

Improve supply chain compliance with Red Hat and QU4RTET

A leading open source, cloud-ready enterprise solution for pharmaceutical serialization

By combining Red Hat solutions with the QU4RTET serialization platform, organizations can:

- Meet their compliance needs.
 - Integrate with trading partners seamlessly.
- Offer serialization support to their customers with confidence.
 - Reduce costs and improve efficiency.

100% of healthcare companies in the Fortune Global 500 use Red Hat.¹

Address complexity with technology

In healthcare, patient safety is paramount. But as pharmaceutical supply chains become more complex, the risks of counterfeiting, diverting, and importing unapproved or substandard drugs are threatening supply chain integrity—and, as a result, the welfare of citizens. Around the globe, government agencies are implementing pharmaceutical product serialization and track-and-trace regulations, each with its unique requirements and enforcement timelines.

In the U.S., the Drug Supply Chain Security Act (DSCSA) requires pharmaceutical companies to deliver improved visibility across their global supply chain networks to identify threats that compromise product quality and safety. Specifically, the DSCSA requires all manufacturers to affix a unique serial number to all products. This serial number must be validated by trading partners as the product travels through the supply chain. This process is typically referred to as serialization.

Serialization mandates require pharmaceutical manufacturers to seamlessly integrate, connect, and collaborate with supply chain partners in new ways, transforming rigid, closed, and reactive systems into transparent, responsive, and proactive end-to-end solutions. In response, organizations across the pharmaceutical supply chain have been reassessing their IT infrastructures and investing in software solutions to ensure global compliance. However, existing serialization platforms are often rigid, lacking the architectural flexibility that customers need to respond appropriately. Red Hat and QU4RTET can help.

Meet global serialization requirements with Red Hat and QU4RTET

Together, Red Hat and QU4RTET deliver an open source, enterprise serialization solution. The combined solution manages serialized product events to allow approved internal and external partners to access product identification, location, and event data throughout the delivery supply chain, and it allows partners to share serial numbers for manufacturing.

Create a more open and flexible approach

Built on open source technology, the Red Hat and QU4RTET solution includes:

- **Red Hat® Enterprise Linux®**, the intelligent operating system that is the consistent foundation for the enterprise hybrid cloud.
- **Red Hat Ansible® Tower**, an automation platform for more securely and efficiently provisioning systems, deploying applications, orchestrating complex workflows, and managing system, network, and application configuration.
- **Red Hat OpenShift®**, offering multiple deployment models with push-button automation to provide scale and security through container technology.
- **Red Hat Storage**, an open, low-cost, software-defined storage platform to handle disparate data formats and scale across physical, virtual, and cloud resources.



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- **Red Hat AMQ**, for a quick and efficient response to business demands by integrating applications and spreading data across the enterprise.
- **QU4RTET serialization platform**,² for communication with site systems, warehouse systems, enterprise resource planning, and trading partners as products move through the supply chain. Support for trade item, location, trading partner, and geolocation tracking are all built in, using established, global standards.

The QU4RTET platform also generates and distributes serial number information to other systems that require unique numbers for manufacturing, packaging, printing, and related activities. The platform includes an integrated Electronic Product Code Information Systems (EPCIS) event repository to ensure global regulatory compliance, diversion detection, product recall, and anti-counterfeiting capabilities.

Connect health data, devices, and systems

The Red Hat and QU4RTET solution is ideally suited to the complexities of modern pharmaceutical manufacturing and distribution. As an open source solution, it offers more adaptability than off-the-shelf or proprietary alternatives, with easily accessed code that can be modified to work within existing supply chains workflows. Also, the subscription-based software provides a software-defined, cloud-ready environment for virtualization, offering greater flexibility, scalability, cost savings, and efficiency.

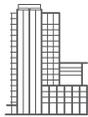
The solution's open source architecture provides interoperability across internal systems, integrating data through applications and application programming interfaces (APIs) and with existing applications and systems. As a result, organizations have visibility across the supply chain ecosystem to proactively manage supply and achieve regulatory requirements. The Red Hat architecture provides robust security to ensure that data is fully protected and can be safely shared with all parties.

² *QU4RTET is an open source, level-4 (enterprise to enterprise) system designed to support both domestic and international serialization requirements. It is fully compliant with the DSCSA and the European Union Falsified Medicines Directive.*

Build collaboration and adaptability for the future

Pharmaceutical supply chains will continue to grow in complexity, as will industry regulations. With the Red Hat and QU4RTET solution, pharmaceutical organizations can meet compliance requirements, seamlessly integrate with trading partners, and provide serialization support to their customers.

For more information on the Red Hat and QU4RTET solution, visit redhat.com/health.



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 integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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