Keysight 89600 Software

Software
Installation
Guide

KEYSIGHT
TECHNOLOGIES

Notices

© Keysight Technologies, Inc. 2000-2014

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Keysight Technologies, Inc. as governed by United States and international copyright laws.

Manual Part Number

89600-90241

Edition

August 2014

Printed in USA

Keysight Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95052 USA

Warranty

The material contained in this document is provided "as is," and is subject to being changed, without notice, in future editions. Further, to the maximum extent permitted by applicable law, Keysight disclaims all warranties, either expressed or implied, with regard to this manual and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Keysight shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein. Should Keysight and the user have a separate written agreement with warranty terms covering the material in this document that conflict with these terms, the warranty terms in the separate agreement shall control.

Technology Licenses

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

Restricted Rights Legend

If software is for use in the performance of a U.S. Government prime contract or subcontract, Software is delivered and licensed as "Commercial computer software" as defined in DFAR 252.227-7014 (June 1995), or as a "commercial item" as defined in FAR 2.101(a) or as "Restricted computer software" as defined in FAR 52.227-19 (June 1987) or any equivalent agency regulation or contract clause. Use, duplication or disclosure of Software is subject to Keysight Technologies' standard commercial license terms, and non-DOD Departments and Agencies of the U.S. Government will receive no greater than Restricted Rights as defined in FAR 52.227-19(c)(1-2) (June 1987). U.S. Government users will receive no greater than Limited Rights as defined in FAR 52.227-14 (June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Additional documentation

In addition to this *Installation Guide* (InstallationGuide.pdf), which is available on the installation DVD in the `manuals` folder, during installation by clicking More Installation Choices > View Installation Guide, or after you install the software in `C:\Program Files\Agilent\89600 Software xx.y\89600 VSA Software\Help` (where *xx.y* is the VSA version number), the following documentation is included with your software:

- A printed *89600 Quick Start Guide* is shipped with the installation DVD. It documents how to install the Keysight 89600 software and a transportable license.
- 89600 VSA Online Help is available after you install the software on your computer. The help includes reference information and tutorials on making several kinds of measurements.
- The complete documentation (PDF files) for the Keysight IO libraries is located in `C:\Program Files (x86)\Agilent\IO Libraries Suite\Manuals` (if you install the IO libraries).
- Specifications are available from the *Document Library* section of the 89600 VSA web page: http://www.keysight.com/find/89600

NOTE   To read the PDF files, you must have Acrobat Reader installed on your computer. To install the latest Acrobat Reader, go to: http://get.adobe.com/reader/

Table of Contents

1 Getting Started

Introduction

The Keysight 89600 Software Installation Guide provides all necessary instructions to install the Keysight 89600 software, to license the software, and to configure the host PC's measurement hardware I/O Interfaces.

The Keysight 89600 software includes two applications: the Keysight 89600 VSA *Vector Signal Analysis* software and the Keysight 89600 WLA *Wireless Link Analysis* software. The software installation wizard guides you though the installation process for both applications. During the Keysight 89600 software installation, you have the option to include or exclude the 89600 VSA and WLA software installation.

Keysight 89600 Software Operating Configurations

The Host PC is the computer that will run the Keysight 89600 software. There are two 89600 software operating configurations: Remote PC Operation and Embedded PC Operation (also referred to as Embedded Instrument Operation). In a Remote PC Operation, the software runs on a standalone host PC linked to the measurement hardware via the I/O interface, such as LAN, GPIB, USB, and IEEE 1394. In an Embedded PC Operation, the 89600 software runs on a PC embedded in the measurement hardware platform such as the Keysight X-Series Analyzer, Keysight Infiniium Scope, and Keysight Logic Analyzer.

KEYSIGHT
TECHNOLOGIES
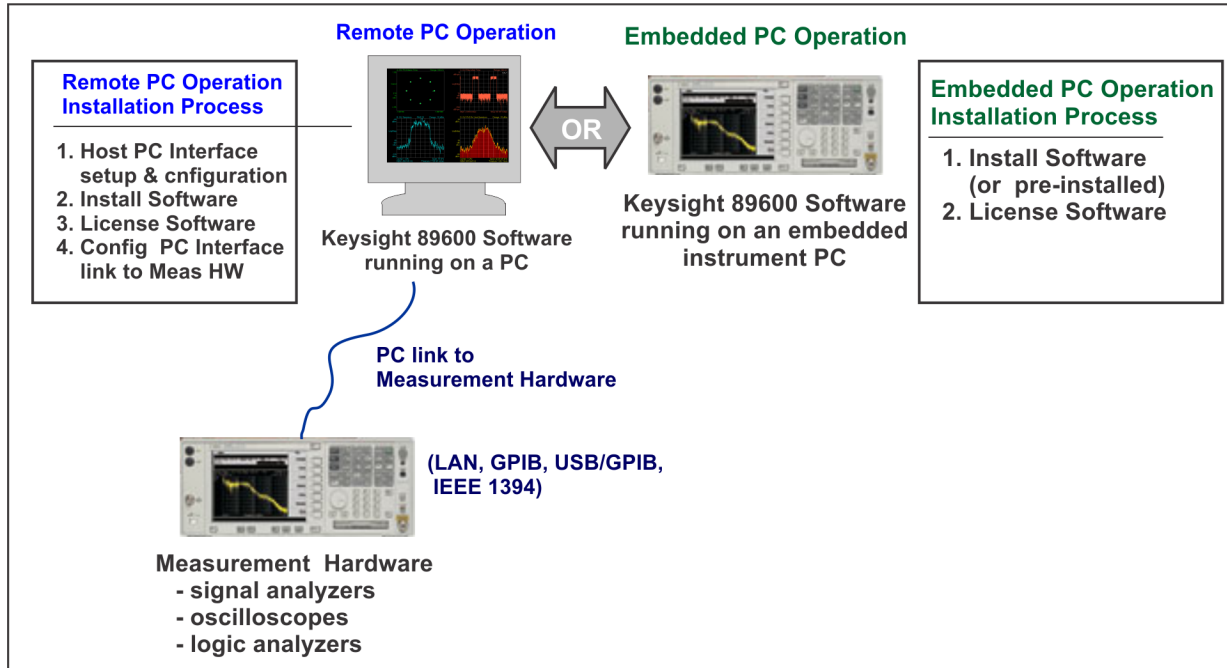
Keysight 89600 Software Installation Process: The Keysight 89600 Software includes the Keysight 89600 VSA software and Keysight 89600 WLA software.

Installation and Configuration Process

The Keysight 89600 software installation process includes the following primary steps:

1. **Setup and configure the remote PC.**

   Make sure that the host PC satisfies the 89600 software minimum PC system requirements and that the PC includes one of the supported I/O interfaces (LAN, GPIB, etc.).

   > **NOTE**   This step is not required for Embedded PC Operation installations.

   Go to Chapter 2 See "Remote PC Setup and Configuration" to setup and configure the host PC hardware including:

   a. Verify that the host PC meets the minimum hardware and software requirements.

   b. Verify that the host PC supports one of the 89600 software I/O interfaces for your measurement hardware configuration. If it does not, you must install and configure the necessary PC I/O interface hardware.

2. **Install the 89600 software.**

   The 89600 software includes two applications: the 89600 VSA software (Vector Signal Analysis software) and the 89600 WLA software (Wireless Link Analysis software). The installation wizard will guide you through the installation process. The Keysight 89600 software can be delivered via two methods: Physical DVD or eDelivery (downloaded from the Keysight 89600 software Website).
   Go to Chapter 3 See "Installing 89600 Software" and follow the instructions to install the Keysight 89600 software.

IMPORTANT If you are upgrading an existing version 14 or earlier 89600 VSA software installation that uses a Floating network license type to software version 15 or later, you must first stop the CDF server service before installing the upgrade software release, see Chapter 5, See "Stopping the FlexNet License Manager CDF Service".

3. **License the Keysight 89600 software.**

   After installing the 89600 software you must license the software and any purchased options. There are four types of licenses: Demo, Trial, Transportable, and Floating (also referred to as a Network license).

   a. **Demo License**: The Demo license is provided with the 89600 software installation and allows you to use the 89600 software with limited functionality. To learn more about Demo license, go to Chapter 4 See "Installing Licenses".

   b. **Trial License**: The Trial license lets you immediately start using a fully licensed 89600 software application for a temporary trail period. When the trial period expires, you will need to purchase a valid license for continued use. To learn more about Trial license, go to Chapter 4 See "Installing Licenses".

   c. **Transportable License**: The Transportable license is used to license the Keysight 89600 software plus options to only run on the host PC. However, you do have the capability to transport the license to a different PC, making it the new host PC. To learn more about and install a Transportable license, go to Chapter 4 See "Installing Licenses".

   d. **Floating License**: The Floating or Network license provides the ability for different PC's to use a license that is stored on a network PC (or server). This provides the capability to quickly transfer a license between different PCs to run the 8900 software. You're still limited to running the 89600 software on a one PC per license basis. To learn more about and install a Floating network license, go to Chapter 5 See "Floating License Installation".

   e. Advanced Floating License Topics: The Advanced Floating License Topics information is not required for the default Floating License installation, see See "Floating License Installation". If you are an expert network license administrator and are installing the new optional FlexNet Floating License administration tool, "lmadmin," then go to Chapter 6 See "Advanced Floating License Server" for installation instructions.

4. **Configure the 89600 Software I/O interface.**

   If you are running the 89600 software in the Remote PC Operation configuration, use this procedure to setup and configure the 89600 software to Measurement Hardware interface link (LAN, GPIB, etc.).

   NOTE This step is not required for Embedded PC Operation installations.

   The Measurement Hardware Interface setup and configuration procedure is not the same for all types of measurement hardware. Go to the procedure that applies to your particular 89600 software measurement hardware configuration:

   a. **Configuring the 89600 software I/O Interface**:

   This procedure applies to most measurement hardware configurations. Go to Chapter 7 See "Configuring IO Interfaces".

> **NOTE**   If your installation measurement hardware is one of the following measurement hardware platforms; Keysight Infiniium Scope, the Keysight N7100 Series analyzer, or the Keysight Logic Analyzers, skip this procedure and use the measurement hardware specific procedure.

b. **Configuring the Keysight Infiniium Windows Scope.**
   When the 89600 software is connected to an Keysight Infiniium scope, go to Chapter 8 See "Configuring Infiniium Windows Scopes".

c. **Configuring the Keysight N7109 Series analyzer.**
   When the 89600 software is connected to an Keysight N7109 Series Multi-Channel Analysis System, go to Chapter 9 See "Configuring Keysight N7109A".

d. **Configuring Keysight Logic Analyzers.**
   When the 89600 software is connected to an Keysight Logic Analyzer, go to Chapter 10 See "Configuring Logic Analyzers".

5. **Calibrate the analyzer.**
   Before making measurements, you should calibrate (or align) your 89600 VSA measurement hardware configuration. Calibrating the measurement hardware will optimize measurement result accuracy. Calibration procedures are not included in this manual, refer to the 89600 VSA online help for use and operation instructions. Go to the "Calibration" help topic for information about calibrating your 89600 VSA configuration.

6. **Troubleshooting any licensing problems.**
   If you encounter problems with the installation or licensing process, refer to Chapter 11 See "Troubleshooting".

2 Remote PC Setup and Configuration

Introduction

This chapter only applies to the remote PC operation configuration. This contains information to setup and configure the PC including system requirements, I/O interface requirements, and the PC interface installation and setup procedure.

> **NOTE** If you are going to install the software in an embedded PC operation, skip this chapter and go directly to See "Installing 89600 Software".

- Verify your PC meets the system requirements listed in the table See "System Requirements".
- Verify that your PC's I/O interface meets the requirements listed in the table See "Required Measurement Hardware Interfaces".
- Install and configure your PC's I/O interface as directed in the procedure See "Install and Configure the PC I/O Interface".

System Requirements

Make sure your PC meets or exceeds the following minimum requirements, refer to the 89600 VSA Software Requirements web page.

Characteristic	Requirement
Operating system	Microsoft Windows 7 Professional, Enterprise, or Ultimate (32 bit or 64 bit)
	Microsoft Windows 8 Professional or Enterprise (32 bit or 64 bit)
CPU	1 GHz (>2 GHz recommended)
RAM	2 GB (4 GB recommended)
Video RAM	128 MB (512 MB recommended)
Hard disk	1 GB available
Additional drives	DVD to load the software; license transfer requires network access or a USB memory device
Interface support	LAN, GPIB, USB, or IEEE-1394 (VXI hardware

KEYSIGHT
TECHNOLOGIES

	only*)
Browser	Internet Explorer Version 9.0 or higher required for full context-sensitive help functionality.

* For VXI hardware and 64 bit Windows 7 operating system configuration, you must use Keysight IO Libraries version 16.1 or later.

Required Measurement Hardware Interfaces

Use this table to determine what type of PC and I/O interface is required for your measurement hardware. Note that you may need to install and configure more than one interface.

Measurement Hardware	Computer Type	Interface
VXI (Keysight 89610, 89611, 89640, 89641)	Laptop or desktop PC	IEEE-1394 VXI to PC***
Keysight ESA	Laptop or desktop PC	GPIB, or USB/GPIB adapter
Keysight ESA-E Series Analyzer	Laptop or desktop PC	GPIB or USB/GPIB
Keysight InfiniiVision 6000/7000 Series Oscilloscope	Laptop or desktop PC	LAN, GPIB, or USB/GPIB
Keysight Infiniium Oscilloscope	Laptop or desktop PC or embedded Windows scope	LAN, GPIB, USB/GPIB, or internal
Keysight Logic Analyzer	Laptop, desktop PC, or embedded PC	LAN, IEEE-1394 (only for 1690 Series), or internal
Keysight X-Series Signal Analyzer	Laptop, desktop PC, or embedded PC	LAN or internal**
Keysight N4010 Wireless Connectivity Test Set	Laptop or desktop PC	USB, LAN, GPIB, or USB/GPIB
Keysight PSA (used as ADC)*	Laptop or desktop PC	LAN, GPIB, USB, or USB/GPIB*
Keysight N7100 Series Multi-Channel Signal Analysis System (N7109A)	Laptop or desktop PC	LAN

* To use GPIB with the PSA, your PSA firmware must be version A.4.0 or later. With earlier firmware versions, you must use the LAN connection.

** The Keysight X-Series Signal Analyzer embedded PC configuration (89600 analyzer running in the analyzer) only supports a LAN interface between the analyzer and an Keysight Source; GPIB is not supported.

*** For VXI hardware and 64 bit Windows 7 operating system configuration, you must use Keysight IO Libraries version 16.1 or later

I/O interface hardware

The 89600 VSA software supports many I/O interface types including LAN, USB. GPIB, IEEE 1394, etc. However, the 89600 VSA software does not support all interface types for each of the available supported measurement hardware platforms. To use a specific type of interface, first verify that the 89600 VSA software supports the measurement hardware I/O interface. If it does support that interface and the PC does not currently support the interface, use the following procedure to install and configure the interface on the PC.

Install and Configure the PC I/O Interface

If you are using simulated measurement hardware, signal simulation software, or an embedded instrument PC installation, you do not need to install/configure an I/O interface. You can skip the remainder of this chapter and go directly to See "Installing 89600 Software".

1. Verify that the 89600 VSA software supports the measurement hardware I/O Interface.
    Go to See "Required Measurement Hardware Interfaces" table and make sure that the 89600 VSA software supports the measurement hardware I/O interface,

    *   If the PC already supports the I/O interface, skip the remainder of this chapter and install the 89600 VSA software—go to See "Installing 89600 Software".
    *   If the PC supports the I/O interface, but it is not currently installed, you will need to install and configure the I/O interface hardware on the PC—go to the next step.
    *   If the 89600 VSA software does not support the measurement hardware I/O interface, you can not use the 89600 VSA software with your measurement hardware.

2. Install I/O Interface Card(s) in the PC.
    Install all necessary I/O interface card(s) in the PC per the instructions that came with the I/O interface card vendor documentation.
    National Instruments GPIB card: For a National Instruments GPIB card, be sure to install the NI 488.2 software first, then reboot your PC and install the interface card.

NOTE	Exclude Multiple GPIB Devices:
	If this PC controls other GPIB measurement hardware or devices, you need to exclude those devices from the 89600 identification process, see See "Troubleshooting Interference With Other Devices or Instruments".

3. Configure the PC I/O Interface.
    Configure the I/O interface card(s) in the PC per the instructions that came with the I/O interface card vendor documentation.

TIP	You can typically use the default I/O interface hardware settings.

NOTE	GPIB: For GPIB interfaces, make sure that each measurement hardware has a unique GPIB address; multiple GPIB devices cannot use the same GPIB address.

NOTE	If the PC and measurement hardware are connected to a local internal LAN, you may

> **NOTE** need to check with your network administrator to verify that the IP addresses for the PC and measurement hardware satisfy requirements.

4. Cycle power OFF/ON on all system hardware.
    After completing the hardware I/O connections, cycle the power OFF/ON on the PC and all connected measurement hardware.

5. Next install the 89600 VSA software. Go to See "Installing 89600 Software".

3 Installing 89600 Software

Keysight 89600 Software Installation

The 89600 software installation includes software for the following applications:

- Keysight 89600 VSA software
- Keysight 89600 WLA software
- Keysight License Services

Installing the 89600 VSA Software

The 89600 VSA Software installation program has several different installation options. Which installation option you will select depends upon where you need to install the 89600 software and how you need it to operate. The two major ways that the 89600 software can operate are in Remote Operation or Embedded Operation.

For Remote Operation, install the 89600 software on a PC which connects to a measurement instrument. For Embedded Operation, install the 89600 software on an embedded PC instrument such as an Keysight X-series Analyzer, an Keysight Infiniium Oscilloscope, or an Keysight Logic Analyzer.

To install the software, use one of the following procedures:

- See "Installing 89600 Software in a PC"
- See "Installing 89600 Software in an Keysight X-Series Signal Analyzer"
- See "Installing 89600 Software in an Keysight Infiniium Scope"
- See "Installing 89600 Software in an Keysight Logic Analyzer"

Installing the 89600 WLA Software

The 89600 WLA Software allows users to analyze wireless signals, correlating control signals with the physical RF signals. The Keysight 89600 WLA Software is installed with the same installation program that installs the Keysight 89600 VSA Software. It must be installed along with the Keysight 89600 VSA Software; it cannot be installed by itself.

The Keysight 89600 WLA Software must be licensed separately from the Keysight 89600 VSA Software.

KEYSIGHT
TECHNOLOGIES

Installing 89600 Software in a PC

To install the Keysight 89600 software in a PC:

IMPORTANT If you are upgrading an existing version 14 or earlier 89600 VSA software installation that uses a Floating license scheme to software version 15 or later, you must first stop the CDF server service before installing the upgrade software release, see Chapter 5, See "Stopping the FlexNet License Manager CDF Service".

1. Windows 8 users: Follow the procedure See "Installing .NET Framework 3.5 on Windows 8 PCs" if you have a Windows 8 PC without Internet access.

   TIP If you have Internet access, you can skip this step and Windows will prompt you to download and install the .NET Framework 3.5 during the 89600 software installation.

2. Close any applications you have open.

   NOTE To install the Keysight 89600 software, you must have administrator privileges on the computer you are installing the Keysight 89600 software on.

3. Insert the Keysight 89600 software installation DVD.

4. If the installation utility does not start automatically, navigate to the DVD drive, and double-click this file:

   `autoplay.exe`

5. When the Keysight 89600 Installation Manager window opens, please open and review the following sections of the Readme file (click View Readme).

   - Required Minimum License Version
   - Installation Information
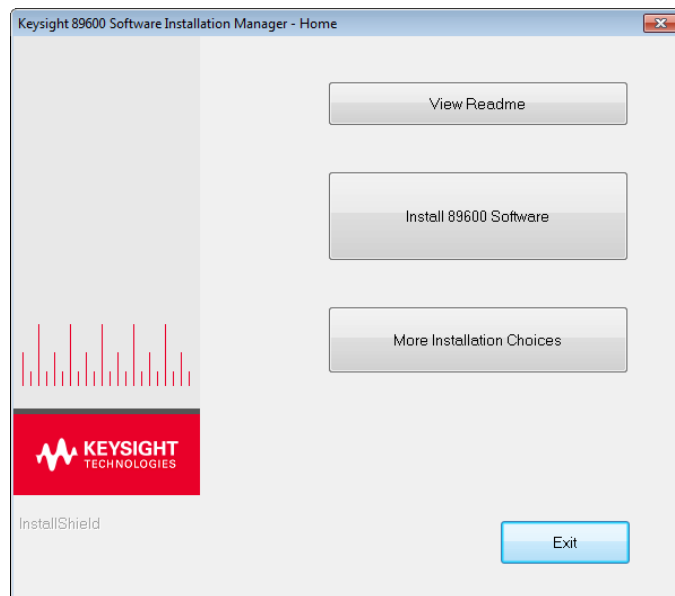
6. After reviewing the Readme file, start the software installation by clicking Install 89600 Software. Step through the InstallShield Wizard and stop at the "**Select Products and Features**" window.

7. Select the Products and Features you want to install, click **Next** and continue through the InstallShield Wizard to complete the installation.
    If you are installing Keysight 89600 WLA Software, click the Keysight 89600 WLA Software option.

> **NOTE**   The Keysight 89600 WLA Software can only be installed along with the Keysight 89600 VSA Software. The WLA Software cannot be installed alone.

> **IMPORTANT**   Windows 8: if you do not have .NET Framework 3.5 installed, a dialog will pop up during installation that will prompt you to install the .NET Framework. Please click Download and install this feature. If you do not have Internet access, you can follow the procedure See "Installing .NET Framework 3.5 on Windows 8 PCs" to install the .NET Framework from the Windows 8 Installation DVD.

After the 89600 software is installed, you have the choice to install hardware support. If you do not choose to install hardware support at this time, all hardware support components are available for installation at a later time, see See "Adding Hardware Support".

8. If you will be using connected hardware, install the Keysight IO Libraries.

9. The installation process configures your system environment for the 89600 software applications. Some installations may required a system PC reboot. If this is the case, when asked click OK to reboot.

> **IMPORTANT**   After rebooting you will need to be logged on with administrative privileges to complete the installation.

> **NOTE**   When installing from a remotely mounted DVD drive, the remote drive must be configured to reconnect at logon so that the installation files can be located after the reboot.

10. The 89600 software installation is now complete and the software can be run. However, the software and options need to be licensed. To learn how to obtain a license, see See "Installing Licenses".

> **TIP**   The first time you install the 89600 software on Windows 8, a tile for each 89600 software shortcut will be created on the Start screen. You can right-click these tiles and remove them from the Start screen by choosing Unpin from Start; or drag to rearrange them into a group, and name the group by zooming out (click "-" at bottom right of screen) and then right-clicking the group and choosing Name group.

Installing .NET Framework 3.5 on Windows 8 PCs
Follow this procedure to install the .NET Framework 3.5 before installing the 89600 software on Windows 8 PCs *without Internet access*.

1. Check to see if .NET Framework 3.5 is already installed.
    a. Click Control Panel > Programs > Turn Windows features on or off.
    b. If the .NET Framework 3.5 (includes .NET 2.0 and 3.0) check box is completely empty, con-

tinue with the rest of this procedure. Otherwise, skip to step 2 in See "Installing 89600 Software in a PC"

2. Close the Windows Features dialog.

3. If you have a *Windows 8 Installation DVD*, insert it into your computer or mount the ISO image.
   If you don't have a *Windows 8 Installation DVD*, use the files in the Keysight_89600_dvd installation folder.

4. Open an Administrator command prompt.
   a. Move the mouse to the lower left-hand corner of the screen.
   b. Right-click and choose Command Prompt (Admin).
   c. Click Yes at the User Account Control dialog if prompted.

5. Type the following command (on a single line) and press Enter:
   ```
   dism /online /enable-feature /featurename:NetFX3 /Source:<dot-net-location> /lim-
   itaccess
   ```
   where <dot-net-location> is defined as:
   - `<installed drive>:\Keysight_89600_dvd\ISSetupPrerequisites\{074EE22F-2485-`
     `4FED-83D1-AAC36C3D9ED0}` or
   - `d:\sources\sxs` where d is the drive where the Windows 8 DVD is mounted.

6. Wait until the feature is installed (you will see the text: "The operation completed successfully.")

7. Restart the computer if prompted.

8. Proceed with step 2 in See "Installing 89600 Software in a PC"

Adding Hardware Support

This procedure shows you how to install add connected Hardware support after the 89600 software has been installed:

1. Close any applications you have open.

   > **NOTE** To install the Keysight 89600 software, you must have administrator privileges on the computer on which you are installing the Keysight 89600 software.

2. Insert the Keysight 89600 software installation DVD.

3. If the installation utility does not start automatically, navigate to the DVD drive, and double-click this file:
   ```
   autoplay.exe
   ```

4. When the Keysight 89600 Installation Manager window opens, click More Installation Choices.

5. In the More Installation Choices window, click Hardware Support Menu.

6. The Hardware Support window opens. Select the components to add and continue through the InstallShield Wizard.

Installing 89600 Software in an Keysight X-Series Signal Analyzer

> **NOTE** Verify that the Instrument software revision (System hardkey > Show softkey > System softkey) is A.13.XX or greater.

You can install 89600 software on your Keysight X-Series Signal Analyzer one of two different ways.

If you have an Internet connection to the X-series analyzer, you can download the Keysight 89600 software from the Keysight 89600 software home page (www.keysight.com/find/89600).

If the Keysight X-Series Analyzer does not have an Internet connection, you can install the software found on the Keysight 89600 software installation DVD. Since Keysight X-Series Signal Analyzers do not have internal DVD drives, you must use a USB-connected drive.

To install the 89600 VSA Software in this manner, you must first copy the contents of the Keysight 89600 software DVD onto the USB Drive. The Keysight 89600 software DVD is not protected or encrypted. The copy will be identical to the original DVD.

NOTE	This procedure assumes that a USB Flash Drive is being used. Other USB storage devices, such as a USB hard drive or USB DVD drive, could also be used.

To install the 89600 VSA software in an Keysight X-Series Signal Analyzer using a USB Flash drive:

1. Insert the Keysight 89600 software DVD into a PC's DVD drive. If the Keysight 89600 Installation Manager window opens, close the installer program (click Exit).

2. Insert a USB Flash Drive into a USB port on the same PC in which the Keysight 89600 software DVD is loaded.

3. Use Windows Explorer to copy the contents of the Keysight 89600 software DVD onto the USB Flash Drive.

4. Connect a USB keyboard and mouse to the analyzer.

NOTE	To install the Keysight 89600 software on the analyzer, you need to have administrator privileges. Press Ctrl - Alt - Delete, then click Log Off…. Log back in as the Administrator. The default password is `agilent4u`.

5. Insert the USB Flash Drive into an available USB port on the analyzer.

6. Open Windows Explorer and navigate to the USB drive.

7. Double-click `autoplay.EXE`

8. When the Keysight 89600 Installation Manager window opens, please read the Readme information.

9. After you read the Readme file, close it, then click Install 89600 VSA. Continue through the InstallShield Wizard until you reach the **Select Products and Features** window.

10. Select the features you want to install, then continue through the InstallShield Wizard to complete the installation.

11. When the installation is complete, exit the Installation Manager.

12. Start the X-Series analyzer application: Double-click the LaunchXSA icon on the Windows desktop.

13. After the X-Series analyzer finishes booting up, start the Keysight 89600 software (press the Mode hardkey then press the More softkey until the 89601 VSA softkey appears. Press the 89601 VSA softkey followed by the Start 89601B softkey to launch the VSA software). Next the software and options need to be licensed. To learn how to obtain a license, see See "Installing Licenses".

Installing 89600 Software in an Keysight Infiniium Scope

IMPORTANT	Embedded operation with the 89600 is not recommended for the Infiniium 8000 and 80000 Series

IMPORTANT scopes.

Many Infiniium oscilloscopes provide an open Microsoft Windows 7 operating system that enables you to install other applications. You can install and operate the 89600 Vector Signal Analysis software on these scopes.

If you have an Internet connection to the Keysight Infiniium scope, you can download the Keysight 89600 software from the Keysight 89600 software home page (www.keysight.com/find/89600).

If the Keysight Infiniium scope does not have an Internet connection, you can install the software found on the Keysight 89600 software installation DVD.

Some Keysight Infiniium scopes have no DVD drive, so for these scopes you must use a USB drive. If you are installing from a USB drive, you must copy the contents of the Keysight 89600 software DVD onto the USB Drive. The Keysight 89600 software DVD is not protected or encrypted. The copy will be identical to the original DVD.

> **NOTE** This procedure assumes that a USB Flash Drive is being used. Other USB storage devices, such as a USB hard drive or USB DVD drive, could also be used.

To install the 89600 VSA and 89600 WLA software in a Windows 7 scope:

1. Increase the scope's virtual memory to at least 1 GB as follows:
    a. Minimize the scope application.
    b. Navigate to: Control Panel > Administrative Tools (double-click) > Computer Management (double-click) > Computer Management (Local) (right-click) > Properties > Advanced (tab)> Performance Settings (button) > Virtual Memory - Change (button) to display the Virtual Memory dialog screen.
    c. Set Initial Size (MB) and Maximum Size (MB) to 1000 MB (or more if you have sufficient Space Available), then click Set > OK > OK (reboot message) > OK > OK.
    d. When the *System Settings Change* dialog appears, click Yes to restart the computer.
2. Insert the Keysight 89600 software installation DVD into the scope's DVD drive. If your scope does not have a DVD drive, use the following procedure:
    a. Insert the Keysight 89600 software DVD into a PC's DVD drive. If the Keysight 89600 Installation Manager window opens, close the installer program (click Exit).
    b. Insert a USB Flash Drive into a USB port on the same PC that the Keysight 89600 software DVD is in.
    c. Copy the contents of the Keysight 89600 software DVD onto the USB Flash Drive.
    d. Connect a USB keyboard and mouse to the scope.

       > **NOTE** To install the Keysight 89600 software on the scope, you need to have administrator privileges. Press Ctrl - Alt - Delete, then click Log Off…. Log back in as the Administrator.

    e. Insert the USB Flash Drive into an available USB port.
    f. Open Windows Explorer and navigate to the USB drive.
    g. Double-click `autoplay.EXE` to bring up the Keysight 89600 Installation Manager.
3. When the Keysight 89600 Installation Manager window opens, please read the Readme information.

4. After you read the Readme file, close it then click Install 89600 VSA. Continue through the InstallShield Wizard until you reach the **Select Products and Features** window.

5. Select the features you want to install, then continue through the InstallShield Wizard to complete the installation.

6. When the installation is complete, exit the Installation Manager.

7. Start the 89600 VSA. Click Start > Programs > Keysight 89600 VSA *xx.y* > Keysight 89600 VSA *xx.y*.
   ...where *xx.y* is the VSA version number.
   Next the software and options need to be licensed. To learn how to obtain a license, see See "Installing Licenses".

Installing 89600 Software in an Keysight Logic Analyzer

The first step is to decide where you want to install the 89600 VSA software. For information on logic analyzer configurations, see See "Configurations".

If the logic analyzer has an Internet connection, you can download the Keysight 89600 software from the Keysight 89600 software home page
(www.keysight.com/find/89600).

You can also install the software from the Keysight 89600 software installation DVD. Since not all Keysight logic analyzers have a DVD drive, you can use a USB drive. The first step is to copy the contents of the Keysight 89600 software DVD onto the USB Drive. The Keysight 89600 software DVD is not protected or encrypted. The copy will be identical to the original DVD.

> **NOTE**   This procedure assumes that a USB Flash Drive is being used. Other USB storage devices, such as a USB hard drive or USB DVD drive, could also be used.

To install the 89600 VSA and 89600 WLA software in a logic analyzer:

1. Insert the Keysight 89600 software DVD into the logic analyzer's DVD drive. If your logic analyzer does not have a DVD drive, use the following procedure:
   a. Insert the Keysight 89600 software DVD into a PC's DVD drive. If the Keysight 89600 Installation Manager window opens, close the installer program (click Exit).
   b. Insert a USB Flash Drive into a USB port on the same PC that the Keysight 89600 software DVD is in.
   c. Copy the contents of the Keysight 89600 software DVD onto the USB Flash Drive.
   d. Connect a USB keyboard and mouse to the analyzer.

   > **NOTE**   To install the Keysight 89600 software on the logic analyzer, you need to log on with administrator privileges.

   e. Insert the USB Flash Drive into an available USB port on the analyzer.
   f. Open Windows Explorer and navigate to the USB drive.
   g. Double-click `autoplay.EXE` to bring up the Keysight 89600 Installation Manager.
2. When the Keysight 89600 Installation Manager window opens, please read the Readme information.
3. After you read the Readme file, close it then click Install 89600 VSA. Continue through the InstallShield Wizard until you reach the *Select Products and Features* window.

4. Select the features you want to install, then continue through the InstallShield Wizard to complete the installation.

5. When the installation is complete, exit the Installation Manager.

> **NOTE**   When installing the 89600 VSA in a logic analyzer mainframe, Hardware support is disabled. This prevents using disk space for unnecessary components that are not needed when the 89600 VSA software is installed in a logic analyzer.

6. Start the 89600 VSA. Click Start > (All) Programs > Keysight 89600 VSA *xx.y* > Keysight 89600 VSA *xx.y* (where *xx.y* is the VSA version number).

Next, the software and its options must be licensed. To learn how to obtain a license, see See "Installing Licenses".

4 Installing Licenses

License Overview

The 89600 software must be licensed to operate in a useful manner. The 89600 software has four types of licenses: Demo, Trial, Transportable, and Floating. The Demo license is installed with the 89600 software; installing one of the other licenses requires three general steps:

1. Running the Keysight License Manager to obtain information about the PC or instrument on which the 89600 is installed.
2. Contacting Keysight Technologies, Inc., to receive a license file.
3. Installing the license file using the Keysight License Manager.

There are additional steps required to transfer an installed license from one PC or instrument to another.

- **Demo**:
  The Demo license is automatically installed when the VSA software is installed. Using the Demo license, the VSA accepts signals only from the simulated input or from the example time capture signals (recordings) provided with the product. Example signal files are located in the following directory:
  C:\Program Files\Agilent\89600 Software xx.y\89600 VSA Software\Help\Signals
  ...where *xx.y* is the VSA version number.
  When you are using a Demo license, the trace shows a "Demo License, Limited Functionality" message:

KEYSIGHT
TECHNOLOGIES
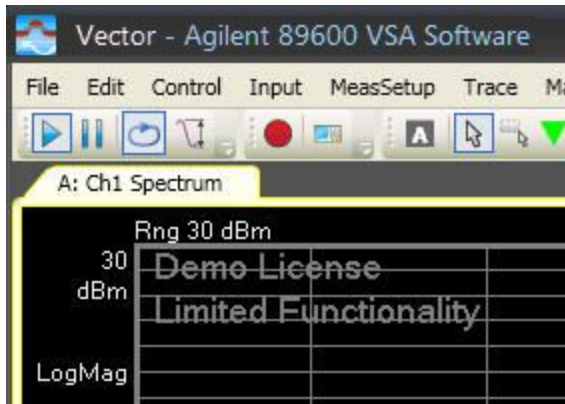
NOTE   If you have an option 200 license installed and only the Demo license is being used, see
See "Troubleshooting Licensing Problems".

- **Trial**:
  The Trial license enables all 89600 VSA software options for a temporary 30 day trial period. This
  license provides time for you to purchase, redeem, and install a permanent license (either a Trans-
  portable or Floating license) while continuing to use a fully licensed VSA. It also allows users who have
  not purchased the software to use "try out" the VSA for the temporary trial period. To install a Trial
  license, perform the steps in See "Trial License".

- **Transportable**:
  The Transportable license must be installed on the same PC that runs the 89600 software. However,
  the license can be moved from one PC to another. To install a Transportable license, perform the
  steps in See "Transportable License".

- **Floating or Network**:
  Floating licenses provide the ability for multiple client PCs to use a common license that is stored on a
  network license server. This is in contrast to the Transportable license that is a PC based license, one
  license per PC.
  Also called a concurrent license, floating licenses are bound to the host ID of the license server, but
  are used by any Client PC running the 89600 software with network access to the server (as long as
  the number of concurrent client users does not exceed the number of granted licenses.)
  To install, setup, and configure a Floating License Server and Client PC, go to See "Floating License
  Installation".

Trial License

This section documents how to obtain and install a Trial license for your 89600 software. The Trial License
provides a fully licensed 89600 VSA software for a temporary 30 day trial period. This gives you time to pur-
chase, redeem, and install a permanent license, either a Transportable license or a Floating license, while con-
tinuing to use the 89600 VSA software.

When the Trial period expires, the 89600 Software license either reverts back to a Demo license or to any
prior installed valid license; either a Transportable license or a Floating license.

NOTE   You will only be granted one Trial license per license Host ID.

Obtaining a Trial License

To enable a Trial license, you must obtain your PC's Host ID, then go to Keysight's online License Manager and redeem the trial license.

Finding Your PC's Host ID

To obtain the License Service Host ID for the PC on which you have installed Keysight 89600 software, follow these steps:

1. Open the **Keysight License Service** dialog box

   a. Right-click the Keysight License Service program icon 🔒 in the Windows desktop Toolbar (if the program icon 🔒 is hidden, click the "Show hidden icons" button on the right side of the toolbar.)

   b. Select About Keysight License Service.
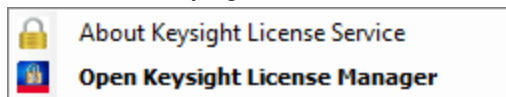
2. Use the **Copy** button to copy the PC **Host ID** into the Windows clipboard.
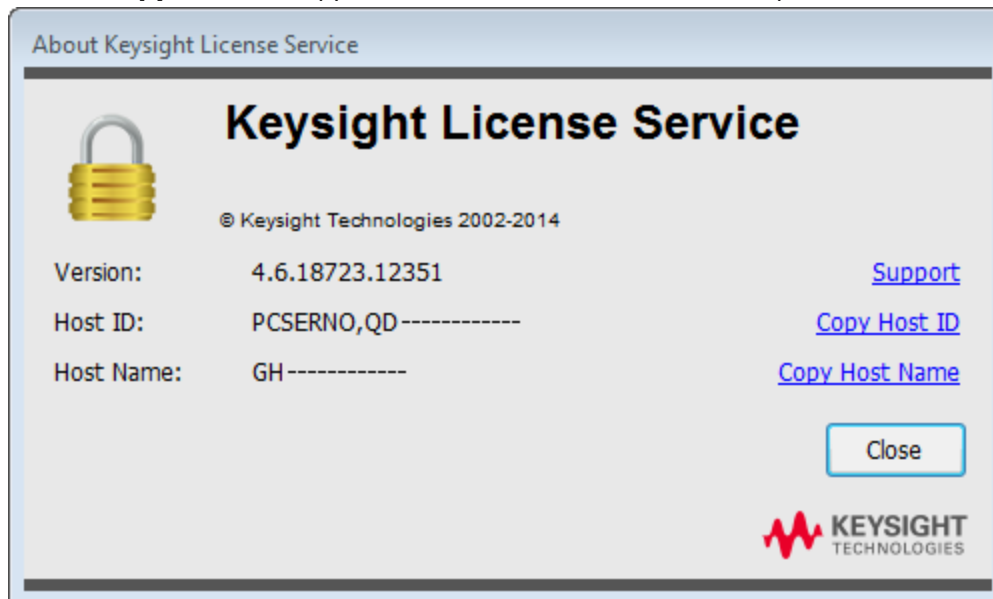
> **NOTE**   For some Measurement Hardware (instruments), the Host IDs consist of an Keysight instrument model number and serial number. On desktop or laptop PCs, and some instruments, the default model number is PCSERNO.

Getting the Trial License

1. Go to the Keysight 89601B VSA website at http://www.keysight.com/find/89601B, select the **Software Trials & Licenses** tab, then follow the instructions to obtain a Trial license.

- You must provide contact information.
- The requested Host ID is available from the Keysight License Manager as described above. If you are accessing the website from the same PC that the VSA software is installed, you can simply **copy and paste** the Host ID into the website form.
- You will only be granted one Trial license per license Host ID.

2. After you finish using the Keysight website, check your email from Keysight containing your license file, then proceed to See "Installing a License" to complete the installation.

Installing a License

When you receive the Keysight email containing your license file, follow these steps to install it:

1. Place the license file either on a network-connected drive or on a drive that is directly connected to the PC.
2. Start the Keysight License Manager by clicking Utilities > Licenses > Status > Keysight License Manager or double clicking on the Keysight License Service icon 🔒 in your Windows notification area.
3. In Keysight License Manager, click File > Install.
4. An Install License File(s) window appears. In this window, browse to the location where you saved the license file. Select the license file, and then click the Open button.

The Keysight License Manager installs the license (from the selected license file) and then displays it in the Tree View as an installed license under *localhost* (your PC). Note that the install operation takes up to 40 seconds to complete.

For details on other ways to install licenses, see Installing Licenses in the Keysight License Manager Help (click Help > Keysight License Manager Help from within the Keysight License Manager utility or click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager Help).

Transportable License

This section describes the steps to obtain and install a Transportable license. The Transportable license enables the 89600 software and options that you have purchased. The license must be installed on the same PC that runs the 89600 software. However, the license can be transferred from one PC to another PC. Transferring the license requires the Keysight License Manager to communicate with the Keysight Software Manager website.

To obtain and install a Transportable license:

1. Purchase an 89600 Software Transportable License.
2. Receive a Software License Entitlement Certificate.
   After purchasing a Transportable License, you will receive a Software License Entitlement Certificate.
3. Redeem the License.
   As described in See "Redeeming a Transportable License", the *Software License Entitlement Certificate* provides instructions to redeem your license.
4. Install the License file.
   As described in See "Installing a Transportable License", after providing the required information, the Keysight Software Manager website will email a License file (*.lic*) to you. Install the license file on the same PC that runs the 89600 software.
5. Activate the License.
   After installing the license, you need to restart the VSA software to activate the license.

NOTE   The term PC refers to any computer or instrument (such as analyzers and oscilloscopes) running the 89600 software.

Redeeming a Transportable License

After purchasing a Transportable License, you will receive a Software License Entitlement Certificate. You will need information from the certificate to redeem and activate a license. To redeem a Transportable license, follow these steps:

1. Collect the Software License Entitlement Certificates for all 89600 VSA software options that you have purchased. The Software License Entitlement Certificates are either emailed to you or are included with the *89600 VSA Software Installation Materials* envelope (printed on gray parchment).

2. Obtain the Host identification information (Host ID). Use the Keysight License Service utility or Keysight License Manager to obtain the *Host ID*.

    a. Open the About Keysight License Service utility, right click the "Keysight License Service icon in the Windows desktop notification area (lower right side of the Windows Task bar) and select About Keysight License Service.

    b. Click the Copy button to the right of the Host ID box. The Host ID information is copied into the Windows clipboard.

3. Redeem your licenses and obtain the license files.

    Follow the instructions included on the *Software License Entitlement Certificate* to redeem your licenses and obtain the license files. Go to the *Keysight Software Manager* website:

    http://www.keysight.com/find/softwaremanager

    *   First time access will require you to register.

        IMPORTANT   Remember your user password. The password is required for future access to manage your licenses.

    *   You will need the *Keysight Order Number* and *Keysight Certificate Number* located on the top of your *Software License Entitlement Certificate*.

4. Install License File(s): Check your email for the license file(s) and then install the license file(s) on the PC — go to See "Installing a Transportable License".

Installing a Transportable License

Installing the license file is necessary to license the 89600 VSA software. After completing See "Redeeming a Transportable License", you will receive an Keysight email containing your license file for the redeemed Entitlement Certificates. Follow these steps to install the license files on the PC:

1. Copy the email attachment ".*lic*" to a folder on your PC, connected hard drive, or USB storage device.

2. Start the Keysight License Manager: click Utilities > Licenses > Status > Keysight License Manager or double clicking the Keysight License Service icon.

3. In Keysight License Manager, click File > Install, browse to the location where you saved the ".*lic*" license file, select the license file, and click the Open button. Or, you can drag-and-drop the license file onto the *Keysight License Manager License Features* window.

    The Keysight License Manager installs the license and lists it in the Keysight License Manager window, *localhost* node.

| NOTE | The install operation can take up to 40 seconds to complete. |

After installing the license file, verify that the Options are licensed for use by the Keysight VSA software.

4. Start the Keysight 89600 VSA software, open the VSA *Licenses Options* dialog (click Utilities > Licenses > Options) and verify the options are correctly licensed (*Yes* in the On column).

"On" Column	License Status
Yes	Option is licensed for use.
--	Dash indicates that the license option has not been selected for use by the VSA. To include an option, open the "Select License Options" system utility and select (check) the options that you want to include in the VSA measurement capability (click Start > (All) Programs/All apps > Keysight 89600 Software xx.y > System Utility > Select License Options, where *xx.y* is the VSA version number). The VSA must be closed and restarted to incorporate the changes.
No	Option is not licensed for use.

See Also

For details on other ways to install licenses, see Installing Licenses in the Keysight License Manager Help (click Help > Keysight License Manager Help from within the Keysight License Manager utility or click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager Help).

Transporting a Transportable License
The Transportable license is a license that can be moved from one PC to different PC. This allows you to use one license to run the 89600 Software on different PC's. However, only one PC at a time can use a single license.

The transportation of a license requires an Internet browser and a connection to the *Keysight Software Manager* website.

| NOTE | A license transport operation may take a up to 90 seconds to complete. |

Choose one of the following procedures based on your network configuration to transport a Transportable license:

- Both Source and Target PCs Connected to a LAN
- Target PC Not Connected to a LAN
- Source PC Not Connected to a LAN
- Both Source PC and Target PC Not Connected to a LAN

Both Source and Target PCs Connected to a LAN

When both the source PC and the target PC are connected to a LAN, you can easily transport a Transportable license in one of the two following ways. (Note that these methods assume that both the source PC and target PC are connected (use File > Connect) in the Keysight License Manager and visible in the Tree View.)

- In the Keysight License Manager's Tree View, select a license or product (to transport all licenses for the product) on the source PC and drag it to the target PC's IP address/hostname node. The licenses are automatically transported from the source PC to the target PC.

Or:

- In the Tree View, select a license or product (to transport all licenses for the product), then click File > Transport. This opens the *Transport one or more licenses* dialog box. Select the target host name from the drop down box and click the Transport button. The licenses are automatically transported from the source PC to the target PC.

Target PC Not Connected to a LAN

When the target PC is not connected to a LAN, the transport operation requires additional steps than if all PCs have network connectivity. To transport a license to a non-connected PC you must:

- Obtain the Host identification of the destination PC.
- Use the Keysight License Manager to remove the license from the source PC and provide a confirmation code of the removal.
- Connect to the Keysight Software Manager website and provide the destination PC's Host identification and the license removal confirmation code.
- Save the new license file.
- Install the new license file on the destination PC.

Use the following procedure to transport a license when the your source PC has an Internet connection, but has no connection with the destination PC.

1. On the source PC, click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager.

2. In the Tree View, select a license or product (to transport all licenses for the product). Click File > Transport. This opens the *Transport one or more licenses* dialog box.

3. Since the destination PC is off line, keep the Destination Host as <offline>. Click the Transport button. You will be asked to verify the transport. Click the Yes button.

4. This opens a *Transportation Confirmation* screen, which verifies that the license was deleted from the localhost and displays a confirmation code. This confirmation screen also specifies a path and the URL file so that you can rehost the license at a later time. Click the Explore button to view the file, otherwise, click the OK button to return to the main display.

5. From the Keysight License Manager, click Tools > Explore Transport Confirmation URLs. This opens the folder where the Transport Confirmation files have been saved.

6. Double-click the *.url* Transport Confirmation file for the license you want to rehost. This opens the Keysight Software Manager website, which enables you to acquire a transported license that is node-locked to the target PC.

7. Find the Host identification on the PC on which you are installing the VSA software license. The license Host identification (Host ID) is used in the Keysight Software Manager website to redeem your

license.

  a. Open the *About Keysight License Service* utility, right click the "Keysight License Service icon
     🔒 in the Windows desktop notification area (lower right side of the Windows Task bar) and
     select About Keysight License Service.

  b. Click the Copy button to the right of the Host ID box. The Host ID information is copied into
     the Windows clipboard.

8. On the Keysight Software Manager website, enter the target PC's Host identification (Host ID), and
   then click the Submit button.

9. The Keysight Software Manager website displays a link for the license. On the license link, right-click
   the link and select Save Target As.

10. On the source PC, save the "*.lic*" license file.

11. On the source PC, connect an external, portable mass storage device—such as a USB Flash Drive, an
    external hard drive, or a writable CD/DVD.

12. On the source PC, copy the license file to the portable mass storage device.

13. Disconnect the portable mass storage device from the source PC and connect it to the target PC.

14. On the target PC, click Start > (All) Programs/All apps > Keysight License Manager > Keysight License
    Manager.

15. On the target PC, open Windows Explorer, locate the .lic license file saved on the connected portable
    storage device, and then drag the license file into the Tree view.

Source PC Not Connected to a LAN

If the source PC is not connected to a LAN, the transport operation requires additional steps than if all PCs
have network connectivity. To transport a license from a non-connected PC you must:

  • Use the Keysight license Manager to remove the license from the source PC and provide a.*url*file to
    confirm the license removal.

  • Move the *.url* file to the destination PC.

  • On the destination PC, open the *.url* file to connect to the Keysight Software Manager website and
    provide the destination PC's Host identification.

  • Save the new license file.

  • Install the new license file on the destination PC.

Follow this procedure to transport a license when the source PC is not connected to a LAN. (Note that this pro-
cedure assumes that the destination PC has an Internet connection.)

1. On the source PC, click Start > (All) Programs/All apps > Keysight License Manager > Keysight License
   Manager.

2. In the Tree View, select a license or product (to transport all licenses for the product). Click File >
   Transport. This open the Transport one or more licenses dialog box.

3. Since the Target PC is off line, keep the Destination Host as <offline>. Click the Transport button. You
   will be asked to verify the transport. Click the Yes button.

4. This opens a Transportation Confirmation screen indicating that the license was deleted from the loc-
   alhost and shows the confirmation code. This confirmation screen also specifies a path and the.*url*file
   so that you can rehost the license. Click the Explore button to view the file, otherwise, click the OK
   button to return to the Keysight License Manager main display.

5. On the source PC, connect an external, portable mass storage device—such as: a USB Flash Drive, an external hard drive, or a writable CD/DVD.

6. On the source PC, copy the *.url* file to the portable mass storage device.

7. Disconnect the portable mass storage device from the source PC and connect it to the destination PC.

8. On the destination PC, locate the *.url* file on the portable mass storage device and double-click it.

9. On the destination PC, the *.url* file opens a browser window that is connected to the Keysight Software Manager website. Note that the fields are automatically filled in with the license contents.

10. On the Keysight Software Manager website, type the target PC's Host identification (Host ID) and then click the Submit button.

11. The Keysight Software Manager website displays a link for the license. On the license link, right-click the link and select Save Target As.

12. On the destination PC, save the license file.

13. On the destination PC, click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager.

14. On the destination PC, open Windows Explorer, locate the license file, and then drag the license file into the Tree View.

Both Source and Target PCs Not Connected to a LAN

If neither the source PC nor the target PC are connected to a LAN, the transport operation requires additional steps than if the PCs have network connectivity. To transport a license from a non-connected PC to a non-connected PC you must:

* Use the Keysight license Manager to remove the license from the source PC and provide a *.url* file to confirm the license removal.

* Move the *.url* file to PC that has Internet connectivity.

* On the Internet-connected PC, open the *.url* file to connect to the Keysight Software Manager website and provide the destination PC's Host identification.

* Save the new license file.

* Move the license file to the destination PC.

* Install the new license file on the destination PC.

Follow this procedure to transport a license when both the source PC and the target PC are not connected to a LAN.

1. On the source PC, click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager.

2. In the Tree View, select a license or product (to transport all licenses for the product). Click File > Transport. This open the **Transport one or more licenses** dialog box.

3. Since the target PC is off line, keep the Destination Host as <offline>. Click the Transport button. You will be asked to verify the transport. Click the Yes button.

4. This opens a Transportation Confirmation screen indicating that the license was deleted from the localhost and shows the confirmation code. This confirmation screen also specifies a path and the *.url* file so that you can rehost the license. Click the Explore button to view the file, otherwise, click the OK button to return to the Keysight License Manager main display.

5. On the source PC, connect an external, portable mass storage device—such as: a USB Flash Drive, an external hard drive, or a writable CD/DVD.

6. On the source PC, copy the *.url* file, to the portable mass storage device.

7. Disconnect the portable mass storage device from the source PC and connect it to a PC with an internet connection.

8. Using Windows Explorer on the internet-connected PC, locate the *.url* file on the portable mass storage device and double-click it.

9. Clicking on the *.url* file opens a browser window that is connected to the Keysight Software Manager website. Note that the fields are automatically filled in with the license contents.

10. On the Keysight Software Manager website, type the target PC's Host identification (Host ID) and then click the Submit button.

11. The Keysight Software Manager website displays a link for the (re-issued) license. On the license link, right-click the link and select Save Target As.

12. Save the license file to a location on the portable mass storage device.

13. Disconnect the portable mass storage device from the internet-connected PC and connect it to the target PC.

14. On the target PC, click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager.

15. On the target PC, open Windows Explorer, locate the *.lic* license file saved on the connected portable storage device, and then drag the license file into the Tree view.

5 Floating License Installation

Overview

This chapter describes the procedure for installing the 89600 software Floating License System, which includes the License Server and Client setup and configuration.

Floating licenses provide the ability for multiple client PCs to use a common license that is stored on a network license server. This is in contrast to the Transportable license that is a PC based license, one license per PC. Also called a concurrent license, floating licenses are bound to the host ID of the license server, but are used by any Client computer running the 89600 software with network access to the server (as long as the number of concurrent client users does not exceed the number of granted licenses.) Floating licenses provide the ability to use one license on different PCs (Instruments).

The client PC or instrument requests a license from the server to run the 89600 VSA software. If a license is available, the server will allocate the license to the client.

Keysight Floating License System Overview
The Keysight 89600 software uses Flexera software's *FlexNet Publisher* to provide floating license administration. The floating license administration requires a PC running the license server that manages license allocation to client PCs running the 89600 VSA software. The license server tracks the number of licenses checked out and the number of licenses still available for use. The client PCs request licenses from the license server to run the 89600 VSA software. If licenses are available, the license server will allocate licenses to the client PC.

KEYSIGHT
TECHNOLOGIES
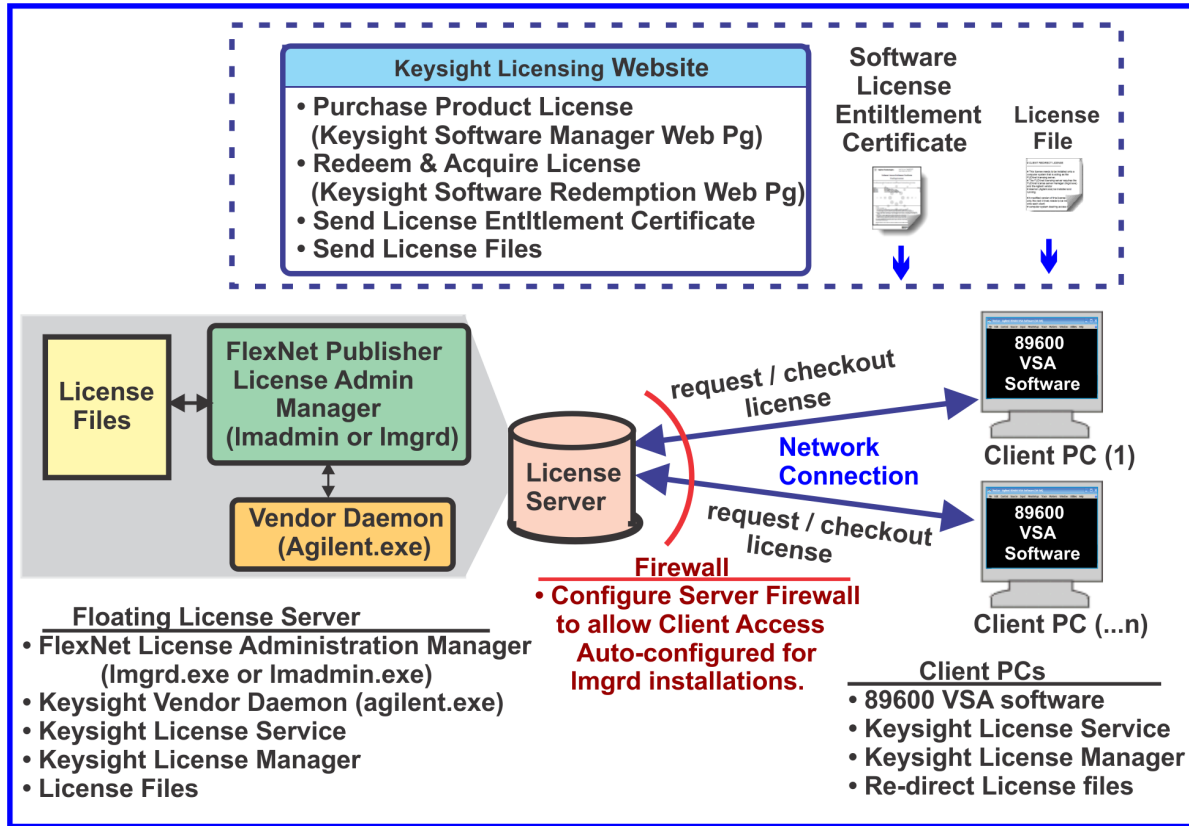
Keysight Floating License System Overview

Using Floating licenses

The *Using Floating License* section provides additional information about understanding and using floating licenses. See See "Using Floating Licenses".

Stopping the FlexNet License Manager CDF Service

Stop the FlexNet License Manager CDF Service before installing the Keysight 89600 VSA software. See See "Make sure that the FlexNet License Manager CDF service (version 14 or earlier) is stopped.".

Selecting Client PC licensed options and features

Use the *Select License Options* utility to specify which licensed options and features you want the Client PC to use. See See "Selecting Licensed Options (Using the Select License Options Utility)".

Troubleshooting

The *Troubleshooting* topic helps solve floating license installation problems. See See "Troubleshooting Floating Licenses".

System Requirements

The Keysight implementation of the FlexNet Publisher-based floating license solution supports the following Windows platforms:

PC Architecture	Processor Type	Operating System
Microsoft Windows 32-bit	x86	Windows Server 2003 R2 Standard Edition, Windows Vista with SP1 (or greater), Windows 7 (all versions)
Microsoft Windows 64-bit	x64	Windows Server 2008 SP2 Standard Edition, Windows Vista with SP1 (or greater), Windows 7 (all versions)
Note: Other Windows platforms and versions may work but have not been explicitly tested		

Floating License Installation

This procedure installs the 89600 VSA software Floating License system.

To ensure a successful installation, perform the installation process in the following sequence:

1. Install Keysight Licensing Services on the License Server. See See "Installing Keysight Licensing Services on the License Server".

   IMPORTANT   For version 15 upgrades from version 14 and earlier installations, you must STOP the licensing service before installing the version 15 89600 VSA software. See See "Make sure that the FlexNet License Manager CDF service (version 14 or earlier) is stopped.".

2. Redeeming Floating Licenses (obtain license files). See See "Redeeming Floating Licenses".
3. Configure and Start the License Server. See See "Configuring and Starting the License Server".
4. Install and set up the Client PC license. See See "Client PC Floating license Installation and Setup".

Installing Keysight Licensing Services on the License Server

This procedure installs the Keysight Licensing Services on the License Server computer. The Keysight 89600 software *Licensing Services* performs the following tasks:

- Installs lmgrd.exe and lmtools.exe, *FlexNet Publisher license administration manager* software
- Installs the Vendor Daemon (agilent.exe)
- Installs the Keysight License Manager (KLM)
- Installs the Keysight License Service (provides the Server PC Host ID)
- Configures the Windows firewall for Lmgrd.exe

Start Installation

To install the Keysight Licensing Service, use the following steps:

1. Make sure that the *FlexNet License Manager CDF service* (version 14 or earlier) is stopped.
   Halt the FlexNet Licensing Manager CDF Service. This step is necessary only if there is an existing 89600 VSA software version 14 or earlier floating license installation and you are upgrading to version 15 and later.

   > **NOTE** There may be an installation error message ".....agilent.exe is LOCKED" shown if you do not stop the FlexNet License Manager CDF service when installing a version 14 to 15 or later upgrade software installation.

   a. Run the lmtools.exe utility (89600 VSA software version 14 or earlier) by clicking: C:\Program Files(x86)\Agilent\CDF\bin\lmtools.exe
   b. Click the Start/Stop/Record tab > Stop Service.

2. Run the Keysight 89600 VSA software installation. When the Keysight 89600 Software Installation Manager "Home" window opens, click the Install 89600 Software button.

   > **NOTE** It is recommended that you open and review the "Readme" file for the latest 89600 VSA software installation notes, click the View Readme button on the installer "Home" window.

3. Stop the Install Wizard at the Select Products and Features window.

   a. For a dedicated license server computer installation (a computer that functions only as the license server and does not concurrently run the 89600 VSA software), install only the "Licensing Services" product.
   In the Select Products and Features window, select only the Licensing Services product and clear all other product/feature install options. Click Next to continue with the installation process.

   > **NOTE** On a dedicated license server, you only need to install "Licensing Services" product

   b. For a multi-use license server computer installation (a computer that functions both as the license server and concurrently runs the 89600 VSA software), install both the Keysight 89600 VSA Software and Licensing Services product option.
   In the Select Products and Features window, select the Keysight 89600 VSA Software and Licensing Services product install options. Click Next to continue with the installation process.

4. Stop at the Install Wizard Select Hardware Support window.

   a. For a dedicated license server computer installation, you do not need to install Hardware Support.
   In the Select Hardware Support window, select the Do not install hardware support option and click Next to continue the installation.

   b. For a multi-use license server computer installation, it is recommended that you install Hardware Support.
   In the Select Hardware Support window, select the Hardware Support Menu (recommended) option and click Next to continue the installation.

The next step is to redeem your 89600 VSA software licenses and to install the license files. To redeem your license, see See "Redeeming Floating Licenses".

Redeeming Floating Licenses
This procedure describes how to redeem floating licenses, obtain the license files, and install the floating license files onto the license server computer. The license server computer is the host computer where the original redeemed license files are installed.

> **NOTE** Before redeeming a floating server license, you must install the Keysight Licensing Services on the Server computer. See See "Installing Keysight Licensing Services on the License Server".

1. Obtain your *Software License Entitlement Certificate(s)*.
   After purchasing the 89600 VSA software floating product licenses, Keysight will send you a *Software License Entitlement Certificate* for all 89600 software and options that you have purchased. The *Software License Entitlement Certificate* provides the *Keysight Order Number* and *Keysight Certificate Number* that you will need to redeem and activate the licenses.

2. Obtain the Host identification information (Host ID). Use the Keysight License Service utility or Keysight License Manager to obtain the *Host ID*.
   a. Open the About Keysight License Service utility, right click the Keysight License Service icon in the Windows desktop notification area (lower right side of the Windows Task bar) and select About Keysight License Service.
   b. Click the Copy button to the right of the Host ID box. The Host ID information is copied into the Windows clipboard.

3. Redeem your licenses and obtain the license files.
   Follow the instructions included on the *Software License Entitlement Certificate* to redeem your licenses and obtain the license files. Go to the *Keysight Software Manager* website:
   http://www.keysight.com/find/softwaremanager
   - First time access will require you to register.

     > **IMPORTANT** Remember your user password. The password is required for future access to manage your licenses.

   - You will need the *Keysight Order Number* and *Keysight Certificate Number* located on the top of your *Software License Entitlement Certificate*.

Next, go to the "Configure and Start the License Server" procedure, See "Configuring and Starting the License Server".

Configuring and Starting the License Server
This procedure configures and starts the floating license server and provides instructions to add new license files to an existing versions 15 and later 89600 VSA software license server installation.

This procedure only applies to license server installations using the FlexNet Publisher "**lmgrd**" license administration manager. For information about the FlexNet Publisher "lmadmin" License Administration Manager, see See "Advanced Floating License Server".

You must have received your floating license files before you start this procedure.

NOTE	Only "floating" license file types (i.e. not transportable license types) can be used with the floating license server applications.

Perform the installation procedure for your particular floating license installation configuration and requirement:

- **Upgrade License Server Installation**
  Perform this procedure when you are upgrading an existing version 14 or earlier 89600 VSA software license server installation to a version 15 or later 89600 software installation:
  See "Upgrade License Server Installation"

- **New License Server Installation**
  Perform this procedure when this is a new 89600 VSA software license server installation:
  See "New License Server Installation"

- **Adding Floating License Server Files**
  Perform this procedure to add floating license files to an existing version 15 or later 89600 VSA software license server installation:
  See "Adding Floating License Server Files"

Upgrade License Server Installation
Beginning with 89600 VSA software version 15 and later, the installed location of the files lmgrd.exe, lmtools, and vendor daemon "agilent.exe" has changed. Following this procedure configures the license service to use the new folder locations for the lmgrd.exe, the license files, and the debug log files.

Perform this procedure when you are upgrading from an existing version 14 or earlier installation to a newer version 15 or later 89600 VSA software installation.

Start installation:

1. Stop the "FlexNet License Manager CDF" service.

   a. Use the lmtools utility to stop the floating license service:
      Open and Run the lmtools utility:
      - For version 14 or earlier 89600 VSA installations, lmtools is located in the following folder:
        "C:\Program Files(x86)\Agilent\CDF\bin\ and click lmtools.exe"
      - For version 15 or later 89600 VSA software installations, lmtools is located in the following folder:
        "C:\Program Files(x86)\Agilent\ACCL\Licensing\bin\and click lmtools.exe"

   b. Click the Start/Stop/Reread tab and select Stop Service.

2. Copy and save the new floating license files to folder:
   "C:\Program Files\Agilent\licensing"

3. Run the lmtools utility:
   "C:\Program Files(x86)\Agilent\ACCL\Licensing\bin\ and click lmtools.exe"

4. Click the Config Services tab and configure the FlexNet license service parameters to use the new folder paths for the various service files:

a. Select the correct Service Name; In the Service Name parameter. Select the previously con-
figured license service for the 89600 VSA (e.g., "FlexNet License Manager CDF").

b. Change the lmgrd path "Path to the lmgrd.exe file" to:
"C:\Program Files(x86)\Agilent\ACCL\Licensing\bin\lmgrd.exe"

c. Verify the floating license file path "Path to the license file":
"C:\Program Files\Agilent\licensing"

d. Specify the debug log file; "Path to the debug log file" to:
"C:\Program Files(x86)\Agilent\ACCL\Licensing\bin\flex.log"

e. Click Save Service.

5. Start the service, click the Start/Stop/Reread tab and click Start Server.

6. Verify the status of the license server, click the Config Services tab then click View Log. Verify that
the licenses in the log file window are correct. Click Close Log to close the log file window.

7. To view the licenses in the Keysight License Manager (KLM), click View > Refresh (localhost).

> **TIP** For more information about the FLEXnet License Tools, open the *FLEXnet License Administrator
> Guide* from the Keysight License Manager (ALM) Help menu.

Next, set up and configure the floating license Client PCs. Go to
.

New License Server Installation
Use this license server installation procedure when this is a new "first-time" installation of the 89600 VSA
software version 15 or later.

1. Copy and save the new floating license files to:
"C:\Program Files\Agilent\licensing"

2. Run lmtools utility:
"C:\Program Files (x86)\Agilent\ACCL\Licensing\bin\lmtools.exe"

> **TIP** For more information about the FLEXnet License Tools, open the *FLEXnet License Admin-
> istrator Guide* from the Keysight License Manager (ALM) Help menu.

3. Click the **Config Services** tab and specify the following information to configure a new FlexNet float-
ing license service:

a. Specify the Service Name. In the Service Name parameter, clear the field and specify:
"FlexNet License Manager ACCL" as the service name.

b. Specify the lmgrd.exe path. In the "Path to the lmgrd.exe file" parameter specify:
"C:\Program Files (x86)\Agilent\ACCL\Licensing\bin\lmgrd.exe"

c. Specify the floating license file path. In the "Path to the license file" parameter, specify the
new floating license file path:
"C:\Program Files\Agilent\licensing"

> **NOTE** Do not include the license file name (*.lic) in the path.

d. Specify the debug log file path. In the "Path to the debug log file" parameter specify:
"C:\Program Files (x86)\Agilent\ACCL\Licensing\bin\flex.log"

e. Select the Use Services check box.

f. Select the Start Server at Power Up check box.

g. Save the service configuration. Click Save Service button.

4. Start the license service. Click the Start/Stop/Reread tab and click Start Server

5. Verify the status of the license server. Click the Config Services tab, and click View Log. Verify that your floating licenses are listed in the debug log file. If not, repeat the process and make sure the license service paths are correct. Click Close Log button to close the debug log file.

6. To view the licensed options in the Keysight License Manager:
    Open the Keysight License Manager and refresh the local host computer, click View > Refresh (localhost).

Next, set up and configure the floating license Client PCs, go to See "Client PC Floating license Installation and Setup".

Adding Floating License Server Files

Perform this procedure to add floating license files onto the license server for an existing 89600 VSA software (version 15 or later) installation.

1. Copy new floating license files to:
    "C:\Program Files\Agilent\licensing"

2. Run lmtools utility:

    "C:\Program Files (x86)\Agilent\ACCL\Licensing\bin\lmtools.exe"

    > **TIP** For more information about the FLEXnet License Tools, open the *FLEXnet License Administrator Guide* from the Keysight License Manager (ALM) Help menu.

3. Refresh the license server. Click the Start/Stop/Reread tab, select the previously configured license service (e.g. "FlexNet License Manager ACCL") and click ReRead License File.

4. Verify the status of the license server. Click the Config Services tab, and click View Log. Verify that your floating licenses are listed in the debug log file. If not, repeat the process and make sure the license service paths are correct etc. Click Close Log button to close the debug log file.

5. To view to licensed options in the Keysight License Manager:
    Open the Keysight License Manager and refresh the local host computer, click View > Refresh (localhost).

Next, set up and configure the floating license Client PCs. Go to See "Client PC Floating license Installation and Setup".

Client PC Floating license Installation and Setup

Follow this procedure to install, configure, and set up the floating license Client PCs.

1. If you have not installed the 89600 VSA software, install the Keysight 89600 software on the Client PC. The default software installation installs the 89600 VSA software and Keysight Licensing Services.

2. Create the Client floating license files.

The Client floating license files are used to redirect licensing requests to the license server. Only one Client floating license file needs to be created. This Client floating license file is copied and re-used by each Client PC.

   a. Make a copy of the original license server floating license file. Remove all line entries <u>except</u> keep these three lines modified as directed.

     1. "SERVER" line: Keep original text.

     2. "VENDOR" line:

     3. "USE_SERVER" line: Keep original text.

```
# Example CLIENT FLOATING LICENSE file (.lic)
# The Client PC floating license file is a modified version of
# the License Server floating license file containing only the
# next 3 lines. This license file needs to be installed onto
# each CLIENT computer requiring access to the
# features of the License Server.

SERVER hostname VDH=PCSERNO.hostID
VENDOR agilent
USE_SERVER
```

NOTE	Different Server & Client PC Domain
	If the Client PC is in a different domain than the server computer, then use the server computer's full domain name in the "SERVER" line (e.g., if the SERVER Host name is mycomputer, change the name to mycomputer.mycompany.com)

3. Install the Client floating license files

   a. Start the Keysight License Manager by double clicking the **Keysight License Service** icon 🔒 or click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager.

   b. To install the license file, *drag-and-drop* the license file onto the Keysight License Manager "License Features" window. Alternatively, you can click the Keysight License Manager menu File > Install and follow the prompts to install the license file.

NOTE	The install operation can take up to 40 seconds to complete.

The Client license files are stored in different folder locations, depending on whether the license Server and Client reside on separate PCs or the same PC:

- If the License Server and Client reside on separate PCs:
  The Client floating license file is saved to the Client PC folder:
  `C:\Program Files\Agilent\licensing`

- If the License Server and Client reside on same PC.
  The Client license file is saved to folder:
  `C:\Program Files\Agilent\licensing\Remote Licenses`

> **NOTE**   Different license file types (Floating, Transportable, etc.) can coexist on the same computer.

4. Verify that the Client PC configuration is correct
   When the license file is successfully installed, the installed Client floating licenses that are available on the license server are listed in the Keysight License Manager "License Products and Features" window, select the Localhost tree, Remote Licenses node. Make sure your licensed options and features are shown.

5. To learn more about using the 89600 VSA software with floating licenses, see:
   - See "Selecting Licensed Options (Using the Select License Options Utility)"
   - See "Keysight Floating License System Overview"
   - See "Troubleshooting Floating Licenses"

Using Floating Licenses

Selecting Licensed Options
(Using the *Select License Options* Utility)

The 89600 VSA software includes a *Select License Options* utility that enables you to selectively license only the options that you want run with the current instance of the 89600 VSA software. By default, the 89600 VSA software will acquire licenses for all currently available licensed options on the server. By selecting only the licenses you need, you free up floating licenses for other floating license enabled users (Client PCs).

All possible license options are listed in the Select License Options dialog box. However, you will only be able to acquire licenses that have been purchased and installed on the license server.

Follow these steps to select only the licenses you need:

1. Run the *Select License Options* utility, click Start > (All) Programs/All apps > Keysight 89600 VSA *xx.y* > System Utilities > Select License Options
   (where *xx.y* is the VSA version number).

2. Select the options that you want to license and clear the options you do not want to license. After you make license option changes, save the changes, by clicking the OK button to save the changes and close the *Select License Options* utility.

3. Restart the 89600 VSA software to activate the licenses you selected.

Troubleshooting Floating Licenses

For more information about other troubleshooting issues, see See "Troubleshooting"

Troubleshooting Floating License Server and Client PC's
Common causes of floating license failures includes:

- Attempting to redeem a granted floating license option being used by another Client PC.
- Attempting to connect to a floating license server that is not operational, or to which you have lost connectivity.

- Attempting to use a floating license server that is improperly configured. For example, the floating license file does not match the server host ID in use.

Troubleshooting FlexNet Publisher License Administration Web Site

Symptom: The FlexNet Publisher Floating License Administration Web Server crashes when you are configuring a new license and then does not allow access to the web page.

To solve this issue, you must:

- Modify the *lmadmin* floating license sever configuration file.
- Remove the Agilent license folder (and license files).
- Ensure the *lamdmin* service is started.
- If installed, ensure that the *Flexnet Licensing Service* is stopped.

In most cases you will then need to restart the See "New Floating License Server Installation using lmadmin" procedure.

1. Open the lmadmin floating license sever configuration file `server.xml` and delete the line between the <vendorDaemons> and </vendorDaemons> xml tags.

2. Delete the *agilent* license folder (and license files) at:

C:\Program Files (x86)\FlexNet Publisher License Server Manager\licenses**agilent**

3. Make sure that the *lmadmin* service is started and, if installed, the *FlexNet Licensing Service* is stopped or removed.

6 Advanced Floating License Server

Overview

Flexera software has released a more recent Floating License admin-istration tool, *lmadmin*. While some users will stay with the legacy administration tool, *lmgrd*, this chapter provides information for the newer product.

The *Advanced Floating License* procedure installs the Keysight 89600 VSA software floating license using the new FlexNet Pub-lisher *lmadmin* License Administration Manager. This procedure assumes that you are familiar with the FlexNet Publisher *lmadmin* License Administration Manager and have decided to use the new *lmadmin* License Administration Manager rather than the legacy *lmgrd* License Administration Manager.

NOTE	Refer to See "Floating License Installation" for instruc-tions to install the Keysight 89600 VSA software floating license using the legacy FlexNet Publisher *lmgrd* License Administration Manager.

About lmadmin License Administration Manager

The Keysight 89600 VSA software floating license supports two Flexera software FlexNet Publisher Floating License Administration Managers; *lmgrd* and *lmadmin*. *lmadmin* is the latest FlexNet Pub-lisher Floating License Administration Manager which uses a Web-based license administration user interface.

IMPORTANT	You cannot run lmadmin and lmgrd concurrently on the same computer. Make sure to remove the lmgrd *FlexNet Licensing Service* when using lmadmin, see See "Upgrade Floating License Server Installation from lmgrd to lmadmin".

To learn more about *lmadmin*, refer to the *FLEXnet License Admin-istration Guide* (included in the Keysight License Manager help) and/or go to the Flexera software web site for more information (www.Flexera software.com). For an overview of the 89600 VSA Float-ing License system, see See "Keysight Floating License System Overview".

KEYSIGHT
TECHNOLOGIES

Choosing lmadmin or lmgrd

The following information will help you decide whether to use the new *lmadmin* or legacy *lmgrd* FlexNet Publisher License Administration Manager for your particular 89600 VSA software floating license application.

1. **lmgrd**: Choose the legacy lmgrd if the following information applies to your 89600 VSA floating license installation.

   - You are already using lmgrd.exe to administer licenses.

   - You are setting up a license server for a small number of Client PCs

   - You have an administrative account on the license server PC that you can log in to troubleshoot license problems and add licenses to the license server PC.

2. **Choosing lmadmin**: Choose lmadmin if the following information applies to your 89600 VSA floating license installation.

   - You are already using lmadmin to administer licenses

   - You have multiple license administrators who may add licenses to the server but do not have administrative accounts on the license server PC

   - You want to begin using lmadmin because Flexera software has communicated their intent to eventually obsolete the legacy lmgrd License Administration Manager.

Floating License Installation (lmadmin)

This procedure installs the Keysight Floating License using the new *lmadmin* license administration manager.

The installation process must be performed in the following sequence to ensure a successful installation:

1. Install Keysight Licensing Services on the Server, See "Installing the Keysight Licensing Services on the License Server (lmadmin)".

   > **IMPORTANT**   For version 15 upgrades from version 14 and earlier installations, you must stop the licensing service before installing the version 15 89600 VSA software.

2. Redeeming Floating licenses (and obtain license files), See "Redeeming a Floating License (lmadmin)".

3. Configure and start the License Server PC, See "Configuring and Starting the License Server (lmadmin)".

4. Configure and set up the Client PC, See "Client PC Floating license Installation and Setup (lmadmin)"

Installing the Keysight Licensing Services on the License Server (lmadmin)

This procedure installs the Keysight Licensing Services and "lmadmin" license administration manager on the License Server computer.

The Keysight 89600 software installs the following Keysight Licensing Services:

- Installs the Vendor Daemon ().

   > **IMPORTANT**   Do not move the agilent.exe daemon. The agilent.exe must remain in the default installed

| IMPORTANT | folder. |

- Installs the Keysight License Manager (KLM).
- Installs the Keysight License Service (provides the Server PC Host ID).

Installing *lmadmin* license administration manager.

- The FlexNet Publisher `lmadmin.exe` license administration manager is not included with the Keysight 89600 Software installation. The lmadmin.exe software is manually downloaded from the Flexera Software website.

Start Installation

1. **Make sure that the *FlexNet License Manager CDF service* (version 14 or earlier) is stopped.**
   Do this step only if there is an existing 89600 VSA software version 14 or earlier floating license installation and you are upgrading to version 15 and later.

   | NOTE | There may be a "LOCKED" installation error message if you do not stop the FlexNet License Manager CDF service when installing a version 14 to 15 or later upgrade software installation. |

   a. Run the `lmtools.exe` utility (89600 VSA software version 14 or earlier):
      `C:\Program Files(x86)\Agilent\CDF\bin\lmtools.exe`

   b. Click the Start/Stop/Record tab > Stop Service.

2. Run the Keysight 89600 VSA software installation. When the Keysight 89600 Software Installation Manager *Home* window opens, click the Install 89600 Software button.

   | NOTE | It is recommended that you open and review the "Readme" file for the latest 89600 VSA software installation notes, click the View Readme button on the installer *Home* window. |

3. Stop at the Install Wizard *Select Products and Features* window.

   a. On a dedicated license server computer installation (computer that only functions as the license server and does not concurrently run the 89600 VSA software), you only need to install the *Licensing Services* product.
      In the *Select Products and Features* window, select only the Licensing Services product, clearing all other product and feature install options. Click Next to continue with the installation process.

      | NOTE | On a dedicated license server, you only need to install *Licensing Services* product. |

   b. On a multi-use license server computer installation (the computer functions as the license server while concurrently run the 89600 VSA software), install both the Keysight 899600 VSA Software and Licensing Services product option.

In the *Select Products and Features* window, select the Keysight 89600 VSA Software and Licensing Services product install options. Click Next to continue with the installation process.

4. Stop at the Install Wizard *Select Hardware Support* window.

    a. On a dedicated license server computer installation, you do not need to install Hardware Support.

        In the *Select Hardware Support* window, select the Do not install hardware support option and click Next to continue the installation.

    b. On a multi-use license server computer installation, it is recommended that you install Hardware Support.

        In the Select Hardware Support window, select the Hardware Support Menu (recommended) option and click Next to continue the installation.

Install lmadmin.exe License Administration Manager

The Flexera software `lmadmin.exe` License Administration Manager is not included with the 89600 VSA software installation. You will manually download the lmadmin.exe from the Flexera software website.

5. Download the lmadmin.exe from the Flexera web site. Go to the http://www.globes.com web page and click the Downloads tab. In the *Products   > License Server Manager and Utilities* section, click the lmadmin. lmgrd. lmuti. lmtoos, etc. link. Download the `lmadmin.exe` product for your Windows platform.

6. Before running the lmadmin installer, make sure that Java is installed on the Server PC. If you do not have java installed, you can go to http://java.com and follow the instructions to download and install Java.

7. Install lmadmin.exe. Run and configure the lmadmin.exe installer as an Administrator. On Windows 7, right click lmadmin.exe file and select run as Administrator.

    a. Continue the Installation and stop at the *Launch Configuration* window. Write down the HTTP Port Number (ex. 8080 or 8090). You will need the HTTP Port number to access the FlexNet Publisher Licenses Administration web site used later in this procedure.

    b. Continue the Installation and stop at the *Service Configuration* window. On the installer *Service Configuration* page, select Run as a service. This enables the license server to automatically start up when you reboot your license server computer.

    c. Stop at the installer *Start the Server* page, select the Start server now option. If you do not start the server at this time, you will have to remember to start the lmadmin service before configuring the license server. When the web browser shows the license configuration page, you can close the browser until you are ready to configure the license server.

        At the Install Complete window, click Done. Next you will need to configure the PC Windows Firewall to allow program access through the Windows Firewall.

        | NOTE | An Internet Explorer error message "cannot display the webpage" will show until the Windows Firewall is configured to allow lmadmin.exe program access through the Windows Firewall. |

8. Configure the Windows firewall.
    Configure Windows Firewall for:

"C:\Program Files (x86)\FLEXnet Publisher License Administration Manager\lmadmin.exe", and Add *Flexera Software LLC* to the list of allowed programs to communicate through Windows Firewall: Go to See "Firewall Configuration and Setup".

9. Next redeem your licenses and obtain the license files, go to See "Redeeming a Floating License (lmadmin) ".

| **IMPORTANT** | Do not move the agilent.exe daemon. The agilent.exe must remain in the default installed folder. |

Redeeming a Floating License (lmadmin)

This procedure describes how to redeem floating licenses, obtain and install the floating license files onto the license server. The license server computer is the host computer where the redeemed license files are installed.

| **NOTE** | Before redeeming a floating server license, you must install the Keysight Licensing Services on the Server computer, see See "Installing the Keysight Licensing Services on the License Server (lmadmin)". |

1. Obtain your *Software License Entitlement Certificate(s)*.

2. After purchasing the Keysight 89600 VSA software floating product licenses, Keysight will send you a "Software License Entitlement Certificate" for all 89600 software and options that you purchased. The *Software License Entitlement Certificate* provides the *Keysight Order Number* and *Keysight Certificate Number* that you will need to redeem and activate the licenses.

3. Obtain the license server computer *Host ID*. You can use the Keysight License Service utility or Keysight License Manager to obtain the Host ID.

    a. Open the *About Keysight License Service* utility, right click the Keysight License Service icon 🔒 in the Windows desktop notification area (lower right side of the Windows Task bar) and select About Keysight License Service.

4. Redeem your licenses and obtain the license files

    Follow the instructions included on the *Software License Entitlement Certificate* to redeem your licenses and obtain the license files. Go to the *Keysight Software Manager* website:

    http://www.keysight.com/find/softwaremanager

    *   First time access will require you to register.

        | **IMPORTANT** | Remember your password as you will need it for return access to manage your licenses. |

    *   You will need the *Keysight Order Number* and *Keysight Certificate Number* located on the top of your "Software License Entitlement Certificate".
    *   If your order includes 89601BN-200 you will also activating your Update Service subscription.

5. Next go to the "Configure and Start the License Server" procedure, See "Configuring and Starting the License Server (lmadmin)".

Configuring and Starting the License Server (lmadmin)

This procedure configures and starts the floating license server and provides instructions to add new license files to an existing versions 15 and later 89600 VSA software license server installation.

This procedure only applies to license server installations using the "lmadmin" license administration manager. Also, you must have received your floating license files before you start this procedure.

NOTE	Only "floating" license file types (not Transportable License files) can be used with the floating license server.

IMPORTANT	The Keysight Licensing Services and `lmadmin.exe` License Administration Manager must be installed before starting this procedure, see See "Floating License Installation (lmadmin)".

IMPORTANT	Do not move the agilent.exe daemon installed folder location. The agilent.exe must remain in the installed folder.

Do the installation procedure for your particular floating license installation requirement:

- **Upgrade Floating License Server Installation from lmgrd to lmadmin**
  Use this procedure when you are upgrading from an existing version 14 89600 VSA software floating license installation and/or installation that uses the "lmgrd" License Administration Manager to a version 15 or later floating license installation the uses the "lmadmin" License Administration Manager, See "Upgrade Floating License Server Installation from lmgrd to lmadmin".

- **New Floating License Server Installation using lmadmin**
  Use this procedure when you are setting up a new floating license installation of the 89600 VSA software that will use the "lmadmin" License Administration Manager, See "New Floating License Server Installation using lmadmin".

- **Adding Floating License Server Files using "lmadmin"**
  Use this procedure when you are adding floating license files onto the license server for an existing 89600 VSA software ver 15 or later floating license installation that uses the "lmadmin" License Administration Manager, See "Adding Floating License Server Files using lmadmin".

Upgrade Floating License Server Installation from lmgrd to lmadmin
Use this license server configuration procedure when you are upgrading an existing 89600 VSA software installation that uses lmgrd to the "lmadmin" FlexNet Publisher License Administration Manager floating license installation.

IMPORTANT	You cannot run lmadmin and lmgrd concurrently on the same computer. Make sure to Stop, Disable or Remove the lmgrd "FlexNet Licensing Service" when using lmadmin.

1. Run lmtools utility: "C:\Program Files (x86)\Agilent\ACCL\Licensing\bin\lmtools.exe"
2. Click the Config Services tab, select the previously configured license service (e.g. "FLEXnet License Manager CDF"), and click Remove Service.
3. Move the existing floating license files from "C:\Program Files\Agilent\licensing" to a temporary folder location. You will reuse these license files in the lmadmin floating license server installation procedure.

4. Install the lmadmin floating license server. Go to See "New Floating License Server Installation using lmadmin".

5. Set up and configure the Client PCs. Go to See "Client PC Floating license Installation and Setup (lmadmin)".

New Floating License Server Installation using lmadmin

Use this license server configuration procedure when you are creating a new installation of the 89600 VSA software and a new installation of *lmadmin* FlexNet Publisher License Administration Manager.

lmadmin Floating License File Folder Information

The legacy lmgrd License Administration Managers use different license file folder locations than newer lmadmin installations. For lmadmin installations do not save any previous floating license server files or other Client license files together in the legacy lmgrd folder location `C:\Program Files\Agilent\licensing`. This is especially important on a computer that functions both as the floating license server and Client PC (i.e. PC that runs the 89600 VSA application).

Storing different license file types, such as, Transportable (node-locked) and floating (Network) licenses in the same folder, will cause lmadmin.exe to crash when searching for valid license files.

> **CAUTION**   Do not store different license file types, such as, Transportable *node-locked* and Floating *Network* license file types in the same PC folder location for *lmadmin* floating license installations.

The 89600 VSA software imports the floating license files into the following folder managed by `lmadmin.exe`: C:\Program Files (x86)\FLEXnet Publisher License Administration Manager\licenses\agilent.

Start the license sever installation

1. Open the lmadmin license server management web interface. Start a Web browser and navigate to URL:
    http://<server>:<HTTP Port Number> (ex: *http://PCname:8080)*
    where: <server> is the name of the license server computer.
    　　　<HTTP Port Number> is the lmadmin.exe installation
    　　　　　assigned HTTP Port Number.
    For the initial *first-time* license server configuration, you must be logged onto the license server computer (not the Client PC). This makes it easy to navigate and use the lmadmin License Administration Manager web interface.

    > **NOTE**   If the browser cannot find the web page, the lmadmin service may not be running on the server. Go to Control Panel > Administrative Tools > Services, find lmadmin and Start the service. After starting the service, retry navigating the browser to the web page.

2. Select the Administration tab.

3. Log in. The first time you access the web page, you will need to specify the following login information:
    sign in user name: "**admin**"
    password "**admin**".
    You will then be required to change the password. Do not forget your new password.

IMPORTANT   Remember your password, you will need this password for future access).

4. Select the Vendor Daemon Configuration tab.

5. Select Import License.

6. *Initial setup*: You can only import **ONE** license file for the initial "first time" setup. Browse to the new floating license file and select import. After you complete the initial license server setup, you can add any additional license files, see See "Adding Floating License Server Files using lmadmin".
    An Import Error and an Import Warning message will be shown indicating "cannot find the agilent.exe file", ignore these error messages and click OK.

    NOTE   An Import Error and an Import Warning message will be shown indicating "cannot find the agilent.exe file", ignore these messages and click OK

7. Select the "agilent" vendor daemon in the Name column and click Administer.

8. Replace any existing license file paths in the *License File or Directory* text box with only a "licenses\agilent" path. This makes it easier to add additional license files at a later time.

9. Specify the "Vendor Daemon Location" path to the installation folder location of the agilent.exe file. There is a different folder path dependent upon the PC Windows platform as follows:

    a. For 32-bit Windows platform, specify:
        C:\ProgramFiles\Agilent\ACCL\Licensing\bin\agilent.exe
        (verify the agilent.exe folder path on your PC)

    b. For 64-bit Windows platform, specify:
        C:\PROGRA~2\Agilent\ACCL\Licensing\bin\agilent.exe
        (verify the agilent.exe folder path on your PC)

        NOTE   For 64-bit Windows, the location of the file is in "C:\Program Files (x86)", but the webpage does not allow you to enter a file path containing an open or close parenthesis, so you must instead enter the short file name "C:\PROGRA~2" of the path.

10. Click Save.

11. Start the vendor daemon by clicking Start. A successful daemon start is verified by an *Up* Status indication.

        NOTE   If the FlexNet Publisher web site crashes, go to the See "Troubleshooting FlexNet Publisher License Administration Web Site" for instructions to restore web access.

12. Verify the status of the license server. Select the Dashboard tab, click the Concurrent button, and wait for the webpage to refresh. Make sure the agilent daemon is selected in the Vendor Daemon indicator (or drop-down list) on the upper right side of the Licenses page. Verify the Feature table includes all your floating licenses that are managed by lmadmin.exe.

TIP   For more information about the FLEXnet License Tools, open the *FLEXnet License Administrator Guide* from the Keysight License Manager (ALM) Help menu.

Next, set up and configure the floating license Client PCs. See See "Client PC Floating license Installation and Setup (lmadmin)".

Adding Floating License Server Files using lmadmin

Use this procedure to add floating license files to your existing lmadmin managed floating licenses. This procedure assumes that you already have an existing Flexera Software "FlexNet Publisher" license administration manager web account.

> **NOTE** You will need your FlexNet Publisher account "user name" and password to access the web page.

1. Copy the new license files to the license server computer and into the FLEXnet Publisher License Administration Manager license file folder. This folder should already exist and contain current license files:
   C:\Program Files (x86)\FLEXnet Publisher License Administration Manager\licenses\agilent

2. Open your Flexera Software "FlexNet Publisher License Administration Manager" web site. This is the same FlexNet Publisher web site used in the initial lmadmin floating license server installation procedure. You will need your account "user name" and password:
   http://<server>:<HTTP Port Number> (ex: *http://PCname:8080*)
   where: <server> is the name of the license server computer.

   > <HTTP Port Number> is the lmadmin.exe installation
   > assigned HTTP Port Number.

   > **NOTE** If the browser cannot find the web page, then the lmadmin service may not be running on the server. Go to **Control Panel > Administrative Tools > Services**, find "lmadmin" and Start the service. After starting the service, retry navigating the browser to the web page.

3. Select the *Administration* tab.
4. Log in. Specify your account *user name* and password information.
5. Select the *Vendor Daemon Configuration* tab.
6. Select the agilent vendor daemon by clicking on Administor.
7. Click Reread License Files to add the new license files to the License Administration Manager.
8. Verify the status of the license server. Select the *Dashboard* tab, click the Concurrent button, and wait for the webpage to refresh. Make sure the *agilent* daemon is selected in the Vendor Daemon indicator (or drop-down list) on the upper right side of the Licenses page. Verify the Feature table includes all your floating licenses that are managed by lmadmin.exe.

> **TIP** For more information about the FLEXnet License Tools, open the *FLEXnet License Administrator Guide* from the Keysight License Manager (ALM) Help menu.

Client PC Floating license Installation and Setup (lmadmin)

This procedure shows you how to install, configure, and set up the floating license Client PCs. Repeat this procedure for each Client PC.

1. If you have not installed the 89600 VSA software, install the Keysight 89600 software on the Client PC. The default software installation installs the 89600 VSA software and Keysight Licensing Services.

   | NOTE | The lmadmin.exe is not installed on Client-only PC's. |

2. Create the Client floating license files.

   The Client floating license files redirect licensing requests to the license server. Only one Client floating license file needs to be created. This Client floating license file is copied and re-used by each Client PC.

   a. Make a copy of the original license server floating license file. Remove all line entries except these three lines, which you must modified as shown.

      1. "SERVER" line: Keep original text.

      2. "VENDOR" line: If the optional VENDOR line "port" number is included in the original server license file, remove the optional "Vendor daemon TCP/IP port number" from the line.

      3. "USE_SERVER" line: Keep original text.

      ```
      # Example CLIENT FLOATING LICENSE file (.lic)
      # The Client PC floating license file is a modified version of
      # the License Server floating license file containing only the
      # next 3 lines. This license file needs to be installed onto
      # each CLIENT computer requiring access to the
      # features of the License Server.


      SERVER hostname VDH=PCSERNO hostID
      VENDOR agilent
      USE_SERVER
      ```

      | NOTE | Different Server & Client PC Domain
If the Client PC is in a different domain than the server computer, then use the server computer's full domain name in the "SERVER" line (e.g., if the SERVER Host name is mycomputer, change the name to mycomputer.mycompany.com) |

3. Install the Client floating license files

   a. Start the Keysight License Manager, double click the Keysight License Service icon 🔒 or click Start > (All) Programs/All apps > Keysight License Manager > Keysight License Manager.

   b. To install the license file, *drag-and-drop* the license file onto the Keysight License Manager "License Features" window. Alternatively, you can click the Keysight License Manager menu File > Install and follow the prompts to install the license file.

   | NOTE | The install operation can take up to 40 seconds to complete. |

The Client license files are stored in different folder locations depending on whether the license Server and Client reside on separate PCs or the same PC:

a. License Server and Client reside on separate PCs:

The Client floating license file is saved to the Client PC folder:

`C:\Program Files\Agilent\licensing`

b. License Server and Client reside on same PC.

The Client license file is saved to folder:

`C:\Program Files\Agilent\licensing\Remote Licenses`

> **NOTE**   Different license file types (Floating, Transportable, etc.) can coexist on the same computer.

4. Verify that the Client PC configuration is correct

When the license file is successfully installed, the Client floating licenses that are available on the license server are listed in the Keysight License Manager *License Products and Features* window. To view the available licenses, select the Localhost tree, Remote Licenses node. Ensure that your licensed options and features are shown.

5. To learn more about using the 89600 VSA software with floating licenses, see

- See "Keysight Floating License System Overview"
- See "Troubleshooting Floating Licenses"

Firewall Configuration and Setup

For a program on a PC to communicate with other PCs across the network, it is necessary to configure that PC's Windows Firewall for that specific program. The following procedure shows how to configure Windows Firewall for a specific program on a PC running Microsoft Windows 7.

1. Open the Windows Control Panel, click Control Panel.

2. Select System and Security.

3. Select Windows Firewall > Allow a program through the Windows Firewall.

4. Click Change settings and then Allow another program.. (opens the *Add a Program* window).

5. In the *Add a Program* window, click Browse... , find and select the program, click Open.

6. Click Add and then OK.

Possible Licensing Firewall Problems

License Warning Message

If, two to three minutes after starting the 89600 VSA software, a License Warning message window appears that says it has lost connection to the network license server, the licensing software may have encountered a firewall incompatibility. Every two to three minutes, the 89600 VSA software connects to the license server to check the Floating license status. Some third party firewall applications treat this as a port scan attack and will lock out the Client. This problem can be fixed by turning off any third party firewall software that resides on the server. This is not an issue with the Windows firewall.

7 Configuring IO Interfaces

Introduction

This chapter provides instructions for configuring your computer to communicate with hardware via IEEE-1394, LAN, USB/GPIB, USB, or GPIB interfaces.

If your measurement hardware is one of the following, skip this chapter and follow the instructions specific for your measurement hardware:

- See "Configuring Infiniium Windows Scopes"
- See "Configuring Keysight N7109A"
- See "Configuring Logic Analyzers"

> **NOTE** Do not configure more than one interface to point to a single instrument, either from a single computer or from multiple computers. For example, if your instrument is on a LAN, do not point to it from two computers simultaneously.

Perform the procedures for each interface type as directed below:

- **IEEE-1394 to VXI**: For VXI IEEE-1394 to VXI interface, start on See "Configuring the VXI interface".
- **LAN**: For LAN interface, start on See "Configuring the LAN interface".
- **USB/GPIB**: For USB/GPIB interface, start on See "Configuring the USB/GPIB Interface".
- **GPIB**: For GPIB interface, start on See "Configuring the GPIB Interface".
- **USB**: For USB interface, start on See "Configuring the USB Interface".

Configuring the VXI interface

To configure the VXI interface:

1. Connect the IEEE 1394 interface card in the computer to the E8491 VXI module in the mainframe.
2. If using a laptop PC, connect the EMC grounding cable from the VXI mainframe chassis to a USB port on the laptop.
3. Power on the computer and the VXI mainframe.

    > **NOTE** If the Found New Hardware Wizard opens, click Next and when it is finished, click Finish.

KEYSIGHT
TECHNOLOGIES

4. Run Connection Expert:

Click the IO Control icon in the task bar, then click Connection Expert. (Or click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Connection Expert.)

> **NOTE** For VXI hardware and 64 bit Windows 7 operating system configurations, you must use Keysight IO Libraries version 16.1 or later.

Connection Expert will automatically detect and configure most interfaces and instruments and will assign names and other default configuration settings.

If the VXIO interface does not show up, check cable connections and power cord connections. You can also connect to another port on the E8491 VXI Interconnect Module. Click Refresh All to update.

Interfaces or instruments can also be added manually to the test system configuration. See Keysight IO Libraries Suite Online Help for more information.

5. Verify that the computer has recognized all the modules in your VXI mainframe by expanding VXI0 in the *Instrument I/O on this PC* section.

Connection Expert will list all the modules and their addresses. A green check mark is shown to verify the VXI mainframe and modules are on and connected properly.
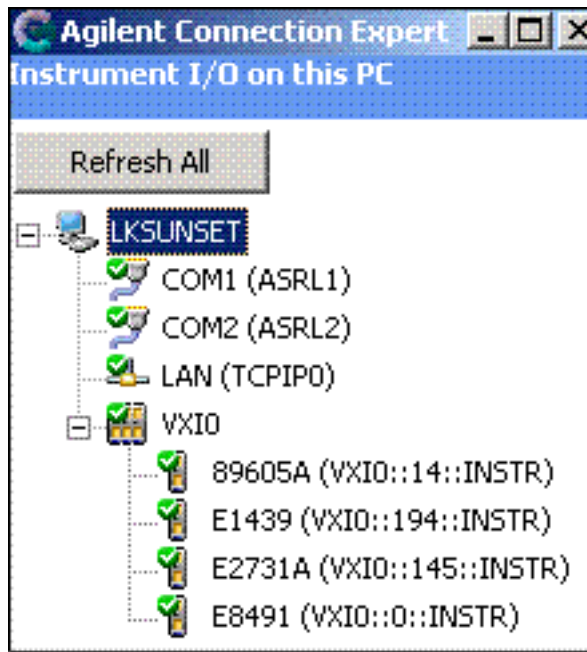
Keysight IO Libraries Suite also provides a VXI Resource Manager that initializes and prepares a VXI system for use. The VXI Resource Manager runs when any of the following conditions occur:

- You start the VXI Resource Manager from the Connection Expert's Tools menu. (Select Tools > VXI Resource Manager > Edit Resources, then click Run in the resulting Resource Manager dialog box.)
- You start it from the Keysight IO Control
- You apply or cycle VXI mainframe power
- You press the E8491 Reset button

- You reboot your PC

   In VXI systems with multiple E8491 interfaces, you can Switch off individual VXI mainframes without affecting other mainframes in the system. When a mainframe is turned on, the VXI Resource Manager reconfigures that mainframe.

For more information about VXI interfaces, see Connectivity in the *Keysight IO Libraries Suite Documentation*. Click on the IO Control icon in the task bar and then select Documentation.

Configuring the LAN interface

Use this procedure to configure the LAN interface for all instruments except the following:

- **Keysight Infiniium oscilloscope**: If your measurement hardware is an Keysight Infiniium oscilloscope, skip this chapter and follow the instructions in the See "Configuring Infiniium Windows Scopes".
- **Keysight Logic Analyzer**: If your measurement hardware is an Keysight Logic Analyzer, skip this chapter and follow the instructions in See "Connecting to a Network " and See "89600 I/O Connections".
- **Keysight N7100 Series**: If your measurement hardware is an Keysight N7100 Series, skip this chapter and follow the instructions in See "Configuring Keysight N7109A".

For more information about LAN interfaces, see *Connectivity* in the Documentation section of the Keysight IO Libraries Suite. You can find this when you click on the IO Control icon in the task bar and then select Documentation.

You must ensure that the IP addresses for your computer and measurement hardware are compatible, then configure the LAN interface. The IP address consists of 4 groups of numbers separated by periods (for example, 192.168.0.10).

| NOTE | To configure the IP addresses on the PC and instrument, you must be logged in as Administrator. |

The instrument can be accessed over your Local Area Network or by directly connecting it to your PC using a LAN cable. The preferred connection configuration is to place the instrument on your Local Area Network. Use the direct connection configuration if you do not have a Local Area Network or if you need to operate in isolation.

To configure your LAN interface:

1. Set the IP address on the instrument, using the appropriate set of instructions:
   - Instrument IP address when your computer is connected to a Local Area Network (see: See "Instrument IP Address for a Local Area Network Configuration").
     or:
   - Instrument IP address for an instrument that is directly connected to the computer (see: See "Instrument IP Address for a Direct Cable Connection").
2. Run Connection Expert (see: See "Run Connection Expert").

Instrument IP Address for a Local Area Network Configuration
This section provides information on setting the instrument IP address when your computer is on a Local Area Network.

To set the instrument IP address for a LAN configuration:

1. If your computer is connected to a Local Area Network, have your network administrator assign an IP address for your instrument hardware that will work with your computer. (The network administrator can also tell you if you need to set Subnet Masks.)
   If your Local Area Network is DNS/DHCP based, you do not need to set an IP address since it will be automatically assigned. If this is the case, skip to step 2.

   a. Set the IP address on the measurement hardware.
      - **PSA**: On the PSA, press System > Config IO > IP address, type the new address using the number keypad, and press Enter.
      - **X-Series Signal Analyzer**: On the analyzer, press System > Show > System to find the IP address. To change the IP address, refer to the LAN Interface configuration documentation provided with the analyzer.
      - **Series 6000/7000 Oscilloscopes**: On the *Series 6000A/7000A* Oscilloscopes, verify the I/O Controller is set to LAN. If it is not set to LAN, press Utility > I/O > Controller XX (where XX is either GPIB, LAN or USB), use the Entry knob labeled with a circular arrow to point the screen arrow to LAN, and press the Controller button. For the *Series 6000L* Oscilloscopes, see scope documentation.

   b. Click in the Subnet Mask box.
      Accept the default numbers that appear for the subnet mask.
      Click OK and close all dialog boxes.

   c. If you are prompted to reboot your computer, do so now.

2. Be sure that both the instrument and your computer are connected to the LAN.

3. Cycle power on the measurement hardware.

4. Continue with See "Run Connection Expert".

Instrument IP Address for a Direct Cable Connection

This section provides information on setting the instrument IP address when your computer is connected to the instrument using a direct cable connection.

To set the IP address for a direct cable connection
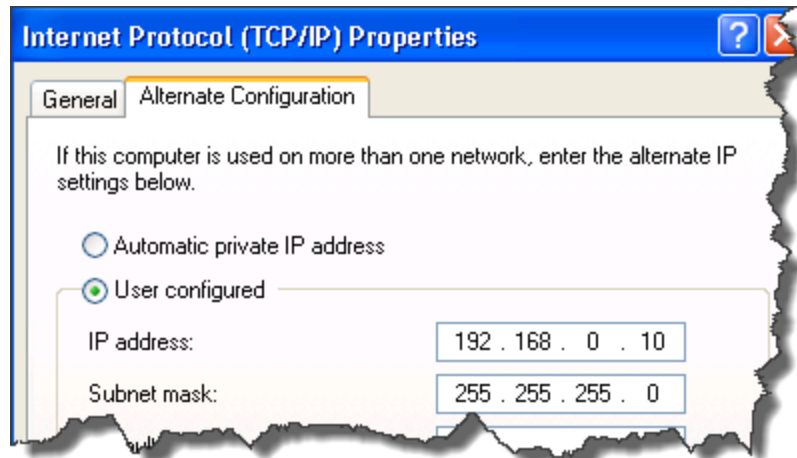
> **NOTE**   For X-Series Analyzers with software version A.11.xx or earlier, you cannot directly connect the analyzer and PC. You can either put the analyzer and PC on a DNS/DHCP-based LAN or update the software on the analyzer to A.12.00 or newer.

1. On the PC running the Keysight 89600 VSA software, set the *Alternate Configuration* for the appropriate LAN port to a user configured IP address and mask (for example, 192.168.0.9/255.255.255.0):

   a. Windows 7 and 8: From the Control Panel, click View network status and tasks, right click the connection that needs an alternate IP address configuration (e.g., Local Area Connection), then select Properties.

   b. In the *Properties* dialog box, on the *Networking* tab, scroll down and select Internet Protocol Version 4 (TCP/IP v4) then click the Properties button.

   c. Select the *Alternate Configuration* tab, then select User configured, enter a fixed IP address

and Subnet mask (for example, 192.168.0.9/255.255.255.0). Click OK then click Close.
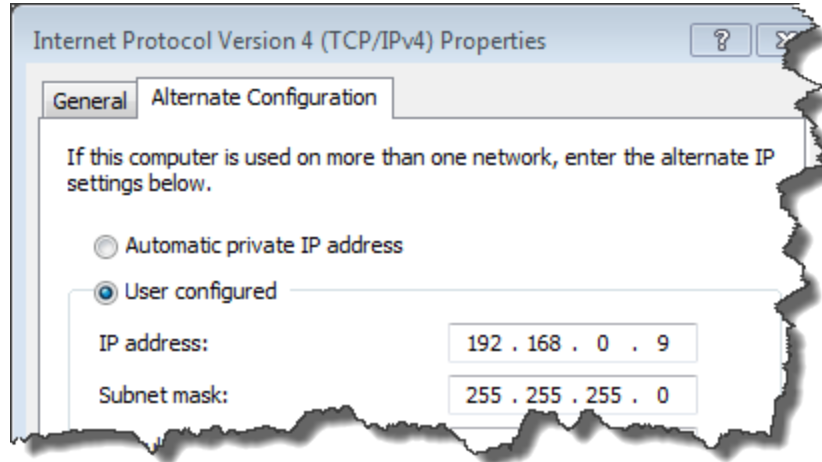
2. Set the instrument's *Alternate Configuration* for the LAN port to a user configured IP address and sub-net mask (for example, 192.168.0.10/255.255.255.0):

   a. Windows 7: From the Control Panel, click View network status and task, right click Local Area Connection, then select Properties.

   Windows 8: From the Control Panel, click View network status and task, click Ethernet, then select Properties.

   b. In the *Properties* dialog box, on the *Networking* tab, scroll down and select Internet Protocol Version 4 (TCP/IP v4) then click the Properties button.

   c. Select the *Alternate Configuration* tab, then select User configured, set the IP address on the instrument so that the first 3 sections of the IP address are the same as the PC's IP address and the last section is different than the PC's. (For example, if the computer IP address is 192.168.0.9, set the hardware IP address to 192.168.0.10.) enter an IP address and Subnet mask (for example, 192.168.0.10/255.255.255.0). Click OK then click Close.

3. For X-Series analyzers, if the instrument is currently connected to a network with a DNS server, release the DNS entry by executing the following commands on the instrument (from a command prompt window):

```
ipconfig /release *
ipconfig /flushdns
```

4. Disconnect the instrument from the corporate LAN cable and connect a LAN cable between the instrument and the PC running the Keysight 89600 VSA software.

5. For X-Series analyzers, execute the following command:

```
ipconfig /renew
```

(this may take a while until it times out trying to talk to the DNS and/or DHCP servers)

6. For X-Series analyzers, enter the following command (from a command prompt window) on the PC running the Keysight 89600 VSA software:

```
ipconfig /flushdns
```

7. Cycle power on the measurement hardware.

8. Continue with See "Run Connection Expert".

Run Connection Expert

1. Run the Keysight IO Libraries Suite Connection Expert tool.

   Click the **Keysight IO Control** icon in the Windows application task bar, then click **Connection Expert**. (Or click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Connection Expert.)

2. Auto discover cannot be done on LAN devices so you must manually add the instrument.

   a. Click on LAN in the *Instrument I/O on this PC* section.

   b. Click **Add an instrument** in the *Task Guide* section. The Add LAN Instrument window will open.

   You can browse for the instrument to be added and select the check box.

   If the instrument is not listed, click Add Address. Enter the hostname or select IP address and enter the IP address of the instrument.
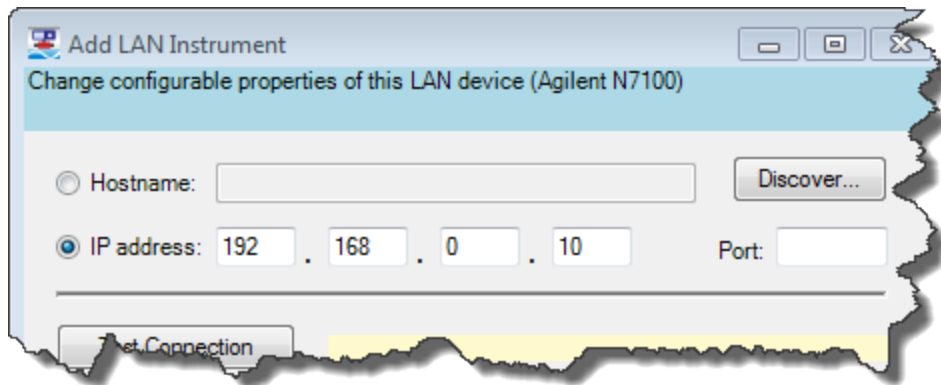
   c. Click OK.

   Connection Expert will automatically configure the interface and instruments and will assign names and other default configuration settings.

3. To verify that the computer recognized the instrument, expand LAN in the *Instrument I/O on this PC* section. Connection Expert will list all instruments and their addresses. A green checkmark is shown

to verify the instrument is on and connected properly.
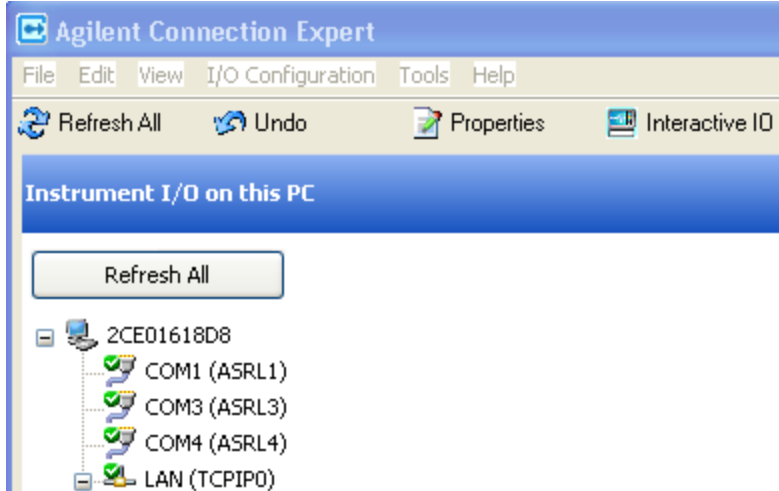
> **NOTE** If you set up a LAN connection, then switch off or disconnect the hardware, the 89600 software looks for the hardware when it is started. This slows down startup. To speed up the 89600 software startup, use Connection Expert to remove the LAN setup or choose to ignore the instrument.

> **NOTE** When the 89600 software locates an instrument, it locks onto the instrument so only the 89600 software can communicate with it. This prevents Keysight IO Libraries from any communication with these instruments and cause the green checkmark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green checkmark will be shown.

If your PC will also be communicating with measurement hardware via GPIB, continue on .

Configuring the USB/GPIB Interface

Use this procedure is to configure the USB/GPIB interface for all measurement hardware except the Keysight Infiniium oscilloscope. If your measurement hardware is an Keysight Infiniium oscilloscope, skip this chapter and follow the instructions in the .

For details on setting up the 82357 USB/GPIB Interface, see the *82357 USB/GPIB User's Guide* in the Keysight IO Libraries Suite Documentation. Click the Keysight IO Control icon in the task bar. Click Documentation > Interface Guides > and then select 82357 USB/GPIB Users Guide.

To configure the USB/GPIB interface:

1. Plug the 82357 USB cable into a USB port on your PC. Do not connect to your GPIB instrument at this time.
2. Observe the 3 LEDs on the E8237A. Initially, only the red FAIL LED should be on. After the Found New Hardware Wizard runs, all 3 LEDs should be ON. If any LED is off after 20 seconds, stop this procedure and refer to the *82357 USB/GPIB User's Guide* in the Keysight IO Libraries Suite Documentation for information.

3. If the Keysight 82357 USB/GPIB Interface Detected dialog box appears, click OK or Accept. (If you want to change any of the settings, refer to the 82357 documentation for instructions.)

4. Connect one or more instruments to the GPIB connector on the 82357.

> **NOTE** On the *Series 6000A/7000A* Oscilloscopes, verify the I/O Controller is set to GPIB. If it is not set to GPIB, press Utility > I/O > Controller *XX* (where *XX* is either GPIB, LAN, or USB), use the Entry knob labeled with a circular arrow to point the screen arrow to LAN, and press the Controller button. For the *Series 6000L* Oscilloscopes, see scope documentation.

Run Connection Expert

1. Run Connection Expert.

   Double-click the IO Control icon in the task bar or click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Connection Expert.

   > Connection Expert will automatically detect and configure the interface and instruments. It will also assign names and other default configuration settings.

2. To verify that the PC has recognized the instrument, expand USB/GPIB (GPIB1) in the *Instrument I/O on this PC* section. Connection Expert lists all instruments and their addresses. A green check-mark is shown to verify the instruments are on and connected properly. To troubleshoot problems, refer to the Troubleshooting chapter in the 82357 User's Guide.
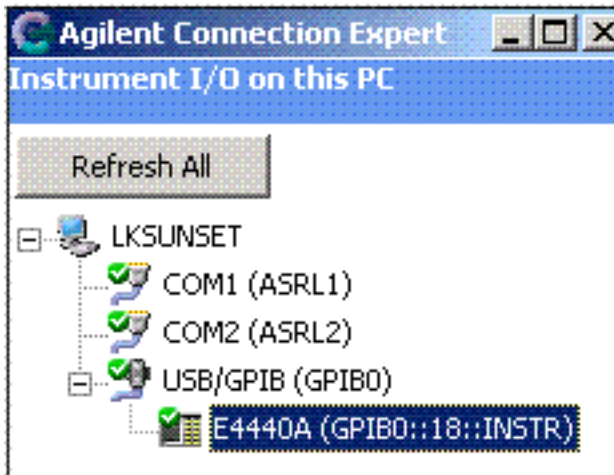
> **NOTE** When the VSA software locates an instrument, it locks onto the instrument so only the VSA software can communicate with it. This prevents Keysight IO Libraries from any communication with these instruments and causes the green checkmark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green checkmark will be shown.

Configuring the GPIB Interface

Use this procedure to configure the GPIB interface for all measurement hardware except the Keysight Infiniium oscilloscope. If your measurement hardware is an Keysight Infiniium oscilloscope, skip this chapter and follow the instructions in See "Configuring Infiniium Windows Scopes".

> **NOTE** This chapter guides you through the specific setup required to get your computer and instrument con-
> figured properly. For more detailed information on IO configuration, refer to the documentation for the
> IO Libraries Suite (click the IO Control icon, then select Documentation).

For more information about GPIB interfaces, see *Connectivity* in the Documentation section of the Keysight
IO Libraries Suite. To find this information, click on the IO Control icon in the task bar and then select Docu-
mentation. (Or click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Documentation.)

To configure the GPIB interface:

1. If you are configuring a GPIB connection for measurement hardware that is currently configured as a
   LAN connection on this computer, you must first remove the LAN configuration. After you have
   removed the LAN configuration, cycle the power on the hardware before continuing with the GPIB
   configuration.

2. Connect your GPIB instruments to the computer's GPIB interface. Power on the PC and the instru-
   ments.

> **NOTE** On the *Series 6000A/7000A* Oscilloscopes, verify the I/O Controller is set to GPIB. If it is not set to
> GPIB, press Utility > I/O > Controller *XX* (where *XX* is either GPIB, LAN, or USB), use the Entry knob
> labeled with a circular arrow to point the screen arrow to LAN, and press the Controller button.
> For the *Series 6000L* Oscilloscopes, see scope documentation.

Run Connection Expert

1. Run Connection Expert.

   Click the IO Control icon in the task bar, then click Connection Expert, or click Start > (All)
   Programs/All apps > Keysight IO Libraries Suite > Connection Expert.

   Connection Expert will automatically detect and configure the interface and instruments and will
   assign names and other default configuration settings.

2. To verify that the computer has recognized the instrument, expand GPIB0 in the *Instrument I/O on
   this PC* section. Connection Expert will list all instruments and their addresses. A green checkmark

shows that the instrument is on and connected properly.
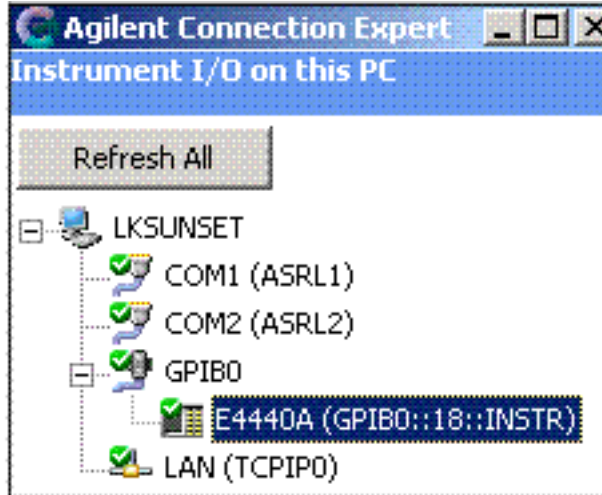
> **NOTE** When the VSA software locates an instrument, it locks onto the instrument so only the VSA software can communicate with it. This will prevent Keysight IO Libraries from any communication with these instruments and cause the green checkmark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green checkmark will be shown.

Configuring the USB Interface

Use this procedure to configure USB interfaces except the Keysight 82357 USB/GPIB Interface. If you are using the Keysight 82357 USB/GPIB Interface, go to See "Configuring the USB/GPIB Interface".

The instructions in this section assume that the USB interface is installed in your PC and is working.

> **NOTE** The purpose of this chapter is to guide you through the specific setup required to get your computer and instrument configured properly. For more detailed information on GPIB IO configuration, refer to the documentation for the IO Libraries Suite (click the IO Control icon, then select Documentation > Connectivity).

To configure the USB interface:

Connect your USB instruments to the USB interface in the computer. Power on the PC and the instruments.

On the Series 6000A/7000A Oscilloscopes, verify the I/O Controller is set to USB. If it is not set to USB, click Utility > I/O > Controller *XX* (where *XX* is either GPIB, LAN or USB), use the Entry knob labeled with a circular arrow to point the screen arrow to USB and click the Controller button. For the Series 6000L Oscilloscopes, see scope documentation.

Run Connection Expert

1. Run Connection Expert.
   Click the IO Control icon in the task bar, then click Connection Expert, or click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Connection Expert.

Connection Expert will automatically detect and configure the interface and instruments and will assign names and other default configuration settings

2. To verify that the computer recognized the instrument, expand USB0 in the *Instrument I/O on this PC* section. Connection Expert will list all instruments and their addresses. A green checkmark will be shown to verify that the instrument is on and connected properly.
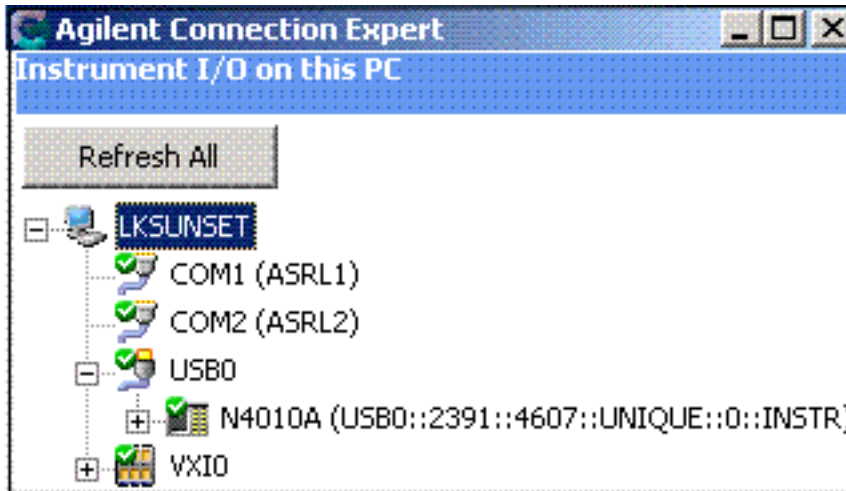
NOTE   When the VSA software locates an instrument, it locks onto the instrument so only the VSA software can communicate with it. This will prevent Keysight IO Libraries from any communication with these instruments and cause the green checkmark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green checkmark will be shown.

8 Configuring Infiniium Windows Scopes

Introduction

This chapter describes how to configure Keysight Infiniium scopes. The chapter includes networking information for configuring Keysight Infiniium scopes, running the Windows 7 operating system, and a corresponding PC running the VSA software.

Refer to Application Note 5990-6819EN (Infiniium Oscilloscopes with 89600 VSA Software) for a list of supported Keysight Infiniium scopes and the required infiniium firmware revisions.

| NOTE | If you are installing the VSA software directly in the Keysight Infiniium scope (Windows 7), see: See "Installing 89600 Software in an Keysight Infiniium Scope". |

Before configuring your Infiniium scope, be sure you have installed the VSA software on the PC you are using with the scope.

For any connection type, there are up to three possible steps:

1. Configure Infiniium Networking
   - See "Configuring Windows Infiniium Networking for Non-DHCP Network"
   - See "Configuring Windows Infiniium Networking for DHCP Network"
   - See "Configuring Windows Infiniium Networking with a Direct Cable Connection"
2. Configure PC Networking
   - See "Configuring PC Networking for a Direct Cable Connection"
3. Configure Keysight IO Config Software for GPIB and LAN
   - See "Configuring PC Keysight IO Config for GPIB Connection"
   - See "Configuring PC's Keysight IO Config for LAN Connection"

   See See "Summary of Connection Types " for additional information in determining the sections you need to complete based on your connection type. Check with your network administrator to determine your network type.

Summary of Connection Types

Connection	Infiniium Net-	PC Net-	PC Keysight

Type	working	working	IO Config Software
GPIB to GPIB	N/A	N/A	See "Configuring PC Keysight IO Config for GPIB Connection"
USB to GPIB	N/A	N/A	See "Configuring the USB/GPIB Interface"
LAN using a direct cable connection	See "Configuring Windows Infiniium Networking with a Direct Cable Connection"	See "Configuring PC Networking for a Direct Cable Connection"	See "Configuring PC's Keysight IO Config for LAN Connection"
LAN with DHCP	See "Configuring Windows Infiniium Networking for DHCP Network"	N/A	See "Configuring PC's Keysight IO Config for LAN Connection"
LAN without DHCP	See "Configuring Windows Infiniium Networking for Non-DHCP Network"	N/A	See "Configuring PC's Keysight IO Config for LAN Connection"

Configuring Windows Infiniium Networking for Non-DHCP Network

Complete the following procedure to configure your Windows 7 Infiniium scope for networking via a non-DHCP (Dynamic Host Configuration Protocol) network.

To configure Windows Infiniium networking for a non-DHCP network:

1. You will need an IP Address, Gateway Address and a Subnet Mask from your Network Administrator.
2. On your Infiniium, quit the scope application if it is running.
3. Open the Control Panel. Open Network Connections. (If you are in Category view, click Network and Internet Connections and then select Network Connections.)
4. Click Local Area Connection and then Properties to display the Local Area Connection Properties dialog box.
5. Select Internet Protocol (TCP/IP) on the connection list and click Properties to display the Internet Protocol (TCP/IP) Properties dialog box.
6. Select Use the following IP address and enter the IP Address, Subnet mask, and Default gateway address provided by your Network Administrator.

7. Click OK in the Internet Protocol (TCP/IP) Properties dialog box.

8. Click OK in the Local Area Connection Properties dialog box. If Windows prompts you to reboot your Infiniium, click Yes. If not, close all open dialog boxes.

9. After the Infiniium reboots, the instrument is ready for LAN control over the LAN interface. Go to See "Configuring PC's Keysight IO Config for LAN Connection".

Configuring Windows Infiniium Networking for DHCP Network

If your network provider uses DHCP Windows will automatically retrieve a dynamic IP Address from the DHCP server. No configuration for the Infiniium is necessary. Continue to See "Configuring PC's Keysight IO Config for LAN Connection".

Configuring Windows Infiniium Networking with a Direct Cable Connection

Complete the following procedure to configure Windows Infiniium Networking with a direct cable connection.

> **NOTE**   If you are using an older PC that does not have Auto-MDIX capability, you will need to use a crossover cable.

To configure Windows Infiniium networking with a direct cable connection:

1. You need to create IP Addresses for both the Infiniium and your PC. Both addresses must have the first 3 sections the same and the last one different. For example, the PC IP address can be 192.168.0.9 and the Infiniium IP address 192.168.0.10.

2. On your Infiniium, quit the scope application if it is running.

3. Open the Control Panel. Open Network Connections. (If you are in Category view, click Network and Internet Connections and then select Network Connection.)

4. Right-click Local Area Connection and then Properties to display the Local Area Connection Properties dialog box.

5. Select Internet Protocol (TCP/IP) from the connection list and click Properties to display the Internet Protocol (TCP/IP) Properties dialog screen.

6. Select the Alternate Configuration tab, then select User configured and enter the IP address for the Infiniium you created in step 1 (192.168.0.10 in this example), and type a subnet mask of 255.255.255.0.

7. Click OK in the Internet Protocol (TCP/IP) Properties dialog box.

8. Click OK in the Local Area Connection Properties dialog box. If Windows prompts you to reboot your Infiniium, click Yes. If not, close all open dialog boxes.

9. After the Infiniium reboots, the instrument is ready for LAN control over the LAN interface. Continue to See "Configuring PC Networking for a Direct Cable Connection".

Configuring PC Networking for a Direct Cable Connection

Complete the following procedure to configure a PC for a direct cable connection.

To configure PC networking for a direct cable connection:

1. On your PC, open the Control Panel.

2. For Windows 7 and 8, click View network status and tasks > Connections: > *(your network connection)* > Properties.

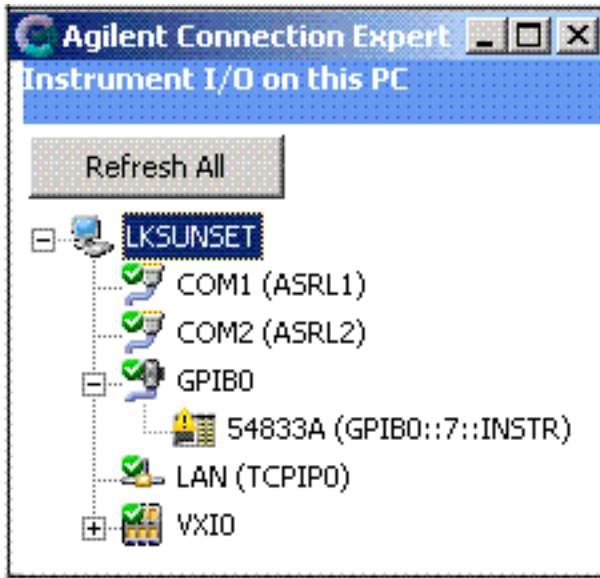This displays the Local Area Connection Properties dialog box.

3. For Windows 7 and 8, select Internet Protocol Version 4 and click Properties.

   This displays the Internet Protocol (TCP/IP or Version 4) Properties dialog screen.

4. Select the *Alternate Configuration* tab, then select User configured and enter the IP Address for the PC you created in step 1 of See "Configuring Windows Infiniium Networking with a Direct Cable Connection" (this example uses 192.168.0.9.), and enter a subnet mask of 255.255.255.0.

5. Click OK in the Internet Protocol (TCP/IP or Version 4) Properties dialog box.

6. Click OK or Close in the Connection Properties dialog box. If Windows prompts you to reboot your PC, click Yes. If not, close any open dialog boxes.

7. After your PC reboots, the PC is ready for setting up the Keysight IO Config software. Go to See "Configuring PC's Keysight IO Config for LAN Connection".

Configuring PC Keysight IO Config for GPIB Connection

The VSA Software will automatically install the Keysight IO Libraries Suite on your PC if they are not already installed. These instructions assume that your computer has a GPIB card installed and operable.

To configure PC Keysight IP Config for a GPIB connection:

1. On the PC with the 89600 software, select: Start > (All) Programs > Keysight IO Libraries Suite > Connection Expert

   Connection Expert will automatically detect and configure the interface and instruments. It will also assign names and other default configuration settings.

2. To verify that the computer recognized the instrument, expand GPIB0 in the *Instrument I/O on this PC* section. Connection Expert will list all instruments and their addresses.

NOTE   Connection Expert will not find the Infiniium scope if the scope application is not running.
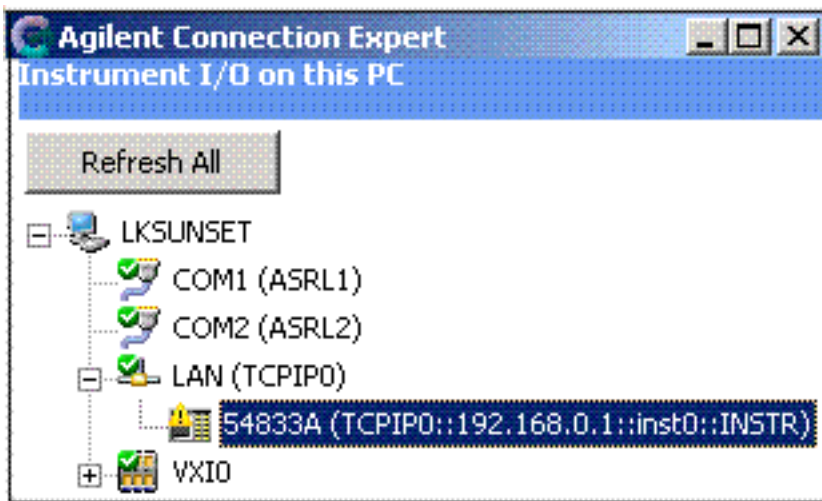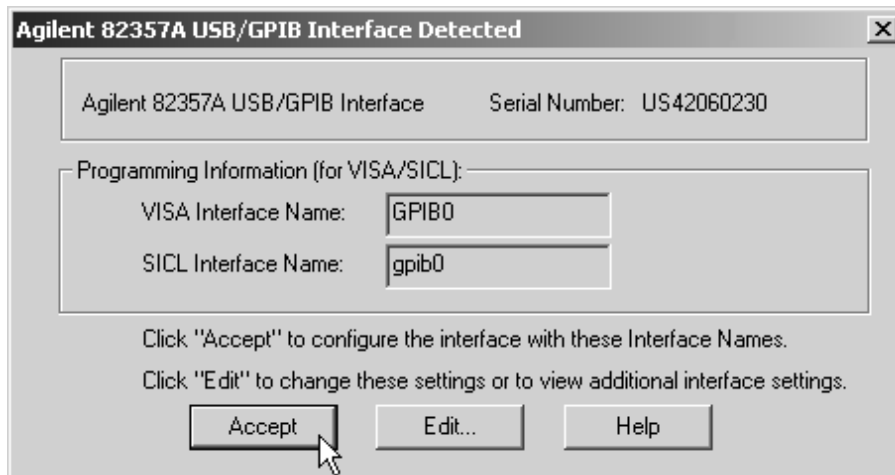
<table>
<tr><td>NOTE</td><td>When the VSA software locates an instrument, it locks onto the instrument so only the VSA software can communicate with it. This will prevent Keysight IO Libraries from any communication with these instruments and cause the green check mark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green check mark will be shown.</td></tr>
</table>

Configuring PC's Keysight IO Config for LAN Connection

The VSA Software automatically installs the Keysight IO Libraries Suite on your PC if they are not already installed.

To configure PC Keysight IO Config for a LAN connection:

1. On the PC with the VSA software, select: Start > (All) Programs > Keysight IO Libraries Suite > Connection Expert.

2. Add an instrument.
   Auto discover cannot be done on LAN devices so you must manually add the instrument.

   a. Click on LAN in the *Instrument I/O on this PC* section.

   b. Click Add an instrument in the *Task Guide* section. The LAN selection should be highlighted but if not, highlight it.

   c. Click Add Address in the Add LAN Instruments dialog box

   d. Select Use IP address in the LAN instrument dialog box and enter the IP address of the instrument.

   e. Click Test Connection. If the dialog box displays a "Could not connect" error, try changing Instrument identification to *IDN query.

   f. Click OK.

3. To verify that the computer recognized the instrument, expand LAN in the *Instrument I/O on this PC* section. Connection Expert lists all instruments and their addresses.

<table>
<tr><td>NOTE</td><td>Connection Expert can not find the Infiniium scope if the scope application is not running.</td></tr>
</table>

<table>
<tr><td>NOTE</td><td>When the VSA software locates an instrument, it locks onto the instrument so only the VSA software can communicate with it. This will prevent Keysight IO Libraries from any communication with these instruments and cause the green check mark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green check mark will be shown.</td></tr>
</table>

Configuring the USB/GPIB Interface

For details on setting up the 82357 USB/GPIB Interface, see the *82357 USB/GPIB User's Guide* in the Keysight IO Libraries Suite Documentation. Click the Keysight IO Control icon in the task bar and select Documentation > Interface Guides > 82357 USB/GPIB Users Guide.

To configure the USB/GPIB interface:

1. Plug the 82357 USB cable into a USB port on your PC. Do not connect to your GPIB instrument at this time.
2. Observe the 3 LEDs on the E8237A. Initially, only the red FAIL LED should be on. After the Found New Hardware Wizard runs, all 3 LEDs should be ON. If any LED is off after 20 seconds, stop and refer to the *82357 USB/GPIB User's Guide* in the Keysight IO Libraries Suite Documentation for information.
3. If the *Keysight 82357 USB/GPIB Interface Detected* dialog box appears, click OK or Accept. (If you want to change any of the settings, refer to the 82357 documentation for instructions.)

```
Agilent 82357A USB/GPIB Interface Detected                    [x]

   Agilent 82357A USB/GPIB Interface      Serial Number:  US42060230

  ┌ Programming Information (for VISA/SICL): ──────────────────────
  │   VISA Interface Name:    │GPIB0        │
  │
  │   SICL Interface Name:    │gpib0        │
  └──────────────────────────────────────────────────────────────

     Click "Accept" to configure the interface with these Interface Names.

     Click "Edit" to change these settings or to view additional interface settings.

        [ Accept ]        [ Edit... ]        [ Help ]
```

4. Connect one or more instruments to the GPIB connector on the 82357.
5. Run Connection Expert.

    Click the IO Control icon in the task bar or click Start > (All) Programs > Keysight IO Libraries Suite > Connection Expert

    Connection Expert will automatically detect and configure the interface and instruments. It will also assign names and other default configuration settings.

6. To verify that the computer recognized the instrument, expand USB/GPIB (GPIB1) in the *Instrument I/O on this PC* section. Connection Expert will list all instruments and their addresses. To

troubleshoot problems, refer to the Troubleshooting chapter in the *82357A User's Guide*.

NOTE	Connection Expert will not find the Infiniium scope if the scope application is not running.

NOTE	When the VSA software locates an instrument, it locks onto the instrument so only the VSA software can communicate with it. This will prevent Keysight IO Libraries from any communication with these instruments and cause the green check mark to become a red X in Connection Expert. You can disconnect the instrument by selecting Control > Disconnect in the VSA software. Select Refresh in Connection Expert and the green check mark will be shown.

9 Configuring Keysight N7109A

Introduction

The Keysight N7109A Multi-Channel Signal Analysis System is a modular hardware system that

- Keysight N7109A Multi-Channel Signal Analysis System

Keysight N7109A Multi-Channel Signal Analysis System Mainframe and Peripheral Modules:

The Keysight N7109A Multi-Channel Signal Analysis System consists of a mainframe and peripheral modules.

- Keysight N7125A Mainframe is an air-cooled 21-slot chassis that provides rugged and modular packaging for 3U Rack Unit size Keysight N7109A Multi-Channel Signal Analysis System peripheral modules.
- Keysight N7140A CPU Module is a single-slot module used as a Slot-1 System Controller or as a DSP Module in Slots 2 to 18.
- Keysight N7145A FPGA Processing Module is a single-slot, multi-purpose digital signal processing (DSP) module with hardware that consists primarily of a Virtex-5 FPGA, on-board SD and QDR RAM, along with external connections for LVDS and RS-232. This module comes with an FPGA image that supports different T&M applications such as MIMO.
- Keysight N7130A Option 062 V/UHF 2-Channel Receiver Module, 20 MHz to 6 GHz is a 2-slot, dual-channel receiver + ADC, capable of providing 40 MHz IF bandwidth from 20 MHz to 6 GHz. The V/UHF 2-Channel Receiver Module has a built-in analog-to-digital converter (ADC) that is capable of independent or multi-module phase-coherent operation.

> **NOTE** You can view and download the latest information for the Keysight N7109A Multi-Channel Signal Analysis System at http://www.keysight.com/find/N7109A.

Software Configuration with Keysight N7109A

This section presents an overview of the process for installing and configuring the Keysight 89600 VSA software that supports Keysight N7109A Multi-Channel Signal Analysis System configurations.

KEYSIGHT
TECHNOLOGIES

If the Keysight N7109A Multi-Channel Signal Analysis System was integrated at the factory, it is ready to operate with the Keysight 89600 VSA software.

No software needs to be installed on the personal computer or the Slot-1 System Controller.

To configure hardware, refer to the *Keysight N7109A Multi-Channel Signal Analysis System Installation and Configuration Guide* (p/n N7109A-90001).

Connect Instruments to VSA Software

You can connect the Keysight N7109A Multi-Channel Signal Analysis System to the VSA using the one of the following procedures:

- See "Connect to an Instrument on a DHCP Network"
- See "Using Diagnostics & Configuration to Connect, Find, and Identify"

> **NOTE**   If there is an error in any of the steps of these procedures, refer to See "Troubleshooting".

Connect to an Instrument on a DHCP Network

1. Click Start > (All) Programs/All apps > Keysight 89600 VSA *xx.y* > Hardware Utilities > N7100 Series > VSA IO Connections (where *xx.y* is the VSA version number).
2. Click Add Instrument.
3. Select the Keysight N7109A instrument then click OK.
4. Click Discover.
5. From the displayed list on the *N7109A Multi-Channel Signal Analysis System LAN Discovery* dialog box, select an instrument, then click Identify.
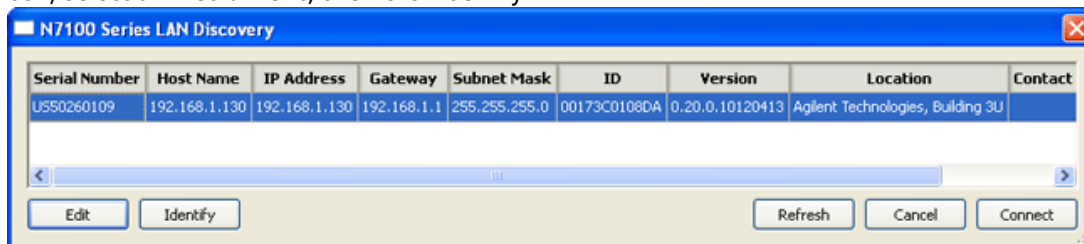
An LED on the N7109A Multi-Channel Signal Analysis System instrument blinks for ten seconds to indicate communication and then turns solid green indicating normal operation. On the Keysight N7109A Multi-Channel Signal Analysis System, the LED can only be viewed by opening the front cover; the LED is then viewable on the front, bottom, left corner.

6. On the *Add LAN Instrument* dialog box:

   a. Select IP Address.

   b. Enter the IP Address as shown in the *N7109A Multi-Channel Signal Analysis System LAN Discovery* dialog box for the identified instrument.

   c. Click Test Connection.
     If the instrument is successfully connected, a message similar to the following is displayed along with a green check mark.
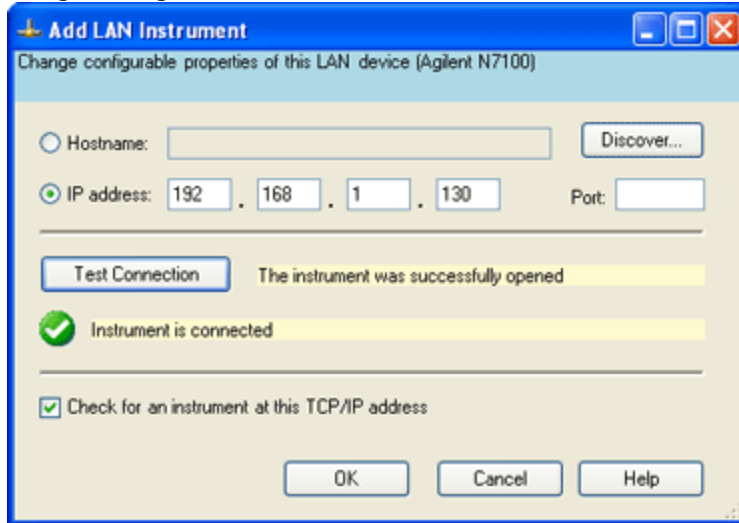
   d. Click OK to check for an instrument at this TCP/IP address.

7. Click Start > (All) Programs/All apps > Keysight 89600 VSA *xx.y* > Keysight 89600 VSA *xx.y*(where *xx.y* is the VSA version number).

8. Click Utilities > Hardware > Analyzer and move the cursor to hover over the various analyzer selections in the drop-down list.

9. Select the Analyzer that displays as the N7109A analyzer. (In this example, Analyzer2 is the N7109A, but it could be different depending on the equipment in your system.
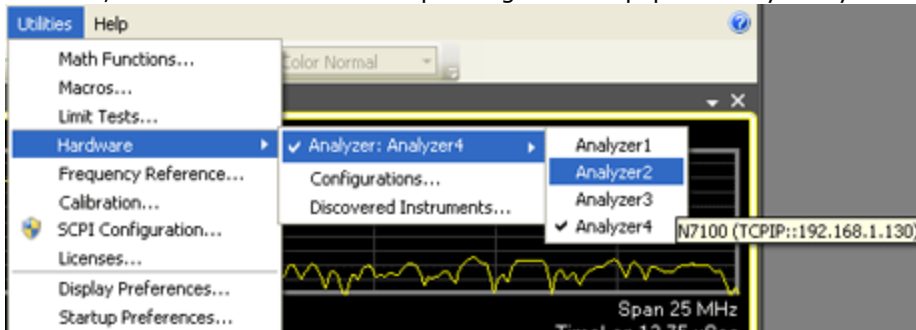
10. If there is no N7109A Analyzer selection:

   a. Click Utilities > Hardware > Configurations.

   b. Click Add new configuration. (This is the green plus sign on the left of the dialog box.)

    c. In the New Hardware Configuration window, select Keysight N7109A Analyzer, then select ">" to move it under Configuration. Select an instrument to use.

    d. Enter a unique name for your analyzer and click OK. This makes it easier to find your instrument when making future connections.

    e. Click Utilities > Hardware > Analyzer and move the cursor to hover over the various analyzer selections in the drop-down list.

    f. Select the Analyzer that displays as the N7109A analyzer. (In this example, Analyzer2 is the N7109A, but it could be different depending on the equipment in your system.)

  11. At this point, the Keysight N7109A Multi-Channel Signal Analysis System hardware should be communicating with the Keysight 89600 VSA software and can be used to perform measurements.

Using Diagnostics & Configuration to Connect, Find, and Identify

This section describes how to use the Diagnostics & Configuration selection to connect, find, and identify an instrument.

> **NOTE**   Ensure that the Keysight 89600 VSA software is closed before running any tests.

Click Start > (All) Programs/All apps > Keysight 89600 VSA *xx.y* > Hardware Utilities > N7100 Series > N7109 Configuration (where *xx.y* is the VSA version number). If you have never connected to an instrument, the *N7109A Multi-Channel Signal Analysis System LAN Discovery* window opens and you need to click Cancel to display the *Keysight N7109A Multi-Channel Signal Analysis System Configuration Tool*.
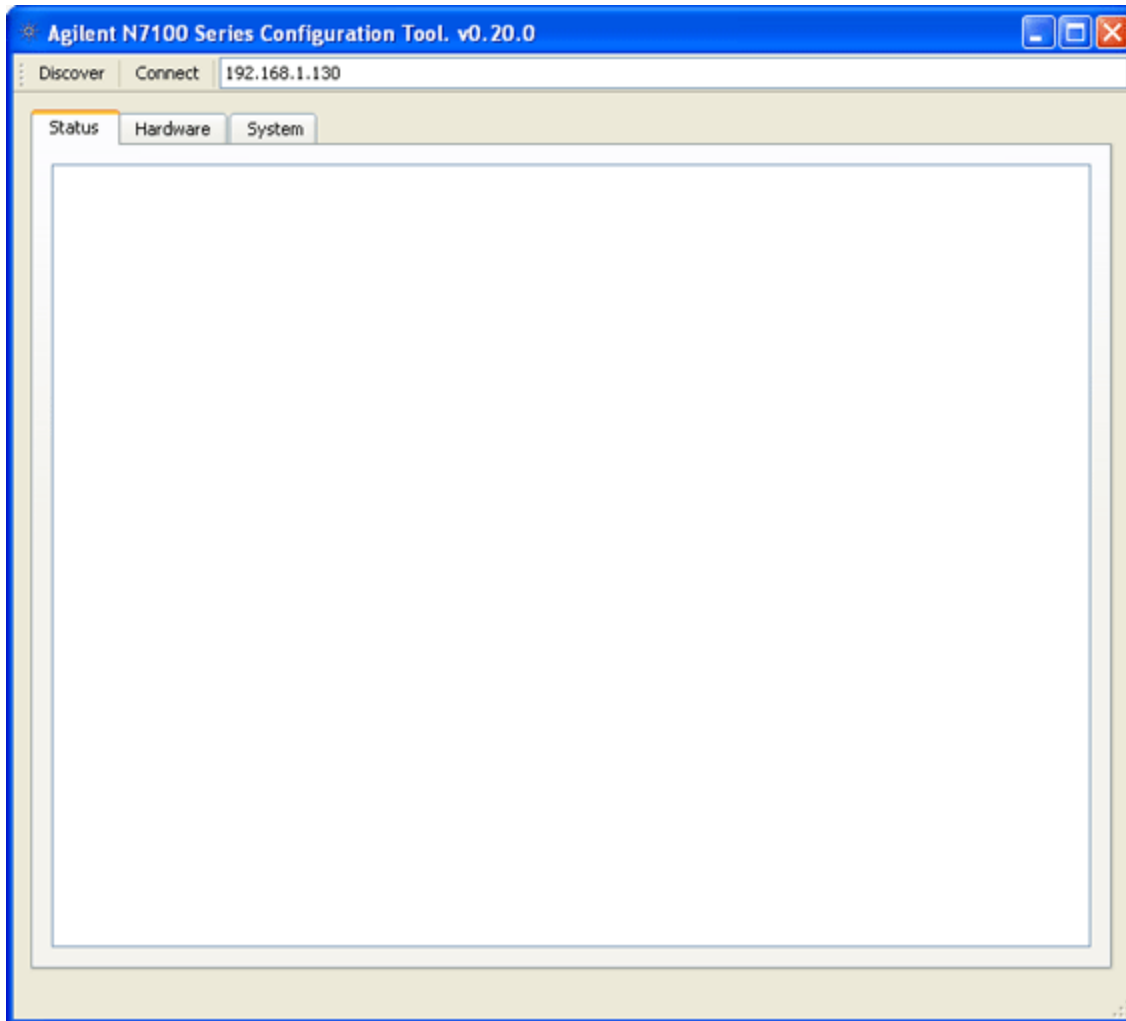
- See "Connecting to Instruments (Connect)"
- See "Finding Instruments (Discover)"
- See "Identifying Instruments"
- See "Status Tab"
- See "Hardware Tab"
- See "System Tab"
- See "Configuring LAN Settings for a Selected Device"

Connecting to Instruments (Connect)

If the currently displayed IP Address is correct, click Connect and the device with the currently displayed IP address is connected.

Finding Instruments (Discover)

Click Discover and the N7109A Multi-Channel Signal Analysis System LAN Discovery tool searches the local LAN connection looking for devices and DHCP servers.

A list of the devices that it finds are then displayed.
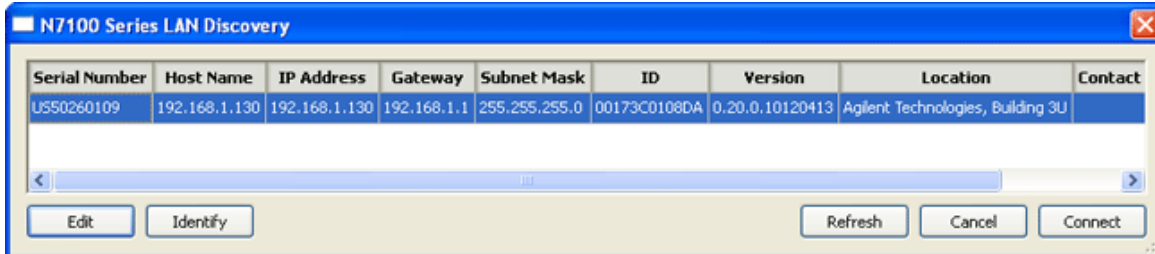
Identifying Instruments

From the displayed list, select an instrument, then click Identify.

An LED on the device should blink to indicate communication.

On the Keysight N7109A Multi-Channel Signal Analysis System, the LED can only be viewed by opening the front cover; the LED is then viewable on the front, bottom, left corner.

Status Tab
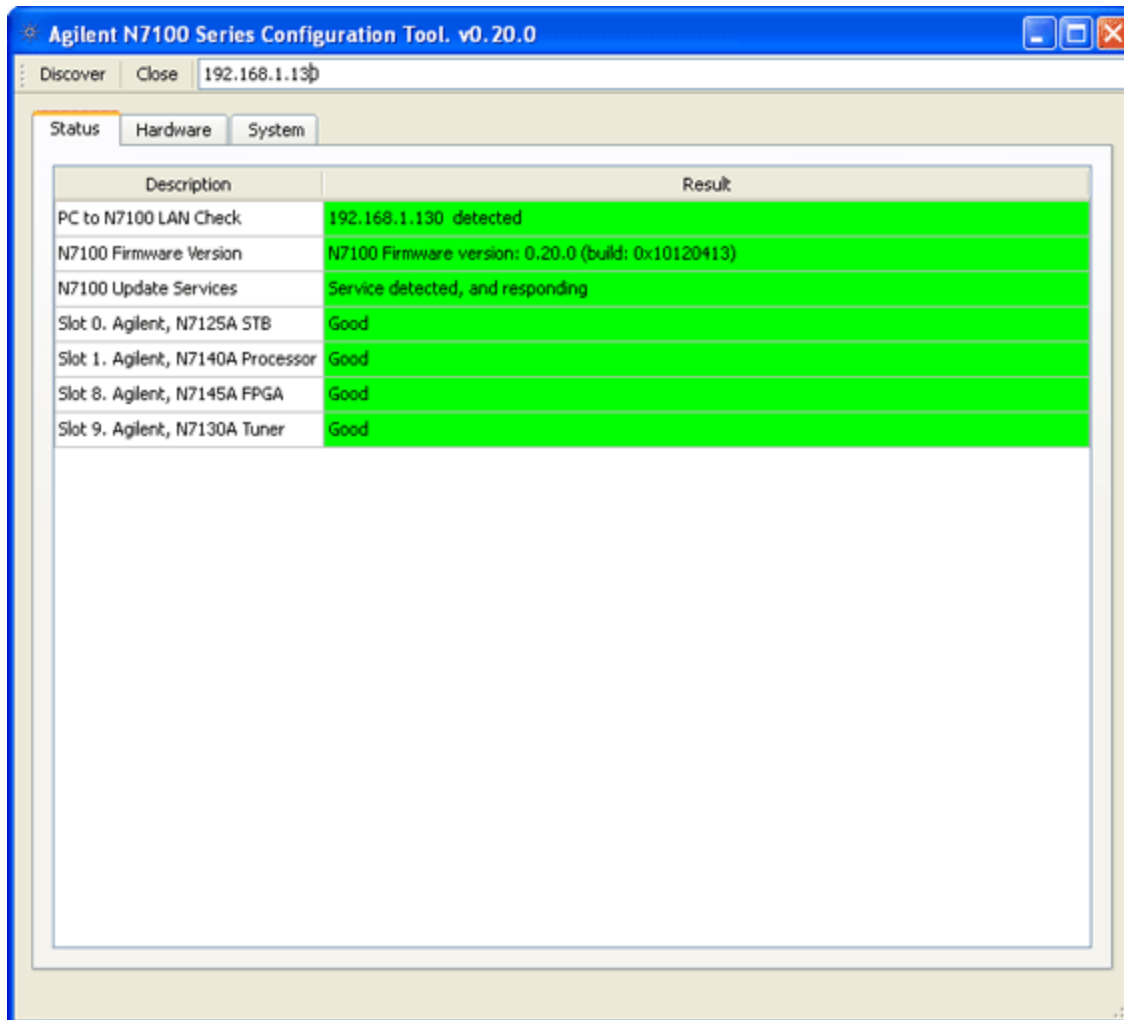
Clicking **Connect** will test out the connections to the Keysight N7109A Multi-Channel Signal Analysis System from your personal computer and check the startup state of the hardware.

- If all boxes are not green, you must resolve the problem.
- If the problem is with a hardware module, more information can be found on the See "Hardware Tab" and See "System Tab".

Hardware Tab

Update Temperatures - use to update the temperature readings of each of the modules in the system and to display the new reading in the Temperature column.

Module Name - displays the name of the Keysight product

Slot / ID - displays the slot number position of the Keysight product

Serial Number - displays the serial number of the Keysight product

Options - displays the options of the Keysight product

Startup Status - displays the status of the Keysight product after it runs a self-test

Temperature - displays the last measured temperature of the Keysight product; it is updated by selecting Update Temperatures.

Version Information - displays the version of FPGA code being used by the Keysight product
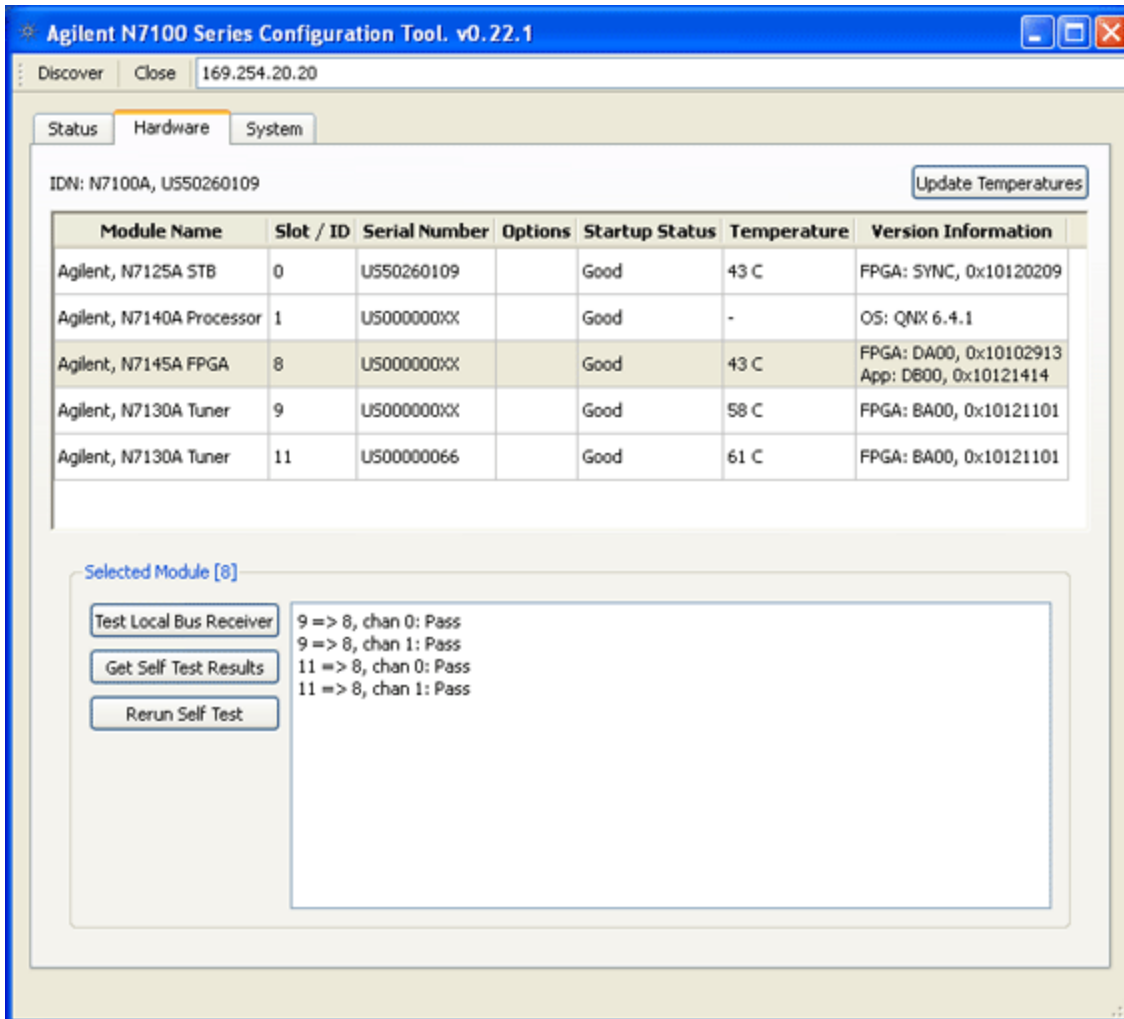
NOTE The Keysight 89600 VSA software must be closed before running any tests because it accesses the same local bus lanes that are used by the following test routines.

Test Local Bus Receiver - displays the results of testing the local bus. For example, in a configuration select the N7145A FPGA Processing Module from the list of hardware and click Test Local Bus Receiver.

In the previous figure, note that the N7145A FPGA Processing Module is in Slot-8. The results displayed by clicking this button as 9=>8, chan 0:Pass and 9=>8, chan 1:Pass indicates that data transferred properly

from channel 0 and channel 1 of the V/UHF 2-Channel Receiver Module positioned in Slot-8. Also, 11=>8, chan 0:Pass and 11=>8, chan 1:Pass indicates that data transferred properly from channel 0 and channel 1 of the V/UHF 2-Channel Receiver Module positioned in Slot-11.

Get Self Test Results - displays the results from the last self test.

Rerun Self Test - reruns the self test and displays (overwrites) the results of any previous self test results.

System Tab
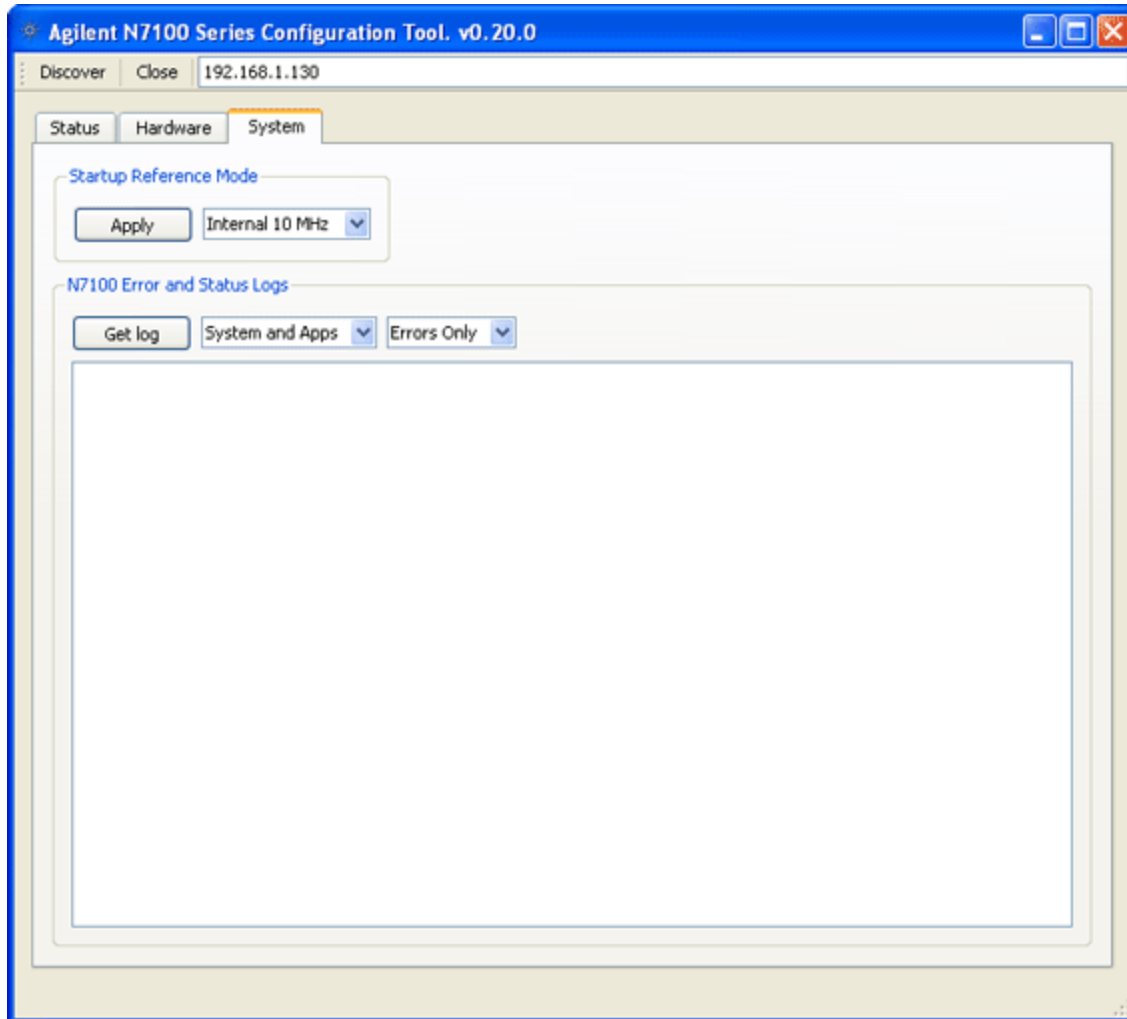
Startup Reference Mode

- **Internal 10 MHz (Default Setting)** - use for the Keysight N7109A Multi-Channel Signal Analysis System.

Instrument Logs

- **Get Log** - use to retrieve the instrument log. The information that is returned is dependent on the selections of the drop-down menus.
- **System and Apps / System Only / Apps Only** - use to select the type of entries to be displayed from the instrument log. You can include both system and application entries, only system entries, or only application entries.
- **All / Errors Only** - use to select either All entries or only Error entries are to be displayed from the instrument log.

Configuring LAN Settings for a Selected Device

Overview of DHCP Networking

- **Router** - a specialized computer (that acts as a Default Gateway), running software that enables data to move from one network to another.
- **Internet Host** - a machine/application connected to the Internet that has an Internet Protocol address (IP address).
- **IP Address** - a group of four numbers, with each group separated by a period (dotted-decimal notation), that is used to uniquely identify every device on a network (such as the Internet). IP addresses must be unique on the network in which they exist.
- **DHCP** - Dynamic Host Configuration Protocol is a client-server set of rules created to enable the dynamic assignment of IP addresses to devices. DHCP reduces the work required by network administrators and prevents IP address conflicts caused by two devices trying to use the same IP address.
- **DHCP Client** - is an Internet host using DHCP to obtain configuration parameters such as an IP address.
- **DHCP Server** - is an Internet host that returns configuration parameters to DHCP Clients. The DHCP Server has a pool of IP addresses from which it draws addresses and then leases them to each DHCP Client device as it boots up and connects to the network. The DHCP Server leases the IP addresses for a period of time set by the network administrator. During the period of the lease, the DHCP Server will not assign that IP address to any other device. When the lease expires, the DHCP Client must either renew the lease or release the IP address.

To configure LAN settings, click Edit on the N7109A Multi-Channel Signal Analysis System LAN Discovery dialog box.

| NOTE | In order to change the IP Address Mode, the Keysight N7109A Multi-Channel Signal Analysis System must be rebooted when the *IP Address Mode* is changed! |

IP Address Mode

- **DHCP with Auto IP Fallback** - (Default Setting). In this IP address mode, a DHCP Server is used to assign IP addresses to each device.
    - If a DHCP Server is not found, it switches (falls back) to Auto IP.
- **Auto IP** - Without a DHCP Server, the device will use Auto IP.
  Auto IP is a client-server set of rules created to enable the automatic assignment of IP addresses to devices that are not using a DHCP server. Auto IP is not the same as DHCP, but also prevents IP address conflicts caused by two devices trying to use the same IP address.

- **Static IP** - Care must be used when setting a device to Static IP because a device may be set to an IP address that conflicts with another device at the same IP address. It is highly recommended that you contact your network administrator before setting a device to a Static IP address.
- **Hostname** - a hostname is an alias for the IP Address. It is assigned to a computer and is used in place of the IP Address - this may make it easier for humans. A computer connected to the Internet may or may not have a hostname, but it must have an IP Address.
- **IP Address** - a group of four numbers, with each group separated by a period (dotted-decimal notation), that is used to uniquely identify every device on a network (such as the Internet). IP addresses must be unique on the network in which they exist.
- **Subnet Mask** - are used to segment IP addresses from one large network into many smaller ones.
- **Default Gateway** - a specialized computer (your local Router), connected to more than one network, running software that allows a device to move data from one network to another. It is used to forward the data from the interface it receives data on, to another interface that retransmits the received data onto another interface serving another network.
  The default gateway is typically the IP address of the local router connected to the local network.
- **Location** - this field may be left empty. It can be used to enter a description of where the device is physically located.
- **Contact** - this field may be left empty. It can be used to enter the name or phone number of the device owner.

Troubleshooting

If there is a problem with *Test Connection*, a message similar to the following is displayed along with a red X mark.
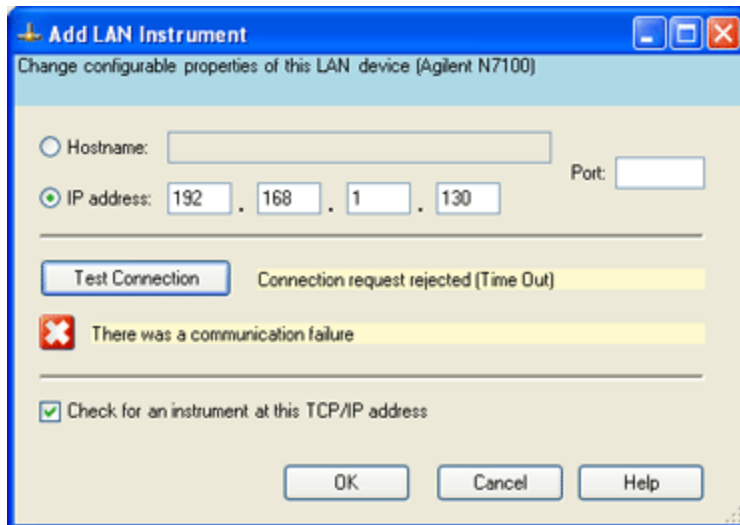
Verify that you entered a valid IP address and try again. You may need to contact your network administrator for a list of valid IP addresses.

If there is a problem when clicking OK to check for an instrument at the TCP/IP address, a message similar to the following is displayed.
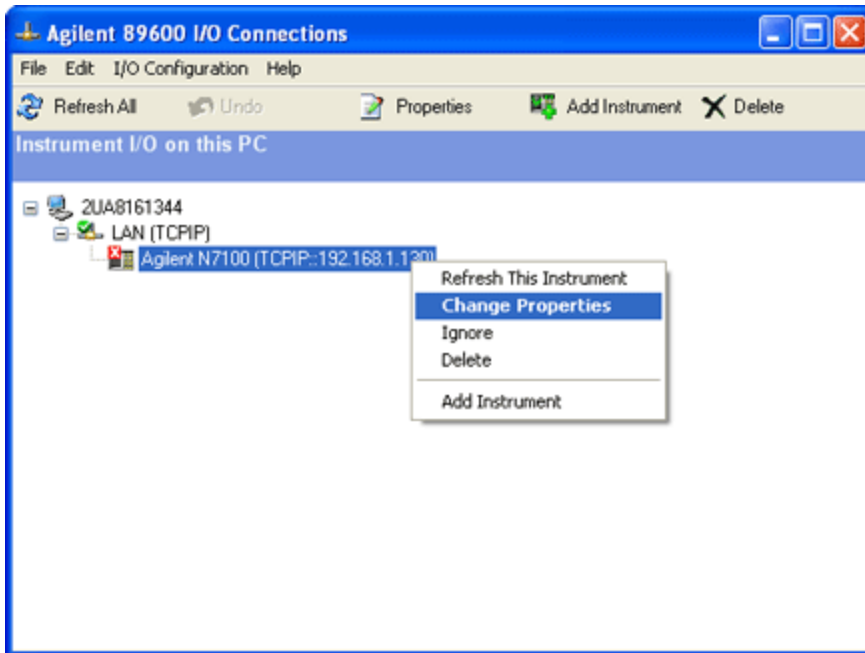
- To correct the problem, point the cursor to the problem instrument with a red X, right-click the mouse to expose a drop-down menu, and click Change Properties.
- Verify that you entered a valid IP address and try again. You may need to contact your network administrator for a list of valid IP addresses.

If there is a problem when starting the VSA software.

- The VSA software cannot communicate with the hardware that was added and is warning that it is going to start in Simulation mode.
- Verify that all cable connections are still made, power is on, and that you entered a valid IP address and try again. See See "Connect Instruments to VSA Software".

10 Configuring Logic Analyzers

Introduction

This chapter contains information related to the Keysight 89600 VSA's link to selected Keysight Logic Analyzers.

The 89600 VSA can capture and analyze time series data on a digital bus using either an Keysight 1680, 1690, 16800, or 16900 series Logic Analyzer as a data source. The Keysight 1680, 1690, 16800, and 16900 series Logic Analyzers all use the same Logic Analyzer software. The Logic Analyzer link to the 89600 VSA is available with Logic Analyzer software revision 5.51 and higher.

Configurations

16900 Series Logic Analyzers

The 16900 series Logic Analyzer application runs on any PC running Windows 7. The PC can be embedded in the 16900 series Logic Analyzer mainframe, or the PC can be connected to the Logic Analyzer mainframe via a LAN.

The 16900 series Logic Analyzer application can be configured to run online or offline. The online configuration acquires data from a digital device using the measurement hardware in the Logic Analyzer mainframe. The offline configuration uses data previously recorded and saved by the Logic Analyzer. Offline analysis does not require a connection to the Logic Analyzer mainframe.

The 89600 VSA application runs on any PC running Windows 7 or Windows 8. The 89600 VSA application runs on either the 16900 series Logic Analyzer mainframe or on a separate PC. The 89600 VSA works with the 16900 series Logic Analyzer whether the 16900 series Logic Analyzer is online or offline.

Configurations for linking the Keysight 16900 series Logic Analyzer to the Keysight 89600 VSA are:

- Logic Analyzer application and VSA application both running on the Logic Analyzer mainframe. From a speed standpoint, this is generally the highest performance configuration.
- Logic Analyzer application running on the Logic Analyzer mainframe. VSA application running on a separate PC. The VSA application communicates with the Logic Analyzer via the LAN interface.

KEYSIGHT
TECHNOLOGIES

> **NOTE** The PC and the Logic Analyzer mainframe must both be members of the same domain or workgroup. If the PC and the Logic Analyzer are members of the same workgroup, you must log on to both the PC and the Logic Analyzer using the same user name.

- Logic Analyzer application and VSA application both running on the same PC. The Logic Analyzer application communicates with the Logic Analyzer mainframe via the LAN interface.

1680 and 16800 Series Logic Analyzers

The 1680 and 16800 series Logic Analyzer application runs on any PC running Windows 7. The PC can be embedded in the 1680 or 16800 series Logic Analyzer mainframe, or the PC can be connected to the Logic Analyzer mainframe via a LAN.

The 1680 and 16800 series Logic Analyzer application can be configured to run online or offline. The online configuration acquires data from a digital device using the measurement hardware in the Logic Analyzer mainframe. The offline configuration uses data previously recorded and saved by the Logic Analyzer. Offline analysis does not require a connection to the Logic Analyzer mainframe.

The 89600 VSA application runs on any PC running Windows 7 or Windows 8. The 89600 VSA application runs on either the 1680 or 16800 series Logic Analyzer mainframe or on a separate PC. The 89600 VSA works with the 1680 or 16800 series Logic Analyzer whether the 1680 or 16800 series Logic Analyzer is online or offline.

Configurations for linking the Keysight 1680 or 16800 series Logic Analyzer to the Keysight 89600 VSA are:

- Logic Analyzer application and VSA application both running on the Logic Analyzer mainframe. From a speed standpoint, this is generally the highest performance configuration.
- Logic Analyzer application running on the Logic Analyzer mainframe. VSA application running on a separate PC. The VSA application communicates with the Logic Analyzer via a LAN interface.

> **NOTE** The PC and the Logic Analyzer mainframe must both be members of the same domain or workgroup. If the PC and the Logic Analyzer are members of the same workgroup, you must log on to both the PC and the Logic Analyzer using the same user name.

- Logic Analyzer application and VSA application both running on the same PC. The Logic Analyzer application communicates with the Logic Analyzer mainframe via a LAN interface.

1690 Series Logic Analyzers

The 1690 series Logic Analyzer application runs on any PC running Windows 7.

> **NOTE** Unlike the 1680, 16800, and 16900 series Logic Analyzers, the 1690 series Logic Analyzer does not have an embedded PC in the Logic Analyzer mainframe.

The 1690 series Logic Analyzer mainframe must be connected to a PC via an IEEE 1394 Firewire interface.

The 1690 series Logic Analyzer application can be configured to run online or offline. The online configuration acquires data from a digital device using the measurement hardware in the Logic Analyzer mainframe. The offline configuration uses data previously recorded and saved by the Logic Analyzer. Offline analysis does not require a connection to the Logic Analyzer mainframe.

The 89600 VSA application runs on any PC running Windows 7 or Windows 8. The 89600 VSA application works with the 1690 series Logic Analyzer whether it is online or offline.

Configurations for linking an Keysight 1690 series Logic Analyzer to an Keysight 89600 VSA are:

- Logic Analyzer application and VSA application both running on the same PC. The Logic Analyzer application communicates with the Logic Analyzer mainframe via the IEEE 1394 interface. From a speed standpoint, this is generally the highest performance configuration.
- Logic Analyzer application and VSA application running on separate PCs. The Logic Analyzer application communicates with the Logic Analyzer mainframe via the IEEE 1394 interface. The VSA application communicates with the Logic Analyzer application via the LAN interface.

> **NOTE** The two PC's must be members of the same domain or workgroup. If the PC's are members of the same workgroup, you must log on to both PC's using the same user name.

Connecting to a Network

If either the Logic Analyzer application or the VSA application requires access to the Logic Analyzer mainframe via a LAN, you must:

- Configure the Logic Analyzer mainframe firewall to enable applications to access it.
- Set up a direct LAN connection between the host computer and the Logic Analyzer mainframe using a LAN cable or set up the Logic Analyzer mainframe to communicate via your intranet.

> **NOTE** If you are using an older PC that does not have Auto-MDIX capability, you will need to use a crossover cable when setting up a direct LAN connections.

- Install the Logic Analyzer COM Automation client software on your remote computer.

> **NOTE** The PC and the Logic Analyzer mainframe must both be members of the same domain or workgroup. If the PC and the Logic Analyzer are members of the same workgroup, you must log on to both the PC and the Logic Analyzer using the same user name.

Follow the instructions in the Logic Analyzer help topic "Setting Up for COM Automation" to properly set up your network connection and configure the firewall. To access the "Setting Up for COM Automation" information, start the Logic Analyzer application and click Help > Help Topics > COM Automation > Setting Up for COM Automation.

The preferred method for installing the Logic Analyzer COM Automation client software is to install the Logic Analyzer software on the remote computer. Installing the Logic Analyzer software automatically installs the COM Automation client. This gives you the benefit of having Logic Analyzer offline analysis capability and the COM Automation client set up on each computer you use to link to the Logic Analyzer. For a free copy of the latest Logic Analyzer software, go to *http://www.keysight.com/find/logic*.

If you would prefer to not install the Logic Analyzer software on your remote computer, you can install just the Logic Analyzer COM Automation client software. The Logic Analyzer COM Automation client software is available on any system that has the Logic Analyzer software installed. The file name is SetupLACOM.exe. The file is located at `C:\Program Files\Agilent Technologies\Logic Analyzer\SetupLACOM.exe`. For additional information on installing the Logic Analyzer COM Automation client software, refer to "Setting Up for COM Automation" in the Logic Analyzer online help.

For information on configuring the 89600 VSA LAN interface, see See "Configuring the LAN interface".

89600 I/O Connections

Keysight 89600 I/O Connections is a software utility that helps you to quickly connect and configure your LAN-connected Logic Analyzer instruments, verify operation, and troubleshoot connectivity problems. The 89600 I/O Connections software is installed with the 89600 VSA software. To start the 89600 I/O Connections utility, click Start > (All) Programs/All apps > Keysight 89600 VSA *xx.y* > Hardware Utilities > Logic Analyzer > VSA IO Connections (where *xx.y* is the VSA version number).

An explorer pane appears when you start the 89600 I/O Connections utility. The explorer pane is a graphical representation of your test system and its status. The following screen shot is of an 89600 I/O Connections explorer pane.
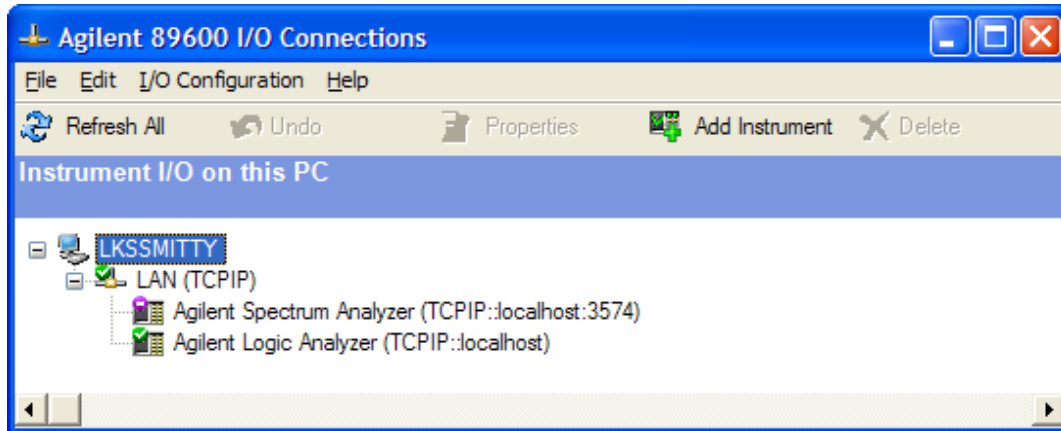
Adding an Instrument

You can use the Keysight 89600 I/O Connections utility to add an instrument in any of the following ways.

- Click Add Instrument on the toolbar.
- Right-click anywhere in the Explorer Pane, then click Add Instrument.
- From the menu bar, click I/O Configuration > Add Instrument.

When the *Add Instrument* dialog box appears, select Keysight Logic Analyzer and click OK.

When the *Add LAN Instrument* dialog box appears, configure your Logic Analyzer in one of the following ways.

- If you know the hostname of the Logic Analyzer, select Hostname and enter the Logic Analyzer hostname.
- If you know the IP address of the Logic analyzer, select IP address and enter the IP address of the Logic analyzer.

Click Test Connection, verify the connection works and click OK.

For additional information on the Keysight 89600 I/O Connections utility, refer to the 89600 VSA online help. To get access to the online help, start the 89600 VSA application, then click Help > Show Help. Information about the Keysight 89600 IO Connections is located under Measurement Platforms > Measurement Hardware > IO Connections for Logic Analyzers and Spectrum Analyzers.

11 Configuring M9391A & M9393A PXIe Analyzers

Introduction

Included in the installation software for the M9391A and M9393A PXIe Vector Signal Analyzer is the Keysight 89600 VSA software role specific to those instruments. A role is a set of DLL files that operate as an interface between the 89600 VSA software and acquisition hardware and is also referred to as the hardware extension.

NOTE	You must purchase 89600 VSA Software Option SSA to use the 89600 VSA software's "Power Spectrum" measurement with the M9391A or M9393A PXIe analyzer.

NOTE	Installation software and product documentation for the M9391A and M9393A is available online at http://www.keysight.com/find/M9391A and http://www.keysight.com/find/M9393A.

The M9391A/M9393A role files, as well as an integration utility, are installed along with other M9391A/M9393A program files. The M9391A/M9393A installer runs the integration utility which detects if 89600 VSA software is installed and, if so, copies the role files into the program files for each compatible version of 89600 VSA.

IMPORTANT	If you install the 89600 VSA software AFTER you install the M9391A/M9393A drivers, you must run the 89600 VSA Integration utility to install the M9391A/M9393A role into the 89600 VSA Program Files. You can access the 89600 VSA Integration utility from the Windows Start menu by clicking Start > All Programs > Keysight > M9391 (or M9393) > 89600 VSA Integration.

A role DLL implements several software interfaces. The interfaces have methods for acquiring measurement hardware, setting acquisition parameters, querying data and querying hardware status. Presence of the role allows 89600 VSA software to detect and configure modules for an M9391A and M9393A receiver. The 89600 VSA's Hardware Configurations dialog is used to specify which PXI modules form an instrument.

KEYSIGHT
TECHNOLOGIES

Installing 89600 VSA Software and Instrument Drivers

To use the Keysight 89600 Series VSA Software, you must install the software and then create a connection between the software and the hardware configuration that is your M9391A or M9393A PXI Vector Signal Analyzer. The steps below show you how to install the 89600 VSA software. The section that follows shows you how to create the connection between software and hardware.

1. Follow the instructions provided with your M9391A/M9393A instrument to install the 89600 VSA software in the instrument's embedded controller or on an external PC connected to the instrument via a PCIe cable.

   When installing the 89600 VSA software, make sure you also install the Keysight IO Libraries. For details, see *Adding Hardware Support* in See "Installing 89600 Software".
2. Run the M9391A/M9393A installer to install the M9391A/M9393A hardware driver.

| NOTE | The M9391A/M9393A installer detects the 89600 VSA software and installs the appropriate role files. |

Creating a New PXIe VSA Instrument

To create a new M9391A or M9393A PXIe VSA instrument, perform the following steps:

1. Run the 89600 VSA Software.
2. Open the "New Hardware Configuration" window.
   a. Click Utilities > Hardware > Configurations.
   b. Click ![plus icon] to display the *New Hardware Configuration* dialog box.
3. In the *New Hardware Configuration* window:
   a. Under the first section, *1. Select the logical instruments to use.*, select the Keysight M9391A or M9393A Analyzer entry and click ![greater than icon] to copy the entry to the "Configuration" window.
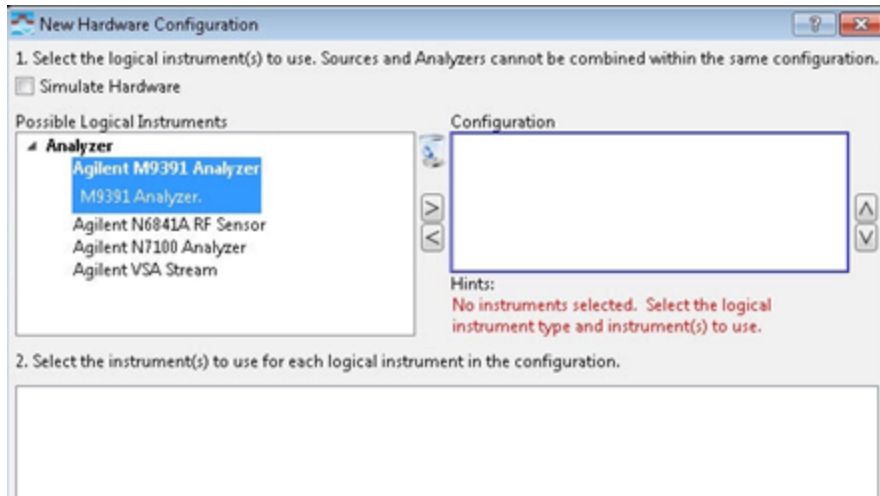
| TIP | If you don't see the M9391A or M9393A in this menu, run the 89600 VSA Integration utility as described earlier in this topic. If, after running that utility you still don't see the M9391A or M9393A, run the Keysight Connection Expert and click Refresh All. |

b.   Under the next section, *2. Select the instrument(s) to use for each logical instrument in the configuration,* select the modules that make up your M9391A or M9393A PXI VSA instrument, as demonstrated in the image below.

If you have more than one instrument in your PXIe mainframe, be careful to select the correct modules for your instrument. You may need to click the drop-down arrows and select modules different than those selected for you.
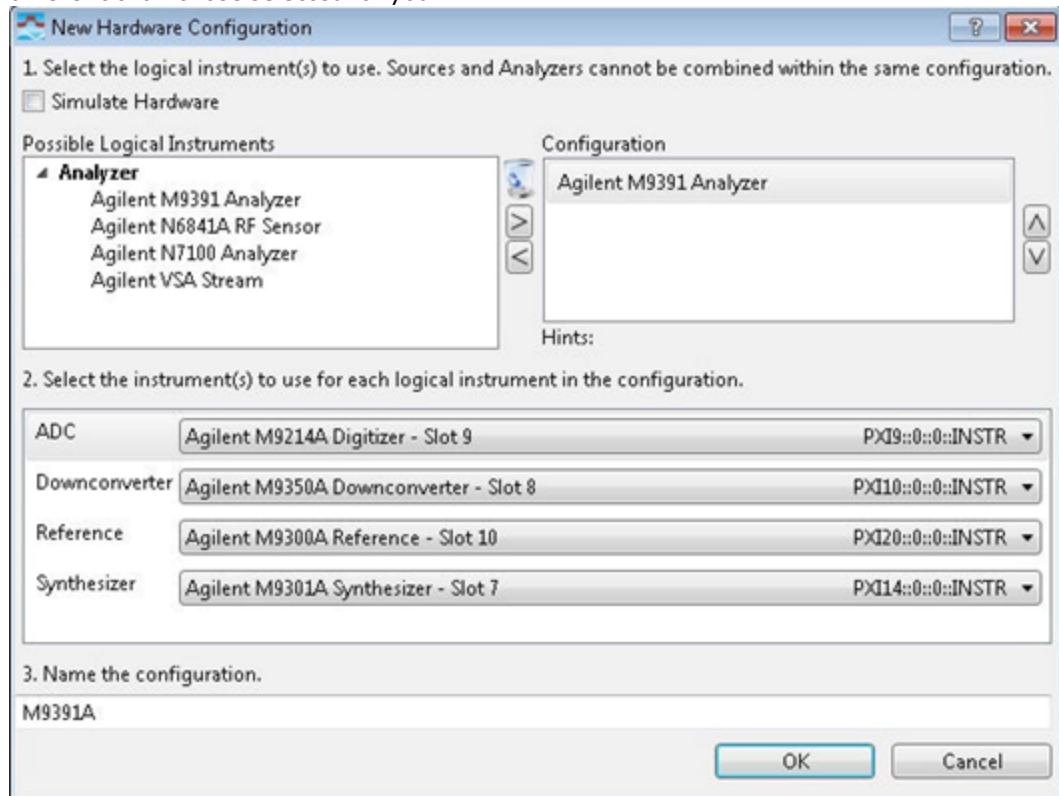
c.   In the final section, *3. Name the configuration*, enter a name for your new configuration.

d.   Click OK to save your new configuration.

4.   If you have more than one instrument configured to run with your 89600 VSA software, click Utilities > Hardware > Analyzer and select the instrument you want to use for your measurement.

5.   Click Current Analyzer Configuration and select your new configuration.

6.   Begin making measurements

12 Troubleshooting

Troubleshooting Licensing Problems

- See "Installing Incorrect License Version Level"
- See "Common Floating License Failures"
- See "FlexNet Publisher Web Site Crashes"

Installing Incorrect License Version Level

If you have an option 200 license installed but only the Demo license is being used, you should check that your license meets the minimum license version that is required by the software.

To check that your license meets the minimum license version requirement:

1. Start the 89600 VSA. Click Start > (All) Programs/All apps > Keysight 89600 VSA xx.y > Keysight 89600 VSA xx.y (where *xx.y* is the VSA version number)

2. View the *Minimum License Version Required*. Click Utilities > Licenses > Status tab.

3. View the *Version* number of your installed option 200 license. Click Keysight License Manager from the License window.

4. If the 89601B option 200 software *Version* number listed in the Keysight License Manager is less than the *Minimum License Version Required* number listed in the License Status tab, then you need a new license to run this software. For example, if the installed license is version 2011.0101 and the minimum license version required is 2011.0701, then you need to order a subscription renewal product.

Common Floating License Failures

This is a list of common causes of floating license failures.

- Attempting to redeem a granted floating license option being used by another Client PC.

- Attempting to connect to a floating license server that is not operational, or to which you have lost connectivity.

- Attempting to use a floating license server that is improperly configured. For example, the floating license file does not match the server host ID in use.

KEYSIGHT
TECHNOLOGIES

FlexNet Publisher Web Site Crashes

Symptom: The FlexNet Publisher Floating License Administration Web Server crashes when you are configuring a new license and then does not allow access to the web page.

To solve this issue, you must:

- Modify the **lmadmin** floating license sever configuration file.
- Remove the Agilent license folder (and license files).
- Ensure the *lamdmin* service is started.
- If installed, ensure that the *Flexnet Licensing Service* is stopped.

In most cases you will then need to restart the See "New Floating License Server Installation using lmadmin" procedure.

1. Open the lmadmin floating license sever configuration file `server.xml` and delete the line between the <vendorDaemons> and </vendorDaemons> xml tags.

2. Delete the *agilent* license folder (and license files) at:
   C:\Program Files (x86)\FlexNet Publisher License Server Manager\licenses**agilent**

3. Make sure that the *lmadmin* service is started and, if installed, the *FlexNet Licensing Service* is stopped or removed.

Troubleshooting a Lost Connection to the Network License Server

This information only applies to systems that use a floating license server and a floating license Client.

If, two to three minutes after starting the 89600 VSA software, a License Warning message window appears that says that the VSA software is about to lose, or has lost, its connection to the network license server, the licensing software may have encountered a firewall incompatibility. Every two to three minutes, the 89600 VSA software connects to the license server to check the Floating license status. Some third party firewall applications treat this as a port scan attack and will lock out the Client. This problem can be fixed by turning off any third party firewall software that resides on the server. This is not an issue with the Windows firewall.

Troubleshooting a LAN Interface Problem

If the 89600 software cannot find your measurement hardware, the problem may be in the LAN interface.

To troubleshoot the LAN interface:

1. Close all 89600 applications. To verify that all applications are closed, run Task Manager.
   a. Right click an empty space in the task bar or press Alt-Ctrl-Delete.
   b. Click Task Manager > Applications.
   c. If there are any *89600* applications listed, highlight them and click End Task.
   d. Click the Processes tab.
   e. If there are any *Agilent.SA.Vsa.*.EXE* processes in the list, highlight them and click End Task.
2. Confirm that your PC can communicate with the instrument.
   a. Open a Command Prompt window: click Start > (All) Programs/All Apps > Accessories or Windows System) > Command Prompt.
   b. Type ping *hostname* and press Enter, where *hostname* is the IP address or hostname for the instrument. (For instructions on finding the IP address or hostname, see See "Instrument IP Address for a Direct Cable Connection".)

      If you are successful, continue with step 3 If you are not successful, continue with the next sub-step.
   c. Make sure that the PC is on and the LAN cable is connected to the PC and the instrument.
   d. If you are connecting directly from the PC to the instrument, verify that you are using a cros-sover LAN cable.
   e. Turn the instrument power off, then back on.
   f. Verify that the subnet mask is set appropriately. For detailed instructions, see: See "Instru-ment IP Address for a Direct Cable Connection".
3. Confirm that VISA Assistant can find and communicate with the LAN instrument.
4. After you have confirmed that Interactive IO can find the instrument, verify that Interactive IO can send a SCPI query (if the instrument supports SCPI).
   a. Restart Interactive IO if necessary.
   b. Click Connect and check the resource name.
   c. Click Send & Read.
   d. If there is an error or an incorrect response, try sending a device clear first. Click Device Clear. If this does not help, cycle power on the instrument and try step c. again.
5. Start an 89600 application. Look for any error dialog boxes at startup stating that the instrument does not have the proper options or firmware.
6. Verify that the instrument is in the list under Utilities > Hardware > Configurations.

LAN Interface Problem With an Infiniium Oscilloscope

If you are having trouble communicating directly over the LAN with an Infiniium Oscilloscope, check that the M libraries on the scope are configured correctly (Click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Connection Expert).

M libraries configuration

VISA Name	SICL Name
GPIB0	hpib7
GPIB1	inst0
TCPIP0	lan

To configure the M libraries (Windows firewall must be off):

1. On the Infiniium scope, minimize the scope application. Click Start > (All) Programs/All apps > Keysight IO Libraries Suite > Connection Expert.

2. Select Internal Instrument in the *Instrument I/O on this PC* and click Change properties. Set the following parameters: SICL Interface ID - hpib7, VISA Interface ID - GPIB0, and Logical unit - 7. Press OK.

3. Select Internal Instrument in the *Instrument I/O on this PC* and click Change properties again. Set the following parameters: SICL Interface ID - inst0, VISA Interface ID - GPIB1, and Logical unit - 8. Press OK.

4. Select TCPIP in the *Instrument I/O on this PC* and click Change properties. Set the following parameters: SICL Interface ID - lan, VISA Interface ID - TCPIP0, Logical unit - 30 and Default Protocol - Auto. Press OK.

5. Select n/a LAN Server in the *Instrument I/O on this PC* and click Change properties. Click the Defaults button and press OK.

6. Close the Connection Expert dialog box.

You must reboot the scope after closing the Connection Expert dialog box.

Troubleshooting Interference With Other Devices or Instruments

When you start an 89600 VSA, the software attempts to identify other instruments and devices connected to the computer. This can cause the following problems:

- Instruments and devices get reset when you start the 89600 VSA even if the instrument/device is not controlled by 89600.
- Errors occur on instruments or devices not controlled by 89600 when you start the 89600 VSA.

To eliminate these problems, instruct the 89600 software to exclude specific devices from the identification process by creating VsaVisaConfig.txt file. To do this, edit the VsaVisaTemplate.txt file and save as a VsaVisaConfig.txt file.

1. Open the VsaVisaConfig.txt file:
   32 bit: C:\Program Files\Agilent\89600 Software xx.y\89600 VSA Software\VsaComponents\x86\VsaVisaTemplate.txt

or

64 bit: `C:\Program Files\Agilent\89600 Software xx.y\89600 VSA Soft-ware\VsaComponents\x64\VsaVisaTemplate.txt`

...where *xx.y* is the VSA version number

2. Modify the file to list the addresses of the devices you want to exclude, then save the file as VsaVisaConfig.txt file in the same folder location.

Troubleshooting the Display Driver

This section provides display driver troubleshooting information.

Symptom

The symbol location shape, such as the dots, on the constellation trace displays do not show properly.

Possible Cause

The display driver may not be functioning properly.

Solution

Use this procedure to correct the display driver:

1. Update the display driver:
   Contact your PC manufacturer to see if a newer version of the display driver is available. If there is, update the driver and verify if the problem is fixed.

2. Reconfigure the display driver settings:
   If the latest display driver does not fix the problem, try decreasing the hardware acceleration.

Index