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Data Analytics for Decision Dominance at the Edge

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Abstract:

By utilizing Artificial Intelligence/Machine Learning (AI/ML) at the edge to perform real-time data processing and analysis, ML models can process vast amounts of data in real-time, filtering out the “noise”, providing commanders with actionable insights swiftly. This includes the identification of patterns, an ability to predict outcomes, and the optimization of resource allocation.

Edge devices can operate independently, maintaining functionality even when network connectivity is disrupted, ensuring continuous data processing. Through the use of Army developed ML decision models, edge devices can prioritize and send critical data when an opportunity arises, ensuring commanders receive the most pertinent information.

Red Hat Device Edge provides a variety of deployment options for a consistent and secure platform to run AI/ML workloads at the edge, the datacenter, and in between. Specifically, for edge deployments, containerized applications and functions-as-a-service using “OpenShift Serverless” reduce the amount of compute, memory, and storage required to process data to the smallest necessary for the mission workload.

By utilizing Red Hat Device Edge and ML, real-time compute requirements can be reduced and the influx of data from sensors can be reigned in, providing commanders in the Army of 2030 and beyond to turn data into actionable decisions effectively, even in degraded and congested environments.