Wind River Studio
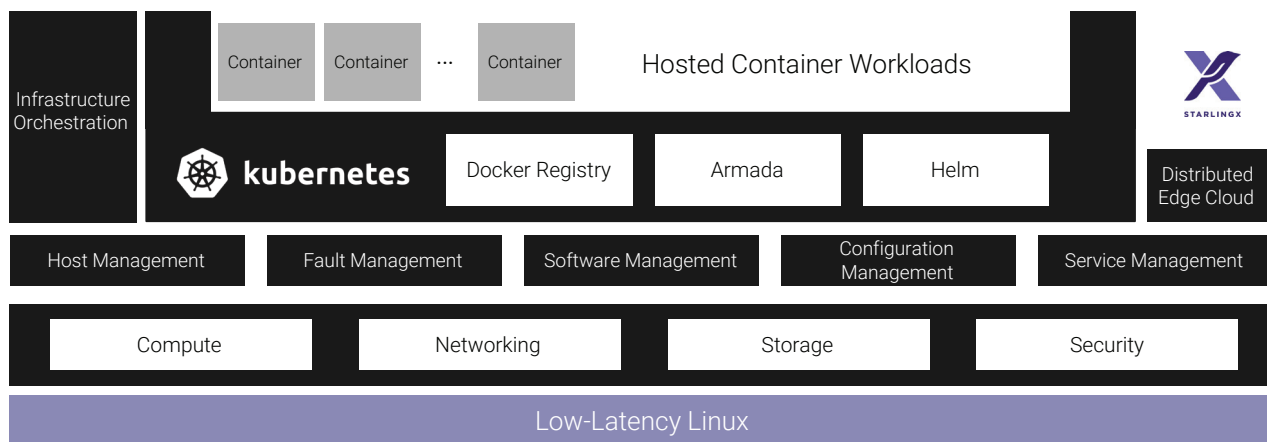# Operator Capabilities: Cloud Platform

Edge connections, especially 5G, are poised to explode in growth. To deliver, 5G networks must offer extremely low latency, high availability, security, and flexibility. They must also rely on distributed cloud architecture to be robust, resilient, and flexible across a multi-node, geo-distributed landscape.

Wind River® delivers these features today with the cloud platform that is at the core of its operator capabilities. Based on the StarlingX project, Wind River Studio Cloud Platform provides a production-grade Kubernetes solution for managing edge cloud infrastructure and compiles best-in-class open source technology to deploy and manage distributed networks.

BENEFITS

Managing distributed cloud networks can be complicated, draining resources and slowing your development of new services. Optimized for the network edge, Cloud Platform offers a flexible, low-latency, high-availability solution for operators with simplified Day 1 and Day 2 operations that meet the challenges of 5G and the future. Key benefits to operator customers deploying Studio include:

- **Controlled operational cost:** Studio simplifies deployment, management, and maintenance. By offering single-pane-of-glass management with automated and hitless software updates and upgrades, your distributed cloud network becomes manageable without any need to disproportionately scale up staff or take down the network. Furthermore, integrated end-to-end security helps mitigate risk, giving you less to worry about.

Infrastructure Orchestration	Container	Container	...	Container	Hosted Container Workloads		STARLINGX
	kubernetes		Docker Registry		Armada	Helm	Distributed Edge Cloud

Host Management	Fault Management	Software Management	Configuration Management	Service Management

Compute	Networking	Storage	Security

Low-Latency Linux

Wind River Studio Cloud Platform

- **Market leadership:** Zero-touch provisioning, automatic updates, and dynamic scaling are a few of the features that make Studio ideal for distributed networks. With the tools needed to easily deploy and manage a diverse distributed cloud network, Studio is the infrastructure that service providers need now to be first to market with 5G vRAN at scale.

- **New revenue streams:** A fundamental premise of 5G is that it will enable new low-latency use cases such as autonomous driving, robotics, and a myriad of yet to be imagined services. With an out-of-the-box, optimized, ultra-low-latency, small-footprint infrastructure, Studio offers flexibility that will grow with your business.

- **Production-ready Kubernetes:** Leverage deployment-ready open source with commercial testing, hardening, and lifecycle support and maintenance. Studio offers a fully supported, open source platform for operators that you can deploy today.

KEY FEATURES

Any technology that is built to support 5G at the edge will require features such as ultra-low latency, high availability, scalability, and security, but that's just a beginning. In order to effectively deploy and manage a distributed network, Studio also provides features for operators such as:

- Simplified Day 1 and Day 2 operations through zero-touch provisioning (ZTP) and single-pane-of-glass host-level management
- Ultra-low latency with deterministic performance optimized per use case
- Support for a single compute node at the far edge
- Scalability from one to many nodes from edge to core
- Orchestration of fully automated upgrade deployments across a geo-distributed cloud, with rollback and roll forward
- Fully integrated security by design
- Automatic workload migration
- High availability with zero downtime for applications

CONTAINER SERVICES AT A GLANCE

- *Docker runtime with Kubernetes orchestration*
- *Local in-cluster Docker Registry*
- *Container networking: Calico, Multus, SR-IOV*
- *Kubernetes persistent storage backed by Ceph*
- *Kubernetes CPU Manager*
- *Kubernetes Topology Manager*
- *Node Feature Discovery*

AIO Simplex — Control, Storage, Worker

AIO High Availability — Control, Storage, Worker

High-Availability Multi-server — Control, Storage, Worker, Worker

Distributed Cloud

Server
Function

USE CASE

With millions of cell sites connecting billions of customers, radio access networks (RANs) make up what is arguably the world's most important distributed network infrastructure. Cell sites will increase exponentially with 5G, driving the industry toward virtualizing the RAN to consolidate and save on equipment costs.

To maximize the benefits of virtual RAN (vRAN), operators need an underlying cloud platform designed to support network-wide configuration and management of far edge applications and infrastructure. Studio is especially suited to these low-latency and high-reliability requirements. It also provides unified edge cloud management and network-wide orchestration that delivers the flexibility to scale from small-footprint, low-cost, low-power single-node servers to full data center configurations.

CARRIER SUPPORT

The CMMI Level 3–rated Wind River Professional Services organization leverages years of system design and development expertise to work collaboratively with customer design and program teams. Professional Services interprets system requirements; architects platform options; and provides recommendations for meeting business, technical, and program goals. For more information, visit www.windriver.com/support.

HOW TO PURCHASE

To discuss how Wind River Studio can help you deploy and manage your distributed edge network, contact your Wind River account manager or visit www.windriver.com/contact.

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