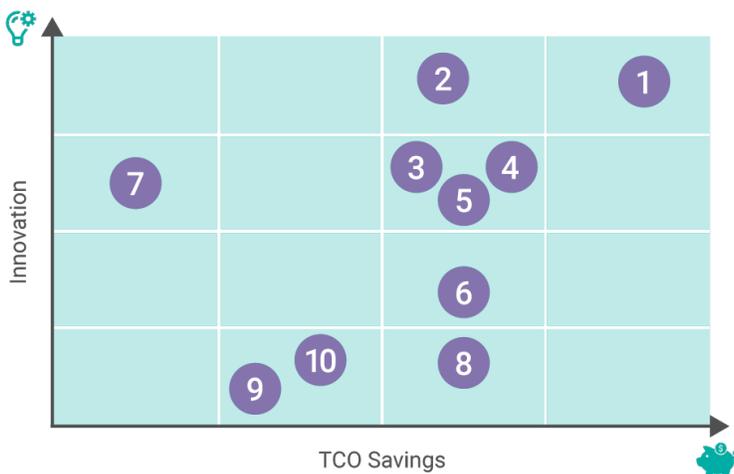# Wind River Studio:
Engineered for Open RAN Success
Through Innovation and TCO Savings

Open RAN could save up to 30% in total cost of operations (TCO) if built with the components that Wind River® Studio provides.

Studio has been proven in live deployments at scale. Its foundational components include a container-based distributed cloud platform and full-stack analytics, plus automation and orchestration.

Here is a sample of some of the unique and innovative features our customers rely on to keep down their TCO.

Key Differentiators: Innovation and TCO Savings

1. CPU utilization / hardware footprint
2. Infrastructure orchestration
3. Power consumption savings
4. Scalability with zero touch
5. Zero-touch deployment of distributed cloud
6. Distributed software patches and upgrades
7. Distributed cloud solution
8. Reliability / high availability
9. Ultra-low latency (out of the box)
10. PTP configurations (out of the box)

CPU Utilization and Hardware Footprint

Impact: TCO Savings: **4/4**   Innovation: **4/4**

Studio has the lowest resource requirement in the market, with only two physical cores needed for the control plane. Optimizations will enable Studio to run on a single core on 4th Gen Intel® Xeon® Scalable processors.

Studio can also operate on a single all-in-one node that includes control, storage, and worker.

Benefits/areas of applicability:

- Efficient hardware server dimensioning
- Power savings
- RAN software optimization

Infrastructure Orchestration

Impact: TCO Savings: **3/4**   Innovation: **4/4**

Wind River supports the complete end-to-end lifecycle management of infrastructure (O-Cloud) and O-RAN services in a single solution.

Integration between Wind River Studio Conductor and the hardware manager is used to implement the correct hardware configuration (BIOS firmware).

Benefits/areas of applicability:

- OpEx reduction
- Time-to-market acceleration
- Minimized human error

Power Consumption Savings

Impact: TCO Savings: **3/4**   Innovation: **3/4**

Wind River is the only CaaS provider demonstrating the ability to reduce power consumption by up to 12%. (This demonstration was performed with O-RAN Alliance ecosystem members at the recent O-RAN PlugFest.)

Benefits/areas of applicability:

- Continuous verification of power savings initiatives for O-RAN deployment
- Ability to identify KPIs and the tools to measure
- Benchmark for comparison with other RAN and hardware vendors

Scalability with Zero Touch

Impact: TCO Savings: **3/4**   Innovation: **3/4**

With Studio you can dynamically scale out the infrastructure (adding worker nodes) with no impact on the existing service(s). Scale from an all-in-one single server (AIO-SX) to a distributed cloud.

Benefits/areas of applicability:

- Hardware server dimensioning
- Power savings
- RAN software optimization

Zero-Touch Deployment of Distributed Cloud

Impact: TCO Savings: **3/4**   Innovation: **3/4**

Wind River is the only CaaS provider that can zero-touch provision a whole distributed cloud using an integrated orchestration framework.

You can execute deployment of a distributed cloud from an orchestrator and deploy a system controller and subclouds with a single click.

Benefits/areas of applicability:

- OpEx reduction
- Time-to-market acceleration
- Minimized human error

Distributed Software Patches and Upgrades

Impact: TCO Savings: **3/4**   Innovation: **2/4**

Wind River is the only CaaS provider with the ability to execute patches and upgrades from a central location. Zero-touch operations are also possible.

Benefits/areas of applicability:

- OpEx reduction
- Time-to-market acceleration
- Minimized human error

Distributed Cloud Solution

Impact: TCO Savings: 1/4   Innovation: 3/4

Benefit from full cloud-native distributed cloud capabilities (not just distributed compute). And service is available even during any communication failure between the central site and cell site.

Benefits/areas of applicability:

- Hardware server dimensioning
- Power savings
- RAN software optimization

Reliability and High Availability

Impact: TCO Savings: 3/4   Innovation: 1/4

Use the lowest number of servers required to implement a high-availability solution, due to efficient hardware utilization capabilities and unique hyper-converged cloud architecture. You can benefit from high availability with as few as two nodes.

Benefits/areas of applicability:

- Hardware server dimensioning
- Power savings
- RAN software optimization

Ultra-Low Latency out of the Box

Impact: TCO Savings: 2/4   Innovation: 1/4

Studio gives you out-of-the-box (i.e., ready for use from Day 0) ultra-low latency without further need for customizations or development. The low-latency kernel satisfies O-RAN low-latency requirements.

Benefits/areas of applicability:

- Hardware server dimensioning
- RAN software optimization

PTP Configurations out of the Box

Impact: TCO Savings: 2/4   Innovation: 1/4

Precision Time Protocol capabilities are available out of the box (i.e., ready for use from Day 0) without further need for customization or development.

Benefits/areas of applicability:

- Hardware server dimensioning
- RAN software optimization

Contact us if you would like to see any of these features demonstrated in your lab.