TTerm Connect Installation Guide

What is TTerm Connect?

TTerm Connect is Turbosoft’s web based terminal emulator. Built on common web technologies such as HTML5, CSS and Javascript, TTerm Connect requires no desktop software installation or management and is able to provide terminal emulation services regardless of platform.

TTerm Connect consists of a server component which provides the actual emulation and host connectivity and a lightweight browser based client which provides the end user interface.

The server component is available for both Windows® and Linux® based servers, specifically Centos 7 and Redhat 7. Webserver software explicitly supported includes Apache (Windows and Linux) and IIS (Windows).

The TTerm Connect client is simply any modern HTML5 capable browser with Javascript enabled. The following browsers are explicitly supported.

- Microsoft Internet Explorer 11
- Microsoft Edge®
- Mozilla Firefox®
- Google Chrome®
- Android Browser 4.4 and above

About this Document

The document applies to TTerm Connect version 1.2.2.xxxx and above.

Intended Audience

This document describes the installation process for the server component of TTerm Connect. Once complete TTerm Connect should be in a state where it is possible to login to the web based Administration Portal and begin configuring for day to day use.

It assumes an understanding of the server environment that the installation will take place on as well as appropriate permissions to install software on said server. As TTerm Connects interfaces are web based a working knowledge of webserver software and it’s configuration is also required.

As described above TTerm Connect explicitly supports Apache and IIS and instructions in this document will refer only to those platforms.

Technical Support and Assistance

For further assistance please visit www.ttwin.com/support or contact Turbosoft Support directly. Full contact details are listed on the last page of this document.
Figure 1. TTerm Connect deployed with Relay Service enabled.
This section describes how TTerm Connect works and provides an overview of the components and layout across your network. If you wish to proceed directly to the installation process, skip ahead to page 7.

**Figure 1** Illustrates a typical TTerm Connect deployment handling host connectivity for users over both internal and external networks. **Figure 2,** (page 6) illustrates a variation where TTerm Connect is concerned solely with service users on an isolated, internal network or intranet.

The main difference between these two configurations is the use of a Relay Service. This is an optional service which presents a single IP address for all incoming connections to the various client facing TTerm Connect server components.

TTerm Connect comprises the following components:

**The Admin Server and Administration Portal**

The Admin Server hosts the web based Administration Portal used for configuring TTerm Connect as well as all management and monitoring functions. Pages are served via http or https depending on how the installation has been configured. By default the Administration Portal is available at port 8090 of the domain TTerm Connect is installed to. This port may be reconfigured post installation.

The Administration Portal is designed to be usable on any device with a modern web browser. Please note that while it is entirely possible to configure a freshly installed TTerm Connect using a phone or tablet it is recommended that initial configuration be performed on a desktop device.

One specific function provided to administrators through the Administrator Portal is Shadowing. Shadowing is a feature that allows an administrator to view, interact with and end a users host session in real time. It’s a powerful tool for providing technical support to end users, gracefully closing abandoned sessions or simply as a management tool for observing user activity. When an Administrator is shadowing a session they are, in terms of how they interact with TTerm Connects components, no different to a regular user connecting to a host. The Administrator will access Emulation Services through a Relay Service (if configured) and so on.

**Figure 1** shows an administrator accessing Emulation Services and the Connection Manager though the Relay Service in the same manner as the end user.

**Emulation Services**

An Emulation Service is an independent TTerm Connect process which provides host connectivity to the end user. Each Emulation Service provides host connectivity for one or more host sessions.

Emulation Services are handled separately and in multiple instances in order to balance server loads and provide separate functionality from administration and configuration handling. New host sessions are dynamically assigned to an Emulation Service by the Connection Manager in order to balance server loads.

The exact number of services that TTerm Connect maintains is determined firstly by configuration options specified through the Administration Portal and secondly by any license conditions.

By default TTerm Connect will start with four (4) services enabled, however this number should be altered to suit requirements through the Administration Portal after installation.
End users may connect to a host system through TTerm Connect’s end user Desktop Client or through a custom webpage - both scenarios are capable of running multiple simultaneous host sessions. When an end user maintains more than one connected host session, it’s possible they will utilize several Emulation Services to facilitate that host connectivity.

Where a Relay Service is employed the web client will maintain a single connection to TTerm Connect server regardless of how many host sessions they may be running. Where no Relay Service is employed the web client will establish a separate connection to an Emulation Service on a per session basis.

**How Many Emulation Services?**

There are a number of factors which would influence this choice, most critically, the number of host sessions that are likely to be running concurrently and the hardware resources available to TTerm Connect.

As a rough guide, Turbosoft recommends running a minimum of 4 services. If you are likely to run greater than 100 simultaneous sessions simply divide the maximum number of likely sessions by 25 to arrive at the number of required services (for example, 150 sessions = 6 services).

The number of Emulation Services is a configurable option available through the Administration portal, post installation.

**Connection Manager**

The Connection Manager is responsible for providing access to resources such as session profiles (host session configurations), license assignment and tracking, user authorization and assigning session requests to Emulation Services and so on.

**Configuration Manager**

The Configuration Manager retains host and system configurations. When interfacing with the Administration Server the Configuration Manager operates in read/write mode. In all other circumstances the Configuration Manager is available as a read-only resource.

**Webserver**

The webserver shown in Figure 1 and Figure 2 is third party software. Explicit support is provided for Apache or Microsoft’s IIS only.

TTerm Connect offers a variety of deployment options, such as the included Desktop Client, a multi-session capable web application.

The Desktop Client option is most suitable for replicating the functionality of a traditional desktop terminal emulation application. During the installation process the source files for the Desktop Client are installed in a specified directory. The installer default option for this directory is a default folder used by Microsoft’s IIS to serve web content. It is recommended that prior to installing TTerm Connect webserver software is installed and configured.

Note that cross-origin resource sharing and mixed content is likely to cause client browser errors. To avoid these ensure that the webserver hosting TTerm Connect content resides on the same domain as the TTerm Connect server installation and that both the webserver and the TTerm Connect installation are configured to use the same protocol - either http or https but not a mixture of both.
**Relay Service**

The Relay Service is an optional service which provides a single exposed port for all Emulation Services and Connection Manager functions. By presenting a single IP address for all incoming connections to the various client facing TTerm Connect components this allows a minimal adjustment to firewalls and simplified network operation.

The suggested usage scenario is when serving emulation content to external networks. In a scenario where all TTerm Connect users are intended to be on an internal network you may wish to consider omitting the Relay Service.

By default, the Relay Service is disabled and it is configurable through the Administration Portal, after installation.

**End Client Components**

Regardless of the deployment method used for delivering host connectivity TTerm Connects webpage components will interact with the server in a similar way.

One or more individual host sessions may be embedded within the page itself. A Session Manager coordinates requests from the individual host session objects in the page to the Connection Manager and Emulation Services, handing the creation and closing of a host session through a dedicated websocket.

When a connection is requested the Session Manager retrieves configuration options (the *Session Profile*) from the Connection Manager which in turn, queries the Configuration Manager. The Connection Manager will then assign the new session to an available Emulation Service. The Emulation Service attempts to establish a connection to the host system as per the configuration options and returns screen content to the web client.

Each individual session maintains its own websocket connection to the relevant Emulation Service. Where a Relay Service is employed these connections are directed through a common port. When a Relay Service is not used each sessions connection will interface directly with the Emulation Service responsible for the host session.

For information on working with the Desktop Client refer to the TTerm Connect Quick Start Guide. For information on embedding terminal emulation in an existing web page or creating a custom web page for terminal emulation refer to the Embedding TTerm Connect. Both documents are included with the TTerm Connect installation or can be obtained by visiting the support section of [www.ttwin.com](http://www.ttwin.com).

**Multiple Server Installations**

At present, while it is possible to share configuration between installations, scenarios for installing TTerm Connect across multiple geographic locations, including centralised control and management of multiple TTerm Connect installation remain unsupported. Such features are expected to be introduced in the near future.
Figure 2. TTerm Connect deployed without a Relay Service.
Installing TTerm Connect on Windows®

System Requirements
Before initiating the installation process ensure you have the correct install package for your operating system and that your server environment meets the required specifications.

- A supported 64 bit Windows operating system: Windows 7, Windows 8, Windows 10 desktop, or Windows Server 2008+
- RAM: 400MB free
- Disk: 400MB free
- Supported webserver software, Apache or IIS, pre-installed.

These specifications assume a site serving up to 200 concurrent host sessions. For larger site requirements please contact Turbosoft.

Install Process
On your Windows Server, run the .exe installation file.

![TTerm Connect Setup](image)

Figure 3. License Agreement

The software License Agreement is displayed. Please review the License Agreement and check the box at the bottom of the tile noting your acceptance to continue the installation process.

Installing Components and File Locations
There are two web based elements to TTerm Connect, an Administration Portal, where configuration, monitoring and management of host connectivity and user activity take place as well as an optional Desktop Client, where end users can login and connect to host systems.
The Administration Portal is self contained and installed with the core TTerm Connect files, however the Desktop Client will run under webserver software of your choice, either IIS or Apache. The two components are installed to different locations.

The installer will first prompt for an installation location where the TTerm Connect (including the Administrator Portal) will be installed. To change the default destination folder, click on the Browse... button.

By default, TTerm Connect is installed in C:\Program Files\Turbosoft\TTermConnect

The installer will then prompt for an install location for the Web Components (the Desktop Client). By default this location is set to C:\inetpub\TTerm Connect, a default IIS directory. Click Browse... to specify an alternate location accessible to your webserver software.

![Figure 4. Select an installation location for the web components.](image)

**Set a Domain**

Specify a domain or IP address where you intend to access both the Administration Portal and Desktop Client. Note that this setting can be altered after installation through the Administration Portal.

![Figure 5. Specify a domain for TTerm Connect.](image)
SSL Configuration

TTerm Connect is designed to be run over SSL to ensure the security of all communications between components and clients. However it is also possible to run TTerm Connect over plain http:// without the need for an SSL certificate.

For a live deployment, Turbosoft strongly recommends the use of an SSL certificate.

![SSL options.](image)

**Figure 6. SSL options.**

To use TTerm Connect without an SSL certificate select **I don't have a Certificate, use http**.

To utilize SSL, select the **Import Cert** option and click the **Browse..** button to locate a certificate on your local device. TTerm Connect supports .pfx and .pem certificates.

If required, enter a **Certificate Password**.

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You may wish to evaluate TTerm Connect without an SSL certificate. SSL options may be enabled at a later time through the Administration Portal.

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The installer will now install the files to the locations specified with the settings described.

TTerm Connect's Connection Manager runs as a Windows Service, allowing TTerm Connect to provides host connectivity immediately after the server boots.

At this point in the installation process this service will be started.
Setup Complete

The setup is now complete and the installer lists the URL and default login credentials for the Administration Portal based on your configuration options. Note these details down.

Figure 7. On completion, the installer lists the default Administration Portal login details.

The default port for the Administration Portal is 8090. This is not configurable during the installation process however may be altered later through the Web Administration Portal itself.

Accessing the Administration Portal

Figure 8. Post installation options.

On completing the installer an option is given to spawn a web browser directly to the Administration Portal and to view the TTerm Connect Quick Start Guide in PDF format.
The Quick Start Guide is designed to provide the user(s) who will be Administering TTerm Connect with enough information to begin working with the software. It covers the basics of administering and configuring TTerm Connect for host connectivity. The document is also available from within the Administration Portal itself through the internal help pages.

The Desktop Client

The included Desktop Client option is most suitable for replicating the functionality of a traditional desktop terminal emulation application. You will recall that during the installation process TTerm Connect installed the Desktop Client files to a specified directory, by default C:\inetpub\TTerm Connect

To complete the installation of TTerm Connect you must ensure that your webserver is hosting a site where the site root points to this directory. This site should also be configured to serve content via http or https depending on your SSL configuration choices during installation.

Please note that it is beyond the scope of this document to provide configuration instructions for third party web-server software.
Of course, it is not essential to use the Desktop Client for host connectivity. You may choose instead to add TTerm Connect to an existing web page or create a custom web page for terminal emulation. This topic is covered in the Embedding TTerm Connect guide included with the TTerm Connect installation. Alternately visit the support section of www.ttwin.com to obtain the document.

What’s Next?

Once setup is complete the user(s) responsible for administering TTerm Connect should login to the Administration Portal using the credentials provided during the installation process.

Once logged into the Administration Portal, follow the directions in the Quick Start Guide or follow the on-screen prompts to begin configuring TTerm Connect for host connectivity.
Support and Further Information

For issues relating directly to TTerm Connect which are not covered by this document consider checking the online resources available at www.ttwin.com/support or contacting Turbosoft support staff directly. To lodge a support ticket with Turbosoft support please visit www.ttwin.com/support_form and have the following details ready:

- Your license details - these can be found on the About page of the Administration Portal. Please also include any maintenance contract number or service agreement you may have with Turbosoft.
- TTerm Connect version number - TTerm Connect consists of a number of components and each will have it’s own, slightly different version number. These components are:
  - The Administration Portal - The web based administration tool.
  - The Desktop Client - The optional web based end user client.
  - The Server - The collection of server based components which provide the core of TTerm Connects emulation and management processes.

If possible, please send the server license version and either the Desktop Client version OR the Administration Portal version number, depending on the source of the issue.

Version details can be found on the About page of the Administration Portal and the settings section of the Desktop client. These details can also be found on the respective login screens.

- Details of the client (end user) environment, including operating system and browser, for example, Windows 10, Chrome version 62.0.0.3097.102

This information is essential to enable Turbosoft to resolve your issue in a timely manner.

Contact Details

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