Guidehouse

AUGUST 2025

CEFLI Webinar

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CEFLI Reminders

The Presentation Deck

- The presentation deck is available now, on this page: https://cefli.org/webinars/

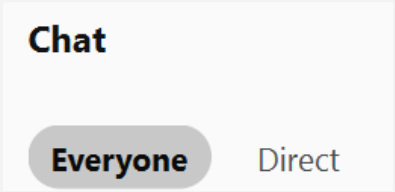
Post-Event Communication

We will email the following information to you in the next few days:

- A link to the recording
- A copy of the slides
- A Certificate of Attendance template (to those who attended the live event)

Questions are Welcomed!

- Please use the **Chat** function
- Send questions via chat to “Everyone”



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Presenters

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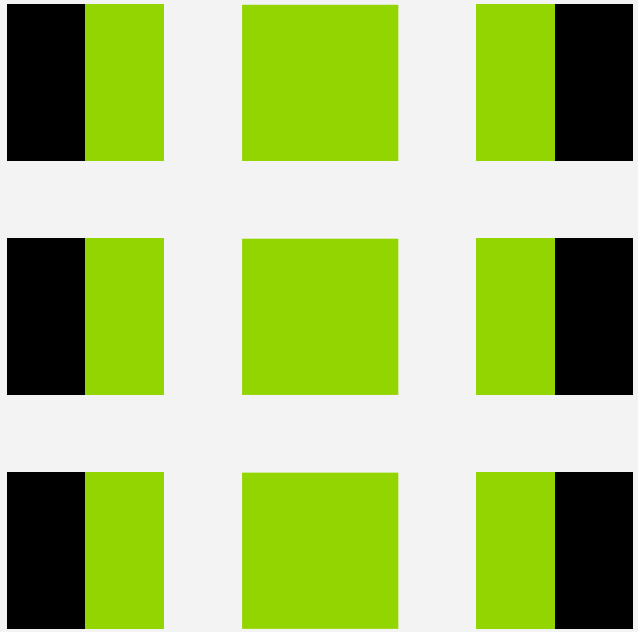

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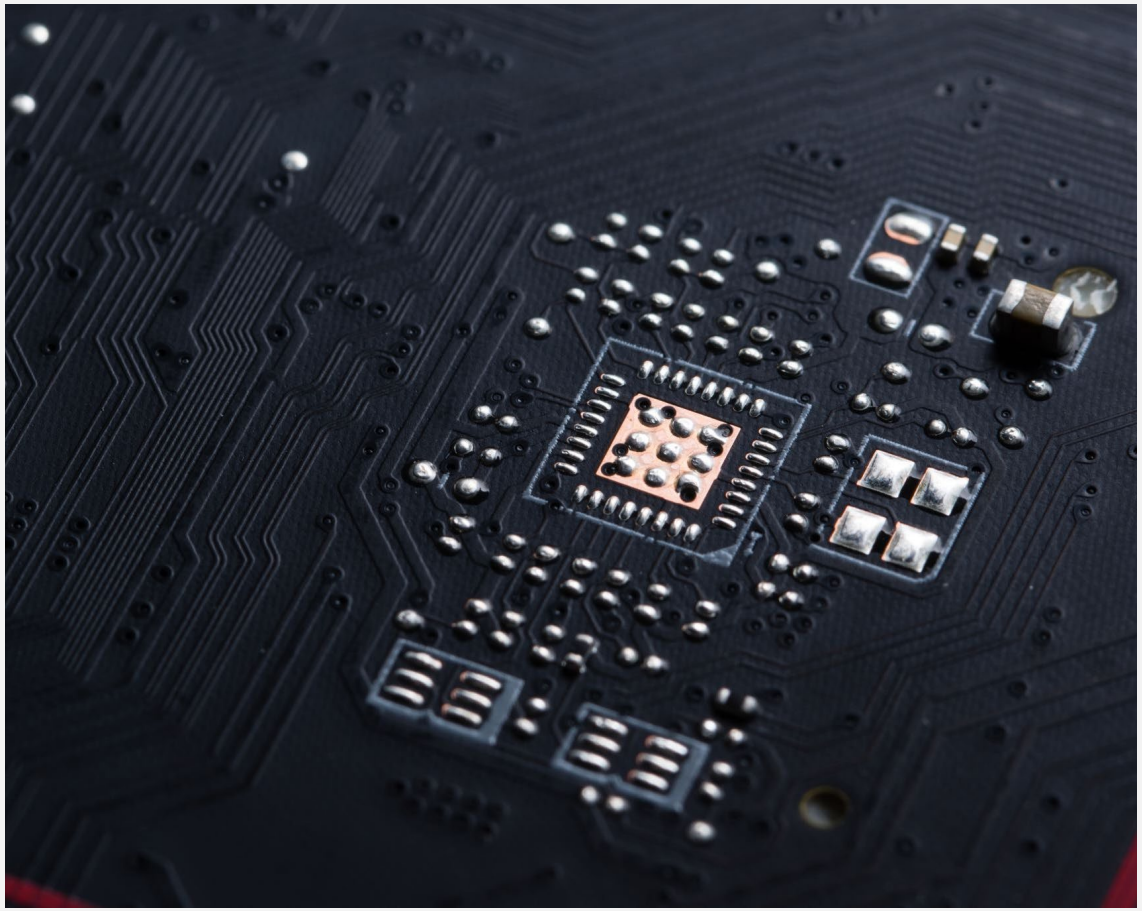
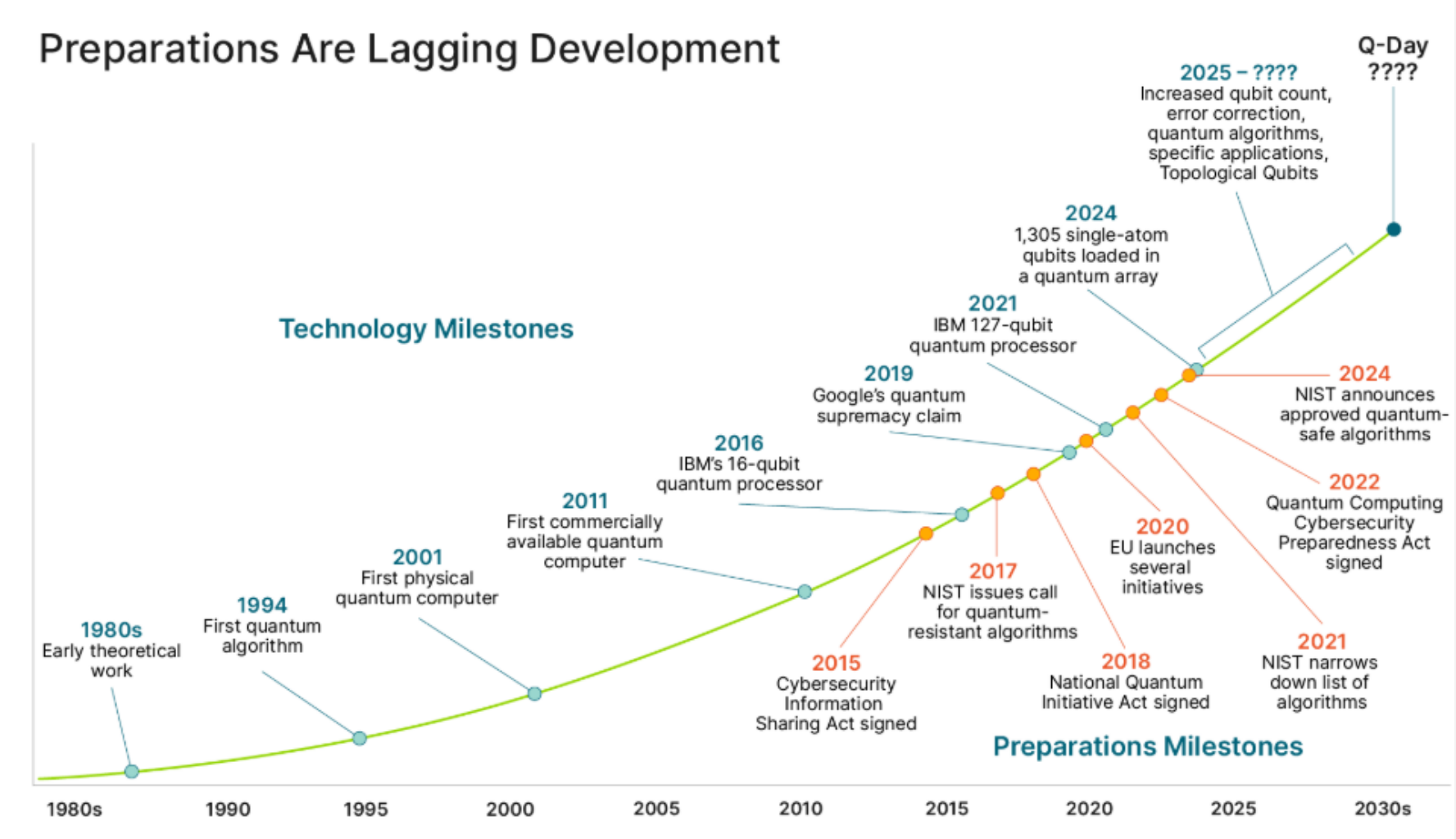
What is Quantum Computing?

- ✓ Quantum computing uses quantum bits or qubits for processing information versus 1's & 0's used in traditional computing.
- ✓ Qubits can exist in multiple states simultaneously through superposition.
- ✓ Entanglement links qubits, enabling complex computations beyond classical limits.
- ✓ Quantum algorithms can solve certain problems faster than classical algorithms.



Countdown to Q-day



Quantum and Compliance

Breaks Today's Encryption:

Quantum computers are expected to one day crack widely used encryption (RSA, ECC) threatening data security and privacy regulations (GDPR, HIPPA, etc.)

Accelerates Risk Modeling:

Can enhance fraud detection, optimization of claims activities and simulate scenarios well **beyond current system capabilities**.

Urgency of "Quantum-Ready" Compliance:

Regulators and industry bodies are already urging firms to being **quantum risk assessments** and explore **post-quantum cryptography**.

What can Quantum do Today?

Type	Tools/Platforms	Maturity
Simulations	IBM, Zapata, Azure	Early Use
Optimization	D-Wave, 1QBit	Applied Pilots
QKD	ID Quantique, Toshiba	Commercial Use
PQC	NIST Standards, Open Libraries	Transitioning
QML	Xanadu, IBM Qiskit	Experimental

Quantum Computing Applications in the Near Future

Cryptography	Developing post-quantum cryptographic algorithms
Optimization	Solving complex optimization problems in logistics, finance, etc.
Drug Discovery	Simulating molecular interactions to find new drugs
Materials Science	Designing novel materials with desired properties

White House' Executive Order (4144 & 14144 Amend.)

Summary of Changes:

- Scaled back from Biden's 14028 and 14144 on vendors to provide SBOMS to the fed agencies. It is made voluntary or removed altogether.
- Scales back aggressive deadlines and reporting structures on Zero Trust architectures.
- Some of the federal acquisition compliance mandates are eased, offering agencies more discretion. Slows the implementation pressure.
- Incident reporting and coordination with CISA still matters but reduces mandatory coordination protocols. Allows agencies more flexibility in managing disclosures.

Noteworthy Highlights:

- **PQC Acceleration**: Federal agencies remain committed to transitioning toward **quantum-safe encryption**, in line with NIST recommendations. This opens the door for more concrete timelines, technical guidance, and pilot projects. **Explains why we are seeing traction from CMS in Quantum Assessments**.
- **AI Security Refocus**: The AI component of the Order pivots away from broad regulatory frameworks and toward practical risk mitigation – emphasizing vulnerability detection, secure deployment, and threat modeling.
- **Integrated Cyber Strategy**: The federal government is clearly aligning software security, quantum resilience, and AI robustness as interrelated pillars of national cyber readiness.

Source: https://www.whitehouse.gov/presidential-actions/2025/06/sustaining-select-efforts-to-strengthen-the-nations-cybersecurity-and-amending-executive-order-13694-and-executive-order-14144/

Where should you start? – Quantum Readiness Roadmap

Preparing Financial Organizations for the Quantum Era – As quantum computing advances, today's cryptographic systems face unprecedented threats. Financial organizations must act now to ensure data security against future quantum attacks. A Quantum-Readiness Roadmap (QRR) provides a step-by-step strategy to protect critical assets and build resilience—leveraging NIST-recommended post-quantum algorithms such as CRYSTALS-Kyber and Dilithium for long-term cryptographic assurance.

1. Assess Current Cryptographic Assets

- Inventory all cryptographic algorithms, protocols, and key lengths.
- Map cryptographic dependencies across internal and third-party systems.
- **Deliverables:** Comprehensive Cryptographic Asset Inventory, Risk Analysis Report, Cryptographic Dependency Map.

2. Identify Quantum Threats

- Analyze vulnerabilities to quantum threats like "Harvest Now, Decrypt Later."
- Prioritize critical systems and data most at risk.
- **Deliverables:** Quantum Threat Landscape Analysis, Prioritized Risk Lists, Readiness Gap Analysis.

3. Adopt Hybrid Cryptography

- Transition to hybrid cryptographic models combining classical and NIST-approved quantum-safe algorithms (e.g., CRYSTALS-Kyber, Dilithium).
- Update cryptographic policies and implement migration toolkits.
- **Deliverables:** Migration Plan, Updated Policies, Implementation Toolkit.

4. Monitor and Adapt

- Deploy monitoring frameworks to track cryptographic performance and readiness.
- Adapt flexibly to new quantum-safe standards as technologies evolve.
- **Deliverable:** Monitoring Framework and Adaptation Plan.

Why Act Now?

Data Harvesting is Real

- Adversaries are already capturing and storing encrypted data today, with the intent to decrypt it once quantum computers mature. Delaying action increases exposure of your sensitive long-term data.

Long Cryptographic Transition Timelines

- Transitioning to post-quantum cryptography (PQC) is a multi-year effort involving inventory, risk analysis, upgrades, and testing. Starting early reduces migration risk and avoids costly last-minute changes.

Regulatory Pressure is Growing

- Governments (e.g., U.S. Executive Order 14028, NIST PQC standards, EU ENISA recommendations) are pushing for quantum-safe compliance. Early adoption ensures alignment and avoids reputation risks, future penalties or audit failures.

Gain Competitive and Client Trust Advantage

- Organizations that act now can demonstrate proactive compliance risk management functions, building customer trust, investor confidence, and positioning the organization as a security-forward leader in the industry.

Get Quantum-Ready Today.

Secure your Future.

Guidehouse QuantumSafe Whitepaper
@LinkedIn – Jeff Zych

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Thank You

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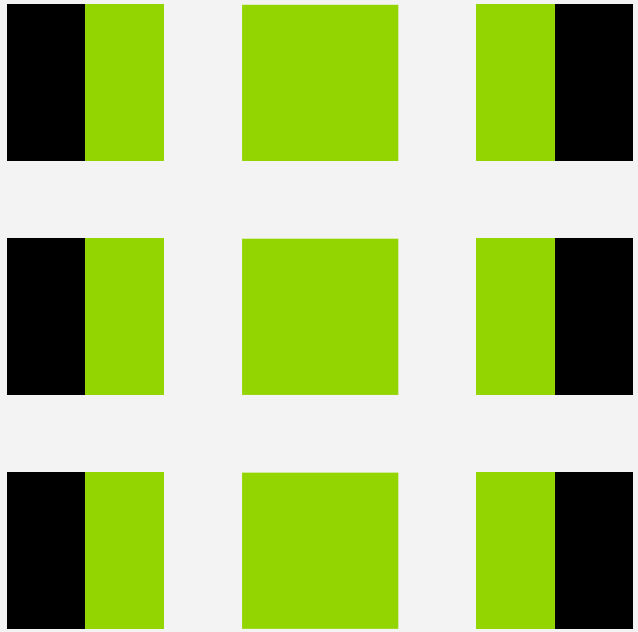

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Questions?

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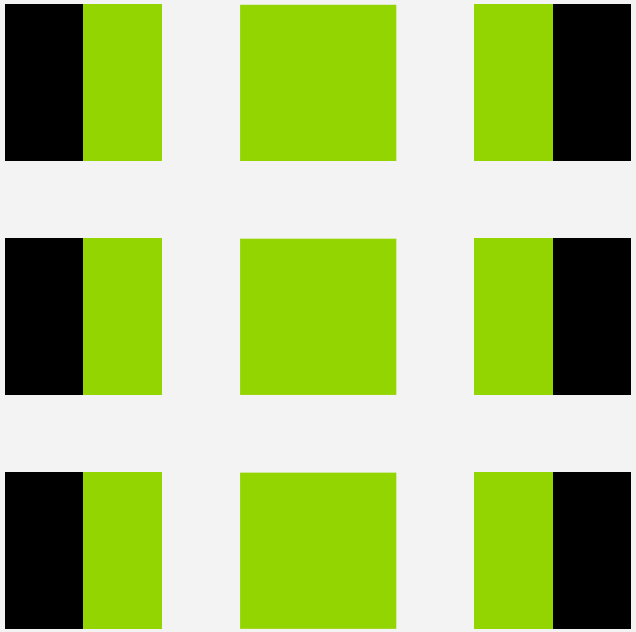

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- CEFLI is not a marketing organization. It is a compliance and ethics organization whose mission is to support professionals by providing educational opportunities that address current compliance matters.

Thank You for Joining us Today!

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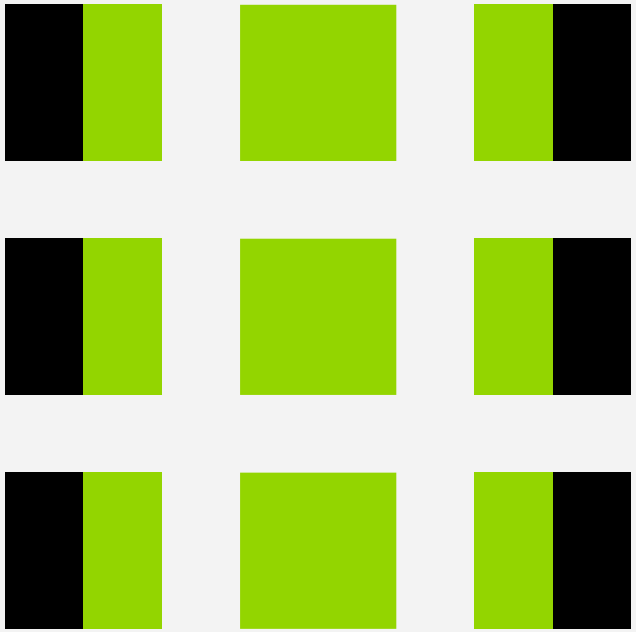

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