PLATFORM GUIDE

for tvOS management

IT manual for managing tvOS devices using Hexnode UEM

hexnode

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Chapter 1: Overview

Introduction to tvOS

The tvOS operating system powers the fourth and fifth generations of Apple TV devices. It is mainly built on the iOS operating system and has extra capabilities to enhance app use on a television interface. tvOS is an operating system created by Apple Inc. for the Apple TV digital media player's second generation and later models. The primary characteristic that sets tvOS apart from earlier Apple TV software is the presence of an app store.

Apple TVs are perfect for streaming web entertainment, digital signage, hallway displays, and other uses. They offer a good substitute for expensive projectors and adapters. They even support AirPlay for wirelessly streaming live video from iOS or Mac devices. This is why Apple TVs are increasingly emerging as the best option for presentations and teamwork.

Why is tvOS management needed?

Apple TV is demonstrating its value in the workplace through use cases like conference rooms, classrooms, digital signage, hospitality and healthcare apps etc. However, manually configuring each tvOS takes hours of IT effort as more models join the business market. The performance of tvOS in the industrial sectors can be controlled and monitored with proper device management.

Unified Endpoint Management (UEM) solutions like Hexnode UEM will streamline the initial setups and automate device enrollment processes. However, proper device management is necessary, from setup and deployment confining the tvOS device to a particular application.

Supported devices

The second and later generations of Apple TVs, iPhones, iPod Touches, and iPads running iOS 7 and higher are all compatible with the tvOS capabilities and AirPlay management options. These guidelines were developed using Apple Configurator 2.0.

Pre-requisite for using Apple TV

For Apple TV to function, you will need the following:

- An HD or 4K television with HDMI
- An HDMI cable to attach your TV and Apple TV (for 4K HDR, you may require a compatible Ultra-High-Speed HDMI cable, sold separately)
- Broadband internet service and access to Ethernet or 802.11 Wi-Fi networks (802.11a, g, n, or ac are required for wireless streaming)
- An Apple ID is required to purchase, rent content, download applications from the App Store and use Home Sharing

Reminder:

- Third-generation Apple TV 4K Wi-Fi does not support Ethernet.
- TVs with HDR10+ are supported by Apple TV 4K (3rd generation) Wi-Fi and Wi-Fi + Ethernet.

Main characteristics of tvOS

Aside from the launch of Apple TV+ and Apple Arcade, tvOS 13 has many new features and enhancements over previous iterations. New features include multiuser support, redesigned home screen, new screensavers, picture-in-picture mode, and many more.

In the past, updates have brought features like the ability to control the Apple TV from a control center on all Apple devices, the ability to enable autofill passwords and automatic connection to AirPods when used with an iCloud-enabled device.
tvOS is always the ideal choice for everyone in the Apple ecosystem because of its attractive features. They include:

- Airplay support
- A well-designed Siri remote
- Easy access to Apple services on the big screen
- Better Airpod or Bluetooth connectivity
- Easy smart home control and management

Chapter 2: tvOS enrollment

Enrolling the device is the first step in integrating tvOS with Hexnode UEM. The device should be enrolled with Hexnode UEM so that it can be monitored and managed by the IT admins of the organization.

Pre-requisites: APNs certificate configuration

Apple Inc. developed the Apple Push Notification service (APNs) to manage communication between Apple devices and third-party services. Hexnode UEM server will send a notification to the APNs server for the iOS device, and the server will then connect with the device.

All Apple devices can communicate with one another through the APNs server. Therefore, to approve this communication from Hexnode UEM to Apple devices, we require the APNs certificate. IT admins can configure the APNs certificate in 3 steps:

1. Create a certificate signing request:

- Login to Hexnode UEM portal and configure the APNs certificate from the admin tab.
- The self-signed certificate from Hexnode can be downloaded by clicking Generate CSR.

2. Upload the self-signed certificate in the Apple server:

- Log in to Apple Push Certificates Portal.
- To create an APNs certificate, click Create a Certificate.
- Upload the Hexnode self-signed certificate.
- Finally, download the generated APNs certificate from Apple.

3. Upload the APNs certificate back to the Hexnode UEM portal:

- Upload the APNs certificate in the portal.
- It will be displayed under APNs in the Admins tab.
- The devices can be enrolled with Hexnode UEM after creating the APNs certificates.

The APNs certificate is valid for a year from the date of creation. After that, every 365 days, the certificate must be renewed. The certificate renewal process is similar to the certificate creation process.

Enrollment methods

Businesses may unlock various tvOS features and capabilities using Hexnode's management solution. In addition, Hexnode UEM provides over-the-air enrollment solutions to add devices to your business quickly and easily. The tvOS devices can be enrolled with Hexnode UEM using two methods as follows:

1. Apple Configurator enrollment

The Apple Configurator can be used to manage and sign-up Apple devices for device management solutions. It's used by businesses and educational institutions to build configuration profiles and install apps and software. Device management is primarily accomplished through profiles. Configurations of the profiles help to keep tvOS devices safe and set to the preferred settings of the enterprise.

Pre-requisites

- An Apple TV running tvOS 10.2 or later is required.
- A macOS device with Apple Configurator 2.5 or later.
- Ensure the Mac and Apple TV are using the same Ethernet or Wi-Fi connection.

How to enroll?

The Apple Configurator enrollment to enroll Apple TVs in Hexnode is a quick and easy process that only requires a few steps.

Step 1: Open Apple Configurator and select the connected Apple TV devices.
Step 2: Assign a default device user and create a Wi-Fi profile in Apple Configurator.
Step 3: Create a blueprint in Apple Configurator that includes the settings and apps to be installed on the devices.
Step 4: Apply the blueprint to the Apple TV devices, which will configure the devices according to the settings and apps specified in the blueprint.
Step 5: Enroll the Apple TV devices in Hexnode UEM using Apple Configurator enrollment. Once the devices are enrolled, IT administrators can remotely manage them using Hexnode UEM's device management tools.

2. ABM enrollment

With the help of Apple Business Manager (ABM), devices can be provisioned in a fully automated manner without the involvement of the end user. Different policies can be set up via Hexnode to automatically push UEM configurations to the enrolled devices using ABM enrollment.

Admins can rapidly deploy software to the appropriate devices without an Apple ID using the available managed distribution. The automatic distribution of Apple devices in an enterprise is made possible via the Device Enrollment Program (DEP) in Apple Business Manager (ABM). The devices are immediately configured after activation. Thereby not requiring the IT team to configure them physically.

Pre-requisites

- An Apple TV running tvOS 10.2 or later is required.
- The enterprise needs to be signed up for Apple Business Manager.

How to enroll?

ABM enrollment allows IT administrators to automatically enroll Apple devices in Hexnode UEM by configuring them with the appropriate settings and credentials before they are unboxed. Although this enrollment method is helpful for organizations with many devices to enroll, it is more efficient and convenient as it does not require user interaction during the enrollment process.
Here are the general steps for enrolling Apple TVs in Hexnode UEM using ABM Enrollment:

Step 1: Navigate to Apple Business Manager (ABM) and log in to your account with two-step verification.
Step 2: Once you have logged in to ABM, click on the Devices page. Here you can view all the devices that ABM currently manages. You can filter the devices based on their source, order numbers, device types, etc. Then, search and select the required devices from the list.
Step 3: Click **Edit Device Management** to configure the device management settings.
Step 4: Select the "**Assign to server**" button, which will open a drop-down menu where you can choose the MDM server to which you want to assign the devices.
Step 5: Now confirm your action to complete the assignment.

With these steps, the devices will be assigned to the Hexnode UEM server, and the IT administrator can manage the devices remotely using Hexnode UEM's device management tools. After completing the steps mentioned above in the ABM account, navigate to the Hexnode console and complete the following steps:

Step 1: Create a configuration profile in the Hexnode UEM console with the configurations you want to apply to the devices and attach them to the device.
Step 2: Connect the device to a Wi-Fi network, then use Remote Management. With Hexnode UEM's device management tools, the device is now prepared for deployment and can be managed remotely.

Chapter 3: tvOS device management

A variety of capabilities of tvOS are supported by Hexnode UEM, including the ability to stream Apple TV via AirPlay and set up Apple TV for conference room display mode. In addition, Apple device management enables the organization to set up, deploy, and manage tvOS devices. A wide variety of limitations and configurations for tvOS devices can be set up with Hexnode UEM.

Wi-Fi

Hexnode UEM helps to configure Wi-Fi settings seamlessly. Through this, IT admins can completely prevent the device access to Wi-Fi or mobile data. Enterprises can effectively save costs by turning off device functions, including Wi-Fi tethering, data roaming, and application auto-sync. Establishing Wi-Fi profiles over the air enables the automatic connection between devices and Wi-Fi networks without a password prompt.

To configure Wi-Fi settings using Hexnode UEM, follow the steps:

1. Navigate to **"Policies"** in the Hexnode UEM console.
2. Choose an existing policy or create one by clicking on **"New Policy"**.
3. Open the Apple tv tab and select **Wi-Fi**.

The configuration of Wi-Fi settings includes:

Sl.no	Wi-Fi Settings	Description
1.	Service Set Identifier	Name of the Wi-Fi network.
2.	Auto join	The device's network connection is determined automatically based on this and is enabled by default.
3.	Hidden network	If your wireless network is hidden, enable this setting. Since a hidden network does not broadcast its SSID, it will not show up in the list of wireless networks that are currently available.
4.	Security type	Choose an encryption technique to protect the wireless network.
5.	Password	Provide a password for the Wi-Fi network that is needed to connect.

Airplay security

Hexnode UEM restricts unauthorized AirPlay streaming to Apple TV. The users can create an AirPlay password or prevent devices from other networks from connecting to the Apple TV. The expanded AirPlay permissions enable mass pairing iOS or macOS devices with Apple TV, enabling users to connect to their chosen screens without difficulty. Apple TVs running tvOS 11 or later are capable of utilizing this function.

The Airplay security feature offers three main security types for the users to choose how secure the connection should be. They are:

- **Passcode once:** A passcode is displayed on the TV while an Apple TV and an Apple device that supports AirPlay are connected. To begin streaming, enter this passcode on the Apple device that supports AirPlay. The passcode is unnecessary if you establish a second connection between the same group of devices.
- **Passcode always:** Under this security type, the user is asked to enter the passcode shown on the TV screen whenever it attempts to broadcast content via AirPlay.
- **Password:** The user needs to create an AirPlay password that will be needed when connecting an Apple TV to a device that supports AirPlay.

Conference room display

Utilizing Apple TV as a conference room display, users can instantly mirror the screen of an iPhone, iPad, or Mac without using any additional software. This allows admins to display custom messages on monitors with Apple TV. In addition, when the conference room display is turned on, it shows network information and guidelines for connecting to Apple TV through Airplay. This feature is supported on tvOS 10.2 and later versions.

Here are the detailed steps for utilizing the conference room display features for tvOS management in Hexnode UEM.

1. Login to the Hexnode UEM console by entering admin credentials.
2. Create a device policy for tvOS by navigating the “**Policies**” tab.
3. Choose an existing policy or create one by clicking on New Policy and name it.
4. Select the “**Apple TV**” tab and configure the conference room display feature from the left panel.
5. Add the required message in the given space.
6. Navigate to the “**Policy targets**” tab, add devices or users' groups as required, and save it.

Device security

Hexnode UEM helps to update Apple TVs to the newest OS releases remotely. In addition, businesses can use the centralized console to remotely reboot or erase one Apple TV or a collection of Apple TV devices. With digital certificates, enterprises can ensure safe access to services like Wi-Fi, Email, and VPN while preventing unauthorized devices from connecting to networks.

Hexnode UEM enables admins to set up and maintain security guidelines, push updates and applications and disenroll devices to reissue them to other users. SCEP, a protocol standard for certificate management, helps to distribute certificates from the certificate authority to the managed devices. The global HTTP proxy setup helps to direct all HTTP traffic from the devices you manage through a proxy server.

To utilize the certificates or global HTTP proxy feature of Apple tv, follow these steps:

1. First, create a device policy for tvOS by navigating to the "**Policies**" tab.
2. Choose an existing policy or create one by clicking on New Policy and name it.
3. Select the "**Apple TV**" tab and configure the global HTTP proxy or certificate feature from the left panel.
4. Fill in the required fields of these features.
5. Navigate to the "**Policy targets**" tab, add devices or users' groups as required, and save it.

6. The certificates pushed through the policy can be seen from **Settings > General > Profiles & Device Management > Hexnode MDM > More Details**. Furthermore, it will be displayed under Certificates.

The configuration of the global HTTP proxy feature includes the following:

Sl.no	Settings	Description
1.	Proxy type	Choose how the proxy server needs to be configured. There are two options: Manual (the default) and Automatic.
2.	Server	The server address of the proxy server.
3.	Port	This is the proxy server's port number. Port 0 is the standard proxy port.
4.	Username and Password	Authentication credentials for the proxy server, including the username and password.
5.	Proxy PAC URL	The PAC file's URL is where the proxy settings are stored. Based on these values, Hexnode UEM will automatically configure the settings.

Custom configurations

The custom configuration profiles help to deploy any settings specific to the organization. Hexnode UEM configuration policies can be used to push all the settings that can be specified for Apple TV devices. The features that can be included under this domain are:

- Pushing particular configurations directly from the centralized admin console to the tvOS devices.
- Creating custom configuration profiles to specify additional enterprise-specific options, such as email settings, credentials and keys, device limits, etc.
- Setting up different policies to push UEM configurations to the enrolled devices automatically.
- Deploying custom configuration profiles to tvOS through .mobileconfig, .xml, or .plist files.

To deploy custom configurations, follow the steps:

1. First, create a device policy for tvOS by navigating to the “**Policies**” tab.
2. Choose an existing policy or create one by clicking on **"New Policy"** and name it.
3. Select the “**Apple TV**” tab and configure the custom configuration feature from the left panel.
4. Select **configuration profiles** directly from the device or from those previously added to the portal.
5. Navigate to the “**Policy targets**” tab, add devices or users' groups as required, and save it.

Application management

Hexnode help to establish the over-the-air bulk distribution of corporate and VPP apps. With the added benefit of restricting Apple TVs to running the necessary corporate application, enterprise apps can be remotely installed. In addition, enterprises can utilize the Volume Purchase Program (VPP) features to revoke and assign apps to other devices, buy apps in bulk, install apps silently without requiring an Apple ID and more.

They can even restrict the use of features like voice over, invert colors, zoom changes, touch, auto-lock, and other tvOS settings in single app kiosk mode. Moreover, distributing and removing apps from the enrolled devices ensure that the user's devices have all the required applications installed. IT admins can also design a personalized app store housing a selection of apps suitable for an organization's needs.

To add Apple TV Enterprise Apps to Hexnode, follow the steps:

1. Navigate to **Apps > +Add Apps > Enterprise Apps**, to add a new enterprise app to the Hexnode portal
2. To **specify the app platform**, click the radio option next to the Apple TV icon in the pop-up window.
3. Upload with either of the following methods:

Sl.no	Settings	Description
1.	IPA file	To choose a file from your computer's storage, click Choose File.
2.	From Manifest URL	Enter a URL where the app is located

4. Choose an existing category or add a new one by clicking the **Plus(+) button**.
5. Enter the **app's description** in the given space.
6. To inform the admin via email about the app update progress, you may also click the **Notify admin via email** once the app upload succeeds/fails box.
7. To upload the application, click **Add**.

To install the application to target tvOS devices, follow the steps below:

1. First, choose the **Manage tab** from the menu.
2. Select the **device name**.
3. Select **Actions > Install Applications**.
4. Select the **Application** and click **Done**.

You shouldn't be concerned if you cannot locate the installed enterprise app on your tvOS device. Depending on the download size and network speed, installing the app could take a few minutes.

Chapter 4: tvOS kiosk management

tvOS kiosk management defines a constrained, purpose-specific environment where Apple TV can be set up. The organization can rapidly establish kiosk mode on the device with Hexnode UEM. The device's security can also be improved by configuring advanced settings specifically for kiosk mode.

Setting up kiosk mode in tvOS

Hexnode UEM supports single app kiosk mode for tvOS devices. The organization can establish a fully tailored full-screen experience by limiting supervised tvOS devices to a particular corporate, shop, or VPP application.

By restricting the use of monitored Apple TV devices to single app mode, IT admins can set up Apple TV for digital signage. In addition, it allows users to launch an application on their devices without intervention and prevents them from independently leaving the lockdown mode of the kiosk.

Locking the device to a single application will prevent it from allowing any other applications to run. The Hexnode portal does not allow the deployment of store apps to Apple TVs. However, IT admins can expand a single app kiosk with store apps already on the devices.

To set up single app kiosk mode in tvOS, follow the steps:

1. First, create a device policy for tvOS by navigating to the "**Policies**" tab.
2. Choose an existing policy or create one by clicking on "**New Policy"** and name it.
3. Select the "**Kiosk Lockdown**" tab and configure the **Single App** feature under Apple TV Kiosk Lockdown from the left panel.
4. Click on the **+ icon** and select the app from the list. Next, configure the advanced kiosk settings and user-enabled options based on preferences.
5. Navigate to the "**Policy targets**" tab, add devices or users' groups as required, and save it.

Hexnode UEM allows you to implement additional limitations for Apple TV kiosk usage, but these features are only compatible with devices running **OS version 10.2 or later**.

Exiting from kiosk mode

To exit, either the device can be taken out of the policy, or the policy can be taken out of the device to get out of single app kiosk mode. The users can redeem the Apple TV's features by exiting the kiosk mode.

IT admins must remove the device from the device group to remove the kiosk policy from a specific device if it is linked to a custom device group. To delete a policy from a single device if it is linked to a dynamic device group, either archive the policy or remove the dynamic group from policy targets will have to be done.

There are three methods to exit from single app kiosk mode in tvOS. They are as follows:

Method 1: Removing the policy target

1. Log in to your Hexnode account.
2. Access the "**Policies**" tab.
3. Open the relevant policy.
4. Navigate to the "**Policy Targets**" tab.
5. To remove the policy from a device, click the remove button that corresponds to that device.
6. Click "**Save**" to finalize the changes.

Method 2: Removing the policy by disassociating it

1. Log in to your Hexnode account.
2. Go to "**Manage**" and select "**Devices**".
3. Select the device from which the policy needs to be removed.
4. Go to the "**Policies**" sub tab.
5. Click on the **trash icon** next to the policy to remove it from the device.

Method 3: Archiving the policy

1. Log in to your Hexnode account.
2. Go to the "**Policies**" tab.
3. Select the relevant policy.
4. Choose the "**Manage**" button and select "**Move to Archive**".
5. Confirm the action by clicking "**Okay**".
6. This method will remove the policy from being actively enforced, but it will **remain saved in the archive** so that it can be restored, if necessary, in the future.