Large-Scale Service Network Management System

Proactnes/SN

The system adopted by most of Japan's carriers and providers to assure high-quality IP network service.
The Essential Network Management Solution for Every IP Service Provider

IP service provided over networks is indispensable to every sector of today’s society, and with demand growing for increasingly advanced services, carriers and service providers are enriching their service offering at a headlong pace. They are increasingly offering services ranging from virtual private network (VPN) and fiber to the home (FTTH) to voice over IP (VoIP), IP broadcasting and bidirectional visual communications on the same IP networks. As the scale and complexity of the offering grows, it is quality of service (QOS) that will determine their ability to satisfy user needs. It is essential, in particular, that they be able to locate failures and determine their parameters quickly and to respond accurately in a timely manner. But conventional network management systems employ a planar display of network configurations that does not show which network equipment is involved in which task, whether video transmission or VPN, for example, making it difficult to determine the precise location and range of failures. Fujitsu's Proactnes/SN (Service Network Manager), by contrast, achieves this level of QOS efficiently and effectively. It also conducts service order flow-through for servers and networks with respect to such server services as service provisioning, redundant network operation management and VoIP.

Powerful configuration and failure management functions

Proactnes/SN features proactive network management functions that support the coexistence of multiple services, VPN management of large numbers of customers and integrated end-to-end management of multi-vendor networks. Because it manages the network on a physical/logical network configuration basis employing a topology map, it can also manage the configurations of such virtual paths as VLAN and MPLS. This permits service-by-service or user-by-user operation status management. The system can quickly and easily identify the root cause of failures, determine the range of their influence and disclose these management contents appropriately to customers. Proactnes/SN also has the critical abilities to respond to changes in the network configuration and scale and additions to the service menu as well as to multi-vendor system equipment.

Adaptive scalability of networks and services

Because Proactnes/SN employs distributed, object-oriented architecture, it offers scalability in terms of network and service scale, number of measurement points, access network and home gateway. A provider can start out small, with just one Proactnes server and a single client, and then add application servers and traffic load step by step. Whether the resulting network features a redundant or centralized (carrier)/area-distributed (WiMAX, home gateway) system configuration or a parent and child system configuration for access, Proactnes/SN can manage it efficiently with equally high QOS.
Versatile topology map-based multiple view management

Proactnes/SN’s multiple-view technology adopts a topology map on which operators can observe the operation status visually from various perspectives on a GUI. A service overlay network can be viewed according to service, such as VoIP, IP broadcasting or Internet, for example, or by individual VPN user. The status of a section overlay network, on the other hand, can be assessed according to whole network, centralized or distributed views, including building-by-building or section-by-section jurisdictional management views. This enables operators to recognize at a glance which server is responsible for the network equipment for each service and to make appropriate judgments concerning rerouting, recovery operations and customer notification when network problems occur. It also enables operators to anticipate problems and reroute traffic to avoid overloading any particular system elements.

Many customers today want to observe their own network usage status and change the configuration themselves, if necessary. This makes it essential that service providers be able to offer a service level agreement (SLA) that guarantees network quality. With Proactnes/SN, individual customers’ network usage status can be displayed on the Internet where they can access it directly.

Flexibility to multi-vender environments

Proactnes/SN’s multi-vender compatibility makes a further significant contribution to high-quality end-to-end network management. Proactnes/SN can manage any vendor’s network equipment, regardless of its function, by employing an application programming interface (API) to define the information necessary for viewing as well as for service and network management and then using a Proactnes element access module (EAM) to wrap the equipment into the system by uplink. The ability to wrap new vendors’ equipment or new models into the system simply by adding a corresponding EAM permits ongoing updating of the network with the latest equipment.
Proactnes/SN

Hardware and Software Requirements for Proactnes/SN

Server

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Solaris 8 2/02 / Solaris 9</td>
</tr>
<tr>
<td>CPU</td>
<td>1.1GHz (2CPU)</td>
</tr>
<tr>
<td>Memory</td>
<td>2GB</td>
</tr>
<tr>
<td>Hard Disc</td>
<td>73GB</td>
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<tr>
<td>Remarks</td>
<td>10/100Base-TX x 1 port, CD-ROM Drive, Oracle8 8.1.7/Oracle9 R2</td>
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Client

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>OS</td>
<td>Windows2000 SP3 –</td>
</tr>
<tr>
<td>CPU</td>
<td>1GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>512MB</td>
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<tr>
<td>Hard Disc</td>
<td>10GB</td>
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<tr>
<td>Remarks</td>
<td>10/100Base-TX x 1 port, CD-ROM Drive, Internet Explorer 6.0 SP2 –</td>
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</tbody>
</table>

Combination of Solaris and Oracle

<table>
<thead>
<tr>
<th>Solaris 8 2/02</th>
<th>Oracle8 8.1.7</th>
<th>Oracle9 R2</th>
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VPN operation management and Alliance with Cisco

1. Fault Monitoring and Configuration Management
   - Root Cause Analysis
   - Multiple View Management
   - Configuration and Router File Management

2. Configuration, Route, Provisioning, Service operation management & Network operation management, Test, Traffic and Quality
   - Service & Network operation management
   - VLAN-VPN
   - MPLS-VPN
   - EoMPLS-VPN
   - MPLS Route (LSP)

3. GOLD & Redundant operation management required by Japan Cisco
   - GOLD operation management, Serial Number Management
   - CDP, HSRP operation management
   - 1Q in 1Q/RSTP VLAN operation management
   - MSTP/MISTP instance combination VLAN operation management
   - MSTP only, MISTP only, MSTP/MISTP both

4. Extreme Redundant operation management
   - ESRP, EAPS operation management

5. LSP MPLS design, Bandwidth management
   - Network design
   - LSP route design and provisioning
   - Bandwidth management

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HA1045-1AP