Hardware and Software Requirements

AudioCodes SmartTAP™ 360° Live

SmartTAP 360° Live

SmartTAP 360° Live Enterprise Recording Solution

Version 5.4

SmartTAP 360° Live

Certified for Microsoft Teams

audiocodes

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Related Documentation

Document Name
SmartTAP 360° Live Installation Manual
SmartTAP 360° Live Administrator Guide
SmartTAP 360° Live for Microsoft Teams Deployment Guide

Document Revision Record

LTRT	Description
27290	Initial document for this release.
27291	Added a note in the specifications regarding SBA integration. In addition the document is now published in the same template as other SmartTAP documentation.
27292	Update to the Server Configurations and the Bot Cluster Specifications.
27293	Update to Server Configurations.

Table of Contents

1 Introduction

This document describes the hardware and software requirements for installing SmartTAP 360° Live Enterprise Recording Solution including the following:

Microsoft rebranded Lync as Skype for Business, therefore when the term Skype for Business appears in this document, it also applies to Microsoft Lync. References to Microsoft Teams are explicitly indicated.

2 SmartTAP 360° Live for Microsoft Teams Requirements

This section describes the recommended specifications for SmartTAP 360° Live Recording solution for Microsoft Teams through the Microsoft policy-based API. SmartTAP 360° Live for Microsoft Teams can record Voice, Video, Screen Sharing and Instant Messaging for internal, PSTN and Federated calls.

For details on SmartTAP 360° Live for Microsoft Teams Recording Policy:

https://docs.microsoft.com/en-us/microsoftteams/teams-recording-policy

This section includes the following:

SmartTAP 360° Live Server Specifications

- **Operating System:** Microsoft Windows Server 2016 or Microsoft Windows Server 2019
- **Server Specifications:**
  - SmartTAP server with the specifications below can handle up to 500 users and 100 audio-only concurrent recordings:
    - Virtual Machine: Tier=Standard, Instance=DS2 v2 (2 vCPUs, 7 GB RAM, 14 GB Temporary storage)
  - SmartTAP server with the specifications below can handle up to 3000 users and 600 audio-only concurrent recordings or up to 500 users and a combination of 100 audio and video concurrent recordings:
    - Virtual Machine: Tier=Standard, Instance=DS3 v2 (4 vCPUs, 14 GB RAM, 28 GB Temporary storage)
  - SmartTAP server with the specifications below can handle up to 3000 users and a combination of 600 audio and video concurrent recordings:

- Virtual Machine: Tier=Standard, Instance=F8s v2 (8 vCPUs, 16 GB RAM, 64 GB Temporary storage)

- SmartTAP server with the specifications below can handle up to 100 targeted users and 10 maximum concurrent audio-only call recordings. Post recording features for the below machine specifications are limited to basic playback and download. In case of maximum recording levels of 10 concurrent audio calls, the playback and download of recordings may be delayed or take a longer time to complete.

  - Virtual Machine: B2MS 2 vCPUs, 8 GB RAM

- **Storage:** An additional managed disk is required for database storage. The estimated size of the required disk can be calculated using the SmartTAP storage calculator (see Server Configurations on page 8). The additional managed disk is not required for POC if the SmartTAP Server's OS disk has sufficient space to hold the database. The disk should be a premium SSD managed disk.

- For mixed deployments where Teams and another integration such as SIPRec need to be deployed in the same SmartTAP solution, the other integration has to be deployed in a separate RDD according to the specifications for the relevant integration.
- Playback performance depends on CPU availability; slowness of the Web interface may be experienced when CPU resources are insufficient to execute playback:
  - ✓ For optimal audio playback performance, the number of concurrent playbacks should not exceed the number of CPU cores - 1
  - ✓ For optimal video playback performance, the number of concurrent playbacks should not exceed half the number of CPU cores
- A server with an equivalent or higher spec must be used when the SmartTAP is deployed On -premises or on a cloud platform other than Azure.
- Concurrent recording specifications should be equal to the maximum simultaneous calls that can be made by the targeted users for recordings; this includes all recording types e.g. Full Time Recording, Record on Demand, Save on Demand.
- For integrations with third-party applications, a custom specification is required.

Microsoft Teams Bot Cluster Specifications

Microsoft Teams Bot can be deployed using one of the below options:

- **Azure Service Fabric Cluster:** Azure Service Fabric Cluster with Silver Durability with a minimum of 5 nodes is required:

  - Virtual Machine: Tier=Standard, Instance=D2 V2 (2 vCPUs, 7 GB RAM)
  - Windows Server 2019 Data Center - with Containers

  For more information, refer to Microsoft Service Fabric Cluster.

Table 2-1: Service Fabric Cluster Concurrent Calls Recordings Table

Media in a Call	Maximum total Calls per vCPU
Voice	25
Voice and video (p2p or group calls up to 4 streams)	9
Voice and screen sharing	15

- **Azure Standalone Cluster:** Standalone cluster including one of the VM specifications below:
  - Virtual Machine: Tier=Standard, Instance=DS2 V2 (2 vCPUs, 7 GB RAM)
  - Virtual Machine: Tier=Standard, Instance=DS3 v2 (4 vCPUs, 14 GB RAM)
  - Virtual Machine: Tier=Standard, Instance=DS4 v2 (8 vCPUs, 28 GB RAM)

Table 2-2: Standalone Cluster Concurrent Calls Recordings Table

Media in a Call	Maximum total Calls per vCPU
Voice	40
Voice and video (p2p or group calls up to 4 streams)	13[1]
Voice and screen sharing	25

- **Additional mandatory Azure resources:**
  - Deployed in Service Fabric Cluster:
    - Standard Load Balancer for Bot Service Fabric Cluster
    - Virtual Machine ScaleSet – VMs for Bot Service Fabric Cluster
  - Public IP address for the Standard Load Balancer (for Standard Load Balancer in case of SFC)
  - Key Vault to store Bot Service Fabric Cluster certificates
  - Microsoft Azure Blob Storage
- **Optional Azure resources:**
  - Application Insights to store Bot logs
  - App Configuration to store Bot configuration

[1]Maximum of 70 video concurrent calls on a single server

Microsoft Teams Instant Message Service CD-Live Component - Beta version for POC

- Installed as a component of the SmartTAP server on Azure (Ds2 V2 2 vCPUs, 7 GB RAM or higher)
- Installed as a Standalone VM on Azure (B2MS 2 vCPUs, 8 GB RAM)

CD-Live cannot be installed On-premises.

SmartTAP 360° Live for Microsoft Teams Availability

SmartTAP 360° Live for Microsoft Teams availability is based on Azure Virtual Machines (VM) Service Level Agreement (SLA):

- SmartTAP Server on Azure VM - SLA is 99.9% for one instance and 99.99% can be achieved by deploying the two servers in different Availability Zones (optionally available at extra cost). Refer to Azure VM SLA.
- SmartTAP 360° Teams BOT on Azure VM - SLA 99.9% (99.95% Service Fabric Cluster). Refer to Azure VM SLA.
- SmartTAP Media on Azure BLOB – SLA is 99.9% for Hot tier, and 99% for Cool Tier. Refer to Azure Blob Storage SLA.
- The durability of Azure Blob using Local Redundant Storage (LRS) is 11 nines. Refer to Azuire Blob Storage Durability.

SmartTAP 360° Live for Microsoft Teams Backup and Restore

Azure Virtual Machines (VM) backup/restore procedures are highly recommended.

3 SmartTAP SIPRec Deployment in Azure - Minimum Specifications

SmartTAP SIPRec recording deployment can be used to record Teams PSTN calls that the SBC or gateway handles.

For deployments other than Azure, see Requirements for Other Integrations on page 8.

SmartTAP SIPRec server:

- B2MS: 2 vCPUs, 8 GB RAM: Low-profile for up to 100 users and 10 concurrent audio calls. Post recording features for this machine specification are limited to basic playback and download. In case of maximum recording levels of 10 concurrent audio calls, the playback and download of recordings may be delayed or take a longer time to complete.
- DS2_v2, 2 vCPUs, 7-GB RAM: Low-profile SmartTAP for up to 50 concurrent audio recordings
- F4s_v2, 4 vCPUs, 8-GB RAM: Middle-profile SmartTAP for up to 150 concurrent audio recordings
- F8s_v2, 8 vCPUs, 16 GB RAM: High-profile SmartTAP for up to 250 concurrent audio recordings.
- An additional managed disk is required for database storage. The estimated size of the required disk can be calculated using the SmartTAP storage calculator (see Server Configurations on page 8. The additional managed disk is not required for POC if the SmartTAP Server's OS disk has sufficient space to hold the database. The disk should be a premium SSD managed disk.
- **SmartTAP SIPRec availability:** SmartTAP SIPRec availability is based on Azure Virtual Machines (VM) Service Level Agreement (SLA):
  - SmartTAP Server on Azure VM - SLA is 99.9% for one instance and 99.99% can be achieved by deploying the two servers in different Availability Zones (optionally available at extra cost). Refer to Azure VM SLA.
- **SmartTAP SIPRec Backup/Restore:** Azure Virtual Machines (VM) backup/restore procedures are highly recommended.

- Playback performance depends on CPU availability; slowness of the Web interface may be experienced when there are insufficient CPU resources to execute playback:

  For optimal audio playback performance, the number of concurrent playbacks should not exceed the number of CPU cores - 1.
- Concurrent recording specifications should be equal to the maximum simultaneous calls that can be made by the targeted users for recordings; this includes all recording types e.g. Full Time Recording, Record on Demand, Save on Demand.

4 Requirements for Other Integrations

This section describes requirements for other integrations including Skype for Business and Microsoft Lync including:

Server Configurations

The following table lists the maximum available resources for three different SmartTAP 360° Live server profiles and for the Media Proxy and Announcement servers.

- Resources refers to Audio, Video, Announcement and Screen Sharing licenses.
- When SmartTAP 360° Live server is deployed on Microsoft Azure, see SmartTAP 360° Live for Microsoft Teams Requirements on page 2

Figure 4-1: SmartTAP 360° Live Server

Server	Specification	Available Resources
SmartTAP 360° Live server (Low Profile)	■ 2 Core 2.5 GHz ■ 6 GB Memory ■ 2 SATA 7200 RPM HDD/SSD* ■ PCIe slots FL / FH2**	50 resources (audio only) 25 resources when Media Proxy Service is installed on the same server (audio only)
SmartTAP 360° Live server (Medium Profile)	■ 6 Cores 2 GHz**** ■ 8 GB Memory ■ 2 SATA 7200 RPM HDD/SSD* ■ PCIe slots FL / FH2**	150 resources 50 resources when Media Proxy Service is installed on the same server (audio only)
SmartTAP 360° Live server*** (High Pro-	■ 12 Core 2 GHz****	300 resources 500 audio resources

Server	Specification	Available Resources
file)	■ 14 GB Memory ■ 2 SATA 7200 RPM HDD/SSD* ■ PCIe slots FL / FH2**	
Media Proxy server***	■ Quad Core 2 GHz (300 resources) ■ 8 Core 2 GHz (500 audio resources) ■ 8 GB Memory ■ SATA 7200 RPM HDD/SSD*	300 resources 500 audio resources
Announcement server***	■ Quad Core 2 GHz ■ 8 GB Memory ■ SATA 7200 RPM HDD/SSD*	300 resources (assuming the announcement length does not exceed 20% of an average call length)

*SmartTAP 360° Live server requires two dedicated HDDs/SSDs - one disk for the Windows OS, SmartTAP 360° Live application software and DB. Another disk is required for the recorded media. The application disk size should be large enough to hold the OS (refer to Microsoft documentation for the disk space requirements), application space and the DB space. Use the SmartTAP storage calculator (see below) for application and DB size estimation. The size of the media disk should be large enough to hold the media; the estimated size of the media can be calculated using the SmartTAP storage calculator (see below). The media disk is required for both local or remote media storage, in case of the temporarily media, make sure the media disk has enough capacity to hold recordings' media over a time that external storage may not be accessible. When running the SmartTAP 360° Live Server in a virtual environment, the HDDs/SSDs has to be dedicated and mapped to SmartTAP 360° Live server VM.

** PCIe Full Length / Full Height slots. The number of slots required is determined by the number of Analog Stations required to record. Each card can record 24 channels (i.e., 56 Phones will require three PCIe card slots).

*** A group of these servers can be deployed when more than the supported recording capacity in one server is required. An additional high-end server is required to be deployed for the Application Server and Database.

**** Higher CPU speed (higher than 2.0 GHz) is recommended to accelerate download and playback for Video or Screen Sharing recorded calls.

- When running in a virtual environment, all specification resources in the table above must be reserved for all servers of SmartTAP 360° Live.
- Dual GB NIC interfaces are required for VoIP Port Mirroring Integration Configuration (this is not relevant for Skype for Business and SIP Recording).
- Playback performance depends on CPU availability; slowness of the Web interface may be experienced when there are insufficient CPU resources to execute playback:
  - ✓ For optimal audio playback performance, the number of concurrent playbacks should not exceed the number of CPU cores - 1
  - ✓ For optimal video playback performance, the number of concurrent playbacks should not exceed the half the number of CPU cores
- Concurrent recording specifications should be equal to the maximum simultaneous calls that can be made by the targeted users for recordings; this includes all recording types e.g. Full Time Recording, Record on Demand, Save on Demand.

To determine the server specification, calculate the required available resources. The calculation of the required resources is based on the number of licenses multiplied by one of the factors specified in the table below.

Figure 4-2: License Factors

License Type	Factor
Audio Recorder License	1
Video Recorder License	10
Announcement License	1
Screen Sharing License	5

- Calculate the required number of resources on the SmartTAP 360° Live server and the Media Proxy server according to the following formula:

  Required Number of Resources = (Number of Audio Recorder Licenses)*(Audio Recorder License Factor) + (Number of Video Recorder Licenses)*(Video Recorder License Factor) + (Number of Screen Sharing Recorder Licenses)*(Screen Sharing Factor)

  Choose the SmartTAP 360° Live server and Media Proxy server with the number of available resources equal or higher than the required recording resources.

- Calculate the required number of resources on the Announcement server according to the following formula:

  Required Number of Resources = (Number of Announcement Licenses)*(Announcement License Factor)

Example 1: 100 Audio Recorder Licenses

- Required Number of Resources = (100 Audio Recorder Licenses)*(1 Audio Recorder License Factor) = 100
- Choose Medium Profile SmartTAP 360° Live server and one Media Proxy server

Example 2: 30 Video Recorder Licenses

- Required Number of Resources = (30 Video Recorder Licenses)*(10 Video Recorder License Factor) = 300
- Choose High Profile SmartTAP 360° Live server and one Media Proxy server

Example 3: 50 Audio Recorder Licenses and 20 Video Recorder Licenses

- Required Number of Resources = (50 Audio Recorder Licenses)*(1 Audio Recorder License Factor) + (20 Video Recorder Licenses)*(10 Video Recorder License Factor)= 50 + 200 = 250
- Choose High Profile SmartTAP 360° Live server and one Media Proxy server

Example 4: 40 Audio Recorder Licenses

- Required Number of Resources = (40 Audio Recorder Licenses)*(1 Audio Recorder License Factor) = 40
- Choose either of the following:
  - Medium Profile SmartTAP 360° Live server with Media Proxy service installed on the SmartTAP 360° Live server
  - Low Profile SmartTAP 360° Live server and separate Media Proxy server

Example 5: 200 Audio Recorder Licenses with Announcement

- For SmartTAP 360° Live server and Media Proxy servers:
  - Required Number of Resources = (200 Audio Recorder Licenses)*(1 Audio Recorder License Factor) = 200
  - Choose High Profile SmartTAP 360° Live server and one Media Proxy server
- For Announcement server:
  - Required Number of Resources = (200 Announcement Licenses)*(1 Announcement License Factor) = 200
  - Choose one Announcement server

Example 6: 50 Audio Recorder Licenses and 50 Screen Sharing Recorder Licenses

- For SmartTAP 360° Live server and Media Proxy servers:
  - Required Number of Resources = (50 Audio Recorder Licenses)*(1 Audio Recorder License Factor) + (50 Screen Sharing Recorder Licenses)*(5 Screen Sharing Recorder License Factor) = 300
  - Choose High Profile SmartTAP 360° Live server and one Media Proxy server

Supported Virtual Machine (VM) Environments

VMware ESXi

- Version 4.1 and higher (IP-based integrations only)
- See Enabling Promiscuous Mode on VMWare ESXi for instructions on how to enable promiscuous mode required for a SmartTAP 360° Live system that is monitoring (tapping) the network.

Microsoft Hyper-V

- Microsoft Windows Server 2019
- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2012 64bit

Hyper-V does not support promiscuous mode. Do not use in Passive integration environments.

Active / Standby Resiliency Configuration (Optional)

AudioCodes supports Microsoft Windows Clustering in the failover configuration, which provides high available service to the SmartTAP application. To support this type of install, the following is required:

- Two identical Windows servers which meet the minimum specifications mentioned above.
- A SAN (Storage Area Network) with iSCSI support.The SmartTAP cluster requires at least 2 Internet Small Computer System Interface (iSCSI) targets - one for the disk witness/quorum, and another for the DB and shared application data. A 3rd iSCSI target “Optional” is required for the media storage. SmartTAP should not be configured to write the media directly to the 3rd media target; instead, it should be set as Media Transfer Service destination.

Supported Microsoft Windows OSS

- Microsoft Windows Server 2019
- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2

Supported Microsoft Integrations

- Microsoft Lync Server 2013
- Skype for Business 2015

- Skype for Business 2019
- Microsoft Teams

SBA Integration

The SmartTAP 360 server with low-profile can be deployed on AudioCodes Mediant 1000B with OSN Server (Mediant 1000B OSN4B 256 GB SSD) together with the Survivable Branch Appliance (SBA) where the SBA is configured with up to 250 users and 8 trunks per branch.

5 Windows Updates

- It is recommended to disable Automatic Windows Updates to prevent unknown side effects.
- AudioCodes only certifies major version Service Pack updates.

Before applying Windows updates, ensure that a system backup is performed.

Installing Windows Updates

- Schedule a maintenance window. SmartTAP does not record during this timeframe.
- Download and install Windows updates.
- Reboot the server, even if Windows does not ask you to reboot to finish installing updates.
- Windows may continue installing updates after the system restart which may cause instability within SmartTAP.
- Once the Windows updates are complete, reboot the server again.

6 Antivirus Software and Windows Defender

- No virus software is included with SmartTAP
- No specific virus software is tested or certified
- If installed, do not scan the following SmartTAP folders and contents to prevent performance impact:
  - Media path: (i.e., Local D:\Media, SAN or NAS)
  - …\Ai-Logix\
  - ...\AudioCodes\
  - ...\MySQL\
- If installed, do not scan the following Teams BOT folders and contents to prevent performance impact:
  - C:\Program Files\Microsoft Service Fabric
  - D:\SvcFab
  - C:\ProgramData\SF
  - C:\MiMedia
  - C:\Program Files (86)\AudioCodes
- For **Windows Defender** disable scanning the same file types and folders.

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