BocaVision™

Thin Clients

Administrator's Manual

for ThinBoot

Boca Vision

with Citrix ICA® Support

Model: WTCD

10BaseT ICA Windows Terminal
Installation Software

BOCA RESEARCH

Please locate the enclosed registration card, fill it out, and return it. Registering your product enables us to better serve you in the event your BocaVision unit(s) requires service.

Boca Research designs, manufactures, markets and supports quality, cost-effective Internet access/thin client/server computing devices, data communications and networking products to facilitate the transmission of information on personal computers, computer networks and the Internet.

The Company also markets its products under the Global Village brand name and sells them worldwide through distributors, original equipment manufacturers (OEMs) and retailers. Boca Research is a U.S. corporation headquartered in Boca Raton, Florida with international operations and ventures worldwide.

Boca Research's WEB address: http://www.bocaresearch.com

Contents

1—Introduction

BocaVision Thin Clients enable inexpensive access to corporate (WinFrame and MetaFrame) network servers. Built-in browser software with open ISP support provides a variety of user options. Configured with a 10BaseT Ethernet connection, monitor (or TV), keyboard, mouse and/or printer, BocaVision delivers exciting network access solutions.

Components

- Network Management Software (ThinBoot) CD
- Administrator's Manual
- Registration card

2—Installing Server Software

Overview of the BocaVision Network Configuration

The diagram on the next page represents a sample network configuration. Installations will vary. Generally, however, workstations are connected to an RJ-45 wall jack with 10BaseT cable running to a centralized hub. The network server is connected to one of the ports in the Ethernet hub.

Sample Configuration

Network Server

Hub (Example)

WT120 workstations

TV (or video projector) for Board Room/Conference Room Presentations/ Demos
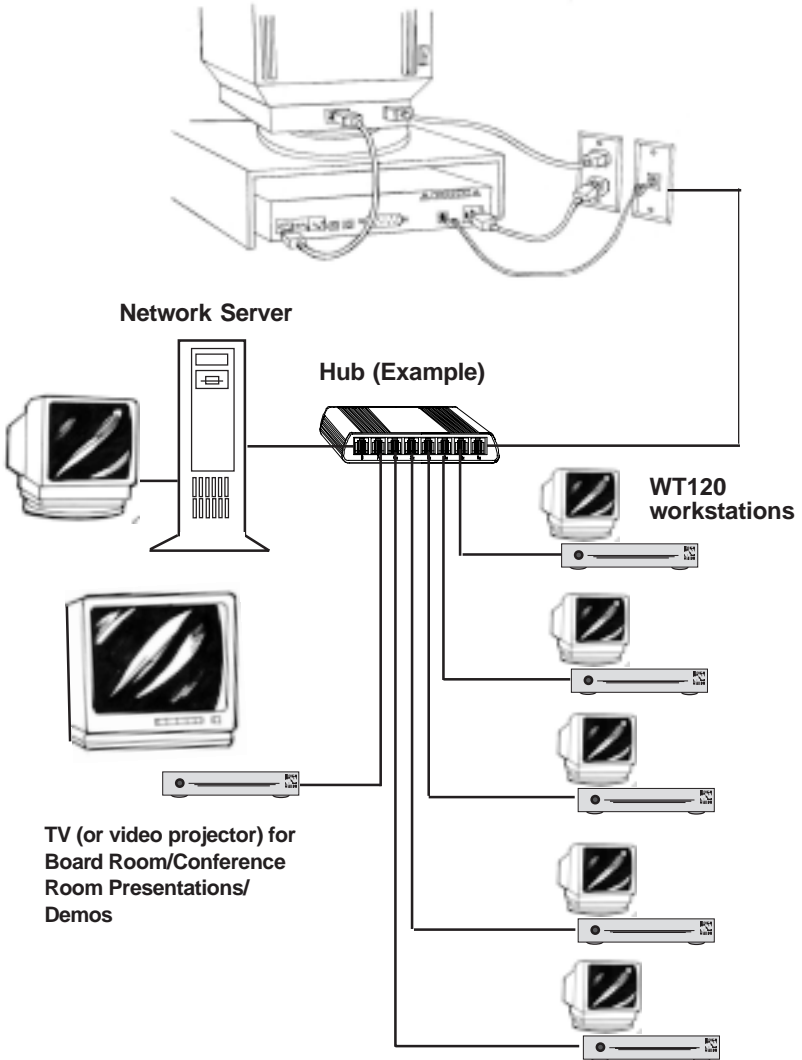
Introduction to Server Software

The bundled Server Software (on CD) allows BocaVision Thin Clients to be used with a Microsoft® Windows NT® Server 4.0, Terminal Server Edition, and Citrix® MetaFrame™ or Windows NT 4.0 and Citrix WinFrame to run Windows applications.

This section of the Administrator's Manual describes how to install the Server Software and set up and configure a Microsoft Windows NT Server 4.0 Terminal Server edition (WTS) or Windows NT Server 4.0 to enable BocaVision Thin Client devices to boot from and use a MetaFrame or WinFrame for loading Windows applications.

The sample configuration values presented are for demonstration purposes only. Use configuration values which are appropriate for your installation site. Microsoft DHCP server supplied with the NT 4.0 product is used to assign IP addresses to the client devices.

It is assumed that you have a working WTS 4.0 system and are familiar with the following:

- Microsoft Windows NT Server 4.0 or Windows NT 4.0 administration and configuration
- Citrix MetaFrame or WinFrame administration and configuration
- Networking TCP/IP protocol

Server Requirements

Software:

• Microsoft Windows NT Server 4.0, Terminal Server Edition and Citrix MetaFrame 1.0 (or later) or Windows NT Server 4.0 and Citrix WinFrame.

Hardware:

• Standard minimum requirements for Windows NT plus 5 additional MB of free hard disk space.

• Memory: 32MB (Server)
4-12MB (per user depending on the application).

The page file should be at least one and a half (1.5) times that of , but not more than double the amount of RAM (<u>example</u>: if RAM is 8MB, page file should be between 12MB and 16MB).

• LAN: Ethernet 10BaseT network interface and cabling

Client Systems Requirements:

• All systems networked using an Ethernet 10BaseT network.

• VGA-compatible monitor (Super VGA or better preferred).

Prerequisites

It is assumed that Windows NT 4.0 Terminal Server Edition or Windows NT Server 4.0 has been installed and configured prior to continuing. Also ensure that the network is running correctly and that the following protocols have been installed and are operating correctly:

• TCP/IP

Make certain that Citrix MetaFrame or WinFrame has already been installed and configured, including support for ICA-TCP sessions, and that user licenses have been added.

Installation Sequence Overview

• Install the Server Software from the ThinBoot CD by following the instructions on the next two pages.

• If you have not done so already, install the Microsoft DHCP server using the Network option from the Control Panel. The Windows NT installation media is required for this.

• Add a user, "ThinBoot" with a password of "thinboot". This is required for the client to attach to the server.

• Set up workstations. Refer to the User's Handbook for cabling and component connections. The Hardware Reference Guide on the Installation CD (in PDF format) provides instructions for connecting the BocaVision unit to a television and VCR.

NOTE: If during MetaFrame or WinFrame installation, you chose to reassign the server's drive letter designation, then substitute the appropriate drive letter.

ThinBoot Installation

IMPORTANT: Make sure the BocaVision WT120 CD is present in your CD-ROM drive. Windows NT will auto-detect the CD and you will be presented with the Main Menu as shown to the right. Select one of the four options or exit. To re-start the CD manually, click the **Start** button, then **Run**. Type **D:\START** and click **OK**. If 'D:' is not the CD-ROM drive letter, substitute the correct letter. At the main screen, you may select any of the four options presented. Continue on the next page for additional option screens.
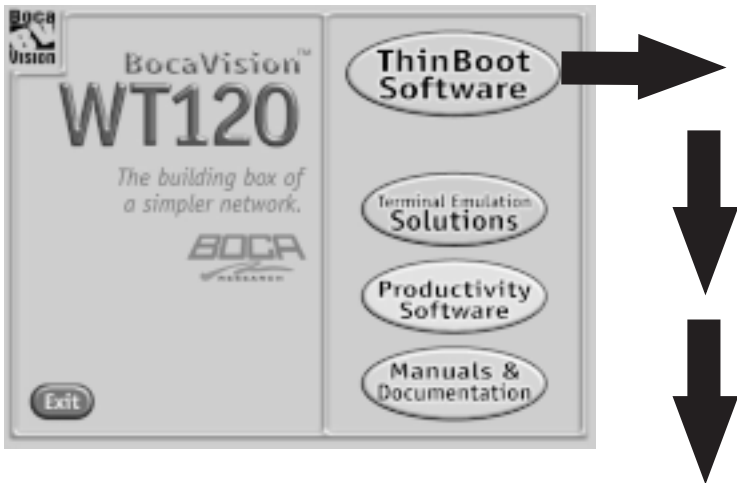
NOTE: When you install the ThinBoot Software, a BocaVision Client Administrator Control utility is also installed. This allows you to set or change Boot options, Browser Options, Proxy Server options, as well as the Citrix Server IP address or name. Simply click the **Start** button, then **Programs**. Select the **BocaVision** Group and choose **BV Client Administrator**. See *Section 4—Advanced Configuration Options* for details.

• Choose Terminal Emulation Solutions for three trial modules: TunEMUL, TunNET, and SQL.

• Free productivity software. Full documentation included. See next selection screen.

• View manuals and documentation using Adobe's Acrobat Reader. See Appendix E for instructions on its use.

Configuring the Server

Sharing the Boot Directory

1. Open the Windows NT Explorer by clicking on **Start**... **Programs**... **Windows NT Explorer**. Browse to the directory where you installed the ThinBoot Server Software.

2. Right-click on the ThinBoot directory and select **Sharing**.

3. Click on the **Shared As** radio button and type "ThinBoot$" in the share name box.

4. Click on the Permissions button to open the Access through Share Permisisons Window and set them to "Everyone" if not already set. Click OK to close this window. A pop-up box will appear stating that resources will not be accessible from MS-DOS workstations. Click **Yes** to continue.

5. Click **Apply,** then **OK**. Close the Explorer.

Adding the Default ThinBoot User

1. Open the **User Manager for Domains** (found in **Administrative Tools**).

2. Select the **User ... New User** menu option.

3. Type "ThinBoot" in the User Name field. Next, type "thinboot" in the **Password** and **Confirm password** fields.

4. Make sure only the **User Cannot Change Password** and **Password Never Expires** boxes are checked.

5. Click on the **Groups** button, select **Users** in the **Member Of:** box and click **Remove**.

6. Click **OK**, **Add,** then **Close**.

7. Select the user "ThinBoot". On the **Policies** menu, select **User Rights**...

   • In the **User Rights Policy** window, select **Log on Locally** from the **Right** drop down menu..
   • In the **Grant** pane, select **Everyone**, (if it is there) then press **Remove**.
   • Click **OK** to close the **User Rights Policy** window.

• Close the **User Manager** window.

Default ThinBoot user setup is complete.

The above has created a user "ThinBoot" with a password of "thinboot". This user has permissions allowing a mount (to allow booting of the BocaVision unit), but not a login.

Configuring the Microsoft DHCP Server

These instructions assume that the DHCP Server has not yet been installed. If you have already installed the DHCP server, skip this section and continue with "Overview of the Client Boot Sequence".

1. Install the Microsoft DHCP server using the **Network** option in the **Control Panel**.

2. Click on the **Services Tab**, then the **Add** button. Select **Microsoft DHCP Server** and click **OK** twice. You will then need to restart the computer before continuing.

3. Run the DHCP Manager application (inside Administrative Tools) and configure it as follows:

4. Double-click on the **Local Machine** and then the menu option **Scope... Create.** Add start and end IP addresses for the IP address pool and fill in your subnet mask. You may optionally type in any IP address you wish to exclude, as well as configure the "Lease Duration" options, and type in a name and comment in the appropriate fields.
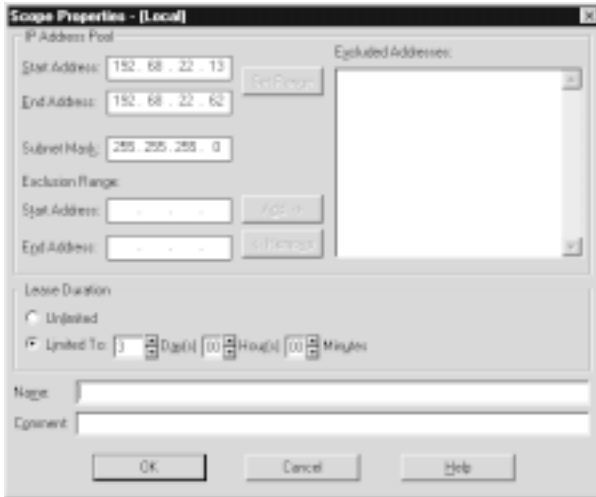
5. Click **OK** and then answer **YES** to activate the new scope.

6. Select the **DHCP_Options ... Scope** menu option and make the
   following option active with the value:

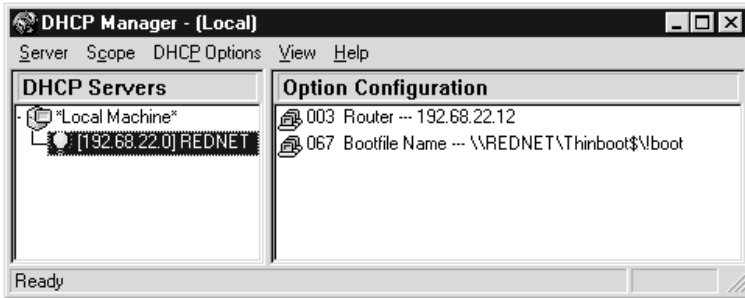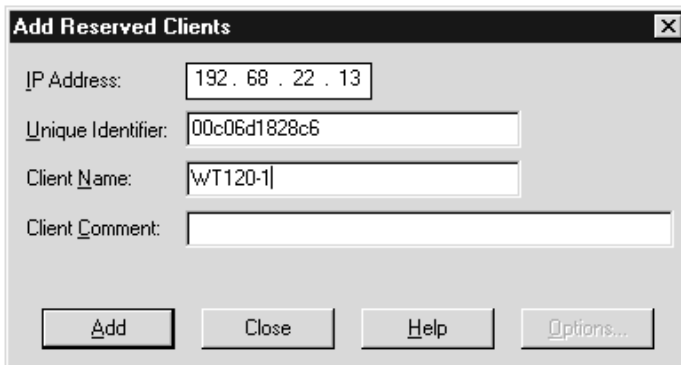   **067 Bootfile Name:** \\<Computer Name> \Thinboot$\!Boot

where <Computer Name> is the name of the computer (as shown in the
Network dialog box in the **Control Panel**.
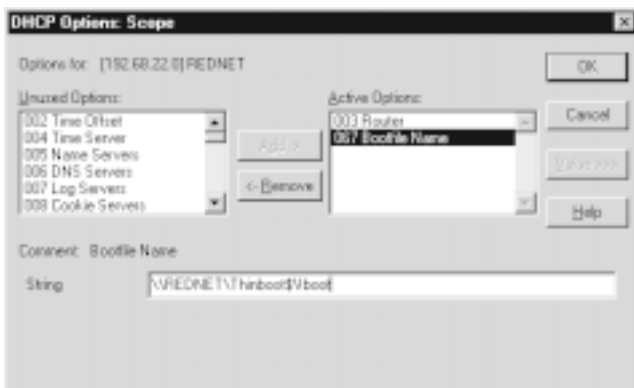
6. You will also need to add the **'003 Router'** option, using the address of the Server.

```
DHCP Manager - (Local)                                    _ □ ×
 Server  Scope  DHCP Options  View  Help
 DHCP Servers                  Option Configuration
 *Local Machine*               003  Router --- 192.68.22.12
   [192.68.22.0] REDNET        067  Bootfile Name --- \\REDNET\Thinboot$\!boot

 Ready
```

7. Select the **Scope ... Add Reservations** menu option and then add the reserved IP addresses for the client machines. For example:

```
Add Reserved Clients                                        ×

 IP Address:        192 . 68 . 22 . 13

 Unique Identifier:  00c06d1828c6

 Client Name:        WT120-1

 Client Comment:

   Add           Close         Help         Options...
```

This **IP address** will be allocated to the specified client. The **Unique Identifier** is the Ethernet MAC address (physical address) of the client, which is found on the outside of the box or on the bottom of the unit, and will be displayed on screen when the unit is switched on. Other clients can be added using this method, however, we recommend testing with one client initially.

Close the DHCP Manager application. It should now be possible to connect the client to the network. Power on the client system and ensure that it is able to find its IP address from the server.

If all elements have been correctly configured, the clients should boot into the opening screen similar to the example shown here:


Client Boot Sequence

When the client system is powered on, its boot sequence is as follows:

1. Client broadcasts its physical (MAC) address in a bootp message.

2. The DHCP Server recognizes this message and checks its database to see if the hardware address is listed. If so, it sends a bootp reply to the client, which includes the client's IP address, netmask, and bootfile location. The client reads its IP address, netmask, and bootfile location from this reply, and any remaining information is discarded.

3. The client logs in as user 'ThinBoot' with the password 'thinboot' and runs the specified bootfile, which downloads necessary software to the client and presents the opening screen as shown previously.

3—Configuration Options

NOTE: When you install ThinBoot Software, a BocaVision Client Administrator Control utility is also installed. This allows you to set or change Boot options, Browser Options, Proxy Support for the Browser as well as the Citrix Server IP address or name. Simply click the **Start** button, then **Programs**. Select the **BocaVision** Group and choose **BV Client Administrator**.
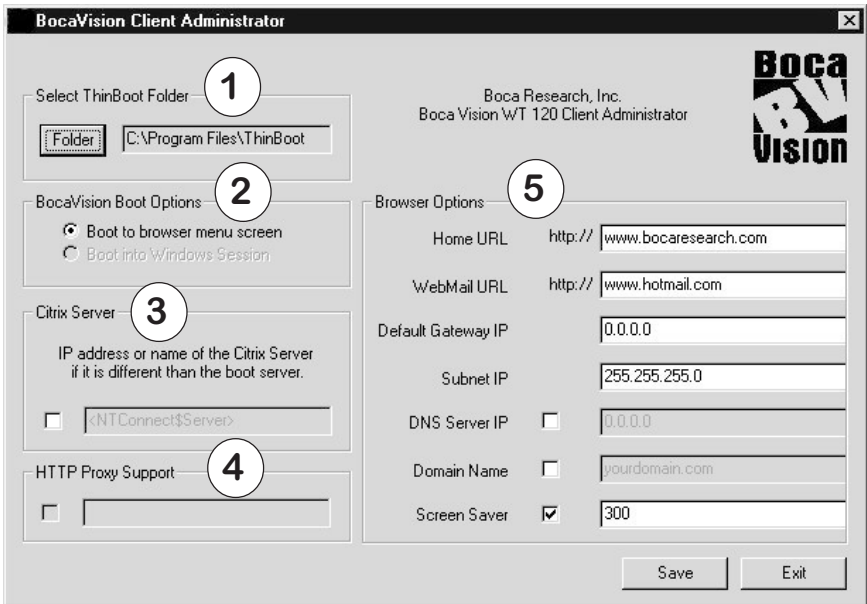
① Select ThinBoot Folder

This field shows the current ThinBoot folder being configured.

- To choose a different folder, click on the Folder button and browse to the new location. If you have made changes to the current configuration, you will be asked to confirm or discard these changes.

- Click OK to update the BocaVision Client Administrator with information from the new ThinBoot folder.

② BocaVision Boot Options

- If you select the "Boot to browser menu screen" option, the `BootOpt` file located in the `/ThinBoot/Config` directory is updated and `Sys$BootOption` is set to `0`.

- If you select the "Boot into Windows Session" option, the `BootOpt` file located in the `/ThinBoot/Config` directory is updated and `Sys$BootOption` is set to `1`.

- If you enter any value other than 0 or 1, you will receive an error message.

③ Citrix Server

- When you edit the Citrix Server information, the line `<NTConnect$Server>` in the `ICA` file (located in the `/ThinBoot/Config` directory) is set to the new value you have entered.

- The Client Administrator will check that the information entered is either an IP address or a server name; if not, an error message is displayed. You will need to re-enter a valid IP address or server name.

4 HTTP Proxy Support

Checking this box enables the BocaVision Browser to access the Web through a proxy server.

• To activate Proxy Support:
  1. Place a checkmark in the box. The field then becomes active.
  2. Enter the IP Address or URL (without "http://"), followed by a colon (:) and the port number for your proxy server.

• Some examples are:
  www.bocaresearch.com:8080
  192.68.21.0:80

⑤ Browser Options

Here, you may edit the following:

- **Default URLs for Home and WebMail pages.** Changing this
  information appends the entered URLs to the following lines in the
  `Browser` file (located in the `\thinboot\config` directory as follows:

    Home URL: `Set NCFresco$DefaultHome http://`
    Email URL: `Set NCFresco$Email URL http://`

- **Default Gateway IP, DNS Server IP, Domain Name, Subnet IP**. This
  allows you to change the default addresses/names for these parameters.
  When this information is changed, the following lines in the `setupnet`
  file (located in the `/ThinBoot/Config` directory) are updated:

    Default Gateway: `bin:route -e add default`
    DNS Server: `set inet$resolvers`
    Domain Name: `set inet$localdomain`
    Subnet: `bin:ifconfig ei0 netmask`

- **Screen Saver**. This allows you to change the default number of seconds
  of system idleness before the Screen Saver is activated. The default is 300
  seconds (or 5 minutes). The value entered in this field must be a decimal
  number, otherwise an error message will result.

Press **Save** to accept your edits. All fields are once again checked for
proper syntax and the appropriate files updated. You will then receive a
confirmation box stating "your changes have been saved"; click **OK**.

If you press **Exit** without saving the changes, a warning message is
displayed: "Are you sure you want to abandon your changes and exit
without saving?" You may click **Yes** to exit the application, or **No** to return
to the application with the information left unchanged.

4—Troubleshooting

If your installation fails to operate correctly, check the error message received and refer to the relevant paragraph below:

Cannot find a bootp server

This means there is a problem with the network connection or the BOOTP server. Check all network connections. Make sure the DHCP server is installed and running and it is configured correctly. Check that the client machine is configured **not** to use static IP addressing. If some clients boot correctly, but one does not, check that the particular client's MAC address has been correctly entered into the DHCP Manager. (Scope | Active Leases, select IP address then Properties)

I/O error in server browser

Usually occurs when the 003 Router entry in the DHCP Manager (DHCP Options | Scope) has not been set up correctly. Check that you have entered the correct IP address of the server.

The Citrix Server you have selected is not accepting connections

Most likely the Citrix server has not been configured correctly. Check that the ica-tcp session is installed and enabled (use **Terminal Server Connection Configuration** in **Administrative Tools**). Check also that Logons are enabled (select the ica-tcp connection, then click on **Connection**...**Edit**... and then the **Advanced** button).

Error: Cannot find given server (Error number &1660A)

This error can result from a number of factors. Check the following:

• The server Computer Name has been configured correctly in the DHCP Manager 067 Bootfile Name option – this must be the same as is configured in the **Control Panel... Network... Identification** field. Note that the case of the letters is unimportant.

• The NetBEUI protocol is running correctly (**Control Panel... Network... Protocols**)

Error: Share name does not exist (Error number &16623)

Make sure the Share name entered in the DHCP Manager **DHCP Options ... Scope** `067 Bootfile Name` is correct.

Error: File 'Lanman::Thinboot.$.!Boot not found (Error number &D6)

This will occur if the !boot folder does not exist in the client's boot path (ThinBoot$), if the !Run file does not exist in the !boot folder, or if the entry in the DHCP Manager **DHCP Options... Scope** `067 Bootfile Name` is incorrect – in this latter case the file name in the error message will change according to what has been entered.

Bootfile name has not been configured by bootp

Check that the client has not been configured for static IP addressing. This can be checked by holding down both ALT keys and rebooting the client system.

Error from server (Error number &1660C)

This error can arise if the password for the ThinBoot user has expired, or has been set to "User Must Change Password at Next Logon". Use **User Manager for Domains** (in **Administrative Tools**) to check that the following settings are activated.

• User Cannot Change Password
• Password Never Expires

Network Protocol Error (Error number &1660F)

This error can occur if the user ThinBoot has been deleted or is missing. Add the user using **User Manager for Domains** (in **Administrative Tools**). The password should be set to the value "thinboot".

Error Access not allowed (Error number &166B4)

This error will occur if the user ThinBoot password is incorrect or missing. Edit the ThinBoot user using **User Manager for Domains** (in **Administrative Tools**). The password should be set to the value "thinboot".

Error: User account has been disabled (Error number &1663D)

This error will occur if the user ThinBoot has been disabled. Edit the ThinBoot user using the **User Manager for Domains** (in **Administrative Tools**) and re-enable the account by clearing the "Account Disabled" box.

Error: no such connection

This error may occur when the user ThinBoot has been set to "User Must Change Password at Next Logon" and "User Cannot Change Password". These two options are not compatible with each other, and it is not normally possible to configure a user in this manner. Use **User Manager for Domains** (in **Administrative Tools**) to clear the "User Must Change Password at Next Logon" option check box.

Appendix A: Limited Warranty

Boca Research, Inc. (BRI) warrants to the original buyer of this product that the hardware is free of defects in materials and workmanship for a period of five years.

Should the product fail to be in working order at any time during the specified warranty period, BRI, will at its option, repair or replace this product as described below, provided that in BRI's sole determination the part or product has not been abused, misused, repaired, or modified.

All products will be serviced and returned via ground at no charge to customers.

All returns for limited warranty service require a Return Merchandise Authorization (RMA). All customers are required to demonstrate proof of purchase when requesting an RMA. The period of warranty commences on the date of purchase. A dated copy of the sales slip must be included with the returned merchandise.

Products which require Limited Warranty service during the warranty period should be delivered to BRI at the address in *Servicing Your Product* (in this manual's appendix) with proof of purchase, copy of canceled check (if any), and the Return Merchandise Authorization (RMA) number provided by BRI Technical Support. Replacement parts or complete products will be furnished on an exchange basis only. Replaced parts and/or products become the property of BRI.

If the returned product is sent by mail, the purchaser agrees to prepay shipping charges, insure the product or assume the risk of loss or damage which may occur in transit, and to use a shipping container equivalent to the original packaging. BRI does not make any warranties in respect to the product, either expressed or implied, including no implied warranties of merchantability or fitness for a particular purpose, except as expressly provided in this agreement. If any labor, repair, or parts replacement is required because of accident, negligence, misuse, theft, vandalism, fire, water or other peril; or because of conditions outside of specifications,

including, but not limited to, electrical power, temperature, humidity or dust; or by moving, repair relocation, or alteration not performed by BRI, or by any other cause other than normal use, the warranty and maintenance obligations provided herein shall not apply.

BRI SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OR FOR LOSS, DAMAGE, OR EXPENSE DIRECTLY OR INDIRECTLY ARISING FROM CUSTOMER'S USE OF OR INABILITY TO USE THE EQUIPMENT EITHER SEPARATELY OR IN COMBINATION WITH OTHER EQUIPMENT, OR FOR PERSONAL INJURY OR LOSS OR DESTRUCTION OF OTHER PROPERTY, OR FROM ANY OTHER CAUSE.

Boca's products are manufactured from new and serviceable used parts tested to Boca Research's quality assurance standards. Occasionally, some new products may contain used, serviceable parts. If the product proves to be defective, Boca Research will bear the costs of labor and materials for hardware replacement or repair during the above specified warranty period. Boca Research or its Authorized Service Providers shall have the option to replace any defective part(s) with new part(s) or, at the option of Boca Research, with serviceable used parts that are equivalent to new parts in performance. Boca Research shall also have the option to replace any defective product(s) with functionally equivalent product(s)

This warranty shall not be applicable to the extent that any provision of this warranty is prohibited by any Federal, state, or municipal law which cannot be preempted. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Appendix B: Servicing your Product

If your product requires service, first contact the authorized dealer from whom you purchased the BocaVision unit. If the dealer is unable to assist you, and you must contact Boca Research, Inc., please follow the instructions below. If the Troubleshooting section did not resolve your problem, you may call our technical support staff for assistance. If you haven't referred to the Troubleshooting sections, do so now.

NOTE: CALLING TECHNICAL SUPPORT WITHOUT COMPLETE AND ACCURATE INFORMATION CONCERNING YOUR PROBLEM MAY BE BOTH TIME-CONSUMING AND FRUSTRATING FOR YOU.

1. When calling Boca Research Technical Support, have the model and serial number of the BocaVision unit available:

2. Call our Technical Support Department between the hours of 8:00 a.m. and 6:30 p.m. EST Monday through Friday at (561) 241-8088. A technician will be available to discuss the problem(s) you are experiencing.

   If factory service is required, you will be given a Return Merchandise Authorization (RMA) number. Please place this number on the outside of the package when you return the item(s) for service and reference it on any correspondence included in the package. Boca Research, Inc. will return any product which is not accompanied by an RMA number.

3. Refer to the Limited Warranty Statement on the previous page to determine if the product is covered under the Boca Research, Inc. Limited Warranty.

4. Certain parts will not be covered under the Boca Research, Inc. Limited Warranty. Dealer installed parts are warranted by the dealer. Parts which you have installed yourself are covered only by the supplier's warranties. In these cases, Boca Research, Inc. can identify which parts

are defective, but will not replace such parts until specific written authorization is received from you. The cost of parts and labor involved in making such repairs will be billed to you C.O.D.

5. When sending the product to Boca Research, Inc. for repairs, please be sure to include:

  • the BocaVision product
  • your name
  • your return street address (for UPS purposes)
  • phone number
  • the RMA number mentioned above

Package the product securely in a container equivalent to the original packaging, and insure the package to protect against loss or damage during transit. Shipping charges must be prepaid; C.O.D. shipments will not be accepted. Please use the address below for all correspondence:

> **Boca Research, Inc.**
> **RMA Department - RMA # _____**
> **6500 West Rogers Circle**
> **Suite 3000**
> **Boca Raton, FL 33487-2841**

NOTE ON INTERNATIONAL SHIPMENTS: Customer is responsible for all charges associated with shipping product directly to Boca Research's facility. This includes but is not limited to freight charges, customs charges, freight forwarding fees, storage fees, handling fees, documentation fees, duties, taxes, port charges, etc. Boca Research will NOT pay charges on freight which is not correctly routed directly to Boca Research's facility.

6. If the repairs performed on your modem were covered by the warranty, Boca Research, Inc. will return it prepaid via UPS.

Appendix C: Obtaining Technical Assistance

How to get Technical Assistance

The dealer that you purchased this product from is the first place you should go for technical assistance. The dealer is usually the most qualified source of help, and is most familiar with your TV and how this product should be installed. Many dealers have customer service and technical support programs, with varying levels of support offered, depending on your needs and consumer electronic knowledge. ***Please contact your dealer first whenever a problem occurs.***

If your Dealer Can't Assist You

If for some reason you are unable to return the product directly to its place of purchase, refer to "Servicing Your Product" in the previous section, or contact us as described here and on the following page.

Related Publications:

BocaVision Thin Client User Handbook

BocaVision Thin Client Hardware Reference (on CD)

On-Line Support!

CompuServe:
GO BOCA
Internet: email:
support@bocaresearch.com
on the World Wide Web:
http://www.bocaresearch.com

Standard Free Technical Support
561-241-8088

For quick answers to technical questions or issues, available M-F 8am-6:30pm (EST).

Priority Service
900-555-4900
($2 per minute)

For customers who need immediate access to senior-level technicians.

Boca BBS
561-241-1601

Provides 24-hour a day access to updated drivers and technical notes. Settings are N,8,1 and all speed modems up to 33.6Kbps are supported.

Technical Support Fax
561-997-2163

Fax in detailed questions and ask for solutions to specific installation problems.

Appendix D: Accessories

- Keyboard: Part no. 8602
- Mouse   Part no. 8603
- AA batteries   Part no. 8264
- AC power cord: Part no. 8270
- Audio/Video cable: Part no. 8507
- S-video Cable: Part no. 8532

To order these items, contact your distributor. For a list of local distributors, contact

Boca Research, Inc.
1601 Clint Moore Road
Boca Raton, Florida 33437-2841
(561) 241-8088

Appendix E: Using the Acrobat Reader

To access documentation for a BocaVision Wt120 product, return to the CD Main Screen and select **Manuals and Documentation**. At the next screen, choose **Install Acrobat Reader**. You will then be able to **View Document** by highlighting and double-clicking a title from the scroll list displayed.

Acrobat Reader 3.x is a Windows-based program from Adobe Systems which allows you to read the manual on screen. You are also able to select sections from a table of contents, search topics, and print selected or all pages of the document. See sample below.

Quick buttons for functions available in pull-down menus

TIP: When Viewing a Document...
To activate the table of contents for the manual when the document is displayed, select *View* from the pull-down menu. Then click on *Bookmarks and Page*. This displays the table of contents. Click on any topic and you will be taken directly to that page.
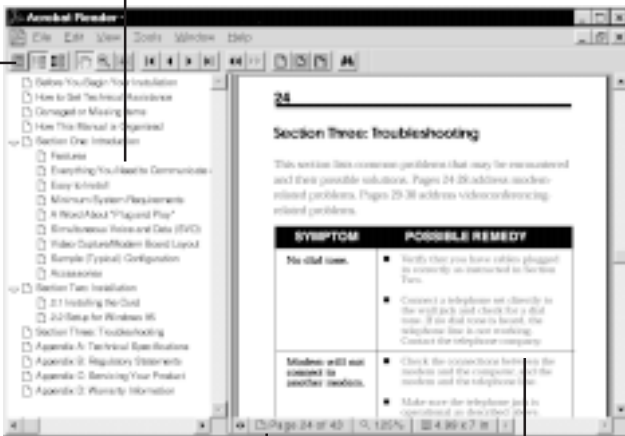
Print entire document or selected pages

Size display from 50% to 800% or custom

Search for selected words/ phrases

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R E S E A R C H