



Case Study

A leading communications company sought assistance evaluating IP call routing architectures using SIP and ENUM technology

Client:

One of the World's Leading Communications Companies

Industry:

Communications

Service Offering:

Component Services

- Application Services
- Quality Assurance & Testing
- Technology Assessment



The Situation: A large communications company was in the early stages of deploying a national VoIP service to its existing Internet, broadband customer base. This early deployment would enable this company to provide a basic line replacement service, but this service would continue to evolve over time to take advantage of the economies of Internet Protocol (IP) transport versus current Time-division Multiplexing (TDM) transport.

The Challenge: The client sought assistance early in the engineering process to help assess the next generation of IP call routing architectures using Simple Internet Protocol (SIP) and Telephone Number Mapping (ENUM) technology. This new architecture would enable internal switch to switch call routing via SIP and eventually IP interconnect with other service providers.

The Response: TEKsystems®, a premier provider of technology staffing and services, responded through its QA & Testing Center of Excellence. Due to TEKsystems' intimate knowledge of ENUM and SIP call routing architectures, TEKsystems provided several services. This included high-level consulting from our communications experts to help define and document the architecture and define the vendor requirements for the SIP and ENUM technology. In addition, a project team was assembled consisting of a test lead, senior test engineer, and test engineer to build a test suite based on the requirements. The test suite was then executed against two ENUM vendor systems and a SIP vendor system. In addition, a performance analysis of various server hardware, operating systems, and database sizes against the proposed vendor system was conducted. Lastly, TEKsystems conducted a throughput analysis of the selected SIP vendor system. TEKsystems then provided the data to allow the client to make the vendor selections.

The Result: As a result of the engagement, TEKsystems developed an internal IP call routing architecture document that defined call flows, performance SLAs, operational requirements, and fail-over architecture. In addition, TEKsystems created a comprehensive test plan, documented test cases for the ENUM vendor selection testing, and provided a complete report of testing results that were used to select the ENUM vendor who



best met the requirements. TEKsystems also delivered a performance tool to execute a set of performance tests against the selected ENUM platform on several different server hardware, operating systems, and database sizes. Additionally, TEKsystems provided the client with an open source SIP performance tool to evaluate the throughput of the selected SIP call routing proxy server. Based on the throughput findings, the QA & Testing team was tasked to evaluate other proxy server options. Finally, TEKsystems delivered a comprehensive test suite for the ENUM and SIP systems that would be used in certification and pre-production testing.