

Tech Note

The SonicWALL SSL-VPN 2000 includes remote access clients for both computers and servers. Users can access desktops and servers via RDP and VNC through the SonicWALL SSL VPN appliance. This Tech Note describes the process of enabling remote access via RDP and VNC on Windows workstations.

RDP and VNC protocols

The Microsoft Remote Desktop Protocol (RDP) provides remote display and input capabilities over a network connection for Windows-based applications. The RDP protocol has been around since Windows NT Server 4.0 and has been updated regularly with each new version of Windows software. RDP is based on an extension of the ITU T.120 family of protocols. The two main versions are RDP 4.0 and RDP 5.0. The new versions (5.0 and 5.1) are backwards compatible with the older version, and among the difference between RDP 4.0 and RDP 5.0 are that the latter supports improved compression and caching, and clipboard mapping.

The SonicWALL SSL-VPN provides client for both RDP 4.0 and RDP 5.0. The RDP 4.0 client is Java based and has the most basic set of features as it is the oldest. The RDP 5.0 client is based on Active X and was introduced with Windows 2000 Terminal Services. The main features of RDP 5.0 are increased performance over slow network connections and full screen mode. RDP 5.1 was introduced with Windows XP Pro and has improvements such as 24-bit color support.

Note: Due to licensing restrictions from Microsoft, the Java based RDP 4.0 client cannot be used to connect to Windows 2003 Server. If the SonicWALL SSL-VPN determines that the target server for an RDP 4.0 session is a Windows 2003 Server, it will deny the connection. You may use RDP 5.0 or VNC instead.

VNC stands for Virtual Network Computing. VNC was originally developed by AT&T, but is today widely available as open source and fully cross platform software. This means you can mix and match the client and server platforms as desired. For example a Windows based PC with a VNC client can control any combination of UNIX, Solaris or Windows machines. The client is Java based which offers even more flexibility. The largest differences between VNC and RDP is that VNC is open source software and does not have the licensing costs of RDP, and that VNC is purely a remote desktop solutions, meaning it lacks the virtualization (or multiple session) capabilities of Microsoft's Terminal Services..

Remote Administration and Application modes on Windows Servers

Microsoft Windows 2000 introduced a new feature based on RDP, called 'Remote Administration' mode. This provides administrators two remote connections to the server to be used for administrative tasks. The administrator then has access to the graphical user interface-based tools that are available in the Windows environment, even if he or she is not using a Windows-based computer to administer the server. This can greatly simplify the task of managing multiple Windows based servers.

However this feature is not meant to replace traditional Terminal Server functionality as it allows only two connections for the network administrators. A conventional Terminal Server runs in 'Application server' mode and allows multiple remote non-administrators to simultaneously access Windows-based applications that run on the server. An 'Application server' mode server requires significantly more powerful hardware and per-user terminal services licenses. In contrast, Remote Administration does not greatly impact server performance and requires no additional licenses.

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The difference between a virtual session and a console session in Windows using RDP

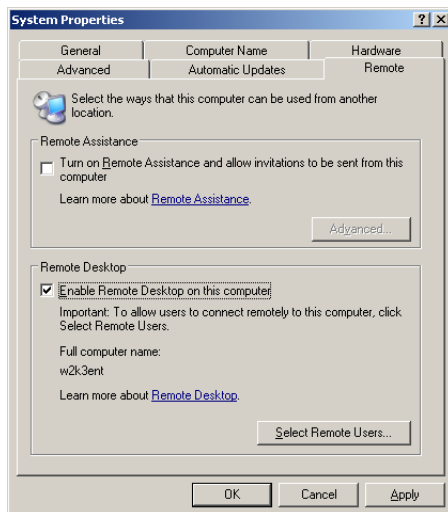
Virtual sessions are only available on Windows Server and not any of the workstation operating systems like Windows 2000 Professional or Windows XP Professional. Remote Desktop on Windows 2000/XP Professional only provides a console session that can not be shared, either it is being used remotely or locally, not both. This is due to the fact that Windows 2000/XP Professional supports only one logged-on user. Virtual Sessions on Windows Server allow two administrators to control the same virtual session and collaborate on the management of a server; this is not possible with the console session. It also allows two administrators to work on different parts of the server without observing each others actions.

How to enable Remote Administration mode on Windows Server 2003 and Windows XP

It is fairly simple to enable Remote Administration of a Windows Server 2003 or Windows XP Pro. However, in Windows Server 2003 and Windows XP the feature is called Remote Desktop. Same idea, different name. It is enabled from the Remote tab on the System Properties page. The System Properties page can be accessed in two ways. First, the long way, go to Start > Settings > Control Panel > System > Remote Tab. Second, the quick way, right click on **My Computer icon > Properties**.

Windows Server 2003

In the Remote Desktop section, click **Enable Remote Desktop on this computer**. This will allow all members of the administrators group to remotely access this computer. To allow users not in the administrator's group remote access, click the **Select Remote Users** button to grant them access.



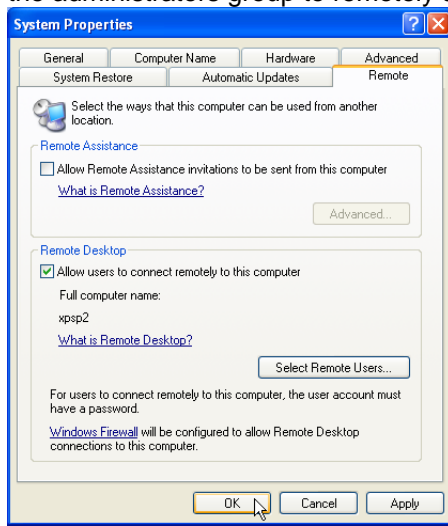
Note:

On the "Console" session in Windows Server 2003, when you connect to the remote computer, Remote Desktop automatically locks that computer so no one can access it locally. This does not happen on the virtual sessions.

On Windows 2003 Server, if you wish to enable 'Application server' mode, you can add 'Terminal Services' through 'Start > Settings > Control Panel > Add/Remove Programs > Add/Remove Windows Components'. Do not use this option if you only require Remote Administration. 'Application server' mode will require that you purchase licenses from Microsoft.

Windows XP

In the Remote Desktop section, click **Allow users to connect remotely to this computer**. This will allow all members of the administrators group to remotely access this computer. To allow users not in the administrator's group remote access, click the **Select Remote Users** button to grant them access.



Notes:

Windows XP Home Edition does not support RDP.

Accounts used for Remote Access must have passwords and firewall settings must be open on TCP port 3389 used for remote access.

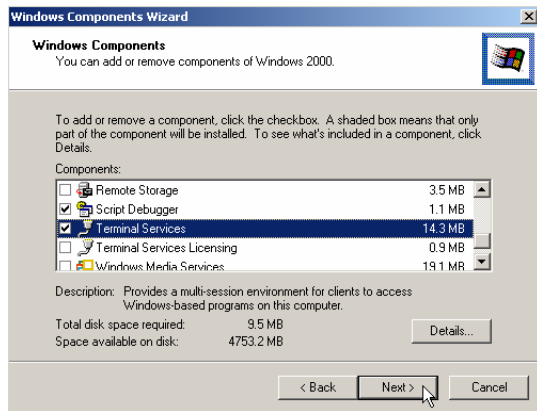


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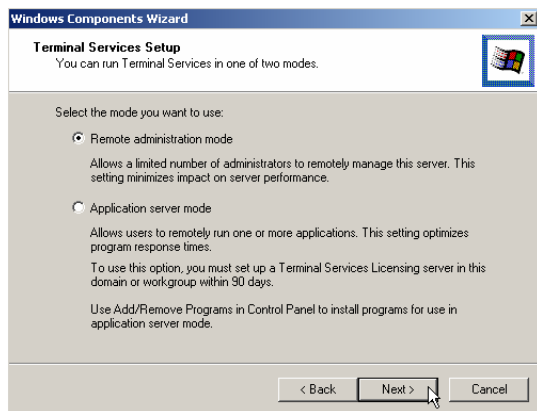
On Windows XP when you connect to the remote computer, Remote Desktop automatically locks the computer so no one else can access your applications and files locally. To unlock the computer locally type CTRL+ALT+DEL.

How to enable Terminal Services on Windows 2000 Server

The process to enable remote access in Windows 2000 server requires installing terminal services. Go to Start > Settings > Control Panel > Add/Remove Programs > Add/Remove Windows Components. This will bring up the Windows Components Wizard.



Select **Terminal Services** and click **Next**.

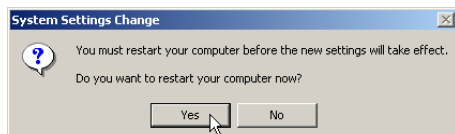


Then select **Remote Administration Mode** and click **Next**.

Note: You may alternatively select 'Application server' mode to support multiple concurrent terminal server sessions, but this will require you to purchase licenses from Microsoft. Only select 'Application server' mode if you have purchased or intend to purchase licenses.



This completes the install. To close the wizard, click **Finish**.



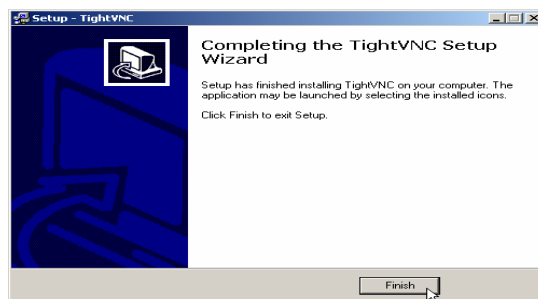
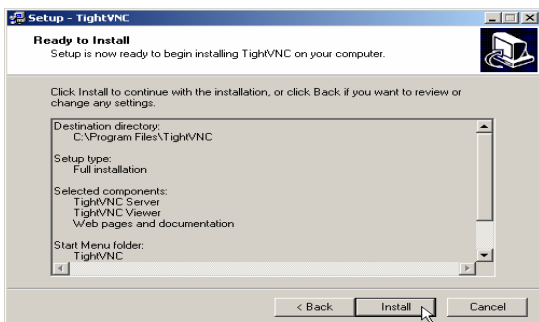
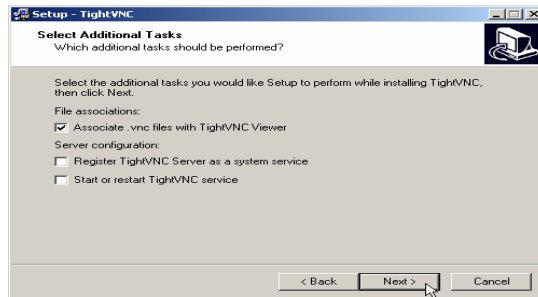
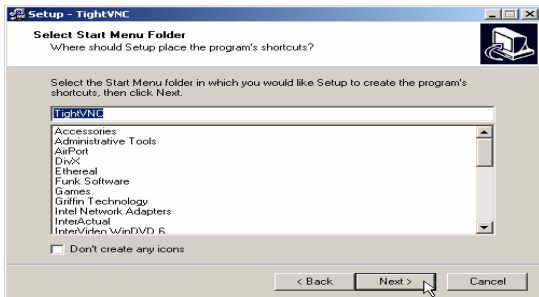
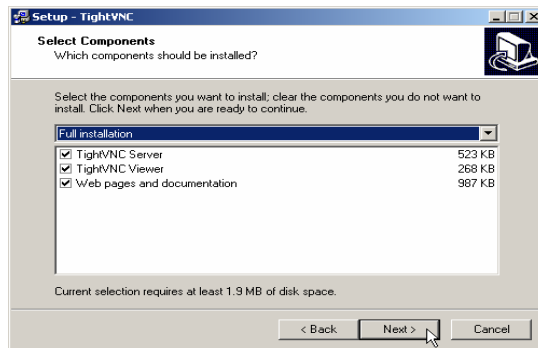
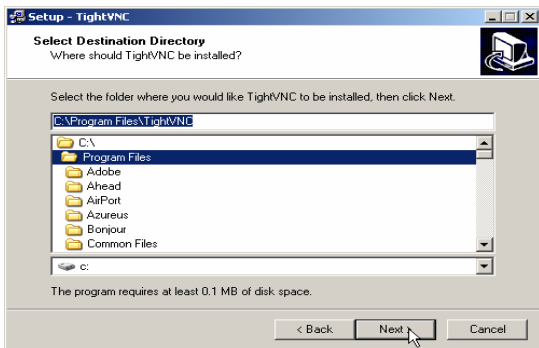
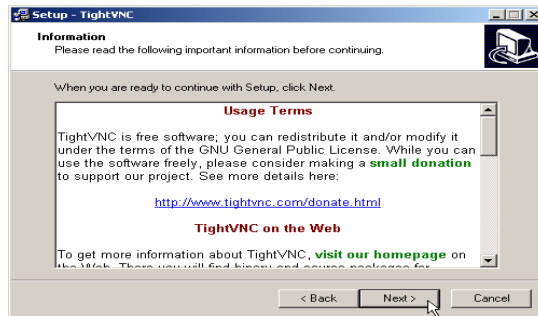
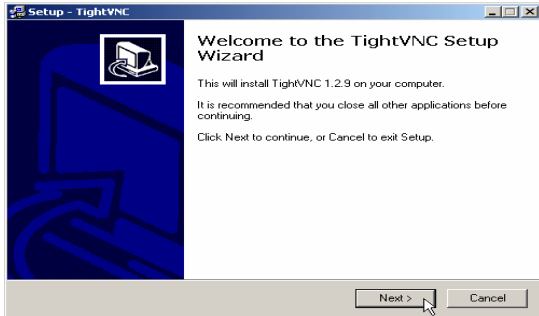
The server must then be restarted.



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How to obtain and install VNC on Windows

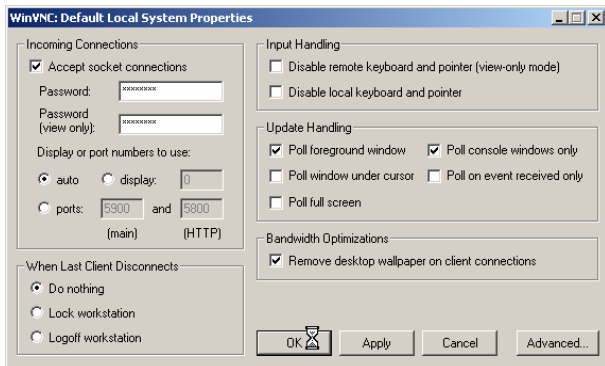
Many versions of VNC are available. TightVNC (<http://www.tightvnc.com/>) is one such version. To install just download the tightvnc-1.2.9-setup.exe and double click it. The install wizard will then start. Click Next to proceed through the install.



This completes the install.

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To set the default password, open the WinVNC Default local System Properties Page.



Note:

If you install this on a Microsoft Windows system running the Microsoft AntiSpyWare application, it will provide a series of alerts and warnings. This is normal; just configure Microsoft AntiSpyWare to allow the VNC application.

The SSL-VPN RDP4/5 and VNC configuration

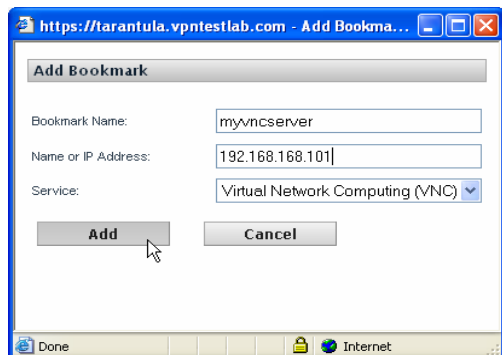
Log into the SSL-VPN appliance as Admin and click on the Virtual Office button. This will open a new window to configure the bookmarks for the RDP and VNC Servers. Click **Add Bookmark** to start. This will bring up the Add bookmark dialog box.



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To Add a VNC Server Bookmark

On the add bookmark dialog box, select Virtual Network Computing (VNC) from the Service drop down menu. You can now enter the bookmark name and IP address. Click **Add** to continue.



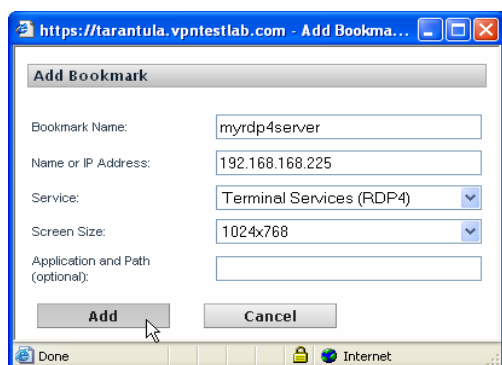
The screenshot shows a web browser window with the URL <https://tarantula.vpntestlab.com>. The main content is an "Add Bookmark" dialog box. It contains the following fields and controls:

- Bookmark Name:
- Name or IP Address:
- Service:
- Buttons: and

The "Add" button is being clicked by a mouse cursor. The browser's status bar at the bottom shows "Done" and "Internet".

To Add a RDP4 Server Bookmark

Click Add Bookmark again. On the add bookmark dialog box, select Terminal Services (RDP4) from the Service drop down menu. You can now enter the Bookmark Name and IP address. The screen size can also be configured. Click **Add** to continue.



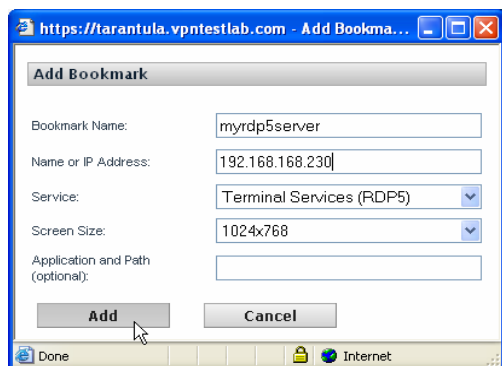
The screenshot shows the "Add Bookmark" dialog box with the following configuration:

- Bookmark Name:
- Name or IP Address:
- Service:
- Screen Size:
- Application and Path (optional):
- Buttons: and

The "Add" button is being clicked by a mouse cursor. The browser's status bar at the bottom shows "Done" and "Internet".

To Add a RDP5 Server Bookmark

Click Add Bookmark again. On the add bookmark dialog box, select Terminal Services (RDP5) from the Service drop down menu. You can now enter the Bookmark Name and IP address. The screen size can also be configured. Click **Add** to continue.



The screenshot shows the "Add Bookmark" dialog box with the following configuration:

- Bookmark Name:
- Name or IP Address:
- Service:
- Screen Size:
- Application and Path (optional):
- Buttons: and

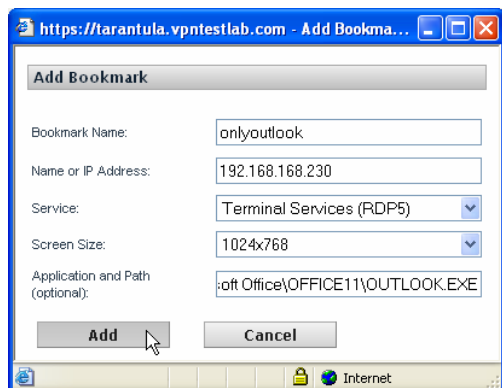
The "Add" button is being clicked by a mouse cursor. The browser's status bar at the bottom shows "Done" and "Internet".

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To Add a Bookmark for a Specific Application on an RDP4/5 Server

It is possible to create a bookmark that is application specific if you want to limit the resources available to the remote user. For example, suppose you want to limit users to one application like Microsoft Outlook. The precise path to the Outlook application is required (e.g. C:\Program Files\Microsoft Office\OFFICE11\OUTLOOK.EXE) and this must be entered in the Application and Path field on the Add bookmark dialog.

Click Add Bookmark. On the add bookmark dialog box, select Terminal Services (RDP5 or RDP4) from the Service drop down menu. You can now enter the Bookmark Name, IP address and the Application and Path. The screen size can also be configured. Click **Add** to continue.



The Bookmarks are now ready to use.

Virtual Office Bookmarks	Host/IP Address	Service	Configure
onlyoutlook	192.168.168.230	Terminal Services (RDP5)	
myrdp5server	192.168.168.230	Terminal Services (RDP5)	
myrdp4server	192.168.168.225	Terminal Services (RDP4)	
myvncserver	192.168.168.101	Virtual Network Computing	