

# Cisco Global Learning Network

Scalable, E-Learning infrastructure efficiently delivers rich, interactive media and enhanced assessment to hundreds of thousands of Cisco Networking Academy™ Program students around the world.

## Redefining E-Learning

Network efficiencies, interactivity, multi-media, personalization, and an appreciation of multiple learning styles have all come together in the Cisco Global Learning Network (GLN). This standards-based, end-to-end network-enhanced learning infrastructure supports highly scalable, flexible, advanced e-learning.

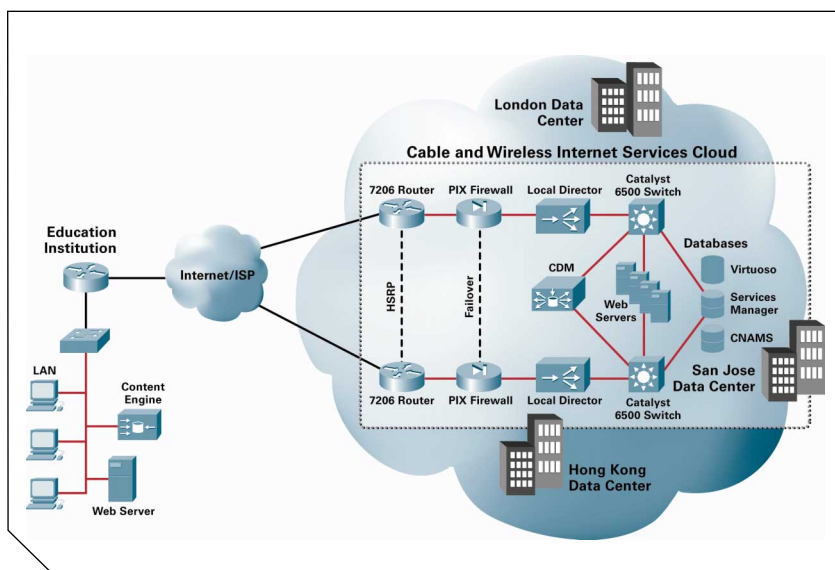
The GLN integrates e-learning applications for authoring, management, and assessment with rich media content, delivery, and a network infrastructure. Implemented as the e-learning environment for the international Cisco Networking Academy™ Program beginning in the summer of 2001,

the GLN brought many important new capabilities. These include global scalability, lack of extensive integration needed for implementation, a disturbed architecture with sophisticated caching to avoid latency, the ability to deliver rich media and interactive components seamlessly, a clearly defined pedagogical hierarchy for authoring, personalized feedback, and the use of Web-based open standards.

The Cisco Networking Academy Program is a worldwide effort designed to teach Internet technology skills to youth and adults. The Networking Academy program is also helping to transform education as the world's largest e-learning laboratory. Cisco has expanded the program to include optional, partner-sponsored courses by IT leaders in the Fundamentals of UNIX, sponsored by Sun Microsystems, the Fundamentals of Web Design, sponsored by Adobe Systems, the Fundamentals of Voice and Data Cabling, sponsored by Panduit, and IT Essentials sponsored by Hewlett-Packard. All courses are delivered through the Cisco Networking Academy Program.

## Elements of a New E-Learning Paradigm

A multi-layered technology, the GLN is far beyond other online or computer-assisted learning models. It delivers several key benefits that make the e-learning experience



Network Topology Diagram

in the Networking Academy program more effective, including *personalized feedback, enhanced assessment, rich media, More Info, and an integrated and scalable network architecture.*

**Personalized Feedback**—Courses developed and delivered using the GLN give learners personalized feedback as dynamically generated Web pages, which teachers can also use to gauge each learner's progress and level of mastery. Pre-assessments and post-assessments, following each course and module, give the learner a chance to understand every aspect of course content before moving on.

**Enhanced Assessment**—Teachers can tailor presentations and assignments based on pre-assessment results. In some curricula, students receive Proficiency Reports that characterize their test performance in terms of different levels of proficiency such as Novice, Partially Proficient, Proficient, and Advanced. These translate for students the meaning of their numerical scores.

**Rich Media**—The courses deliver content in auditory, visual, tactile, numeric, and text formats to best accommodate individual learning styles. A typical Web page may display a combination of text, audio, or video tracks, graphics, and numerical representations.

**More Info**—For some Cisco Networking Academy Program curriculum, this optional feature appears at the bottom of the course page. It offers e-learners additional information and resources (i.e. URLs to Web sites, documents, videos, animations) to bolster understanding, as needed.

**Integrated and Scalable Network Architecture**—Networking Academy courses delivered, using the GLN require advanced

network architecture and caching strategies to support the smooth deliver of rich media and personalized feedback. The GLN was designed with Internet middleware that is TCP/IP-based and has standard application program interfaces (APIs) to handle the delivery of course content and the pre- and post-assessments. The GLN integrates the main elements of an e-learning solution—content, applications and services, and network infrastructure—into a single architecture. Instead of relying on delivery via centralized network resources, the GLN relies on content caching strategies within the local area network (LAN) of each user organization. Implementation of the More Info component of the GLN at the LAN is best accomplished with a locally installed content engine, which efficiently distributes rich media to up to thirty simultaneous users per content engine. High performance delivery of bandwidth-intensive content is achieved by distributing content as close to the end user as possible.

### Continually Evolving E-Learning

Aside from its multimedia content, assessment features, and efficient and scalable infrastructure, the GLN includes powerful tools to help instructors manage and evaluate online learners. Third-party course management applications can also be integrated into the GLN to support the distribution of learner IDs, user names, passwords, course schedules, assignments, course communications, and grades.

More effective learning is the ultimate goal of the GLN. Beginning as a vehicle for technical education, it is a model for transforming course design and deliver at large for millions both in the industrialized world and in least developed regions.



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