

Veryx ATTEST™ OF Controller Conformance Test Suite DATASHEET



Veryx ATTEST Conformance Test Suite (CTS) for OpenFlow Controller is ideal for equipment manufacturers and service providers, who desire an easy and efficient solution for verification of **OpenFlow™ Protocol (Open Network Foundation OpenFlow Specification Version 1.3.3)** implementation in their OpenFlow controllers, deployable in **Software-defined Networking (SDN)**. OpenFlow protocol allows direct access to and manipulation of the forwarding plane of network devices such as switches and routers, both physical and virtual (hypervisor-based) by moving network control out of the networking switches to logically centralized control software.

Veryx has automated test cases that comprehensively test for OpenFlow protocol conformance to *ONF OpenFlow Specification Version 1.3.3*. These test cases are grouped into convenient test groups for each category of functions.

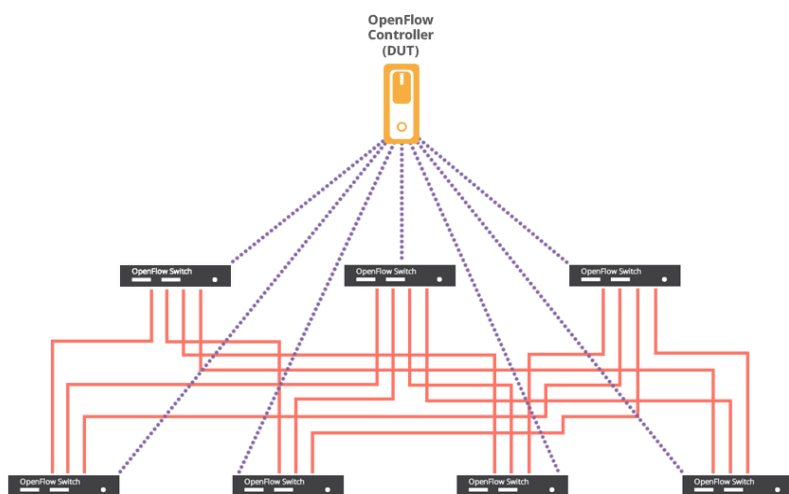


Figure 1: An example of Topology with OpenFlow controller

HIGHLIGHTS

- Verifies the access permission on switch based on controller's role – DEFAULT, SLAVE or MASTER
- Verifies the capability to generate and record the status from Asynchronous messages – Packet-In, Flow Removed, Port Status, and Error.
- Verifies the capability to generate and record the status from Symmetric messages – Hello, Echo Request/Reply.
- Verifies connections setup and interruption using TCP/TLS
- Verifies the communication with multiple controllers

BENEFITS

- Enables significant speeding up of testing cycles and reduces the "time-to-market"
- Test suites written in industry standard TCL scripts. Well defined APIs provide the flexibility to customize the test cases for specific requirements
- Built in Automation and Reporting Capabilities

SPECIFICATIONS

- ★ ONF OpenFlow Switch Specification 1.0.0
- ★ ONF OpenFlow Switch Specification 1.3.1
- ★ ONF OpenFlow Switch Specification 1.3.2
- ★ ONF OpenFlow Switch Specification 1.3.3

KEY TESTS

- ★ Channel Connection using TCP/TLS
- ★ Messages generation and reception
 - during Handshake
 - for switch configuration
 - for entry modifications in Flow and Group tables
 - for Port capabilities modifications
- ★ All statistics and status requests using Multipart messages as defined in version 1.3
- ★ All statistics and status requests using Read State messages as defined in version 1.0
- ★ Generation and reception of
 - Barrier messages
 - Role Request messages
 - Packet-In message
 - Packet-Out message
- ★ Validation of error messages

PLATFORM REQUIREMENTS

- ★ VT-400
- ★ ATTEST 6.x Framework
- ★ 1 Ethernet port
- ★ Serial or additional Ethernet port for DUT management

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OF Controller (Total test cases – 91)

- | | |
|--|---|
| <ul style="list-style-type: none"> • Supports version 1.0, 1.3 • Access permission for controller roles – DEFAULT, SLAVE and MASTER • Symmetric messages • Handshake during connection setup • Switch configuration messages • Flow and Group entry modification | <ul style="list-style-type: none"> • Generation and reception of Read state request and reply messages as defined in version 1.0 • Generation and reception of Multipart request and reply messages as defined in version 1.3 • Error handling • Connections using TCP/TLS • All messages verification – Controller-to-switch, Asynchronous, Symmetric |
|--|---|

Veryx ATTEST OF Controller is designed for conformance testing of OpenFlow functions in OpenFlow Controller. Veryx also provides OF Switch conformance test suite for switches and PktBlaster SDN Controller Test solution for functionality and performance verification of SDN controllers.

ATTEST Test Suites are written in industry standard Tcl scripts. Well defined APIs and source files provide the flexibility to add, customize, or modify the test cases for specific requirements.

Veryx ATTEST OF Controller test suite relies on ATTEST – a powerful test framework that requires minimal time for set-up and enables efficient use of time and resources

Veryx ATTEST Framework helps customers to easily integrate device under test for automation – using CLI / SNMP (v1 / v2 / v3). It also provides a standard interface to integrate with home-grown automation systems.

For more information, kindly visit our website or contact us.

ORDERING INFORMATION

PRODUCT	PART NUMBER
ATTEST Conformance Test Suite – OpenFlow Controller	CTS-SDN-OFC-B

Veryx also offers [PktBlaster SDN Controller test solution](#) that provides Performance Benchmarking of SDN controllers and real-time emulation of SDN networks.

About Veryx Technologies

Veryx Technologies (formerly Net-O2 Technologies) provides innovative Verification and Measurement Solutions for the global communications industry. ATTEST solutions verify networking equipment being used for Access, Carrier Ethernet, Data Center, Edge, Enterprise, Industrial and Security. The unique offerings from Veryx enable customers to reduce the “time-required-to-test” and enhance their “time-to-market”.

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