



Cisco Crosswork Data Gateway Data Sheet

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Cisco Crosswork Data Gateway is a secure, common collection platform for gathering network telemetry data and depositing it on a message bus for any application including Cisco Crosswork on-premise and cloud-based SaaS applications.

Product overview

Packet networks are growing and will continue to grow even more with the advent of technologies such as 5G in mobile access and Remote PHY in cable. With increased network demand and network expansions to address these new technologies, Service Provider networks are expected to have a substantial increase in the number of devices. As networks get bigger, already overloaded software systems will receive even larger amounts of telemetry data from the networks that Service Providers want to leverage for exciting new analytics and network functions. The term “telemetry” is used in a generic way here and applies to MDT (Model Driven Telemetry), SNMP, Syslog, Netflow etc. There is great operational value in network telemetry data! Cisco Crosswork Data Gateway has been developed for real time data collection from multi-vendor network devices. Cisco Crosswork Data Gateway is here to simplify the collection challenges of all this network traffic.

Cisco Crosswork Data Gateway is an on-premise application deployed close to network devices enabling multiple data collection methods - MDT, SNMP, CLI etc. The collected data is delivered securely and consumed by on premise and cloud analytics applications. Crosswork Data Gateway enables a critical and important tenet of data collection: the collection process should be an efficient and centralized step.

Cisco Crosswork Data Gateway assumes the job of connecting to devices, collecting the data, and publishing it. Pushing a first-stage processing function closer to the source data, Crosswork Data Gateway can reduce the amount of data sent to the application and the stress on the devices, abstracting the network complexity and reducing application vendor dependencies. If the use case dictates, Cisco Crosswork Data Gateway can send the raw data for direct consumption by the registered application.

The instances of Cisco Crosswork Data Gateway can be distributed to support large-scale networks. Crosswork applications scale better by offloading data collection and processing to distributed Data Gateway instances closer to the devices.

Features and benefits

Table 1. Key features and benefits

Feature	Benefit
Multiple device protocols for collection	<ul style="list-style-type: none"> • Rather than having a different application for each device protocol in the network, Cisco Crosswork Data Gateway funnels all of it through one tool while simplifying the technical details • Supported protocols: SNMP, CLI, and MDT.
Multiple data distribution options	Cisco Crosswork Data Gateway supports three options for applications to consume the data: <ul style="list-style-type: none"> • gRPC dial-out • publishing to an external secure Kafka bus • Crosswork application integration
One collection point	<ul style="list-style-type: none"> • Reducing load on your network devices improves network performance. A single data collection touch point to your network simplifies security requirements and reduces opportunities for mistakes
Multivendor ready	<ul style="list-style-type: none"> • Easily add support for other vendor devices, you can have one data collection system for your whole network
Streaming telemetry	<ul style="list-style-type: none"> • Whether you want to reduce the amount of impact on your devices or simply funnel your telemetry

Feature	Benefit
collection	data through one place, Cisco Crosswork Data Gateway has you covered
Cisco Crosswork Cloud integration	<ul style="list-style-type: none"> Cisco Crosswork Data Gateway is leveraged by cloud services like Cisco Crosswork Network Insights and Cisco Crosswork Trust Insights to manage on-premise data collection
Cisco Crosswork on-premise integration	<ul style="list-style-type: none"> Cisco Crosswork Data Gateway is leveraged by on-premise Cisco Crosswork applications: Health Insights, Change Automation, and Optimization Engine for distributed data collection
Programmable	<ul style="list-style-type: none"> Leveraging the open Northbound API from the Crosswork platform, Cisco Crosswork Data Gateway can be integrated with external applications to extend the collection ecosystem
Centralized collection management and troubleshooting	<ul style="list-style-type: none"> For simplified deployment and life cycle management of your distributed collection, Cisco Crosswork Data Gateway Integrates with the Crosswork Network Automation platform

Centralized collection management and troubleshooting

Whether trying to deploy the newest MIB package or trying to determine the collection status of the latest job, using Cisco Crosswork Network Automation as a centralized life cycle manager gives added ease for troubleshooting, deploying, and managing distributed collection. The central controller sits in the middle and orchestrates the communication to the Cisco Crosswork Data Gateway's and the network devices.

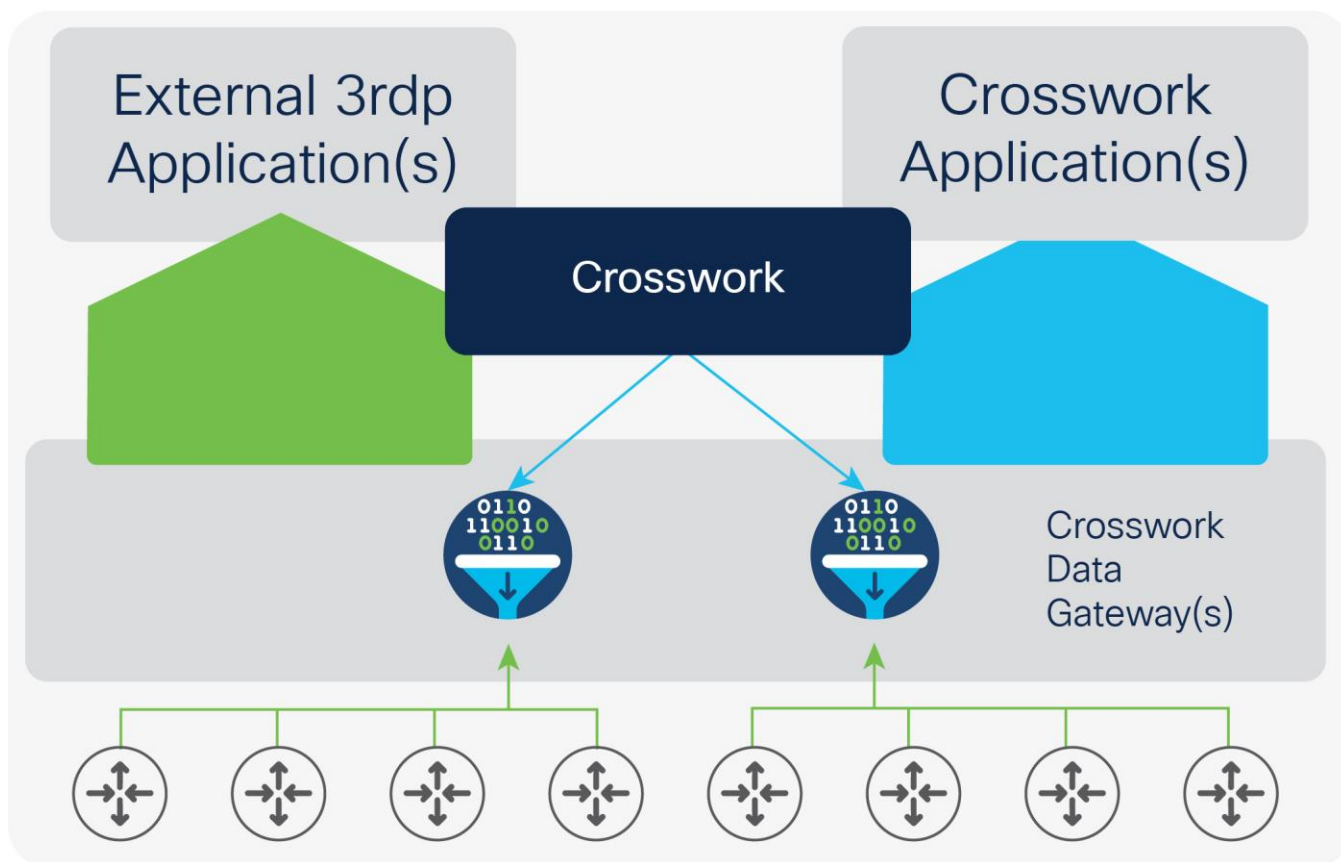


Figure 1. Architecture Overview of how Cisco Crosswork Data Gateway fits into the network

A common collection point

As the number of network analytics applications (on-premise or cloud) used by Service Providers increases, common collection becomes critical to distribute data securely and help operations teams with visibility of information collected.

- Single point of integration – deploy and integrate with network once, add new services later
- Multi-protocol collection – SNMP, CLI, MDT supported now with others in the future
- Cloud Connectivity – Gateway for multiple Cisco Crosswork Cloud services

Increased application scale

Cisco Crosswork applications scale better by offloading data collection and processing to distributed Cisco Crosswork Data Gateways.

Any device, Any vendor

Cisco Crosswork Data Gateway supports different Cisco devices out of the box. Cisco Crosswork Data Gateway provides infrastructure to add new device packages that support data collection from multi-vendor devices. For Release 1.1, this will be supported for CLI and SNMP data collection.

Cisco Crosswork Data Gateway is designed to be easily extensible to support any device type (including 3rd party) with the supported protocols. Create additional device package files and add them to the application. Out-of-the-box, Cisco provides a set of device packs for the following device OS to demonstrate the functionality:

Table 2. Included device packages

Operating System
Cisco IOS-XR
Cisco IOS-XE
Cisco NX-OS

Multiple protocol support

Cisco Crosswork Data Gateway supports a number of industry standard communication protocols to the network. For the initial release we focused on some of the most common protocols and are constantly expanding this list.

Table 3. Supported protocols

Protocol	Description
SNMP	SNMP v1, v2c, v3. SNMP Traps and notifications
MDT	Model driven telemetry, dial out over TCP
CLI	Command Line Interface, Telnet/SSH

Data output

Data requests are published to a message server. Cisco Crosswork Data Gateway supports two options for applications to consume its data:

- gRPC dial-out to an application hosted gRPC server
- publishing to an external secure Kafka bus

Data retention and storage is outside of the scope of Cisco Crosswork Data Gateway.

Licensing

While the software is included with the purchase of on-premise Cisco Crosswork applications:

- Health Insights
- Change Automation, and
- Optimization Engine

Additional license enablement can be purchased on top of one of the above on-premise applications for access to the APIs to integrate Cisco Crosswork Data Gateway to an external application.

1. RTU for external collection distribution for application integration
2. RTM for each device you wish to collect data from for distribution to your external destination

For Crosswork Cloud applications, Cisco Crosswork Data Gateway software is included in your application cost.

System requirements

These are the system requirements to install the base collector VM. For the Crosswork on-premise management requirements please see [Cisco Crosswork Change Automation and Health Insights Data Sheet](#).

Table 4. System requirements

Category	Required
Hypervisor	VMWare ESXi 6.5 (Update 2 or later) and 6.7.x
Memory	32 GB minimum
Diskspace	50 GB SSD
vCPU	8 vCPU
Interface	Three physical interfaces: <ul style="list-style-type: none">• One interface for management traffic, including SSH and GUI access to the VM. The DNS and NTP servers, and the default gateway, must be reachable via this interface• One interface for southbound data traffic. Managed devices must be reachable via this interface (routable)• One interface for northbound data publishing. The data destination must be reachable via this interface

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