

## Windows 2000 Terminal Server

# Part 4: Server Licensing

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The licensing required for the various components for the Microsoft operating systems can be confusing and if you are not armed with the correct information, you may have a system that will ultimately prevent you from running EdulogNT. This document is done to help you understand the different requirements and examples are given to help you to properly plan your license requirements. Also included is contact information for SHI, Inc. the contacts for the Microsoft Select Service Agreement. NOTE: Prices shown are as of the creation date of this document and are subject to change. Check the current North Carolina Purchase and Contracts website for the most current information (<http://www.doa.state.nc.us/PandC/keyword.htm>), look for Software, Microsoft Select Agreement). Specific contact information will be included in this document, as well.

**One other consideration:** After you use the included examples to determine the specific software and number/type of licenses that you will need, you must take one other fact into consideration. The number of licenses you actually need may be calculated as either **Per Server** or **Per Seat**. For example, in a large office setting, there may be fifty employees, but experience has shown that no more than 35 will ever access the server at the same time (concurrent connections). Rather than purchasing one license for EVERY workstation (per Server option), they would purchase only 35 licenses and be restricted to a maximum of 35 workstations attaching at any one time (per Seat option). This has saved the cost of 15 licenses. The calculation of Per Seat vs. Per Server may only be an issue in very large sites.

**UPDATE NOTE: We have determined that the setup used will be PER SERVER. Calculation of the number of licenses is not as critical as it was when this paper was first written as we now strongly recommend that the connecting workstations be either Win2000 or WinXP. Per Seat mode is really only important if the users need to connect to multiple terminal services servers. This will NOT be the case for typical districts.**

### Software/License Components

#### Server

<b>Windows Server 2000 English Disk Kit MLF w/SP4</b> <b>Mfg. Part # C11-03258</b>	<b>\$25.00</b>
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The CD's that contain the Win 2000 Server Program. Only one set of CD's is generally required even for multiple servers.

<b>Windows Server Standard 2003 All Languages Volume License</b> <b>Mfg. Part # P73-00161</b>	<b>\$79.51</b>
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This is the license that allows the use of a Win 2000 server. One license is required for each server. (Note: This is not a misprint, the license for Win2000 is the same as Win2003)

<p><b>NOTE: NO CALS are included with either of the above. See below to determine how many and what type of CAL's are needed. And how many need to be registered.</b></p>
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## Workstations

### Windows 2000 or Windows XP is STRONGLY RECOMMENDED for all workstations.

**Windows 2000 CD's (w/SP 4)** **\$25.00**  
**Mfg. Part # B23-03950**

The CD's that contain the Win 2000 Pro (workstation) Program. Only one set of CD's is generally required even for multiple workstations.

**Windows 2000 License** **\$51.64/each**  
**Mfg. Part # E85-00351**

License for workstations to allow the use of Win2000 Pro. Need one per machine

**Windows XP CD's (w/SP2)** **\$25.00**  
**Mfg. Part # E85-02839**

The CD's that contain the Win XP (workstation) Program. Only one set of CD's is generally required even for multiple workstations.

**Windows XP License** **\$51.64/each**  
**Mfg. Part # E85-00351**

License for workstations to allow the use of WinXP. Need one per machine

Microsoft does not have upgrade licenses anymore except for the Windows Operating System. There are no licenses for Windows 2000, but you can purchase the Windows XP Upgrade license and load prior version of Windows off of a current license.

### Workstation to Server connection Licenses

There are two ways that a workstation can connect to a server. The first and most common is called 'client-server' mode. This mode allows you to open windows explorer and browse to your network places, select the server and use files, programs and such that you find on the server. In many instances, a drive letter can be 'mapped' to a certain location so that you don't have to browse to it but go directly as if it were a drive itself.

The second is through Terminal Services. Terminal Services allows you to connect to the server as if it were your workstation. Your actual workstation becomes a 'dumb' terminal and all that it does is transfer screen displays and keystrokes to the terminal server. All programs that you run and actual work that is being performed is done on the server itself. This is where the licensing issues come in.

Windows 2000 Server is the only Operating System (OS) currently authorized to run TIMSNT. Client-Server connections require one type of license while Terminal Service connections require a different type. Some machines will require both. Under certain circumstances, CALs must be purchased separately, in other cases CALs may be part of what you already have. In either case, the Terminal Service CALs must be 'installed' or activated.

## **How to determine if you need to purchase additional CALs and what types are needed:**

### Client-Server Connections

Win2000/WinXP workstations: No additional license is required as the workstation operating systems is the same level or higher than the server's operating system.

WinNT workstations: An additional CAL is required for each workstation that needs to connect to the server. This is because the server is a higher level system and the resources and features of that system have not been paid for through the purchase of the workstation's OS. The purchase of a CAL for each of these machines is required.

### Terminal Services Connections

Win2000/WinXP workstations: No additional license is required as the workstation operating system is the same level or higher than the server's operating system. The Terminal Services CALs must be activated in the Terminal Services Licensing Manager on the server.

WinNT workstations: An additional CAL is required for each workstation that needs to connect to the server. This is because the server is a higher level system and the resources and features of that system have not been paid for through the purchase of the workstation's OS. The purchase of a CAL for each of these machines needs to be purchased. The Terminal Services CALs must be activated in the Terminal Services Licensing Manager on the server.

### **1. How to determine how many CALs you already have.**

To start with, how many CALs came with the Server software?

1. If you purchased your server with Win2000 pre-installed from Dell, IBM, Compaq, etc., they generally come with 5 CALs included.
2. If you purchased the Win2000 from SHI, Inc., NO CALs are included with the server license. (SHI, Inc. is the company that has the Microsoft Select Service Agreement, and is authorized under the State of NC Purchase and Contract. Contact info listed at the end of this document).

How many CALs came with the workstations software?

1. Win2000/WinXP – Each machine with these OS's have 1 CAL each.
2. WinNT – They have NO applicable licenses, client-server or terminal services.

### **Example 1:**

There is an environment with (1) Win2000 server w/terminal services activated. There are 15 workstations (all either Win2000 or XP) that will connect either through either client/server or TS. The Server was purchased through Dell and came with Win2000 installed, including the 5 licenses.

Client-server: No additional licenses needed, you have 20, one with each workstation and 5 with the server. No registration is required.

Terminal Services: No additional licenses needed, you have 15, one with each workstation. The licenses need to be activated in the Terminal Services Licensing Manager. You would register 20, one for each workstation (15), and those included with the server (5). In this example, you actually have an excess of 5 licenses.

**Example 2:**

There is an environment with (1) Win2000 server w/terminal services activated. There are 10 workstations (all either Win2000 or XP) and 7 Win-NT that will connect either through client/server or TS. The server came without an OS and Win2000 was purchased through SHI with NO additional licenses.

Client-server: There are 10 licenses that came with the Win2000/WinXP workstations. Need to purchase 7 additional CALs for the NT machines. No license activation is required.

Terminal Services: There are 10 Terminal Services CALs, one with each workstation. Need to purchase 7 TS CALs for the 7 NT machines. The licenses need to be activated in the Terminal Services Licensing Manager. You would register 17, one for each Win2000/WinXP workstation (10), and the additional purchased for the NT machines (7).

**Windows Server CAL 2003 All Languages Volume License Device CAL                   \$5.74/each  
Mfg. Part # R18-00007**

This is required for EVERY workstation that connects to a server, no matter what operating system the workstation uses, no matter how it connects; remote dial-up, client server (direct connection), or terminal services. Some Server packages will contain 5 with it, if you purchase OS separately under state P&C through SHI, it will NOT contain any of these licenses. All Win2000 & WinXP have this included in the basic OS and an additional purchase is NOT required.

**Windows Terminal Services CAL 2003 All Languages   \$25.41/each  
Mfg Part # R19-00008**

License required for ANY WinNT workstation connecting to a Win2000 Server using Terminal Services.

**CONTACTS:**

NC Purchase and Contract Website: <http://www.doa.state.nc.us/PandC/keyword.htm>

Lookup 'Software, Microsoft Select Agreement'. This is setup on e-procurement and will take you to the SHI, Inc. information. This is a Statewide Convenience Contract for the purchase of Microsoft Licenses and Maintenance by State of North Carolina Agencies and non-State Agencies and other eligible users including local government and educational entities.

**K-12 contact information** (Microsoft Select Service Agreement for software):

SHI, Inc inside sales 1-800-211-0831  
1-800-211-7954 (fax)  
[carolinateam@shi.com](mailto:carolinateam@shi.com)

## License Activation

A Terminal Server is a computer on which terminal services is enabled in Application Serving mode. It provides client access to Windows-based applications running entirely on the server and supports multiple client sessions on that server. A terminal server will serve up sessions to **unlicensed clients for 90-days** without finding a license server. This period is known as the *license server grace period* and begins from the first time a Terminal Services client connection is made to the terminal server, including a client session from the server to itself.

After the 90-day grace period is up, all clients will be locked out of the server. Therefore, it is important to purchase a license which allows a pre-determined number of users access to the server. Once a license has been purchased you will have 4 methods in which to activate your server license. Those being **Internet**, **Web**, **Phone**, and **Fax**. These instructions will cover only the **Internet** method.

Once the licenses have been ordered you may begin activation of them.

To begin:

1. At the server, login to the **Administrator** or **Support** account.
2. On the Task bar, click **Start > Settings > Control Panel**
3. Double-click on **Administrative Tools**
4. Double-click on **Terminal Services Licensing**
5. Expand **All Servers** to display your server name and click on it as shown below.



6. Under the **Action** menu, Select **Activate Server**.
7. Select **Next**
8. Select **Internet**, then **Next**
9. Select **Microsoft Select or Microsoft Enterprise Agreement**, then **Next**

10. Enter all required information on the following screen. Suggestions follow the graphic.

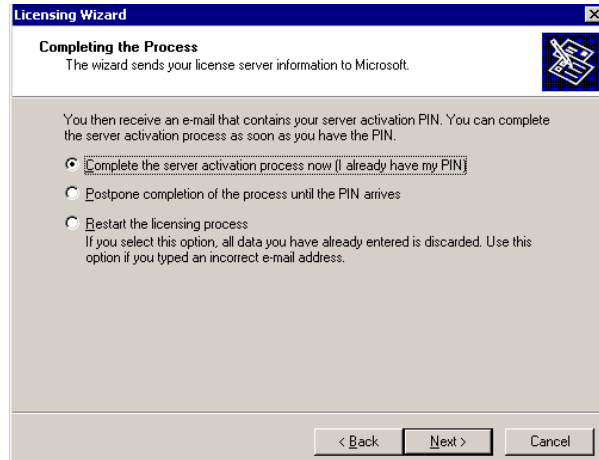
- **Company:** In the example above, we used 'Onslow County Public Schools'. Of course, you would replace 'Onslow' with your county name.
- **Organization Unit:** **Transportation – TIMS.**
- **Last and First Name:** **Enter your TIMS coordinator's name.**
- **Phone:** Optional, but we recommend entering your TIMS coordinator's number.
- **Fax:** Optional.
- **E-Mail: Required.** The e-mail address you enter will need to be one that is immediately accessible to you. Microsoft will send a confirmation e-mail along with a PIN number that will be necessary before you can continue with the licensing process. You should receive this e-mail almost immediately.

Click **Next** when finished entering your information.

11. Confirm the e-mail address at this screen, then Click **OK**.

12. Enter your mailing address, etc, then **Next**.

13. Select **Complete the server activation process now (I already have my PIN)**, then **Next**



14. At this point, you will be receiving an e-mail from Microsoft. **Do Not** exit from the Licensing Wizard, but check your e-mail in the background. When you receive an email similar to the following, **highlight** the **PIN number**, right-click and select **Copy**.

**“Thank you for activating your Terminal Services License Server with Microsoft.  
This mail contains the PIN needed to complete the activation process.  
This PIN must be entered into the Licensing Wizard exactly as shown:**

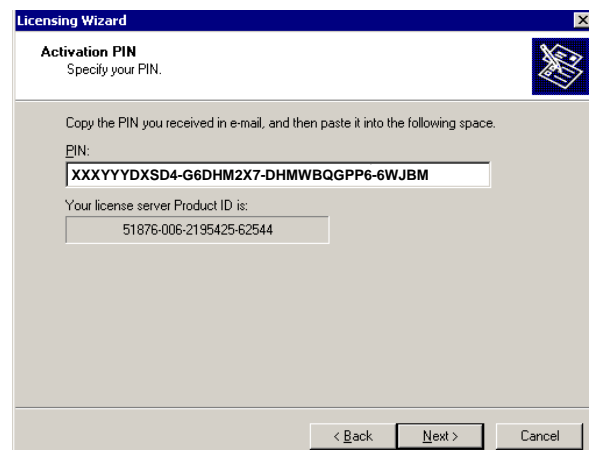
**Your PIN: XXXXXXXXSD4-G6DHM2X7-DHMWBQPP6-6WJBM**

**This PIN is valid for the Terminal Services License Server with the following Product ID:**

**Product ID: 51876-006-025931-76254**

- Note: it is recommended that you print this e-mail and attach it to the licenses that were purchased.

15. Go back to the **Licensing Wizard**. When you are prompted to enter your PIN number, select the field, right-click and select **Paste**. When done, click **Next**.

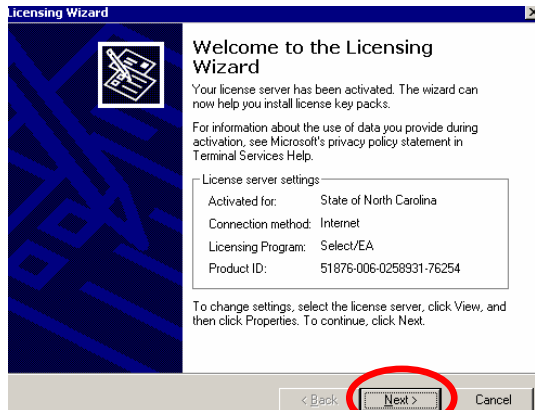




16. Select **Install licenses now** (if not already selected), then **Next**.



17. Confirm the next screen by clicking **Next**.

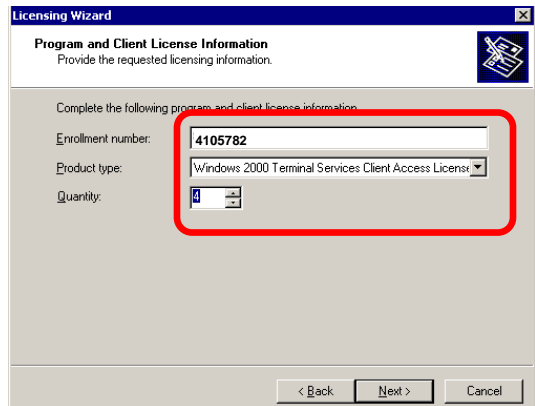


18. You will also be asked to enter your Enrollment number, product type, and quantity.

Enter the following information:

- Enrollment number: **4105782 \***
- Product type: **Windows 2000 Terminal Services Client Access License**
- Quantity: enter the number of licenses that you purchased for your site.

When finished, select **Next**.



19. Activation of your licenses is now completed. Click **Finish**, to exit.

