



## SERVICE DESCRIPTION: GDT NETWORK-AS-A-SERVICE, POWERED BY JUNIPER



Full lifecycle LAN and wireless infrastructure services for a next-generation experience inclusive of design, deployment, and managed services.



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## **A Modern Approach to Full-Lifecycle NaaS**

### **Network Transformation Is More Critical than Ever**

LAN and WiFi availability, coverage, and capacity are table stakes for every organization and critical to user productivity, collaboration, and enterprise goals. Yet many struggle to digitally transform.

A rapidly evolving technology landscape and shifting business requirements can strain network bandwidth and availability and degrade the user and customer experience. Many organizations lack the skills, resources, or budget to effectively design, deploy, and maintain their core LAN/WiFi and maximize their investments. Other organizations have quickly deployed architecture, only to realize the solution doesn't meet their needs.

### **Accelerate Network Transformation with GDT NaaS**

GDT NaaS solves these problems by providing a modern, comprehensive approach to full-lifecycle NaaS, delivering speed to value, increased ROI, and dramatic connectivity improvements. GDT has the experience, technical resources, and tools to design, deploy, install, and manage your LAN and WiFi infrastructure powered by Juniper.

GDT NaaS, Powered by Juniper provides an all-inclusive, subscription-based model for consuming Juniper hardware, software, licenses, and 24x7x365 support services with the option of no upfront capital investment. It's a flexible, cost-effective approach designed to help your business fuel innovation, accelerate value, and lower risk.

This document explores GDT NaaS and GDT NaaS, Powered by Juniper, including solution highlights, deliverables, and subscription options.



## GDT NaaS Highlights

GDT NaaS designs, builds, deploys, validates, optimizes, and manages your network, so you don't have to. Our team of industry experts leverages proven methodologies, localized presence, and unmatched expertise.

### Benefits of GDT NaaS

- Tailored solution driven by customer-defined outcomes
- Flexible solution consumption models
- Cost predictability and business goal alignment
- Improved user experiences and productivity
- Improved security and compliance, with insights into user and network device behaviors
- Improved agility, responsiveness, and scalability
- Improved application performance
- Improved network ROI
- Elimination of over-provisioning
- Improved speed to value
- Reduced need for skilled headcount

### What's Included in GDT NaaS

GDT offers packaged solutions to enable adoption with quality, consistency, and speed for its NaaS offering, including:

- All required hardware, software, and support services combined in a single, all-inclusive monthly subscription with no upfront capital investments.
- Full lifecycle of technical services from GDT, including consulting, advisory, professional, and managed services, allow customers to offload network monitoring, administration, and operations, providing a proactive service that ensures that NaaS technology is operating optimally.
- Integrated project management structure to ensure transformation and migration to managed services.
- 24x7x365 support for proactive service monitoring and management of incidents, problems, changes, and performance.
- Proactive services leveraging advanced machine learning (ML) and artificial intelligence (AI) capabilities.
- Lifecycle management of software upgrades and security patching.
- Regular service reviews with a dedicated Customer Engagement Manager (CEM) to review reporting, SLAs, and continuous improvement measures. CEM



acts as a single point of contact and provides insights into network consumption.

- Pre-defined templated, tested, and approved configurations to ensure interoperability and optimal performance, providing service assurance before implementation for industry verticals (healthcare, retail/branch, education, hospitality, MDUs, manufacturing, transportation, and warehousing).
- Location-based service options to empower the enterprise to enable enhanced connectivity for secure, business-critical applications; improve employee productivity and user experience; track and better utilize IoT devices; and apply analytics to drive efficiency and strategic decisions.

## GDT NaaS Design & Implementation Options Summary

Deliverables Included	Optional Add-ons
<b>Design</b>	
Design discovery workshop	Onsite site survey for design
Predictive or Hybrid site survey	
Design documents, including bill of materials	
Implementation plan	
<b>Implementation</b>	
<b>Remote turn-up of LAN components</b>	Cabling and device mounting
Integration with customer's core network services (DNS, DHCP, IPAM, NAC, SSO)	Enabling location services
Post-install RF validation	Enabling customer engagement and analytics capabilities for Wi-Fi

## GDT NaaS, Powered by Juniper

This section provides an overview of GDT NaaS, Powered by Juniper. GDT delivers this best-in-class wired and wireless LAN solution, focused on driving remarkable user experiences and improved business outcomes.

GDT has created standardized design, deployment, and implementation solution options that are designed around common networking requirements and alternatively can quickly customize deployment solutions based on client specificity.



GDT has also established a monthly, all-inclusive NaaS service bundled around monthly consumption of Juniper infrastructure, software, and licenses required for the client's NaaS solution.

### NaaS Services

GDT NaaS, Powered by Juniper leverages the breadth of Juniper Networking solutions with a flexible way to consume network infrastructure for a monthly fee versus up-front capital expenditure. In addition to the GDT NaaS services previously listed, GDT NaaS, Powered by Juniper includes:

- Juniper Mist Cloud low-level design.
- Standard or Industrial site Predictive Design, staging, turnup, and configuration in Juniper Mist Cloud (using RF design built from predictive means).
- Standard or Industrial site Hybrid Design (site survey with Access Point on a Stick with spectrum analysis), site survey, staging, turnup, and configuration in Juniper Mist Cloud.
- Cabling and installation of infrastructure, which can be priced on an individual case basis as an additional option.
- NaaS services, design, survey, and deployment, plus day 2 services, required hardware, software, licenses, and support services combined in a single, all-inclusive monthly price, with the option of zero one-time costs.
- Proactive services leveraging Juniper Mist's advanced machine learning (ML) and artificial intelligence (AI) capabilities.

CATEGORY	SOLUTION DESCRIPTION
<a href="#">DESIGN</a>	Services to consult, design, and implement a new Juniper Mist Central dashboard and new configuration group templates that all client site locations will pull standard configurations.
<a href="#">PREDICTIVE STANDARD SITE TURNUP</a>	Services to bring up a <b>new office or retail location</b> using an RF design built from <b>predictive means</b> . Includes pre-installation design, staging, turnup, and configuration via Juniper Central dashboard, and post-installation testing and RF validation.
<a href="#">PREDICTIVE INDUSTRIAL SITE TURNUP</a>	Services to bring up a <b>new Industrial/Warehouse</b> location using an RF design built from <b>predictive means</b> . It includes pre-installation design, staging, turnup, and configuration via Juniper Central dashboard, and post-installation testing and RF validation.

CATEGORY	SOLUTION DESCRIPTION
<a href="#">HYBRID STANDARD SITE TURNUP</a>	Services to bring up a <b>new office or retail location</b> using an RF design built from an onsite survey <b>with Access Point on a Stick (APoS) survey</b> and spectrum analysis included. Includes pre-installation design, staging, turnup, and configuration via Juniper Central dashboard, and post-installation testing and RF validation.
<a href="#">HYBRID INDUSTRIAL SITE TURNUP</a>	Services to bring up a <b>new industrial or warehouse location</b> using an RF design built from an <b>onsite survey with APoS</b> and spectrum analysis included. It includes pre-installation design, staging, turnup, and configuration via Juniper Central dashboard, and post-installation testing and RF validation.
<a href="#">WIRELESS</a>	<p>Provides WLAN access service at customer sites, including guest Wi-Fi access within a limited area. Provides customer device endpoints with WLAN connectivity and performance to the WAN edge customer premises equipment (CPE) at a site, on the internet, and at customer resources in accordance with applicable design standards. Real-time insights into the exact performance that users and devices are experiencing. Automated corrective action for network self-tuning that identifies and fixes problems negatively affecting user sessions.</p> <p>Provides day 2 managed services that include:</p> <ol style="list-style-type: none"> <li>Support for infrastructure components, including:               <ul style="list-style-type: none"> <li>Consulting and advisory support for direct and indirect technical challenges.</li> <li>Global, 24x7x365 monitoring and proactive and reactive support for incidents, problems, changes, and performance management.</li> <li>GDT ITSM portal and ServiceNow ticketing.</li> <li>Integrated monitoring with Juniper Mist Cloud.</li> <li>Network performance and trend reporting.</li> <li>Lifecycle management of software configuration upgrades.</li> <li>Lifecycle security patching.</li> <li>Onsite infrastructure break/fix/replacement.</li> <li>Eco-standard equipment disposal.</li> <li>Access to Juniper-certified engineering resources.</li> </ul> </li> <li>Customer Engagement Management (CEM) resource assists in all phases of the service lifecycle and service delivery and provides relevant information at regular intervals throughout the subscription term.</li> </ol>
<a href="#">WIRED</a>	Provides physical wired network switching infrastructure service to link computers, printers, specialty equipment, and peripheral equipment within a defined area, such as a site. Provides customer device endpoints with wired connectivity and performance to the WAN edge CPE at a site, on the internet, and at customer resources in accordance with applicable



CATEGORY	SOLUTION DESCRIPTION
	<p>design standards. Provides day 2 managed services that include:</p> <ol style="list-style-type: none"> <li>Support for infrastructure components, including: <ul style="list-style-type: none"> <li>Consulting and advisory support for direct and indirect technical challenges.</li> <li>Global, 24x7x365 monitoring and proactive and reactive support for incidents, problems, changes, and performance management.</li> <li>GDT ITSM portal and ServiceNow ticketing.</li> <li>Integrated monitoring with Juniper Mist Cloud.</li> <li>Network performance and trend reporting.</li> <li>Lifecycle management of software configuration upgrades.</li> <li>Lifecycle security patching.</li> <li>Onsite infrastructure break/fix/replacement.</li> <li>Eco-standard equipment disposal.</li> <li>Access to Juniper-certified engineering resources.</li> </ul> </li> <li>Customer Engagement Management (CEM) resource assists in all phases of the service lifecycle service delivery and provides relevant information at regular intervals throughout the subscription term.</li> </ol>
<b>INDOOR LOCATION SERVICES</b>	Location services include user engagement, asset visibility, premium analytics, and contact tracing. Provides performance monitoring solution to validate network health and user experience through synthetic testing.
<b>NETWORK SECURITY INTEGRATION</b>	Ensures that the NaaS solution is properly integrated with client established security platform.

### NaaS Service Details

Each of the infrastructure component categories includes the following core service features. Subscriptions include the required Juniper Systems, software, licenses, and service components for the specific use cases of the product solutions.

FEATURE	DELIVERY SPECIFICATIONS
<b>Consumption Terms</b>	<p><b>Term Duration:</b> The subscription duration or subscription term is either 36 or 60 months with monthly billing.</p> <p><b>Flex up:</b> To support the growth of the customer’s expanding network needs, customers can flex up by placing additional subscription orders as per standard subscription term durations of 36 or 60 months.</p>



FEATURE	DELIVERY SPECIFICATIONS
	<p><b>End of term:</b> Approximately 12 months prior to the expiration of the subscription term, GDT will provide end-of-the-subscription term options as follows:</p> <ul style="list-style-type: none"> <li>• <b>Extend:</b> Extend existing contract month-to-month subject to the systems in the subscription not being “end of support.” (Automatic default in the event of no option being selected.)</li> <li>• <b>Renew:</b> Renew the contract for another minimum of 36 or 60 months with an option to refresh technology.</li> <li>• <b>Return:</b> Return the systems/infrastructure included in the subscription to cancel the service.</li> <li>• <b>Replace:</b> Evolve the current solution to the next generation by replacing the overall solution with new technology.</li> </ul>
<p><b>Support</b></p>	<p>GDT provides a strategic approach to day 2 network operations.</p> <p>Through trained and certified experienced teams, continuous improvement of our processes, and automation technology, GDT support yields greater operational efficiencies, reduced mean time to recovery, fewer outages, less downtime, and a scalable solution that supports your organization.</p> <p>Subscription support for infrastructure components includes:</p> <ul style="list-style-type: none"> <li>• Consulting and advisory support for direct and indirect technical challenges.</li> <li>• Global, 24x7x365 monitoring and proactive and reactive support for incidents, problems, changes, and performance management.</li> <li>• GDT ITSM portal and ServiceNow ticketing.</li> <li>• Integrated monitoring with Juniper Mist Cloud.</li> <li>• Network performance and trend reporting.</li> <li>• Lifecycle management of software configuration upgrades.</li> <li>• Lifecycle security patching.</li> <li>• Optional onsite infrastructure break/fix/replacement.</li> <li>• Eco-standard equipment disposal.</li> <li>• Access to Juniper-certified engineering resources.</li> </ul>
<p><b>Customer Experience Management (CEM)</b></p>	<p>CEM service assists in service delivery and provides relevant information throughout the consumption terms. A sample of CEM deliverables is listed as follows:</p> <ol style="list-style-type: none"> <li>1. Assists in all phases of the service lifecycle and is available throughout the subscription term.             <ol style="list-style-type: none"> <li>a. User and site onboarding supports customer by providing relevant information to design and deploy subscriptions and the checklist of recommended activities.</li> <li>b. Enable inventory collection for reporting and generate relevant reports. Provide contextualized product advisories for security, end-of-life, end-of-development, and end-of-support reports</li> </ol> </li> </ol>

FEATURE	DELIVERY SPECIFICATIONS
	<p style="text-align: center;">based on collected inventory access to product advisories.</p> <ol style="list-style-type: none"> <li>2. Assist customer in service delivery during all phases of the service lifecycle and throughout the subscription term, including :               <ol style="list-style-type: none"> <li>a. Kickoff meeting to review the predefined RACI (responsible, accountable, consulted, and informed) and associated work activities.</li> <li>b. Service planning meeting to define metrics relevant to the customer for network operations and reporting.</li> <li>c. Review the customer’s as-built document for best practices and define metrics relevant to the customer for network operations so there is a baseline and opportunity for continual service improvement based on defined metrics.</li> <li>d. Escalation matrix that defines when escalation should occur and who should handle each escalation level. This is the operational RACI that provides the details on who to contact based on issue severity and priority.</li> <li>e. Conduct quarterly business review (QBR) meetings to address:                   <ol style="list-style-type: none"> <li>i. Inventory reports and defined metrics                       <ol style="list-style-type: none"> <li>1. Reporting lifecycle and operational metrics</li> <li>2. Customer success plan implementation status</li> </ol> </li> </ol> </li> </ol> </li> </ol>

## NaaS Design Services

Services to consult, design, and implement a root Juniper dashboard and new Site Group Templates that all site locations will pull standard configurations from.

### GDT Tasks

- Host a design discovery workshop with the client to understand business requirements and goals and future planning.
- Assess existing WLAN systems via remote access or through review of running configurations.
- Build low-level design (LLD) documentation to capture bill of materials, logical and physical architecture, code requirements, integration with supporting infrastructure, and configuration elements.
- Use the mutually approved LLD to configure a configuration group with SSIDs for the client.
- Turn up Juniper Access Points (AP) for testing.
- Provide remote support, work with the client to test each SSID via client connectivity to confirm connectivity, ensure authentication is functioning as planned, confirm any guest splash pages are prompting correctly, and allow



access with terms and conditions acceptance or through the planned login access.

### **Predictive Standard Site Turnup**

Services to bring up a new office or retail location using an RF design built from predictive means. Includes pre-installation design, staging, turnup, and configuration via Mist dashboard, and post-installation testing and RF validation. Assumes that an existing dashboard with Site Group Templates was already completed by GDT or has been performed by another resource or organization to support the site's configuration needs.

#### GDT Tasks

- Predictive RF Design
  - Includes a kick-off meeting, predictive modeling, and report.
- Staging
  - Run all access points through staging to label, inventory, and confirm functionality and organize for shipment.
- Remote Turnup
  - Set up the new site in the customer's existing Mist dashboard.
  - Provide install instructions to install teams, remotely turn up access points, support install teams through troubleshooting, support WLAN connectivity testing, load maps into the dashboard, and place access points on maps.
- RF Install Onsite RF Validation

### **Predictive Industrial Site Turnup**

Services to bring up a new Industrial/Warehouse location using an RF design built from predictive means. It includes pre-installation design, staging, turnup, and configuration via Mist dashboard and post-installation testing and RF validation. Assumes that an existing dashboard with Site Group Templates was already completed by GDT or has been performed by another resource or vendor to support the sites configuration needs.

#### GDT Tasks

- Predictive RF Design
  - Includes a kick-off meeting, predictive modelling, and report.



- Staging
  - Run all access points through staging to label, inventory, confirm functionality, and organize for shipment.
- Remote Turnup
  - Set up the new site in the customer's existing Mist dashboard.
  - Provide install instructions to the install team, remotely turn up access points, support the install team through troubleshooting, support WLAN connectivity testing, load maps into the dashboard, and place access points on maps.
- RF Install Onsite RF Validation

### **Hybrid Standard Site Turnup**

Services to bring up a new office or retail location using an RF design built from an onsite survey with APoS survey and spectrum analysis included. Includes pre-installation design, staging, turnup, and configuration via Mist dashboard, and post-installation testing and RF validation. Assumes that an existing dashboard with Site Group Templates was already completed by GDT or has been performed by another resource or organization to support the sites configuration needs.

### GDT Tasks

- Onsite Survey with RF Design
  - Includes a kick-off meeting, predictive modelling with 40% onsite signal testing, spectrum analysis, and report.
- Staging
  - Run all access points through staging to label, inventory, confirm functionality, and organize for shipment.
- Remote Turnup
  - Set up the new site in the customer's existing Mist dashboard.
  - Provide Install instructions to install teams, remotely turn up access points, support install teams through troubleshooting, support WLAN connectivity testing, load maps into the dashboard, and place access points on maps.
- RF Install Onsite RF Validation



## Hybrid Industrial Site Turnup

Services to bring up a new industrial or warehouse location using an RF Design built from an onsite survey with Access Point on a Stick (APoS) and spectrum analysis included. It includes pre-installation design, staging, turnup, and configuration via Mist Dashboard, and post-installation testing and RF validation. Assumes that an existing Dashboard with Site Group Templates was already completed by GDT or has been performed by another to support the sites configuration needs.

### GDT Tasks

- Onsite Survey with RF Design
  - Includes kick-off meeting and predictive modelling, with 40% onsite signal testing, spectrum analysis, and report.
- Staging
  - Run all access points through staging to label, inventory, confirm functionality, and organize for shipment.
- Remote Turnup
  - Set up the new site in the customer's existing Mist dashboard.
  - Provide install instructions to the install team, remotely turn up access points, support the install team through troubleshooting, support WLAN connectivity testing, load maps into the dashboard, and place access points on maps.
- RF Install Onsite RF Validation

## Wireless Access

The solution delivers real-time insights into the exact performance that mobile users and devices are experiencing, with automated corrective action for network self-tuning that identifies and fixes problems negatively affecting user sessions. This delivers predictable, reliable, and measurable results with unique visibility into user experiences. GDT tools can track key wireless criteria (pre- and post-connection metrics), like time to connect capacity, coverage, and throughput. Anomaly detection automatically captures packets for event correlation and builds network intelligence with radio resource management (RRM) at the client level.



## Key Features

1. Customizable service level expectations for key Wi-Fi performance metrics
  - Time to connect
  - Throughput
  - Roaming
  - Coverage
  - Capacity
2. AI-Driven RRM
  - Juniper Mist uses data science and cumulative SLE performance to learn and optimize radio settings to ensure performance while also instantaneously adapting to intermittent outside interference.
3. Dynamic packet capture
  - Capture packets for troubleshooting from the Juniper Mist cloud architecture when the system detects a major issue, such as an authorization failure.
4. Root-cause identification
  - Proactive Analytics and Correlation Engine (PACE) proactively identifies and fixes the root cause of problems.
5. Digital transformation with network insights
  - The Juniper Mist Wi-Fi Assurance service includes base capabilities for analyzing up to 30 days of data, simplifying the process of extracting network insights from data across your enterprise.
6. Simple resource assignment and prioritization
  - With the WxLAN policy feature, Mist lets you assign and prioritize network resources (such as servers and printers) to Wi-Fi users with the click of a mouse or using preassigned policies without the cost and complexity of VLANs and ACLs.
7. Network Automation with APIs
  - The Juniper Mist platform is 100 percent programmable, using open APIs for full automation and seamless integration with complementary products.
8. Guest Wi-Fi
  - Juniper Mist provides the industry's most scalable guest access solution, with flexible options, multiple language support, customizable branding, social login, external captive portal integration, and AAA/RADIUS integration.



## Wireless Access Points and Edge

Juniper access points work in conjunction with [Juniper Mist Cloud](#) and [Mist AI](#) to deliver premium [wireless access](#) capabilities. The [Juniper Mist Edge](#) extends microservices to the campus network for agility and scale while enabling new applications at the edge.

### Juniper Mist Edge

Some network services require specific functions to be handled on-premises due to bandwidth, latency, or architecture requirements. Juniper Mist Edge extends select microservices to the customer premises while using the Juniper Mist cloud and its distributed software architecture for scalable and resilient operations, management, troubleshooting, and analytics.

For large campus networks, Juniper Mist Edge provides data plane centralization and seamless roaming through on-premises tunnel termination of traffic to and from access points while keeping all the control and management functions in the Juniper Mist cloud. Juniper Mist Edge extends VLANs to distributed branches and telecommuters, replacing remote VPN technology, and it provides dynamic traffic segmentation for IoT devices. Split tunnelling enables separation of guest access and corporate traffic.

### Key Benefits

The Juniper Mist Edge architecture offers several key benefits:

- Agility to develop and deploy new microservices rapidly.
- A scalable platform to meet the demands of small and large campus environments.
- Deployment and management simplicity.
- Stateless architecture for quick failover.
- Service upgrades within seconds.
- Decoupled service deployment from AP firmware.
- Zero-touch configuration and cloud management.

Juniper Mist Edge is deployed as a standalone appliance with multiple variants for different-size deployments. A software-only virtual machine (VM) solution will be available in the near future for added design flexibility.





## **Mist AI and Cloud**

Mist AI uses a combination of artificial intelligence, machine learning, and data science techniques to optimize user experiences across the wireless and wired access infrastructure.

Data is ingested from numerous sources, Juniper Mist access points, and switches for end-to-end insight into user experiences. These devices work in concert with Mist AI to optimize user experiences, automated event correlation, root cause identification, network assurance, proactive anomaly detection, and more.

Users benefit from a network infrastructure that is more predictable, reliable, and measurable.

For more information on product details, please visit:

[Wireless Access Solution | Juniper Networks US](#)

[Wireless & WiFi Access Points & Edge | Juniper Networks US](#)

## **Wired Access**

Juniper access switches deliver the performance and scale expected from Juniper with zero-touch provisioning, campus fabric support, proactive troubleshooting, and self-driving automation for ongoing operational simplicity.

Juniper is a recognized leader in wired access with a wide array of leading-edge hardware platforms operated via the cloud and Mist AI. EX Series switches support robust policies, cost-effectively scale, deliver enterprise-grade performance, and offer a robust set of features, multigigabit rates (1/2.5/5/10GbE), Power over Ethernet (PoE) up to 90W, standards-based micro-segmentation with Group-Based Policies, MACsec, and Day 0-to-Day 2+ cloud-readiness, to name a few.

EX Series switches are cloud-ready, high-performance access and distribution/core-layer devices for enterprise branches and campuses. Combine the EX switches with Juniper's Wi-Fi portfolio for a unified wired and wireless solution that delivers simple and secure connectivity.

For more information on product details, please visit:

[Wired Access & Campus Solutions | Juniper Networks US](#)

[EX Series | Juniper Networks US](#)



## Indoor Location Services

Indoor location services are critical to revolutionizing the user experience. Increasingly, enterprises require real-time cloud location services that combine personalization, data analytics, and operational simplicity to deliver turn-by-turn navigation and comprehensive visibility.

Juniper Mist cloud architecture converges Wi-Fi and Juniper-patented virtual Bluetooth® LE (vBLE) technology to enable indoor location services that deliver optimum location accuracy and unparalleled user experiences. With Juniper vBLE technology, no battery-powered beacons or manual calibration are required. The patented vBLE solutions deliver location services accurately to between one and three meters and can be used for:

- Locating equipment and other assets.
- Engaging in new ways with customers, patients, and guests through their mobile phones with promotions, greetings, and step-by-step directions.
- Protecting employee and guest health with contact tracing location services.

## Juniper Mist Indoor Location Services Coverage

### 1. User Engagement

- Uses virtual Bluetooth LE (vBLE) array technology and cloud-based machine learning to drive down deployment costs and improve the accuracy of real-time indoor location services, from wayfinding to location-based proximity notifications.
- Key Features
  - Implement new wireless services, such as indoor navigation and proximity messages.
  - Drive customer behavior with contextual offers.
  - Trigger HVAC, security cameras, and other IoT devices based on user location.
  - Easily direct employees to available resources such as meeting rooms.
- Delivers indoor location capabilities for context-based interactions with users via mobile applications, leveraging standards-based Bluetooth LE technology with Juniper Wi-Fi Access Points. User Engagement is built on the Juniper Mist Cloud, a scalable microservices-based cloud platform, and leverages Juniper's vBLE technology with a differentiated mobile SDK that has sensor fusion for IOS and Android OS. This powerful technology

combination delivers real-time, accurate blue dot location for mobile applications and virtual, beacon-based push notifications.

- Juniper Access Points with a patented 16-element vBLE antenna provide extreme low latency location estimates at extremely high scale using the open and programmable microservices-based Juniper Mist cloud architecture. This enables the industry's most accurate and scalable location services without the need for battery-powered Bluetooth Low Energy (BLE) beacons or manual location calibration. Internal passive antennas in the Juniper Access Points boost transmit power and produce directional beams for 1-3 meter location accuracy. With the Juniper vBLE technology, you can more easily deploy and scale user engagement services with unprecedented accuracy and agility.
- User Engagement enables real-time location services for mobile applications integrated with mapping solutions and mobile device hardware. Possible use cases are:
  - **Retail** applications that give businesses better control over their users' mobile journeys. Retailers can deliver rich in-store experiences with features like contextual offers, easy product navigation, and personalized messages, creating a seamless and rewarding customer experience.
  - **Healthcare** applications allow providers to deliver wayfinding and turn-by-turn navigation to outpatients and visitors, personalized engagement for patients, push notifications, and volunteer assistance.
  - **Higher education** institutions can offer accurate wayfinding to classrooms, auditoriums, and food services while enhancing overall student and staff experiences.
  - **Enterprise businesses** can streamline employee operations with real-time indoor positioning, directing them to available resources and facilitating communication.
  - **Warehouse** managers can direct employees to products for pickup, minimize walking routes, and push notifications to help locate products or other assets.

## 2. Asset Visibility

- Makes it easy to find key assets and people, with detailed location analytics always at your fingertips.
- Enables indoor location tracking of people, assets, and their movements over time by leveraging standards based BLE technology with Juniper Wi-Fi



Access Points to provide accurate location information. The asset visibility service, built on the Juniper Mist Cloud, a scalable microservices-based cloud platform, unites Wi-Fi connectivity, indoor location services for asset tracking, mobile app-based engagement, and IoT in a single solution. With Juniper's patented vBLE technology, the same infrastructure for engaging with mobile users via wayfinding and immersive push notifications enabled via virtual beacons can be used for locating, tracking, and analyzing an organization's most valuable assets.

With Asset Visibility, organizations gain:

- Full visibility into the locations of people and things using standards-based Bluetooth LE services easily locates key resources, like nurses, security guards, and sales associates, and tracks IV pumps, forklifts, and high-value assets with BLE tags.
- Asset identity that assigns names to asset tags or BLE-enabled mobile and IoT devices to locate these assets on your venue map or integrate location with business applications.
- Detailed analytics on a comprehensive dashboard show visits and dwell times to help identify zone traffic patterns and congestion points.
- Possible use cases for tags and workflow applications with our ecosystem partners are:
  - **Retail:** Improve inventory management and loss prevention; optimize shelf management, store layout, and merchandise placement; and track personnel and equipment.
  - **Healthcare:** Minimize disruptions and delays in hospital operations; monitor personnel for employee health and safety; and track the inventory and location of medical equipment.
  - **Higher education:** Manage campus asset visibility/tracking; minimize theft and loss of valuable school property and scientific equipment; and track usage of classrooms, labs, and other indoor campus areas.
  - **Manufacturing:** Optimize workflows and equipment maintenance and monitor the precise location of products and equipment like forklifts, pallets, and robotic carts.
  - **Enterprise:** Improve IT asset management; locate audio-visual equipment, office hardware, and mobile computing assets; and optimize space utilization by tracking employee traffic patterns and resource usage.

- Workflow applications
  - Juniper's flexibility allows for tailored workflow applications to get the most value out of Asset Visibility delivered from the Juniper Mist cloud. From asset tracking to employee health and safety monitoring, use cases span the spectrum and enable data-driven decision-making across the various vertical business segments. Third-party applications can integrate easily with the location and zone Webhooks and raw data for encrypted telemetry payloads. When integrated with IoT Asset Visibility, the apps enable various location-based workflows and use cases.
- Standards-Based Interoperability with Third-Party BLE Asset Tags
  - Asset Visibility interoperates with any standards based, third-party BLE tags to provide real-time visibility and location monitoring of assets. By attaching a third-party BLE tag to assets, businesses can streamline operations and management and extensively monitor both people and things. Asset tracking enables more efficient resource allocation, enhances operational efficiency, and improves overall productivity.
- Total Programmability via Open APIs and Webhooks
  - Open APIs allow for automation and seamless integration with external applications. The APIs provide the capability to invoke actions based on user or external events, as well as for using the cloud-native webhook framework. The Juniper Mist platform, which supports Asset Visibility, is 100% programmable for full automation and seamless integration across Juniper access, wired, wireless, WAN, security, user engagement, and asset location domains.
- Automatic Feature and Security Updates
  - The Juniper Mist cloud architecture keeps the Asset Visibility service optimized with the most advanced technologies. New features, security patches, and updates are automatically added on a bi-weekly basis without interruptions or service downtime. This dramatically simplifies and improves service operations for network IT administrators by eliminating lengthy software upgrades and service downtime.

### 3. Premium Analytics

- Advanced, cloud-based analytics service that provides enterprises with end-to-end network observability. IT and line-of-business users can gain unique networking and location insights based on any combination of

Juniper Mist AI-driven data sets and, optionally, third-party data sets. This offers end-to-end network observability, giving IT and line-of-business users unique network and location insights.

- The only service of its kind to offer long-term data storage for full-stack network and location insights.
- Professionals in vertical markets such as retail, healthcare, hospitality, and education can quickly analyze guest behavior, such as visits, dwell time, or movement between zones over long-term time periods.
- Facilities managers can obtain insights to help them manage occupancy and assets and to optimize space.
- Key Features:
  - Up to 13 months+ of data storage
  - Report scheduling
  - Ingestion of Mist AI-driven data
  - Optional third-party data ingestion
  - Ability to mix/match data sets
  - Simple, preconfigured dashboards
- With the Premium Analytics service, networking teams gain insights from client to cloud, allowing them to effectively identify and solve sub-par experiences. They can also use client and traffic utilization data for better planning, resource management, and public safety. Here are some sample networking use cases:
  - Monitoring and behavior reports for applications, traffic, and clients.
  - Monitoring historic and average service-level expectations.
  - Ingestion and reporting from Juniper and third-party network devices (not managed by Juniper Mist cloud architecture).
  - Insights on device OS and device manufacturers.
  - Traffic metrics on the basis of service set identifier (SSID) switch interfaces.

#### **4. Line of Business Insights**

- Business insights, customer and employee engagement, occupancy analysis, and proximity tracing, have become top priorities for digital transformation initiatives, especially in hybrid workforce environments. Whether analyzing retail traffic flows, space occupancy and utilization in



the enterprise, optimizing staff operations, or conducting real-time reporting of congested areas, enterprises from different verticals want network data insights to drive decisions around staffing, product placement, real estate planning, and proximity tracing.

- Premium Analytics combines location services built into the platform and those available through technology partnerships. User Engagement and Asset Visibility are the location services from Juniper Networks. The result of this combination of location services and analytics is fast access to business insights that support requested analytics about customers and guests.
- Enterprises and retailers that segment their end users and subscribe to the User Engagement or Asset Visibility service will see areas where customers visit, allowing them to drive more interactions with associates and customers for higher basket sizes. Retailers can also use the digital platform to help them support industry best practices for cross-selling, omnichannel initiatives, and day-to-day practices like social distancing.
- Popular business analytics use cases include:
  - Visitor segmentation and trends with dynamic categorizations.
  - Unique visitor trends with popular motion flows for user journey mapping and proximity tracing.
  - Ingestion and customized reporting with third-party data.

#### NETWORK DASHBOARD

<b>Wireless</b>	Wireless Network Insights	<ul style="list-style-type: none"> <li>• Long-term SLE and traffic trends</li> <li>• Client distribution by device-type, OS, 802.11 protocols</li> <li>• Traffic &amp; applications insights by SSID &amp; clients</li> <li>• Busiest AP and SSID</li> </ul>
	Wireless IDS	<ul style="list-style-type: none"> <li>• Long-term storage rogue &amp; IDS events</li> <li>• Filter by Site, BSSID, RSSI</li> <li>• Trending &amp; distribution views</li> </ul>
	RF Health and Utilization	<ul style="list-style-type: none"> <li>• Channel utilization analytics for RF bands</li> <li>• Interference, neighbor count, and co-channel metrics</li> <li>• Filter by org, site, and AP</li> </ul>



## NETWORK DASHBOARD

<b>Wired</b>	Wired Network Insights	<ul style="list-style-type: none"> <li>Traffic metrics of wired network by site, switch, port, and VLAN</li> <li>Traffic trends by switch, port, and VLAN</li> <li>Port utilization trends</li> <li>Switch SLE metrics</li> </ul>
<b>Events</b>	Wireless Client Events	<ul style="list-style-type: none"> <li>Organization-wide client-failure analysis</li> <li>Failure types and distribution by site, WLAN, AP, client type, and OS</li> <li>Detailed failure analysis</li> <li>DHCP, DNS, authorization, association, and roaming</li> </ul>
	Audit	<ul style="list-style-type: none"> <li>Long-term storage of audit logs</li> <li>Top actions by type</li> <li>Top actions by user</li> </ul>
	Inventory	<ul style="list-style-type: none"> <li>Organization-wide inventory report</li> <li>Firmware and model details</li> </ul>

## LINE OF BUSINESS DASHBOARDS

<b>Location</b>	Engagement Analytics	<ul style="list-style-type: none"> <li>Visitor footfall metrics</li> <li>Loyalty visitor, one-time visitor, and passerby visitor</li> <li>Monthly and weekly trends of visitor footfalls</li> <li>Dwell time metrics and trends</li> <li>Zone ranking &amp; zone movement analytics</li> </ul>
	Occupancy Analytics	<ul style="list-style-type: none"> <li>Occupancy &amp; dwell-time details of sites, floors, and zones</li> <li>Zone ranking and heatmap</li> <li>Filter occupancy sources from Wi-Fi, BLE tags, and BLE app clients</li> </ul>
	Proximity Tracking	<ul style="list-style-type: none"> <li>User journey map</li> <li>Proximity tracing filtered by engagement duration</li> <li>Filter by multiple input sources – Wi-Fi, BLE, tags</li> </ul>

## Insights

Wired, Wireless Insights		
Features	Basic	Premium Analytics
Network insights wired and wireless	Y	Y
Security insights – rogues and honeypots	Y	Y
Client connections – trend and counts	Y	Y
Application visibility from Juniper Mist Wireless	Y	Y
Queries (rank, list, trend, and counts)	Y	Y
Custom queries – unique devices on multiple WLANs (trend and counts)	N	Y
Average and historic service level expectations beyond 7 days	N	Y
Trend reports for applications, traffic, and clients	N	Y
Insights on device OS and device manufacturer	N	Y
Traffic metrics on the basis of SSID, switch, switch interfaces, or WAN zones	N	Y
Access point ranking by clients and traffic	N	Y
Wireless security threat distribution and rogue access point trends	N	Y
Audit log reports for a longer period	N	Y
Inventory reports	N	Y
WAN visibility for link QoE and application QoE	N	Y
Ingestion and reporting from Juniper Network Devices (not managed by Juniper Mist Cloud)	N	Y

Engagement Analytics		
Features	Basic	Premium Analytics
Visitor segmentation and reporting based on user-defined dwell times	Y	Y
Dwell time that includes trends and averages for predefined labels for visitor segmentation	Y	Y
Unique visitor trends based on predefined labels for visitor segmentation	Y	Y
Dwell and visits per site, floor, and department	Y	Y
Visitor segmentation between new and repeat based on a fixed, 7-day rolling window	Y	Y
Heat maps, real-time and historical replay of visits and dwell times	Y	Y
Visitor segmentation between new and repeat based on flexible and configurable time duration	N	Y
Data segmentation and reporting based on dynamic aggregation of dwell times for visitor segmentation	N	Y
Dwell time that includes trends and average for dynamically defined labels for visitor segmentation	N	Y
Unique visitor trends based on dynamically defined labels for visitor segmentation	N	Y
Ability to reprocess historical data sets based on changes in criteria	N	Y
Popular motion paths, traffic flows between zones	N	Y
Ingestion and reporting with location and third-party data such as sentiment, weather, and so on	N	Y

Proximity Tracking		
Features	Basic	Premium Analytics
Ability to rewind and replay the location history of individuals	N	Y
Ability to identify users who were in close proximity to a selected individual	N	Y
Ability to identify encounter duration	N	Y
Ability to customize encounter duration and historic timeframes	N	Y
Heat map of zone occupancies based on preconfigured maximum capacity restrictions	N	Y

## Contact Tracing

Juniper has several tools that assist with contract tracing by leveraging existing wireless access and indoor location technologies coupled with Mist AI. These tools can help ensure the safety of employees, guests, students, customers, and patients as part of a comprehensive business continuity plan. Minimize risk with capabilities such as hot zone alerting, user journey information, and proximity tracing. Mitigate risks by identifying:

- With whom infected or symptomatic individuals have recently come in contact.
- What office areas they visit, and for how long.
- If there are hot zones susceptible to spreading a virus.
- Any proactive actions that might prevent unnecessary contact.
  - Journey mapping
    - View historical foot traffic patterns and dwell times for individuals who report testing positive for COVID-19 or other viruses from the moment they come on-site until their departure.
  - Proximity tracing
    - Quickly identify the proximity of COVID-19-positive individuals to other team members.
  - Hot zone alerting
    - Use real-time, location-based alerting to direct foot traffic away from congested areas. View trends over time to identify troublesome areas requiring defensive action.



## Network Security Integration

GDT is highly skilled in network security, cybersecurity, and firewalls. As an add-on work scope to the NaaS agreement, GDT works with the client to ensure the LAN and wireless infrastructure is built to interoperate with the client's current security standards.

To learn more about GDT NaaS and GDT NaaS, Powered by Juniper Networks, visit <https://gdt.com/solutions/networking/> or contact GDT at 214.857.6100 or <https://gdt.com/contact-us>.