Tisio Recovery Guide V1.5

Tisio

Thin Clients with Peace of Mind®

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Revision History

June 2007, Tisio Linux V1 Recovery Guide First Release.

January 2008, Tisio Linux V1.5 Recovery Guide Release.

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Tisio System Recovery

There are two recovery systems available for the Tisio devices. The built-in recovery system offers methods to reload or update the Tisio operating systems, reset video settings for the device, update the RecoveryOS System or Clone the contents of the Flash ROM to the TDM server. In later version it is controlled by a new RecoveryOS system.

The Tisio Linux devices can support one of the following recovery and boot systems:

■ RecoveryOS System – The RecoveryOS System is used on Tisio devices running version 1.5.0 or newer operating software. The RecoveryOS System provides support for reloading or updating the Tisio operating systems, resetting video settings for the device, update the RecoveryOS System and Clone the operating system on the Flash ROM to the Tisio Device Manager server. For details on using the RecoveryOS see section below

■ Boot Agent System – User in earlier Tisio operating systems prior to version 1.5.0, the Boot control was handed by the Boot Agent. This system supported ways to recover the Tisio operating system and reset the video settings. For details on recovering using the Boot Agent see section on Tisio System Recovery (Boot Agent).

Tisio RecoveryOS System

The Tisio RecoveryOS provides methods to reload or update the Tisio operating systems, reset video settings for the device, update the RecoveryOS System or Clone the contents of the Flash ROM to the TDM server.

When the terminal is powered on, the Tisio RecoveryOS starts and loads the Tisio operating system. After the operating system has been loaded, the Tisio will display the initial screens for normal use. If the initial screens do not display properly or the Tisio boot screen never disappears then a system recovery should be performed.

Tisio System RecoveryOS Menu

The System RecoveryOS menu provides methods for system recovery and special system updates. The menu is different for each of the three supported operating systems available for the Tisio device, Linux, Windows CE and Windows XP Embedded. The menu is accessed by pressing the Escape key during the boot process. The RecoveryOS menu includes:

■ Start (O/S Name) – This starts the Tisio Operating System in normal operating mode. This is the default choice when the device is turned on.

■ (O/S name) Video Factory Reset – This starts the Tisio Operating System and resets the displays video to the standard resolution.

■ (O/S name) Recovery – This is used to reload the Tisio Operating System on local Flash.

■ Recovery System Update – This is used allow the RecoveryOS system on the Flash to be updated.

■ Cloning – This is used to create an image copy of the current Operating system and all its current settings. For details on the use of cloning see the user manual TDM Startup Guide V1.5.

```
┌────────────────────────────────────────────────┐
│                                                  │
│   Thin Client RecoveryOS System                  │
│                                                  │
│    Start (O/S Name)                              │
│   (O/S Name) Video Factory Reset                 │
│   (O/S Name) Recovery                            │
│   Recovery System Update                         │
│   Cloning                                        │
│                                                  │
│                                                  │
│                                                  │
│                                                  │
│                                                  │
│   Use the ↑ and ↓ key to highlight an entry. Press │
│   Enter or 'b' to boot.                          │
│                                                  │
└────────────────────────────────────────────────┘
```
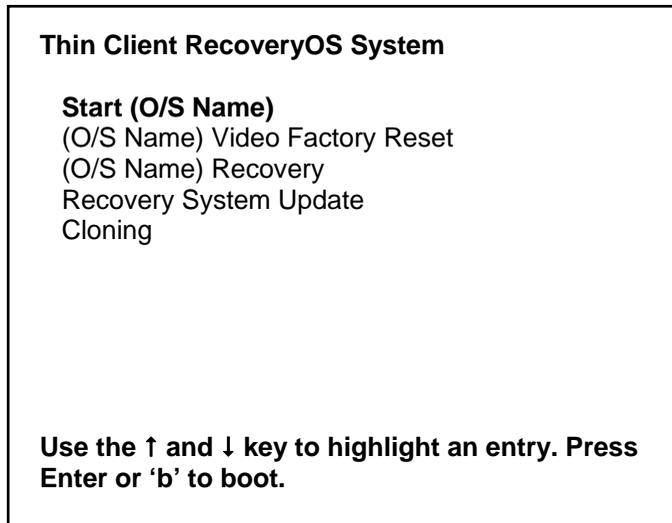
Figure 1 - Tisio RecoveryOS Menu

Accessing the RecoveryOS Menu

To access the Tisio RecoveryOS follow these steps.

1. Power on the Tisio terminal.

2. After power on wait for following information to be displayed on the Tisio device:

   Booting GBLDR
   Press 'ESC' to enter the menu… 0

3. You have just a few seconds to press the Escape key to stop the device from booting and display the Tisio RecoveryOS menu. If you see the following text on the display you will need to restart at step 1 again.

   Booting 'Start Linux 2.0'
   Loading…….

4. When the RecoveryOS menu is displayed, press the up or down arrow keys to select one of the menu items.

Note   Only one menu item is displayed at a time. See Figure 1 - Tisio RecoveryOS Menu for example showing all items.

Initiating Video Factory Reset

The Tisio Video Factory Reset starts the Tisio (O/S Name)system and resets the displays video to the standard resolution of 1024x768.

The Tisio video reset process is initiated from the Tisio RecoveryOS menu. See section above Accessing the RecoveryOS Menu. From the Tisio RecoveryOS menu select item **(O/S Name) Video Factory Reset.**

To start Tisio video reset, follow these steps.

1. Power on the Tisio terminal.
2. Press the Escape key to display the Tisio RecoveryOS menu. See Accessing the RecoveryOS Menu.
3. Press the down arrow and select item **(O/S Name) Video Factory Reset** and press enter.
4. Wait for the system to load and display the Tisio Setup Wizard. Go to the Display section and select the correct video settings and click to finish and close the Setup Wizard.
5. After reboot the Tisio device will retain all its previous settings except for the video setting that was reset.

Initiating System Recovery (from RecoveryOS Menu)

The Tisio system recovery process downloads a new Operating System image from the Tisio Device Management recovery server or other web server. See the Tisio Recovery Guide manual on installing, downloading and configuring the Tisio Device Management recovery server or web server.

The Tisio system recovery process is initiated from the Tisio RecoveryOS menu. See section above Accessing the RecoveryOS Menu. From the Tisio RecoveryOS menu select item **(O/S Name) Recovery.**

Note   The power to the Tisio terminal should not be interrupted until

until the system recovery has completed. The device must be connected using the wired network cable and a DHCP server must be available to assign a network address to the Tisio device for the recovery process.

Start System Recovery from RecoveryOS menu

To start Tisio system recovery, follow these steps.

1. Power on the Tisio terminal.

2. Press the Escape key to display the Tisio RecoveryOS menu. See Accessing the RecoveryOS Menu.

3. Press the down arrow and select item **(O/S Name) Recovery** and press enter.

4. Wait for the RecoveryOS to reload and when prompted for: "*The 2nd partition is going to be formatted. Are you sure? [y/n]*" type **y** and press the Enter key.

5. The recovery files will be downloaded and the operating system installed. After installation is complete press any key to restart the Tisio device with the recovered operation system.

6. After power on the Tisio device will be in the initial state as shipped from the factory.

Initiating Update of RecoveryOS

The Tisio system recovery process downloads a new Operating System image from the Tisio Device Management recovery server or other web server. See the Tisio Recovery Guide manual on installing, downloading and configuring the Tisio Device Management recovery server or web server.

The Tisio RecoveryOS system update process is initiated from the Tisio RecoveryOS menu. See section above Accessing the RecoveryOS

RecoveryOS Menu. From the Tisio RecoveryOS menu select item **Recovery System Update.**

Note   The power to the Tisio terminal should not be interrupted until the RecoveryOS system has been updated. The device must be connected using the wired network cable and a DHCP server must be available to assign a network address to the Tisio device for the recovery process.

Start RecoveryOS System Update

To start Tisio RecoveryOS system update, follow these steps.

1. Power on the Tisio terminal.
2. Press the Escape key to display the Tisio RecoveryOS menu. See Accessing the RecoveryOS Menu.
3. Press the down arrow and select item **Recovery System Update** and press enter.
4. Wait for the RecoveryOS to update and when prompted for: "*The RecoveryOS is going to be updated. Are you sure? [y/n]*" type **y** and press the Enter key.
5. The RecoveryOS files will be downloaded and installed. After installation is complete press any key to restart the Tisio device with the recovered operation system.

Initiating Cloning

Cloning is used to create an image copy of the current Tisio operating system and all its current settings. For details on the using cloning see the TDM Startup Guide V1.5 user manual**.**

Tisio Recovery server for (Tisio's with RecoveryOS)

Introduction

Below describes what a Tisio Recovery server is and how it is used to provide recovery O/S images for the Tisio Thin Client devices running the RecoveryOS.

The Tisio Recovery server is a Windows or UNIX/Linux web server containing the Tisio recovery files. The Tisio Thin Client devices request a recovery image using a special URL address through a special key sequence. This request is sent to the Tisio Recovery server when Tisio devices are asked to rewrite the flashed operating system.

Requirements

The local network has specific requirements so the Tisio thin clients will be successful when requested to perform a recovery of the local operating system. There must be available on the network a Tisio Recovery server. The recovery process requires a DHCP server available on the network so the Tisio thin client can obtain a network TCP/IP address. Tisio device must also be able to resolve the host name **tisiodm, tisiodm.yourdomain, thinccodm** or **thinccodm.yourdomain**. An entry for this name should be added to the local DNS server as an alias name of the Tisio Recovery server.

RecoveryOS URL Search Path

Tisio device searches a number of predefined URL paths to locate the Recovery server on the network and the correct recovery image during a recovery process. The Tisio Thin Clients uses the following values to search for a recovery server and files using the search order listed below.

Search URL

http://tisiodm/.........
http://tisiodm.yourdomain/.........
http://tisiodm:8080/.........
http://tisiodm.yourdomain:8080/.........
http://thinccodm/.......
https://thinccodm.yourdomain/..........
http://thinccodm:8080/.........
http://thinccodm.yourdomain:8080/........

Table 1 - URL Search Path

The next portion of the URL is determined by the Tisio model and O/S type performing the recovery. Add the URLs above to the path below to determine the path of recovery files located on the Tisio Recovery server, **<URLs Above>/ThinCCo/tcc_kits/<OS Type>.**

Model	Name is based on Model and OS type
Tisio 96CE	ThinCCo/tcc_kits/cecle01
Tisio 300CE	ThinCCo/tcc_kits/cecle02
Tisio 96XP	ThinCCo/tcc_kits/xpfam01
Tisio 300XP	ThinCCo/tcc_kits/xpfam01
Tisio 96LX	ThinCCo/tcc_kits/lxfam01
Tisio 300LX	ThinCCo/tcc_kits/lxfam01

Table 2 - Model & O/S Defines Rest of URL

During the Recovery process two files are requested. They are **<name>.zip** and **<name>.md5**.

Note: The recovery image must be installed on to the correct model device otherwise the Tisio device will not function. Licensing safeguards have been built in to ensure the correct O/S image matches the model of the original Tisio device.

As an example, if a Tisio 96CE device was performing a recovery, the first three requests would use the URL:

1. https://thinccodm/ThinCCo/tcc_kits/cecle01.md5
2. http://thinccodm.yourdomain/ThinCCo/tcc_kits/cecle01.md5
3. http://thinccodm:8080/ThinCCo/tcc_kits/cecle01.md5

Tisio System Recovery (Boot Agent)

The Tisio Boot Agent recovery system is used on all Tisio devices prior to version 1.5.0.

When the terminal is powered on, the Tisio Boot Agent starts and loads the Tisio operating system. After the operating system has been loaded, the Tisio will display the initial screens for normal use. If the initial screens do not display properly or the Tisio boot screen never disappears then a system recovery should be performed.

The Tisio system recovery process downloads a new Operating System image from the Tisio Device Management recovery server or other web server. See the Tisio Recovery Guide manual on installing, downloading and configuring the Tisio Device Management recovery server or web server.

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[THE DEVICE IS STARTING - PLEASE WAIT]

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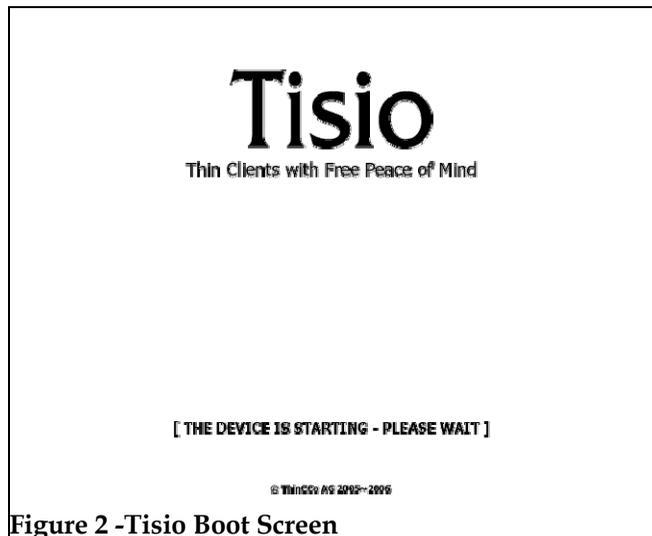
Figure 2 -Tisio Boot Screen

The Tisio system recovery process is initiated just after power on by a key press sequence. During the system recovery process, the Tisio update screen is shown.

Note   The power to the Tisio terminal should not be interrupted until the system recovery has completed.

Figure 3- Tisio Boot Screen

Initiating System Recovery

When the terminal is powered on, system recovery can be initiated using the key sequences below.

Key Press Sequence	Use
Ctrl+Alt+F10	Used to initiate a normal system recovery of the Operating System.
Ctrl+Alt+F2	Used to initiate an advanced system recover of the Operating System with logging enabled.

The system recovery key sequence can only be pressed within a short period of time and only during the initial power up sequence. After power on, wait for a second beep before pressing the system recovery key sequence. There is a 3 second window in which the system recovery key sequences can be pressed. If the system recovery key sequence is pressed after the 3 second window it will be ignored. The diagram below shows what happens during power on and the recovery process.
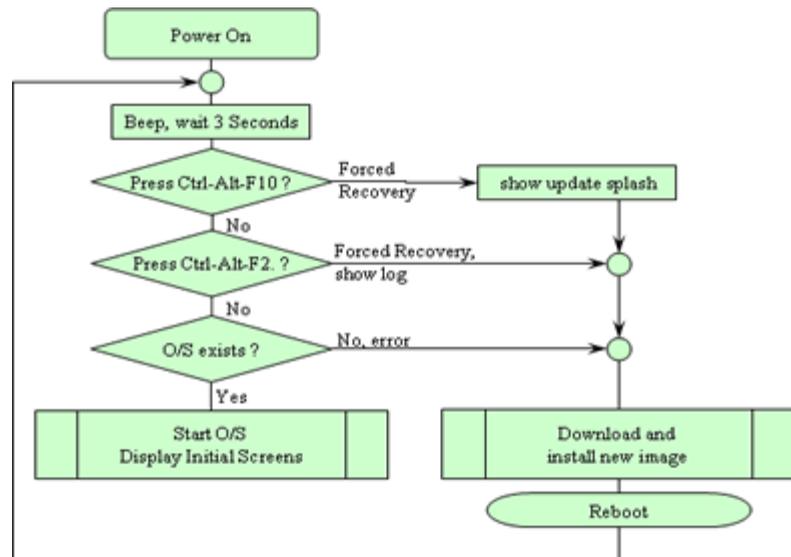
Figure 4 - Tisio Recovery Process

Start System Recovery

The system recovery key sequence can only be pressed within a short period of time and only during the initial power up sequence. To start Tisio system recovery, follow these steps.

1. Power on the Tisio terminal.

2. After power on wait for a first beep, and a short while later there will be a second beep. After the second beep there is a three second window in which the system recovery key sequences can be pressed.

3.   Press the system recovery key sequence before the three second window.

4.   If the system recovery key sequence is pressed after the three second window it will be ignored. Repeat the steps until the **Error! Reference source not found.** is shown.

After the Tisio recovery sequence completes, the <u>Tisio Startup Wizard</u> will appear indicating Tisio thin client has been fully recovered and set to factory defaults. Follow the steps in the section <u>If the Tisio Setup WizardAppears</u> to configure your Tisio terminal.

Tisio Recovery server for (Tisio's with Boot Agent)

Introduction

Below describes what a Tisio Recovery server is and how it is used to provide recovery O/S images for the Tisio Thin Client devices running the Boot Agent.

The Tisio Recovery server is a Windows or UNIX/Linux web server containing the Tisio recovery files. The Tisio Thin Client devices request a recovery image using a special URL address through a special key sequence. This request is sent to the Tisio Recovery server when Tisio devices are asked to rewrite the flashed operating system.

Requirements

The local network has specific requirements so the Tisio thin clients will be successful when requested to perform a recovery of the local operating system. There must be available on the network a Tisio Recovery server. The recovery process requires a DHCP server available on the network so the Tisio thin client can obtain a network TCP/IP address. Tisio device must also be able to resolve the host name **thinccodm** or **thinccodm.yourdomain**. An entry for this name

this name should be added to the local DNS server as an alias name of the Tisio Recovery server.

Recovery URL Search Path

Tisio device searches a number of predefined URL paths to locate the Recovery server on the network and the correct recovery image during a recovery process. The Tisio Thin Clients uses the following values to search for a recovery server and files using the search order listed below.

Search URL
https://thinccodm/.........
http://thinccodm:8080/.........
http://thinccodm/.......
https://thinccodm.yourdomain/.........
http://thinccodm.yourdomain:8080/.........
http://thinccodm.yourdomain /.......
https://thinccodm.thincco.com/..........
http://thinccodm.thincco.com:8080/.........
http://thinccodm.thincco.com/........

Table 3 - URL Search Path

The next portion of the URL is determined by the Tisio model and O/S type performing the recovery. Add the URLs above to the path below to determine the path of recovery files located on the Tisio Recovery server, **<URLs Above>/ThinCCo/tcc_kits/tisio_0n/<O/S Type>/.**

Model	Path is based on Model and O/S type
Tisio 96CE	ThinCCo/tcc_kits/tisio_04/ce
Tisio 300CE	ThinCCo/tcc_kits/tisio_02/ce
Tisio 96XP	ThinCCo/tcc_kits/tisio_04/xp
Tisio 300XP	ThinCCo/tcc_kits/tisio_02/xp
Tisio 96LX	ThinCCo/tcc_kits/tisio_04/lx

Model	Path is based on Model and O/S type
Tisio 300LX	ThinCCo/tcc_kits/tisio_02/lx

Table 4 - Model & O/S Defines Rest of URL

During the Recovery process two files are requested. They are **thincco.zip** and **md5sum**.

Note: The recovery image must be installed on to the correct model device otherwise the Tisio device will not function. Licensing safeguards have been built in to ensure the correct O/S image matches the model of the original Tisio device.

As an example, if a Tisio 96CE device was performing a recovery, the first three requests would use the URL:

4. https://thinccodm/ThinCCo/tcc_kits/tisio_04/ce/md5sum
5. http://thinccodm:8080/ThinCCo/tcc_kits/tisio_04/ce/md5sum
6. http://thinccodm/ThinCCo/tcc_kits/tisio_04/ce/md5sum

Downloading the Tisio Recovery Images

The recovery images for all products are found on ThinPATH Systems Website. Open the link below in a browser to download the Tisio recovery images. Follow the instructions on the page to locate the recovery images for your Tisio product.

http://www.tp-sys.com/index.php?modules=support&content=patches

There are recovery files for earlier versions of Tisio devices and Tisio devices running operating system version 1.5 or newer. See the ThinPATH Systems web site for details on download the correct recovery files for your system.

Installing Tisio Recovery files

The Tisio Recovery files can be installed on most web servers. This document describes how to install the Tisio Recovery Images on the following Web based platforms.

■ Tisio Device Manager server

■ Windows IIS Web Server

■ ThinPATH Portal Server

■ Linux/UNIX Web server such as Apache

Installing Recovery Files on the Windows TDM server

The Tisio Device Manager server is used to remotely manage Tisio devices. This installation requires that you have already installed the Tisio Device Management Software on a Windows PC and you have downloaded the Tisio Recovery Images. Please refer to the TDM Installation manual on the ThinPATH Systems Website, www.tp-sys.com.

To install the Tisio Recovery Images on the Windows based TDM server perform the following steps:

1. The Tisio Recovery Images are self extracting executables. Download the appropriate Tisio Recovery Image and execute it.

2. When prompted for the location where to install the files change the installation path to "**C:\Program Files\Apache Software Foundation\Tomcat 5.5\webapps\ThinCCo**

3. Click on the Unzip button to extract the files. When complete close the window.

4. For Tisio devices using the RecoveryOS place both files in the current directory. For Tisio devices running the older Boot Agent, change to the directory C:\Program Files\Apache Software Foundation\Tomcat 5.5\webapps\ThinCCo\ tcc_kits\tisio_04\ce and place both the thincco.zip and md5sum files there.

5. On you DNS server make a DNS alias for (tisiodm or thinccodm for RecoveryOS) thinccodm and point it to the DNS name for the PC that is running the TDM software.

6. Now when you perform the recovery it should download it from your local PC.

Installing Recovery Files on the ThinPATH Portal server.

The ThinPATH Portal server manages the Tisio CE devices, older ThinSTAR thin clients and PCs running ThinPATH PC. The ThinPATH Portal Server uses IIS. To install the Tisio Recovery Images on the ThinPATH Portal server perform the installation procedure under the section Installing the Recovery Files on Windows IIS

Installing Recovery Files on Windows IIS

This installation requires that you have already installed Windows IIS support on a Windows PC and you have downloaded the Tisio Recovery Images. Please refer to Microsoft installation instructions on installing IIS.

To install the Tisio Recovery Images on the Windows IIS server perform the following steps:

1. This installation will require creating a Virtual Web directory. In the windows file system create the follow directory if not present: **C:\Inetpub\wwwroot\html\ThinCCo**

2. On the PC where IIS is installed, open the Internet Information Services tool. This is normally started from the start menu, **Start> Programs> Administration Tools> Internet Information Services**.

3. In the IIS Administration window expand the Server name and Web Sites to open the **Default Web Site**. Select the **Default Web Site.**

4. Right Click and select **New > Virtual Directory.** You will be prompted to begin creating a new virtual directory, click next to continue.
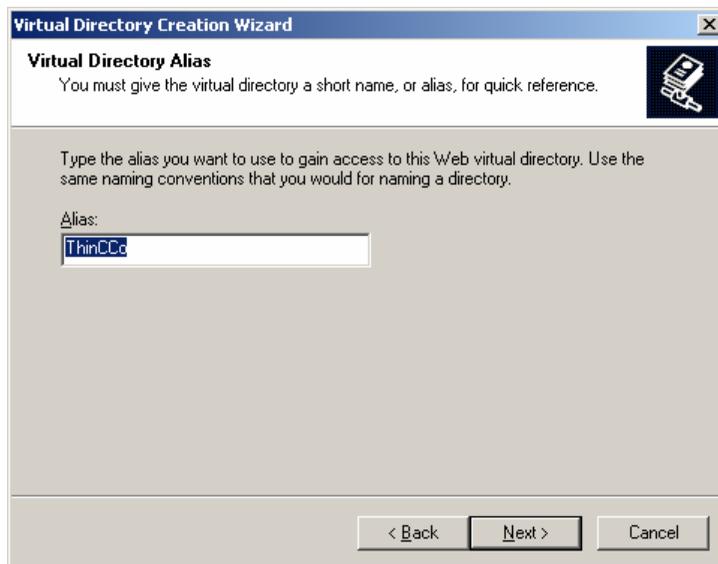
5. Enter the Alias name of **ThinCCo** as shown and click next. Enter the name ThinCCo exactly as shown paying attention close attention to the case of characters.
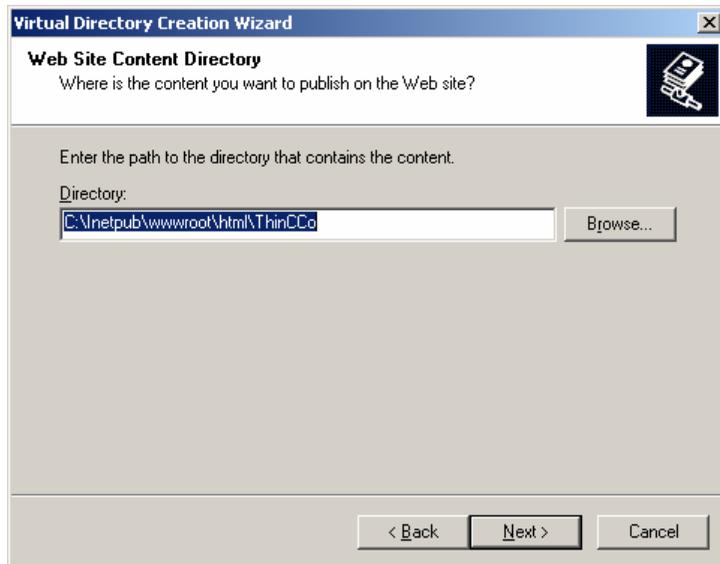
6. Click on the Browse button and go to directory:
   C:\Inetpub\wwwroot\html\ThinCCo and click next.
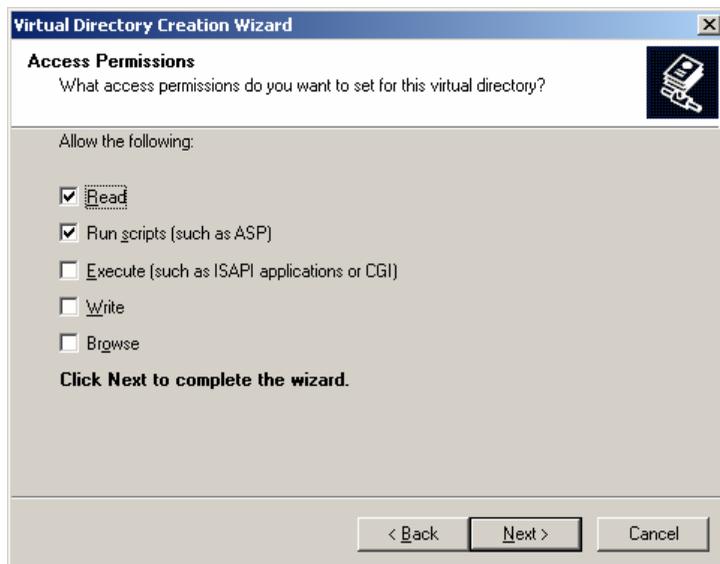
7. Select the Access Permission as listed above and click next.

8. Click finish to complete creating the virtual web directory. Close the IIS Administration window.

9. The Tisio Recovery Images are self extracting executables. Download the appropriate Tisio Recovery Image and execute it.

10. When prompted for the location where to install the files change the installation path to **C:\Inetpub\wwwroot\html\ThinCCo**

11. Click on the Unzip button to extract the files. When complete close the window.

Installing Recovery Files on UNIX/Linux Apache server

This installation requires that you have already installed Apache Web server support on a UNIX/Linux server and you have downloaded the Tisio Recovery Images. Please refer to the Apache documentation for installing Apache 2.0.

To install the Tisio Recovery Images on the UNIX/Linux Apache server perform the following steps:

1. This installation will require creating a Virtual Web directory on the Apache Web server. In the UNIX/Linux file system create the follow directory if not present: **/var/www/ThinCCo**

2. To create a virtual directory on a server running Apache Web server software the configuration file for Apache is a text file and must be edited.

 Note: The Apache Web server uses the term alias instead of virtual directory.

3. The Apache configuration file is named conf/httpd.conf and is located in the Apache install directory. Many times it is found at /etc/httpd/conf/httpd.conf.

4. Add the following lines below near the end of the file. Make sure this is not a duplicate or already in the configuration file.

```
Alias /ThinCCo/ "/var/www/ThinCCo/"
<Directory "/var/www/ThinCCo">
    Options Indexes FollowSymLinks
    AllowOverride All
    Order allow,deny
    Allow from all
</Directory>
```

5. After the entry has been added, save and exit from the Apache configuration file.

6. Restart the Apache server to have the change take effect. Usually the command is **/etc/init.d/httpd restart**.

7. The Tisio Recovery Images are tar archives. Download the appropriate Tisio Recovery Image to the /tmp directory.

8. Use the tar command to extract the files and place them in the proper location defined by the virtual directory defined above in step 4.

9. CD to the **/var/www/ThinCCo** directory and issue the tar command: **tar xvzpf /tmp/<recoveryFile>.**

10. To test the recovery files and verify they can be downloaded, open a Web browser and enter the URL http://<webServer>/<PATH from Table 4>/thincco.zip. The response should be a request to download the file thincco.zip. This indicates the recovery server is working correctly.

Installing Recovery Files on UNIX/Linux Tomcat server

This installation requires that you have already installed the Tomcat Web server support on a UNIX/Linux server and you have downloaded the Tisio Recovery Images. Please refer to the Tomcat documentation for installing Tomcat.

To install the Tisio Recovery Images on the UNIX/Linux Tomcat server perform the following steps:

1. This installation will require creating a Virtual Web directory on the Tomcat Web server. In the UNIX/Linux file system create the follow directory if not present: **/var/www/ThinCCo**

2. To create a virtual directory on a server running Tomcat Web server software the configuration file for Tomcat is a XML file and must be edited. Be careful to place the added lines at the proper location (nested within the <ContextManager> element tags and not to break any XML tags.

   Note: The Tomcat Web server uses the term context instead of virtual directory.

3. Locate the conf/server.xml file in the Tomcat install directory.

4. Add the following entry in the part of the file where other similar entries are located. The server.xml file is an XML file, so pay close attention to the required XML file syntax.

```
<Context path="/ThinCCo"
   docBase="/var/www/ThinCCo"
   debug="1"
   reloadable="true" >
</Context>
```

Note: If you mis-edit the Tomcat configuration file or have
        unbalanced angle brackets or quotes, Tomcat cannot start
        properly. Watch for error messages when you start Tomcat.

5. Stop and restart the Tomcat server (and the Apache server if you
    are running Tomcat under Apache) to have the change take effect.
    Usually the commands are:
    ```
    /etc/init.d/httpd restart
    /etc/init.d/tomcat restart
    ```

6. The Tisio Recovery Images are tar archives. Download the
    appropriate Tisio Recovery Image to the /tmp directory.

7. Use the tar command to extract the files and place them in the
    proper location defined by the virtual directory defined above in
    step 4.

8. CD to the **/var/www/ThinCCo** directory and issue the tar
    command: **tar xvzpf /tmp/<recoveryFile>.**

9. To test the recovery files and verify they can be downloaded, open
    a Web browser and enter the URL http://<webServer>/<PATH
    from Table 4>/thincco.zip. The response should be a request to
    download the file thincco.zip. This indicates the recovery server is
    working correctly.