

Microsoft Windows Terminal Server, Citrix MetaFrame, and PeopleSoft

Installation and Configuration Guidelines

This document provides guidelines on configuring and installing Microsoft Windows NT 4.0, Terminal Server Edition—with or without Citrix MetaFrame—for use with PeopleSoft applications.

Supported Configurations

Be sure to check with your Account Manager to get the latest information on supported configurations, including PeopleSoft versions, Terminal Server versions, and Citrix MetaFrame versions.

CPU and Memory Recommendations

As noted in the latest *PeopleSoft Hardware and Software Requirements Guide*, the recommended minimum client hardware configuration is a Pentium 133 CPU with at least 32MB of RAM. Based on these figures, the following table represents the recommended CPU and memory for a typical Terminal Server running PeopleSoft clients.

Note. Sizing is a relative process and, depending on your specific requirements, these numbers can skew either way; this information is only meant as a starting point. Your environment—hardware, applications, user activity level, and so on—will dictate your actual needs.

Concurrent Users	Processor Required	RAM
10 – 12	1 - P6 200 or above	256Mb+
20 – 24	2 - P6 200 or above	512Mb+
30 – 36	3 - PII 233 or above	768Mb+
40 – 48	4 - PII 233 or above	1Gb+
48+	Add additional Terminal Servers based on above model	

Terminal Server Usage Restrictions

The Terminal Server will be servicing many clients, in essence acting as the operating system for all users connected to it. With this in mind, you should keep the Terminal Server free of PeopleSoft processes that can be handled by other servers. Here are our recommendations for process distribution:

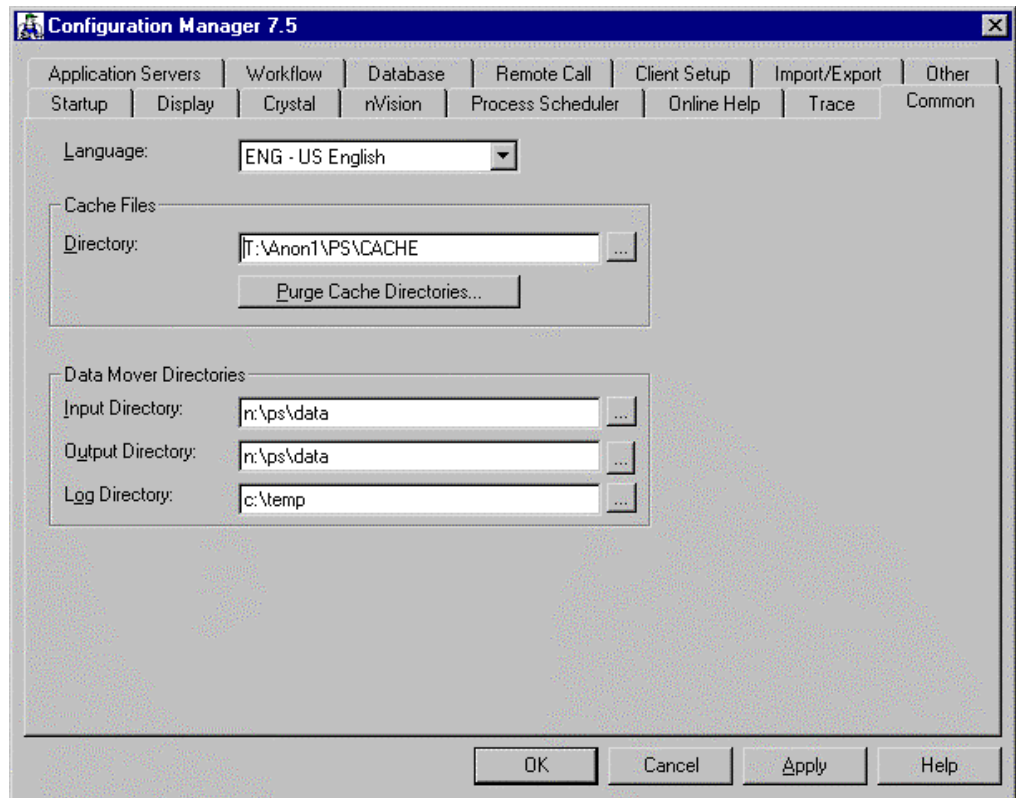
1. Never run the database server on the Terminal Server. Run it on a separate machine.
2. Never run the PeopleSoft application server on the Terminal Server. Run it on a separate machine.
3. Never run Process Scheduler on the Terminal Server. Run it on your database server or on a separate server.
4. If possible, use a separate file server to act as the repository for non-shared user files, including PeopleSoft cache files. This will put the burden of read/write file I/O on a separate server, reducing the overhead for the Terminal Server and allowing more of its resources to be devoted to processing user applications.
For more information see ...
5. Use a high-speed network connection between the Terminal Server and any auxiliary servers, including—but not limited to—database servers, application servers, Process Scheduler servers, and file servers.

User Home Directories

Because multiple Terminal Server clients run on a single server, it is important that each user have their own dedicated file area—commonly referred to as a home directory—for non-shared files such as temp and cache files.

PeopleSoft Cache Files

In a client/server environment, each PeopleSoft user has a set of cache files stored on their client machine. In the Terminal Server environment, each user must also have a unique set of cache files. You can achieve this by assigning each Terminal Server user a home directory—preferably on a separate server—and using Configuration Manager to point the cache files directory to a subdirectory of that home directory.



Specifying a User's Cache Files Directory under a Dedicated Home Directory

Only one Terminal Server user should be able to read/write data to each PeopleSoft cache directory.

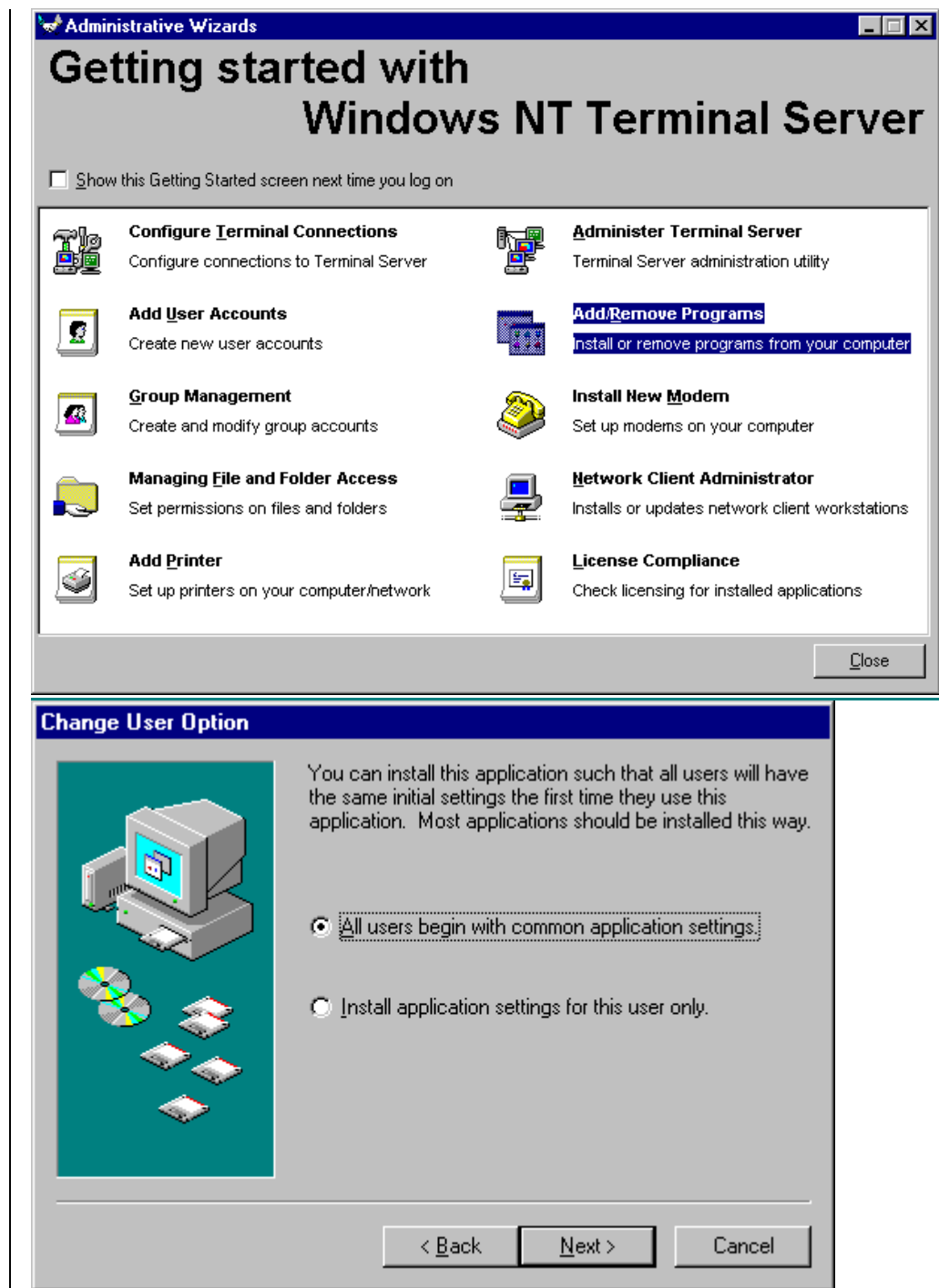
It is equally important that only one PeopleTools instance has access to each set of cache files. If multiple PeopleTools instances access the same set of cache data, you could experience application exception errors. This can happen if a user ends a Terminal Server session improperly, then restarts. To avoid this, see the suggestions for ending Terminal Server Sessions.

Anonymous Users

If your Terminal Server environment uses anonymous logon IDs, make sure that each anonymous ID has its own home directory area, and that only one instance of each anonymous user can be logged in at the same time.


Installing Applications

When installing applications on the Terminal Server—such as Microsoft Office or PeopleSoft—if you want all users to be able to access these applications use the Add/Remove Programs Administrative Wizard and choose to install such that All users begin with common application settings. This will ensure that all users have this application installed versus only the installing user.



Ending a Terminal Server Session

Users can end a Terminal Server session in a variety of ways, including:

1. Clicking **Start, Logoff** in the session taskbar.
2. Clicking **Start, Disconnect** in the session taskbar.
3. Clicking the **Close Window** button  at the upper right corner of the title bar

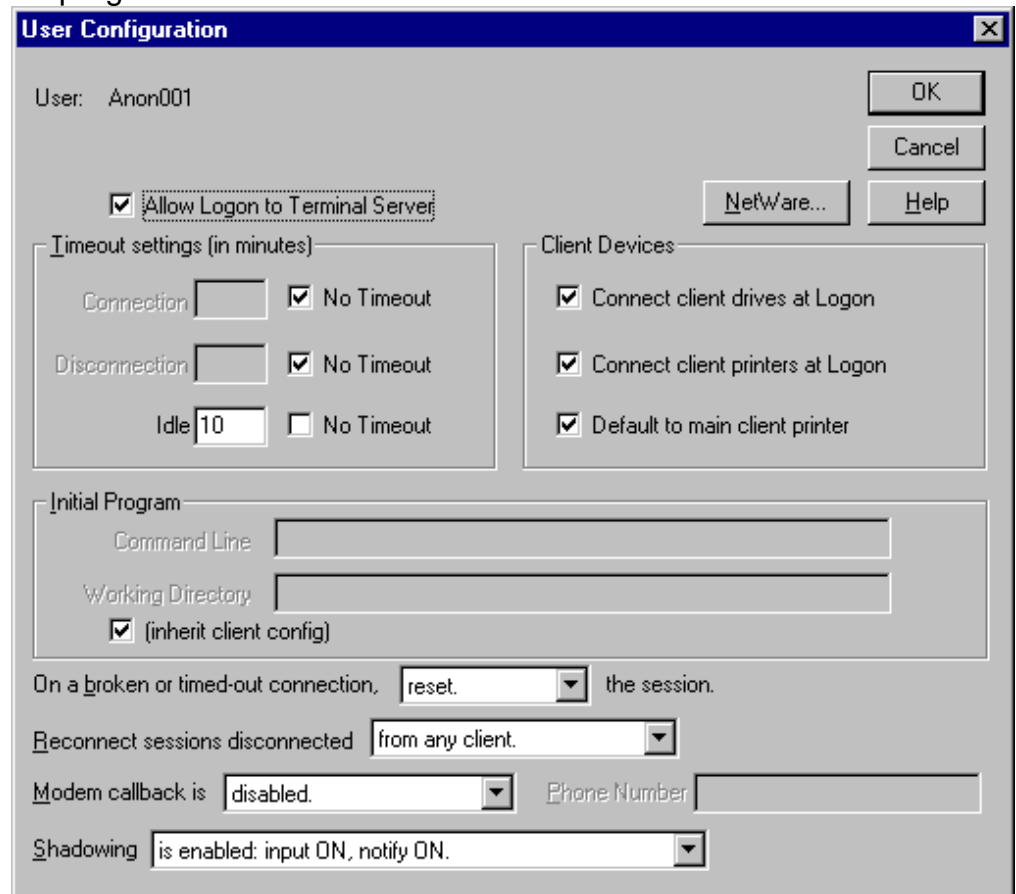
However, the only recommended way to end a Terminal Server session is option 1— using **Start, Logoff**. This will end the user session and close down all running programs, including PeopleTools. Ending a session in this way ensures that there are no PeopleTools programs left running. The next time a PeopleTools program is launched, it will not conflict with any other PeopleTools program run in the previous session. This comes back to the issue of maintaining a clean set of cache files for each users PeopleTools program.

If users click the **Close Window** button or **Start, Disconnect** from a terminal session, there is a chance that when the user reconnects there will be phantom programs running, including PeopleTools. This means there can be multiple instances of PeopleTools running without the user knowing it. These multiple instances of PeopleTools can corrupt the cache files causing a system access violation and shutting down PeopleTools.

To further ensure that users are safely closing programs down when they leave a terminal session, administrators can set an option in the user's profile. This can be done in two places.

User Configuration under User Manager, Config by setting the 'On a broken or timed-out connection, reset the session' setting to 'reset'.

1. User Configuration can be overridden by setting the same setting in the Advanced Connection Settings under the Edit Connection Advanced section in the Terminal Server Connection Configuration program.



2. User Configuration can be overridden by setting the same setting in the Advanced Connection Settings under the Edit Connection Advanced section in the Terminal Server Connection Configuration program.

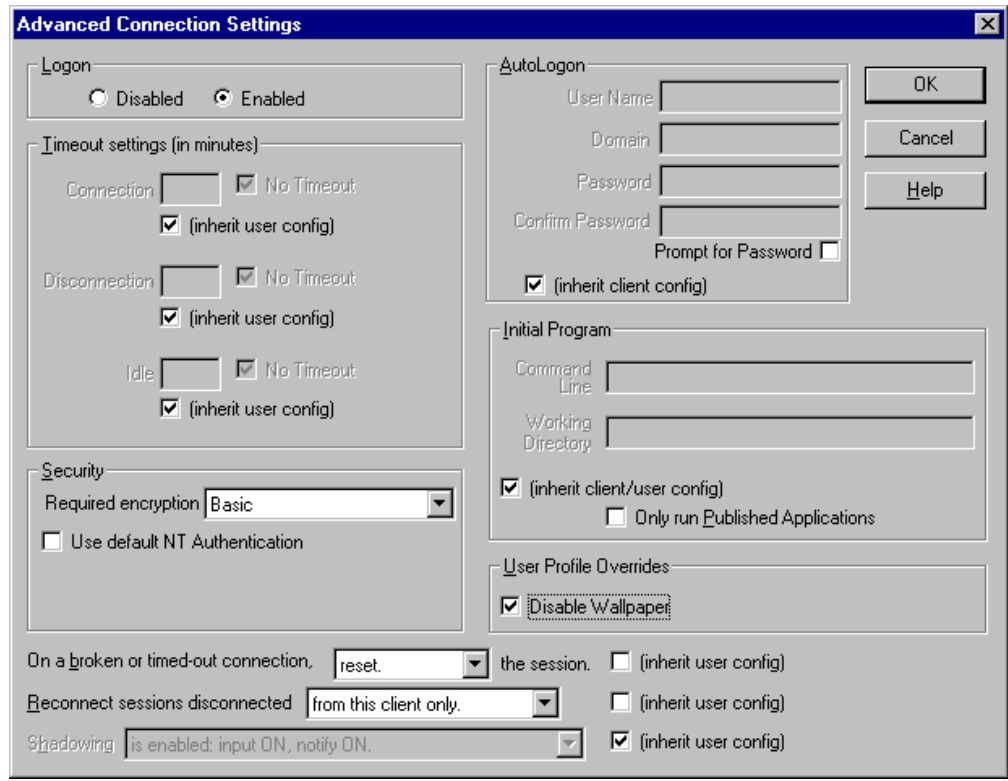
This is the recommended setting and way of closing a terminal session.

Performance Tuning Considerations

This section offers suggestions on how to improve the performance PeopleSoft applications on the Terminal Server.

Background Wallpaper

Terminal Server sessions carry display characteristics over the network to the end user. The fewer graphics that need to travel the network, the better the performance for the end user. For this reason, the administrator may want to disable background desktop wallpaper. This can be done through the Terminal Connection Configuration program.



PeopleSoft Splash Screen

If you're concerned about the network traffic generated by the PeopleSoft "splash" screen when signing on from a Terminal Server client, you can disable it.

To disable the splash screen at startup, add the following command line parameter to the PSTOOLS.EXE command used to start PeopleTools:

`-ss NO`

For example:

`N: \PT750\BI \NCLIENT\WINX86\PSTOOLS.EXE -ss NO`

Troubleshooting

If you're experiencing problems running PeopleSoft applications in your Terminal Server environment, scan this section for tips and known issues.

Application Errors

Question

Sometimes when certain users access applications, such as Crystal Reports, they get error stating dll's or system files are missing. Why does it happen?

Background

WTS is a multiuser operating system. When an application gets installed, it can be installed in one of two ways. Either as an application for the specific user installing the application, or as an application for all users of the system.

Answer

When installing applications, if all users are to have access to it, make sure it gets installed for all users. This is done by specifying that 'All users begin with common applications settings'. Refer to the *Installing Applications* section in this document.

File ID Limits

Question

With more concurrent users on WTS, the server frequently gets Event ID 2009 errors in the Event Log? What is this? And why does it happen?

Background

Windows NT 4.0 has a limitation of open file handles (FID's). For each SMB virtual circuit, there is a limit of 2048 FID's. If client sessions are accessing the same file server, all clients will share the SMB virtual circuit, hence all clients will contribute to the 2048 FID limitation. This is also true for mappings to the local WTS server. Since most home directory mappings are done by connecting to a shared resource, even if client sessions access a local WTS drive, if a drive mapping is used (i.e., virtual drive is mapped with the net use command) all clients will have the 2048 FID limitation.

Answer

PeopleSoft uses numerous files when running. We recommend using a separate file server to limit resource contention. When using a separate file server, all clients will be subject to the combined 2048 FID limit. A solution would be to spread users across multiple file servers. The actual limit of users per server would be based on actual usage. For instance, users who use 3rd party applications on top of PeopleSoft, for instance Crystal Reports or Excel, would use more FID's.

Microsoft is aware of this limitation in NT and are working to improve this limit.

Crystal Display with PT 6.x

Question

Under Windows Terminal Server, Crystal Reports does not display data correctly. This happens only with PeopleTools 6.x. How do I correct this problem?

Answer

A PeopleSoft dll, *pssys.dll* needs to be registered with Windows Terminal Server. To do this issue the following command at a command prompt:

```
register pssys.dll /system
```