



DPG's Rugged Edge Device (R.E.D.)

Introduction

DPG's Rugged Edge Device (R.E.D.) is an innovative on-premises private cloud solution that delivers powerful hyper-converged infrastructure (HCI) capabilities on compact hardware. With minimal compute, memory, and storage requirements, and built-in support for VLANs and high-speed networking, R.E.D. empowers teams to run virtual machines and containerized workloads seamlessly.

Whether deployed in data centers, mobile tactical vehicles, or disconnected field operations, R.E.D. ensures mission-critical performance anywhere, bridging traditional virtualized systems with modern containerized ecosystems to support seamless operations across core and edge environments.

Scalability Across Multi-Domain Operations (MDO)

R.E.D. is engineered for flexibility, mobility, and mission assurance. Its modular, tactical-ready architecture enables seamless scalability and operational stability across a wide range of deployment environments:

- **Vehicles:** Lightweight and ruggedized, R.E.D. is deployable in mobile command centers, tactical vehicles, and autonomous platforms, providing on-the-move compute and storage capabilities for real-time decision-making in the field.
- **Maritime Platforms:** Designed for constrained, high-latency environments where durability and continuous operation are critical. R.E.D. delivers consistent, secure services aboard naval vessels and marine operations.
- **Remote or Disconnected Environments:** As a tactical-ready platform, R.E.D. enables agile deployments in air-gapped or disconnected locations. Its compact hardware requirements, built-in security controls, and ability to run without external dependencies ensure operational continuity in austere environments.

This unmatched versatility allows R.E.D. to maintain stability, security, and performance in Denied, Disrupted, Intermittent, and Limited bandwidth (DDIL) conditions, making it the ideal infrastructure solution across core and edge domains.

Core Features

Modernized Infrastructure

It is an open-source alternative designed for operators seeking a cloud-native HCI solution. R.E.D.'s HCI runs on bare metal and provides integrated virtualization and distributed storage capabilities. In addition to traditional virtual machines (VMs), the HCI supports containerized environments automatically.

DPG's R.E.D. open-source HCI solution integrates traditional and containerized systems to create a unified infrastructure. This modernization facilitates efficient resource allocation, high-speed network storage, and support for secure Virtual Desktop Infrastructure (VDI).



Comprehensive Kubernetes Management

R.E.D. provides enterprise-grade Kubernetes management, ensuring deployments are efficient and adaptable. Rancher supports Kubernetes clusters across diverse environments, including bare-metal, private clouds, public clouds, and vSphere.

Zero Trust Security

R.E.D. enhances container security through Zero Trust protection, including continuous scanning, real-time threat detection, and compliance enforcement. This ensures alignment with stringent standards like STIG and Risk Management Framework (RMF), safeguarding operations from evolving threats.

Centralized Management Systems

R.E.D. incorporates centralized enterprise management systems for streamlined access control, user authentication, DNS management, certificate provisioning, and Kubernetes management. This centralization reduces administrative overhead and enhances organizational visibility.

Core Benefits

- **Enhanced Efficiency:** Unified resource management through HCI and Kubernetes simplifies operations, optimizes resource utilization, and accelerates deployments.
- **Built-in Compliance:** Zero Trust ensures real-time threat detection and compliance with STIG and ATO standards, mitigating risks.
- **Centralized Management:** Simplified administration through centralized systems offers consistent policy enforcement and improved user experience.
- **Seamless Scalability:** R.E.D.'s modular design supports multi-site operations and adapts to evolving demands without requiring costly overhauls.
- **Cost Savings:** Reduced maintenance and downtime lead to lower operational costs while maintaining high efficiency.
- **Improved Reliability:** By addressing latency and outdated system challenges, R.E.D. ensures secure, high-performance operations for critical workloads.
- **Mobility:** R.E.D.'s form factor meets FAA carry-on requirements, with exterior dimensions of 22x24x9 inches and weighing approximately 30lbs.

Applications

High-Performance Processing

- DPG's R.E.D. supports resource-intensive workloads, enabling organizations to meet operational goals without compromising speed or security.

Secure Virtual Desktop Infrastructure (VDI)

- The solution enhances remote workforce productivity through secure and efficient VDI, ensuring seamless access in air-gapped environments.

Adaptive Storage Solutions

- High-speed network storage is tailored to the unique requirements of customers, offering flexibility and reliability for growing data needs.



Conclusion

DPG's Rugged Edge Device (R.E.D.) is a mission-ready solution that transforms how organizations deploy and manage infrastructure across diverse environments. By uniting open-source hyper-converged infrastructure, Kubernetes orchestration, and Zero-Trust security, R.E.D. delivers a secure, scalable, and efficient platform capable of supporting mobile command vehicles, maritime operations, and disconnected field deployments.

Its modular, tactical-ready architecture ensures R.E.D. can adapt to any mission, whether operating in fully connected core environments or the most austere edge locations. With simplified management, built-in compliance, and consistent performance, R.E.D. empowers defense, government, and commercial teams to modernize operations, reduce risk, and accelerate mission outcomes.