# Red Hat and TOUGHBOOK: Powering the industrial and defense edge

## Protect critical operations with performance, reliability, and a focus on security

In today's high-stakes industrial and defense landscapes, digital transformation is not just an innovation initiative—it is a critical priority. Teams need to have real-time access to security-focused, reliable, and high-performance computing that is optimized for the world's most rugged environments at the farthest edges of networks.

Red Hat and Panasonic collaborated to meet this need by offering Panasonic TOUGHBOOK devices with Red Hat® Device Edge as its edge computing platform. This brings together field-grade hardware and enterprise-grade software to offer a flexible, secure, and reliable edge computing platform for organizations operating at the edge of connectivity and comfort, with advanced edge computing, AI-powered automation, and real-time data processing.

### Panasonic TOUGHBOOK: Built for the front line

These rugged laptops and handheld computers offer a complete solution that brings together hardware, software, and services to put data directly into the hands of front-line workers working in harsh conditions and keep them connected, safe, and efficient.

They are built to withstand the most rugged conditions, tested extensively (including testing for drops, shocks, vibrations, temperature extremes, humidity, altitude, rain, dust, sand resistance, and thermal shocks), and backed by robust warranties and a network of engineers, industry experts, and repair centers.

Already designed to thrive in a wide range of critical use cases—including emergency services, public safety and smart cities, and ports and customs—Panasonic has expanded the verticals that TOUGHBOOK devices are optimized for by offering them with Red Hat Device Edge.

### Red Hat Device Edge: Connectivity in all environments

This lightweight, enterprise-grade platform is optimized to deploy and manage containerized applications at the farthest edge of networks, offering hybrid cloud capabilities to remote, resource-constrained, and rugged environments.

These 3 key Red Hat solutions transform edge devices from passive data collectors into active decision-making nodes that can support the full spectrum of critical workloads:

- **Red Hat Enterprise Linux®**. This open source operating system (OS) offers a stable and reliable platform for running applications and workloads with flexibility, consistency, and a focus on security across various hardware and cloud platforms. It provides long-term, comprehensive support, cross-domain compatibility, certified reliability, and a host of features, capabilities, and integrations to help organizations succeed at the edge.

- **MicroShift.** This lightweight Kubernetes container orchestration solution is built from the edge capabilities of Red Hat OpenShift®. It brings Kubernetes-native capabilities to remote and rugged locations with limited computing power and uses a consistent Kubernetes application programming interface (API) to extend operational consistency for hybrid and multicloud deployments all the way to the farthest edge of networks.
- **Red Hat Ansible® Automation Platform.** This versatile automation platform uses containerization to distribute and run automation across environments and offers a single, consistent view of enterprise IT landscapes. This unified approach to automation helps lower operational expenses and offers reliability and consistency across datacenters, hybrid and multicloud environments, and the farthest edge of networks where resources are extremely limited.

## Support intelligent operations at the farthest edge of a network

The combination of these hardware and software solutions provides containerization, centralized management, integrated security, and many other key capabilities that industrial and defense organizations need to succeed in rugged environments at the edge of networks. This includes cloud-native capabilities, offline operation and synchronization to help mitigate risk of data loss during outages, and local data processing that reduces latency and allows for real-time decision-making.

This all comes together to deliver:

- **Accelerated decision-making at the edge.** Red Hat and TOUGHBOOK offer an edge-first approach where data is collected, processed, and analyzed locally. This eliminates delays from sending data back to centralized data centers so that decision-support systems, such as AI and real-time analytics, can operate with minimal latency to give front-line workers immediate access to critical insights.
- **Operational resilience in harsh conditions.** TOUGHBOOK's certified durability makes sure that devices survive drops, shocks, vibration, and inclement weather. Red Hat further enhances this resilience by providing reliable product lifecycles and stable software platforms that maintain functionality even in disconnected or air-gapped environments.
- **Interoperability across systems.** Modern operational networks are complex and distributed, often requiring outdated systems to communicate with cloud-native applications, edge devices, and mobile platforms. Red Hat's open source architecture provides plug-and-play compatibility across a wide range of hardware and software environments. This comes together with TOUGHBOOK's modular hardware options that can adapt to specific needs to deliver streamlined integration options across operations.
- **Robust security focus.** Red Hat Enterprise Linux includes integrated security features such as SELinux (Security-Enhanced Linux), FIPS 140-2 validation, and support for DISA STIG compliance. TOUGHBOOK complements this with hardware-level protections, including removable solid-state drives (SSDs), trusted platform module (TPM) chips, and encrypted storage.
- **Software-hardware integration.** Red Hat Enterprise Linux and Red Hat Device Edge run natively on TOUGHBOOK systems, to provide a consistent and reliable software experience, as well as accelerated deployment, streamlined management, and optimized performance across different edge environments.

- **Optimized performance and lifecycle management.** Performance tuning and resource optimization are key features of Red Hat platforms. Combined with TOUGHBOOK's long device lifecycle and field-serviceable components, organizations can rely on sustained performance and reduced total cost of ownership (TCO).
- **Long-term reliability.** Red Hat supports Red Hat Enterprise Linux for up to 10 years, aligning perfectly with the long lifecycle of TOUGHBOOK hardware to provide stability across operational timelines.
- **Global reach, and local support.** TOUGHBOOK offers in-region service and repair facilities, while Red Hat provides 24x7 enterprise-grade support backed by global engineering teams. This combination provides comprehensive support coverage to help reduce downtime and support mission continuity anywhere in the world.

## Use case: Red Hat and TOUGHBOOK in the industrial sector

Digital operations within industrial sectors play a vital role in supporting everything from field technicians working in remote environments to complex logistics and supply chain management systems. But deploying and managing IT systems in these high-demand settings comes with an evolving set of challenges.

Red Hat and TOUGHBOOK's scalable, security-focused, and high-performance computing helps industrial teams process and share vital data, maintain operational continuity, and adapt quickly to evolving demands.

### Support resilient operations with industrial-grade durability and security focus

TOUGHBOOK with Red Hat delivers a reliable and robust computing solution built to last and support dependable operations in even the most challenging and vulnerable industrial environments with:

- **Rugged design.** TOUGHBOOK is engineered to endure drops, shocks, vibrations, and harsh weather conditions to support continuous operations in challenging industrial and outdoor environments. This is backed up by certification to key ingress protection standards, including Ingress Protection (IP) Ratings IP65, IP66, and IP68.
- **Advanced focus on security.** Red Hat provides a security-focused IT environment that adheres to a large range of key security standards, including Common Criteria ISO/IEC 15408, CIS Benchmarks, and more.

### Empower frontline workers and IT administrators in demanding environments

From on-site equipment maintenance to coordinating field inspections or remote diagnostics, frontline industrial personnel need reliable access to critical systems and tools. Red Hat and TOUGHBOOK support this with:

- **Reliable industrial communications.** TOUGHBOOK supports stable, security-focused on-site communications, while Red Hat safeguards data transfer with advanced encryption and cyber protection, to help industrial teams maintain data integrity and collaboration in bandwidth-constrained or remote conditions.
- **Control and coordination.** TOUGHBOOK devices powered by Red Hat platforms feature secure boot, enterprise-grade encryption, and real-time software updates that support reliable communication and coordination across field teams, control centers, and supervisory systems.

- **On-the-move and mobile applications.** TOUGHBOOK are designed for mobile and vehicle-mounted scenarios, with a build that withstands shocks and vibrations. Red Hat complements this with high-performance data processing and the flexibility of containerized applications for secure, mobile-first deployments.

## Use case: Red Hat and TOUGHBOOK in the defense sector

Digital operations in the defense sector are critical, supporting everything from frontline troops to logistics and command centres. Deploying and managing military IT systems presents unique and evolving challenges that require security-focused, scalable, and high-performance solutions.

TOUGHBOOK with Red Hat delivers the security-focused, scalable, and high-performance computing environment needed to dominate the digital battlefield and support the ever-evolving requirements of modern warfare.

### Keep frontline troops and operations safe and connected

Protecting communications in combat zones is essential for operational success, and even more critically, it is key to keeping the frontline connected and safe. Red Hat and TOUGHBOOK support this crucial need with:

- **Reliable and safeguarded battlefield communications.** Red Hat helps maintain data transmission on security-focused battlefield networks with advanced encryption, access controls, and containerized applications that meet key military security standards for safeguarding mission-critical applications and data. This includes FIPS 140-2/140-3, Secure Technical Implementation Guidelines (STIGs), FedRAMP, and more.
- **Mobile applications and extreme resilience.** Red Hat and TOUGHBOOK are designed to thrive in extreme mobile scenarios, with a build that withstands shocks and vibrations and the computing capabilities needed for security-focused, mobile-first deployments.

### Gain tactical superiority with high-performance computing and AI

Military personnel require real-time data processing and AI-powered insights at the point of engagement. This helps them maintain a tactical advantage through rapid response capabilities and enhanced situational awareness. Red Hat and TOUGHBOOK support these mission-critical needs with:

- **Optimized performance and scalability.** Red Hat platforms support real-time data processing, application containerisation, efficient resource allocation to support optimised performance for defense applications, and streamlined scaling of defense forces operations, from mission control to the tactical edge.
- **Decision dominance powered by AI and edge computing.** Red Hat solutions provide the high-performance edge computing, real-time data processing, and AI-powered insights needed for military operations to maintain access to mission-critical intelligence and accelerate tactical decision-making.

## Start transforming your edge operations with Red Hat and Panasonic

Explore this page to learn more about Panasonic TOUGHBOOK and Red Hat Device Edge or to speak to a Red Hatter about how it can help your organization operate reliably and effectively in even the most rugged and remote environments.

**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 develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. A trusted adviser to the Fortune 500, Red Hat provides award-winning support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.


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