

# Valkyrie1564

## User Manual

This is the User Manual for Valkyrie1564. Valkyrie1564 is a PC application that lets you perform advanced network tests according to the [ITU-T Y.1564 standard](#) using one or more of the [Xena test equipment chassis](#).

This manual contains a high-level introduction and a few usage scenarios to get you started with using the Valkyrie1564. Refer to the [Valkyrie1564 Reference Manual](#) for a detailed description of all the various configuration options in the application.

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# GENERAL INFORMATION

## CAPABILITIES

The Valkyrie1564 application features the following capabilities:

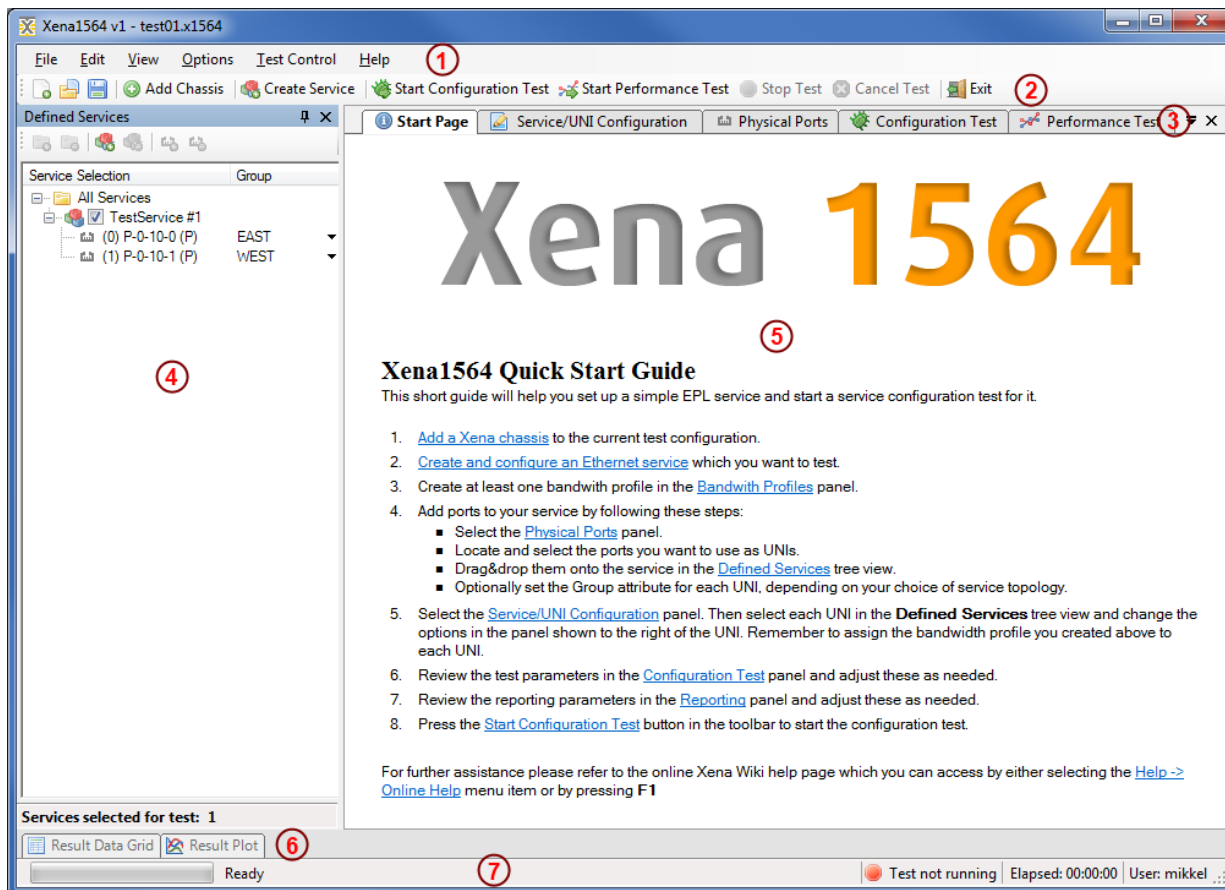
- Enables the user to create, edit and execute test configurations using Xena Networks test equipment in accordance with the [ITU-T Y.1564 standard](#).
- Define test configuration using standard [MEF 10.2/ITU-T Y.1563](#) terminology.
- Full support for both Y.1564 configuration and performance test types.
- Ability to define multiple Ethernet services.
- Ability to execute test on one, several or all defined Ethernet services.
- Ability to organize defined services in a custom folder hierarchy.
- Support for multiple [ValkyrieBay](#) and [ValkyrieCompact](#) test chassis.
- Support for different network topologies and traffic flow directions.
- Support for both layer 2 and layer 3 testing.
- Support for either IPv4 or IPv6.
- Ability to flexibly define the protocol layers supported by each user-to-network interface (UNI) – Ethernet, Customer and Service VLANs, MPLS, IP and UDP.
- Ability to define either per-UNI or per-CoS bandwidth profiles for each UNI.
- Ability to specify CoS-to-DSCP mapping.
- Test reports can be created in either PDF or XML format or both.
- Extensive configuration options to fine-tune the tests.

## OVERVIEW

The application uses a tabbed panel layout to divide the functionality into separate areas. The following sections briefly explain the main areas of the GUI.

### Main Application View

The main Valkyrie1564 application view is shown in the image below.



The numbered parts of the view are:

1. The menu bar.
2. The toolbar providing easy access to the most needed functions in the menu bar.
3. The main tabbed panel containing the function panels.
4. The service tree view showing all defined services and their UNIs.
5. Content of the main tabbed panel.
6. The results grid and plot panels – here shown in hidden state.
7. The status bar showing current status and progress information.

For more details on the general functionality refer to the [Reference Manual](#).

# BASIC TEST CONFIGURATIONS

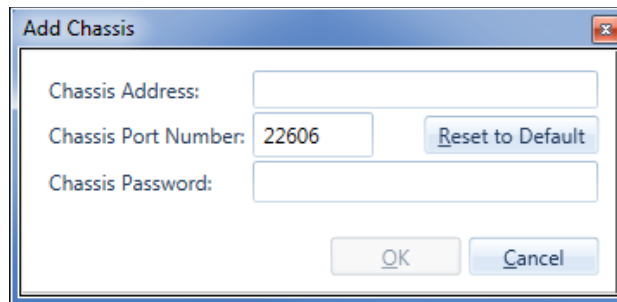
This section explains how to create a few common test configurations.

## EPL, PORT-BASED

In this scenario we will create a simple EPL service with no VLAN multiplexing on the UNI (i.e. port-based) using plain Ethernet traffic.

### Add a Xena Chassis

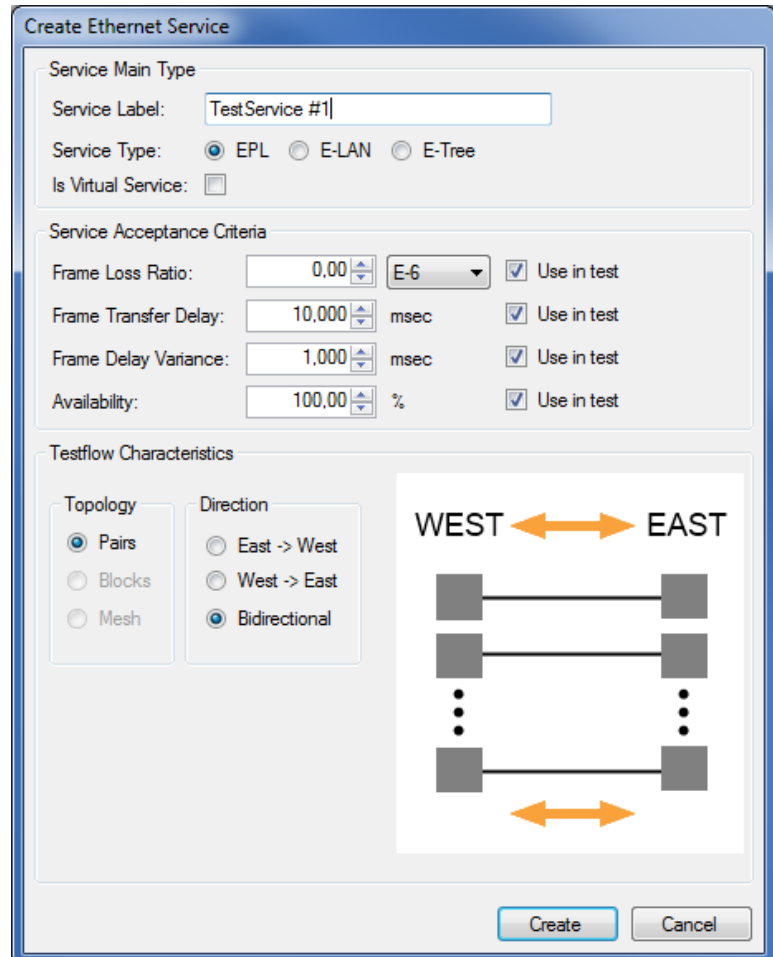
1. Click the **Add Chassis** button in the main toolbar. This will display the dialog shown below.



2. Enter the IP address and password of a Xena chassis and press **OK**.

### Create the Service

Create a new Ethernet service either by clicking the “Create Service” icon in the small toolbar at the top of the **Defined Services** tree panel, located at the left part of the application, or by right-clicking on the “All Services” root in the **Defined Services** tree panel and selecting the “Create Service” menu option. This will display the dialog shown in the image.



1. Enter a suitable **label** for the service to make it easy to identify it later on.
2. Set the **Service Type** to “EPL” (should be the default choice). Leave the **Is Virtual Service** checkbox unchecked as we want to define a port-based service.
3. Optionally modify the **Service Acceptance Criterias** to use in the test. These values represents 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. Finally you need to 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.
5. Press the **Create** button to create your service.

#### Create a Bandwidth Profile

1. Switch to the **Bandwidth Profiles** panel and click the “Create Profile” button in the small toolbar at the top of the panel. A new entry will now be inserted in the list below. If you cannot see the **Bandwidth Profiles** panel tab in the tabbed view you can either enlarge the main window until the tab pops into view or you can select the **Bandwidth Profiles** menu item in the **View** menu. Alternatively you can click on the little down-arrow in the right edge of the tab-bar and select the **Bandwidth Profiles** panel.
2. Click the cell in the CIR column and enter the committed bandwidth you want the UNIs to provide.
3. Optionally click the cell in the EIR column and enter the additional excess bandwidth you want the UNIs to provide.
4. You can also optionally modify the CBS and EBS values. The default value for both is 12176, according to [MEF 13](#), clause 36.

#### Add the UNIs

1. Switch to the **Physical Ports** panel. Expand the module(s) as needed and locate two ports that you want to use in your test.
2. Select the ports, either one by one or both at the same time, drag them to the service you created in the **Defined Services** tree view and drop them onto the service.
3. The two UNIs will now be shown under the service in the services tree view. Notice that the cells under the **Group** column contains the text “Select Group...”. Change this value to “EAST” for the first UNI and “WEST” for the other.
4. Switch to the **Service/UNI Configuration** panel. Select the first UNI to view the UNI configuration panel as shown below.

## UNI Configuration

Frame Configuration

Ingress Bandwidth Profiles

Egress Bandwidth Profiles

**Frame Header Composition**

VLAN: Customer Tag

VLAN: Service Tag

MPLS Header(s)

Stack Size:

IP Header

IP Version:

UDP Header

Enable UDP Checksum

L2

**Frame Payload**

Payload Type:

Payload Pattern:

00	00	00	00	00	00
00	00	00	00	00	00
00	00	00	00	00	00

**Frame Editor**

Ethernet		MPLS		
Type		Label	Class	TTL
88	47	0	0	255

5. For this test we will just leave the default traffic settings (plain Ethernet, no VLANs, no IP, etc).
6. Select the **Ingress Bandwidth Profiles** sub-tab and set the **Per-UNI Bandwidth Profile** to point to the profile we just created.
7. Do the same for the other UNI.
8. Save your configuration and give it a suitable filename.

### Start a Configuration Test

1. Click the “Start Configuration Test” button in the main toolbar.
2. The **Result Data Grid** panel will now be shown automatically. Here you can follow the progress of the test.
3. Once the test completes the resulting PDF report should open automatically in the default PDF viewer application on your PC.

## E-LAN, PORT-BASED

This example expands a bit on the first example and will thus only describe the new features in details. You can either use the same configuration as for the first example or you can create a new configuration.

1. Add a Xena chassis to the configuration (or re-use the one you already have).
2. Create a new Ethernet service. Set the Service Type to “E-LAN”. Set the testflow topology to “Mesh”.
3. Select 3 suitable ports in the Physical Ports panel and drag&drop them to the service you just created.
4. Set the Per-UNI bandwidth profile for each UNI to a suitable bandwidth profile (reuse the one you created before or create a new one for this test).
5. Save your configuration.

6. Right-click on the service you just created in the Defined Services tree view and select the “Run Configuration Test” (for this service only) item.

## EPL WITH C-TAG

This example also expands on the first example and shows how to add service multiplexing using a Customer VLAN tag (C-TAG) and also how to enable per-CoS bandwidth profiles. We will create an EVPL service with a C-TAG value of 10, using bandwidth profiles for CoS value 1 and 5.

1. Add a Xena chassis to the configuration (or re-use the one you already have).
2. Create a new Ethernet service. Set the Service Type to “EPL” and check the “Is Virtual” checkbox.
3. Go to the Bandwidth Profiles panel and create and configure two new profiles, one for each CoS value we want to use. The CIR/EIR values should preferably be different so that you can see a difference when you run the test.
4. Add two suitable ports to the service. Assign each of the ports to a different direction group (EAST or WEST).
5. Select both UNIs in the tree view and change to the Service/UNI Configuration panel. Check the VLAN: Customer Tag checkbox and set the C-tag value in the Frame Editor to 10.
6. Change to the Ingress Bandwidth Profiles tab. Select the Use Per-CoS Bandwidth Profiles option.
7. Press the Add button. Set the CoS value to 1 and select the first profile you created above. Ignore the DSCP settings and press OK.
8. Add another CoS-profile mapping for CoS value 5.
9. Save your configuration.
10. Right-click on the service you just created in the Defined Services tree view and select the “Run Configuration Test” (for this service only) item.

## EPL WITH IP TRAFFIC

This example shows how to setup IP traffic on a service.

1. Add a Xena chassis to the configuration (or re-use the one you already have).
2. Create a new Ethernet service. Set the Service Type to “EPL”.
3. Change to the Physical Ports panel. Select two suitable ports to use and assign an IP address to each in the configuration panel at the bottom of the main port panel. Optionally assign a gateway address as well if your network setup requires this.
4. Add the two ports to the service as UNIs. Assign each of the UNIs to a different direction group (EAST or WEST).
5. Select both UNIs and enable IPv4 Header in the Frame Configuration. Also assign a bandwidth profile to each UNI.
6. Save your configuration.
7. Right-click on the service you just created in the Defined Services tree view and select the “Run Configuration Test” (for this service only) item.



# TROUBLESHOOTING

This section contains some guidelines when you encounter a problem with one of the Xena test applications, such as [ValkyrieManager](#), [Valkyrie2544](#), [Valkyrie1564](#), [Valkyrie3918](#) or [Valkyrie2889](#) and want to obtain help from your support representative.

## BASIC INSTRUCTIONS

This section explains how you should report a problem to your support representative.

### Describe the Problem

To enable fast resolution of your problem we request that your support request contains the following information:

- Name and version of the Xena test software used (the version can be seen in the main title bar)
- A description of what you are trying to do with the software.
- If the software misbehaved please describe what you actually encountered and you expected instead.
- Screenshots of any error situation.
- The test configuration file for the application (contained in the support archive).
- Any debug log files for the application (contained in the support archive).

### Create a Support Information Archive

The Xena test applications include a menu entry called **Create Support Information Archive** which will create a compressed ZIP archive containing both the currently loaded configuration file and the content of the **Logs** and **Settings** directories. This file can then be emailed to your support representative.

For the Valkyrie1564 and similar test applications this menu entry is located in the **Help** menu. For the ValkyrieManager application it is located in the **Tools** ribbon menu.

**Please note:** For the Valkyrie1564 and similar test applications it is important that the configuration file used when the problem was detected is loaded when the support archive is generated. Otherwise the configuration file will not be part of the archive.

### Attach Screenshots

Screenshots are a great and easy way of communicating what you see on the screen. To obtain a screenshot of a running program and send it to Xena support perform the following actions:

1. Point your mouse inside the program window.
2. Press the <Alt-PrintScr> keys simultaneously.
3. Switch to your email program and start a new email message.
4. Press <Ctrl-V> or select "Paste" from the menu (most likely the "Edit" menu) to insert the screenshot into the email.

## ADDITIONAL DETAILS

This section goes into a bit more detail about the various items contained in the Xena Support Archive mentioned above.

### Configuration Files

The Xena test applications keeps their configurations in special files with an application-specific extension. The extensions used are as follows:

<i>Valkyrie2544:</i>	*.x44 or *.x2544
<i>Valkyrie1564:</i>	*.x1564
<i>Valkyrie3918:</i>	*.x3918
<i>ValkyrieManager:</i>	*.xmcfg

The configuration files will be located in a common Xena data directory on your PC. More specifically they will be located in the following path: **C:<UserAppDataDir>Xena<XenaTestApplication>**. The <UserAppDataDir> directory depends on your Windows version:

<i>Windows Vista, 7 and 8:</i>	C:Users<username>AppDataRoaming
<i>Windows XP:</i>	C:Documents and Settings<username>}Application Data

The <username> is the name of the currently logged-in user.

The Xena test applications include a menu entry called **Explore Xena Data Directory** in the **File** menu that will open a Windows Explorer in the correct directory, regardless of the Windows version.

### Debug Log Files

The Xena test applications logs certain events and errors to a series of debug log file located in the Logs subdirectory under the above mentioned main application data directory. If you encounter errors it may help the support if you include these files in your support request.