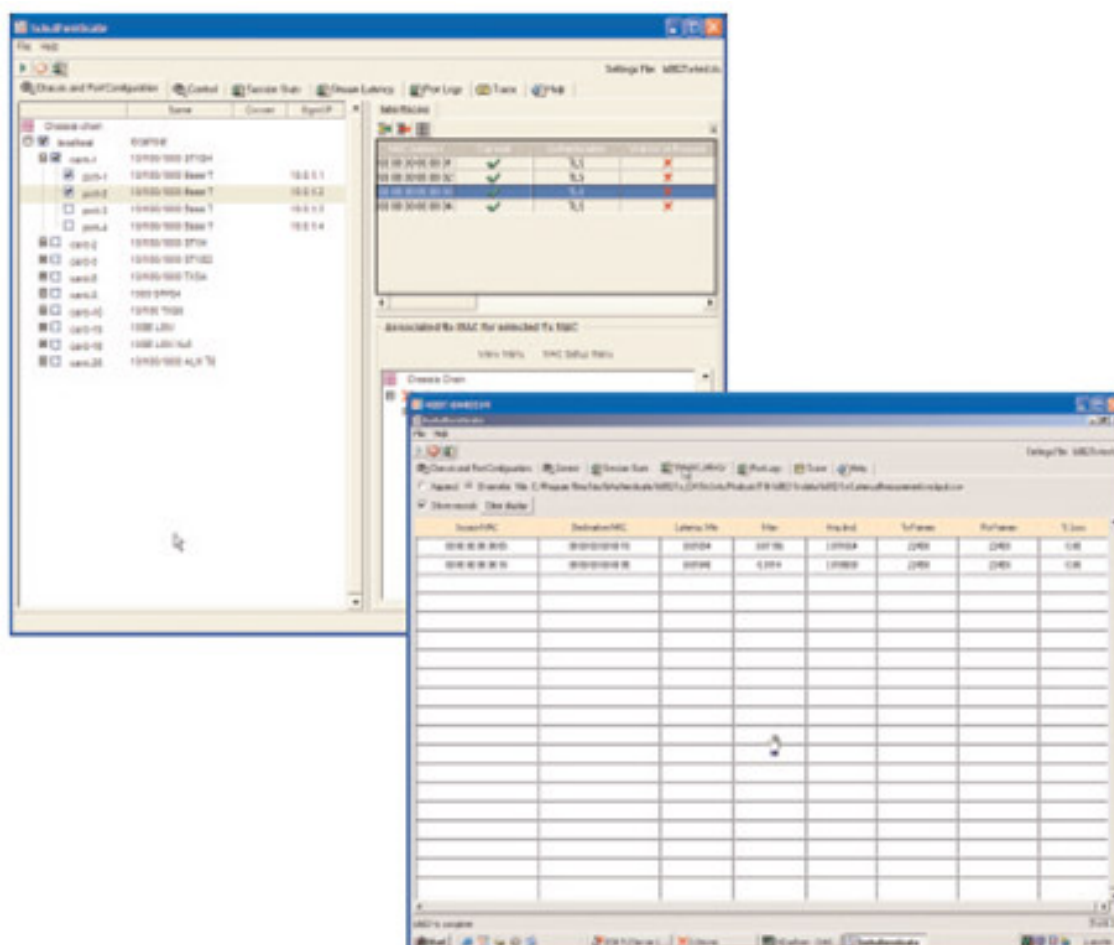


# IxAuthenticate



Ixia's IxAuthenticate enables comprehensive testing of network switch authentication functions by emulating large numbers of supplicants/users. IxAuthenticate provides data plane performance metrics, including throughput and latency. IxAuthenticate's easy-to-use graphical testing environment enables quick configuration and analysis of test results.

IxAuthenticate utilizes Ixia's Ethernet Load Modules to emulate supplicants and perform data plane traffic generation and analysis. This creates a highly scalable test solution, where increased test capacity requirements are met with the simple addition of more test ports in to the test environment.



## Specifications

<b>Supported Authentication Protocols</b>	802.1x, MS Machine Authentication, Layer 2 NAC, Layer 3 NAC (EAPoUDP, LPIP, GWIP)
<b>Authentication Modes</b>	Single-Host, Multi-Host Single-Auth, Multi-Host Multi-Auth
<b>Authentication Types</b>	<ul style="list-style-type: none"><li>• EAP-MD5, EAP-TLS, EAP-TTLS, PEAP, EAP-FAST</li><li>• Automatic certificate generation using an external Certificate Authority</li><li>• Ability to mix authentication types in a single test</li></ul>
<b>Protocol Control Parameters</b>	Retries, Authentication period, Session Timing, Time to hold after a failure, Time to wait for ID request after EAPOL start, Maximum successive EAPOL start messages, EAP TLS fragment size
<b>Supplicant Parameters</b>	Source MAC address, Source IP address, Username, Password, VLAN ID, Authentication type
<b>NAC Parameters</b>	Application state catalogs, application postures, application posture sequences
<b>EAPoUDP Parameters</b>	Client rate control, Renew timer, Timeout, Cookie Size, Port number, Traffic triggers including ARP, GARP, DHCP and Web Traffic
<b>Traffic Parameters</b>	Source MAC address and Destination MAC address mapping, Traffic generation rate, Frame size, Continuous run or Test Duration Time
<b>Test Control Parameters</b>	Maximum authentication sessions, Setup delay, Establish delay, Tear-down delay, Test mode, Session hold time, Random hold time, Test duration
<b>Session Statistics</b>	Number of attempts, success, EAP failures, EAP timeouts, min, max, and avg. latency (time to successfully authenticate). Statistics categorized based on authentication type (MD5, TLS, PEAP)
<b>EAPOL Frame Statistics</b>	EAPOL frames received, EAPOL frames transmitted, EAPOL start frames transmitted, EAPOL logoff frames transmitted, EAP response/ID frames transmitted, EAP response frames transmitted, EAP response/ID frames received, EAP response frames received, EAP request/ID frames received, EAP request frames received, Invalid EAPOL frames received, EAP length error frames received, EAP alert, EAP successes, EAP failures

## Comprehensive and Scalable

IxAuthenticate provides truly comprehensive testing of network switch authentication functions. An extensive set of control and supplicant parameters can be specified to test the authenticator at varying conditions. Using the Ixia Load Modules, several traffic streams can be sent at line-rate. A single chassis can be scaled to emulate tens of thousands of supplicants, providing extreme scalability.

## Extensive Statistics

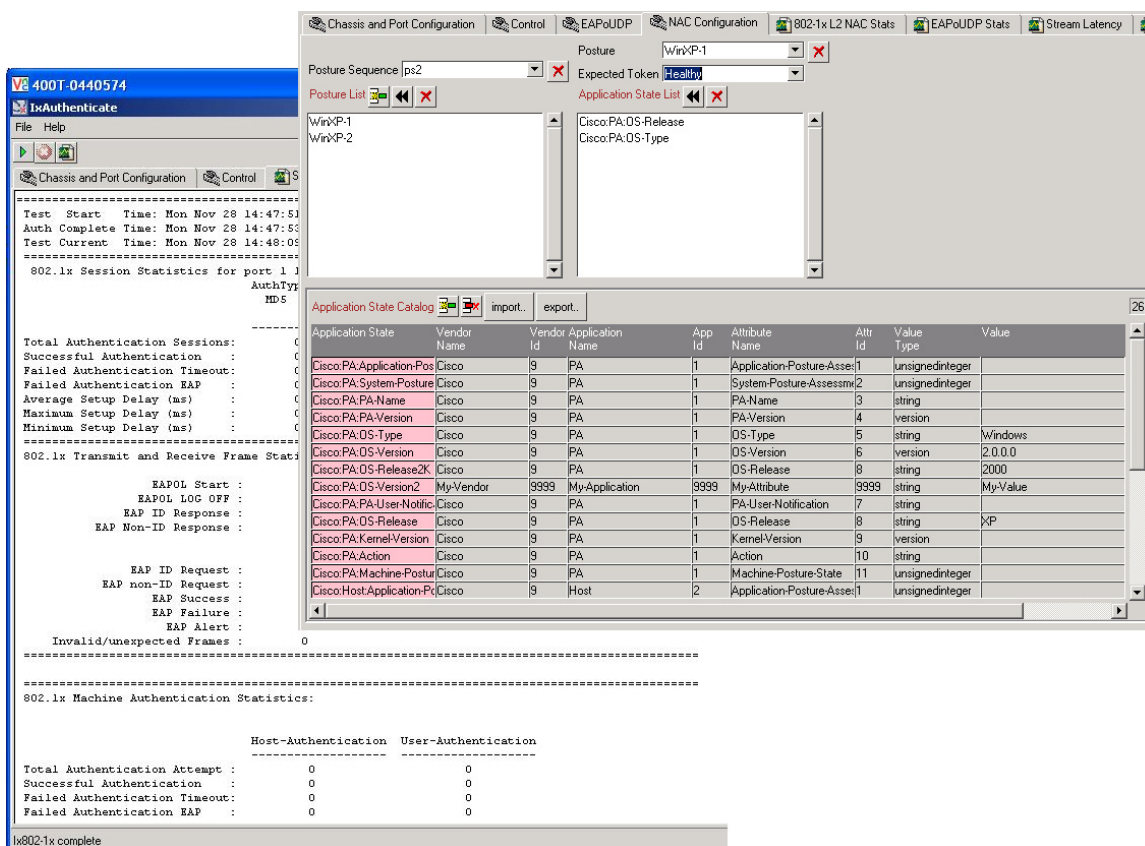
IxAuthenticate provides a rich set of statistics both in real time and in a summary format. In addition to detailed statistics on both the 802.1x protocol messages and data performance, detailed supplicant state machine information is also available. These statistics are available as per port statistics, as well as on an aggregate basis.

## Easy-to-Use GUI

IxAuthenticate is easy to use with a Graphical User Interface that has a simple tab-based configuration and results screens. Results are available in real time in a simple tabular format.

## Easy Automation

IxAuthenticate can be completely automated using a Tcl API. Configurations can also be exported from the GUI to quickly create automation scripts.



The screenshot displays the IxAuthenticate GUI with several tabs: Chassis and Port Configuration, Control, EAPoUDP, NAC Configuration, 802.1x L2 NAC Stats, EAPoUDP Stats, and Stream Latency. The 'Control' tab is active, showing a 'Posture' dropdown set to 'WinXP-1' and an 'Expected Token' dropdown set to 'Health'. Below these are 'Posture List' and 'Application State List' sections. The 'Application State Catalog' is expanded, showing a table of application states.

Application State	Vendor Name	Vendor Application Id	Application Name	App Id	Attribute Name	Attr Id	Value Type	Value
Cisco:PA:Application-Pos	Cisco	9	PA	1	Application-Posture-Asse	1	unsignedInteger	
Cisco:PA:System-Posture	Cisco	9	PA	1	System-Posture-Assessm	2	unsignedInteger	
Cisco:PA:PA-Name	Cisco	9	PA	1	PA-Name	3	string	
Cisco:PA:PA-Version	Cisco	9	PA	1	PA-Version	4	version	
Cisco:PA:OS-Type	Cisco	9	PA	1	OS-Type	5	string	Windows
Cisco:PA:OS-Version	Cisco	9	PA	1	OS-Version	6	version	2.0.0.0
Cisco:PA:OS-Release2K	Cisco	9	PA	1	OS-Release	8	string	2000
Cisco:PA:OS-Version2	My-Vendor	9999	My-Application	9999	My-Attribute	9999	string	My-Value
Cisco:PA:PA-User-Notific	Cisco	9	PA	1	PA-User-Notification	7	string	
Cisco:PA:OS-Release	Cisco	9	PA	1	OS-Release	8	string	XP
Cisco:PA:KernelVersion	Cisco	9	PA	1	Kernel-Version	9	version	
Cisco:PA:Action	Cisco	9	PA	1	Action	10	string	
Cisco:PA:Machine-Postur	Cisco	9	PA	1	Machine-Posture-State	11	unsignedInteger	
Cisco:HostApplication-P	Cisco	9	Host	2	Application-Posture-Asse	1	unsignedInteger	

On the left, the 'Test Start Time' is Mon Nov 28 14:47:51, 'Auth Complete Time' is Mon Nov 28 14:47:53, and 'Test Current Time' is Mon Nov 28 14:48:05. Below this, '802.1x Session Statistics for port 1' are shown. At the bottom, '802.1x Machine Authentication Statistics' are displayed, showing zero attempts, successes, or failures for both Host and User authentication.

## Product Ordering Information

### IxAuthenticate

IxAuth-802.1x - IxAuthenticate 802.1x Test Application

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