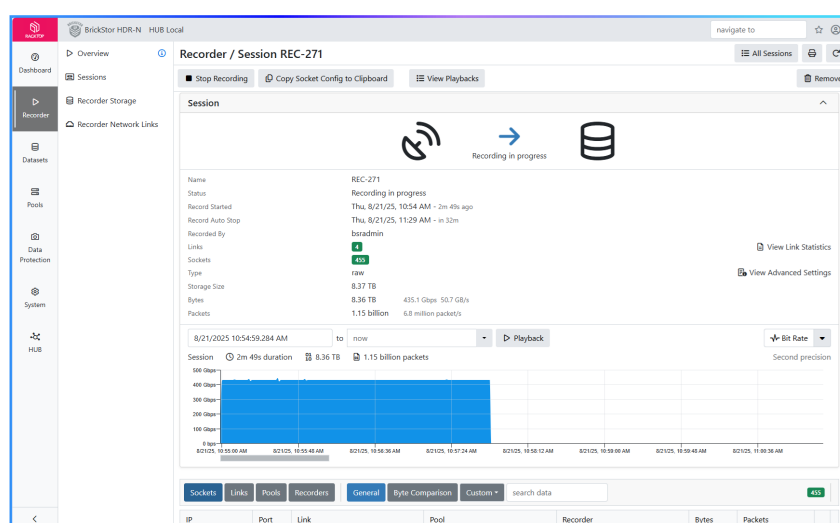


RF Data Recorder and Playback

A secure, scalable data recorder capable of terabit speeds

RackTop's BrickStor High-Speed Data Recorder (HDR) product line is a next-generation scalable storage platform that combines industry-leading performance with advanced data security technology to achieve multi-protocol network data recording and playback at Terabit speed. It is a software-defined technology stack that leverages off-the-shelf hardware and is flexible enough to function from the tactical edge to the data center. The cost-effective solution supports high-speed Ethernet connectivity with security and has a unique scale-out design to support the aggregation of multiple data recorders into a single, logical recording system. BrickStor HDR was built specifically to address the recording and playback of any RF signal, including ultra-wideband RF signals, over Ethernet at extreme speed and with lossless integrity.



BrickStor HUB High-Speed Data Recorder

Features:

Multi-Protocol RF Ingest

- Multicast UDP, Unicast UDP, and VITA 49 support over Ethernet
- Seamlessly capture wideband RF signals using standardized IP-based data flows

Record & Playback Functionality

- Capture and store wideband signals in real time, then play them back at full fidelity
- Analyze, test, and validate signals repeatedly without the hassle of recapturing
- Ideal for lab environments, field deployments, and everything in between

Massive Storage in 1U

- 960 TB of raw storage capacity in a single rack unit that can handle even the largest signal captures
- Scalability to expand storage as your data demands grow
- High-density design that keeps your data center footprint minimal

Blazing Network Speeds

- Up to 800 Gb/s of network connectivity in 1U, perfect for high-bandwidth RF ingest and playback. Aggregate multiple systems together to achieve Terabit speed
- Multiple NIC options are available for flexible network architectures
- Eliminate network bottlenecks and keep pace with ultra-wideband data streams

Cyber Secure NAS Integration

- Built-in cybersecurity and NAS (Network Attached Storage) functionalities
- Encrypted data storage, secure authentication, and real-time data protection
- Compliance with CSfC, FIPS, and Common Criteria depending on deployment needs

Ultra-Fast Throughput & Reliable Performance

- Optimized file system technologies for high-speed read/write operations
- Integrated data compression for efficient usage of available capacity
- End-to-end data integrity with self-healing architecture and protection against bit errors

Deployment Flexibility

- Fits seamlessly in 1U of rack space with clustering options for larger, distributed environments
- Ruggedized options available for challenging conditions
- Perfect for ground stations, test labs, range telemetry, electronic warfare, and more

User-Friendly Management Tools

- Intuitive web-based GUI and REST API for system configuration and monitoring
- Save and restore recording configurations

Data Portability

- Hot swappable Disk Packs to offload and carry data securely from the field
- Export data to an external mount point

Specification	Details
Protocols	Multicast/Unicast UDP, VITA 49 over Ethernet
Network Connectivity	Up to 800 Gb/s (multiple NIC options)
Storage Capacity	960 TB in 1U
Data Throughput	High-speed recording/playback up to wire-rate
Security	Cyber secure NAS, encryption at rest, access controls
Form Factor	19" rack or specialized formats (military, portable)
Management	Web-based GUI, REST API
Encryption	2 Layers of FIPS AES-256 (CSfC options available)
Compliance	FIPS, Common Criteria, CSfC, and others (deployment-specific)
Operating Environment	Standard or ruggedized variants

Use Cases

- Aerospace & Defense: Field-deployable, radar recording and playback
- Electronic Warfare (EW) & SIGINT: Capture and replay complex RF scenarios to train systems and refine algorithms
- Telecommunications & Satellite: Validate signals end-to-end with precise record and playback
- Research & Development: Store massive data sets for replay-based experimentation and system analysis

Deployment

The solution is deployable in a ruggedized form factor for tactical and edge deployments as well as a standard data center rack server. Ruggedized form factors can be designed to meet rigorous environmental and military specifications. Systems can be tailored to meet the mission and platform's size, weight, and power requirements.