A CLEVER TCP/IP® Case Study
Applied Expert Systems, the Business Service Management Company

A Major Financial Services Company based in Cleveland

Ranked among the top 20 bank holding companies in the U.S., this client is a $50 billion diversified financial services company based in Cleveland, Ohio. The company operates through an extensive banking network primarily in Ohio, Indiana, Illinois, Kentucky, Michigan, and Pennsylvania, and also serves customers in selected national markets. Its core businesses include commercial and retail banking, consumer finance, asset management, mortgage financing and servicing, and payment processing.

The Background

To meet the critical needs of its key businesses, the company has implemented a diverse mix of client/server and mainframe applications. While all core processing has been centralized and standardized at one site, the organization also maintains a number of distributed server sites to support client/server applications. About 20 percent of the organization's business systems have migrated to client/server with 12,000 PCs already installed. The first large-scale client/server port occurred in 1995, with many of the smaller systems following shortly thereafter.

Prior to the overhaul, the company had three mainframe processors with little or no TCP/IP connectivity. Systems were isolated with single points of failure for network connectivity and application support. In this environment, there was a high risk of losing connectivity to end users and branches. Major system changes caused significant down time, since there was little or no application movement to other systems. The environment was running on network technology created and established in the early 1990s. Most of the interfaces were configured and tuned incorrectly, resulting in systems using more memory and CPU cycles than required for the networking functions.

One of the major changes undertaken was the conversion from a Bi-Sync and SNA network to an APPN/HPR/RTP and TCP/IP network, which specifically included numerous Enterprise Extender connections. This new design also allowed for single points of failure to be progressively eliminated, while a fully automated, recoverable hardware and software solution was implemented for TCP/IP connectivity to the mainframe.

During this transition the network support team realized that the older network management tools in use were inadequate for their requirements in this new TCP/IP-SNA hybrid environment. They were approaching 10,000 simultaneous TN3270e-hybrid Telnet-TCP/IP to 3270 SNA-based application sessions requiring monitoring, tracking, and reporting, with hundreds of FTP file transfers occurring daily.

The Problem

The question they faced was how to manage this evolving hybrid network of HPR and TCP/IP connectivity and rapidly expanding session traffic and report on its performance. The client/server-based technology meant that 12,000+ PC-based clients needed the ability to instantly access multiple server-based applications throughout the network. To minimize customer service time, critical Service Level Objectives mandated consistent monitoring of network response times to properly trend and report on as many of the bank's key TCP/IP-based Business Services as possible. The company also needed to maximize its ability to monitor branch-based customer service client PCs. Since the vast majority of the Business Service applications remained z/OS-based, the company preferred to perform and manage this monitoring task from a z/OS-centric foundation.

The Solution

Selected products from IBM were included to achieve an effective solution. One key ingredient was the addition of Tivoli NetView Monitoring for TCP/IP Performance. Not only did this product provide insight into the UDP-port based perspective of APPN/HPR/RTP links and their throughput and performance, but it also provided real-time diagnostic shortcuts to view the

HPR/RTP VTAM-based connections. Furthermore, it provided near-time TCP/IP activity and session logging, as well as in-depth historical reporting, based on SMF record data. This provided insight into the growing TN3270e, FTP, and TCP-based client/server traffic.

Trending information, derived from other integral historical data collections, became available for newer, high-speed IP Channel link throughput, such as OSA-Express. The product also provided automated, real-time, critical resource monitoring methodology that technicians were seeking in order to provide SLO answers to management. This included the recording of performance data in interval-based SMF records, reporting on network response times, and trending for any IP-addressable resource, such as client workstations. The data became available in graphic format.

Following completion of the migration, the company now has a much smaller physical (hardware) footprint, a more robust network connection to the mainframe, and, most importantly, a highly reliable and measurable branch networking environment. The bank concluded that they had achieved the required visibility of their TCP/IP network mainframe connections and acquired a proactive methodology for monitoring TCP/IP performance changes or anomalies before they resulted in response time issues and/or downtime.

Tivoli NetView Monitoring for TCP/IP Performance, which may also be referred to as NPM/IP, is developed and maintained by Applied Expert Systems, Inc. and licensed to IBM. AES brands this product as CLEVER TCP/IP, a key member of the CLEVER family of performance monitoring solutions.
Note: The AES/IBM agreement extends through NPM/IP v1.5.

AES focuses on the development of network performance and availability Business Service Management solutions. Through its strong emphasis on listening to customers, foreseeing far-reaching trends in the marketplace, and providing stellar support systems, AES continues to maintain its lead in providing state-of-the-art, easy-to-use performance tools for the very backbone of eCommerce.

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