A Guide to Industry Trends in **Ethernet Services**

IRIS NETWORKS

In partnership with
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Section 1:
Enterprise Priorities and Network Impacts

The "Great Unknown"

Two competing workplace ideologies are on a collision course — the "Great Return" and the "Great Disconnect." On the one hand, you've got the "Great Return" predicting a wave of employees rushing back to the office. In fact, some surveys suggest that 50% of today's enterprises want to see their employees return to the office 5 days a week. On the other hand, you've got the "Great Disconnect" that is predicting a workforce that is reluctant to return to the office. In fact, 80% of today's workforce wants more say in where they work, while 94% want more say in when they work — this is according to a survey conducted by the Future Forum Pulse[i].

50%

of today's enterprises want to see their employees return to the office 5 days a week

80%

of today's workforce wants more say in where they work

94%
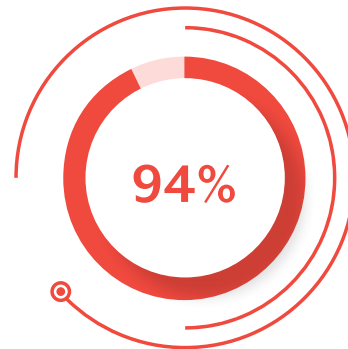
of employees want more say in when they work

While no one knows which side will win out in the end, one thing is for sure:

The future of the workplace — and by extension the connectivity needs of enterprises — is uncertain, and **businesses must be ready to adapt.**

Today's Financial Enterprises **Must...**

- Improve application performance and strengthen security for remote and mobile employees

- Take care not to over-architect their networks to the point they are paying for capacity they aren't using

- Take care not to under-architect their networks to the point they aren't able to support peak-demand requirements

The Proliferation of
Digital Applications

According to MuleSoft's 2022 Connectivity Benchmark Report, 72% of organizations' customer interactions are now digital and, on average, enterprises are using 976 applications[ii] — this is up from 843 the year before.

What does this mean for network connectivity? A need for higher-bandwidth, lower-latency services.

Today's financial enterprises must ask themselves…

- What technology will ensure optimal application performance without increasing complexity?

- Which services best support today's bandwidth intensive, latency-sensitive digital applications?
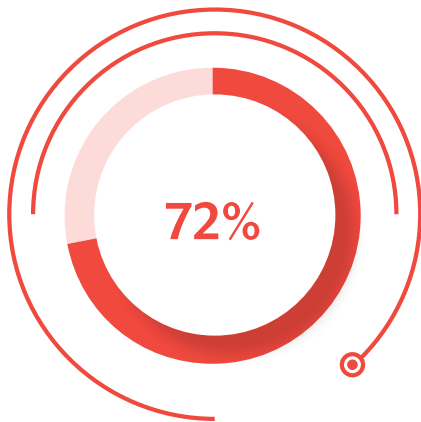
72% of organizations' customer interactions are now digital

The Move to **Multicloud**

According to Flexera's 2021 State of the Cloud report, 92% of enterprises have a multicloud strategy, while 80% have a hybrid cloud strategy. The report also found that businesses are using, on average, 2.6 public clouds and 2.7 private clouds[iii]. While financial and banking sectors tend to lag in technology adoption, 91% of financial institutions are actively using cloud services or plan to in the next 6-9 months[iv]. This multicloud, hybrid cloud strategy provides the performance and security adaptability and flexibility that enterprises need in today's hyperconnected environment. This is especially true for financial institutions that are finding the limits and liabilities of public clouds.

92%
of enterprises have a
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80%
of enterprises have a
hybrid cloud strategy

But what does this mean for network connectivity? Multicloud and hybrid cloud add complexity — this complexity requires more sophisticated performance and security.

Today's financial enterprises must pick a network strategy that can...

✓ Support both a data-center-centric and internet enabled cloud model

✓ Deliver scalability, QoS, application performance, and security

✓ Provide a safe user experience when applications are in different clouds

"**More enterprises are moving to a multicloud environment** to support HQ locations, data centers, branch offices and more. Some of them use private cloud for mission-critical applications and PII but want to move into a public cloud for administrative applications or where customer data is stripped out."

- Daniele Loffreda,
Head of Virtualized Edge Solutions Marketing at Ciena

The Rise in **Cyber-Crime**

As expected, the average cost of a data breach (according to the latest report by IBM and the Ponemon Institute[v]) has increased to $4.24 million — a 10% increase from 2019. Interestingly, but perhaps not surprisingly, the average breach cost was $1.07 million higher when remote work was somehow involved; the time it took to contain the breach was protracted.

Also according to the report, the financial sector is paying the second most — only behind healthcare — for data breaches ($5.72 million on average). Compromised credentials were responsible for 20% of breaches, Zero Trust strategies reduced the cost of a breach by $1.76 million and AI-powered and automated security strategies reduced cost by 80%.

$4.24M

$3.86M

Average Cost Per Breach

2020

2021
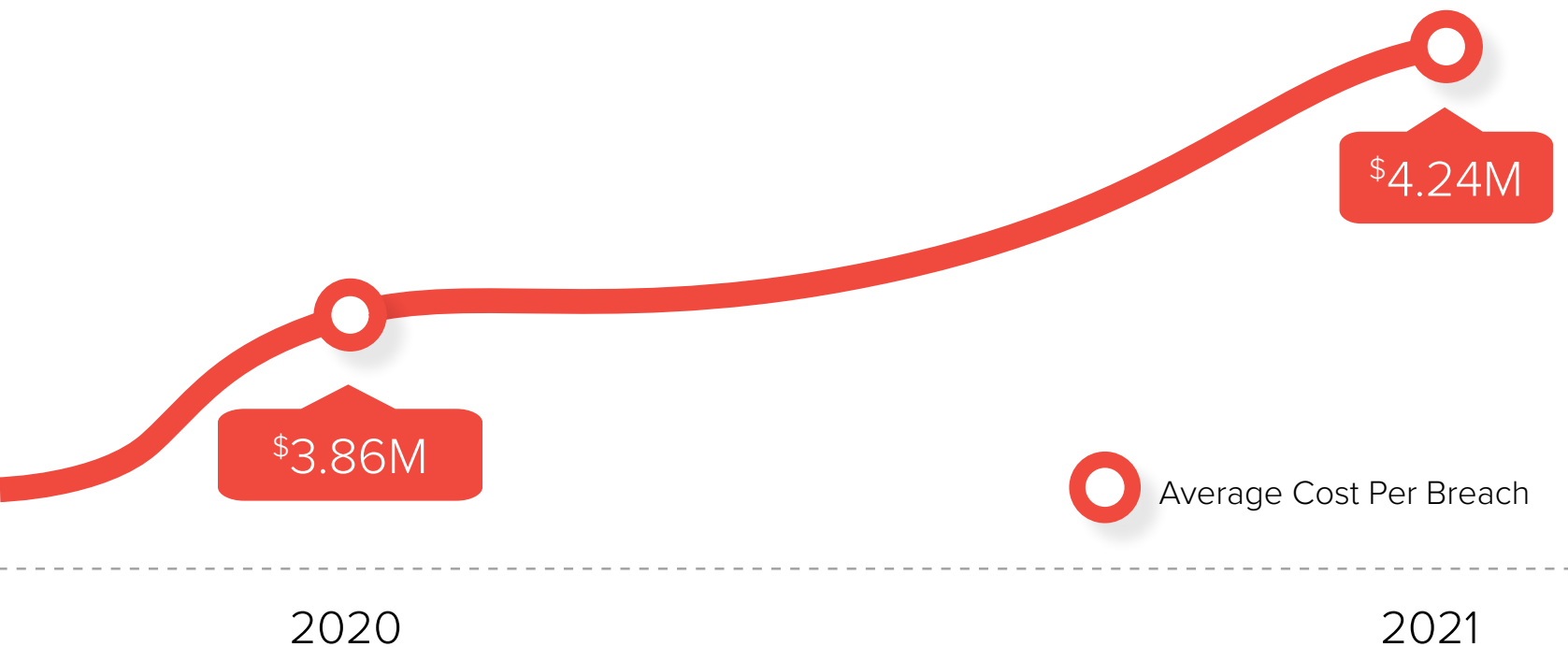
What does this mean for network connectivity? It means enterprises need better, more responsive security services and must continually adapt to the convergence of network and security.

Today's financial enterprises should ask themselves…

✔ How secure is the underlying network service connecting the organization's locations?

✔ How strong is the security posture at each of the organization's locations?

✔ Are VPNs providing the required security for employees working remotely?

Section 2:
How Business Ethernet Services Meet
Enterprise Needs

Top Network **Priorities**

Bandwidth capacity: Delivering application performance while being adaptable to fluctuating bandwidth needs

Decrease cost: Looking for highest capacity/performance for lowest cost

Reduce complexity: Network staff should support applications rather than network management

Flexible: Capable of quickly scaling to meet business requirements

Secure application access: Onsite, remote or mobile

Top Ethernet Services **Benefits**

Scalability

- Low latency
- High throughput
- On demand

Affordability

- Lower cost
- More affordable than MPLS
- Metro and regional coverage

Simplicity

- Easier to plan, deploy, and manage at scale
- Customer-controlled routing and IP addressing
- Critical apps are managed and controlled in-house

Security

- Strengthened branch security
- Layer 2 security features
- Device and cloud-based FW/vFW and SSE

Section 3:
Business Ethernet Services Types and Market Outlook

Market Outlook

Port Volume Growth[i]	• Solid port growth in Q1 2022 • 10GigE+ speed saw a 5.7% increase in shipments • 1GigE speed saw a 4.3% increase in shipments
Revenue Volume Growth[ii]	• Relatively flat growth in Q1 2022 • Slight decline in revenue for 10GigE+ • Slight increase in revenue for 1GigE
Ethernet DIA	• Primarily for public cloud connectivity • Single-ended point-to-network Ethernet connection from an enterprise site to an ISP • Highest port growth outlook through 2023[viii] • Addresses key cloud connectivity needs, like secure access, bandwidth scalability, QoS assurance and application performance
E-Private Line	• Top service for private cloud and inter-data center connectivity • Dedicated point-to-point Ethernet connection between two enterprise sites or data centers • Can be either primary connection or serve as redundant service for BC/DR
Ethernet Virtual Private Line (EVPL)	• Steady growth forecast through 2026[ix] • A dedicated point-to-point Ethernet connection that supports multiple virtual connections between two enterprise sites
E-Access to VPN	• Hybrid Ethernet/IP VPNs that link to public services or private clouds • Growth peaked in 2021, but CIOs are turning away from VPNs citing security risks[x]

Section 4:
Industry Vertical Examples

Finance — The Second Largest Ethernet Services Segment

The rate and amount of data generated by the financial sector continues to accelerate with big data analytics lying at the foundation of the data explosion.

- Financial institutions generate terabytes of data every day

- "Smart" branches, RPA, high-frequency trading, payments processing and other digital applications require scalable, high-speed, low-latency connectivity

- New cloud-based digital applications and customer data must be accessible 24/7

- High-frequency trading programs sift through huge volumes of data and execute trades within nano-seconds

- Congestion, outages and cyber-attacks impact customers and the ability to comply with security requirements

+700%

Data Generated Every Second

Conclusion

Network demands (both from employee and customer perspectives) are getting more complex and more intense. More applications, more attempted breaches, more sophisticated offerings and evolving needs not only mean more bandwidth, but also more flexibility.

Ultimately, today's financial institutions need networks that can...

- ✓ Support the "Great Unknown" by accelerating digital transformation, evolving to multi-cloud environments and strengthening security

- ✓ Support WANs with scalable bandwidth as a means of improving application performance, while delivering secure access and lowering cost and complexity

- ✓ Deliver on enterprise connectivity requirements with DIA, EPL and EVPL

IRIS networks is built on wholly owned fiber assets along with industry-leading Ciena technology, which delivers scalable, flexible, high-capacity data transport and protects mission-critical traffic. Ciena has proactively partnered with financial services organizations from banks to fintech to trading firms and more for decades. This collaboration helps drive research and development for the evolution of optical packet and virtualized networking technologies, helping to develop the financial services networks of the future.

We, too, partner with our financial services customers and are always available to consult or answer questions you might have.

You can reach us at **865-448-4747, connect@irisnetworksusa.com** or **www.irisnetworksusa.com.** We welcome that chance to assess your current network assets and build a long-term network strategy around your needs for bandwidth, security, cloud connectivity, and business performance.

> In the meantime, visit our
>
> Financial Services Network Resource Hub
>
> for more insights about evolving financial networks.

[i] "Future Forum Pulse Summer Snapshot", https://futureforum.com/pulse-survey/, visited Aug 2, 2022

[ii] "70% of Organizations Do Not Provide Completely Connected User Experiences, New MuleSoft Study Reveals", MuleSoft, https://www.mulesoft.com/press-center/feb-2022-connectivity-benchmark-report, visited Aug 2, 2022

[iii] "Flexera: 92% of enterprises now have a multi-cloud strategy", ITP.net, https://www.itp.net/infrastructure/cloud/96541-92-of-enterprises-now-have-a-multi-cloud-strategy, visited Aug 2, 2022

[iv] "Banking on Open Hybrid Multicloud", IBM, https://www.ibm.com/thought-leadership/institute-business-value/report/banking-hybrid-multicloud, visited Aug 2, 2022

[v] "Cost of a Data Breach Report 2021", IBM Corporation, July 2021

[vi] IDC Press Release: "Worldwide Ethernet Switch Revenues Increased 12.7% Year Over Year in the First Quarter of 2022 While Router Market Revenues Increased 3.5%, According to IDC", Jun 8, 2022

[viii] "STATFlash: Ethernet Bandwidth Surges on Migration to Gigabit Services", Vertical Systems Group, https://www.verticalsystems.com/2019/09/25/statflash-u-s-carrier-ethernet-dynamics/, visited Aug 2, 2022

[ix] Abstract: "Virtual Private LAN Service Market - Forecast(2022 - 2027)", IndustryArc, https://www.industryarc.com/Report/19221/virtual-private-lan-service-market.html, visited Aug 2, 2022

[x] Death Knell for the VPN?", David Ramel, Virtualization & Cloud Review, https://virtualizationreview.com/articles/2022/01/05/vpn-demise.aspx, visited Aug 2, 2022