WNDRVR

Wind River Studio Distributed Cloud

Wind River® Studio provides a complete cloud-native infrastructure software stack, based on the StarlingX open source project.

WHY DISTRIBUTED CLOUD??

Distributed cloud capabilities are essential to support the use cases of the future. As demanding requirements for connectivity with low latency and high reliability become nearly ubiquitous, distributed clouds that bring compute and storage closer to end users are becoming more common. This trend is increasing the need for on-premises network access, which in turn is driving adoption of hybrid cloud architectures.

A distributed cloud architecture is a fundamental element in realizing the promise of 5G, where AI and automation processes that enable digital scale become the norm for successful CSPs across the globe.

EMPLOY A DISTRIBUTED CLOUD INFRASTRUCTURE FOR THE FAR EDGE

Studio provides a Kubernetes-based cloud infrastructure stack. Based on the open source StarlingX project, Studio Cloud Platform compiles best-in-class open source technology to deploy and manage distributed networks.

Studio distributed edge cloud capabilities are delivered through a production-grade distributed Kubernetes cloud platform for managing edge cloud infrastructure. Studio provides ready-to-use multi-node and distributed clusters that can be deployed on bare metal or in the cloud.

Wind River has decades of experience delivering solutions to telecom equipment manufacturers needing infrastructure to power radio access network (RAN) appliances. Studio is deployed by Tier 1 operators around the world. Studio distributed cloud capabilities start with StarlingX, a purpose-built, fully featured open source distributed cloud infrastructure. By including Day 1 and Day 2 features, plus integrated analytics and automation, Wind River makes it easy and cost-effective for operators to deploy and operate their distributed cloud.

Why Now for Distributed Cloud?

- **The need is recognized:** Nine out of ten technology leaders indicate that they would accelerate adoption of technologies such as AI/ML, AR, VR, self-driving AGVs, digital twins, and more with the promise of access to a highly reliable, ultra–low latency intelligent cloud.
- **Infrastructure to support 5G is being deployed today:** As 5G services are made available, we can expect the demand to increase once consumers and businesses learn how to take advantage of extremely low latency and high bandwidth connectivity. As we move past the learning curve of what 5G can enable, we can expect demand to increase.
- **6G will be here sooner than we think:** 6G is expected to expand the capabilities of 5G, particularly with enhanced scalability and dynamic access to different connection types and speeds 100 times faster than 5G and latency that is five times lower.

.ARCHITECTURE

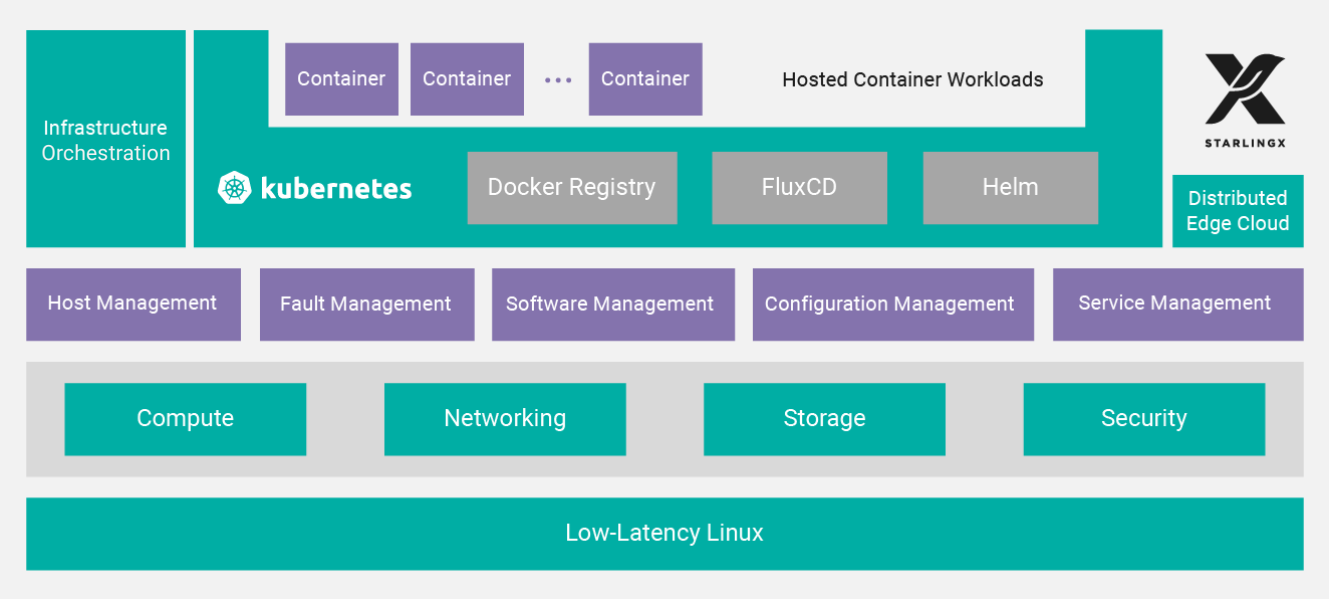

Figure 1. Studio Conductor enables zero-touch provisioning across millions of entities

FEATURES AND BENEFITS

- **Distributed cloud:** Heterogeneous distribution of Kubernetes clouds includes a central cloud (system controller) and remote, geographically dispersed edge clouds. Studio supports centralized deployment of a container platform on subclouds with subcloud health monitoring and management.
- **Day One and Day Two capabilities:** Deploying and managing a distributed cloud is complex. Studio includes features to help ease the burden and complexity. With zero-touch provisioning and automated fault management and deployment of updates and upgrades, all through a single pane of glass, operators can keep their cloud optimized to provide revenue-generating services to their customers without interruption.
- **Host management:** Studio provides full lifecycle management of the host, detecting and automatically handling host failures and initiating recovery. It also provides monitoring and fault reporting for cluster connectivity, critical process failures, resource utilization thresholds, interface states, and more.
- **Fault management:** Studio provides a framework for infrastructure services via API to set, clear, and query customer alarms as well as generate logs for significant events. It maintains an active alarm list and provides a REST API to query alarms and events.
- **Software management:** Automated deployment of software updates for security and/or new functionality includes an end-to-end rolling upgrade solution and supports in-service and reboot required patches.
- **Configuration management:** Studio manages installation through auto-discovery of new nodes, managing installation parameters, and bulk provisioning of nodes through the XML file. It also handles nodal configuration and inventory discovery.
- **Service management:** With a high availability manager with an N+M redundancy model or N across multiple nodes, Studio uses multiple messaging paths to avoid split-brain communication failures. It also provides active or passive monitoring of services.

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