VALKYRIE OVERVIEW

Valkyrie is Xena's flagship Layer 2-3 Ethernet traffic generator for all speeds up to 800G, analyzing network devices and service performance. It offers an extensive range of copper and fiber Ethernet test modules, making it ideal for lab-based data-plane test scenarios.

ValkyrieBay 4U - 12 module slots

ValkyrieCompact 1U - 1 fixed module

1 slot modules   2 slot modules

- Test modules ranging from 10M to 800GE
- Management via Valkyrie Manager GUI
- Test suites applications for RFC 2544, 2889, 3918, & Y.1564
- Test Automation via CLI & Python Lib

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VALKYRIE TESTING

- Stream oriented traffic generation and analysis
- Statistics tracked per stream, or per user-defined packet filters
- Analysis of throughput, latency, jitter, loss, sequence, and misorder errors
- Generate 100k unique traffic flows using Modifiers
- Generate new stream based on PCAP import file
- Real-time performance logging with charting and histograms
- Test Reports in PDF or HTML
- Real-time logging of result counters to CSV or XML file.
- Wire-speed capture buffer, including event triggering and export to Wireshark

MORE VALKYRIE TEST CAPABILITY

Functional Testing
- Ethernet traffic generation and analysis
- PCS/PMA and L1 PRBS testing with Freya, Thor and Loki modules
- Unicast and Multicast
- Energy Efficient Ethernet (EEE)
- Microbursts and random IFG
- Custom packet headers via templates or fully user specified
- Easy to use graphical based scheduling function

Certification & Interoperability
- G.fast per ID-337
- GPON per TR-247/ATP-247/TR-255

QoS & Service Validation
- Charting and histograms
- Background traffic injection
- Jitter analysis
- One-way latency analysis
- Inline measurements mode
- ITU-T Y.1564
- Live Monitoring
- Proactive Testing
- Wholesale Ethernet
- Performance Logging

Performance and QA Testing
- Throughput analysis
- Lost packets statistics
- Latency analysis

Security
- Traffic that mimics various types of DDoS attacks
- Very high traffic loads
- Undersized and oversized frames
- Non-standard Inter-Frame-Gaps
- Deviation of the Ethernet signal frequency
- Insertion of L2/3 packet level errors
- Insertion of PCS Layer Errors
- Emulation of fragment Overlap

Benchmarking
- RFC2544, RFC2889, RFC3918
- Vsperf
- Y.1564

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HARDWARE - TEST MODULES

Valkyrie offers 18 test modules which are divided into 4 groups based on which SerDes speeds they support:

ODIN	**LOKI**	**THOR**	**FREYA**
10Mbps > 10Gbps	10Gbps > 100Gbps	10Gbps > 400Gbps	100Gbps > 800Gbps

10Mbps, 100Mbps, 1G, 2.5G, 5G & 10G using up to 10Gbps SerDes NRZ
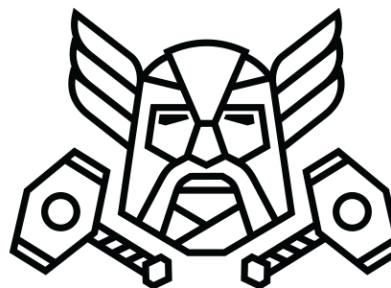
10G, 25G, 40G, 50G and 100G using 10Gbps or 25Gbps SerDes NRZ

10G, 25G, 40G, 50G and 100G using 10Gbps or 25Gbps SerDes NRZ
+
50G, 100G, 200G & 400G using 56Gbps SerDes PAM4

100G, 200G, 400G and 800G using 112Gbps SerDes PAM4

HARDWARE – TEST MODULES: ODIN
Up to 10Gbps SerDes NRZ for 100M to 10G testing

	Odin-10G-1S-6P	Odin-10G-4S-2P-Combi	Odin-10G-5S-6P-CU	Odin-5G-4S-6P-CU	Odin-1G-3S-6P	Odin-1G-3S-6P-E*	Odin-1G-3S-6P-T1-RJ45
INTERFACES	6 SFP+	2 SFP+4 SFP	6 RJ45	6 RJ45	6 SFP	6 SFP	4 RJ45
PORTS & SPEEDS	6 ports & 10G BASE-SR / LR / DAC	2 ports & 10G BASE SR / LR / DAC 4 ports & 100 / 1000M optical or 10 / 100 / 1000M BASE-T	6 ports & 100 / 1000 / 2500 / 5000 / 10000M 10G Base-T copper	6 ports & 100 / 1000 / 2500 / 5000 copper	6 ports & 100 / 1000M optical or 10 / 100 / 1000M BASE-T	6 ports & 100 / 1000M optical or 10 / 100 / 1000M BASE-T	6 ports & 100/1000M Base-T1 copper + 2 ports & 10M Base-T1S copper For testing Automotive Ethernet ECUs
VALKYRIE COMPACT	✓	✓	✓	✓	✓	✓	✓
VALKYRIEBAY	✓		✓	✓	✓	✓	✓

*The Odin-1G-3S-6P-E is an enhanced version of Odin-1G-3S-6P:
256 transmit streams (instead of 32), 6 modifiers per stream (instead of 2) and support for Priority Flow Control.

HARDWARE – TEST MODULES: LOKI
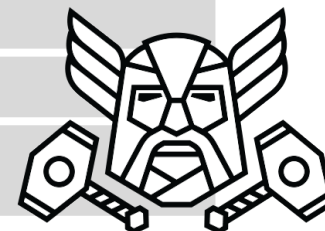## 10Gbps / 25Gbps SerDes NRZ
for 10G to 100G testing

	Loki-100G-5S-2P
INTERFACES	2 QSFP28
PORTS & SPEEDS	2 ports & 100GBASE-SR4/LR4/CR4 or 4 ports & 50GBASE-SR2/LR2/CR2 or 2 ports & 40GBASE-SR4/LR4/CR4 or 8 ports & 25GBASE-SR/LR/CR or 8 ports & 10GBASE-SR/CR
VALKYRIECOMPACT	✓
VALKYRIEBAY	✓

HARDWARE – TEST MODULES: THOR
10Gbps / 25Gbps SerDes NRZ for 10G to 100G testing + 56Gbps SerDes PAM4 for 50G to 400G testing

	Thor-100G-5S-4P	Thor-400G-7S-1P
INTERFACES	1 QSFP-DD/QSFP56/QSFP28/QSFP+ and 1 QSFP56/QSFP28/QSFP+	
PORTS & SPEEDS	4 ports & 100GBASE-DR or 4 ports & 100GBASE-SR2/CR2 or 2 ports & 100GBASE-SR4/LR4/CR4 or 8 ports & 50GBASE-SR/CR or 4 ports & 50GBASE-SR2/LR2/CR2 or 2 ports & 40GBASE-SR4/LR4/CR4 or 8 ports & 25GBASE-SR/LR/CR or 8 ports & 10GBASE-SR/LR/CR	1 ports & 400GBASE-DR4/FR8/LR8 or 2 ports & 200GBASE-CWDM4 or 1 ports & 200GBASE-CR8 or 2 ports & 200GBASE-DR4/SR4/FR4/LR4/CR4 or 4 ports & 100GBASE-DR or 4 ports & 100GBASE-SR2/CR2 or 2 ports & 100GBASE-SR4/LR4/CR4 or 8 ports & 50GBASE-SR/CR or 4 ports & 50GBASE-SR2/LR2/CR2 or 2 ports & 40GBASE-SR4/LR4/CR4 or 8 ports & 25GBASE-SR/LR/CR or 8 ports & 10GBASE-SR/LR/CR Also exists without AN/LT: Thor-400G-7S-1P-LE. Only available while stocks last.
VALKYRIECOMPACT	✓	✓
VALKYRIEBAY	Can only be installed in the Val-C12-2400G chassis	

HARDWARE – TEST MODULES: FREYA
112Gbps SerDes PAM4 for 100G to 800G testing

	Freya-800G-1S-1P	Freya-800G-4S-1P	Freya-800G-1S-1P-OSFP	Freya-800G-4S-1P-OSFP
Ethernet Interfaces PAM4 112G		1x800GE: Ethernet Consortium 2x400GE, 8x100GE : 802.3ck		
TGA Traffic Generator and Analysis	2x100GE	1x800GE 2x400GE 8x100GE	N/A	1x800GE 2x400GE 8x100GE
PPG Programmable Pattern Generator: PCS Layer Tester for Transceiver/PHY validation		1x800GE 2x400GE 8x100GE		

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HARDWARE - CHASSIS

Valkyrie test modules can be mounted in either a modular 4U ValkyrieBay which has 12 slots, or the 1U ValkyrieCompact with one fixed slot.

The 4U ValkyrieBay offers greater flexibility and scalability. For example it can hold up to 6 x 800G or 144 x 10G ports. The 1U ValkyrieCompact however is easier to transport and suitable for desktop use.
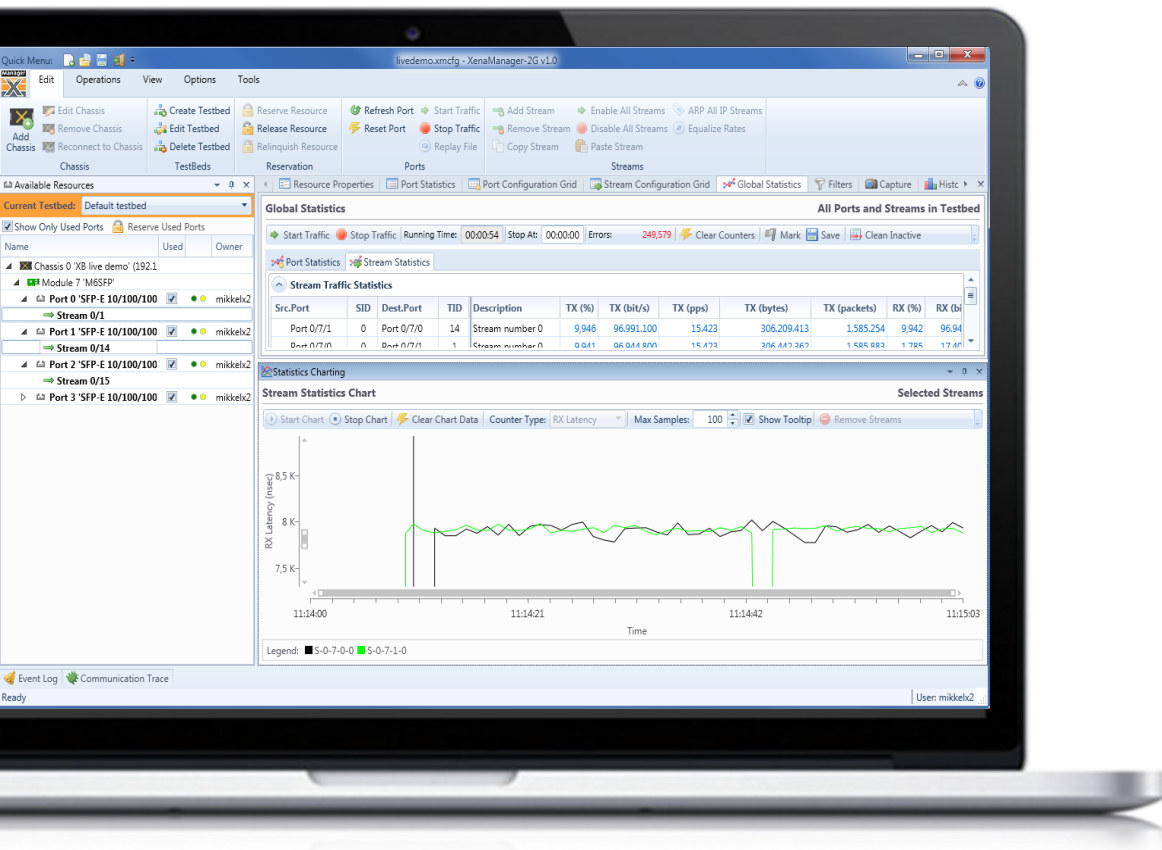

ValkyrieBay 4U - 12 module slots

ValkyrieCompact 1U - 1 fixed module

VALKYRIE SOFTWARE

The Valkyrie chassis and test modules are controlled via ValkyrieManager, a Windows GUI client provided for ad-hoc test execution, and remote management of test equipment located in multiple locations.

Bundled together with ValkyrieManager are:

- Standalone applications for automated RFC 2544, Y.1564, RFC 2889 and RFC 3918 testing.

- ValkyrieCLI, a command-line-interface scripting API with hundreds of scriptable parameters to make test automation easier.
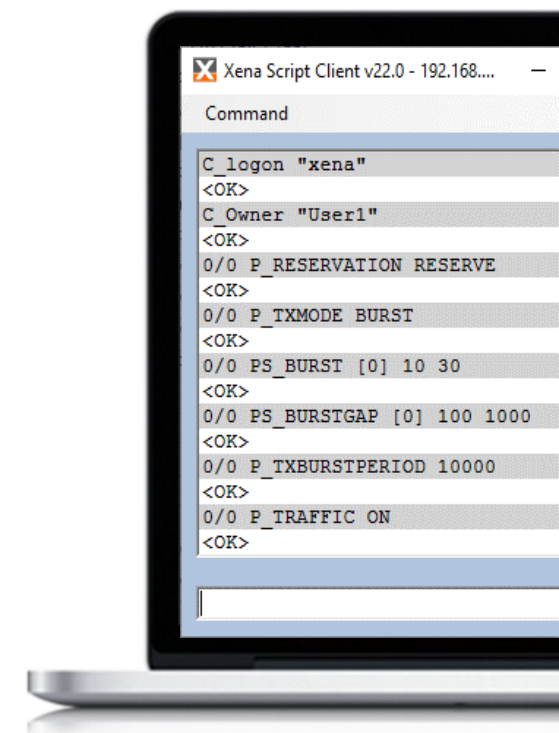
In addition, ValkyrieTimeSynch enables multiple Xena testers to synchronize their local clock with each other.

AUTOMATION

Xena offers the industry's best tools for automating Ethernet testing:

- Xena CLI API: Xena's innovative and incredibly easy-to-use command-line-interface (CLI) scripting API with hundreds of scriptable parameters. Can be used with any client platform e.g. Python, Perl.

- Xena Rest API: A client-less, language-agnostic, chassis embedded REST server, which lets you build automation scripts with your choice of language, tool and client environment. It supports all Valkyrie CLI commands and adds many more abstract operations to simplify and speed up automation development.

- Xena Test Suites: standalone applications for automated RFC 2544, Y.1564, RFC 2889 and RFC 3918 testing

- ValkyrieManager Traffic Scheduler: a user defined sequence of operations activated with a single mouse click, making testing easier.

- 3rd party test frameworks that support our products

Learn more about Valkyrie Automation tools

VALKYRIE KEY FEATURES

- Compact ValkyrieCompact 1U chassis covers 1, 2.5, 5, 10, 25, 40, 50, 100, 200, 400GE speeds
- ValkyrieManager is a richly-featured and easy-to-use User interface ("2-clicks" to get a stream running)
- Industry's only UI integrated Traffic Generation & Impairment solution (Valkyrie & Chimera)
- Robust chassis platform (Linux) that runs "forever", supporting +40-day test cases
- Freya test modules installed in Valkyrie support up to 800G PAM4
- Thor test modules support both four PAM4 based speeds (50, 100, 200 and 400GE) and five NRZ based speeds (10, 25, 40, 50 and 100GE)
- Precise and accurate traffic generation and analysis
- Multi-user platform with port reservation resolution down to one port per user
- Industry's best traffic scheduler
- Advanced FEC stats for PAM4 ports
- Smooth and fast chassis software upgrade processes
- Automotive Ethernet Test Module available
- Same CLI commands across all port speeds

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XENA VALUE PACK

3 years' SW updates included
When you buy any of our Valkyrie, Chimera, Vulcan or Vantage solutions, all the software licenses are included – plus you can download all the updates released during the next 3 years.

3 years' HW warranty included
We cover the cost of fixing hardware problems for 3 years after purchase

Technical support also included
Xena offers free online/email support for the lifetime of the product.

Free product training
We strive to make user-friendly solutions and provide comprehensive technical documentation. But if you'd also like some one-on-one technical training, we're happy to oblige.

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