Valkyrie1564 (v1.14)
A STEP-BY-STEP GUIDE
AGENDA

Valkyrie1564 – Step by Step

Create Service
Bandwidth Profile
Physical Ports
Service/UNI Configuration
Configuration Test
Performance Test
Reporting
Create Service

After launching Valkyrie1564, start here:
Create Service

GUI Panels

Create Ethernet Service

- Service Main Type
  - Service Label:
  - Service Type: EPL, E-LAN, E-Tree
  - Is Virtual Service:

- Service Acceptance Criteria
  - Frame Loss Ratio: 0.00 E-6
  - Frame Transfer Delay: 10.000 msec
  - Frame Delay Variance: 1.000 msec
  - Availability: 100.00%

- Testflow Characteristics
  - Topology: Pairs, Blocks, Mesh
  - Direction: East -> West, West -> East, Bidirectional

- WEST <-> EAST

Create Cancel
Create Service

Service Creation

1. Enter a suitable **Service Label** to make the service easy to identify later on.

2. Set the **Service Type:**

**Ethernet Private Line (EPL)**

Ethernet Private Line is a Point-to-Point service. It consists of two User Network Interfaces (UNIs) with one EVC provisioned between them.
Set the **Service Type:**

**Ethernet Virtual Private Line (EVPL)** is a Point-to-Multipoint service. It consists of two or more user network interfaces (UNIs) with multiple EVCs between them (service multiplexing).
Create Service

Service Creation

Set the **Service Type:**

*Ethernet Local Area Networks (E-LAN)* - provides a multipoint topology like a local network. Each node can reach any other node.
Set the **Service Type:**

**Ethernet Tree (E-Tree)** - a rooted multi-point service that connects a number of UNIs providing sites with hub and spoke multipoint connectivity. Each UNI is designated as either *root* or *leaf*.
Create Service

Service Creation

3 These values represent the guarantees you want to issue to the user of the service as part of the Service Level Agreement (SLA) for this service. If one or more of the criteria should not be used in the test you can deselect them using the Use in test checkboxes to the right.

4 Specify the Testflow Characteristics. For an EPL you can only select the "Pairs" topology as the other topology options are only relevant for multipoint configurations.

You can, however, select the direction for the test traffic. You should keep the default choice of "Bidirectional" for this test.
Select the **Bandwidth Profiles** tab and click the "Create Profile" button in the small toolbar at the top of the panel.

Click the cell in the CIR column and enter the committed bandwidth you want the UNIs to provide.

Optionally, click the cell in the EIR column and enter the additional excess bandwidth you want the UNIs to provide.

You can also optionally modify the CBS and EBS values.

The default value for both is 12176, according to [MEF 13](#), clause 36.
Bandwidth Profiles

CIR - Committed Information Rate
CBS - Committed Burst Size
EIR - Excess Information Rate
EBS - Excess Burst Size
Physical Ports

1. First add a chassis by clicking “Add Chassis”
2. Enter the IP address of the unit that will be used.
3. Click “OK”.

![Image showing the process of adding a chassis and entering IP address.](image-url)
Physical Ports

Drag and Drop the ports you want to use on to the right service.
1. Configure the service ports according to the topology.
2. Choose EAST WEST Sides for Port Pairs.
Physical Ports

Configure additional port parameters per port:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-Frame Gap:</td>
<td>Specifies the minimum gap between frames generated for a port, expressed as a number of bytes.</td>
</tr>
<tr>
<td>Speed Reduction:</td>
<td>Specifies an optional speed reduction on the transmit side of the port, expressed as a ppm value.</td>
</tr>
<tr>
<td>Enable PAUSE Mode:</td>
<td>Controls whether the port responds to incoming PAUSE frames.</td>
</tr>
<tr>
<td>Enable Auto-Negotiation:</td>
<td>Controls whether auto-negotiation for the port is enabled or not.</td>
</tr>
<tr>
<td>Latency Offset:</td>
<td>An optional offset in nanoseconds for the port which is used for latency measurements. You can measure an appropriate value for this by looping two test ports together and performing a latency test. The resulting average latency of this test should be zero. If this is not the case you can adjust the Latency Offset value until you reach a zero value. Then you can use the calibrated value in other tests.</td>
</tr>
</tbody>
</table>
Configure additional port parameters per port:

Set the IP Address IPv4/IPv4 if this is a Layer 3 test.
Configure additional port parameters per port:

<table>
<thead>
<tr>
<th>Public IP Address:</th>
<th>If a port is located behind a NAT firewall/router it may be necessary to provide the public IP address offered by the NAT firewall/router. Valkyrie1564 will then perform an ARP request for the public IP address before starting the test to avoid packet loss due to an initial ARP phase. The real (internal) IP address of the port must still be configured in the main port grid as this may be used to send Gratuitous ARP packets from the port to the router before starting the test.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public IP Prefix:</td>
<td>The network prefix value for the public IP address.</td>
</tr>
</tbody>
</table>

This setting can be used to specify the public IP address of the port if the port is behind a NAT gateway.
Physical Ports

Configure additional port parameters per port:

Remote Loop IP Address:

When a port with layer-3 protocol segments (IPv4/IPv6) has been configured as a looped port you must specify the IP address of the remote port so that the Xena tester can perform an ARP request for the MAC address.
Service/Uni Creation

Frame Configuration
Service/Uni Creation

Frame Configuration

1. Select the needed headers for the test:

2. Fill in the values for the selected headers:

- **Pattern** means you can set your own custom pattern:
- **Incrementing** means “000102030405...FF00010203...” provides built-in data integrity check for payload.
- **PRBS** provides Pseudo Random Bit Sequence of \(2^{31}-1\) pattern
- No data integrity with adding Payload checksum in port properties
Service/Uni Creation

Ingress Bandwidth Profiles

Per-UNI Bandwidth - select from pre-built Bandwidth Profiles.
Service/Uni Creation

Ingress Bandwidth Profiles

Per-CoS Bandwidth Profiles

If you want to use the Per-CoS Bandwidth profile you can select the CoS and Map to DSCP Value as well:
Service/Uni Creation

Egress Bandwidth Profiles

Per-UNI Bandwidth Profiles – Select the Egress Bandwidth profile:
Configuration Test

1. Select Test Steps
   - Rate Tests
     - CIR Validation Test
     - CIR Step-Load Test
     - Run if CIR Validation Test Fails
     - EIR Configuration Test
     - Traffic Policing Test
   - Burst Tests
     - CBS Configuration Test
     - EBS Configuration Test

2. Test Execution Parameters
   - Common Parameters
     - Iterations: 1
     - Step Duration: 1 second
     - Break Test On Fail: 
   - CIR Step-Load Parameters
     - Start Rate: 25 % of CIR
     - Step Rate: 25 % of CIR
   - Traffic Policing Parameters
     - Grace Factor: 0.00 % of CIR

3. L3 Address Refresh
   - Refresh Enabled: 
   - Refresh Period: 4.00 seconds
   - Misc. Settings
     - Latency Mode: Last-To-Last

4. Frame Sizes
   - Software Controlled Sizes
     - ITU-T Default: 64, 128, 256, 512, 1024, 1280, 1518
     - Custom Sizes: 512
     - Size Range: Start size: 100, End size: 1500, Step size: 100
   - Hardware Controlled Sizes
     - Incrementing: Min. size: 64, Max. size: 1500
     - Butterfly Sizes
     - Random Sizes
     - Mixed Sizes
Configuration Test

1. **Simple CIR validation test Y.1564, chapter 8.1.2, test A.1.**
   During the test, the transmitting probe generates frames at the CIR rate.
   The receiving probe measures the received rate, loss, delay, and jitter on the stream. The test fails if any of the maximum frame loss ratio, delay, or jitter thresholds are violated.

2. **EIR configuration test - Y.1564, chapter 8.1.2, test B.**
   During the test, the transmitting probe generates frames at the CIR + EIR rate.
   The receiving probe measures received rate, loss, delay, and jitter on the stream. The test fails if the measured rate is less than CIR*(1 – max_loss).
Configuration Test

2 Test Execution Parameters

Common Parameters:

Duration: Fill in the duration of each iteration.

Iterations: Fill in the number of iteration per this test.

Break Test On Fail: Stop test immediately as it would imply a configuration error.

CIR Step-Load Parameters:

Start Rate: The Rate in which the test will start.

Step Rate: The Rate increment value.

Traffic Policing Parameters:

Grace Factor: This is the value referred to in the standard as M Factor. The M factor is added to allow for the effect of the traffic policer's CBS and EBS settings, and test time.

*Experience will determine the values for M.*
**L3 Address Refresh:**

*If the Enable Refresh checkbox is checked the tester will periodically emit ARP requests (for IPv4) or Neighbor Advertisement requests (for IPv6). The period can be set using the Refresh Period field.*

**Misc. Settings:**

**Latency Mode:** Select the Latency mode to be measured.
Configuration Test

ITU-T Default:
The default setting is to use the ITU-T standard frame sizes: 64, 128, 256, 512, 1024, 1280 and 1518 bytes.

The following options are also available:

Custom Sizes:
Lets you specify a comma-separated list of values - useful if you only want to test using one or two packet sizes.

Size Range:
Lets you specify a range of packet sizes and the steps.

Incrementing Sizes:
Lets you specify a Min and Max size – the sizes: Min, Min+1, Min+2, ..., Max.

Butterfly Sizes:
Lets you specify a Min and Max size – the sizes: Min, Max, Min+1, Max-1, Min+2, Max-2, ...

Random Sizes:
Lets you specify a Min and Max size – The sizes will vary among Min – Max randomly.
4 Mixed Sizes:
The Xena tester will use a more or less random mix of packet sizes when sending traffic.

*Note that the use of this option will introduce a slight inaccuracy when calculating various results, as the packet sizes are not deterministic. A weighted average will be used.*
Performance Test

1. Test Period
   - 15 Minutes
   - 2 Hours
   - 24 Hours

2. Availability Settings
   - Frame Loss Ratio for SES

3. L3 Address Refresh
   - Refresh Enabled
   - Refresh Period

4. Frame Sizes
   - Software Controlled Sizes
     - ITU-T Default
     - Custom Sizes
     - Size Range
   - Hardware Controlled Sizes
     - Incrementing
     - Butterfly Sizes
     - Random Sizes
     - Mixed Sizes
Performance Test

1. **Time Period:** Select how long you would like to run the test. **Unbounded** means it will be stopped manually by the user.

2. **Availability settings:**
   - **Frame Loss Ratio for SES:**
   - **Severe Errored Seconds =**

3. **L3 Address Refresh:**
   - If the **Enable Refresh** checkbox is checked, the tester will periodically emit ARP requests (for IPv4) or Neighbor Advertisement requests (for IPv6).
   - The period can be set using the **Refresh Period** field.

4. **Misc. Settings:**
   - **Latency Mode:** Select the Latency mode to be measured.
Performance Test

**ITU-T Default:**
The default setting is to use the ITU-T standard frame sizes: 64, 128, 256, 512, 1024, 1280, and 1518 bytes.

The following options are also available:

**Custom Sizes:**
Lets you specify a comma-separated list of values - useful if you only want to test using one or two packet sizes

**Size Range:**
Lets you specify a range of packet sizes and the steps.

**Incrementing Sizes:**
Lets you specify a Min and Max size – the sizes: Min, Min+1, Min+2,…, Max.

**Butterfly Sizes:**
Lets you specify a Min and Max size – the sizes: Min, Max, Min+1, Max-1, Min+2, Max-2,…

**Random Sizes:**
Lets you specify a Min and Max size – The sizes will vary among Min – Max randomly.
**Performance Test**

**4 Mixed Sizes:**
The Xena tester will use a more or less random mix of packet sizes when sending traffic.

<table>
<thead>
<tr>
<th>Packet Sizes</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>64</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>78</td>
<td>0</td>
</tr>
<tr>
<td>92</td>
<td>0</td>
</tr>
<tr>
<td>256</td>
<td>57</td>
</tr>
<tr>
<td>496</td>
<td>3</td>
</tr>
<tr>
<td>512</td>
<td>1</td>
</tr>
<tr>
<td>570</td>
<td>0</td>
</tr>
<tr>
<td>576</td>
<td>0</td>
</tr>
<tr>
<td>594</td>
<td>0</td>
</tr>
<tr>
<td>1438</td>
<td>0</td>
</tr>
<tr>
<td>1518</td>
<td>0</td>
</tr>
<tr>
<td>9216</td>
<td>0</td>
</tr>
<tr>
<td>16360</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note that the use of this option will introduce a slight inaccuracy when calculating various results, as the packet sizes are not deterministic. A weighted average will be used.*
Reporting

1. **Report Identification**
   - Customer Name: Xena Networks
   - Customer Service ID:
   - Customer Access ID:
   - Comments:

2. **Report Generation Options**
   - **Report Naming**
     - Report Filename Prefix: valkyrie1554-Report
     - Append Timestamp to Filename: 
   - **Report Content**
     - Include Stream Information in Report: 
     - Include Charts in Report: 
     - Throughput Unit for Charts: Frames/s
   - **Report Formats**
     - Generate PDF Report
     - Generate XML Report

---

[Image of software interface]
1) **Report Identification:**

This section contains options that help identify the test context.

**Customer Name:**
The name of the customer for which the test is performed.

**Customer Service/Access Id:**
These options let you provide details about the network circuits you are testing.

**Comments:**
Lets you provide any multi-line comments for the test configuration.
Reporting

2 Report generation Options:

Report Naming

Report Filename Prefix:
Specifies the prefix for the report filename.

Append Timestamp to Filename:
If checked, a timestamp on the form <YYYYMMDD-HHMMSS> is added to the filename prefix.
Reporting

2 Report Content:

Include Stream Information in Report: If checked the report will also contain detailed results for each port. If unchecked only the totals will be reported.

Include Charts in Report: If checked the report will include bar charts showing the test results. (This is only applicable for PDF type reports.)

Throughput Unit for Charts: This property allow you to determine whether the units of data are referred to as "packets" or "frames".

Report Formats:
Select which type(s) of reports will be generated. You can enable several. The generated report files will be given a file extension that matches the selected type i.e. ".pdf" for PDF files and so forth.

*XML Report Specification - You can find the specification for the XML Report here.
Want more?

CHECK TECHNICAL DOCUMENTATION
TRY OUR LIVE DEMO SYSTEM
BOOK A GUIDED SW TOUR
CONTACT US: support@xenanetworks.com