The bridge to possible

Crosswork Cloud

SaaS insights and operational simplicity

The sheer number of different management and reporting products service providers must deploy, operate, and maintain is increasing. These products are ancillary to your user-facing services and maintaining all these applications adds to Operational Expenditures (OpEx) and increases operational complexity. Dealing with these products reduces the amount of time required by service providers to build and maintain the services that directly deliver end-user value.

Service providers can benefit by scaling their operational services from the cloud with Cisco Crosswork Cloud. It offers multiple cloud-based solutions that provide operational insights and validation of network health and security. You benefit from the agility and scale of the cloud, and your valuable data is secured. Using Cisco Crosswork Cloud, you can gain information, analytics, and insights that are independent of other web and Over-The-Top (OTT) networks.

Benefits

Cloud-based network automation services can offer service providers many advantages, including:

- Gain insights and analytics that are independent of other networks
- Adapt to new services quickly with scalable and flexible integration
- Reduce internal operational complexity and speed up deployment
- Get instantly available and continuously implemented features and updates
- Obtain financial benefits from moving IT costs from CapEx to OpEx with a pay as-you-go model

Why operate in the cloud?

At this point, almost every business has moved some aspect of their business to the cloud using the Software as a Service (SaaS) delivery model. Cloud-based SaaS uses the internet to deliver applications to users. Most SaaS applications work through a web browser, including familiar cloud-based applications like Salesforce or ServiceNow.

As a service provider, network reporting and analytics services are mandatory expansions of your internal network optimization and automation infrastructure. Whether you want to have greater analytical insights into routing efficiency, trust posture, or other value-added service overlays, deployment can be a critical make-or-break process. Improper deployment can be costly, set an organization back in time and functionality, and introduce additional operational complexity that can be difficult to manage. Additionally, any incremental update or modification to these implementations, when managed locally, can be costly and slow to adopt.

With cloud-based SaaS services, deployment can happen quickly with low operational cost. These services also offer continuous updates that allow you to operate with the most up-to-date and influential features. When deployment cost and complexity are distributed to external providers, you no longer need to maintain large operational structures to add valuable reporting and analytics to your network.

Cloud services can offer many advantages for businesses, including:

- Scalability to meet increasing demand for resources and fast application implementation, deployment, and updates
- Reduction in geographic limitations and the ability to create multi-region infrastructures and support distributed teams
- Simplified disaster recovery, easier maintenance, and better control of software and other resources
- Financial benefits from moving IT costs from a Capital Expenditure (CapEx) to OpEx with a pay-as-you-go model
- More flexible integration with a single integration point or API, such as with Cisco Crosswork Situation Manager

For verification purposes, you may want to keep analytics, security, and trust applications off-site so you have third-party independent authentication.

From a security standpoint, SaaS solutions can help protect you from insider threats and internal bad actors. SaaS services provide a new operational model that is up-to-date, continuously monitored, and continuously updated. Carriers can quickly take advantage of new features and capabilities without the operational burden of constantly testing and deploying new updates for ancillary services.

Cisco Crosswork Cloud overview

As a service provider, you're probably aware of on-premises automation solutions from Cisco. These applications provide actionable insights with automated network orchestration that can help you avoid network degradation and customer issues. However, not all situations and applications are as efficient on-premises, so it may make sense to deploy from a cloud SaaS solution instead.

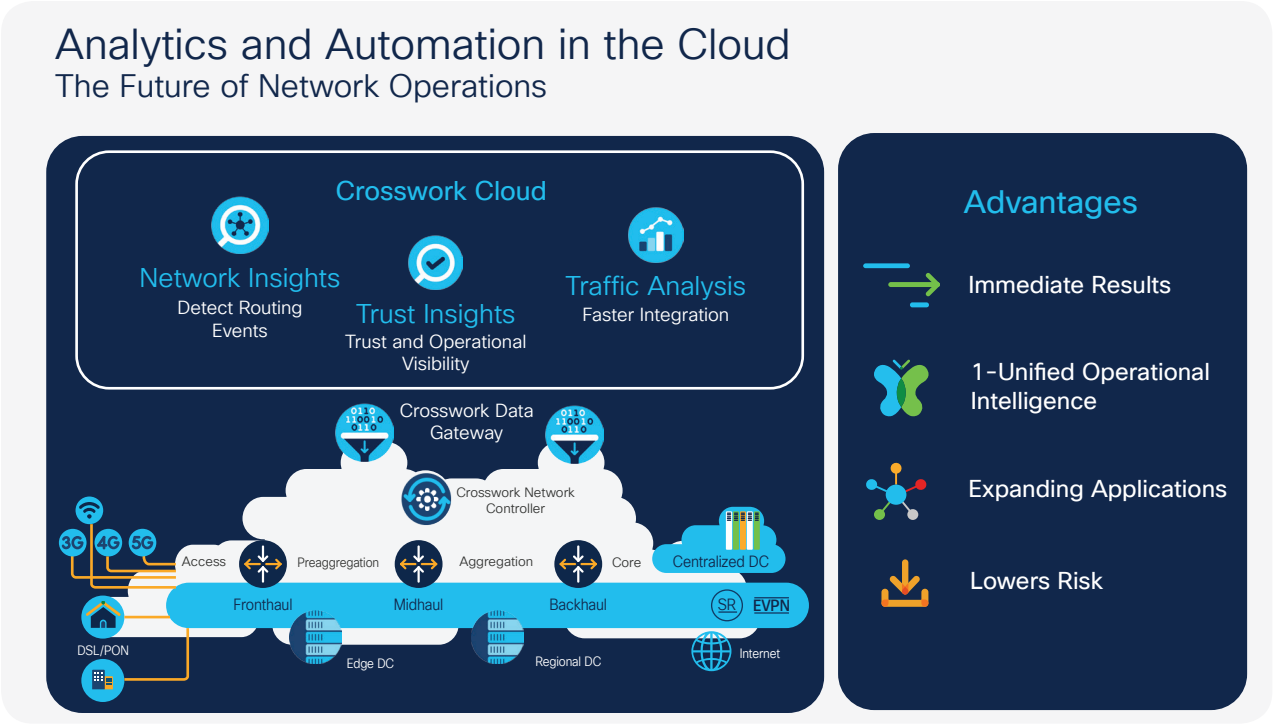
Cisco specializes in helping you operate your network more efficiently, and with our SaaS applications, you can build features and services that are independent of your direct competitors. We have access to routing data and telemetry to help you keep your network running well without relying on services from your industry rivals.

Crosswork Cloud SaaS applications are designed to live in the cloud. The applications are most efficient when they operate in proximity to external databases to enhance or enable their functionality. Because the Crosswork Cloud SaaS applications are operated by Cisco and reside in the cloud, you don't need to take any actions to continually deploy feature enhancements and critical updates. You no longer need to deal with burdensome internal qualification and deployment cycles.

Cisco Crosswork Cloud is uniquely suited to provide an operational edge over your competitors so you can deliver more trustworthy, reliable services to your end users. By enhancing your network's performance and quality, you can ultimately raise your external brand perception and value.

Crosswork Network Insights, Trust Insights, and Traffic Analysis are SaaS applications delivered through the Cisco Crosswork Cloud.

Figure 1. The many advantages of Crosswork Cloud



Cisco Crosswork Network Insights

High-profile attacks like Border Gateway Protocol (BGP) route leaks and hijacks occur regularly, and network operators need tools to help assess the routing health of their network and potential risks to their data. Network Insights is a cloud-based SaaS offering in the Cisco Crosswork Cloud solution that proactively tracks the health of the network and the status of prefixes. Network Insights provides BGP security operations with real-time visibility of BGP traffic inside the domain, outside the domain, and on edge peering routers that automatically trigger policies to notify security analysts and block or remediate BGP attacks.

Network Insights provides access to a large BGP data repository for forensics and dispute resolution, while simultaneously reducing reporting latency to a near real-time two seconds. This historical visibility and speed to understand potential route leaks or hijacks greatly reduces potential threat exposure. Unlike other more limited BGP analysis tools, Network Insights provides real-time BGP visibility and integration with the Cisco Crosswork suite of products. More efficient and meaningful insights into network routing health can help protect the integrity of your network and improve the customer experience.

Cisco Crosswork - Trust Insights

Network infrastructure security issues can be caused by malicious actions or simple procedural errors. These events can have unforeseen effects on the integrity of your network and business model. The security event data provided by networks today is plentiful, but the existing toolsets are unable to validate the device's integrity. Device trust posture can be difficult to verify when it's not combined with critical system knowledge provided by the manufacturer. Cisco has industry-leading expertise designing trustworthy technologies with multilayered security into our platforms.

Trust Insights is a cloud-based SaaS solution from the Cisco Crosswork Cloud solution that provides signed and encrypted system integrity information to track the trust posture of the network hardware and software components. This hosted service provides intuitive visualization, rich analytics, and alerts on actionable device integrity events.

Trust Insights offers visibility to help you assess the integrity and affirm trust in your network routing infrastructure. It aggregates hardware and software signature information from your network devices and gathers evidence to validate if the hardware is authentic and that running software maps to published known good values. The service enables you to take maximum advantage of the trustworthy technologies built into the Cisco platforms and collect and validate changes in system integrity information.

Using Cisco Crosswork Data Gateway, the Trust Insights service establishes a secure communication channel with the devices in your network. This mechanism allows the secure exchange of information to onboard network devices and collect verifiable evidence to monitor their trust posture.

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Learn more

For more information about Cisco Crosswork Cloud, visit www.cisco.com/go/crosswork or view the data sheets below for more specifics:

- Crosswork Network Insights Data Sheet
- Crosswork Cloud Traffic Analysis Data Sheet
- Crosswork Cloud Trust Insights Data Sheet

Cisco Crosswork – Traffic Analysis

Your network can be complex and unpredictable. Traffic from OTT applications, automated systems, malicious attacks, or variations from simple operational errors can have unforeseen effects on traffic flows. Today's network devices also produce vast amounts of data on both statistics and flows.

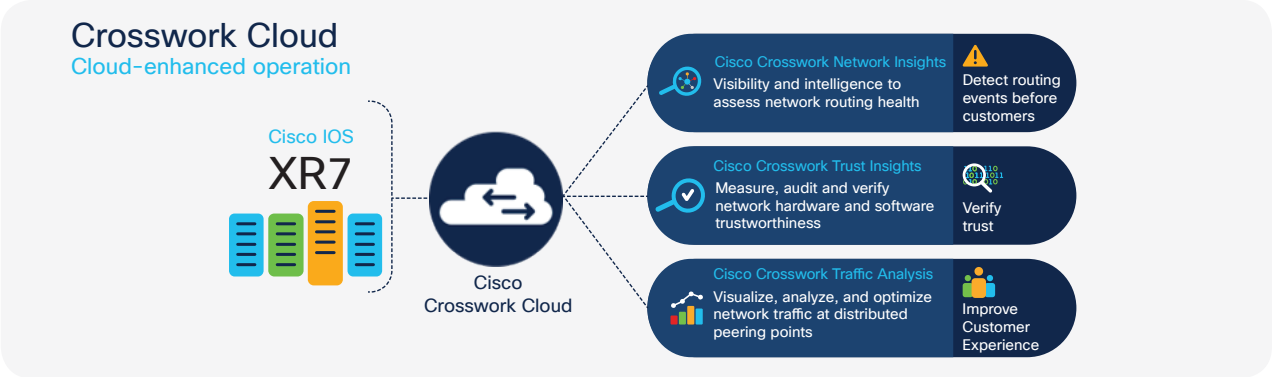
Service providers are challenged to meet these intense demands for always-on connectivity powered by reliable, high speed bandwidth. They need effective tools to consume and correlate this critical traffic data at scale and at low operational cost. Traffic analytics and automation are central to understanding and protecting your customer's experience.

Traffic Analysis offers a network monitoring solution for complex enterprise and service provider networks. The solution captures, enriches, and analyzes network data to help service providers, web companies, and enterprises improve network performance, manage costs, gain visibility, and reduce downtime. It supports both cloud and on-premises server, router, switch, and firewall hardware.

The solution helps you understand the flow of traffic and minimize congestion at key points in your network. Delivered as a cloud-based SaaS application, Traffic Analysis's analytics technology addresses an urgent need and continuous challenge facing service providers, web companies, and enterprises – how to proactively manage their networks and take advance action with insights.

Traffic Analysis helps address key service provider customer challenges such as who should you peer with and what changes do you need to make to achieve a peering traffic load balance with engineering recommendations applicable at all network Interior Gateway Protocol (IGP) boundaries. By effectively extracting and managing huge amounts of data, operators can rapidly address and even proactively avoid disrupting events and impending security threats. Traffic Analysis technology will help to provide reliable, timely, and actionable information about what's happening in the network 24/7 to deliver premium customer experiences.

Figure 2. Cisco Crosswork Cloud features Network Insights, Trust Insights, and Traffic Analysis



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