

Thin Client Setup and Troubleshooting Guide

Abstract

This Thin Client Troubleshooting Guide is designed to be used in conjunction with the ***Thin Clients and Mobile Access sections*** of the ***current version IWS Technical Reference (Help Manual)***. The Guide is designed to be used in helping to correctly set up the web thin client and secure viewer access. This Guide will help prevent common mistakes and potential errors.

The Troubleshooting Guide is broken down into 3 sections:

1. The first section is designed to be used as a checklist. To use it for set up and troubleshooting, simply print this document and check the boxes as each step is completed.
2. The second section is a troubleshooting chart showing common issues that may be encountered, the reason for the issue, and the solution to correct the issue.
3. Finally, the third section is the Appendix, describing the use of common troubleshooting tools and applications.

Note: This guide uses default configuration values.

Section 1: Thin Client Set Up Checklist

- ✓ Check the box when completed.

Before you begin

- Verify the IP address of the runtime device.
- If using port forwarding, make certain it is set up correctly to direct to the correct IP address on the following ports:
 - Port 1234- Data Server (IWS Runtime)
 - Port 80-Web Server (HTTP)
 - Port 443-Web Server (If using HTTPS/SSL)
- If using firewalls/antivirus software, make certain the above ports are configured to allow access.

Configuring the Data Server

Web Settings dialog configuration

- Is the Data Server IP/Secondary Data Server IP correct?
 - TIP: If the Data Server (in the IWS Runtime) and the Web Server (e.g. IIS) have the same IP address, this field can be left blank.*
- Under the Advanced section, unless connecting on a single port, leave Web Tunneling Gateway disabled. This is for certain port security situations and is not commonly used. Please read the Technical Reference for more information.
- Did you Publish the project (Application Menu>Publish>Save all as HTML)? This needs to be done if any

changes are made in the project's Web settings.

Configure the project's base settings

- Is the TCP/IP Server task set to Automatic? (Home>Local Settings>Tasks)
- Is the TCP port set to 1234? (Project>Communication)
- If using Project Security, do any of the security groups have thin client access?

Configuring a web server to host your project pages

Choosing a Web Server

- Any web server should be able to host basic Web Thin Clients/Secure Viewers. For other thin clients, make certain the chosen web server supports:
 - Mobile Access Tabular- Collaborative Data Objects (CDO) and Active Server Pages (ASP)
 - Web Tunneling Gateway- Internet Service API (ISAPI) extensions
 - Mobile Access-This must be a version of IIS that supports ASP.NET
- Is any other process using port 80 (HTTP)? See “Using NETSTAT” below

Configuring IIS

- Is the physical location of the Website pointed to the correct folder? (IIS>Basic Settings)
 - If using Secure Viewer, the location must be your project's root directory
 - If not using Secure Viewer, the preferred location would be the project's \Web subfolder.
- Are the bindings configured for http? (IIS>Bindings)
- If using Pass-through Authentication, add the following users to the project folder's security settings:
 - IUSR
 - *[Computer Name]\IIS_IUSRS*
- Are the MIME types configured?

Section 2: Troubleshooting

Symptom	Possible Causes	Solutions
ISSymbol “Error connecting to server” on Web Thin Client and/or Secure Viewer: Error code 10061 (WSAECONNREFUSED)	<ul style="list-style-type: none"> TCP/IP Server is not running Port 1234 is blocked IP address is incorrect Network Security is blocking port 	<ul style="list-style-type: none"> Make sure IWS project is running Verify the TCP/IP Server task is started Verify the IP address in IIS matches the runtime device Allow port access in Firewall/Antivirus software Check Port availability using Telnet
ISSymbol “Error connection timed out” on Web Thin Client and/or Secure Viewer: Error code 10060 (WSAETIMEDOUT)	<ul style="list-style-type: none"> No network access Port 1234 is blocked IP address is not available Network Security is blocking access 	<ul style="list-style-type: none"> Check connection using Ping Check Port availability using Telnet Verify network settings
HTTP Error 404 (File not found)	<ul style="list-style-type: none"> Web Server not running URL incorrect Project not published Web server hosting wrong folder 	<ul style="list-style-type: none"> Verify Web Server is running and hosting the correct folder Make certain project is published Verify URL
HTTP Error 401 (Unauthorized)	<ul style="list-style-type: none"> Network Security is blocking access User credentials not valid Firewall/Antivirus software preventing connection 	<ul style="list-style-type: none"> Check connection using Ping Check Port availability using Telnet Verify network settings
HTTP Error 403 (Forbidden)	<ul style="list-style-type: none"> Network Security is blocking access Credentials not valid Firewall/Antivirus software preventing connection 	<ul style="list-style-type: none"> Check with your network administrator and verify that the connected users are allowed access, ports 80, 1234 and 443 are available to the thin client, and port forwarding is configured correctly.
HTTP Error 500 (Internal Server Error) (NOTE: This is a generic error message and similar to the HTTP Error 401)	<ul style="list-style-type: none"> IIS received invalid credentials Network issues IIS not allowing access 	<ul style="list-style-type: none"> Check connection using Ping Check Port availability using Telnet Verify network settings If using IIS with Pass-through authentication, if allowed add the following users to the Project folder’s security: <ul style="list-style-type: none"> IUSR [PC-Name]\IIS_IUSRS
HTTP Error 503 (Service Unavailable)	<ul style="list-style-type: none"> The runtime device cannot locate the 	<ul style="list-style-type: none"> Contact your network administrator Verify the runtime system
HTTP Error 511 (Authentication Required)	<ul style="list-style-type: none"> Network security is not allowing the particular user from accessing the runtime device via TCP. 	<ul style="list-style-type: none"> Contact your network administrator
Blank Screen	<ul style="list-style-type: none"> MIME types not set Missing project files No startup screen set (Secure Viewer) ISSymbol.ocx has been blocked from uploading or updating I.E. (Win 8 Security) 	<ul style="list-style-type: none"> Configure the MIME types in IIS Republish the project Run ThinClientSetup.exe on the target machine to manually load the ISSymbol.ocx, or start I.E. under <u>Run As Administrator</u> to update the plug-in, then restart normally.
Blank Screen w/Red [X]	<ul style="list-style-type: none"> ISSymbol version mismatch ISSymbol not loading properly Using a non-supported browser 	<ul style="list-style-type: none"> Configure the Internet Explorer settings to allow the control to run Use a supported browser Verify the ISSymbol version matches the IWS version Host the ISSymbolVM.cab file locally

Section 3: Appendix

Use these tools to help identify issues with connections.

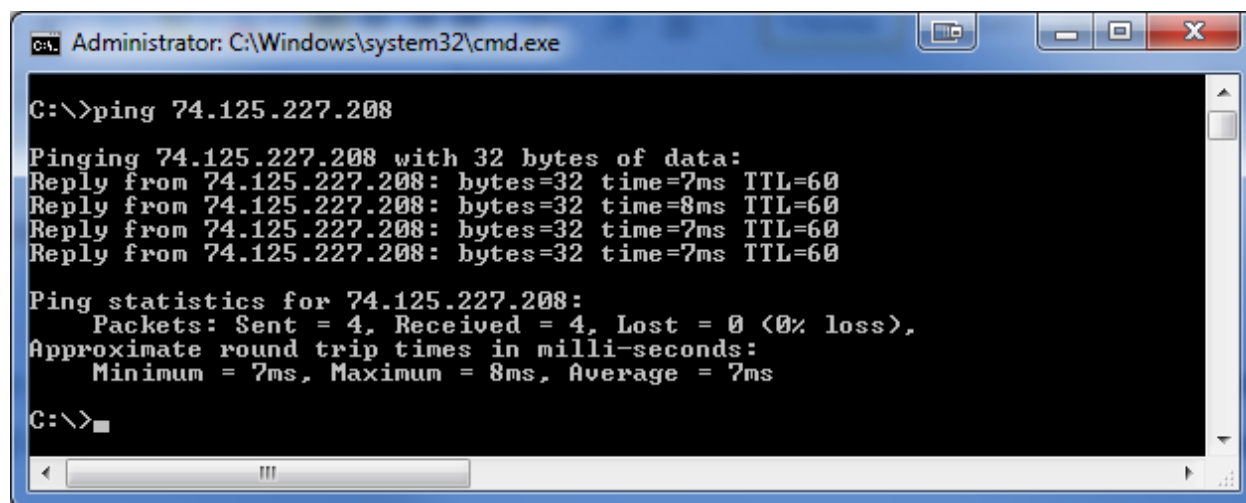
PING

Ping is the primary tool to test connectivity to a particular host across an IP network. Since the Ping command does not use ports, it can only verify the device exists on the same network as the client. Therefore, the first step is to attempt to connect to the project runtime system from the thin client device. Open a command prompt on the thin client device and issue a ping command to the IP address/URL of the runtime device.

The syntax for PING in the command prompt is:

```
>PING [HOST IP or URL]
```

For example:



```
Administrator: C:\Windows\system32\cmd.exe
C:\>ping 74.125.227.208

Pinging 74.125.227.208 with 32 bytes of data:
Reply from 74.125.227.208: bytes=32 time=7ms TTL=60
Reply from 74.125.227.208: bytes=32 time=8ms TTL=60
Reply from 74.125.227.208: bytes=32 time=7ms TTL=60
Reply from 74.125.227.208: bytes=32 time=7ms TTL=60

Ping statistics for 74.125.227.208:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 8ms, Average = 7ms

C:\>
```

If there are any errors, there is a network connection issue which must be resolved before you can continue.

TELNET

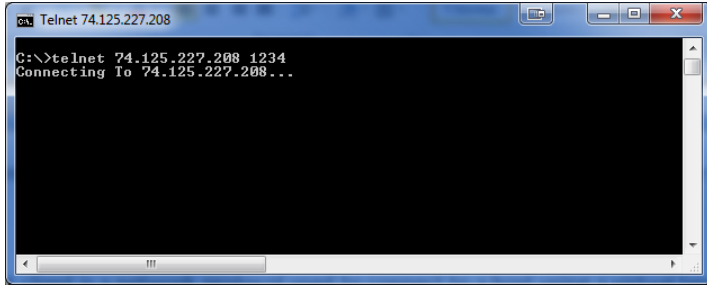
The Telnet client is a network protocol used to connect to a host using a virtual terminal connection. However, the most common use of this is to establish a connection with the Telnet protocol, verifying that a specific port on the host device is “listening,” and can be used to test availability of the IWS TCP/IP server (default port 1234).

In order for Schneider Electric Thin Clients to connect to a project, the client must be able to connect to the Web Server (such as IIS) using http/https protocol, and then be able to connect to the IWS data server. The default port for the data server is 1234. From a command prompt on the Thin Client device, request a telnet connection to the runtime device on the IWS server port.

The syntax for TELNET in the command prompt is:

```
>TELNET [HOST IP or URL] [TCP Port]
```

For Example:



If there is a connection error, the device is not accessible on that port. This is normally due to network security, firewalls, antivirus software, port forwarding or a myriad of other reasons. For devices with only one available port, please refer to the technical reference section on Web Tunneling Gateway.

Using NETSTAT

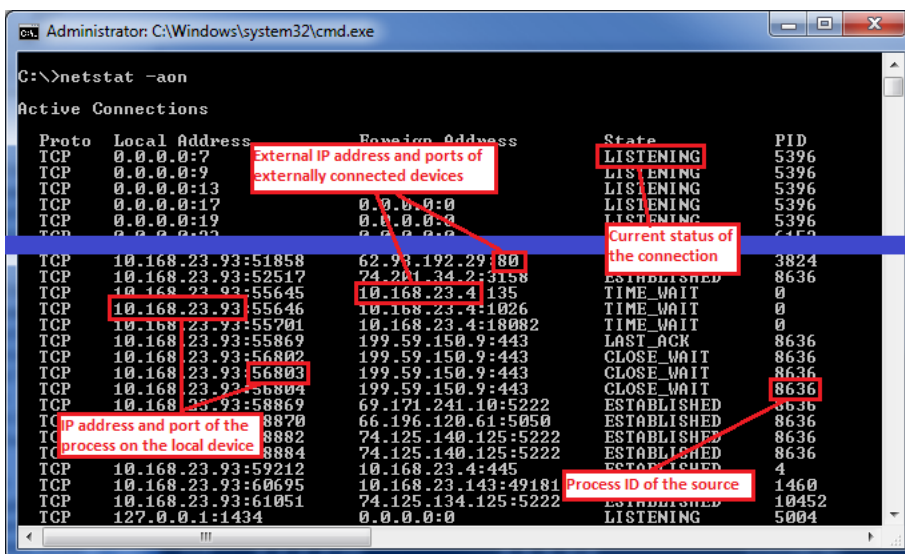
Netstat is a tool for identifying network processes and their associated TCP/IP ports currently in use on the device. If another process or service is using a given port (such as port 80), that port is “locked” and cannot be used by anything else. In order to function, a web server must be “listening” on that device. If there is a conflict, you must either configure one of the processes to listen to a different port or use Task Manager to end the conflicting process. If you cannot identify the conflicting process, use NETSTAT from a command prompt.

The syntax for NETSTAT in the command prompt is:

>NETSTAT -aon

NOTE: The “-aon” adds these parameters to the command:

- -a Displays all connections and listening ports.
- -n Displays addresses and port numbers in numerical form.
- -o Displays the owning process ID associated with each connection.



To locate the process, you can view the PID in Windows Task Manager.

Note: Telnet is not activated by default in Windows Vista/7/2008R2/8. To activate this feature, go to your Control Panel. From there open Programs and Features>Turn Windows Features On and Off. Select "Telnet Client" and click OK, which will then activate the client.

Discussion about Local Hosting of the ISSymbol ActiveX Control

When a Web Thin Client runs the HTML published by IWS, the first thing it does is check for the ISSymbol.ocx registration. If it is not currently registered on the thin client device, it will then download the installer and automatically run the setup. The most current version of the installer is located on InduSoft's servers and is the default URL in the project's web settings.

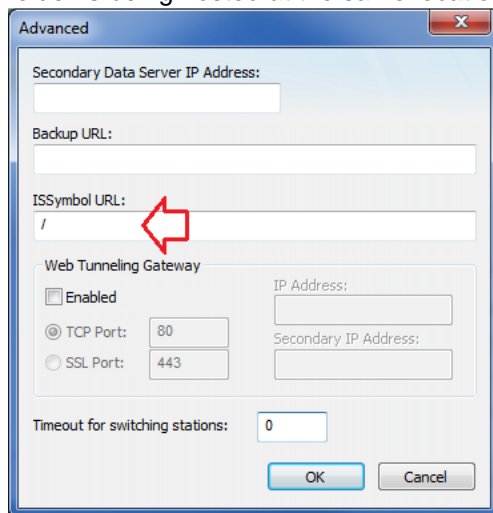
```
10 <body leftmargin=0 topmargin=0 marginwidth=0 marginheight=0>
11
12 <p><object id="ISSymbol1"
13 classid="clsid:0AEE24BF-5425-4e69-9AA9-19BB5EAB2349"
14 codebase="http://www.indusoft.com/ISSymbol/v71.1.0/ISSymbolVM.cab#version=1101,1303,0802,0000"
15 align="baseline" border="0" width="1280" height="800"><param
16 name="_StockProps" value="0">
17
```

The default version and location of the ISSymbolVM.cab

For many reasons it may be prudent to host this file locally, such as if the thin client has no network access.

The simplest method to host the file locally is as follows. Locate the file "ISSymbolVM.cab" in the \bin folder of your product installation (default location C:\Program Files (x86)\Schneider Electric\EcoStruxure Machine SCADA Expert v8.0\Bin). Copy this file and place it in your project's folder. **This should be the folder being hosted by your web folder.**

In your project's web settings, under Advanced, change the ISSymbol URL to a single forward-slash ("/"). Since the folder is being hosted at the same location as the ISSymbolVM.cab, it does not need the full URL.



NOTES

- You **must** republish the project after **any** changes to the project's web settings.
- If you upgrade IWS at any time, remember to replace the ISSymbolVM.cab with the upgraded version.

After this is completed, republish the project. The download URL will now be relative to the project folder.

```
10 <body leftmargin=0 topmargin=0 marginwidth=0 marginheight=0>  
11  
12 <p><object id="ISSymbol1"  
13 classid="clsid:0AEE24BF-5425-4e69-9AA9-19BB5EAB2349"  
14 codebase="/ISSymbolVM.cab#version=1101,1303,0802,0000"  
15 align="baseline" border="0" width="1280" height="800"><param  
16 name="_StockProps" value="0">  
17
```

Revision Table

Revision	Author	Date	Comments
A	Brian Golla Richard Clark	June 7, 2013 June 10, 2013	<ul style="list-style-type: none">Initial Word DocumentPut into Tech Note Format
B	Richard Clark	Feb 12, 2014	<ul style="list-style-type: none">Added info re Win 8 security not allowing upload of ISSymbol.ocx, updated Note, Title formatting
C			<ul style="list-style-type: none">