 2. Use **My Computer** or **Windows Explorer** to browse the CD-ROM contents.
- Step 3. Double-click on the *licmgr* directory.
- Step 4. Double-click on the *licmgr.exe* file.

The **License Manager** connects to the license server process on the UNIX host.

Exercise: Running the License Manager

Run the **License Manager** from either a PC or the UNIX command line.
Display the licenses in use.

7.10.1 Upgrading the demonstration license

If you installed SCO Vision2K components with no license number, the products are licensed for 30 days. If you later purchase a license, you can upgrade from the demonstration license to a full product license.

For example, to upgrade the TermVision license on the PC:

Step 1. Select **Start** ⇒ **Vision** ⇒ **Upgrade TermVision License**.

Step 2. Enter the new license number.

Step 3. Click on **OK**.

A pop-up window indicates that the upgrade succeeded.

Step 4. Click on **OK** to close the **Success** window.

7.11 Lesson Summary

This lesson described how you can use SCO SuperVision to provide remote management and control of groups of PCs running Vision family products. With the SuperVision **Administration Workbench** you can:

- Distribute files, objects, and tasks to PCs
- Configure SCO Vision2K products and control usage
- Query running applications
- Examine a PC filesystem
- See a remote PC display

This lesson also covered the **License Manager**, a tool to help network administrators track and control SCO Vision2K licenses.

Review questions

1. How can you configure a PC so that it will not accept updates from the Administration Host?
2. Give an example of a restriction the administrator may place on a PC using an SCO Vision2K application.
3. How do you upgrade the evaluation license for one of the SCO Vision2K PC products?

7.12 Relevant Commands and Files

The following commands and files were presented in this lesson.

Relevant commands

/usr/bin/admsh	TCL interpreter
/usr/vision/bin/authsrv	SCO Vision2K daemon that authenticates users
/usr/vision/bin/licadmin	License administration tool for Vision2K UNIX host components
/usr/vision/tcl/admtasks/checkxvC	TCL script that checks whether XVision is installed on a PC running Windows 95 and if so, places an Xterm object on the Windows desktop.
/usr/vision/tcl/admtasks/pcinvent	TCL script that lists the Vision2K software installed on administered PCs
/usr/vision/tcl/admtasks/proccmd	TCL script that processes TCL commands
/usr/vision/tcl/admtasks/who	TCL script that lists all active PCs in the administration database
/usr/vision/tcl/admtasks/wingroups	TCL script that creates groups for different versions of Windows in the administration database and adds all active PCs to one of the groups

Relevant files

<i>/usr/vision/etc/visionpriv</i>	Configuration file that lists the UNIX user accounts allowed to run the Administration Workbench
<i>/usr/vision/admin</i>	Directory containing files that make up the administration database

7.13 Answers to Review Questions

The answers to the review questions found in Section 7.11, “Lesson Summary,” on page 7-39 are provided in this section.

1. You can you configure a PC so that it will not accept updates from the Administration Host by clearing the option “Allow this PC to be administered by SuperVision” in the **Admin** window of **Vision Services**.
2. The example of a restriction the administrator may place on a PC using an SCO VISION2K application shown in this lesson is the printing function within an ANSI terminal emulator. Some examples of global restrictions include modifying properties for local and remote files, executing programs, and creating or deleting files.
3. To upgrade the evaluation license, run the applicable upgrade program from the **Start** ⇨ **Vision** menu?

8

SCO VisionFS

Lesson 8

SCO VisionFS

Pre-lesson preparation

To complete the exercises in the lesson:

- Have a working network in place with at least one Windows workstation and one SCO UNIX host. This lesson is most effective when you have at least two PCs on the network; one which will serve as the Administrator, and the other to act as the administered PC.
- Have SCO VisionFS products installed on both the UNIX host and a Windows workstation, according to the instructions in Section 2.3, “Installing SCO VisionFS,” on page 2-7.
- Have the SCO Vision2K installation CD-ROM available for accessing the **SCO Vision2K Reference** guide and the on-line manual, **Introducing SCO VisionFS**.

Introduction

SCO VisionFS gives PC users transparent access to resources on a UNIX server in a way that is simple to install and requires very little configuration. Workstation users can browse UNIX servers using the **Network Neighborhood** and access shared files and printers as they would on other networked PCs.

This lesson focuses on strategies and tools for providing file and printer sharing services to Microsoft Windows-based computers on your network using SCO VisionFS.

Objectives

This lesson describes how VisionFS is used to connect Windows workstations to servers running SCO UNIX operating systems. By the end of this lesson, you will be able to:

- Use the **Profile Editor** to create file and directory shares and modify share properties
- Configure shared UNIX printers
- Configure shared PC printers
- Set and modify VisionFS passwords
- Use SCO TermLite to run UNIX programs

8.1 VisionFS Overview

SCO VisionFS is a simple and economical option for providing file and printer sharing for Windows clients. VisionFS uses the Common Internet File System (CIFS) protocol to share files and printers. CIFS is the native protocol used by Windows 95 and other Windows versions to share files and printers. This allows workstation users to access UNIX resources using built-in Windows facilities, such as the **Network Neighborhood**. Other Vision2K products require you to install separate (but similar) tools onto the PC to access the server.

For example, when TermVision is installed on a PC, the **UNIX Neighborhood** icon appears on the desktop and is used to browse UNIX servers. When VisionFS is installed on a server, no new software is needed on the workstation. The Network Neighborhood will automatically see any UNIX servers with VisionFS installed.

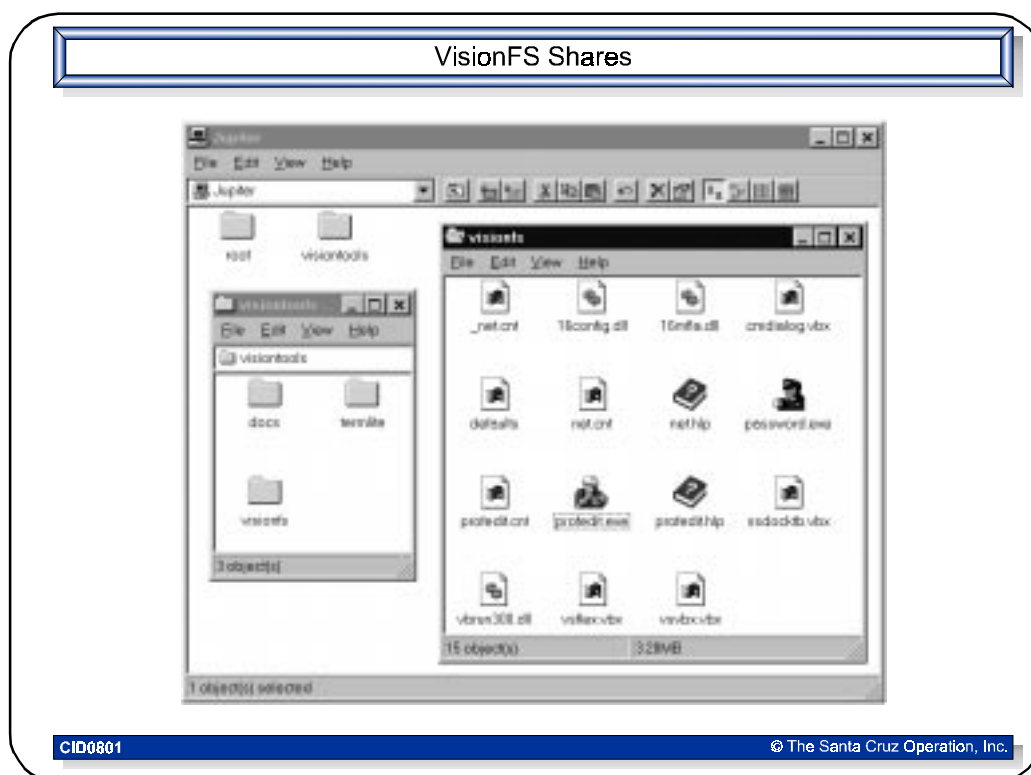
Other advantages of using VisionFS to provide file and printer sharing include:

- VisionFS is designed to share files and printers with Windows clients handling Windows users, passwords, filenames, permissions, etc.
- Because users are probably already familiar with the Windows interfaces used to access CIFS shared files and printers, there is little or no user training required.
- VisionFS is relatively simple to configure and administer.

VisionFS is provided with SCO OpenServer Release 5 and UnixWare 7.1 operating systems and is licensed for the number of UNIX users by default. SCO VisionFS can also be purchased separately, or as part of the Vision2K suite of products, for other UNIX operating systems.

SCO VisionFS user licenses can be purchased to allow additional PCs connect to shared resources on the UNIX servers.

AV 8-1



CID0801

© The Santa Cruz Operation, Inc.

8.2 VisionFS administration overview

Depending on your network requirements, there may be little or no need to perform additional administration once SCO VisionFS is installed and the password database is created, as described in Lesson 2: “Installing SCO Vision2K.”

During installation, SCO VisionFS automatically creates several default shares, including:

- A printer share for each UNIX printer
- A directory share for each UNIX user account that exists at the time of installation
- A share accessible to the administrator account (root) for accessing tools, such as the **Profile Editor** and documentation

AV 8-1: VisionFS Shares

This shows the default shares on a newly installed VisionFS server.

Additional administration is required primarily when you need to:

- Add shared directories or printers
- Modify default access permissions
- Add users

Although some VisionFS administration can be performed from the UNIX command line, most tasks are best performed from the VisionFS **Profile Editor**. The **Profile Editor** is a Windows application that can be used to perform remote configuration of your VisionFS server.

8.3 Using the Profile Editor

Only a *VisionFS administrator* has permission to run the **Profile Editor**. By default, there is one VisionFS administrator, with the user name of **root**, on both the Windows and UNIX systems.

The two **root** user accounts (UNIX and Windows) should use the same password. If the passwords are not the same, VisionFS prompts you for the UNIX **root** password when you try to access shared directories or printers.

NOTE: If your Windows client system uses a Windows NT domain controller to authenticate users, then you will need to add a user **root** to the domain controller, keeping the password the same as the UNIX **root** password.

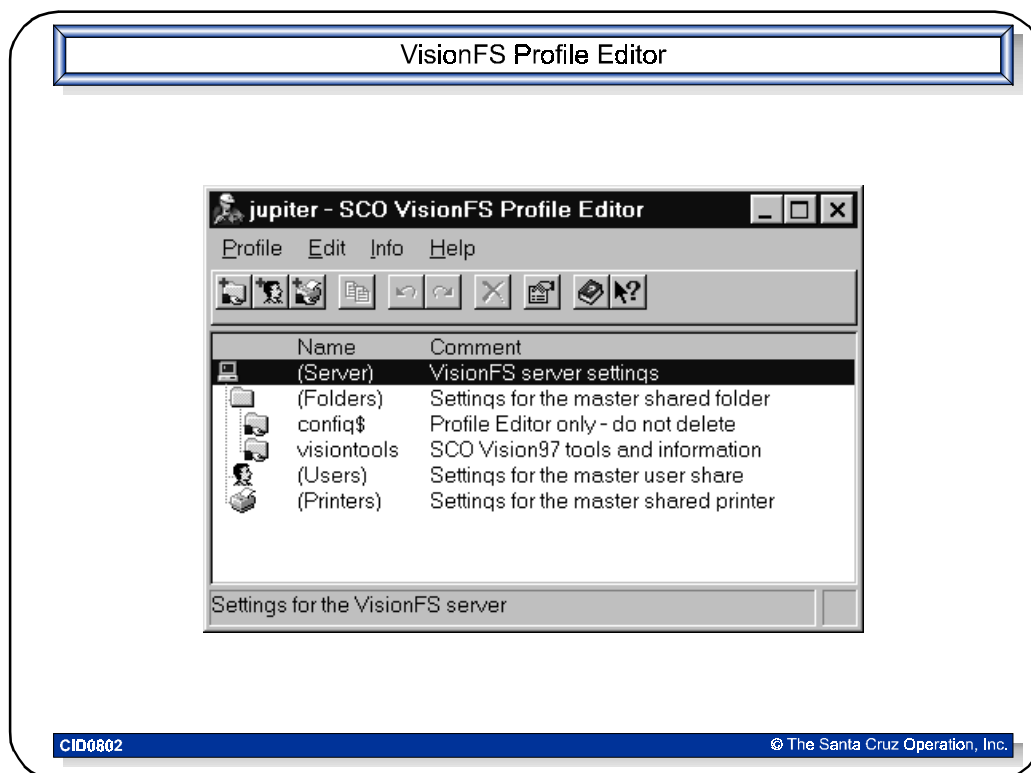
If you need to change the user name of the VisionFS administrator, or give the Windows user a different name from the UNIX user, enter this command on the UNIX system:

/usr/vision/bin/visionfs setup

This prompts you to answer several questions including what name you want to use for the VisionFS administrator.

The default *visiontools* share is used to provide access to the **Profile Editor**. You can run the **Profile Editor** directly from the VisionFS server without copying it to the Windows system.

AV 8-2



AV 8-2: The VisionFS Profile Editor

This is the default configuration for a newly installed server.

The **Profile Editor** is shared as *visiontools\visionfs\profedit.exe*. This file is located on the UNIX server in */usr/vision/bin/pctools/en_US/visionfs*.

By default, the VisionFS server starts automatically when UNIX boots. If your VisionFS server is not running, you must start it before you can access the *visiontools* share. To start VisionFS, enter this UNIX command:

/usr/vision/bin/visionfs start

Exercise: Running the profile editor

- | | |
|---------|---|
| Step 1. | Log in to a Windows system as the VisionFS administrator. By default, the username is root . |
| Step 2. | Access the VisionFS server. |
| Step 3. | Open the <i>visiontools</i> share. |
| Step 4. | Open the <i>visionfs</i> folder. |
| Step 5. | Run the VisionFS Profile Editor . Double-click on:

profedit.exe |

AV 8-3

VisionFS Shared Folder Properties Window



CID0803

© The Santa Cruz Operation, Inc.

8.3.1 Sharing files and directories using the Profile Editor

By default, VisionFS shares each user's home directory to that user. This is called an *automatic user share*. For example, when the user **alison** browses a newly installed VisionFS server from a client system, two shares are available:

- *visiontools*, which is `/usr/vision/bin/pctools/en_US` on the server
- *alison*, which is `/home/alison` (or **alison**'s home directory) on the server

To add a new shared directory, follow these steps:

- Step 1. Create a directory on the UNIX server. This must be done from the UNIX system.
- Step 2. Run the VisionFS **Profile Editor** for the correct server.
- Step 3. Select **Edit** ⇒ **New Shared Folder** from the menu.
- Step 4. Enter the name that users will see in the "Share Name" field.
- Step 5. Enter the UNIX pathname in the "UNIX Directory" field.
- Step 6. Click on **OK**.
- Step 7. Select **Profile** ⇒ **Update Server** from the menu.

Your changes will not be visible to clients until the server has been updated. The server can be updated even if it is in use by other users.

AV 8-3: VisionFS Shared Folder Properties Window

The slide shows the fields filled in as they should be for this exercise.

Exercise: Sharing a directory

On your UNIX system, create a directory called `/wordfiles`. Use the **Profile Editor** to share this directory with the same share name.

8.3.2 Default settings and the master shared folder

By default, the settings for each share are dynamically linked to default settings. The default settings are available through an item called the *master shared folder*. You can control which settings are linked to the defaults through the **Link** buttons available in the **Profile Editor**:

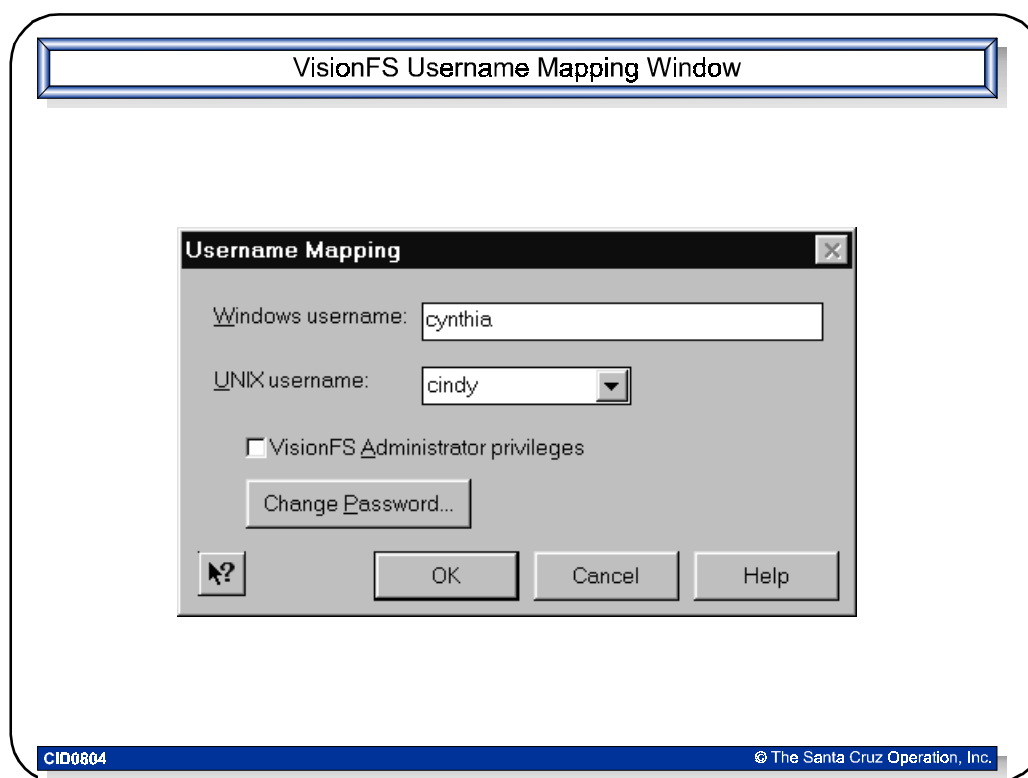
1. If the **Link** button is checked, the setting is automatically set to the default value stored in the master shared folder.
2. If the **Link** button is not checked, you can change its setting.

To change the master settings in the **Profile Editor**:

Step 1. Select **Settings for the master shared folder** from the list.

Step 2. Select **Edit** ⇨ **Properties** from the menu.

AV 8-4



8.3.3 Username mapping

You might have users that have accounts on both your UNIX and Windows systems but their username can differ. To allow these users authenticated access to the VisionFS shares, you must create a *username mapping*.

For example, to map from the Windows user **cynthia** to the UNIX user **cindy**:

- Step 1. Select **VisionFS server settings** from the **Profile Editor**.
- Step 2. Select **Edit** ⇒ **Properties** from the menu.
- Step 3. Select the **Users** tab.
- Step 4. Click on **New**.
- Step 5. Enter **cynthia** in the “Windows username” field.
- Step 6. Enter **cindy** in the “UNIX username” field.
- Step 7. Click on **OK**.

Note that you have the option of making this user a VisionFS administrator. Only do this if you would trust the user with the **root** password on your UNIX system because this user can create a read-write share of your root directory.

AV 8-4: The VisionFS Username Mapping Window

This slide shows the **Username Mapping Window**.

AV 8-5



8.3.4 Limiting access to a shared folder

You might want to restrict which users have read or write access to a given folder. Windows users are divided into two categories:

authenticated Users who have a corresponding UNIX user account

guest Users who do not have a corresponding UNIX user account

To determine what access a user has to a share, you must consider:

- VisionFS share access is configured with the VisionFS **Profile Editor**.
- Normal UNIX permissions are configured with the **chmod(1)**, **chown(1)**, and **chgrp(1)** commands on the UNIX server.

For a type of access to be granted, both the VisionFS share access and the UNIX permissions must grant that type of access.

By default, guest users do not have access to VisionFS shares.

By default, authenticated users have read-write access to a shared folder through VisionFS. To actually read or write shared files, the UNIX permissions must also grant that user the appropriate rights.

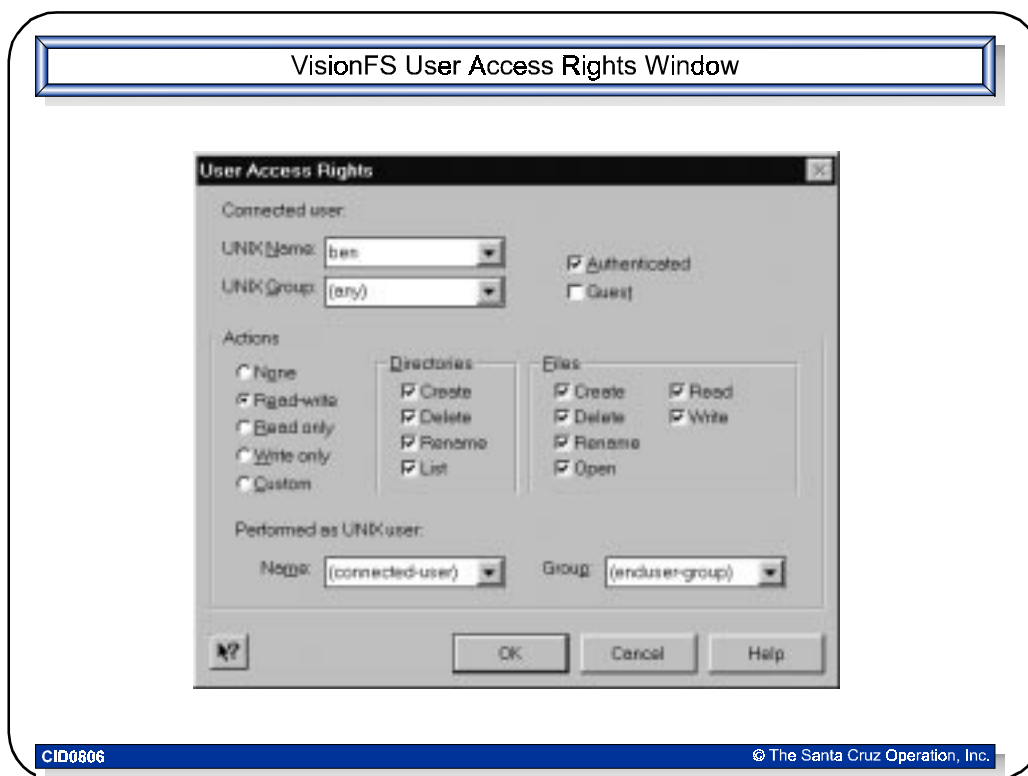
To configure VisionFS shared folder access:

- Step 1. Run the VisionFS **Profile Editor**.
- Step 2. Select the share you want to configure.
- Step 3. Select **Edit** ⇒ **Properties** from the menu.
- Step 4. Select the **Access** tab from the **Properties** window. This displays the window shown AV.

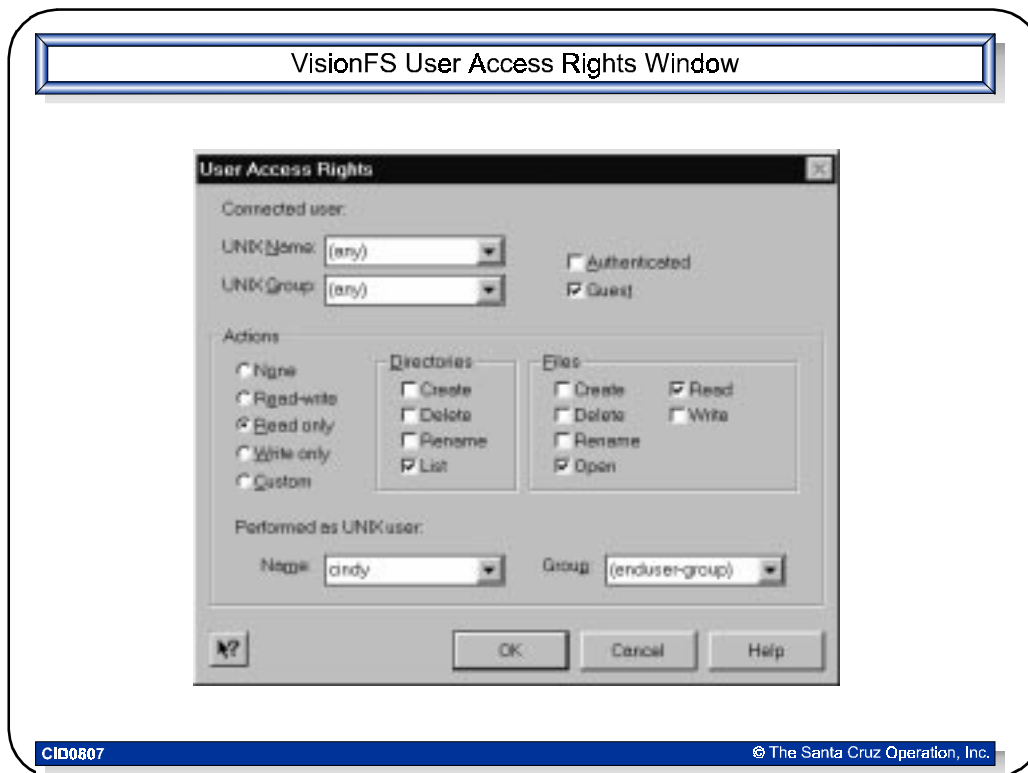
AV 8-5: The VisionFS Share Access Window

This slide shows the default access permissions for a new share.

AV 8-6



AV 8-7



For example, to change the default access to read-only for a share:

- Step 1. Select the line corresponding to the “Name” of **(any)**.
- Step 2. Click on **Edit**.
- Step 3. Select **Read only** under the “Actions” heading.
- Step 4. Click on **OK**.

Note that you can also select “Share is read-only” on the **Access** panel for the share. However, that option applies to all users and cannot be overridden for a particular user. The method described here can be overridden.

To add read-write access for a particular user named **ben**, as shown in AV 8-6:

- Step 1. Click on **New**.
- Step 2. Select the user **ben** from the “UNIX Name” field.
- Step 3. Select **Read-write** under the “Actions” heading.
- Step 4. Click on **OK**.
- Step 5. Set permissions on the UNIX system to grant **ben** read-write access.

AV 8-6: VisionFS User Access Rights

This slide shows the User Access Rights window filled out to grant **ben** read-write access.

To grant read-only access to guest users as shown in AV 8-7:

- Step 1. Click on **New**.
- Step 2. Deselect the **Authenticated** checkbox. The **Guest** checkbox is selected for you.
- Step 3. Select **Read only** under the “Actions” heading.
- Step 4. Select the UNIX user whose permissions will be used for the guest users under the “Performed as UNIX user” heading.
- Step 5. Click on **OK**.

AV 8-7: VisionFS User Access Rights

This slide show the User Access Rights window filled out to grant read-only access to guest users, with all guest actions performed as the UNIX user **cindy**.

8.4 Sharing printers using VisionFS

VisionFS can be used to share printers attached to the both the UNIX server system and Windows client machines.

This means that the Windows client users can access printers on the UNIX system, and UNIX users can print to printers attached to Windows machines.

8.4.1 Sharing UNIX printers

When the VisionFS server starts, it automatically shares all of the printers found on the UNIX server. Each printer on the UNIX server has an icon displayed on the Windows client. To display shared printers, access your VisionFS server by double-clicking on the **Network Neighborhood** icon.

If you have added new printers since the last reboot, restart VisionFS so that it detects the new printers. To restart the VisionFS server, select **Profile** ⇒ **Restart Server** from the **Profile Editor** menu on your Windows client. To restart VisionFS from the UNIX command line, enter:

```
/usr/vision/bin/visionfs stop
```

```
/usr/vision/bin/visionfs start
```

To use a shared printer from Windows 95, you must add a network printer to your Windows system. To start the setup process, double-click on the printer icon and follow the normal Windows prompts.

Network printer setup can also be started from Windows using **Start** ⇒ **Settings** ⇒ **Printers** ⇒ **Add Printer**.

AV 8-8

VisionFS Shared Printer Properties Window



CID0808

© The Santa Cruz Operation, Inc.

8.4.2 Setting access permissions on printers

By default, newly-shared printers use the settings for the master shared printer. To change the master settings in the **Profile Editor**:

Step 1. Select **Settings for the master shared printer**.

Step 2. Select **Edit** ⇒ **Properties**.

To customize settings for a particular printer, create an explicit share rather than using the automatic one. To explicitly share a printer:

Step 1. Select **Edit** ⇒ **New Shared Printer**.

Step 2. Select the UNIX name for the printer in the “Printer Name” field.

Step 3. Enter the name of the printer in the “Share Name” field if you use a different Windows name for the printer.

Step 4. Click on **OK**.

AV 8-8: VisionFS Shared Printer Properties Window

This slide shows the UNIX printer **laser1** shared with the name **laser-101**.

To change the settings for an explicitly shared printer:

Step 1. Select the shared printer to configure.

Step 2. Select **Edit** ⇒ **Properties** from the menu.

8.4.3 Sharing workstation printers

You can have printers attached to your Windows client systems and make them available to UNIX applications. The workstation, or *client*, printers are shared using the built-in printer sharing tools found in Windows 95 and other versions of Windows. VisionFS is used to provide access to the client printers from the UNIX command line.

Configuring client printer sharing involves three steps:

1. Configure Windows to share printers.
2. Configure Windows to share a particular printer.
3. Use VisionFS to access the shared client printer.

To enable printer sharing on Windows 95:

- Step 1. Right-click on the **Network Neighborhood** icon.
- Step 2. Select **Properties** from the pop-up menu.
- Step 3. Click on **File and Print Sharing**.
- Step 4. Select “I want to be able to allow others to print to my printer(s).”
- Step 5. Click on **OK**.
- Step 6. Select the **Access Control** tab.
- Step 7. Click on **Share-level access control**.
- Step 8. Click on **OK**.
- Step 9. Reboot if needed.

To share a particular printer with Windows 95:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Printers**.
- Step 2. Right-click on the printer you want to share.
- Step 3. Select **Sharing** from the pop-up menu.
- Step 4. Click on **Shared As**.
- Step 5. Supply a name for this printer in the “Share Name” field.
- Step 6. Leave the “Password” field blank.
- Step 7. Click on **OK**.

To print to the shared printer from the UNIX command line, use the command:

```
visionfs print //client/printer filename --user guest --password
```

where:

- client* Is the name of the client system that is sharing the printer
- printer* Is the share name for the printer
- filename* Is the UNIX file that you want to print

The **visionfs** command is found in the */usr/vision/bin* directory.

For more convenient use, you can write a shell script that runs the above command. Alternatively, you can write a printer interface script so the shared printer can be accessed using the **lp(C)** command.

8.5 Command-line administration

Some SCO VisionFS administrative tasks can be performed on the UNIX server from the command line using the visionfs command.

The syntax is:

```
/usr/vision/bin/visionfs option [ argument ]
```

For a complete list, enter:

```
/usr/vision/bin/visionfs help
```

This is a partial list of the most commonly-used options:

Option	Description
information	Writes system and VisionFS details to a file
license	Adds license numbers, lets you change license mode
lookup	Gives information about a network name
message	Sends a WinPopup message to a user or workgroup
netinfo	Displays information about UNIX network interfaces
password	Modifies VisionFS passwords
print	Prints a file to a network printer
restart	Stops then restarts the server
setup	Modifies or fixes the server configuration
share	Adds, removes and lists shared folders
start	Starts the server
status	Reports server details (names, Administrators, connections)
stop	Stops the server

To display the arguments for a specific option, enter the **visionfs** command with the option. For example, to see the arguments for the **password** option, enter:

```
# /usr/vision/bin/visionfs password
```

Valid arguments are: <option>

where <option> may be one of:

--add <user> [<password>]	Adds <user> to the VisionFS database
--amend <user> [<password>]	Changes <user>'s VisionFS password
--remove <user>	Removes <user> from the password database
--list	Lists users with VisionFS passwords
--query <user>	Checks <user> has a VisionFS password
--wizard	Runs the VisionFS Password wizard, which lets you import UNIX users into the VisionFS password database

8.5.1 Adding users and changing passwords

If you add UNIX accounts after VisionFS is installed, they are not automatically added to the VisionFS password database. You must run the password command to add users individually before the new users can access VisionFS shares from a client.

For example, to set the password for a new UNIX account, **bar**, enter:

```
/usr/vision/bin/visionfs password --add bar bar
```

This sets the VisionFS password to be the same as the UNIX account name, **bar**.

The VisionFS password command is also used to update the VisionFS password database when the UNIX password is changed for a user account. If the UNIX password is changed, and the VisionFS password database is not updated, the user will be prompted for a password whenever accessing a shared resource.

After running the password command, stop and restart the VisionFS server:

```
/usr/vision/bin/visionfs stop
```

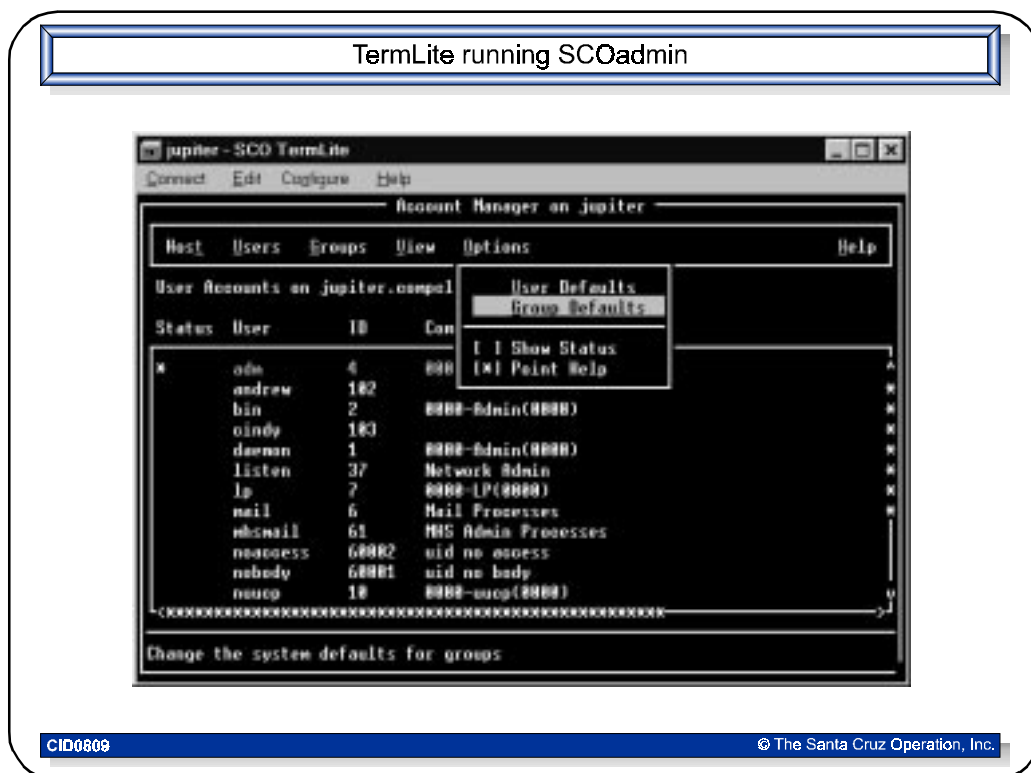
```
/usr/vision/bin/visionfs start
```

Exercise: Adding users

Add one or more UNIX account on the server and run the **password** command to add them to the VisionFS database. Consider using the **--wizard** option to add multiple accounts.

Restart the VisionFS server process to read the updated password database.

AV 8-9



8.6 TermLite

TermLite is a lightweight terminal emulator for Windows that is included with SCO VisionFS. It emulates the ANSI, VT100, and VT320 terminal types, among others.

A version of TermLite is installed on your UnixWare 7 system when VisionFS is installed, and made available in a shared folder. It can also be installed separately from the Optional Services CD-ROM.

AV 8-9: TermLite running SCOadmin

This slide shows SCOadmin running in a TermLite window, using the VT100 terminal type.

To run TermLite from Windows 95, you have two options:

- Run TermLite directly from the share, leaving the executable file on the server.
- For VisionFS, select **Network Neighborhood** ⇒ *server* ⇒ **visiontools** ⇒ **termlite** ⇒ **termlite.exe**

This can also be done using the MS-DOS command line (or **Start** ⇒ **Run**). To do this, enter:

\\server\visiontools\termlite\termlite.exe

- Run the installation program from the share, which installs the TermLite executable on your client machine.
- For VisionFS, select **Network Neighborhood** ⇒ **server** ⇒ **visiontools** ⇒ **termlite** ⇒ **setup.exe**

This can also be done using the MS-DOS command line (or **Start** ⇒ **Run**). To do this, enter:

\\server\visiontools\termlite\termlite.exe

While TermLite is running, to open a connection to a remote system:

- Step 1. Select **Connect** ⇒ **Connect to** from the menu.
- Step 2. Enter the name of the UNIX host in the “Host” field.
- Step 3. Click on **Connect**.
- Step 4. Log in to the UNIX system when prompted to do so.

To change the terminal type that TermLite emulates:

- Step 1. Select **Configure** ⇒ **Terminal** from the TermLite menu.
- Step 2. Click on **Identity**.
- Step 3. Select a terminal type from the “Identity Type” list.

Note that you cannot run TermLite directly from the UnixWare 7 Optional Services CD-ROM; you must install the TermLite package on your UnixWare 7 system first. TermLite is branded/licensed as it copies to the Windows client. If you want to use TermLite without VisionFS, use **ftp**(TC) to transfer `/usr/vision/bin/pctools/en_US/termlite/Termlite.exe` to a Windows system. It will run in evaluation mode and expire after 30 days.

Exercise: Running TermLite from the VisionFS server

- Step 1. Run TermLite from a Windows system leaving the TermLite executable on the VisionFS server.
- Step 2. Run programs such as **vi(1)**, **scoadmin(1M)**, and **setcolor(1)**. Adjust the terminal type if needed.
- Note that SCOadmin may not work correctly unless VT100 terminal emulation is selected.
- Step 3. Select **Configure** ⇔ **Terminal** from the menu.
- Choose yellow text on a blue background.
 - Change the number of lines displayed to 35.
- Step 4. Resize the window so the font is a readable size.
- Step 5. Experiment with other TermLite configuration options.

8.7 Lesson Summary

Today, it is rare to find a network of computers that all use the same operating system. Thus, networking means understanding cross-platform connectivity options. Using SCO VisionFS to provide services to a network of clients running Microsoft Windows is a cost-effective solution that is easy to administer.

Review questions

1. How do you enable new users to access a UNIX server from a PC using VisionFS?
2. How do you change and control access to shared resources?
3. What is the simplest way to share a print attached to a UNIX system?
4. What are two alternatives for running TermLite? What are the advantages and disadvantages of each?

8.8 Relevant Commands, Directories, Shares, and Packages

The following commands, directories, shares, and packages were presented.

Relevant commands

<code>/usr/vision/bin/visionfs</code>	VisionFS server administration tool
<code>winipcfg</code>	A Windows 95 command for displaying IP configuration settings

Relevant UNIX directories

<code>/usr/vision/bin/pctools/en_US</code>	Home of the visiontools shared folder
--	--

Relevant VisionFS shared files

<code>visiontools\visionfs\profedit.exe</code>	The VisionFS Profile Editor
<code>visiontools\docs\vfsintro.pdf</code>	Introducing VisionFS , documentation in Acrobat format (120+ pages)
<code>visiontools\termlite\TermLite.exe</code>	The TermLite executable
<code>visiontools\termlite\Setup.exe</code>	The TermLite installation program

Relevant package names

<code>afps</code>	Advanced File and Print Server
<code>nws</code>	NetWare Services
<code>termlite</code>	TermLite
<code>visionfs</code>	VisionFS
<code>winsrvcs</code>	VisionFS and TermLite

8.9 Answers to Review Questions

1. You must run the VisionFS password wizard whenever a new UNIX account is added and then restart the server. If you attempt to log onto the network with a UNIX account and password that has not been added to the VisionFS password database, access is denied.
2. The **Profile Editor** is used to change access permissions on VisionFS shared resources. It is run from a PC user logged in as **root**, or another account that is authorized to perform VisionFS administration.
3. When VisionFS is started, it automatically shares existing UNIX printers. If you add a new printer, simply restart VisionFS and a share is created for that printer.
4. One alternative for running TermLite is to run it directly from a VisionFS shared folder. This is the easiest way, as there is no client-side installation involved. However, it creates more network traffic, as the TermLite executable must be transferred across the network every time it is used.

A second alternative for running TermLite is to install it on the Windows client. This creates less network traffic, but requires some initial installation work. It also allows you to use TermLite to connect to other systems while the VisionFS server is down.

9

SCO Vision2K Troubleshooting Basics

Introduction

This lesson focuses on the tools and procedures used to analyze and fix problems encountered while using SCO Vision2K products.

Objectives

This lesson describes how SCO Vision2K is used to connect Windows workstations to servers running SCO UNIX operating systems. By the end of this lesson, you will be able to:

- Access SCO Support services
- Troubleshoot basic network problems
- Use the built-in Vision2K diagnostics tools
- Analyze common causes of problems with browsing remote hosts, printing, sending messages, configuring transports, and using SuperVision

9.1 Accessing Online Support Resources

There are many resources for obtaining help with SCO Vision2K products. Use one of these methods:

- Telephone
- Fax and e-mail
- World Wide Web

9.1.1 Contacting Support by telephone

When you call, you should be at your computer and have the product documentation at hand. Be prepared to give the following information.

- The type of hardware that you are using, including network hardware if applicable.
- The operating system that you are using.
- The exact wording of any messages that appeared on your screen.
- A description of what happened and what you were doing when the problem occurred.
- A description of how you tried to solve the problem.
- The name of the supplier of the software.

When calling Technical Support, your inquiry will be logged on to our computerized help-desk system. You will be allocated a unique reference number which you should quote in all further correspondence regarding the inquiry.

These are the telephone contact details for Technical Support:

North & South America

Tel: +1 (831) 425-4726
or (800) 347-4381 (Support Contract
customers only)
Hours: 8am to 5pm Pacific Time.

Europe & International

Tel: +44 (0)113 251 2222
Hours: 08:00 to 17:30 UK time.

9.1.2 Contacting Support by e-mail and fax

Use the form provided in Vision Help to describe your problem, and then send to:

SCO Technical Support fax:

North & South America+1 (831) 427-5443

Europe & International+44 (0)113 251 2223

SCO Technical Support e-mail:

North & South America support@sco.com

Europe & International ukvision@sco.com

9.1.3 World Wide Web support resources

You can visit the SCO Technical Support Web site at <http://www.sco.com/Support>. Then choose **Online Services** ⇒ **SCO Vision2K** ⇒ **SCO Vision2K**. From here, you can access technical articles (TAs), patches, and newsgroups for each of the SCO Vision2K products.

AV 9-1

UNIX Network Status Commands

```
# netstat -in
```

Name	Mtu	Network	Address	Ipkts	Ierrs	Opkts	Oerrs	Coll
net1	1500	132.147.67	132.147.67.4	31831	0	31831	63466	11
lo0	8232	127	127.0.0.1	542501	0	542501	0	0
at10*	8232	none	none	No Statistics Available				

```
# ifconfig -a
```

```
net0: flags=4043<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
      inet 132.147.67.4 netmask fffffff0 broadcast 132.147.67.255
      perf. params: rcv size: 24576; send size: 24576; full-size frames: 1
      ether 02:07:01:19:53:0f
lo0: flags=4049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 8232
      inet 127.0.0.1 netmask ff000000
      perf. params: rcv size: 57344; send size: 57344; full-size frames: 1
at10: flags=404a<BROADCAST,LOOPBACK,RUNNING,MULTICAST> mtu 8232
      inet 0.0.0.0 netmask ff000000
      perf. params: rcv size: 4096; send size: 8192; full-size frames: 1
```

CID0901

© The Santa Cruz Operation, Inc.

AV 9-2

PC Network Status Commands

The screenshot shows the 'IP Configuration' window with the following settings:

- Host Name: SUM
- DNS Servers: (empty)
- Nicad Type: Standard
- NetBIOS Scope Id: (empty)
- IP Routing Enabled: ☐
- WINS Proxy Enabled: ☐
- NetBIOS Resolution Uses DNS: ☐
- Ethernet Adapter Information: ELPCOR Ethernet Adapter
- Adapter Address: 08-00-80-1E-21-F1
- IP Address: 132.147.67.102
- Subnet Mask: 255.255.255.0
- Default Gateway: (empty)
- DHCP Server: (empty)
- Primary WINS Server: (empty)
- Secondary WINS Server: (empty)
- Lease Obtained: (empty)
- Lease Expires: (empty)

Buttons at the bottom: OK, Cancel, Apply, Release All, Renew All.

CID0902

© The Santa Cruz Operation, Inc.

9.2 Basic Network Troubleshooting

The most common cause of trouble with SCO Vision2K products is configuration problems with the underlying networking software. If you are have problems accessing network resources, start troubleshooting with the TCP/IP protocol, as described in the next subsection.

9.2.1 TCP/IP configuration information

In order to test the TCP/IP connection, obtain information about your current configuration parameters.

On SCO UNIX hosts, use the **netstat** and **ifconfig** commands to view TCP/IP information. For example, log in as **root** and enter:

```
# netstat -in
```

If TCP/IP is configured, you will see at least *lo0* and *net0* entries. If more than one network adapter is installed and configured, you will see additional *net* entries. Use the **ifconfig** command to view the TCP/IP parameters. For example:

```
# ifconfig -a
```

AV 9-1: UNIX Network Status Commands

This shows a example output from running the **netstat** and **ifconfig** commands on a UNIX host.

On Windows systems, use the **winipcfg** command (on Windows 95 and 98) to view the TCP/IP configuration. For example:

Step 1. Open a DOS window. Alternately, select **Start** ⇨ **Run**.

Step 2. Enter **winipcfg**.

Step 3. Click on **More Info**.

AV 9-2: PC Network Status Commands

This shows a example output from running the **winipcfg** command on a Windows 98.

The PCs and UNIX hosts must be on the same subnet to communicate using SCO Vision2K. This means they will have the same values for the subnet mask and the network portion of the IP addresses will match.

In these examples, the subnet mask is 255.255.255.0 and the network address is 132.147.67 for both the UNIX and PC systems.

AV 9-3

UNIX Hosts File

```
# more /etc/hosts

#      @(#)hosts,v 6.1 1993/08/21 02:17:48 stevea Exp - STREAMware TCP/IP
source
#      SCCS IDENTIFICATION
127.0.0.1      localhost
132.147.67.4   spider1  spider1.somedom.com
132.147.67.89  agape    agape.somedom.com
132.147.65.30  slim     slim.somedom.com
132.147.67.33  fuji     fuji.somedom.com
132.147.67.41  neccig   neccig.-somedom.com
```

CID0903

© The Santa Cruz Operation, Inc.

AV 9-4

Windows Hosts File

```
c:\> type c:\windows\hosts

# Copyright (c) 1998 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP stack for Windows98
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com          # source server
#       38.25.63.10       x.acme.com              # x client host

127.0.0.1      localhost
132.147.67.89  agape
132.147.65.30  slim
132.147.67.33  fuji
132.147.67.41  neccig
132.147.67.4   spider1
```

CID0904

© The Santa Cruz Operation, Inc.

9.2.2 Testing TCP/IP connectivity

Verify that the PC and UNIX systems can communicate over TCP/IP using **ping**. For example, if the UNIX host IP address is 132.147.67.4, use **ping** from the prompt in a DOS window to test connectivity from a PC. Enter:

```
ping 132.147.67.4
```

Do the same test from the UNIX host using the IP address of the PC. If this fails, either TCP/IP is not configured correctly or you have a hardware problem. See the UNIX and Windows online documentation for TCP/IP troubleshooting information.

Next, verify that *name resolution* is configured. SCO Vision2K products require IP addresses to be mapped to network node names. This is known as name resolution. Again use **ping** on both the UNIX host and the PC, this time with the host name, to test name resolution. For example:

On UNIX hosts, enter:

```
# ping PC-name
```

On PCs, open a DOS window and enter:

```
C:\ ping UNIX-name
```

If you are unable to successfully use TCP/IP utilities such as **ping** and **telnet** with a host name, you have a problem with name resolution. There are several ways to configure name resolution, including DNS and *hosts* files. To simplify troubleshooting, configure *hosts* files on both the PC and UNIX systems to map network node names to IP addresses.

The UNIX and Windows *hosts* files have the same format:

```
IPaddress host-name fully-qualified-domain-name
```

On Windows, the *hosts* file is in *C:\Windows*. On UNIX, the *hosts* file is in */etc*.

AV 9-3: UNIX Hosts File

This shows an example */etc/hosts* file on a UNIX host.

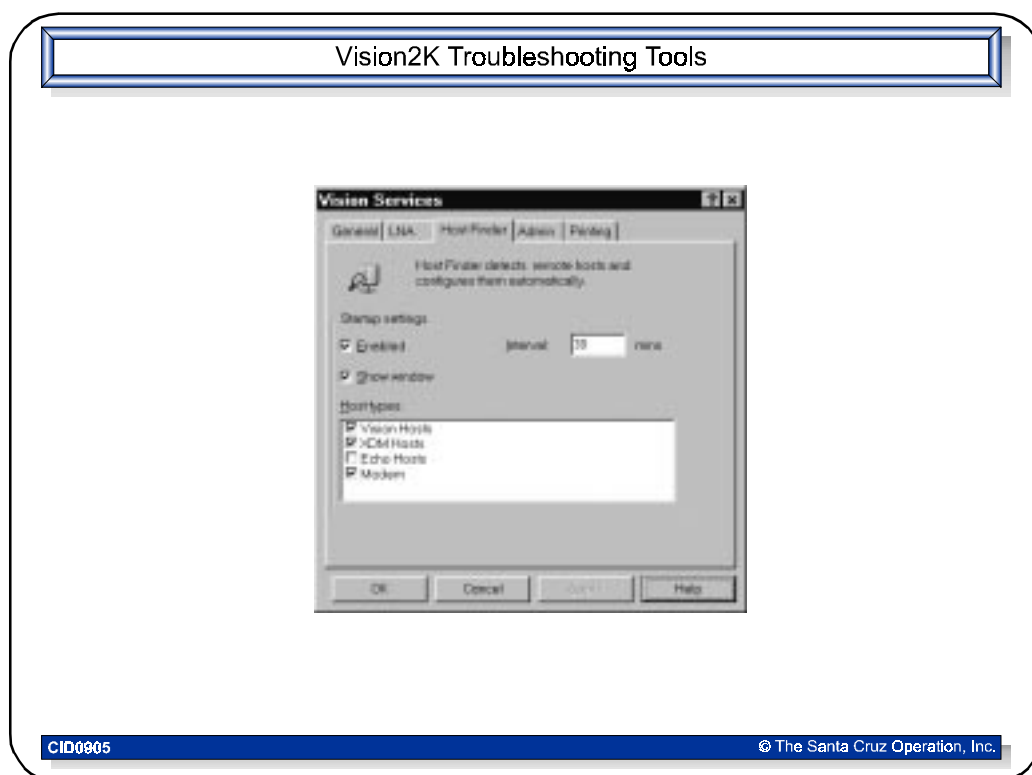
AV 9-4: Windows Hosts File

This shows an example *c:\windows\hosts* file on a PC. Note that this file was created by copying the sample hosts file *c:\windows\hosts.sam*. Also note that only node names are included in the PC *hosts* file. It is not absolutely necessary to use fully-qualified domain names on either system.

If your network uses DNS for name resolution, verify that your PC has DNS enabled and is configured with the correct IP addresses for the primary and secondary DNS servers. Also make sure that your UNIX host has DNS configured correctly. Use the **nslookup** command on the UNIX host to check the entries for your systems.

When you can successfully connect to all systems using **ping** with host names, try to browse from the PC.

AV 9-5



9.3 Using Vision2K Diagnostic Tools

SCO Vision2K can be configured to display messages from several subsystems to help you see where problems are originating. By default, these are not displayed. However, you can configure each service to show messages in a window through the **Vision Services** manager in the **Control Panel**.

For example, to set **Vision Services** to display messages relating to how UNIX hosts are detected:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**.
- Step 2. Double-click on **Vision Services**.
- Step 3. Choose the **Host Finder** tab.
- Step 4. Select the “Show window” option.
- Step 5. Click on **Apply**.

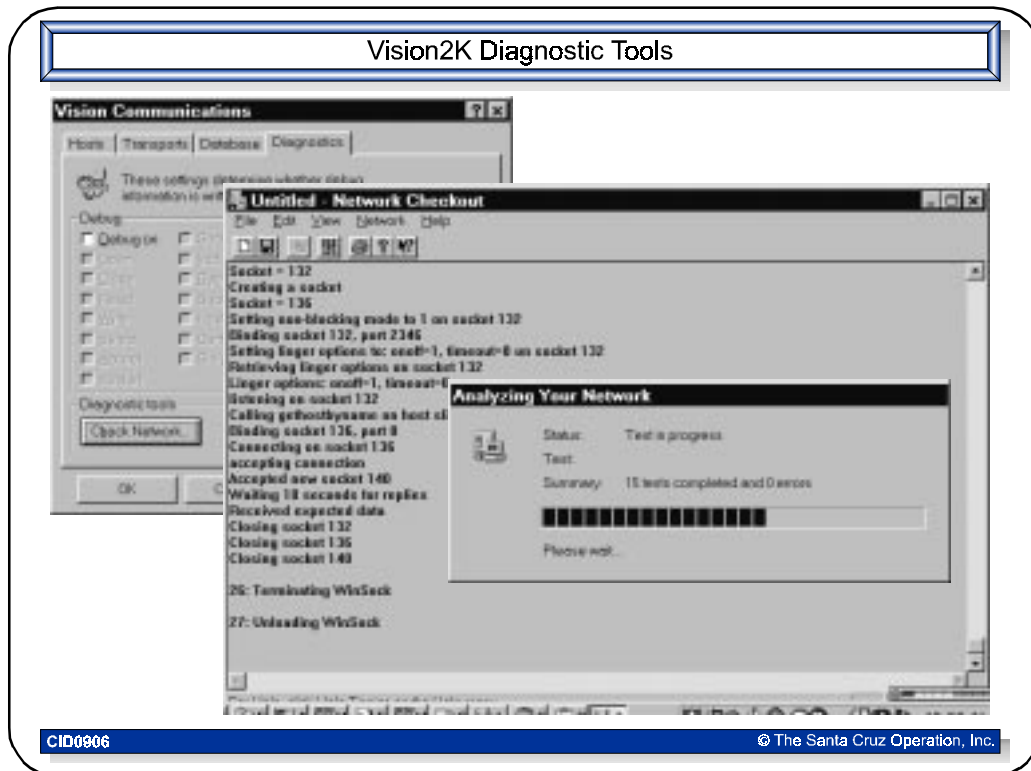
You can set this option for each service configured from the **Vision Services** icon. You can also display messages related to Vision transports and connectivity from the **Vision Communications** icon in the **Control Panel**. To enable message display:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**
- Step 2. Double-click on **Vision Communications**.
- Step 3. Choose the **Database** tab.
- Step 4. Select the “Show window” option
- Step 5. Click on **Apply**.

AV 9-5: Vision Services Troubleshooting

This shows how you can configure **Vision Services** to show messages related to how hosts are detected.

AV 9-6



Vision Communications also has an extensive set of debugging facilities, configured through the **Diagnostics** tab. By default, debugging is turned off. It generates a large amount of log file data, which can rapidly use disk space.

Notice the **Check Network** button that is available from **Vision Communications**. This brings up a window from which you can configure and run a set of tests that communicate with hosts over the network.

AV 9-6: Vision Diagnostic Tools

This shows **Vision Communication** diagnostics running after starting from the **Check Network** button on the **Diagnostics** tab.

9.4 Problems Browsing

The most common causes for browsing problems are:

- TCP/IP configuration is incorrect—usually related to subnet masks and name resolution (see Section 9.2.1, “TCP/IP configuration information”)
- Microsoft Networking configuration parameters are incorrect
- Passwords don’t match
- UNIX server processes are not running

Check these areas as described in the next sections and try browsing again.

9.4.1 Microsoft networking configuration parameters

On the PC, select **Start** ⇒ **Settings** ⇒ **Control Panel** ⇒ **Networking** and check these configuration parameters:

Configuration tab	Select Client for Microsoft Networks ⇒ Properties and set “Network logon options” to “Logon and restore network connections.” Select File and printer for Microsoft Networks ⇒ Properties and set “Browse Master” to “Automatic.”
Identification tab	Check the “Workgroup” setting. If you can’t see other PCs, make sure all PCs have the same value.
Access Control tab	Set to “Share-level access control.”

9.4.2 Passwords

If you are unable to browse other systems on the network, it might be due to password conflicts. UNIX, VisionFS, and Windows all use passwords, and they might all be set to different values. To simplify debugging access problems, reset all passwords to the same value. To do this:

On the UNIX host:

Step 1. Change the user's UNIX password using the **passwd** command.

Step 2. Set the VisionFS password to the same value using this command line:

```
/usr/vision/bin/visionfs password --amend user-name password
```

where *password* is the same used for the UNIX account.

On the PC:

Step 3. Select **Start** ⇒ **Find** ⇒ **Files or Folders**.

Step 4. Enter ***.pwl** in the "Named" field.

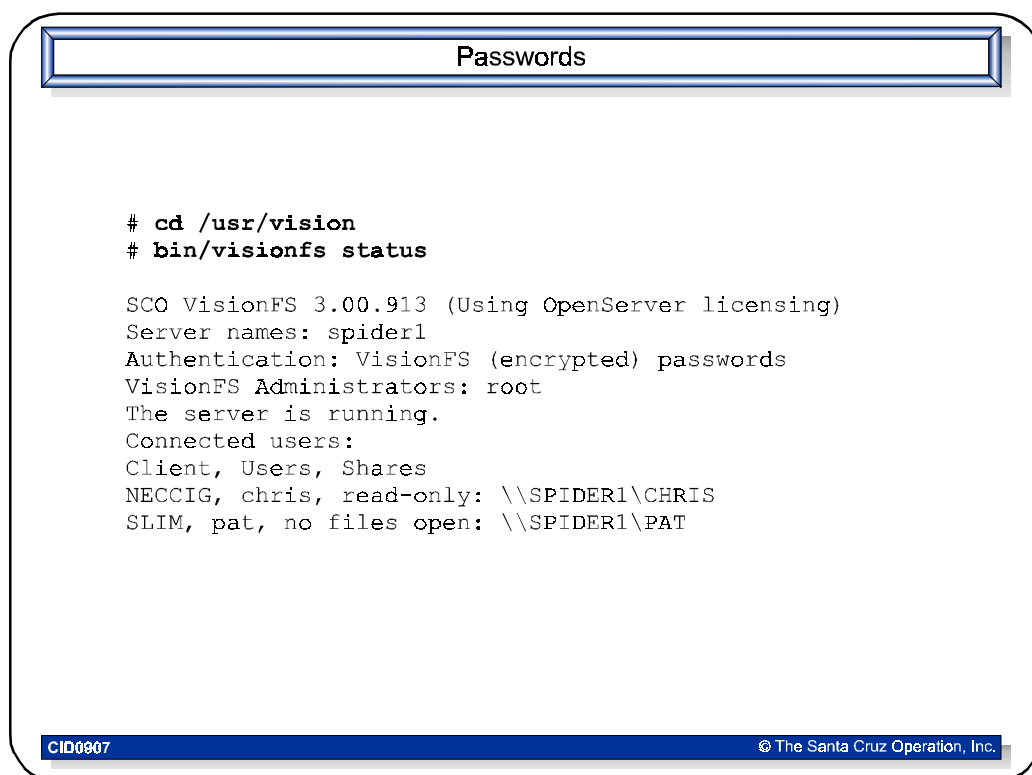
Step 5. Remove all *.pwl* files

Step 6. Log off and back in using the password set on the UNIX host.

Another problem with passwords occurs when the UNIX host and PC(s) are configured to use different password encryption schemes. Some versions of Windows, such as Windows 98, and Vision products, such as VisionFS 3.0, use encryption. Windows 95 and earlier versions of VisionFS do not use encrypted passwords by default.

While it is possible to configure Vision2K to use unencrypted passwords, it is recommended you configure Windows PC to enable use of encryption. For some versions of Windows, this requires you to install security patches.

AV 9-7



To determine whether VisionFS is using (UNIX) unencrypted or encrypted passwords:

- Step 1. Log into the UNIX host running the VisionFS server as **root**.
- Step 2. Change to the directory containing the VisionFS files (usually `/usr/vision` or `/usr/local/vision`)
- Step 3. Run the VisionFS **status** command. Enter:

```
./visionfs status
```

You will see a listing of the current status of the VisionFS server, including what type of passwords the server is currently using; UNIX (unencrypted) passwords or VisionFS (encrypted) passwords.

AV 9-7: VisionFS Password Encryption

This slide shows example output from the **visionfs status** command.

To change the type of passwords used, run the VisionFS **setup** program. Select the type of password scheme that matches your Windows PCs.

- Step 1. As **root**, in the VisionFS directory, enter:

```
bin/visionfs setup
```

- Step 2. Enter **n** when prompted to accept the current settings.

During **setup**, you are prompted to change several server settings. Choose the options that leave other VisionFS settings intact.

- Step 3. When prompted to change the type of password/authentication method, enter **y**.

- Step 4. Select either **u** to configure unencrypted passwords, or **v** for encrypted (VisionFS) passwords.

- Step 5. Continue through the prompts, retaining your original server settings.

- Step 6. Run the password wizard to reset passwords. Enter:

```
bin/visionfs --password wizard
```

- Step 7. Restart VisionFS. Enter:

```
bin/visionfs restart
```

To determine whether your Windows 95 or 98 PC is using encrypted passwords, check the Windows registry. You can also modify the configuration to use unencrypted passwords by editing the registry using the **Registry Editor**.

WARNING: Using the **Registry Editor** incorrectly can cause serious, system-wide problems that may require you to reinstall Windows. Use this tool at your own risk. Back up the registry before editing, and create a Windows boot disk.

Step 1. Select **Start** ⇒ **Run**. Enter the **regedit** command:

regedit

Step 2. Double-click on the folder for the HKEY_LOCAL_MACHINE key.

Step 3. Double-click on the folder for the System key.

Step 4. Double-click on the folder for the CurrentControlSet key.

Step 5. Double-click on the folder for the Services key.

Step 6. Double-click on the folder for the VxD key.

Step 7. Double-click on the folder for the VNETSUP key.

Step 8. Note the value of EnablePlainTextPassword in the right pane of the window. If data is set to 0, encryption is configured. If set to 1, plain text passwords are configured.

Step 9. To change the setting, double-click on EnablePlainTextPassword.

Step 10. Enter value data 0 to enable encryptions, or 1 to disable.

Step 11. Click on **OK**.

Step 12. Exit from the registry editor program. Select **Registry** ⇒ **Exit**.

Step 13. Reboot the Windows PC.

9.4.3 Checking Vision2K UNIX processes

To determine which Vision server processes are running on the UNIX host, use the command line:

```
# ps -ef | grep vision
```

Depending on the Vision2K products you have installed, some or all of these processes will be running:

```
root 2645      1  0.0 14:59:53 ?? 0:00.65 /usr/local/vision/bin/lina -b
root 2649      1  0.0 15:00:03 ?? 0:00.98 /usr/local/vision/bin/licsrv -p7
root 2653      1  0.0 14:59:53 ?? 0:00.05 /usr/local/vision/bin/logsrv -p7
root 2655      1  0.0 14:59:53 ?? 0:01.53 /usr/local/vision/bin/nsmsrv -p7
root 2662      1  0.0 15:00:04 ?? 0:00.08 /usr/local/vision/bin/authsrv -p7
root 4306      1  0.0 15:59:11 ?? 0:00.08 /usr/local/vision/bin/tsrv -p7
root 8635    8607  0.0 17:59:49 ttyt1 0:00.01 grep vision
```

If some or all Vision process are not running, determine the reason by looking at the log file. For example, enter:

```
# more /usr/vision/log/vweventlog
```

These types of errors messages:

```
licsrv: Initialise: Gethostbyname failed errno 114
```

```
licsrv: Initialise: Gethostbyname failed errno 115
```

indicate that there is a problem with name resolution. That is, TCP/IP is failing when resolving host names to an IP address, or when trying to contact a host name. See Section 9.2.2, “Testing TCP/IP connectivity,” on page 9-9 for information about solving name resolution problems.

9.4.3.1 SCO VisionFS will not start

SCO VisionFS does not start by default after installation. You must first run the password wizard to create the VisionFS password database and start the VisionFS server manually the first time. It will then start by default every time the system is rebooted.

Remember, it is best to create the UNIX accounts for PC users and then run the password wizard. If you create new UNIX accounts after running the wizard, you will either need to re-run the wizard, or use the **visionfs password** command to add a VisionFS password for the new accounts before they will be able to access shared resources.

9.5 Problems Accessing Resources

Error messages such as “Connection refused” or “Access denied” are usually related to problems in one of these areas:

- Passwords (see Section 9.4.2, “Passwords,” on page 9-17)
- Permissions
- Licenses

9.5.1 Permission problems

To access files and directories on remote UNIX hosts from a PC, you must have permissions set appropriately on the UNIX system. You can view the UNIX permissions from a PC using the **Unix** or **Network Neighborhood** browsers, clicking on the file icon, and selecting **File** ⇨ **Properties**. However, this does not show you the owner.

If you are unable change permissions on a UNIX resource from the PC—you check boxes, click on **OK**, and they go back to being unchecked—you do not have permission to change the file. You will need to log onto UNIX as **root** or the owner and set permissions or ownership using **chmod**.

9.5.2 License problems

The most common license-related problems are:

- The license server process is not running (see Section 9.4.3, “Checking Vision2K UNIX processes,” on page 9-21)
- Vision Services are not running on the PC
- The demonstration licenses have not been upgraded
- A Vision Resume license has not been applied on the UNIX host

When starting a Vision family product, this error can occur if Vision Services are not running on the PC:

A valid license could not be obtained. This may be because your license has expired, or that all available licenses are already in use by others.

To start Vision Services:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**.
- Step 2. Double-click on **Vision Services**.
- Step 3. Click on **Startup**.
- Step 4. Click on **OK**.

You might see several pop-up windows with licensing information, or attempts to connect to UNIX hosts using various transports.

If you have installed Vision2K products without a license, the products will not function after expiring. You must obtain valid licenses, and upgrade the products with these licenses as described in Section 7.10.1, “Upgrading the demonstration license,” on page 7-38.

There is a problem using SCO Vision Resume with a demonstration license. Installing a Vision Resume license using the standard command for installing a Vision family product license fails. The standard command is:

```
VISIONDIR/bin/licadmin -a
```

where *VISIONDIR* is the directory where Vision Services for UNIX is installed.

This is because Vision Resume license numbers have a product code of 353 and the product database file, *prodinfo.dat*, does not contain this product code.

To solve this problem, instead use this command:

```
VISIONDIR/bin/xresume -licadd license-number
```

9.6 Problems Printing

The most common trouble areas with remote printing are caused by one of these problems:

- Name resolution—the PCs and host(s) cannot locate each other using the network node name (see Section 9.2.2, “Testing TCP/IP connectivity,” on page 9-9)
- Printer names do not match on the the PC and host
- The UNIX server does not have a `hosts.lpd` file configured to allow access from a remote system
- Problems with carriage return/new line mapping

Check each of these basic configuration areas to locating the source of printing problems. As with other Vision services, it might be helpful to show the Vision print service messages.

To set **Vision Services** to display printing messages:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**
- Step 2. Double-click on **Vision Services**.
- Step 3. Choose the **Printing** tab.
- Step 4. Select the “Show window” option
- Step 5. Click on **Apply**.

9.6.1 Enabling remote access to the UNIX host

On some UNIX systems, you must configure an `/etc/hosts.lpd` file to allow it to accept print requests from any more system.

Check your UNIX system manual pages for **lp**, **lpd**, `hosts.lpd`, or **lpssystem** for help.

9.6.2 Printer names

You must specify the same printer name on both the UNIX host and PC so that the remote print services can find the intended printers on the remote system.

When configuring a printer on PC to print to a remote UNIX host, make sure the printer name set in **Vision Services** *exactly* matches the UNIX printer name. There are several fields where names are entered and it is easy to accidentally enter the wrong one.

Likewise, when configuring UNIX to print to a remote printer attached to a PC, make sure the printer name configured on UNIX matches the PC printer name.

9.6.3 Problems with carriage return/line feed

When printing to a printer attached to a PC, you might have a problem where the lines of text don't all start at the left margin of the page. Instead, they *stair-step* across the page, like this:

```
Test print
      line two
            line three
                  line four
```

The reason for this is that Windows use two characters to indicate the end of a line of text:

- Carriage return (CR) which ensures the next character to be printed appears at the beginning of a line
- Linefeed (LF) which ensures the next character to be printed appears vertically below where it would otherwise appear.

UNIX hosts use only one, LF. This means a raw UNIX text file will show lines being moved vertically down the page, but not returning to the beginning of the line near the left margin of the paper.

To solve this problem, enable conversion of LF to CR-LF when a file is being printed on the PC. To do this for the 32-bit Vision Family applications:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**,
- Step 2. Double-click on the **Vision Services** icon.
- Step 3. Choose the **Printing** tab.
- Step 4. Select the printer from the list.
- Step 5. Click on **Edit**.
- Step 6. Click on **Newling Mapping**.
- Step 7. Click on **Ok**.

Note that some laser printer manufacturers now allow the printer to map CR to CR-LF. This is often configured using the printer's LCD panel.

9.7 Problems Sending and Displaying Messages

If you are unable to view users to send messages, and receive an error message about the Name Space Manager, check to see if the **nsmsrv** process is running on the UNIX host using the **ps** command. For example:

```
ps -ef | grep nsmsrv
```

If it is not running, restart **Vision Services**. Enter:

```
/usr/vision/bin/v2k restart
```

Verify the **nsmsrv** process is running using the **ps** command and then try again to send a message from a PC.

This might also be caused by modifying or creating new transports. See Section 9.9, “Problems with Transports,” on page 9-29.

9.8 Problems with SuperVision

These are the most common problems using SuperVision

- PCs are not automatically added to the administration database. You must manually add each PC using **Administration Workbench** before it can be administered by SuperVision.
- You are unable to run **Administration Workbench** because you are not logged in as an administrator. Add the UNIX user name to the `/usr/vision/etc/visionpriv` file on the UNIX host and restart the Vision2K server daemons. See Section 7.3, “Using the Administration Workbench,” on page 7-9.
- There is a problem with the transport that prevents the UNIX host from being seen by the PC (see Section 9.9, “Problems with Transports,” on page 9-29)
- You cannot force an update from the **Administration Workbench** unless you have first selected a PC or group to which the update applies.

9.9 Problems with Transports

When **Vision Services** start on the PC (denoted by the Vision product 'splash' screen), they broadcast around the network using the available transports to establish the presence of Vision hosts, particularly the host running the Master Name Space Manager. There is a problem whereby only *automatic* transports allow detection of Vision Hosts. An automatic transport is one that appears in the **Transport** tab of **Vision Communications** with the automatic property set to “Yes.”

This restricts use of **Admin Workbench** and the **User Viewer**, as it is possible that **Vision Services** don't have the transports available to detect a Vision host. Connections to these fail with the message:

Could not find Name Space Manager

Despite this, browsing, licensing, USP connections via Proxy, and other Vision Services are available.

To solve this, add USP-TCP, USP via Proxy, or the USP transport you have created, to the 'automatic' list:

- Step 1. Select **Start** ⇒ **Settings** ⇒ **Control Panel**,
- Step 2. Double-click on the **Vision Communications** icon.
- Step 3. Choose the **Transports** tab. Select the transport causing problems.
- Step 4. Click on **Properties**.
- Step 5. Select 'Include this transport in automatic selection?'
- Step 6. Click on **Apply**.
- Step 7. Click on OK to exit the **Transport Properties** window.
- Step 8. Click on OK to exit the **Vision Communications** window.

9.10 Lesson Summary

Network configuration problems can cause SCO Vision2K products to work improperly. This lesson provides basic troubleshooting information to help you identify and solve the most common problems encountered with Vision2K products.

Generally, problems with Vision2K have their origin in the underlying TCP/IP configuration. Approach problem resolution by first checking that you can communicate between systems using basic TCP/IP commands.

Review questions

1. Which commands provide information about TCP/IP configuration?
2. What is name resolution and why is it critical to Vision2K?
3. What are some common reasons for browsing to fail?
4. What are some common problems with passwords?

9.11 Relevant Commands

The following commands and files were presented.

Relevant commands

chmod	UNIX command for changing file properties
ifconfig	UNIX network interface configuration commands
lp, lpd, lpsystem	UNIX print subsystem commands
ping	Command to test TCP/IP connectivity
ps	UNIX process status command
netstat	UNIX command that displays network interface information
nslookup	UNIX command for viewing IP address mappings to host names
regedit	Windows tool for editing the registry
/usr/vision/bin/licadmin	Vision2K setup tool
/usr/vision/bin/v2k	Vision2K setup tool
/usr/vision/bin/visionfs	VisionFS server administration tool
/usr/vision/bin/xresume	Vision2K setup tool
winipcfg	Windows 95 command for displaying IP configuration settings

Relevant directories

<i>c:\windows\hosts</i>	TCP/IP address to name mapping file for Windows
<i>/etc/hosts</i>	TCP/IP address to name mapping file for UNIX
<i>/etc/hosts.lpd</i>	Configuration file used by LPD to determine which remote systems can print locally
<i>/usr/vision/prodinfo.dat</i>	Licensing data file
<i>/usr/vision/log/vweventlog</i>	Log file for Vision2K events

9.12 Answers to Review Questions

The answers to the review questions found in Section 9.10, “Lesson Summary,” on page 9-30 are provided in this section.

1. On UNIX systems, use the **netstat** and **ifconfig** commands to view information about TCP/IP. On Windows 95 and 98 systems, use the **winipcfg** command.
2. Name resolution is the mapping of IP addresses to network host (node) names. It is critical to SCO Vision2K because systems contact each other using names, not IP addresses. TCP/IP must map the host name to an IP address in order to contact the correct node.
3. Browning can fail for several reasons. Among the most common are:
 - You have logged onto the network with the wrong password
 - Name resolution is not working properly
 - Other networking parameters are incorrect
 - UNIX server processes are not running
4. Common problems with passwords:
 - UNIX, Windows, and Vision passwords don't match
 - PCs are using unencrypted passwords and the UNIX Vision server uses encrypted

