

Web Remote Control SA Software Installation and Setup

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Introduction

The Web Remote Control SA software includes an installation program, “setup.exe”, that installs it properly onto a PC. However, the Web Remote Control SA server is not operational unless that PC also has:

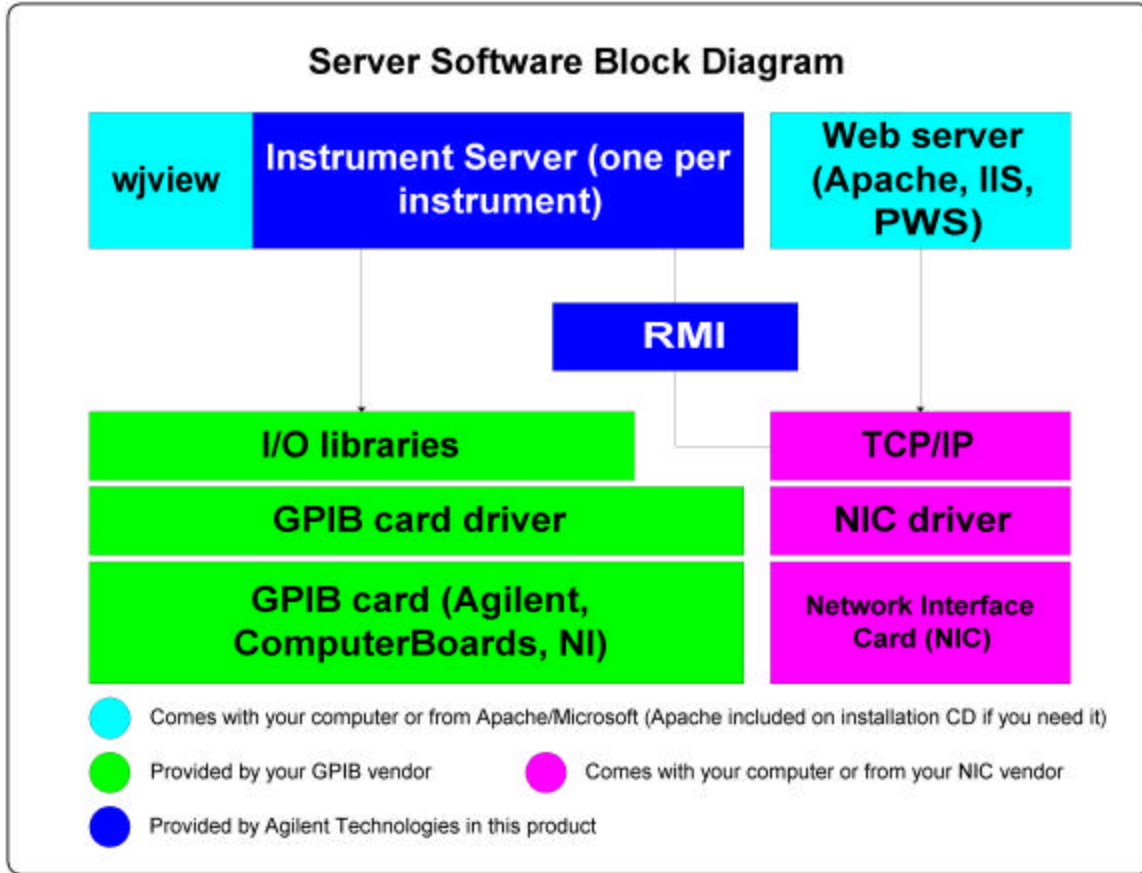
- An installed and working connection to a Local Area Network (LAN).
- An installed and working web server.
- If the spectrum analyzer’s GPIB port will be used, GPIB I/O hardware and software to allow connection to the spectrum analyzer.
- “wjview.exe”, an application that provides an environment for running Java programs on a PC.

This document provides instructions on how to acquire, install, and configure software that is required to set up a working “server” PC that is available for connection to client browsers for remote control and display of Agilent spectrum analyzer measurements.

Terms, Names of Components

In this document, we will refer to various components that must be installed on your server PC. This section defines the names of these components and terms used in this document. Refer to Figure 1 and Figure 2, block diagrams showing these components and how they are related to each other.

Figure 1:



Local Area Network (LAN): the network connecting the computers and network devices (such as printers or Internet proxy servers) together in your organization. In many larger organizations, a “firewall” protects computers on the LAN from unauthorized access by computers on the Internet.

Server PC: the Windows 2000 or Windows XP computer that connects your spectrum analyzer(s) to your Local Area Network so that browsers can remotely control and view measurements from those spectrum analyzer(s).

Server software: all the components that are installed on a computer to make it a Server PC.

Web server: software (either from Apache or Microsoft) that serves web pages to [browsers](#).

Client computer: a computer on the Local Area Network ([LAN](#)) that is able to make a network connection to the [Server PC](#).

Browser: a program that runs on a client computer (either Internet Explorer or Netscape Navigator) that is capable of displaying web pages from a web server and running a [Java applet](#).

Client user: the operator or user of a browser on a client computer.

Java applet: a java program that runs in a browser on a client computer. In our case, a special applet, installed with the server software components from Agilent Technologies, runs in a local or remote browser, and provides remote control and viewing of measurements from your Web Remote Control spectrum analyzer(s).

GPIB: the General Purpose Interface Bus, an I/O connection from a computer to an instrument that conforms to the IEEE 488.2 interconnection standard.

GPIB card: add-on interface hardware for a computer. Agilent Technologies provides PCI GPIB interface cards for PC's, as does National Instruments. ComputerBoards provides PCMCIA [GPIB](#) interface cards for laptop computers, as does National Instruments.

GPIB card driver: the software that allows a computer to communicate with a GPIB card that has been installed on that computer. The GPIB card driver software is provided with the GPIB card by its vendor.

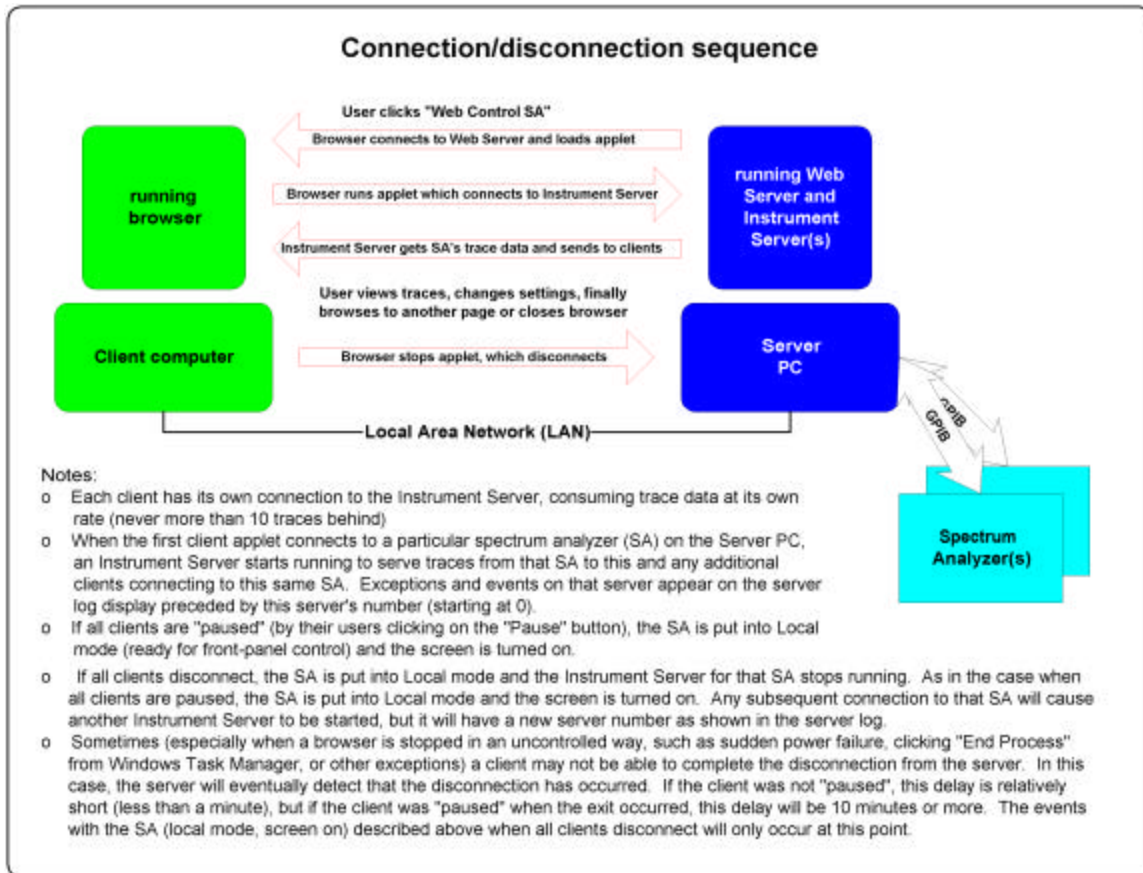
I/O libraries: the software that allows various computer programs to communicate with [GPIB card](#) drivers from various vendors. The I/O libraries provide a uniform interface to programs so that they do not have to be concerned with the proprietary differences between GPIB cards and their drivers. The I/O libraries are provided with the GPIB card by the vendor, and are normally installed at the same time as the [GPIB card driver](#).

Network Interface Card (NIC): the hardware that connects a computer to a Local Area Network ([LAN](#)).

NIC driver: the software that allows a computer to communicate with a NIC. This driver is provided with the [NIC](#) by its vendor.

TCP/IP: the low-level network protocol used by browsers to connect to web servers and most other systems on a LAN or the Internet. You must have a working [NIC](#) and TCP/IP "stack" on your server and all your clients as a prerequisite to setting up a Web Remote Control system.

Figure 2:



Remote Method Invocation (RMI): is the Remote Procedure Call (RPC) mechanism used by Java (and by our [Java applet](#)) to get or send information to the server over the LAN. The installation of the server components from Agilent Technologies (from this package) installs RMI on your server.

Instrument server: the software component provided in this product by Agilent Technologies and installed from this package that gets trace data from a particular instrument and sends it to client applets. The Instrument Server also synchronizes requests from clients so that they do not interfere with each other. There is actually one Instrument Server instantiated for each instrument being web-enabled -- this one product you are installing creates these, as needed, as clients connect to different instruments.

Wjview: a Windows program that provides an environment in which a Java program can run (such as our [Instrument Server](#)). When you click "Start Server" in the Agilent Web Remote | SA program group, you are starting a program that runs within the wjview environment and listens for clients requesting connections to an Instrument Server through port 1099. When the first client requests to connect to an instrument, this Server starts a new Instrument Server that is dedicated to web-enabling that instrument until all clients finish using that instrument and disconnect

Installation Preparations

There are some tasks you should perform before installing the server software components from Agilent Technologies on your server PC. While most of these components can be installed in any order, many build on others so following the order listed here will help you check for proper installation as you go along.

Server PC Minimum Requirements

The server PC supported by Agilent Technologies for this product is a personal computer that *must* meet the following requirements:

- is a desktop or laptop computer running Windows 2000 (Service Pack 4) or Windows XP (Service Pack 2), or
- has a 180 MHz Pentium II CPU or better.
- has a working connection to a Local Area Network (LAN), with TCP/IP installed and configured such that it can “ping” all required clients (check with your system administrator if you are unsure if this requirement is met).
- has a working GPIB card, **or** is a desktop PC with at least one free PCI expansion slot that is capable of containing a PCI GPIB card (see supported PCI GPIB cards below under [I/O hardware](#)), **or** is a laptop computer with at least one free PCMCIA slot that is capable of containing a PCMCIA GPIB card (see supported PCMCIA GPIB cards below under [I/O hardware](#)), **unless** you plan to connect your instrument to your PC by using an Agilent E5810A LAN/GPIB portal or the instrument’s LAN port if it is a PSA.
- has at least 128 MB of RAM or more, and at least 100 MB of free disk space
- has at least a 15” monitor capable of greater than 256 colors, and display resolution of at least 1024 x 768 pixels.

Server Software Installation and Setup

In this section, you will find the steps to successfully install all the components necessary to get your product installed and running on your server.

1. Site your spectrum analyzer and establish its GPIB address. Refer to the section [Instrument Siting](#) for more information.
2. Install and configure a GPIB connection between your server PC and the spectrum analyzer. Refer to [I/O Hardware](#) for more information.
3. Install and configure the software drivers for the GPIB interface card used in the previous step. Refer to [I/O Software](#) for more information.
4. Install and configure a web server. Apache for Windows has been provided with your installation CD for your convenience. Refer to [Web Server](#) for more information.
5. Verify or install the Java Virtual Machine application to create the environment for running the Web Remote Control SA software. Refer to [Java Virtual Machine](#) for more information.
6. Install and configure the Web Remote Control Spectrum Analyzer software. Refer to [Instrument Server](#) for more information.

Instrument Siting

Procure your spectrum analyzer that you intend to use with this product. Note that if you are using a PSA spectrum analyzer, only firmware versions A.02.01 and higher are supported. If you have an older version of firmware, you can install and run the Web Remote Software, but this is unsupported and you may encounter problems in the operation of the PSA through the Web Remote Software. If you do go ahead with the installation with an unsupported firmware version, it is recommended that you upgrade the firmware on your PSA to A.02.01 or higher as soon as possible.

If you are using a direct GPIB connection, the spectrum analyzer must be located within 4 meters of your server PC. Connect a GPIB cable to the GPIB interface on the spectrum analyzer, making sure to tighten the screws snugly so that you have a good connection.

If you are using an Agilent E5810A LAN/GPIB portal, the spectrum analyzer must be located within 4 meters of this portal, and the portal must be connected to a Local Area Network (LAN) through which the server PC can connect to it. Connect a GPIB cable to the GPIB interface on the spectrum analyzer, making sure to tighten the screws snugly so that you have a good connection.

If your spectrum analyzer is a PSA and you are using the instrument's LAN port, the instrument must be connected to a Local Area Network (LAN) through which the server PC can connect to it.

Power up your spectrum analyzer. If you do not already know what GPIB address this instrument has (spectrum analyzers are “18” by default), you may check this by pressing:

- For an ESA, the **System** then **Remote Port** buttons on the front panel of the spectrum analyzer
- For a PSA, the **System** then **Config I/O** and buttons on the front panel of the spectrum analyzer and looking at the **GPIB Address** setting

and make a note of the GPIB address on the instrument’s screen.

If you don’t have a signal source of interest handy, you may want to connect some signal source to the input connector of the spectrum analyzer, so that you will have something to look at when you get this all running. One simple source might be a “rabbit ears” TV/FM antenna.

I/O Hardware

Unless you are using the LAN port on a PSA, this product requires a GPIB connection to the spectrum analyzer, whether provided by a direct GPIB connection (through a GPIB cable from the server PC to the spectrum analyzer) or provided by a LAN-GPIB connection (through an Agilent E5810A portal). If you are using the LAN port on a PSA, you may skip this section.

If you need to physically locate your spectrum analyzer at some distance (greater than 4 meters, the longest supported Agilent GPIB cable), you will need to use an Agilent E5810A portal. Note that your system performance is likely to be less than with a direct connection. Follow the installation and operation instructions that come with your E5810A portal to connect the server PC to the spectrum analyzer.

To connect a desktop PC via a direct GPIB connection, you may use either the Agilent 82350A PCI GPIB Interface card, or a National Instruments PCI-GPIB Interface card. Note that “Control Panel” and/or National Instruments’ “GPIB Explorer” will likely label the card as “PCI-GPIB+”.

To connect a laptop PC via a direct GPIB connection, you may use either the ComputerBoards PCM-GPIB PCMCIA interface card, or National Instruments’ PCMCIA-GPIB for Windows 2000 interface card.

Follow the installation and operation instructions that come with your interface card, and connect the card using a GPIB cable to the spectrum analyzer.

I/O Software

This section should provide you with all the information necessary to install and configure the I/O software you will need to communicate with your SA. If the information provided in this section is not enough, or if you want to know more about configuring I/O software for connectivity, more complete information can be found in the “Configuring IO” document found on the installation CD in the Help folder. This document may also be of use if you are planning on configuring instruments to use with the arbitrary instrument control feature of the Web Remote software. To open the CD, right click on the CD drive containing the installation CD and select “open” from the context menu.

Depending on whether you have installed I/O hardware from Agilent or some other vendor, or are using the PSA LAN Port, choose the appropriate next step.

- If you have installed an Agilent GPIB interface card or are using an E5810A portal, you should now have a blue (or multi-colored) “IO” icon in the system tray (located in the lower-right corner of your screen, near the clock display) signifying that you have installed the Agilent I/O Libraries. If you do not have

the Agilent I/O libraries installed, you may download and install them from http://www.agilent.com/find/iolib_support. Alternately, you can install the Agilent I/O Libraries from the installation CD in the Files/IO Libs folder. To open the CD, right click on the CD drive containing the installation CD and select “open” from the context menu.

When you have successfully installed the IO Libraries, and you see that you have the “IO” icon, right click it and select “About Agilent IO Libraries Control” and verify that the version is J.00.00 or newer (or 14.07202.1 or higher). Click “OK” to close the version dialog, then right click the “IO” again and select “Run Visa Assistant” or “Agilent Connection Expert” to test your connection to your spectrum analyzer.

If using Visa Assistant, after searching for all connected instruments, Visa Assistant will show you which instruments are connected to GPIB0, GPIB1, and so on. The “::18” (or some other numbers preceded by “::”) part refers to the GPIB address of the instrument on that GPIB interface.

Click on the instrument you want to test, and then click the Formatted I/O tab and then the IEEE 488.2 radio button in that tab. You may enter any query you wish into the “Enter String to Print or Query” box, and execute that query by clicking “viQueryf”. In this case, simply click on the *IDN? button to query the instrument’s ID string. When it returns with a string that resembles the instrument you expect, you can be assured that you have configured your instrument to be properly connected to a GPIB handle.

Note: if you are using an E5810A portal and are unsure how to configure it, follow the directions in the next section for configuring a connection to a PSA LAN port, except enter “gpib0” for the Remote SICL Interface Name instead of “gpib7”.

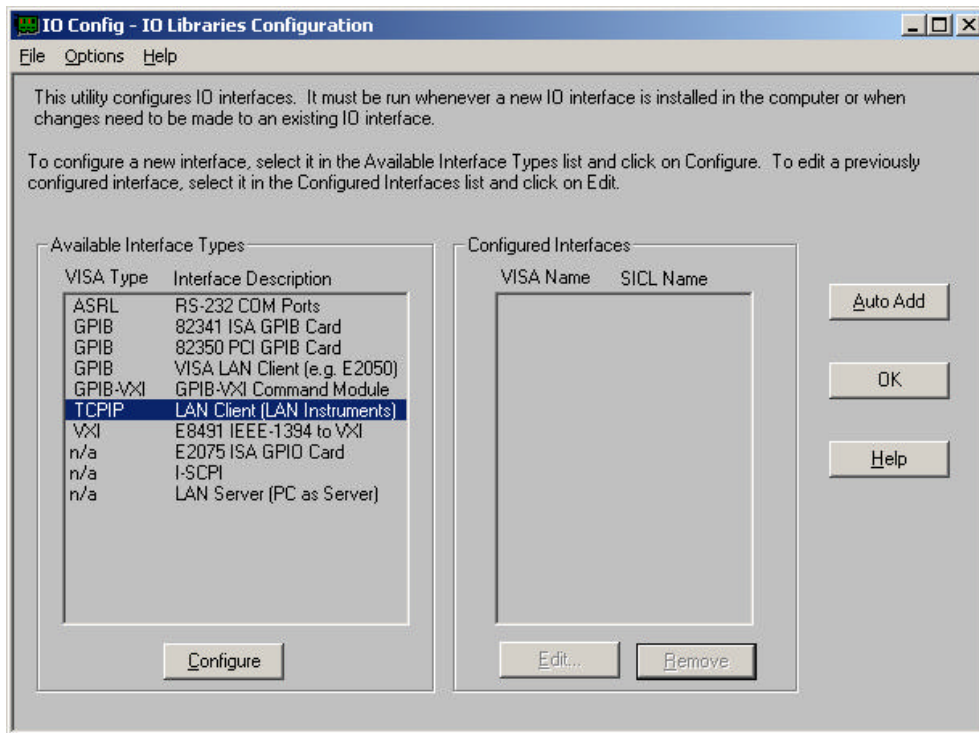
- If you are using the LAN port on a PSA, you will need to install the Agilent IO libraries to connect to your instrument. You may download and install them from http://www.agilent.com/find/iolib_support, or simply install the Agilent I/O Libraries from the installation CD in the Files/IO Libs folder. To open the CD right click on the CD drive containing the installation CD and select “open” from the context menu. Once the IO Libraries are successfully installed, you should have an “IO” icon in the system tray (located in the lower-right corner of your screen, near the clock display).

The first step to getting connected to your PSA via the LAN port is to set the correct network parameters for the PSA. This is done from the front panel by pressing the “System” button and then selecting the “Config I/O” softkey. This will activate a menu that allows you to enter the networking parameters for the PSA, namely the IP address, Host Name, and Subnet Mask. You will probably need to contact your IT department to have an IP address and host name assigned

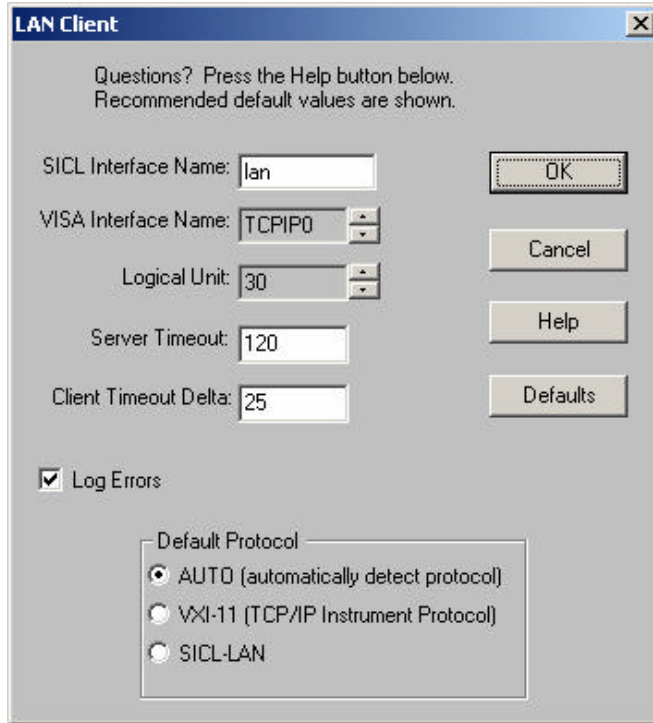
to the PSA, since the PSA does not have DHCP capabilities, and to verify the correct subnet mask. Alternately, if there is no network available, or if you want to connect the PSA directly to a laptop (or desktop) via the LAN port, follow the cross-over cable procedure explained in the “Cross-Over Cable Setup” document in the Help folder on the Installation CD. To open the CD, right click on the CD drive containing the installation CD and select “open” from the context menu.

Before attempting to connect to the PSA with the IO Library software, ensure that it is properly set up on the network by verifying that the Server PC can successfully ping the PSA.

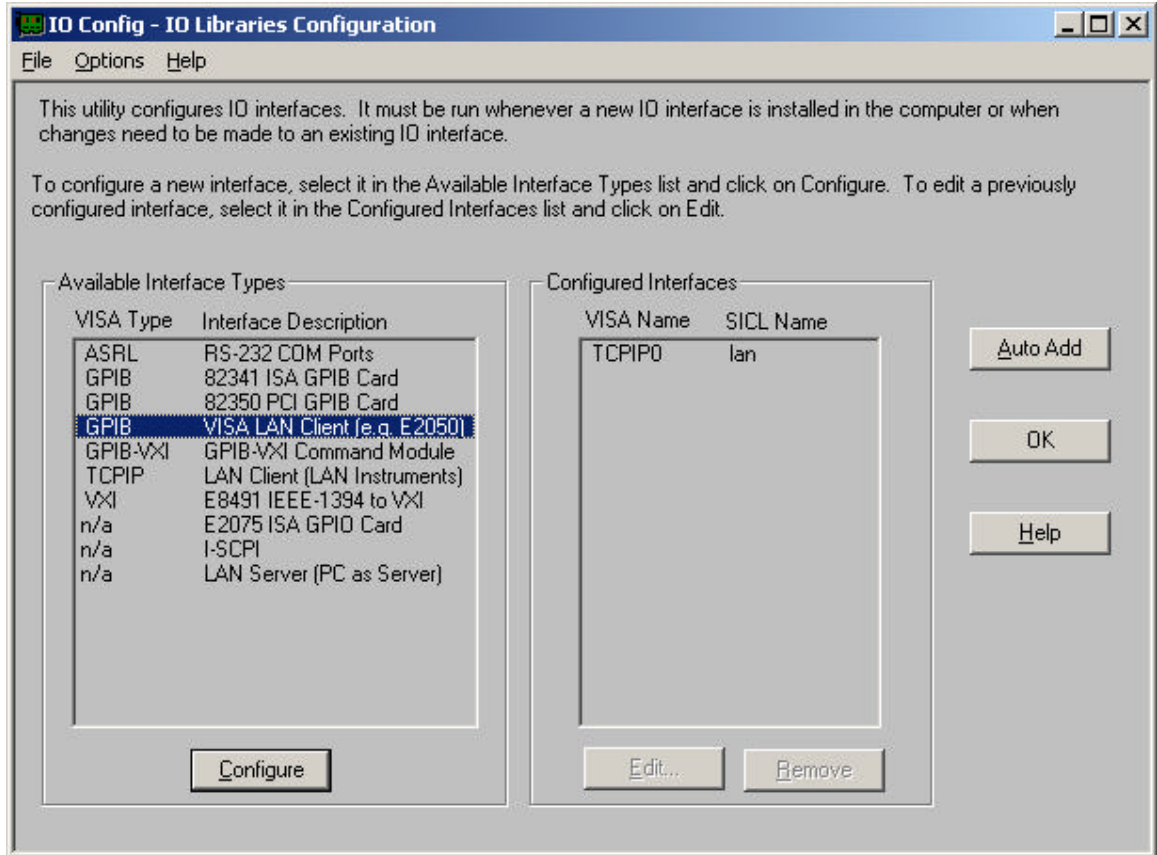
Once the PSA is successfully set up on the network, it is time to configure the IO libraries so that the instrument server will be able to communicate with the PSA. If you are using a version of the Agilent IO Libraries older than Suite 14, right click on the IO icon in the system tray and select “Run IO Config” from the context menu. From the list on the right, select the “LAN Client (LAN Instruments)” and click the “Configure” button:



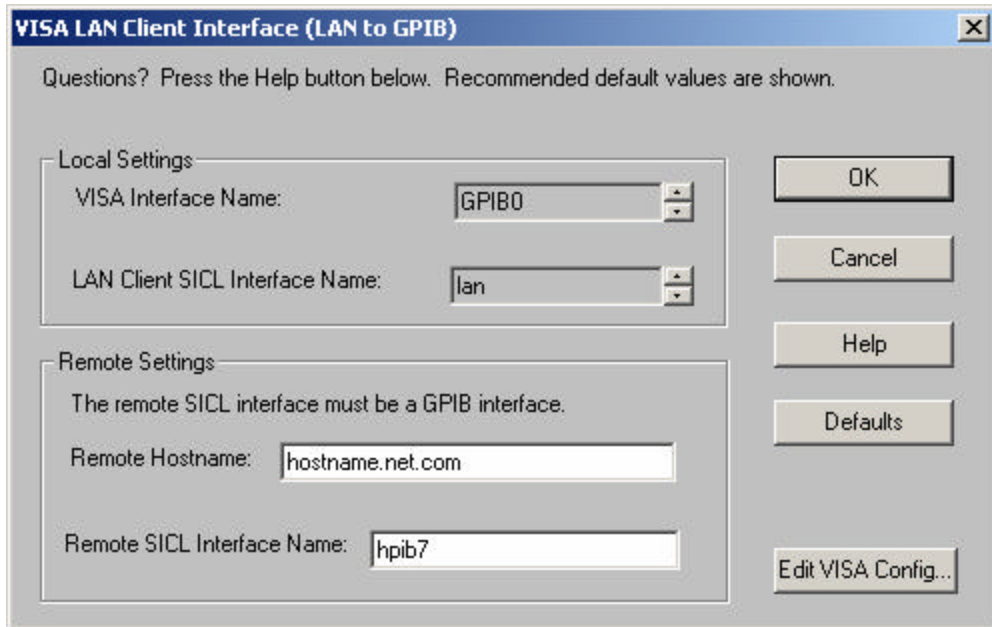
The following dialog should appear:



The default values are sufficient, so simply click the OK button. Now select “VISA LAN Client (e.g. E2050)” as shown. (Note: the E2050 is just an example of this type on I/O configuration. You do **not** need an E2050 GPIB to LAN gateway when using the PSA LAN port. Also note, depending on the version of the IO Libraries, E5810 may appear instead of E2050.)

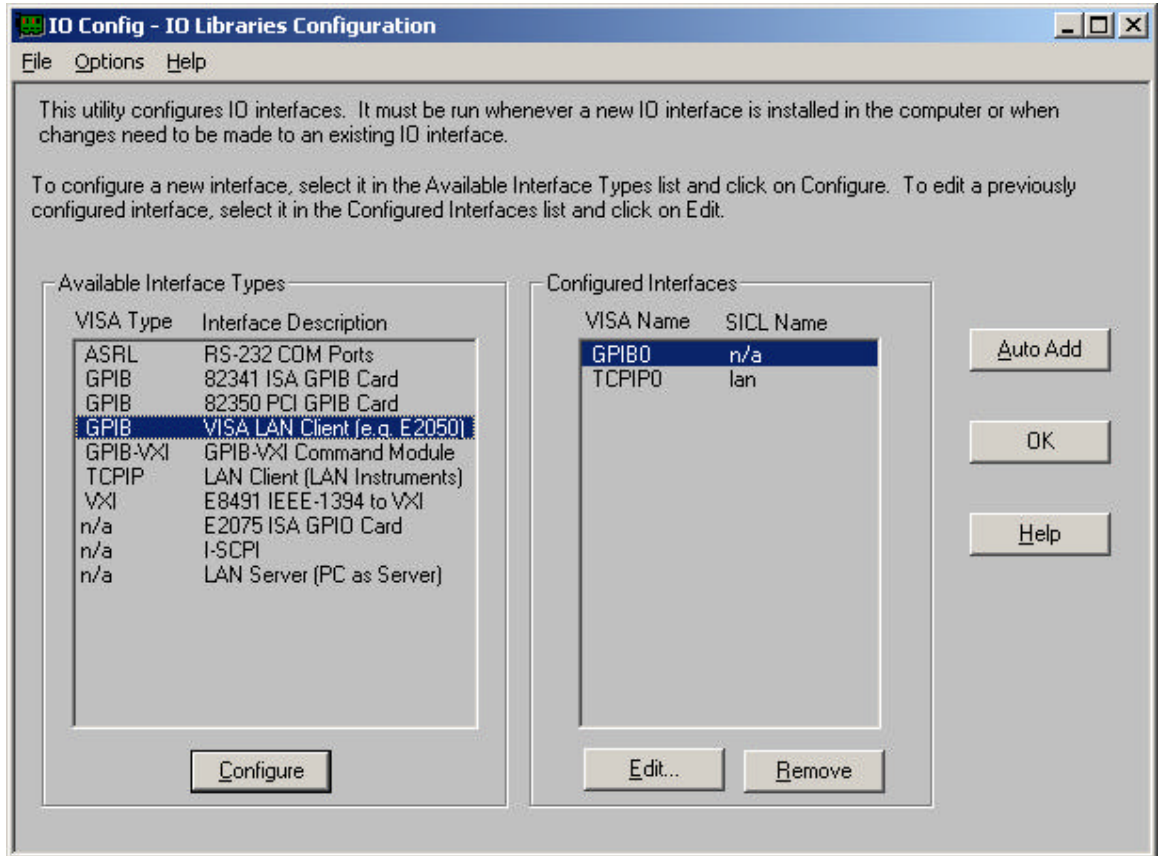


Click the Configure button, and the following dialog should appear:



You will need to make changes to the settings in this dialog. In the Remote Hostname field enter the IP address of the PSA. In the Remote SICL Interface

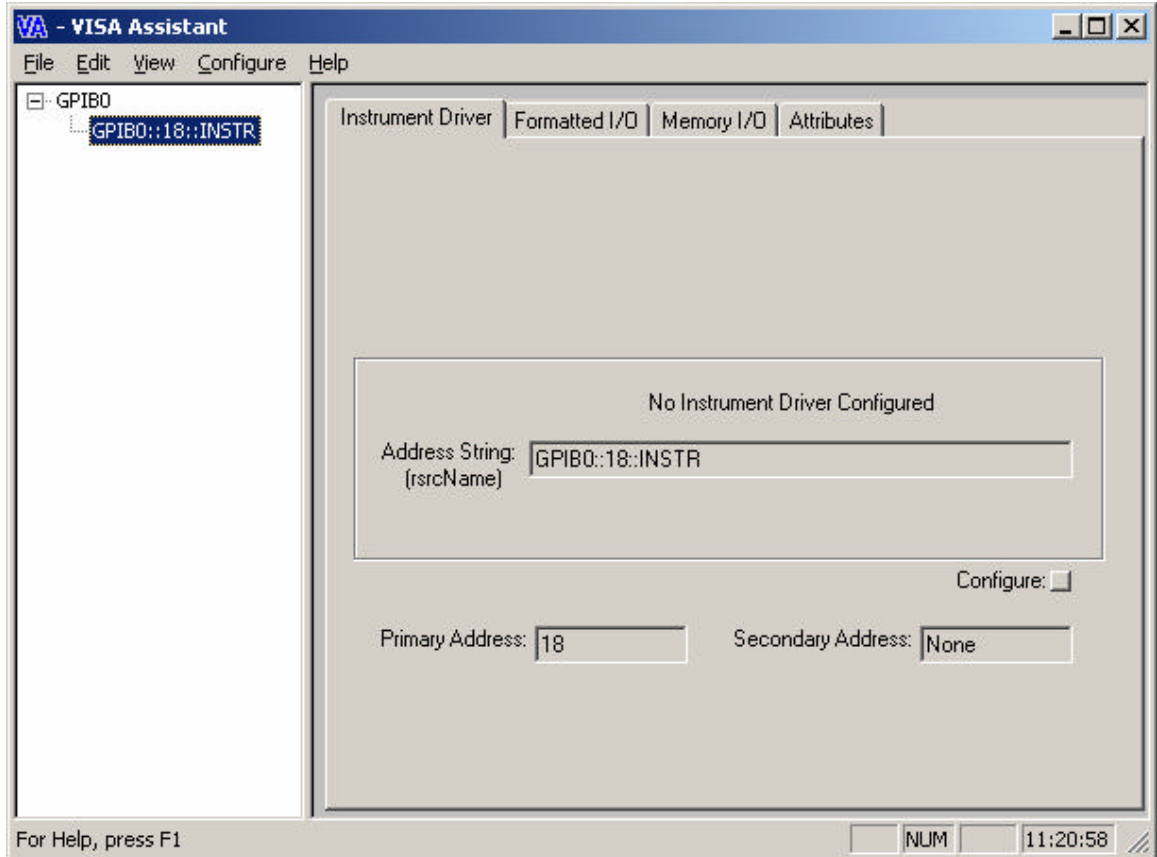
Name field, you must change the default value of “hpib7” to “gpib7”. You may change the VISA interface name if desired. After making these changes, click OK. The main window should now look like this:



Now click OK to close IO Config.

To verify that you have properly configured you PSA, right click the “IO” again and select “Run Visa Assistant”.

After searching for all connected instruments, Visa Assistant will show a list of all the instruments configured and connected to the server PC. These instruments will be specified by a GPIB interface (GPIB0, GPIB1, and so on) and the GPIB address (some numbers preceded by “::”) of the instrument on that GPIB interface. 18 is the default GPIB address for a spectrum analyzer.



Click on the entry for the PSA in the list, and then click the Formatted I/O tab. Next, click the IEEE 488.2 radio button that should now be in the lower right. Several buttons should appear just above the radio buttons. Click the *IDN? button and view the response. The identification string for the PSA should have been returned. If you have completed all of these steps successfully, then you have successfully configured your server PC to communicate with your PSA, and will now be able to properly run the Web Remote Instrument Server.

If using Suite 14 IO Libraries, the Agilent Connection Expert should be used instead of the steps listed above.

- If you have installed an NI GPIB card in your desktop server PC, or a ComputerBoards GPIB PCM card in your laptop, use the software that was installed with that GPIB card to verify that you have a connection to your desired instrument.

Web Server

You must have a running web server to run this product. You must install a web server BEFORE you install your server software from Agilent Technologies.

The web servers that are supported are:

- Apache for Windows. This free web server is preferred because it has no (known) limits on the number of simultaneous client connections that it will allow. You can download it from the Apache web site at: <http://httpd.apache.org/>, or install the version provided on the installation CD in the Files/Apache folder. To open the CD right click on the CD drive containing the installation CD and select “open” from the context menu. Once it is installed, click “Install Apache” then “Install service” in the Apache Web Server program group.
- Microsoft’s Internet Information Services (IIS) on Windows 2000 or XP. This may limit the number of clients to about 4 or 5 (it’s not necessarily always the same).

To ensure that it is installed on Windows 2000, click “Add/Remove Programs” in the Control Panel, select the Windows Setup tab, scroll down to Internet Information Services, and verify that the checkbox next to this item has a check mark in it. If it is blank, click it then click Next to begin the installation process.

For Windows XP, look on the “Add/Remove Windows Components” area in the “Add/Remove programs” application found in the control panel. “Internet Information Services (IIS)” should be selected in the list. If it is not, check the box to begin the installation.

IIS can be controlled with the application found on the Windows Start Menu under Programs | Administrative Tools.

Test your web server by starting a browser and go to the URL “http://<your fully qualified server computer’s network name or IP address>”. For example, if your computer is named “myserver.mycompany.com”, go to “http://myserver.mycompany.com”. You should see some default web page from your web server; if you get error 404 or any other indication that the page is not found, make sure that the web server is running and started as a service by looking at “Services” under “Control Panel” | “Administrative Tools”. If it is not “Started”, right-click the item (Apache or IIS Admin Service), click “Properties”, and set “Startup type” to “Automatic”. Reboot and retest to make sure your web server is running. Since it is now configured as a service that automatically starts up, it should always be running even after a reboot.

Java Virtual Machine

To run the Web Remote Control software, you must have a working version of the Microsoft Java Virtual Machine (JVM). Windows 2000 comes with the JVM, so if you are using Windows 2000, the JVM came installed on your PC when you purchased it and you can skip the rest of this section. However, if you are using Windows XP you must verify that the JVM is properly installed. To do this, search your hard drive for the file “wjview.exe” (it is usually in the “c:\windows\system32” folder). If this file is not present on your hard drive, then you must install the JVM. If you do find the file “wjview.exe”, you must make sure it meets the version number requirement. To do this, right click on the file, and select “Properties” from the context menu. Click on the “Version” tab and look at the number to the right of “File Version:”. This number should be 5.0.3229.0 or higher. If the version number is not high enough, you should upgrade the JVM to a more recent version.

The JVM can be installed from the installation CD in the Files/MS JVM folder. To open the CD right click on the CD drive containing the installation CD and select “open” from the context menu.

Instrument Server

Run “setup.exe” from your product CD, or run the self-extracting installation package from the Agilent download site. Follow the instructions to install the product. If you have any deficits in previously installed software that the instrument server depends upon, the installation will stop and notify you what component(s) you need. You may choose a location in which to install the program files (or accept the default). The installation needs to know the path to the directory on your system under which any web files (html files, images, etc.) will be shared. This is referred to as your “web root” directory. If IIS is found on your system, this web root location will be defaulted to “C:\inetpub\wwwroot”. If Apache is found to be your web server, this web root location will be defaulted to “C:\Program Files\Apache Group\Apache2\htdocs”. You should NOT change this unless you need to configure an additional “virtual” or served directory in your web server.

After the instrument server is successfully installed, and a new program group is created from which you can start it, the configuration utility runs. This utility allows you to configure an instrument to be web-enabled, as the next section describes.

Configuring an Instrument

This section describes the use of the “Configure” tool for the Web Remote Control spectrum analyzer. This tool is used to create the special web pages that will provide clients with the applet that allows them to connect to the web-enabling instrument server for remote access and control. This tool is run automatically at the end of the installation

of Web Remote Control SA, and can also be run from the Web Remote Control program group on the start menu to update the web files or configure additional instruments.

Before you run the configuration tool, you should make sure that the instrument you want to configure is properly connected to the server computer.

When the configure tool runs, you will see an interface looking like this:

The screenshot shows a Windows-style dialog box titled "Configure". It has four text input fields and two buttons. The first field, labeled "Path to Web Server root directory:", contains the text "c:\inetpub\wwwroot". To its right is a second field labeled "Subdirectory (optional):" which is currently empty. Below these is a field labeled "Bookmark Title:" containing the text "Welcome to Agilent Technologies Web Remote Control Site". The final field is labeled "Instrument Address:" and contains "GPIB0:18". At the bottom of the dialog are two buttons: "Continue" and "Cancel".

The values entered in the various text fields on this interface will affect the web pages generated by the configure tool. If at any time you decide not to configure web pages, you can close this tool without making any changes by pressing the “Cancel” button or the “X” in the upper right-hand corner. Pressing “Continue” will cause the web pages to be generated, so it is important to verify that the values in the various fields on the interface are correct before pressing that button.

“Path to Web Server root directory:”

During the installation process the location of the web server root directory was entered. The path shown here will match the one entered in the installation.

“Subdirectory (optional):”

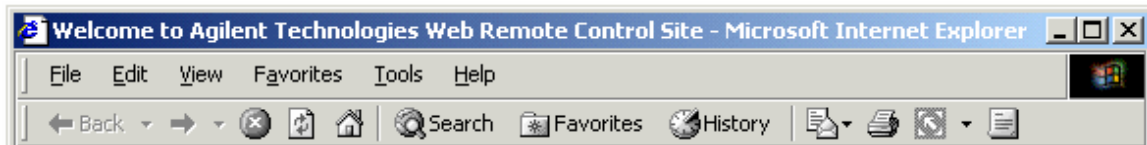
You have the option of installing the web pages directly into your web server’s root directory, or into a subdirectory under the web server root. Leaving this field blank will cause the web pages to be placed directly into your web server’s root directory. This is probably what you want if you plan on serving only one instrument. If, however, you need to configure multiple instruments, the web pages for each instrument will have to be placed in separate directories. If you are configuring multiple instruments, you can configure one instrument for the web server root, and other instruments for subdirectories. The string entered in this field will be both the name of the subdirectory

under your web server root directory that the web files are stored in, and part of the address a client will have to use to access your Web Remote Control instrument.

For example, suppose your web root is “c:\inetpub\wwwroot” (the default for Microsoft’s IIS and PWS web servers), and that the Internet address that maps to your web server is “www.yourmachinename.com”. Also, assume that you have configured your web server to automatically load “index.html” (this is recommended). If you configure the web pages directly into the web server root by leaving the subdirectory field empty, the web pages will be created in the “c:\inetpub\wwwroot” directory, and a client will only need to enter “www.yourmachinename.com” into their web browser to access the Web Remote Control welcome page. If, however, you enter “ESA” into the subdirectory field, the web pages will be created in “c:\inetpub\wwwroot\ESA” and a client will need to enter “www.yourmachinename.com/ESA” to access the welcome page.

“Bookmark Title:”

The value entered into this field will appear in the title bar of a web browser navigating to your Web Remote Control site.

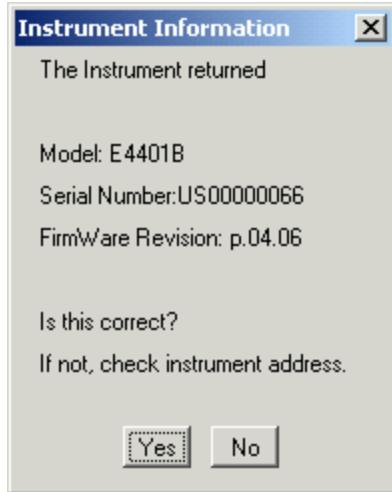


This title will also be the default name provided if a client creates a bookmark to your Web Remote Control site in their web browser. It is highly recommended that you change this title from its default to something more specific to your Web Remote Control site. This will allow users who wish to bookmark multiple Web Remote Control sites to do so without having to change the default bookmark title provided by their web browser for each Web Remote Control site they bookmark.

“Instrument Address:”

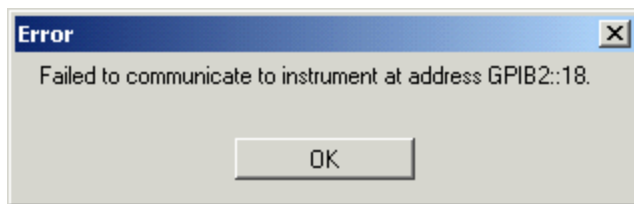
This field specifies the address of the instrument you are configuring web pages for. The configure tool will use this address to verify the existence of the instrument and query it for various values that will be displayed on the resulting web pages. This is the reason that you must have the instrument connected and ready before running the configure tool.

After you have verified the correctness of the values in the fields and are ready to configure the web pages, press the “Continue” button. If the configure tool is able to connect to an instrument at the specified address, you will see a dialog looking like this:



If the information presented is correct, then you should press “Yes”, and the web pages will be created. If the information is incorrect, then it is likely that you have specified the wrong address, or the wrong instrument is connected to the address you specified. In either case, you can click “No”, and the web pages will not be created. You can then fix whatever problems you need to and try again.

If you instead see something like the following dialog:



then the configure tool was unable to communicate with an instrument at the address specified. You should make sure that you have specified the correct address and that the instrument is connected and powered on at that address.

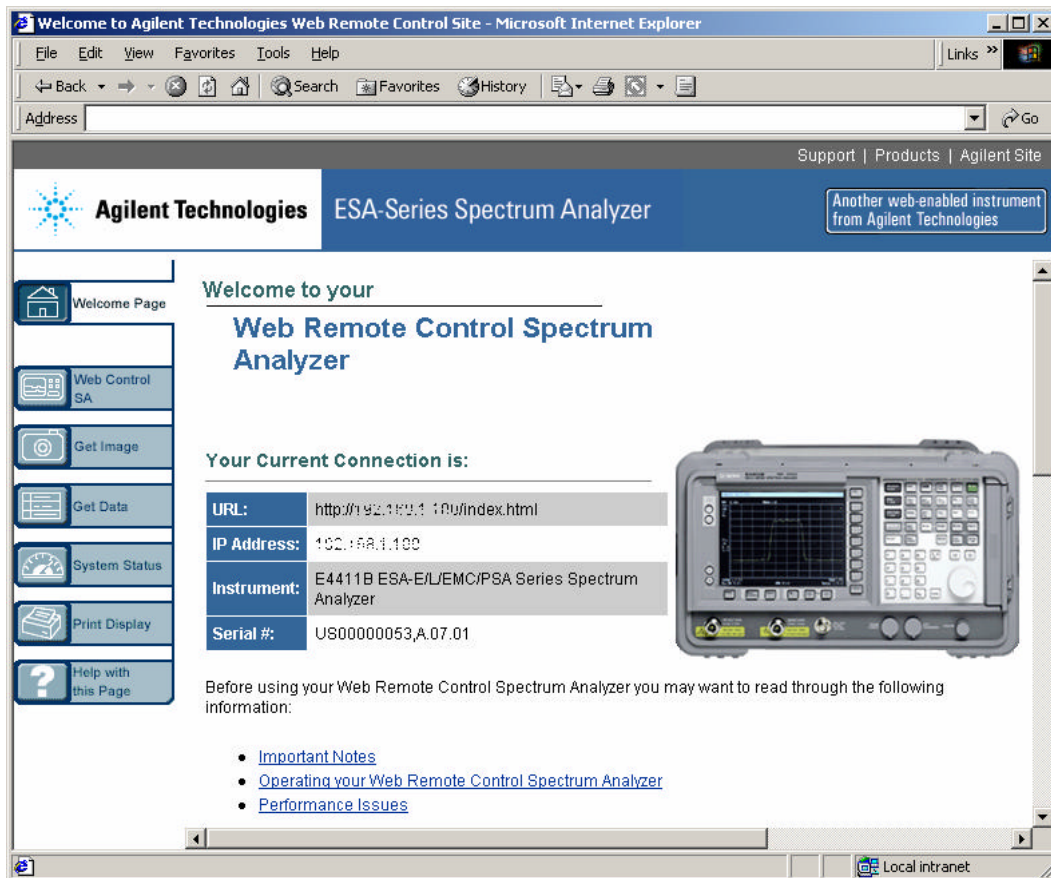
The only way to remove web pages created by the configure tool is to uninstall all the Web Remote Control software. However, it is possible to reconfigure the web pages in a given directory if you have made changes, such as connecting a different instrument, or changing the address of your instrument. To do this, simply follow the same steps as above. You will receive a warning that the SA web pages have already been installed in the specified directory. At that point click “OK” to update the web pages, or click “Cancel” if you do not want to update the web pages.

Test Using the Applet

Run a browser on your server PC. Enter <http://<server PC name>/<instrument webpage directory>/index.html> into the Address line (on Internet Explorer) or Location line (on Netscape Navigator), where <server PC name> is the name or IP address of your server PC, as configured by your network administrator, and where [<instrument web page directory>] is the name of the [subdirectory](#) you chose in the Instrument server installation step above (if any – just leave out everything between “[” and “]” in the above example if you chose the default of no subdirectory). For example, if your server PC’s network name is “mycomputer.mycompany.com” and you have no subdirectory for the instrument’s web page, enter: “http://mycomputer.mycompany.com/index.html”. If you specified a subdirectory for the instrument’s web pages (such as, “mySA”), enter: “http://mycomputer.mycompany.com/mySA/index.html”.

Note: if you are using an Apache web server, or configured your PWS/IIS web server to use “index.html” as the default web page (as described in the previous [Web server](#) installation section), you may leave off the “/index.html” from the end of the address or location.

The browser should return a web page much like this:

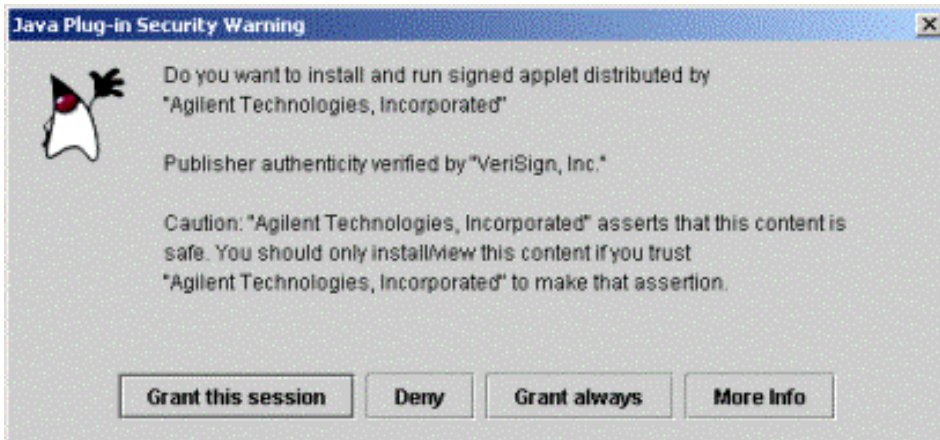


Click on the “Web Control SA” button. If you are running Internet Explorer, after a brief period while the browser starts to load the applet, another “Security Warning” window should appear that looks much like this:



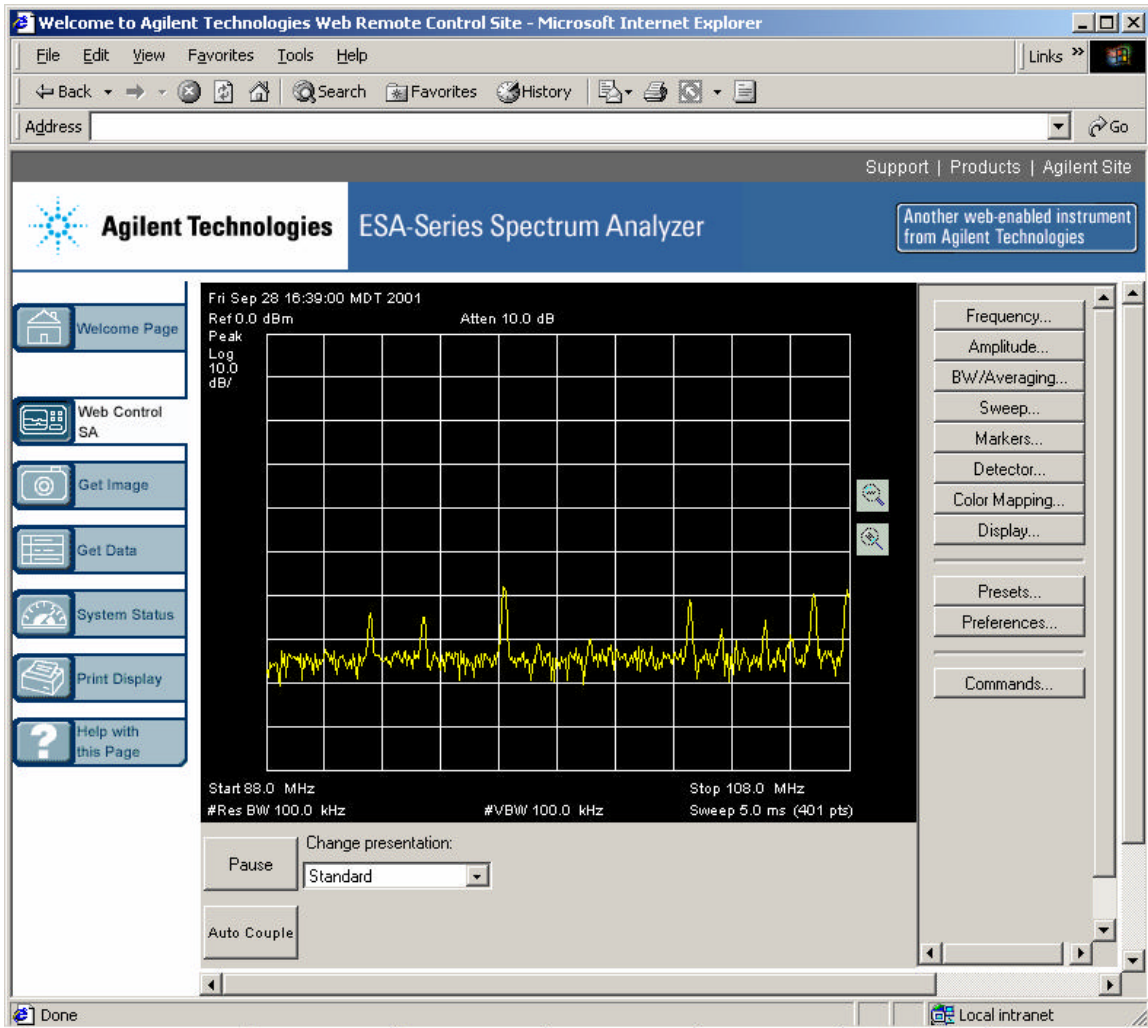
Click the checkbox next to “Always trust content from Agilent Technologies, Incorporated” (recommended), then “Yes” if you trust that the applet supplied by Agilent Technologies is safe to run (you must accept this certificate to run the applet).

You are likely not to get such a security dialog on Netscape Navigator, but if you do, it should look something like this:



Click “Grant always” (recommended) or “Grant this session” if you trust that the applet supplied by Agilent Technologies is safe (you must accept this certificate to run the applet).

After a somewhat longer period of loading the applet, you should see a display similar to the following picture, which strongly resembles the display on the screen of a spectrum analyzer.



Congratulations! You have successfully installed your Web Remote Control spectrum analyzer product!

Client Setup

Client PC Minimum Requirements

The client PC supported by Agilent Technologies for this product is a personal computer that *must* meet the following requirements:

- is a desktop or laptop computer running Windows 95/98/Me/2000/NT 4.0/XP or better.
- has a Pentium CPU or better.
- has a working connection to a Local Area Network (LAN), with TCP/IP installed and configured such that it can “ping” all required servers (check with your system administrator if you are unsure if this requirement is met). Note that neither “ping” nor a browser can connect to a server that is inside an organization’s “firewall” if that client PC is not also inside the same “firewall”.
- has at least a 15” monitor capable of greater than 256 colors, and display resolution of at least 1024 x 768 pixels.
- has either Internet Explorer 4.0 with Service Pack 2 (or better) or Netscape Navigator 4.5 (or better) installed and working.
- A Microsoft Java Virtual Machine installed (Internet Explorer), or the Sun Java Plug-in (Internet Explorer, or Netscape 6.0 or higher).

Agilent Technologies has qualified how well the applet runs on non-PC computers, such as HP-UX, Solaris, Linux, or Macintosh. While Agilent Technologies CANNOT provide technical support for problems you may have running the applet on these computers, you may find that the applet runs acceptably well in Netscape Navigator or Internet Explorer on these computers.

Follow the steps shown in the “[Test Using the Applet](#)” section to connect your client(s) to the Web Remote Control spectrum analyzer server.

Using the Server as a Client

As you may have noticed, a browser running on your server PC can use the server in the same way as any remote client. This may be useful to troubleshoot your system, or to simply operate your Web Remote Control spectrum analyzer while you collaborate with another client who is connecting remotely. For optimum performance, do not leave the local browser running as a client of your Web Remote Control spectrum analyzer unless you are using it, as it consumes CPU bandwidth and other system resources on your server PC and could slow down your instrument server a modest amount.

Maintenance

You should have no difficulty running your server software if you choose to upgrade your server PC from Windows 2000 to Windows XP, or install newer service packs. However, Agilent Technologies has not been able to test configurations with service packs newer than were available when this product was released (Service Pack 4 for Windows 2000 and Service Pack 2 for Windows XP), so your ability to run this software on newer configurations is not guaranteed. When you upgrade from one Windows version to the next, you should first uninstall the server software then reinstall it after you have the new Windows version installed and have met the [minimum server PC requirements](#).

Upgrades

In the future, Agilent Technologies may release a newer version of this product. It is recommended that you uninstall this version of the software from your server PC before you install the newer version. Follow the installation instructions for the new release carefully.

Uninstallation

Before uninstalling this product make sure that you are not running the server, and that there are no clients connected to the applet or web pages. To uninstall this product from your server PC, run the “Uninstall” program from the “Agilent Web Remote” | “SA” program group (this is the same program group where you find “Start Server”). No uninstallation is necessary or available for the clients.