NWN SUNCOM Communication Services Single Tenant Service Description

This Service Description Document (SDD) describes offer-specific terms of the Unified Communications Services made available by NWN Corporation to our customers ("Subscriber," "you" or "your").

NWN is a technology solution provider that works with customers to understand their current environments and the challenges they face in those environments to then design and deliver technology solutions that address those challenges and deliver positive business outcomes. We organize those technology solutions around 5 core offerings: Unified Communications, Contact Center, End User Devices, Connectivity, and Security. We leverage deep expertise and experience in advanced networking, data center and connectivity technologies to deliver these offerings, and we provide a flexible delivery model that enables customers to consume these offerings based on their preference, whether that is on-premises or hybrid, public cloud or private cloud.

These terms shall adhere to the SUNCOM Communication Services contract.

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1. NWN Unified Communications Essential & Complete Offering

1.1. NWN Unified Communications Essential & Complete Service Overview

NWN's Unified Communications Offering is a solution as a service that integrates all modes of communication into a unified end user experience. With NWN Unified Communications, organizations can transform how things get done by adopting the latest collaboration technology that best aligns to the organization's needs. NWN's integrated offering includes an end-to-end SLA from the network to the end user applications on the devices, which enables organizations to minimize risk and focus on business.

NWN delivers core unified communications and next-gen collaboration capabilities all as an integrated solution/offering that is simple to consume, use and manage for organization of all sizes. NWN streamlines the implementation and management of unified communications, allowing customers to adopt the latest technology and maximize the benefits provided by these solutions, which include:

- Transforming the workplace experience for the next generation

- Supporting users' workstyles, devices, and apps

- Enabling high quality, secure, real-time communications and collaboration

- Reducing the cost of providing communication and collaboration services

- Supporting decision makers with the correct tools to enable them to reach productivity goals

NWN's Essential and Complete Unified Communication Service Bundles offer a suite of Enterprise Collaboration services and applications aimed to help customers enhance employee productivity and communication while improving the overall employee and customer experience. As part of the Unified Communications Solution NWN also provides Innovation Adoption Services and Tech-Enabled Services making this a true solution-as-a-Service offering.

NWN's Unified Communications Solution provides an enterprise-ready unified communications and collaboration features as a service. It employs the Cisco Unified Communications Manager (CUCM) platform as the core of the service enabling NWN to offer:

- **Enterprise telephony** - A calling platform based on Cisco Unified Communications Manager that provides full-featured, enterprise-grade IP telephony for any size organization. NWN services include optional PSTN access with Local, LD (Long Distance), & International calling.

- **Unified communications** - Voice and video calling, mobility, messaging, and presence on any desktop or mobile device with Cisco Jabber or Webex Teams.

- **Meetings and Team Collaboration** - Better meetings with high-definition video, screen sharing, team messaging and continuous collaboration.

- **Endpoints for every use case** - Wide range of Cisco IP phones, software clients and Video room systems to suit any requirement and transform your workplace.

- **EMP Control, Reporting and Analytics** - Provides a complete suite of tools to streamline and optimize the day-to-day management of your Enterprise Communications System.

1.2. Unified Communications Essential Bundle

Part Number	Description
UC-BUN-ESS	Unified Communications Essential Bundle

NWN's Essential Unified Communications Service Bundle or "Hybrid Cloud" is a turnkey Unified Communications service offering. The workload resides in the client's datacenter with cloud-based management tools. The service includes licensing & technology and professional service installation. Customers have the option of purchasing ongoing monitoring and management services as well as Centralized SIP services from NWN. The Essential service is intended for customers that would like to keep hardware on their premise. The following services are available:

	UC ESSENTIALS
Technology & Licensing	X
Platform Setup (Design/Implement/Enablement)	X
Network Readiness & Validation	X
Telecom Services*	X
UC Operational Assessment	X
System Monitoring & Management	X

1.3. Unified Communications Complete Bundle

Part Number	Description
UC-BUN-COM	Unified Communications Complete Bundle

NWN Complete Unified Communications Bundle or "Private Cloud" is a NWN complete hosted & Geo-Redundant Unified Communications offering. NWN owns, operates, and managed the hardware in it's datacenters with cloud based management tools. Each customer has it's own dedicated & isolated environment that can be fully customizable. NWN includes Monitoring, Management, SLAs, and Centralized SIP services. The Complete Unified Communications bundle is for clients that require a complete lifecycle managed solution including services such as Customer Self-care portal, Advanced Billing & Analytics, upgrades, MACDs (Moves, Adds, and Changes), and SLA support. The following services are available:

	UC COMPLETE
Technology & Licensing	X
Platform Setup (Design/Implement/Enablement)	X
Network Readiness & Validation	X
Telecom Services*	X
UC Operational Assessment	X
System Monitoring & Management	X
Service Level Agreement & Support	X
MACDs	X
UC Threat Management	X
Smart Provisioning & Administration	X
Advanced Reporting & Analytics	X
Workflow Integration Services	X

1.4. User Deployment Models

NWN will use one of the licensing deployment models below to determine the best fit for the subscription type the customer chooses. NWN is responsible for maintaining the subscription services sufficient to meet the need of the SUNCOM work order.

- Named User
- Enterprise Agreement
- Active User Model

1.5. Calling User Subscription Packages (Calling License)

To help customers find the right service at the right price, a range of User Subscription Packages (User Bundles) is offered by NWN. Organizations can select those User Subscription packages that best meet their needs. Every voice and video endpoint connected to the service must be assigned a license and will consume one of the following subscriptions.

NWN Unified Communications services are provided to the Customer through individual subscriptions for Customer End Users, monitoring and management of Endpoints, and the ability to support inter- and intra-company point to point and multipoint conference calls. Along with a subscription to voice and/or video collaboration, a Customer may also subscribe to additional features to add functionality to their services.

User Subscription Packages combine the following services:

- Calling and Emergency Responder Licenses
- PSTN Services

- Professional Services & Enablement

- 24x7x365 Ongoing Support and Management

- SLAs per the SUNCOM Communication Services Agreement

- Hybrid or Private Infrastructure support of purchased user subscriptions

1.5.1. Single Tenant Subscription

Part Number	Description
UC-MSR-NWNFL-BUN200	Single UC System with features outlined in SUNCOM contract - min 200 subscriptions
UC-MSR-NWNFL-BUN500	Single UC System with features outlined in SUNCOM contract - min 500 subscriptions
UC-MSR-NWNFL-BUN1000	Single UC System with features outlined in SUNCOM contract - min 1000 subscriptions
UC-MSR-NWNFL-BUN5000	Single UC System with features outlined in SUNCOM contract - min 5000 subscriptions

Subscriptions includes the features and services outlined in the SUNCOM Communication Services contract associated with Category 1 Single Tenant. Each subscription package requires a minimum total subscription count as indicated in the part number listed. Subscription bundles include the following services:

- Calling subscription license for a user profile with up to 5 associated devices, or a single unassigned device.

- Local and Long distance telephony service up to 250 minutes per month per subscription. Additional minutes are billed at the overage telephony rate of $0.01 per minute.

- Access to a dedicated single tenant system dedicated to the end customer

- Connectivity via MFN2 network

1.6. Telecom (PSTN) Services Packages

NWN Centralized PSTN services can be purchased individually as required in four different models:

- User Bundle

- Committed Bundle for Toll Free and International

- Pay as You Go (Per Minute)

- Standalone Centralized SIP Trunking

1.6.1. User Calling Bundle

1.6.1.1. Standard User Calling Bundle

Part Number	Description
UC-AAS-CIR-STDC	Standard Calling User

Features Included:

- 1 DID
- Unlimited Local & Long Distance in 48 Continental United States Minutes per PSTN Utilization Policy
- E911

NWN Deliverables:

- Provision and Activate New or Ported DID

Customer Responsibilities:

- Each Common Area and Calling User must have Standard Calling Bundle

Assumptions: Extension-to-Extension Calls within the Customer account never incur any usage fee and are unlimited, except to the extent that such calls are forwarded to another number that is not on the Customer account.

Additional Calling Credits may be purchased through the Auto-Purchase feature, which can be selected for automatic purchase in various increments on the Administrative Portal. Auto-Purchase is triggered when the combined usage of all End Users on an Account exceeds the total Calling Credits or when End Users make calls with additional fees (e.g., 411).

Minute Bundles and Calling Credit Bundles expire at the end of month and cannot roll over to the following month. Auto-Purchased Calling Credits expire twelve (12) months from date of purchase. Bundles may not be sold, transferred, assigned, or applied to any other customer. NWN reserves the right to charge reasonable overage fees when Customer exceeds the usage limits on Services that have such limits during two consecutive billing cycles.

Please see PSTN Assumption Section

1.6.2. Committed Minute Bundles

1.6.2.2. Toll Free Minutes

Part Number	Description
UC-AAS-CIR-TFDID	Toll Free DID
UC-AAS-CIR-TF1000	1,000 Minutes of Toll-Free
UC-AAS-CIR-TF10K	10,000 Minutes of Toll-Free

NWN Calling User Bundle does not include toll-free calling. Toll-Free access services are available for use with the NWN Unified Communication Service at the applicable rates. The Toll Free Bundles are billed monthly. There is no monthly roll-over. Customer must request from NWN the ability to use Toll Free Services. Applicable Toll-free Rates are posted HERE

Features Included:

- Toll Free DID

- Monthly Minutes based on the Toll-Free Minute Calling Bundle purchased (1,000, or 10,000).

NWN Deliverable:

- Provision and activate Toll Free DID and

- Bill Customer at the applicable Rates

Customer Responsibilities:

- Request from NWN Toll Free Services via pre-sales engagement or through a change order during the assess or support phase of the service contract

Assumptions:

- If customer purchases a Toll-Free DID they must purchase a Toll-Free Minute Calling Bundle

- Customer will be billed for overages at the applicable rates monthly in arrears.

- Please see PSTN Assumption Section

1.6.2.3. International Minutes

Part Number	Description
UC-AAS-CIR-INTL1000	1,000 Minutes of International Calling – Committed per Month
UC-AAS-CIR-INTL10K	10,000 Minutes of International Calling – Committed per Month
UC-AAS-CIR-INTLM	1 Minute of International Calling – Overage

Features Included:

- International PSTN Service to available countries on the published rate tables

NWN Deliverable:

- Enable International Services

- Bill Customer at the applicable Rates Monthly based on Usage (1,000 or 10,000)

- Overage per minute above the committed rate (UC-AAS-CIR-INTLM)

Customer Responsibilities:

- Request from NWN Sales or Customer Success International Services via sales engagement or support ticket

- Through a change order during the assess phase of the project

- During their support service contract

Assumptions

International Calling Credit Bundles can be purchased in addition to any base amount included with the purchased tier. International External Calls are charged based on per minute usage on the Account per

destination rates [OUTSIDE USA: Outbound calling rates will be applied based on the rate in effect at the time of use.] Currently effective rates are available HERE

1.6.3. SIP Trunking

Part Number	Description
UC-AAS-CIR-SIPTRUNK	Dedicated SIP Trunk (20 Call Paths)

Some customer may require replacement of PRIs when converting to Standard IP telephony. SIP Trunking services are available to directly connect customers collaboration endpoints and users to the PSTN. Trunking services are available as monthly as a service charge for the length of the contract.

Features Included:

- 3,000 Local & Long Distance Minutes a Month of PSTN Services per Trunk

NWN Deliverables:

- Configure (1) SIP Trunk between NWN's Centralized SIP Services and Customer's Communications Manager.

Customer Responsibilities:

- See Appendix C for Customer Requirements and Assumptions

NWN Assumptions:

- See Appendix C for Customer Requirements and Assumptions
- See Appendix E for PSTN Requirements and Assumptions

1.6.4. Additional DIDs

Part Number	Description
UC-AAS-CIR-DID	Standard DID (New or Ported)
UC-AAS-CIR-DIDSPARE	Spare DID not in use (New or Ported)

NWN provides Direct Inward Dial Telephone Numbers (DID/TN) services for customers that would like a standalone DID to reserve for future growth purposes such as new: end users, devices, or services.

Features Included:

- 1 DID New or Ported
- E911 service not included

NWN Deliverable:

- Activation of 1 DID
- Internal routing of DID to non-E911 location (UC-AAS-CIR-DID only)

Customer Responsibilities:

- Request DID from NWN

Assumptions:

The Following services are <u>NOT</u> included:

- Local or Long Distance
- Toll Free Service
- International Service
- Emergency Service (Not Active when Unassigned)

PSTN Assumption Section is listed here

1.6.5. Overage Minutes

Part Number	Description
UC-AAS-NWNFL-LLDOVR	Local and long distance per minute charge for exceeding a commitment plan

Features Included:

- One minute of local or long distance service through NWN's SIP trunking service that exceeds the customer's commitment level. Usage is based on number of minutes per call rounded up to the nearest minute.

1.6.6. DID Activation Request (Enter total # of New/Port Requests)

Part Number	Description
UC-PRO-DID-ACT	New DID Activation Request (Enter total # of New/Port Requests)

Features Included:

- Professional services to activate new or ported numbers onto Customer's Centralized PSTN Services.

NWN Deliverables:

- Activate and enable Customer DIDs either New or Ported onto Customer's Centralized PSTN Services
- Coordinate with Carriers to obtain new or ported numbers
- Coordinate with FCC and follow all State, Local, and Federal regulations

Customer Responsibilities:

- Submit accurate paperwork and documentation to NWN Telecom team in a timely manner and in accordance to the project plan.

Assumptions:

- For Each Request to obtain new or ported numbers (Active New Service before or during a Service Contract) Customer's may be charged the Activation fee.

Where permitted in the US Mainland, Customer may port telephone numbers to Bandwidth.com, NWN's SIP Provider, from another carrier and may request another carrier to port a telephone number from Bandwidth. There are mandated rules and regulations regarding the porting of numbers to and from Bandwidth.

With the purchase of DID Service SKUs, there is no separate charge for the porting of telephone numbers to NWN. Customer must advise NWN of its request to port existing telephone numbers to NWN, and NWN will process the request as required with the other carrier.

Customer may port existing telephone numbers assigned to Customer for use with its NWN Service to another carrier. Customer's new carrier must interconnect and receive ported telephone numbers in the same Local Calling Area with which the ported-out telephone numbers are normally associated. Customer must contact their new carrier and request that their NWN/Bandwidth telephone number be ported to the new carrier, and the new carrier must process the customer's request as required by NWN.

1.6.7. Overage Minutes

Part Number	Description
UC-AAS-NWNFL-LLDOVR	Local and long distance per minute charge for exceeding a commitment plan

Features Included:

- One minute of local or long distance service through NWN's SIP trunking service that exceeds the customer's commitment level. Usage is based on number of minutes per call rounded up to the nearest minute.

1.6.8. SMS Messaging

Part Number	Description
UC-AAS-NWNFL-SMS10K	Short Message Service Notification bundle of 10,000 messages.

Features Included:

- SMS is based on SMPP v3.4; An SMS message may originate from a mobile phone, a computer or an Internet-based service, but the SMS message must be initiated due to human interaction, versus an automated or timed message. Each SMS message is viewed as a single instantiation of these definitions (i.e., if a message is transmitted from a natural person to an application and a subsequent message is transmitted from the application to a natural person, such as an SMS search function). Although the round-trip appears as though the SMS message originated from a natural person back to the same natural person, each SMS message is viewed individually. Message Routing: All 911 Enabled Two-Way Numbers used for Message Routing with SMS will be used for both Outbound and Inbound messaging. Maximum Messages Per Second: SMS limits the maximum number of SMS messages Licensee may transmit measured on a per second basis. Unless otherwise specified in the SOF, the maximum number

of SMS messages per second Licensee may transmit is limited to five (5). SMS is based on RFC 3261 ("SIP-Session Initiation Protocol") and RFC 3428 ("Session Initiation Protocol (SIP) Extension for Instant Messaging"); Licensee will conform to RFC 3261 and RFC 3428.

- Invoicing will be based on actual usage. If messaging exceeds a 10,000 increment, then the quantity will increase accordingly.

1.6.9. Uncommitted Bundles

Part Number	Description
UC-AAS-NWNFL-TF100KU	Toll-Free 100,000 minute block.
UC-AAS-NWNFL-LLD100KU	Local and Long Distance 100,000 minute block.

Features Included:

- These are uncommitted blocks of minutes for Toll-Free or Local and Long Distance. Invoicing will be based on actual usage. If usage exceeds 100,000 minutes in a given month, this reduced rate product item can be used in substitute for the contracted per minute rates.

1.7. Professional Service Packages

To facilitate the support of features afore mentioned, scalability and the level of resiliency required by your organization, NWN offers a range of Infrastructure Packages (Infrastructure Bundles). These Infrastructure Packages not only include all of the backend infrastructure to support the Unified Communication and Collaboration Workloads but also fast-start services for onboarding and support. In addition to our fast-start services, NWN offers a variety of additional deployment and support services packages, including equipment deployment, implementation, cutover/activations, training services, and custom support.

All of these Services are delivered by the NWN Customer Success organization and complement the User Subscription Packages. Every user deployment must be assigned to a Cloud Infrastructure Bundle. For Professional Service Project & Implementation Methodology please see Appendix A.

1.7.1. "Small" Setup Package

Part Number	Description
UC-PRO-HYBRID-CORES	NWN UC Hybrid Cloud Infrastructure Bundle 500 – 1499 users
UC-PRO-PRIVATE-CORES	NWN UC Private Cloud Infrastructure Bundle 500 – 1499 users

Infrastructure Bundle S

Professional Services and Installation for up to the following Applications and services:

All User Subscription Packages:

- 3 Cisco Unified Communications Manager (1 PUB / 2 SUB)

- 2 Cisco Unity Connection (1PUB / 1 SUB)

- 1 Cisco Expressway-C/E pair for

- o Mobile and Remote Access (MRA)

- o Business-to-Business (B2B)

- o Hybrid Connector Services

- Cisco Emergency Responder

- 5 Company-wide Auto Attendants (Call Handlers)

- 5 Site Specific Auto Attendant (Call Handler)

- Up to 5 Cutovers / Turn-ups

1.7.2. "Medium" Setup Package

Part Number	Description
UC-PRO-HYBRID-COREM	NWN UC Hybrid Cloud Infrastructure Bundle 1500 – 4999 users
UC-PRO-PRIVATE-COREM	NWN UC Private Cloud Infrastructure Bundle 1500 – 4999 users

Infrastructure Bundle M

Professional Services and Installation for up to the following Applications and Services:

All User Subscription Packages:

- 3 Cisco Unified Communications Manager (1 PUB / 2 SUB)

- 2 Cisco Unity Connection (1PUB / 1 SUB)

- Cisco Emergency Responder

- 1 Cisco Expressway-C/E pair for

- o Mobile and Remote Access (MRA)

- o Business-to-Business (B2B)

- o Hybrid Connector Services

- 5 Company-wide Auto Attendants (Call Handlers)

- 20 Site Specific Auto Attendant (Call Handler)

- Up to 20 Cutovers / Turn-ups

1.7.3. "Large" Setup Package

Part Number	Description
UC-PRO-HYBRID-COREL	NWN UC Hybrid Cloud Infrastructure Bundle 5000 – 7499 users
UC-PRO-PRIVATE-COREL	NWN UC Private Cloud Infrastructure Bundle 5000 – 7499 users

Infrastructure Bundle L

Professional Services and Installation for up to the following Applications and services:

All User Subscription Packages:

- 7 Cisco Unified Communications Manager (1 PUB / 2 TFTP / 2 MOH / 4 SUB)

- 2 Cisco Unity Connection (1PUB / 1 SUB)

- Cisco Emergency Responder

- 2 Cisco Expressway-C/E pair for

  - Mobile and Remote Access (MRA)

  - Business-to-Business (B2B)

  - Hybrid Connector Services

- 10 Company-wide Auto Attendants (Call Handlers)

- 37 Site Specific Auto Attendant (Call Handler)

- Up to 37 Cutovers / Turn-ups

1.7.4. "Extra Large" Setup Package

Part Number	Description
UC-PRO-HYBRID-COREXL	NWN UC Hybrid Cloud Infrastructure Bundle 7500 – 10000 users
UC-PRO-PRIVATE-COREXL	NWN UC Private Cloud Infrastructure Bundle 7500 – 10000 users

Infrastructure Bundle XL

Professional Services and Installation for up to the following Applications and services:

All User Subscription Packages:

- 7 Cisco Unified Communications Manager (1 PUB / 2 TFTP / 2 MOH / 6 SUB)

- 2 Cisco Unity Connection (1PUB / 1 SUB)

- Cisco Emergency Responder

- 2 Cisco Expressway-C/E pair for

  - Mobile and Remote Access (MRA)

  - Business-to-Business (B2B)

  - Hybrid Connector Services

- 15 Company-wide Auto Attendants (Call Handlers)

- 50 Site Specific Auto Attendant (Call Handler)

- Up to 50 Cutovers / Turn-ups

1.8. Infrastructure Enable Packages

Part Number	Description
UC-MSN-HYBRID-COREL	Services setup for UC Large Hybrid Bundle
UC-MSN-HYBRID-COREM	Services setup for UC Medium Hybrid Bundle

UC-MSN-HYBRID-CORES	Services setup for UC Small Hybrid Bundle
UC-MSN-HYBRID-COREXL	Services setup for UC XL Hybrid Bundle
UC-MSN-PRIVATE-COREL	Services setup for UC Large Private Bundle
UC-MSN-PRIVATE-COREM	Services setup for UC Medium Private Bundle
UC-MSN-PRIVATE-CORES	Services setup for UC Small Private Bundle
UC-MSN-PRIVATE-COREXL	Services setup for UC XL Private Bundle

NWN Infrastructure Enable packages includes the services and support to on-board a customer's environment onto NWN's Experience Management platform which includes: Customer Success Center, Technology Operations Center, Advanced Analytics and Reporting, and an Interactive Knowledge Base.

A Site-to-site VPN from NWN Secure Management Network to the Customer Network will allow NWN Engineers to access the onsite collector for Management/Maintenance, and also to access customer Monitored Assets.

The customer firewall allows the collector to communicate to the monitoring datacenter via a host based VPN. The firewall also allows the agent on the collector to allow management in the case of a host VPN connectivity interruption.

Customer's may be charged an enablement fee if NWN is taking over Monitor and Management of an existing Unified Communication system that is not part of a current Professional Service installation project.

Please see Appendix B for more details on NWN's Enablement and Onboarding methodology.

1.9. Support Packages

Please see Appendix B. for NWN's Ongoing Monitoring, Management and Support methodology and processes. The following infrastructure support packages can be sold separately for Essential Service customers however are required for complete customers. The Support Infrastructure package must match the Professional service package purchased.

1.9.1. "Small" Support Package

Part Number	Description
UC-MSR-HYBRID-CORES	UC Small Hybrid Bundle Support
UC-MSR-PRIVATE-CORES	UCaaS Small Private Bundle Support

Deliverables

Monitoring & Management for up to the following Applications and services:

- 3 Cisco Unified Communications Manager (1 PUB / 2 SUB)

- 2 Cisco Unity Connection (1PUB / 1 SUB)

- Cisco Emergency Responder
- 1 Cisco Expressway-C/E pair for
  - Mobile and Remote Access (MRA)
  - Business-to-Business (B2B)
  - Hybrid Connector Services
- 5 Company-wide Auto Attendants (Call Handlers)
- 5 Site Specific Auto Attendant (Call Handler)
- Up to 5 Cutovers / Turn-ups

Assumptions:

- Moves, Adds, and/or Changes are not included in Support

1.9.2. "Medium" Support Package

Part Number	Description
UC-MSR-HYBRID-COREM	UC Medium Hybrid Bundle Support
UC-MSR-PRIVATE-CORES	UCaaS Medium Private Bundle Support

Monitor and Management for up to the following Applications and Services:

- 3 Cisco Unified Communications Manager (1 PUB / 2 SUB)
- 2 Cisco Unity Connection (1PUB / 1 SUB)
- Cisco Emergency Responder
- 1 Cisco Expressway-C/E pair for
  - Mobile and Remote Access (MRA)
  - Business-to-Business (B2B)
  - Hybrid Connector Services
- 5 Company-wide Auto Attendants (Call Handlers)
- 20 Site Specific Auto Attendant (Call Handler)
- Up to 20 Cutovers / Turn-ups

Assumptions:

- Moves, Adds, and/or Changes are not included in Support

1.9.3. "Large" Support Package

Part Number	Description
UC-MSR-HYBRID-COREL	UC Large Hybrid Bundle Support
UC-MSR-PRIVATE-COREL	UCaaS Large Private Bundle Support

Monitor and Management for up to the following Applications and services:

- 7 Cisco Unified Communications Manager (1 PUB / 2 TFTP / 2 MOH / 4 SUB)
- 2 Cisco Unity Connection (1PUB / 1 SUB)
- Cisco Emergency Responder
- 2 Cisco Expressway-C/E pair for
  - Mobile and Remote Access (MRA)
  - Business-to-Business (B2B)
  - Hybrid Connector Services
- 10 Company-wide Auto Attendants (Call Handlers)
- 37 Site Specific Auto Attendant (Call Handler)
- Up to 37 Cutovers / Turn-ups

Assumptions:

- Moves, Adds, and/or Changes are not included in Support

1.9.4. "Extra Large" Support Package

Part Number	Description
UC-MSR-HYBRID-COREL	UC XL Hybrid Bundle Support
UC-MSR-PRIVATE-COREL	UCaaS XL Private Bundle Support

Monitoring and Management for up to the following Applications and services:

- Cisco Unified Communications Manager (1 PUB / 2 TFTP / 2 MOH / 6 SUB)
- 2 Cisco Unity Connection (1PUB / 1 SUB)
- Cisco Emergency Responder
- 2 Cisco Expressway-C/E pair for
  - Mobile and Remote Access (MRA)
  - Business-to-Business (B2B)
  - Hybrid Connector Services
- 15 Company-wide Auto Attendants (Call Handlers)
- 50 Site Specific Auto Attendant (Call Handler)
- Up to 50 Cutovers / Turn-ups

Assumptions:

- Moves, Adds, and/or Changes are not included in Support

1.9.5. MACD Support

Part Number	Description
UC-MSN-MACD	Support MACD

NWN Deliverable:

Perform Move, Add, Change, or Delete on customer behalf per MACD definitions, assumptions, and SLAs.

1.9.6. Infrastructure Package Assumptions

Services NOT included on these base packages (S – XL); however available as Services Add-ons:

- See Appendix A for additional details and assumptions
- Toll-Free Numbers or International access (Fees Applicable)
- Installation/deployment of Phones
- Installation/deployment of Analog Gateways
- Services to support Local Break Out (LBO)
- Survivable Remote System Telephony (SRST)
- Network Transport or Connectivity to NWN Data Centers
- Integration with legacy PBX or 3rd-party System
- Travel time
- After hours and weekend rates may apply

1.9.6.4. Essential Service Package Assumptions

The following Deployment Services Assumptions apply to the Infrastructure and Deployment Services Packages (S - XL):

- **Customer is responsible for PSTN connectivity unless otherwise noted**
- **Customer is Responsible for Network Connectivity**

1.9.6.5. Complete Service Package Assumptions

The following Deployment Services Assumptions apply to the Infrastructure and Deployment Services Packages (S - XL):

- Private multi-customer architecture
- End-to-end Cisco Platform
- Geographically Redundant Data Centers for Service Continuity
- Call path to user ratio of 20:1
- Estimated average of 200 users per site
- Site/Location = Physical site/location, turn up or porting exercise

The following Support Services Assumptions apply to the Infrastructure Support Packages (S - XL):

- Version Upgrades to leverage latest features

- Streamlined Administration and Self-care Portals (EMP Control)

- Call Reporting and Billing (EMP Reporting)

1.10. Professional Services (Hourly)

1.10.1. NWN Professional Services Hourly (Regular Time)

Part Number	Description
UC-PRO-PC-S	Hourly PS Engagement - Project Coordinator
UC-PRO-PM-S	Hourly PS Engagement - Project Manager
UC-PRO-SRPM-S	Hourly PS Engagement - Strategic Project Manager
UC-PRO-CON-S	Hourly PS Engagement - Principal Consultant
UC-PRO-SE-S	Hourly PS Engagement - Solutions Engineer
UC-PRO-SRSE-S	Hourly PS Engagement - Senior Solutions Engineer

Assumptions:

- Customer is responsible for providing access to all systems requested by NWN for completion of the project.

- Customer is responsible for providing all hardware, software, maintenance and other resources required for the successful completion of the project.

- Customer will provide a primary point of contact for the NWN Project Coordinator.

- Customer will be responsible to have complete backups of any data prior to commencement of our services. NWN assumes no responsibility for lost data.

- Customer is responsible for Travel expenses, Travel expenses not included

- NWN Standard Business Hours are Monday thru Friday, 8am to 5pm. All work effort noted above is estimated to be completed during this timeframe. If after-hours work is required, then a change order will be required.

- NWN will provide knowledge transfer to Customer staff throughout the engagement.   Knowledge transfer is not intended to replace formal technical training and certification.

- Customer must have ACTIVE manufacturer support contracts on any existing equipment that NWN will be performing work on during this work effort.

Deliverables:

- Engineering services for the duration set forth.

- Project Coordination will work with project team and client to get project kicked off.

- Coordinator will be primary point of contact for NWN/Client and is responsible for scheduling, communications and status for the project.

1.10.2. NWN Professional Service Hourly (Overtime)

Part Number	Description
UC-PRO-PC-AH	Hourly PS Engagement - Project Coordinator Afterhours
UC-PRO-PM-AH	Hourly PS Engagement - Project Manager Afterhours
UC-PRO-SRPM-AH	Hourly PS Engagement - Strategic Project Manager Afterhours
UC-PRO-CON-AH	Hourly PS Engagement - Principal Consultant Afterhours
UC-PRO-SE-AH	Hourly PS Engagement - Solutions Engineer Afterhours
UC-PRO-SRSE-AH	Hourly PS Engagement - Senior Solutions Engineer Afterhours

Assumptions:

- Customer is responsible for providing access to all systems requested by NWN for completion of the project.

- Customer is responsible for Travel expenses, Travel expenses not included

- Customer is responsible for providing all hardware, software, maintenance and other resources required for the successful completion of the project.

- Customer will provide a primary point of contact for the NWN Project Coordinator.

- Customer will be responsible to have complete backups of any data prior to commencement of our services. NWN assumes no responsibility for lost data.

- NWN Standard Business Hours are Monday thru Friday, 8am to 5pm. All work effort noted above is estimated to be completed during this timeframe. If after-hours work is required, then a change order will be required.

- NWN will provide knowledge transfer to Customer staff throughout the engagement.   Knowledge transfer is not intended to replace formal technical training and certification.

- Customer must have ACTIVE manufacturer support contracts on any existing equipment that NWN will be performing work on during this work effort.

Deliverables:

- Engineering services for the duration set forth.

- Project Coordination will work with project team and client to get project kicked off.

- Coordinator will be primary point of contact for NWN/Client and is responsible for scheduling, communications and status for the project.

1.11. Unified Communication Application Add-ons

NWN provides services to add additional infrastructure capabilities to an existing deployment. The following infrastructure add-on services include the professional and project management services to plan, design, configure, and install additional capabilities for a Unified Communications deployment. NWN assumes the customer has already purchased any required software, hardware, licensing, etc.

1.11.1. Expressway C/E Pair (Collaboration Edge) Add-on

Part Number	Description

UC-PRO-HYBRID-EXCE	UC Hybrid Add-on Expressway-C/E Pair

Cisco Expressway Series works as part of the Cisco Unified Communications Manager product family to provide access for mobile, desktop, and fixed clients. The application provides advanced multimodal firewall traversal and access services for secure voice, video, instant messaging and presence, directory, and visual voicemail outside your enterprise firewall without the need for a VPN.

Features:

- Base software license
- Expressway-E license
- Gateway feature license
- Series feature license
- Advanced Networking feature license
- TURN feature license
- Desk phone and room registration licenses

NWN Deliverables:

Professional services and project management to install and configure the following:

(1) Expressway for MRA and B2B to existing CUCM Cluster

- Requires Add-on Rich Media Session licenses
- Expressway-C
- Expressway-E
- Expressway base system and cluster configuration (CUCM integration)
- Configure Expressway-C and Integrate with CUCM Cluster
- Configure Expressway-E, load CA signed certificates and Integrate with Expressway-C
- Testing & Validation
- DNS & Firewall configuration
- System documentation
- Technical handoff / Administrative Knowledge Transfer

Please see Appendix A for full Professional Services Provisioning and On-boarding Methodology.

Customer Requirements:

Collaboration Edge enables supported Jabber clients and Cisco IP Phones that are not on the Customer's corporate network to connect to the NWN Unified Communications service using an encrypted Internet connection. The mobile and remote access feature enables the Jabber clients and fixed remote endpoints to connect to the NWN Unified Communications service without the use of a User initiated VPN connection.

Collaboration Edge supports the following Jabber features:

- Instant Messaging and Presence

- Voice and video calls

- Jabber-based audio and video conferencing

- Desktop sharing

- Visual voicemail

- Custom HTML tabs

- Directory search (limited)

If Collaboration Edge is used in combination with LDAP integration with Jabber Users spread among multiple directory domains, a separate Collaboration Edge instance will be needed for each directory domain containing Jabber Users. Additional charges will apply to support these scenarios. Jabber feature availability could be limited with Collaboration Edge.

Devices and Clients supported with Expressway C/E pair MRA functionality add-on:

- Cisco IP Phones 7800 Series

- Cisco IP Phones 8800 Series

- Jabber for Windows 11.x or later

- Jabber for Mac 11.x or later

- Jabber for iOS 11.x or later

- Jabber for Android 11.x or later

The Internet connectivity/circuits to the NWN Unified Communications network must be working prior to installation of Collaboration Edge of service.

Collaboration Edge does not include any Service level performance guarantees with Jabber or Cisco IP Phones over the Internet.

The Customer-provided firewall must allow the following ports to be opened:

UDP/TCP	DST Port	Notes
TCP	7001	SIP TCP/TLS
UDP	36000	RTP Assent
UDP	36001	RTCP Assent

Additional Customer responsibilities may include:

- Provide the internal domain name used by the Jabber client.

- Provide the external domain name used by the Jabber client.

- Provide IP address of internal and external DNS servers.

- Obtain a table from NWN and create A and SRV records in the internal DNS servers.

- Obtain a table from NWN and create A and SRV records in the external DNS servers.

- Customer shall acquire a minimum of two (2) public certificates from a public Certificate Authority (CA). NWN will provide Customer with the required Certificate Signaling Requests (CSRs). Customer's Certification Authority may have restrictions on the name of state locality, organization name and organization unit when creating a CSR. Customer will be required to provide this information to NWN.

Assumptions:

NWN will be providing the professional services and installation. NWN is not responsible for supplying any hardware, licensing, or any additional services other than stated in the deliverable section.

1.11.2. Unified Communications Manager (UCM) Node Add-on

Part Number	Description
UC-PRO-HYBRID-UCMN	UC Hybrid Add-on UCM Node

Features Included:

Professional Services, Project Management, and installation of (1) Additional Cisco Unified Communication Manager Sub Node to existing CUCM Cluster.

NWN Deliverables:

Professional services and project management to install and configure the following:

(1) Additional Cisco Unified Communication Manager Sub Node

- Develop Network Design & System Planning
- Staging and Configuration of any Hardware
- Deploy latest updates and versions
- Deploy OVA files and ISOs
- Configure Base System (Service Activation, server names, and service parameters)
- Configure Media Resources (MRG, MRGL) and Trunks
- DNS & Firewall configuration
- Testing & Validation
- System documentation
- Technical handoff / Administrative Knowledge Transfer

Customer Responsibilities:

- Provide all required hardware, licensing, network diagrams
- Customer is required to program their DNS servers and firewalls.

Assumptions:

- Please see Appendix C & D for Technical Requirements and Configuration Assumptions
- Please See Appendix A for Professional Service Process and Methodology

1.11.3. Unity Connection (UCxN) Node Add-on

Part Number	Description
UC-PRO-HYBRID-UCNN	UC Hybrid Add-on UCxN Node

Features Included:

Professional Services, Project Management, and installation of (1) Additional Cisco Unified Communication Unity Connection Sub Node to existing CUCM Cluster.

Access your Cisco Unity Connection voice messages the way you prefer – whether from an IP phone, a mobile phone, a web browser, an email client, or a desktop client such as Cisco Jabber®.

Professional Services, Project Management, and installation of (1) Additional Cisco Unity Connection Sub Node to existing CUCM Cluster.

NWN Deliverables:

Professional services and project management to install and configure the following:

(1) Additional Cisco Unity Connection Sub Node

- Develop Network Design & System Planning
- Staging and Configuration of any Hardware
- Deploy latest updates and versions
- Configure Base System and Cluster Configuration (Service Activation, server names, and service parameters)
- Configure Integration to CUCM Cluster
- Testing and Validation
- DNS & Firewall configuration
- System documentation
- Technical handoff / Administrative Knowledge Transfer

Customer Responsibilities:

- Provide NWN requested documentation, topologies, or requirements related to the successful completion of the project.
- Ensure that relevant resources are available to attend any meetings or requirements
- Review any documentation provided by NWN during the delivery of these services and provide feedback as requested.
- Please See Appendix A for Professional Service Process and Methodology

- Please see Appendix C & D for Technical Requirements and Configuration Assumptions

1.11.4. Jabber/IM&P Cluster Add-on

Part Number	Description
UC-PRO-HYBRID-JIMP	UC Hybrid Add-on Jabber/IM&P Cluster

Cisco Unified Presence is a standards-based enterprise platform that brings people together in and across organizations in the most effective way. This open and extensible platform facilitates the highly secure exchange of presence and instant messaging (IM) information between Cisco Unified Communications and other applications.

Features:

- Professional Services, Project Management, configuration, and installation of (1) Additional Jabber IM&P Server.

NWN Deliverables:

- Install and Configure (1) Primary IM&P Server
- Install and Configure (1) Secondary Server
- Configure Cluster & Base System Configuration to (1) CUCM Cluster
- Configure cluster and environment (DNS, AD, Certificates, etc.) for Jabber Implementation and provision all users

Customer Responsibilities:

- Provide NWN requested documentation, topologies, or requirements related to the successful completion of the project.
- Customer is required to program their DNS servers and firewalls.
- Ensure that relevant resources are available to attend any meetings or requirements
- Review any documentation provided by NWN during the delivery of these services and provide feedback as requested.
- Customer is responsible for AD Cleanup, DNS configuration for service discovery, etc.
- Install Jabber on User desktops
- Please See Appendix A for Professional Service Process and Methodology
- Please see Appendix C & D for Technical Requirements and Configuration Assumptions

1.12. Cisco Emergency Responder (CER) Advanced E911

1.12.5. CER Installation

Part Number	Description

UC-PRO-HYBRID-CERCORE	UC Hybrid CER Infrastructure Installation

Features:

- Professional Services, Project Management, configuration, and installation of Cisco Emergency Responder Server

NWN Deliverables:

- Install and Configure (1) CER PUB
- Install and Configure (1) CER SUB
- Install and Configure CER Base System integration and cluster configuration to CUCM
- Complete Emergency Responder and CUCM Configuration (CTI Ports, CTI Route Points, Application Users, ER Dashboard, etc)
- Testing & Validation

Customer Responsibilities & Assumptions:

- Please See Appendix E for Emergency PSTN Requirements and Assumptions

1.12.6. CER Support

Part Number	Description
UC-MSR-HYBRID-CERCORE	UC Hybrid CER Infrastructure Support

NWN Deliverables:

- Monitor and Manage (1) CER Server
- See Appendix B for Ongoing Management & Support Details

1.13. Attendant Console Application Options

The Attendant Console application enables Customer management of incoming calls. The application combines traditional telephony functions with advanced voice capabilities to answer and transfer calls from multiple sources. Service options include:

- Attendant Console Standard
- Attendant Console Advanced

1.13.1. Attendant Console Standard (Server-less)

Attendant Console Standard does not require an application specific server. The application also allows the End User (normally the Customer's operator or receptionist) to control and manipulate calls that are on the End User's IP phone (including calls on the End User's Jabber client) allowing the Attendant Console End

User(s) to quickly process calls via the Attendant Console Standard application rather than through the phone.

Part Number	Description
UC-Pro-Hybrid-AttCon	UC Hybrid Standard Attendant Console Installation
UC-Pro-Private-AttCon	UC Private Standard Attendant Console Installation

Features:

- Call handling directly from the application

- Searchable corporate directory and personal directory groups

- Live view of contact availability through:

- Phone line state

- Cisco presence or WebEx Teams

- Integration with Cisco Unified Communications Manager hunt groups

- No server to deploy and maintain

NWN Deliverables:

- Configure up to (4) Standard Attendant Consoles

. Customer Responsibility:

- Customer provides correct type and number of licenses

- Customer provides any necessary hardware, licensing, and servers.

- Ensure the Operator's Windows based PC meets the minimum hardware, software, and Operation System requirements for the Attendant Console application as determined or provided by NWN.

- Procure the Cisco software, license, and vendor maintenance via NWN for the Attendant Console licenses and software maintenance/upgrade licenses.

- Ensure the operator workstations have IP connectivity to the Attendant Console server within the NWN Unified Communications architecture and that all customer firewalls will forward the appropriate packets between these Endpoints.

- Install and support the Attendant Console PC based application on the End User's desktop and troubleshoot the application on the End User's desktop

1.13.2. Attendant Console Advanced (Server based)

Part Number	Description

UC-PRO-HYBRID-ATTCONA	UC Hybrid Advanced Attendant Console Setup
UC-PRO-PRIVATE-ATTCONA	UC Private Advanced Attendant Console Setup

Features:

Attendant Console Advanced provides the operator tools to accept and dispatch incoming calls across the Customer's organization. The application is specifically designed to work with the Cisco Unified Communications Manager.

This server-based application offers features, including a call-queuing engine, Endpoint busy status, presence integration, and an IP PBX directory search. The application's directory supports up to 100,000 contacts and can be directly synchronized with Active Directory. Up to 40 concurrent users can use Attendant Console Advanced.

NWN Deliverables:

Some IP Phones and associated features cannot be used for Attendant Console Advance users.

- Deploy, Install, and Configure (1) Cisco Attendant Console Primary Advanced Server

- Deploy, Install, and Configure (1) Attendant Console Secondary Server

- Configure Unified Communications service to work with the Cisco Attendant Console Advanced product.

Customer Responsibilities/Assumptions:

- Customer provides correct type and number of licenses

- Customer provides any necessary hardware, licensing, and servers.

- Ensure the Operator's Windows based PC meets the minimum hardware, software, and Operation System requirements for the Attendant Console application as determined or provided by NWN.

- Procure the Cisco software, license, and vendor maintenance via NWN for the Attendant Console licenses and software maintenance/upgrade licenses.

- Ensure the operator workstations have IP connectivity to the Attendant Console server within the NWN Unified Communications architecture and that all customer firewalls will forward the appropriate packets between these Endpoints.

- Install and support the Attendant Console PC based application on the End User's desktop and troubleshoot the application on the End User's desktop. Install and support the PC based application software for the Attendant Console application and for the Attendant Console End User.

1.14. Auto Attendant (Call Handlers)

Auto Attendant is available as part of the Cloud Infrastructure Packages or as an optional add-on feature. In inbound calls, NWN Unified Communications Services Voice Mail system will utilize available port capacity and may limit the amount of call traffic that can be handled.

 If the Auto Attendant traffic causes call blocking to the NWN Unified Communications Services Voicemail system, then the Customer will be responsible for evaluating Auto Attendant requirements and making

adjustments to the number of, and/or use of Auto Attendants. Auto Attendant allows a voice port to be configured to support inbound selectable call options with prompt defining each option. Upon selecting an option, the inbound call is directed to a specific end user or hunt group number. There are no queuing options or statistics for inbound calls provided with call handlers. Optional Auto Attendant Add-on Services may be purchased to support additional primary or secondary options.

1.14.1. Two Additional Call Handlers (Auto Attendants)

Part Number	Description
UC-PRO-ENT-CH2	Additional Call Handlers - 2x5 options

NWN Deliverables:

- Configure up to (2) Auto Attendants with up to 2x5 Options

Assumptions:

- Customer will provide prompts and voice greetings for the auto attendants

1.14.2. Four Additional Call Handlers (Auto Attendants)

Part Number	Description
UC-PRO-ENT-CH4	Additional Call Handlers - 4x5 options

NWN Deliverables:

- Configure up to (4) Auto Attendants with up to 4x5 Options

Assumptions:

- Customer will provide prompts and voice greetings for the auto attendants

1.14.3. Content used with Auto Attendant

The Customer will be responsible for providing recordings to be used as announcements for Auto Attendants. NWN is not responsible for any content Customer transmits, stores, records or plays using the feature. The Customer content shall not violate the NWN Acceptable Use Policy or the intellectual property rights of NWN or any third party.

NWN reserves the right to terminate the Auto Attendant feature if NWN determines in its sole discretion that Customer's Content may adversely affect NWN's public image or damage NWN's reputation or goodwill.

Customer represents and warrants that (1) it holds all rights necessary to use the Content in connection with the Services provided under this Service Guide, and (2) its Content will at all times comply in full with any and all requirements of federal, state and local laws and regulations. All right, title and interest in and to any Content shall remain the property of Customer. Customer further agrees to indemnity and hold NWN harmless for any failure to satisfy any of the terms of this section.

1.15. Paging Services (Broadcast and Emergency Notification)

NWN Unified Communication Services offer optional Advanced Paging and Mass notification services that sends audio, text and images to mobile and on-premises devices. It increases the speed, reach, and success rate of emergency notification communications to get critical information to the people that need it.

1.15.1. Paging User License

Description
NWN sales will work with customer to provide a quote from 3rd Party Paging Provider

NWN Deliverables:

Provision and Configure (1) Paging User

Features Included:

Group Announcement Services are available to NWN Unified Communications subscribers in two options:

- Advanced Notification
- Fusion

Assumptions:

- If customer purchases Fusion licenses, they must purchase Paging Server installation
- NWN will not provide training as part of the engagement

The Advanced Notification and Fusion features are identified in the table below:

Option	Advanced	Fusion
Send Text and/or Audio from:		
Desk phones	X	X
Web console	X	X
iOS or Android mobile app		X
Other systems	X	X
Send Text and/or Audio to:		
Desk phones	X	X
Mobile phones		X
Email	X	X
IP speakers and clocks	X	X
Twitter	X	

Option	Advanced	Fusion
Digital Signage	X	X
Internet of things	X	X
Send Messages as:		
Live audio	X	X
Ad-hoc audio	X	X
Pre-recorded audio	X	X
Text to speech	X	X
Overhead page	X	X
Email	X	X
Social media post		X
SMS text		X
Phone call		X
Push notifications		X
Automatically broadcast notification for:		
Outbound calls to 911	X	X
Incoming severe weather	X	X
Conference call collaboration	X	X
Webex Teams spaces	X	X
Message confirmation and escalation	X	X
Night bell	X	X
School bells	X	X
Architecture type:		
Requires paging gateway/fusion server	X	X
Hosted virtual appliance	X	
Hybrid cloud architecture		X
Survivability		X

1.15.2. Paging Server Installation

Part Number	Description
UC-PRO-HYBRID-PG	UC Hybrid Paging Server Installation & Config
UC-PRO-PRIVATE-PG	UC Private Paging Server Installation & Config

Features Included:

- NWN Professional Services to configure and install Informacast Paging Server
- High Availability between Data Center & Remote Sites
- Survivable Remote Site Notification
- Distributed Activation

NWN Deliverables:

- Install and configure (1) InformaCast Primary Server
- Install and configure (1) InformaCast Resilient Server
- (1) InformaCast base system and cluster configuration (CUCM integration)

Assumptions:

- Customer will provide necessary hardware, gateways, and licensing for the Paging servers
- Please See Paging Assumptions Section in the Service Description
- NWN will not provide training services

1.15.3. Paging Support

Part Number	Description
UC-MSR-HYBRID-PG	UC Hybrid Paging Server Support
UC-MSR-PRIVATE-PG	UC Private Paging Server Support

NWN Deliverables:

- Monitor & Manage (1) Informacast Primary Server
- Monitor & Manage (1) INformacast Resilience Server

Assumptions:

- Please see Appendix B for Ongoing Support Services

1.15.4. Paging Gateway & Appliance

One or more Singlewire Paging Gateways must be procured by the Customer to connect multiple announcing devices to the Broadcast and Emergency Notification Service over a non-IP multicast enabled WAN. Under this scenario, the Broadcast and Emergency Notification Service will send messages to each gateway using traditional IP unicast packets and the gateway will use IP multicast to distribute the messages to the multiple announcing devices that are downstream from each gateway.

The number of gateways supported is virtually unlimited; however, the Broadcast and Emergency Notification Service will need to replicate the announcement packets to each configured gateway consuming WAN bandwidth. The downstream LAN architecture must have Protocol-Independent Multicast (PIM) configured in Sparse or Sparse/Dense Mode.

1.15.5. Paging Assumptions

Distribution Options

Group Announcement Service supports Overhead paging systems that meet NWN defined system requirements and are integrated using one of the following architectures:

- Existing paging system requires a FXS interface
- Existing paging system requires line-in and control leads
- Singlewire Legacy paging interface feature.

Mobile and remote users also require an additional Customer provided zone controller device and a Customer provided subscription to InformaCast Mobile.

IP Multicast over the WAN

Group Announcement Service distributes messages to the multiple announcing Devices using IP Multicast, which is directly routed over the Customer's WAN and LAN architecture, provided such architecture has Protocol-Independent Multicast (PIM) configured in Sparse Mode using static Rendezvous Point(s) (RPs).

Architecture and System Requirements

Broadcast and Emergency Notification Service uses the Singlewire Software, LLC InformaCast application as an interface to Customer's existing Supported Paging system via an analog interface. Group Announcements are distributed using the Broadcast and Emergency Notification Service, which is an application implemented in the NWN Unified Communications architecture.

Broadcast and Emergency Notification is not currently supported in a high-availability model (only one server can be used per environment).

IP multicast is used to send the messages from the Group Announcement Service to the supported paging Endpoint. To facilitate IP multicast routing, the Group Announcement Service is installed on the customer side of the NWN Unified Communications firewall. IP multicast configuration in the NWN core data centers is included for NWN Unified Communications Subscribers.

Customer is responsible for the configuration of IP Multicast routing in Customer's existing WAN and/or LAN environments.

Overhead Paging Systems Customer Requirements

NWN Unified Communications provides Broadcast and Emergency Notification Advanced Notifications and Fusion options for Customer's existing overhead paging systems.

In addition to the requirements for Basic Paging:

- Customer shall also provide a zone controller device.

- Customer shall be provided access to a self-service provisioning system to manage their own Moves, Adds, Changes, and deletes (MACDs).

- Support for Mobile and remote users requires subscription to InformaCast Mobile (ordered separately from Singlewire).

Supported Endpoints for Broadcast and Emergency Notification

Supported Endpoints include desk phones manufactured by Cisco that are enabled with a speakerphone. Please consult the following URL for the complete list of supported phones:

https://www.singlewire.com/matrix/cisco-phones

No other Endpoints or devices, including IP Communicator, Jabber, CUCI based phones, DX series, analog, and telepresence are supported.

Mobile Endpoints

Mobile and remote user support allows for Group Announcements to be sent to a user's iOS and/or Android base device running the InformaCast Mobile application [iOS 7.0 or later and Android 2.3 (Gingerbread) or later]. The InformaCast Mobile application is a separate cloud- based subscription service that must be procured through NWN. Each user can have the InformaCast Mobile application installed on a maximum of three devices.

The following InformaCast message types can be sent to InformaCast Mobile's distribution lists:

- Text

- Text and Pre-Recorded Audio

- Text and Live Audio (except audio recorded via InformaCast Desktop Notifier)

- Text and Ad-Hoc Audio

- Pre-Recorded Audio

- Live Audio (except audio recorded via InformaCast Desktop Notifier)

- Ad-Hoc Audio

The following InformaCast message types can be triggered by an InformaCast Mobile notification:

- Text

- Text and Pre-Recorded Audio

- Pre-Recorded Audio

1.16. Call Recording and Compliance

NWN Unified Communications offers an optional Collaboration Recording and Compliance feature. The Collaboration Recording Feature is available for NWN Unified Communications subscribers with supported Cisco IP phones and Jabber for Windows. Only calls using the G.711 codec can be recorded. In addition to calls, NWN supports the optional recording of Jabber IM (Instant Messaging) conversations and screen capture when an on-prem Server is included as part of the service.

Call recording information may be accessed through a web browser on the Customer's network. When Recording Features are engaged, an audible beep is played at regular intervals during the recorded call. Recordings will be stored encrypted for a period of 90 days in the NWN data centers. All recordings will be deleted after 90 days without notification.

Use of the Recording Feature with NWN Unified Communications, is subject to the software license terms, warranty terms, and related procedural terms found at Customer and Customer's

1.16.1. Always On Call Recording

Part Number	Description
UC-PRO-HYBRID-SCR	UC Hybrid Standard Always On Call Recording Installation
UC-PRO-PRIVATE-SCR	UC Private Standard Always On Call Recording Installation

NWN Always On Call Recording is the option to records all calls from supported IP phones enabled with recording. These recordings may be played back or downloaded as .wav file or mp3 format files or sent as email attachment from NWN's calling portal.

NWN Deliverables:

- Install (1) Always On-Call Recording Server

1.16.2. On-Demand Recording

Part Number	Description
UC-PRO-HYBRID-ARCRD	UC Hybrid Advanced On Demand Voice Recording Installation
UC-PRO-PRIVATE-ARCRD	UC Private Advanced On Demand Voice Recording Installation
UC-MSR-HYBRID-ARCD	UC Hybrid Advanced On Demand Voice Recording Infrastructure Support
UC-MSR-PRIVATE-ARCRD	UC Private Advanced On Demand Voice Recording Infrastructure Support

NWN On-Demand Call Recording allows for the user to begin, end or cancel the call recording through soft keys on the supported IP phone.

NWN Deliverables:

- Install (1) Advanced On-Demand Call Recording Server
- Monitor & Manage (1) Advanced On-Demand Voice Recording Server

1.16.3. Call Recording Assumptions

Recording and Privacy

Customers subscribing to this feature consent to sharing of Customer information with NWN for the purpose of onboarding customers and enabling the feature.

The servers used for call recording are located in the NWN data centers in the US and call recording information will be stored encrypted.

The laws of some jurisdictions require notice and consent of one or more, and in some cases all, participants prior to recording, monitoring, storing or intercepting communications. Customer is responsible for complying with such laws, including providing necessary notices and obtaining required consent, prior to enabling or using the record features. Customer agrees to indemnify and defend NWN and its affiliates from and against any and all third-party claims and related loss, liability, damage and expense, arising from or related to failure to comply with applicable laws.

Customer Requirements with Collaboration Recording

Availability of Verba Call Recording with NWN Unified Communications is subject to the following:

- Customer shall purchase a Collaboration Recording and Compliance Server or infrastructure Add-on and optional On-Prem Collaboration Recording Server if screen capture is required.

- Customer shall purchase sufficient Call Recording subscriptions to accommodate the number of Customer End Users who will have the Call Recording Feature enabled for use.

- If Customer End User will have multiple devices that can initiate call recording in parallel, then each device will require a Call Recording Subscription. Once the subscription pool is depleted, the subsequent Customer End User call will not be recorded.

- Customer shall cooperate to provide Customer End User and device information

- Customer shall provide network bandwidth of 1.5M or higher per screen required for optimal experience.

- Customer shall procure and maintain a connection of sufficient bandwidth to support the recording and play back as required by G.711 codec.

- Call Recording is limited to Cisco Endpoints excluding Jabber mobile and tablet Endpoints.

- Customer will utilize the Web Client 2.0 on the Manager and Supervisor workstations.

Web Client 2.0 requires Microsoft Silverlight version 5.1.10411 or higher to be installed on the client workstation. Customer will ensure that the workstations that require Web 2.0 access have Microsoft Silverlight loaded prior to loading Web Client 2.0.

1.17. Advanced Voicemail Transcription

Part Number	Description
UC-AAS-PRIVATE-VMU	UC Private Advanced Voicemail User

UC-AAS-HYBRID-VMU	UC Hybrid Advanced Voicemail User

NWN provides additional services for advanced speech to text transcription for Voicemail. Voicemail transcription enhances productivity and improves customer and user experience. NWN provides services to configure, install and manage the infrastructure and users for Voicemail Transcription. This service is an optional add-on that can be added to the infrastructure bundles per the service description. This service includes Voicemail messages to be sent to email via text. This does not include Voicemail services to SMS.

NWN Deliverables:

- Activate Transcription Service

- Each user includes 50 minutes of transcription per month that is pooled across users

- Overage is billed on usage in arrears.

1.18.   Routers & Gateways

There are two support options for Customers requiring customer premises-based Gateway Endpoint support for Site Survivability, On-Site PSTN connectivity, analog gateway support, DSP farm, and/or Session Border Controller (SBC) services for a local PSTN SIP connection. They are:

- NWN Managed Telco/SIP Router

- NWN Managed Analog Gateway

1.18.1. NWN Managed Telco/SIP Router (Site Survivability "SRST")

The Site Survivability Feature is an additional feature available with the NWN Unified Communications service provides for limited completion of calls in the event of a failure of a Customer's connectivity to the NWN network, by routing calls over the Public Switched Telephone Network (PSTN) network. The Site Survivability feature will be provided via a Survivability Gateway installed on the Customer's premises. When the configured and supported Cisco IP phone loses communications to the NWN Unified Communications service, it will connect to and use the Survivability Gateway. The Survivability Gateway will provide outbound PSTN calling based on the gateway's PSTN connections and Customer wishes. It is possible and advisable under certain circumstances to limit outbound calling to emergency calls (e.g. 911 in the United States). Inbound calling during data networking failures will also be maintained, if and only if, the Survivability Gateway already provides inbound PSTN calling services for that location.

1.18.1.6.   Installation

Part Number	Description
UC-PRO-HYBRID-SPGW	UC Hybrid SIP/PRI Gateway Setup
UC-PRO-PRIVATE-SPGW	UC Private SIP/PRI Gateway Setup

Deliverables:

- Stage & Configure (1) Router for Site Survivability

Customer Responsibilities:

Purchase under a separate agreement or with an alternate provider an appropriate number of PSTN lines necessary to activate the Gateway Endpoint - supported PSTN lines include: traditional analog, ISDN BRI, ISDN

PRI and SIP based PSTN service;

Publish, as appropriate, the PSTN line numbers at the location they wish to receive inbound calls during an outage but be cognizant of the limitation on the number of calls that can be handled in survivability mode.

Assumptions:

The number of concurrent calls supported is limited by the capacity of the Survivability Gateway and the connected PSTN trunks. Only certain Cisco based phones are supported. Unsupported phones and analog gateways, as well as softphone clients will not register to the Survivability Gateway and will remain down until access to the NWN Unified Communications services is reestablished. The list of phones and endpoints that support the Site Survivable Feature is dependent of the Cisco Software and endpoint used for the Gateway Endpoint. Cisco Systems provides the list of supported phones and endpoints based on software version and router platform.

The following types of calls may be supported with the Site Survivable Feature:

- On-net Intra-site only NWN Unified Communications desk phone to desk phone calling
- External calls:
    - o The number of off-net calls is limited by the number of PSTN connections on the Gateway Endpoint.
    - o Customer may also instruct NWN to limit the type of outbound calls to:
        - Emergency (e.g. 911)
        - Service (e.g. 611 and 411)
        - Toll free
        - Local
        - National
        - International
- Inbound PSTN calls only if the Survivability Gateway normally handles inbound calls. Inbound calling during a Site Survivable event must be carefully engineered with the PSTN provider(s) and NWN Unified Communications engineering if inbound PSTN calls are not normally sent to site's Gateway.
- Calls in progress at the time of a failure will be supported as follows:
    - o Intra-site calls in progress will continue to completion
    - o Inter-site calls (calls between NWN Unified Communications users at the failure location and any party outside that location) will be dropped due to the WAN/LAN network failure. The call will remain up if IP connectivity between the phones is maintained.
    - o PSTN calls where the PSTN gateway and the IP phones maintains IP connectivity (typical when the Gateway Endpoint and the PSTN gateway is the same device).

NWN does not guarantee or warrant that the Survivability Gateway will operate in all instances of network degradation or outage. Site survivability protection will not be available in the event of a failure of the Gateway itself. The Survivability Gateway is also dependent on the functioning of the PSTN. Periodic testing is advisable.

1.18.1.7.   Support

Part Number	Description
UC-MSR-HYBRID-SPGW	UC Hybrid SIP/PRI Gateway Support
UC-MSR-PRIVATE-SPGW	UC Private SIP/PRI Gateway Support

NWN Managed Router service provides a Customer with a premise based router offering Voice Gateway support as well as several other traditional router services including WAN access in a single device. Customers using this service may have a single router in their location connecting Customer End Users to the Customer's network as well as providing PSTN and/or Site Survivability services.

This option requires Customer to enter into and maintain a separate agreement with NWN.

NWN will be responsible for configuring, managing, and troubleshooting the NWN Unified Communications end of the SIP connection between the NWN Unified Communications UCM Servers and this router. The Customer may not configure this router to perform other activities or change the voice functions (including On-Net and Off-Net services) it performs. Customer understands implementation of a Customer Managed router is on an "AS IS" basis with no warranties, express or implied, of any kind by NWN.

NWN Deliverable:

- Monitor & Manage (1) Telco/WAN Router for SRST

Assumptions:

- [Please see Appendix B for Ongoing Management and Support Services](#)

1.18.2. Analog Gateways

Analog gateways enable analog devices such as phones, faxes, and modems, and want or need to continue to after migration to IP telephony. As customers migrate to IP & SIP devices, NWN can help customers through the migration & transition by installing new analog gateways as well as managing them for ongoing support & maintenance. NWN is able to support Analog Gateways in both an on premise and cloud telephony environment

1.18.2.8.   Installation

Part Number	Description
UC-PRO-HYBRID-AGW	UC Hybrid Analog Gateway Setup
UC-PRO-PRIVATE-AGW	UC Private Analog Gateway Setup

Deliverables:

- Stage & Configure (1) Analog Gateway
  - Gather Analog Port mappings
- Deploy & Install (1) Analog Gateway on-site
- Validate port connectivity to NWN DC(s) and UC Applications (For Complete customers only)

Assumptions

- Analog Gateways are supported models from Cisco (Not EOL)
- Customer has purchased any necessary licensing for registration
- Customer to provide all cabling and low voltage wiring

1.18.2.9.   Support

Part Number	Description
UC-MSR-HYBRID-AGW	Analog Gateway Support
UC-MSR-PRIVATE-AGW	Analog Gateway Support

Deliverables:

- Monitor & Manage (1) Cisco Analog Gateway
- Includes maintenance and upgrades

Assumptions:

- Gateways are supported Cisco Models (Not EOL)
- Please see Appendix B for Ongoing Management and Support Services

1.19.   Training

1.19.1. On-site Training

NWN Provides On-site End-User and Admin Training services on the following Unified Communication Applications and Devices:

- Cisco IP Phones (68xx, 78xx, & 88xx)
- Webex Video Devices
- Webex Teams & Meetings
- Attendant Console
- Jabber

Full Day Training

Part Number	Description
UC-3PN-MAESTRI-OFULL	UC Hybrid/Private Onsite Training – Full Day

Included:

- 4 Contiguous Training Sessions up to 12 People per Session per day
- On-site support and material
- Travel to and from location

Customer Responsibilities

- Determine the topic based on organization and user requirements
- Determine training session attendee list

Assumptions

- Travel to continental U.S. is included
- Reference Cards are not included

Additional Full Day Training

Part Number	Description
UC-3PN-MAESTRI-OFADD	UC Hybrid/Private Additional Full Day Onsite Training

Included:

- 4 Contiguous Training Sessions up to 12 People per Session per day
- On-site support and material
- Travel to and from location

Customer Responsibilities

- Determine the topic based on organization and user requirements
- Determine training session attendee list

Assumptions

- Travel to continental U.S. is included
- Must Purchase Full Day On-site first before purchasing additional Days
- Reference Cards are not included

Part Number	Description
UC-3PN-MAESTRI-OHALF	UC Hybrid/Private Onsite Training – Half Day

Included:

- 2 Contiguous Training Sessions up to 12 People per Session per day
- On-site support and material
- Travel to and from location

Customer Responsibilities

- Determine the topic based on organization and user requirements
- Determine training session attendee list

Assumptions

- Travel to continental U.S. is included
- Reference Cards are not included

1.19.2. Distance/Remote Training

NWN Provides Online Distant End-User and Admin Training services on the following Unified Communication Applications and Devices:

- Cisco IP Phones (68xx, 78xx, & 88xx)
- Webex Video Devices
- Attendant Console
- Jabber

Full Day Distant Learning Training

Part Number	Description
UC-3PN-MAESTRI-RFULL	UC Hybrid/Private Distance Learning Training - Full Day

Included:

- 4 Contiguous Training Sessions up to 25 People per Session
- Remote support and material
- Session is recorded

Customer Responsibilities

- Determine the topic based on organization and user requirements
- Determine training session attendee list

Assumptions

- Customer has ability to attend Webex Meeting Session

Half Day Distant Learning Training

Part Number	Description
UC-3PN-MAESTRI-RHALF	UC Hybrid/Private Distance Learning Training - Half Day

Included:

- 2 Contiguous Training Sessions up to 25 People per Session
- Remote support and material
- Session is recorded

Customer Responsibilities

- Determine the topic based on organization and user requirements
- Determine training session attendee list

Assumptions

- Customer has ability to attend Webex Meeting Session

Individual Distant Learning Training

Part Number	Description
UC-3PN-MAESTRI-RHOUR	UC Hybrid/Private Distance Learning Training - One Hour

Included:

- 1 – 1 Hour Training Sessions up to 25 People per Session
- Remote support and material
- Session is recorded

Customer Responsibilities

- Determine the topic based on organization and user requirements
- Determine training session attendee list

Assumptions

- Customer has ability to attend Webex Meeting Session

2. NWN Experience Management Platform for Unified Communications

As enterprise organizations adopt a plethora of complex communication applications, services and devices, they discover new challenges. EMP, solves these challenges by delivering user control of all Cloud Communications Services, improving operations, providing cost savings and enhancing customer experience.

Part or NWN's Experience Management Platform (EMP) EMP is a complete suite to streamline the administration, improve support and monitor your NWN resources. This complete Suite provides a Provisioning, Administration and Self-care Portal (EMP Control) and a Reporting, Billing and Invoicing Portal (EMP Reporting).

2.1.1. EMP Control for Admins (UC Complete Only)

NWN Customers may use the "EMP Control Portal" web interface to access and manage the settings of their telephony devices and access personal and corporate directories.

EMP Control is a web-based application wherein the (or our) Customer can manage and monitor its NWN service. A broadband Internet connection is required.

In EMP Control, Customer Administrator can set up User profiles, assign telephone numbers and features to Users, reset User passwords, create company directories, create groups and billing codes and view reports and other administration function.

EMP Control provides a Provisioning & Administration Portal for your support team while enabling a new "IT support" type experience for your end-users.

EMP Control offers a domain manager for NWN Unified Communications, enabling customers to easily provision users, services, and devices. EMP Control also provides advanced analytics and change management control to provide easier self-service and management of Communications services.

Features provided by EMP Control include:

EMP Control Features include:

- Provisioning of services of the telephony ecosystem, using a single application
- Provisioning of heterogeneous ecosystem using different technologies.
- Using a single interface for usual provisioning tasks.
- Delegation of rights for all provisioning tasks, in a hierarchical manner.
- LDAP/AD integration
- Build Framework (Provisioning of Provider, Reseller/Department, Customers/Tenants, Sites and administrators at different hierarchy levels)
- Provisioning of UC Apps (CUCM/CUC/IM&P)
- Role Based Access Control
- Create Packages
- Provisioning of Dial Plan
- DN Inventory, E.164 numbers, Area codes

- Provisioning of End Users and Endpoints

- Day 2 (MACD)

    o User profile templates:

- Executive User vs Standard User vs Common Area Phone

- Define template based on user or functionality

- Define features per template. Examples: voice mail, single number reach, extension mobility, jabber, DID, etc.

    o Roles based access control

    o Directory number management

    o Logs history and ability to rollback changes

    o Analog Gateway/Phone/Extension, Line Group, Hunt List, Hunt Pilot, Local Breakout, SNR, Call Forward, CTI RP, Call Park, Users, Voicemail accounts, Extension Mobility, Presence, Jabber, E.164, Pickup Group, Phones, EM Device Profile and Line

    o Search Line Group/Hunt List/Hunt Pilot, Devices, Call Pickup Group, Route List, Route Pattern, Transformation Pattern, Translation Pattern

    o Move users /extensions between sites

    o Bulk Imports of users and endpoints

- Selfcare Portal Examples:

    o Password management

    o Call forwarding

    o Profile management

    o Services Store

    o Corporate directory access

    o Single number reach configuration

2.1.2. EMP Control for Users (UC Complete Only)

NWN shall provide the Customer with the EMP Control default password for all the End Users when not LDAP integrated. Customers shall inform End Users of their "EMP Control" user name and the initial temporary password.

EMP Control can also be integrated with the Customer's LDAP or Active Directory environment for account synchronization and authentication.

Customer must appoint a Company Administrator and delegate to that Administrator the authority to act on behalf of the Customer as the single point of contact with respect to the Customer's NWN Service. If the Customer has purchased NWN services at multiple Sites, the Customer can appoint an Administrator for each Site. Customer may also designate one or more alternate Administrators in the event that the lead Administrator is absent or unavailable; the alternate will have the same responsibilities and authority as the

Administrator. The Customer's Administrator and designated alternate shall be responsible for the following:

- Acting as the single point of contact for all matters related to the Customer's NWN service.

- The Administrator has the authority and responsibility for any matters related to NWN and NWN can rely on the Administrator's decisions and actions related to NWN.

2.2. Experience Management Portal Essentials Service

Part Number	Description
UC-MSR-EMP-ESS	NWN Offering Knowledge Base, NWN Community, Self-Service and Company Ticketing

The Experience Management Portal Essentials Service transforms the customer experience through access to NWN Offering Knowledge Base, NWN Community, Self-Service and Company Ticketing.

Experience Management Portal Essentials Features and User Rights:

Self-Service Ticketing
- o Through the EMP Portal, users have access to self-service ticketing to be able to perform the following actions:
  - Initiate requests and trouble tickets
  - Update active tickets
  - View ticket status and history

Self-Service Company Ticketing
- o Through the EMP Portal, administrators have visibility to all tickets for their company and are able to perform the following actions
  - View company tickets
  - Update active tickets
  - View ticket status and history

NWN Knowledge Base
- o The NWN Knowledge Base empowers customers with the information to maximize adoption and value from our solutions.
- o NWN Knowledge Base Content:
  - Curated content focused on best practices, including the most common questions for each of the NWN offerings.
  - Learning resources for seasoned administrators and end-users
    - "How to" articles
    - Training Documentation & Videos
- o Users are able to perform the following actions:
  - Search and view articles

- Rate article effectiveness
- Rate article usefulness
- Post article comments

NWN Community

The NWN Community feature allows users to engage and strategize with industry peers.

- o Users are able to:
  - Post a question or comment to start a discussion
  - Follow and participate in discussions

Customers are enabled in the Experience Management Portal as follows:

- Customer Account Creation
- Application of entitlements including:
  - o NWN Offerings Consumed
  - o NWN uses Role Based Access Controls (RBAC) to manage user access. Roles will be applied based on customer defined user role assignments.
    - Administrator

      Access includes:
      - Self-service Company Ticketing
      - NWN Knowledge Base
      - NWN Community
    - Customer End-User

      Access includes:
      - Self-service Ticketing
      - NWN Knowledge Base
      - NWN Community

Customer Responsibilities

- It is the customer's responsibility to notify NWN of any changes in personnel or EMP role assignment.

2.3. Experience Management Portal Core Service

Part Number	Description
UC-MSR-EMP-CORE	NWN Offering Knowledge Base, NWN Community, Self-Service Ticketing, SLA Dashboard, UC Administration, UC Reporting and Dashboards

The Experience Management Portal Core Service provides users with access to real-time monitoring and reporting, self-service support capabilities such as curated learning resources, access to the NWN Community and

self-service ticketing.

Experience Management Portal Core Features and User Rights:

PRIVATE CLOUD

Control

EMP Control offers advanced self-service administration and end user self-care.

UC Advanced Administration

Administration feature enhancements include:

- Customized Role Based Access (Up to 2 Custom Roles)
    - Example: Specific access defined for Help Desk agents, Finance or Procurement
- Create custom statistics reports and dashboards
- Schedule activities such as Moves, Adds or Changes to a user or their services

Report

Unified Communications Reporting and Analytics

Unified Communications Reporting and Analytics streamlines monitoring of resources usage, volume and trends.

Standard Reporting features include

- Date Filtering
- Filtering (i.e. User, Extension, Device, Site)
- Search within
- Download and Save-as
- Up to 18 months of data available online
- Report Scheduling and Subscription

Call Detail List Reports provide the following:

- Monthly Call Detail Report
- Emergency Call Detail Report
- International Call Detail Report
- Toll-free Call Detail Report

Call Analytics and Metrics Reports which provide the following:

- Call Volume -- by Directory Number
- Answered Calls – by Directory Number or Hunt Group
- Abandoned Calls
- Native Call Queue

Operational Reports which provide the following analytics:

- Usage Trends – Summary, Analysis by TN or Call Types
- Telephone Number Dashboard – Ported History
- Telephone Number List – Ported History
- Service List - IP Phone, Voicemail

Invoice Detail Reports which provide the following:

- Summary by Item
- Summary by Cost Center
- Invoice Delta to Prior Month
- International Call Charges
- Toll-free Call Charges

Service Level Agreement Performance

Through EMP Reporting, users have real-time visibility into service performance through the Service Level Agreement
Dashboards.

The Dashboards include:

- Month to date performance statistics
  - Closed cases
    - Month to date Case count by priority and case type
    - Month to date Service Level Agreement Performance on closed cases by priority and type
  - Active Cases
    - Case count by case type and priority
- Service Level Agreement Performance and Case Trending (rolling 12 months)
  - Opened Cases Trends
    - By Case Type
    - By Priority

- o Service Level Agreement Performance Trends
  - By Case Type

HYBRID CLOUD

Monitor

EMP Monitoring provides real-time visibility into application performance.

Users have access to:

- One (1) Monitoring Dashboard offering real-time aggregated views of events and trends.
  The Dashboard includes:
  - o Open Events Chart – Events organized by Severity
  - o Open Events List with drill down capability
  - o Open Events - Events by Location
  - o Production state
- Comprehensive and up to date view of a customer's monitored infrastructure populated through the automated collection process
- Event Console providing an aggregated view into events

Report

Service Level Agreement Performance

Through EMP Reporting, users have real-time visibility into service performance through the Service Level Agreement

Dashboards.

The Dashboards include:
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  - o Service Level Agreement Performance Trends
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Support

Self-Service Ticketing

Through the EMP Portal users have access to self-service ticketing where they are able to perform the following actions

- Initiate requests and trouble tickets
- Update active tickets
- View ticket status and history

Self-Service Company Ticketing

Through the EMP Portal users have visibility to all tickets for their company and are able to perform the following actions

- View company tickets
- Update active tickets
- View ticket status and history

NWN Knowledge Base

The NWN Knowledge Base empowers customers with the information to maximize adoption and value from our solutions. The NWN Knowledge Base includes:

- Curated content focused on best practices and the most common questions for each of the NWN offering
  - Learning resources for seasoned administrator and end-users
    - "How to" articles
    - Training Documentation & Videos
- Users are able to perform the following actions:
  - Search and view articles
  - Rate article effectiveness
  - Rate article usefulness
  - Post article comments

NWN Community

The NWN Community feature allows users to engage and strategize with industry peers.
  - Users are able to:
    - Post a question or comment to start a discussion
    - Follow and participate in discussions

Customers are enabled in the Experience Management Portal as follows:

- Customer Account Creation
- Application of entitlements including:
    - NWN Offerings Consumed
    - NWN uses Role Based Access Controls (RBAC) to manage user access. Roles will be applied based on customer defined user role assignments.
        - Administrator

        Access includes:
            - Self-service Company Ticketing
            - Service Level Agreement Dashboard
            - NWN Knowledge Base
            - NWN Community
            - UC Advanced Administration
            - UC Reporting
        - Customer End-User

        Access includes:
            - Self-service Ticketing
            - NWN Knowledge Base
            - NWN Community
            - UC Advanced Self-Care

Customer Responsibilities

- It is the customer's responsibility to notify NWN of any changes in personnel or EMP role assignment.

2.4. Experience Management Portal Complete Service

Part Number	Description
UC-BUN-EMP-COMPLETE	
UC-MSR-EMP-COM	NWN Offering Knowledge Base, NWN Community, Self-Service Ticketing, SLA Dashboard, UC Administration, UC Reporting and Dashboards
UC-MSN-EMP-CUST	UC EMP Customization
UC-MSR-EMP-CUST	UC EMP Customization Maintenance

The Experience Management Portal Complete Service layers customer defined customizations such as custom reporting, dashboards and integrations on top of real-time monitoring and reporting, self-service support capabilities such as curated learning resources, access to the NWN Community and self-service ticketing.

Experience Management Portal Complete Features and User Rights:

Custom Reporting
- o NWN will work with customer to define requirements for custom reports
- o NWN will develop, implement and maintain the defined custom reports

Custom Dashboards
- NWN will work with customer to define requirements for custom dashboards
- NWN will develop, implement and maintain the defined custom dashboards

Custom Integration
- NWN will work with customer to define requirements for custom integrations
- NWN will develop, implement and maintain the defined custom integrations

Experience Management Portal Complete Features and User Rights:

PRIVATE CLOUD

Control

EMP Control offers advanced self-service administration and end user self-care.

UC Advanced Administration

Administration feature enhancements include:
- Customized Role Based Access (Up to 2 Custom Roles)
  - o Example: Specific access defined for Help Desk agents, Finance or Procurement
- Create custom statistics reports and dashboards
- Schedule activities such as Moves, Adds or Changes to a user or their services

Report

Unified Communications Reporting and Analytics

Unified Communications Reporting and Analytics streamlines monitoring of resources usage, volume and trends.

Standard Reporting features include
- Date Filtering

- Filtering (i.e. User, Extension, Device, Site)
- Search within
- Download and Save-as
- Up to 18 months of data available online
- Report Scheduling and Subscription

Call Detail List Reports provide the following:
- Call Detail Search – by Directory Number, DID, Date
- Monthly Call Detail Report
- Emergency Call Detail Report
- International Call Detail Report
- Toll-free Call Detail Report

Call Analytics and Metrics Reports which provide the following:
- Call Volume -- by Directory Number
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    - Case count by case type and priority
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  - Opened Cases Trends
    - By Case Type
    - By Priority
  - Service Level Agreement Performance Trends
    - By Case Type

HYBRID CLOUD

Monitor

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- Customer Account Creation
- Application of entitlements including:
  - NWN Offerings Consumed
  - NWN uses Role Based Access Controls (RBAC) to manage user access. Roles will be applied based on customer defined user role assignments.
    - Administrator
      Access includes:
      - Self-service Company Ticketing
      - Service Level Agreement Dashboard
      - NWN Knowledge Base
      - NWN Community
      - UC Advanced Administration
      - UC Reporting
    - Customer End-User
      Access includes:
      - Self-service Ticketing
      - NWN Knowledge Base
      - NWN Community
      - UC Advanced Self-Care

Customer Responsibilities

- It is the customer's responsibility to notify NWN of any changes in personnel or EMP role assignment.

2.5. Experience Management Portal Upgrades and Add-ons

Part Number	Description
UC-MSR-EMP-ESS2CORE	Upgrade from UC EMP Essentials to Core

Customers may choose to upgrade from the Experience Management Essentials Service to the Core Service. By upgrading to the Experience Management Portal Core Service users receive access to administration and self-care, Reporting and Analytics in addition to the self-service support capabilities such as curated learning resources, access to the NWN Community and self-service ticketing.

Experience Management Portal Core Features and User Rights:

PRIVATE CLOUD

Control

EMP Control offers advanced self-service administration and end user self-care.

<u>UC Advanced Administration</u>

Administration feature enhancements include:

- Customized Role Based Access (Up to 2 Custom Roles)
    - o Example: Specific access defined for Help Desk agents, Finance or Procurement
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Report

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HYBRID CLOUD

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Report

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  - Active Cases
    - Case count by case type and priority

- Service Level Agreement Performance and Case Trending (rolling 12 months)
  - Opened Cases Trends
    - By Case Type
    - By Priority
  - Service Level Agreement Performance Trends
    - By Case Type
    -

Support

Self-Service Ticketing

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- Application of entitlements including:
  - o NWN Offerings Consumed
  - o NWN uses Role Based Access Controls (RBAC) to manage user access. Roles will be applied based on customer defined user role assignments.
    - Administrator

      Access includes:
      - Self-service Company Ticketing
      - Service Level Agreement Dashboard
      - NWN Knowledge Base
      - NWN Community
      - UC Advanced Administration
      - UC Reporting
    - Customer End-User

      Access includes:
      - Self-service Ticketing
      - NWN Knowledge Base
      - NWN Community
      - UC Advanced Self-Care

Customer Responsibilities

- It is the customer's responsibility to notify NWN of any changes in personnel or EMP role assignment.

Part Number	Description
UC-MSR-EMP-ESS2COM	Upgrade from UC EMP Core to Complete
UC-MSN-EMP-CUST	UC EMP Customization
UCC-MSR-EMP-CUST	UC EMP Customization Maintenance

Customers may choose to upgrade to the Experience Management Portal Complete Service. By upgrading to the Complete Service customers layer customizations such as custom reporting, dashboards and integrations on top of real-time monitoring and reporting, self-service support capabilities such as curated learning resources, access to the NWN Community and self-service ticketing.

Experience Management Portal Complete Features and User Rights:

Custom Reporting

- o NWN will work with customer to define requirements for custom reports
- o NWN will develop, implement and maintain the defined custom reports

Custom Dashboards

- NWN will work with customer to define requirements for custom dashboards
- NWN will develop, implement and maintain the defined custom dashboards

Custom Integration

- NWN will work with customer to define requirements for custom integrations
- NWN will develop, implement and maintain the defined custom integrations

PRIVATE CLOUD

Control

EMP Control offers advanced self-service administration and end user self-care.

UC Advanced Administration

Administration feature enhancements include:

- Customized Role Based Access (Up to 2 Custom Roles)
  - o Example: Specific access defined for Help Desk agents, Finance or Procurement
- Create custom statistics reports and dashboards
- Schedule activities such as Moves, Adds or Changes to a user or their services

Report

Unified Communications Reporting and Analytics

Unified Communications Reporting and Analytics streamlines monitoring of resources usage, volume and trends.

Standard Reporting features include

- Date Filtering
- Filtering (i.e. User, Extension, Device, Site)
- Search within
- Download and Save-as
- Up to 18 months of data available online
- Report Scheduling and Subscription

Call Detail Reporting

- Call Volume Summary
- Monthly Call Detail Report
- Emergency Call Detail Report
- International Call Detail Report
- Toll-free Call Detail Report

Invoice Details Reports

- Invoice Detail by Device
- International Call Charges
- Toll-free Call Charges
- Invoice Detail by Cost Center

Operational Reports

- SIP Usage
- Telephone Number Dashboard – Ported History
- Telephone Number List – Ported History
- Service List - IP Phone, Voicemail
- Usage Trends - Analysis by TN
- Usage Trends
- Monthly Usage - Summary

Service Level Agreement Performance

Through EMP Reporting, users have real-time visibility into service performance through the Service Level Agreement
Dashboards.

The Dashboards include:

- Month to date performance statistics
    - Closed cases
        - Month to date Case count by priority and case type
        - Month to date Service Level Agreement Performance on closed cases by priority and type
    - Active Cases
        - Case count by case type and priority
- Service Level Agreement Performance and Case Trending (rolling 12 months)
    - Opened Cases Trends
        - By Case Type
        - By Priority
    - Service Level Agreement Performance Trends
        - By Case Type

HYBRID CLOUD

Monitor

EMP Monitoring provides real-time visibility into application performance.

Users have access to:

- One (1) Monitoring Dashboard offering real-time aggregated views of events and trends.
  The Dashboard includes:
    - Open Events Chart – Events organized by Severity
    - Open Events List with drill down capability
    - Open Events - Events by Location
    - Production state
- Comprehensive and up to date view of a customer's monitored infrastructure populated through the automated collection process
- Event Console providing an aggregated view into events

Report

Service Level Agreement Performance

Through EMP Reporting, users have real-time visibility into service performance through the Service Level Agreement

Dashboards.

The Dashboards include:

- Month to date performance statistics

- o Closed cases
  - Month to date Case count by priority and case type
  - Month to date Service Level Agreement Performance on closed cases by priority and type
- o Active Cases
  - Case count by case type and priority
- Service Level Agreement Performance and Case Trending (rolling 12 months)
  - o Opened Cases Trends
    - By Case Type
    - By Priority
  - o Service Level Agreement Performance Trends
    - By Case Type

Customers are enabled in the Experience Management Portal as follows:

- Customer Account Creation
- Application of entitlements including:
  - o NWN Offerings Consumed
  - o NWN uses Role Based Access Controls (RBAC) to manage user access. Roles will be applied based on customer defined user role assignments.
    - Administrator

      Access includes:
      - Self-service Company Ticketing
      - Service Level Agreement Dashboard
      - NWN Knowledge Base
      - NWN Community
      - UC Advanced Administration
      - UC Reporting
      - Customizations
    - Customer End-User

      Access includes:
      - Self-service Ticketing
      - NWN Knowledge Base
      - NWN Community
      - UC Advanced Self-Care

Customer Responsibilities

- It is the customer's responsibility to notify NWN of any changes in personnel or EMP role assignment.

Part Number	Description
UC-MSR-EMP-CORE2COM	Upgrade from UC EMP Core to Complete
UC-MSN-EMP-CUST	UC EMP Customization
UCC-MSR-EMP-CUST	UC EMP Customization Maintenance

Customers may choose to upgrade to the Experience Management Portal Complete Service. By upgrading to the Complete Service customers layer customizations such as custom reporting, dashboards and integrations on top of real-time monitoring and reporting, self-service support capabilities such as curated learning resources, access to the NWN Community and self-service ticketing.

Experience Management Portal Complete Features and User Rights:

Custom Reporting
- NWN will work with customer to define requirements for custom reports
- NWN will develop, implement and maintain the defined custom reports

Custom Dashboards
- NWN will work with customer to define requirements for custom dashboards
- NWN will develop, implement and maintain the defined custom dashboards

Custom Integrations
- NWN will work with customer to define requirements for custom integrations
- NWN will develop, implement and maintain the defined custom integrations

Customers are enabled in the Experience Management Portal as follows:
- Customer Account Creation
- Application of entitlements including:
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    - Administrator

      Access includes:
      - Self-service Company Ticketing
      - Service Level Agreement Dashboard
      - NWN Knowledge Base

- NWN Community
- UC Advanced Administration
- UC Reporting
- Customizations
  - Customer End-User

  Access includes:
  - Self-service Ticketing
  - NWN Knowledge Base
  - NWN Community
  - UC Advanced Self-Care

Customer Responsibilities
- It is the customer's responsibility to notify NWN of any changes in personnel or EMP role assignment.

3. Upgrades (Hardware Refresh) – For Essential Customers Only

This upgrade will be performed on new hardware being purchased by the customer as part of this project. NWN assumes that the customer has SWSS (Software and Support Service) current and active on all their Cisco Unified Communication applications and users. This will be leveraged to obtain all licensing and software required for this upgrade.

Upgrading their existing Unified Communications System to release will allow the customer to take advantage of the latest productivity enhancements and collaboration tools included with the new releases of the Cisco Unified Communications Applications.

NWN will provide project management to include oversight of all services in the upgrade. Please see Appendix A for more details on Project Manage

During the All Upgrades, NWN will:
- Review the current system configuration and verify upgrade paths and hardware/software compatibility.
- Develop detailed design specifications and migration plan.
- Perform a backup of all system configurations.
- Licensing planning and licensing migration.
- Test and validate all existing system functionality.
- Perform technical handoff and administration knowledge transfer.
- Update existing system documentation.

Activities include based on services purchased:

- VMWare ESXi update/patching – NWN will update/upgrade the ESXi hosts currently used for the virtualization of Cisco Unified Communications to the latest recommended version/update of VMWare ESXi as per Cisco's best practices and recommendations for the virtualization of Unified Communications applications.

- Licensing Planning and Registration – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.

- Product Update Tool – NWN will procure updated UC software and licenses required for the completion of this upgrade using the Cisco Product Upgrade Tool (PUT) and the customer's active UCSS/ESW or SWSS contract.

- Collaboration Applications Upgrade – After obtaining all necessary licensing and during an agreed upon maintenance window NWN will complete the upgrade of the Cisco Unified Communications Applications. NWN will complete the following tasks during this phase:

    o Upgrade Cisco Unified Enterprise Attendant Console Server on the existing hardware platform from version to Cisco IM & Presence node version

    o Upgrade Cisco Unified Attendant Console Clients

    o During a maintenance window NWN will activate the new version of software and perform a complete system test and validate all functionality.

At the conclusion of the project NWN will document the installation and complete the technical handoff, which will entail the review of the system documentation and administrative knowledge transfer on the ongoing operation and management of the new system.

3.1. UCM Upgrade (Up to 3 Nodes)

Part Number	Description
UC-PRO-HYBRID-UEUCM3RF	UC Hybrid Upgrade - Execute UCM Cluster - up to 3 nodes (HW Refresh)

Customer has engaged NWN for the upgrade of their existing Cisco Unified Communications System. NWN will upgrade the customer's existing Cisco Unified Communications System component based on the services purchased:

NWN Deliverables:

- Upgrade (1) Cisco Unified Communications Manager Cluster up to (3) Nodes

- During a maintenance window NWN will activate the new version of software and perform a complete system test and validate all functionality.

- Install Cisco Unified Communications Manager first node (Publisher) version on the new primary server.

- Install Cisco Unified Communications Manager additional nodes (Subscribers) version on the new secondary server(s).

- Unified Communications System Backup and System Preparation – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:

- o Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).
  - o Backup System Configuration and User Data for the following Collaboration Applications
- Restore CUCM Cluster System Configuration backup on new servers.
- Upgrade Cisco Unified Communications Manager cluster to version on new servers.
- Licensing Planning and Registration – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.

3.2. UCM Upgrade (Up to 2 Nodes)

Part Number	Description
UC-PRO-HYRID-UEUCM2RF	UC Hybrid Upgrade - Execute UCM Cluster - 2 additional nodes (HW Refresh)

NWN Deliverables:

- Upgrade (1) Cisco Unified Communications Manager Cluster up to (2) Nodes
- During a maintenance window NWN will activate the new version of software and perform a complete system test and validate all functionality.
- Install Cisco Unified Communications Manager first node (Publisher) version on the new primary server.
- Install Cisco Unified Communications Manager additional nodes (Subscribers) version on the new secondary server(s).
- Restore CUCM Cluster System Configuration backup on new servers.
- Upgrade Cisco Unified Communications Manager cluster to version on new servers.
- Unified Communications System Backup and System Preparation – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:
  - o Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).
  - o Backup System Configuration and User Data for the following Collaboration Applications
- Licensing Planning and Registration – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.

3.3. UCxN Upgrade

Part Number	Description

UC-PRO-HYBRID-UEUCNR	UC Hybrid Upgrade - Execute UCxN Cluster (HW Refresh)

NWN Deliverables:

- Upgrade (1) Cisco Unity Connection Cluster

- <u>Unified Communications System Backup and System Preparation</u> – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:

    o Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).

    o Backup System Configuration and User Data for the following Collaboration Applications

    o Install Cisco Unity Connection first node (Publisher) version on the new primary server.

    o Install Cisco Unity Connection second node (Subscriber) version on the new secondary server.

    o Complete Cisco Unity Connection base System configuration in preparation to restoring user configuration with COBRAS.

- <u>Licensing Planning and Registration</u> – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.

3.4. Jabber IM&P Cluster Upgrade

Part Number	Description
UC-PRO-HYBRID-UEJIMPRF	UC Hybrid Upgrade - Execute Jabber/IM&P Cluster (HW Refresh)

NWN Deliverables:

- Upgrade (1) Cisco Unified Presence or IM&P Cluster

- Upgrade Cisco Unified Presence first node (Publisher)on the existing hardware platform from version to Cisco IM & Presence node version

- <u>Unified Communications System Backup and System Preparation</u> – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:

    o Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).

    o Backup System Configuration and User Data for the following Collaboration Applications

- <u>Licensing Planning and Registration</u> – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.

3.5. Expressway C/E Pair Upgrade

Part Number	Description
UC-PRO-HYBRID-UEEXCERF	UC Hybrid Upgrade - Execute Expressway-C/E Pair (HW Refresh)

NWN Deliverables:

- Upgrade (1) Cisco Expressway C/E Pair

- <u>Unified Communications System Backup and System Preparation</u> – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:

    o Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).

    o Backup System Configuration and User Data for the following Collaboration Applications

3.6. Attendant Console Upgrade

Part Number	Description
UC-PRO-HYBRID-UEACRF	UC Hybrid Upgrade - Execute Attendant Console (HW Refresh)

NWN Deliverables:

- <u>Collaboration Applications Upgrade</u> – After obtaining all necessary licensing and during an agreed upon maintenance window NWN will complete the upgrade of the Cisco Unified Communications Applications. NWN will complete the following tasks during this phase:

    o Upgrade Cisco Unified Enterprise Attendant Console Server on the existing hardware platform from version to Cisco IM & Presence node version

    o Upgrade Cisco Unified Attendant Console Clients

- During a maintenance window NWN will activate the new version of software and perform a complete system test and validate all functionality

3.7. Phone Firmware Upgrade

Part Number	Description
UC-PRO-HYBRID-UPPF	UC Hybrid Upgrade - Prepare Phone Firmware - 200 Phones

NWN Deliverables:

- Upgrade up to 200 Phones to latest Cisco Firmware

- NWN will update the phones with latest recommended firmware load for the existing phone models in anticipation to the system upgrade to minimize potential downtime.

3.8. Voice Gateway iOS Upgrade

Part Number	Description
UC-PRO-HYBRID-UPVGUR	UC Hybrid Upgrade - Prepare Voice Gateway IOS Upgrade or HW Refresh

NWN Deliverable:

- Upgrade IOS and Memory on (1) ISR Voice Gateways

- Replace EOL/EOS Voice Gateway provided by Customer or NWN

3.9. Cisco Emergency Responder Upgrade

Part Number	Description
UC-PRO-HYBRID-UECERRF	UC Hybrid Upgrade - Execute Emergency Responder (HW Refresh)

NWN Deliverable:

- Install (1) CER PUB version on new primary server platform
- Restore (1) CER Configuration using DRS
- Upgrade (1) CER SUB on new primary server platform
- Install (1) CER SUB version on new secondary server platform

3.10. Server Staging

Part Number	Description
UC-PRO-HYBRID-UPSSHW	UC Hybrid Upgrade - Prepare Server Staging (HW Refresh)

NWN Deliverable:

- On-site (NWN or Customer) Staging of up to (3) Servers

4. Upgrades (Hardware In-place) – For Essential Customers Only

Customer has engaged NWN for the upgrade of their existing Cisco Unified Communications System to the release as agreed upon between the Customer and NWN. As part of this project NWN will upgrade the customer's existing Cisco Unified Communications System components based on the services purchased:

The upgrade will be performed using the customer's existing hardware platform. NWN assumes that the customer has ESW/UCSS current and active on all their Cisco Unified Communication applications and users. This will be leveraged to obtain all licensing and software required for this upgrade.

NWN will provide project management to include oversight of all services. The NWN project manager will interface with the local phone companies and other contractors/vendors associated with the completion of this project during each site rollout and provide status updates to the Customer's IT team throughout the project via regular status update meetings.

During the upgrade NWN will:

- Review the current system configuration and verify upgrade paths and hardware/software compatibility.
- Develop detailed design specifications and migration plan.
- Perform a backup of all system configurations.
- Licensing planning and licensing migration.

- Test and validate all existing system functionality.
- Perform technical handoff and administration knowledge transfer.
- Update existing system documentation.

Activities include based on services purchased:

- Install/Upgrade Cisco Prime License Manager Services on the CUCM Publisher. As part of the configuration NWN will configure all the Applications and load necessary licensing.
- UC Applications Upgrade – After obtaining all necessary licensing and during an agreed upon maintenance window NWN will complete the upgrade of the Cisco Unified Communications Applications. NWN will complete the following tasks during this phase:
  - Upgrade Cisco Unified Presence first node (Publisher) on the existing hardware platform.
  - Upgrade Cisco Unified Enterprise Attendant Console Server on the existing hardware platform.
- During a maintenance window NWN will activate the new version of software and perform a complete system test and validate all functionality.

Hardware In-place Upgrade Assumptions:

The upgrade and configuration of any of the third-party applications currently used in the customer's environment are outside of the scope of this upgrade and as such NWN expect the customer to engage the appropriate vendors in the troubleshooting and reconfiguration of these components in order to guarantee interoperability with the new versions of Cisco Unified Communications.

- Production readiness acceptance – NWN will review the production cutover and implementation with the customer to verify that the solution is functioning in their environment as presented in this scope and the detailed design from the earlier Gate Review.
- Production implementation – NWN will turn up the system and migrate users as per the previously agreed upon schedule.
- System Troubleshooting – NWN will troubleshoot and diagnose technical issues associated with this project. Any issues not related to upgrade of the Unified Communications platform will require a change order and may affect the schedule of events planned for this project. NWN will work with the customer to isolate and identify network issues as well as provide assistance within reasonable boundaries. Any issues outside the scope of this project are the responsibility of the customer.
- Network, PSTN and Analog Connections – NWN will provide the customer with requirements for all network connections. It is the Client's responsibility to provide any necessary cables, connections, panels and labor associated with bringing PSTN, network or internal analog cabling to the equipment. All connections must be identified prior to the start of the project. NWN does not provide cabling services of any kind.

At the conclusion of the project NWN will document the installation and complete the technical handoff, which will entail the review of the system documentation and administrative knowledge transfer on the ongoing operation and management of the new system.

4.1. UCM Upgrade (Up to 3 Nodes)

Part Number	Description
UC-PRO-HYBRID-UEUCM3IP	UC Hybrid Upgrade - Execute UCM Cluster - up to 3 nodes (In-Place)

NWN Deliverables:

- Upgrade Cisco Unified Communications Manager up to (1) Publisher on the existing hardware platform.
- Upgrade Cisco Unified Communications Manager up to (2) Subscribers on the existing hardware platform.
- Unified Communications System Backup and System Preparation – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:
- Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).
- VMWare ESXi update/patching – NWN will update/upgrade the ESXi hosts currently used for the virtualization of Cisco Unified Communications to the latest recommended version/update of VMWare ESXi as per Cisco's best practices and recommendations for the virtualization of Unified Communications applications. NWN is not responsible for upgrading hardware for hosting Cisco Unified Communications Applications.
- Licensing Planning and Registration – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.
- Product Update Tool – NWN will procure updated UC software and licenses required for the completion of this upgrade using the Cisco Product Upgrade Tool (PUT) and the customer's active UCSS/ESW or SWSS contract.
- Pre-production integration – NWN will configure, test and integrate the in scope solution to the point of production impacting cutover or placement into service. NWN will validate the functionality of the system to the point possible prior to integrating the solution into the customer's production systems.
- UC Core System Upgrade – After obtaining all necessary licensing and during an agreed upon maintenance window NWN will complete the upgrade of the Cisco Unified Communications Applications. NWN will complete the following tasks during this phase:

4.2. UCM Upgrade (Up to 2 Nodes)

Part Number	Description
UC-PRO-HYBRID-UEUCM2IP	UC Hybrid Upgrade - Execute UCM Cluster - 2 additional nodes (In-Place)

NWN Deliverables:

- Upgrade Cisco Unified Communications Manager up to (1) Publisher on the existing hardware platform.
- Upgrade Cisco Unified Communications Manager up to (1) Subscribers on the existing hardware platform.

- Unified Communications System Backup and System Preparation – NWN will backup the configuration of all of the system components in preparation of the system upgrade. The system backup phase will entail:

- Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).

- VMWare ESXi update/patching – NWN will update/upgrade the ESXi hosts currently used for the virtualization of Cisco Unified Communications to the latest recommended version/update of VMWare ESXi as per Cisco's best practices and recommendations for the virtualization of Unified Communications applications.

- Licensing Planning and Registration – NWN will review the existing licensing, install the UCT (User Count Tool) to validate existing and migrated licensing, assist the customer obtaining the necessary licensing and registering it prior to the completion of the Cisco Unified Communications System upgrade.

- Product Update Tool – NWN will procure updated UC software and licenses required for the completion of this upgrade using the Cisco Product Upgrade Tool (PUT) and the customer's active UCSS/ESW or SWSS contract.

- Pre-production integration – NWN will configure, test and integrate the in scope solution to the point of production impacting cutover or placement into service. NWN will validate the functionality of the system to the point possible prior to integrating the solution into the customer's production systems.

- UC Core System Upgrade – After obtaining all necessary licensing and during an agreed upon maintenance window NWN will complete the upgrade of the Cisco Unified Communications Applications. NWN will complete the following tasks during this phase:

4.3. UCxN Upgrade

Part Number	Description
UC-PRO-HYBRID-UEUCNIP	UC Hybrid Upgrade - Execute UCxN Cluster (In-Place)

NWN Deliverables:

- Upgrade (1) Cisco Unity Connection first node (Publisher) on the existing hardware platform.
- Upgrade (1) Cisco Unity Connection second node (Subscriber) on the existing hardware platform.

4.4. Jabber IM&P Cluster Upgrade

Part Number	Description
UC-PRO-HYBRID-UEJIMPIP	UC Hybrid Upgrade - Execute Jabber/IM&P Cluster (In-Place)

NWN Deliverable:

- Upgrade (1) Jabber IM&P Cluster
- Provision Jabber Clients in CUCM and document the process for the team so they can configure additional users at a later time.

- Test and validate all functionality required Jabber Mobile and Remote Access users if Expressway C/E pair has been deployed and configured.

4.5. Expressway C/E Pair Upgrade

Part Number	Description
UC-PRO-HYBRID-UEEXCEIP	UC Hybrid Upgrade - Execute Expressway-C/E Pair (In-Place)

NWN Deliverables:

Upgrade (1) Expressway C/E Pair and Jabber Mobile and remote access - Deploy Cisco Expressway Collaboration Gateway services and configure Cisco Jabber to support Mobility and Remote Access. During this phase NWN will complete the following tasks:

- Upgrade Expressway-C and Expressway-E Virtual Appliances.
- Work with customer network team to complete the network configuration required for the configuration of the Collaboration Gateway services. This includes:
    - Network connectivity
    - Firewall rules
    - DNS entries
    - Certificates
    - Integrate CUCM cluster with the Expressway-C System

4.6. Attendant Console Upgrade

Part Number	Description
UC-PRO-HYBRID-UEACIP	UC Hybrid Upgrade - Execute Attendant Console (In-Place)

NWN Deliverable:

- Upgrade up to (10) Operator Clients
- Upgrade CUBAC/CUEAC Server on existing platform

4.7. Cisco Emergency Responder Upgrade

Part Number	Description
UC-PRO-HYBRID-UECERIP	UC Hybrid Upgrade - Execute Emergency Responder (In-Place)

NWN Deliverable:

- Upgrade up to (1) CER Pub
- Upgrade up to (1) CER Sub

4.8. VMware Upgrade

Part Number	Description
UC-PRO-HYBRID-UPVMHIP	UC Hybrid Upgrade - Prepare VMWare ESXi Host Upgrade (In-Place)

NWN Deliverable:

- VMWare Upgrades/Updates on first (2) UCS C-Series Servers (Install lastest ESXi version and updates, firmware, deploy new ova files, update VMWare tools, etc)

5. Appendix A. Provisioning and Onboarding Methodology

5.1. Project Management Methodology

NWN manages projects with a documented and proven methodology that aligns with our customer's specific needs. Our project delivery methodology is consistent with the Project Management Institutes PMBOK guidelines.

NWN will assign a Project Manager to manage all aspects of project delivery. The assigned Project Manager will leverage the NWN project methodology, to ensure the successful delivery of the project and will be in contact to coordinate project kickoff activities within two weeks of execution of the Service Contract.

5.1.1. Assigned Project Manager

The following outlines the roles and responsibilities of the NWN Project Manager:

- Act as a single point-of-contact
- Conduct project kick-off activities and ensure thorough project communication with project stakeholders and team members
- Schedule and facilitate weekly project status meetings with all relevant parties and stakeholders
- Prepare, distribute & communicate weekly status reports, action item, opened and closed issues, critical paths and related project reports
- Develop & maintain a detailed project plan, task plan, schedule & communications plan
- Manage project scope and respond to change requests through the Project Change Request (PCR) process
- Define and manage the escalation process
- Review all project documentation and deliverables
- Oversee knowledge transfer

In addition, a designated NWN Customer Experience Manager will be assigned. Their role is to work hand-in-hand with your designated contacts as your advocate and to initiate activities that allow for a smooth transition from project activities to support activities.

5.1.2. Assigned Customer Experience Manager

The following outlines the roles and responsibilities of the NWN Customer Experience Manager (CEM):

- Customer advocate for any questions and concerns that may arise during project activities
- Supports onboarding activities (establishing operating process, contacts for support)

- Assures a smooth transition from integration/provisioning phases into the support phases of the project

5.1.3. Project Management Process

To deliver the highest quality project implementation, NWN brings a tightly controlled, comprehensive project management process that emphasizes detailed up-front discovery and design to help avoid costly, time-consuming missteps later in the deployment cycle. This approach has a proven track record of success.

5.1.4. Major Milestones /Deliverables

Our documented and proven methodology includes:

- **Initiate** Project Kick Off meetings to review the scope with the project team and develop the project management plan
- **Assess** Current Target Infrastructure
- **Design, Validate, Test and Pilot** the New Environment
- **Prepare** Build the Initial Unit
- **Execute** Production Integrations/Migrations, Cut Over, and Train Users
- **Transition** your New Platform to Customer Support, Knowledge Transfer

5.1.5. Project Work Breakdown Structure and Timeline

The Project work breakdown structure and timeline is planned and managed in Microsoft Project and is included in the Microsoft Project Task Plan.

5.1.6. Requirements Management Process

The overall requirements management process is focused on handling the requirements after they have been initially approved. This includes maintaining changes or additions to the requirements throughout the entire project and tracking the requirements throughout the lifecycle.

Name	Requirements Management Responsibilities
NWN Project Manager	Manages scope change requirements through leadership of the effort to communicate project requirements, document adjustments to project requirements and facilitates scope change management activities for all approved changes to requirements.
Project Team	Contributes to the identification of project requirements.

5.1.7. Risk Management Process

The methodology utilized by NWN for risk management includes a progressive approach. As a project begins, many elements of the project are unknown. As the project progresses, more information is gained and project risks become more visible. Performing an initial Risk Assessment will be the responsibility of the Project Manager. The Project Manager will determine the most appropriate method for executing the initial risk assessment. Identified Risks are tracked reviewed throughout project execution.

Funding for risk management is contained in the overall project budget. Changes in Scope due to risk mitigation activities will require change management.

Roles and Responsibilities

Name	Risk Management Responsibilities
NWN Project Manager	Identifies project related risk, documents project risks, leads the effort to mitigate risk, and leads the effort to communicate project risk.
Project Team	Contributes to the identification of project risks. Assist in the mitigation of risks.

Rules and Procedures

Communication

Communication regarding risk will follow the project communications plan.

Tracking

Tracking of risk elements and activities should be documented in the Risk Management Worksheet.

Risk Impact Analysis Approach

The assigned Project Manager will utilize the initial Risk Assessment to determine the appropriate next steps in analyzing the project risk. The PM will document details regarding the project risks, the probability of occurrence, the anticipated impact to the project, the likely exposure and an agreed upon mitigation plan.

5.1.8. Change Management Process

The NWN Project Manager will utilize the Change Management Process to manage the lifecycle of all changes. All Change Requests will be documented, assigned and tracked for progress.

Roles and Responsibilities

Name	Change Management Responsibilities
NWN Project Manager	Documents project change requests, facilitate change request review and decision making, leads the effort to communicate change request and their status, escalates if change cannot be resolved by the review team and supports re-baselining activities if necessary
Project Team	Contributes to the identification of project risks. Assist in the mitigation of risks.

Rules/Procedures

Any team member may submit a change request to the Project Manager. The requested change will be clearly documented and will explain any impact that the change will have on the project and associated deliverables. The project manager will review the request and determine if the change is appropriate. If so, it will be forwarded to the project sponsor for final decision.

Change Impact Analysis Approach

Analysis of all requested changes will be performed to identify the impact of the change on the Project Costs, Risks, Schedule and Resources. The results of this analysis will be documented in the NWN Change Control Worksheet.

5.1.9. Communications Management Process

Properly communicating on a project is a critical success factor for managing the expectations of all stakeholders. This includes reporting from the project team to the Project Manager and reporting from the Project Manager to all stakeholders. The assigned Project Manager is the project communication steward for all project related information exchanges.

The sample Communications Matrix below provides an example of a project's communications. To keep the communications relevant and timely, we also include plans for collecting and responding to feedback.

Communication Item	Description / Purpose	Frequency	Audience
Project Kick-off Meeting	Meeting to describe a high level view of project, introduce project team members & their roles, communicate project structure & initial high-level business needs & setup future meetings	One-time	Customer, NWN
Project Team Status Meetings	Review project plan, progress & status, log & prioritize Constraints / Assumptions / Issues / Risks items, Critical Path (determine if any obstacles to completing critical tasks, escalate obstacles for resolution), share completed deliverables, discuss topics	Weekly throughout Implementation	Customer, NWN
Design Review Meetings	Team review of specification or technical design, satisfy that all issues are resolved & deliverable contents are complete	As Needed	Customer, NWN
Turnover Meetings	Formal handoff among NWN departments / disciplines	As Required	Project Stakeholders
Lessons Learned Meeting	Review opportunities for improvement & reinforcement of best practices	One-time	Project Stakeholders

5.1.10. Time Management Plan

The time management plan must describe the process for controlling the proposed schedule and how the achievement of tasks and milestones will be identified and reported. The plan must also detail the process to identify, resolve, and report resolution of problems such as schedule slippage. The time management plan will include:

Time Management Process

The NWN Project Manager is responsible for breaking down the implementation into measurable tasks and milestones. The work breakdown structure is applied to the project schedule and allows the Project Manager to closely monitor project timelines to avoid schedule overruns. Project Timeline health is reviewed in weekly status meetings to allow for timely identification of schedule slippage. If schedule slippage occurs, The Project

Manager is responsible for planning steps for resolution with the Project Team and communicating the plan and progress.

Role and Responsibilities

Name	Time Management Responsibilities
NWN Project Manager	Responsible for Time Management during the implementation phase of the SOW.

5.2. Provisioning Process

Project Provisioning Flowchart

Initiate	Assess	Design	Prepare	Execute	Transition
• Discovery	• Collect data	• Design sessions	• Staging	• Train users	• Day 2 support
• Define project scope	• Document environment	• Documentation	• Pre-production integration	• Production integrations	• Transfer to customer support
• Form project team	• Review findings	• Integration plan	• 1st Unit build	• Phased cutover/migration	•
• Project Kickoff	• Data validation	• Test plan			
• Create project package		* *GATE REVIEW Design Sign off*		* *GATE REVIEW Functional Sign off*	

5.2.1. Initiate Phase

<u>Form Project Team</u> – NWN will organize project team including project management, engineering and support resources.

<u>Project Kickoff (Internal & External)</u> – NWN will host a Project Kickoff meeting with the customer to review project timeline, requirements, goals, and customer stakeholders in order to have a successful implementation. The Customer is required to have the correct stakeholders in the Project Kickoff meeting. It is highly suggested the following customer stakeholders attend this meeting:

- Project Sponsor
- IT (Voice/Collaboration) Administrator
- Network Administrator
- Project Team

Scheduling Design & Status Meetings - NWN and client will work together to identify resources for project and coordinate schedules for the Design and Status meetings

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Milestones & Deliverables:

1. Project Kickoff Meeting Notes, including communication plan
2. Schedule for Design & Status Meetings

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3. Project Work Schedules & Related Meetings

5.2.2. Assess Phase

<u>End User Requirement Definition and Configuration Database Gathering</u> – NWN will provide User Database form to be completed by the Customer and reviewed at the Design Meeting. These topics will include:

- o Coordinate with Customer to plan, design, and implement all station and telephone programmable features.
- o Perform Customer interview and key-sheet preparation/configuration database of end-user station requirements to be used for system programming and station deployment.
- o Create worksheets to guide Customer representatives to plan and design features such as line appearances, hunt groups, pick-up groups, etc.
- o Port, Device Count and/or Location Information - Customer is to provide detailed, accurate, and current information to avoid delays in the above schedule which may require a Change Request correction.

Milestones & Deliverables:
1. End User Requirement Definition

5.2.3. Design Phase

<u>Circuit design overview & planning</u> – NWN will work with the Customer to integrate any contracted circuits into the network topology. The Client will be included on communication and planning events including:

- o Scheduling and completion of vendor site survey
- o Installation of circuit
- o Extension of point of demarcation
- o Installation and testing of Out-of-Band access solution.

<u>Network Design Meeting</u> – Review with Customer the network infrastructure requirements document and answer any Customer questions that have arisen. See Customer Expectations "Assumptions, Requirements, and Terms" section below.

<u>NWN Unified Communications Design Meeting(s)</u> – After the completion of the network design meetings, NWN and Customer's team will hold a series of design meetings to discuss the technical aspects of the NWN Unified Communications Solution. NWN expects the Customer will come prepared with documentation and resources necessary to cover all topics. These topics will include:

- o Architecture and software version features review
- o Unified Communications device compatibility check
- o Migration strategies
- o User database review
- o Auto-Attendants and specialized voice-mail options
- o Call flows
- o Dial Plan

- o Discussion of downtime and risks
- o Customer responsibilities
- o Fax over IP current and future design
- o Integration into other systems
- o Application and voice gateway co-existence planning
- o End-user training requirements and training plan.

Existing Telephony Integrations – NWN will work with Customer' IT staff to integrate the existing telephony solutions with NWN's hosted environment. A plan will be created that outlines system will co-exist in both environment (if possible) during the migration period.

Vendor Communications - Once cutover strategy is defined, NWN and Customer will meet with NWN Contracted 3rd party vendors to establish, review and agree on cutover plan, if required. If other 3rd party vendors need to involved, then the Customer must coordinate the schedules for those vendors.

"Fallback Plan" – NWN and Customer will build into the design a fallback plan for each stage of the migration. Being that the rollout will be a phased migration, dial plans and network connectivity will be in place for the migration, thus making a fallback plan easier to execute on.

Gate Review – At the end of this Design meeting, NWN has gathered enough information to create final design document for the installation of the equipment. The design document will include configuration parameters specific to the install and any key technical decision made during design. The design will conform to Cisco guidelines and recommendations and the completed design document will be submitted for customer approval prior to proceeding with the install.

Milestones & Deliverables:

1. Design meeting and updated project plans for implementation of the Hosted Communications Solution.
2. Design Document(s) and Acceptance

5.2.4. Prepare Phase (Implementation and Testing)

Provisioning – NWN will provision the Solution which and all of its applications in NWN's Datacenters.

The NWN Solution will include the following components:

- o Call Control Servers - These will provide call processing.
- o Voicemail with Unified Messaging Server(s) – This will provide unified messaging services.
- o Enhanced 911 Notification Server(s) – This will provide E911 services.
- o Optional – Instant Messaging Server(s) – This will provide Instant Message and Presence
- o Optional - HCS-CC Server(s) – This will provide contact center services.
- o Optional – Paging and Emergency Notification Server(s) / Gateway(s) – this will provide paging services
- o Cisco ISR routers for PSTN connectivity – to be located in the customer Data Centers.
- o Establish MPLS Communication between Customer site(s) and Data Center.
- o NWN's service assurance, monitoring and management suite

Standard Phone Features - NWN will configure and test all station equipment. The list below is a sample of the features NWN will configure. The final list of features and configurations are determined during the design phase. The following is a sample of the features that will be implemented:

- o Multiple line appearances on phone - Fast Transfer: Blind or Consult
- o Busy Lamp Field
- o Call Forward: <Busy, No Answer> Voicemail - Call Forward: <All> Restricted Access
- o Standard Ring-Tones
- o I-Divert active/inactive)
- o Call waiting (yes/no)
- o Internal Caller ID
- o External Caller ID (as supported by carrier) - Last Number Redial
- o Corporate Directory
- o Station Speed Dial with configuration changes from IP phone - Call Park
- o Meet-Me
- o Call Detail Records
- o Out of "The Box" Music On Hold
- o Single Number Reach " Find Me, Follow Me"
- o As sited in Customer's Hosted VoIP Project.

Milestones & Deliverables:

1. Provision Solution and Applications in NWN Datacenters
2. Configure, Test and Label Station Equipment

5.2.5. Execute Phase (Cutover and Training)

Phased implementation – NWN, working with the Customer's technical team, will implement the new solution in phases as defined in the Design Phase

On Premises Equipment – Below is a list of NWN owned equipment that may be installed on the Customer's premises. This will vary based on contracted services SKUs

- o MPLS Routers
- o Voice / SRST Gateways
- o Analog Voice Gateways
- o Endpoints
- o Analog Telephony Adapters (ATA)

Train the Trainer / End User Training - The training to be provided as part of this project in the form of "self-paced user training" for which NWN will be responsible for:

- o Provide Customer with the training material in the form of Quick User Guides and/or Web Based Tutorial for future use.

Administration Training – NWN will provide training for each implementation. The exact type of training required will be determined during Service Contract negotiations.

Network/System Troubleshooting – NWN will troubleshoot and diagnose technical issues associated with this project. Any issues that arise from Customer provided or owned devices and/or configurations related to the NWN Solution will require a change order and may affect the schedule of events planned for this project. NWN will work with Customer to isolate and identify network/system issues as well as provide assistance within reasonable boundaries. Any issues outside the scope of this project are the responsibility of Customer.

GATE REVIEW: Production readiness acceptance – NWN will review the production cutover and implementation with the customer to verify that the solution is functioning in their environment as presented in this scope and the detailed design from the earlier Gate Review.

First Day in Service Support – NWN will remain on site to help address and diagnose any problems that arise during the Unified Communications deployment within the scope of this project. NWN will troubleshoot configuration and integration issues arising from this project. NWN will review the production cutover and implementation with the customer to verify that the solution is functioning in their environment as presented in this scope and the detailed design from the earlier acceptance task. First Day Support does not include additional Moves, Adds, or Changes. NWN and the Client will formalize a detailed list of open items. Open items within the scope of this project will be addressed and resolved. Open items deferred due to Client availability will require a change order to complete.

Milestones & Deliverables:

1. Delivery of the detailed Bill of Materials (BOM) equipment &/or software components as identified in the Reference Materials section of this document

2. Installation and Configuration of the NWN Solution based on parameters referenced in the approved Design Document

3. Train the Trainer / End User Training

4. Solution Goes Live, Start Transition to Post Cut Over, Start of Invoice Date

5. First Day Support

5.2.6. Transition (Transition to Support)

A. Day 2 Support – NWN provisioning team remains on site to address and diagnose any problems that arise due to the migration to the new environment. NWN works with assigned persons as noted in "Assumptions and Requirements" section below to troubleshoot issues. Once the new system is agreed to be stable by NWN and Customer Designation Staff, NWN will start the process to finalize the documentation for the project.

B. Knowledge Transfer – NWN's technical team on the project conducts a solution orientation session and knowledge transfer with the Customer Designated Staff. This does not replace manufacturer specific technical training on the specific equipment but provides a solid overview of the final design and configuration and how to manage the environment using NWN's hosted collaboration administrative portal. Details of this session are:

   o One session with up to four Customer staff at the Customer or NWN location.

C. Transition Meeting to Support – NWN conducts a provisioning phase review, gains customer acceptance and transitions to the support phase of the SOW.

Milestones & Deliverables:

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1. Project documentation, to include:
    a. Action item list & Issues reports
    b. Support 'Welcome Letter'

Onsite engineering is now complete. Engineers will be focused on completing technical documentation and a review with the support team. The Project Manager will verify approval for final billing, schedule and complete Project Review, and Closure meetings with Customer to acquire final Approval Signatures.

The project now enters into the Support and Management phase for the duration of the Service Contract.

6. Appendix B. Ongoing Management and Support

6.1. Management and Support Onboarding Process

NWN's setup (or on-boarding) process for management & monitoring support services starts with the Transition phase of the Project (See Appendix A.) NWN begins supporting customers early during by providing Day 2 support services first and ramping monitoring and pro-active support services up as the project completes Transition. The NWN Project Manager will coordinate with NWN Assigned Customer Experience Manager (CEM) to transition the project to support with a Welcome Email

The NWN project team works closely with the customer support team to document and understand the operating environment.

6.2. Assigned Customer Experience Manager

The following outlines the roles and responsibilities of the NWN CEM:

- Schedules monthly meetings which include the following:
    - Review SLA reports
    - Review all tickets that have been open and closed during a month
    - Review any tickets that remain open
    - Review changes to the "Customer's" environment that may affect our service
    - Review upcoming upgrades and new features/functionality they may provide
    - Review upcoming scheduled maintenance or upgrades
- Manage new customer orders
- Program management of the contact between the "Customer" and NWN
- Manages change orders and completion sign-offs
- Manages customer relationship
- Provides overall service/support management

6.3. Assigned Solution Engineer

A Solution Engineer is a level 2 engineer with a broad set of experiences. For all levels of support, a Solution Engineer is assigned to your environment to facilitate a deeper understanding of your environment to assist in troubleshooting issues. In addition, they represent an additional point of contact into the managed services organization and a single point of escalation. In addition to a Solutions Engineer, a Backup Solution Engineer is assigned to every environment.

6.4. Monitoring and Incident Support

NWN will monitor the health and performance of the NWN Solution and NWN-managed devices on Customer network. NWN will respond to alerts according to the Incident support information below. Examples of incidents NWN will resolve include:

- Communications Manager/Unity hosted solution performance issues

- Gateway faults or performance issues

- Connectivity incidents or performance issues

- SIP or PRI Telco Connectivity

- User Administration (Moves, Adds, Changes and Deletes)

- RMA Processing (for covered devices)

Incidents are escalated based on Severity. Severity is defined in the below "Services Level Agreement" section.

Priority Level	Definition
Priority 1	• A critical system or service is unavailable, causing a severe impact on operations. There is no alternative, redundant or back up to this system or service.
Priority 2	• A critical system or service is slowed or interrupted, however a work-around is in place so that operations can continue. • A service interruption is occurring on a non-critical system or service.
Priority 3	• The functionality of a non-critical system or service has been degraded. • An error has been detected that is not affecting service performance or availability.

- Should a Level 1 issue be identified, NWN will focus an engineer or team of engineers to fix the problem.

- Vendor escalation will, many times, be immediate. For Level 2 and Level 3 situations, the Customer and NWN will agree upon an action and escalation plan based upon criticality and resource availability.

- Customer will designate a list of authorized callers that NWN will validate for security purposes upon opening a new case. It is Customer's responsibility to notify NWN should this contact list change. Notifications should be emailed and all urgent changes should be followed up via a phone call to the NWN Command Center.

- For Customer-managed devices and applications that are part of the voice infrastructure (notably, switches & cabling), it is the Customer's responsibility to resolve incidents and to ensure compliance with individual vendor's requirements regarding version supportability. If NWN is asked to assist in troubleshooting Customer-managed devices and applications, additional hourly charges may apply.

- The Customer or desktop support partner will be responsible for physical movement, return, and replacement of handsets as well as providing appropriate switch connectivity and PoE for handsets.

6.5. MACD Definitions

Priority Level	Definition
MACD	Move, Add, Change or Deletion (MACD) process is intended for sites that are already deployed. MACD is related to the following: Physical device or "soft" device (Jabber, IP Communicator) End user (including voicemail PINs and passwords) Site based numbers (Extensions, Direct Inward Dial numbers and Auto Attendants). MACD SLA is for up to five users or end user devices and is intended for those sites that are already deployed
MACD - Move	A programmatic relocation of a device, end user or number. Examples: Move a phone from Location A to Location B Move an end user from Location A to Location B Move a DID or DN from Location A to Location B
MACD - Add	A programmatic addition of a device, end user or number. Examples: Add a phone and/or end user to Location Add Extension Mobility to an end user Add a VM box to an end user
MACD - Change	A programmatic manipulation of existing configuration of a device, end user or number. Examples: Change a phone model for an existing device Change a VM box PIN Change where an inbound DID or DN terminates
MACD – Delete	A programmatic removal of existing configuration. Examples: Delete a phone Delete an end user Delete a DID or DN
Priority 3 - MACD	All Move, Add, Change or Deletions

6.6. Monthly Management Reporting

Tracking and reporting are key components of the support services. On a monthly basis, NWN will provide a

summary report of the work performed on the customer's behalf. This will include:

- Service Availability

- Incident Management

- MACDs

- Change & Service Request Management

6.7. Monthly Analysis Reports

On a monthly basis, the Customer will receive an analysis report of NWN's performance against agreed upon Service Level Agreements (SLAs). NWN reviews monthly performance and YTD trending information.

6.8. Notification Process

6.8.1. Scheduled System Maintenance

NWN will perform maintenance on the Hosted Solution and supported client devices in order to keep the system healthy, backed up, and functioning optimally. Should a scheduled system maintenance activity result in system unavailability, NWN will perform that maintenance during an off-hours window and will provide a minimum of 1-week notice to Customer designated contacts.

NWN has industry standard defined and documented change windows. These windows are subject to change but can be reviewed with the customer at any time during the term of this SOW.

6.8.2. System Upgrades

NWN will schedule to upgrade the Customer environment for Major Releases within 18 months of release. Allowances may be made for 3rd party applications that are integrated with the Customer environment. Customers will upgrade integrated Customer environments to compatibility to major OEM releases within 24 months. NWN will upgrade Customer environments to Minor Releases upon agreement and as necessary.

6.8.3. Emergency System Maintenance (Un-scheduled)

NWN reserves the right to perform emergency maintenance on the Hosted Solution and supported client devices in order to keep the system operational and functioning optimally. Should an emergency maintenance activity be required to either prevent or resolve an emergency, NWN will notify the appropriate customer contacts as soon as possible before actions are taken.

6.9. Supported Devices

Devices not supported by the Cisco powered solution will not be supported by NWN's Contact Center solution.

6.10. Upgrades and/or Features (Change Orders)

A signed Change Order Form and new Purchase Order for such change(s) for the following:

- Moves of and Incremental Additions (including onsite Spare Devices) to device counts

- Additions of Solution Features

- Customer changes to implementation dates

- Customer changes to the scope of the Services to be performed

- Customer request for NWN to assist in or with

    o Troubleshooting Customer-managed devices and applications

    o Configurations on customer owned or provided devices

    o Physical movement, return, and replacement of handsets

    o Providing appropriate switch connectivity and PoE for handsets

Changes that do not increase device count require a signed Change Order and Amended or New Purchase Order. Examples of changes include but are not limited to bandwidth, additional circuits, and/or number of users.

7. Appendix C. General Customer Requirements & Assumptions

1. **Customer's Designated Representatives.** Customer to assign a Dedicated Representative(s) for the following activates:

    - Project Implementation – Responsible for coordinating installation activity with the NWN dedicated Project Manager. Customer will provide NWN with their current and accurate information as well as other contact(s) necessary for access to Customer's Premises.

    - Transition Phase – Responsible for coordinating activities of transition and will have Troubleshooting Knowledge of Network, Software Applications and End User Devices.

    - Support Phase – Responsible for coordinating activities of support of solution during the SOW term. Customer will provide a list of authorized callers that NWN will validate for security purposes upon opening a new case. It is Customer's responsibility to notify NWN should this contact list change. The Customer is also responsible for providing business hours and other information in an effort to collectively identify escalation and customer notification procedures.

2. **Customer-Managed Devices and Applications.** For Managed Devices and Applications that are part of the voice infrastructure (notably, switches & cabling), the Customer is responsible to resolve incidents and to ensure compliance with individual vendor's requirements regarding version supportability before implementation starts and during the support of the SOW.

3. **Premises.** Customer will maintain the Premises and any other location where System may be located in a safe and secure manner, in accordance with recommended industry standards and conditions, and in a manner as required by the specifications accompanying the System and/or as may be advised by NWN. Such requirements include but are not limited to ensuring use of the appropriate power requirements, data communications equipment, network and/or using cabling.

4. **Work Place and Use of System.** Customer will provide NWN with a safe place to work. Customer will comply with any and all Local, State, and Federal work place laws and regulations regarding the working conditions on the Customer Premises and use of System. System may not be used for any purpose other than that for which it is provided to Customer under this SOW. Customer may require any NWN personnel to leave its premises provided that if Customer has not provided reasonable grounds for

requiring the personnel to leave, then NWN shall not be liable of its obligations under the Agreement to the extent it is delayed in performing them by reason of the removal.

5. **Hold Harmless.** Customer agrees it will not engage in the following activities and will hold NWN harmless in the event that the Customer or one of the Customer's users:

- Utilize the service to commit a fraud upon another party

- Unlawfully uses the service

- Abuses or misuses NWN's network or service

6. **Customer Equipment.** Customer shall notify NWN promptly of any changes in Customer's hardware or software that may affect Service provided by NWN.

- Customer will not permit any person other than Customer's Designated Representative to rearrange, disconnect, remove, relocate, attempt to repair, or otherwise tamper with any System without the prior written consent of NWN.

- If Customer wishes to relocate System, Customer shall provide written notice (subject to NWN approval) thirty (30) day prior written notification to NWN. Relocation may only occur within the country of original delivery.

7. **Access.** Customer will allow, or will secure permission, for NWN and its underlying suppliers, sub-contractors or agents to access Premises and/or System for the installation, maintenance, repair, replacement, relocation, inspection, monitoring, identification, or repossession of the System and performance of the Service from time to time as may be determined is necessary or desirable by NWN. NWN will use commercially reasonable efforts to notify Customer regarding timing and implementation of any replacement System (hardware or software) that will occur on the Premises.

8. **Work Area.** Customer to provide a work area for NWN to use during on-site activities to include Internet and public phone network access including but not limited to:

- Parking passes and adequate parking for the NWN project team.

- Outside phone and Internet access, at no additional charge, for all NWN staff when onsite

9. **Notices.** Each party shall appoint a Designated Representative(s).

10. **Work Hours.** Normal working hours for implementation services are normal business hours (8:00 am to 5:00 pm in local time zone), Monday through Friday with no limitations of access to the workplace. Work performed after normal business hours will be billed at an additional charge.

11. **Pre-Implementation.** Customer will come prepared with documentation and resources necessary to cover all topics including but not limited to:

- **Port information that is accurate and complete before NWN can properly schedule Implementation. Inaccurate and/or Incomplete Port data can lead to delays with implementation.**

- Quality of Service (QoS) and Security Best Practices

- Accurate, Complete, and Documented

    - Hardware/Software versions

    - IP Routing and IP Addressing

- VLAN Layout

- WAN Circuit Design and Sizing

- PSTN Connectivity Design

- Existing Application Server and Gateway Design.

- Design/technical components as part of the delivery of this project:

  - Provide current network design.

  - Provide IP address schema and design specs.

  - Participate in all design and planning sessions and be prepared to sign off on all milestones.

  - Third party delays are recognized and accounted for

  - Customer provided information is correct and current

  - Provide the best possible prints and floor plans for use during the installation. These prints and floor plans will become the property of NWN.

- Customer will perform and/or provide the following requirements as part of the delivery of this Solution:

  - IT environment in place and configured to secure and establish proper network and endpoint connectivity, including but not limited to:

    - Existing switch, router and firewall configuration work needed to establish properly secured connectivity in this scope of work unless otherwise noted in this SOW. If NWN assistance is requested a change order will be required.

    - Structured wiring and structured wiring components are in place and operational to support the efforts in this project.

    - Adequate electrical power, UPS, and surge protection are in place and operational to support hardware and software listed on this project.

    - Equipment racks, shelves, and environmental requirements such as heating and cooling are the responsibility of Customer. NWN will provide Customer with these requirements upon request.

    - All hardware, software, licensing, maintenance or other required resources not explicitly listed on the Bill of Materials and subsequent Purchase Order.

    - Acceptable PSTN connectivity on the Customer premises if SRST functionality is part of the Solution.

    - The Customer will provide space, power, network and internet connectivity for each NWN-provided device needed to deliver the Solution.

    - Customer will Rack, Stack and Cable any network elements of the solution unless otherwise noted.

12. If prior to the commencement or during the performance of the Services purchased, Customer (i) fails to deliver any required material or services, (ii) fails to provide access to computer systems or facilities,

as specified in the original Quote or SOW, and/or (iii) if the services are unable to be performed due to Customer delays for a period of over Sixty (60) days, NWN may require Customer to sign a Change Order Form in the form attached to the SOW setting forth the conditions and rates or fees, if any, under which NWN will continue providing Services. If such Change Order requires additional fees, Customer shall be required to submit a purchase order or purchase order change notice indicating Customer's agreement to pay such additional fees for NWN to continue to perform the Services.

13. Should the Customer or its affiliates be responsible for any delay, reschedule, or deployment back-out, Customer shall assume all resultant engineering and work effort costs. NWN will issue a change order to customer outlining the project impact and cost.

14. NWN is not responsible for configuration changes on any equipment not specifically stated in the above Statement of Work.

15. Customer assumes all responsibility for providing the appropriate power for all installed equipment in this proposal. NWN can provide the plug type and desired power connection for each piece of equipment in the proposal.

16. Customer is responsible for all rack or cabinet hardware (including rack mounting hardware) that is needed to install the new equipment.

17. Customer assumes all responsibility for ensuring enough contiguous rack space for the new equipment to be installed during this project.

18. Customer needs to provide all Fiber Patch Cables between the new network equipment and the fiber patch panels in each network closet. NWN can provide the appropriate connector type for each patch cable if desired by the Customer.

19. Customer needs to provide all Copper Patch Cables between the new network equipment and the copper patch panels in each network closet. NWN assumes RJ45 connectivity for all copper patch cables needed.

20. Customer is responsible for providing all Cable Management (Vertical and Horizontal) in order to correctly route each patch cable from the newly installed network equipment to the appropriate patch panel.

21. Customer must provide access along with safety, security & emergency protocols for NWN staff for all the appropriate areas in the facility in order to complete the work effort included in this proposal.

22. Customer is responsible for all environmental concerns in each network closet that NWN will install new equipment. If equipment problems arise due to excessive heat or water in the network closets, then the Customer is responsible for all equipment replacement costs.

23. Customer must provide free and clear access to the network equipment racks in each network closet.

24. Customer must provide a work area large enough for receipt of all new equipment for this project.

25. Customer must provide outside phone and Internet access for all NWN staff when onsite.

26. Customer must provide a dedicated point of contact for the entirety of this project. This Contact must be available during major steps in the installation process. If the Customer contact is not available during the process and schedules slide due to Customer unavailability, then Customer costs may arise to the delayed schedule.

27. Customer and NWN will mutually agree upon downtime prior to any installation and ensure this downtime is scheduled in advance so the Customer can make appropriate preparations at the facility.

28. Customer must obtain all necessary work permits.

29. Customer's responsible for removal of shipping packaging once all the equipment is received at the Customer site.

30. Adjacent equipment, including equipment that is connected to elements being worked on by NWN, has manufacturer support as well as customer-assigned support personnel to address any issues that arise during the work under this engagement.

31. Services will be restored to pre-upgrade/pre-migration status/condition. Resolution of any pre-existing issues is not within the scope of this engagement.

32. Customer will provide existing "as built" information, including diagrams and other documentation.

7.1. Devices (Customer Premise Equipment) Assumptions

7.1.1. Endpoint that are End of Sale and End of Life

End of Sale (EOS) - Means the equipment is no longer available from the manufacturer. Manufacturer support may be reduced or no longer available directly by the manufacturer or through NWN.

End of Life (EOL) - Means the equipment is no longer available from the manufacturer and is no longer supported directly by the manufacturer or through NWN.

Customers may continue to use devices that have reached their EOS date; however, to support continued use of NWN Services, Customer shall promptly disconnect and replace EOL Endpoint(s) with Supported Endpoint(s). Disconnect fees may apply.

EOL Endpoints may stop working at any time, including after a Service upgrade or patch. Customer's continued use of EOL Endpoints shall not receive any upgrades, patches, or maintenance from NWN. The Service is provided AS IS without warranty of any kind. Customer shall not receive any reduction or credits to their Monthly Recurring Charge for any disruptions to Service Availability caused in whole or in part by Customer's use of any EOL Endpoint(s).

7.1.2. Shipping

Customer may order Equipment from NWN for use with the Services by entering into a Service Contract with NWN. Customer shall pay all shipping and related charges unless otherwise stated in a Service Agreement. All Equipment shipments are F.C.A. (free carrier), and title and risk of loss or damage shall pass to Customer upon delivery to the carrier. Customer shall be deemed the importer of Equipment for all purposes, and shall be liable for any applicable customs, import/export duties, clearance charges and other Taxes (including VAT), in connection with international shipments. NWN may refer Customer to a local or regional Equipment vendor for Customer Locations outside the Primary Market.

7.1.3. Hardware Maintenance

Maintenance on Hardware is not included and may be purchased in addition to any hardware purchased. It is the customer responsibility to manage maintenance renewals for the hardware. Please visit Cisco Smartnet for more information: https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/smart-net-total-care/datasheet-c78-735459.html

7.1.4. Lost, stolen, altered or broken equipment

During the Term, Customer shall not modify the equipment in any manner without the express written consent of NWN and shall only use the equipment in connection with the Services. Customer shall be responsible for all lost stolen or broken equipment (except to the extent covered by warranty) and shall promptly notify NWN of any such loss or theft and cooperate with NWN as reasonably requested to prevent unauthorized use of lost or stolen equipment.

7.1.5. Equipment Leasing Companies

NWN may refer Customer to one or more unaffiliated companies that have agreed to provide equipment-leasing options to NWN customers (a "Leasing Company"). The terms of any such leasing arrangement shall be governed solely by Customer's contract with the Leasing Company. NWN does not endorse, guarantee the services of, or have control over such Leasing Companies and disclaims all liability in connection with their services. The use of any financial information, Personal Data and other information disclosed to or collected by Leasing Companies is governed by such Leasing Company's own privacy policies and not by NWN's Privacy Policy.

7.1.6. Unsupported Devices

Customer shall be responsible for ensuring that any equipment acquired from a third-party vendor is in reasonable working condition and configured in accordance with NWN's technical requirements. Customer shall not access or use the Services with any equipment or devices other than supported equipment. NWN shall have no liability whatsoever for Customer's access or use of the Services with any equipment or device that is not supported by NWN (an "Unsupported Device"). Refer to Section 1.3 for a list of supported equipment.

7.2. Unsupported Services

Notwithstanding anything the contrary herein, neither NWN nor any of its designated Affiliates shall be required to provide technical support for, and NWN disclaims all service level commitments, representations and warranties as to the performance of, Services that are either (a) used for a purpose or in a manner inconsistent with the Documentation (for example, as part of an alarm or paging system), (b) used with Unsupported Devices or with supported equipment that does not comply with Section 1.3; or (c) accessed in an Environment for which the Customer has waived a network assessment or failed to make requested adjustments under Section 4.3 above (the Services described in clauses (a) through (c) are referred to collectively as "Unsupported Services").

7.3. Company Administrator

Customer must appoint a Company Administrator and delegate to that Administrator the authority to act on behalf of the Customer as the single point of contact with respect to the Customer's NWN Service. If the Customer has purchased NWN at multiple Sites, the Customer can appoint an Administrator for each Site. Customer may also designate one or more alternate Administrators in the event that the lead Administrator is absent or unavailable; the alternate will have the same responsibilities and authority as the Administrator. The Customer's Administrator and designated alternate shall be responsible for the following:

- Acting as the single point of contact for all matters related to the Customer's NWN Cloud service.

- The Administrator has the authority and responsibility for any matters related to NWN Cloud and NWN can rely on the Administrator's decisions and actions related to NWN.

7.4. Security Configuration Requirements

NWN Service is provided as a service and provides customer management space. Infrastructure controls are specifically designed to compartmentalize customer data. Communications between one customer environments to another is not permitted other than through traditional PSTN connections or third-party video bridging services such as Cisco WebEx CMR.

The system and security requirements for the NWN Services include:

- Physical Security - NWN Services is located in highly secure, reliable, and geographically redundant NWN core data centers.

- Communications Protection - NWN Services does not examine the contents of conversations, which include voice, text, video, and file sharing. To further protect the transmission from unlawful interception, all conversations, chat conversations may be optionally encrypted and sent over secure communication channels using current networking standards.

- Infrastructure - NWN Services infrastructure provides operating, monitoring, and managing the network and its elements. The environment has 3 distinct security zones:

  o Management Network - A separate physical interface for connecting to network management systems

  o Secure Environment - Provide the NWN Services application and customer data storage, are firewall protected from the other networks, including the Internet, by IP Border Elements. Network traffic is load balanced, via redundant hardware, to provide workload distribution, increased performance, and automatic rerouting in the event of a communications or server failure.

  o Customer Network - The majority, if not all, of the network components are in the NWN Cloud and not on the customer premises. Customers access the Cloud via an NWN data service, an NWN VPN, or via an Internet Service Provider (ISP) of their choice.

- Role-based Privileges - Each User ID and Password (for End-Users, Customer Administrators, NWN Customer Care, and NWN Network Management) is associated with a role that defines and restricts which privileges or rights are available to an individual user for accessing to communication channels and to data storage areas.

- Data Protection - NWN Services allows only the owner of any account data to access or manage them (password / role-based access). This includes creating, renaming, deleting and editing associated metadata. Customer data is never examined nor processed during normal procedures.

- Data Storage Security - NWN Services segregates stored data for each individual user.

- Investigative Support - NWN monitors all accesses and changes to its managed environment. Information is logged for auditing and troubleshooting purposes.

7.5. Customer Not Ready

If NWN is unable to perform scheduled on-Site work that causes NWN to re-dispatch an NWN Technician/Engineer due to a Customer Not Ready reason, billing for NWN or any impacted NWN component may commence on the scheduled due date. Customer Not Ready reasons include, but are not limited to: 1) lack of physical access to the Site; 2) Local Site Contact not available to assist with the installation; 3) the Customer provided inside wiring is not operational; and/or 4) Lack of adequate power and environmental conditions as specified by equipment manufacturer.

7.6. Network Readiness

Prior to placing an order for NWN Services, it is highly recommended that the Customer conduct a Network Assessment at each location, which NWN Public Cloud Calling will be installed. It is a requirement that each location meet the minimum Network Requirements. **Link to Network Requirements** Failure to do so may result in blocked calls or poor quality service if requirements are not met.

It is the Customer's responsibility to resolve any Customer environment (i.e. LAN, network) issues before, during, or after Test and Turn up of NWN Public Cloud Calling Services.

Customer may purchase additional network assessment or consulting services from NWN to assist with meeting Network Requirements. All additional services will be executed as a change order to this contract.

7.7. Customer Network Responsibility

Customer shall be responsible for ensuring that its Internet connection, any local network equipment, hardware and software used in connection with the Services, and all related configurations (collectively, "Environment"), adhere to the minimum standards and technical requirements specified in applicable Documentation. Customer agrees to: (a) grant NWN access to Customer's personnel, facilities and other resources under Customer's control as NWN may reasonably request in order to perform its obligations under the Customer Agreement; (b) allow NWN, upon reasonable request and subject to compliance with Customer's security policies, to conduct an initial assessment of Customer's network; and (c) make any adjustments to Customer's Environment that NWN reasonably determines necessary to satisfy the minimum technical prerequisites specified in the applicable Network Requirements

7.8. Minimum Bandwidth

Bandwidth evaluation for the desired NWN implementation on applicable VPN connections is included with the NWN Services sale when the Service is purchased from NWN. If the Customer prefers to have NWN assist with the bandwidth evaluation for non-NWN connections, a fee-based Network Assessment is available from NWN Professional Services.

In addition to ensuring appropriate bandwidth, Customer must ensure the IP network components used to transport NWN Service provide the appropriate DSCP based Quality of Service (QoS) for media and signaling. The key QoS components required are:

- Very low packet drop probability
- Low latency (<150 milliseconds between Endpoints and <200 milliseconds between nodes and each Endpoint)

- Low latency jitter (<20 milliseconds for Endpoints, and <75 milliseconds for signaling)

- Delivery of packets in the same order as they are sent

- If Customer does not adhere to these QoS requirements, Customer may experience service defects (such as periodic garbled voice/video communications or Endpoint resets) caused by delayed or discarded Service packets over non-QoS based network segment. Performance depends on a variety of factors, including, but not limited to, the number of subscribers simultaneously using the network, customer location, and destination and traffic on the WAN network. NWN is not responsible for degradations in service associated with such transport issues. NWN is provided AS IS without warranty of any kind. In these cases, the Customer will need to procure QoS aware network transport for the affected site or sites.

7.9. Service Limitations

7.9.7. Quality of Service

IP-based communications have inherent limitations relative to analog and other traditional communications methods. While NWN's Services have been engineered to address and manage these limitations, NWN cannot guarantee that all communications transmitted to or from the NWN Platform (including voice, facsimile and text messages) will be delivered without loss of data or at all. Customer acknowledges and understands that call quality depends not only on the specification and availability of the Broadband service to which Customer is connected but also on the telecommunications network to which the other parties are connected.

7.9.8. Alarm Signals; Critical Safety Applications

Customer understands that the services are not authorized or intended to be used to carry alarm signals or for use in any high-risk, critical safety or other applications where any failure, interruption or malfunction may reasonably be anticipated to result in bodily injury, loss of life or catastrophic damage to property.

7.9.9. Use Outside the Primary Market

Although NWN sells Services primarily to customers domiciled in the Primary Market, NWN's Services are nomadic by nature and may be accessible through an Internet connection virtually anywhere a broadband connection is available. Regulation of IP-based telephony services varies significantly from jurisdiction to jurisdiction. For example, some countries have prohibited IP-based telephony services that interconnect with the local PSTN, and others require the user to obtain a specific consent or license. In addition, internet service providers (ISPs) in some countries may impose contractual restrictions on the use of their services for IP-based telephony. Methods of enforcement range from number blocking and suspension of internet service to fines and criminal penalties. Before ordering Services for use in a jurisdiction outside the Primary Market, Customer is urged to consult with counsel for advice regarding its proposed use of the Services in that jurisdiction. Customer shall be solely responsible and liable for any violation of local Laws or breach of third-party contract terms resulting from Customer's use of the Services outside the Primary Market, regardless of whether NWN has consented to such use.

7.9.10. Non-NWN Applications

Continued Interoperability. Certain Services may contain features designed to interoperate with Non-NWN Applications. NWN cannot guarantee the continued availability of such Service features and may cease

providing them without entitling Customer to any refund, credit or other compensation. Any custom work performed by NWN to enable interoperation with a Non-NWN Application shall be charged as Professional Services and undertaken on a commercially reasonable efforts basis.

No Warranty or Liability. Unless the Customer Agreement provides otherwise: (a) NWN does not warrant and is not responsible for any aspect of Non-NWN Applications, regardless of whether they are designated by NWN as "certified," "approved" or "recommended"; (b) Customer's procurement and use of Non-NWN Applications is solely between Customer and the applicable third-party provider; and (c) NWN shall not be required to provide support for Non-NWN Applications. If Customer installs or enables Non-NWN Applications or services for use with a Subscription Service, Customer agrees that NWN may allow the third-party providers to access Customer Data as required for the interoperation of such Non-NWN Applications with the Subscription Service, and NWN shall not be responsible for any disclosure, modification or deletion of Customer Data resulting therefrom.

7.9.11. Customizations

NWN may agree or refuse, in its sole discretion, any Customer requests for custom modifications or additions to the Services or other aspects of the NWN Platform ("Customizations") for Customer's benefit. Any Customization work performed by NWN shall be charged as Professional Services and shall be undertaken on a reasonable efforts basis. Customer acknowledges that (a) NWN does not provide support for Customizations under standard Support Plans; (b) a Customization may adversely impact other aspects of the Services, or their overall functionality or security; and (c) future upgrades and modifications to the NWN Platform may impair the functionality of a Customization.

7.10.   Geographic Availability

NWN Cloud Calling is only available for installation at Sites in the United States and Canada, and where FCC required 911 or E911 capability can be provided. NWN Cloud may be discontinued if necessary local service facilities or required 911 or E911 capability cease to be available.

Webex Teams & Meetings is not available in all countries; accordingly, purchases may be limited or restricted in some markets. If the NWN Team Messaging Services ordered are limited or restricted in the Subscriber's market, NWN will not be able to provision the Team Messaging service. Cisco Webex Teams is currently available in the countries listed here.

7.10.1. NWN Calling Contract Locations

For initial release, NWN Cloud is offered only to enterprises whose headquarters are located in the United States (See Section 1.2) also known as a "contract" country. A "contract" country means NWN has the ability to do business in that specific country. NWN Cloud can support international locations as long as they are governed by the US market agreement, which includes strict contractual acceptance of data and media being homed into the US market.

NWN Cloud Contract Countries:

- United States

7.10.2. NWN Calling Branch Countries

NWN Webex Cloud Calling Branch Countries are defined as locations in which a Company is not headquartered but does business. NWN Webex Cloud Calling is available in the following Branch Countries listed below:

- Canada

7.10.3. Centralized PSTN & SIP Service Availability

Local Centralized PSTN & SIP for NWN Webex Cloud Calling is available in the following Countries:

- United States
- Canada

7.10.4. Subscription Requirements

NWN Cloud Calling requires that Customer obtain and maintain the following:

- Internet Connection to support network access to the NWN Cloud Data Centers
- PSTN Calling Plan – included with our NWN Cloud Subscriptions
- Active Calling license subscription
- Compatibility with standard Cisco IP telephony-based technology
- Cooperation from third party provider that includes written configuration guides for general Cisco IP telephony environments (IP/SIP services only)
- Technical configuration assistance to facilitate the service build-out as well as help troubleshoot service interruptions after the service has been configured; and
- Professional Services – Project Management, Consulting Services, Design Services, Network Integration Services, and Deployment Services
- Ongoing Tier-1 Support contract (included) for duration of service

In the event that NWN incurs charges for telecommunications services that are not identified in the usage/overage list or contracted SKUs, NWN reserves the right to invoice the customer after producing evidentiary data.

7.10.5. User Accessibility Policy

Customer's use of Subscription Services is subject to limitations on the number of Agents authorized to use the Services. Unless the Customer Agreement provides otherwise: (a) a specified quantity of Subscription Services in a Service Order limits the number of Agents and corresponding account logins to the specified quantity; (b) an Agent's login credentials may be used only by the designated Agent until his or her account is reassigned; and (c) an Agent's account login may be reassigned to a new individual only when replacing a previously authorized

Agent who will no longer use the Services. Customer may designate as Agents only individuals over whom Customer has sufficient control (contractual or otherwise) to ensure compliance with these Terms, such as employees and consultants.

NWN hereby grants Customer the non-exclusive, non-transferable (except as provided herein) right to access and use the Subscription Services ordered by Customer, together with all related components of the NWN Cloud Platform, during the term of the applicable Service Contract, for Customer's own internal business purposes, subject to the terms and conditions of the Customer Agreement.

8. Appendix D. Technical Requirements & Assumptions

8.1. Customer LDAP Integration

NWN supports the integration of Customer's Enterprise Directory with NWN infrastructure components via the Lightweight Directory Access Protocol (LDAP). Enterprise Directory integration consists of the following elements:

- User synchronization and provisioning (including Customer directory preparation). Some NWN User configuration information is provided by the Customer's LDAP Directory.

- Authentication - The authentication process enables Jabber Users to authenticate credentials against the Customer's corporate LDAP directory. Authentication can be either traditional authentication (User authenticates with his/her Active Directory User ID and password for each login) or Single Sign On (SSO). SSO allows Users to access Jabber without entering a password as long as the User has already authenticated elsewhere under conditions controlled by Customer. LDAP authentication (traditional or SSO) is an optional feature. Without LDAP authentication, Users must use their NWN defined password.

- Contact Search - This function allows the End User to search/add contacts in their Jabber client.

NWN will enable Enterprise Directory integration provided that Customer meets the minimum technical requirements identified by NWN during the Plan and Design phases of NWN deployment.

If the User IDs for the NWN Jabber clients are spread across multiple domains within one or more Active Directory forest, the Customer must deploy, configure, and manage one or more servers running Active Directory Lightweight Directory Services (AD-LDS) within their network infrastructure. User Principal Name (UPN) must be used as the NWN User ID. UPN is usually the sAMAccount plus the Customer's domain name. For example: "jdoe@company.com" (UPN consists of everything between the double quotes).

If SSO is to be deployed, the Customer must deploy, configure, and manage Microsoft Active Directory Federation Service (AD-FS) or PingFederate as an Identity Provider (IdP). Security Assertion Markup Language (SAML) is used to exchange authentication and authorization data between the Customer's AD-FS or PingFederate IdP server and NWN's server(s). If User IDs are spread across domains in multiple forests, authentication is limited to SSO or NWN server-based passwords.

IP Network Address Translation (IP NAT) is not supported for all communications between the Customer's Microsoft Active Directory servers to the NWN servers. NWN has designed the NWN architecture to be free of IP NAT devices along this path; Customers must ensure the path within their network is free of IP NAT devices. Customer firewalls must also not block communications between the Customer's AD servers and the NWN infrastructure.

8.1.1. Active Directory-Lightweight Directory Services Support

Microsoft Active Directory-Lightweight Directory Service (AD-LDS), formerly known as Active Directory Application Mode (ADAM), must be used to provide directory services between the Customer's environment and the NWN applications when users are spread among multiple domains. AD-LDS is used for User synchronization – that is to funnel and store the User accounts imported from multiple Customer AD domains. AD-LDS is not needed if all User accounts used in NWN are in a single AD domain or with five (5) or less domains within a single forest.

AD-LDS performs a scheduled synchronization for each Customer domain. UC applications will in turn synchronize user accounts with AD-LDS.

AD-LDS is part of the Customer's Active Directory environment and is procured, installed and managed by the Customer.

For NWN to integrate with Customer's environment using AD-LDS, the Customer's DNS infrastructure must be in place allowing domains in one forest to communicate with the domains in the other forests and the appropriate trust relationships must be established and validated between the forests.

AD-LDS requires one or more SSL connections. SSL requires the installation and use of certificate on the server running AD-LDS and on all applications integrated with AD-LDS (including the NWN applications). The customer must procure and provide all required certificates to NWN and renew them as appropriate.

AD-LDS to NWN service communications is limited to LDAP over TCP. LDAP over SSL has not been certified by NWN.

8.1.2. Single Sign-on using Security Assertion Markup Language (SAML)

Although some of the applications supporting NWN services already support Single Sign-on (SSO) functionality using the Security Assertion Markup Language (SAML) 2.0, support of SSO for all NWN Service has yet to be certified by NWN.

8.1.3. LDAP Versions Supported

Customer is required to provide LDAP software using the following supported software:

- Microsoft Active Directory 2008 R1 (32-bit) / R2 (64-bit)
- Microsoft Active Directory 2012
- Microsoft Active Directory 2016
- Microsoft Lightweight Directory Services 2008 R1(32-bit) / R2(64-bit)
- Microsoft Lightweight Directory Services 2012
- Microsoft Lightweight Directory Services 2016

8.1.4. LDAP Limitations

The following limitations are applicable when NWN Unified Communications is integrated into the customer's LDAP environment:

- Customer's LDAP applications and NWN Unified Communications servers must be able to resolve

Fully Qualified Domain Names (FQDNs) via the Customer's primary DNS server. DNS reverse lookup is also required. The DNS domain reverse lookup for the NWN Unified Communications servers must be within the Customer's network (rather than the Internet) because the NWN Unified Communications server IP addresses are unique within each Customer's network, but not between customer networks.

- Customer's LDAP applications (especially AD-FS) must have global time synchronization via Network Time Protocol (NTP). The service will fail to operate properly if Customer's and NWN Unified Communications servers are off even a few seconds from each other.

- The user search bases that are specified in the LDAP directory configurations must include no more than a total of 160,000 LDAP Users. Synchronizing large numbers of User accounts can lead to starvation of disk space, slower database performance, and longer upgrade times within the NWN Unified Communications service.

8.1.5. Roles and Responsibilities with LDAP

Successful integration requires Customer maintain the minimum supported LDAP software version(s) and provide information as required by NWN in the Plan and Design phase of deployment. Upon completion of these steps, NWN will validate, verify and activate the connection with LDAP.

- Active Directory Telephone Number field must comply with the NWN Unified Communications dial plan that has been or will be implemented.

Optional:

- Home Phone Number = E.164 format (i.e. +1<DID>)

- Mobile Phone Number = E.164 format (i.e. +1<DID>)

- Procure, install, configure, and maintain the Customer premises deployment of Microsoft Active Directory (including, but not limited to AD-LDS, AD-FS, and Domain Controllers).

- Provide the Fully Qualified Domain Name (FQDN), IP address, TCP port and application partition name of the AD-LDS instance (or Domain Controller if single tree/forest implementation) as well as the user credentials to access the directory. To enable services, NWN will need the two ports that the AD-LDS server will use.

- Provide the FQDNs and IP address of server processing authentication (AD-FS, Domain Controller, etc.).

- Verify two-way forest trusts are established if there are more than one top-level domain.

- Verify the federation between AD-FS servers are configured if there are more than one top- level domain. Distribute the appropriate AD schema to the all participating AD servers.

- Ensure that all domain User accounts have the correct UPN, email address and telephone number.

- Set the domain user account attribute(s) if a subnet of domain users will be imported to the NWN Unified Communications Service so that only NWN Unified Communications users are imported into the Service.

- If AD-LDS will be used, import Users from AD Domain Controller(s) to AD-LDS. Create a synchronization schedule to automate synchronizing the domain information to AD-LDS. Verify the User accounts that will be used in the NWN Unified Communications Service are in AD-LDS.

- Set the DNS A and SRV records in the Customer's top-level domain(s) for the Jabber client deployment.

- Provide information for Certificate Signing Requests (CSRs) used within the Customer's environment as well as submit the CSRs NWN provides for the NWN Unified Communications servers to the Certificate Authority (CA) or Public Key Infrastructure (PKI) for certificate generation. Distribute the certificates as appropriate. Renew the certificates when needed.

- Configure Jabber clients in the enterprise environment.

NWN:

- If SSL certificates are to be used, create and provide the Customer with NWN Unified Communications Server CSRs and upload Customer provided SSL certificates to the NWN Unified Communications servers.

- If SSL certificates are to be used, import the trusted root CA certificates of customer PKI to the NWN Unified Communications applications.

8.1.6. LDAP Integration Deployment

LDAP integration includes the following steps to enable NWN Unified Communications with Cisco Jabber integration: component validation and preparation; establish communication between network components; configuration of Jabber client in enterprise environment. Successful integration requires Customer maintain the minimum supported LDAP software version and provide information as required by NWN in the Plan and Design phase of deployment. Upon completion of these steps, NWN will validate, verify and activate the LDAP Directory.

For the Microsoft Active Directory implementation of LDAP, the server/listening ports are:

- TCP 636 For Domain Controllers (secure)
- TCP 3269 For Global Catalog servers (secure)

Microsoft does not support IP Network Address Translation (IP NAT) for all communications to the Microsoft Active Directory, including communications to the NWN Unified Communications components.

8.1.7. Information Exchange between Customer and NWN

Information to gather from Customer:

NWN will provide the configuration parameters to enable Customer to configure the Cisco Jabber soft client to integrate with NWN Unified Communications.

Customer Responsibilities:

In support of NWN Unified Communications with Jabber, Customer shall:

- Provide and configure Microsoft Active Directory (AD) services to integrate with NWN Unified Communications

- Open Firewalls to allow communication between NWN Unified Communications and their AD domain

- Provide NWN the minimum data set required to configure NWN Unified Communications to integrate with Customer's LDAP servers

- Provide NWN minimum data set required to provision Jabber client

- Provide a list of additional services or features to enable for the Jabber clients

- Accurately populate the following AD user attributes

  o NWN Unified Communications Telephone number

  o Optional:

      ▪ Home Phone Number = E.164 format (i.e. +1<DID>)

      ▪ Mobile Phone Number = E.164 format (i.e. +1<DID>)

- Provide and configure corporate Wi-Fi network for mobile devices

- Establish connectivity between the corporate Wi-Fi network and NWN Unified Communications Service

- Provide Jabber client software download instructions to End Users

- Provide Cisco Jabber training and documentation to End Users

- Configure SRV record with "_cuplogin" service and "_tcp" protocol, on the DNS server pointing to the "A" record of the Instant Messaging and Presence server

- Configure "A" record for NWN Unified Communications service if required

8.1.8. Integration with Customer's Domain Name Service (DNS) Domains

The use of security certificates is common when third-party applications (including Microsoft LDAP and SSO) are integrated into NWN. Security certificates generally use Domain Name Service (DNS) names for all server-to-server references. As a result, the Customer must have DNS "A" record entries for all involved NWN and Customer servers in the Customer's DNS domain. DNS references are often used with NWN Unified Communications features facilitating end user access to NWN Unified Communications from outside the Customers' network. There are other use cases utilizing DNS references to NWN servers and applications.

To limit service interruptions caused by the inability of one or more NWN Unified Communications applications to resolve DNS names due to short-term network failures or Customer DNS application issues, NWN may run DNS services hosting a non-authoritative copy of the Customer's domain containing the DNS records in a customer's environment within one or more NWN Data Centers.

DNS Resolution required for all Telephony endpoints.

Customer Responsibilities:

- NWN will provide the DNS names for the NWN servers; and the IP Addresses for these servers.

- Add these DNS entries to Customer's DNS domain;

- Add required SRV records (provided by NWN) to both the private and public Customer DNS environments.

- Add DNS entries for all Customer application referenced by NWN applications to the Customer's DNS domain

- Set Time To Live (TTL) for these DNS domains to 24 hours or longer.

8.2. Cisco Jabber

Cisco Jabber is an IM/Presence and audio/video Endpoint software client (PC, Smartphone, Tablet) provided and licensed by Cisco that is available in the Named User, EA User and EA User (Calling+Meeting) Subscription Packages (Cisco Jabber is referred to as Cisco Jabber or Jabber throughout the document).

Jabber may be downloaded from the Self-care Portal (EMP Control) or downloaded from Cisco's website. The Cisco Jabber softphone, if used, is considered a device (separate from any other device that user may have) and subjected to the NWN Unified Communications device per user limits.

To function properly, the Cisco Jabber client must be used on the Customer's corporate network, connected to Customer's network via VPN, or with NWN's Collaboration Edge Service.

Customer's use of Jabber is subject to the license agreement between Cisco and the Customer. NWN Unified Communications with Cisco Jabber supports the following Jabber features: Presence, Instant Messaging, VoIP calling, Video, Webex, Outlook, Office365, Google Calendar and voicemail. Customer must separately obtain all End User equipment, including PCs and mobile devices and these devices must be devices that NWN supports.

Customer may optionally choose to use encryption features with Jabber as described herein. Jabber encryption features are disabled unless and until is requested by the Customer. Encryption is not available in all areas and may require additional services for activation and configuration resulting in additional charges.

Cisco Jabber works best when integrated with the Customer Lightweight Directory Access Protocol (LDAP).

8.2.1. Jabber Configuration in Enterprise Environment

NWN Unified Communications Jabber clients generally interact directly with the Customer's LDAP Server(s).

DHCP Server

The NWN Unified Communications service requires reliable Dynamic Host Configuration Protocol (DHCP) server(s) to respond to IP Phones and Jabber client hosts DHCP requests during the initial phone and Jabber client registration process. The DHCP server(s) must be configured to dynamically respond to DHCP requests and minimally provide the following information:

- IP address and subnet mask
- Trivial File Transfer Protocol (TFTP) server IP address of the NWN Unified Communications IP PBX through DHCP option 150
- Default gateway IP address
- DNS server IP address (required for Jabber clients and IP Phones

The Customer's DHCP server(s) that provides these services for IP phones and Jabber client hosts must be correctly configured and managed by the Customer. NWN will provide the customer with the TFTP server's IP address that is configured in the DHCP option 150 attribute.

DNS Server

When an NWN Unified Communications Jabber client starts up, it will typically first obtain an IP address from the DHCP server and then prompt the End User to enter any missing information the following list at different stages of the registration process:

- NWN Jabber Client Device Name

- NWN Unified Communications UCM TFTP Server IP address

- NWN IM&P Server IP address

- NWN Unified Communications mail Server IP address

- User name and password (Active Directory user name and password)

- Voice Mail Pilot number and PIN

Cisco Jabber for Windows uses DNS SRV lookup to automatically discover and connect to the NWN IM&P servers, provided, the Customer configures an SRV record for the NWN IM&P servers for windows clients on each domain containing Cisco Jabber client users.

NWN will provide the Customer with the IP addresses of the various servers, the voice mail pilot number and PIN, and the device name information. Customer will be responsible for the configuration of the various DNS records.

Corporate Wi-Fi Network

The customer must provide the Wi-Fi infrastructure for Jabber for mobile devices such as Smartphones and iPad to access the NWN Unified Communications infrastructure. It is imperative that the customer's DHCP server for the Wi-Fi network is configured to respond to the DHCP requests from the iPhone with a DNS server IP address.

Limitations

NWN Unified Communications does not support the following Jabber client features and deployment options:

- Contact photo retrieval from Active Directory

- iPhone in the desk phone integrated mode

- Mobile Jabber client using AnyConnect client on the mobile devices to access customer's corporate and NWN infrastructure through Cisco ASA based FW.

- Integration of CUCM and Unity Connect with non-Microsoft Directory services

- Windows and MAC workstations desktop sharing

- Electronic Data Interchange (EDI) custom attribute mapping for Jabber for Windows client

- Jabber for Android Tablets

8.2.2. Certificate Management with Cisco Jabber

With Certificate Management, Jabber establishes an encrypted connection via external certificates between validated Jabber Endpoints and the NWN Unified Communications servers. The following Certificates are supported for Certificate Management:

HTTP (Tomcat):

- Cisco Communications Manager IM and Presence - HTTP (Tomcat)

- Cisco Unified Communications Manager

- Cisco Unity Connection

CUPS-XMPP:

- Cisco Communications Manager IM and Presence

Certificate Authority ("CA") can be both Public and Private Certificate issued trusted certificate.

Public CA:

- Customer obtains Certificate Signing Request (CSR) from NWN and obtains Certificates from a third-party company that verifies the server identity and issues a trusted certificate. Supported certificates include: Microsoft, Keon, DigiCert and Verisign.

Private CA:

- Customer Administrator can create and manage a local CA and issue trusted certificates for the supported Microsoft Certificate Authority only.

NWN Responsibilities:

- NWN will evaluate and verify the CSR request and notify Customer of the outcome of the verification.

- NWN will install verified Customer certificates.

- Customer shall cooperate with NWN to test the installed certificate. Billing for NWN Unified Communications Service with Cisco Jabber will begin once the certificates have been installed.

Customer Responsibilities:

- Acquire the certificates from the external Certificate Authority.

- Provide NWN the Certificates to be installed.

- Configure SRV record with "cuplogin" service and "tcp" protocol in the Customer top level domain, on the DNS server pointing to the "A" record of the NWN Instant Messaging and Presence server.

- Configure "A" record for NWN Unified Communications service if required.

- Procure 3G or above Mobile Data Network connections for smartphones and simultaneous voice and data service is required.

- Open Firewalls to allow communication between NWN Service and Customer AD domain.

- Provide and configure corporate Wi-Fi network for mobile devices.

- Establish connectivity between the corporate Wi-Fi network and NWN Unified Communications Service.

- Provide NWN minimum data set required to provision Jabber client.

- Provide a list of additional services or features to enable for the Jabber clients.

- Provide Jabber client software download instructions to End Users.

- Provide Cisco Jabber training and documentation to End Users.

- For Microsoft Active Directory (AD) integration, see section regarding Customer LDAP Integration.

8.2.3. UDS for Contact Search

NWN Unified Communications with Cisco Jabber supports User Data Service (UDS) Search via Cisco Communications Manager for User data populated in the Active Directory of the Cisco Communications Manager. The feature enables a Jabber client User to search for another User via UDS Search.

8.2.4. Persistent Chat Rooms

Persistent Chat Rooms are currently not supported with Jabber. Customers requiring Persistent Messaging can use Webex Teams Spaces.

8.2.5. Contact Photos

Cisco Jabber retrieves and displays contact photos by dynamically building a URL to contact photos with a directory attribute and a URL template.

The Customer will be responsible for the configuration of the Web Server and User Profile configuration on LDAP or Active Directory.

8.2.6. Citrix/VMWare Support for Jabber

NWN Unified Communications is not supported on Citrix XenApp/XenDesktop or VMWare Horizon Virtual Desktops.

8.3. System Integrations

NWN supports integration of NWN Unified Communications with Customer premises PBX or Customer premises based UC Solutions on a case by case basis. Implementation and Deployment Services to support these integrations are not included on the standard services packages in this document and would need to be scoped separately.

8.4. Geographic Availability

NWN Unified Communications services are only available for installation at sites in the United States and Canada, and where FCC required 911 or E911 capability can be provided. The service may be discontinued if necessary local service facilities or required 911 or E911 capability cease to be available.

Webex Teams & Meetings is not available in all countries; accordingly, purchases may be limited or restricted in some markets. If the NWN Team Messaging Services ordered are limited or restricted in the Subscriber's market, NWN will not be able to provision the Team Messaging service. Cisco Webex Teams is currently available in the countries listed here.

9. Appendix E. Security Configuration Requirements

NWN Service is provided as a service and provides customer management space. Infrastructure controls are specifically designed to compartmentalize customer data. Communications between one customer environment to another is not permitted other than through traditional PSTN connections or third-party video bridging

services such as Cisco WebEx CMR.

The system and security requirements for the NWN Services include:

- Physical Security - NWN Services are located in highly secure, reliable, and geographically redundant NWN core data centers.

- Communications Protection - NWN Services does not examine the contents of conversations, which include voice, text, video, and file sharing. To further protect the transmission from unlawful interception, all conversations, chat conversations may be optionally encrypted and sent over secure communication channels using current networking standards.

- Infrastructure - NWN Services infrastructure provides operating, monitoring, and managing the network and its elements. The environment has 3 distinct security zones:

    o Management Network - A separate physical interface for connecting to network management systems

    o Secure Environment - Provide the NWN Services application and customer data storage, are firewall protected from the other networks, including the Internet, by IP Border Elements. Network traffic is load balanced, via redundant hardware, to provide workload distribution, increased performance, and automatic rerouting in the event of a communications or server failure.

    o Customer Network - The majority, if not all, of the network components are in the NWN Cloud and not on the customer premises. Customers access the Cloud via an NWN data service, an NWN VPN, or via an Internet Service Provider (ISP) of their choice.

- Role-based Privileges - Each User ID and Password (for End-Users, Customer Administrators, NWN Customer Care, and NWN Network Management) is associated with a role that defines and restricts which privileges or rights are available to an individual user for accessing to communication channels and to data storage areas.

- Data Protection - NWN Services allows only the owner of any account data to access or manage them (password / role-based access). This includes creating, renaming, deleting and editing associated metadata. Customer data is never examined nor processed during normal procedures.

- Data Storage Security - NWN Services segregates stored data for each individual user.

- Investigative Support - NWN monitors all accesses and changes to its managed environment. Information is logged for auditing and troubleshooting purposes.

9.1. Encryption in Transit

Encryption in transit refers to encryption of voice, IM-chat and voicemail data during transmission using TLS encryption for signaling and 2048 bit SRTP encryption for media. Encryption is optional and is supported on limited UC devices and endpoints as determined by NWN.

Encryption in transit is not supported with the following call types:

- Call to/from the PSTN

- Emergency call including calls to 911

- Inter cluster 3rd party PBX

- 3rd party SIP endpoints

10. Appendix F. PSTN Service Assumptions

10.1. PSTN Deployment Configurations

The NWN Unified Communications service facilitates connections to Customer provided PSTN access for agreed upon deployment configuration options on a per site basis. The available deployment configuration option categories are:

- Central PSTN access (PSTN connections are typically terminated at the NWN Unified Communications data centers via SIP Trunking).

- Local Break out (LBO) PSTN access via a customer premises Voice Gateway with or without Survivable Remote Site Telephony (SRST) serving that location as a dedicated solution.

- Third-party SIP connection terminating at the customer's premises. PSTN services is supported via the Cisco Unified Border Element (CUBE) (also known as Session Border Controller - SBC). NWN Unified Communications is generally only compatible with SIP services that are capable of interoperating with Cisco Unified Communications Manager based deployments.

10.1.1. Customer Responsibilities

Customer is responsible for Third-party vendor SIP Contracts, connectivity and related configuration.

The Customer is responsible for completing the following tasks:

- Configure Customer managed CUBE Enterprise at the Customer's location.

- Procuring the SIP trunk service from the third-party vendor.

- Obtain and maintain appropriate SBC hardware, technology licenses, and SBC licenses.

- Providing connectivity between the CUBE Enterprise and SIP trunk service provider.

- Collect the required data to support inter-working CUBE Enterprise with SIP Trunk service provider.

NWN will provide a comprehensive Solution Architecture Design Document that will convey the overall solution architecture (including: customer locations, WAN transport, and ancillary products/services required for an end-to-end solution) for a project. This Solution Architecture Design Document will also define the scope for the deployment of NWN Unified Communications related on- premises equipment by the NWN Services Delivery team. NWN Deployment Services are included as part of the Infrastructure and Deployment Services Packages. Additional Deployment Services can be contracted and purchased separately. The NWN deployment services are detailed within the Physical Implementation section of the Solution Architecture Design Document.

The Physical Implementation section of the Solution Design document will include, among other details, an initial phase of work to capture the site detail/detailed station review necessary to develop a Dial Plan and map phone type and users to the overall project. The information is necessary for NWN to establish initial Service Delivery order flows for the NWN Unified Communications programming phase. Subsequent phases of work are based on the deployment scenarios and may include phone placement, voice router

installation/configured as well as test and turn up responsibilities. Coordination with equipment procurement is another factor that must be considered in describing the appropriate plan for the particular solution approach for the project.

10.2. Public Telecommunications Numbering Plan

In order to properly configure Direct Inward Dial Telephone Numbers (DID/TN), customers shall provide existing or separately obtained telephone number blocks for configuration to the NWN Unified Communications Service for all locations.

The Customer administrator shall be required to assign NPA NXXs to authorized End Users based on the site where NWN Unified Communications users are located and to reassign an accurate NPA NXX number to NWN Unified Communications users who move from one site to another.

10.3. SIP URI Dialing

NWN Unified Communications supports dialing using directory Uniform Resource Identifier (URI) for call addressing.

- Directory URIs are a string of characters that can be used to identify a directory number. Directory numbers are assigned to devices connected to Cisco Communications Manager that can route calls to that device using the directory URI. Directory URIs appears as an email address and follows the username@host format where the host portion is an IPv4 address or a fully qualified domain name.

- URI dialing is available for SIP and SCCP Endpoints that support directory URIs.

- SIP URI dialing supports:
    - Intra-company calls:
        - Dial using SIP URI between Endpoints registered to same CUCM
        - Dial using SIP URI between Endpoints registered to different Call Agent same company (CUCM or VCS)

10.4. Dial Plan Setup

NWN will develop and present to Customer an Enterprise-level dial plan based on the Cisco HCS Type 4 plan and on information provided to NWN by Customer. The dial plan will indicate the routing of telephone calls based on the digits dialed and may include alternate PSTN routing if main routes are inoperable or busy, depending on the implemented design.

The standard dial plan developed by NWN will use "9" for external trunk access, access to the PSTN.

While some customization is possible it would need to be handled on a case by case basis and would require additional Deployment and Engineering Services, beyond what is included on the NWN Unified Communications standard service offerings.

10.5. PSTN Acceptable Use Policy

NWN reserves the right to charge reasonable overage fees as needed. The following guideline apply to usage of NWN's PSTN services

The Services (including any device, system, network, or account used in connection with the Services, or the NWN Network) may not be used to:

- **Illegal activity.** Violate any applicable law, including U.S. federal, state, or local laws or regulations, or any applicable law or regulation of any foreign jurisdiction, including applicable laws regarding the recording of communications.

- **Infringing activity.** Infringe, misappropriate, or otherwise violate NWN's or anyone's rights (including intellectual property, privacy, personality, publicity, or otherwise; or display or use NWN's marks without consent or in violation of NWN policies.

- **Auto-dialing; trunking; traffic pumping.** Perform auto-dialing or "predictive dialing" in an abusive manner; trunk or forward your NWN phone or fax number to other numbers that handle multiple simultaneous calls or to a private branch exchange (PBX) or a key system; traffic pumping or access stimulation of calls through the Services or the NWN Network.

- **Minors.** Exploit or harm minors (e.g., expose them to inappropriate content; ask for personally identifiable information without parental consent).

- **Interference; transmit viruses.** Interfere, inhibit, compromise, or otherwise harm the Services or the NWN Network (regardless of intent or knowledge); transmit any material that contains viruses, time or logic bombs, Trojan horses, worms, malware, spyware, or any other programs that may be harmful or dangerous.

- **Objectionable activity.** Act in an indecent, offensive, threatening, harassing, defamatory, libelous, fraudulent, malicious, disruptive, tortious, or other objectionable manner; or create a false caller ID identity (i.e., ID spoofing), forge addresses or headers, or otherwise mislead others about a sender's identity or origin.

- **Driving; safety.** Use while driving or otherwise in an unsafe manner.

- **Harvest information; spam; bulk messages.** Harvest or collect information about third parties or End Users without consent; send bulk communications or other content without the recipient's consent.

- **Excessive or unauthorized use.** Use any device, system, network, account, plan, or the Services in an unauthorized manner or in excess of reasonable business use.

- **Circumvent compliance or security.** Take advantage of, bypass, exploit, defeat, disable, or otherwise circumvent limitations of the Services, security mechanisms, or compliance with this AUP or any law.

- **Interception.** Intercept, capture, sniff, monitor, modify, emulate, decrypt, or redirect any communication or data for any purpose.

10.6. N11 and other Calling

Operator Assisted Calling, 311, 511 and other N11 Calling. NWN Unified Communications does not support 0+ or operator assisted calling (including, without limitation, collect calls, third party billing calls, 900, or calling card calls). The Services may not support 211, 311, 411, 511 and/or N11 calling in one or more service areas. Additional charges may apply for these calls.

10.7. No Liability

NWN will have no responsibility or liability for any cost, damages, liabilities, or inconvenience caused by calls made to Customer's telephone number; materials sent to Customer, inaccuracies, errors or omissions with

Listing Information; or any other use of such information. NWN will not be liable to Customer for any use by third parties of Customer's Listing Information obtained through the Directory Listing Service, including without limitation the use of such information after Customer has opted out of the Directory Listing Service.

10.8. Overages

NWN reserves the right to charge for overages per the published PSTN Rate table or if the customer goes above the minutes allocated per contracted allowance as stated in the SOW and/or Contract. This applies to Standard Calling, Toll-Free Calling, & International Calling inbound and outbound minutes. Partial Minutes will be rounded to the next whole minute.

10.9. Emergency 911 Assumptions and Definitions

10.9.1. Emergency Calling Services Limitations

NWN Unified Communications Service utilizes a digital technology called Voice over Internet Protocol (VoIP), which allows voice calls to be made from a device using a broadband connection, including a wired connection, a Wi-Fi connection, or a wireless data plan purchased in connection with a wireless service. This Section provides important information for Customer about emergency calling, including 911/E911 services in the US. In some instances, the customer's emergency calling service may not be available or may be disabled when using a VoIP service or may be limited in comparison with traditional PSTN telephony service including, but not limited to, the following situations:

- 9-1-1 or emergency services is dialed from a location other than the Registered Location last provided or the location to which the user's device is registered;

- The broadband connection (wired, wireless and/or Wi-Fi) has been disrupted or impaired;

- The data service upon which the broadband connection is dependent is terminated or is disrupted or impaired;

- Loss of electrical or battery power;

- Customer or User terminal equipment is not configured correctly;

- Applicable equipment set-up instructions are not properly followed;

- Delays have occurred in processing a newly updated Registered Location;

- Use of non-native telephone number;

- At the time a call to 9-1-1 or emergency services is made, the Customer's WAN/LAN network has insufficient VoIP bandwidth to support any additional calls and/or the capacity of the Customer's PSTN service has been exhausted;

- Customer has not provisioned and connected PSTN service for one or more locations;

- Endpoint has been turned off or has gone into energy saving sleep mode and requires hardware or software initiation and/or warm up period before being operational.

Because of these availability constraints and limitations, Customer and Users should always have available alternate means of accessing 911/E911 or other emergency calling services. Customer should inform all Users of the Service of these limitations (including but not limited to, the distribution and posting of labels as discussed in the "Notification/Warning Labels", below) and of available alternate means of accessing

911/E911, or other emergency calling services.

Failure to update Registered Location information may result in emergency calls being routed to the incorrect PSAP, preventing or delaying emergency response.

10.9.2. Registered Location

When 911 is dialed over an Interconnected VoIP Service, the Registered Location is used for PSAP routing (i.e., it determines which PSAP will receive the 911/E911 call) and forms the basis of the ALI delivered to the PSAP that the PSAP uses to identify the calling party's actual location Bandwidth routes the 911 call to a PSAP based on the Registered Location information provided by Customer or User.

Prior to the initial activation of NWN at any Site, Customer must provide NWN the correct Registered Location information for each User. If NWN is unable to validate the Customer-provided Registered Location, the device used with the Service cannot be used at that location because 911 may not route properly.

Failure to update Registered Location information may result in emergency calls being routed to the incorrect PSAP, preventing or delaying emergency response. Customer or User can update the Registered Location in the EMP Control portal.

There may be delay between the time that a new Registered Location is provided by Customer or User and the time that the new Registered Location populates into the appropriate databases. The duration of such delay will vary with the service, and can range from the typical minutes, to hours or days.

When a User without a dialable 10-digit number (extension only User) originates a 911 call, NWN through Bandwidth directly routes the call to the appropriate local PSAP associated with the User's provisioned Location, however, the caller ID information presented to the PSAP is the Customer-designated location caller ID number for the provisioned location of the User. The User's extension number will NOT be passed to the PSAP. Customer must advise Users of the importance of providing their name and exact location to the emergency operator. It is also important that the location caller ID for the Customer location be a telephone number that is answered by someone who can immediately assist the PSAP in identifying the caller needing emergency services. Therefore, the location caller ID can never be: (1) an Auto Attendant telephone number; or, (2) the lead number of a Contact Center queue; or, (3) an "unmanned" station; or, (4) a telephone number that is used to access voicemail.

Customer or Customer's User, as applicable, is responsible for updating the Registered Location. Customer is solely and continuously responsible for ensuring the accuracy of the Registered Location information to ensure emergency calls are routed to the appropriate PSAP. Customer is fully liable, and shall indemnify NWN, for all losses, claims and damages that may result from any inaccurate Registered Location information.

10.9.3. Configuration and Service Outage

In the event of a power outage, Customer or User may be required to reset or reconfigure Customer's CPE and/or NWN CPE used for NWN Services prior to being able to use the local calling functions, including for 911 dialing purposes. 911/E911 service will fail to operate properly when used at a location that is not a Registered Location.

Customer use of Uninterruptable Power Supplies (UPSs) for CPE supporting NWN services may help to prevent service disruptions during short power failures.

10.9.4. Additional 911/E911 Assumptions

In addition to the limitations above, calls made by Customers or Customer end-users on NWN Unified Communications Voice to 9-1-1 who are not subscribing to NWN Advanced E911 service, will be routed through the site's PSTN service provided by the Customer. In these cases:

- The NWN Unified Communications Service 911/E911 calling capability is dependent on the 911/E911 capability of the Customer's PSTN trunking and calling plan service.

- When a 911 or E911 call is made using NWN Unified Communications, NWN will use the standard protocols and processes to route the call over the PSTN service provided by the customer. These standards may use the calling party's telephone number to look up the end user's physical location or may use the mailing address associated with the PSTN service circuit termination point. NWN Unified Communications Voice will facilitate the appropriate routing of 9-1-1 calls by including the customer specified Caller ID number information on calls to 9-1-1 as well as route these calls to the customer specified PSTN service connection for each customer location.

- If Customer wishes to have the individual User's address and call back information available to the PSAP, the customer must either subscribe to NWN Unified Communications Advanced E911 service or make independent arrangements with the PSAP and the PSTN Service provider used for calling 9-1-1 services. Depending on the service the Customer procures, the Customer may also need to keep the location information within the PSAP database updated with each End User's accurate location information.

10.9.5. Customer Non-Standard Call Routing for Emergency Calls and Corresponding Limitations

All NWN Unified Communications North American dial plans will connect End Users who dial 9-1-1 or 9 (PSTN Breakout)-9-1-1 to 911 via the customer's PSTN service provider. In most cases, a secondary dial tone will be heard after dialing the initial 9. After dialing the initial 9, End Users can complete an emergency call by dialing either 1-1 or 9-1-1.

If Customer requests that NWN implement a non-standard emergency call routing plan at a Customer Site, Customer shall provide NWN with a written request detailing such non-standard call routing plan for each potential Site. NWN shall review the non-standard call routing request and implement such plan as directed by Customer at a given Site in NWN's sole discretion.

Customer understands that non-standard emergency call routing plan introduces certain risks, including the potential for delay in contacting emergency responders. Customer assumes all such risk. Customer further understands and agrees that Customer is responsible for ensuring all non-standard call routing plans comply with applicable law and regulation.

Customer understands that NWN's implementation of a non-standard call routing plan at a given site is provided on an "AS IS" basis with no warranties, express or implied, of any kind.

Customer understands and agrees that Customer is responsible to ensure that all calls to emergency dialing service numbers are routed over appropriate facilities to ensure completion provided by that local service provider, or other provider. Customer agrees to indemnify and defend NWN and its affiliates from and against any and all third-party claims and related loss, liability, damage and expense, arising from or related to Customer request to use, and use of an alternate arrangement or non-standard call routing plan.

NWN reserves the right to discontinue supporting independent arrangements or non-standard call routing plans at any time if NWN reasonably believes the independent arrangement or non- standard call routing plan is inconsistent with applicable law or regulation.

In no event shall NWN or its affiliates be liable to Customer, Customer affiliates or third parties claiming through Customer for monetary damages of any kind, including direct, indirect, incidental, special, reliance or consequential damages, expenses arising from Customer's deployment or use of the Call Routing Plan, or lost profits or revenues, arising out of any breach or alleged breach of this Addendum.

10.9.6. Advanced E911 Service Definitions

Cisco Emergency Responder (CER) is an application that automates and simplifies Advanced E911 management. It provides secure and reliable 9-1-1 support for the NWN Service including automatic IP phone tracking, onsite security desk routing and notification, reporting and management capabilities.

Endpoint is a hardware device or software instance that can receive and/or make voice calls.

Emergency Response Location (ERL) is the specific customer location to which an Endpoint may be mapped, which may include more granular location information defined in addition to the municipal address, like building name, wing, floor number and/or suite number.

Public Safety Answering Point (PSAP) is the public 9-1-1 operator center that has been designated to receive 9-1-1 calls for a geographical area and dispatch emergency service personnel.

10.9.7. Advanced E911 Option for NWN Unified Communications Service

The NWN Advanced E911 service is an optional NWN Unified Communications feature for U.S. based sites subject to the terms and conditions set forth herein. The Advanced E911 Solution enables a NWN Customer to access an Enhanced 9-1-1 ("E911") database, to load, change, or update ERL information for NWN Endpoints and map it to Endpoint specific criteria based upon Layer 3 (IP Addresses) for device tracking. The NWN customer may also configure via the web interface security desk notification, security desk participation in 911 calls, as well as other Advanced E911 centric features.

When a Customer adds/removes/changes Endpoints covered by an existing subscription in a location where it has provisioned Advanced E911, the CER automatically discovers the location of the subscribing Endpoint (e.g., IP phones, soft phones, wireless phones, etc.) provided that the Customer has existing ERL information and mapping criteria for that location. CER discovered location information will determine the routing of the 9-1-1 call to the most appropriate PSAP.

A minimum of two additional DIDs are required per ERL resulting in additional charges per ERL.

Customer shall be responsible for identifying Endpoint information as follows:

- Customer will designate an authorized representative responsible for all communications between NWN and Customer with regard to implementation of the Service ("Customer Project Manager"). Customer Project Manager shall manage and control installation of the Customer-provided hardware and software, the gathering and input of appropriate data, and coordination of all database upload and testing activities. Customer Project Manager shall have responsibility for the implementation tasks and schedule and shall have the authority to make decisions and commitments for the Customer. Customer Project Manager shall be responsible for timely transfer of information to and from NWN, and shall ensure the accuracy and completeness of all data in the database. Customer shall mutually agree on an implementation Schedule with NWN.

- In a format designated by NWN, Customer will propagate the network map template required for CER provisioning holding the association between network elements and ERLs for all Customer subscribing locations. Network element supported by NWN is Layer 3 subnets.

- If Customer expands or add locations (e.g., add new floors, new buildings), Customer is responsible for providing the ERL information for the new location(s), and establishing the Endpoint-specific criteria that will be used for device tracking (Layer 3 Subnets). Additional subscriptions may be required.

- In the event that either Customer or NWN becomes aware of any security vulnerability that arises from the use or configuration any NWN Advanced E911 Solution component, the parties agree that they will provide all reasonable cooperation to promptly address such vulnerabilities.

- Customer shall notify NWN promptly of any circumstances of which Customer has knowledge relating to any unauthorized use of the Service by any person or entity. Customer shall take, at Customer's expense, any legal action necessary to prevent or stop the unauthorized access or use of the Service by any third-party.

NWN shall manage the CER to the manufacture's specifications to function appropriately and facilitate Customer access to the web interface provisioning and reporting functions.

11.Appendix G. General Terms & Conditions

11.1. Cisco Universal Cloud Agreement

Cisco Universal Cloud Agreement Link

11.2. Cisco Collaboration Flex Plan

Cisco Collaboration Flex Plan Offer Description Link

11.3. Cisco Knowledge Worker Definition & Form

For Collaboration Enterprise Agreement or Active User buying models, a Knowledge Worker (KW) is an end-customer employee or contractor who utilizes a computing device. This definition can be used across industries, and is independent of the products being purchased.

The price of the Collaboration Enterprise Agreement Suites and Active User offers is directly correlated to the number of Knowledge Workers within an organization. Consequently, correctly identifying and counting knowledge workers is a critical part of the sales process.

The best practice is to take a top-down approach for counting knowledge workers, using the following steps:

1. Determine the bounds of the organization that will be covered by the agreement.
2. Assess the general composition of the customer's workforce (employees + contractors) within the defined boundaries. If it is largely knowledge or information-based (e.g. software company), the final Knowledge Worker count is likely very close to the customer's total workforce count. If the workforce is more manual or materials-based (e.g., manufacturing, retail), the Knowledge Worker count may be a fraction of the total workforce count.

3. Determine if the customer has an established Knowledge Worker count based on other software enterprise agreements. If so, assess the viability/applicability of this count compared to the above definition.

4. If an existing Knowledge Work count is not available or applicable, determine if there is an appropriate proxy (e.g. #personal computers, # enterprise directory service users) that can be measured.

5. In absence of any other information, a high-level human resource employee profile can be used to approximate the number of Knowledge Workers

11.4. True Forward for Enterprise Agreements

True Forward

A "True Forward" is an adjustment process that reconciles fees that you owe when your quantity of provisioned Knowledge Workers exceeds your Growth Allowance. If a True Forward is required, Cisco will generate a bill as part of the annual True Forward event in order to align your payment obligation to your use. Under the Program Terms, the True Forward is assessed in the billing year after you exceed the Growth Allowance. If you are assessed a True Forward one year and you no longer exceed the Growth Allowance, you will not be assessed a True Forward the following year. You may not decrease the Knowledge Workers in your EUIF at any point during your subscription. Please see your purchase agreement for additional details about the True Forward process, including billing. Upon reasonable request, you may need to verify the number of software licenses that you have installed, accessed, deployed, or activated. Cisco or your Partner will handle the True Forward calculation and any additional billing required your responsibilities related to True Forward overages are tied directly to your payment obligations, and accordingly any lapse in carrying out those responsibilities can result in an interruption of services.

If you modify your order by choosing a different buying model within Cisco Collaboration Flex Plan, you may be required to pay any True Forward fees incurred in connection with your current buying model before you are able to switch to a new buying model.

This applies to Enterprise Agreement Calling, Meetings, & Active User Meetings.

11.5. Unified Communications User Features

CUCM 11.5 Feature List
https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/admin/11_5_1/featureConfig/CUCM_BK_C7DC 69D3_00_cucm-feature-configuration-guide_115/CUCM_BK_C7DC69D3_00_cucm-feature-configuration-guide_115_chapter_00.html

Feature	Common Area	Named User	EA User	EA User Calling+Meeting
Number of Devices	1	10	10	10
Attendant Console Standard				

Windows based application residing only on Customer's desktop. Note: Requires purchase of Named User Subscription		Optional Add-on	Optional Add-on	Optional Add-on
Attendant Console Advanced				
Requires one or more servers to be built, maintained and periodically upgraded within the NWN Unified Communications core data center(s). Note: Requires purchase of Named User Subscription		Optional Add-on	Optional Add-on	Optional Add-on
Auto Attendant				
Call Management: Call handlers, directory handlers, interview handlers, call routing, schedules and holidays. Note: Each Auto Attendant Subscription allows for up to five primary options to be created with each primary option having up to four sub options. Additional options beyond the 5X4 options or custom outbound dialer's requirements are at an additional charge to the Customer.		Optional Add-on	Optional Add-on	Optional Add-on
Cisco Webex Teams				
Secure, all-in-one team collaboration from Cisco Webex. Cisco Webex Teams is an app for continuous teamwork. Move work forward in secure work spaces where everyone can contribute anytime with messaging, file sharing, white boarding, video meetings, calling, and more.		✓	✓	✓
Cisco Jabber				
Soft Client		✓	✓	✓
Call Features				
Enterprise Telephony	✓	✓	✓	✓
Barge: single button		✓*	✓*	✓*
Busy Lamp Field speed dials		✓*	✓*	✓*

Call Forward: All, Busy, No Answer, to Voicemail, and Unregistered. Note: Forward to Voicemail is only applicable when voicemail is also purchased, otherwise, these call forwarding options are available to another internal or external number.	✓	✓	✓	✓
Call Hold/Resume: Includes Music on Hold or beeps on hold	✓	✓	✓	✓
Call Park	✓	✓	✓	✓
Call Pickup and Group Call Pickup	✓	✓	✓	✓
Call Transfer Direct, Consultative, Blind, Complete transfer on hang up	✓	✓	✓	✓
Call Waiting	✓	✓	✓	✓
Client Matter Codes (CMC)	✓	✓	✓	✓
Forced Authentication Codes	✓	✓	✓	✓
Join across lines: allows Users to join callers from different lines or already established calls.		✓	✓	✓
Multi-CODEC (Coder-DECoder) support; high bandwidth CODECs (G.711/G.722) and low bandwidth CODEC (G.729).	✓	✓	✓	✓
Abbreviated Dialing	✓	✓	✓	✓
Do not disturb	✓	✓	✓	✓
Do not Ring	✓	✓	✓	✓
Call Reject	✓	✓	✓	✓
Redirect to Voicemail		✓	✓	✓
On-Hook dialing.	✓	✓	✓	✓
Off-Hook Dialing	✓	✓	✓	✓
Direct Outward Dial (DOD).	✓	✓	✓	✓
Calling Line Identification (ID), when supplied by Public Switched Telephone Network (PSTN).	✓	✓	✓	✓
Dialed Number ID Service (DNIS): receipt/passing of dialed number.	✓	✓	✓	✓
Direct Inward Dial (DID)/Direct Dialing in (DDI).	✓	✓	✓	✓

Hunt Groups: Longest Idle Hunting, Sequential Hunting and Broadcast Hunting.	✓	✓	✓	✓
Toll Restriction	✓	✓	✓	✓
Hierarchical dial plans (National, Local, Toll-Free and International) based on site codes and station numbers or a customer-wide flat dial plan based station numbers.	✓	✓	✓	✓
Audio Conferencing Features				
Ad-hoc Conferencing (up to 4 or 16 participants depending on conferencing hardware used)	✓	✓	✓	✓
Multi-Party Meet-Me Conferencing Originator: Dependent on phone	✓	✓	✓	✓
Multi-Party Meet-Me Conferencing Participate: Dependent on phone	✓	✓	✓	✓
Conference chaining	✓	✓	✓	✓
Conference Now: Allows for the addition of a PIN to the Meet-Me feature, making it more secure		✓	✓	✓
Directory Features				
Personal Directory		✓	✓	✓
LDAP Support		✓	✓	✓
Mobile Device Import (QR Code)		✓	✓	✓
Phone Features				
Incoming Call Routing	✓	✓	✓	✓
Outgoing Call Routing (Note: requires separate PSTN service)	✓	✓	✓	✓
Abbreviated dialing: Program from 1-99 numbers that when pushed will automatically dial a pre- programmed number. Note: Supported on IP Phones Only	✓	✓	✓	✓
Audible and visual indication of ringing line: Indicator light on IP phone/handset, distinctive ring per line, distinctive ring (external vs. internal), user configurable ring settings	✓*	✓	✓	✓

Multiple line appearances: Number based on IP phone		✓*	✓*	✓*
Soft key support		✓*	✓*	✓*
Extension Mobility		✓	✓	✓
Single number reach: Call processing to customer defined devices		✓	✓	✓
Privacy: will disable the Barging feature on phone line		✓	✓	✓
Desk and mobile pick up: Available with purchase of client		✓	✓	✓
Answer/Release: Soft key to answer/end call on IP phone for most phones	✓	✓	✓	✓
"+" (E.164) dialing when supported by the phone.	✓*	✓*	✓*	✓*
Call status per line: On IP phone showing connected state, number, and timer of call duration.				
Hands-free speakerphone support.				
IM & Presence Features (IM)				
Presence Indicator		✓	✓	✓
Instant Messaging / Chat		✓	✓	✓
Softphone		✓	✓	✓
Directory Integration		✓	✓	✓
Contacts List		✓	✓	✓
Calendar Integration		✓	✓	✓
Click-to-dial (Outlook/O365)		✓	✓	✓
Desk-phone Control (on-net)		✓	✓	✓
Mobile and Remote Access (MRA)		✓	✓	✓
Point-to-point Video		✓	✓	✓
Visual Voicemail		✓	✓	✓
Video Telephony				
Point-to-point video using 88xx phones		✓	✓	✓

Point-to-point video using Jabber		✓	✓	✓
Point-to-point video using DX Series phones		✓	✓	✓
Room based and other Video Endpoints used for participating in video conferences		✓	✓	✓
Voicemail				
Call restriction tables to minimize the potential for toll fraud		✓	✓	✓
Record up to five personal greetings: Alternative, busy, internal, off hours, or standard		✓	✓	✓
Private distribution list creation and ability to send messages to the list		✓	✓	✓
Can send notifications for messages from a particular user or phone number		✓	✓	✓
Can specify after greeting action: callers can leave message, sign in, hang up, or be sent to call handlers, directory handlers, interview handlers, or other users		✓	✓	✓
Live reply (internal and external callers): Immediately reply to messages from other users		✓	✓	✓
Address message by extension or by name		✓	✓	✓
Address message to multiple recipients		✓	✓	✓
Mark message as regular, urgent, or private		✓	✓	✓
Play messages: Reverse, pause, or fast forward message, control volume, speed		✓	✓	✓
Process messages: Repeat, reply, record, forward, delete, save, mark as new, hear day or time stamp, skip to next message		✓	✓	✓
Record message for future delivery		✓	✓	✓
Remove introductions to forward messages		✓	✓	✓

Request return receipt for recorded messages		✓	✓	✓
Search for messages by name, caller ID, phone number, extension		✓	✓	✓
Call Routing, time of day and Holiday schedulers		✓	✓	✓
Integrated Email and Voicemail (Unified Messaging) for Microsoft Exchange or Office365		✓	✓	✓
Integrated Email and Voicemail (Unified Messaging) for Google Mail (G-Suite)		Optional Add-on	Optional Add-on	Optional Add-on
Visual Voicemail: Use the screen on user's phone to work with messages, rather than respond to audio prompts. User can view and play messages. Note: Network traffic must be allowed on certain ports between the phone VLAN and the voicemail server. Uses TCP Port: 80, and Protocol 443		✓*	✓*	✓*

*Dependent upon Endpoint Type.

For the NWN Unified Communications subscriptions that include voicemail, NWN provides two voice messaging options: Basic and Advanced (Unified Messaging) Voicemail. The Unified Messaging option provides voice message access via both the standard voice-based telephone User interface and through End User's email. Basic Voicemail is included with the Foundation Subscription while Unified Messaging is included with the Standard and Higher Subscriptions. The Unified Messaging and Voicemail features associated with each option are described in the following table.

View email, voicemail, fax messages together from an IMAP client: Microsoft Outlook, IBM Lotus Notes, Entourage for MAC		✓
ViewMail for Outlook plug-in to allow users to compose, reply to, forward, play, rewind, or pause messages from mail client		✓
Play & Process voicemail messages by voice	✓	✓
Edit and manage personal greetings by voice	✓	✓
Speak voicemail passwords, time, and dates	✓	✓
Record up to five personal greetings	✓	✓
Specify after-greeting action	✓	✓

Send notifications for messages from a specific subscriber	✓	✓
Create private distribution list and send messages to this list	✓	✓
Mark messages as regular, urgent, or private	✓	✓
Process messages and play messages	✓	✓
Address message to multiple recipients	✓	✓
Search for messages by name, caller ID, phone number, extension	✓	✓
Create messages (no playback when sent outside of company)	✓	✓
Request return receipts for recorded messages	✓	✓
Live recording of conversation with recording sent to mailbox	✓	✓
Live reply (Internal and external callers) - immediately reply to messages	✓	✓
Address messages by extension or by name	✓	✓
Per User Voice message aging policies and voice messaging storage allocation (50 Meg per user)	✓	✓

12. Appendix H. ATS and Security Service Descriptions

12.1. ATS Service Description

ATS Service Description Link

12.2. Security Service Description

Security Service Description Link