

IP network active monitoring system

Active monitoring is not only crucial for ensuring the stability of business operations but also central to enhancing productivity and reducing downtime. In a fast-paced, high-demand business environment, every pause can potentially result in significant losses. Active monitoring signifies early warning and prevention, resolving the potential issues and maximizing the continuity of operations.



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Product Introduction

With the widespread and rapid development of computer networks, the internet has become integrated into all aspects of daily life, including work, shopping, audio and video chats, video conferencing, social networking, online gaming, and streaming movies and TV shows. It is no exaggeration to say that the user experience of these services, particularly for audio and video data, is highly sensitive to network service quality metrics such as packet loss, latency, and jitter.

IT teams focus on the following issues:

- How to monitor the end-to-end network status in real time and network quality?
- How to monitor the health of application services(HTTP/FTP/MAIL/DNS/DHCP, etc.) in real time?
- How to improve the efficiency of troubleshooting and the quality of maintenance?
- How to conduct continuous and active 7x24 hours of scheduled test and measurement of user experience?

• How to find and solve problems in network applications in advance before the end user experience becomes worse, and report the alarm through email, SMS or WeChat?

• How to test the impact of wired, wireless(including 5G, Wifi6) and virtualization/cloud infrastructure on applications concisely and effectively?

• How to evaluate the optimization effect of new network technology architecture such as SD-WAN?

These will be a very big challenge, but also an urgent issue to be solved in the daily work of IT operations personnel. The Xinertel IP network active monitoring system will help you solve the above problems.

IP Network Active Monitoring System

IP Network Active Monitoring System(X-Vision)

Introduction

The X-Vision IP network active monitoring system generates network traffic to measure end-to-end network and application quality, providing 24/7 real-time testing data. It reports real-time critical network metrics for all links, such as packet loss, latency, jitter, and out-of-order packets, and supports real-time alerts via email, SMS, and WeChat. This enables enterprise or telecom IT team to perform IP network performance test and evaluation, network quality SLA analysis and alerts, network optimization, equipment selection evaluation, and network troubleshooting and resolution.

The X-Vision monitoring system Features a software architecture based on a distributed design with a layered functional structure, consisting of a presentation layer, a business logic layer, and a data processing layer. Each layer can be scaled through server expansion to meet the demands of large-scale monitoring.







System

X-Vision consists of console and active monitoring probe:

- The X-Vision console can be deployed on a Cloud VPC, ESXi Linux, or a physical Linux host, which is accessible via a browser.
- Active monitoring probes: hardware probes, software probes, or cloud probes.



Active monitoring test type

The X-Vision network active monitoring system supports two-arm monitoring and one-arm monitoring.

Two-arm test

The active monitoring probes at both ends of the link generate traffic(such as UDP, HTTP, FTP, or audio and video streams) to evaluate the network quality. The test scenarios are as follows:

(1)Network forwarding performance test: latency, jitter, out-of-order, packet loss ratio, etc., and support customized network test topology and test cases;

(2) Throughput test: supports UDP/TCP throughput test;

(3)Voice and video bearing quality test: support voice and video stream simulation, and test latency, jitter, out-of-order, packet loss ratio.

One-arm test

Through an active monitoring probe at one side of the link, real application traffic such as HTTP and DNS is simulated to conduct real-time network quality assessments of real services in the network, such as WEB and DNS servers. The test scenarios are as follows:

(1)HTTP/HTTPS application test: support DNS resolution, TCP connection/s, first byte and last byte time, and download rate test;

(2)Internet VPN access test: access guality of different types of websites;

(3)Server performance test: DNS server, mail server, DHCP server test;

(4)Network node accessibilityn: Traceroute



IP Network Active Monitoring System

IP network performance test tool(X-Launch)

Introduction

The X-Launch tests the end-to-end performance of the network and the application quality of service by simulating real network traffic.

X-Launch supports comprehensive network performance evaluation and device test by simulating real application protocols on hundreds of endpoints

X-Launch can also evaluate the performance of wired or wireless networks; Support REST API to facilitate automated testing; Support PDF report and detailed test results; Support U-Key mode license.



System

X-Launch consists of the control end(TestConsole) and the test endpoint(TestPoint):

- The X-Launch console software is installed in Windows 7/10(64 bit), CentOS or Ubuntu. PC requirement: 4-core CPU, 8 GB memory or above, and 150 GB hard disk or above
- The test endpoint supports Linux, Windows, Android, IOS, VxWorks.

Test process

After activation, the test endpoints proactively register with the X-Launch console. Then the users can configure test cases and parameters, which are applied to the test endpoints. The test endpoints conduct tests based on these configurations and return the results.





Protocol

Application	Protocol	Metric
TCP service	TCP_TP TCP_RR TCP_CRR	TCP connection establishment time, throughput, transaction rate, transaction time
UDP service	UDP_TP UDP_STREAM UDP_RR	One way delay, jitter, out-of order, throughput, transaction rate, transaction time
Internet data service	HTTP, FTP, POP3, SMTP	TCP connection establishment time, user login time, service response time, TTFB, TTLB, and application layer throughput
Voice service	VOICE	Session establishment time, call success ratio, R value, MOS
DNS service	DNS	Resolution response time
Video service	RTSP	Delay, jitter, packet loss ratio
ICMP	PING Trace route	Response time, loss rate

Test topology

X-Launch supports two types of test: two-arm test and one-arm test.

Two-arm Test

Both sides of the NUT/DUT are X-Launch test endpoints, which generate real traffic between test endpoints to test the performance of NUT/DUT.



One-arm test

The test endpoint initiates an application session to test a real server(such as a website). In the test topology, one side acts as the test initiator, while the other side is the real server being tested.

