



Read Me First - Cloud Scale Operational Enhancement

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Cisco IOS XR provides a new set of operational innovations to address key next generation operational requirements.

The operational enhancements enable incremental builds, agile workflows, and modular delivery of software, and the capability to host third-party applications on Cisco routers. These innovations enable traditional and web service providers to converge their data centers and wide area network (WAN) architectures, by making networks more programmable, and by facilitating tighter integration with popular IT configuration and management tools.

The key operational enhancements are:

Telemetry

Telemetry enables efficient network monitoring at large scale by collecting data. The data can be used for a variety of applications such as network optimization, predictive analysis, traffic trend analysis, and analytics. Users define a configured receiver for collecting data, the frequency for data to be pushed out to the receiver, the encoding format and the transport protocol. [Read More...](#)

Application Hosting

Application hosting gives administrators a powerful Linux platform for leveraging the use of industry standard tools and utilities. Cisco IOS XR 6.0 supports a number of third-party off-the-shelf applications and provides a robust Linux environment to cross-compile custom applications using Cisco provided SDK. The 64-bit Linux-based operating system simplifies the integration of applications, configuration management tools, and industry-standard auto-provisioning mechanisms to meet the DevOps style of workflows. [Read More...](#)

Data Modelling

Data models are a programmatic and standards based way of configuring and collecting operational data of a network device. Using data models Cisco IOS XR operating system enables network automation at scale; it uses IETF YANG data modeling language and Netconf protocol for configuration management. Other industry-wide protocols are also **supported such as gRPC (google's Remote Procedure Calls) to automate** programmable network operations. [Read More...](#)

Flexible Packaging

Flexible packaging modularizes the Cisco IOS XR operating system and delivers RPM Package Manager (RPM) packages. The base software is leaner, and contains only the required mandatory packages, with, some packages separated out and made available as optional RPM packages. Users have the flexibility to select and install the services

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they want, by choosing relevant RPMs. RPM based delivery of packages enable easier and faster system updates. [Read More...](#)