Accelerating the mission: United States Air Force

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United States Air Force challenges

Like other defense agencies, the U.S. Air Force faces a range of challenges, including:

- **Multi-domain, data-driven battlefield.** Modern warfighters rely on real-time intelligence to move the mission forward. This intelligence depends on agile and frictionless access to critical data and applications across kinetic and cyber domains. The Air Force must be equipped to deliver these capabilities at the speed of need, whether in a traditional datacenter, the public cloud, or at the tactical edge.

- **Legacy hardware systems.** High risk-aversion and long-duration field-worthiness testing cycles impede system modernization by keeping older, obsolete technologies in service, which are costly to maintain and difficult to upgrade.

- **Software development modernization.** Slow authorization to operate (ATO) approvals and legacy software development processes impede the adoption of agile development practices and DevSecOps processes, which are essential for building flexible and scalable microservices-based applications. Modernizing software development is necessary for enabling continuous integration and delivery or deployment (CI/CD) and improvement of mission-critical applications.

- **Barriers to change.** Change is hard, especially in organizations with deeply ingrained traditions, rigid command structures, and high turnover in the workforce. The cultural shifts needed to establish modern software development practices and infrastructure do not come naturally to any organization, and these factors magnify the challenge.

- **Funding constraints.** Air Force missions are typically funded in a disconnected manner with funds based on individual programs. Additionally, much of the Air Force budget is directed toward maintaining and patching legacy systems.

IT trends in the Air Force

To address these challenges, the Air Force is rebuilding its IT infrastructure and approaches to application development and deployment.

- **Infrastructure automation.** The Air Force is using automation to redeploy and update its existing infrastructure rapidly to align with established CONOPS, which will reduce the potential for human error. Air Force staff are also automating the development of enterprise- and mission-critical applications for faster and more streamlined application deployment to bring new capabilities to the fight.

- **Security-focused automation.** Security-focused automation is increasingly built into application development pipelines to identify and remediate application and platform vulnerabilities quickly while achieving compliance with published STIGs, RMF packages, and rigorous red/blue team testing.

- **Agile development.** Traditional waterfall development methods cannot deliver new warfighting capabilities at the speed of relevance. Therefore, the Air Force is shifting toward agile processes defined by DevSecOps, emphasizing CI/CD.

Compliance: Red Hat OpenShift is the only enterprise container platform with FIPS compliance and multiple layers of federally-certified security hardening.

The new Air Force

Cloud adoption: The mission is delivering better decision-making capabilities—not troubleshooting equipment failures. Major public clouds now provide security and performance as good as or better than private datacenters. Moving development and application hosting to the cloud helps you accelerate innovation and manage costs.

Modern development: The Air Force is accelerating application development through agile processes and tools.

Automation: Automating routine tasks helps defense agencies deliver consistent services without error-prone, labor-intensive manual processes, allowing warfighters to focus on their mission.

Cost reduction: Cloud migration, consolidation, and automation are helping government IT teams deliver services for the same or lower costs.

- **Increased connectivity.** Initiatives like the Advanced Battle Management System and Joint All-Domain Command and Control are designed to provide warfighters with real-time intelligence for rapid and informed decision-making capabilities. These ambitious efforts require the Air Force to implement an agile architecture and data integration framework that allows processes to be informed and accelerated across the entire domain.

Accelerating application development and deployment

Bringing real-time decision-making capabilities to the warfighter requires a transformation in the Air Force's digital landscape. This transformation calls for agile collaboration among teams, continuous, iterative processes, and an underlying open source technology infrastructure that supports it all.

With Red Hat® Consulting, Red Hat OpenShift®, and Red Hat Ansible® Automation Platform, we help organizations like the Air Force use open source software, automation, and industry expertise to break down traditional barriers, banish outdated development processes, bridge old and new IT systems, and deliver timely, mission-critical applications and services.

Our expert team of cleared and DoD-experienced Red Hat Consultants work with agencies to embrace agile development practices and create new, security-focused environments in which control parameters are locked down from within. Through Red Hat Open Innovation Labs, we support defense agencies in adopting a DevSecOps culture with security-focused application development pipelines and new technologies that address obsolescence issues and the challenges of building new warfighting capabilities in near-real-time.

Red Hat accelerates application development and deployment by replacing legacy IT technologies and processes with agile and flexible open source software. Red Hat OpenShift manages hybrid cloud, multicloud, and edge deployments to allow agencies to move faster and drive innovation at scale, and can be used across centralized data centers, within the public cloud, or at the tactical edge. Red Hat Ansible Automation Platform further empowers these initiatives by providing infrastructure automation and the ability to manage complex deployments easily.

Learn more

Learn more about how the Air Force and other defense agencies use Red Hat to achieve their mission objectives by visiting our website.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.
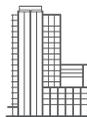
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