STAYING RESILIENT IN A WORLD RELYING ON CONNECTIVITY

Harnessing Hybrid Cloud for Defence and Security

61N

THE CONNECTIVITY CHALLENGE IN DEFENCE AND SECURITY

Key issue: Increasing reliance on connectivity on operations

For Defense and Security

THE HYBRID CLOUD ECOSYSTEM

Find the Azure service for your Hybrid + multicloud needs

If you want to	Use this
Synchronize on-premises directories and enable single sign-on	[Azure Active Directory](#)
Find fully managed, intelligent, and scalable PostgreSQL	[Azure Database for PostgreSQL](#)
Experience a fast, reliable, and private connection to Azure	[ExpressRoute](#)
Find cloud-native SIEM and intelligent security analytics	[Microsoft Sentinel](#)
Consume services privately on Azure	[Azure SQL Edge](#)
Extend threat protection to any infrastructure	[Microsoft Defender for Cloud](#)

Secure, develop, and operate infrastructure, apps, and Azure services anywhere	[Azure Arc](#)
Build and run innovative hybrid apps across cloud boundaries	[Azure Stack](#)
Run your production workloads anywhere on hybrid, familiar, hyperconverged infrastructure	[Azure Stack HCI](#)
Find an Azure-managed device that brings the compute, storage, and intelligence of Azure to the edge	[Azure Stack Edge](#)

AZURE STACK HUB - THE TACTICAL CLOUD

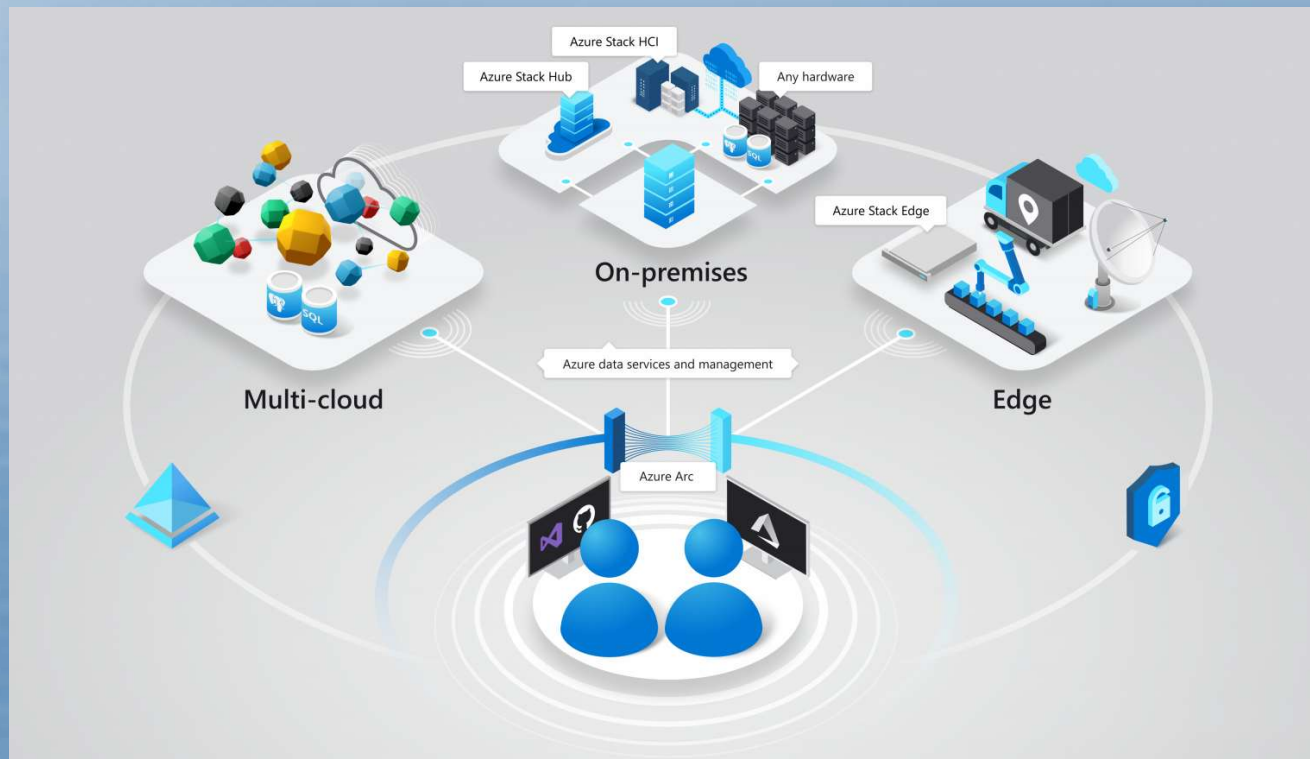On-premise Azure services, offline capability.

AZURE STACK EDGE - INTELLIGENCE AT THE EDGE

Real-time data processing, AI/ML at the edge.

AZURE ARC - UNIFIED MANAGEMENT

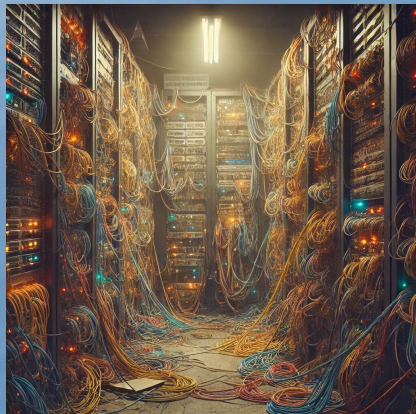Centralized governance, multi-cloud management.

AZURE STACK HCI - MODERNIZED INFRASTRUCTURE

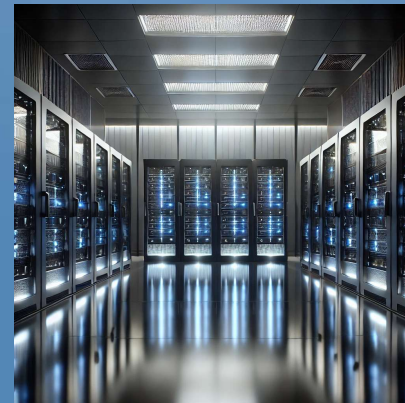High-performance virtualization, Azure integration.

Siloed Servers & Storage	Unified Compute, Storage & Networking
• Complex management	• Simplified management via Azure Portal
• Scalability limits	• Scalable with Azure integration
• High operational costs	• Cost-efficient infrastructure

AZURE LOCAL – LOW-LATENCY, PRIVATE CLOUD SOLUTIONS

Component	Description
🏢 **Azure Operator Nexus**	Private 5G networks and edge services for secure, high-speed communications within defense bases.
📡 **Azure Private MEC**	Localized edge computing for real-time processing and low-latency applications in secure facilities.

⚡ Low-Latency Performance
- Real-time data processing for mission-critical tasks.

🔒 Enhanced Security
- Isolated, private cloud environments ensure data stays on-premises.

📊 Reliable Communications
- Private 5G networks for resilient, high-speed connectivity.

🖥️ Edge Computing
- Deploy AI/ML models and applications close to where data is generated.

In Defence and Security
REAL-WORLD APPLICATIONS

SCENARIO 1: TACTICAL DEPLOYMENTS

- Cloud-like environments in disconnected regions

- Example: Remote deployment of Stack Hub and Stack Edge in conflict zones.

SCENARIO 2: DISASTER RESPONSE

- Real-time analysis of disaster zones.

- Example: Coordinating relief efforts with local data processing.

SCENARIO 3: CYBERSECURITY AND TRAINING

- Isolated environments for secure workloads and training.

- Example: Simulating cyberattacks in a controlled environment.

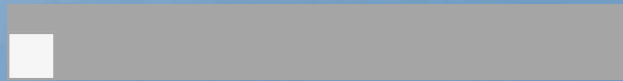For Defence and Security
STRATEGIC BENEFITS

WHY HYBRID CLOUD MATTERS FOR DEFENCE AND SECURITY?

Resilience

Compliance

Speed

Operates in low/no connectivity environments.

Keeps sensitive data secure and localized.

Real-time insights for informed decisions.

Future Outlook
CHALLENGES AND OPPORTUNITIES

CHALLENGES IN HYBRID CLOUD ADOPTION

Challenge	Mitigation
Complexity of Hybrid Setups	Use tools like **Azure Arc** for unified management across hybrid environments. Implement **modular deployments**: start with one component (e.g., Azure Stack Hub) and expand gradually. Provide training to IT teams on hybrid cloud architecture and tools.
Data Sovereignty and Compliance Requirements	Deploy **Azure Stack Hub** for complete control over data in disconnected or highly secure environments.Use Azure's **built-in compliance tools** to monitor and enforce data handling policies. Leverage **Azure Policy** via Arc to ensure consistent governance across all environments.
Cybersecurity Risks	Implement a **zero-trust security model**: Verify users, devices, and applications at every access point. Use **Azure Sentinel** for proactive threat detection and response. Regularly update software and apply security patches to all components, including Stack Hub and Edge.
Connectivity Constraints	Deploy **Azure Stack Hub** and Edge for offline-first capabilities. Use **Edge computing** to process data locally and synchronize with the cloud only when connectivity is restored. Build redundant communication channels (e.g., satellite broadband) for critical environments.
Cost Management	Use Azure's **Cost Management and Billing** tools to track and optimize spending. Perform a **cost-benefit analysis** before deploying hybrid components. Consider subscription-based models for hardware (e.g., Azure Stack Edge).
Talent and Skills Gap	Invest in **training and certifications** for IT teams (e.g., Microsoft Azure certifications). Partner with **experienced service providers** to assist with deployments. Use tools like **Azure Migrate** to simplify onboarding and reduce manual effort.
Vendor Lock-In	Leverage **Azure Arc** for multi-cloud management, allowing integration with AWS, Google Cloud, and other platforms. Use **open-source tools** and standards wherever possible to avoid lock-in. Adopt an **interoperable architecture** to future-proof your deployments.
Legacy System Integration	Use **Azure Stack HCI** to modernize legacy IT systems incrementally. Develop a **phased migration plan** to minimize operational disruption. Test integration in a pilot environment before full deployment.

FUTURE TRENDS AND OPPORTUNITIES

Multi-Cloud and Hybrid Strategies

- Opportunity: Flexibility and resilience by integrating multiple cloud providers.

Zero Trust Security

- Opportunity: Enhanced security by verifying every access point.

AI and Automation

- Opportunity: Improve decision-making and automate operations.

5G and Edge Computing

- Opportunity: Real-time data processing and low-latency communications.

Data Sovereignty

- Opportunity: Maintain control over sensitive data and meet compliance.

Geopolitical Resilience

- Opportunity: Adapt cloud strategies to mitigate geopolitical risks.

COMPETITION?

Feature	Azure Local	AWS	Google Cloud	Oracle Cloud
On-Premises Cloud	Azure Stack Hub	AWS Outposts	Google Distributed Cloud Hosted	Oracle Cloud@Customer
Private 5G and Edge	Azure Private MEC	AWS Wavelength	Google Distributed Cloud Edge	Oracle Roving Edge Infrastructure
Low-Latency Deployments	Azure Local Zones	AWS Local Zones	Google Distributed Cloud Edge	Oracle Roving Edge Infrastructure
Disconnected Environments	Azure Stack Hub	AWS Outposts	Google Distributed Cloud Hosted	Oracle Cloud@Customer

Call to Action

CONCLUSIONS

STAYING RESILIENT IN A CONNECTED WORLD

Key Takeaways

- Hybrid cloud is essential for resilience.
- Azure solutions provide unmatched flexibility and security.

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