

XGS2 Chassis Platform

Release 9.24 Patch 1

Notices

Copyright Notice

© Keysight Technologies -2022

No part of this document 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.

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 express 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.

U.S. Government Rights

The Software is "commercial computer software," as defined by Federal Acquisition Regulation ("FAR") 2.101. Pursuant to FAR 12.212 and 27.405-3 and Department of Defense FAR Supplement ("DFARS") 227.7202, the U.S. government acquires commercial computer software

under the same terms by which the software is customarily provided to the public. Accordingly, Keysight provides the Software to U.S. government customers under its standard commercial license, which is embodied in its End User License Agreement (EULA), a copy of which can be found at

<http://www.keysight.com/find/sweula>.

The license set forth in the EULA represents the exclusive authority by which the U.S. government may use, modify, distribute, or disclose the Software. The EULA and the license set forth therein, does not require or permit, among other things, that Keysight: (1) Furnish technical information related to commercial computer software or commercial computer software documentation that is not customarily provided to the public; or (2) Relinquish to, or otherwise provide, the government rights in excess of these rights customarily provided to the public to use, modify, reproduce, release, perform, display, or disclose commercial computer software or commercial computer software documentation. No additional government requirements beyond those set forth in the EULA shall apply, except to the extent that those terms, rights, or licenses are explicitly required from all providers of commercial computer software pursuant to the FAR and the DFARS and are set forth specifically in writing elsewhere in the EULA. Keysight shall be under no obligation to update, revise or otherwise modify the Software. With respect to any technical data as defined by FAR 2.101, pursuant to FAR 12.211 and 27.404.2 and DFARS 227.7102, the U.S. government acquires no greater than Limited Rights as defined in FAR 27.401 or DFAR 227.7103-5 (c), as applicable in any technical data. 52.227-14 (June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

Safety Information



Do not proceed beyond a hazard notice until the indicated conditions are fully understood and met.

A **CAUTION** notice denotes a hazardous situation that, if not avoided, could result in minor or moderate injury.

A **WARNING** notice denotes a hazardous situation that, if not avoided, could result in death or serious injury.

Contacting Us

Keysight headquarters

1400 Fountaingrove Parkway
Santa Rosa, CA 95403-1738
www.ixiacom.com/contact/info

Support

Global Support	+1 818 595 2599	support@ixiacom.com
<i>Regional and local support contacts:</i>		
APAC Support	+91 80 4939 6410	support@ixiacom.com
Australia	+61-742434942	support@ixiacom.com
EMEA Support	+40 21 301 5699	support-emea@ixiacom.com
Greater China Region	+400 898 0598	support-china@ixiacom.com
Hong Kong	+852-30084465	support@ixiacom.com
India Office	+91 80 4939 6410	support-india@ixiacom.com
Japan Head Office	+81 3 5326 1980	support-japan@ixiacom.com
Korea Office	+82 2 3461 0095	support-korea@ixiacom.com
Singapore Office	+65-6215-7700	support@ixiacom.com
Taiwan (local toll-free number)	00801856991	support@ixiacom.com

Documentation conventions

The following documentation conventions are used in this guide:

Describing interactions with the UI

You can interact with products by using different input methods: keyboard, mouse, touch, and more. So in most parts of the user documentation, generic verbs have been used that work with any input method. In cases where input-neutral verbs do not work, mouse-specific verbs are used as the first choice, followed by touch-specific verbs as the second choice.

See the following table for examples on how you can interpret the different input methods.

Input-neutral	Mouse	Touch
Select Modify .	Click Modify .	Tap Modify .
Select Accounts > Other accounts > Add an account .	Click Accounts > Other accounts > Add an account .	Tap Accounts > Other accounts > Add an account .
To open the document in Outline view, select View > Outline .	To open the document in Outline view, click View > Outline .	To open the document in Outline view, tap View > Outline .
Select Protocols .	Click the Protocols tab.	Tap Protocols .
-NA-	Double-click the Client wizard.	Double-tap the Client wizard.
Open the Packages context menu.	Right-click Packages to open the shortcut menu.	Long tap Packages to open the shortcut menu.

Deprecated words

The following words have been replaced with new words, considering the audience profile, our modern approach to voice and style, and our emphasis to use input-neutral terms that support all input methods.

Old usage...	New usage...
shortcut menu, right-click menu	context menu
click, right-click	select
drag and drop	drag

CONTENTS

Contacting Us	iii
Documentation conventions	iv
Chapter 1 XGS2 Chassis Platform Overview	1
XGS2 Processor Modules	3
Front Panel	5
Indicators and Controls	6
Product Specifications	6
Chapter 2 XGS2 Chassis Physical Setup	9
Unpack and Connect the Unit	10
Install XGS2 Chassis	10
Rack Mounting and Ventilation Warning	14
Installing the XGS2 chassis in an Equipment Rack	14
Installing the XGS2 on a Flat Surface	14
Record Product Information	16
Chapter 3 XGS2-SD Configuration	17
Connecting the XGS2-SD Processor module	18
Initial Configuration XGS2-SD	19
Chapter 4 Ixia Test Applications Support	21
Ixia Applications support for XGS2-SD	22
IxLoad	22
IxNetwork	22
Chapter 5 Common Administrative Tasks	25
Start a Windows Remote Desktop Connection	26

Chapter 6 Troubleshooting	27
LED Indicators	28
IP Addressing Issues	30
Troubleshooting Licensing Issues	31
INDEX	33

CHAPTER 1 XGS2 Chassis Platform Overview

This section provides an overview of the XGS2 chassis platform, the physical units and the indicators and controls on them.

In this section:

- XGS2 Processor Modules** 3
- Front Panel** 5
- Indicators and Controls** 6
- Product Specifications** 6

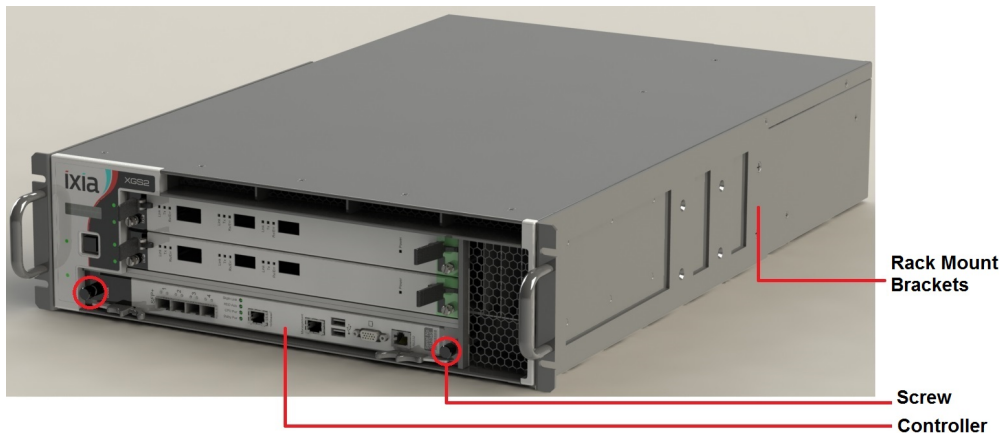
This page intentionally left blank.

XGS2 Processor Modules

XGS2 is the next-generation benchtop chassis platform that brings higher density, modular service capability, and efficient air flow for rack mount applications. This chassis platform supports application and security testing with the Ixia IxLoad, IxNetwork and BreakingPoint software products. The model of the chassis platform supported on Windows 10 is XGS2-SD - Standard Performance Controller. This model provides support for IxLoad and IxNetwork but not BPS.

The XGS2 Processor Module is a modular, field-replaceable system controller unit running Linux, and Windows 10 operating systems for management and control of load modules, user management, port configurations, and statistics. It allows and manages the execution of both IxOS/IxServer and BreakingPoint environments in parallel, providing users the ability to run both IxLoad and BreakingPoint tests at the same time on different load modules.

The chassis is shown below:



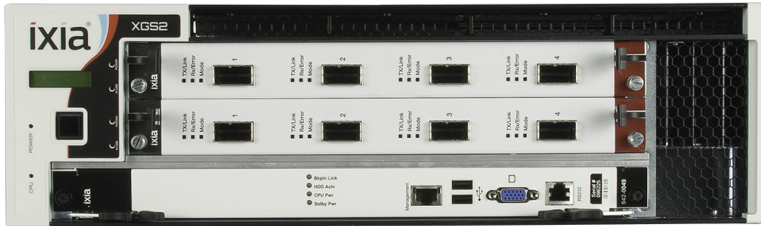
Chassis Front View



Chassis Rear View

Front Panel

The XGS2-SD front panel:



Indicators and Controls

1	Power LED	Indicates the current power state: <ul style="list-style-type: none">▪ Green: the system is ON and all power supplies are operational.▪ Off: the system is powered off or one or more power supplies are not operational.
2	Power button	Power button: Power cycles the unit: <ul style="list-style-type: none">▪ Short press (0.5 to 2 seconds): Graceful system shutdown. Allow up to 30 seconds for the system to power-down.▪ Long press (4 seconds): Force Power Shutdown - immediate.
3	Serial port	Provides attachment to the serial port of a workstation, using the provided RJ45 to DB232 cable.
4	USB ports	Provides attachment of USB devices.
5	LAN port	An RJ-45 10/100/1000-BaseT management port, providing connection to your network.

Product Specifications

This section describes the network emulator regulatory compliance, safety and product specifications.

Chassis

3U Rack Mountable

Regulatory Compliance

UL File #: E255262

Safety

North America

UL 60950-1, 2nd Edition

CSA C22.2 No. 60950-1, 2nd Edition

Europe

EN60950-1, 2nd Edition

International

CB Scheme: IEC 60950-1:2nd Edition

EMI/EMC

North America

FCC part 15, Class A (USA)

ICES-003 Issue 4, Class A (Canada)

Europe

EN 55022:2010 +C1 (Emissions, Harmonics, Flicker)

EN 55024:2010 (Immunity)

International

IEC/EN 61000-3-2:2009 Harmonic emissions

IEC/EN 61000-3-3:2008 Voltage Fluctuations & Flicker Immunity

IEC/EN 61000-4-2:2008 Electrostatic Discharge Immunity

IEC/EN 61000-4-3:2006 Radiated Immunity

IEC/EN 61000-4-4:2004 +A1:2010 Transient/Burst Immunity

IEC/EN 61000-4-5:2005 Surge Immunity

IEC/EN 61000-4-6:2008 Conducted Radio Frequency Immunity

IEC/EN 61000-4-11:2004 Voltage Dips, Interruptions and Variations Immunity

Dimensions

3U

H x W x D: 5.1" x 17.5" x 26.5"

H x W x D: 12.95 x 44.45 x 67.31 cm

Weight: 55 lbs. (25 kg)

Thermal

Operating Temp.: 0° to 40° C


Operating humidity: 10 to 85% (RH), non-condensing

Input Power

INPUT 1/ALIMENTATION 1: 100-240VAC, 50/60Hz, 8A

INPUT 2/ALIMENTATION 2: 100-240VAC, 50/60Hz, 8A

INPUT 3/ALIMENTATION 3: 100-240VAC, 50/60Hz, 8A

 **Note:** Inputs 1 and 2 are required for normal operation. Input 3 is optional.

CHAPTER 2 XGS2 Chassis Physical Setup

This section describes the tasks needed to physically set up the XGS2-SD unit for operation.

In this section:

- Unpack and Connect the Unit10**
- Rack Mounting and Ventilation Warning14**
- Installing the XGS2 on a Flat Surface14**
- Record Product Information16**

Unpack and Connect the Unit

1. Unpack the unit from the shipping container, and verify that you have all the required components.

The XGS2 chassis platform shipping carton contains the following items:

- One XGS2 chassis
- One rack mounting kit
- Two power cords (one additional power cord if you buy an optional redundant power supply)
- Ixia standard warranty notice
- One *XGS2 Getting Start Guide*
- Any optional items that you ordered (such as transceivers and cables)

If any items are missing or damaged, contact Ixia Support. Refer to *Contacting Us on page iii* for contact information for each Ixia region.

2. Install the chassis. See [Install XGS2 Chassis below](#).

3. Place the unit in the operating location that you have chosen.

You can operate the appliance as a desktop unit or a rack-mounted chassis. For rack-mount instructions, refer to [Rack Mounting and Ventilation Warning](#).

4. Before connecting the unit, record the following information from the label on the back of the unit:
 - Host Name (for example, XGS2-SD),
 - Part number (for example, 940-0010),

(You can record these in the form on [Record Product Information on page 16](#).)

5. Connect the LAN port on the XGS2 chassis platform to your network.

6. Connect the VGA and USB ports to the KVM infrastructure (or connect them to a local monitor, mouse, and keyboard).

Using the provided USB to PS2 cable, connect the RS232 port on the XGS2 chassis platform to the workstation that you will use to manage the unit (described in [Initial Configuration XGS2-SD on page 19](#)).

If your workstation does not have a 9-pin serial port, you will need to use a USB to Serial port converter.

7. Connect the power cord (provided in the shipping carton) to a 110V or 220V power source.

8. Switch on the power supply.

9. Check the following LED indicators to ensure that your system is operating correctly:

- Power LED indicator: Green indicates proper operation.
- LAN port LED indicator: Green indicates proper operation.

Install XGS2 Chassis




The following sections describe the installation procedure for the XGS2-SD chassis .




1. Insert the controller module in the lower slot in front of the chassis. Ensure that the module is fully seated. Ensure that the thumbscrews are screwed in properly.



2. Take the Sync module and insert it in its slot on the back of the chassis.



<p>3.</p>	<p>When the Sync module is fully inserted, tighten its two screws.</p>	 A close-up photograph of a person's hand using a screwdriver to tighten a screw on the Sync module of the XGS2 chassis. The Sync module is a vertical component with four RJ45 ports labeled SYNC PORT 1, SYNC PORT 2, SYNC PORT 3, and SYNC PORT 4. The chassis door is open, and a warning label is visible on the door.
<p>4.</p>	<p>Insert a power supply in one of the power supply slots.</p>	 A photograph showing a hand inserting a power supply unit into a slot in the XGS2 chassis. The power supply is a silver and black unit with a red fan. The chassis door is open, and the Sync module is visible in the background.
<p>5.</p>	<p>Push the power supply until you hear a click and it is fully seated in its slot.</p>	 A photograph showing the power supply unit fully seated in its slot in the XGS2 chassis. The power supply is now flush with the front panel of the chassis. The chassis door is open, and the Sync module is visible in the background.

<p>6.</p>	<p>Repeat the same for the second supply.</p> <hr/> <p>Note: If you have purchased the optional redundant power supply, you may have to repeat this step after removing the empty slot cover.</p>	
<p>7.</p>	<p>The fully assembled chassis's rear view looks like this.</p>	
<p>8.</p>	<p>If you need rack mounting, attach the two rack mounts. Tighten the rack mounts using the screws provided. Depending on your rack equipment placement requirement, you can attach the rack mounts to the front of the chassis, or at an offset from the chassis front.</p>	 <p><i>Rack Mounts attached to the front of the chassis</i></p>



Rack Mounts attached at an offset from the chassis front

- | | |
|----|---|
| 9. | Use the provided power cords to connect the chassis to the electrical power source. |
|----|---|

Rack Mounting and Ventilation Warning

The XGS2 chassis are shipped with brackets and screws for rack mounting and rubber feet for stationing on a flat surface.

Installing the XGS2 chassis in an Equipment Rack

1. The equipment can be installed in most standard 19-inch racks and Telco two-post racks. To install the unit in a rack, complete the following steps:
2. Use the supplied screws to attach a mounting bracket to each side of the unit.
3. Position the unit in the rack and align the holes in the mounting bracket with the holes in the rack.
4. Insert and tighten two screws appropriate for your rack through each of the mounting brackets.

 **Note:** Place orders for ETSI rack brackets separately.

Installing the XGS2 on a Flat Surface

The product can be installed on any appropriate level surface that can safely support the weight of the product and the attached cables.

To install the product, set it on the flat surface and check for proper ventilation.

The supplied rubber feet are optional, but are recommended to keep the product from slipping when not racked.

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturers.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Record Product Information

You can use this page to record the product information required during initial system configuration (and for future reference).

- The Host Name, Part Number, and Windows Product Key are printed on the label on the back of the unit.
- The IP addresses are either assigned by the network's DHCP server or statically assigned by a system administrator.

Host Name:	
Part Number:	
IxOS IP address:	
Windows Product Key:	

CHAPTER 3 XGS2-SD Configuration

This section describes the tasks needed to configure the XGS2-SD chassis.

In this section:

- Connecting the XGS2-SD Processor module18**
- Initial Configuration XGS2-SD19**

Connecting the XGS2-SD Processor module

This section describes the process of connecting the XGS2-SD Processor module. To connect the module you need to do the following:

1. Insert and remove the Processor Module.
2. Connect the RJ45 management port (4) as the designated management port to your lab management switch.
3. Connect the VGA (2) and USB (3) ports to the KVM infrastructure (or to a local monitor, mouse, and keyboard).

Initial Configuration XGS2-SD

To perform initial system configuration for the XGS2-SD chassis, do the following:

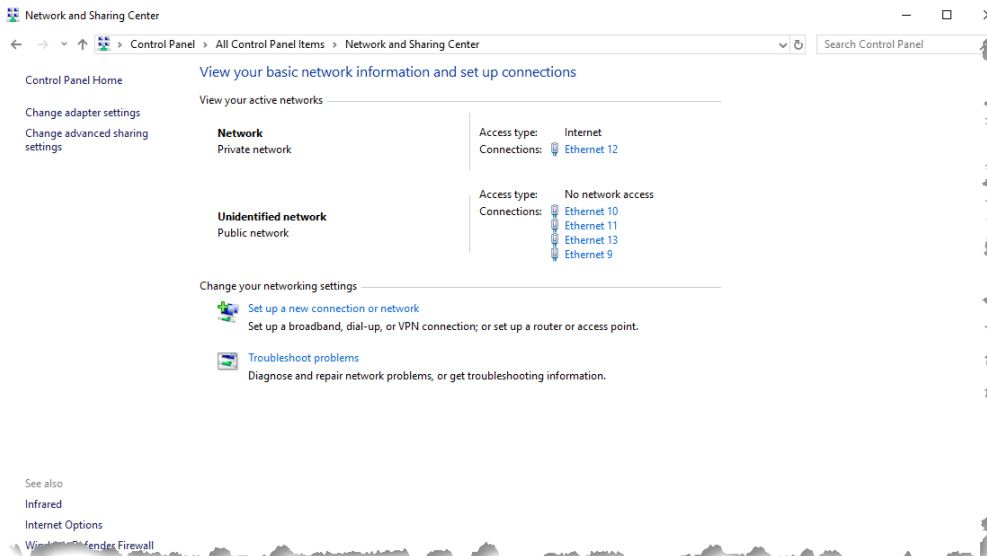
1. Connect the monitor, USB mouse and keyboard, and then start the chassis.
2. When the chassis boots up, log on to the chassis.
The user name is **ixia** and the password is the CPU module serial number found on the sticker located at the back of the chassis.
3. Once you log on to the chassis, [change the IP address](#).

Note: 10.0.x.x/16 is the default internal port address. This can be changed from IxExplorer Chassis Properties.

Change IP Address

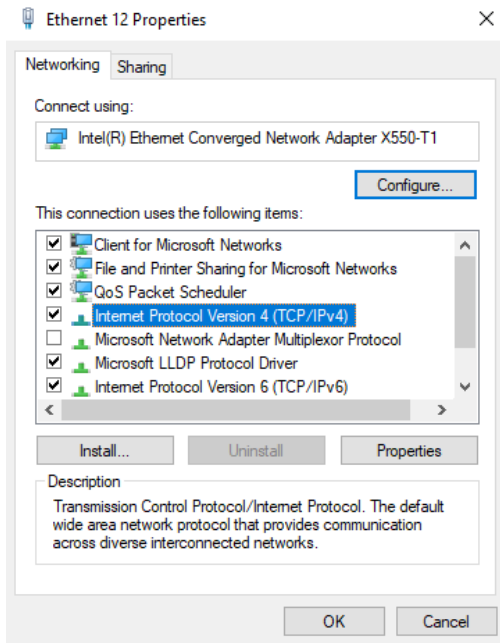
To change the IP address, do the following:

1. On the Start menu, select **Control Panel**.
2. Select **Network and Internet** and then select **Network and Sharing Center**. The **View your basic network information and set up connections** window appears.

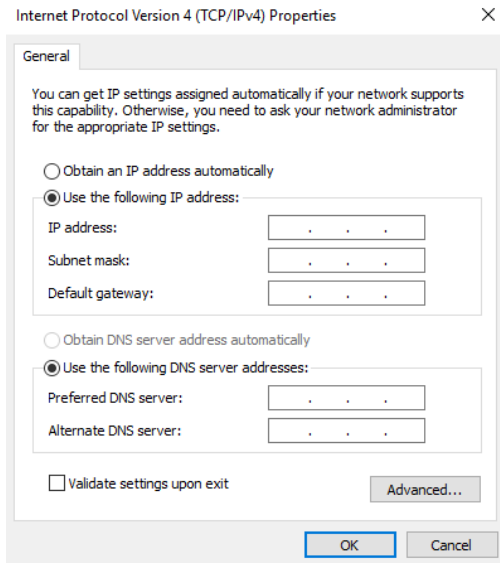


3. Under **View your active networks**, select the local area connection under **Access type: Internet**. The **Status** window appears.

4. Select **Properties**. Select **Internet Protocol Version 4 (TCP/IPv4)**.



5. Select **Properties** and then select the **Use the following IP address** option.



6. Enter the IP address, subnet mask and default gateway.

CHAPTER 4 Ixia Test Applications Support

This section provides the details of the Ixia Test Applications supported by XGS2 chassis platform.

In this section:

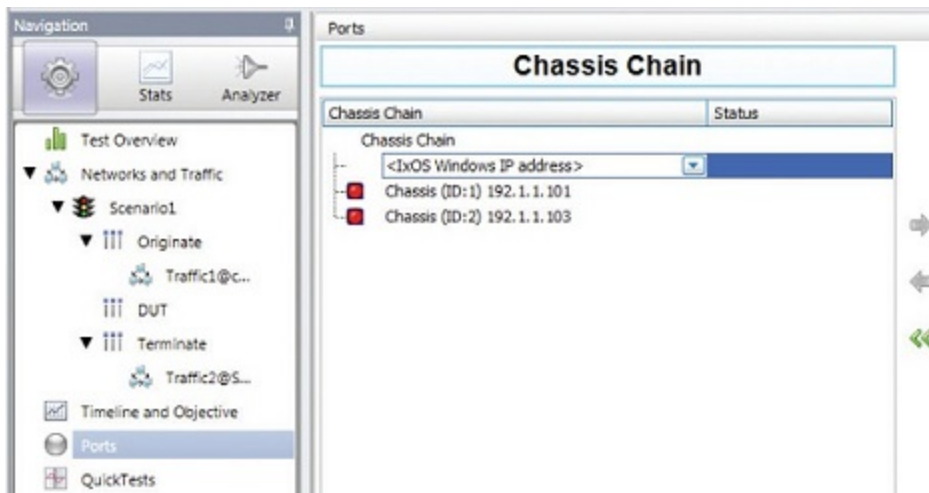
Ixia Applications support for XGS2-SD 22

Ixia Applications support for XGS2-SD

This section provides the details of the Ixia Test Applications supported by XGS2-SD chassis.

IxLoad

When running the IxLoad client application to add your new XGS2-SD chassis in the Chassis Chain pane, the IxOS Windows machine IP address should be used:



IxNetwork

To start IxNetwork and assign ports from an :XGS2-SD chassis

1. Log on to an application server or workstation that has the IxNetwork application installed.
2. Start IxNetwork.
3. Select XGS2 ports for configuration in the IxNetwork test:
 - Select Ports in the navigation pane.
 - Select the Add Chassis icon (in the Port Tools ribbon). Enter the XGS2 host name or IP address.
4. Assign ports from the XGS2 system to the current IxNetwork test scenario.

The screenshot shows the Ixia Network Manager interface. The top menu bar includes File, Home, Automation, Results / Reports, Views, Debug, and Configuration. The Configuration menu is active, showing options like Add Ports, Add Offline Ports, Delete, IxVM Deployment Wizard, Virtual Chassis Builder, Connect All, Release All, Assign Selected, Clear Ownership, Unassign Selected, Link Up/Down, Reboot CPU, Capture, License Setting, Edit L1 Properties, Refresh OAM Status, Import Legacy, Card Configuration, and L1 Config.

The main area displays a table of port configurations:

	State	Name	Connection Status	Negotiated Speed (Mbps)	Loopback
1	●	Ethernet - 001	10.200.105.60:01:01 RG 01	100000	None
2	●	Ethernet - 002	10.200.105.60:01:02 RG 02	100000	None

Below the table, there are tabs for General, Port CPU Statistics, Port Statistics, and Global Protocol Statistics. The Global Protocol Statistics tab is selected, showing a table of statistics for the two ports:

Stat Name	Port Name	Control Packet Tx.	Control Packet Rx.	Ping Reply Tx.	Ping Request Tx.	Ping Reply Rx.	Ping Request Rx.	Arp
1 10.200.105.60/Card01/Port01	Ethernet - 001	0	0	0	0	0	0	0
2 10.200.105.60/Card01/Port02	Ethernet - 002	0	0	0	0	0	0	0

Note: It is recommended that you periodically check the Ixia compatibility matrix (<https://support.ixiacom.com/support-overview/product-support/product-compatibility-matrix>) to determine the correct Ixia software application versions that are validated for interoperability.

This page intentionally left blank.

CHAPTER 5 Common Administrative Tasks

This topic describes, for reference, some of the common tasks that system administrators will perform on the XGS2 system.

In this section:

Start a Windows Remote Desktop Connection26

Start a Windows Remote Desktop Connection

To start a Remote Desktop Connection session to the XGS2 system:

1. If you do not know the IxOS IP address, ping the unit's host name.
The host name appears on the label on the back of the unit.
The ping command will return the IxOS IP address.
2. From the management workstation, start a **Remote Desktop Connection** session with the chassis, using the IP address that was returned by the ping command.
In the Windows Security window, provide the following credentials:
 - User name: ixia
 - Password: the last part of the host name. For example, if the host name is xxxx-X1234567, the password will be X1234567.

After you select OK, Remote Desktop Connection establishes the connection and displays the chassis desktop.

CHAPTER 6 Troubleshooting

This section provides guidance for interpreting the operational status of your XGS2 unit, and troubleshooting issues that may arise.

If you need assistance, contact Ixia Technical Support using the contact information provided in [Contact Us](#).

In this section:

- LED Indicators** **28**
- IP Addressing Issues** **30**
- Troubleshooting Licensing Issues** **31**

LED Indicators

The XGS2 chassis provides LED indicators that provide a visual presentation of the operational status of the device and its individual ports.

LED/LCD Display


The XGS2-SD chassis has front panel LEDs for each load module slot. The following table describes the purpose and meaning of each indicator:

Label	Color	Description
Power	Green	When the Power LED is flashing, the board is being detected or initialized. The Power LED is illuminated when the board is powered.
In Use	Amber	The Active LED is illuminated when you have taken ownership of the load module. If you run traffic from IxExplorer, without taking port ownership, the In Use light is not illuminated.

CPU Slot LED Definitions

The specifications of LEDs for the Processor module and the LEDs above the Processor module slot are shown in the following table:

	LED	Color	Description
On the chassis front face	CPU card Slot LED	Yellow	The backplane is initializing
		Green	The backplane has initialized
Processor module - front panel	Stdby Pwr LED	Green	5V Stand-by power is available
	CPU Pwr LED	Green	CPU Card power is available
	HDD Act LED		
	Bkpln Link LED	Green	PCIe link to backplane is up
Processor module - Ethernet LEDs for each port	Link LED	Green	Port has link.

	LED	Color	Description
			 Note: Link and Activity LEDs are included for all Ethernet ports.
	Act LED		Flashes when port has activity.

IP Addressing Issues

The XGS2-SD chassis model requires the following management IP addresses:

- the IxOS address

If your network implements a DHCP service, the XGS2 IP addresses will automatically be assigned by that service, unless you choose to assign static IP addresses instead. When assigning static IP addresses, you must observe the following requirements:

- The two management IP addresses must be in the same subnet.
- The two IP addresses needed for management cannot be on the following subnets:
 - 10.1.1.x/24 - internal virtual network
 - 10.1.2.x/24 - internal virtual network
 - 10.0.x.x/16 - default internal port address. This can be changed from IxExplorer Chassis Properties.

Failure to observe these requirements will result in connectivity failures.

Troubleshooting Licensing Issues

Following is a list of licensing issues that can result in operational problems:

- Licensing: An IxOS license is required to run both BreakingPoint and IxLoad.
- License invalidation: Time discrepancies between the network and the XGS2 system will invalidate the installed licenses. To avoid this, configure the XGS2 to use NTP (or manage the time setting manually, if NTP is not available to you).

This page intentionally left blank.

INDEX

C

Connecting 18

customer assistance iii

D

documentation conventions iv

F

front panel 5

I

indicators and controls 6

initial configuration XGS2-SD 19

IP addressing issues 30

ixia applications support for XGS2-SD 22

K

keyboard interactions iv

L

LED indicators 28

M

mouse interactions iv

P

product support iii

R

Remote Desktop Connection, starting 26

S

support services iii

T

technical support iii

touch interactions iv

troubleshooting licensing issues 31

X

XGS2 processor modules 3



© Keysight Technologies, 2022

Keysight Technologies, Inc.
1400 Fountaingrove Parkway
Santa Rosa, CA 95403-1738

www.keysight.com