WEEK 7: REAL-WORLD APPLICATIONS

RECAP: WEEK 6

We focused on use cases of cloud technology, particularly Microsoft Azure, for executive leaders.

We covered a range of use cases from ensuring business continuity to leveraging AI for innovation, all aligned with organizational goals.

- BCDR
- Big Data and Analytics
- IoT and Edge Computing
- AI and ML
- DevOps

- Week 1-2: Introduction to Cloud Technology
- Week 3-5: Cloud Strategy and Architecture
- **Week 6-7: Use Cases and Real-World Applications**
- Week 8-9: Benefits and Value Proposition
- Week 10-12: Challenges and Risks
- Week 13-14: Interactive Simulations and Practical Exercises
- Week 15: Course Review and Final Assessment

OVERVIEW: WEEK 7

We will explore industry-specific case studies in sectors such as healthcare, finance, and retail.

These case studies will illustrate practical examples of cloud transformation and highlight the real-world benefits that organizations have achieved.

Finally, interactive activities and strategic discussions will encourage you to apply these insights to your own organizations.

The goal is to help you, as executive leaders, extract actionable strategies and prioritize initiatives that align with your business goals.

REVIEW: BUSINESS OUTCOMES FROM CLOUD USE CASES

Enhanced Agility:
Rapid responsiveness to market changes and customer demands.

Improved ROI:
Better resource allocation and cost-effective solutions boost profitability.

Data-Driven Insights:
Advanced analytics enable smarter, informed decision-making.

Resilience & Continuity:
High availability and disaster recovery ensure business continuity.

Customer Loyalty:
Personalized experiences lead to increased customer retention.

REVIEW: ROLE OF LEADERSHIP IN CLOUD ADOPTION

Vision Setting:
Establish clear, strategic objectives for cloud initiatives.

Resource Commitment:
Ensure adequate investment in technology, talent, and training.

Cross-Functional Collaboration:
Promote alignment between IT, operations, finance, and business units.

Risk Management:
Champion robust frameworks to mitigate risks and ensure compliance.

Continuous Innovation:
Foster a culture that embraces change and leverages emerging technologies.

CHALLENGES IN HEALTHCARE

Data Privacy: Strict regulations like HIPAA require secure data handling

Interoperability: Integrating diverse systems (EMRs, labs) is complex

Cost Pressures: Balancing care quality with budget constraints

Patient Experience: Meeting demands for personalized, accessible care

Scalability: Handling growing data volumes from devices and records

HOW AZURE ADDRESSES CHALLENGES IN HEALTHCARE

Secure Data Handling: Built-in compliance tools ensure HIPAA adherence, simplifying data privacy.

Interoperability Solutions: Azure API for FHIR standardizes data exchange across systems.

Cost Efficiency: The pay-as-you-go model cuts upfront costs, aligning spending with usage.

Patient-Centric Tools: Azure Health Bot powers virtual assistants, improving access and engagement.

Scalable Infrastructure: Elastic resources handle fluctuating data loads, like during peak seasons, without over-provisioning.

SPECIFIC AZURE SERVICES FOR HEALTHCARE

Azure API for FHIR: Standardizes health data exchange

Azure Health Data Services: Manages and analyzes health data

Azure IoT for Healthcare: Connects medical devices securely

Azure AI Health Insights: Extracts insights from clinical data

Microsoft Cloud for Healthcare: Comprehensive solution suite

What is Azure API for FHIR? - Azure API for FHIR | Microsoft Learn

Azure Health Data Services | Microsoft Azure

IoT in Healthcare Solutions | Microsoft Azure

HYPOTHETICAL USE CASE

Hospital System: A multi-location network with fragmented patient data.

Challenge: Clinicians lacked a unified view of patient histories, causing delays and errors.

Solution: Adopted Azure Health Data Services for centralized management and API for FHIR for integration.

Outcome: Real-time record access improved care coordination and reduced duplicate tests.

Benefit: Better patient safety, satisfaction, and efficiency, aligning with quality and cost goals.
This case demonstrates Azure's transformative potential in patient data management.

CASE STUDY 1: GE HEALTHCARE IMAGING

- GE Healthcare's use of Azure Blob Storage
- **Goals:** Cost reduction and flexible storage

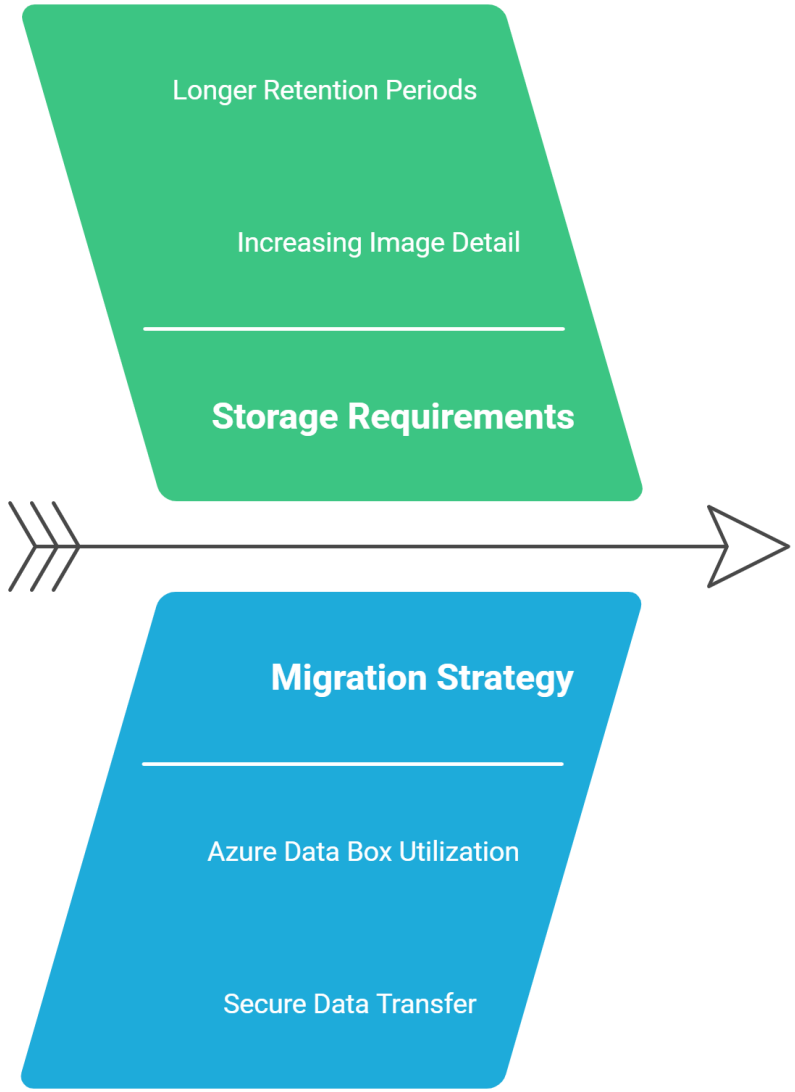
Microsoft Azure Blob Storage provides flexible, economical storage for GE Healthcare's medical imaging team | Microsoft Customer Stories

CASE STUDY 1: MOTIVATION FOR MIGRATION

Cost reduction: Lower infrastructure and maintenance costs

Feature addition: Integration with Edison Datalogue

CASE STUDY 1: CHALLENGES & SOLUTIONS



CASE STUDY 1: BENEFITS REALIZED

Cost savings: Significant reduction in storage costs

Improved efficiency: Faster onboarding and reduced repair time

Scalability: Easy scaling of workloads

POP QUIZ:

Which of the following was a primary motivation for GE Healthcare's migration to Azure?

A. To continue relying on legacy systems
B. To enhance data management and scalability while reducing operational costs
C. To increase manual processes for greater control
D. To focus solely on hardware upgrades

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POP QUIZ:

What key Azure capability contributed most to improving GE Healthcare's operational efficiency?

A. Increased reliance on manual data processing
B. Scalable cloud storage and integrated analytics tools
C. Decentralized data silos
D. Traditional on-premises backup systems

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POP QUIZ:

Which leadership action was most critical in ensuring the success of GE Healthcare's cloud transformation?

A. Minimizing collaboration between departments
B. Providing strategic vision and securing necessary resources
C. Leaving decision-making solely to the IT department
D. Maintaining the status quo of legacy systems

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CHALLENGES IN FINANCE

Regulatory Compliance: Navigating complex rules like GDPR, SOX

Fraud Detection: Identifying anomalies in real-time transactions

Data Security: Protecting sensitive financial information

Legacy Systems: Modernizing outdated infrastructure

Customer Expectations: Delivering personalized, seamless experiences

HOW AZURE ADDRESSES CHALLENGES IN FINANCE

Compliance Tools: Azure Policy enforces regulatory standards

Advanced Analytics: Azure AI detects fraud patterns in real-time

Security Features: Microsoft Sentinel provides threat detection

Modernization: Azure Migrate transitions legacy systems to cloud

Personalization: Azure Machine Learning tailors customer experiences

AZURE SERVICES FOR FINANCE

Microsoft Cloud for Financial Services: Industry-specific solutions

Azure Confidential Computing: Secures sensitive data in use

Azure Blockchain: Enhances transparency and trust

Azure Synapse: Analyzes large datasets for insights

Power Apps: Builds custom financial applications quickly

What is Microsoft Cloud for Financial Services? - Microsoft Cloud for Financial Services | Microsoft Learn

USE CASE: FRAUD DETECTION

A hypothetical regional bank highlights Azure's fraud detection prowess:

Bank: A mid-sized institution hit by growing fraud.
Challenge: Traditional methods couldn't match sophisticated fraud tactics.
Solution: Used Azure AI and Machine Learning for real-time transaction analysis.
Outcome: Cut fraud losses through early detection and prevention.
Benefit: Safeguarded assets and increased customer confidence, supporting risk management.
This case shows how Azure's AI strengthens financial security.

https://download.microsoft.com/download/0/1/5/0150425C-14C7-41F4-97EA-3DE57B678C51/IndUC_FraudDetection.pdf

CASE STUDY 2:

Swiss Re's use of Azure Synapse Analytics and Power BI

Goals: Efficiency, scalability, and cost savings

Swiss Re Drives Deeper, Faster Insights with Azure Synapse Analytics and Power BI | Microsoft Customer Stories

CASE STUDY 2: MOTIVATION TO MIGRATE

Efficiency: Faster report generation and reduced processing times

Scalability: Handle large data loads and scale services as needed

Cost savings: Reduced operational costs

CASE STUDY 2: CHALLENGES & SOLUTIONS

Data handling: Existing system inefficiencies

Migration strategy: Proof of concept to ensure compatibility

CASE STUDY 2: BENEFITS REALIZED

Improved efficiency: Report generation time reduced from months to days

Cost savings: 30-40% savings on several services

Scalability: Ability to scale services during peak times

ACTIVITY

Task: Using the case study details, identify and list the key metrics Swiss Re likely monitored to assess the success of their migration (e.g., report generation time, cost savings percentage, scalability improvements).

Follow-Up:

- Explain how these metrics inform leadership decisions on future investments.
- Propose two additional KPIs that could further enhance strategic decision-making.

CASE STUDY 4: MANUFACTURING

[Mechanical moles, digitally tweaked: TRACTO uses telemetry data in Azure to offer customers real advantages | Microsoft Customer Stories]

CASE STUDY 4: SUMMARY

TRACTO's use of Azure for telemetry data processing

Goals:

- Increase reliability and optimize drilling processes
- Part of a broader digital strategy
- Enhancing digital capabilities
- Improving service delivery

Intelligent solutions for trenchless construction | TRACTO

CASE STUDY 4: MOTIVATION

Improved service for customers

Preparing for future growth

Reduced operational costs

Handle large data loads and scale services as needed

Faster data processing and reduced downtime

CASE STUDY 4: CHALLENGES & SOLUTIONS

Data handling: Existing system inefficiencies

Migration strategy: Use of Azure IoT Hub, Kubernetes Services, and SQL Database

Compliance: Adhering to data protection laws

Real-time processing: Ensuring timely data analysis

Integration: Seamless integration with existing system

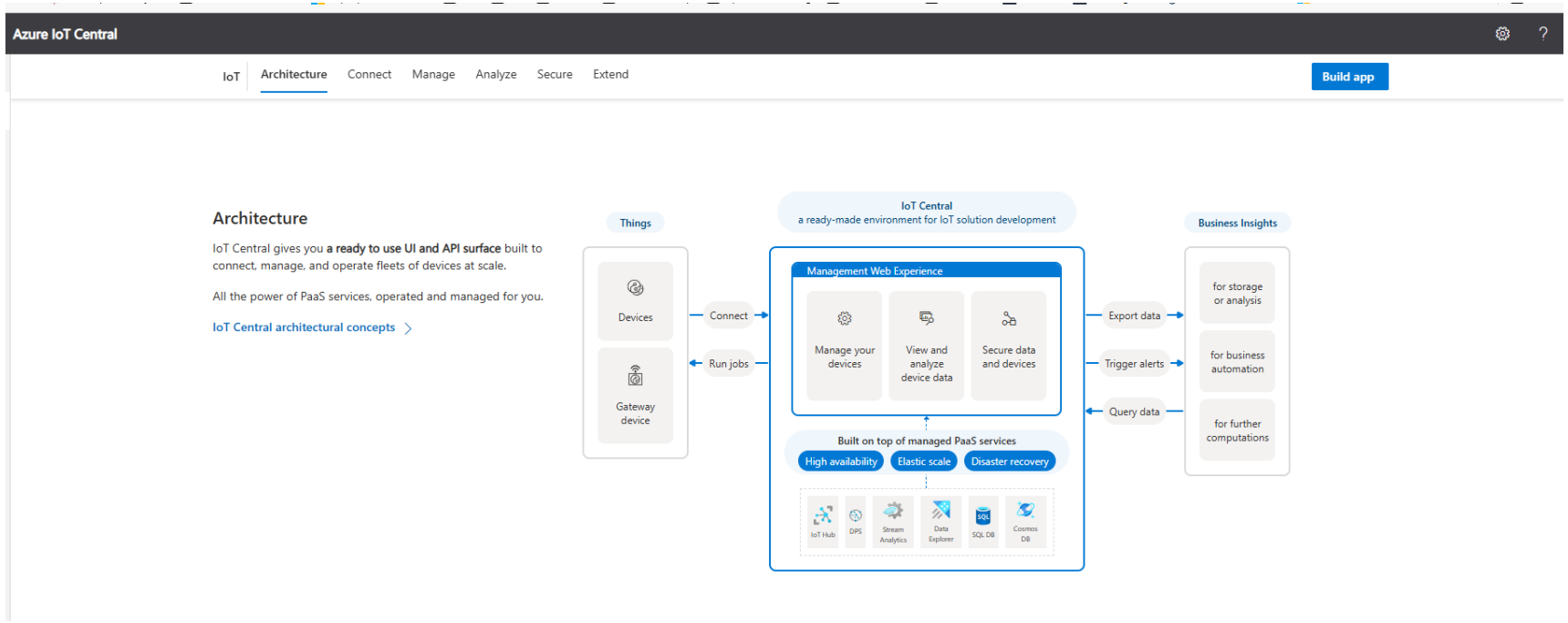
CASE STUDY 4: BENEFITS

- **Improved efficiency:** Real-time data processing and reduced downtime
- **Cost savings:** Significant reduction in operational costs
- **Scalability:** Ability to scale services during peak times
- **Enhanced decision-making:** Better insights from data
- **Customer satisfaction:** Improved service delivery

DEMO: CONNECTING A DEVICE TO IOT CENTRAL

In this demo you will learn how easy it is to add simulated devices to Azure IoT Central. Building the actual device code to send telemetry is beyond the scope of this demo.

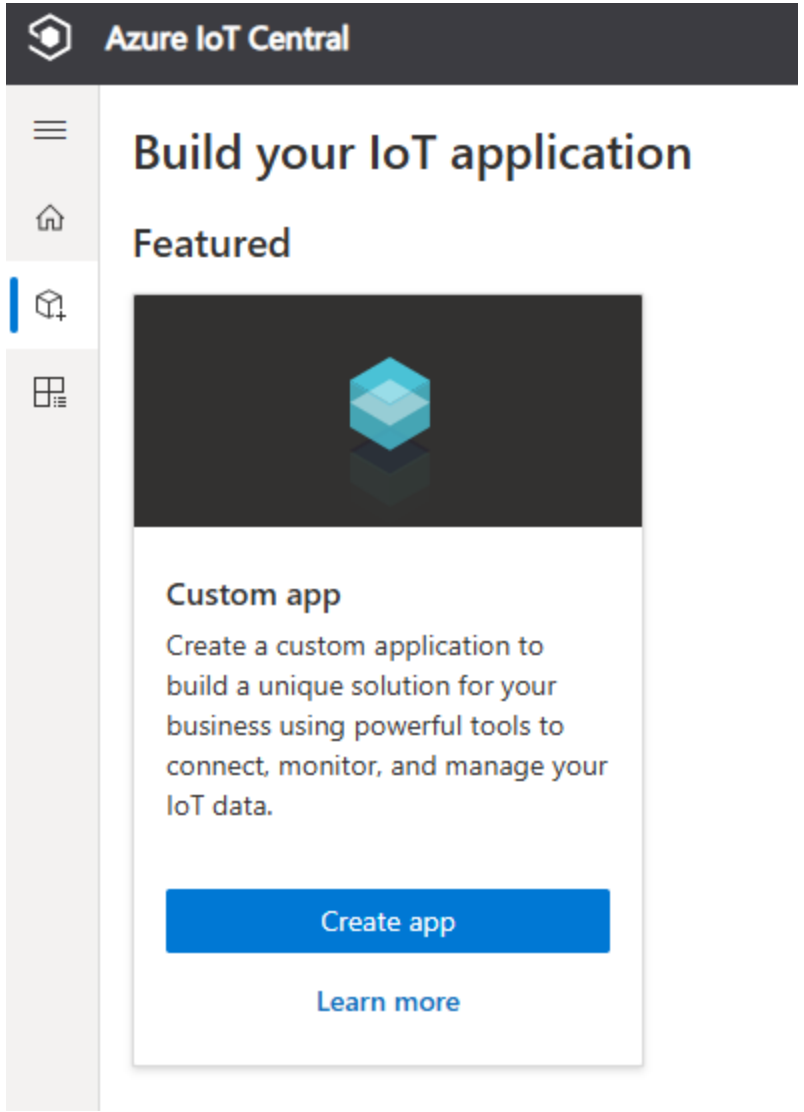
We start by visiting: [Home | Azure IoT Central]



DEMO: CONNECTING A DEVICE TO IOT CENTRAL

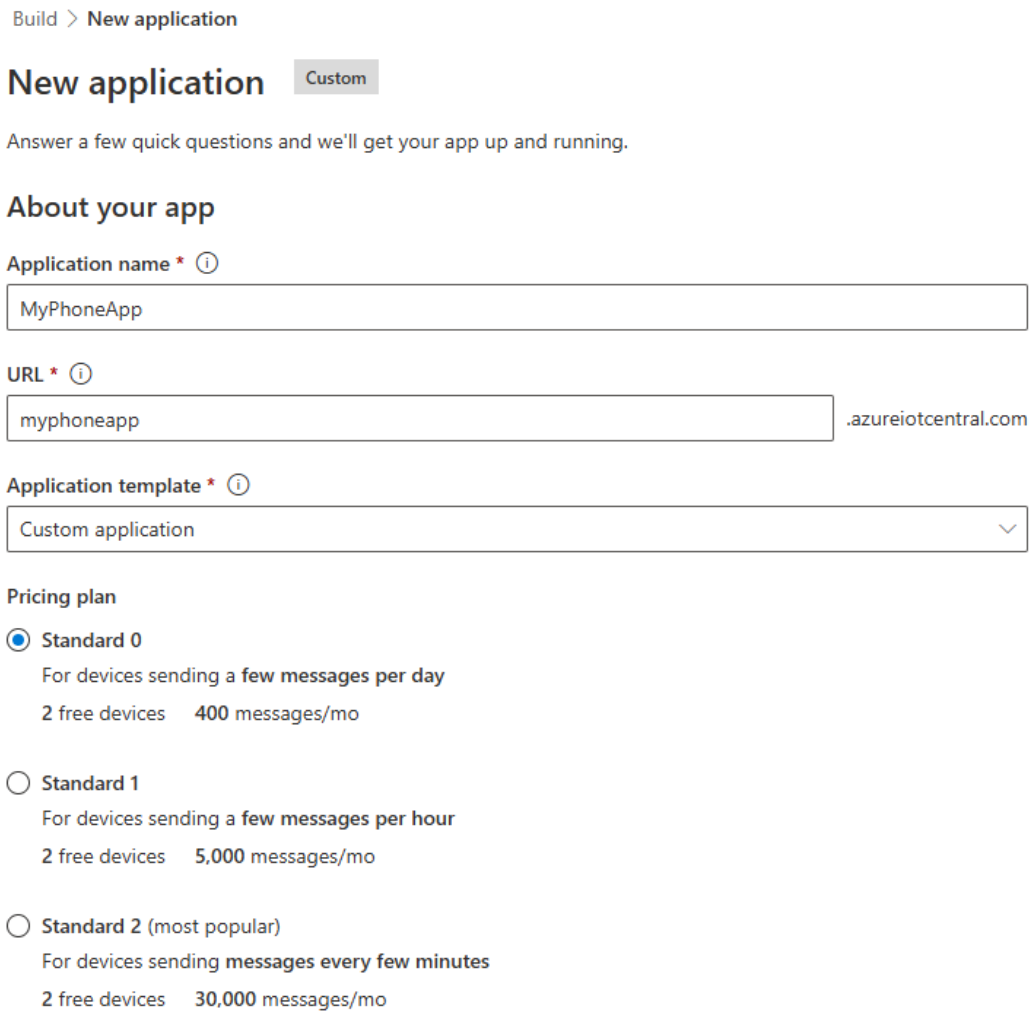
Click on **Build an App**

Then select **Create App**



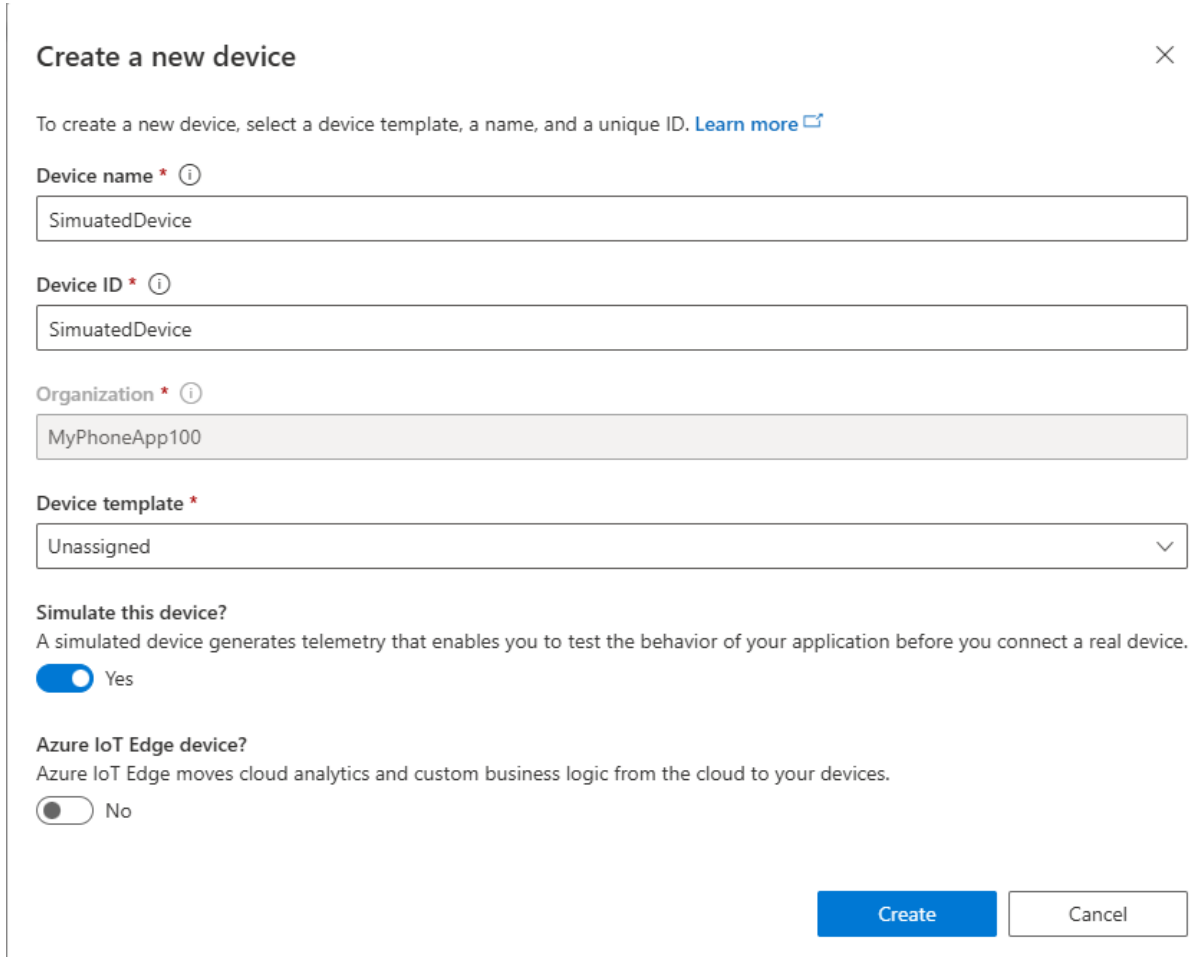
DEMO: CONNECTING A DEVICE TO IOT CENTRAL

- Enter a globally unique name for the app and url
- Choose Standard 0 for the pricing plan
- Select an Azure Subscription and a region
- Click **Create**



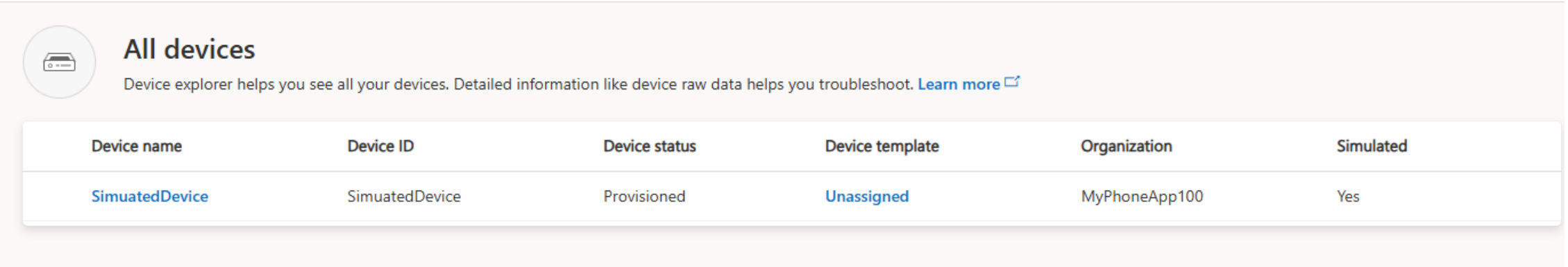
DEMO: CONNECTING A DEVICE TO IOT CENTRAL

- On the devices page click **Add a New Device**
- Complete the device name and id
- Select **Simulate this device**
- Click **Create**

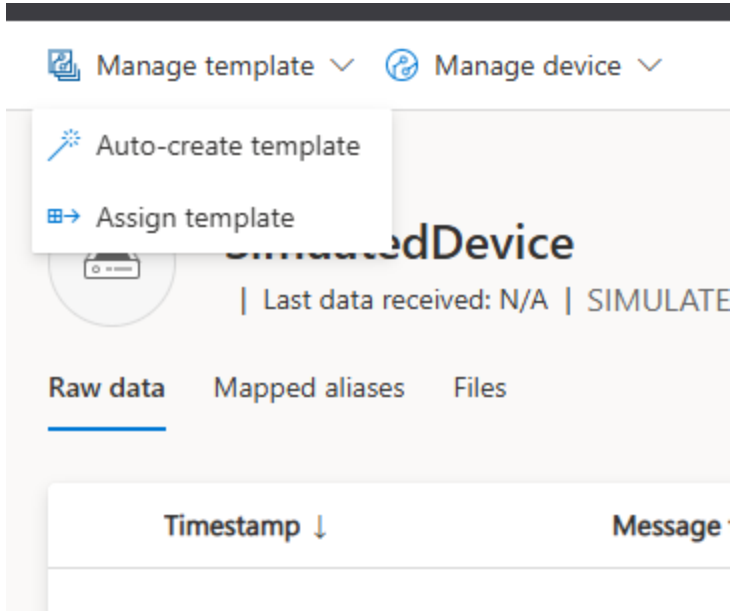


DEMO: CONNECTING A DEVICE TO IOT CENTRAL

Navigate to the Devices page and open your simulated Device



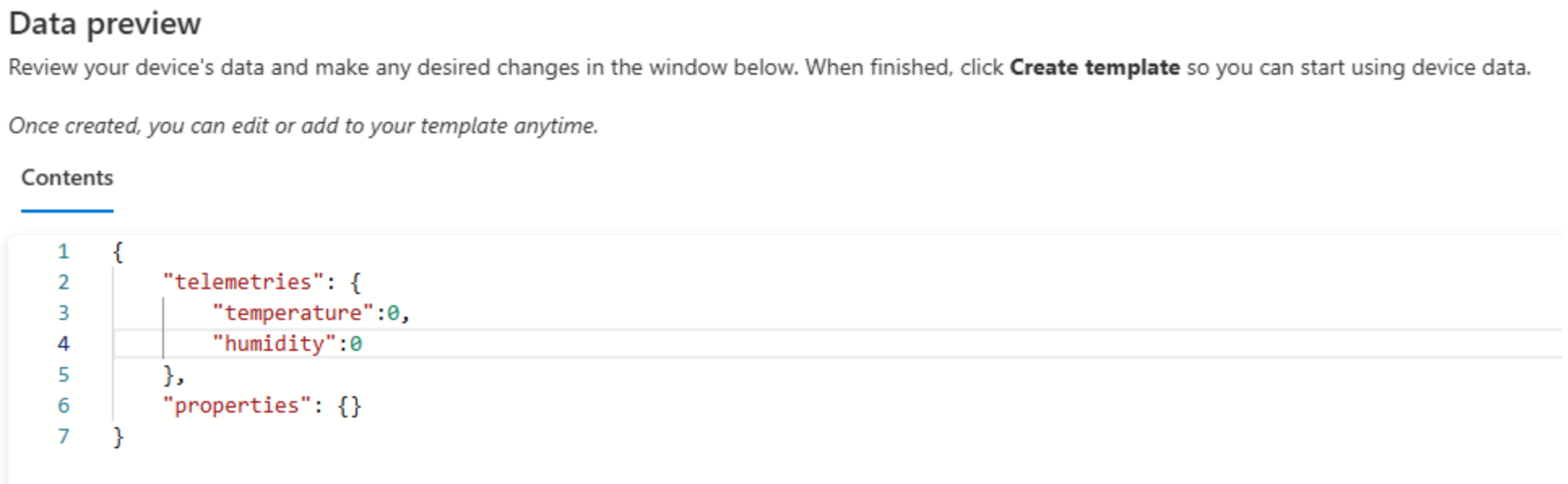
DEMO: ADD A DEVICE TEMPLATE



Click on Manage template then select Auto-create template

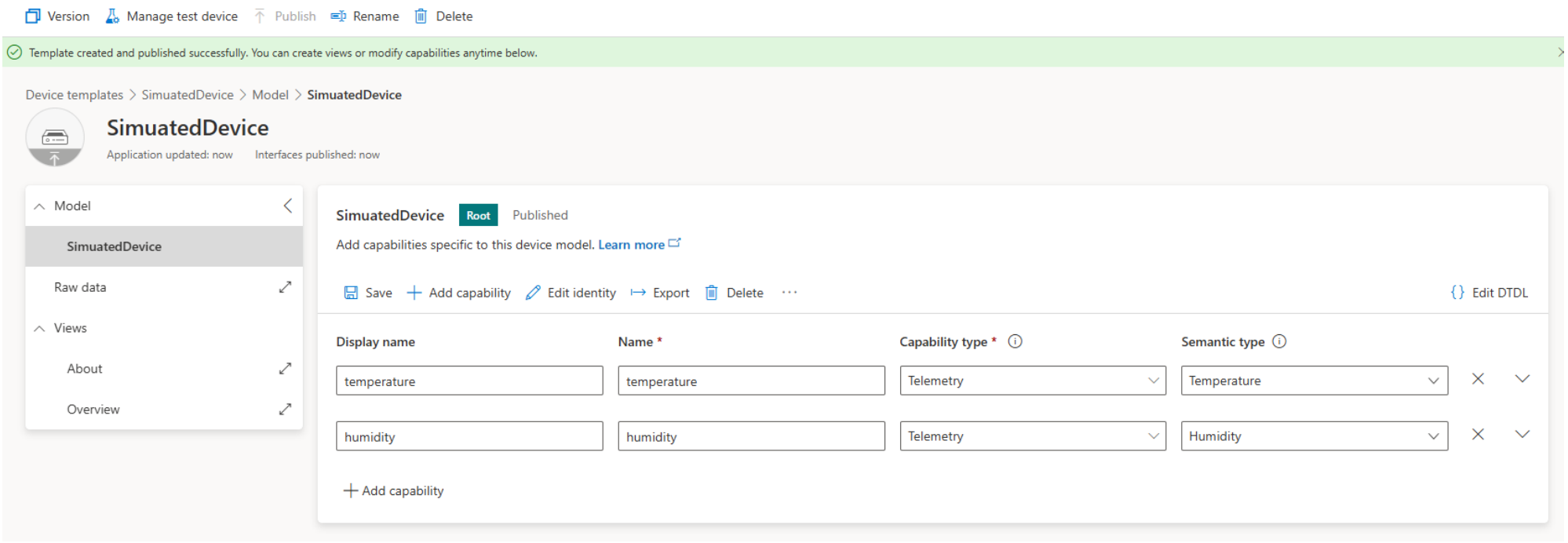
DEMO: ADD A DEVICE TEMPLATE

Add the telemetries and properties for your device e.g. temperature and humidity

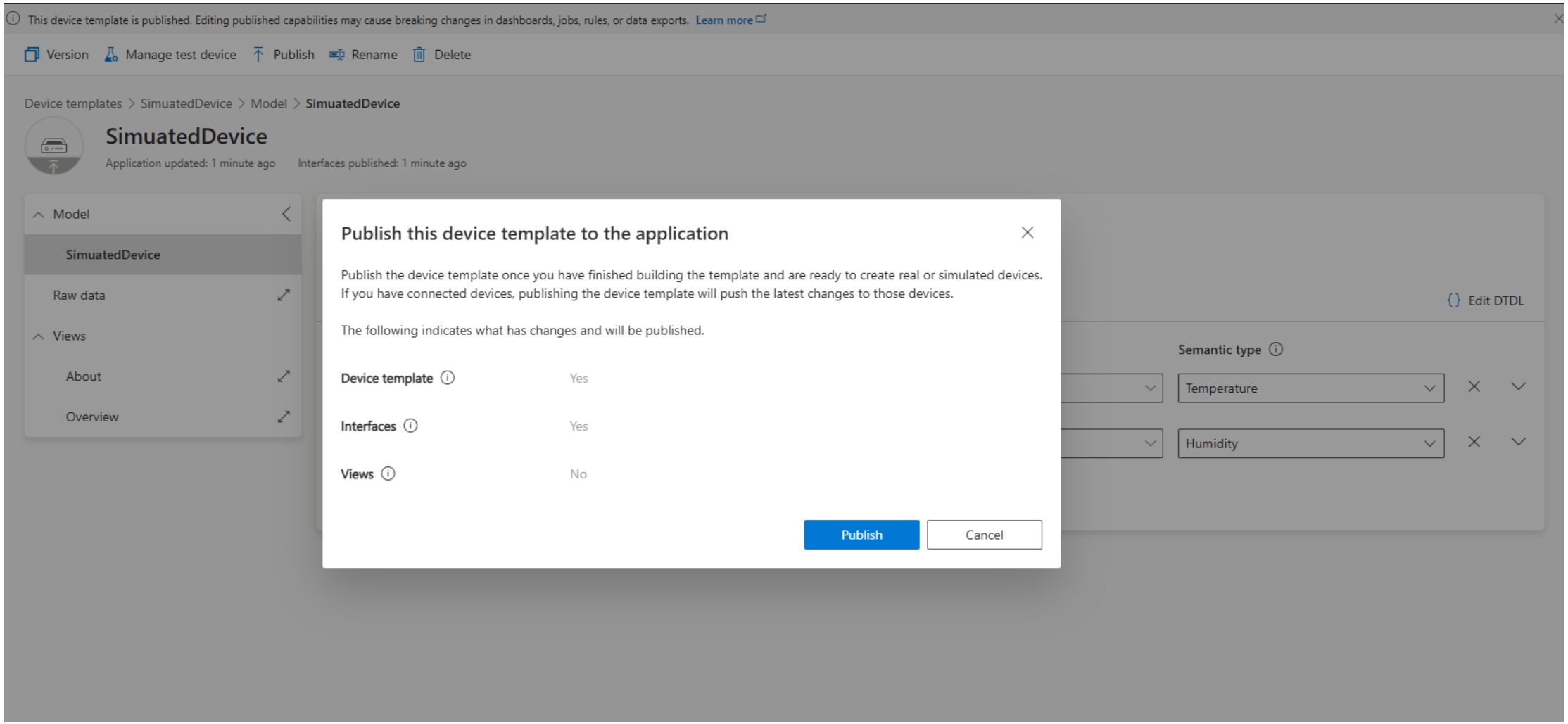


DEMO: REVISE DEVICE PROPERTIES

Assign the appropriate semantic types to your device telemetries and properties.



DEMO: PUBLISH YOUR DEVICE



POP QUIZ:

Which Azure services did TRACTO implement to address their data handling challenges?
A) Azure IoT Hub, Azure Kubernetes Services, and Azure SQL Database
B) Azure Virtual Machines and Azure Blob Storage
C) Azure DevOps and Azure Functions
D) Azure Cosmos DB and Azure Logic Apps

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POP QUIZ:

What were the primary goals for TRACTO's adoption of Azure in their trenchless technology operations?

A) Increase reliability and optimize drilling processes
B) Reduce marketing expenses
C) Expand into new markets
D) Enhance employee training programs

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INDIVIDUAL KEY TAKEAWAYS

Write down three key insights from today’s session.

Highlight how these take aways influence your work.

WEEK 7 REVIEW

Week 7 provided a comprehensive understanding of how cloud use cases can drive digital transformation and operational excellence.

As leaders, the insights gained this week emphasize the need to continuously innovate, invest in scalable solutions, and maintain a proactive approach to risk management and strategic planning.

These learnings are instrumental in guiding your organization toward sustained competitive advantage and long-term success in an increasingly digital landscape.

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Q&A AND OPEN DISCUSSION


THANK
YOU