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Preparing your Organization for Teams Phone Adoption
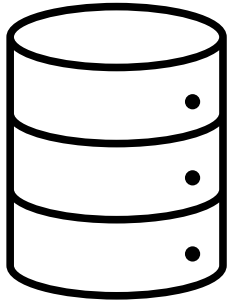
September 28, 2022

Agenda

- Planning - Lessons Learned - Adoption
- Analog
- Licensing
- Network Best Practices
- E911
- Devices
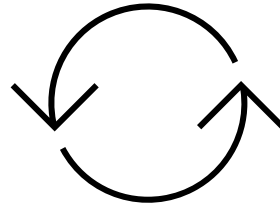- Contact Center
- Success Stories
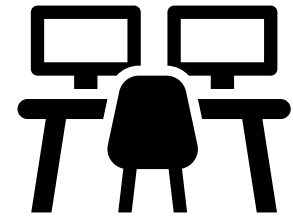
Planning – OCM - Training

PBX Data Mapping

Large Amounts of Data
- Users, devices, dialing features, preferences
- Users spread across multiple sites and PBX's

Feature Parity
- IP-PBX Features may function differently
- Some features don't exist in Teams

Manual Labor
- Subject to human errors leads to "surprises" during migrations
- Time consuming leads to long implementations
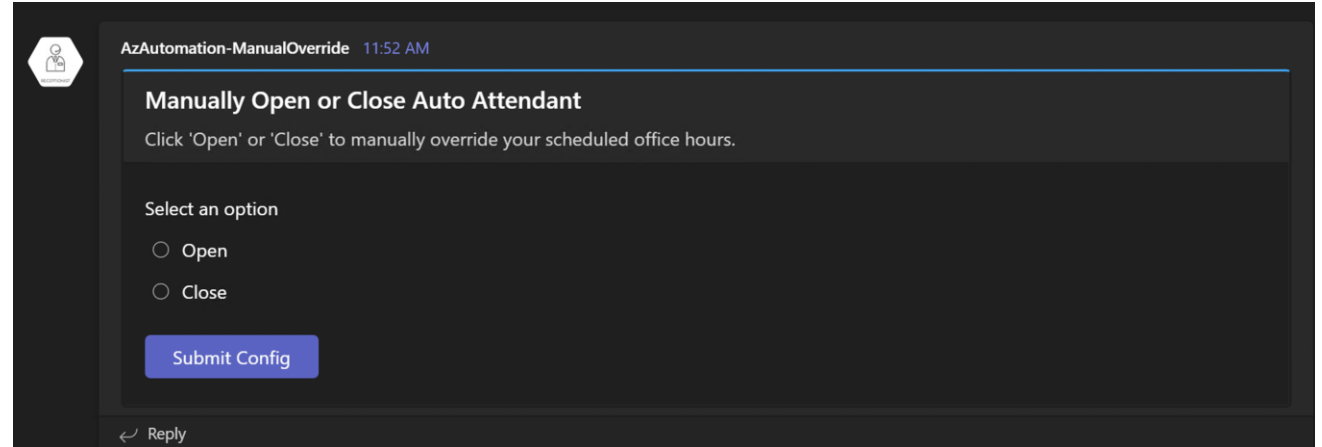
Microsoft Teams Voice Features

Microsoft Teams		AVAYA	CISCO
Call Forwarding	Auto Attendants	VDN/Vectors	Auto Attendant
Dynamic E911	Call Queues	Hunt Groups	Hunt Groups
Call Transfer	Simultaneous Ring	EC500	Single Number Reach
Reject call to VM	Device Switching	Extension Mobility	Extension Mobility
Music on Hold (1:1 PSTN)	Delegates	Bridged Appearance	Manager Assistant
Presence Based Routing	Group Call Pickup	Call Pickup Group	Call Pickup Group
Closed Captioning	Call Answering Rules	Coverage Path	RNA
Call Forwarding	Walkie-Talkie	Phone Paging	Phone Paging
Call Park	Azure Voicemail**	IX Messaging	Unity

*__**Feature parity not present__*

Planning – Market Direction

- Documentation is critical – Have a solid design/plan
  - Should be completed prior not after
- SBC's must be Certified to work with Teams
  - https://learn.microsoft.com/en-us/microsoftteams/direct-routing-border-controllers
  - SBC's next to or behind the firewall
- Government Regulations for Global Customers
  - India China Challenges
- Identifying Business Continuity Plans
  - SBA
  - Internet
  - WAN
- Don't leave any phones/use cases behind
  - Analog
  - Native SIP endpoints
- Persona Migrations
  - Boss/Admin
- Direct Routing as a Service / OC

Lessons Learned / Gotchas

- Auto Attendant Limitations
  - "Night Service"
  - DTMF Timeout
- Rotating On Call Persona
- Train your Telecom admins on Microsoft ecosystem
- Customization of Teams Devices
  - Branding
  - Ring Down
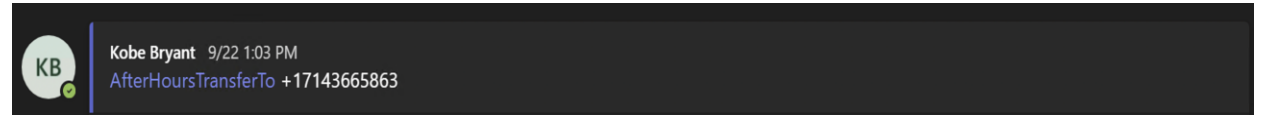
Rollout Phases

- Proof of Concept – STRONGLY RECOMMENDED
  - Use a scenario with common variables to the rest of the organization
    - Give pilot users appropriate training
    - Try out quick wins
    - Find solutions for pains
    - Get feedback and adjust
    - Collect common questions
- Determine how various interop modes work in your organization
- Review what's happening against your expected results
- Pull out those test plans and re-run them

Microsoft Teams Sample Project Framework

POC

Service Integration / POC Kickoff – 1 Day

- DRaaS Integration (2 Hours)
- Procure 20 New Temporary DID Numbers
- Enable 20 POC Users
- Configure Single Auto Attendant
- Configure Single Call Queue
- Enable Static E911

Customer Responsibilities
- Provide Service Account for DRaaS Integration
- Provide names of 20 Pilot Users
- Provide Information on Internet traffic flows

Production Planning

Planning – 2 Weeks

- Review Network Topology
- Review Dynamic E911 Requirements
- Co-Develop Project Plan
- Review AA/CQ Requirements
- Review Analog Requirements
- Review Disaster Plan Requirements
- Develop Change Management Strategy
- Identify Production Pilot Groups
- Device Strategy

Customer Responsibilities
- Provide Project Manager
- Telecom lead to participate in Telephony Business Requirements discovery

Production POC

Production Pilot Kick Off – 30 Days

- Enable Production Pilot Users
- Provide Feedback Loop for service enhancements/issues
- Review feedback loop comments
- Adjust services
- Provide Training Services

Customer Responsibilities
- Provide Project Manager
- Provide feedback loop information to NWN Carousel

Production Migration

Production Rollout – 60-120 Days

- Enable Production users based on co-developed Project / Migration schedule with CA DMV

Here's how to roll out Teams Phone in your organization

1 Onboard early adopters and champions

- Identify key champions in different departments/areas of your organization.
- Provide early training and demos so they can act as a resource within their departments.

2 Create communication plans

- Send out your customized email to let users know that Teams Phone is ready for people to use.
- Pin up your posters to generate more awareness and excitement.
- Distribute the Get started guides; these include a general user guide and custom guides by role (executives, executive admins, helpdesk, road warriors, and inside sales.
- Set up communities: Teams Groups/Office 365, Yammer.

3 Update training materials

- Give your service desk the Helpdesk Guide to support your deployment with detailed instructions on many Teams Phone tasks, troubleshooting guides, and frequently asked questions.
- Consider creating a Teams group for training, where you can collect all training resources into one location.

4 Provide in-person/remote training options

- Get early adopters and champions to host small training groups within their departments/areas.
- Set up larger remote training options with Teams Phone demos.
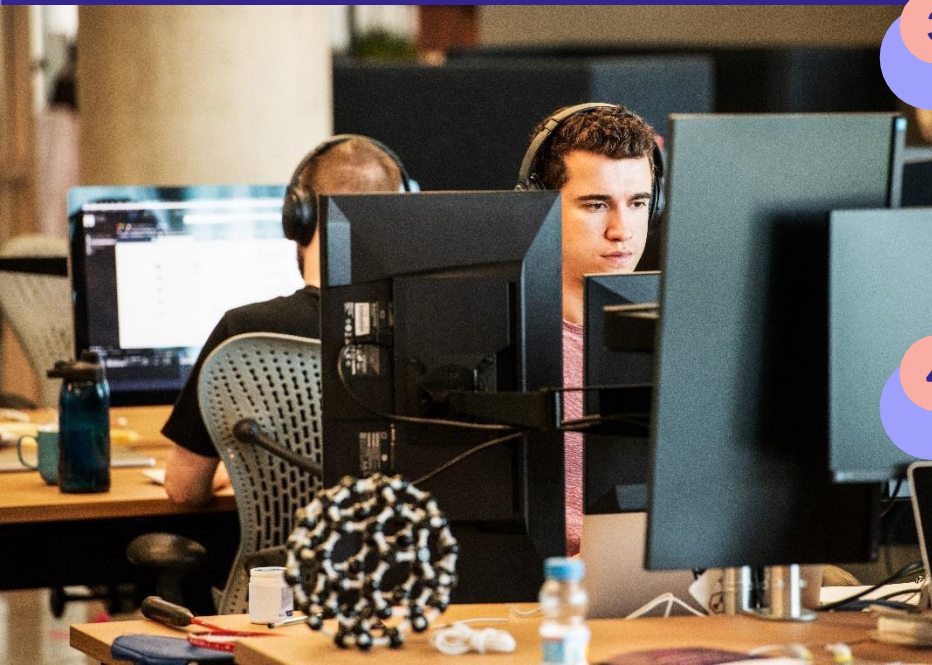
Take advantage of the Teams Phone Adoption Kit

The Teams Phone Adoption Kit includes resources to help you roll out Teams Phone to your organization.

What you'll find inside:

› Adoption Change Management Workbook template

› Poster

› Email template

› "Get Started" guides

› Helpdesk Guide

https://aka.ms/TeamsPhoneAdoptionKit

Analog

Analog stations

Analog devices are still a crucial component of many organizations telephone solution. Microsoft Teams phone can utilize these devices through integration with certified partners.

1. Analog stations are brought into the Teams phone space via Direct Routing/SBC configurations.

2. Certified partners use analog gateways to connect to SBC's to allow for call routing.

3. Dial plans are then created to allow extension and number dialing to and from those devices.

Lift Phones, Security Phones, Rugged Phones, Fax Machines, Modems, Fire Panels

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Analog device interoperability

Direct Routing with SBC allows for connectivity to on premises analog devices. This in combination with dial plans allows us to extension dial analog stations from the Teams client.
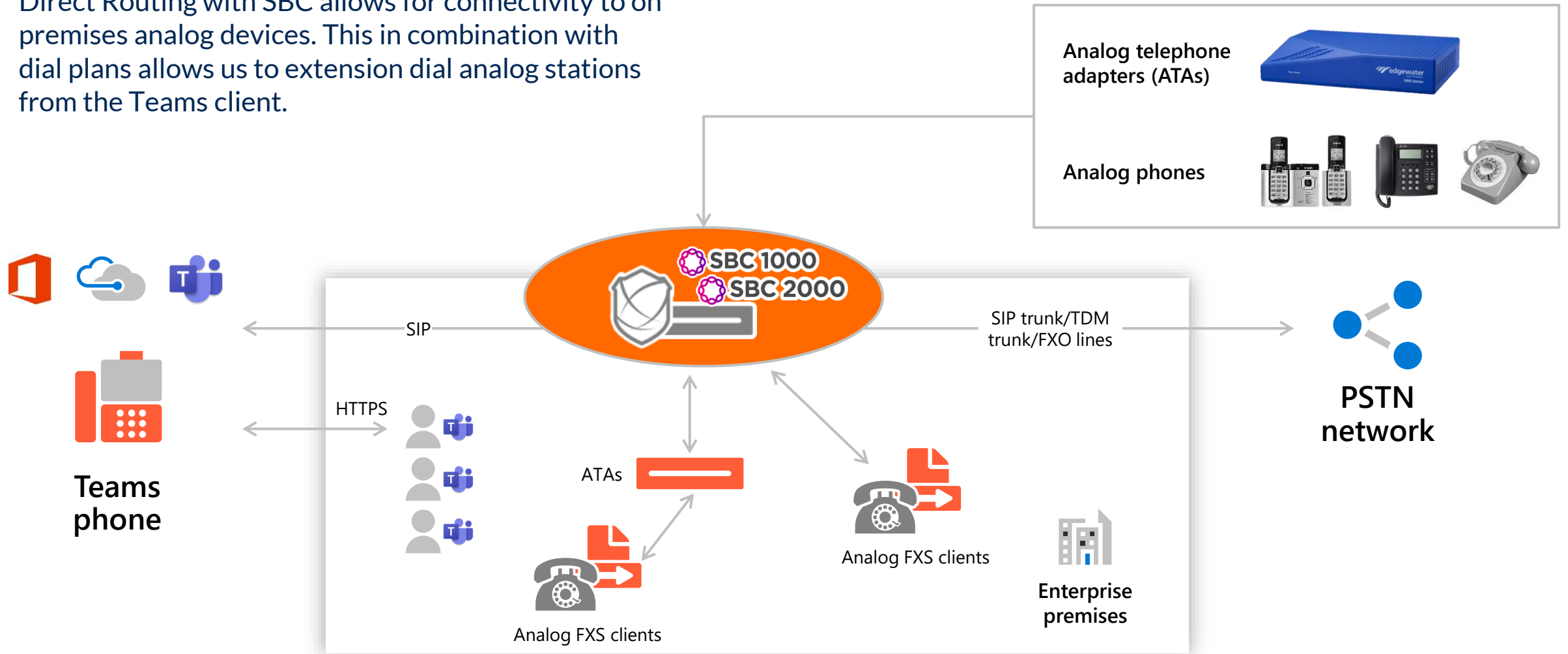
Centrex/POTS

- Carriers can retire copper facilities and replace them with fiber by providing 180 days notice to the FCC
- Verizon AT&T, CenturyLink/Lumen and Frontier have all started retiring copper plant
- Month-to-month rates have increased by over 500% in the past 5 years in some territories
- AT&T has raised rates twice a year for the past 6 years in its 21 states
- The other major carriers (Verizon, Frontier, Qwest and CenturyLink) have raised rates annually for the past several years
- Copper line repairs are not prioritized by carriers
- SLAs have been eliminated

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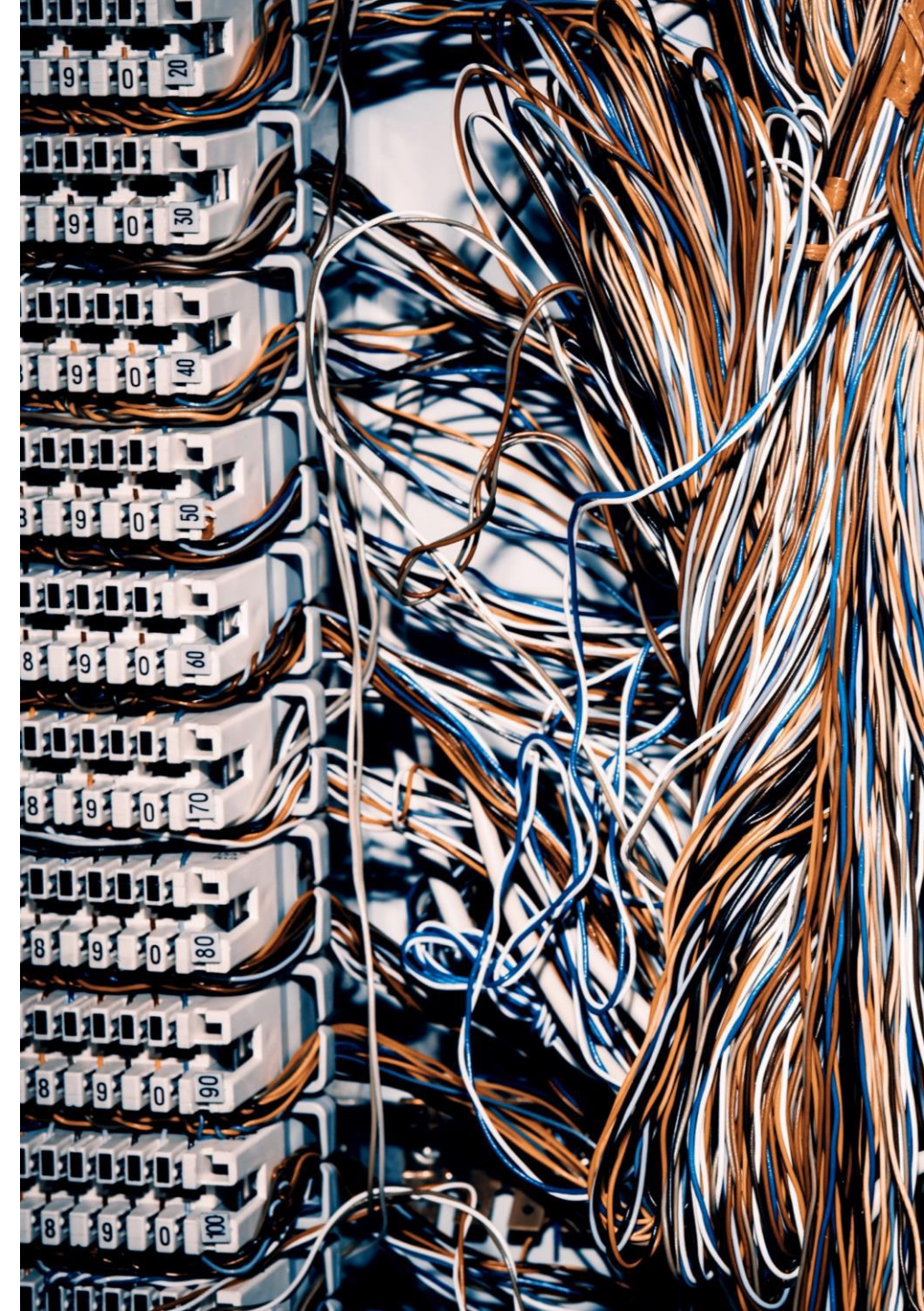
"Pots in a Box"

Staging & Kitting
- Fully assembled
- Preconfigured and tested
- Fire protective coating on the board

Installation Includes
- Site survey to validate and confirm inventory and telephone numbers
- Tag and locate
- Installation of the board
- Mounting the 4G antenna for optimal 4G coverage
- Testing connectivity to internet
- Testing failover to 4G
- Testing failover between the SIM cards
- Cross connect into existing 66 Block
- Testing and confirm all voice and safety lines are working correctly
- Porting numbers if needed

Great use case for emergency lines and elevator lines
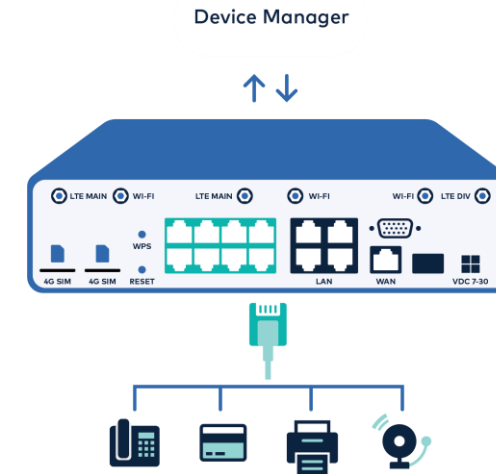
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Licensing

Licensing

Personal
Any Teams license

Example licenses:
A3/A5/E1/E3/E5/G1/G3

Any license outside of X5
Requires at minimum "Phone System" Add On

Common area
Common Area Phone license

Microsoft Teams
Phone System
Skype for Business Online
Microsoft Intune

Meeting Room
Meeting Room Pro

Microsoft Teams
Phone System
Skype for Business Online
Audio conferencing
Microsoft Intune

Optional add-ons
Calling Plan
Direct Routing
Operator Connect
Phone System

Optional add-ons
Calling Plan
Direct Routing
Operator Connect

Optional add-ons
Calling Plan
Direct Routing
Operator Connect

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Network Best Practices

Network

- Ensure proper firewall ports are open
- Local internet breakout highly recommended
- Local internet DNS
- Split Tunneling for VPN users
- Network Assessment
- Microsoft has engineered Teams in a way that local internet breakout from the client is strongly recommended. This is to ensure each user is using the most optimal (usually closest) route to Teams.
- The reason for this recommendation is that once connected to a local Microsoft network edge (front door), that traffic more quickly and efficiently to the destination than routing across the internet

Network Best Practice #1

Allow all Teams traffic through your network

- This is not optional
- Microsoft provides an up to date list of all Teams traffic so there is no excuse
  - https://learn.microsoft.com/en-us/microsoft-365/enterprise/urls-and-ip-address-ranges?view=o365-worldwide
- Not only does each URL/IP address need to be allowed, it needs be handled appropriately, this is based on category

Microsoft Use Required, Optimize, Allow, or Default

ID	Category	ER	Addresses	Ports
11	Optimize Required	Yes	13.107.64.0/18, 52.112.0.0/14, 52.120.0.0/14, 2603:1063::/38	UDP: 3478, 3479, 3480, 3481

IMPORTANT: This list will change, be prepared to keep your network up to date. There is a web service/API to help automate https://learn.microsoft.com/en-us/microsoft-365/enterprise/microsoft-365-ip-web-service?view=o365-worldwide

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Network Best Practice #2

- Bypass Proxies!
- Proxies do have their uses in corporate environment, but for Teams, it can cause issues. Microsoft recommends not using Proxies with Teams, but if you do have to, please follow their guidelines
  - https://learn.microsoft.com/en-us/microsoftteams/proxy-servers-for-skype-for-business-online

Not using a proxy server is recommended

When it comes to Teams or Skype for Business traffic over proxies, Microsoft recommends bypassing proxies. Proxies don't make Teams or Skype for Business more secure because the traffic is already encrypted.

And having a proxy can cause issues. Performance-related problems can be introduced to the environment through latency and packet loss. Issues such as these will result in a negative experience in such Teams or Skype for Business scenarios as audio and video, where real-time streams are essential.

Network Best Practice #3

- Always have the client breakout to internet locally

- Microsoft recommends that the Teams client connects to the closest Microsoft edge

- There are several reasons why this may not be the case
  - Centralized internet egress – Where a corporate network centralizes the internet egress for all locations (also known as backhauling traffic). Usually implemented for cost savings, easier management, reporting or security

- Remote Worker VPN
  - From a security standpoint it makes sense to route all traffic through the VPN, including internet, via a managed corporate network
    - However, for Teams this is not the best use case
    - Use Split-Tunneling and allow Teams traffic to break out locally
      - Possible issues with no Split-Tunnelling
        - Additional encryption overhead
        - Unoptimized data flow into Office 365 network
        - Potential Dynamic E911 issues

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E911

E911

- Why?
  - Legal Compliance
  - Lawsuits
  - Because lives matter
- USA
  - Federal and varying state laws
  - Some states have no requirements others need to located within 40K square feet, others smaller
- Kari's Law
  - Went into effect February 16, 2020
  - Must not require a prefix or digit (ex. 9) be dialed before calling 911
  - Designated personal (typically a local employee) must be notified that a 911 call has been placed. The notification can be a call, email, chat, text (SMS) or pop-up message
- Ray Baums Act
  - Wired or fixed telephony devices will require January 6, 2021
  - Wireless or non-fixed devise will require this January 6, 2022
  - In general, the system must provide a dispatchable location of 911 callers so first responders can be dispatched directly to the known location. This includes the street address, but also more granular information like office suite #, floor, and room number. Square football not dfined at this time

E911 continued

- Review whats needed to support Dynamic E911/PIDF-LO
- Addresses need to be validated
  - https://tools.usps.com/zip-code-lookup.htm?byaddress
- Bring your networking team to planning sessions
  - Are you spanning VLAN's across physical building locations?
- Intercepting 911 calls and sending them to your security team is NOT ALLOWED
- What's needed?
  - Emergency Addresses
  - Networking
  - Network Topology
  - Emergency Call Routing
    - Calling Plans Automatic
    - Needed for Direct Routing
  - Emergency Calling Policies
    - Used for Kari's Law
    - Notification Modes
      - Notification Only
      - Conference Muted
      - Conference Unmuted
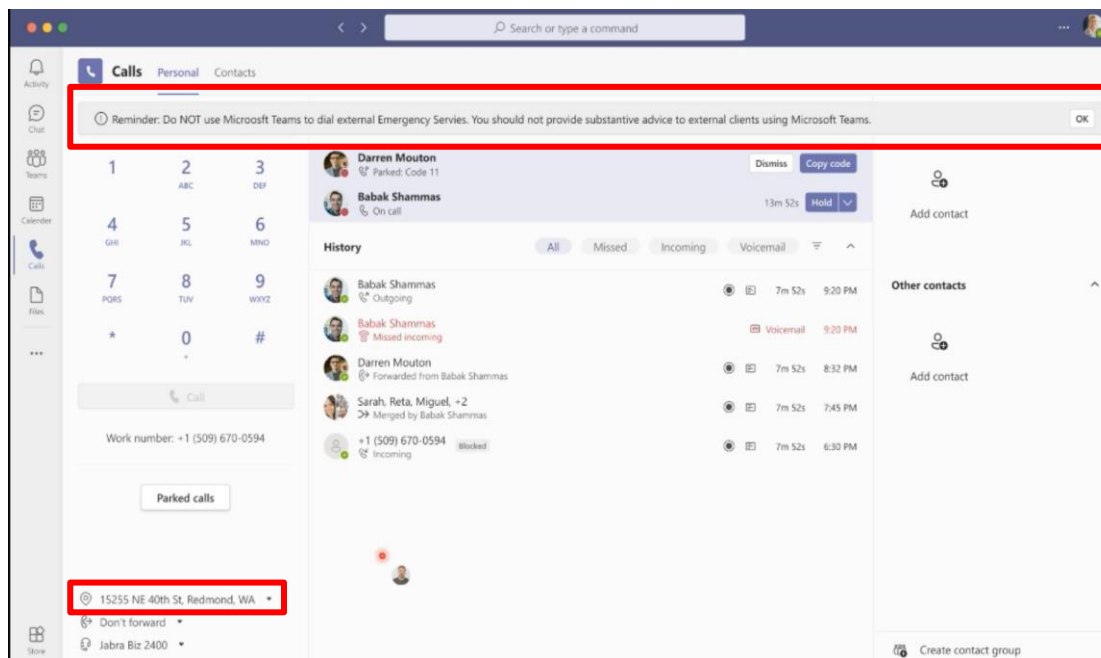
Devices / EMS / CA Policies

Microsoft Teams personal space devices

Microsoft Teams peripherals

SENNHEISER

BOSE

EPOS

Jabra

logitech

Yealink

poly

Microsoft Teams phones

poly

CRESTRON

Yealink

audiocodes
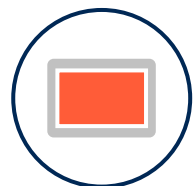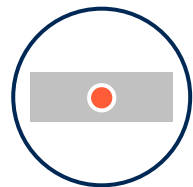
Microsoft Teams displays

New category

Lenovo

Yealink

Browse full selection at Devices Showcase office.com/teamsdevices

Shared devices conditional access
Intune compliance + Device filters

Azure Active Directory Conditional Access Rule

Assignment

Users & Groups:

Shared devices group

Cloud Apps:

Exchange Online

Microsoft Teams

SharePoint Online

Conditions:

Device Platforms

Android

Locations

All trusted locations

Device Scoping Filters

Team Android Device Models

Access Controls

Grant Type:

Grant Access

Controls:

Require Device to be marked as Compliant

Intune

Compliance Policy

Compliance Settings

Rooted Devices: Block
Block Minimum OS: 5.0

Actions for non-compliance

Mark device noncompliant: Immediately

Assignments

Shared Devices Group

Device Scoping Filters

Teams Android Device Models

Android Fundamentals

- There are two basic models of management of an Android device.
  - **Android Device Administrator** – this is 'legacy' but applies to nearly every device. Provides a very basic level of management of a device.
    - Because this is the legacy method, general guidance to customers is to migrate away from it. This causes some confusion because it is the way we will manage Teams devices.
  - **Android Enterprise** – this is the modern approach, but requires OEMs to bundle some Google services with their devices.
    - There are many different types of management model under the Android Enterprise heading.
    - Teams devices don't support Android Enterprise so we won't go into more detail – but – customers may use terms like COPE (Corporate-Owned, Personally Enabled), Fully Managed, COBO (corporate-owned, business-only) – these are all variants of Android Enterprise management.

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SIP gateway

Leverage your existing SIP phone investments

User authentication

Core calling features

Inbound / outbound calls to Teams or PSTN (hold/resume with music, mute/unmute, DTMF)

Call transfer (single step/blind, consulted transfer)

Dial in/out from a meeting (audio conferencing)

Device-only "do not disturb"

Voicemail and message waiting indicator

Integrated into Teams routing policies/regulations

Device inventory management in Teams admin center

Static emergency calling, static emergency location support with security desk notifications*

*Some devices now support Dynamic 911

Compatible SIP phones

Cisco IP Phones with MPP firmware (6821, 6901, 7800 series, 8800 series)

Polycom SIP phones (VVX series 100, 200, 300, 400, 500, 600 etc.)

Yealink (T20 series, T30 series, T40 series, T50 series)

AudioCodes 400 HD series
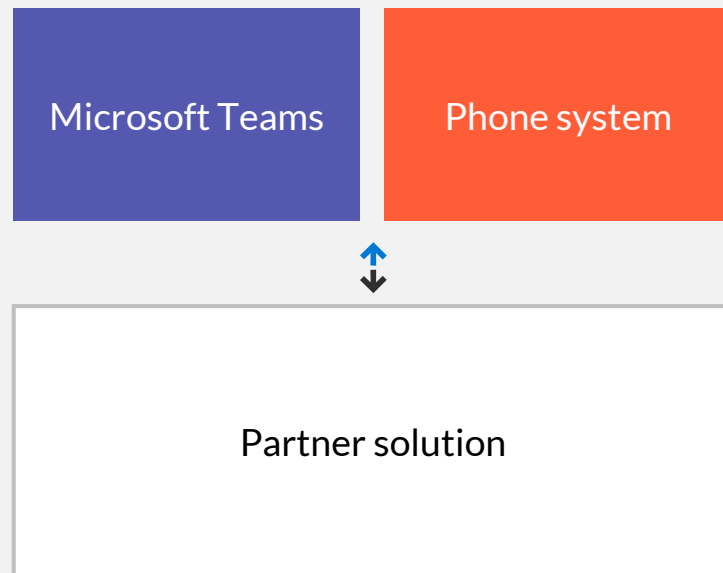
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Contact Center

Blending Microsoft Teams and Contact Center

Teams as the hub for internal and external customer connection, integrated with partner solutions
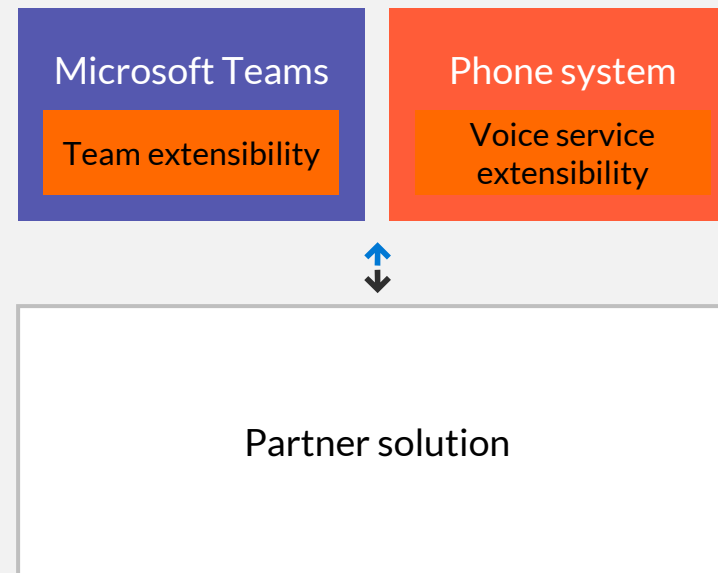
Combine capabilities based on your needs and tailored for each team

Continue to evolve your customer journeys as Microsoft and partner solutions innovate

Connect

Microsoft Teams	Phone system

↕

Partner solution

Extend

Microsoft Teams	Phone system
Team extensibility	Voice service extensibility

↕

Partner solution

Power

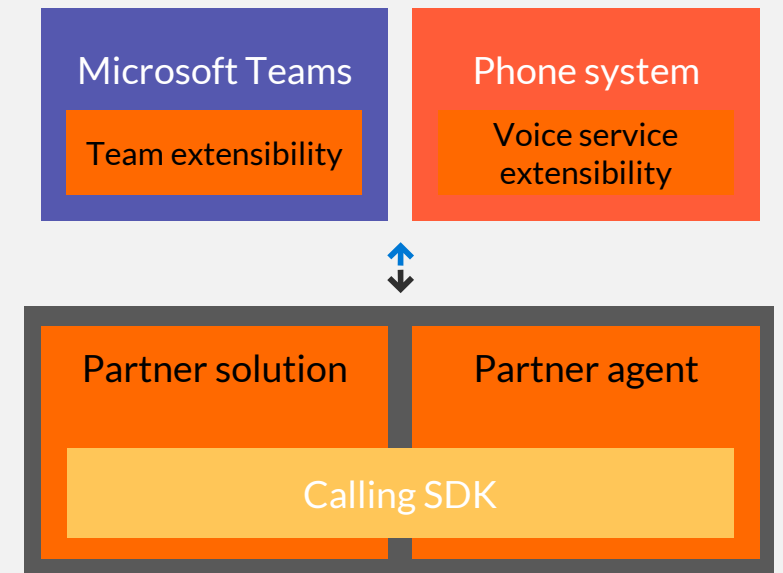| Microsoft Teams	Phone system
Team extensibility	Voice service extensibility

↕

Partner solution	Partner agent
Calling SDK	

https://learn.microsoft.com/en-us/microsoftteams/teams-contact-center?tabs=connect

Teams Phone System "Contact Center" Light

Decision Making Factors

- **Teams Only vs Contact Center**
  - Size
  - Complexity
  - Modalities Desired
  - Interaction Call Volume

Dynamics CRM users could leverage Dynamics 365 CC

Feature	Teams	3rd Party
Auto Attendant	✓	✓
CQ– Attendant Routing	✓	✓
CQ– Serial Routing	✓	✓
CQ- Round Robin	✓	✓
CQ – Longest Idle	✓	✓
Skills Based Routing	✗	✓
Omni-Channel	✗	✓
Cradle to Grave Reporting	✗	✓
Supervisor / Service Observe	✗	✓
Post Wrap-Up	✗	✓
Surveys	✗	✓
Real Time Monitoring / Wallboards	✗	✓
Work Force Management	✗	✓
Call Recording	✗	✓

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Success Stories - Conclusion

State of California– Visual Collaboration & Calling

Challenge

The State of California subscribed to a new G5 Office 365 agreement across the state. As more state agencies adopted a Hybrid Workforce, the existing tool sets available for telephony and collaboration were antiquated. NWN Carousel was given aggressive timelines to deploy Teams Calling and Microsoft Teams Room across various state agencies

Solution

NWN Carousel provided the consulting, design and implementation plan to integrate its Direct Routing as a Service to over 23 state agencies totaling 30K end points and 800 Microsoft Teams Rooms to include Teams Panels and NWN Carousel's Managed Services.

Outcome

NWN Carousel successfully completed the installation within the timeline provided by the agencies thus enhancing Customer Experience for their employees returning to the office. In addition to improved end user collaboration, the state will save over $20M over a 5-year period by adopting Teams Calling.

Value Driver: **Transform Customer Experience**

Thank you