DoD Edge 2.0

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Edge computing provides the opportunity to transform DoD application delivery, offering localized data analysis, artificial intelligence, process automation and other digital capabilities. This is in contrast to current GovCloud-based infrastructure offerings that rely on centralized architectures built only on US soil. The drawback of centralized architectures is that they cannot cost-effectively support the ultra-low latency and extreme throughput demanded by localized workloads at the edge. Instead, cloud capabilities should be localized at the source of business data to form an edge cloud, which places computing, storage and networking resources where the data is sourced—at the edge of the network. An edge cloud capable of securely extending existing DoD cloud solutions – whether in GovClouds or on-prem – to the edge would create a fundamental DoD asset for innovation, enabling information dominance and transforming DoD business processes.

F5 Distributed Cloud Services (XCS) is an innovative new platform from F5 that can provide this solution for DoD. It works in concert with on-prem DoD data centers and GovClouds to extend their capabilities to the edge. It provides a secure and distributed cloud environment to deploy, secure and operate applications across diverse edge environments, including O-CONUS, forward operating bases or even extending to sensors on airframes. Key capabilities include application and infrastructure management as well as secure connectivity across edge sites and GovClouds. XCS provides a cloud-native software stack that integrates compute, storage, networking and security for DoD components to manage their distributed edge workloads. XCS provides secure connectivity service that seamlessly connects edge sites to each other and to GovClouds with zero-trust and application-level security.

Challenges Addressed

- Complexity introduced by monitoring heterogeneous edge environments in different GovClouds and operating a fleet of distributed applications and data
- Creating consistent, standardized security policies and profiles of distributed infrastructure, apps and data across GovCloud and on-prem environments
- Delivery of reliable and high performing connectivity across edge and multi-cloud

Benefits

- Simplification of Edge Fleet Management and Operations - SaaS-based deployment and lifecycle management of hardware and infrastructure software allows customers to focus on application software development.
- Integrated Security from Edge to Cloud - Protect the fleet of edge infrastructure and apps from vulnerabilities and get real-time visibility and telemetry from edge devices. Secure connectivity across cloud and edge enables end-to-end situational awareness.

- Performance Optimization and Cost Reduction - SaaS-based delivery of platform services, coupled with a high performance global network, significantly reduces the cost of deployment, operations and application downtime at the edge.

DoD Use Cases

SECURE GATEWAY FOR DISTRIBUTED EDGE
XCS at the edge consolidates network routing, application load balancing, API gateway, and security services with centralized policy, operations and observability. The XCS global network adds high performance and secure connectivity across edge and cloud, reducing fleet complexity.

DISTRIBUTED APPLICATION AND SENSOR FLEET MANAGEMENT
XCS consolidates compute, storage and network services with centralized operations of a fleet of distributed nodes. Kubernetes API automates application deployment, scaling, security and operations across the fleet without the burden of operating multiple individual clusters.