

# VantageManager

## User Manual

This is the User Manual for VantageManager.

VantageManager is the primary software application used to manage and configure the Xena Networks Production Line test equipment.

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## WELCOME

Welcome to VantageManager User Manual. You can find useful information about configuring, executing, and performance tests ranging from basic operations to advanced features, whether you are new to VantageManager or an advanced one.

## INSTALLATION

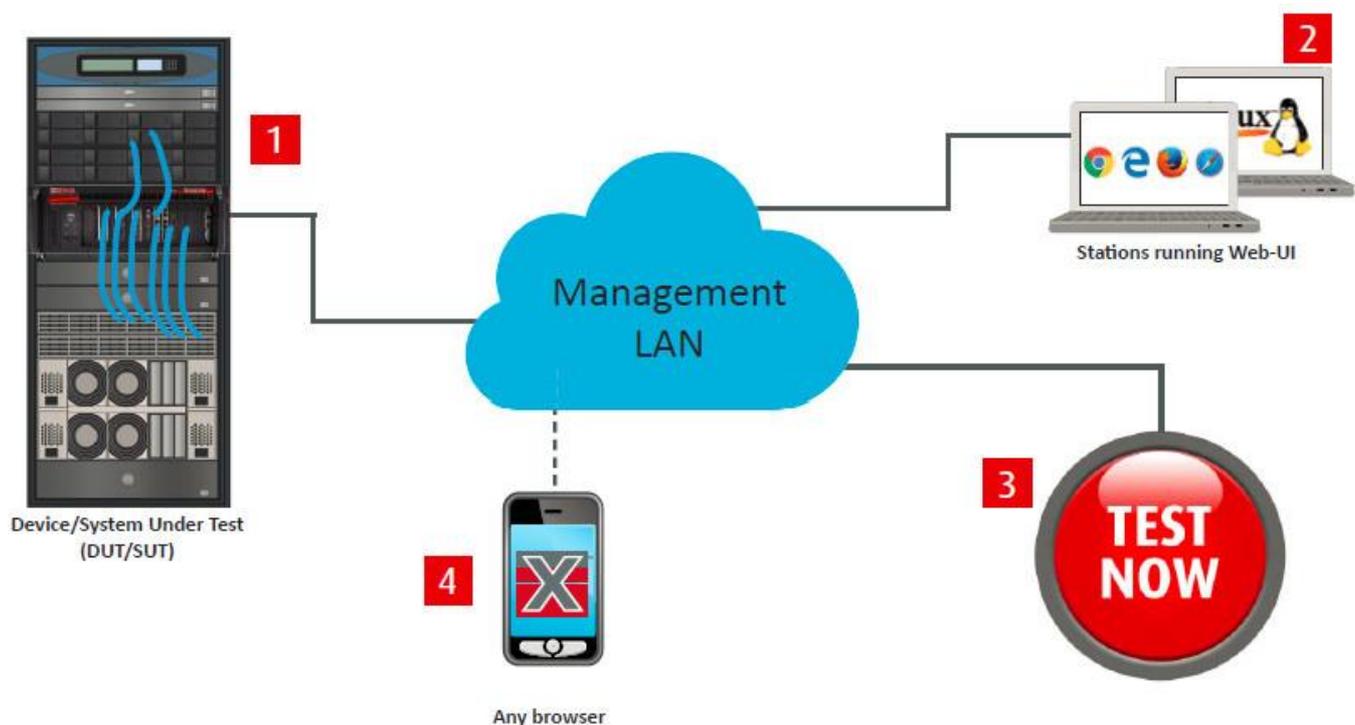
VantageManager is a program which runs in the chassis, you don't need to install any software, just a web browser. For the IE browser, you need to install the IE 8 or higher version. It is advised for you to use a Firefox browser.

## GENERAL INFORMATION

Vantage is a production line test solution for networking devices that use Ethernet traffic, such as switches, NICs, routers, GPONs, cable modems, EOC, power modems and so on.

The solution consists of dedicated hardware and software from experienced test & measurement experts, and is designed to be flexible, scalable and very easy to use.

Vantage enables networking equipment manufacturers (NEMs) to quickly detect performance issues and verify new features before the devices under test (DUTs) leave the factory.



# Login VantageManager

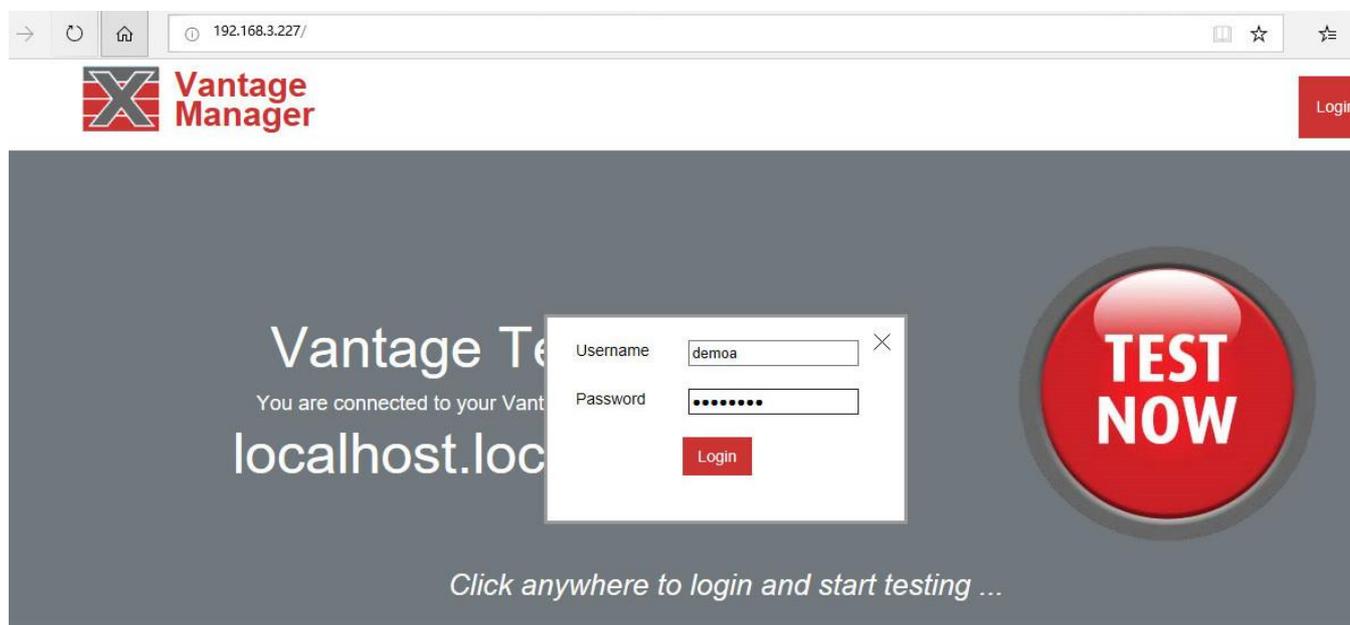
## User and Password

Users can log into Vantage via any browser, but for the compatibility, Xena suggests using Firefox or Chrome. The default IP address of Vantage is 192.168.1.227.

If you use IE, please make sure that your IE version is 8.0 or newer. If your IE is lower than 8.0, it may cause some UI display errors.

Admin default account:

- User name : demoa
- Password : Xena2018



# VantageManager

There will be four main operations on the home page, they will guide users to enter different management UI pages. Different users will see different number operations, based on the user role. If the user whose role only contains “Test” and “Result”, that means he could only visit the “Test Now” and “Test Result” pages. The administrator can always change roles of the users.

## Test Now

“Test Now” UI page is the main test page of VantageManager, the user will spend most of their time on this page. In this page, customer can add new tests, start/stop tests, check test log and input the Serial number of the DUT and so on.

## Test Result

On this UI page, the user can view test results and download their test report. There are two types of test reports customer could download – TEXT/PDF. And the user can check the detailed information of each test result.

## Test Configuration

As you know, for different kinds of DUT, we should need different test cases and topology. So you need to define the ports and streams mapping for different test scenes. The user can add test template on this test UI page, and modify the value of the streams which they have defined.

Vantage allows users to redefine multiple test templates before testing. Once the test template has been defined, tester just need to run the test but no need to configure again.

## Administration

This is the administrator UI page which is only accessible for users assigned with administrator role. In this UI, users can assign the ports to different users and could change the roles for different users. Most important, that you can add new user in this UI page.



Test Now



Test Results



Test Configuration



Administration

# Vantage Chassis Administration

## Chassis information

In this UI page, you could get the chassis information. It will contain Vendor, Version, Version date and so on.

Item	Description
Vendor	VantageManger will always belong to Xena Networks ApS
Version	The version number of the program
Version date	The date of this version published
Chassis web address	The web address of the chassis, it's specific for multiple chassis in one UI
Chassis	The chassis information, it will display all chassis information if user adds multiple chassis into one manager IP.
VantageManager Chassis Upgrade	Visit the VantageManager Chassis Upgrade web page through this link.

## Test port information

The port information is from the last scan performed and may be out of date.

To update the information press the "Rescan Ports" button.

The most important thing is that you can assign the ports to different users. Note that you can only use this port after assigning it to your user.

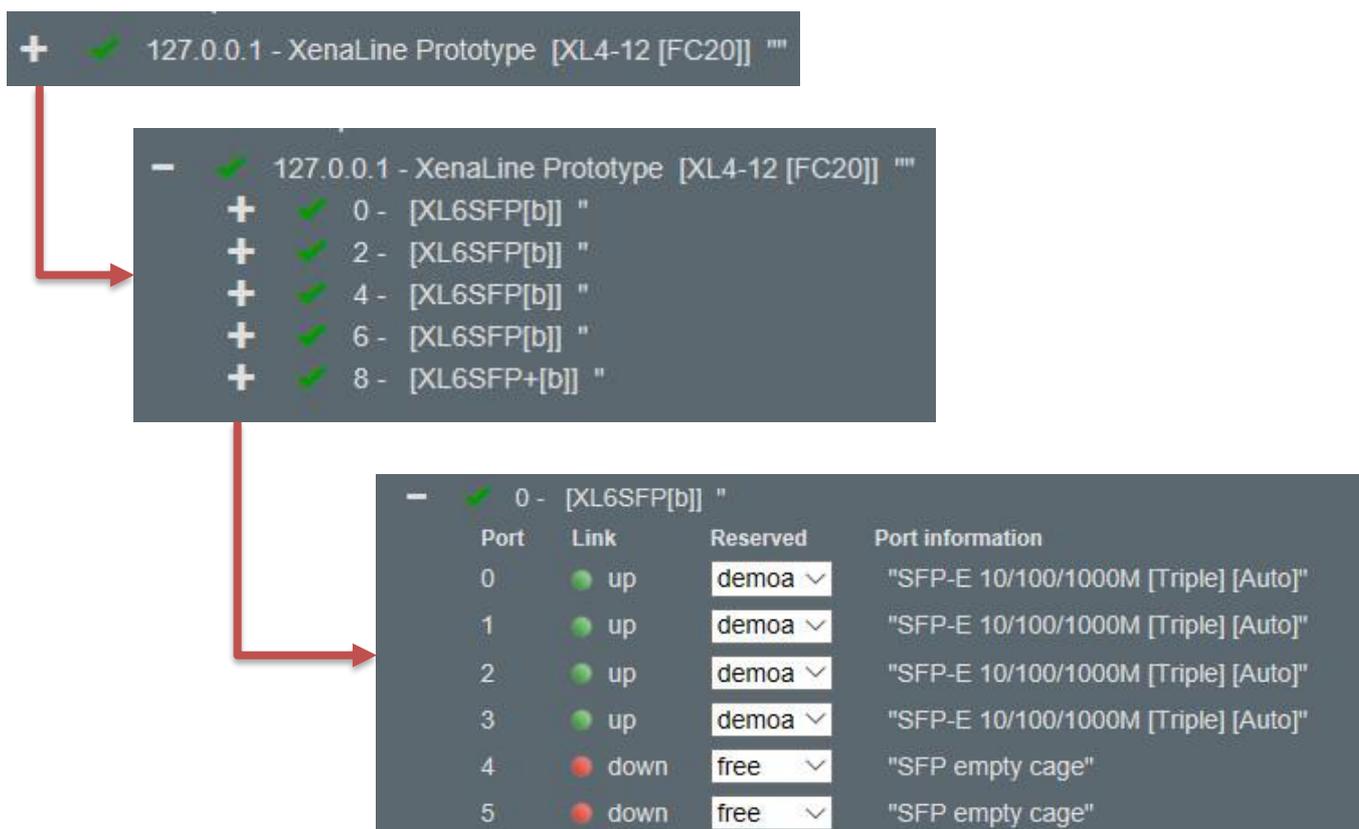


Expand button: Click this button to expand or hide the detailed information of each chassis/module.

0 - [XL6SFP[b]]

Modules ID – [Modules type]

Item	Description
Port	Port ID of each module.
Link	Link status of the port, green means link up, red means link down
Reserved	The owner of the ports. One port only can be assigned to one user.
Port information	The transceiver information and port speed types. If there is no transceiver in the cage, it will display "empty cage"



## User administration

VantageManager allows the administrator to add new users and assign their roles. If your user is not an administrator, it will not be allowed access to the “User administration” page.

Item	Description	
New user login name	The name of the new user, you can use this new user to log into VantageManager	
Active and login name	The name of the users	
Roles	Test	The role of “Test Now” page, will allow user start the test
	Config	The role of “Configuration” page, allows user define the test configuration
	Result	The role of “Test Result” page, allows the user to view the detail test result and download the RDF/TEXT test report
	Admin	The role of “Vantage XenaLine Administration page”, the administrator user, allow customer modify the user and their roles
	The button which is used to add a new user	
	Enable/disable the user, once you disable it, you can't login to Vantage any more with this user	

	Modify the password of the users
	Save the password which you have inputted
	Filter the user list, e.g. just see the active users

## Test Configurations

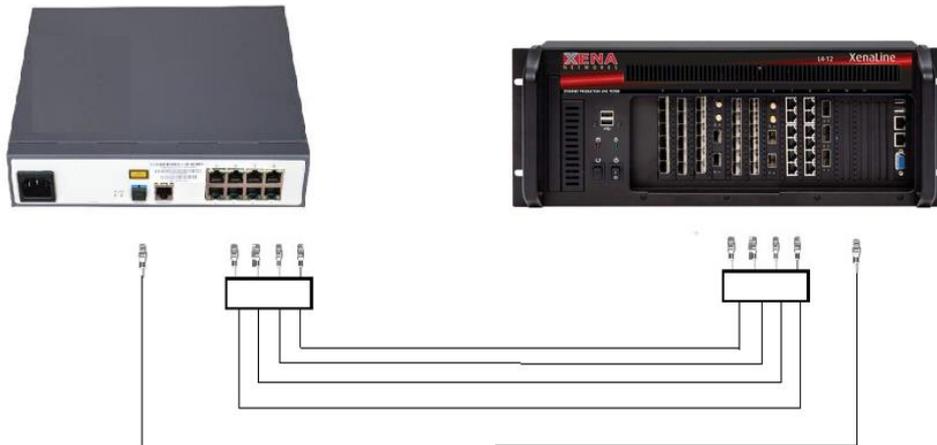
### Test case

VantageManager has defined 5 basic test cases for the user. Users could modify the configuration based on these 5 templates:

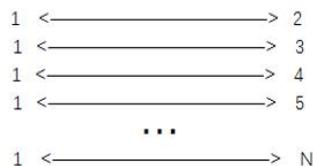
### Xtlc\_aggregation

Aggregation test case designed for PON. As a PON, there will be an aggregated interface and multiple LAN ports. All LAN ports will upstream to the aggregated port and downstream from the aggregated port to each LAN port.

The streams and port map:



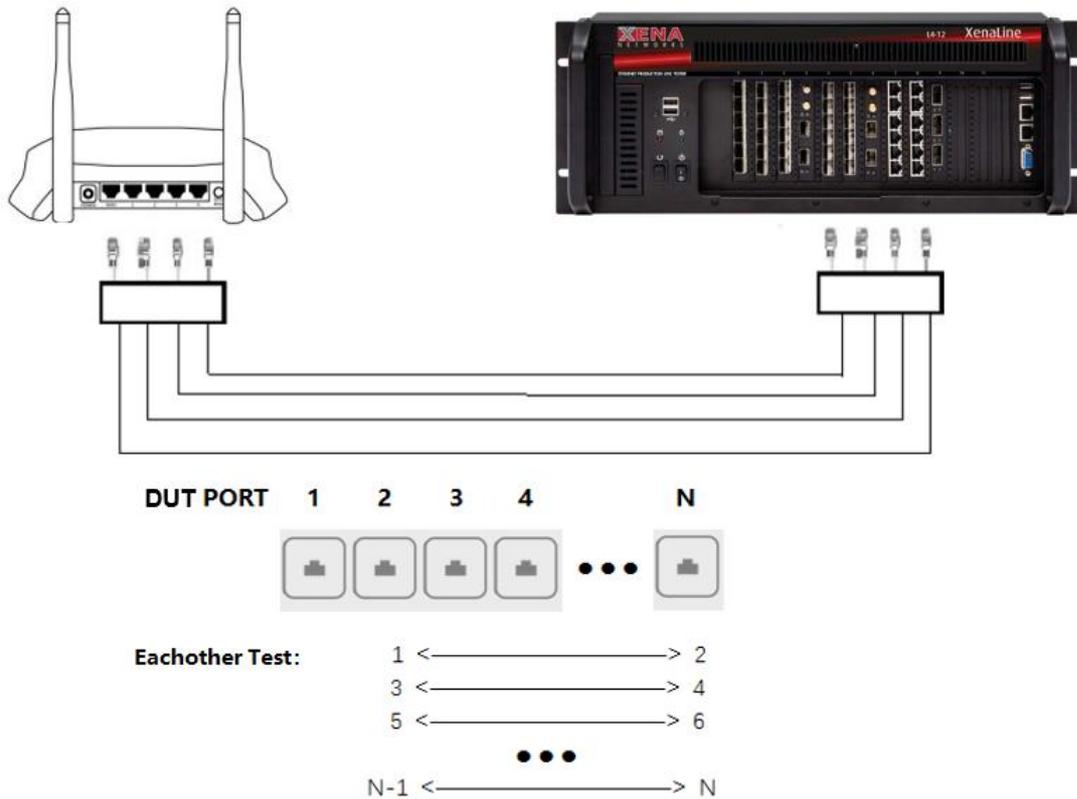
Aggregation Test:  
**Aggregation port: 1**  
 Downlink Ports: 2, 3, 4, 5, ..., N



## Xtlc\_eachother

Eachother test case which designed for the Switch, router and ECI and so on. This test is used to test the whole LAN ports performance. This test case will make the DUT ports into multiple pairs of test ports, like 1 & 2, 3 & 4 and so on. And send streams to each other. So it would ask the customer to add the even number of ports to the port map.

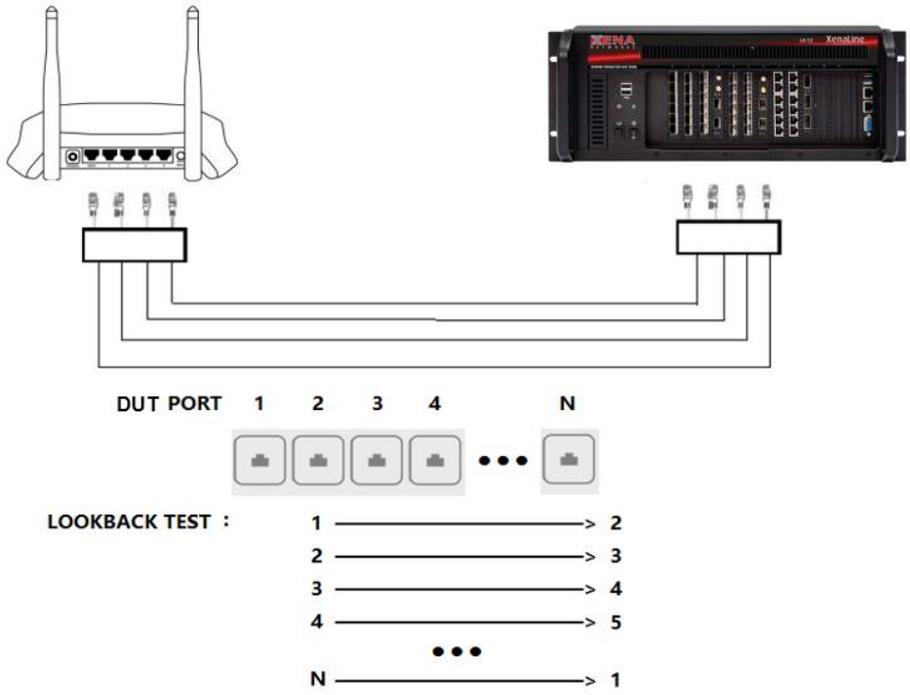
The streams and ports map



## Xtlc\_loopback

Loopback test case which designed for the Switch, router and ECI and so on. This test is used to test the whole LAN ports performance. It will send the stream from 1 to 2, 2 to 3, 3 to 4 and so on. This test doesn't have port number limitation. Odd numbers could be added into the port map too.

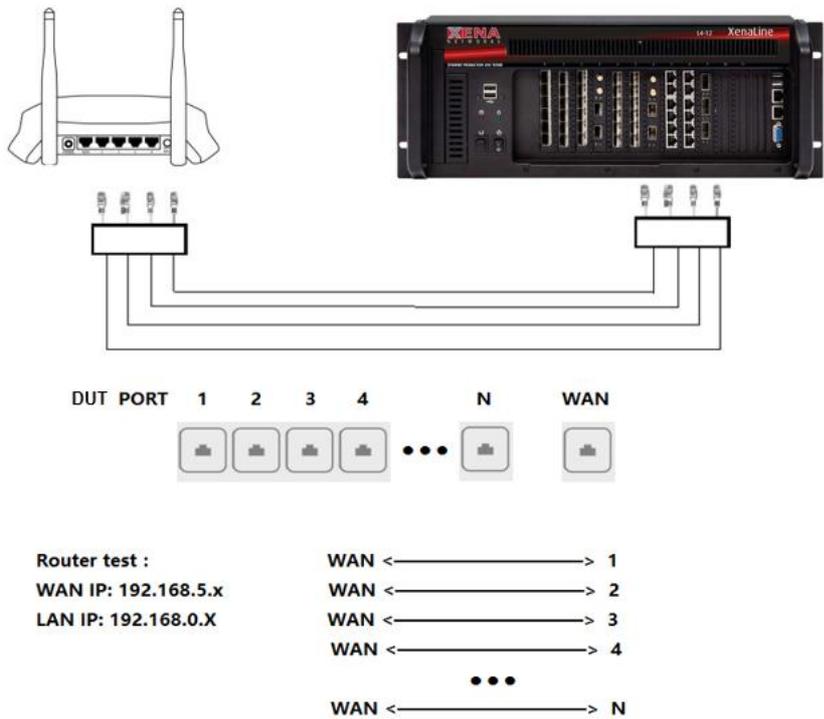
The streams and ports map



### Xlrc\_router

Router test case which designed for the Router. VantageManager predefines as WAN port, others will be assigned as LAN ports. Vantage will send one stream from each LAN port to WAN port and send one stream from WAN port to each LAN port.

The streams and ports map



## Test suite combination

Test suite combination is a task list. User could add multiple test cases into it, then Vantage will run those test cases one by one. And of course, you should configure the same port number for each test case, or it will fail. The max number of the test case is 10 (from 0 to 9).

## Autoconfiguration

The global configuration of the test template, once you change the value of the configuration, the value of the test template will be reset.

- **Number of ports:**  
The ports which the DUT needs to be tested. It will affect the streams and ports map. Enter the desired number of ports.
- **LAN subnet (/24) :**  
The LAN ports subnet, you could set the subnet for the tester LAN ports. It will affect for the all LAN ports. Enter the IP address for the desired subnet , e.g. 192.168.1.0(/24 is assumed)
- **VLAN**  
The VLAN tag which will affect to the whole stream. If not empty or 0, enables insertion of VLAN tag in the LAN stream packets.

## Overall test configuration

Overall test configuration is the main test configuration for each test template. It's the test process logic when the test running. Double click the value to switch to an input box instead of the slider; This will make it easier to set a fixed value.

Item	Description
Automatically clone	If set to a non-zero value, the system will wait this long for the link to disconnect and then automatically reset the DUT field and start a new test after this delay. Use the slider to select a value and press 'Set' to save the new value
Lost packets threshold	If the packet loss exceeds this value, the test will be marked as failed. Use the slider to select a value and press 'Set' to save the new value
Autolearn time and MAC detection	The max time of the MAC learning. Tester will send some low speed rate streams to help the DUT to learn the MAC address.
Test execution time	Duration time of measurements. Use the slider to select a value and press 'Set' to save the new value

Timeout for link synchronization	Timeout for link synchronization before sending first packets, once the link sync timeout, the test will stop and fail.
Port(s) to await:	Select one or more ports (ctrl+click to select multiple), if you enable <b>“Automatically clone test after delay”</b> , the program will detect the ports link status after last test complete. When the program checks that the DUT has been changed (ports reconnect), test will clone and start again.
Enable MAC address detection for SN	Enables autolearn of MAC from DUT using ARP request, program will learn the MAC address of the DUT with the selecting port. The ARP destination IP can be defined by customer.

## Port configuration

Port properties of Vantage tester ports, the user can define the IP address, MAC address, port speed and so on. And the roles of the test case will be display on the left top on each port configuration box. The aggregation port and the WAN port will always be the first port in the test template. Note that all this configuration will be reset if you change the value of **“Autoconfiguration”**. That means you’d rather finish the **“Autoconfiguration”** before the **“port configuration”**.

Item	Description
Port	The role of this test template.
Port IP address	You can define the IP address, mask, gateway for the tester port. And the port could reply the ARP and ping packet.
Port speed	If the physical interface supports setting the port speed, it may be set here. If set to default the value depends on the module/port type. Select an option and press ‘Set’ to save the new value
BroadR-Reach	If the physical interface supports setting the BroadR-Reach mode, it may be set here. If set to default the value depends on the module/port type. Select an option and press ‘Set’ to save the new value

## Stream configuration

Stream configuration of the test template. The user can define the value of each stream in this UI page. The stream number of each port is based on the test case types. The stream ID will display on the left top of the configuration box, the port ID will display on the right top. **“SID”** is the label which Xena will add into the payload, it’s the ID which Xena recognizes that the packet is generated by Xena.

Item	Description	
Mac address	Sets the source and destination MAC address inserted in the header of test packets. Enter mac address using 6 hex bytes, e.g. 03456723168E	
Port IP address	Select the IP protocol as well as source and destination IP. Enter IP address using 123.123.123.123 notation.	
Protocol	IP	Define the stream packet into IP packet.
	TCP	Define the stream packet into IP packet.
	UDP	Define the stream packet into UDP packet.
	-	Define the stream packet into Ethernet packet.
Ports	Enter the source and destination port number. Requires protocol to be TCP or UDP.	
VLAN:	Enables and sets the VLAN tag for insertion of VLAN headers in the stream packets	
Packet lengths	* Enter desired length of stream packets (Support jumbo frame)	
Rate	Set the maximum rate fraction for this stream on the port. If the sum of fractions for streams on a port is above 100%, actual traffic rate will be lower. Press 'Set' to save the new value	
Distr	Set the type of the packet length. Random, BTFly(Butterfly), INCR(Incrementing), MIX, Fixed.	
Payload type	Set the type of byte pattern used for payload data in test packets. Select an option and press 'Set' to save the new value	

\* It will depends the module:  
1/10G: 60 to 16000 bytes    Others: 60 to 9200 bytes

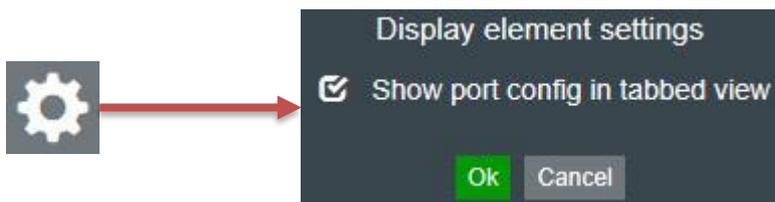
## Other configuration settings

- **Description**  
The Description of the test case, it should describe the topology of the test case. You could learn the information from this box. Of course, you could change and modify the content, click the button to save the value.
- **Config ID**  
The test template ID of each template, each template will only has one config ID.
- **Create by**  
See the creation user and the creation date in this element.
- **Update by**  
See the user and date of configuration updates in this element.

- **View**  
View the raw test configuration. You could view the test case scripting as a json file.
- **Download**  
Download the test case from this chassis to user's computer. Modify it with TEXT and upload to another chassis.
- **Upload**  
Modify the configuration file with TEXT and upload to the chassis from user's computer.
- **Delete**  
Delete the test configuration

## Display element settings

Change the display element settings to change the display types of the ports and streams configuration. Click the  button to open the "Display element settings" window. Enable "Show port config in tabbed view" to display the stream configuration of the item in a tabbed view.



Stream: stream1 SID=1, PORT=port1

MAC address: Src 04F4BC45C601 Dst 8416F9DD7965 ⓘ

Protocol: IP Src IP 192.168.5.1 Dst IP 192.168.5.2 ⓘ

Ports: Src 3333 Dst 4444 ⓘ

VLAN:  Tag 0 ⓘ

Packet lengths: Min 64 Max 1518 Distr FIXED ⓘ

Rate / payload: Rat 33 % ⓘ Type INCR ⓘ

Set

Stream: stream2 SID=2, PORT=port1

MAC address: Src 04F4BC45C602 Dst 8416F9DD7965 ⓘ

Protocol: IP Src IP 192.168.5.1 Dst IP 192.168.5.2 ⓘ

Ports: Src 3333 Dst 4444 ⓘ

VLAN:  Tag 0 ⓘ

Packet lengths: Min 64 Max 1518 Distr FIXED ⓘ

Rate / payload: Rat 33 % ⓘ Type INCR ⓘ

Set

Port and stream configuration

Port	IP address ⓘ	Mask	Gateway	Speed ⓘ	BroadR-Reach ⓘ
DUT WAN port 1	192.168.5.1	255.255.255.0	192.168.5.1	default	default
DUT LAN port 2	192.168.4.2	255.255.255.0	192.168.4.1	default	default
DUT LAN port 3	192.168.4.3	255.255.255.0	192.168.4.1	default	default
DUT LAN port 4	192.168.4.4	255.255.255.0	192.168.4.1	default	default

Save configuration

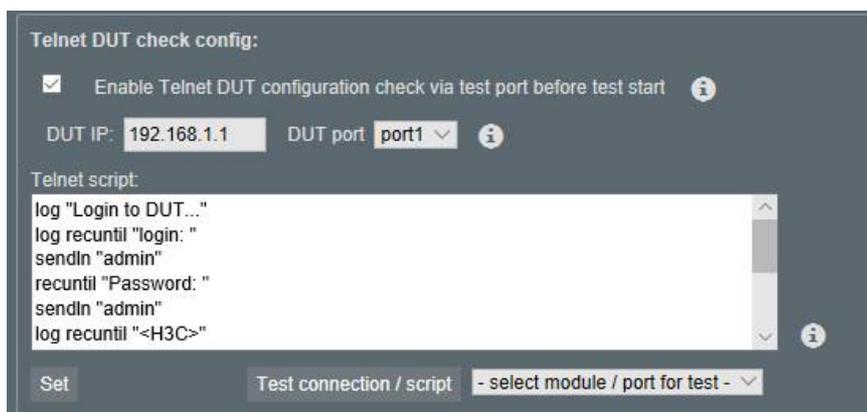
## Telnet feature

### Description

Telnet is a great feature that simplifies the testing process and implements more advanced test scenarios.

In the past, if your PON device needs to test traffic in both GPON mode and EPON mode, you needed to test it in GPON mode first, then change it into EPON mode manually.

But now, with the Vantage Telnet feature, Vantage could telnet to the DUT and change it into EPON mode and then test the traffic automatically. It will save you time and make your work more efficient. Alternatively, you could even telnet to the DUT to get the serial number instead of scanning the serial number manually.



### VantageManager Telnet script commands

Script version 1.1, 2019-04-20

Script consist of a number of lines which will be executed in sequence.

Any empty line or line that starts with a semicolon ";" will be ignored

<str-exp> may be

- A constant string enclosed in single ' or double " .  
Special characters may be inserted, such as \n \t etc. Example "show ver"
- A variable identifier of a variable previously assigned (see the set command below)
- Two <str-exp> seperated by the + operator. Example "abcd" + "def"
- The result of a command/function as defined below. Example "The result is:" + recuntil " >"
- A variable identifier of a variable previously assigned (see the set command below)

<int-exp> may be

- A constant integer number. Example 1, 5.
- A variable identifier of a variable previously assigned (see the set command below)
- Two <int-exp> seperated by the + operator. Example 3+7
- boolean expression with the operators "not", "and", "or". Examples with result in []: not 2 [0], 3 and 4 [1]
- parenthesis may be used. Example: (3 and 0) or 11 [1]
- the result of comparing two ints or strings with the == or != operator. Examples "aa"==recuntil " >", 2!=5
- The result of a command/function as defined below. Example match "def", "abcdef" [1]

## Commands/functions:

send <str-exp>

Send a string to the DUT via telnet  
Returns the same string as sent.

sendln <str-exp>

Send a string followed by CRLF to the DUT via telnet  
Returns the same string as sent.

recuntil <str-exp>

Receive data from the DUT until it contains the string specified  
Return the received data up to but not including the string.

recln

Receive data from the DUT until next CRLF  
Return the received data up to but not including the CRLF.

wait <int-exp>

Wait the specified number of seconds  
Returns 1

failif <int-exp>

Will abort script execution (and also test execution) with an error message if <int-exp> is not 0.  
Returns 0 if the script is not aborted. Does not return if it is aborted.

log <str-exp>

Prints the specified expression to the test log on the UI (which is also included in the test report)  
Returns the same string.

match <str-exp-1> , <str-exp-2>

Matches two expressions. Returns 1 if <str-exp-1> is contained in <str-exp-2> and 0 otherwise.  
<str-exp-1> may be a regular expression with usual wildcards, regex syntax etc.

set <varid> = <str-or-int-exp>

Assign the value to the variable specified which may be used in other expressions.  
Returns the value of the expression.

## Examples of scripts:

```
; script that will login to DUT
```

```
log "Login to DUT..."
```

```
log recuntil "login: "
```

```
sendln "admin"
```

```
recuntil "Password: "
```

```
sendln "12345"
```

```
recuntil " >"
```

```
log "Login successfull..."
```

```
; check if version of DUT is 5.2 as obtained by the system resource print command
```

```
sendln "system resource print"
```

```
log recuntil " >"
```

```
log recuntil " >"
```

```
set reply= recuntil " >"
```

```
log reply
```

```
failif not match "version: 5.2", reply
```

```
log "Version of DUT is correct ..."
```

## Test Now

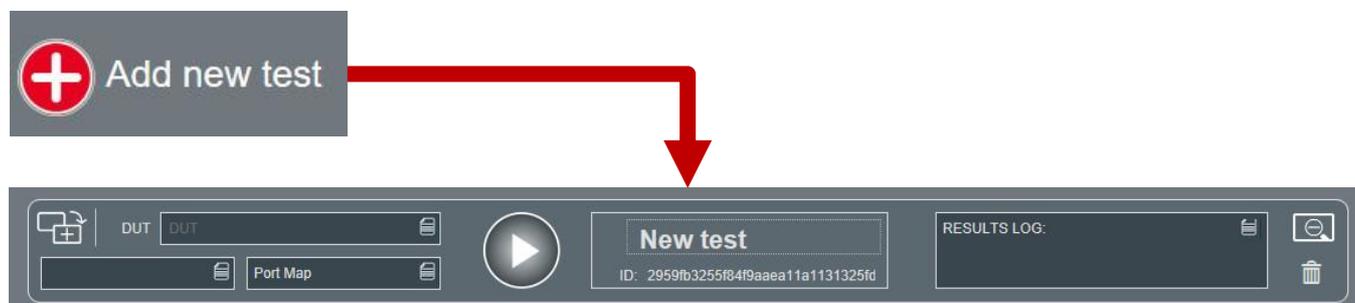
As this is one of the most important features of VantageManager, the user will spend most of their time on this page. Once the test templates configuration has been done, customer will only focus on this page and do tests on this page.

Customers could perform their behaviors like that:

- Add new test
- Start test
- Stop test
- Input serial number
- Select port map
- Check detail test log
- Select the number of test windows
- Filter test

### Add new test

Once customer finished their configuration and assigned their test ports, you can enter “Test Now” UI page and click this button to add a new test. Note that Vantage’s test is independent, a new test would not overwrite the old test. Each test will be saved in the chassis until you delete it manually.



### DUT

This input box allows customer input their DUT’s serial number, this serial number will be saved in the test result and test report. Customer could use it to search their test result and test report in VantageManager.

There are three ways that in which you can input the serial number to the box.

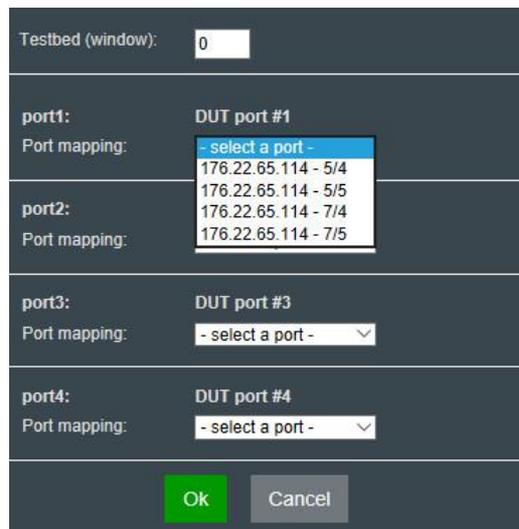
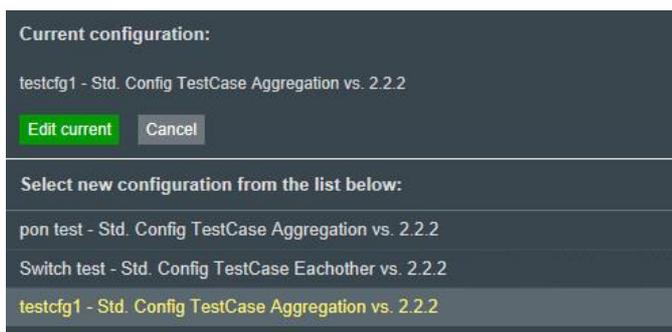
1. By keyboard, typing it manually.
2. Input the serial number with a scanner.
3. Scan the MAC address as a serial number.  
It could be done by Vantage automatically.



## Select test configuration

After performing “Add new test”, you can select a test configuration for the new test, the one which customer has configured on the test configuration UI page. You should configure it before you select the port map.

Once you click the list button , all the test template that you have made will display as a list. You could select which you want test.



## Status of the test

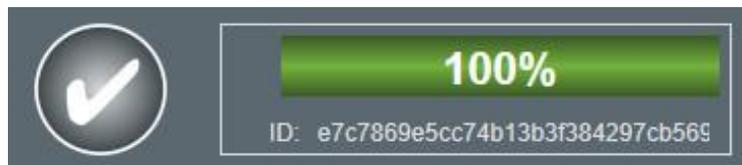
Different views are used to distinguish the status of the test. The green will be used to identify the test being passed, red for indicating test failure. The progress bar in the middle of the test shows the schedule of the test.



**Config.** – That means this test is being configured or has finished configuration. Click the “start” button to run the test.



**Running** – When test is running, the progress will be display on the bar. The link status will also display on the left of the bar. Click the “stop” button to stop the test case, if needed.

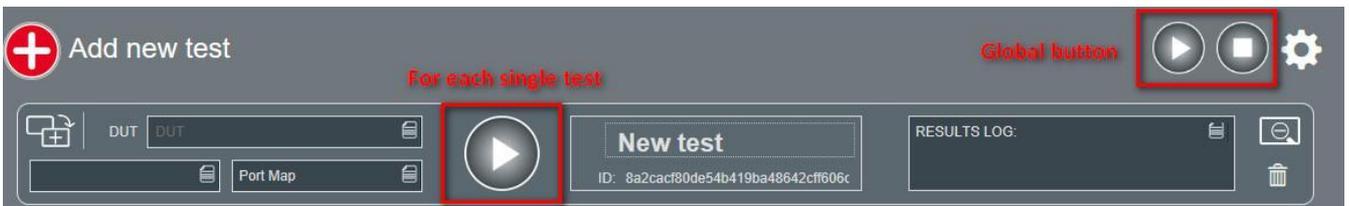


**Passed** – If test finish and passed, the program will display a “V” icon on the button and display an green bar with 100%.

	<p><b>Failed</b> – If the test finished and failed, it will display a “X” on the button and the bar will be colored red.</p>
	<p>If the user enables “Automatically clone”, after the last test finished, the new test will be cloned and display “2%” until the user changes the DUT.</p>
	<p>Naturally, there will be a wait time while the user changes the DUT. In case of time out, the test will end with red (failure).</p>
	<p><b>New test</b> where the test configuration hasn't yet been selected. You should select a test configuration for it.</p>

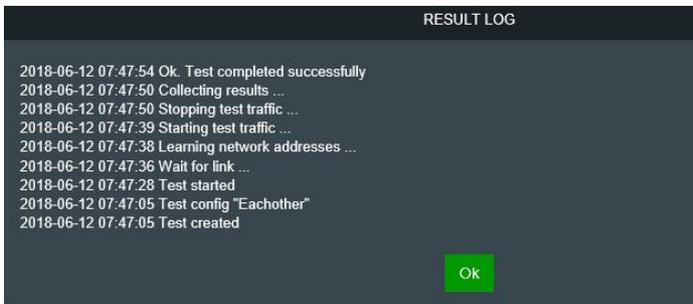
## Start/Stop

There are two kinds of **Start/Stop** buttons in the Vantage interface. One is for single test which is on the each individual test bar, this button will only start or stop the single test. Another is the global Start/Stop button which is located on the top right of the test windows. Once you click this global button, it will apply to all tests which are not finished.



## Results log

In this box, all the outcomes of the test will be recorded including a time stamp. It will record the creation time of the test, the test configuration which it's running and the test is passed or failed, and the reason of the failure and so on. Left click the box to show the detailed information.



## Other buttons



Click this button to expand the test box to see more information of the test.



Click this button to hide the detailed test information.



Click this button to delete test.



The global statistics of the test result. It will display the Passed number



The global statistics of the test result. It will display the Failed number



Input your "Station ID" here and this Station ID to include it in the test report.



Input your "Tester ID" here and this Tester ID to include it in the test report.

## Testbed window settings

The **Testbed window settings** could change the display options of the **Test Now** page. Here, you can define how many tests shows on the front page or hide some buttons that aren't in use. It is also possible to filter the view of the passed and the failed tests.

- Window layout:  
It could be set into different numbers of windows  
1(1x1), 2(2x1), 4(2x2), 6(3x2), 8(4x2), 10(5x2), 12(6x2)
- Hide successfully completed tests  
All the successful tests will be hidden on this UI page.
- Hide failed completed tests  
All the failed tests will be hidden on this UI page
- Delete unfinished tests  
All the test which didn't finish will be deleted
- Show latest  results  
It will only show the latest x amount of tests in each test window.

## Display element settings

Display element of different button and box. This setting could allow customer hide or display the below element settings.

- Show pass/fail statistics  
Enable this setting to show passed and failed counters on the top of the page.  
It is global statistics, it will count the pass and the fail test.
- Show "Start/stop all" button  
Enable this setting to show a global start button on the top of the page next to the "Test window settings". It's a global button – clicking it starts/stops all the tests that have not finished.
- Show Tester ID  
Allows for input of Tester ID if this feature is enabled. The Tester ID will be featured on the test report.
- Show Station ID  
Allows the user to input their Station ID if this feature is enabled. The Station ID will be featured on the test report.

## Test Statistics

In this page, customer could view the global test statistics of each tester. And customer could view their test statistics history, too.

There is a “Reset counters” button in each test statistics summary box. Once you click it, the counter will be reset to 0.



Click this button to turn into the **Test Statistics** UI page. This button is on the top menu.

### View global test statistics

Test statistics summary

	Passed	Failed
<i>demoa</i>	0	0
<a href="#" style="background-color: #555; color: white; padding: 2px 5px;">Reset counters</a>		
<i>321 @ 123</i>	5	0
<a href="#" style="background-color: #555; color: white; padding: 2px 5px;">Reset counters</a>		

Test statistics history 2018-12-05 09:00 - 2018-12-06 09:00

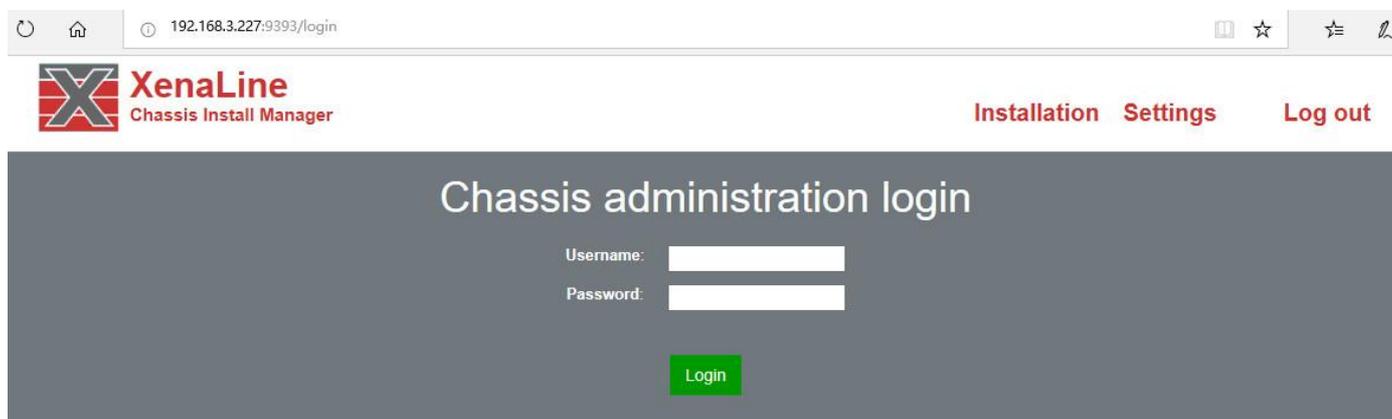
Interval start	Passed	Failed
<i>321 @ 123</i>		
2018-12-06 07:00	5	0

# Vantage Chassis Upgrade

Vantage Chassis Upgrade is the web page which used to upgrade the chassis' release. You can also change the IP address of the chassis here.

## Visit Vantage Chassis Upgrade

Very similarly to VantageManager, you login to **Vantage Chassis Upgrade** with a browser and input **192.168.1.227:9393**. (The same IP address as for **Vantage Manager**)



## Installation

On this page you can upgrade your unit with the Vantage image from Xena. Naturally, you can pick whichever release you would like. It is possible to install multiple versions, however only one can run at a time.

Install steps:

1. Click the button "**Click here to upload and install a new version**"
2. Select the image which has been download to your computer
3. Click "**Upload application file**" to load the image
4. It will return to the version list page. Identify the version which you have loaded and click "**Install**"
5. Stop the old version of Vantage and "**Start**" the new version.

### Installed software versions

+ Click here to upload and install a new version

Appl. ID	Version	Release date	Install date	Status	Action
xl2_2_3_2_p	2.3	2018-12-07	2018-12-07 00:12	Active and running	Stop
xl2_2_3_1_d	2.3	2018-11-24	2018-12-03 00:12	Configured, ready to start	Start
xl2_2_2_4_d	2.2	2018-11-12	2018-11-13 00:11	Configured, ready to start	Start
xl2_2_2_3_d	2.2	2018-11-10	2018-11-11 00:11	Configured, ready to start	Start
xl2_2_2_2_d	2.2	2018-11-05	2018-11-08 00:11	Configured, ready to start	Start
xl2_2_1_1_d	2.1	2018-08-17	2018-08-31 00:08	Configured, ready to start	Start
xl2_2_1_0_p	2.1.0	2018-07-09	2018-07-31 00:07	Configured, ready to start	Start

## How to change the chassis IP address

Change the chassis settings on the **Settings** page. Change network settings for the chassis. The chassis will automatically reboot after the changes have been saved.

Chassis hostname	The device name of the chassis
Use DHCP	Once you enable this feature, the chassis will send the DHCP required for the network and get the IP address from the DHCP server. Please ensure that the DHCP server works.
IP address	The IP address of the chassis, you could change it manually.
Network mask	The mask of the Chassis manager interface.
Gateway	The gateway of the manager port. You should set it if you change the subnet of chassis IP address.

### Chassis settings

for the chassis. The chassis will automatically reboot after the c

Chassis hostname: localhost.localdomain

Use DHCP:

IP address: 192.168.3.227

Network mask: 255.255.255.0

Gateway: 192.168.3.1

DNS1: 192.168.3.1

DNS2:

**Note: Don't forget to Save settings and restart chassis to apply the values.**