CNC Selects GenieATM to Optimize Network Planning and Analysis

Built and operated by CNC, CNCnet owns very high speed International transit links (1.2Gbps), peering links to other domestic ISPs (3.2Gbps) and the extra high speed backbone infrastructure (40Gbps). As a national-wide IP network backbone, CNCnet provides high-speed data transportation and a variety of networking services.

The Challenges of CNC Network Managers

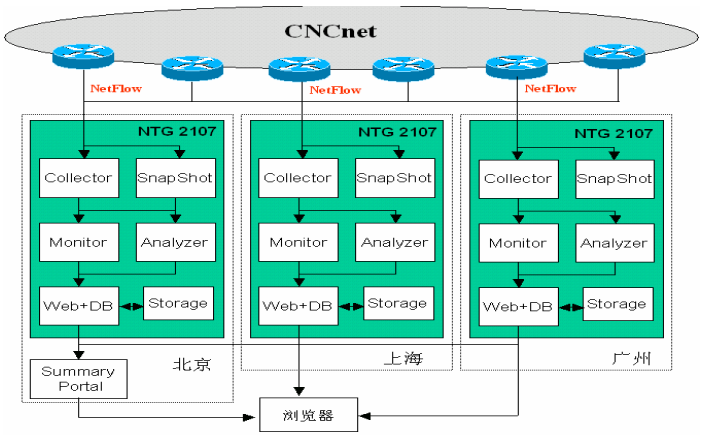
With the fast growing network bandwidth demands and emerging of new network services, CNC network managers found the conventional network management systems fall short in the areas of network-wide traffic monitoring, in-depth network visibility, and capacity and routing planning for CNCnet. The CNC network management team then clearly identified their goals to achieve thru the search of a new Network Traffic Analysis/Management solution:

1. **Network Security**：timely Dos/DDoS, worm attacks and anomaly traffic detection without signature publication waiting and also attacks/anomalies back-tracing and locating capabilities;
2. **Network Operation & Maintenance**：continuous monitoring on important links/customers/services, so that the managers can garner useful information such as traffic baselines and network usage behaviors for daily Operation & Maintenance;
3. **Decision Support**：drilled-down traffic information helps to do various business analysis, cost analysis, network planning and peering strategy decisions.

In response to the identified needs, after a careful survey of solutions CNC decided to deploy GenieATM (Genie Advanced Traffic Management) solutions for achieving these CNCnet management goals.

Deployment of GenieATM Solutions

After closely discussing with CNC network management team to understand their network topology and the management challenges faced, GenieNRM proposed to deploy 3 GenieATM 2107 systems in its IDCs (Beijing, Shanghai, and Guangzhou) on the backbone network and initiated the on-line tests as follows:



GenieATM Deployments in the CNCNet Backbone Network

Function I → Flow Monitor

7x24 hrs traffic monitoring on important links/customers/services via the Flow Monitor function. In addition to the continuous monitoring, traffic thresholds of each monitored network segment were set. Once a threshold was violated, real-time alarm was sent via SNMP trap or e-mail to notify management correspondents for timely reactions.

Function II → Traffic Snapshot

The unique function of GenieATM, Real-time Traffic Snapshot, was used to conduct an overall network health examination. In less than 10 minutes, all the malicious traffic such as Sasser worms, ICMP attack and unwanted traffic such as P2P e-Donkey were successfully identified. Not only anomalies were detected but also anomalies' detailed information was provided, such as the network addresses of the anomaly initiators/victims and the interface of the impacted network resources.

Function III → Flow Analysis

Flow Analysis was performed to identify up to Top-128 heavy network resource consumers, the remote-end they are connecting to, and the applications they are using. The Top-N function provides also historical analyses enabling cross examination backwards with traffic monitor reports. The network managers hence no more regard historical event back tracing as a painful task.

Anytime, Anywhere Analysis – GenieATM Empowers Network Manageability of CNCnet

Beneficial Results：

- **Make 24x7hrs, Global-scale Traffic Visibility Possible**：prior to the deployment of GenieATM, the CNC network management team had difficulties to gain the traffic visibility of their scaled networks. Now with the capability of long-term traffic monitoring focusing on any critical network spots, the network management staff can have the holistic view of its international transit points, domestic peering points, important customers and critical services.
- **Effective DoS/DDoS/Worm/Anomaly Traffic Detection**：take the outbreak of MS SQL Slammer attack on January 25th 2003 for example, with the help of GenieATM, CNCnet O&M engineers identified the anomalous traffic in the very early stage, and with details such as the source/destination IP addresses and the protocol/port information, the engineers responded and contained the problem quickly. While other service provides were still struggling for recovering from the attack impacts in the following weeks, CNCnet had totally resolved the problem and provided its subscribers with superior network performance.
- **Optimal Network Planning & Peering Decisions**：instead of the guesswork, now the CNC network managers can optimize its network planning with practical traffic information such as the trending traffic

statistics and drill-down Top-N analyses. Also the BGP-based analysis information helps to optimize the traffic routing policies and the essential materials to achieve the most cost-effective Peering/Transit relationships.

- **Painless Deployment & Easy Management**：the appliance solution, transparent architecture contributes to an effortless, non-interrupting deployment experience of GenieATM. GenieATM's layered-administration design lets the CNC network management team easily delegate different management tasks to different members of the crew with different scopes of responsibilities. The remote access with friendly Web-based GUI and the support of Simplified Chinese language provides CNC network managers the superior manageability.

About CNC (China Netcom)

China Netcom Corporation Ltd. (CNC) is a super telecommunications enterprise in China and the fixed telecommunications service partner for the 2008 Olympic Games. It is a well-known telecommunications operator both in China and in the world. CNC has a total registered capital of RMB 60 billion yuan, and the value of its total assets exceeded RMB 250 billion yuan by end 2003. For more information, please visit www.cnc.net.cn/