



CenturyLink Metro Ethernet for Financial Services **Delivering secure, scalable connectivity across metro areas**

As competition in the financial services sector intensifies and the regulatory climate tightens, the adoption of personalized services related to retirement, investments, taxes and estate planning continues to accelerate. One thing is clear in this environment – the demand for secure, reliable, robust, high-bandwidth connectivity continues to rise. Metro Ethernet is a flexible, highly-scalable and reliable solution that delivers switched, Ethernet connectivity to enable banks, brokerage firms and other financial services institutions to extend their local area networks to other metro sites for increased efficiency with traffic prioritization.

Metro Ethernet provides technical expertise, responsive account management and world-class services that exceed customer expectations for quality, value and reliability.

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Table of contents

Introduction	3
Differentiating financial services	3
Metro Ethernet overview	4
Quality of service	5
Benefits	5
Supporting online financial services	5
Delivering non-stop transaction services	6
Ensuring regulatory compliance	7
Reducing operating costs	7
Alcatel-Lucent Ethernet service switch	8

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Introduction

Financial services firms continue to offer more options and sophisticated, online transaction capabilities to differentiate themselves and enable their customers to access account information and transact business. For example, Click to Talk lets customers use instant messaging to contact a representative. This puts additional demands on connectivity requirements. Given the rapid adoption of these services, it's no surprise that the Meta Group estimates that a network outage can cost a financial institution more than \$1.5 million per hour in lost revenue.

The implications of the financial industries' regulations remain unclear. What is clear is that firms will be held accountable for the security, integrity and survivability of customer data and increasing demands on the networks that interconnect their facilities.

Metro Ethernet offers a highly-scalable, reliable, secure and cost-effective solution to meet the connectivity demands of the evolving financial services industry, between multiple locations and across metro areas. Metro Ethernet delivers greater service flexibility by enabling healthcare organizations to obtain the exact amount of bandwidth required or upgrade their networks and increase capacity quickly.

Differentiating financial services

As the financial services industry continues to experience consolidation among larger firms. To offer new, more sophisticated services at lower costs and to comply with ever increasing regulation, IT managers focus on 4 operational imperatives:

Supporting online financial services

The number of online banking transactions and stock trades continues to grow. In an industry based on personal service, financial institutions build more robust customer relationship management capabilities into their online applications.

Delivering non-stop transaction services

Firms know that disruptions in network operations can cost millions of dollars in direct and indirect losses and that delivering fast, non-stop transaction services relies on a robust, flexible and resilient network.

Ensuring regulatory compliance

Firms are subject to stringent regulatory requirements governing securities transactions, recordkeeping, fair credit reporting, auditing and business continuity planning, as well as those related to disclosure of personal information.

Reducing operating costs

With ever increasing pressure to improve productivity and profitability, IT managers know that they must achieve the first 3 imperatives while reducing costs and improving resource productivity.

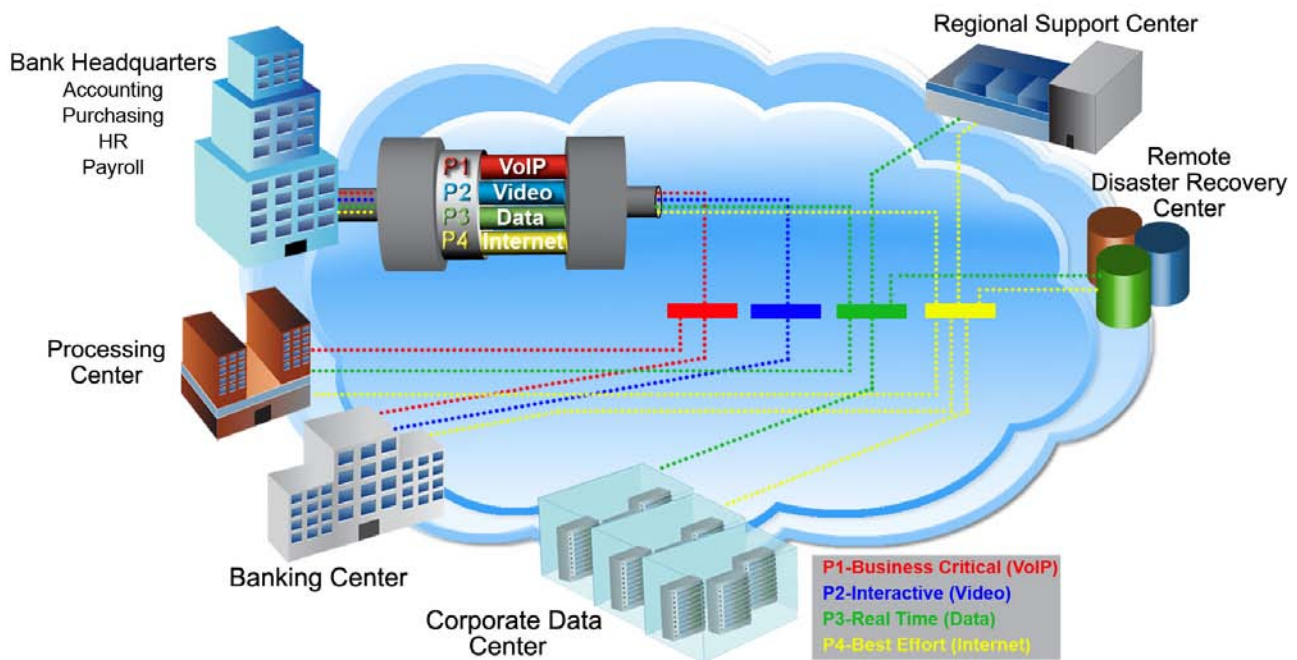
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Metro Ethernet overview

Metro Ethernet combines the simplicity and low cost of Ethernet with the speed and reliability of optical fiber to deliver flexible, highly-scalable connectivity between branches, brokerage offices, call centers and data centers across a metro area. Metro Ethernet is available in point-to-point and multipoint service configurations with bandwidth available in manageable increments from 10Mbps to 1Gbps. Traffic flows securely as Ethernet virtual circuits (EVCs) across a highly-reliable network infrastructure.

Metro Ethernet seamlessly extends access to data and business applications. With Metro Ethernet, a representative can assist customers with complicated transactions in real time. The representative can access a complete customer history, finalize the transaction and send an electronic confirmation—all with the utmost in privacy and security. In addition to IP-centric applications, Metro Ethernet is ideal for integrating voice, video and Internet traffic to eliminate network overlays.



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Quality of service

CenturyLink™ offers a quality of service (QoS) feature with Metro Ethernet that enables firms to prioritize and control network traffic by type to help ensure availability and efficiently manage network resources. Recommendations for QoS strategies include:

- Priority 1 – used for mission-critical market data that require immediate connections
- Priority 2 – used for specific financial transactions and customer relationship management (CRM) applications
- Priority 3 – used for regular business data
- Priority 4 – used for communications that only require best effort service

CenturyLink can assist firms with the design and deployment of customized solutions with our technical experts at our National System Design Center. Metro Ethernet solutions are highly-reliable and backed by a written service level agreement (SLA) that defines performance objectives. Our network operations center (NOC) continually monitors the network to support SLAs.

Benefits

- Securely connects multiple facilities across a metro area
- Point-to-point and multipoint service
- Supports adoption of online financial services applications
- Offers unparalleled scalability to precisely match bandwidth to requirements
- Delivers high availability – up to 99.9% SLAs
- Enables control over routing and traffic priority
- More cost-effective than Internet connectivity service options

Supporting online financial services

Network requirements	CenturyLink solution
Business Continuity/Disaster Recovery and storage Driven by the high cost of network downtime, Sarbanes-Oxley and other regulations, rapid off-site data mirroring and retrieval is vital to financial services firms	
<ul style="list-style-type: none">• Private, secure networking• Flexible capacity to accommodate large planned and unplanned data transmissions• High availability and survivability	Metro Ethernet supports high-capacity, redundant uplink connections enabling switching if a failure is detected
Digital image services Financial services firms use digital files for check images and other documentation that must be readily available, in some cases, within specific time periods	
<ul style="list-style-type: none">• High-performance connectivity• Capacity to transport large data files• Quality of service with high availability	Metro Ethernet supports large image files with point-to-point EVCs capable of handling large frame sizes.

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Online financial services and transaction processing Financial services firms are experiencing increased use of online transaction services for home banking, stock trading, retirement fund management and other applications	
<ul style="list-style-type: none"> • Private, secure networking • Scalable bandwidth • High-network reliability 	<ul style="list-style-type: none"> • Metro Ethernet runs on a private network managed by CenturyLink • Metro Ethernet supports most higher-layer applications • Metro Ethernet is the preferred transport to connect data centers because of its large capacity
Customer care solutions and contact centers Click to Talk and video solutions that use IP telephone to provide customer support from within online applications are becoming more prevalent as financial services firms adopt more sophisticated CRM applications	
<ul style="list-style-type: none"> • Real-time access to call center applications • Meshed architectures • Scalable bandwidth • Quality of service 	<ul style="list-style-type: none"> • Metro Ethernet seamlessly extends access to applications across a metro area • Metro Ethernet is ideal for converging voice, video and data to eliminate network overlays
Distribution of financial market data and broadcasts Broadcasting external data feeds to corporate locations is a critical aspect of financial services firms' operations	
<ul style="list-style-type: none"> • Real-time, uninterrupted connections to corporate locations • Quality of service to support video 	Metro Ethernet supports Quality of service for real-time traffic, based on a highly-available and resilient network
Conferencing applications and remote training Video and other media used for conferencing, online collaboration, training and professional development	
<ul style="list-style-type: none"> • High-capacity network for rich media applications • Quality of service to support real-time applications 	Metro Ethernet supports remote training, video, data and voice in an environment with low latency and jitter, necessary for sensitive applications

Delivering non-stop transaction services

Firms know that disruptions in network operations can cost millions of dollars in direct and indirect losses. Customers expect to complete stock trades rapidly to take advantage of an ever-growing list of online services at their discretion. Metro Ethernet keeps networks operating at peak performance, 24/7/365.

High availability

The Metro Ethernet infrastructure uses carrier-grade network elements with stringent reliability requirements and resilient failure recovery mechanisms to optimize the service for minimal failover administration.

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Flexibility/scalability

Metro Ethernet can support point-to-point and multipoint connections with bandwidth profiles up to 1Gbps. Unparalleled scalability with bandwidth is available in 10Mbps increments from 10Mbps to 100Mbps. Bandwidth in 100Mbps increments from 100Mbps to 1Gbps, (also at 150Mbps, complementing traditional private line speeds) allow firms to cost-effectively match Metro Ethernet to their requirements.

Quality of service

Customer-selected QoS is an optional feature of Metro Ethernet that let IT professionals manage network resources more efficiently while ensuring the performance of critical applications.

Ensuring regulatory compliance

Ensuring regulatory compliance depends on the transport of volumes of data, often stored on multiple network servers or backed up in remote data centers. Metro Ethernet is provided across a carrier-class optical network with secure facilities that adhere to strict network policies specifically designed to meet the needs of financial services industry.

Security

Data travels over the Metro Ethernet infrastructure as native Ethernet, so many of the security methods used in the local area network (LAN) can be extended across the metro area. Connections are made through Ethernet virtual circuits (EVCs) that partition traffic securely while maintaining connectivity across all devices. When complemented by firewalls, intrusion detection systems, anti-virus solutions, security can be efficiently maintained across the network.

Support for Business Continuity/Disaster Recovery

CenturyLink assists firms by designing and deploying customized BCDR solutions to ensure the survivability of mission-critical applications, backed by responsive account management and service delivery personnel.

Reducing operating costs

Controlling operating costs is a mandate that is not unique to the financial services industry. As with most businesses, IT managers at firms must balance that mandate against a need to launch new services and remain competitive. Metro Ethernet supports this balanced approach with unsurpassed flexibility and reliability.



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Extended reach

Metro Ethernet can securely connect multiple branches, neighborhood banking centers and brokerage offices enabling financial services professionals to collaborate more easily and better serve a diverse clientele with an equally diverse array of financial services. Plus, with Metro Ethernet, efficient BCDR and remote storage plans can be implemented with the security, availability and reliability that ensures regulatory compliance.

Lower IT management costs

In addition to eliminating LAN/WAN protocol conversions and the need to support multiple legacy WAN services, Metro Ethernet enables firms to converge IP data and applications, voice, video and Internet traffic on a single network service. Metro Ethernet enables consolidation of servers and remote facilities, further reducing overhead and on-going management costs.

More cost-effective overall

Metro Ethernet bandwidth costs are typically lower than traditional private line and synchronous optical networks. Unparalleled flexibility and scalability allows firms to better tailor bandwidth to their specific requirements.

Enabled by Alcatel-Lucent 7450 Ethernet service switch

With industry-leading density and performance the Alcatel-Lucent 7450 Ethernet service switch (ESS) router supports scalable, reliable and predictable SLA-based Ethernet services. The Alcatel-Lucent 7450 ESS router, part of the service routing platform, overcomes the limitations imposed by traditional Ethernet switches while minimizing operating expenses to reduce the total cost of ownership.

Benefits

- Dramatically improves network stability, scalability, availability and performance
- QoS management enables support for different traffic types
- Superior provisioning tools speed deployment of new Ethernet services

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