



# **TerraGate User Manual**

**Version 3.5**

Skyline Software Systems Inc.

## TerraGate User Manual

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## CHAPTER 1. INTRODUCTION

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### About This Manual

The TerraGate User Manual contains information on using all TerraGate components and features. The manual assumes you have a working knowledge of your computer and its operating conventions, including the management of server applications. If you need help performing any of these tasks, consult the documentation resources provided with your operating system.

### Numbers and Bullets

Lists appear in the manual as either numbers or bullets. Numbers are used to outline a series of steps that should be performed in a sequential order. A series of bulleted lines makes no distinction regarding order of completion.

### “See” Statement with Hyperlink

Throughout the manual, other sections are referenced for further clarification. At such points, the word “See:” appears in bold, followed by the underlined title of the referenced section. When working with the online version of this manual simply click on the underlined hyperlink, the manual will take you directly to the desired section.

### Finding Your Way in This Manual

This manual is logically divided into chapters and blocks according to the tasks you can perform with TerraGate. Each section includes all the information related to a specific task or component. If you cannot locate a specific feature, refer to the table of contents at the beginning of the manual.

### Using the Online Help

TerraGate also contains complete help documentation. The TerraGate help system includes all of the information in this manual, plus more advanced click-and-jump navigation tools with full color screen shots and illustrations.

### Starting the Online Help

To get to the online help page:

- Select the “TerraGate Help Topics F1” entry under the help menu;
- or
- Click the F1 key at any time during the TerraGate session.

### Using Web Resources

If you have an Internet connection on your system, you can use the TerraGate online features to access additional information and demonstrations located under the TerraGate section of the Skyline web site. (<http://www.skylinesoft.com/>)

### To access Skyline Home Page

From the help menu, choose “Skyline Software Systems Home”.

In this site you can find information about the TerraGate components, sample data and applications, and information about the Skyline TerraSuite architecture.

### TerraGate Family

TerraGate suite is a family of tools designed to support all the client-server requirements of Skyline’s 3D technology. With the TerraGate tools you can stream terrain database to remote TerraExplorer users, create 3D snapshots for pure HTML clients, provide session hosting for collaboration between TerraExplorer users, and enhance Web Site integration.

**TerraGate has four components:**

#### TerraGate Streamer component

TerraGate streamer delivers 3D terrain database to thousands of clients simultaneously. TerraGate streamer can serve Skyline terrain databases (MPT files), created by TerraBuilder, or on-demand 3D processing of raw imagery and elevation data using the DirectConnect extension. In conjunction with TerraBuilder, TerraDeveloper, and TerraExplorer Pro, TerraGate makes the digital earth accessible, and enables a geo-referenced backdrop for web-based applications.

### Internet License component

The Internet License component allows enhanced web integration between TerraExplorer viewers and Web content. The Internet License component unlocks the extended TerraExplorer Pro API capabilities for TerraExplorer Viewer applications for users that work with authorized web servers. This component allows the generation and modification of specific and targeted flying experiences in real-time.

### TerraPhoto3D component

TerraPhoto3D is a server-side rendering machine that takes snapshots of Skyline's 3D world to be used with any web page. End-users can navigate and modify the 3D world from any PC, Web browser, hand-held or wireless device, using the powerful HTML based API. TerraPhoto3D renders 3D images created by TerraBuilder and TerraExplorer and sends them, as JPEG images, to any HTML browser.

### Collaboration component

The Collaboration component provides hosting services for collaboration sessions between TerraExplorer users. Using the collaboration tool in TerraExplorer, users can create collaboration sessions and invite remote participants to share the 3D experience.

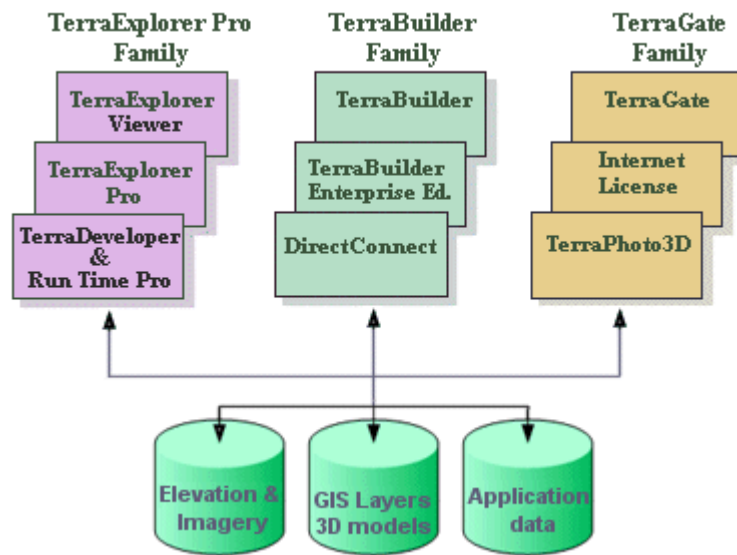
## TerraSuite Architecture

**TerraGate is a fundamental element in Skyline's TerraSuite architecture. The TerraSuite architecture is organized into three products families:**

TerraExplorer Pro Family: allows users to create their own customized 3D visualization environment by editing and annotating a 3D database.

TerraBuilder Family: allows users to create a photo-realistic, geographically accurate, 3D model of the earth for their geo-referenced applications.

TerraGate Family: network data server that streams and manages 3D geographic data in real-time to TerraExplorer clients.



**TerraSuite Architecture**

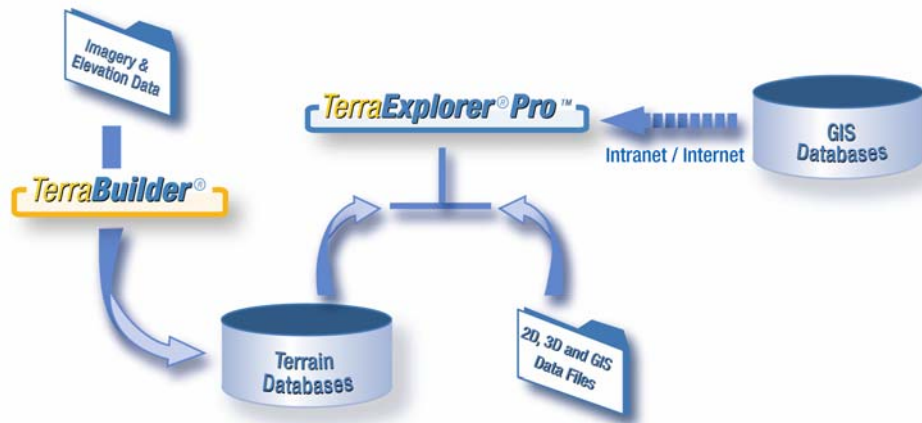
### Data Flow

You can use TerraExplorer Pro in a local desktop environment, accessing terrain and content data directly, or in a network environment via the TerraGate server.

TerraBuilder builds a terrain database (MPT files) from aerial images and terrain data.

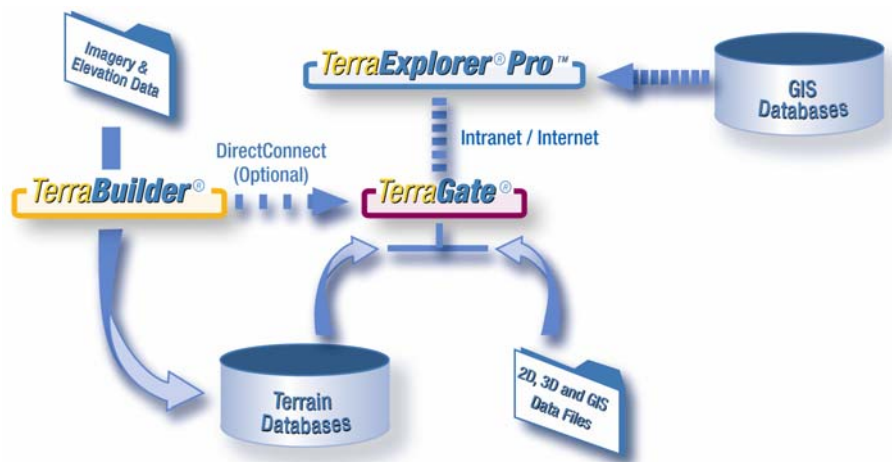
TerraExplorer Pro fuses your area-specific 2D, 3D and GIS content, either from your local database or from an external GIS database via network, into a fully customized end-user project for viewing with TerraExplorer or any Skyline fly-through enabled application.





**Desktop Configuration**

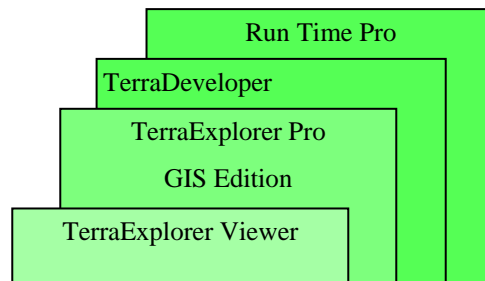
In a network environment TerraGate allows you to work on remote terrain databases without loading them to the local machine. Use TerraGate DirectConnect to view files in TerraExplorer straight from the image file database, without creating terrain database files. This is especially useful for very large image files that would require very long TerraBuilder compilation times.



**Network Configuration**

## The TerraExplorer Pro Family Hierarchy

All the products in the TerraExplorer Pro family are built on the same technology. The TerraExplorer Viewer provides the basic viewing capabilities. The TerraExplorer Pro GIS Edition adds editing, analyzing and control tools. The TerraDeveloper adds user interface customization capabilities that can be utilized with the TerraExplorer Run Time Pro. The TerraExplorer Pro family also includes a comprehensive set of tools and extensions. All tools, developed using the TerraExplorer Pro API, can be activated by TerraExplorer Pro, TerraExplorer Run Time Pro and, with a special license, by the TerraExplorer Viewer.



**TerraExplorer Pro Family Hierarchy**

	<b>TerraExplorer Viewer</b>	<b>TerraExplorer Pro GIS Edition</b>	<b>TerraDeveloper &amp; Run Time Pro</b>
3D Fly-through	+	+	+
Six Degrees of Movement	+	+	+
Reference Map	+	+	+
Snapshot Creation	+	+	+
Measurement Tools	+	+	+
Basic API	+	+	+
Pro API	Optional	+	+
Authoring and Editing Tools		+	+
Terrain analyzing		+	+
Project Setting Parameters		+	+

	<b>TerraExplorer Viewer</b>	<b>TerraExplorer Pro GIS Edition</b>	<b>TerraDeveloper &amp; Run Time Pro</b>
Movie Creation		+	+
Load GIS Layers		+	+
Save layers to GIS files		+	+
Create CD and Internet Distribution Kits		+	
Customize User Interface	+		+
Integrate in HTML pages	+		+
Integrate in any Windows Application	+		+

## About TerraExplorer Pro

TerraExplorer Pro is a powerful, easy-to-use tool for editing, annotating and publishing photo-realistic interactive 3D environments.

Terra Explorer Pro allows users to shape the digital world in their own image. By editing and annotating geo-referenced 3D terrain models created through TerraBuilder, users can customize the Terra experience to highlight local geographic content. Overlaying local information on to a 3D map can create an exciting interactive application to promote specific features of a region, showing function, relation and proximity along with a distinct view of the area. By providing valuable local information, this technology can significantly enhance users' online experiences. TerraExplorer Pro can create a view of the world that meets your customers' needs.

TerraExplorer Pro includes all the real-time 3D terrain viewing capabilities found in the TerraExplorer basic viewer, as well as all the editing tools required to annotate terrain models created by Skyline's unique TerraBuilder product. TerraExplorer Pro offers a 3D Editor that enables users to create, import, manipulate, and edit new and existing objects. All the desired terrain overlay information such as text, labels, graphics, 2D and 3D entities, and animations can be created or imported from standard GIS files and databases. TerraExplorer Pro is an essential tool for content providers wishing to publish their unique local information over Intranets or the Internet. It provides powerful and easy editing, annotation and publishing of photo-realistic, interactive, and rich 3D terrain visualizations.

### **About TerraDeveloper**

The Skyline TerraDeveloper software development kit is a set of ActiveX controls that provide full customization of TerraExplorer Pro applications to developers. Utilizing the TerraExplorer Pro environment, developers can build their own applications in 3D by integrating the TerraExplorer Pro capabilities in any application or HTML page.

TerraDeveloper allows the addition of powerful 3D geospatial interfaces to any application for PC based systems, including desktops, laptops, network and wireless based solutions.

### **About TerraExplorer Run Time Pro**

The TerraExplorer Run Time Pro is an application component designed to run with applications developed using TerraDeveloper, and utilize the full TerraExplorer Pro API.

An application developed with TerraDeveloper can be distributed with a cost-effective TerraExplorer Run Time that installs and runs with the application.

### **About the TerraExplorer Viewer**

Part of a suite of software tools from Skyline Software Systems, TerraExplorer provides PC users with interactive, photo-realistic terrains in a simple but powerful application. The TerraExplorer viewer gives users the ability to view terrains that are created by Skyline's TerraBuilder and TerraExplorer Pro, and then streamed over the Internet by TerraGate. TerraExplorer's Internet capability delivers 3D terrain visualizations from around the globe to any Windows-based PC.

The TerraExplorer viewer can be used as a viewing application for TerraExplorer Pro projects. Anything you build using the Pro tool can be accessed by the viewer application although no editing tools are provided with the basic viewer. You can create TerraExplorer Viewer run time kits using the "create basic kit" feature of TerraExplorer Pro. TerraExplorer Viewer run time kits can be created for desktop configuration or network configuration. Run time kits can be distributed by local media such as CD ROMs, or placed on the Net as part of a web based application.

## **TerraBuilder Family**

TerraBuilder allows users to quickly create, edit and maintain Skyline 3D Terra databases.

Users can create a photo-realistic, geographically accurate, 3D model of the earth for their geo-referenced applications. This component of Skyline's suite of products draws together data to create a 3D backdrop for overlay, or addition of content using Skyline's authoring and editing tool, the TerraExplorer Pro.

Combining any number of aerial photos, satellite images, geographic terrain information, digital elevation models, and vector data, TerraBuilder enables quick and easy creation of large 3D Terra databases. With multiple import formats, TerraBuilder can merge data with different resolutions and sizes, re-project data into a common reference projection and clip areas from selected sources for inclusion in the final database.

**TerraBuilder has two extensions:**

### **TerraBuilder - Enterprise Edition**

The new Enterprise Edition allows the user to share the workload of massive 3D database creation between several computers and multi-CPU platforms simultaneously. With the new TerraBuilder Fusers, every computer on the network stands-by for MPT creation, adding its computing power to the 3D terrain generation process. With new, industry standard, formats like ECW, IMG and NIMA's CIB, CADRG and DTED, TerraBuilder can now directly import files from an even larger number of imagery and elevation data sources. Revision of its internal mechanism and numerous user interface updates makes creating databases with TerraBuilder more efficient and intuitive.

### **TerraBuilder - DirectConnect**

TerraBuilder DirectConnect to TerraGate provides the ability to stream aerial and elevation data, in its native format (e.g., ECW, Mr. SID), directly to TerraExplorer clients. TerraBuilder DirectConnect saves you the time and resources by skipping the 3D terrain database creation and streaming the native data, using the TerraGate server, to TerraExplorer and TerraExplorer Pro clients over the network.

## CHAPTER 2. GETTING STARTED

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### Software and Hardware Requirements

- **Operating System:** TerraGate runs on any Windows® 2000 (SP 4), XP (SP 2) or 2003 Server (SP 1). For TerraPhoto3D component, Internet Information Services (IIS) is required.
- **Processor:** TerraGate runs on any Intel Processor or compatible. It is recommended to run the application on a Pentium III processor or higher.
- Total amount of **memory** (RAM) is another important factor in the performance of TerraGate. For optimum performance, the server should be equipped with at least 512 MB of RAM plus 2 MB per concurrent user connecting to that TerraGate server. Running TerraBuilder Fusers requires additional resources. For TerraPhoto3D component 128 MB is required for each Fly project instance.
- **Video Card:** TerraGate requires no video card. TerraPhoto3D requires video cards with 64 MB of memory, although it is recommended to use video cards with 256 MB.
- **User Privileges:** You must have Administrator rights to install TerraGate and to run the TerraGate Manager.

### License Mechanism

The TerraSuite License Manager is responsible for protecting the various applications, and allows the user to view and update the current license level.

#### The License Manager

To activate the License Manager choose Help menu>License Manager, or Start>Programs>Skyline>License Manager. In the License Manager you can view your current license status, order evaluation kits of new products or extensions, and register for a device-dependent software license.

#### Local Hardware Protection (HASP Key)

TerraGate requires a HASP key – a physical hardware key that plugs into the USB or parallel port of the computer – to allow the operation of the product. The HASP key is included in the TerraGate Software Package. Each TerraGate HASP key has a coded version number indicating the license level of the product, (e.g., DirectConnect) which can only be changed by contacting Skyline Software Systems.

**Make sure that you plug the HASP key into the computer before you start TerraGate Manager and its services.**

**Note:** If a parallel key is supplied, and you already have a HASP key connected to the parallel port for other software, you can chain the existing HASP key with the TerraExplorer Pro key.

### **Floating License**

The license information can also be obtained using a floating license server. By installing a physical hardware key on the license server, a predetermined number of concurrent users on the same network can use TerraGate, according to the license level defined by Skyline, without an individual hardware key on each of their computers.

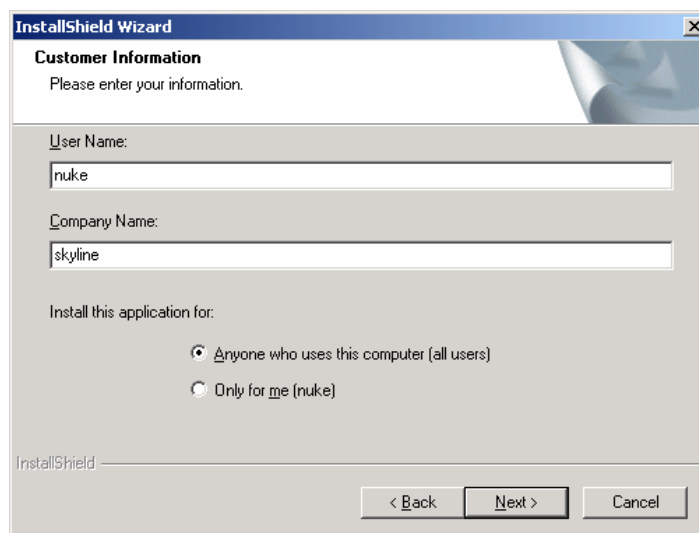
### **Workstation Dependent Software License**

Another type of license is the Workstation dependent software license. This license does not require any hardware protection but is limited to a specific computer. Before working with the Workstation dependent software license you must first register to get a license locked to your computer. It cannot be transferred without repeating the registration process.

## Installing TerraGate Manager and Components

To install TerraGate Manager and its components follow these steps:

1. Log on as a user with administration privileges.
2. Insert the installation CD into your CD-ROM drive.
3. Click on **setup.exe**. You see the Welcome screen.
4. Click **Next** to view the Software License Agreement dialog box.  
If you agree to the licensing terms, click Yes to continue the installation.
5. In the next page type your personal and company information and select whether the TerraGate Manager should be available for all users, or only for the current user.

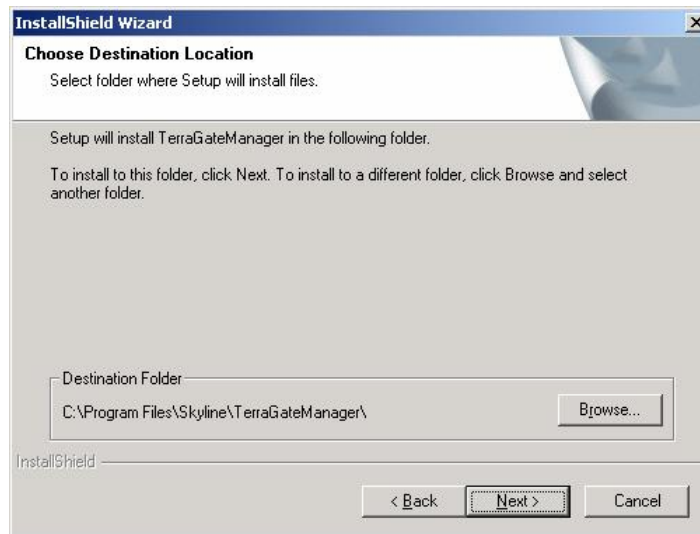


The screenshot shows the 'InstallShield Wizard' window with the 'Customer Information' tab selected. The window has a title bar with 'InstallShield Wizard' and a close button. Below the title bar, it says 'Customer Information' and 'Please enter your information.' There are two text input fields: 'User Name:' with the text 'nuke' and 'Company Name:' with the text 'skyline'. Below these fields, it says 'Install this application for:' followed by two radio button options: 'Anyone who uses this computer (all users)' (which is selected) and 'Only for me (nuke)'. At the bottom left, it says 'InstallShield'. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Figure 2-1. Information Page

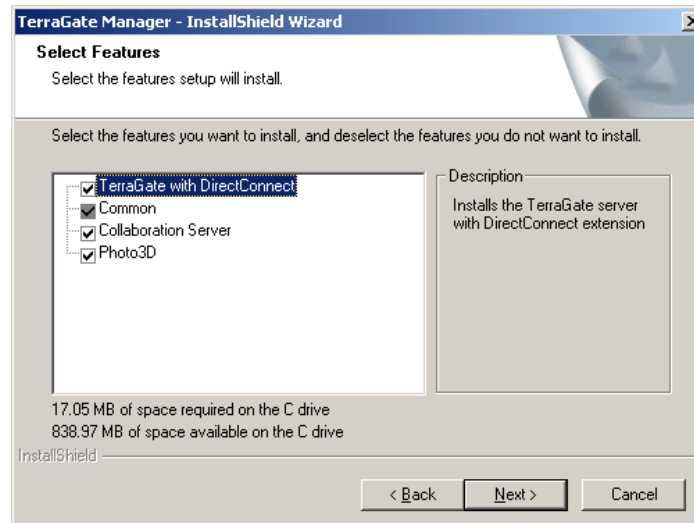
6. Set the location of the TerraGate installation. The HASP driver is installed after this step.





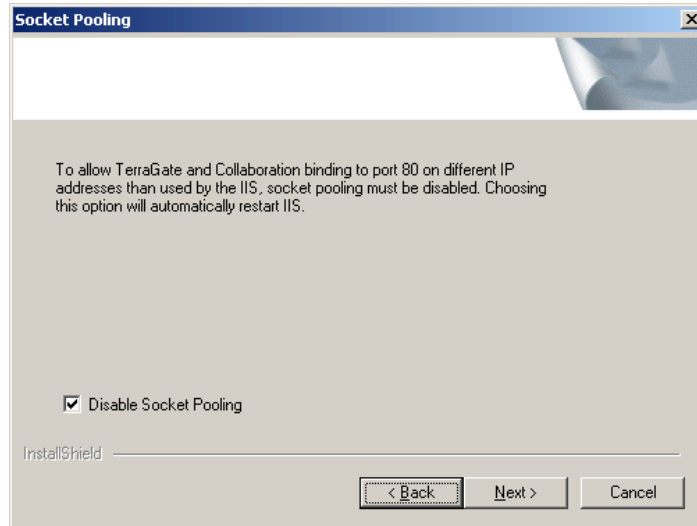
**Figure 2-2. Choose Destination Location Page**

7. Select, or deselect, the components you want to install. Note that you must have a valid license for each component you install.



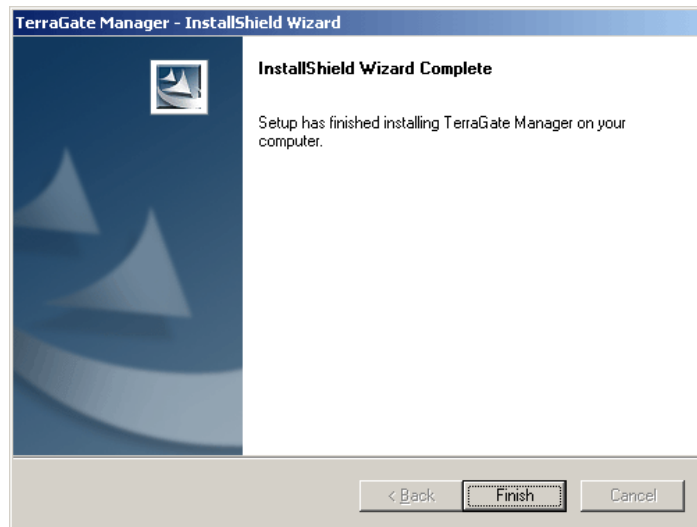
**Figure 2-3. Component Selection Page**

8. If you are using Windows 2000, you get the Socket Pooling page. The IIS 5.0 *socket pooling* feature causes IIS to bind to all IP addresses. Disabling socket pooling allows TerraGate and the Collaboration Server to run on the same port (80) together with IIS. See: [TerraGate and Microsoft IIS](#) section



**Figure 2-4. Disable Socket Pooling Page**

9. The installation copies the files to the destination folder, creates shortcut icons to start TerraGate Manager on your desktop, and adds menu items under "Skyline" in Windows Start> All Programs.



**Figure 2-5. Complete Installation Page**

## 64-bit Windows

If you are using 64-bit Windows, the installation prompts you to manually install the appropriate HASP driver. To install follow these steps:

1. In Windows explorer, browse to the route of the installation CD and extract the file “haspdinst\_x64.zip” to a folder on your computer.  
Note: It is advised to check for the latest version of the file on:  
<http://www.aladdin.com/support/hasp/hasp4/enduser.asp>
2. In the extracted folder, run the file “haspdinst\_x64.exe” and follow the on-screen instructions.

## Installed Files

The setup program installs the TerraGate Manager and components files into a directory of your choice, or the default directory, C:\Program Files\Skyline\TerraGateManager. The directory structure is as follows:

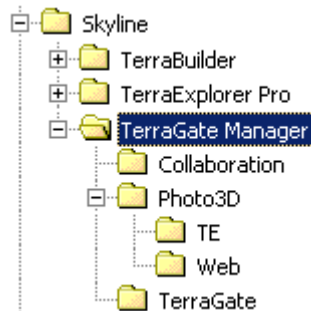


Figure 2-6. TerraGate Manager Directory Tree

## Configuring after Installation

You can start the TerraGate Manager and the various components after initial configuration.

Follow the instruction below to configure and test the individual components that you installed.

### Testing TerraGate

To configure the TerraGate streamer component **See:** [TerraGate Settings](#) in the “TerraGate Streamer Component” chapter. For computer that are also running Microsoft Internet Information Services **See:** [TerraGate and Microsoft IIS](#).

To test TerraGate after the installation and configuration is complete, you need a viewer such as *TerraExplorer Pro*.

*Test procedure:*

1. Make sure the TerraGate service is running (through TerraGate Manager or the Windows NT/2000/XP service manager).
2. Open the TerraExplorer Pro on a client machine.
3. Select the File Menu and choose Open.
4. Type: `<MPT name>@<TerraGate server>:< port>`
5. If you enabled SSL Security on your TerraGate server:  
Type: `tgates:// <TerraGate server>:< port>/<MPT name>`  
**See:** [Security Settings](#) in the “TerraGate Streamer Component” chapter.  
Where:  
`<MPT name>` is an MPT file located in the [Maps Directories](#). If nothing was changed, the MPT file, *sample.mpt*, is already there. If you installed the DirectConnect extension, `<MPT name>` can also be a TerraBuilder Project file (TBP).  
`<TerraGate server>` is the IP or name of the machine running TerraGate. You need to specify the port only if you are using a port other than 80 (default).  
For example: [sample.mpt@tgate2.skylinesoft.com](#) (this example may actually work, but it will not test the newly installed TerraGate).
6. Press OK.

The terrain (MPT file) should be loaded on the main window of TerraExplorer Pro, and you should see the Sea of Galilee.

### Testing TerraPhoto3D

To configure the TerraPhoto3D component **See:** [TerraPhoto3D Settings](#) in the “TerraPhoto3D Component” chapter.

To test TerraPhoto3D after installation and configuration is complete, follow these steps:

1. In Windows explorer, browse to “C:\Program Files\Skyline\TerraGate Manager\Photo3D\Examples” or to the relative path in your installation folder.
2. Use an HTML editor to edit the file “SimpleClient.html”.
3. Find the variable “ServerName” and set the IP or name of your TerraPhoto3D server, e.g., *var ServerName = "www.skylinesoft.com";*.
4. Set the “ObjX” and “ObjY” values to the X and Y coordinates respectively of the initial viewing position.
5. Save the file and run it in your browser. You should see the image generated by the TerraPhoto3D server. You can also navigate using the controls and the mouse wheel.

**Note:** The “SimpleClient.html” uses a secured method for working with TerraPhoto3D server. This method is activated if you select the “secure” checkbox when the page is running in the viewer. To use this option **See:** [Using a Dynamic Web Page](#) and [Testing with Dynamic Web Page](#) in the “TerraPhoto3D Component” chapter.

For further information on how to create web pages that use images from TerraPhoto3D server **See:** [Using the TerraPhoto3D Program](#) in the “TerraPhoto3D Component” chapter.

## Testing Internet License

To configure the Internet License component **See:** [Internet License Settings](#) in the “Internet License Component” chapter.

To test Internet License after the installation and configuration is complete, follow these steps:

1. Run TerraExplorer Viewer and open a FLY file.
2. In Windows explorer, browse to “C:\Program Files\Skyline\TerraGate Manager\TerraGate” or to the relative path in your installation folder.
3. Use an HTML editor to edit the file “SimpleInternetLicense.html”.
4. Find the <META> tag with the NAME value of “NetLicenseServer”. Change the value of the CONTENT value to the IP or name of your Internet License server. This is the same address used by the TerraGate server, e.g., *CONTENT="http://www.skyline.com/"*.

5. Save the file and run it in your browser. Click the Test License button. You should get a message saying the Internet License is working properly, and a circle is added to your project.

## Testing Collaboration

To configure the Collaboration component **See:** [Collaboration Settings](#) in the “Collaboration Component” chapter.

To test Collaboration after the installation and configuration is complete you need a *TerraExplorer Pro* viewer with Collaboration extension.

*Test procedure:*

1. Open TerraExplorer.
2. From the Tools Menu select Collaboration.
3. In the Connection Section, set the Location Type to Create Session on Server.
4. Set the Server Host Name parameter, which is the Collaboration Server IP address or name. If the port is different than the default (80), use `<Collaboration server>:< port>` where `<Collaboration server>` is the Collaboration Server IP, and `< port>` is the port used. You can find this information on the Collaboration Settings dialog.
5. In the session name field enter a word to be used as the session name (e.g., “MyFirstSession”).
6. Enter a User.
7. Click on the Start Session button.
8. Open the session panel in the collaboration tool and make sure you are connected to the session.
9. On TerraGate Manager, select the collaboration status page. A session by the name defined in step 5, with one connected user should appear.

## Uninstalling TerraGate

The Uninstall feature lets you quickly remove all folders and files that you installed to your hard disk during the installation procedure.

### **To Uninstall TerraGate**

1. Exit TerraGate Manager.
2. In Windows, choose Start>Settings>Control Panel, and double click Add/Remove Program. In Windows XP choose Start>Control Panel>Add or Remove Programs.
3. Select TerraGate Manager from the Add/Remove Programs list.
4. Select Add/Remove or Change/Remove, depending on your system.
5. Select Remove and click Next.
6. Select OK on the Confirm Uninstall message.
7. Follow the on-screen instructions until all TerraGate Manager files are removed.
8. Exit from the Add/Remove Dialog Box.

### **Starting TerraGate Manager**

You can start TerraGate Manager by doing one of the following:

- Choose Start > All Programs > Skyline > TerraGate Manager.
- Choose the TerraGate Manager icon on your desktop.

After the TerraGate Manager application opens, you are ready to manage the TerraGate components.

## CHAPTER 3. WHAT'S NEW IN RELEASE 3.5

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### New Internet License component

The Internet License component unlocks the extended TerraExplorer Pro API capabilities for TerraExplorer Viewer applications for users that work with authorized web servers.

- Replaces the old FlyGen component
- Extend the integration capabilities between TerraExplorer viewers and Web content.
- Adds TerraExplorer Pro functionality to TerraExplorer viewers (using the API)
- Approves any web page (e.g. HTML, ASP) located in the customer's domain.
- Controls approved domains through the TerraGate license mechanism.



## New TerraPhoto3D component

Server-side rendering machine that takes snapshots of Skyline's 3D world to be used with any web page.

- Renders 3D images created by TerraExplorer and sends them, as JPEG images, to web browsers.
- Control the location of the camera and add objects using the TerraExplorer API.
- View the 3D world from any PC, hand-held and advanced mobile phones.
- Works in a multi-server distributed environment.
- Fully controlled by the TerraGate Manager.



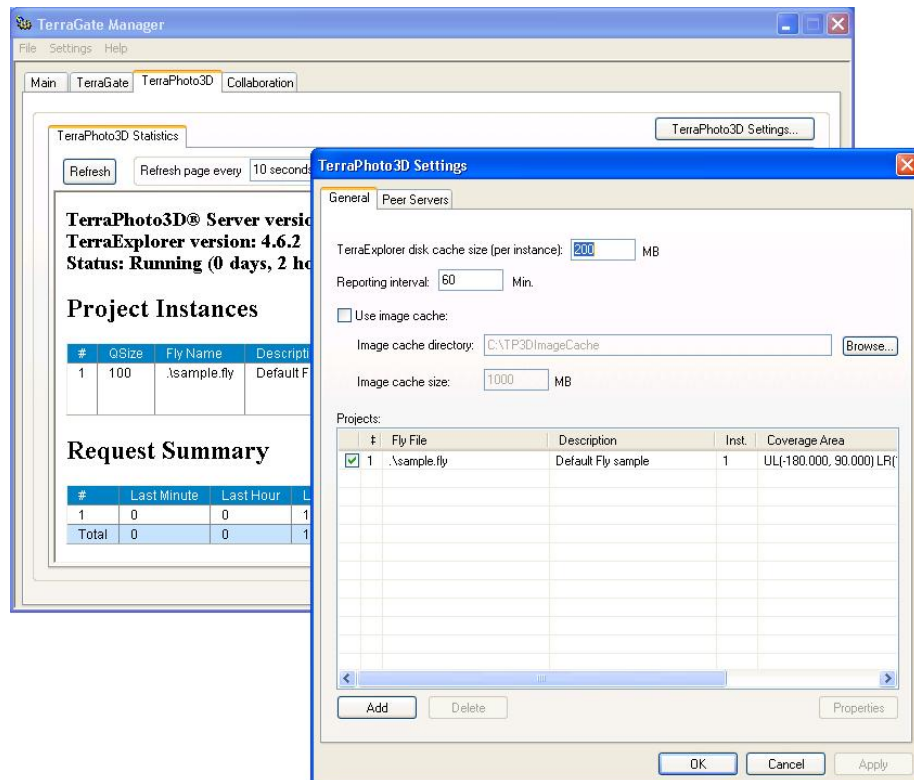
## New Collaboration Server component

Provides hosting services for collaboration sessions between TerraExplorer users.

- Host unlimited number of sessions.
- Allow users behind different firewalls to collaborate with each other.

## Improved TerraGate manager

- Control and monitor the Internet License component.
- Control and monitor the Photo3D component.
- Control and monitor the Collaboration component.



## Updated DirectConnect

- Uses the new version 1.7 TerraBuilder Fusers.
- Improved management of Fusers.

## CHAPTER 4. BASIC CONCEPTS

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### General

TerraGate suite is a family of tools designed to support all the client-server requirements of the Skyline's 3D technology. With the TerraGate components you can stream terrain database to remote TerraExplorer users, create 3D snapshots for pure HTML clients, provides session hosting for collaboration between TerraExplorer users and enhanced Web Site integration. The TerraGate Manager is a console application that manages and monitors all installed TerraGate components on your server.

Four components can be installed:

- **TerraGate streamer component.** A powerful network data server technology designed to stream 3D terrain databases in real-time.
- **TerraPhoto3D component.** A 3D snapshot generation server.
- **Internet License component.** An authorization server allowing activation of TerraExplorer extended API from authorized domains. Requires the TerraGate streamer component.
- **Collaboration component.** Hosts TerraExplorer Collaboration sessions to which multiple users can connect and work together in the 3D environment.

### What is the TerraGate Manager?

The TerraGate Manager is a management and configuration tool allowing the user to control and monitor Skyline server applications, change configurations, view performance and statistics, add maps, etc. The TerraGate Manager controls the server components installed on your system.

### What is the TerraGate streamer component?

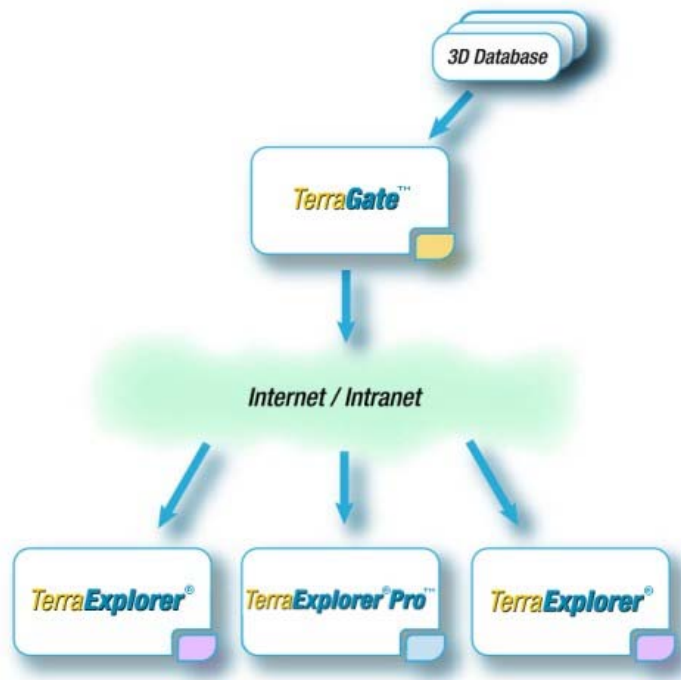
TerraGate is a powerful network data server technology designed to stream 3D geographic data in real-time.

TerraGate delivers Skyline digital earth data to thousands of clients simultaneously. It provides the platform for launching applications created with Terra development and editing tools. In conjunction with [TerraBuilder](#), [TerraDeveloper](#), and [TerraExplorer Pro](#), TerraGate makes the digital Earth accessible, and enables a geo-referenced backdrop for clients' web-based applications.

TerraGate differs significantly from video streaming technology in that it works seamlessly across variable bandwidths on the Internet and is not affected by latency or breaks in connectivity. Once a user has received the initial scene in low-resolution, they can begin accessing the 3D environment without waiting for entire frames of data to display. This breakthrough technology displays seamless 3D graphics for a smoother and more enjoyable user experience.

The TerraGate client-server model is optimized to handle thousands of concurrent users accessing virtually unlimited sized databases in low-bandwidth situations, giving each user uninterrupted viewing. TerraGate achieves this by allowing the client to quickly receive low-resolution scenes around the current location, and then requesting high-resolution information based on the user's current speed and direction, while allowing for real-time changes in navigation.

In multi-processor environments, TerraGate automatically shares the load between processors.



**Figure 3-1. TerraGate Architecture**

**Features:**

- 3D data streaming over private networks or the Internet
- Optimized for low-bandwidth conditions

- Designed for easy scalability
- Uses TCP/IP protocols
- Works with Firewalls and Proxy Servers
- Takes full advantage of multi-processor server hardware
- Efficient handling of massive data sets
- Terrain data size limited only by disk media

### What is the Internet License component?

The Internet License component, allows the generation of specific and targeted flying experiences in real-time, by providing TerraExplorer Pro API functionality to TerraExplorer Viewer applications over the Internet.

The Internet License server authenticates web-pages downloaded from pre-defined domains. The web pages carry a signature identifying the Internet License server to use. When the web page accesses the TerraExplorer Viewer application using its API, the application verifies the validity of it with the server. After the verification succeeds TerraExplorer Pro API commands can be called by the web page.

The Internet License requires TerraGate streaming component to be installed. It uses the server settings, as defined by the streaming component, for communicating with clients.

Using this component you can dramatically enhanced the user experience by dynamically adding elements to the 3D world and performing advanced operations.

### What is the TerraPhoto3D component?

TerraPhoto3D is a server-side rendering machine that takes snapshots of Skyline's 3D world to be used with any web page. End-users can navigate and modify the 3D world from any PC, Web browser, hand-held or wireless device, using the powerful HTML based API. TerraPhoto3D renders 3D images created by TerraBuilder and TerraExplorer and sends them, as JPEG images, to any HTML browser.

### What is the Collaboration component?

The Collaboration component provides hosting services for collaboration sessions between TerraExplorer users. Using the collaboration tool in TerraExplorer users can create collaboration sessions and invite remote participants to share the 3D experience.

## CHAPTER 5. TERRAGATE MANAGER

Use the “Main” tab on the TerraGate Manager to control, monitor and set the components.

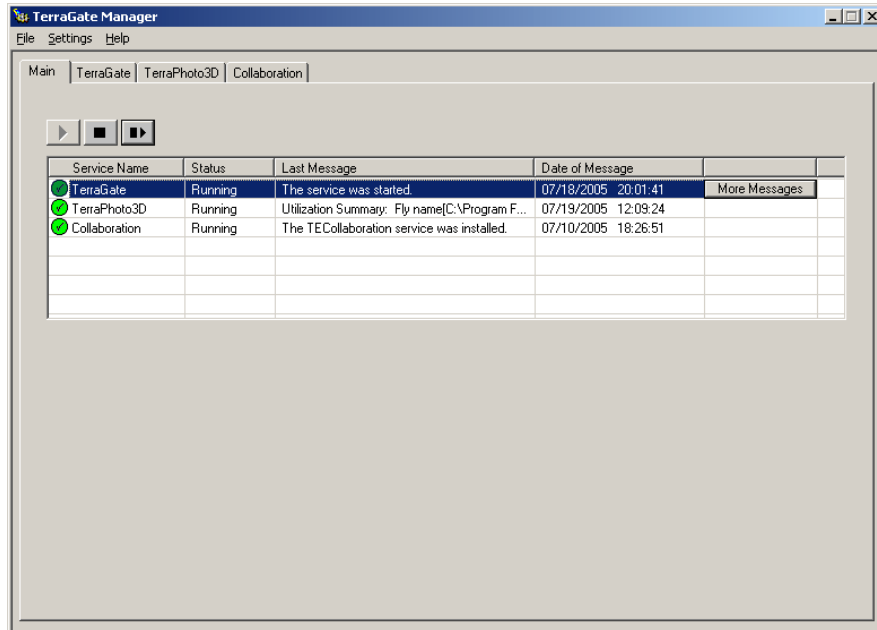




Figure 4-1. The TerraGate Manager

### Starting and Stopping a Service

To start a service highlight the corresponding row, then click the Start button .

To stop the service, click the Stop button .

To restart (stop and start) the service while it is running, click the Restart button .

You can also right click on the service name and then choose “Start Service”, “Stop Service” or “Restart Service”.

### Service Status

The Status column indicates whether the service is running or has been stopped.

## **Event Message**

The “Last Message” column displays the latest event message sent by the service. This message can be information, a warning or an error message. The “Date of Message” column displays the time and date of the last message.

To see all the events sent by the service, highlight the corresponding service, then click the “More Messages” button. This opens a new window with a list of all the events.

## CHAPTER 6. TERRAGATE STREAMER COMPONENT

Use the “*TerraGate*” tab on the TerraGate Manager to control, monitor and set the TerraGate component.

### TerraGate Settings

To open the TerraGate Settings dialog, click the “TerraGate Settings” button, or select TerraGate from the Settings Menu.

#### TerraGate General Settings

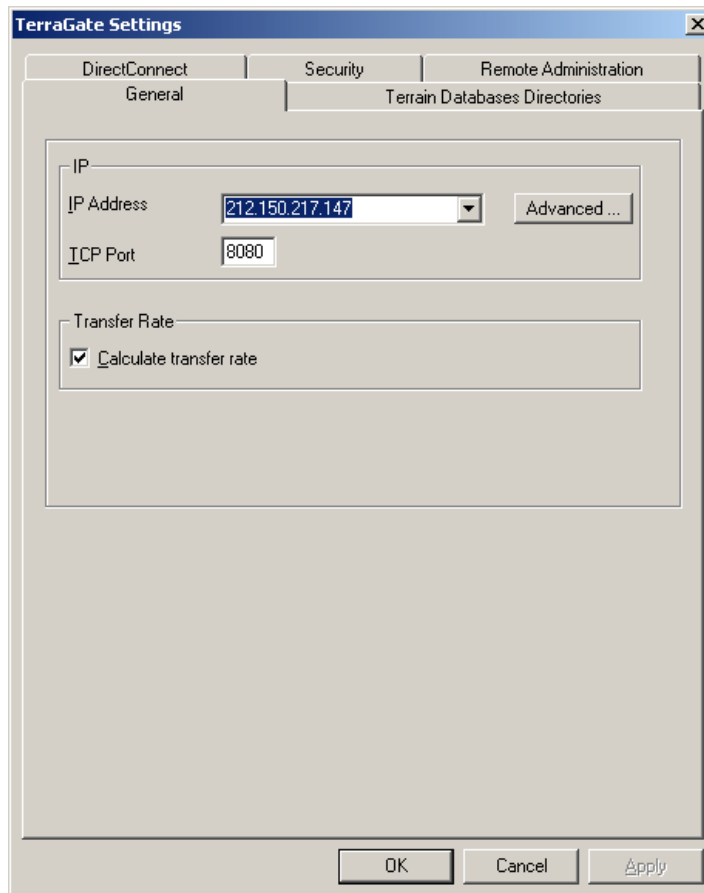


Figure 5-1. TerraGate General Settings.



### IP Address

This is the address in which TerraGate listens to incoming connections.

This feature is useful when the computer running TerraGate has more than one IP address, and the other addresses might be used for other purposes.

In the default settings, “All addresses”, the TerraGate service listens to all the addresses.

All the machine addresses appear in the list box, and you can select one of them.

If the required address is not in the list box, you can type it manually.

**Note:** If the computer running TerraGate does not have a fixed IP address, it is not possible to use this feature, and this field must have the value of “All addresses”.

### TCP port

This is the port in which TerraGate listens to incoming connections. The default value is 80 (but it can be changed if necessary).

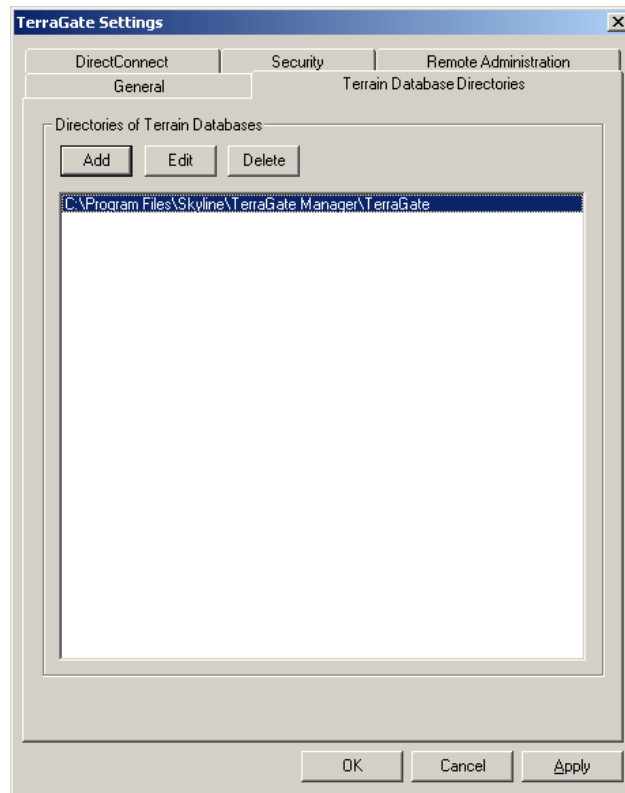
### Calculate Transfer Rate

When this box is checked, TerraGate calculates the total transfer rate to the clients.

The results of the calculation can be seen on the TerraGate Statistics tab of TerraGate Manager.

### Terrain Database Directories

Terrain Databases files of different types are stored in the Terrain Database Directories. MPT files are used to stream pre-processed terrain databases using the TerraGate streamer component. TerraBuilder Project files (TBP) can also be used if you have the DirectConnect extension installed.



**Figure 5-2. TerraGate Terrain Database Directories**

***To add a new entry***

Use the “*Add*” button or type the location (entire path) on a new line (cell), inside the Terrain Database Directories listing window.

For TerraBuilder Project files (TBP) specify a path recognized by all computers that are running TerraBuilder Fusers. You can do this with UNC, e.g., `\\MyComputer\MyShareName`, or a mapped shared network drive.

***To edit an entry***

Select one of the entries in the table and then press the “*Edit*” button. You can then modify the previously specified location of the directory.

***To delete an entry***

Select the entry and then click the “*Delete*” button.

The default value for the Terrain Databases Directory is the directory where TerraGate is installed.

Note that if a specified directory is on a network drive, you should run the TerraGate service from an account that can access that resource. The default account is the “system account” which can access resources only on the local system.

DirectConnect Settings

Set the TerraBuilder Fusers to be used, the cache location and size, and determine DirectConnect behavior when a TerraBuilder Project is not being accessed.

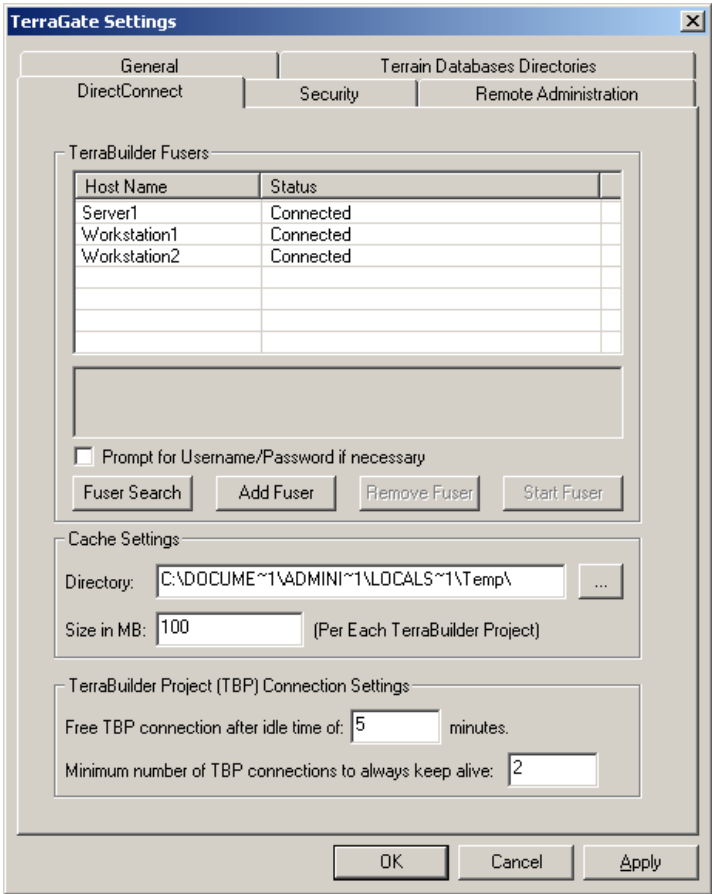


Figure 5-3. DirectConnect Settings

## TerraBuilder Fusers

### *To search for Fusers*

Use the “*Fuser Search*” button to look for all available TerraBuilder Fusers on the network. This may take some time.

### *To add a Fuser*

Use the “*Add Fuser*” button to add a TerraBuilder Fuser. Type the name of the computer where the Fuser is running to add it to the list of Fusers.

### *To remove a Fuser*

Use the “*Remove Fuser*” button to remove a TerraBuilder Fuser from the list of Fusers.

### *To start a Fuser*

From the list, select a Fuser that is not running. Use the “*Start Fuser*” button to return the Fuser to working state.

## Cache Settings

### *Directory*

Sets the location for DirectConnect cache files. We advise changing the location to a known folder where you can monitor its size.

### *Size in MB*

Sets the maximum cache size for each TerraBuilder Project that appears in the Terrain Database Directories.

## TerraBuilder Project (TBP) Connection Settings

These settings determine the DirectConnect behavior when a TerraBuilder Project is not being accessed. Keeping a connection alive allows fast reconnection to this project. However, it is important to know that each live connection requires memory on each of the participating computers that are running Fusers.

### *Free TBP connection after idle time of:*

Determines the time that the TerraBuilder Fusers remain connected to a project after the last access to it.

### *Minimum number of TBP connections to always keep alive:*

When a TerraBuilder Project is no longer being accessed, by default, TerraGate automatically shuts down the connection after a predetermined period of time. By setting this parameter, it is possible to have TerraGate

always keep a minimum number of connections alive. This can minimize the startup time for subsequent accesses to the same project.

## Security Settings

Set TerraGate security parameters that determine how TerraGate handles connection requests from remote clients.

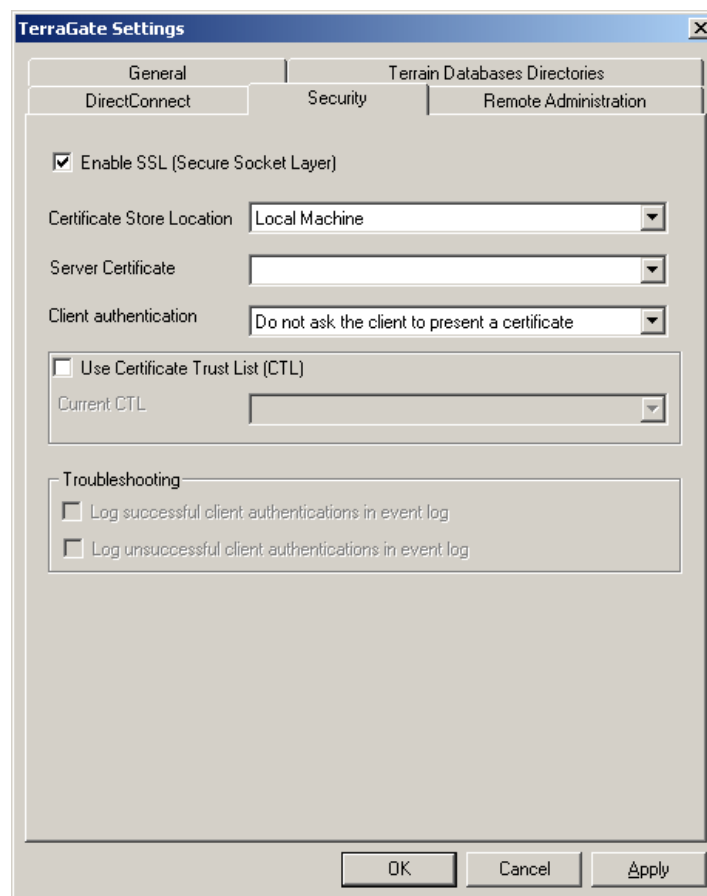


Figure 5-4. Security Settings

## Enable SSL (Secure Socket Layer)

When this box is checked, TerraGate uses Secure Socket Layer protocol. The protocol encrypts the transferred data and requires the client to obtain a valid certificate for connecting to the web site.

## Certificate Store Location

Define the location of the Certificate Store to be used. Select Local Machine if the TerraGate service is running under the System or Network account (default). Select Current User if user under a different user account.

## Server Certificate

Select the certificate to be used for the TerraGate server. The available options depend on the Certificate Store Location defined above.

## Client Authentication

Determine the authentication level:

### *Do not ask the client to present a certification*

Certification is not required for connection.

### *Ask the client to present a certification*

Ask the client asked for a certificate, and use certificate-based authentication, if certificate is supplied. If the client does not present a certificate, force the clients to use basic authentication.

### *To delete an entry*

Ask the client asked for a certificate. If the client does not present a certificate, do not allow a connection.

## Use Certificate Trust List (CTL)

Choose to use a Certificate Trust List (CTL) and select the specific CTL to be used.

## Troubleshooting

Enables Logging successful and unsuccessful client authentications in the event log. The troubleshooting option is available only when the user is asked or required to present a certificate in the Client Authentication setting.

## Remote Administration Settings

Enable remote administration from listed IP addresses.

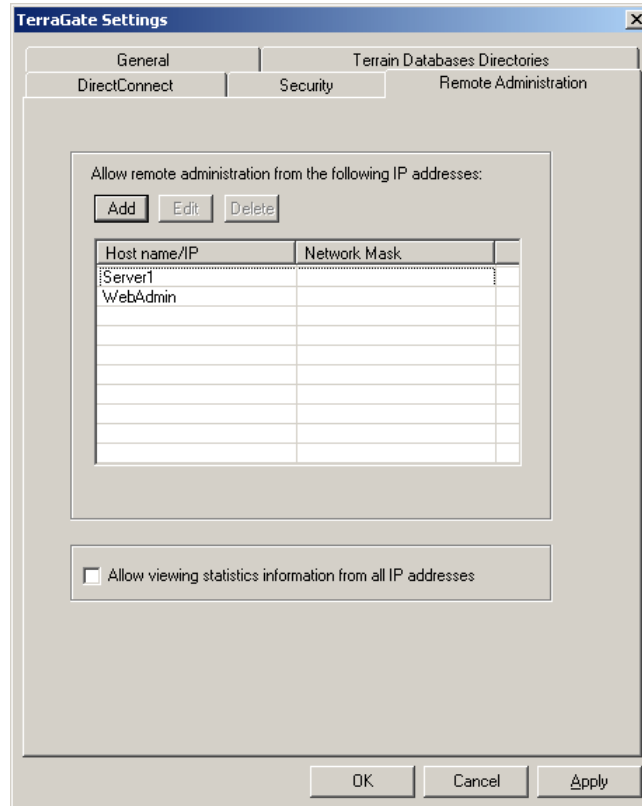


Figure 5-5. Remote Administration Settings

## Remote Administration of IP Addresses

This option is used to control the IP addresses that can view the TerraGate statistics and maps pages and the FlyGen statistics page. The table contains all the IP addresses/names that can view these pages.

Each entry may be one of three options:

**Computer name** – ensure that the computer running TerraGate and FlyGen can resolve this name.

**IP address** - the IP address of the computer that needs the remote access.

**IP address with network mask** - enter a network base address and a network mask. All the addresses within this network are able to access these pages.

### ***To add a new entry***

Click the “Add” button. A dialog box appears that lets you choose between entering a computer name (as in option 1 above) and entering an IP address (options 2 or 3 above). If a network mask is entered, the IP address is treated as a network base address (option 3).

### ***To edit an entry***

Select one of the entries in the table and press the “Edit” button. A dialog box similar to the “Add” dialog box appears.

### ***To delete an entry***

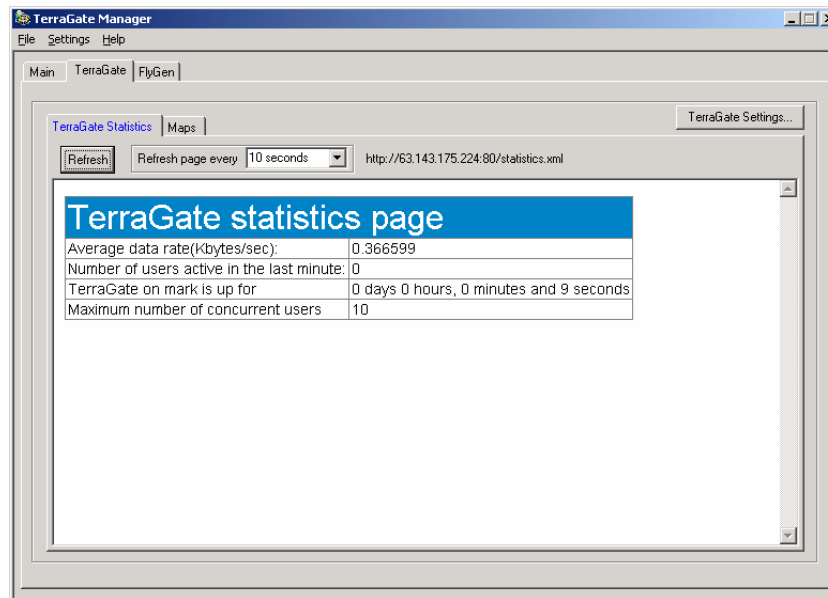
Select the entry (or entries) and then press the “Delete” button.

## **Allow viewing statistics information from all IP addresses:**

Check this option to allow all IP addresses to view the statistics and maps pages. We recommended this option when using a proxy server.

## **TerraGate Statistics**

The following page displays the TerraGate statistics:



**Figure 5-6. TerraGate Statistics**



### *Average data rate:*

The average data rate in Kbytes/sec  
This average is calculated for the last 10 seconds

### *Number of users active in the last minute:*

The number of users who received data from TerraGate in the last minute

### *TerraGate on "Computer Name" is up for:*

A continuous tally of the time that the TerraGate service is up and running

### *Maximum number of concurrent users:*

Even though the TerraGate server can support a very large number of concurrent users, each TerraGate product is configured to allow for a maximum number of clients (maximum number of users connected to the TerraGate server at the same time).

This information is specific to each TerraGate license and cannot be changed without getting a new license file from Skyline.

If the maximum number has been reached and another client tries to connect to the TerraGate server, a message ("No more licenses available") appears on the screen of the client computer.

If this occurs, you may want to upgrade your TerraGate to allow for more client connections by contacting Skyline.

### *Maximum number of DirectConnect Fusers:*

If your license file includes the DirectConnect extension, shows the maximum number of TerraBuilder fusers allowed to run.

This information is specific to each TerraGate license and cannot be changed without getting a new license file from Skyline.

## **Refresh**

This control instantly updates the page. Refresh can be set automatically by choosing the time interval from the dropdown box.

## **Remote viewing**

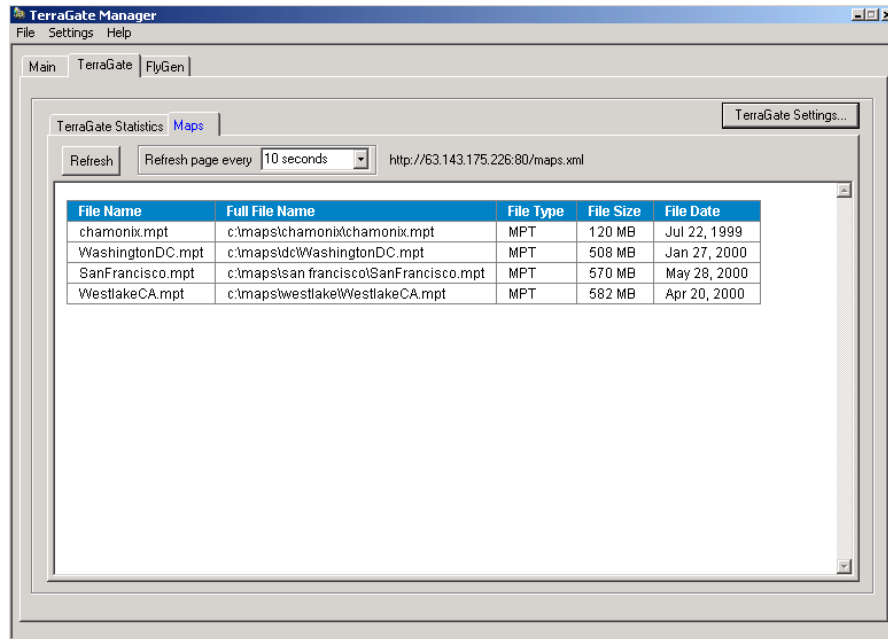
The statistics page can be viewed from a remote computer (with authorization) by typing in a browser the URL:

http://<TerraGate Host>:<TerraGate Port>/statistics.xml.

**See:** [Remote Administration IP Addresses](#).

## Terrain Databases

The page lists all the terrain databases that exist under the [Terrain Database Directories](#). This is the list of terrain databases that can be accessed by TerraGate.



**Figure 5-7. Terrain Databases**

*File Name:*

The terrain database file name. Use this name when accessing the file from a client, e.g., chamonix.mpt@<TerraGate Host>.

*Full File Name:*

Full path and name of the terrain database file

*File Type:*

“MPT” for pre-processed MPT terrain database files.

“TBP” for TerraBuilder Project files using the DirectConnect extension.

*File Size:*

Size of the file in Megabytes

*File Date:*

Last modified date of the file

### *Project Model:*

The Project Model used by the terrain database, e.g., “Planar”, “Globe”

### **Refresh**

This control instantly updates the page. Refresh can be set automatically by choosing the time interval from the dropdown box.

### **Remote viewing**

The terrain databases page can be viewed from a remote computer (with authorization) by typing in a browser the URL:

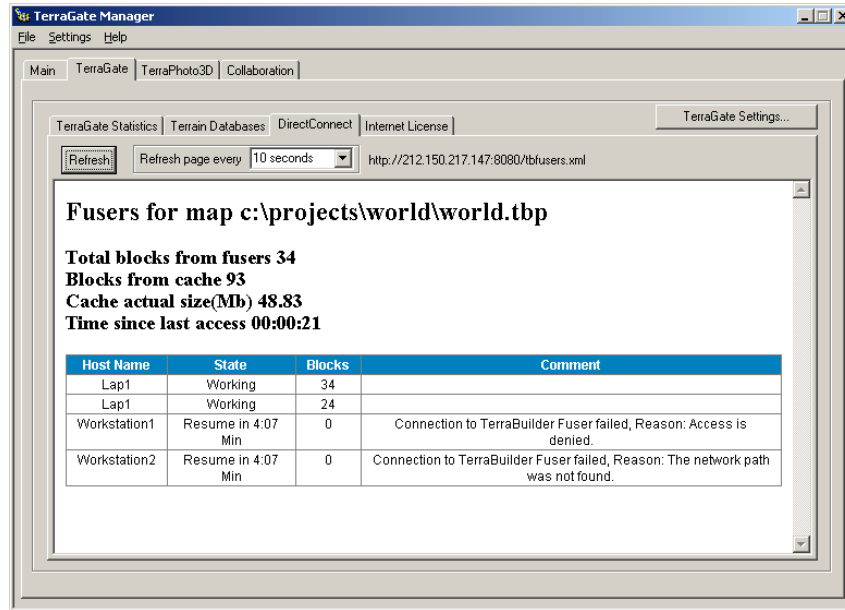
http://<TerraGate Host>:<TerraGate Port>/maps.xml.

See: [Remote Administration IP Addresses](#).

### **DirectConnect**

The page lists all the active TerraBuilder Fusers together with the relevant information. When a user is connected to a TerraBuilder Project file that appears in the Terrain Databases tab, fusers are used to build the database and the project is considered active.

See: [DirectConnect Settings](#) in the “TerraGate streamer component” chapter.



**Figure 5-8. DirectConnect**

For each active TerraBuilder Project the following information is available:

*Total blocks:*

The total number of blocks streamed to clients since it became active

*Blocks from cache:*

Number of blocks that were streamed to the user from the cache  
 The blocks were created when a previous call requested the same information. This means no fuser processing was used to deliver this block.

*Time since last access:*

The time since a user actively requested a block

*Host Name:*

Name of participating fuser

*State:*

The condition of the fuser, e.g., “working”

*Blocks:*

Number of blocks created by the fuser since is became active

### *Comment:*

Additional information on the fuser  
Errors and reasons are also displayed here

### Refresh

This control instantly updates the page. Refresh can be set automatically by choosing the time interval from the dropdown box.

### Remote viewing

The maps page can be viewed from a remote computer (with authorization) by typing in a browser the URL:

`http://<TerraGate Host>:<TerraGate Port>/tbfusers.xml`.

See: [Remote Administration IP Addresses](#).

### Internet License

The page lists all the authorized domains for the Internet License Server component.

See: [Internet License Settings](#) in the “Internet License Component” chapter.

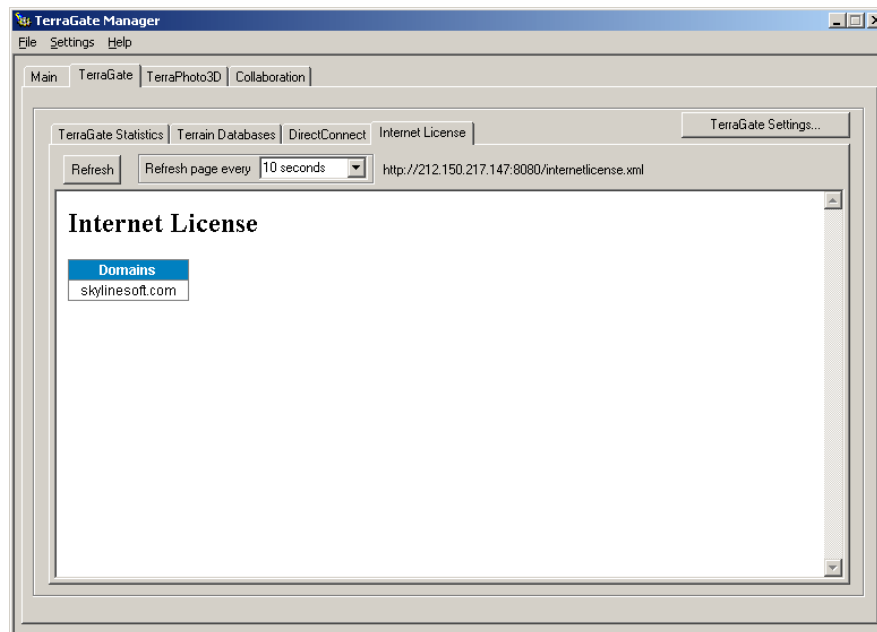


Figure 5-9. Internet License

*Domains:*

A list of domains that are authorized by this Internet License server.

## **Refresh**

This control instantly updates the page. Refresh can be set automatically by choosing the time interval from the dropdown box.

## **Remote viewing**

The maps page can be viewed from a remote computer (with authorization) by typing in a browser the URL:

`http://<TerraGate Host>:<TerraGate Port>/internetlicense.xml.`

See: [Remote Administration IP Addresses](#).

## **Streaming TerraExplorer FLY Files Using TerraGate**

After TerraGate has been installed and is functioning properly, you are ready to offer fly-through over a 3D area, to other users. This is done via FLY files, that you generate using the TerraExplorer Pro product, also from Skyline Software Systems.

TerraGate does **NOT** manage the FLY files, that include the content data such as 2D maps, images, 3D objects, GIFs, animated GIFs, HTML pages. This information is actually downloaded to the client computer, on which the TerraExplorer or TerraExplorer Pro application has been installed.

For this reason, it is important to locate these files on an open access WEB server, from where the files can be downloaded. If the FLY file cannot be downloaded to the client computer because of access restrictions, or because they are not hosted on a WEB server, streaming from TerraGate cannot occur.

The TerraExplorer application downloads these files, while TerraGate is in charge of streaming the terrain database via the TerraGate server.

## **The TerraGate Program**

The TerraGate program is a Windows service. There is no need to run it from Windows Explorer, or from the command line.

The program settings are located in the system registry. Use the TerraGate Manager program to edit those entries, and avoid editing the registry manually.

## TerraGate and Microsoft IIS

When running both TerraGate and Microsoft Internet Information Server (IIS) on the same computer, both TerraGate and IIS need to bind to port 80. (This is the default port for both applications.) Different procedure is used for IIS 5.X used in Windows 2000 and XP, and IIS 6.0 used in Windows Server 2003.

Therefore, two IP addresses (or more) must be allocated: One for the IIS web server, and one for TerraGate.

After allocating an IP address for TerraGate, specify the address in TerraGate Manager.

**Note:** You can set TerraGate to use a port other than 80. However, using port 80 usually avoids access and firewall issues.

### Disable IIS “Socket pooling” manually in IIS 5.X

The following procedure is done automatically in the [installation](#) phase. This section is provided as a reference only, if you wish to perform the procedure manually.

In the Microsoft Management Console (MMC) configure the IIS web server to use only the Address Allocated for IIS.

Under Windows 2000 or Windows XP (IIS versions 5.0 or 5.1, respectively) IIS has a feature called “socket pooling”. This means that IIS binds to all addresses, even if it is configured to use only one of the addresses.

This feature is enabled by default, to disable it use the following procedure:

At the command prompt, type **cd \inetpub\adminscripts**.

At the \inetpub\AdminScripts command prompt, type **cscript adsutil.vbs set w3svc/disablesocketpooling true**

The command prompt returns the following: **disablesocketpooling : (BOOLEAN) TRUE**

### Disable IIS “Socket pooling” manually in IIS 6.0

The following procedure is not done automatically in the installation phase. This section is provided for your convenience. For more information consult the Windows IIS documentation.

1. Install Microsoft Windows support tools from the Windows Server 2003 CD.
2. In the command prompt type the following:  
*httpcfg set iplisten -I XXX.XXX.XXX.XXX*  
Where xxx.xxx.xxx.xxx is the IP address you want IIS to use.
3. Repeat step 2 for all other addresses you want IIS to use.  
If this list of addresses is specified, the IIS listens only to addresses on the list. This allows TerraGate to bind to port 80 on an IP address that is not in the list. Otherwise IIS listens on all IPs on the machine.

## CHAPTER 7. DIRECTCONNECT EXTENSION

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The TerraBuilder DirectConnect extension, together with TerraGate component stream image and elevation data, in their native formats (e.g., ECW, Mr. SID), directly to TerraExplorer clients. DirectConnect saves you time and resources by allowing you to skip the 3D terrain database creation process altogether.

TerraBuilder DirectConnect, together with TerraGate, allows users to fly directly over a TerraBuilder Project (TBP), eliminating the need to create an MPT 3D database. You can add your source files to a TerraBuilder Project, perform all the required manipulations, and make the project immediately accessible, through TerraGate, to TerraExplorer and TerraExplorer Pro clients.

TerraBuilder DirectConnect is designed for users who need to create on-demand databases. Incorporating all the existing features of TerraBuilder, it can manipulate and combine multiple source files, of various formats and projections as well as unlimited size and resolution. It also uses the multi-processor and multi-computer capability of the TerraBuilder Enterprise Edition to share the workload among several computers in your organization. Massive archives of data can now be made accessible for 3D visualization in a matter of minutes.

The TerraBuilder DirectConnect is an extension to TerraGate streamer component. To configure the relevant settings of the streamer component **See:** [DirectConnect](#) in the “TerraGate Streamer Component” chapter

**Note:** This chapter assumes that the reader is familiar with TerraBuilder, or has access to the TerraBuilder manuals.

### Advantages

With TerraBuilder DirectConnect, you do not need to create a 3D terrain database. All you need to do is add the source files in their native formats to a TerraBuilder Project, and make it available via TerraGate. This frees you from the time-consuming task of generating a 3D terrain database.

A 3D terrain database can now be generated on demand, utilizing very large numbers of different source files. Source files can be added to a common project and delivered to the TerraExplorer client. Later, existing source files can be updated, or new files added, to show variations of the original information, such as a different time-of-year or increased resolution.

With TerraBuilder DirectConnect near real-time updates are now possible. Once an updated image or elevation source is available, it can be loaded in a TerraBuilder Project and be immediately available, in 3D form, for clients to work with over the network.



TerraBuilder DirectConnect uses TerraBuilder Fusers to exploit the combined computing power of any available server-side computers. This provides scalability for the resources needed to handle the performance-demanding workload of on-the-fly 3D terrain database creation.

### What is a TerraBuilder Fuser?

A TerraBuilder Fuser (or “Fuser”) is an application that allows TerraBuilder DirectConnect to utilize the resources of the computer, on which it is running, for the on-demand generation of a virtual 3D terrain database. The Fuser remains idle until activated by the TerraGate Manager computer (or “Master computer”) on your network.

A TerraBuilder Fuser can also serve the TerraBuilder Enterprise Edition for workload sharing during offline MPT file generation.

### TerraBuilder Fuser Installation

TerraBuilder DirectConnect uses the TerraBuilder Fuser to exploit the combined computing power of any available server-side computers. At least one TerraBuilder Fuser should be installed on the server computer, or other computers accessible to the server.

Note: You do not have to install the TerraBuilder Fuser on computers that already have TerraBuilder installed.

To install TerraBuilder Fuser follow these steps:

1. Log on as a user with administration privileges.
2. If you have an old version of TerraBuilder or TerraBuilder Fuser running, close it before continuing with the installation.
3. Insert the installation CD into your CD-ROM drive.
4. Browse to the *TerraBuilder Fuser Installation* Click on **setup.exe**.
5. Follow the on-screen installation instructions.

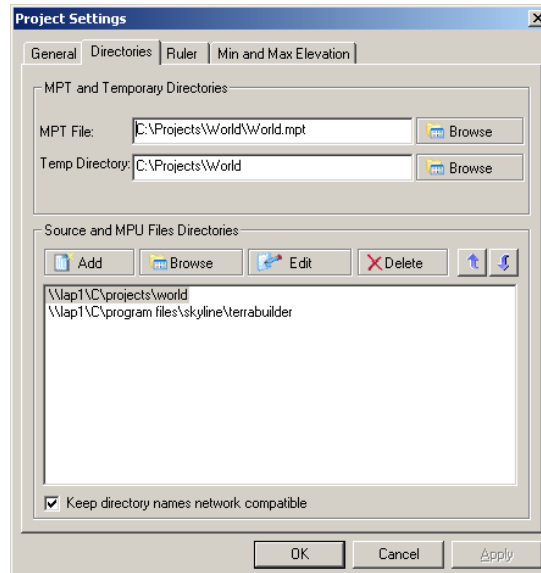
### Creating a TerraBuilder Project File for DirectConnect

All Fuser computers must be connected to the TerraGate computer using the same LAN configured with the same Microsoft Windows Network. The Master computer must be able to access each of the clients (i.e., they must be accessible as “\\*ComputerName*” from Windows Explorer). Furthermore, the Master and Fuser computers should be able to access the project source files and the project file (\*.tbp)

using the same shared network mapped drives. Note that it is possible to run a Fuser on the same computer that is running TerraGate.

## To Set the TerraBuilder Project File

1. From the Project menu, select Settings to open the Project Settings dialog box.
2. Select the Directories tab.
3. In the Source and MPU Files area select Keep directory names network compatible. Depending on your computer and server configuration this operation may fail. If it completes successfully skip to step 7. If it does you need to share the drive or folder. Alternatively, you can map a shared network drive. See: [To Map a Shared Network Drive](#) in this chapter.
4. In the Directories list, select the first source and click Edit.
5. Set the source path for the appropriate Mapped network drive.  
For example: if your source is located in “C:\Projects\Mysources\” that is mapped to the drive letter “M”, change it to “M:\Mysources\”.  
This allows the Fusers running on other computers to access this file, using the same mapping.
6. Repeat steps 4 and 5 for all the directories in the project.
7. Save the project.



**Figure 6-1. Project Settings**

The TerraBuilder Project file is now ready to be used by TerraGate.

### To Map a Shared Network Drive

Assign mapped network drives to every folder where the project file (\*.tbp) or the source files are located.

1. Open Windows Explorer.
2. On the Tools menu, click Map Network Drive.
3. In Drive, select the drive letter to map to the shared resource.
4. In Folder, type the server and share name of the resource, in the form \\servername\sharename, or click Browse to locate the resource.

Note: Map each folder to the same drive letter on all computers.

Note that in order for TerraBuilder DirectConnect to work, the Pyramid files for all the source files in the project must be present, i.e. the Pyramid column in the source list should indicate ✓ for all source files. For more information about Pyramids see the TerraBuilder Reference Manual.

### Updating the Project

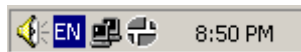
To update the terrain

1. Edit and Save your TerraBuilder Project.
2. Reopen the TerraBuilder Project from TerraExplorer Pro.

## Setting up the Fuser Computers

### Fuser Computers

Installing TerraBuilder Fuser on any computer on the network enables it to take part in the on-demand 3D database creation process. When the Fuser is installed on a computer, a TerraBuilder Fuser icon appears in the Windows Status Area. Users have full control over the Fuser running on their computer and can allow an Fuser to operate, or not



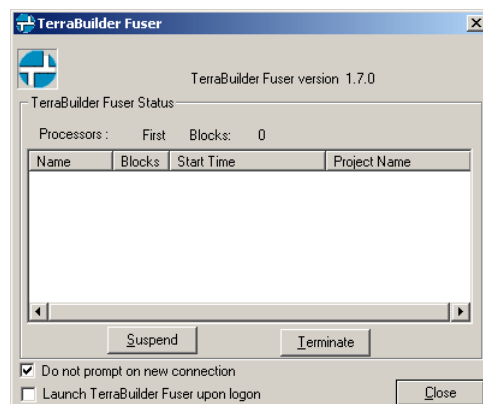
## To Manage an Fuser (Fuser Computers)

To start the TerraBuilder Fuser, select:

Start – Programs – Skyline - TerraBuilder Fuser– TerraBuilder Fuser.

The Fuser is now ready to serve TerraGate.

1. Click on the TerraBuilder Fuser icon in the Windows Status Area to open the TerraBuilder Fuser dialog box.  
The dialog box shows the state of the Fuser, and details of the current file.
2. When an initiating computer designates your computer as a Fuser you are asked if you accept. To disable this prompt in consequent requests, select Do Not Prompt on New Connection.
3. Select Suspend to temporarily stop the Fuser.  
Select Resume to reactivate the Fuser.  
The Master computer attempts to reactivate the Fuser every five minutes.  
The Fuser is reactivated only if you have selected Resume.  
Note: When you suspend a Fuser, the Master computer continues to run the process using other available Fusers. If no other Fusers are available, TerraGate waits for new or resumed Fusers. The number of available Fusers affects the streaming performance for TerraExplorer users.
4. Select Terminate to permanently stop the Fuser
5. To automatically launch the Fuser on logon:  
Select the Launch TerraBuilder Fuser upon logon check box in the Fuser dialog box.  
- or -  
Right click the icon in the Windows Status area to open the TerraBuilder Fuser pop-up menu, and select Launch Fuser upon logon.



**Figure 6-2. TerraBuilder Fuser**

## Setting up TerraGate Log On Properties

To allow the TerraGate Service to be able to access TerraBuilder Fusers on other computers, you must set the service's Log On information. This must be done from a user account with access permission to the Fuser computers.

1. Open: Start – Settings - Control Panel – Administrative Tools - Services
2. Select the TerraGate Service, and stop it.
3. Right-Click and select Properties, select the Log On Tab.
4. Check “This Account” and specify the Account name and password for an account that can access the Fuser computers.
5. Click Apply, and restart the TerraGate Service.

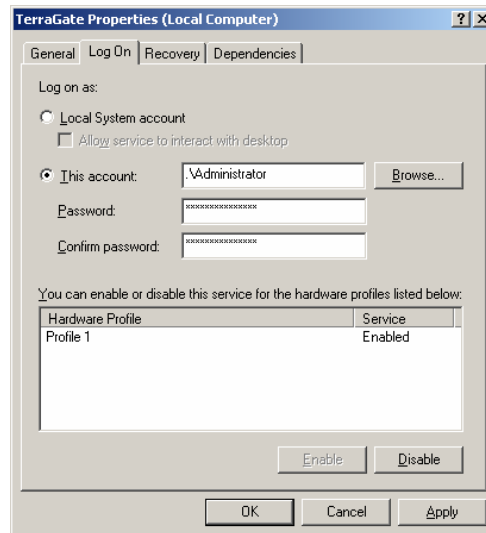


Figure 6-3. TerraGate Properties

## Performance

TerraBuilder DirectConnect allows you to instantly fly over 3D databases generated in real time. This section discusses the settings and configurations that result in improved performance, and their implications.

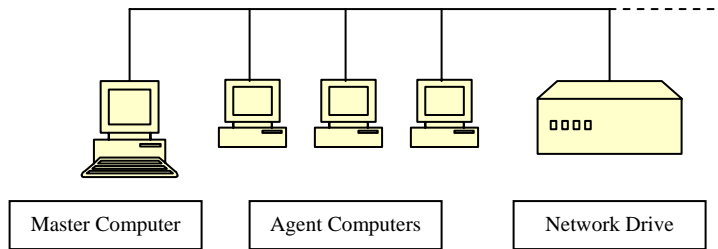
## Multi-CPU Computers

DirectConnect, together with TerraBuilder Fusers, allows users with multi-CPU computers (Dual, Quad etc.) to utilize the computer's resources more efficiently. To maximize performance for a computer with more than one CPU, the TerraBuilder Fuser opens a separate thread for each CPU.

Note that multi-CPU computers are also known as multiprocessing computers or SMP (symmetrical multi processing) computers.

## I/O Issues

If multiple processes access the same source files on a shared local or network hard drive that is not fast enough, a bottleneck can occur. We recommend using a fast hard drive that is connected to each participant computer through the fastest possible network connection (see Figure 1). A Storage Area Network (SAN) may provide even better performance. The steps below may help increase performance, however, as computers and networks vary in processing power, speed, etc., we advise you to evaluate these suggestions before you implement them. If you are in doubt, consult your system administrator.

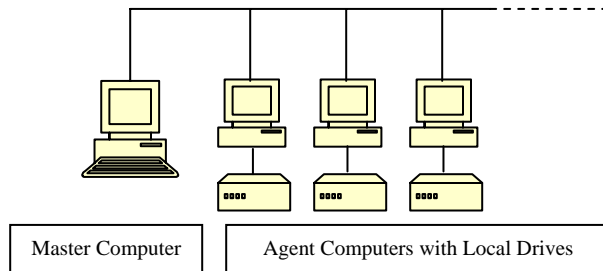


**Figure 6-4. Master Computer with Agents and Network Drive**

## Make Multiple Copies of your Source Files

One way to optimize I/O performance is to create multiple copies of the source files and place them on the local drives of each of the participating computers. This allows each computer sole access to the sources, reducing access time, and lowering the traffic on the network.

For example, if your source files are located on the mapped drive "M:\MySources", map the "M" drive letter on each of the Agent computers to a local drive. Leave the Directories settings as is, thus each Agent reads the source files from its local drive.



**Figure 6-5. Local Drives with Copy of Sources for each Agent**

### **TerraBuilder DirectConnect Compared to MPT Files**

TerraBuilder DirectConnect requires many more system resources than working with pre-processed MPT files, because the 3D database is built on demand. It is advised to pre-process an MPT file when working with a very large number of concurrent users.

## CHAPTER 8. TERRAPHOTO3D COMPONENT

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### Definitions

<b>FLY file</b>	A TerraExplorer Project file that defines the terrain database and overlay information and creates the 3D environment.
<b>Project</b>	A TerraExplorer Fly file and bounding box definition for coverage area. A request for a snapshot in the coverage area is created based on the FLY file defined.
<b>TerraExplorer Instance (Instance)</b>	A TerraExplorer application running in the background, with a certain FLY file loaded in it. An instance is capable of taking a snapshot based on the FLY file information, and in the Coverage Area defined by the project. One or more instances are available for each defined project.
<b>Peer Servers</b>	<p>A list of other TerraPhoto3D servers that are known to your TerraPhoto3D server.</p> <p>If your TerraPhoto3D server receives a request for a snapshot of an area that is not covered by projects defined on the server, it attempts to find a server on the Peer Server list that does cover the area. If your server is successful, it sends on the request.</p>
<b>Render</b>	The creation of a snapshot by a TerraExplorer instance.

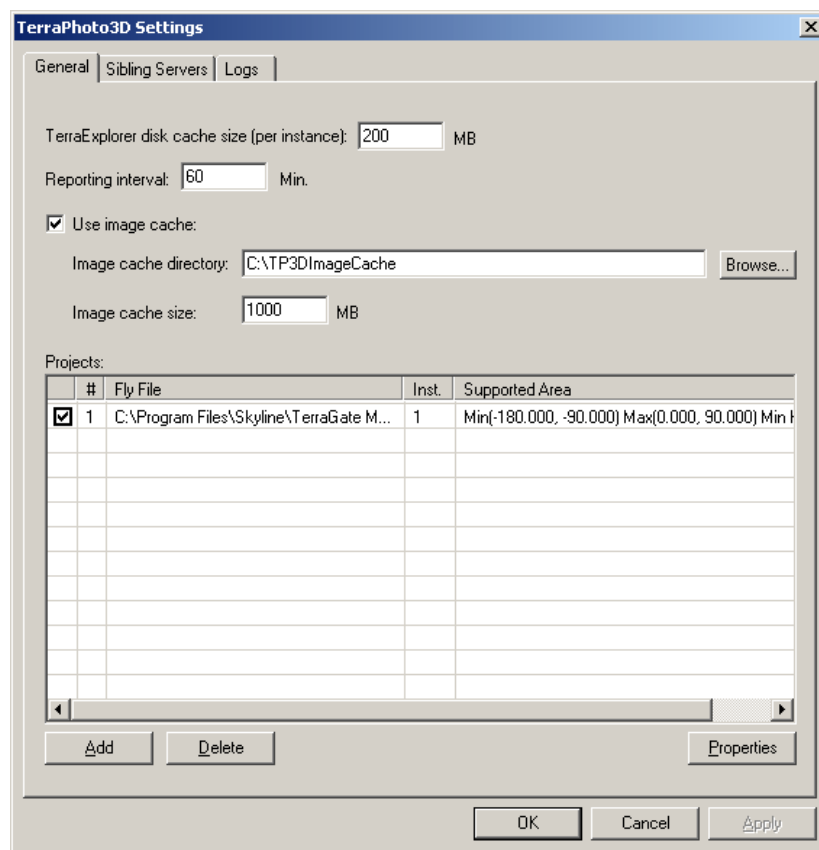


## TerraPhoto3D Settings

This is the main TerraPhoto3D configuration tool. When started, it opens a User Interface window showing the configuration parameters.

To open the TerraPhoto3D Settings dialog, click the “TerraPhoto3D Settings” button, or select TerraPhoto3D from the Settings Menu.

## TerraPhoto3D General Settings



### Figure 7-1. TerraPhoto3D General Settings

## TerraExplorer disk cache size

The amount of disk cache in Megabytes used by each TerraExplorer Instance

## Reporting Interval

Defines the interval, in minutes, at which a utilization summary message is generated. The utilization summary includes information on usage of each instance, and can be viewed in the Logs tab of the TerraPhoto3D settings dialog, and the application event viewer.

## Use Image Cache

When selected, snapshots that are created by the server are saved in a cache directory. Future requests for the same snapshots are used from the cached file.

## Image Cache Directory

Type, or locate with the browse button, the directory used to store cached images.

## Image Cache Size

The cache directory maximum size in Megabytes.

## Projects

A list of all TerraPhoto3D projects. You can Add or Delete a project, and set whether a project is active. To set the project properties, select a project in the list, and click the Properties button. A Project named, *sample.fly*, already exists in the projects list. You can edit the following parameters:

**Project Description** – A user-defined name describing the project.

**Active Project** – Determines if the project is active. An active project is available for requests on the supported area. Instances, up to the defined number are used to handle the requests. An inactive project does not launch any instances.

**Number of Instances** – The maximum number of instances that are launched to handle requests on the Supported area.

**Coverage Area** – Determines the bounding box of the coverage area, and the minimum elevation. Requests for snapshots included in this coverage area are handled by this project.

**Default Snapshot Size** – Define the width and height, in pixel, of the generated snapshot if not defined by the user during the request.

**Advanced Settings** – The queued requests define the number of requests that can be pending for a snapshot generation. Requests made when the queue is full get a “Server Busy” response. The request timeout defines the maximum

waiting time for a snapshot generation. Request unhandled for a longer time gets a “Server Busy” response.

### ***To add a new entry***

Click the “Add” button. A dialog box appears that lets you choose a Fly file.

### ***To edit an entry***

Select one of the entries in the table and press the “Edit” button. A dialog box similar to the “Add” dialog box appears.

### ***To delete an entry***

Select the entry (or entries) and then press the “Delete” button.

## **Setting Sibling Servers**

Create a list of other TerraPhoto3D servers that are known to your TerraPhoto3D server.

If your TerraPhoto3D server receives a request for a snapshot of an area that is not covered by projects defined on the server, it attempts to find a server on this list that does cover the area. If your server is successful, it sends on the request.



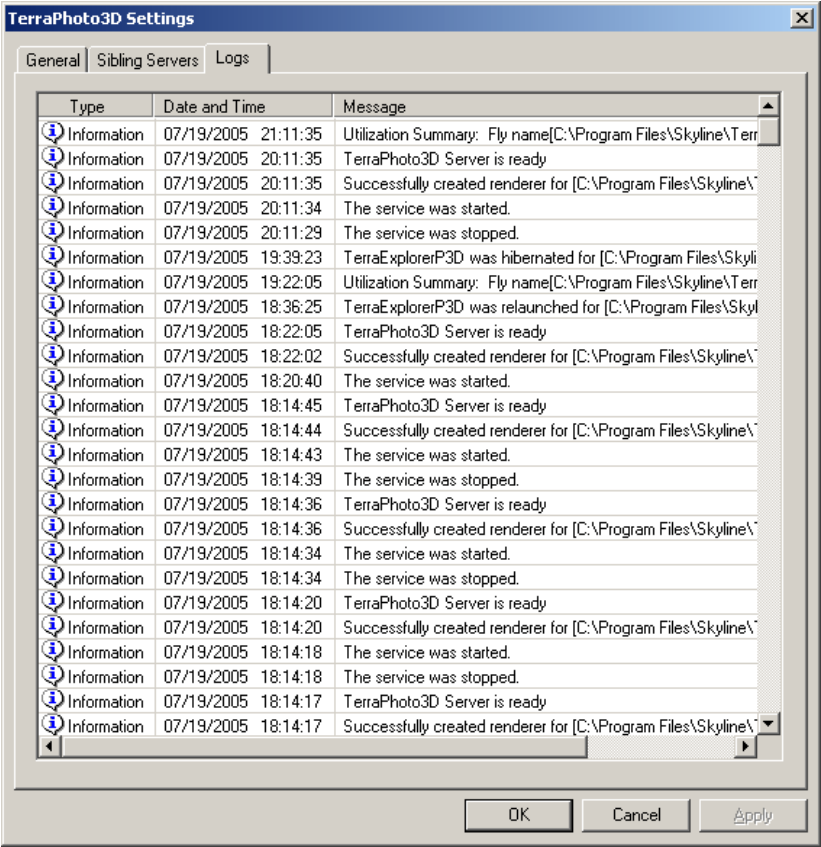
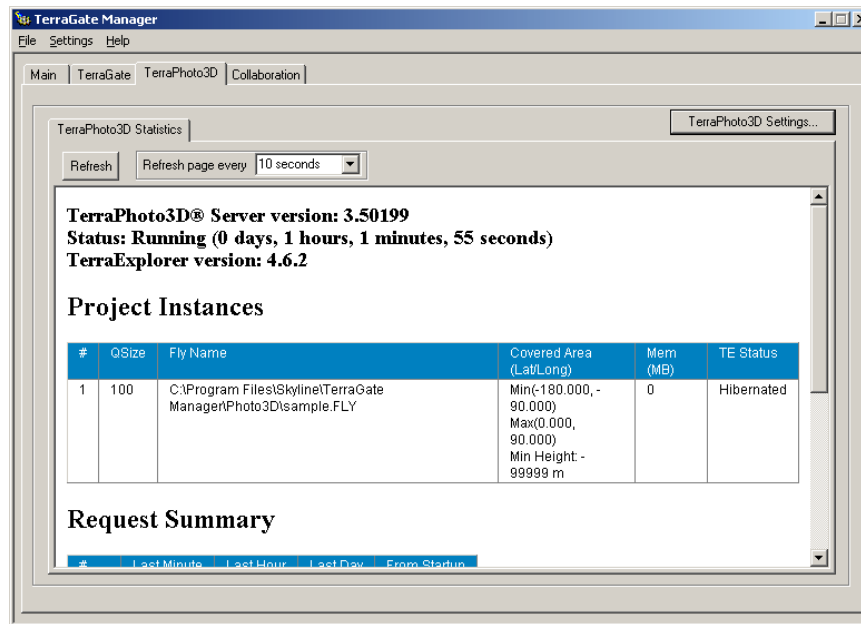


Figure 7-3. TerraPhoto3D Logs

TerraPhoto3D Statistics

The following page displays the TerraPhoto3D statistics:



**Figure 7-4. TerraPhoto3D Statistics**

*Version:*

The version number of the TerraPhoto3D server.

*TerraExplorer Version:*

The version number of the TerraExplorer instances.

*Status:*

The elapsed time that the server is running for.

*Project Instances:*

A statistic list of all the project instances. For each instance appear the project name, defined queue size, covered area, memory usage and TerraExplorer status.

*Request Summary:*

Counters for the snapshot requests handled by every instance. For each instance appears the number of requests made in the last minute, hour, day and from the server startup.

*Request Status:*

Statistics for the snapshot requests from every instance from server startup. For each instance appears the number of snapshots that were rendered or

used from cache. In addition, show the number of snapshots that were not delivered due to timeouts, busy server or other errors. The total number of snapshots, average time per request and average time per snapshot rendering is also displayed.

### *Unhandled Request Summary:*

Counters for the number of requests that were not handled. Separate count is made to requests that were redirected to other peer servers and requests made outside of the coverage area.

## **Refresh**

This control instantly updates the page. Refresh can be set automatically by choosing the time interval from the dropdown box.

## **Remote viewing**

The statistics page can be viewed from a remote computer by typing in a browser the URL:

`http://<Web Server>/tp3d/tp3dimage.dll?getstatus.`

Where <Web Server> is the IP or name of the IIS web server.

## Using the TerraPhoto3D Program

The TerraPhoto3D program is a server that generates an image file in return to a request. There is no need to run it from Windows Explorer, or from the command line. Use the TerraGate Manager program to edit the TerraPhoto3D settings.

After TerraPhoto3D has been installed and is functioning properly, you are ready to offer on-demand customized snapshots services to web clients. This is done via a request to the TerraPhoto3D server. The returned image is displayed in a web page. The web pages should be created as described below.

The request is a VBScript that uses TerraExplorer Pro API commands to define the image that is created. Using the IPlane interface you can specify the location of the camera when the snapshot is taken. Other advanced operation, e.g., creating text labels in the 3D world, can be used to populate the created image. Complete documentation of the TerraExplorer API can be found in TerraExplorer Pro Programmer's Guide and in the online help for TerraExplorer Pro. To create a TerraPhoto3D script **See:** [Creating a TerraPhoto3D](#) Script in this chapter.

TerraPhoto3D does **NOT** manage the web pages that include the content data such as the page layout and interactive controls. For this reason, it is important to locate these files on an open access WEB server, from where the files can be downloaded.

You can create a simple HTML page that access the TerraPhoto3D directly, as explained in "[Using Direct ISAPI Access](#)" below. However, this approach is good for inner-organization setup as it is a potential security risk. For a secured implementation, you should encapsulate the calls to the TerraPhoto3D using a dynamic web page and a server side COM object. This provides better security to your application by allowing only designated script commands to be executed. **See:** [Using a Dynamic Web Page](#) in this chapter.

## Creating a TerraPhoto3D Script

The TerraPhoto3D script uses TerraExplorer Pro API commands written in VBScript. The script commands can include any valid TerraExplorer Pro command, e.g., changing the position of the camera, creating annotations, etc. TerraPhoto3D executes the script, and only afterwards generates the snapshots, so the commands take affect on the image.

Complete documentation of the TerraExplorer API can be found in TerraExplorer Pro Programmer's Guide and in the online help for TerraExplorer Pro. The Programmer's Guide is also located at "C:\Program Files\Skyline\TerraGate Manager\Photo3D\TE" or the relative path in your installation folder.

The script must take the following into account:



- **Include camera position command** – Use any of the IPlane interface camera positioning methods. This includes the FlyTo() and SetPosition() methods. The coordinates used must be in Geographic Lat/Long WGS84.
- **Use VBScript syntax** – Any error in executing the script on the server results in a “Script Error” image.
- **Single line** – The script cannot include line breaks, carriage returns etc. To include multiple commands in one script use the VBScript “.” separator.

You can use the following constants, which do not need to be declared:

- **IPlane** – Exposes the IPlane4 interface. Mainly used to set the location of the camera that is used in the snapshot. For example, you can use the FlyTo() and SetPosition() methods.
- **IObjectManager** – Exposes the IObjectManger4 interface. Use the interface to create objects in the 3D environment. For example, place a set of relevant text label marking locations in the area of the snapshots, or draw polylines to show roads. These objects exist on the snapshot you create immediately after creating the objects and are then removed. For objects to remain in a few snapshots, create them with IObjectManager before each frame.  
Note that “permanent” layers, like street names, should be added to the FLY file of the project.
- **ISnapshot** – Exposes the ISnapshot interface. Use the SnapshotWidth and SnapshotHeight properties to define the size of the generated image. The maximum size is 800 pixels wide and 600 pixel high.
- **ICoordSys** – Exposes the ICoordSys3 interface. Coordinates used in any TerraPhoto3D script, by default, are regarded as Geographic Lat/Long WGS84. To change the coordinate system, use ICoordSys.
- **TerraExplorer** – Exposes the TerraExplorer CoClass. You can use it to define any of the TerraExplorer interfaces. For example, this Script:  
*Set ITerrain = TerraExplorer.interface("ITerrain4");*  
*ITerrain.GetGroundHeight 0.0,0.0,0,ResultHeight*  
Retrieves the height of the 0.0,0.0 coordinate in the terrain.

### Example Script:

The following scripts sets the position of the camera at set position, sets the image size as 456 by 340 pixels, and places a circle in the viewed area.

```
IPlane.FlyTo -71.054, 42.3540, 0,1 2000, 0, -  
50,'JumpToLocation':ISnapshot.SnapshotWidth=456:ISnapshot.SnapshotHeight=34  
0":IObjectManager.Createsphere -71.054, 42.3540, 100, 500
```

## Using a Dynamic Web Page

It is advised to use a dynamic web page, like asp, to encapsulate the calls to the TerraPhoto3D server. Script messages sent directly to the ISAPI server extension are a potential security risk. To avoid this risk, create a dynamic web page that exposes the execution of a limited set of commands. The client sends the predefined commands as parameters to the dynamic page. On the server side, these commands are translated to TerraPhoto3D script and executed. A special COM object, "TP3DGetImageCOM.dll", is installed with TerraPhoto3D. It provides access to the TerraPhoto3D server from the dynamic web page.

Follow these instructions to create a secured dynamic web page. The instructions here refer to an ASP page written in VBScript, but other dynamic page languages can be used:

1. **Define Query Strings** – define a Query String on your page, to get the coordinates of the snapshot you want to generate, e.g., "SnapPoi". You can define other parameters as needed by your page, e.g., "Width", "Height", "AddSphere" etc.
2. **Define Variable for the TP3DGetImage Object** – create an object variable to reference to TP3DGetImage.  
*Dim tp3d*
3. **Create TP3DGetImage Object** – Use the *CreateObject* Function to reference the variable to the TP3DGetImage object. TerraExplorer uses the application name *TP3DGetImageCOM* and object name *GetImage*. You can also use the *New* keyword.  
*Set tp3d = CreateObject("TP3DGetImageCOM.GetImage")*
4. **Define TerraPhoto3D Script** – This is the same TerraPhoto3D script as described above. See: [Creating a TerraPhoto3D Script](#) in this chapter. Use the query strings values to build the script command. In this case the value for the *SnapPoi* sting is expected to be X, Y, Height, Distance, Yaw, Pitch, as a string divided with commas so it fits the *IPlane::FlyTo()* method.  
*script = "IPlane.FlyTo "& SnapPoi & "," & Chr(034) & "JumpToLocation" & Chr(034)*
5. **Call the GetImage() method** – This method send the script command to the TerraPhoto3D server and returns the resulting image. See: [GetImage\(\) method](#) in this chapter.  
*resimage = tp3d.GetImage(script, cacheResponse, redirServer)*
6. **Return the Result as Image** – Use the value returned in the previous step for the response of the page, and identify it as an image.  
*Response.Clear*  
*Response.ContentType = "image/jpeg"*

```
response.binarywrite resimage
Response.End
```

## Using HTML <IMG> tag

Follow these instructions to add an image element, using the <IMG> tag, to an HTML page to request and display an image from secured dynamic page:

1. Inside the <BODY> element of your HTML page add an <IMG> tag.
2. Set the “src” attribute to a request a snapshot from a secured dynamic page. You can do this in the tag itself, or using a scripting language. The input string should be a concatenation of these elements:
  - Dynamic page address  
The URL of the dynamic page  
*e.g., Http://www.skylinesoft.com/secure/ tp3dcom.asp*
  - Query String values  
*e.g., “?SnapPoi=-100.5,38.04,0,4000000,0,-65”*  
This format is used for ASP pages and uses the example *SnapPoi* string suggested above. Use the appropriate format for your dynamic page.
3. Run the HTML page in a browser. When the page is loaded, a request is sent to the TerraPhoto3D server through the dynamic page and TP3DGetImageCOM object, and the resulting image is displayed in the <IMG> element.
4. You can create a set of controls, e.g., buttons or links that dynamically create the dynamic page call, and set it to the “src” attribute. For example, you can create a button that takes a snapshot 50 meters to the north and updates the image. Each time you set the “src” a new image is generated and displayed.

## GetImage() Method

Calls the TerraPhoto3D server and generates a snapshot in response to a TerraPhoto3D script.

```
HRESULT GetImage(
[in] BSTR sScript,
[out] VARIANT* nCacheThis,
[out] VARIANT* sRedir,
[out, retval] VARIANT* pImage);
```

**Parameters:**

- **sScript** – A valid TerraPhoto3D script. See: [Creating a TerraPhoto3D Script](#) in this chapter.
- **nCacheThis** – A Boolean value. Returns TRUE when the snapshot was not rendered and a message image was returned, e.g., “Server Busy”. In this case you should identify the image sent to the client, as an image that should not be cached. The next time the client makes the same request, it is sent again to the server and not using the message image from the cache, e.g., In ASP this can be done by adding this to the response object:  
*Response.CacheControl = "No-cache, , must-revalidate"*  
*Response.AddHeader "Pragma", "no-cache"*
- **sRedir** – If the string is not empty (“”), the server could not handle the request, and contains a server address for redirection. Redirect the request to the address give, e.g., in ASP *Response.Redirect*.
- **pVal** – Once the method call is returned, pVal contains the image stream.

**Testing with Dynamic Web Page**

An ASP page is copied to your install directory as a sample for the technique described above. To run the Secured Dynamic Page example, follow these steps:

1. Follow the steps listed in [Testing TerraPhoto3D](#) in the “Getting Started” chapter.
2. In Windows explorer, browse to “C:\Program Files\Skyline\TerraGate Manager\Photo3D\Examples” or to the relative path in your installation folder.
3. Copy the file “tp3dcom.asp” to a directory on your web server. The directory must have permissions to run scripts.
4. In the file “tp3dcom.asp” find the variable “DirectoryOnServer” and set the directory name under the web server where you copied the ASP page to in step 3, e.g., *DirectoryOnServer = "/Skyline/DynamicPages/"*;
5. In the file “SimpleClient.html” find the variable “DirectoryOnServer” and set the directory name under the web server where you copied the ASP page to in step 3, e.g., *var DirectoryOnServer = "/Skyline/DynamicPages/"*;
6. Save the file and run it in your browser. Select the “Secure” checkbox to request the images through the established secure channel.

## **Using Direct ISAPI Access**

You can directly access the TerraPhoto3D server using an ISAPI server extension. This method requires creating a virtual directory on your web server, and creating an HTML page that accesses the server. Use this quick and simple method when using the TerraPhoto3D server inside an organization where security risks from the general public do not exist.

### **Creating a Virtual Directory for TerraPhoto3D**

TerraPhoto3D server is an ISAPI server extension that requires configuration for it to be accessed by remote users. TerraPhoto3D should be installed on a computer running Internet Information Services (IIS). A Virtual Directory should be created on the IIS pointing to the TerraPhoto3D folder. When using Windows Server 2003 you are also required to set Web Service Extension for the ISAPI server.

#### **Creating Virtual Directory:**

1. In Windows control panel select Administrative Tools, and click Internet Information Services.
2. In the left pane, locate the web site that you want to be used for TerraPhoto3D.
3. Right-click the web site, select New and click Virtual Directory. The Virtual Directory Creation Wizard opens.
4. Click Next on the welcome page, and type "TP3D" in the Alias field. Note that name must be as specified here. Click Next.
5. Click the Browse button to locate the folder named Web under TerraGate Manager\Photo3D folder in the install path. By default the path is "C:\Program Files\Skyline\TerraGate Manager\Photo3D\Web". Click Next.
6. Select the Read and Execute access permissions. Click Next.
7. Click Finish.

#### **Creating Web Service Extension**

1. In Windows control panel select Administrative Tools, and click Internet Information Services (IIS) Manager.
2. In the left pane, right-click Web Service Extensions for the local computer, select Add a new Web Service Extension. The New Web Service Extension dialog opens.

3. Enter the Extension Name “TP3D”.
4. Click Add to add a new required file. The Add File dialog opens.
5. Click the Browse button to locate the file named “TP3DImage.dll”. By default the path is “C:\Program Files\Skyline\TerraGate Manager\Photo3D\Web”. Click OK.
6. Select the Set extensions status to Allowed.
7. Click OK.

### Using HTML <IMG> tag

Follow these instructions to add an image element, using the <IMG> tag, to an HTML page to request and display an image from a TerraPhoto3D server:

1. Inside the <BODY> element of your HTML page add an <IMG> tag.
2. Set the “src” attribute to post a TerraPhoto3D script directly from a TerraPhoto3D ISAPI server. You can do this in the tag itself, or using a scripting language. The input string should be a concatenation of these elements:
  - ISAPI server address  
`http://<TerraPhoto3D Server>:< port>/TP3D/TP3DImage.dll`  
 Where <TerraPhoto3D Server> is the IP or name of the machine running TerraPhoto3D. You need to specify the port only if the web site is using a port other than 80 (default).
  - Request constants  
`”?DefaultRequest?Params= ”`  
 Use exactly this text.
  - TerraPhoto3D script **See:** [Creating a TerraPhoto3D Script](#) in this chapter.
3. Run the HTML page in a browser. When the page is loaded, a request is sent to the TerraPhoto3D server, and the resulting image is displayed in the <IMG> element.
4. You can create a set of controls, e.g., buttons or links that dynamically create the script, and set it to the “src” attribute. For example, you can create a button that takes a snapshot 50 meters to the north and updates the image. Each time you set the “src” a new image is generated and displayed.

For additional information and a sample web page **See:** [Testing TerraPhoto3D](#) in the “Getting Started” chapter.

### Example HTML Page

The following HTML page calls the TerraPhoto3D ISAPI dll with a script that sets the position of the camera at set position, sets the image size to 456 by 340 pixels, and places a circle in the viewed area:

```
<HTML>
```

```
<BODY>
```

```
<IMG id="TerraPhoto3DImage"  
src="http://lap1.skyline.co.il/TP3D/TP3DImage.dll?DefaultRequest?Params=IPlan  
e.FlyTo -71.054, 42.3540, 0, 12000, 0, -  
50,'JumpToLocation':ISnapshot.SnapshotWidth=456:ISnapshot.SnapshotHeight=34  
0:IObjectManager.Createsphere -71.054,42.3540, 100, 500">
```

```
</BODY>
```

```
</HTML>
```

## CHAPTER 9. INTERNET LICENSE COMPONENT

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The Internet License component authorizes the use of extended TerraExplorer Pro API capabilities for TerraExplorer viewer. Each Internet License includes a list of domain names and addresses that can be authorized by it. The list is written in your TerraGate license file, and can be changed by Skyline only.

Each web page that is delivered from one of the authorized domains, and includes a custom tag, can interact with the advanced API. When such a web page attempts to use advanced TerraExplorer Pro API from TerraExplorer Viewer, an authorization request is sent to the Internet License server. If the domain from which the page originated is included in the authorized list, TerraExplorer Viewer receives permission to execute the advanced API.

### Internet License Settings

The Internet License server component is installed as part of the TerraGate streamer component. It is using the TerraGate streamer server to manage the communication between it and the TerraExplorer Viewer application. Its address is the same as the TerraGate streamer component. To view and configure the IP address **See:** [IP Address](#) in the “TerraGate Streamer Component” chapter.

The Internet License server starts and stops with the TerraGate streamer component. For more information **See:** [Starting and Stopping a Service](#) in the “TerraGate Manager” chapter.

To view the authorized domains list **See:** [Internet License](#) in the “TerraGate Streamer Component” chapter.

### Creating a Web Page that uses Internet License

For a web page to be able to unlock the extended TerraExplorer Pro API capabilities for TerraExplorer Viewer it must follow these requirements:

#### Include <Meta> Tag or use Terrain from TerraGate

The HTML web page should include identification for the Internet License server to be used for authorization.

To add a <Meta> tag:

1. In the “Head” area of your HTML page, add a “Meta” tag.
2. The “name” value of the tag must be “NetLicenseServer”.



3. The “Content” value of the tag should be the IP or name of the TerraGate server. You need to specify the port only if you are using a port other than 80 (default), e.g., <http://www.skylinesoft.com:8080/>

Example:

```
<HTML>
<HEAD>
<META NAME="NetLicenseServer" CONTENT="http://www.skylinesoft.com/">
</HEAD>
<BODY>Test Page</BODY>
</HTML>
```

If your HTML web page does not include the NetLicenseServer” <Meta> tag, and the terrain database that is open in TerraExplorer Viewer comes from a TerraGate server, TerraExplorer automatically tries to access an Internet License server in the same address. However, it is advised to use the <Meta> tag on all pages.

### Posted on an Authorized Domain

Your web page should be posted on a web server with a domain name that appears in the domains list.

Users that access this page must use TerraExplorer or Microsoft Internet Explorer, and type a URL that points to the authorized domain.

For example, if the domain “www.skylinesoft.com” is authorized on your server, post the HTML pages on a web server on that domain. Accesses to this page must use a URL that starts with “http://www.skylinesoft.com/...”

To view the authorized domains list See: [Internet License](#) in the “TerraGate Streamer Component” chapter.

### Use TerraExplorer Pro API

The TerraExplorer Application Programming Interface (API) provides a powerful way for integrating TerraExplorer, TerraExplorer Pro and custom applications. It also provides a way to create extensions that can access external information sources such as databases or GIS files. All of the interfaces, based on the COM protocol, can be managed through a scripting language (e.g., JavaScript) as well as non-scripting languages (e.g., C++ or Visual Basic).

The TerraExplorer Viewer supports a subset of the interfaces presented in this guide. Using advanced TerraExplorer Pro API is not available unless you use the Internet License server.

If your page attempts using the advanced API, and meets the requirements above, the functionality is executed. For example, your page can use the

IObjectManager3::CreateCircle() method only after the Internet License server authorized the operation.

Complete documentation of the TerraExplorer API can be found in TerraExplorer Pro Programmer's Guide and in the online help for TerraExplorer Pro. The Programmer's Guide is also located at "C:\Program Files\Skyline\TerraGate Manager\Photo3D\TE" or the relative path in your installation folder.

## CHAPTER 10. COLLABORATION COMPONENT

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Use the “*Collaboration*” tab on the TerraGate Manager to control, monitor and set the TerraGate component.

### Collaboration Settings

To open the Collaboration Settings click the “Collaboration Settings” button, or select Collaboration from the Settings Menu.

#### Collaboration General Settings

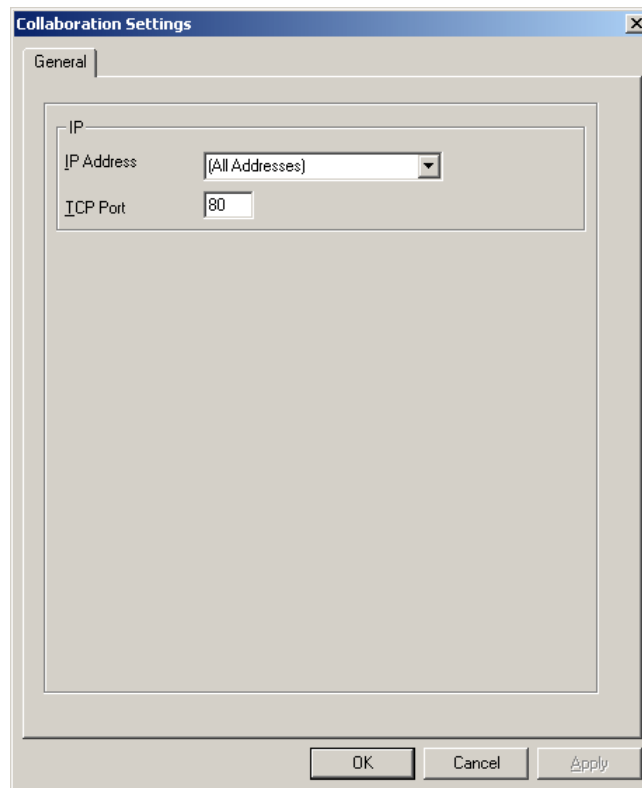


Figure 9-1. Collaboration Settings

## IP Address

This is the address in which the Collaboration server listens to incoming connections.

This feature is useful when the computer running the Collaboration server has more than one IP address, and the other addresses might be used for other purposes.

In the default settings, “All addresses”, the Collaboration server listens to all the addresses.

All the machine addresses appear in the list box, and you can select one of them.

**Note:** If the computer running the Collaboration server does not have a fixed IP address, it is not possible to use this feature, and this field must have the value of “All addresses”.

## TCP port

This is the port in which Collaboration server listens to incoming connections. The default value is 80 (but it can be changed if necessary).

## Refresh

This control instantly updates the page. Refresh can be set automatically by choosing the time interval from the dropdown box.

## Collaboration and Microsoft IIS

When running both the Collaboration server and Microsoft Internet Information Server (IIS) on the same computer, both the Collaboration server and IIS need to bind to port 80. (This is the default port for both applications.) Different procedure is used for IIS 5.X used in Windows 2000 and XP, and IIS 6.0 used in Windows Server 2003.

Therefore, two IP addresses (or more) must be allocated: One for the IIS web server, and one for the Collaboration server.

After allocating an IP address for the Collaboration server, specify the address in TerraGate Manager.

**Note:** You can set the Collaboration server to use a port other than 80. However, using port 80 usually avoids access and firewall issues. To connect to a collaboration server on port different than 80 use  
`<CollaborationServer>:<Port>` in the Server Host Name field. Where  
`<CollaborationServer>` is the IP or name of the Collaboration server, and  
`<Port>` is the port used.

### Disable IIS “Socket pooling” manually in IIS 5.X

The following procedure is done automatically in the [installation](#) phase. This section is provided as a reference only, if you wish to perform the procedure manually.

In the Microsoft Management Console (MMC) configure the IIS web server to use only the Address Allocated for IIS.

Under Windows 2000 or Windows XP (IIS versions 5.0 or 5.1, respectively) IIS has a feature called “socket pooling”. This means that IIS binds to all addresses, even if it is configured to use only one of the addresses.

This feature is enabled by default, to disable it use the following procedure:

At the command prompt, type **cd \inetpub\adminscripts**.

At the \inetpub\AdminScripts command prompt, type **cscript adsutil.vbs set w3svc/disablesocketpooling true**

The command prompt returns the following: **disablesocketpooling : (BOOLEAN) TRUE**

### Disable IIS “Socket pooling” manually in IIS 6.0

The following procedure is not done automatically in the installation phase. This section is provided for your convenience. For more information consult the Windows IIS documentation.

1. Install Microsoft Windows support tools from the Windows Server 2003 CD.
2. In the command prompt type the following:  
*httpcfg set iplisten -I XXX.XXX.XXX.XXX*  
Where xxx.xxx.xxx.xxx is the IP address you want IIS to use.
3. Repeat step 2 for all other addresses you want IIS to use.  
If this list of addresses is specified, the IIS listens only to addresses on the list. This allows TerraGate to bind to port 80 on an IP address that is not in the list. Otherwise IIS listens on all IPs on the machine.

## Collaboration and TerraGate

When running both the Collaboration server and TerraGate, each requires a unique IP address and port combination. Therefore, you must allocate two (or more) IP addresses: one for the Collaboration server, and one for the IIS web server.

Alternatively use different ports on the same IP address.

After allocating an IP address for the Collaboration server, specify the address in TerraGate Manager.

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