

**TALK
DATA
TOME**

Navigating the Data Storage Maze: Conquering Security, Complexity, and Efficiency Challenges



James Langley
Solutions Consultant
Hitachi Vantara Federal

TALK DATA TO ME

October 11th

We are a trusted government IT solutions provider, delivering software and support solutions to Federal, State, Local, and Education customers. Carahsoft maintains dedicated teams to support sales and marketing for all its vendors.

- Introduction
- The Rising Tide
- Challenge 1: Security
- Challenge 2: Complexity
- Challenge 3: Efficiency
- Questions from audience
- Next steps

Meet James

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Job

Master Solutions Consultant

Background

25 years IT (5 years w / Hitachi)

Previous roles at Brocade, EMC Partners, and US Department of State

Multiple published pieces in FedTech, GCN, FCW, Fed News Network, and Cyber Defense Magazine

Certs

PMP, Hitachi TPS, VMware VSP, VTSP, HP ATP, MCP, EMCPP

I love to

Move it, Move it.

Email

james.langley@hitachivantarafederal.com

Connect

LinkedIn: [james-langley-uva2000](#)

The Rising Tide: Managing the Deluge of Data

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Mobile Apps



Machine Data



Drones



Thermal Imaging



Surveillance



Financial Services



Sensors



Healthcare Data



Audio Files



Video Footage



Emergency Response Data



Streaming Media

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POLL***

Out of the Three, What is Your Top Data Storage Challenge?

The image features a solid red rectangle in the center, which serves as a background for the text. The text "Data Security" is written in a white, bold, italicized sans-serif font. The entire composition is set against a black background, which is decorated with numerous white-outlined circles of varying sizes, some of which have a soft glow effect.

Data Security

Fortifying Your Data: Tackling Security Challenges

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Business Priorities are Driving Digital Transformation in Multicloud Era.

Through 2025

99%

Of Cloud Security Failures will be enterprise's fault.

Through 2025

90%

of organization

That fail to control public cloud use will inappropriately share sensitive data.

During 2022 FH

236.1

Million

Total number of Ransomware attacks worldwide.

• **Users and Endpoints**

60% of knowledge workers are remote, and at least 18% will not return to the office.

• **Apps and Data**

By 2025, 45% of organizations worldwide will have experienced cyber attacks

• **Cloud Infrastructure**

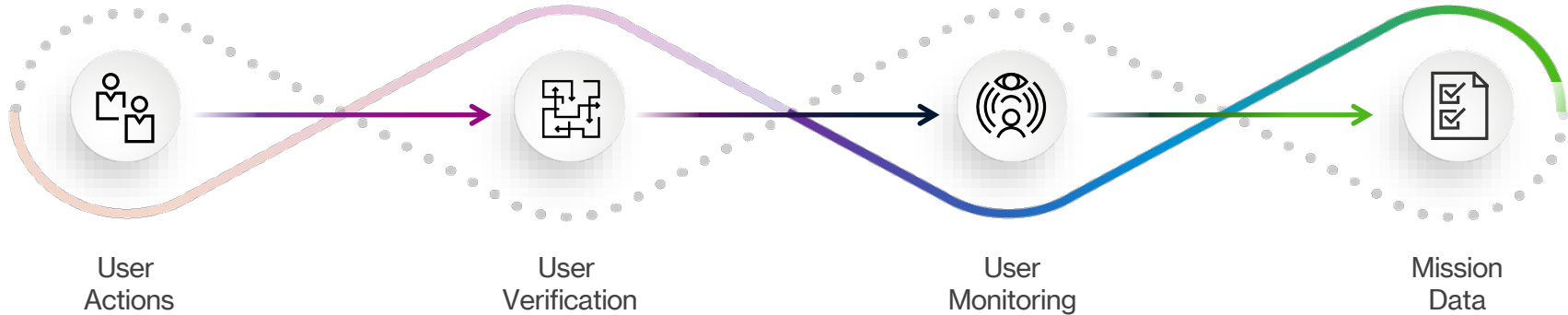
By 2025, over 95% of new workloads will be deployed on cloud-native platforms

Fortifying Your Data: Federal Guidance

- Federal Information Security Modernization Act (FISMA)
- National Institute of Standards and Technology (NIST) Cybersecurity Framework and NIST Special Publication 800-207
- Cybersecurity and Infrastructure Security Agency (CISA)
- Executive Order (EO) 14028 – Improving the Nation's Cybersecurity
- Department of Defense (DoD) Zero Trust Reference Architecture



Fortifying Your Data: Zero Trust Principles



Guiding Principle – “Never trust, always verify.”



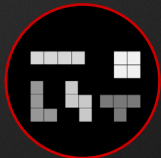
Assumption of Zero Trust

- Least Privilege Access



User & Device Authentication

- Continuous Verification
- Continuous Monitoring



Micro-Segmentation



Data Encryption



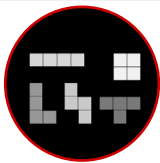
Adaptive Security



User Education & Training

Fortifying Your Data: Storage Area Networks

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- **Network Segmentation**

- WWPN Zones
- vSAN / Virtual Fabrics
- FC Routing



- **Authentication and Authorization**

- RBAC Controls
- IAM Solutions
- MFA



- **Data Encryption**

- Data-at-Rest (FIPS-140-2 & FIPS-140-3)
- Data-in-Flight (Switch to Switch Encryption)
- HTTPS API or Admin Access



- **Continuous Monitoring and Audits**

- Anomaly Detection & SIEM Log Analysis
- Zero Trust Operating Policies
- Regular Security Audits and Assessments



- **User/Admin Education and Training**

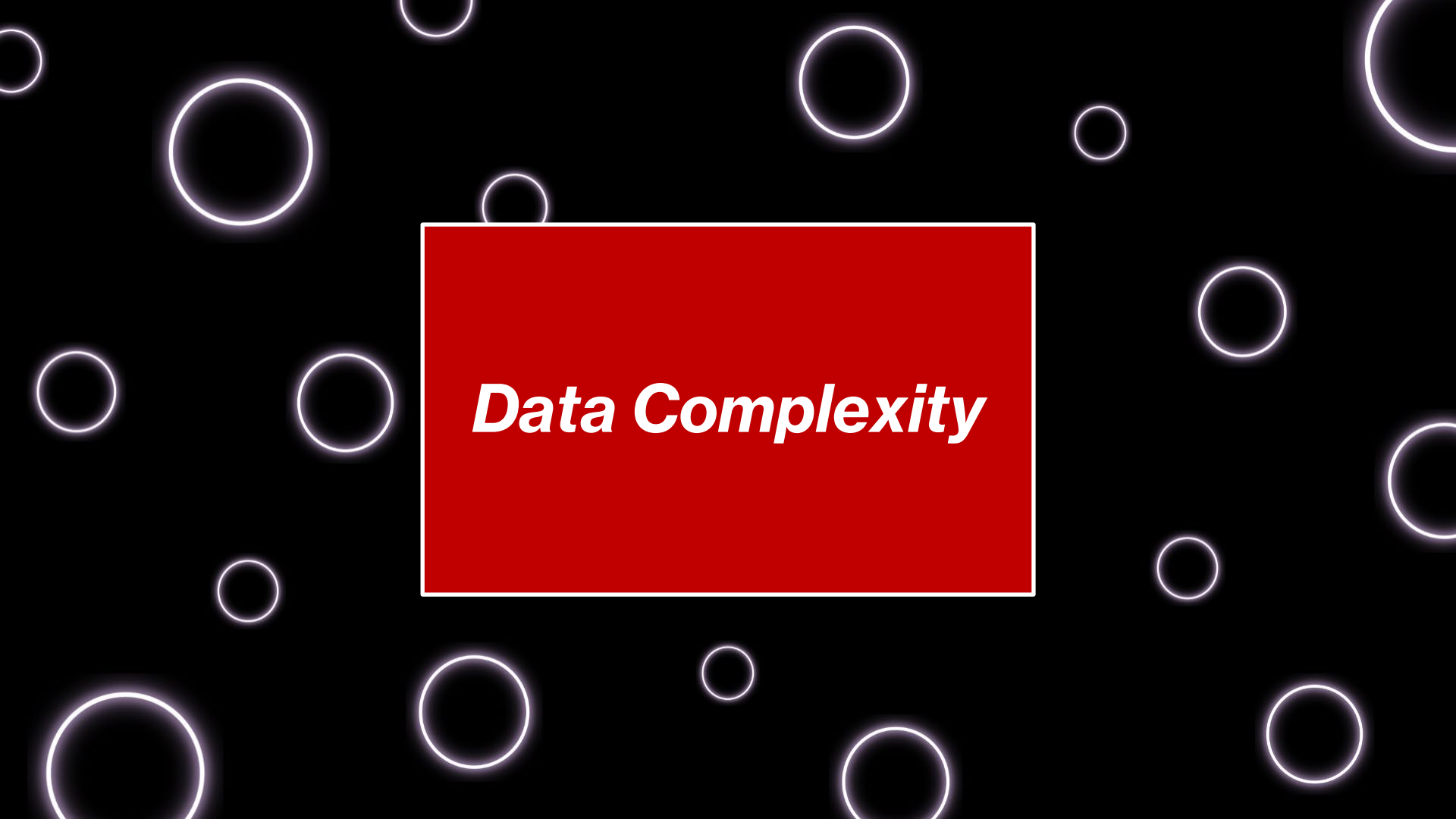
- Educate on Zero Trust
- Understand Role(s) in Zero Trust
- Train the Entire Application Support Stack



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How Mature is Your Organization's Adoption of Zero Trust?



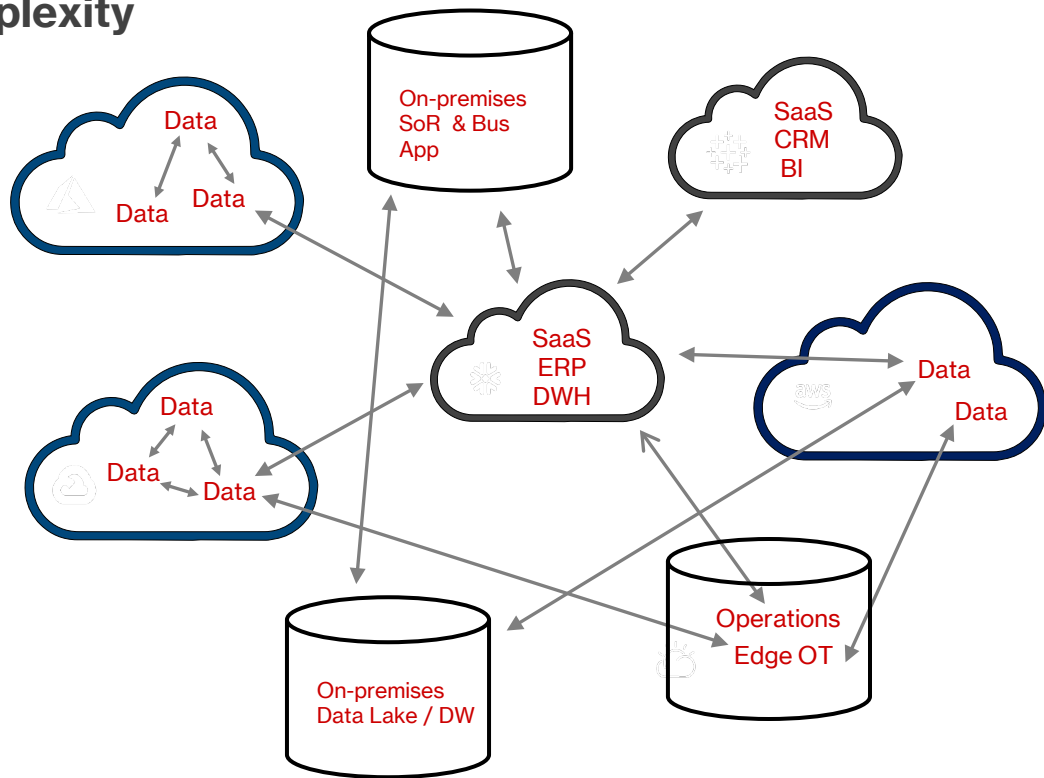
Data Complexity

Unraveling the Knot: Simplifying Complexity in Data Storage

Multi-Cloud needs lead to Data Complexity

- **77%** IT decision-makers distrust the data they use
- **89%** Enterprises have data distributed across multiple clouds
- **56%** CDOs feel that access and prep is biggest data activation challenge

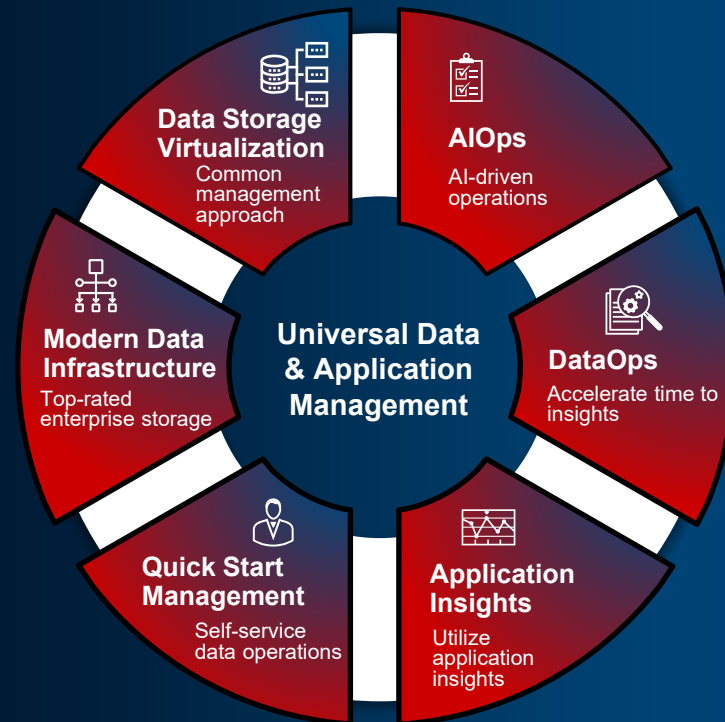
Cost	Risk	Value
↑	↑	×



Unraveling the Knot: Universal Data Management Architecture

An **End-to-End Data Management Framework** to simplify all data management activities across disparate data silos and applications.

- ✓ Deliverable at **any scale**
- ✓ Accelerates **data-driven outcomes**
- ✓ Reduces **cost and governance risks**
- ✓ Achieves **data agility and efficiency goals**



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Does Your Organization Have a Data Governance Strategy? If So, How Mature is Your Data Governance, Integration, and Analysis Regimes?

A red rectangle with a thin white border is centered on a black background. Inside the rectangle, the words "Data Efficiency" are written in a white, bold, italicized sans-serif font. The background is decorated with numerous white circles of varying sizes, some of which have a glowing or neon-like effect.

Data Efficiency

Efficiency Unleashed: The Need to Maximize Data Storage

- It is estimated that **90% of the world's data** was generated in the **last two years** alone.
- In a single minute in 2021, there were approximately **4.5 million videos** viewed on YouTube, **511,200 tweets** posted on Twitter, and **188 million** emails sent, according to Statista.
- Businesses, on average, saw their data grow by **40% per year**, as reported by Forbes.
- Data centers, which house and process much of this data, are energy-intensive. In 2020, data centers consumed about **1% of the world's total electricity**, as per the International Energy Agency (IEA).
- Data centers are responsible for about **2% of global greenhouse gas emissions**, roughly equivalent to the emissions from the airline industry, according to a study by Nature Communications.



Efficiency Unleashed: Storage Virtualization removes Silos

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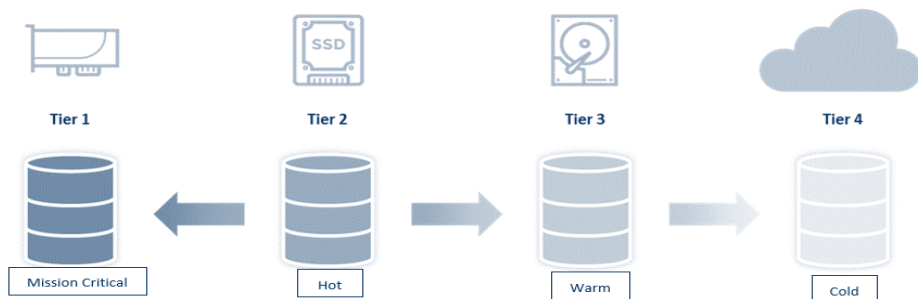


- Improve Utilization & Eliminate Islands of Storage
- Centralize Operations & Administration
 - Maximize Asset Return on Investment
 - Data Mobility & Migration Ease
 - Optimize Performance and Availability

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Efficiency Unleashed: Right Data. Right Place. Right Time

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» Tiered Data Storage

- Data is managed in groups of volumes by means of a concept known as tiers.
- Each tier corresponds to certain operational requirements such as performance and cost.

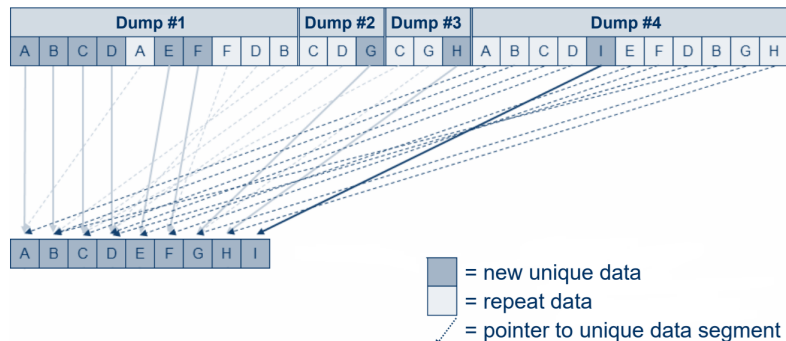
Benefits include:

- Data Classification
- Cost Efficiency
- Performance Optimization
- Data Lifecycle Management
- Automated Data Tiering
- Scalability and Flexibility
- Data Mobility and Migration
- Disaster Recovery and Redundancy

Efficiency Unleashed: Maximizing Data Storage Potential



run-length encoding



»» Data Compression

- Data compression identifies the repetition of information that can be expressed more efficiently.
- Compression occurs via an algorithm such as:
 - Dictionary-Matching Algorithms
 - Run-Length Encoding (RLE)
 - Entropy Encoding

»» Data Deduplication

- Data deduplication focuses on identifying and eliminating duplicate or redundant data within a dataset or storage system.
- Key Data Deduplication Concepts:
 - Single-Copy Retention
 - Hash Functions
 - In-Line and Post-Process Operations

Efficiency Unleashed: Sustainable Data Storage

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Hitachi data storage solutions are certified under various schemes and promoting energy saving and visualization of emissions.

Are your solutions certified for sustainability?

» CFP (Carbon Footprint of Products)

A scheme of “visualizing” CO₂ equivalent emissions obtained by converting Greenhouse Gas emissions from the entire life cycle stages of a product (goods or service), i.e., from the raw material acquisition stage to the disposal and recycling stage.



Hitachi's storage products (Hitachi Virtual Storage Platform E590, E790, E1090, 5200 and 5600) are certified under the CFP Program

Reference information:

[Overview | CFP Program \(cfp-japan.jp\)](#)

[The Japan EPD Program by SuMPO \(ecoleaf-label.jp\)](#)

» ENERGY STAR Data Center Storage v2.0

The United States Environmental Protection Agency defines standards for power consumption and other key indicators. Computers, servers, imaging equipment, and display products that satisfy these standards bear the international ENERGY STAR logo.



Hitachi's storage products (Hitachi Virtual Storage Platform E590, E790 and E1090) are certified under the USA ENERGY STAR program.

Reference information:

[Data Center Storage Version 2 || ENERGY STAR](#)

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How Important Are Efficiency, Sustainability, and Carbon Reduction Initiatives in Your IT Strategy?

Portfolio

Products. Software. Solutions & Consulting Services.

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Engineer Data-Driven Outcomes

Digital Advisory

Industry Consulting Services
Solution Co-Creation

Digital Engineering

Experience Design
Application Engineering

Data-Driven Insights

360 Degree Visibility
Analytics as a Service

Optimize the Data Fabric

Data Modernization

Hybrid Cloud Data Platforms
Enterprise Data Architecture

DataOps

Data Engineering
Pipeline Automation

Data Governance

Data Cataloging
Governance and Compliance

Modernize the Digital Core

Digital Infrastructure & Ops

Hybrid Cloud Data Platforms
Enterprise Data Architecture

App Modernization

Re-platform for Cloud-native
Modernize ERP

Cloud Ops

Cloud Engineering, DevSecOps,
FinOps, Site Reliability
Engineering, RunOps

Powered by **Digital Infrastructure** | **Software** | **Consulting Services & Digital Solutions**

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Our Customers

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Defense



Intelligence



Civilian

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Q&A



***TAKE
ACTION***

Conquering the Data Storage Maze: Key Takeaways

- Takeaway 1: Data Security is Non-Negotiable.
- Takeaway 2: Simplify to Thrive.
- Takeaway 3: Efficiency Drives Value.

Embarking on Your Data Storage Journey: Closing Remarks

1. **Continue Learning** with additional resources to provided after today's webinar
2. **Schedule a Discussion** with a Hitachi Vantara Federal Expert
3. **Attend the Next Webinar** in the Talk Data to Me series

A virtual series from Hitachi Vantara Federal

Talk Data to Me



10/25 | eDiscovery Unraveled:
Uncovering Process Realities and
Technology Integration



Details & Register



T shirt Raffle

- 10 attendees will win a Talk Data to Me T shirt
- Drawing takes place from today's attendees
- Winners will be notified via email within 24 hours that they have won
- We will collect winners' address and size to ship out T shirts



For more information, please don't hesitate to contact our team.

Jordan McFarland

Jordan.McFarland@carahsoft.com

571-662-3314



- James Langley
- james.langley@hitachivantarafederal.com
- LinkedIn: <https://www.linkedin.com/in/james-langley-uva2000/>

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WHAT TOPICS WOULD YOU LIKE TO HEAR ON FUTURE SESSIONS?

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