

Summary of Requirements

Network quality measurement software

Manager server

Hardware	CPU	Intel® Xeon® Processor E5-2640v3 (2.60GHz/20MB/8core) × 1 or faster processor
	Memory	128GB or greater
	Disk	1.2TB or greater
	Ethernet Card	10/100/1000BASE-T × 1 or greater
OS	Red Hat Enterprise Linux 6.6 (for Intel64)	

Probe server

Hardware	CPU	Intel® Xeon® Processor E5-2667v3 (3.20GHz/20MB/8core) × 2 or faster processor
	Memory	128GB or greater
	Disk	1.2TB or greater
	Ethernet Card	10/100/1000BASE-T × 3 or greater 10GBASE × 2 or greater
OS	Red Hat Enterprise Linux 6.6 (for Intel64)	

Voice quality management software

Hardware	CPU	Dual core Intel® Xeon® Processor 5205 (1.86GHz) × 1 or faster processor
	Memory	4GB or greater
	Disk	300GB or greater
	Ethernet Card	LAN card (Dual Port) (1000BASE-T) Expansion LAN card (Dual Port) (1000BASE-T) *Line for maintenance × 1, Line monitor × 2
OS	Red Hat Enterprise Linux 5.1 (for x86)	

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<http://www.fujitsu.com/global/products/network/products/proactnes-2-qm/>



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Traffic measurement software

Manager server

Hardware	CPU	Intel® Xeon® Processor X5647 (2.93GHz/12MB/4core) × 1 or faster processor
	Memory	32GB or greater
	Disk	300GB or greater
	Ethernet Card	1000BASE-T × 1 or greater
OS Notes	OS	Red Hat Enterprise Linux 6.4 (for Intel64)
	Database	Oracle 11gR2 Enterprise Edition
	Notes	OpenJDK1.6, Tomcat6.0.24, Apache2.2

Monitoring server

Hardware	CPU	Intel® Xeon® Processor E5606 (2.13GHz/8MB/4core) × 2 or faster processor
	Memory	32GB or greater
	Disk	300GB or greater
	Ethernet Card	1000BASE-T × 1 or greater
OS Notes	OS	Red Hat Enterprise Linux 6.4 (for Intel64)
	Database	PostgreSQL8.4.13

FUJITSU Network Proactnes II QM Network Quality Management Solutions



FUJITSU Network Proactnes II QM network quality management software

FUJITSU Network Proactnes II QM voice quality management software

FUJITSU Network Proactnes II QM traffic measurement software

shaping tomorrow with you

Features of FUJITSU Network Proactnes II QM

Proactnes II QM visualizes network service quality and supports maintenance and optimization of networks.

- Real-time detection of network quality degradation
- Visualization of traffic for detecting abnormality in network quality
- Use of open interface to provide alarm information
- Detection of echo that causes voice quality degradation
- Continuous monitoring of the network's condition

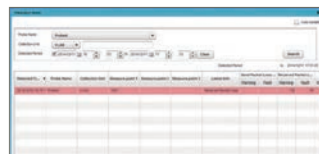
Real-time detection of network quality degradation

Proactnes II QM network quality management software

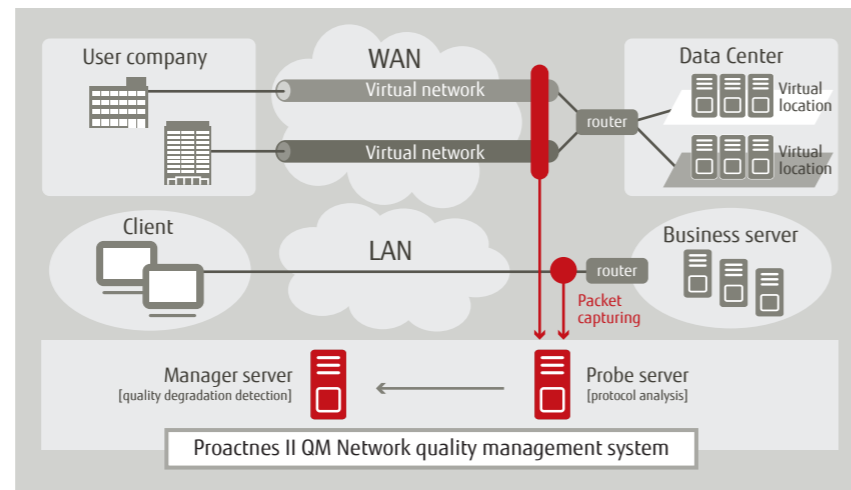
Proactnes II QM detects quality changes in real time by supporting packet capture and analysis for IP network and virtual network transfer protocol.

Supported protocol :
IP, TCP, UDP, NVGRE^{(*)1}, Q-in-Q^{(*)2}

- Displays quality degraded user and cause of degradation in real time



- Displays user traffic quality in chronological order



How to detect a wide range of quality degradation

Proactnes II QM can detect a wide range of quality degradation by capturing at a point where traffics aggregate.

(*)1) NVGRE : Virtualization for network tunneling protocol (*2) Q-in-Q : IEEE 802.1q Tunneling

Visualization of traffic for detecting abnormality in network quality

Proactnes II QM network quality management software

By analyzing user packets in real time, Proactnes II QM visualizes network service quality of each user.

Identification of user traffic

Proactnes II QM distinguishes user traffics based on identifiers attached in user packet protocols.

- In case of NVGRE : Both Outer IP address^{(*)3} and VSID.
- In case of QinQ : Both S-Tag and C-Tag.

Items for quality monitoring

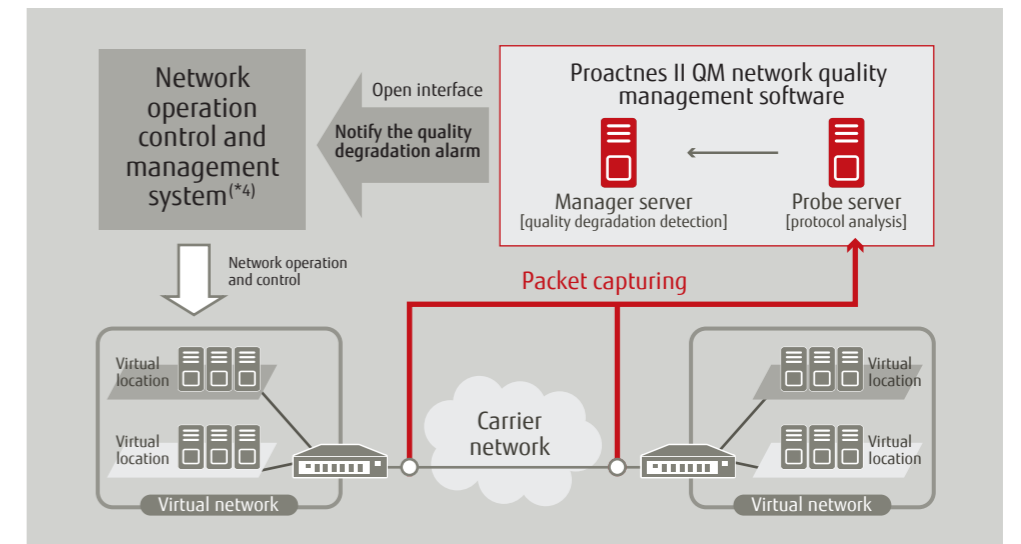
- Bandwidth usage : Monitors how much bandwidth is occupied by user traffic.
- Delay : Measures round trip delay time of packets. This gives an indication of application response speed.
- Packet loss : Measures TCP packet loss in each direction. Frequent packet loss causes video image corruption.

(*)3) Outer IP address : IP address of IP packet carrying GRE

Use of open interface to provide alarm information

Proactnes II QM network quality management software

Proactnes II QM uses open interface to notify the quality degradation alarm to network operation control and management systems. This enables Proactnes II QM to feed back its alarm information to network operation and control systems.

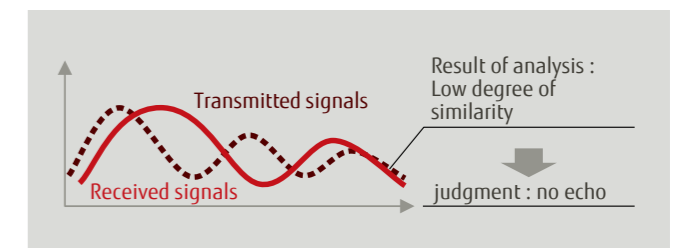
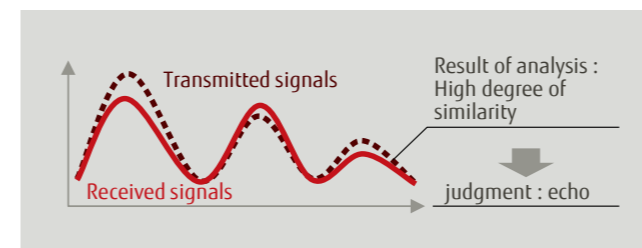


(*)4) By cooperating with Wide Area Virtual Network Operational Control And Management Software FUJITSU Network Virtuora NC, effective operation and control of the virtual network is possible

Detection of echo that causes voice quality degradation

Proactnes II QM voice quality management software

Voice quality is evaluated based on echo which determines user QoE from audio point of view. It is not evaluated from network quality.



Continuous monitoring of the network's condition

Proactnes II QM traffic measurement software

Traffic information is collected and stored periodically. Using the value from network configuration as thresholds, Proactnes II QM performs verification all the time.

Scalability

Available in large-scale network (up to 100,000 points) by adding monitoring servers.

