TriTeal Enterprise Desktop (TED™) 4.2

NTED 2.0 Installation and User's Guide

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Preface

What Does NTED 2.0 Do?

NTED offers transparent integration of UNIX and Windows applications and files. NTED serves PCs as well, so users across the enterprise can benefit from centralized Windows application deployment. NTED provides easy access from your UNIX and Windows desktop to applications that run natively on Microsoft Windows NT servers. In addition, consider the following:

- Files can be shared between UNIX and Windows NT through PCNFS (NFS) or TEDFS (SMB).
- Windows file types are represented in TED by their Windows icons.
- Windows applications are determined dynamically so that TED users can see and access all common program groups available on the selected Windows NT application server.
- UNIX pathnames are automatically converted to UNC names. Automatic mounting removes the necessity to manually mount shares before accessing remote files via NTED.
- NTED includes support for server failover.

NTED Features

- Easy launch of Windows applications from TED.
- Cut, copy, and paste between Windows and UNIX.
- Windows files stored along with UNIX files and accessed from a single file manager.
- Automatic startup of Windows applications from remote systems.
- Native Windows NT execution for optimal performance.
- Offloads graphics to the desktop, optimizing server memory use.
- File sharing optimized for multiuser NT.
- Compatible with any X11 desktop device.
- Uses open systems protocols and desktop software.
- Full 2, 16, 256, 64K, and 16M color modes.

Who Should Use this Guide

This guide is intended for users and system administrators.

How this Guide is Organized

Chapter 1, "Setting Up NTED 2.0," describes the installation procedure for NTED 2.0 as well as the requirements for the Windows NT application server and its configuration.

Chapter 2, "Using NTED 2.0," describes how to start Windows applications from TED, and provides examples and troubleshooting tips for configuring Windows applications to run under NTED 2.0.

Related Books

- The WinCenter Pro 3.0 Manual Set. For a full listing of available WinCenter Pro 3.0 documentation, see page 1-2 of the *WinCenter Pro 3.0 Installation & User's Guide.*
- For complete information about using TEDFS, see the *TEDFS Installation and User's Guide*.

What Typographic Changes and Symbols Mean

The following table describes the type changes and symbols used in this book.

Table P-1 Typographic Conventions

Typeface or Symbol	Meaning	Example
`AaBbCc123`	The names of commands, files, and directories; onscreen computer output	Edit your `.login` file. Use `ls -a` to list all files. `system% You have mail.`
AaBbCc123	Command-line placeholder: replace with a real name or value	To delete a file, type `rm` *filename*.
AaBbCc123	Book titles, new words or terms, or words to be emphasized	Read Chapter 6 in *User's Guide*. These are called *class* options. You *must* be root to do this.
Code samples may display the following:		
`%`	UNIX C shell prompt	`system%`
`$`	UNIX Bourne and Korn shell prompt	`system$`
`#`	Superuser prompt, all shells	`system#`

Setting Up NTED 2.0

To set up NTED 2.0, first set up the NTED server, then set up the UNIX workstations that will be accessing Windows applications. This section describes these setup procedures.

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System Requirements

Before you can run NTED 2.0, consider the following requirements for both the UNIX workstation where you plan to use NTED 2.0, and the Windows NT server from which your Windows applications will run.

Windows NT Server Requirements

The Windows NT server from which applications will be accessed needs to meet the following specifications:

- Pentium or better Intel CPU
- 24 MB RAM, plus an additional 8 MB for each concurrent UNIX user
- 150 MB free hard disk space
- CD-ROM drive
- 3.5 inch floppy disk drive
- Ethernet network card

UNIX Workstation Requirements

You need the following on each UNIX workstation that will run NTED 2.0:

- TED 4.2
- 9 MB of disk space

NTED Components

The NTED system is comprised of the NTED application server and one or more UNIX workstations. The following diagram illustrates this setup, showing which parts of the system are located on each machine.

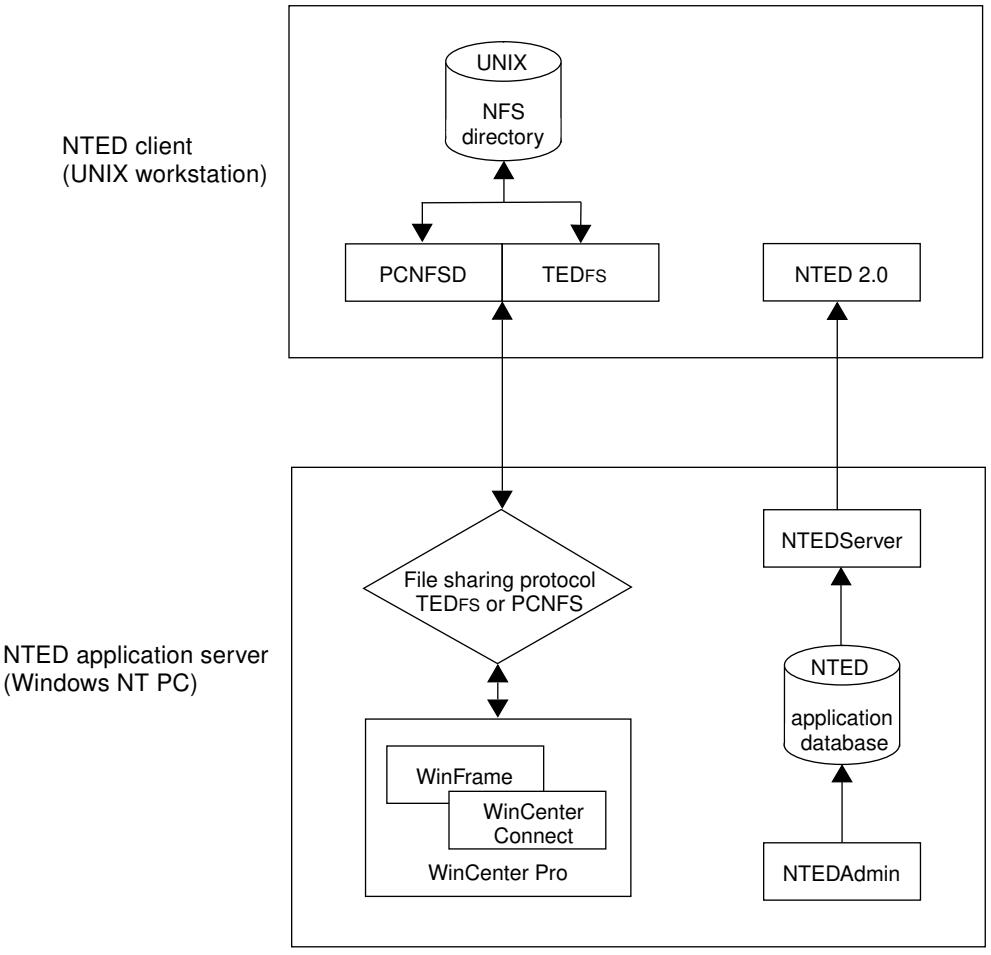

Figure 1-1 NTED components

What You Will Need

To complete the NTED installation and setup, you will need the following:

- If any of your hardware comes with a Windows NT driver disk, you will need to have this disk.
- TED 4.2 CD-ROM, which includes NTED 2.0 and TEDFS.
- PCNFS UNIX Daemons disk (3.5 inch floppy).
- WinCenter Pro 3.0 disks and CD-ROM.
- The NTED application server (Windows NT PC) will use TCP/IP to communicate across the network to the UNIX machines. Therefore, the installation requires the assignment of an IP address and a host name. You should also have any gateway and/or DNS addresses available during installation. In summary, you need to have the following information:

  IP address: _____ - _____ - _____ - _____

  Host name: _____

  Gateway: _____ - _____ - _____ - _____

  DNS: _____ - _____ - _____ - _____

- If you will be using PCNFS for file sharing, you need to have `rpc.pcnfsd`. If you do not already have `rpc.pcnfsd`, you can get it from the TriTeal FTP site, (ftp.triteal.com), in the following location:

  `/pub/outgoing/SUPPORT/NTED/PCNFS`

Setting Up the NTED Application Server

The first step in setting up NTED is to set up your Windows NT PC as the NTED application server. This requires the following steps, all of which are described in this section:

- Configure the Windows NT server.
- Install WinCenter Pro.
- Install the file sharing protocol.
- Install the NTED services.

Configuring the Windows NT Server

See your Windows NT server documentation for instructions on setting up your server. Once you have Windows NT set up, do the following:

1. Load the desired Windows applications.
2. Install an ethernet card and TCP/IP software.
3. Configure TCP/IP for your network.

4. Populate the <*NT root*>`/system32/drivers/etc/hosts.equiv` and/or `.rhosts` files with all possible TED hosts.

   In some cases the names should be fully qualified (host.domain). For example, if you were using DNS, you would need to use fully qualified names.

Installing WinCenter Pro

WinCenter Pro includes WinFrame (multiuser Windows NT) and WinCenter Connect (for UNIX file sharing). To install WinCenter Pro 3.0, you will need to do a series of separate installations. See the *WinCenter Pro 3.0 Installation & User's Guide* for more information on setting up WinCenter Pro.

Exceptions to the WinCenter Pro Installation Instructions

When you install WinCenter Pro, follow the WinCenter Pro installation instructions, with the following exceptions:

- When the installer requests the WinFrame license disk, choose Cancel. If the installation fails for any reason and the licenses have been installed, you cannot retrieve them. You can install the licenses online after the NTED setup is complete.
- Use the vendor-supplied driver for your network card, rather than the driver on the WinFrame CD-ROM. If you have any doubts as to whether Windows NT has configured your network adapter card correctly, quit the network installation by selecting No Network when asked to configure a card manually. Like the licenses, networking can be installed after NTED is set up.

  To install networking after NTED, from the Control Panel, select Network, and then Add Adapter. You are asked for the Windows NT distribution files. Typically these are on the Windows NT CD-ROM, in the I386 directory. From this point, the prompts and fields are the same as in the original installation.

WinCenter Pro Installation Process

Changes to Windows NT 3.51 often require a system reboot to take effect. You can complete several setup steps and then reboot when all are complete. The following steps indicate the order in which the WinCenter Pro installation should be completed, and the point at which you should reboot your Windows NT machine.

1. If you will be using PCNFS, install InterDrive NT.
   - Open the Network Control Panel.
   - Select Add Software.

- With the InterDrive NT disk in drive A:, scroll to where you can add software provided on a separate manufacturer's disk.
- When you see the InterDrive configuration screen, choose Cancel.
- Do **not** restart when prompted.

2. Install WinCenter Connect.
   - Install NIS support, even if you do not plan to use it—you can disable it after installation. If you do not know the NIS server and domain names, enter generic names and change them later.
   - Do **not** restart when prompted.
3. Install the WinFrame licenses. This step does not require a reboot.
4. Install the service packs. SP4a is on the WinCenter Connect CD-ROM and SP5 is on the TriTeal FTP site (ftp.triteal.com) in the following location:

   `/pub/outgoing/SUPPORT/NTED/SP5`
5. Restart Windows NT.

Installing a File Sharing Protocol

You can use the SMB and/or the NFS protocol for sharing files between the UNIX workstation and the NTED application server.

- TEDFS uses the SMB protocol. It is installed automatically with NTED, so it does not require any additional setup on the NTED application server.
- If you will be using NFS, install and set up PCNFS on the NTED application server. See the InterDrive PCNFS documentation for details.

Installing the NTED Services

The NTED services (NTEDAdmin and NTEDServer) allow the NTED client to access applications that reside on the NTED application server. Install the NTED services on the Windows NT PC using the following procedure:

▼ *To install the NTED services*

1. Log in as administrator.
2. Choose `setup.exe` from the NT3.51 directory on the TED 4.2 CD.
3. Select the directory where you want the NTED services to be located.
4. Follow the on-screen instructions.

1

Setting Up the UNIX Workstations

To get the UNIX system ready to run NTED, install the NTED client, then set up each user who will be accessing Windows applications.

Installing the NTED client

When you install the NTED client, TEDFS can also be installed. Install the NTED client using the following procedure:

▼ *To install the NTED client*

1. Log in as root.
2. Insert the TED 4.2 CD-ROM into the CD-ROM drive and mount the CD file system according to your machine's instructions. The disk is divided into several subdirectories specific to UNIX system architecture.
3. Change directories to the UNIX directory.
4. Type the following to install the NTED 2.0 package using TED Install.

   ```
   ./install
   ```

   Note – For more information on the installation process, see the *TED 4.2 Release Notes*.

5. Select NTED.
6. Choose Typical Installation.
7. Choose Yes to edit system files.
8. Click Execute Install.

   When the installation is complete, a message appears.

9. Click OK.

   The NTED Installation window appears.

10. From the File menu, choose Exit.

When you have completed the installation, the following are installed:

- `/usr/dt/bin/winLaunch`, which is the NTED 2.0 application launcher.
- `/usr/dt/bin/ntedsetup`, which is the executable file for the NTED Setup window.
- `/usr/dt/bin/ntedclient`, which is the executable that queries a Windows NT host for applications, file types, and icons.
- `/usr/dt/bin/ntedserverfail`, which is the executable that handles server failover.
- `/usr/dt/appconfig/types/C/NTED.dt`, which contains the basic actions to use NTED 2.0.
- `/usr/dt/appconfig/icons/C/win*.*`, which contains the icons for the basic actions to use NTED 2.0.
- `/usr/dt/appconfig/icons/C/Nted*.*`, which contains the icons for the basic actions to use NTED 2.0.
- `/usr/dt/appconfig/appmanager/C/NTED/*`, which is the NTED 2.0 directory that appears in the Application Manager.
- `/usr/dt/TEDfs/*`, which contains the files needed for using TEDFS.

Using NTED Setup

NTED setup completes the installation/setup process of the NTED client by setting up each UNIX user to access the NTED application server. The administrator sets the defaults and then users can customize their own settings.

▼ *To set up the defaults*

1. Log in as root.
2. Open the Application Manager.
3. Double-click the NTED folder.
4. Double-click the NTED Setup icon.

The NTED Setup dialog box appears as shown in Figure 1-2.

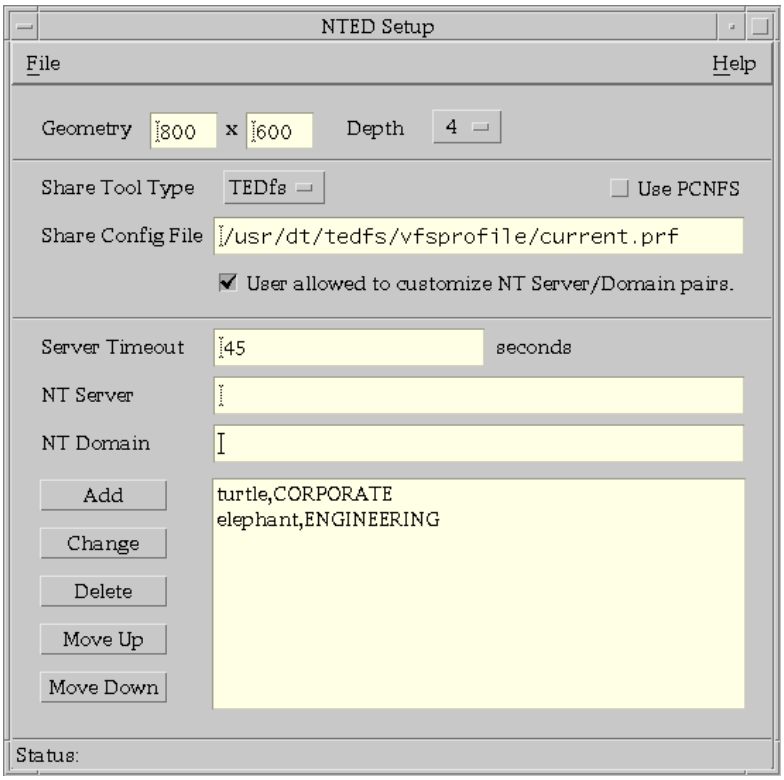

Figure 1-2 The NTED Setup dialog box

5. If you want to change the screen resolution setting, type the new resolution numbers in the Geometry field.
6. From the Depth pop-up list, choose 1, 4, 8, or 24 for the emulated screen depth.

   The greater the depth, the more colors are allocated for Windows applications. The recommended depth is 4.

Note – On many platforms, a depth of 8 causes the desktop colors to flash when moving the mouse pointer from Windows applications to TED 4.2 applications.

---

7. From the Share Tool Type pop-up list, choose a file share tool (such as TEDFS or None).
8. If you selected a file share tool, type the path of the file share tool's config file in the Share Config File field. (If you selected TEDFS in step 7, a default path is provided.)
9. Choose whether to use PCNFS as an additional protocol for file sharing.

10. Select whether users are allowed to modify server/domain pairs.
11. In the Server Timeout field, type in the desired timeout period (in seconds). This is the amount of time that the system will try to connect to a Windows NT server before failover occurs. At failover, the system tries to connect to the next Windows NT server on the list.
12. In the NT Server and NT Domain fields, type the Windows NT server and domain (optional) information.

    The list shows the order in which Windows NT will query servers for application data. Type the names and use Add or Enter to add them to the list. Use the Move Up and Move Down buttons to arrange the list in the correct order. Use the Delete button to remove a name from the list.
13. When you have made all setup choices, save your changes:
    - If you have changed the server/domain list, choose Save/Appgather from the File menu.

      NTED searches the server for available applications.
    - If you have not changed the server/domain list, choose Save from the File menu.

    After you save these changes, an ASCII file called `winLaunchrc`, which contains your NTED 2.0 settings, is created in your `/etc/dt/config/C/` directory.
14. Log out.

▼ *To set up a user for NTED 2.0*

1. Log in as any user.
2. Open the Application Manager.
3. Double-click the NTED folder.
4. Double-click the NTED Setup icon.
5. If you want to set up NTED for a different user than the one listed, type the new user name in the Username field.

   Note – For file sharing, the Windows NT user name needs to be the same as the UNIX user name; however, passwords can be different.
6. In the Password field, type the user's Windows NT password.
7. In the Verify Password field, repeat the user's password.

Note – The password will be encrypted when the configuration is saved from the File menu. However, if you want better password protection, leave the password field blank. When the user starts a Windows NT session, he or she will be prompted for a password.

8. If you want to change the screen resolution setting, type the new resolution numbers in the Geometry field.
9. From the Depth pop-up list, choose 1, 4, 8, or 24 for the emulated screen depth.

   The greater the depth, the more colors are allocated for Windows applications. The recommended depth is 4.

Note – On many platforms, a depth of 8 causes the desktop colors to flash when moving the mouse pointer from Windows applications to TED 4.2 applications.

10. In the Server Timeout field, type in the desired timeout period (in seconds). This is the amount of time that the system will try to connect to a Windows NT server before failover occurs. At failover, the system tries to connect to the next Windows NT server on the list.

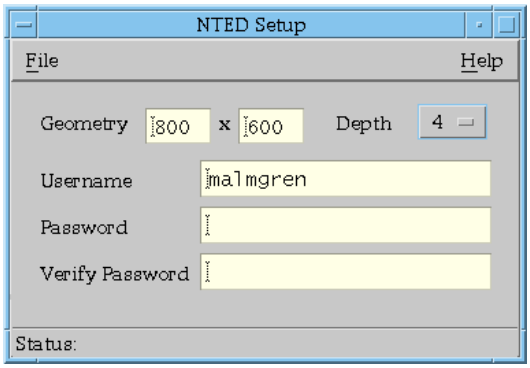

Figure 1-3 NTED User Setup if users can not modify server/domain pairs

11. If NTED is set up so that users can modify server/domain pairs (as shown in Figure 1-4), type the Windows NT server and domain (optional) information in the NT Server and NT Domain fields.

    The list shows the order in which Windows NT will query servers for application data. Type the names and use Add or Enter to add them to the list. Use the Move Up and Move Down buttons to arrange the list in the correct order. Use the Delete button to remove a name from the list.

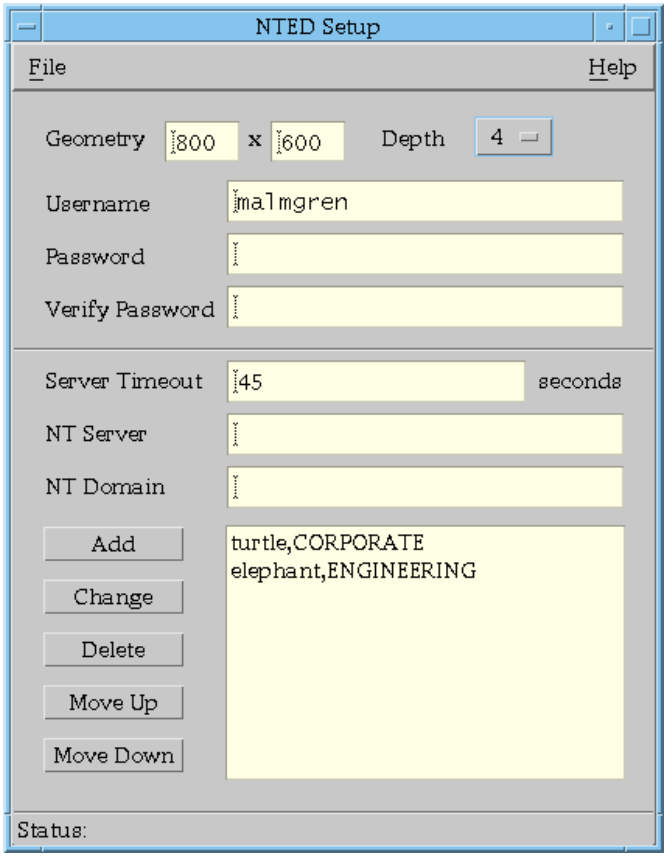

Figure 1-4 NTED User Setup if users can modify server/domain pairs

12. When you have made all setup choices, save your changes:

    - If you have changed the server/domain list, choose Save/Appgather from the File menu.

      NTED searches the server for available applications.

    - If you have not changed the server/domain list, choose Save from the File menu.

Setting Up File Sharing on the UNIX Host

In order for Windows applications to access UNIX files, the NTED application server needs to be connected over the network to a UNIX host that has access to the files. The network connection alone is not enough to pass files from UNIX to Windows NT when manipulating files on the UNIX side, because the two operating systems have incompatible naming conventions. Use a file sharing application to accomplish this interaction, either TEDFS or InterDrive PCNFS.

Setting Up File Sharing with PCNFS

PCNFS is a client that runs on the NTED application server and communicates with the server PCNFSD, which is running on the UNIX host. PCNFS gives the NTED application server access to all exported drives on the UNIX host. A PCNFS client is delivered with WinCenter Pro 3.0. Many UNIX systems have PCNFSD available. As a courtesy, rpc.pcnfsd, the UNIX component of PCNFS, is freely available from TriTeal's FTP site—see "What You Will Need" on page 3 for the location.

Note – See your operating system instructions for more information on setting up file sharing with PCNFS.

Setting Up File Sharing with TEDFS

TEDFS is automatically installed with NTED 2.0. See the *TEDFS Installation and User's Guide* for instructions on setting up TEDFS.

Adding a New Windows Application to NTED

If you add a Windows application to the NTED application server and want UNIX workstations to have access to it, add it to NTED using NTEDAdmin.

▼ *To add a new Windows application to NTED*

1. Open the NTED2.0 program group.
2. Double-click the NTEDAdmin icon.
3. Click Update.

Using NTED 2.0

2

This chapter describes how to use NTED 2.0 to access Windows applications and application files on your NTED application server as well as how to create actions and data types for Windows applications not already defined.

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Opening Windows Applications and Files

One of the main benefits of using NTED 2.0 is the ability to work with Windows application files using the TED graphical user interface. You can add Windows applications to the TED Front Panel or subpanels, as well as manipulate and open Windows application files from the File Manager, or send or receive them as email attachments.

NTED 2.0 can support any Windows application you have on your NTED application server. Actions and data types from the NTED application server specified in the server/domain pair are automatically available.

If you have other Windows applications that you would like to use with TED, you can define actions and file types for them. See “Adding Windows Applications” on page 16 for more information.

Opening Windows Application Files

Use the following procedure to open Windows application files from the TriTeal Enterprise Desktop.

▼ *To open Windows files*

♦ Double-click the Windows file you want to open from either of the following places:

- Email attachments
- File Manager

This action automatically starts an NTED 2.0 session and displays the file you opened with the appropriate application.

Opening Windows Applications

Windows applications can be started by double-clicking application icons.

▼ *To open a Windows application with NTED 2.0*

You can start any of the default Windows applications by doing the following:

1. Open the Application Manager.
2. Double-click the NTED icon.

   The NTED folder appears as shown in Figure 2-1.

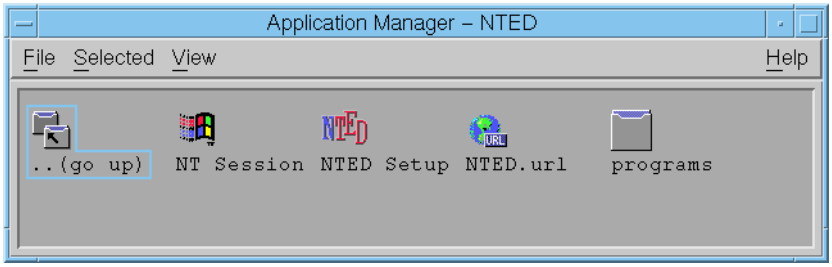

Figure 2-1 The NTED folder contents in the Application Manager

3. Double-click the Programs icon.
4. Double-click the icon for the group in which the application is located.

   Groups correspond to Windows program groups on the NTED application server (for example, accessories).

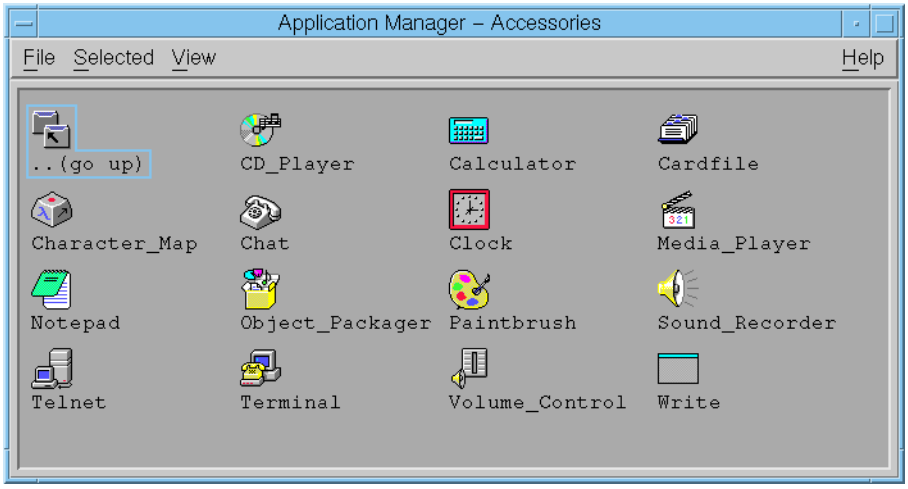

Figure 2-2 The Accessories application folder

5. Double-click the icon for the application you want to start.

Note – Double-clicking any icon associated with a Windows application starts a Windows NT session unless one is already running.

If you prefer to start NTED 2.0 and use the Windows Program Manager to start applications and manage files, use the following procedure.

▼ *To start a Windows NT session with NTED 2.0*

1. Open the Application Manager.
2. Double-click the NTED icon.

   The NTED folder appears as shown in Figure 2-3.

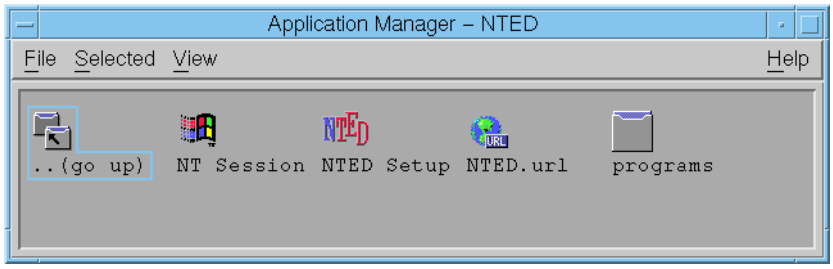

Figure 2-3 The NTED folder contents in the Application Manager

3. Double-click the NT Session icon.
4. When the Program Manager appears, double-click the icon for the Windows application that you want to start.

5. When the Windows environment opens, begin using your Windows application as you normally would.

Note – NTED has no control over Windows applications except for starting and quitting. All errors associated with a Windows application are displayed by the application itself (not NTED).

Adding Windows Applications

When you start NTED 2.0, actions and data types are already provided that let you open Windows applications directly from icons in your TED Application Manager. You can also double-click files in your File Manager or email attachments. If you add an application that you want to access this way, add it to NTED using NTEDAdmin (see "Adding a New Windows Application to NTED" on page 12).

You may also use other Windows applications frequently that do not appear in your Application Manager. If you want to open these Windows applications from your Application Manager, you can define actions and data types yourself.

See the *TED Advanced User's and System Administrator's Guide* for information about creating actions and data types for the Windows applications that you want to manipulate with TED. See in particular, Chapter 4, "Registering an Application" for a complete example.

The following example shows the actions and data types that need to be defined to run Microsoft Project™ in TED.

▼ *To Define Actions and Data Types for a Windows Application*

The following files can be placed in either `/etc/dt/*` or in `$HOME/.dt/*`. If the files are placed into the `/etc/dt` directory, then all users will be able to use the new action. If the files are placed into the `$HOME/.dt` directory, then only the individual user will have access to the action.

1. Define icons for the application.

   See "Step 6: Creating Icons for the Application" in Chapter 4 of the *TED Advanced User's and System Administrator's Guide* for a complete description and example.

   You can use the same icon for both the application and the application file, or you can define separate icons. You can select from icons in `/usr/dt/appconfig/icons/`*language*, or you can create one using the Icon Editor. Either way, one should be specified.

2. Place the icons in `/etc/dt/appconfig/icons/`*language* or `$HOME/.dt/icons`.

3. Create a file in `/etc/dt/appconfig/types/`*language* or `$HOME/.dt/types`: The file should have a unique name ending in `.dt`.

4. Create two action definitions as shown in the example below for Microsoft Project. One includes an argument in the `EXEC_STRING`, and one does not:

```
ACTION Microsoft_Project
{
 TYPE        COMMAND
 ARG_COUNT   >0
 LABEL       Microsoft Project
 ICON        Icon name
 EXEC_STRING/usr/dt/bin/winLaunch \
             c:/msoffice/winproj/winproj.exe \
             /switch1 /switch2 %Arg_1%
 WINDOW_TYPE NO_STDIO
}
ACTION Microsoft_Project
{
 TYPE        COMMAND
 ARG_COUNT   0
 LABEL       Microsoft Project
 ICON        Icon name
 EXEC_STRING/usr/dt/bin/winLaunch \
             c:/msoffice/winproj/winproj.exe /switch1 \
             /switch2
 WINDOW_TYPE NO_STDIO
}
```

5. Create a data type for Microsoft Project files:

```
DATA_ATTRIBUTES ProjFile
{
 ICON        Icon Name
 DESCRIPTIONMicrosoft Project Document
 MIME_TYPE   application/msproject
 ACTIONS     Open
}
DATA_CRITERIA ProjFile_Criteria
{
 DATA_ATTRIBUTES_NAMEProjFile
 NAME_PATTERN *.[mM][pP][pP]
}
```

6. Create an Open action for Microsoft Project files:

```
ACTION Open
{
 ARG_TYPE    ProjFile
 TYPE        MAP
 MAP_ACTION Microsoft_Project
}
```

7. Save and quit the file.

8. Create an action file in the following directory:

   `/etc/dt/appconfig/appmanager/NTED/Microsoft_Project`

   You can also create the file in `$HOME/.dt/appmanager/NTED` directory, which you may need to create.

   This should be an executable file with the same name as the action it will run. The purpose of this file is to create a visual representation of the underlying action.

9. Log out and log back in or execute the "Reload Applications" action in the Desktop_Tools folder in the Application Manager.

   The new Microsoft Project action appears in the NTED application group.

Note – You can visit TriTeal's NTED web site for contributed actions, definition files and utilities by double-clicking the NTED URL in the NTED application group in the Application Manager.

Quitting Your NTED Session

Use the following procedure when you have finished working in your NTED session.

▼ *To quit an NTED Session*

1. In the Windows Program Manager, select Logoff from the File menu.
2. Click OK to quit the Windows NT session.

Troubleshooting

Double-clicking a Windows document from the TED File Manager fails to load the document.

Solution: Make sure the file is in a shared directory and that PCNFSD or TEDFS is running. See "Setting Up the UNIX Workstations" on page 6 for more information.

The user is unable to connect to the WinCenter host or start an application.

Solution: Populate the host.equiv or .rhosts file with the UNIX hostname. If you are using DNS, this name will need to be fully qualified with both the host name and domain name (host.domain). If you are not using DNS, make sure the host table is populated properly.

If you do not want to define your own actions.

Solution: Visit the NTED Web page for a number of contributed actions, definition files, and utilities that can be downloaded.