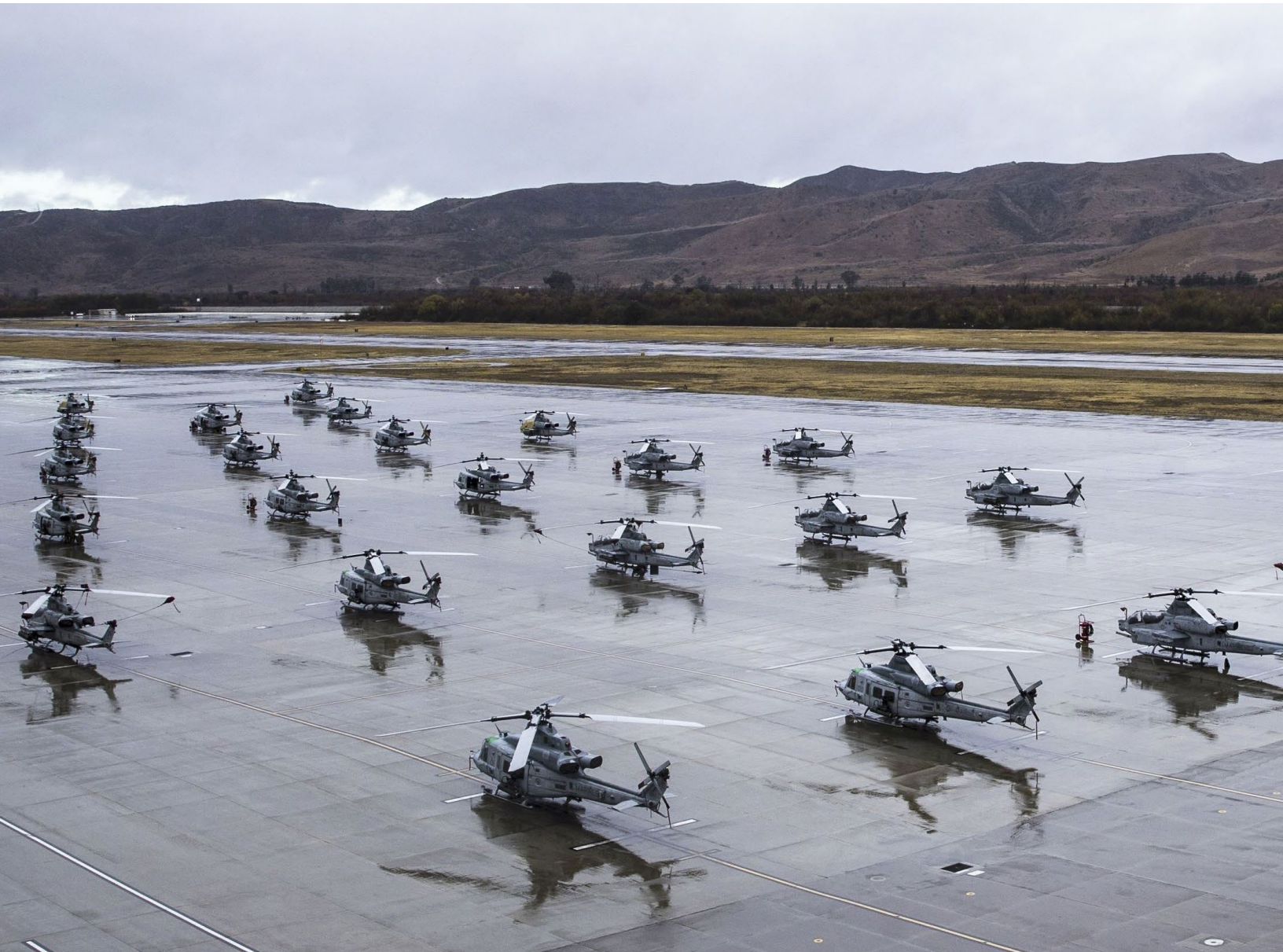
Azure Government for the Department of Defense

Microsoft

Harnessing the Intelligent Cloud for Defense



The rapid evolution of technology and use of data and on-demand computing power is changing the landscape of defense. This is leading to a massive shift in how the United States Department of Defense (DoD) is adopting cloud computing services to rapidly innovate and extend mission capabilities.

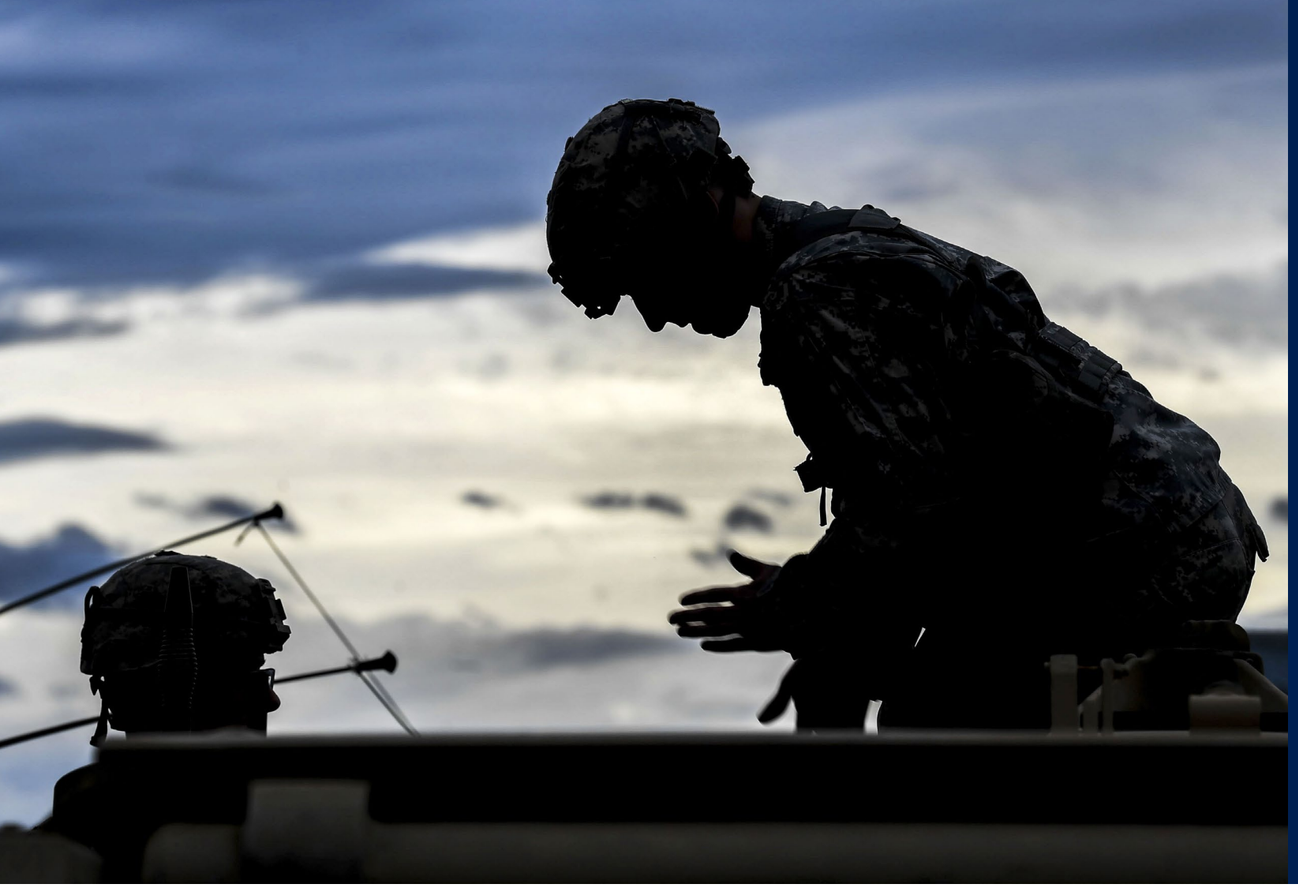
In a September 2017 memo directing the DoD to take steps to accelerate enterprise cloud adoption within the Department, Deputy Secretary of Defense Patrick Shanahan cited the use of commercial capabilities in the areas of data infrastructure and management, cybersecurity, and more as critical to maintaining the DoD's military advantage.

Today, IT teams can leverage the capabilities of Azure Government in each of these areas, bringing transformative workloads to the cloud to advance the mission.

What is Azure Government?

Azure Government is an exclusive instance of Microsoft Azure with world-class security and controls designed for sensitive government data, enabling government customers to safely transfer mission-critical workloads to the cloud.

Azure has over 38 services included in our FedRAMP High compliance program and robust networking throughout the United States with 8 announced regions, including 2 DoD regions certified at Impact Level 5, all connected via private dark fiber. Each region is over 500 miles apart with data replication between regions for business continuity.



Improve the reliability of intelligence

In reconnaissance in many unclassified scenarios, teams find a treasure trove of information, but it's difficult to know if that information is trustworthy, meaningful, or timely. Defense teams need the capability to extract mission relevant information and convert it into actionable insights.

Intelligence teams working to discern the signal from the noise need to process large quantities of data in a meaningful way, often in remote locations with limited connectivity. Speed is paramount in enabling teams to respond quickly and accurately.

Azure Government can help defense agencies analyze massive volumes of data, delivering rich insights for accelerated operational responsiveness and long-term strategic advantage.

Key solutions for improving the reliability of intelligence

Teams working with immense amounts of structured and unstructured data need to consider the data management lifecycle in establishing a cloud strategy that works across existing data stores and provides a cost-effective foundation for future requirements. Choosing Azure Government for data management gives you the agility to adapt to changing conditions and optimize the reliability of intelligence. Some key services to consider:

Bring together historical and real-time data in Azure SQL Database, which uses built-in intelligence to learn your unique database patterns and automatically tune the database for improved performance and protection. Protect the chain of custody with Microsoft's end-to-end datacenter security practices.

Gain visibility into trends and anomalies with Azure IoT Hub, querying terabytes of data from hundreds of millions of sensor events alongside volumes of historic data, in seconds, to support decision making in command and control situations.

Get the most current view of available data with Azure Stream Analytics, which enables you to run massively parallel real-time analytics on multiple IoT or non-IoT streams of data, so you can more easily identify changes in the environment as they occur.

Bring data to life with Power BI, a suite of business analytics tools that deliver insights throughout your organization. Connect to hundreds of data sources, simplify data prep, and drive ad hoc analysis.

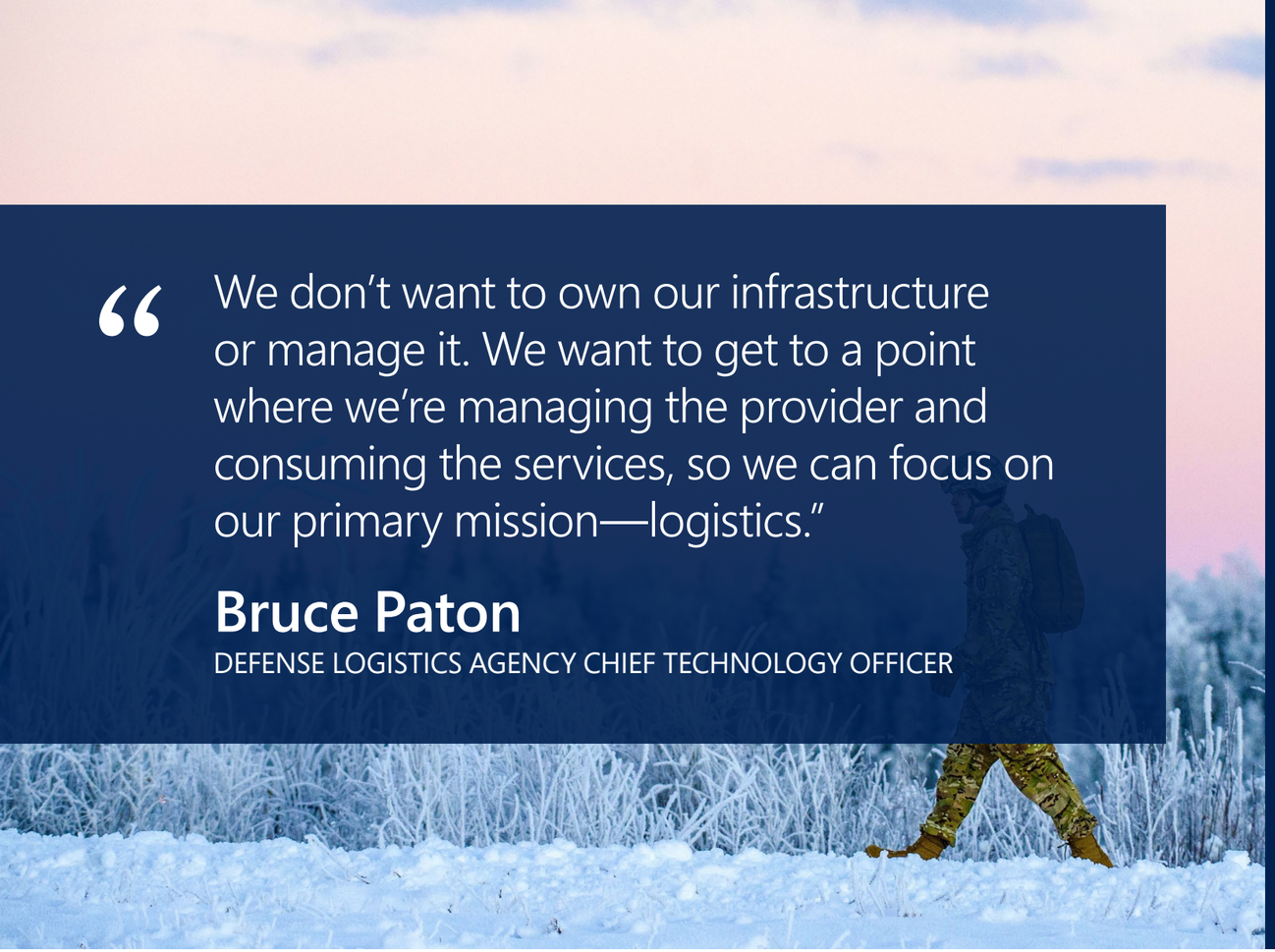
Scenario: Improving the reliability of intelligence

Intelligence teams working in the field need to quickly understand and identify what information is valuable to the case and decide on best next steps. Data and information can come from anywhere—from people, to sensors, to artifacts such as documents and video footage.

The challenge in handling all this data lies in determining what information can be readily acted on with a high degree of confidence. Estimations report that more than 99 percent[1] of the data collected by the United States Department of Defense (DoD) is never analyzed. This means that crucial intelligence can be missed—intelligence that could be vital to the success and safety of armed forces.

Teams can combine the ability for rich analytics with real-time environmental data from Internet of Things (IoT) solutions built on Azure IoT Hub to optimize situational awareness. And Azure Stream Analytics helps you run massively parallel analytics on multiple streams of data so you can identify changes in the environment as they occur.

[1] *Source: Trends in Technology and Digital Security: Digital Threats Symposium—Compendium Of Proceedings," Center for Cyber & Homeland Security at the George Washington University, Fall 2017*



> “We don’t want to own our infrastructure or manage it. We want to get to a point where we’re managing the provider and consuming the services, so we can focus on our primary mission—logistics.”

Bruce Paton
DEFENSE LOGISTICS AGENCY CHIEF TECHNOLOGY OFFICER

Scenario: Delivering modern logistics with predictive maintenance

With the advent of the Internet of Things (IoT) and the vast increase of sensors across equipment, smart analytics can surface unprecedented insights. Equipment today can constantly report its level of use, environmental conditions, and other real-time statistics. Collating this data can help teams better determine rate of failure and remaining useful life.

Through IoT and data analytics, new approaches can be devised to improve operations and equipment availability with predictive—even preemptive—maintenance, ensuring equipment is serviced as needed, well within calculated and proven parameters. Ultimately, this helps to ensure personnel safety and mission success.

With Microsoft Azure Government you can rapidly deploy a predictive maintenance solution in the Impact Level 5 authorized Department of Defense (DoD) cloud. Using new investments across IoT and data analytics, Azure can provide accurate equipment status based on real-time environmental and usage analysis.

By combining the data from devices and sensors with advanced analytics, it’s possible to both monitor equipment in real time and predict the remaining useful life of components—ensuring maintenance can be scheduled in a timely manner to prevent mechanical failures.

Deliver modern logistics

The sheer scale of operations in defense makes logistics an extremely complex task. With recent investments in RFID tagging and other IoT solutions for inventory control, the DoD is gaining significant efficiencies through digitization. New cloud technologies offer immense opportunity for further modernizing logistical operations.

In addition, confidence in the reliability and effectiveness of military equipment is paramount. Armed forces spend considerable resources to ensure that equipment remains operational, with no unexpected failures due to worn-out parts.

Predictive maintenance solutions built on Azure Government can overhaul the way assets are maintained and utilized, increasing readiness and reducing the burden on forward-deployed maintenance teams. This increases your efficiency and ensures the right parts and trained personnel are in place before operational interruptions occur.

Key Azure solutions for modernizing legacy infrastructure

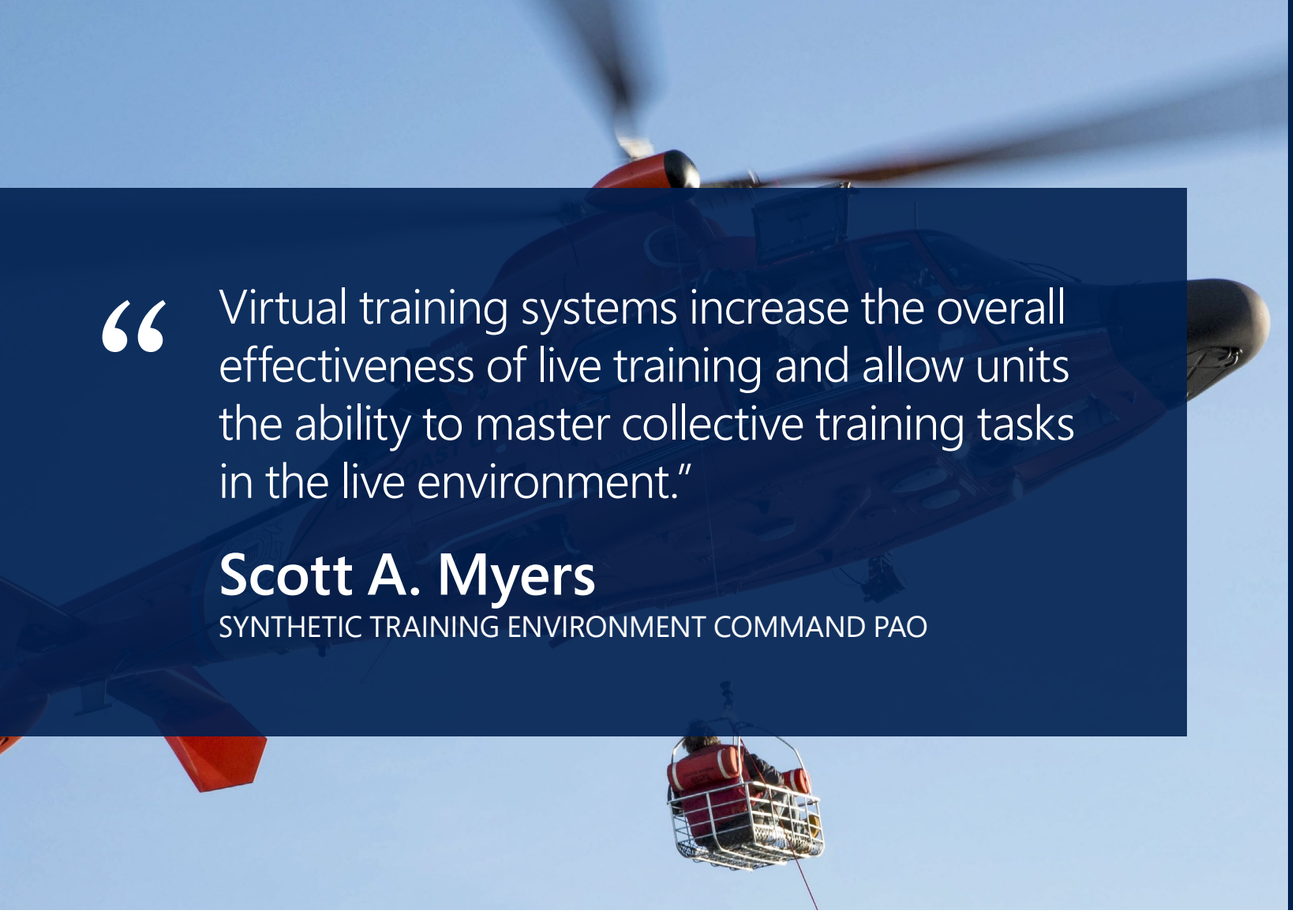
When modernizing logistics operations, consider some of the following solutions to help you get more work done at the tactical edge, optimizing operations and reducing the overall cost of maintenance:

Optimize logistics operations with Azure IoT Hub collecting the data you need, even in remote locations with variable connectivity, to deliver parts and people to the right place at the right time.

Visualize your edge data more easily with Power BI, a suite of business analytics tools that can help you develop customized dashboards or apps for control rooms or mobile devices, providing a user-friendly interface for operations teams.

Improve readiness with predictive maintenance solutions to reduce the burden on forward-deployed teams. Choose Platform-as-a-Service (PaaS) options like Microsoft Azure IoT Suite* or Software-as-a-Service (SaaS) options like Microsoft IoT Central* for a fully managed solution.

Rely on built-in security intelligence to stay ahead: At Microsoft, we receive anonymized telemetry from billions of logins, devices, and services, combined with AI and behavioral analysis and built into our products to give you a strategic edge. In addition, Azure Advanced Threat Protection helps you detect and investigate advanced attacks on-premises and in the cloud.



> "Virtual training systems increase the overall effectiveness of live training and allow units the ability to master collective training tasks in the live environment."
>
> **Scott A. Myers**
> SYNTHETIC TRAINING ENVIRONMENT COMMAND PAO

Scenario: Increase the effectiveness of training and readiness

With millions of total employees to train, both civilian and military, and hundreds of functional areas to cover, training organizations need the ability to deliver digital training cost-effectively at massive scale. With Azure Government, training organizations can utilize platform services to deliver customized training content to military personnel, reducing administrative overhead while achieving security and compliance requirements.

For example, Azure Media Services can be used to distribute digital content at scale while protecting the security of the content. Use Azure Media Services to secure your media from the time it leaves production through storage, processing, and delivery. You define what type of licenses you want and we handle the infrastructure, security, and scalability.

Azure Active Directory gives you granular control of permissions, so you can more easily manage what content you want to make available to specific people and groups. This enables digital training to be used in a targeted, contextually relevant way to prepare troops for live training.

Increase the effectiveness of training and readiness

For the largest employer on the planet, managing training and readiness for millions of people around planet is no small task. At the same time, the DoD continues improve training effectiveness and evolve metrics to provide more accurate indications of the readiness of forces.

Delivering the right training at the right time in the right format gets easier with Azure Government, a secure and highly compliant platform that can help you quickly create and stream new content to devices anywhere in the world. And, you can utilize advanced capabilities to provide customized content for specific individuals or specific scenarios.

In addition, training organizations need to ensure their training records are stored in accordance with the strictest security controls. Azure Government is designed meet the highest DoD security requirements for cloud computing, with the largest number of services authorized at Information Impact Level 5 across infrastructure, platform, and services.

Key solutions for improving the effectiveness of training and readiness

When creating digital training to improve the readiness of military personnel, consider a government-only cloud with these capabilities:

Stream broadcast-quality content easily and cost-effectively with Azure Media Services, which enhances accessibility, distribution, and the ability to rapidly scale while protecting your content.

Manage reporting securely with Power BI, a suite of business analytics tools that enable your personnel to gain the insights they need to make better decisions, while helping you monitor access to content to ensure security and compliance.

Enable single sign-on to simplify user access to your cloud applications from any device using Azure Active Directory, a comprehensive identity and access management solution, and add Azure Multi-Factor Authentication for an additional level of access verification.

** These services currently available in Azure commercial, some have been announced as coming soon to Azure Government. Please see the Products available by region page for service availability and subscribe to the Azure Government blog to hear the latest on Azure Government.*

WHY AZURE GOVERNMENT

Unlock **innovation** with powerful data and analysis services to rapidly build **intelligent** solutions at scale.

Enable **productivity** with a growing marketplace and managed services to help you focus on your mission.

Rest assured with the **trusted** cloud exclusive to government, with world-class security and advanced threat protection services.

Meet critical **compliance** standards and exceed U.S. Government regulatory requirements.

Accelerate development with an open platform and unified tools and services in a **flexible** and truly **hybrid** environment.

Microsoft

CJIS

Microsoft government cloud services adhere to the US Criminal Justice Information Services Security Policy.

DFARS

Microsoft Azure Government supports Defense Federal Acquisition Regulation (DFARS) requirements.

DoD

Microsoft received Department of Defense (DoD) Provisional Authorizations at Impact Levels 5, 4, and 2.

FedRAMP

Microsoft was granted US Federal Risk and Authorization Management Program P-ATOs and ATOs.

FIPS 140-2

Microsoft certifies that its cryptographic modules comply with the US Federal Info Processing Standard.

IRS 1075

Microsoft has controls that meet the requirements of US Internal Revenue Service Publication 1075.

ITAR

Azure Government supports customers building US International Traffic in Arms Regs-capable systems.

NIST 800-171

Microsoft DoD certifications address and exceed US NIST 800-171 security requirements.

NIST CSF

Azure Government supports customers building US International Traffic in Arms Regs-capable systems.

Section 508

Microsoft cloud services offer Voluntary Product Accessibility Templates.

FedRAMP Federal Risk Authorization Management Program

INTERNATIONAL TRAFFIC IN ARMS ITAR REGULATIONS COMPLIANT

IRS

HIPAA