

Xgig Analyzer 8.5.4 Release Notes

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Overview

This **Readme** details information regarding the latest features provided in this release with known issues and other helpful information. Please review the [Feature Enhancements and Defect Fixes](#) as well as the [Known Issues](#) sections for more details.

For full instructions on using Xgig Analyzer, please refer to the [Xgig Analyzer User's Guide](#) and other documents included on the product's released USB thumbdrive.

Feature Enhancements and Defect Fixes

Feature Enhancements:

- This patch release version 8.5.4 and the previous patch release version 8.5.2 mainly consist of bug fixes. This release also has the followings:
 - The Java script for the Xgig chassis upgrade utility has been signed. This makes future upgrading of the chassis app kit and OS via the web interface more friendly and eliminates the need to add the chassis name to the Exception Site List in the Java Control Panel.

NOTE:

This improved behavior requires the chassis to be first upgraded with both the new app kit and the new OS of this release.

- Downgrading the chassis app kit to an older version which has unmatched firmware or does not support hardware of the chassis will be blocked to prevent cases where a chassis may become incapacitated.
- User has the option to upgrade and reinstall to one or both primary and backup OS partitions of the Xgig chassis.

NOTE:

The side effect of this is upgrading the chassis App Kit would also upgrading or reinstalling the chassis OS. To avoid the reinstalling of the OS from happening, change the name of the System(X.X.X) folder in the C:\Program Files (x86)\Viavi\Xgig Analyzer\Chassis\ folder to another name such as OS(X.X.X)

- Previous patch release version 8.5.1 was for the improvement performance of the 50G/100G/128G in general and bug fixes.
- Previous release version 8.5.0 was an official release of 50G Ethernet on the existing 25/32/100/128 Xgig1000 platform.
- Previous release version 8.3.0 includes the followings:
 - Initial support for 50G Ethernet on the existing 25/32/100/128 Xgig1000 platform.
 - Support Brocade's proprietary decodes for Inter Switch Link (ISL).
- Previous release version 8.2.0 includes the followings:
 - Support Maestro 8.8.0 release for SFF 8644 Jammer capability.
 - Bug fixes and new decodes.
- Previous release version 8.1.1 includes the followings:

- Firmware upgrade for new revision of the clock generator chips in the backend of the XG1 hardware.
- Bug fixes for the main grid of Trace View software application.
- Previous release version 8.1.0 includes the followings:
 - Optical QSFP for 128G Fibre Channel.
 - Quad Analog Pass Through (QAPT) adapter unit allows analog pass through traffic for 100G Ethernet and 128G Fibre Channel.
- Previous release version 8.0.0 includes the followings:
 1. Introducing 100G Ethernet and 128G Fibre Channel support on the Xgig1000 25G/32G/100G/128G chassis:
NOTE: Please see the [Constraints](#) section for any limitations.
 1. 8-stage Advanced Triggering.
 2. 128GB of capture memory per port for protocols and data rates which use the QSFP ports.
 2. Support of PCIe's interposer for SFF 8644 interface.
 3. Improved Trace View GUI with new data event grid.
 4. Note:
 1. TC API's ClientTransport.dll file is renamed to Transport.dll .
 2. PerfMon SW application is no longer available. TraceControl SW application already has most of its functions.

Decode and other Improvements

1. For a complete list of decode improvements, please read the "CurrentProtocolVersions.txt" file. This file is located in the following folder: *Xgig Analyzer install location \Viavi\XgigAnalyzer\CurrentProtocols*. Highlighted for this release include:
 - FC-LS-3: implemented fully:
<http://www.t11.org/ftp/t11/pub/fc/ls-3/16-395v2.pdf> Dec 6 2016
 - SPC-5 implemented fully:
<http://www.t10.org/cgi-bin/ac.pl?t=f&f=spc5r12.pdf> 24 Sept 2016
 - SBC-4: implemented fully:
<http://www.t10.org/cgi-bin/ac.pl?t=f&f=sbc4r12.pdf> 11 Oct 2016
 - NVMe over Fabrics: Implemented fully including RDMA CM
http://www.nvmexpress.org/wp-content/uploads/NVMe_over_Fabrics_1_0_Gold_20160605.pdf June 5, 2016
 - ROCEv2: update protocol spec reference only, the decodes haven't changed:
http://www.infinibandta.org/content/pages.php?pg=technology_public_specification Annex17_RoCEv2.pdf Sept 2014
 - ROCE/IBxE: update protocol spec reference only, the decodes haven't changed:
http://www.infinibandta.org/content/pages.php?pg=technology_public_specification Annex_RoCE_final.pdf April 2010
 - FC-NVMe: Implemented fully:
<http://www.t11.org/ftp/t11/pub/fc/nvme/16-020v8.pdf> Rev 1.11 Nov 1 2016
IMPORTANT: The FC-NVMe spec Rev 1.11 is INCOMPATIBLE with the prior spec Rev 1.08 we supported in the 8.1.0 release. Xgig-TraceView and Expert now support Rev 1.11 by default, but you can force using the prior spec rev 1.08 by clicking TraceView's menu View / Decode Switches / FC-NVMe Interpretation / Old FC-NVMe Rev 1.08. This switch affects both TraceView and Expert.
After you set that switch in TraceView, you have to exit/re-launch Expert, then clear and

re-process the entire capture in Expert with the menu Edit / Clear Trace File Configuration.

- o NVMe-MI: implemented over MCTP (not SMBus):
http://nvmexpress.org/wp-content/uploads/NVM_Express_Management_Interface_1_0_gold.pdf November 17, 2015
 - o NVMe (NVM Express) Management Messages over MCTP Binding Specification
http://www.dmtf.org/sites/default/files/standards/documents/DSP0235_1.0.0.pdf 2015-03-06
 - o Management Component Transport Protocol (MCTP) IDs and Codes:
https://www.dmtf.org/sites/default/files/standards/documents/DSP0239_1.3.0.pdf 2015-03-06
 - o NVMe 1.2.1: implemented fully:
http://www.nvmexpress.org/wp-content/uploads/NVM_Express_1_2_1_Gold_20160603.pdf June 5, 2016
 - o 25G Auto-Negotiation Page:
[Schedule_3_25G-50G Specification_r1-6.pdf](#)
2. Xgig-Expert now supports full FC-NVMe analysis and it produces an Exchange View.
 3. The 25/32/100/128G Transmitter Training dialog now supports 4 lanes of training. It reports the cumulative value for each coefficient relative to the last Initialize, Preset, Min or Max value. Also a few bugs have been fixed.
 4. Minor improvements were done for various areas and they are documented in the User's Guide.

Defect Fixes:

This release include some minor fixes in various areas. The following issues have also been corrected

1. Problem of dropping Idles thereby violating the IFG requirement.
2. Captures with Link Reset events at 40G Ethernet may be prompted with a Corrupt Domain message when viewing.
3. Issue with creating FC domain when the 10/16/40 protocol board only has a partial analyzer license.
4. Support Brocade's propriety ISLs EOFs for 32G and 128G FC plus other special OS.
5. Missing Rcvr.RcvrLock and Rcvr.RcvrCfg states in LTSSM GUI are now fixed.
6. Decodes support for Write Atomic command (op code 0x9C) and Write Atomic 32 (op code 0x7F) are added.
7. Problem with Save Complete Payload option of Export To Text feature is now fixed.
8. Error starting a capture using Trace Control on PC using Chinese language time format.
9. Issue with starting a capture of PCIe traffic using app kit 10.5.0.172358.
10. Capture triggered on CLQREQ signal when the TTL-In check box is unchecked.
11. Convert the decode hint field to 64-bits to allow for the extra SW-ILS command code bytes for VA_Port ILS requests.
12. For Fibre Channel - Trigger on any SCSI Status other than "00" (good).
13. Added option "Reduce error data capture during loss of sync" for 25GE and 32G FC.

14. Issue with falsely triggering on frames with 'Auto-Neg Encoding Error' and of Training Frames which have marker or MVC encoding errors is now fixed.
15. Remove the Validation Error message when selecting "Auto" Link Speed for Xgig1000 16G FC platform.

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System Requirements

Listed below are the basics and recommended system configurations for Xgig Analyzer to achieve optimal performance.

Basic Requirements:

OS (32-bit and 64-bit)	Windows 7 Professional and Enterprise with Service Pack 1 Windows 8.1 Professional or Enterprise Windows 10 Pro and Enterprise * Windows Server 2008 R2 Standard or Enterprise with Service Pack 1 * Windows Server 2012 R2 Update Standard or Essentials
Network Interface Card	Suitable for communication with remote chassis
Ethernet	100 Mbps on the host network (1000 Mbps recommended) Xgig Chassis supports 10, 100, and 1000 Mbps data rates.
Subnet	All chassis within a sync group must be in the same subnet and use the same TCP port number.
Browser	Internet Explorer v6.0+ Firefox v1.5+
Media	USB 2.0 port
Other	1024x768 SVGA Serial data port (not mandatory) Standard type A to type B USB cable for Xgig applications using USB functions USB-RS232 adapter for using the floating license serial dongle with Xgig1000 and Xgig5000 chassis
Pre-requisite Software for Xgig Analyzer client (included on product's released USB thumbdrive)	Microsoft Windows Installer 3.1 Microsoft .NET Framework 4.5 Microsoft Visual C++ Redistributable 2012

* Only 64-bit versions

The following is the recommendation of client PC for best performance

CPU	Core i5 class CPU
Memory	At least 8GB RAM with a 64-bit version of Windows. If the Xgig blades have the (optional) larger memory modules installed, additional RAM helps optimize trace processing. When Traffic Summary View and Exchange View processing are employed in standard work flow, we recommend at least 16GB of RAM installed.
Hard Drive	At least 256GB SATA3 SSD Future trace files to be saved will require more disk space depending on the size of the captures.
Monitor	1600x1200 SVGA Multi-Monitor is highly recommended

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Previous Releases

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Constraints

Following are setup, configuration, and software constraints for Xgig 8.5.4

- The Xgig1000 50Gbps, 100Gbps Ethernet and 128Gbps Fibre Channel chassis has a few limitations :
 - Separate license is required for each of the protocols and data rates mentioned above.
 - The above mentioned protocols and data rates are only supported via the QSFP ports . These ports do not support lower data rates.
 - Quad Analog Pass Through (QAPT) unit is required if Digital Retime of the signal is not desired.
 - Filtering and triggering of Unframed data is not fully functional for 100Gbps Ethernet yet.
- The followings apply to all ports, i.e. SFP and QSFP for 25G/32G/100G/128G, on this chassis
 - The 25GE ports also support 10GE data rate and require separate license for it.
 - TraceView TrafficSummaryView (TSV) is not available.
 - Starting time sync with other chassis has not yet been calibrated - and is expected to change.
 - The ports as are forced to the Digital-Retime (DR) setting without the Analog Pass-Through (APT) module.
 - The ports are forced to the Analog Pass-Through setting while the APT module is installed.
- The USB Direct Connection feature has a few limitations:
 - Only USB 2.0 data rate is currently supported in this release.
 - A chassis in USB mode cannot be part of a multichassis sync group.
 - Only the Xgig Analyzer SW application is supported in this release. This means that if Xgig Maestro SW application is also needed for certain test configurations, the standard Ethernet connection must be used.
 - System and App Kit upgrading processes from the client PC are not supported through the USB Direct Connect.
 - System shutdown option is not available in the Discovery window.
- Long Tuning Operations dialog - When using the Auto-Select Best Preset function for autotuning at 12Gbps on the 12G SAS Xgig1000 or the 12G SAS Wide blade, the system will become unresponsive during the process duration until it is finished.
- Port-pair swapping - When using the Autotuning function to autotune at 12Gbps on the 12G SAS Xgig1000, the SAS Analyzer port pairs may be swapped in order to obtain better signal results. When ports are swapped, this means the traffic to ports A and B of an analyzer have been switched. The Analyzer port labels will be swapped as well. However the CLE image will not change to reflect this. Port-pair swapping is only supported on the 12G SAS Xgig1000 on CLE Configuration 41 on Analyzer ports 1 & 2.
- PCIe support in TC API is not fully implemented in this release.
- Since specialty drivers are not installed in the OS for the various kinds of external USB drives, please note that if an external USB drive prompts for a HW installation, it will not be usable on the Xgig chassis. Only those drives that will operate with the standard USB storage class system drivers without prompting for a HW install will operate on the chassis.
- TraceView application software of version 8.5.4 can view old capture buffers and files but old versions of TraceView client software will not be able to open capture buffers or files from version ANALYZER_VERSION.

- When a pair of ports of the dual-personality is changed to a different personality, all four ports will be shown as "Unavailable (Function changed)" in the Resource Browser of the Performance Monitor software window.
- We changed the way we count and navigate physical layer Code Violations in Fibre Channel Frames. Only the first of these errors is counted per frame. Capture files made with earlier versions of the Xgig Analyzer will not show the RD/CV counter. Navigation of RD/CV errors is disabled when opening these older traces.
- The 6G blade should not be installed in the same chassis of a 12G blade even though the two can be in the same domain.
- For Xgig1000 platform, OS version 1000.0.5 or later requires the accompanying application software kit version 8.10.0 or later and vice versa.
- For Xgig5000 platform, OS version 5000.0.9 or later requires the accompanying application software kit version 8.5.2 or later and vice versa.
- TDIO_API user should make sure that the Client Authentication feature is disabled. The program will fail with a message saying authentication failed if the feature is enabled. At this time there is no API to allow the user to programmatically pass in an authentication password.

- In SAS/SATA traces, if the analyzer does not capture the beginning of a Primitive Sequence then that sequence will not be included in the Traffic Summary counters.

Note: When in doubt, look into the Icon column in Dword View for a cyan colored background. This indicates the beginning of a sequence. If there is no such color shading then the sequence will not be included in the TSV's counters.

- Certain services on all chassis types would not be initialized on boot-up if an Ethernet link is not present on the management port. Therefore the port LED will not light up.

To fix this problem, connect an Ethernet link on the management port of the chassis (no need to reboot).

- Surveyor captures of up to 2GB in size can be converted to ".tgp" (Xgig TraceView) format. If an attempt is made to convert captures larger than this, a valid capture file of the first 2GB of data will be created.
- Xgig TraceView 8.5.4 supports configuration files from previous releases. However, configuration files created with Xgig TraceView ANALYZER_VERSION may not be compatible with earlier releases.
- Xgig Analyzer 8.5.4 software cannot be installed on a network share. It has to be installed on a local hard drive. If you install the software on a network share, the Discovery dialog will not function.

In this case, you should uninstall the software completely, and then re-install it on a local disk following the installation procedure in the [Xgig Installation Guide](#).

- Users with Xgig Analyzer 2.5.0 software that plan to exchange traces with Xgig Analyzer 8.5.4 users should obtain the client patch release 2.5.2 or 2.6.1 to ensure consistent trace-time ranges.
- Automated link creation for SAS/SATA ports will put selected wide ports into a single link and selected narrow ports into another link. These links are created when a domain is "Create and Lock". However, this feature requires 3 conditions on the links to be met and thus can be overridden when there are no suitable links found. Please refer to [Xgig Analyzer User's Guide](#) for more information.

Known Issues

The following issues will be addressed in the near future:

1. There maybe problem using the chassis in the slave mode. The workaround is to use the chassis as the master chassis in a sync group.
2. Saving an LTSSM processed trace does not save the LTSSM data with the saving trace.
3. The Xgig Analyzer does not recognize the PCIe Compliance Pattern and reports it as a Primitive/OS Error.
4. 3G traffic is not captured reliably in Auto (12/6/3G). It is recommended that users to select Auto (6/3G) option when using 3G devices.
5. When using Analog Pass-through on the 10G/16G Xgig1000 chassis, changing the transceiver rate might affect the traffic between host and device.
6. For 12G and 16G blades, buffers with large number of segments and having Trace Summary View (TSV) enabled might pose a couple of problems:
 1. Extraction - saving all segments at once might be interrupted. Try saving only few segments at a time.
 2. Viewing - switching rapidly between segments without waiting for Trace Summary View (TSV) to finish loading might result with overloading the server. Try waiting for the TSV loading to complete before moving to next segment.
7. Using Performance Monitor to change data rate for any port pair in a chassis will interrupt trace viewing or trace processing. It is strongly recommended that changing data rate for any ports should only be done via TraceControl.
8. Sometimes exchanges may not show frames under them after scrolling. Collapsing and re-expanding them will fix the display.
9. For Configurable Link Extender (CLE) shipped prior to Xgig Analyzer version 4.6.0 release, it is necessary to connect each individual unit to the chassis, one at a time and with power. This allows the chassis to upgrade the CLE units with latest firmware.
10. When cascading the CLEs together, making changes to their configurations before they finish initializing may result with inconsistent in the displays in the sync group discovery window. To avoid this, wait for the units to finish initializing first.
11. The last primitive in a wrapped capture may not be included in the FC TSV data.
12. With certain traffic captured, the OOB graphical display's time interval window may show a speed negotiation period that is not found in the OOB sequence. However, the OOB Sequence graph will show the correct data. Other discrepancies may also appear when viewing directly from the buffers. If this is the case then try saving the buffers to files and view it from there before contacting support.
13. Certain steps in maneuvering through the traces could cause the server to misbehave. The indication for this is when message windows keep showing up informing of some missing events. To correct this, close the trace then reopen in a new window. To avoid this totally, save the trace to files before working on them.
14. In some cases, TraceView may not show the TSV view until you manually re-size it. After enabling it in TV, user may have to manually re-size it from zero pixels.
15. "Go To exchange in Exchange View" option may sometimes only get you close to the Exchange you are looking for.
16. When capturing traces on both sides of an expander in the same domain using two blades, inaccuracies in the time stamp may occur when the capturing traces contain OOB traffic.

In order to work around this issue, the user should start the capture after links have been established. Then OOB traffic can be generated by re-initializing either link or both. Re-initialization can be accomplished by power cycling the devices including the expander, HBA, drives or drive enclosure, or by pulling and re-inserting the cables.

17. In the 6.5.3 EE2 release, the sliding search inside SAS/SATA frames on the 12G blade is broken and as a result, the capture never stops. Do not use the sliding search in that release.

The following list shows potential problems which have been identified and the recommendations to avoid or correct the issues.

1. The Xgig-A 6.5.2/Xgig Maestro 7.5.2 and OLDER clients ARE NOT able to discover chassis with AppKit 9.6.0.145950 and NEWER. In that case, both client applications popup the error message:

Discovery cannot find 'XGIGCHASSIS-X (w.x.y.z)'. Check the spelling and try again. Under this scenario, you need to upgrade the client applications to Xgig-A 6.5.3/Xgig-Maestro 7.5.3 or newer. When you get that message, you can run the following command line utilities to detect the chassis connectivity:

```
ping CHASSIS_IP_ADDRESS
```

```
c:\program files (x86)\JDSU\Xgig Analyzer\pullremotesll.exe CHASSIS_IP_ADDRESS
```

If ping can connect to the chassis, and if pullremotesll.exe dumps a big XML output on the command line, it means the chassis is accessible and you should call customer support for further instructions.

2. If a host PC has TREND Micro anti-virus software installed it might "blue screen" when running the new USB software interface application or locking CLE ports. This is not our bug. Please contact your IT department or TREND Micro's support team to get a patch of the anti-virus software for the host PC system.
3. Repeatedly canceling any kind of operations could put the server in a catch up mode. This includes opening/closing trace rapidly or canceling a save or a search operation. Avoid doing these as at the worst case, the server may lock up resulting in loss of data. Most of the time the server will recover if it is left idle for a while.
4. In TraceView, heavy filtering on large channel counts traces could result with displaying blanks in the DT/Port column. To overcome this, perform page down and page up again using either the keyboard or by clicking the mouse in the main events grid's vertical scroll bar.
5. Moving a chassis from one subnet to another might result with unexpected behavior of the server software. To avoid this, perform a soft reboot whenever the sync group configuration is changed. This action can be done via the web interface.
6. Run-disconnected feature works properly when TraceControl application is closed before disconnecting the client from the server. Ports might not be unlocked if the client is disconnected from the server without closing the TraceControl application first. For example, the Ethernet cable connecting the PC or laptop to the network is removed abruptly while TraceControl application is still running. To avoid having ports in the locked state with no clients connected, always close the application before disconnect the client. In the case that the problem has already happened, try to reclaim the domain by using the same client.
7. For 8Gbps FC blade, when capture in scrambling mode, any unframed data on the wire would require 2-3 subsequent good frames before it would re-sync.
8. OOB decodes for 3Gbps data from the 3Gbps and 6Gbps blades will both follow SAS-2 specifications. However, no Begin/End markers are shown for OOB traffic captured on 3G blade.
9. When using Windows 2003 Server, the "Go Back" button in the Equalization Setting Result dialog box maybe non-functional. Turn off Internet Explorer Enhanced Security Configuration to make the button work. Another workaround for this issue is to right-click any where in the window and select the "Back" option instead of using the "Go Back" button on the page.

Compatibility & Interoperability

Software Compatibility

- Previous versions of Xgig Analyzer or any viewer/trial software versions **must be uninstalled**, prior to installation of Xgig 8.5.4 software. Refer to the [Xgig Installation Guide](#) for detailed instructions on installing the software.
- Terminal Service Users: To install the software under a Terminal Server session, you must select Start> Settings>Control Panel>Add or Remove Programs, then click "Add New Programs", then the product's released USB thumbdrive to locate the Xgig Analyzer 8.5.4 installation software to install. Otherwise, the software may not run correctly.
- The following software can co-exist with Xgig Analyzer 8.5.4 on the same system: Surveyor and Xgig Maestro.
- Traces captured from previous versions of Xgig are fully compatible with Xgig Analyzer 8.5.4. However, 66-bit data of previously captured 10G traces won't be displayed. This will be corrected in the near future.
- Xgig Analyzer client versions 8.5.4 and server software version 11.5.4 are NOT compatible with previous client versions and their associated server software.
- Graphical PDK version 2.3.0 is compatible with Xgig Analyzer 8.5.4.
- FRRunner version 4.0.2 is compatible with Xgig Analyzer 8.5.4.

NOTE: FRRunner software application version 3.7.0 is the first release which has been updated to reflect our changes from the old company Finisar to the new company JDS Uniphase.

Once again, FRRunner software application version 4.0.2 is the first release which has been updated to reflect our changes from the old company JDS Uniphase to the new company Viavi Solutions.

The following is a list of released clients and their compatible application kits. The Operating System versions are also shown for reference.

NOTE: This is not an exhaustive list and we recommend that you use the last listed pair of versions of the client and the server software.

Client Version	Application Kit	OS Version	Notes
Older Xgig-A Clients	Previous released App Kits	Legacy Xgig OS Systems	Refer to the Previous Releases document.
Xgig-A 5.0.0.98660	App Kit 8.2.0.98582	System 5.0.0	EA release - SAS/SATA Advanced Triggering and FC Traffic Summary View.
Xgig-A 5.0.0.102410	App Kit 8.3.0.102430	System 5.0.0	EA Release - SATA Auto speed-negotiation for 6G/3G and 3G/1.5G data rates.
Xgig-A 5.0.0.108610	App Kit 8.4.0.1009039	System 5.0.2	RTM Release - Exchange View for SAS/SATA.
Xgig-A 5.1.0.110728	App Kit 8.5.0.110887	System 5.0.2 / System 5000.0.7	Introducing new Xgig5000 chassis and 8-port 10G Ethernet IO blade. Early Adopter release

Xgig-A 5.1.0.111275	App Kit 8.5.1.111289	System 5.0.2 / System 5000.0.7	Introducing 2-port 16G rev A SERDES Fibre Channel IO blade. Early Adopter release
Xgig-A 5.1.0.113377	App Kit 8.6.0.113417	System 5.0.2 / System 5000.0.9	RTM release for Analyzer 5.1.0 and Patch release for Maestro 6.1.1
Xgig-A 5.1.0.113417	App Kit 8.6.1.113417	System 5.0.2 / System 5000.0.9	Patch release for Analyzer and Maestro, partial blade licensing
Xgig-A 5.1.2.116691	App Kit 8.7.0.116899	System 5.0.2 / System 5000.0.9	Introducing 16G FC 4-port rev B SERDES for Analyzer and Maestro's Jammer and LoadTester applications.
Xgig-A 5.1.3.118147	App Kit 8.8.1.118328	System 5.0.2 / System 5000.0.9	Patch release for Analyzer and Maestro
Xgig-A 5.1.4.119438	App Kit 8.8.2.119804	System 5.0.2 / System 5000.0.9	Patch release for Analyzer and Maestro
Xgig-A 5.2.0.117141	App Kit 8.8.0.117172	System 5.0.2 / System 5000.0.9	EA1 release for 12G Analyzer
Xgig-A 5.2.2.120877	App Kit 8.8.3.120877	System 5.0.2 / System 5000.0.9	EA3 release for 12G Analyzer
Xgig-A 5.3.0.123070	App Kit 8.9.0.122978	System 5.0.2 / System 5000.0.9	Major feature release for Analyzer
Xgig-A 5.3.1.124168	App Kit 8.10.0.124098	System 5.0.2 / System 5000.0.9	Patch release for Analyzer T1/T2 feature.
Xgig-A 5.4.0.126474	App Kit 8.10.0.126474	System 5.0.2 / System 1000.0.5 / System 5000.0.9	Introducing new Xgig1000 chassis with 12G SAS protocol board as Early Adopter release.
Xgig-A 6.0.0.126905	App Kit 9.0.0.126905	System 5.0.2 / System 1000.0.7 / System 5000.0.9	Introducing new Xgig1000 chassis with 12G SAS protocol board and new 40G Ethernet as Early Adopter release Features release including 12G SAS and 16G FC enhancements.
Xgig-A 6.1.0.130664	App Kit 9.1.0.130935	System 5.0.2 / System 1000.0.7 / System 5000.0.9	Features release - 12G SAS Auto- Speed Negotiation 16G FC Training Events support and bug fixes.
Xgig-A 6.2.0.135803	App Kit 9.2.0.135803	System 5.1.2 / System 1000.0.19 / System 5000.0.25	Features release - Chassis admin via LCD display and control Save to chassis USB attached disk Timed and Floating licensing via the external dongles 10G Ethernet FEC support - Xgig blade only, 12G SAS 64-bit Sliding Pattern Search, 16G FC Training Events compression, 66-bit block non- error data display, Advanced

			Triggering, Traffic Summary View, and bug fixes.
Xgig-A 6.2.0.135803	App Kit 9.3.0.136241	System 5.1.2 / System 1000.0.19 / System 5000.0.25	This is Xgig-A version 6.3.0 release which was released with 16G FC Generator release - old client but new app kit SW.
Xgig-A 6.3.1.137327	App Kit 9.3.1.137327	System 5.1.4 / System 1000.0.21 / System 5000.0.27	Patch release for Analyzer and Maestro.
Xgig-A 6.3.2.138194	App Kit 9.3.2.138150	System 5.1.4 / System 1000.0.21 / System 5000.0.27	Patch release for Analyzer - CLE config #0 available for 12G blade.
Xgig-A 6.5.0.139847	App Kit 9.5.0.139872	System 5.1.6 / System 1000.0.23 / System 5000.0.29	Introducing 10G Ethernet and 16G FC on Xgig1000 platform.
Xgig-A 6.5.0.139847	App Kit 9.5.1.140112	System 5.1.6 / System 1000.0.23 / System 5000.0.29	Add 4-port version of 10G Ethernet and 16G FC on Xgig1000 platform.
Xgig-A 6.5.2.140131	App Kit 9.5.2.140207	System 5.1.6 / System 1000.0.23 / System 5000.0.29	Patch release for API support of FRunner script conversion.
Xgig-A 6.5.3.141043	App Kit 9.5.3.141043	System 5.1.6 / System 1000.0.23 / System 5000.0.29	EE2 release for various 16G FC bug fixes.
Xgig-A 6.5.3.141346	App Kit 9.5.3.141346	System 5.1.6 / System 1000.0.23 / System 5000.0.29	EE3 release for various 12G SAS bug fixes.
Xgig-A 6.5.3.141958	App Kit 9.5.3.141994	System 5.1.6 / System 1000.0.23 / System 5000.0.29	EE5 release for auto-tuning.
Xgig-A 6.5.3.143225	App Kit 9.5.3.143263	System 5.1.6 / System 1000.0.23 / System 5000.0.29	Official patch release for 12G SAS auto-tuning and power management, and 16G FC dual-personality of the 4-port FPGA.
Xgig-A 6.6.0.145982	App Kit 9.6.0.145982	System 5.1.6 / System 1000.0.23 / System 5000.0.29	Xgig1000 platform supports: 40G with QSFP+, 10GE/16G FC dual-personality of the 4-port FPGA, 10GE channels from QSFP ports, and port-pair licensing, 12G SAS Optical support and Tx Training display.
Xgig-A 6.6.1.146637	App Kit 9.6.1.146637	System 5.1.6 / System	Patch release to fix issues with Auto-Tuning and Tx Training

		1000.0.23 / System 5000.0.29	Summary events using the 12G SAS protocol board.
Xgig-A 6.7.0.147997	App Kit 9.7.0.148138	System 5.1.6 / System 1000.0.23 / System 5000.0.29	Features release which includes 10GE AJ and TC API Python.
Xgig-A 6.7.1.150162	App Kit 9.7.1.150235	System 5.1.6 / System 1000.0.23 / System 5000.0.29	New CLE configurations for X1K 12G SAS: "J,J,J,J", "A-J-J-A", "G-A, G-A" and "J-A,J-A".
Xgig-A 6.8.0.150381	App Kit 9.8.0.150417	System 5.1.6 / System 1000.0.29 / System 5000.0.29	New revision of the motherboard of the Xgig 1000 chassis.
Xgig-A 6.8.1.153211	App Kit 9.8.1.153224	System 5.1.6 / System 1000.0.31 / System 5000.0.29	Patch release with bug fixes.
Xgig-A 7.0.0.152368	App Kit 10.0.0.152368	System 5.1.6 / System 1000.0.29 / System 5000.0.29	Introducing PCIe 3.0 X8 on Xgig1000 platform with NVMe support.
Xgig-A 7.0.1.153504	App Kit 10.0.1.153504	System 5.1.6 / System 1000.0.31 / System 5000.0.29	Patch release with enhancements for PCIe/NVMe support.
Xgig-A 7.0.2.154180	App Kit 10.0.2.154180	System 5.1.6 / System 1000.0.31 / System 5000.0.29	Patch release with enhancements for PCIe/NVMe support.
Xgig-A 7.0.3.155448	App Kit 10.0.3.155273	System 5.1.6 / System 1000.0.31 / System 5000.0.29	Patch release for bug fixes and enhancements for PCIe/NVMe support.
Xgig-A 7.0.4.156991	App Kit 10.0.4.156991	System 5.1.6 / System 1000.0.31 / System 5000.0.29	Patch release with bug fixes and enhancements for ASPM and PCIe x4 licensing option.
Xgig-A 7.0.5.158012	App Kit 10.0.5.158012	System 5.1.6 / System 1000.0.31 / System 5000.0.29	Patch release with bug fixes for Expert and memory diagnostic tool.
Xgig-A 7.1.0.159520	App Kit 10.1.0.159477	System 5.1.6 / System 1000.0.31 / System 5000.0.29	12G SAS HW supports for 6G SATA & Power Management, 8GB/port buffer size for 10G/16G, 12G, and 16GB/port buffer size for 40G. Many improvement related to PCIe such as Decodes for NVMe, AHCI, and

			SOP. Support LTSSM, ASPM, and new interposer for SFF-8639 connector type.
Xgig-A 7.1.1.162078	App Kit 10.1.1.161785	System 5.1.6 / System 1000.0.43 / System 5000.0.41	USB Direct Connect Save buffer to a sub-directory. Bug fixes.
Xgig-A 7.2.0.162787	App Kit 10.3.0.162969	System 5.1.6 / System 1000.0.43 / System 5000.0.41	Support PCIe Jammer (Maestro) release.
Xgig-A 7.3.0.168685	App Kit 10.4.0.168685	System 5.1.6 / System 1000.1.3 / System 5000.0.41	PCIe's TS1/TS2 Compression, CLKREQ#/PERST# capture, L1 substates. Expert skips optional FC/Ethernet headers. Decode Improvements. Bug fixes.
Xgig-A 7.3.1.169226	App Kit 10.4.1.169175	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Firmware upgrade for 25GE and 32G FC protocol board.
Xgig-A 7.3.2.170651	App Kit 10.4.2.170651	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Introducing M.2 interposer and improved PCIe tuning wizard.
Xgig-A 7.3.3.171411	App Kit 10.4.3.171411	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Bug fixes.
Xgig-A 7.5.0.172366	App Kit 10.5.0.172358	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Introducing 32G FC and 25G Ethernet support on the Xgig1000 platform.
Xgig-A 8.0.0.173829	App Kit 11.0.0.173838	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Introducing 100GE and 128G FC support on the same Xgig1000 platform with the 25GE and 32G FC. The two QSFP ports are used for this data rates and they are capable of 128GB capture per port. Support of PCIe's SFF8644.
Xgig-A 8.1.0.175049	App Kit 11.1.0.175032	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Support of optical QSFP for 128G FC and of QAPT for analog pass through traffic for both 100GE and 128G FC.
Xgig-A 8.1.1.175517	App Kit 11.1.1.175486	System 5.1.6 / System 1000.1.3 / System 5000.0.41	FW for rev B clock generator chips on the BE of XG1 HW. TV's main grid bug fixes.
Xgig-A 8.2.0.175895	App Kit 11.2.0.175895	System 5.1.6 / System 1000.1.3 /	Support Maestro 8.8.0 release for SFF 8644 Jammer capability. Bug fixes and new decodes.

		System 5000.0.41	
Xgig-A 8.3.0.176697	App Kit 11.3.0.176717	System 5.1.6 / System 1000.1.3 / System 5000.0.41	50G Ethernet Early Adopter. Brocade's proprietary ISL decode.
Xgig-A 8.5.0.177796	App Kit 11.5.0.177778	System 5.1.6 / System 1000.1.3 / System 5000.0.41	50G Ethernet official release. Bug fixes.
Xgig-A 8.5.1.179213	App Kit 11.5.1.179205	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Improved performance for 50G/100G Ethernet and 128G FC. Bug fixes.
Xgig-A 8.5.2.179849	App Kit 11.5.2.179895	System 5.1.6 / System 1000.1.3 / System 5000.0.41	Mainly bug fixes.
Xgig-A 8.5.4.181572	App Kit 11.5.4.181532	System 6.2.1 / System 1000.3.1 / System 5000.2.1	Bug fixes, Java signer, app kit downgrade prevention, and options to upgrade or reinstall OS to one or both partitions.

Hardware Compatibility

- New hardware blades require matching server and client version.
- Supports all existing Xgig Multi-Function blades.
- Supports all existing wide blades (8-port) and narrow blades (4-port and 2-port) Xgig blades.
- All Xgig Multi-Function blades are supported in Xgig5000 chassis using the adapter trays.

Platforms Tested

Various makes and models of laptops and desktop PCs with the following Operating Systems were used to test the software. The client software can also be installed and used on 64-bit machines and Windows OS. However, it is operated as 32-bit software. All pre-requisites must be installed prior to installing the software.

- Windows 7 - Professional and Enterprise with SP1 editions
- Windows 8 - Professional and Enterprise editions
- Windows 10 - Pro and Enterprise editions
- Windows Server 2008 R2 with SP1 - Standard and Enterprise editions
- Windows Server 2012 R2 Update - Standard and Essentials editions

Bus Doctor and I-Tech:

In addition to Xgig file formats and other well known Ethernet capture file formats, the Xgig Analyzer supports SAS/SATA, Fibre Channel, and Ethernet with Bus Doctor and I-Tech trace file formats. However, they cannot work directly with Bus Doctor or I-Tech hardware. They only work with saved trace files.

Xgig Expert and Xgig TraceView now support SAS v1.1 - Serial Attached SCSI captures taken from the Bus Doctor RX-108, RX-252 and I-Tech PowerFrame analyzer platforms. Xgig Expert provides full SAS Link Layer (SL), Serial SCSI Protocol (SSP), Serial ATA (Native and STP) experts and metrics for both single transmit/receive links as well as wide links of up to the number of physical capture lanes available on the analyzer (8 lanes/4 links on the RX-252 and 32 lanes/16 links on the PowerFrame).

It is recommended to use JDSU Bus Doctor Plus v3.2 or higher versions of the software for trace capture from the Bus Doctor Platform.

It is recommended to use I-Tech Satellite Software v2.10.1 for trace capture from either the PowerFrame or the legacy platforms.

To convert a trace, simply open the trace with either Xgig Expert or Xgig TraceView:

1. Select File/Open from the Xgig application.
2. Change the Files Of Type selector to "Bus Doctor (*.trace)". For I-Tech traces, select "I-Tech (*.SAT)".
3. Navigate to the directory where the trace is stored. NOTE: This will vary somewhat for Bus Doctor and Bus Doctor Plus. Bus Doctor files are typically a single .trace file with a name of mytrace.trace. Bus Doctor Plus files are comprised of several files stored within a directory named `mytrace.trc\`, which contains the file `_data.trace` along with some other supporting files.
4. Double-click on the saved file which you want to convert.
5. If the trace has been previously converted, you will be prompted to overwrite the trace.
6. Once the trace file has been converted, the files can be reopened by simply opening the .TGP file in the same directory that the original trace file was converted from. In the example above, this would be `C:\traces\mytrace.trc\mytrace.tgp`. This file can be opened with Xgig Expert via the File/Open menu or in Xgig TraceView by simply double-clicking on the TGP file in explorer or using File/Open.
7. The trace will then be converted to Xgig trace format and automatically opened once the conversion is completed.

NOTE: Xgig TraceView and Xgig Expert will not work directly with the Bus Doctor or I-Tech hardware platforms. Refer to the [Xgig Analyzer User's Guide](#) for more details.

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Upgrading the chassis

Use one of the following methods to upgrade the Xgig chassis:

NOTE: After finishing the app kit upgrading process, the Xgig5000 and Xgig1000 might go through the firmware upgrading for the blades installed and the chassis. Please pay attention to the following details.

- Status LED lights of the blades are blinking GREEN or alternating RED and PURPLE - Firmware upgrading or recovering is in progress. Please do not disturb! The Status page of the chassis web interface will display the orange banner indicating that firmware upgrading is in progress as well.
- Status LED lights of the blades are blinking RED - Firmware upgrading is complete and it requires that the chassis to be power cycled. Please turn the chassis OFF and wait for 10 seconds before applying power to the chassis to turn it ON. Un-predictable behavior might result if the chassis is not properly power cycled.
- Downgrading an Xgig5000 or Xgig1000 chassis from app kit version 9.1.0 to any earlier versions requires the chassis to be power cycled for the downgrade process to complete. However, the Status LED lights of the blades will not blink RED to indicate this requirement. Monitor the Status LED lights of the blades as the firmware

downgrade process proceeds. The LEDs will blink GREEN for several minutes (approximately 10 minutes per blade). Once all the Blade Status LEDs turn steady BLUE and all ports LEDs are off in the case of Xgig1000 chassis, power cycle the chassis before using it. When the chassis boots, the Blade Status LEDs will return to steady BLUE, this time indicating that the chassis is ready for use.

Upgrading the chassis from client software applications:

1. Install the Xgig Analyzer 8.5.4 client software on your PC by following the instructions in the [Xgig Analyzer Installation Guide](#).
2. Launch the Xgig TraceControl or Xgig Performance Monitor application.
3. Click the "Create Domain" button in Xgig TraceControl or the "Select Sync Group" button in Xgig Performance Monitor.
4. In the "Select Ports for ..." window, select the Sync Group containing the chassis you need to upgrade.
 - a. If the sync group has a compatible Appkit software, all chassis in the sync group will appear. Right-click on the space under the "Viavi Xgig" label of one of the chassis and select "Upgrade Sync Group with latest `System/Appkit...`" option from the context menu to start the chassis software upgrade. Either the System or Appkit or both will be upgraded depending on the status of each chassis in the sync group.
 - b. If the sync group has old and incompatible Appkit software, an "Upgrade" button is available under the message informing of its incompatibility with the installed client software. Press the "Upgrade" button to start the chassis software upgrade. Alternately, you can click on the hyperlink of the master chassis of the sync group (i.e. `http://Chassis_IP_Address`) and use the Xgig Web Utility upgrade method shown below to upgrade the sync group.
5. If the chassis selected for upgrade is part of a Sync Group that includes multiple chassis, all chassis in the Sync Group will be upgraded.
6. You will receive a message confirming the upgrade versions. Press "Yes" to confirm.
7. The "Upgrade Chassis" window appears showing the upgrade status of each chassis in the sync group.
8. If both the System and Appkit software are to be upgraded, the Appkit software will be upgraded first then the chassis is rebooted. After two minutes delay, the System software will be upgraded. It would take a little longer for a chassis to reboot after a System software upgrade.
9. An "Upgrade Complete" dialog appears to notify the completion of the upgrade process.
 - a. Press "OK" to close the "Upgrade Complete" dialog.
 - b. Press "Close" to close the "Upgrade Chassis" window.
 - c. Press "Cancel" to close the "Select Ports ..." window.
10. Once the sync group is rebooted, it is ready to be used.

NOTE:

- The upgrade process above will launch its own FTP server to upgrade the chassis. Make sure your PC is not running any FTP server software. You will receive a warning message when this happens. Just close your running FTP server then proceed with upgrading the chassis.
- If the upgrade of the chassis from the client application fails for any reason, use the Web Utility upgrading procedure shown below to upgrade the chassis.

Upgrading via Xgig Web Utility (requires an FTP server):

1. Install the Xgig Analyzer 8.5.4 client software on your PC by following the instructions in the [Xgig Analyzer Installation Guide](#).
2. Copy the contents of the .../Xgig Analyzer/Chassis folder in the Xgig Analyzer installation directory on your PC to the FTP server root or default login folder.
3. Proceed to the section "Upgrading the Xgig System Image and Application Image Software" in the "XgigFamilyHardware.pdf" to perform an upgrade using the Xgig Web Utility.
4. Once the sync group is rebooted, it is ready to be used.

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Support

Online Support

A trial version of software release is available on the Viavi's web site as a free download. This software provides a convenient way to share traces with multiple users that are not required to have the Xgig hardware.

Click here to download the trial software version: www.viavisolutions.com/XgigAnalyzerTrialSoftware

Technical Support

If you require technical assistance

Voice : +1 844 GO VIAVI (1-844-468-4284)

E-Mail: techsupport-snt@viavisolutions.com

For the latest TAC information, go to www.viavisolutions.com/TechnicalAssistanceInfo.

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