



# Network Capacity Expansion System

Maximizing Bandwidth Value At Remote Sites

## What Is Cisco NCE?

Cisco NCE is a transport layer proxy that increases the amount of available bandwidth at small to mid-sized branch offices and remote locations. It is a small-footprint module that easily integrates into the modular Cisco integrated services routers (ISRs).

Organizations today are facing numerous wide area network (WAN) challenges. Employees around the world need instant access to centrally-located information. Branch offices require continuous backup of mission critical data. Users must have satisfactory experiences with IP voice and video communication. And of course, bandwidth costs must be controlled without sacrificing application performance.

Cisco NCE addresses these challenges by cost-effectively increasing the amount of available bandwidth to accelerate data transfer over the WAN. With NCE, multisite and global organizations get more data through and more value out of their existing WAN links.

## Fast Data Transfers

For low-bandwidth, low-latency WAN links, typical gain in data transfer rate is 3 to 8 times over that provided by TCP. As latency, packet loss, or congestion increases, NCE performs even better, accelerating data transfer up to 20 times. In challenging WAN environments, such as satellite, the gain frequently reaches 30 times.

## Network Transparency

Cisco NCE is a hardware extension of Cisco IOS® Software and directly integrated into the Cisco Express Forwarding switching path, helping ensure complete transparency to other network services and all security provisions.

## Cost-Effectiveness

Cisco NCE lowers operational expenses by expanding available WAN capacity and eliminating or postponing the need to upgrade bandwidth. It offers a high return on investment through its low cost and considerable bandwidth savings. Payback time can be as little as a few weeks.

## Cisco NCE Benefits

### For Your Customers and Employees

- Faster access to centralized back office systems
- Quicker response from revenue generating applications
- Better IP voice or videoconferencing experience

### For Your IT Organization

- Expansion of available bandwidth
- Reduction in bandwidth utilization
- Increased data transfer rates

### For Your Business

- Lower operational expenses
- High return on investment
- Lower total cost of ownership

## Cisco NCE Framework

Bandwidth specifies the maximum data transfer rate achievable on a WAN link. Latency, congestion, and packet loss determine the actual transfer rate. Cisco NCE uses two techniques to take transfer rate past the bandwidth limit: virtual bandwidth expansion and improved bandwidth utilization. Compression and packet-bundling algorithms increase effective bandwidth. Packet flow control and TCP optimization mitigate effects of congestion and latency to improve utilization of available bandwidth. The combined effect of these technologies results in a dramatic expansion of available WAN link capacity and enables extremely fast data transfer rates over the WAN.

