Functional Areas of Network Management System

Functional Areas of Network Management System

The management of telecommunications network can be divided into five key functional areas of network management: performance management, fault management, configuration management, security management and accounting management is included in the same category.

1. Performance Management

Performance management systems are the top-level network management applications. They are responsible for monitoring and controlling overall network performance, both within and across network services. Performance management co-ordinates the actions of the lower level, task-oriented applications to recognise and resolve network performance problems.

The goal of performance management is to measure and make available various aspects of network performance so that inter-network performance can be maintained at an acceptable level. Examples of performance variables that might be provided include network throughput, user response times, and line utilisation.

Performance management involves three main steps. First, performance data is gathered on variables of interest to network administrators. Second, the data is analysed to determine normal (baseline) levels. Finally, appropriate performance thresholds are determined for each important variable so that exceeding these thresholds indicates a network problem worthy of attention. Management entities continually monitor performance variables. When a performance threshold is exceeded, an alert is generated and sent to the network management system.

Each of the steps just described are part of the process to set up a reactive system. When performance becomes unacceptable because of an exceeded user-defined threshold, the system reacts by sending a message. Performance management also permits proactive methods: For example, network simulation can be used to project how network growth will affect performance metrics. Such simulation can alert administrators to impending problems so that counteractive measures can be taken.

2. Fault Management

Fault management systems are responsible for managing network failures. When performance data and possible alarm reports are sent to the Network Management System (NMS), it categorises and stores the reports and further processes this data. The purpose of fault management is to ensure the smooth operation of the network and rapid correction of any kind of problems that are detected.