

VANTAGE

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Story



A low-cost modular Ethernet test solution designed from the bottom up for volume manufacturing test, with a built-in test executive, multiple concurrent users and integration into customers' Quality Management Systems (QMS).

Test solution for production line testing of ethernet devices

- Primary DUT: Switches
- Secondary DUT: NICs, Routers, EPONs/GPONs, Cable Modem, EOC, Power Modem, Transceivers and Automotive

Vantage chassis only interoperates with Vantage software

Automated UI, with one-click simplicity

- Pre-defined production test cases
- Sequential and batch test modes, without manual intervention
- Pass/Failure Threshold pre-configuration



Target customers: OEM/ODM/Foundries/NEMs

- a) RnD of Production Dept
- b) Production Line of Manufacture Factory

1. International OEMs

- a) Foxconn
- b) Pegatron
- c) Flextronics
- d) Jabil
- e) Wistron
- f) Bosch
- g) Wipro
- h) Delphi
- i) Siemens
- a) Sanmina
- b) Celestica
- c) New Kinpo
- d) USI
- e) Venture
- f) Molex

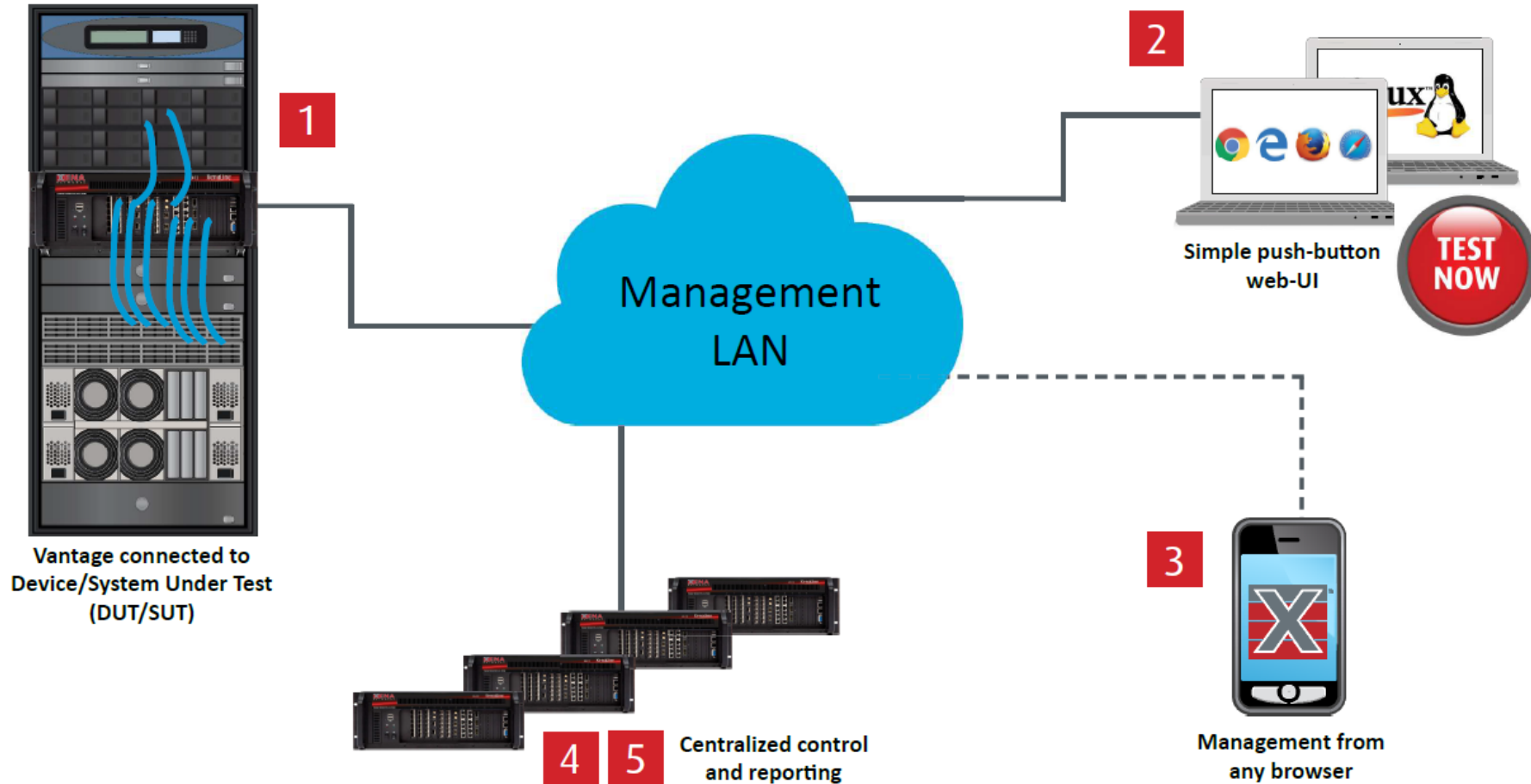
2. China based OEMs

- a) Hisense
- b) Kyland
- c) Tianyi
- d) T&W
- e) Changhong
- f) Yicheng



Applications





1 The Vantage tester is connected to the Device/System under test and accessed via an IP address using a web browser.

2 No software installation is required – production staff get a simple, reliable tool that requires zero-training to use.

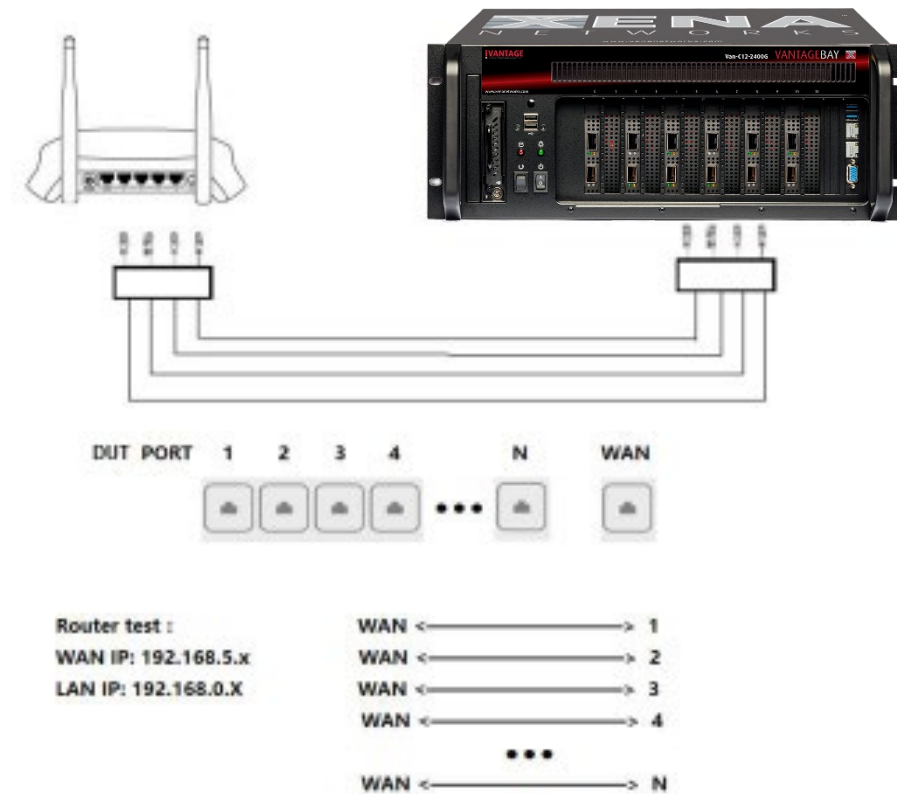
3 Administrators can use web-browsers on mobile phones or tablets to remotely operate the system.

4 Multiple Vantage test systems can be clustered, allowing administrators to manage access and configure tests from a central point.

5 Test results can also be viewed and extracted to a central point from all VantageBay systems

Testcases Library

Router test	Bi-directional traffic generation between WAN and LAN ports, could be multiple LAN ports to single WAN port, or one WAN port to multiple LAN ports. Test of throughput and failures. The test may be configured with values for packet size, bandwidth, packet loss and other stream parameters. The result of the test is a pass/fail message. In the case of fail details about the failure for later analysis.
Two-way interaction test	Generate traffic between all ports, or between odd and even ports, or one direction traffic generation, with or without VLAN tagged frames. The result of the test is a pass/fail message and in the case of fail details about the failure for later analysis.
Aggregation test	Supports one-to-many and many-to-one traffic generation
Loopback test	Loopback test one a configurable number of ports on e.g. a DUT such as a switch or a router. The test may be configured with values for packet size, bandwidth, packet loss and other stream parameters. The result of the test is a pass/fail message and in the case of fail details about the failure for later analysis.
PON aggregation test	Traffic is transmitted one-to-many and packets are sent both up and downlink. The test may be configured with values for packet size, bandwidth, packet loss and other stream parameters. The result of the test is a pass/fail message and in the case of fail details about the failure for later analysis.



Testcases Library

- Vantage's advanced software architecture allows the user to produce its own test cases.
- Xena professional service can customize the test case for clients as needed

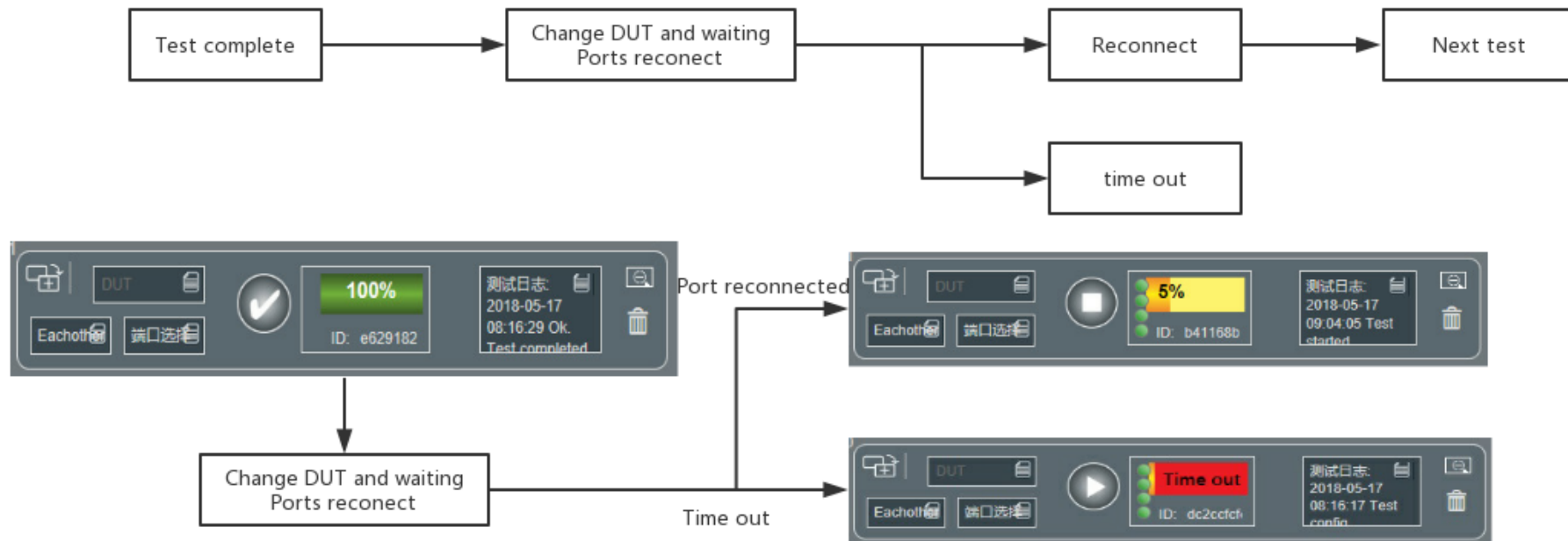
```
JSON test configuration for id: 35aa9d41a34b43b2af8cc3b0d8882857

{
  "portcfg": {
    "port1": {
      "portcfg": {
        "paramvalues": {
          "pgateway": "192.168.99.1",
          "psrcip": "192.168.99.2",
          "psrcmask": "255.255.255.0"
        },
        "raw": {
          "1": "{module}/{port} P_IPADDRESS {psrcip} {psrcmask} {pgateway} 0.0.0.255",
          "2": "{module}/{port} P_ARPREPLY ON",
          "3": "{module}/{port} P_PINGREPLY ON"
        }
      }
    }
  }
}
```

Ok

Intelligent Cyclic Test

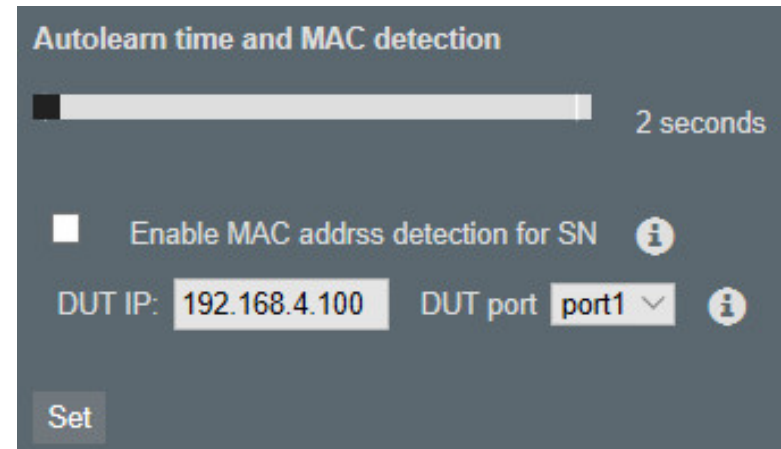
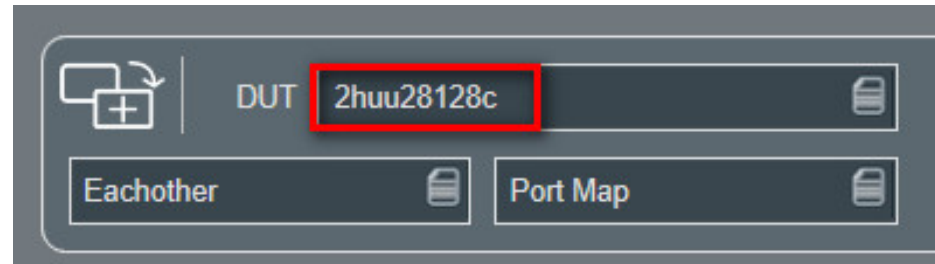
Vantage will repeat the same test with no interactive operation needed, the tester will detect the port connection and link status automatically, then rerun the test once link is up



DUT Serial Number

Two ways to acquire DUT Serial Numbers

1. Input SN via keyboard or a scanner devices
2. Use DUT's MAC address as SN



Test Result UI

- Tx packets
- Rx packets
- Latency
- Test date
- SN number
- Tx bytes
- Rx bytes

VANTAGE MANAGER

2018-07-22 07:21 0 : Lost packets rate 0.0 percent is below limit 0 DUT: 2huu28128c CFG: Eachother

Test result summary

Test identifier	: 489d557fc7864d6fa4fc66bbb916cbf0	Test chassis	: localhost.localdomain
Test DUT id	: 2huu28128c	Test started	: 2018-07-22 05:21:26
Test configuration	: Eachother	Test duration	: 0:00:21
Test result	: PASS	Tester (userid)	: xenaline

Port/stream mapping

Port/stream mapping	Sent packets	Received packets	Lost packets
port3/2 → port4/3	7879704	7879704	0
port1/0 → port2/1	7593635	7593635	0
port2/1 → port1/0	7740039	7740039	0
port4/3 → port3/2	8022481	8022481	0

Test result raw data

port/stream	tbytes	tpackets	dummy	seq	mis	pld	rbytes	rpackets	min	avg	max
port3/2	504301056	7879704	0	0	0	0	504301056	7879704	66	85	138
port1/0	485992640	7593635	0	0	0	0	485992640	7593635	66	82	114
port2/1	495362496	7740039	0	0	0	0	495362496	7740039	66	101	138
port4/3	513438784	8022481	0	0	0	0	513438784	8022481	66	76	114

Reporting

PDF Test Report

Vantage Test Report



Test Identifier : 489d557fc7854d6fa4fc66bbb916cbf0
 Test DUT id : 2huu28128c
 Test configuration : Eachother
 Test chassis : localhost.localdomain
 Test started : 2018-07-22 05:21:26
 Test duration : 0:00:21
 Tester (userid) : xenaline

 Test result : PASS

Test result details

Port mapping	Sent packets	Received packets	Lost packets
port3/2 -> port4/3	7879704	7879704	0
port1/0 -> port2/1	7593635	7593635	0
port2/1 -> port1/0	7740039	7740039	0
port4/3 -> port3/2	8022481	8022481	0

Port mapping	Min	Avg	Max
port3/2 -> port4/3	66	85	138
port1/0 -> port2/1	66	82	114
port2/1 -> port1/0	66	101	138
port4/3 -> port3/2	66	76	114

Text Test Report

Test date: 2017-10-11,14:08:09
 Xena Test type: Aggregation Test
 Xena Test ports: 0/4 0/2 0/3 0/0 0/1
 Xena Test Result: Pass
 Test DUT:
 Stream Statistics:
 Stream 0 TX:Port 0/4 RX:Port 0/1 Send:235177 Receive:235177 Loss:0 Misorder:0
 Stream 1 TX:Port 0/4 RX:Port 0/0 Send:235177 Receive:235177 Loss:0 Misorder:0
 Stream 2 TX:Port 0/4 RX:Port 0/3 Send:235176 Receive:235176 Loss:0 Misorder:0
 Stream 3 TX:Port 0/4 RX:Port 0/2 Send:235176 Receive:235176 Loss:0 Misorder:0
 Stream 4 TX:Port 0/2 RX:Port 0/4 Send:23497 Receive:23497 Loss:0 Misorder:0
 Stream 5 TX:Port 0/3 RX:Port 0/4 Send:23497 Receive:23497 Loss:0 Misorder:0
 Stream 6 TX:Port 0/0 RX:Port 0/4 Send:234963 Receive:234963 Loss:0 Misorder:0
 Stream 7 TX:Port 0/1 RX:Port 0/4 Send:23497 Receive:23497 Loss:0 Misorder:0

 Latency Statistics:
 Stream 0 TX:Port 0/4 RX:Port 0/1 Min:63226 Avg:69125 Max:94426
 Stream 1 TX:Port 0/4 RX:Port 0/0 Min:28403 Avg:30764 Max:35957
 Stream 2 TX:Port 0/4 RX:Port 0/3 Min:63419 Avg:69165 Max:94402
 Stream 3 TX:Port 0/4 RX:Port 0/2 Min:63298 Avg:69131 Max:94282
 Stream 4 TX:Port 0/2 RX:Port 0/4 Min:25629 Avg:48574 Max:222737
 Stream 5 TX:Port 0/3 RX:Port 0/4 Min:25605 Avg:49481 Max:328388
 Stream 6 TX:Port 0/0 RX:Port 0/4 Min:22550 Avg:46695 Max:452897
 Stream 7 TX:Port 0/1 RX:Port 0/4 Min:25677 Avg:49691 Max:452561

User Management

- Vantage support multiple users in the one chassis
- Different users with different administration rights

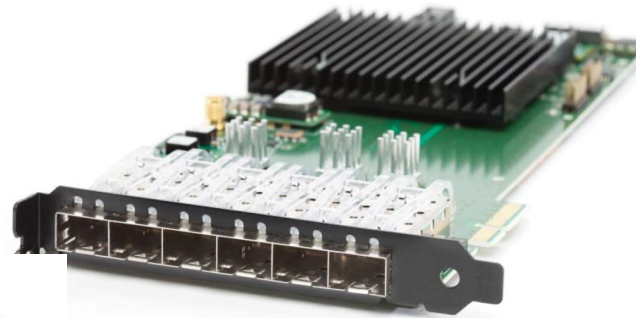
User administration

Active and login name:	First name, last name and email:	Roles:
<input checked="" type="checkbox"/> demo1	Demo 1	<input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> Config <input checked="" type="checkbox"/> Result <input type="checkbox"/> Admin
<input checked="" type="checkbox"/> demo2	Demo 2	<input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> Config <input checked="" type="checkbox"/> Result <input type="checkbox"/> Admin
<input checked="" type="checkbox"/> demoa	Demo Admin	<input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> Config <input checked="" type="checkbox"/> Result <input checked="" type="checkbox"/> Admin
New user login name:	First name, last name and email:	Roles:
<input type="text"/>	<input type="text"/> <input type="text"/>	<input checked="" type="checkbox"/> Test <input type="checkbox"/> Config <input type="checkbox"/> Result <input type="checkbox"/> Admin



Hardware

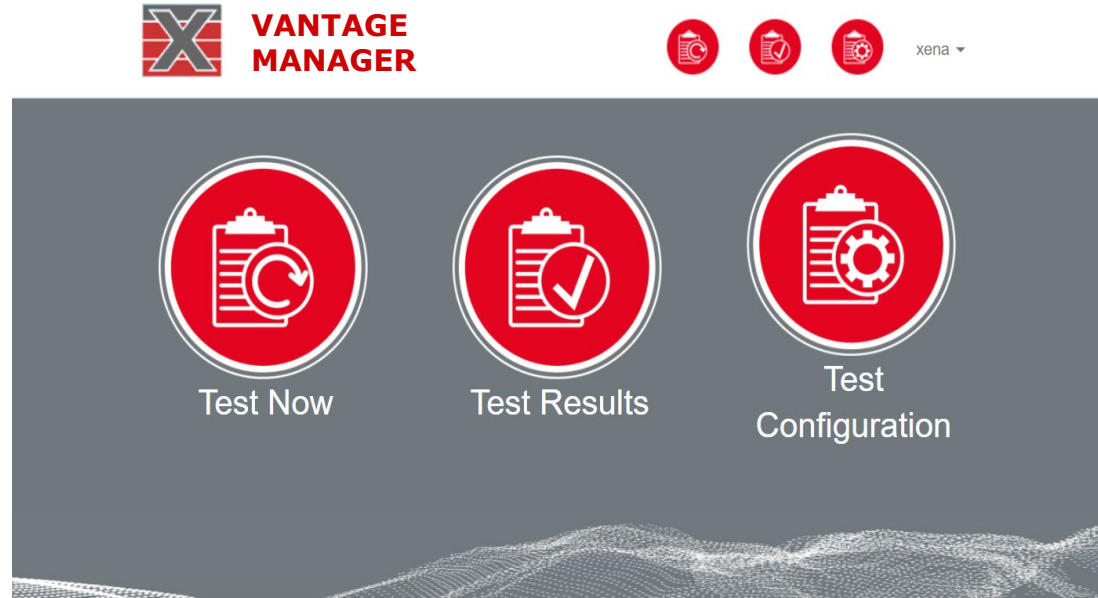
P/N#	Description
VAN-C12-720G	VantageBay 4U chassis with 12 modular slots and management unit controller
VAN-1G-3S-6P	1GE 2-speed, 6-port test module (SFP ports)
VAN-10G-1S-6P	10GE 1-speed, 6-port test module (SFP+ ports)
VAN-10G-5S-6P-CU	10GE 5-speed, 6-port test module (RJ45 ports)
VAN-100G-5S-2P	100GE 5-speed, 2 port test module QSFP28, 2 x 100G or 4 x 50G or 2 x 40G or 8 x 25G or 8 x 10G
VAN-400G-7S-1P	400GE 7-speed, 1 port test module QSFP-DD/QSFP56/QSFP28/QSFP
C-Van-100G-5S-2P	100GE 5-speed, 2 port test module QSFP28, 2 x 100G or 4 x 50G or 2 x 40G or 8 x 25G or 8 x 10G
C-Van-10G-1S-6P	10GE 1-speed, 6-port test module (SFP+ ports)
C-Van-10G-5S-6P-CU	10GE 5-speed, 6-port test module (RJ45 ports)





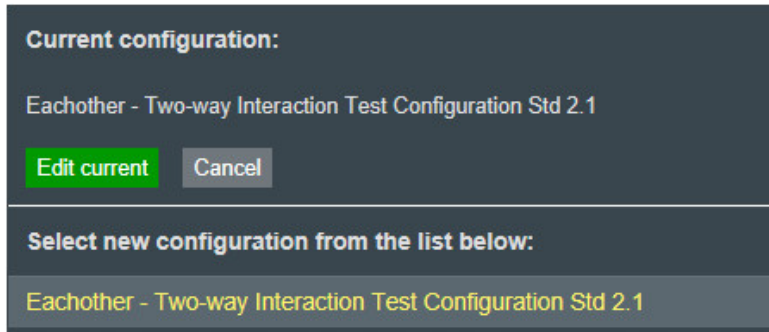
Software

- A Python based Web UI
- Easy to use, no need tech backgrounds
- Automation, no complicated configuration
- Customization - allow testers to add more testcases as needed

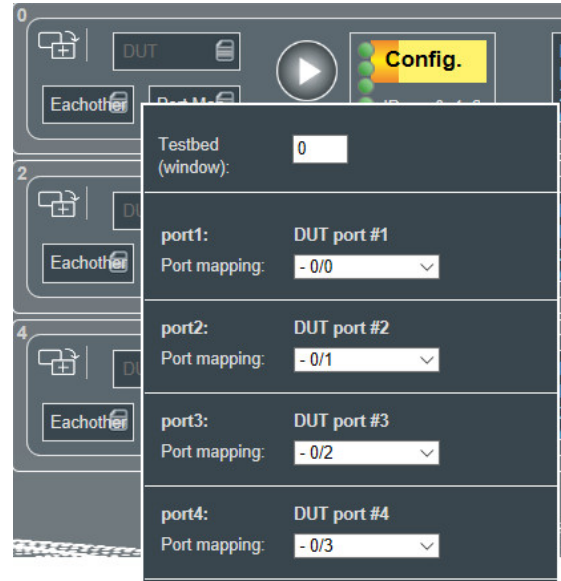


Only 3 buttons to complete a test!

1. Select the test configuration



2. Select the port



3. Click the Start button



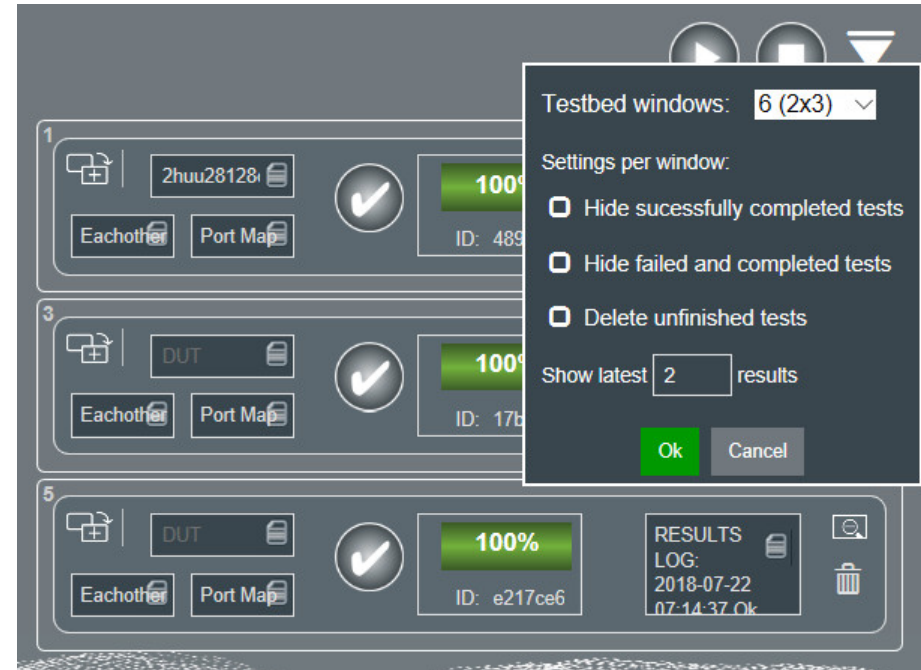
- Multiple tests and Test Suite windows, to implement multiple testcases simultaneously.
- Test status and Progress Bar
- Realtime logs displaying

VANTAGE MANAGER

Press the button to add a new test

Test ID	Status	Progress	Results Log
aa0a1a2	Completed	100%	2018-07-22 07-13:20 Ok
f39241f7	Running	5%	2018-07-22 07-19:44
0f0346b1	Completed	100%	2018-07-22 07-15:45 Ok
489d557	Configuring	Config.	2018-07-22 07-15:15 Test
17b5fd11	Completed	100%	2018-07-22 07-16:19 Ok
e217ce6	Completed	100%	2018-07-22 07-14:37 Ok

- Flexible test windows displaying
 - Allow user to define the displaying amounts, and arrangement: 1 row x1 column or 2x1,2x4,
- Test Results displaying filtering
 - Only display successfully tests
 - Only display failed test
 - Show () tests result





Key Features

Three buttons to complete a test!

- Multiple tests and Test Suite windows, to implement multiple testcases simultaneously
- Test status and Progress Bar
- Realtime logs UI displaying

The screenshot displays the Vantage Manager interface. At the top left is the VANTAGE MANAGER logo. To the right are five red circular icons representing different test stages. Below the logo is a dark grey panel with a red plus icon and the text "Press the button to add a new test". The main area contains a grid of six test cards, numbered 0 to 5. Each card shows a DUT (Device Under Test) name, a progress bar, a status indicator (checkmark or play button), and a RESULTS LOG section with a date and time. The progress bars show 100%, 5%, and 100% completion for different tests. The status indicators show a play button for the 'Config.' test and checkmarks for others. The RESULTS LOG section includes a date and time, and a status indicator (e.g., 'Ok').

Test ID	Progress	Status	Results Log
aa0a1a2	100%	Completed	2018-07-22 07:13:20.Ok
f39241f7	5%	In Progress	2018-07-22 07:19:44
0f0346b!	100%	Completed	2018-07-22 07:15:45.Ok
489d557	Config.	Running	2018-07-22 07:15:15.Test
17b5fd1l	100%	Completed	2018-07-22 07:16:19.Ok
e217ce6	100%	Completed	2018-07-22 07:14:37.Ok

Simple and easy to read test Report

- Pass or fail test result
- TXT, PDF, HTML Test Report
- Real time test logs
- DUT (s/n, id, testcase) and Tester Info
- Over 10 years test result storage

Vantage Test Report



Test Identifier : de8956a1003c44c1a5162170c4715d1f
Test DUT id :
Test configuration : test123
Test chassis : fed2.syhh.dk
Test started : 2019-04-11 17:47:27
Test duration : 0:00:24
Tester (login) : demoa

Test result : PASS

Test result details

Port mapping	Sent packets	Received packets	Lost packets
port1/1 -> port2/2	75266013	75266013	0
port2/2 -> port1/1	76535168	76535168	0

Port mapping	Min	Avg	Max
port1/1 -> port2/2	7	38	55
port2/2 -> port1/1	15	38	55

Test log

2019-04-11 19:47:02 Test created
2019-04-11 19:47:02 Test config is "test123"
2019-04-11 19:47:27 Test started
2019-04-11 19:47:39 Waiting for link sync. on port(s): port1,port2
2019-04-11 19:47:43 Learning network addresses ...
2019-04-11 19:47:44 Starting test traffic ...
2019-04-11 19:47:44 Test executing time is 5 seconds ...
2019-04-11 19:47:49 Stopping test traffic ...
2019-04-11 19:47:49 Collecting results ...
2019-04-11 19:47:51 Ok. Test completed successfully

Cost-effective with the best class performance!

- Most accuracy and stable production test tool, with the technology from 10 years RnD testing
- Full coverage with all port speeds, Market only support from 1GE up to 400GE
- Local customization and scripting support
- Multi-language UI (Chinese, English, Danish, Thai and Japanese if needed)





Roadmap



Future features releases:

Stay up to date
follow <https://xenanetworks.com/comingsoon>

COMING SOON



Summary

What?

Volume manufacturers, production and QA

For who?

- Domestic router manufacturers
- Automotive/avionics
- Transceiver manufacturers
- Sub Assembly manufacturers

Top issues Vantage solves:

- Low key count testing
- Configuration by Test manager, testing by low skilled operators
- Fast testing
- Integration into Enterprise QA database
- Multi users on one chassis

Why Vantage?

- Low cost
- High reliability
- Purpose built for production
- Web UI

Thank you



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www.xenanetworks.com



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