TED Enhancements

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Unifying Enterprise Computing

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Preface

TED Enhancements provides an overview of the features that TriTeal has added to the Common Desktop Environment (CDE) to form the TriTeal Enterprise Desktop (TED).

Who Should Use This Guide

This guide is intended for users and system administrators.

How This Guide Is Organized

Chapter 1, "Overview of Enhancements" provides a brief look at the added features of the TriTeal Enterprise Desktop beyond the standards of the Common Desktop Environment.

Chapter 2, "Using the GWM" describes the enhancements that have been made to the Graphical Workspace Manager (GWM).

Chapter 3, "Window and Session Management Tools" describes the enhancements that have been made to session and window management, including the Workspace Control and Workspace Menu.

Chapter 4, "Using TEDscape" describes how TEDSCAPE helps Netscape Navigator act like a CDE-compliant application. Web documents can be dragged and dropped to and from Netscape Navigator, Version 3.0 and up.

Chapter 5, "Using the Mailer" describes the enhancements that have been made to the Mailer, including the new icon bars.

Chapter 6, "PAM Administration" describes the framework that lets new authentication technologies be "plugged-in." The Pluggable Authentication Module (PAM) can be used to integrate UNIX login with other security mechanisms, such as DCE.

Chapter 7, "Key Binding Enhancements" lists all the key binding enhancements that have been added to the TriTeal Enterprise Desktop.

Chapter 8, "Resources and Variables" lists all resource enhancements that have been added to the TriTeal Enterprise Desktop.

What Typographic Changes and Symbols Mean

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

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#`

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Overview of Enhancements

This chapter provides an overview of all TED enhancements.

Introduction

The Common Desktop Environment

The Common Desktop Environment (CDE) is a graphical user interface that makes applications running on UNIX systems portable and easy to use. Developed by IBM, Hewlett-Packard, SunSoft, and Novell, CDE has become the defacto standard for UNIX desktops because it unites different platforms under a single user interface.

TED: CDE and Much More

The TriTeal Enterprise Desktop (TED) is an implementation of CDE, version 1.0.10, that includes a number of productivity enhancements. TED was designed to unify your heterogeneous UNIX environment. It is the only cross-platform CDE implementation supporting Solaris, HP-UX, IRIX, and AIX. TED unites files, applications and network resources into one standard, integrated desktop environment. What's more, with features such as central administration, TED can be easily tailored for your environment. TED also adapts to your corporate IT standard with Year 2000 compliance and integrated DCE support. DCE integration provides login security for your enterprise enabling DCE login authentication and DCE password verification.

Feature enhancement

A TED feature enhancement is an improvement to the CDE technology, or a new feature added to enhance the desktop. A feature enhancement, though, is not typically a stand-alone product or feature. Feature enhancements are installed

by default during the TED installation. An example of a feature enhancement is the Graphical Workspace Manager (GWM). Feature enhancements are part of the core TED product.

Desktop service

A TED desktop service is a complete product that has been seamlessly integrated into TED. An example of a desktop service is TEDSCAPE, a tool that helps Netscape Navigator act like a CDE compliant application. Desktop services are bundled with TED and can be optionally installed during installation and configuration (see *TriTeal Enterprise Desktop: Installation Guide*).

Add-on application

A TED add-on application is an independent application that augments and adds value to the core functionality of the TED product. An example of an add-on application is TEDSECURE or NTED. Add-on applications must be purchased and installed separately from TED.

What's New in TED 4.4?

A number of additions and enhancements have been made to the TriTeal Enterprise Desktop since version 4.0. Please see the latest copy of the Release Notes for detailed information of features, enhancements, and problem fixes. TED 4.4 is the latest release of TED and contains the following features:

- Full Year 2000 certification for all supported platforms.
- Enhancement to the GWM, which allows to you drag and drop windows into and out of the GWM.
- Improvements to TEDSECURE that include the following:
  - Increased mail options, such as FORTEZZA and the Merged Mailer
  - Increased cache size for certificates
  - Updated FORTEZZA encryption with the latest SPYRUS libraries
  - Ability to receive Armor mail

What Were the Enhancements to CDE?

The following list includes the major feature enhancements, desktop services and add-on applications that TriTeal has added to CDE in update releases since TED 4.0. All of these features are available in TED 4.4.

TEDSCAPE

TEDSCAPE helps the Netscape Navigator act like a CDE compliant application. Web documents can be dragged and dropped to and from Netscape Navigator Version 3.0 and up. See ***Chapter 4, "Using TEDscape"*** for details.

Graphical Workspace Manager (GWM)

The CDE Front Panel includes multiple workspaces to increase your screen real estate. Each workspace can contain a number of running applications, which you can easily access by using buttons to switch back and forth between workspaces. TriTeal has extended this workspace concept with the Graphical Workspace Manager (GWM). The GWM not only gives you access to each workspace, but also provides a view of all open applications in the workspace, allowing you increased productivity. See ***Chapter 2, "Using the GWM"*** for details.

Pluggable Authentication Module (PAM) Administration

The Pluggable Authentication Module (PAM) framework allows for new authentication technologies to be "plugged-in." It can be used to integrate UNIX login with other security mechanisms. Mechanisms for account, session, and password management can also be "plugged-in" using this framework. See ***Chapter 6, "PAM Administration"*** for details.

Session and Window Manager Tools

Multiple Screen Support

TED includes multiple screen support, which lets you display TED on more than one monitor, expanding the number of applications and workspaces you can work with.

Workspace Menu Enhancement

The Workspace Menu has two new options. The Show GWM option displays the Graphical Workspace Manager (GWM), and the Application List option displays a window listing all currently running applications on the desktop.

Session Manager Enhancement

The Session Manager has been modified to allow for an alternate method of specifying the command string used to regenerate an application after a TED session is restarted.

Productivity Tools

Mail Tool Enhancements

The CDE specification, and therefore TED, comes equipped with a standard mail application, `dtmail`. TriTeal has improved the editing capabilities of this application and added an icon bar. The TED enhanced mail application lets you select an original mail message, make changes to it, and save those changes back to the original mail message. You can edit the content of the message only and not the header information, then save any editing back to the original message without having to create a copy of the original message. An icon bar has also been added to access commonly used features. Please see the *TriTeal Enterprise Desktop 4.0 User's Guide* for more information on editing your mail messages.

Key Bindings and Resources

Key Binding Enhancements

TED provides advanced key, button, and menu binding functions. You can use key binding enhancements as short-cuts to commonly used functions. See ***Chapter 7, "Key Binding Enhancements***" for details.

Resource and Environment Variable Enhancements

TED provides new Resources and Environment Variables that let you customize your environment more efficiently. See ***Chapter 8, "Resources and Variables***" for details.

Add-on Applications

These add-on applications must be purchased separately. If you are interested in any of these products, please contact your TriTeal sales representative for more information.

WINTED

WINTED seamlessly delivers UNIX applications and files to the native Windows desktop. Users benefit by staying within their intuitive environment, easily accessing UNIX applications from the Windows desktop. WINTED also complements the Windows desktop with powerful productivity extensions. Both of these attributes can be centrally administered, reducing costs associated with hands-on administration, support, and maintenance.

NTED

NTED seamlessly delivers Windows applications and files to the native UNIX desktop. Users benefit by staying within their intuitive environment, easily accessing Windows applications from the UNIX desktop. System Administrators benefit from central NT administration, reducing overall PC administration costs and complementing existing IT strategies.

TEDFS

TEDFS is a UNIX-to-Windows integration tool that works in conjunction with both WINTED and NTED. Based on the SMB/CIFS file sharing standard, TEDFS makes it easy to share files and printers in a cross-platform environment. Unlike PC-NFS based solutions, TEDFS requires no client-side software, making it easier to install, deploy, and manage.

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Using the GWM

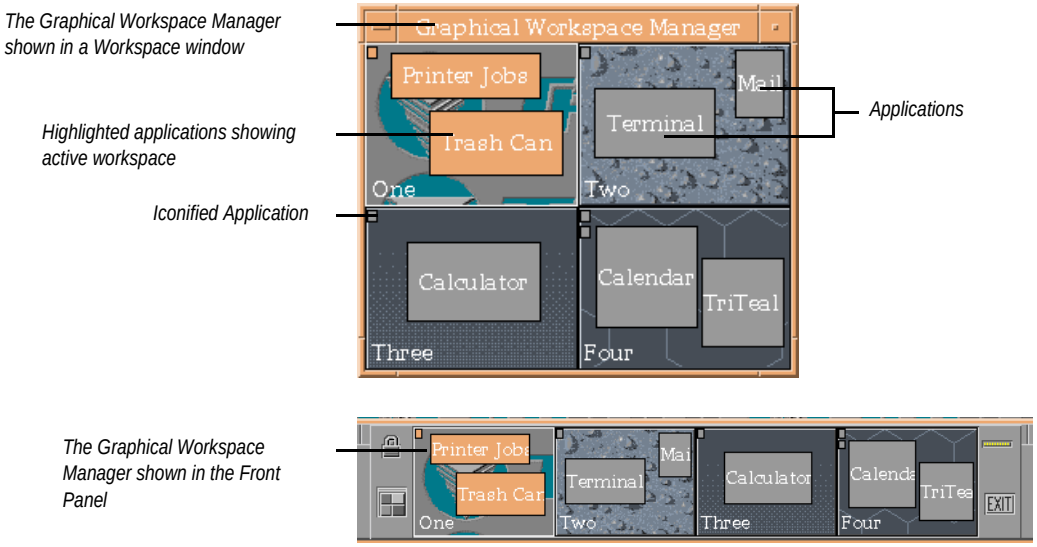
For quick and more efficient access to your applications, a Graphical Workspace Manager (GWM) has been added to the Front Panel as part of the TED Workspace Manager. The Graphical Workspace Manager shows a miniature view of the contents of each workspace in your session. You can display different workspaces with a button click and also select which application you want to be active. With the GWM, you can do the following:

- View workspace contents and navigate through multiple workspaces.
- Move applications from one workspace to another.
- Put copies of applications on multiple workspaces.
- See full application names by simply placing the pointer over the application icon.
- Change the size and layout of the workspaces.
- Display the name and backdrop of the workspaces.
- Change the position and font size of the workspace names.
- Easily move the Graphical Workspace Manager from the Front Panel to a separate window, if you prefer.
- Add, rename, and delete workspaces from the GWM.
- Change workspaces with keyboard shortcuts, or by clicking with the mouse.
- Add new resource variables to your X resources file to change the default settings for the GWM.

The new release of the Graphical Workspace Manager provides the following new feature:

- Drag and drop of clients or thumbnails to and from the GWM workspace or current workspace.

The figure below displays the Graphical Workspace Manager window in the Workspace and in the Front Panel.



Moving from Workspace to Workspace

You can easily change the current workspace using the GWM with a click of the mouse. You can also add new window manager functions to your `dtwmrc` file to use keyboard shortcuts to change workspaces.

The following options are available for the `f.workspace_change` <*direction*> function:

- left
- right
- up
- down
- left_up
- right_up
- left_down
- right_down

See ***Chapter 7, "Key Binding Enhancements,"*** for more information about changing workspaces with key bindings.

To change workspaces

♦ To change the workspace that is displayed, do one of the following:

- Click with mouse button 2 in the desired GWM workspace.

  If you click on an application using mouse button 2, that application will be brought to the top of the stack when the new workspace is displayed.
- Double-click with mouse button 1 in the desired GWM workspace.
- Use the keyboard shortcuts you set up in your `dtwmrc` file.

Working with Applications in the Workspace

The GWM gives you easy access to the applications you have running in different workspaces. Using the GWM, you can do the following:

- Move applications from one workspace to another.
- Copy applications to other workspaces using the Control key.
- Drag and drop applications into or out of the GWM.

Moving applications

♦ Using mouse button 1, drag the application window or minimized application (icon) to the desired workspace.

Copying applications

♦ Press the Control key, and using mouse button 1, drag the application window to the desired workspace.

This action has the same effect as the Occupy Workspace option on the icon pop-up menu or the application's system menu.

Note You can press or release the Control key while moving or copying applications to change from one to the other and vice versa. You can also press the Esc key to cancel.

The GWM has been enhanced for TED 4.4 to include a feature that lets you drag applications from the current workspace to a GWM workspace. You can also drag thumbnails from any GWM workspace into the current workspace.

Please refer to "To set GWM properties" on page 11 for information on enabling this feature using the GWM Properties dialog box.

Dragging and dropping clients or thumbnails

♦ Do the following:

- To drag a client to a different GWM workspace, move the window until you see the outline of the window shrink to a thumbnail size.

  When you release the mouse button, the client will be moved to the GWM workspace.

- To drag a thumbnail to the current workspace, drag the thumbnail out of the GWM workspace until you see a large outline.

  When you release the mouse button, the client will appear in the current workspace.

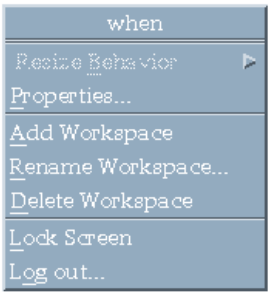
Adding and Deleting Workspaces

You can easily add, rename, and delete workspaces using the GWM pop-up menu.

To add workspaces

1 Place your cursor over a workspace in the GWM.

Press mouse button 3 to display the GWM pop-up menu.



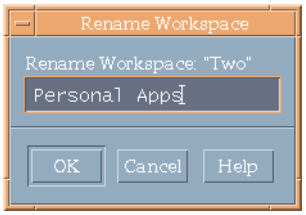
2 Choose Add Workspace from the pop-up menu.

The workspace is given the name New, or New1, New2... and so on, if New already exists.

To rename a workspace

1 Place your cursor over the workspace that you want to rename.

2 Press mouse button 3, and choose Rename Workspace from the pop-up menu.



To delete a workspace

1 Place your cursor over a workspace in the GWM.

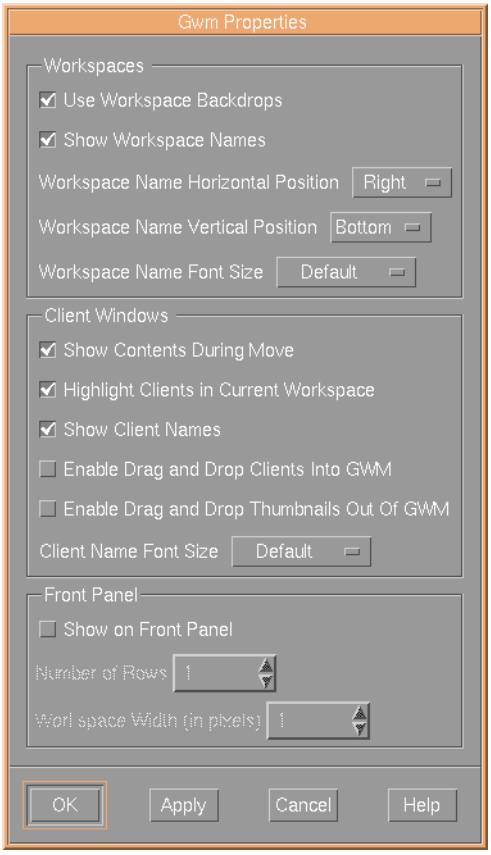
2 Press mouse button 3, and choose Delete Workspace from the pop-up menu.

Displaying the GWM in the Workspace

You can change the GWM so that it appears in the Workspace rather than the Front Panel. You can easily change this setting using the Properties dialog box.

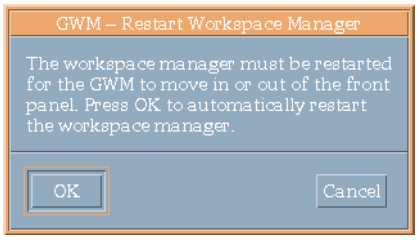
To display the GWM in the Workspace

1. Place your cursor over a workspace in the GWM.
2. Press mouse button 3, and choose Properties from the pop-up menu. The GWM Properties dialog box appears.



3. Click the Show on Front Panel check box.
4. Click OK.

   The following dialog box appears.



5 Click OK to restart the Workspace Manager.

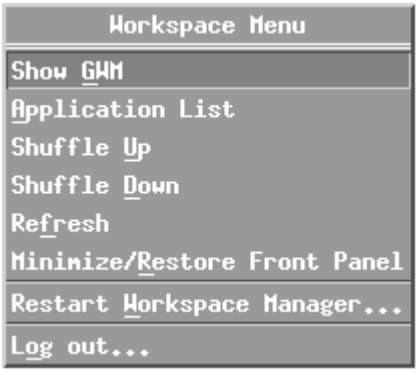
When the Workspace Manager restarts, the GWM will appear in the Workspace as a separate window.

If you close the GWM window, you can display it using one of the following two procedures:

To show the GWM using the Workspace Menu

1 Place the pointer over an unoccupied area of the desktop and press mouse button 3.

The Workspace menu appears.



2 Choose Show GWM.

The Graphical Workspace Manager appears.

Note If you choose this command when the GWM is in the Front Panel, it will have no effect.

To start the GWM from the Front Panel

♦ Click the GWM control in the Front Panel.

Note If you click this control when the GWM is in the Front Panel, it will have no effect.

Changing the Appearance of the GWM

To set GWM properties

1. Place your cursor over a workspace in the GWM.
2. Press mouse button 3, and choose Properties from the pop-up menu.
3. Do any of the following to make Workspace changes:
   - Check Use Workspace Backdrops if you want each workspace backdrop displayed in the GWM workspaces.
   - Check Show Workspace Names if you want the names of the workspaces displayed in the GWM workspaces.
   - If you choose to display workspace names, you can also specify the location of the text. Select a vertical and horizontal position for the names by selecting from the appropriate pop-up list.
   - Choose a font size for the workspace name text. Note that the Default text is the font specified in your Style Manager Font control.
4. Do any of the following to make changes to the appearance and behavior of client application windows in the GWM:
   - Check Show Contents During Move if you want to see the application's name as you move it from one workspace to another.
   - Check Highlight Clients in Current Workspace to make all applications in the current workspace use the highlight color. This is in addition to the white workspace border and makes it easier to determine which is the active workspace.
   - Check Show Client Names to display the names of the client applications in the GWM workspaces.
   - Check Enable Drag and Drop Clients Into GWM to drag clients into a GWM workspace.
   - Check Enable Drag and Drop Thumbnails Out Of GWM to drag thumbnails from a GWM workspace to the current workspace.
   - Choose a font size for the application name text. Note that the Default font is the font specified in your Style Manager Font control.

To change the size of the GWM in the Front Panel

1 Choose Properties from the GWM pop-up menu.

2 Choose the Number of Rows by clicking on the spin box.

The number you select determines the "desired" number of rows, not necessarily the exact number. Depending on how many workspaces you have, the number of rows will change, but will try to approximate the number of rows you chose.

3 Choose the Workspace Width by clicking on the spin box.

Because you can not visually adjust the size of the workspaces when they are in the Front Panel, you have to choose the size in pixels.

4 Click Apply.

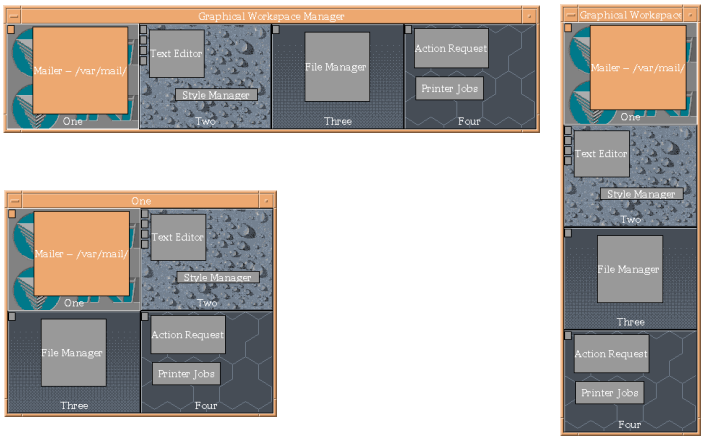
5 Click OK to close the Properties dialog box.

To change the size and layout of the GWM in the workspace

The GWM lets you modify the size and shape of the GWM in the Workspace. The following illustration shows some of the variations of the GWM, changing both size and layout. You can make these changes by choosing different Resize Behavior settings from the GWM pop-up menu.

The default setting for Resize Behavior is Changes Size. By dragging a corner of the GWM window, you can change the size of the workspaces. Their layout remains the same.

If you choose the Changes Layout setting for Resize Behavior, the size of the workspaces remains the same, but the layout changes. Instead of the standard 2 by 2 layout, you can resize the GWM window, to create 1 by 4 or 4 by 1 layouts. If you add more workspaces, you will have even more possibilities.



1 Do one of the following:
   - Choose Changes Size from the Resize Behavior option to keep the same layout and resize the workspaces.
   - Choose Changes Layout from the Resize Behavior option to keep the same size workspaces and change their layout.

2 Drag the GWM window to the desired size and shape.

Note You may need to switch back and forth between changing layout and size of the GWM to get the GWM window to look the way you want it to.

Configuring GWM Resources

A number of new resources have been added to make using the GWM more customizable. Most of the resources are duplicates of options on the Properties panel, but a few can be set only by adding resources to any of the following files:

- `/etc/dt/config/`*language*`/sys.resources`
- `/etc/dt/app-defaults/`*language*`/Dtwm`
- `$HOME/.Xdefaults`

Changes to `sys.resources` or `Dtwm` will affect all accounts on a system, and changes to `.Xdefaults` will affect individual accounts.

For a list of resources and descriptions please see "Graphical Workspace Manager (GWM)" on page 58.

3

Window and Session Management Tools

This chapter outlines the session and window management enhancements to the TriTeal Enterprise Desktop.

Multiple Screen Support

To address the needs of users who have multiple screens on a single workstation, TriTeal has enhanced multiple screen support in `dtwm`. You no longer have to start applications by hand to display them on a non-primary screen.

- TED sessions can be configured to run with either an independent Front Panel on each screen, or a single Front Panel on the primary screen. Both Window Manager configurations are discussed below.
- The TED clients, `dtfile`, `dtstyle`, and so on, have also been extended to account for increased multiple screen functionality.
- File Manager views may be displayed on screens other than the primary screen.
- Colormaps, backdrops, and so on, may be changed on any screen without stopping and restarting `dtstyle` on the target screen.

Along with these obvious enhancements, many subtle improvements have been made to allow for easier control of desktop attributes and resources.

The files that are affected are:

`/etc/dt/app-defaults/C/Dtwm`

This configuration of `Dtwm` creates a Front Panel on each screen of the display. While all Front Panels are identical, using the same `dtwmrc` file, they can be configured differently and function independently.

Each screen of the display functions as a unique desktop environment, however all screens are governed by a single user session. Resources, application hints and presence, and so on, are all saved in the same manner as in a standard TED session.

The Window Manager can run on any display device that the X display server controls.

If you specify more than one display device, you must also specify the physical configuration of the displays using the appropriate X display server flags. To run the X display server on all the display devices, follow the procedure below:

To run TED on multiple displays

1 Read the manual pages for the X display server of your system.

Note It is important to identify the X display server flags you need to use. The manual pages will explain what steps you need to take in order to select your primary display device, and to set the orientation of the devices (left to right, or top to bottom.) All the display devices should be defined and available to the system.

2 Verify that you can start the X display server on all display devices by simply executing the X display server using the flags you have identified from the man pages.

3 Stop all TED processes on your system.

4 Modify the `/etc/dt/config/Xservers` file to include the flags in the X display server line.

For example, the following change will display the Login Manager on the IBM AIX platform with two display devices:

Comment out the line

```
# :0 Local local@console /usr/bin/X11/X -T -force :0
```

and insert the following line:

```
:0 Local local@console /usr/bin/X11/X -T -force \
                      -P11 1 -P12 2
```

The following example illustrates the changes required to display the Login Manager on the Sun Solaris platform with two display devices (for example, `/dev/cgsix0` and `/dev/cgsix1`):

Comment out the line

```
* Local local_uid@console root /usr/openwin/bin/X \
                              :0 -nobanner
```

and insert the following line:

```
* Local local_uid@console root /usr/openwin/bin/ \
            X -nobanner -dev /dev/fb0 -dev /dev/fb1
```

5 Start the Login Manager (`dtlogin`).

The Login Manager will appear on the primary display device and the Session Manager will run on all display devices.

Workspace Menu Enhancements

The Workspace Menu has been enhanced with the following additions, to make window management easier:

- The Show GWM option displays the Graphical Workspace Manager. For more information on the Show GWM option, please see "To show the GWM using the Workspace Menu" on page 10.
- The Application List option displays a window that lists all currently running applications on TED.

To display a list of running applications

1. Place the pointer over an unoccupied area of the desktop and press mouse button 3.
2. Select Application List.

   A window appears with a list of all currently active applications.

3. Double-click an application to go to the workspace where the application is running.

   The application you selected also becomes the active window.

Note If an application list window is open, it will not automatically update when an application is closed. To see a revised list, open a new application list window.

Style Manager Enhancements

The Style Manager has been enhanced with a Workspaces control.

Adding the Workspaces Resource Control

The Workspaces control is an optional control that you can add to the Style Manager by modifying the `Dtstyle*componentList` resource in the `Dtstyle` file of the `/etc/dt/app-defaults/`*language* directory.

Although the Workspaces control is similar in appearance to the Graphical Workspace Manager (GWM) button on the Front Panel, it provides different functions from that of the GWM.

You can do the following after adding the Workspaces control:

- Synchronize workspaces across screens (for multiple screen display).
- Hide or show the workspace switch area.
- Add a workspace slider control to specify the number of workspaces, and change the number of workspaces, if desired.

When the Workspaces control is added, the Style Manager will show the new control next to the Startup control.

The Workspaces control is shown below.

To add the Workspaces Resource Control to the Style Manager

1. Change directory to: `/etc/dt/app-defaults/`*language*`/`
2. Use a text editor to open the file `Dtstyle`.

   Copy the file from `/usr/dt/app-defaults/`*language*`/` if it does not exist.
3. Find the resource: `Dtstyle*componentList.`

   The `Dtstyle*componentList` will list all the controls presently included in the Style Manager.
4. Add `Workspaces` to the end of the list after the word `Startup`.
5. Save the changes you have made.

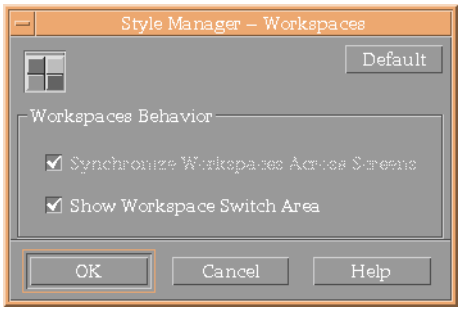
You should now see the Workspaces control in the Style Manager when you open it.

To enable synchronized workspaces

Note This option will be available only if you have a multiple screen display.

1 Locate the Workspaces control at the far right of the Style Manager, and click the control.

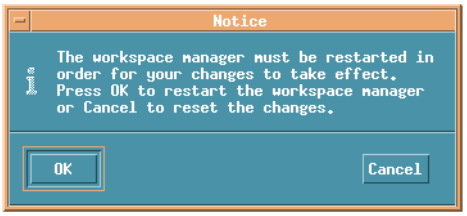
The Workspaces dialog box will appear as shown below. The dialog box may also display a Number of Workspaces slider if you added the resource as described in "To add the Workspaces slider" on page 20.



2 Click the Synchronize Workspaces Across Screens checkbox to turn on the feature.

3 Click OK.

The dialog box shown below appears, informing you that the Workspace Manager must be restarted for the new changes to take effect.



4 Click OK to restart the Workspace Manager and apply the changes you have made or Cancel to stop the changes from being made.

To hide or show the Workspace switch area

1 Locate the Workspaces control at the far right of the Style Manager, and click the control.

2 Click the Show Workspace Switch Area checkbox to show or hide the Workspace switch area.

3 Click OK.

4 When the dialog box appears, click OK to restart the Workspace Manager and apply the changes you have made, or click Cancel to stop the changes from being made.

Note If you have the GWM in your Front Panel, and you turn off the Workspace Switch Area, the GWM will automatically be displayed in a workspace window.

To add the Workspaces slider

1 Change directory to: `/etc/dt/app-defaults/`*language*`/`

2 Use a text editor to open the file `Dtstyle`.

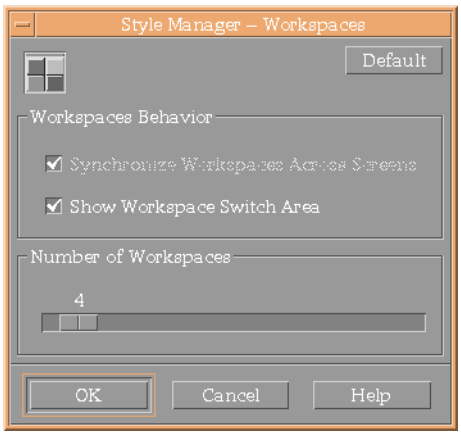
Copy the file from `/usr/dt/app-defaults/`*language*`/` if it does not exist.

3 Add the following line below the `Dtstyle*componentList` entry:

```
Dtstyle*useNumWsScale: True
```

4 Save the changes you have made and restart the Style Manager.

The Workspace Manager dialog box appears with the slider control.



To add Workspaces with the Workspaces Dialog Box

1 Locate the Workspaces control at the far right of the Style Manager, and click the control.

The Workspaces dialog box appears.

2 Move the slider to display the total number of workspaces that you want.

3 Click OK.

Note You can use a resource to limit the number of workspaces that you can add with the slider. If you limit the workspaces in your switch area, the actions you take in the Workspaces dialog box will have different effects. See the following procedure for more information.

To change the Switch Area Button Limit

The slider on the Workspaces dialog box lets you add a large number of workspaces instantly, which can save you time. However, large numbers of workspaces may create a huge, unmanageable Front Panel if you display all the workspace buttons. The Switch Area Button Limit resource lets you limit the number of buttons in the switch area so that if you want to work with large numbers of workspaces, you won't end up with an unwieldy Front Panel. All workspaces will be displayed in the GWM exclusively.

This procedure is completely optional. You don't have to limit the switch area if you don't want to.

1. Change directory to: `/etc/dt/app-defaults/`*language*`/`
2. Use an editor to open the file `Dtstyle`.

   Copy the file from `/usr/dt/app-defaults/`*language* if it does not exist.
3. Add the following line:

   `Dtstyle*switchButtonLimit: <`*limit*`>`

   where *<limit>* is a number. The default is 0.
4. Save the changes you have made and restart the Style Manager.

   This resource limits the number of workspaces you can add using the slider that will display in the Front Panel only. It does not limit the workspaces you can add using the pop-up menus in the GWM or in the switch area of the Front Panel.

Now, if you display the Workspaces control and attempt to use the slider to set the number of workspaces, you may detect different behavior. If you use the slider to increase the number of workspaces and you exceed the limit set by the resource, the Show Workspace Switch Area checkbox will be unchecked and made unavailable. If you restart the Workspace Manager, the buttons in the switch area will not appear. You will see the specified number of workspaces in the GWM only.

The Show Workspace Switch Area check box will become available when you move the slider below the limit specified by the resource.

Session Manager Enhancements

Alternate Command String for Regenerating Applications

The TED Session Manager has been modified to allow for an alternate method of specifying the command string used to regenerate an application after a TED session is restarted.

Formerly, the contents of the WM_COMMAND property were queried for each top level window on the root window for the purpose of saving the user's session at logout time. The contents of the WM_COMMAND property were used to build a dtsmcmd command string that was saved in the dt.session file. The dt.session file is read when a TED session is resumed. All applications referenced in the file are restarted with the command derived from the WM_COMMAND window property. Applications started from shell scripts, or in any other manner that requires some preliminary setup, would fail to be restarted properly under the default dtwm.

To allow users to specify an alternate startup string to be used in place of the contents of WM_COMMAND, the WM_COMMAND_STR resource was created. By specifying this resource for a given application, the user causes the session manager to ignore the contents of WM_COMMAND and use the string specified in the appname*WM_COMMAND_STR resource in its place.

An example shell script that starts an X application is shown below:

```
#!/bin/sh
echo "table*WM_COMMAND_STR:    /home/fred/TABLE/run" | xrdb -merge
XAPPLRESDIR=/home/fred/TABLE/APP
export XAPPLRESDIR
/home/fred/TABLE/table
```

Notice the call to xrdb -merge that sets the WM_COMMAND_STR resource. The shell script run starts the X program table. After logging out and logging back in again, the shell script run will be invoked to start table instead of table being invoked directly, as would be the case if WM_COMMAND_STR was not set.

Session Log Files

Random stdout and stderr output from applications started by the Session Manager, the Front Panel, or Workspaces menu can be directed into your $HOME/.dt/sessionlogs directory. By default, this output is not recorded, but is instead sent to /dev/null.

If you want to see this random application output (usually only for debugging purposes), edit your .dtprofile file and comment out the dtstart_sessionlogfile lines to send the output to your $HOME/.dt/sessionlogs directory.

Alternatively, you can change /dev/null to /dev/console to see the debugging output on your console device.

4

Using TEDSCAPE

What Does TEDSCAPE Do?

TEDSCAPE helps Netscape Navigator act like a CDE compliant application. Web documents can be dragged and dropped to and from Netscape Navigator version 3.0 and up.

Features

TEDSCAPE has the following features:

- Documents can be saved as a URL file.
- Only one TEDSCAPE process runs on a display, regardless of how many browser windows are opened.

System Requirements

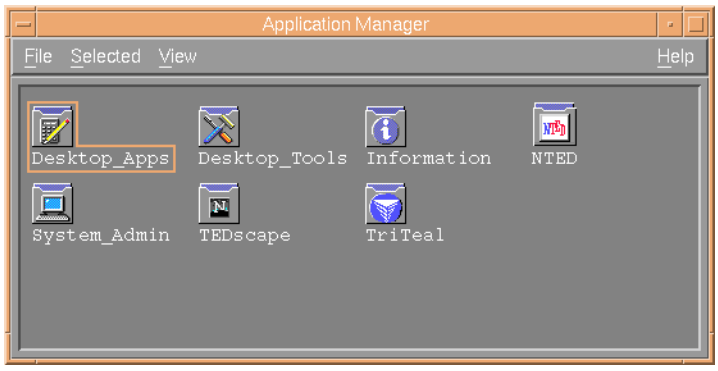
- Netscape Navigator version 3.0 or higher

Starting TEDSCAPE

You can start TEDSCAPE in a number of ways as described in the following procedures:

To start TEDSCAPE from the Application Manager

1. Click the Application Manager control in the Front Panel.
2. Double-click the TEDscape folder.



3 Double-click the TEDscape icon.

To start TEDSCAPE by drag and drop

- Drag and drop a document onto the TEDscape icon in the Application Manager.

  The document must be a file type that is recognized by TEDSCAPE.

To start TEDSCAPE from a file

- Double-click on a URL document icon within the File Manager or as an attachment in the Mailer.

  The document must be a file type that is recognized by TEDSCAPE.

To start TEDSCAPE from the command line

1 Change directory to `/usr/dt/bin`.

2 Type the following command:

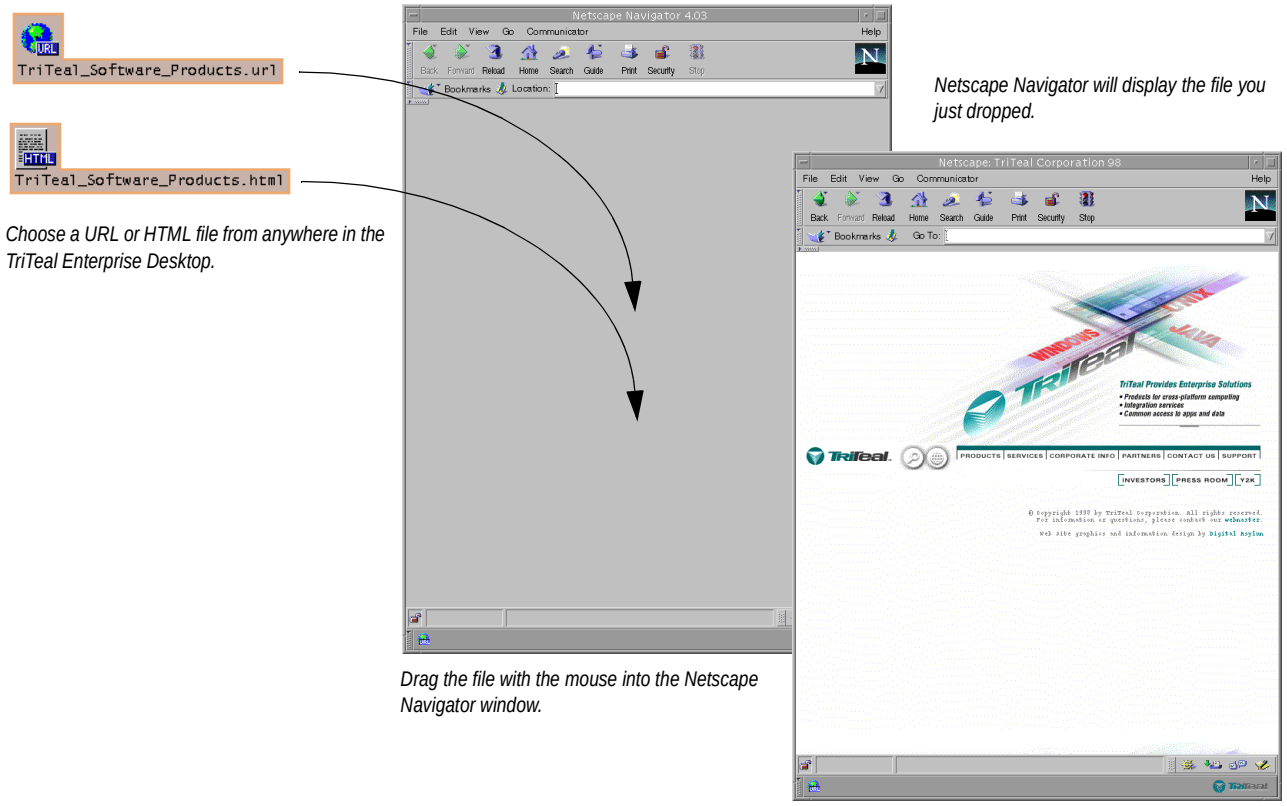
```
tedscape
```

Using TEDSCAPE

This section describes how to open and save files in TEDSCAPE.

Opening Files in TEDSCAPE

With TEDSCAPE, you can drag and drop files from anywhere in the TriTeal Enterprise Desktop to Netscape Navigator to open or display them.



Note Only URL files or HTML source can be dragged from the desktop to TEDSCAPE.

TEDSCAPE can handle all CDE and TED file types. However, they will be displayed as source unless there is internal support for a particular file type (such as GIF and JPEG images).

Printing Files in TEDSCAPE

TEDSCAPE lets you print a URL file simply by drag and drop. When you run Netscape Navigator with TEDSCAPE you will notice a URL icon at the bottom of the browser.

To print the URL of a document

1. Open TEDSCAPE.
2. Open a document (either local or remote).

3 When the document is loaded, place the pointer on the URL icon at the bottom of TEDSCAPE and press mouse button 1.

4 Drag the URL icon to the Print Manager icon on the Front Panel.

The URL of the document is printed.

Saving Files in TEDSCAPE

With TEDSCAPE, you can save URL and image files using the drag and drop features of the TriTeal Enterprise Desktop.

To save the URL of a document

1 Open TEDSCAPE.

2 Open a document (either local or remote).

3 When the document is loaded, place the pointer on the URL icon at the bottom of TEDSCAPE and press mouse button 1.

4 Drag the URL icon to the desktop, Mailer, or File Manager.

The URL of the document is saved.

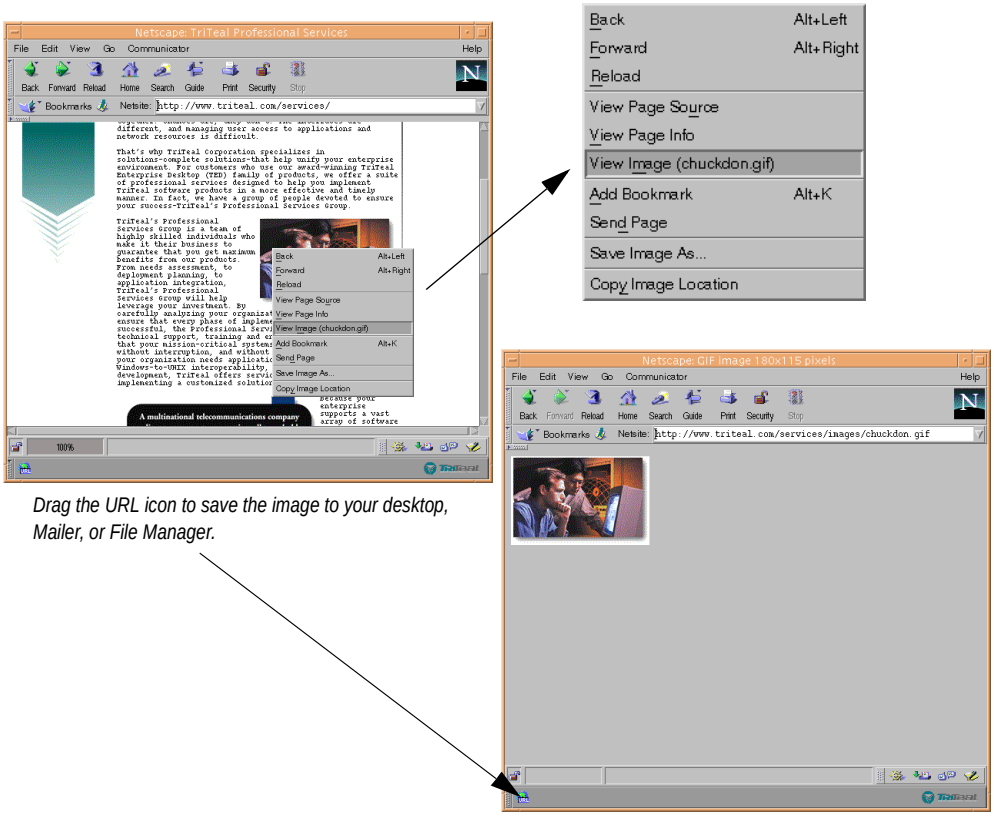
Saving Image Files

It is not possible to use the URL icon to save image files that are contained in larger documents. To save image files, you will need to isolate the image onto its own page and then drag the URL icon to the desktop, Mailer, or File Manager.

To save image files in TEDSCAPE

1 Position the pointer over the image you want to save, and press mouse button 3.

This will open the Netscape Commands menu. The Netscape Commands menu is shown below.



Drag the URL icon to save the image to your desktop, Mailer, or File Manager.

2 Choose View Image from the Netscape Commands menu.

The image will now appear by itself in the TEDSCAPE window.

3 Drag the URL icon to the desktop, Mailer, or File Manager.

5

Using the Mailer

This chapter describes an overview of the TED 4.4 enhancements to the Mailer.

Introduction

The TED enhanced mail application lets you select an original mail message, make changes to it, and save those changes back to the original mail message. An icon bar has also been added to access commonly used features. Please see the *TriTeal Enterprise Desktop 4.0 User's Guide* for more information on editing your mail messages. This chapter contains information on Mailer features enhanced since TED 4.0.

Use the Mailer to perform the following tasks:

- Browse and view messages.
- Compose new messages.
- Send messages to various recipients with or without attachments.
- Respond to messages.
- Forward messages to others not on the original mailing list.
- Print messages.

Please refer to the *TriTeal Enterprise Desktop User's Guide* for complete information about standard Mailer features.

Composing Messages

The following illustration shows the Mailer compose window toolbar, which lets you use icons to access Mailer features.

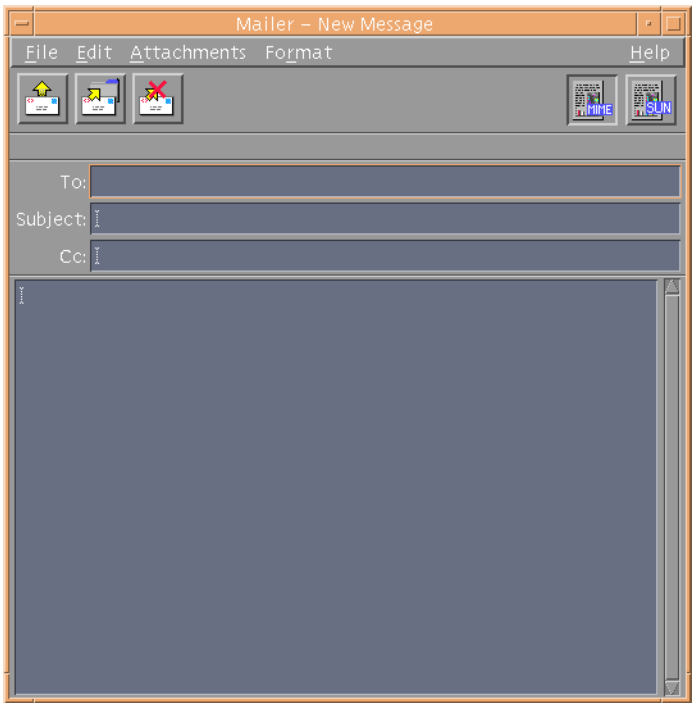
To compose a message

1 If the Mailer is not already started, click the Mailer control in the Front Panel.

The mailbox appears.

2 Choose New from the Compose menu.

Note — You can also access the Compose menu from the Edit window, which appears when you double-click a message in your Mailer View window.



3 Type the e-mail address of the recipient in the To field and press Return.

4 Type the topic of the message in the Subject field and press Return.

5 *Optional.* Type the e-mail addresses of the users you want to be carbon copy recipients of this message in the Cc field.

6 Click the MIME or Sun button to choose the format for the message.

7 Type the body of the message and add attachments or include files as you normally would.

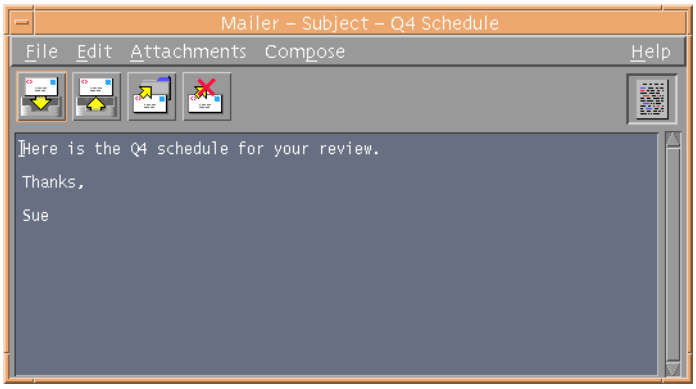
8 Click the Send button or choose Send from the File menu.

Editing E-mail Messages

The following illustration shows the toolbar for the Edit window. The buttons on the left duplicate the menu items on the File menu.

To make changes to messages in your mailbox

1 To make changes to messages in your mailbox, do one of the following:
- Double-click the message header in the Message Header list.
- Select the message, then choose Open from the Message menu.



2 Make changes to the message as desired.

3 Click the Save button or choose Save from the File menu.

Note — You can also access the Compose menu from the Edit window, which lets you respond to a message after you have double-clicked it.

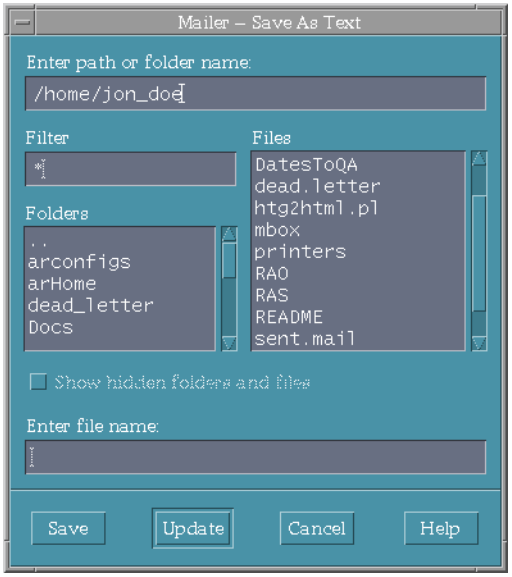
Saving E-mail Messages

If you select a message and choose Save As from the Message menu, the message will be saved as a mail file, including all the mail header information. If you want to save a message simply as a text file, use the procedure below.

To save e-mail messages as files

1 To save an e-mail message as a text file without mail headers, do one of the following:
- Double-click the message header in the Message Header list.
- Select the message, then choose Open from the Message menu.

2 Click the Save As button or choose Save As... from the File menu.



3 Choose a location for the file.

4 Choose a name for the file.

5 Click Save.

Printing Messages

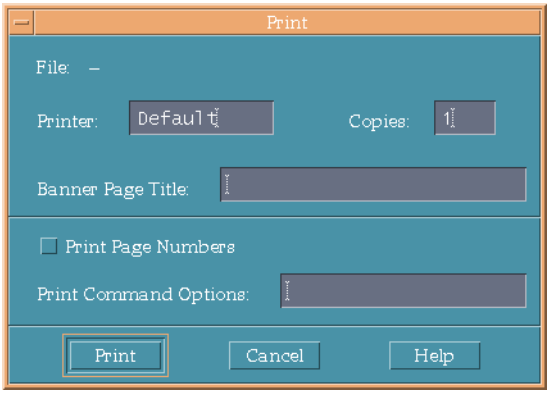
You can print an e-mail message in the following ways:

- Print the e-mail message from the Mailer Message Menu.
- Drag the message from the Mailer Header List to the Print Manager control on the Front Panel or to the Print Manager icon in the Application Manager or subpanel.
- Drag the e-mail message's attachment icon to the Print Manager control in the Front Panel or to the Print Manager icon in the Application Manager or the Printer subpanel.

To print messages from the Mailer

1 Select an e-mail message in the Mailer Header List or its attachment from the Attachment List.

2 Choose Print from the Message menu or click the Print button on the Mail Manager Main Window.



3 *Optional.* Set any of these printing options:
- Type the number of copies to print.
- Type text to appear on the printer banner page. The banner page is printed in addition to the burst page.
- Click Print Page Numbers if you want to number the pages.
- Type command-line printer options.

4 Click Print.

The e-mail message is printed with the chosen options. The Print dialog box closes when you print the e-mail message. To close the dialog box without printing your e-mail message, click Cancel.

New Mailer Resource

Setting Timeout Processing to Check for NFS Problems

The following resource can be added to the `.mailrc` file:

```
set rfsiotimeout=60
```

This resource can be used to set timeout processing to check for NFS hangs. The timeout value is in seconds. If a timeout is detected, you will be notified of a potential problem, but the NFS operation will not hang.

If the timeout is enabled, make sure the timeout value is set to a number of seconds that is larger than the worst case read/write/open time (that is, consider large mailboxes on a congested network), or you may see the warning dialog even when there is no problem.

6

PAM Administration

The Pluggable Authentication Module (PAM) framework allows for new authentication technologies to be "plugged-in." It can be used to integrate UNIX login with other security mechanisms. Mechanisms for account, session, and password management can also be "plugged-in" using this framework.

Introduction to PAM

PAM lets the system administrator choose any combination of services to provide authentication. The list below includes some of the advantages of PAM to the system administrator.

- Flexible configuration policy
  - Per application authentication policy
  - Can choose a default authentication mechanism for non-specified applications
- Ease of use for the end-user
  - No retyping of passwords if they are the same
- Can pass optional parameters to the services

PAM Terminology

PAM employs run-time pluggable modules to provide authentication related services. These modules are broken into four different types based on their function: authentication, account management, session management, and password management.

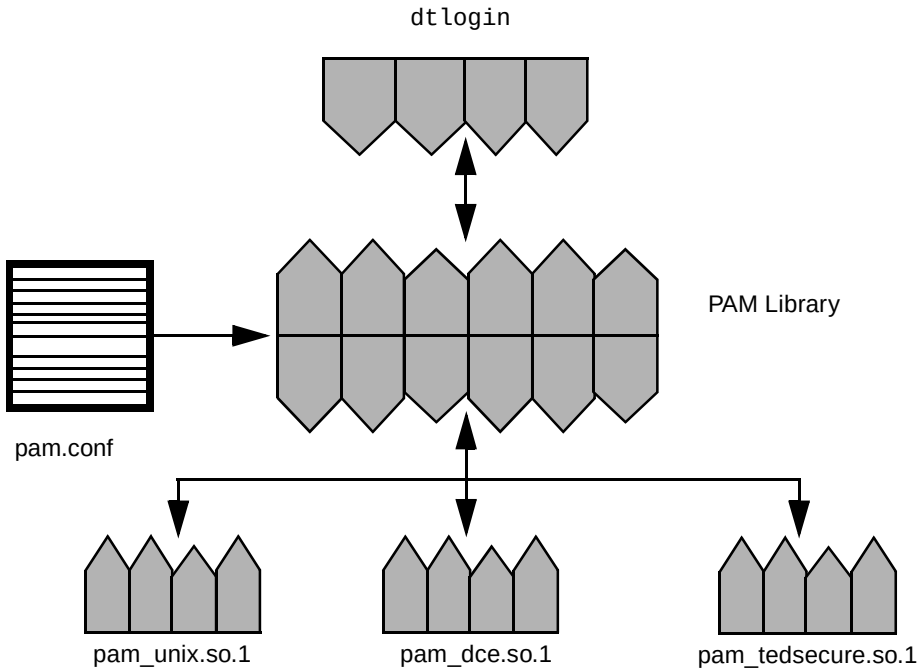
- The authentication modules provide authentication for users and allows for credentials to be set, refreshed, or destroyed. These modules allow for the user to be identified.
- The account modules check for password aging, account expiration, and access hour restrictions. Once the user is identified using the authentication modules, the account modules will determine if the user can be given access.

- The session modules primarily manage the opening and closing of an authentication session. They can log activity or provide for clean-up after the session is over.
- The password modules allow for changes to the password and the password-related attributes.

PAM allows for authentication by multiple methods through stacking. When a user is authenticated through PAM, multiple methods can be selected to fully identify the user. Depending on the configuration, the user can be prompted for passwords for each authentication method. Therefore, the user will not need to remember to execute another command to get fully authenticated. The order that the methods are used is determined through the configuration file, `/etc/dt/config/pam.conf`, if it exists, or the default configuration file, `/usr/dt/config/pam.conf`.

How Does PAM Work?

The following diagram illustrates the relationship between the TED Login Manager (`dtlogin`), the PAM library, and the modules. The Login Manager uses the PAM library to access the appropriate module. The `pam.conf` file defines which modules are to be used with each application. Responses from the modules are passed back through the library to the application.



PAM Files

The PAM software consists of a library, several modules, and a configuration file.

PAM Library

The PAM library, `/usr/dt/lib/libpam`, provides the framework to load the appropriate modules and manage stacking. It provides a generic structure for all of the modules to plug into.

PAM Modules

Each module provides the implementation of a specific mechanism. More than one module type (auth, account, session, or password) may be associated with each module, but each module needs to manage at least one module type. Here is a description of some of the modules:

- The `pam_unix` modules, found in `/usr/dt/lib/security/`, provide support for authentication, account management, session management, and password management. Any of the four module type definitions can be used with this module. It uses UNIX passwords for authentication. The file names are as follows:
  - Solaris—`pam_unix.so.1`
  - AIX—`pam_unix.a`
  - HP-UX—`pam_unix.sl`
- The `pam_dce` module, `/usr/dt/lib/security/pam_dce.so.1` (Solaris only), provides support for authentication, account management, and password management. Any of these three module type definitions can be used with this module. The `pam_dce` module uses DCE Registry for authentication.
- The `pam_tedsecure` module, `/usr/dt/lib/security/pam_tedsecure.so.1`, provides support for FORTEZZA login and the TEDsecure session. The `pam_tedsecure` module uses the FORTEZZA card for authentication.
  - Solaris—`pam_tedsecure.so.1`
  - AIX—`pam_tedsecure.a`

For security reasons, it is required that these files be owned by `root` and for the permissions to be set such that the files are not writable through `group` or `other` permissions. If the file is not owned by `root`, PAM will not load the module.

PAM Configuration File

The default PAM configuration file, `/usr/dt/config/pam.conf`, can be copied to `/etc/dt/config/pam.conf`, and edited to select authentication mechanisms for each system-entry application. The file consists of entries following this syntax:

service_name module_type control_flag module_path module_options

where *service_name* indicates the name of the service, *module_type* denotes the module type for the service, *control_flag* selects the continuation and failure semantics for the module, *module_path* specifies the pathname to a library object which implements the service functionality, and *module_options* are specific options that can be passed to the service modules. The only optional component

is *module_options*. All other values must be defined. Comments can be added to the file by starting the line with a #. Any white-space can be used to delimit the fields.

An entry in this file is ignored if one of the following conditions exist:

- The line has less than four fields
- An invalid value is given for *module_type* or *control_flag*
- The named module is not found

The following table shows an example for configuring the `dtlogin` service.

Service Name	*Daemon or Command*	*Module Type*
dtlogin	`/usr/dt/bin/dtlogin`	auth, account, session

One of three *control_flags* must be selected for each entry to determine continuation or failure behavior from the module. These flags determine what the ultimate result (success or failure) will be. The values are defined below:

- `required` - this module must return success in order to have the overall result be successful
- `optional` - if this module fails, the overall result can be successful if another module in this stack returns success
- `sufficient` - if this module is successful, skip the remaining modules in the stack, even if they are labeled as `required`

If all of the modules are labeled as `required`, then authentication through all modules must succeed in order for the user to be authenticated. If some of the modules fail then an error value from the first failed module is reported. If a failure occurs for a `required` module, all modules in the stack are still tried but the access is denied.

If none of the modules are labeled as `required`, then at least one of the entries for that service must succeed for the user to be authenticated. The `optional` flag should be used when one success in the stack is enough. This flag should only be used if it is not important for this mechanism to succeed. For instance if your users need to have permission associated with a specific mechanism to get their work done, then it should not be labeled as `optional`.

The `sufficient` flag allows for one successful authentication to be enough for the user to get in. More information about these flags is given in the next section which presents the default `/usr/dt/config/pam.conf` file.

The generic `pam.conf` file looks like the following:

```
#ident @(#)pam.conf 1.20     TriTeal Corporation 10/25/96
#
# PAM configuration

#
# Authentication management
#
dtlogin auth required   /usr/dt/lib/security/pam_unix.so.1

# DCE authentication module
# dtlogin     auth optional   /usr/dt/lib/security/pam_dce.so.1

# TEDsecure authentication module
```

```
# dtlogin    auth optional   /usr/dt/lib/security/pam_tedsecure.so.1

#
# Account management
#
dtlogin account required        /usr/dt/lib/security/pam_unix.so.1

#
# Session management
#
other   session required        /usr/dt/lib/security/pam_unix.so.1

#
# Password management
#
other   password required       /usr/dt/lib/security/pam_unix.so.1
```

Most of the other commands requiring authentication require successful authentication through the `pam_unix` module.

Selecting `OTHER` for the service name allows a default to be set for any other commands that need authentication that are not included in the file. The `OTHER` option makes it easier to administer the file, since many commands that are using the same module can be covered by only one entry. Also, the `OTHER` option when used as a "catch-all" can make sure that each access is covered by one module. By convention the `OTHER` entry is included at the bottom of the section for each module type. The *service_name* field is case-insensitive; the capitalization is included to improve readability.

The rest of the entries in the file control the account, session, and password management. With the use of the default service name, `OTHER`, the file could be simplified to:

```
#
# PAM configuration
#
# Authentication management
#
OTHER     auth     required   /usr/dt/lib/security/pam_unix.so.1
#
# Account management
#
OTHER     account  required   /usr/dt/lib/security/pam_unix.so.1
#
# Session management
#
OTHER     session  required   /usr/dt/lib/security/pam_unix.so.1
#
# Password management
#
OTHER     password required   /usr/dt/lib/security/pam_unix.so.1
```

Normally the entry for the *module_path* is "root-relative." If the entry for `module_path` does not begin with a slash (/), the path `/usr/dt/lib/security/` is prepended to the filename. Paths to modules located in other directories must start from root.

The values for the *module_options* can be found in the man pages for the module (for example, `pam_unix(5)` and `pam_dce(5)`). The `use_first_pass` and `try_first_pass` options, which are supported by the `pam_unix` and `pam_dce` modules, allow for reuse of the same password for authentication without retyping it.

If `login` specifies authentication through both `pam_dce` and `pam_unix`, then the user would be prompted to type in a password for each module. In situations where the passwords are the same, the `use_first_pass` module option would prompt for only one password and would use that password to authenticate the user for both modules. If the passwords are different, the authentication would fail and the user would not be able to login. In general, this option should be used with an `optional` control flag, as shown below, to make sure that the user can still get in.

```
# Authentication management
#
login     auth   required  /usr/dt/lib/security/pam_unix.so.1
login     auth   optional  /usr/dt/lib/security/pam_dce.so.1 \
                           use_first_pass
```

If `try_first_pass` module option was used instead, the DCE module will prompt for a second password if the passwords do not match or if an error is made. If both methods of authentication are necessary for a user to get access to all the tools they need, using this option could cause some confusion with the user since the user could get access with only one type of authentication.

Configuring PAM

The section below discusses some of the tasks that may be required to allow PAM to be fully functional. In particular, you should be aware of some of the security issues associated with the configuration file.

Planning for PAM

When deciding how best to employ PAM in your environment, start by focusing on these issues:

- Determine what your needs are, especially which modules you should select.
- Decide on the order in which the modules should be run.
- Select the control flag for that module.
- Choose the options if necessary for the module.

Here are some suggestions to consider before changing the configuration file:

- Use the OTHER entry for each module type, so that each application does not have to be included.
- Make sure to consider the security implications of the sufficient and optional control flags.
- Review the man pages associated with the modules to understand how they will function and what options are available.
- Review the man pages to study the interactions between stacked modules.

Note PAM will use the configuration file `/etc/dt/config/pam.conf` first. If that file does not exist, PAM checks `/usr/dt/config/pam.conf.` If neither file exists then the `/etc/pam.conf` file will be used.

To add the DCE PAM module

- Edit the `/etc/dt/config/pam.conf` file to look like the following

```
#ident @(#)pam.conf 1.20     TriTeal Corporation 10/25/96
#
# PAM configuration

#
# Authentication management
#
dtlogin    auth required  /usr/dt/lib/security/pam_unix.so.1

# DCE authentication module
dtlogin    auth optional  /usr/dt/lib/security/pam_dce.so.1

# TEDsecure authentication module
# dtlogin  auth optional  /usr/dt/lib/security/ \
                          pam_tedsecure.so.1

#
# Account management
#
dtlogin account required      /usr/dt/lib/security/pam_unix.so.1

#
# Session management
#
other   session required      /usr/dt/lib/security/pam_unix.so.1

#
# Password management
#
other   password required     /usr/dt/lib/security/pam_unix.so.1
```

Note that in this example, the DCE module is only used for login. But if you wanted to, the DCE module could be added for other services as well. If the `pam_dce` module is added as an `auth` module for login, it should also be added as an `account` module as well.

To correct problems with `/etc/dt/config/pam.conf`

If the PAM configuration file is misconfigured or gets corrupted, it is possible that even the root user would not be able to log in with the Login Manager. To correct the problem, do the following:

1. Log in as root at the command line.
2. Edit the PAM configuration file, `/etc/dt/config/pam.conf`, and correct any problems with the file.

To add a module

1. Study the documentation on the module and determine which control flags and other options should be used.
2. Copy the new module to `/usr/dt/lib/security`.
3. Set the permissions so that the module file is owned by root and permissions are 555. (`chmod 555`)
4. Edit the PAM configuration file, `/etc/dt/config/pam.conf`, and add this module to the appropriate services.
5. Restart the Login Manager.
6. Test the changes.

To initiate error reporting

1. Add entries to `/etc/syslog.conf`

   The syslog daemon must be restarted or a SIGHUP signal sent to it for any changes to take effect. These selections can be added to the file to gather information about PAM:

   - `auth.alert` - messages about conditions that should be fixed now
   - `auth.crit` - critical messages
   - `auth.err` - error messages
   - `auth.info` - informational messages
   - `auth.debug` - debugging messages

2. Create a `pam_debug` file by using the following command:

   ```
   touch /etc/pam_debug
   ```

   Creating this file will ensure that the PAM library sends error messages.

The entry below will print all of the alert messages on the console, critical messages will be mailed to root, and informational and debug messages will be added to `/var/log/pamlog`.

```
auth.alert              /dev/console
auth.crit               'root'
auth.info;auth.debug    /var/log/pamlog
```

Each line in the log contains a time stamp, the name of the system that generated it, and a message. The `pamlog` file can log a large amount of information.

To add a password requirement to the PAM UNIX module

A new field has been created for the PAM configuration file that will prevent all accounts without passwords from logging in.

- Add the following entry to the `/usr/dt/config/pam.conf` file:

```
#
# Authentication management
#
dtlogin auth required /usr/dt/lib/security/pam_unix.so.1.0 \
                                        passwd_required
```

7

Key Binding Enhancements

This chapter outlines the key binding enhancements for the TriTeal Enterprise Desktop. The features in this chapter typically would be used by a system administrator.

Where to Add Key Binding Enhancements

These capabilities are accessed by defining the specified functionality in the `dtwmrc` configuration file. The `dtwmrc` file defines default configuration parameters for the TED Window Manager. A default, system-wide version of the `dtwmrc` file is located in the `/usr/dt/config/C` directory and is named `sys.dtwmrc`. Modifications made in this file will impact all users of TED on a specific system. All changes should be placed in the `/etc/dt/config/`*language* directory, so changes will not be lost. A local version of this file can be placed in the `$HOME/.dt` directory of a specific user and should be named `dtwmrc`. This local file will override the global `sys.dtwmrc` file for that specific user. By default, there is no `dtwmrc` file in a user's `$HOME/.dt` directory.

The Key Binding Enhancements are used by modifying the `sys.dtwmrc` or your own `dtwmrc` file. This file contains structures that define the button, key, and menu bindings for `dtwm`. For example, the Default Key Bindings structure defines the default actions associated with selecting a key. This structure is currently defined in the `sys.dtwmrc` file as follows:

```
Keys DtKeyBindings
{
Shift<key>Escape          icon|window       f.post_wmenu
Alt<key>space             icon|window       f.post_wmenu
Alt<key>Tab               root|icon|window  f.next_key
Alt Shift<key>Tab         root|icon|window  f.prev_key
Alt<key>Escape            root|icon|window  f.next_key
Alt Shift<key>Escape      root|icon|window  f.prev_key
Alt<key>Down              root|icon|window  f.circle_down
Alt<key>Up                root|icon|window  f.circle_up
Alt Ctrl Shift<key>exclam   root|icon|window   f.set_behavior
Alt<key>F6                window            f.next_key transient
Alt Shift<key>F6          window            f.prev_key transient
<key>SunFront             ifkey|icon|window f.raise_lower
```

```
<key>SunOpen              ifkey|window      f.minimize
<key>SunOpen              ifkey|icon        f.normalize
}
```

Each line within this structure binds a specific action to a key sequence. The first element in the definition is the key sequence to bind the action to. The second element defines when the context in which the binding is active. Options include:

`window`	The binding is available when a window has input focus.
`icon`	The binding is available when an icon has input focus.
`root`	The binding is available when the root window (background) has input focus.
`ifkey`	Used whenever the key sequence involves keysyms which may not exist on all platforms. It is a way to avoid printing out an error for an unknown keysym.

Multiple options are separated with the pipe (`|`) character. The third element in the definition is the TED Window Manager function to execute when the key sequence is input. The Key Binding Enhancements described below all define new window manager functions available in TED 4.2 `dtwm`. Each enhancement will contain an example of how to define the binding in the default key bindings structure.

Note For all the key bindings below, the class name of an `X` client is the name of the executable (`xterm`). The application name of an `X` client is a name specified on the command line with the `-n` option (for example, `xterm -n fred`, where `fred` is the application name).

Keybinding Functions

Change Workspaces

The following function can change the workspace that is displayed. You could map the simple cursor keys, or use the keys in the numeric keypad for more directions.

Name	`f.workspace_change` *arg*
Description	Changes the workspace that is displayed. *arg* is one of the following: left, right, up, down, left_up, up_left, right_up, up_right, left_down, down_left, right_down, or down_right.

Example

1 Add the following line to your `DtKeyBindings`:

```
Alt<key>Left   root|icon|window      f.workspace_change left
```

2 Restart dtwm by choosing Restart Workspace Manager from the Workspace Menu.

3 Press Alt + the left cursor key. This will cause the workspace to the left of the currently displayed workspace to be displayed.

If no workspace exists to the left of the current workspace, no change occurs. You will be able to move only in the direction where there is a workspace to display.

Raise and Focus

The following function can raise and focus an application.

Name	f.raise_and_focus *arg*
Description	Raises and sets input focus to the named X client when the key binding is input. *arg* is the class name or application name of the X client to raise and set focus to.

1 Start an xterm at the command line:

```
xterm -name fred &
```

2 Add the following line to your DtKeyBindings:

```
Meta<key>F5        root|icon|window      f.raise_and_focus fred
```

3 Restart dtwm by choosing Restart Workspace Manager from the Workspace Menu.

4 Press Meta + F5. This will cause the xterm named "fred" to raise and acquire the input focus.

Send Message

The following function can send an X protocol message to a named client.

Name	f.send_msg_protocol *msg*
Description	Sends a message to the named X client when the key binding is input. *msg* is an X Protocol message to which the X client responds.

Example

1 Start an xterm at the command line:

```
xterm -name fred &
```

2 Add the following line to your DtKeyBindings:

```
Meta<key>F5 root|icon|window f.send_msg_protocol \
fred.WM_DELETE_WINDOW
```

3 Restart dtwm by choosing Restart Workspace Manager from the Workspace Menu.

4 While holding the Meta key, press the F5 key. This will cause the `xterm` named "fred" to receive the `WM_DELETE_WINDOW` X Protocol message.

Raise, Focus and Send Message

The following function can raise, focus, and send a message to a named client.

Name	`f.raise_and_focus_send_msg` *arg.msg*
Description	Raises, sets input focus, and sends a message to the named `X` client when the key binding is input. *arg* is the class name or application name of the `X` client to raise, focus, and send the message to. *msg* is an X Protocol message to which the `X` client responds.

1 Start an application with the command line:

```
my_app -name fred &
```

2 Add the following line to your `DtKeyBindings`:

```
Meta<key>F5 root|icon|window f.raise_and_focus_send_msg
fred.WM_NEW
```

3 Restart `dtwm` by choosing Restart Workspace Manager from the Workspace Menu.

4 While holding the Meta key, press the F5 key. This will cause the application named "fred" to raise, acquire the input focus, and to receive the `WM_NEW` (Note: this is not a default X protocol, it represents a protocol created by the user for an application) user defined X Protocol.

Execute Front Panel

The following function can execute any front panel action.

Name	`f.exec_fp` *arg*
Description	Executes a button in the front panel. If the button executed is a workspace button then `dtwm` will simply switch to the specified workspace. If the button executed is not a workspace button, then the action associated with the button is performed. *arg* is either the name of a workspace button or the name of a button in the front panel. The name of a workspace button should be the numeric number of the button (such as, "one", "two", "three", and so on), regardless of the name actually set for the button. The name of any other button in the front panel should be the name specified in the control construct for the button as defined in the `sys.dtwmrc` or `dtwmrc` file.

The following buttons are defined by default:

`Style`	Style Manager button
`Help`	Help Manager button
`Printer`	Print Manager button
`Mail`	Mail Tool button
`Home`	File Manager button
`Applications`	Applications button
`Trash`	Trash button
`Terminal`	Terminal button
`TextEdit`	TED Text Editor application button

Example

1. Add the following line to your `DtKeyBindings`:
   ```
   Meta<key>F5 root|icon|window  f.exec_fp Style
   ```
2. Restart `dtwm` by choosing Restart Workspace Manager from the Workspace Menu.
3. While holding the Meta key, press the F5 key. This will cause the Style Manager to execute as if its button was selected in the front panel.

Show GWM

The following function can start the Graphical Workspace Manager:

Name	`f.show_gwm`
Description	Starts the Graphical Workspace Manager (GWM).

Example

1. Add the following line to your `DtKeyBindings`:
   ```
   Meta<key>F5 root|icon|window  f.show_gwm
   ```
2. Restart `dtwm` by choosing Restart Workspace Manager from the Workspace Menu.
3. While holding the Meta key, press the F5 key. This will start the GWM.

Move Client, Raise, and Focus

The following function can raise, focus, and move an application to the current workspace.

Name	`f.raise_focus_and_move` *arg*
Description	Raises, sets input focus to, and moves to the current workspace the named `X` client when the key binding is input. *arg* is the class name or application name of the `X` client.

Example

1. Start an `xterm` at the command line:
   ```
   xterm -name fred &
   ```
2. Add the following line to your `DtKeyBindings`:
   ```
   Meta<key>F5 root|icon|window  f.raise_focus_and_move fred
   ```
3. Restart `dtwm` by choosing Restart Workspace Manager from the Workspace Menu.
4. Change to a workspace which does not contain the `xterm` named "fred".
5. While holding the Meta key, press the F5 key. This will cause the `xterm` named "fred" to move to the current workspace, raise, and acquire the input focus.

Switch Workspace, Raise and Focus

The following function can switch workspace, raise, and focus a client.

Name	`f.raise_focus_and_switch` *arg*
Description	Raises, sets input focus to, and switches to the first workspace which contains the named `X` client when the key binding is input. *arg* is the class name or application name of the `X` client.

Example

1. Start an `xterm` at the command line:
   ```
   xterm -name fred &
   ```
2. Add the following line to your `DtKeyBindings`:
   ```
   Meta<key>F5 root|icon|window  f.raise_focus_and_switch fred
   ```
3. Restart `dtwm` by choosing Restart Workspace Manager from the Workspace Menu.
4. Change to a workspace which does not contain the `xterm` named "fred."
5. While holding the Meta key, press the F5 key. This will cause dtwm to switch to the first workspace which contains the `xterm` named "fred" and for "fred" to raise and acquire the input focus.

Application List

The following function can add the Application List in the Workspace Menu.

Name	`f.show_app_list`
Description	This resource is used to list applications running in the user's current session and allows the user to select one. Once the user selects an application, the Application List disappears, and the selected application is raised to the top of the workspace. If the application is in a different workspace, the `dtwm` switches to that workspace.

1. Add the following line to your `DtKeyBindings`:

   ```
   Meta<key>F5 root|icon|window  f.show_app_list
   ```

2. Restart `dtwm` by choosing Restart Workspace Manager from the Workspace Menu.

3. While holding the Meta key, press the F5 key. This will start the Application List.

8

Resources and Variables

This chapter outlines the resource and environment variable enhancements for the TriTeal Enterprise Desktop. The variables described in this chapter typically would be used by a system administrator

TED 4.4 provides resources and environment variables that let you customize your environment more efficiently.

Session Manager

Name	Logout Confirmation Dialog
Description	Removes Logout Confirmation Dialog UI components from the Style Manager, thus giving users no choice to turn on or off the Confirm Logout Dialog. It is disabled when the resource is set to False.
Resource	`Dtstyle*confirmLogout`
Type	Boolean
Resource values	True (default) or False
Files	`/etc/dt/app-defaults/C/Dtstyle`

Name	Command Prefix
Description	Appends a user-specified string (such as a script) to a command string. It is enabled when the resource `useRestartPrefix` is set to True and the prefix `restartPrefix` is specified.
Resource	`Dtsession*useRestartPrefix`
Type	Boolean
Resource values	True or False (default)
Resource	`Dtsession*restartPrefix`
Type	String
Resource values	`NULL`
Files	`/etc/dt/app-defaults/C/Dtsession`

Name	Restart of NON-ICCCM compliant applications
Description	Restarts applications that do not have the WM_COMMAND property.
Resource	<app name>`*WM_COMMAND_STR` (application's execution string)
Type	String
Resource value	non-existent (default)

Name	Automatic Session Save
Description	Saves the user's session. When this resource is turned on, UI components are added to the Style Manager's Startup Dialog that allow the user to turn automatic saves on or off and to adjust the interval between saves. The current state of the session is saved periodically, based on the interval specified. This feature is enabled when the resource is set to True.
Resource	`Dtsession*autoSaveSession`
Type	Boolean
Resource values	True or False (default)
Files	`/etc/dt/app-defaults/C/Dtsession`

Name	Remove Help button from Logout Confirmation dialog box
Description	Removes the Help button from the Logout Confirmation dialog box. The resource is commented out.
Resource	`Dtsession*displayExitDialogHelp`
Type	Boolean
Resource values	True or False (default)
Files	`/etc/dt/app-defaults/C/Dtsession`

Name	Exit message for Logout Confirmation dialog box (current session)
Description	Displays a message in the Logout Confirmation dialog box. If you have the Style Manager - Startup option set to Resume Current Session, the message you supply with `Dtsession*confirmExitMessageSave` will be displayed.
Resource	`Dtsession*confirmExitMessageSave`
Type	String
Resource values	User supplied message text.
Files	`/etc/dt/app-defaults/C/Dtsession`

Name	Exit message for Logout Confirmation dialog box (home session)
Description	Displays a message in the Logout Confirmation dialog box. If you have the Style Manager - Startup option set to Return to Home Session, the message you supply with `Dtsession*confirmExitMessageNoSave` will be displayed.
Resource	`Dtsession*confirmExitMessageNoSave`
Type	String
Resource values	User supplied message text
Files	`/etc/dt/app-defaults/C/Dtsession`

Window Manager

Name	Synchronize Workspaces Across Screens
Description	Specifies synchronization of workspace switching across multiple screens. This is specified by a toggle button located in the Style Manager's Workspaces dialog box. See "Show Workspace Control" on page 56 for information on adding the Workspaces control to the Style Manager.
Resource	`Dtwm*syncDesktopSwitch`
Type	Boolean
Resource values	True (default) or False
Files	`/etc/dt/app-defaults/C/Dtwm`

Name	Multiple Front Panels
Description	Enables the Window manager to display a Front Panel on each screen. TED includes the ability to use multiple screens on one display.
Resource	`Dtwm*multiFrontPanel`
Type	Boolean
Resource values	True (default) or False
Files	`/etc/dt/app-defaults/C/Dtwm`

Name	Show Workspace Control
Description	Adds the Workspaces control to the Style Manager. The Workspaces control displays a dialog box that lets the user show or hide the Front Panel workspace switch area. To add the Workspaces control, add `Workspaces` to the end of the resource `Dtstyle*componentList`.
Resource	`Dtstyle*componentList`
Type	NONE
Resource values	NONE
Files	`/etc/dt/app-defaults/C/Dtstyle`

Name	Show Workspace Slider
Description	Adds a slider control to the Workspaces dialog box, which lets you specify the number of workspace buttons or workspaces in the GWM.
Resource	`Dtstyle*useNumWsScale`
Type	Boolean
Resource values	True or False (default)
Files	`/etc/dt/app-defaults/C/Dtstyle`

Name	Busy Cursor
Description	Changes the cursor into a busy indicator, which parallels the busy light on the Front Panel. This feature is enabled when the resource is set to True.
Resource	`Dtwm*useBusyCursor`
Type	Boolean
Resource values	True or False (default)
Files	`/etc/dt/app-defaults/C/Dtwm`

Name	Reverse Key Binding Order
Description	Overrides the key bindings without having to use resources. If two key binding sets are defined with the same name, this feature uses the set last defined in the file. This feature is enabled when the resource is set to True.
Resource	`Dtwm*reverseBindingOrder`
Type	Boolean
Resource values	True or False (default)
Files	`/etc/dt/app-defaults/C/Dtwm`

Name	Alternative dtwmrc Path
Description	Changes the `$HOME/.dt/dtwmrc` file. The user specifies the path and file by setting the `DTWMRC` environment variable.
Resource	NONE
Type	NONE
Resource values	NONE
Variable	`DTWMRC`

Name	Applications List Geometry
Description	Specifies the geometry of the Application List Window. The geometry value is a standard X window geometry specification.
Resource	`Dtwm*Running Applications*geometry`
Type	X geometry
Resource values	X geometry values.
Files	`/etc/dt/app-defaults/C/Dtwm`

Name	Use Alternate Date Format for Front Panel Calendar Control
Description	Specifies the date format of the Calendar control on the Front Panel. The date will appear as follows: 11:30 Mar. 05 Weds To use the alternate date format: 1. The resource must be set to True in the following file: /etc/dt/app-defaults/C/Dtwm. 2. The Date CONTROL entry DATE_FORMAT in the /etc/dt/appconfig/types/C/dtwm.fp must be changed to the following: %I:%M%n%b. %d%n%a
Resource	Dtwm*useAltDateFormat
Type	Boolean
Resource values	True or False (Default)
Files	/etc/dt/appconfig/types/C/dtwm.fp /etc/dt/app-defaults/C/Dtwm

Graphical Workspace Manager (GWM)

A number of resources have been added to make the GWM more customizable. Most of the resources are duplicates of options on the Properties panel, but a few can be set only by adding resources to any of the following files:

- /etc/dt/config/*language*/sys.resources
- /etc/dt/app-defaults/*language*/Dtwm
- $HOME/.Xdefaults

Changes to sys.resources or Dtwm will affect all accounts on a system, and changes to .Xdefaults will affect individual accounts.

Screen Resources

Screen resources can be set on a per-screen basis. If you are working with a multiple screen display, you can set up different GWMs for each screen.

Name	Display GWM
Description	Displays the GWM
Resource	Dtwm*gwmVisible
Type	Boolean
Resource values	True (default) or False

Name	GWM Workspace Width
Description	Standard X geometry string format. The width value indicates the desired width of each workspace. The height will be ignored to allow the screen's aspect ratio to be preserved.
Resource	Dtwm*gwmGeometry
Type	String
Resource values	Not set.

Name	Iconify GWM
Description	True if GWM should be displayed iconified.
Resource	`Dtwm*gwmIconic`
Type	Boolean
Resource values	True or False (default)

Name	GWM Row Number
Description	Specifies the number of rows in the GWM.
Resource	`Dtwm*gwmRows`
Type	Integer
Resource values	Not set.

Name	Display Backdrops
Description	Displays the workspace backdrops.
Resource	`Dtwm*gwmUseBackdrops`
Type	Boolean
Resource values	True (default) or False

Name	Display Workspace Names
Description	Displays the name of the workspace in each workspace.
Resource	`Dtwm*gwmWsNamesVisible`
Type	Boolean
Resource values	True (default) or False

Name	Horizontal Workspace Name Placement
Description	Determines the horizontal placement of the workspace names. - Left—XmALIGNMENT_BEGINNING - Center—XmALIGNMENT_CENTER - Right—XmALIGNMENT_END
Resource	`Dtwm*gwmWsNamesHorizontalAlignment`
Type	Label Alignment
Resource values	XmALIGNMENT_BEGINNING (default)

Name	Workspace Names Font Selection
Description	This indicates the menu position selected for the workspace names font. This should generally not be set by the user.
Resource	`Dtwm*gwmWsNamesSelectedFont`
Type	Integer
Resource values	0 (default)

Name	Display GWM in All Workspaces
Description	Forces the GWM to occupy all workspaces.
Resource	`Dtwm*gwmAllWorkspaces`
Type	Boolean
Resource values	True or False (default)

Name	Workspace Names Default Font
Description	Specifies the default font for the workspace names.
Resource	`Dtwm*gwmWsNamesFontList`
Type	FontList
Resource values	Not set.

Name	Display Client Names
Description	Displays the names of the client applications in the GWM workspaces.
Resource	`Dtwm*gwmClientNamesVisible`
Type	Boolean
Resource values	True (default) or False

Name	Client Names Font Selection
Description	Indicates the menu position selected for the client names font. This should generally not be set by users.
Resource	`Dtwm*gwmClientNamesSelectedFont`
Type	Integer
Resource values	0 (default)

Name	Client Names Default Font
Description	Specifies the default font for the client names.
Resource	`Dtwm*gwmClientNamesFontList`
Type	FontList
Resource values	0 (default)

Name	Highlight Current Workspace Applications
Description	Highlights the applications in the current workspace with the active color.
Resource	`Dtwm*gwmClientColorActive`
Type	Boolean
Resource values	True (default) or False

Name	Application List in GWM's Menu
Description	Adds an Application List (see Application List) menu item to the Graphical Workspace Manager's system menu. It is enabled when the resource is set to True.
Resource	`Dtwm*gwmAppList`
Type	Boolean
Resource values	True or False (default)
Files	`/etc/dt/app-defaults/C/Dtwm`

Global Resources

These resources affect the GWM on every screen.

Name	Show Application Names During Move
Description	Shows application names as they are moved. If this resource is set to True, you will see the name of an application as you move it from one workspace to another. If this resource is set to False, just an outline of the application window is displayed.
Resource	`Dtwm*gwmOpaqueMove`
Type	Boolean
Resource values	True (default) or False

Name	Resize Behavior
Description	Determines whether Changes Size or Changes Layout is the default behavior for the Resize behavior options. The default is False, which specifies Changes Size as the default behavior.
Resource	`Dtwm*gwmResizeLayout`
Type	Boolean
Resource values	True or False (default)

New for TED 4.4

Name	Enable Drag and Drop
Description	Turns on the drag and drop of clients and thumbnails for moving applications into and out of the GWM.
Resource	`Dtwm*gwmDnDIntoGWM`
Type	Boolean
Resource values	True or False (default)
Resource	`Dtwm*gwmDnDOutGWM`
Type	Boolean
Resource values	True or False (default)

Login Manager

Name	Automatic Login
Description	Logs in the user specified in the `/var/dt/tmp/dtlogin.user` file. This file would be created and maintained by the system administrator and would contain a single user ID. The feature is enabled when the `Dtlogin*autoLogin` resource is set to True and the path for the file is specified with the `Dtlogin*userIdFile` resource.
Resource	`Dtlogin*autoLogin`
Type	Boolean
Resource values	True or False (default)
Resource	`Dtlogin*userIdFile`
Type	String
Resource values	`/var/dt/tmp/dtlogin.user`
Files	`/etc/dt/config/Xconfig`

Name	Login Console
Description	Lets users specify an X application (such as `xconsole`) to be run below the login panel. The user specifies how much space below the login panel to leave uncovered and the application to start. The application is started before `dtlogin,` starts `dtgreet` and is stopped after a user has been validated. The specified X application needs to be passed the display name option with a valid display name and the geometry option with a valid geometry. Additionally, the `Dtlogin*grabServer` resource in the `/etc/dt/config/Xconfig` needs to be set to False.
Resource	`Dtlogin*consoleHeight`
Type	Integer
Resource values	0 (default)
Resource	`Dtlogin*appString`
Type	String
Resource values	"" (default)
Resource	`Dtlogin*grabServer`
Type	String
Resource values	True (default) or False
Files	`/etc/dt/config/C/Xresources` (for `consoleHeight`) `/etc/dt/config/Xconfig` (for `appString`, `grabServer`)

New for TED 4.4

Name	*Remote or Local root access*
Description	This resource can be used to prevent root login from `dtlogin` on any remote terminal or local console.
Resource	`Dtlogin*allowRemoteRootAccess`
Type	Boolean
Resource values	True (default) or False)
Resource	`Dtlogin*allowLocalRootAccess`
Type	Boolean
Resource values	True (default) or False)
Files	`/etc/dt/config/Xconfig`

Terminal

A resource has been added that will let you specify whether or not you want the New command to appear on the Window menu of a terminal window (dtterm).

Name	*New menu option on Window Menu*
Description	Displays a New command on the Window menu if set to True. If set to False, the New command will not appear.
Resource	`Dtterm*allowNewWindow`
Type	Boolean
Resource values	True (default) or False
Files	`/etc/dt/app-defaults/C/Dtterm`
Command line	A command line option was also added to support this resource: `dtterm -anw` sets allowNewWindow to False. `dtterm +anw` sets allowNewWindow to True.

Mailer

Name	*Specify temporary directory for Mail attachments*
Description	Specifies the path for the temporary directory to use for mail attachments.
Resource	`Dtmail*dtTmpDir`
Type	String
Resource values	Not set.
Files	`/etc/dt/config/Xconfig`

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