PBX Assessment

Report generated on: 24-Feb-2019

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1 Introduction

This report analyzes the CUCM PBX configuration and evaluates various aspects regarding the ability to migrate them into Teams™.

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This document was auto generated from the PBX configuration using Univonix's PBX Assessment.

1.1 About Source PBX: Cisco

Cisco Unified Communications Manager (CUCM) is an IP-based communications system integrating voice, video and, data. The CUCM data model consists of several main entities and flexible configuration options:

1. End User – can be associated one or more devices. Each device can be either a hardware / software phone, or a virtual one (i.e. device profile). In the case of device profile, the Cisco End User will be able to login different physical devices (i.e. extension mobility).
2. Device (e.g. phone) – can be configured with one or more extensions. In case no extensions are configured, the device can still be used for extension mobility. In addition, each device can be controlled by one or more Cisco End Users. A standalone device will not be associated with any Cisco End User (e.g. public / common area phones)
3. Extension – can be configured in one single device or can be shared between multiple devices (physical, software or virtual).

Consequently, CUCM administrators could choose different way to achieve similar functionalities.

2 Configuration Resources

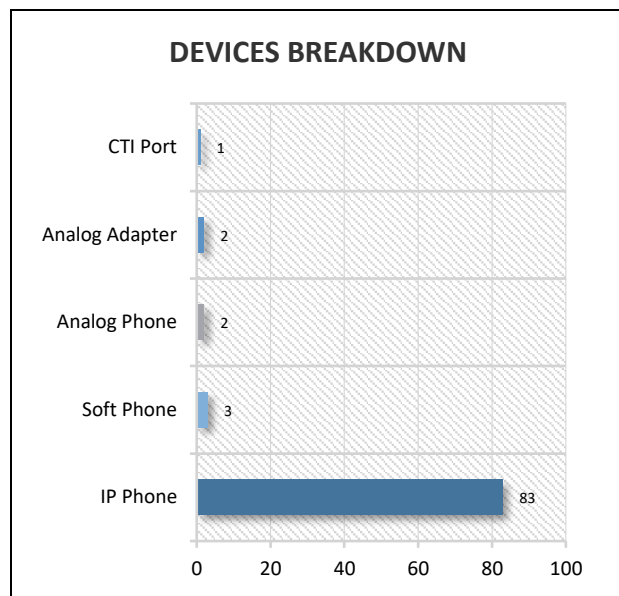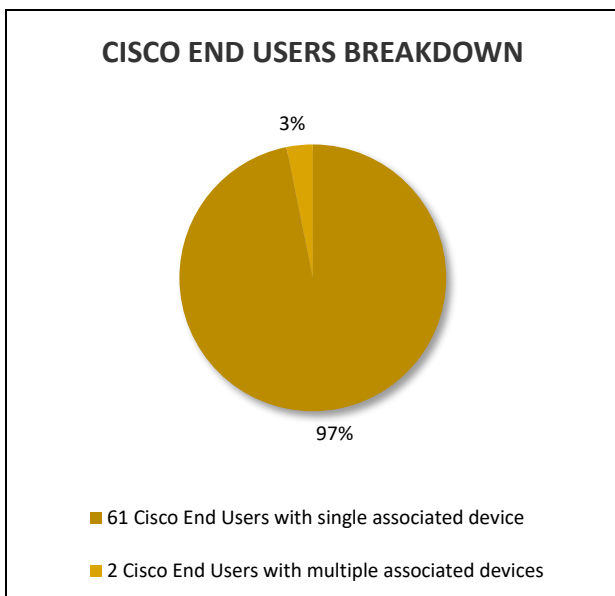The following table lists the files used for generating this report.

2.1 Files

File Name	File Type	Process Date
1.UnivonixLab.tar	CUCM 10.5.2	20-Feb-2019

3 Executive Summary

3.1 Cisco End Users & Devices Analysis

The analyzed configuration includes:

1. 63 Cisco End Users, 63 of which are associated with extensions. Out of the 63 Cisco End Users 63 are associated to one or multiple devices

2. 91 Cisco Devices with extensions, 25 of which are not associated with any Cisco End User – e.g. public / common area phones. Devices can share multiple extensions and Cisco End Users.

CISCO END USERS BREAKDOWN

3%

97%

- 61 Cisco End Users with single associated device
- 2 Cisco End Users with multiple associated devices

DEVICES BREAKDOWN

Device	Count
CTI Port	1
Analog Adapter	2
Analog Phone	2
Soft Phone	3
IP Phone	83

User Type	Count
Cisco End Users with single associated device	61
Cisco End Users with multiple associated devices	2
Total	**63**

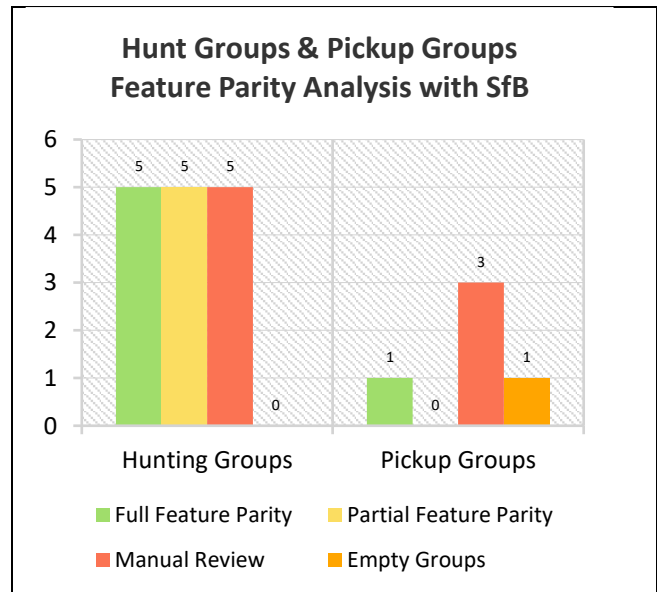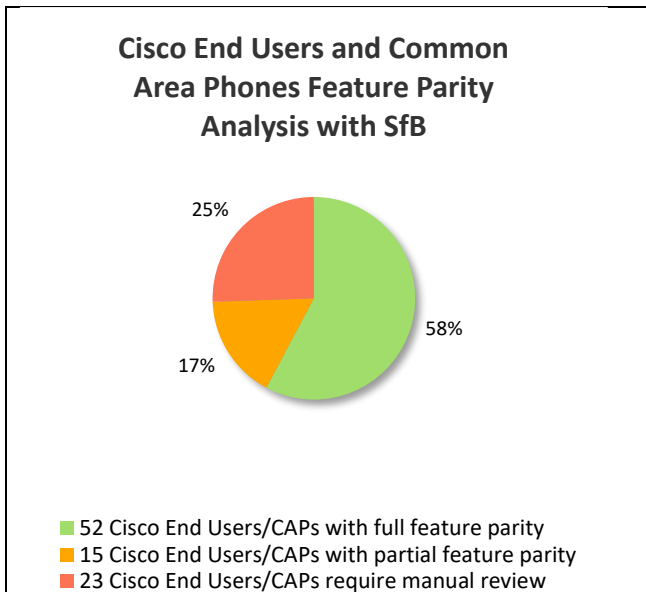| Device Type	Count	Description
IP Phone	83	Desk IP Phone
Analog Adapter	2	Analog Telephone Adapter
Soft Phone	3	PC/Mobile Software Client
Analog Phone	2	Analog Phone
CTI Port	1	CTI Port
Total	**91**	

3.2 Feature Parity Analysis with Teams™

The feature parity analysis is based on a total of 97 analyzed extensions:

1. 96 of them are associated with the following subsets:63 Cisco End Users, 25 Common Area Phones, 2 Analog Adaptors, 2 Analog Devices, 12 Hunt Groups, 5 Pickup Groups.

2. 1 of them is associated with a CTI Port (extensions integrated with 3rd party application such as call center, IVR, web dialers etc.)

Note that extensions can belong to more than one subset.

The feature parity analysis includes the following categories:

1. Green – extensions that can be migrated to Teams™ without losing any functionality

2. Yellow – extensions that can be migrated to Teams™ but functionalities may be lost

3. Red – extensions that cannot be migrated to Teams™ prior to manual review and resolution. Cisco End Users with multiple issues (e.g. yellow & red) are marked as red in the executive summary, while the yellow issues are listed on the detailed feature parity analysis (section 4).

4. Orange – Hunt Group / Pickup Group configured in the system, without any associated extensions. This suggests that the Hunt Group / Pickup Group is not being used.

Cisco End Users and Common Area Phones Feature Parity Analysis with SfB

- 25%
- 58%
- 17%

■ 52 Cisco End Users/CAPs with full feature parity
■ 15 Cisco End Users/CAPs with partial feature parity
■ 23 Cisco End Users/CAPs require manual review

Hunt Groups & Pickup Groups Feature Parity Analysis with SfB

■ Full Feature Parity   ■ Partial Feature Parity
■ Manual Review   ■ Empty Groups

Summary of extensions with features that require manual review (marked as red):

Subset	Count	Description
Cisco End Users & Common Area Phones (CAPs)	15	Shared Extensions - The same extension is shared between different Cisco End Users. Can indicate Boss / Admin relationship
	6	Cisco End Users with multiple extensions
Analog Devices & Adapters	2	Analog Phones - Connected to remote gateway
	2	Analog Adapters - Connector to Fax, Intercom, Alarm etc.
Hunt Groups	5	Hunt Groups with non-user entries (e.g. with Common Area Phones)
Pickup Group	1	Call Pickup Groups
	3	Call Pickup Groups with non-user entries
	1	Empty Call Pickup Groups

4 Detailed Feature Parity Analysis with Teams™

The following section lists the features currently used in the PBX.

The count indicates the number of Cisco End Users using this feature; Users can use more than one feature.

For Hunt Groups & Pickup Groups, the count indicates the number of groups configured in the PBX.

Status	Description
✔	Indicates that the user / hunt group / pickup group can migrate to Teams™ and Get the same functionality.
⚠	Indicates that the feature is currently not fully supported by Teams™. CUCM End Users configured with this feature can be migrated but might lose some functionality. In some cases, 3rd party solutions can close the gap.
✖	Indicates an issue that needs to be manually reviewed prior to migration to Teams™. CUCM End Users / Hunt Groups / Pickup Groups will not be able to migrate to Teams™ unless issues resolved.

#	Status	Feature	Count	Legacy PBX Feature Description	Teams™ Parity
1	✔	Call Pickup Groups	1	Members of a call pickup group can answer a call that comes in on a directory number other than their own within the pickup group.	Teams Server supports Group Call Pickup enabling users to answer incoming calls to their colleagues from their own phones.
2	✔	Call Pickup Groups with no members	1	Call Pickup Groups configured, without any associated extensions.	Teams Server supports Group Call Pickup however, as no extensions are configured, the Pickup Group is not useable
3	✖	Call Pickup Groups with non-user entries	3	Members of a call pickup group can answer a call that comes in on a directory number other than their own within the pickup group. These groups also include Standalone or analog numbers	Teams Server supports Group Call Pickup enabling users to answer incoming calls to their colleagues from their own phones. However, numbers that are not associated with users are not natively supported. A possible solution would be to replace the non-user with a dummy user.
4	✔	Hunt Groups	5	A Hunt Group is the method of distributing phone calls from a single telephone number to a group of several extensions.	Teams Server supports response group that gives similar functionality.
5	⚠	Hunt Groups that Automatically Logout Users that Don't Answer	2	Hunt group members that do not answer calls will be automatically logged out from the hunt group and will have to manually log back in to return to the group	Teams Server supports response groups with formal agent groups that gives similar functionality. However, in Teams Server, members will not be automatically logged out of response group if they do not answer a call.
6	⚠	Hunt Groups Using Members' Forwarding Settings	3	A hunt group that uses the personal forwarding settings of the individual members rather than a unique setting for the hunt group.	Teams Server supports reponse groups that gives similar functionality. However, when calling a reponse group its call forward settings will override that of the individual members.

#	Status	Feature	Count	Legacy PBX Feature Description	Teams™ Parity
7	⚠️	Hunt Groups with Call Pickup	1	Calls to a Hunt Group with call pickup can be answered remotely from another device using a predefined number.	Teams Server supports response groups that gives similar functionality and also supports call pickup. However, there is no notion of response group based pickup in Teams Server, calls can only be picked up based on user pickup groups.
8	⚠️	Hunt Groups with Called, Calling or Connected Number Transformations	1	When a call is received by this hunt group either the called number, calling number or connected number will be transformed.	Teams Server supports response groups that gives similar functionality. However, in Teams Server, number transformation is not supported.
9	⚠️	Hunt Groups with Hunt Algorithms that are not Supported	3	A Hunt Group algorithm is used to determine where to route the call when the current extension is unable to answer the incoming call. These hunt groups use algorithms that cannot be mapped.	Teams Server supports call queues that gives similar functionality. However, Phone System, does not have an equivalent hunt algorithm that is used in the source PBX.
10	⚠️	Hunt Groups with MLPP	2	A hunt group with the Multilevel Precedence and Preemption (MLPP) policy may disconnect existing calls based on call priority.	Teams Server supports response groups that gives similar functionality. However, it does not support priority calling.
11	❌	Hunt Groups with non-user entries	5	A Hunt Group is the method of distributing phone calls from a single telephone number to a group of several extensions. These groups have Standalone, external or analog numbers	Teams Server supports response group that gives similar functionality. However, only users are supported (i.e. not common area phone, analog or external numbers).
12	⚠️	Hunt Groups with Park Monitoring Forward No Retrieve Destination	1	When a call that was routed via the hunt list is parked, the Hunt Pilot Park Monitoring Forward No Retrieve Destination is used to forward the parked call when the parked call is not answered.	Teams Server supports response groups that gives similar functionality. However, in Teams Server call parking is a user feature.
13	❌	Hunt Groups with Wildcards in Pilot Number	2	A Hunt Group with a wild card in the pilot number can be connected to using a range of numbers.	Teams Server supports response groups that gives similar functionality. However, each response group must have a unique number.
14	⚠️	Intercom Groups	1	Members of an Intercom Group can be called quickly causing the callee station to automatically answer the call.	Teams server only supports intercom calls using a limited set of physical devices.
15	✅	Analog Adaptor	2	Adaptor that interfaces with legacy analog telephones, fax machines, analog conference telephones and other analog devices to IP based telephony.	Teams supports analog adaptors.
16	✅	Analog Phone	2	Analog telephone device that is connected to a remote gateway (e.g. connector to Fax, Intercom, Alarm etc.).	Teams Server supports analog phones.

#	Status	Feature	Count	Legacy PBX Feature Description	Teams™ Parity
17	✖	Cisco End Users with Multiple Extensions	6	User with more than one extension.	Teams Server supports only one primary phone line and one private line per user. A possible solution would be to add dummy users and assign delegation rights.
18	✔	Delegated Line	6	The same phone extension is associated with more than user/phone in a boss/admin relationship	Teams Server supports line delegation.
19	✔	Forward No Answer	3	Automatically forward incoming calls (regardless of their source) when there is no answer.	Teams Server supports Forward No Answer.
20	⚠	Forward No Answer External	5	Automatically forward external (i.e. from the PSTN) incoming calls when there is no answer.	Forward No Answer is supported, however, Teams Server doesn't distinguish between internal and external calls.
21	⚠	Forward No Answer Internal	2	Automatically forward internal (i.e. within the organization) incoming calls when there is no answer.	Forward No Answer is supported, however, Teams Server doesn't distinguish between internal and external calls.
22	⚠	Forward No Coverage Internal	1	Forwards internal calls when the hunt list is exhausted or timed out, and the associated hunt-pilot for coverage specifies "Use Personal Preferences" for its final forwarding.	Teams Server doesn't support forward no coverage.
23	⚠	Forward On Busy External	2	Automatically forward only external (i.e. from the PSTN) incoming calls when the line is busy.	Forward on busy external is not natively supported by Teams Server.
24	✖	Shared Line	9	The same phone extension is associated with more than one user/phone. This scenario might indicate boss/admin relationship.	Teams Server supports only one phone number for each user/common area phone. In the case of Boss/Admin scenario, Teams Server supports delegation.
25	✔	Simultaneous Ring	5	Provides user with the ability to be reached via a single enterprise phone number that rings on both their desk phone and another destination (e.g. cellular) simultaneously	Teams Server enables users to use single number reach by configuring Simultaneous Ring
26	⚠	Speed Dials	17	Devices with speed dials configured.	Teams Server clients do not support speed dials. However, Teams Server favorites can give similar experience.

5 Detailed Devices Mapping

The following table gives a breakdown of all 91 devices according to types:

Device Type	Description
IP Phone	Desk IP Phone
Wireless IP Phone	Wireless Desk IP Phone
Video Phone	Video Enabled Desk IP Phone
Audio Conference Phone	Audio Conference Desk Phone
Software Client	PC Software Client
Analog Adapter	Analog Telephone Adapter (e.g. connector to Fax, Intercom, Alarm etc.)
Analog Phone	Analog phone connected to remote gateway
CTI Port	CTI Port

Device Type	Model	End of Life	Count
IP Phone	Cisco 7910	May-31-07	1
	Cisco 7940	Jul-22-15	7
	Cisco 7941	Jan-16-15	1
	Cisco 7942	Jan-31-21	15
	Cisco 7960	Jul-22-15	52
	Cisco 7961	Jan-16-15	2
	Cisco 7962	Jan-31-21	2
	Cisco 7970	Jul-31-13	1
	Cisco 7975	Jun-30-23	2
Total			**83**

Device Type	Model	End of Life	Count
Analog Adapter	Cisco ATA 186	Sep-30-15	1
	Cisco ATA 190	None Announced	1
Total			**2**

Device Type	Model	End of Life	Count
Soft Phone	Cisco Dual Mode for Android	Dec-31-21	2
	Cisco Unified Client Services Framework	Unknown	1
Total			**3**

Device Type	Model	End of Life	Count
Analog Phone	Analog Phone	N/A	2
Total			**2**

Device Type	Model	End of Life	Count
CTI Port	Cisco CTI Port	N/A	1
Total			**1**

6 Glossary of Terms

The terms and definitions are related to their usage in the PBX Assessment report.

Term	Definition
Analog Adapter	An Analog Telephone Adapter device (e.g. connector to Fax, Intercom, Alarm etc.).
Analog Phone	An Analog Telephone device that is connected to a remote gateway (e.g. connector to Fax, Intercom, Alarm etc.).
Audio Conference Phone	An Audio Conference desk phone device.
Common Area Phone	A device that is not associated with a user. Also referred to as Stand Alone Device.
CTI	Computer Telephony Integration (CTI) enables users to take advantage of computer-processing functions while making, receiving, and managing telephone calls. CTI applications allow you to perform such tasks as retrieving customer information from a database using a caller ID, or to work with the information gathered by an Interactive Voice Response (IVR) system to route a customer's call, along with their information, to the appropriate customer service representative.
Device Profile	A device profile comprises the set of attributes (services and/or features), e.g. line number, forwarding, that will appear on the phone when the associated user logs in.
Devices	Hardware or software telephony clients configured in the legacy PBX. Devices can be associated to one or multiple extensions.
Feature Parity Requires Manual Review	Indicates an issue that needs to be manually reviewed prior to migration to Teams™. Users will not be able to migrate to Teams™ unless issues of this type are resolved.
Full Feature Parity	Indicates that the user can migrate to Teams™ and get the same functionality.
Group	A typical group can correlate to a site, a physical location or other criteria defined.
Group - Location	Group criteria to filter the assessment based on the 'location' field configured on the legacy PBX. Cisco Location field is used to implement call admission control and limit bandwidth available for audio and video. It is not necessarily relating to a physical/geographical location.
Group – Other	Any other extensions that do not belong to the other of the groups.
Group – Pattern	Group criteria to filter the assessment on all the extensions that match a certain pattern.
Group - Range	Group criteria to filter the assessment on all the extensions within a given range.
Hunt Group	A Hunt Group is the method of distributing phone calls from a single telephone number to a group of several phone extensions.
IP Phone	A desktop phone also referred to as handset device.
Legacy PBX	The telephony system which is being assessed and reported in this document.
Line	A telephone number configured on the legacy PBX.
Partial Feature Parity	Indicates that the feature is currently not fully supported by Teams™. Users configured with this feature can be migrated but might lose some functionality. In some cases, 3rd party solutions can close the gap.
Private Line	Private line is a secondary line assigned to an Teams On-Prem user. A private line does not appear in the telephone directories and has limited set of telephony features (no call forwarding, no team call, no delegation, no group call pickup etc.)
Software Client	An Android / iOS / PC Software client device.
Stand Alone Device	A device that is not associated with a user. Also referred to as Common Area Phone in Teams™.
TelePresence	An Advanced Video Conferencing device.
Users	End users that are configured on the legacy PBX. Users can be associated to multiple devices and device profiles.
Video Phone	A handset device with video capabilities.
Wireless IP Phone	A wireless handset device.