BlueJeans Dolby Voice Room

Advanced Configuration Guide

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Contents

1 Introduction

Deploying the BlueJeans Dolby Voice Room is a multistep process that may involve preparing your network, Dolby Conferencing Console, or your provisioning server, and configuring the BlueJeans Dolby Voice Room conferencing app.

- About this guide
- Related documentation
- Documentation feedback

1.1 About this guide

This document provides advanced instructions for configuring Dolby Voice Room to work with the BlueJeans Dolby Voice Room solution. Use this document to guide you through the deployment process and ensure a successful and timely deployment at your site.

This guide is intended for sales engineers and IT groups requiring advanced configuration for local setup to address:

- Complex network environments
- The need to provision multiple devices and scale
- The ability to control firmware application provisioning

Before you begin deployment, make sure that you have copies of the related documentation. You may need to refer to other documentation for more information and specific instructions.

1.2 Related documentation

The documentation for the Dolby Voice product family consists of software development kit documentation, release notes, and guides. Several of these guides are especially useful for users of the Dolby Voice Room.

The *Dolby Voice Room Administrator's Guide* describes how to install and administer the Dolby Voice Room.

The *Dolby Voice Room Quick Start Guide* describes how to use the basic and advanced phone features, and how to customize the phone.

The *Dolby Voice Room Open Source Software Guide* describes third-party open-source software that is incorporated into the Dolby Voice Room software.

The *Dolby Conferencing Console Operations and Management Guide* describes how to install the Dolby Conferencing Console software and use it to administer Dolby Voice Room systems.

For BlueJeans Dolby Voice Room documentation, see the BlueJeans Support website (https://support.bluejeans.com/knowledge/dolby-rooms).

1.3 Documentation feedback

If you have comments or feedback about this documentation, send us an email at dolbyvoicedocs@dolby.com.

2 Network preparation

Before deploying the BlueJeans Dolby Voice Room, you need to prepare your network.

- Hardware requirements
- Architectural overview
- Firewall requirements
- Bandwidth planning
- 802.1X authentication
- NTP server
- Proxy configuration
- VLAN configuration
- DNS configuration
- IP PBX configuration
- LDAP configuration for a corporate directory

2.1 Hardware requirements

All components that are required for the BlueJeans Dolby Voice Room are provided in the box.

For more information about hardware and mounting instructions, see the *Dolby Voice Room Quick Start Guide*.

2.2 Architectural overview

Before you set up the BlueJeans Dolby Voice Room system, review the following architectural diagram to learn about the essential components and their relationships to one another.

Figure 1: BlueJeans plug and play provisioning method architecture
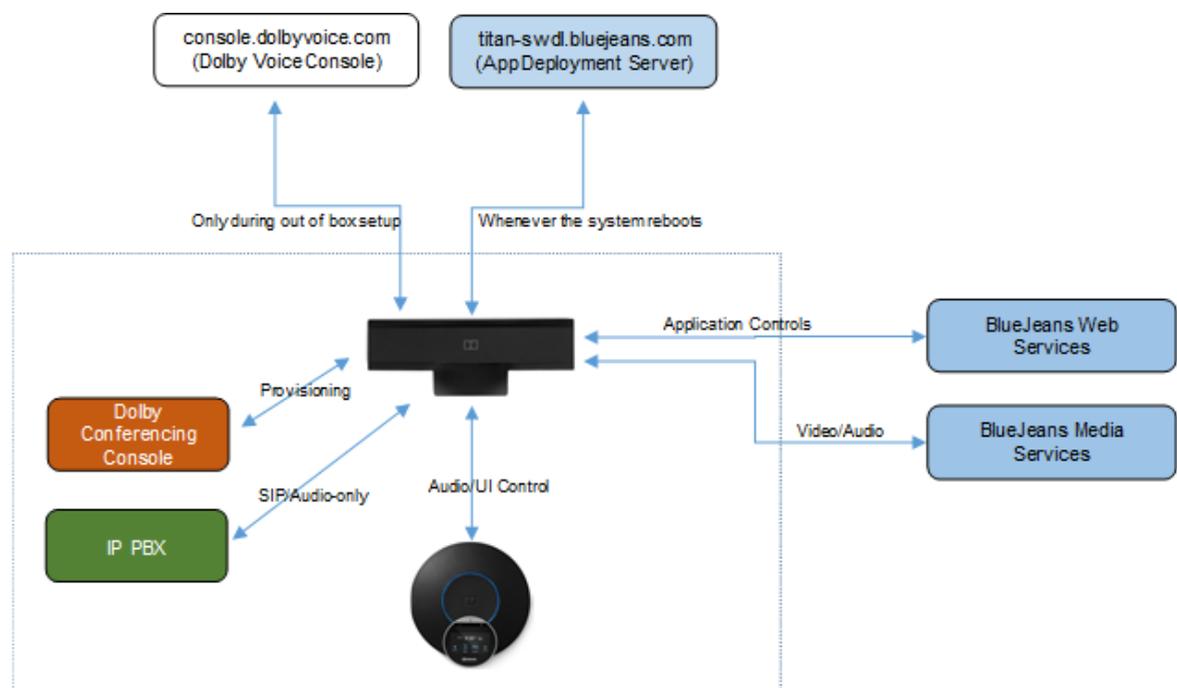
The plug and play provisioning method provides the following benefits:

- It is ideal for small-scale and trial deployments.

- Setup is easy and gets you started quickly.

- BlueJeans manages the firmware that runs on the Dolby Voice Room system.

- You can configure IP private branch exchange (PBX) settings using the BlueJeans Command Center or the Dolby Voice Room web interface.

2.3 Firewall requirements

If you have a firewall, the policy must be configured to meet BlueJeans Dolby Voice Room requirements.

Connect to the BlueJeans cloud server using the recommended /User Datagram Protocol (UDP) ports, and open the firewall ports against the recommended IP range.

Ensure that the following network requirements have been met:

- Configure your firewall for BlueJeans.

  For more information about configuring firewalls for BlueJeans, see https://support.bluejeans.com/knowledge/tcp-udp-ports.

- Dolby Voice Room requires connection to ports 80 and 443 for the domain dolbyvoice.com. Please configure your network to support these ports.

- Check with your BlueJeans account manager to determine any additional network requirements, including WebRTC port requirements.

Related information

plug and play provisioning method requirements on page 12

2.4 Bandwidth planning

Dolby Voice Room supports the H.264 video codec. Check with your BlueJeans account manager for video bandwidth requirements.

A minimum of 4 Mbps, for both upload and download, is required.

2.5 802.1X authentication

If your network requires 802.1X during the network setup portion of the setup wizard, you must complete 802.1X setup.

See the *Dolby Voice Room Administrator's Guide* for additional information on 802.1X authentication.

Depending on the 802.1X configuration, you may need to accept the authentication server certificate. The setup wizard guides you through the process and detects many of the settings for you, including your virtual LAN (VLAN) and IP network settings.

You can also upload certificates to the Dolby Voice Room using the Dolby Voice Room web interface.

> 📝 **Note:** If you use a self-signed authentication certificate, or a CA certificate that is not in the default Dolby Voice Room trusted certificate authority list, we recommend that you use local setup with the Dolby Conferencing Console for 802.1X. The Dolby Conferencing Console makes it easier to distribute the certificate.

2.5.1 Uploading a new CA certificate

You can change the CA certificate store using the Dolby Voice Room web interface.

About this task

Use this procedure in cases where Dolby Conferencing Console is not available or you do not have access to a provisioning server. You must make sure the Dolby Voice Room is configured in a network that permits you to connect to the Dolby Voice Room web interface from your computer. The Dolby Voice Room accepts .pem and .cer file types.

Procedure

1. Log in to the Dolby Voice Room web interface.

   For instructions, see the *Dolby Conference Phone Administrator's Guide*.

2. Select **Tools** > **Certificates** > **Import CA certificates**.
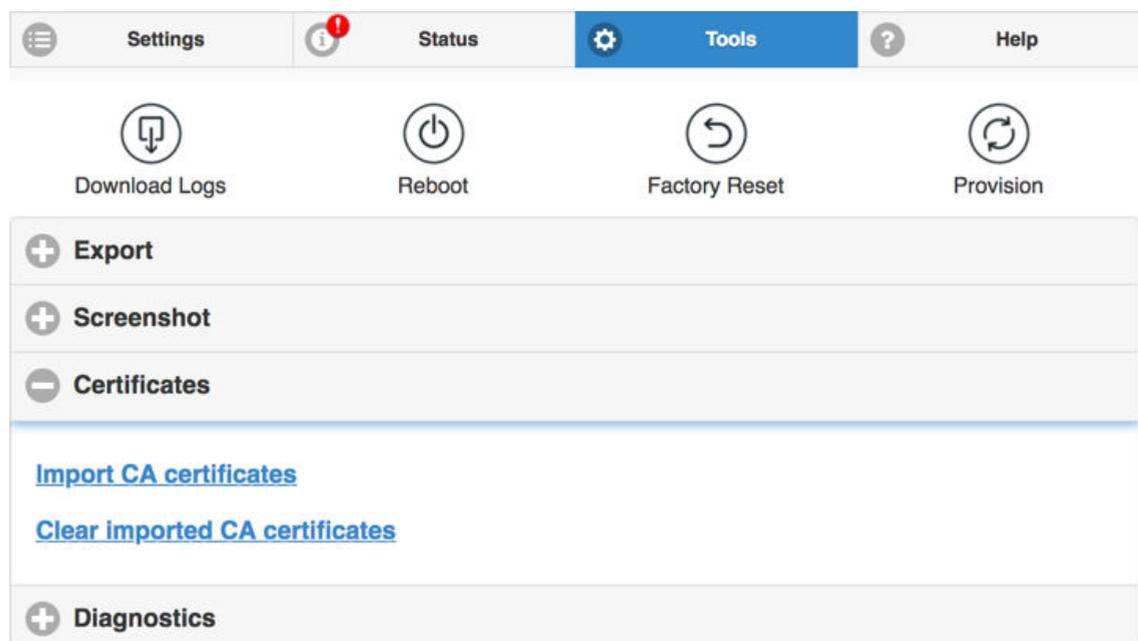
3. A dialog box displays, from which you can navigate to the certificates on your system.

Results

When the upload is complete, the number of certificates uploaded is displayed.

2.6 NTP server

Dolby Voice Room uses a time server to synchronize the clocks on all of the systems in the network.

You must specify Network Time Protocol (NTP) servers in the network settings so that you can use features like the calendar and other functionality that are dependent on accurate time and

date. We recommend that you use the Dynamic Host Configuration Protocol (DHCP) option for NTP server address delivery.

See the *Dolby Voice Room Administrator's Guide* for additional information on NTP server requirements and configuring the time server.

2.7 Proxy configuration

Some network configurations require that you specify a proxy server.

Dolby Voice Room supports Web Proxy Automatic Discovery (WPAD) and proxy automatic configuration (PAC).

For information on Hypertext Transfer Protocol (HTTP) proxy requirements and specifying a proxy server, see the *Dolby Voice Room Administrator's Guide*.

2.7.1 Specifying a proxy configuration with a PAC URL

Configure a PAC URL that instructs the Dolby Voice Room to automatically discover the proxy settings based on the target URL.

About this task

Dolby Voice Room supports the WPAD method for locating the PAC URL. Enable this to trigger automatic proxy discovery in the network. This is the recommended mechanism, because it allows for more flexibility in dynamically allocating proxy resources in your network.

Additionally, you can use one of these methods to specify the proxy configuration:

- Use the Dolby Voice Room web interface:

    a) Navigate to **Settings** > **Network** > **Proxy**.

    b) Switch **Enable WPAD** to **On**, and then complete these steps:

    - In the **Proxy Server Login Name** field, type a proxy authentication user name.

    - In the **Proxy Server Login Password** field, type a proxy authentication password.

    If your network does not implement WPAD, leave this parameter off and manually set the PAC URL by using the **PAC Configuration URL** field as described in the next step.

    c) If your network does not implement PAC, leave **Enable WPAD** off (described in the previous step) and complete these steps:

    - In the **PAC Configuration URL** field, enter the PAC URL.

    - Optional: In the **Proxy Server Login Name** field, type a proxy authentication user name.

    - Optional: In the **Proxy Server Login Password** field, type a proxy authentication password.

- Use the Dolby Conferencing Console:

    a) From the Dolby Conferencing Console, select a device, and then click the **Edit device configuration** button.

    b) If your network supports WPAD, from **Network** > **Proxy**, drag **Enable WPAD** to the device configuration. Switch `Network.Proxy.AutoDiscover` to **ON**, and then complete these steps:

- Drag **Proxy Server Login Name** to the device configuration. In the
  `Network.Proxy.UserName` field, type a proxy authentication user name.

- Drag **Proxy Server Login Password** to the device configuration. In the
  `Network.Proxy.Password` field, type a proxy authentication password.

If your network does not implement WPAD, leave this parameter off and manually set the
PAC URL by using `Network.Proxy.PacUrl` as described in the next step.

c) If your network does not support WPAD, navigate to **Network > Proxy** and then complete
these steps:

- Drag **PAC Configuration URL** to the device configuration. In the `Network.Proxy.PacURL`
  field, type the PAC URL.

  The phone uses the `Network.Proxy.PacUrl` parameter to determine which proxy server
  to communicate with in the BlueJeans infrastructure.

- Optional: Drag **Proxy Server Login Name** to the device configuration. In the
  `Network.Proxy.UserName` field, type a proxy authentication user name.

- Optional: Drag **Proxy Server Login Password** to the device configuration. In the
  `Network.Proxy.Password` field, type a proxy authentication password.

2.8 VLAN configuration

The Dolby Voice Room system can be configured on single- or dual-VLAN networks.

The Dolby Voice Room system is factory configured for VLAN 0.

📝 **Note:** Dolby Voice Room does not support Link Layer Discovery Protocol (LLDP).

See the *Dolby Voice Room Administrator's Guide* for information on the following topics:

- Primary and secondary VLANs
- Dual VLAN limitations
- Voice VLAN and data VLAN checklists
- Configuring the secondary VLAN

2.8.1 Entering VLAN information manually

You can enter VLAN information manually into the network settings of the phone.

About this task
Use the `Network.Vlan.ManualVlanId` parameter to set the primary VLAN ID.

- Using the Dolby Voice Room web interface:

  a) Navigate to **Network > Virtual LAN**.

  b) Type the value into the **Manual VLAN ID** field.

- Using the phone user interface:

  a) Navigate to **Advanced > Administrative settings > Network configuration > Ethernet**.

  b) Type the value into the **Manual VLAN ID** field.

  You can also manually configure VLAN information using the setup wizard.

2.9 DNS configuration

Dolby Voice Room requires a valid Domain Name System (DNS) configuration to function properly.

If DNS configuration through DHCP does not meet your requirements, you can override that configuration using the Dolby Voice Room web interface or the phone user interface setup wizard.

See the *Dolby Voice Room Administrator's Guide* for additional information on these topics:

- DHCP and DNS server requirements

- Automatic provisioning using a DNS server

- Domain Name System service record (DNS SRV) syntax for the automatic provisioning method

2.9.1 Manually overriding DHCP assigned DNS settings

If you want to use another set of DNS settings, or if you do not have a valid DNS configuration, you can manually override the DHCP-assigned DNS settings.

About this task
You can manually assign the domain name, the DNS server address, and the alternative DNS server address.

📝 **Note:** When dual VLAN configuration is enabled, manual override is available only on the primary VLAN.

For more information, see the *Dolby Voice Room Administrator's Guide*.

Procedure

1. From the phone home screen, tap this sequence:

   ⚙️ > ••• > **Administrative Settings**

2. Enter the administrator password, and tap **Enter**.

3. Select **Network configuration** > **IP network**.

4. Enable **Manual DNS**.

5. Modify the **Domain name**, the **DNS server 1**, and the **DNS server 2**, as required, and tap ✔.

2.10 IP PBX configuration

The Dolby Voice Room can connect to your preferred IP PBX service for regular telephony functionality.

BlueJeans supports configuration of IP PBX through the Command Center. You can also use an on-premises Dolby Conferencing Console to manage a large number of Dolby Voice Room IP PBX configurations, or the Dolby Voice Room web interface to configure an individual phone.

See the *Dolby Voice Room Administrator's Guide* for additional information on these topics:

- Configuring IP PBX

- IP PBX prerequisites

- Configuring IP PBX using the web interface

- Configuring IP PBX using Dolby Conferencing Console

- Adjusting codec preferences

- Configuring voice activation detection

2.11 LDAP configuration for a corporate directory

You can connect your Dolby Voice Room to a directory server that supports Lightweight Directory Access Protocol (LDAP) version 3.

When the Dolby Voice Room is connected to an LDAP server, you can search the company directory to find phone extension numbers. For instructions on how to configure and connect to an LDAP server, see the *Dolby Voice Room Administrator's Guide* .

3 Plug and play provisioning method

After you configure the BlueJeans Dolby Voice Room network settings and options, you can automatically provision the system using the plug and play provisioning method.

- Plug and play provisioning method requirements
- Plugging in and setting up the system automatically

3.1 Plug and play provisioning method requirements

With the plug and play provisioning method, the Dolby Voice Room is provisioned automatically by the BlueJeans provisioning service.

In addition to the firewall requirements, the plug and play provisioning method requires you to enable Hypertext Transfer Protocol Secure (HTTPS) protocol (port 443) access to:

- The Dolby Voice Console:

  https://console.dolbyvoice.com/

- The BlueJeans Dolby Voice Room provisioning server:

  https://dsetup.bluejeans.com

- The Dolby Voice Hub setup app:

  https://titan-swdl.bluejeans.com/cassata/poseidon/index.html

- The Dolby Conference Phone setup app:

  https://titan-swdl.bluejeans.com/titan/

Related information

Network preparation on page 5
Firewall requirements on page 6

3.2 Plugging in and setting up the system automatically

The Dolby Voice Room requires a wired network connection. After your system is plugged in, many settings may be automatically detected.

Procedure

1. Connect the system to an Ethernet port on the network using an Ethernet cable.
   The setup wizard appears on the system.

2. Depending on how you purchased the Dolby Voice Room system, you may see a service provider selection screen or the **Setup BlueJeans room** screen. Follow the instructions on the Dolby Conference Phone to complete the plug and play provisioning method setup.

What to do next

See the BlueJeans Dolby Voice Room *Admin Guide* on the BlueJeans Support website (https://support.bluejeans.com/knowledge/dolby-voice-rooms) for detailed information about the plug and play provisioning method.

If needed, see the the *Dolby Voice Room Administrator's Guide* for complete information and instructions for these provisioning methods.

4 Local setup

You can configure BlueJeans Dolby Voice Room for local setup if you require a configuration that is more advanced than the plug and play provisioning method.

- About local setup
- Dolby Conferencing Console preparation
- Configuring local setup
- 802.1X deployment with Dolby Conferencing Console
- Setting the BlueJeans Dolby Voice Room configuration parameters

4.1 About local setup

You can deploy BlueJeans Dolby Voice Room using local setup for several scenarios.

These are the possible scenarios:

- You want to control or lock the firmware and application version that run on your BlueJeans Dolby Voice Room.

- You have more than six BlueJeans Dolby Voice Rooms and want to enable IP PBX configuration.

- You use 802.1X network authentication.

- You use an LDAP directory server and want to enable LDAP on the BlueJeans Dolby Voice Room to allow users to search for other extension numbers.

- You want an aggregated report for both BlueJeans Dolby Voice Room and IP PBX usage in your rooms.

  Note: With local setup, BlueJeans Dolby Voice Room still has access to logs from the rooms and can provide tier-one and tier-two customer support.

4.2 Dolby Conferencing Console preparation

The Dolby Conferencing Console software provides an interface for IT administrators to use in managing BlueJeans Dolby Voice Rooms.

As an administrator, you can use the Dolby Conferencing Console software to provision devices, assemble them into device pools for ease of management, obtain analytic information about them, and monitor device status on both an individual and group level.

Depending on your deployment, you can install the Dolby Conferencing Console software on physical or virtual machines using an .ova installation file or an RPM Package Manager (RPM) package.

For trials and small- to medium-scale deployments (less than 500 BlueJeans Dolby Voice Rooms), we recommend that you install the Dolby Conferencing Console software on virtual machines using the .ova installation file. This is the simplest installation process and requires 30 minutes or less.

For other deployments, especially those involving more than 500 BlueJeans Dolby Voice Rooms and where scalability is important, we recommend that you install the Dolby Conferencing Console software on Linux-based physical or virtual machines, or on Amazon Web Services (AWS) virtual machines, by using the RPM package.

For information on installing the Dolby Conferencing Console software on-premises and using it to administer BlueJeans Dolby Voice Rooms, see the *Dolby Conferencing Console Operations and Management Guide*.

4.3 Configuring local setup

You can skip the plug and play provisioning method and proceed to configuring local setup when you see one of the initial screens on the BlueJeans Dolby Voice Room.

About this task

If the plug and play provisioning method fails, you can use the setup wizard to manually enter the Dolby Conferencing Console server address. You can also set up the DNS SRV for the BlueJeans Dolby Voice Room to automatically discover the Dolby Conferencing Console on your network.

For information on out-of-the-box discovery of the provisioning server and setting up the DNS SRV, see the *Dolby Voice Room Administrator's Guide*.

Procedure

1. On the BlueJeans Dolby Voice Room user interface, tap **Skip to local setup** or tap ☒ .
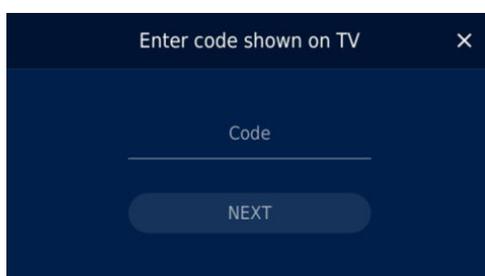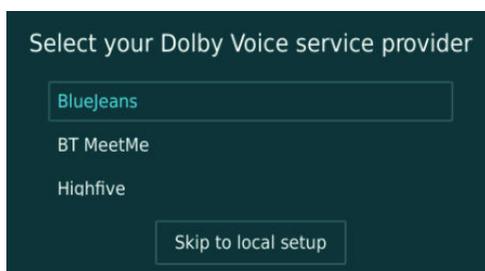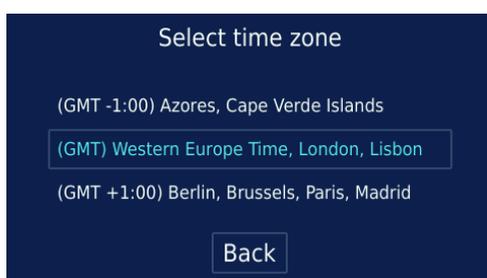

2. Tap **Confirm** to cancel the BlueJeans setup.

3. From the **Select language** screen, choose a language. If needed, scroll up or down to find the language.
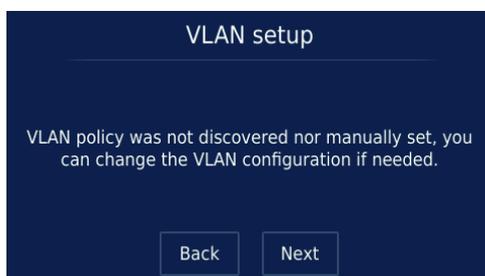

4. From the **Select time zone** screen, choose a time zone. If needed, scroll up or down to find the time zone.
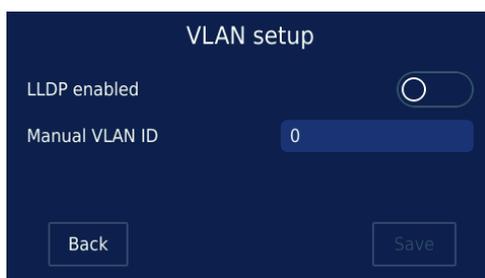

5. Optional: From the **Network setup** screen, you can change your VLAN settings, if needed.

a) Tap **VLAN** to change the VLAN configuration.
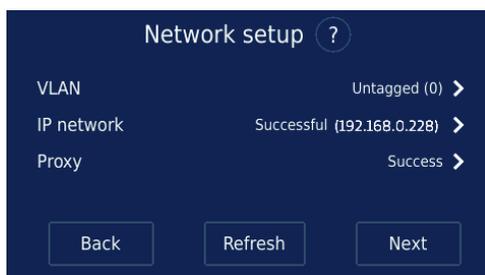
b) Tap **Next**.

c) Enable LLDP, and update the manual VLAN ID.

By default, LLDP is disabled.

6. From the **Network setup** screen, you can change your proxy settings, if needed.
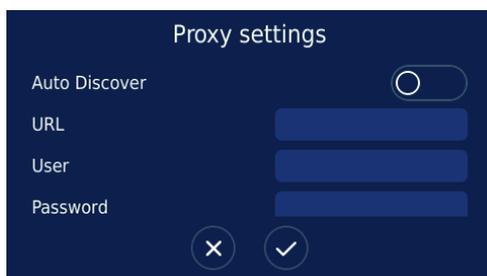
7. If challenged for 802.1X authentication, tap **Confirm certificate**, and then follow the instructions in Configuring 802.1X.

8. From the **Setup provisioning** screen, tap **Manual setup**.
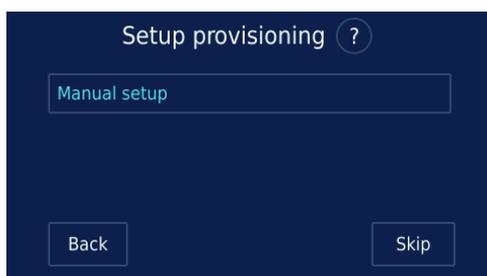
9. Enter your Dolby Conferencing Console server address, and tap **Save**.
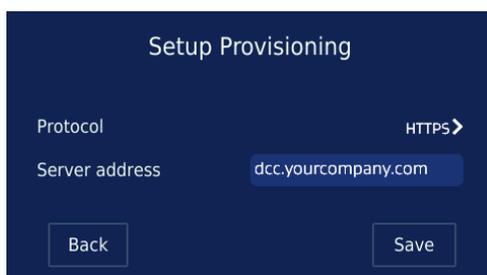
What to do next
Wait for the system to connect to the Dolby Conferencing Console, and then continue with the BlueJeans setup workflow to pair the Dolby Voice Room using the Captcha code shown on your TV.

To re-enable LLDP, you must enable the setting manually in **Settings**, either on the phone user interface or using the Dolby Conferencing Console.

4.4 802.1X deployment with Dolby Conferencing Console

To deploy your BlueJeans Dolby Voice Room with 802.1X network authentication, use the Dolby Conferencing Console software to provision certificate authority (CA) certificates on the Dolby Voice Room.

Prior to configuring 802.1X authentication on the BlueJeans Dolby Voice Room:

- Import the server CA certificate into Dolby Conferencing Console.

- Assign the certificate to the device pool to which the BlueJeans Dolby Voice Room is allocated.

For information on managing device pools and certificates using the Dolby Conferencing Console, see the *Dolby Conferencing Console Operations and Management Guide*.

4.5 Setting the BlueJeans Dolby Voice Room configuration parameters

With local setup, you must configure the Dolby Voice Room profile on the Dolby Conferencing Console so that the system can load the BlueJeans conferencing app.

About this task

Use the Dolby Conferencing Console to create a profile to assign to the device pool to which the BlueJeans Dolby Voice Room is allocated.

For information on device pool management and creating and adding a profile, see the *Dolby Conferencing Console Operations and Management Guide*.

Procedure

1. From the Dolby Conferencing Console web interface, on the home screen, select the pool where you want to create the new profile.
   A screen displays the pool with a listing of all its devices.

2. From the **Settings** menu, select **Profiles**.
   The **Current profiles** screen displays.

3. Create a new profile by clicking the add button.

The **Create a new profile** screen displays.

4. Enter a profile name.

5. From **Dolby Voice Conferencing Service** > **Hub Application**, set `Dvms.HubAp.Url` to https://titan-swdl.bluejeans.com/cassata/poseidon/index.html.

6. From **Dolby Conference Phone** > **Application**, set `Phone.App.Url` to https://titan-swdl.bluejeans.com/titan.

7. From **Dolby Voice Conferencing Service** > **Audio** > **Codec**, drag **Codec** to the device configuration.

8. In the `Dvms.Server.Codec` field, type `96;dvc-2;8000`.

9. From **Dolby Voice Conferencing Service** > **Service**, drag **Name** to the device configuration.

10. In the `Dvms.Service.Name` field, type `BlueJeans Huddle`.

    This sets the Dolby Voice conferencing service name that appears on the home screen of the device.

11. To save your changes, click the confirm button.

12. Add the profile to all relevant device pools that have the BlueJeans Dolby Voice Room service.

What to do next

You are ready to start hosting and joining BlueJeans meetings from the BlueJeans Dolby Voice Room.

5 Support information

If you have a problem, we recommend that you review this document and the related documentation. If you cannot troubleshoot the problem on your own, contact BlueJeans for support.

- Reporting an issue
- Support contacts

5.1 Reporting an issue

If you encounter a problem with the BlueJeans Dolby Voice Room, you can directly report an issue to BlueJeans using the phone user interface.

Procedure

1. From the phone home screen, tap this sequence:

   ⚙ > **Report an Issue**

2. In the comment field, enter the issue and tap **Report**.

   Report an issue   ✕

   If you'd like, please tell us what went wrong.

   Comment (optional)
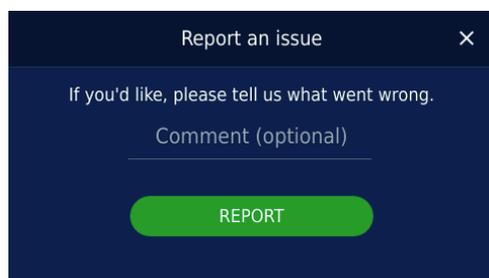
   REPORT

5.2 Support contacts

In addition to reporting a problem using the BlueJeans Dolby Voice Room user interface, you can refer to the BlueJeans knowledge base, or directly contact BlueJeans for support.

For additional information and support:

- Visit the BlueJeans Knowledge Base

- Contact BlueJeans Support

Glossary

API

Application programming interface. A set of functions that can be used to access the functions of an operating system or other type of software.

AWS

Amazon Web Services. The Amazon cloud computing services platform.

DHCP

Dynamic Host Configuration Protocol.

DNS

Domain Name System. An Internet service that translates Internet domain and host names to IP addresses and conversely. DNS automatically converts between the name entered in a web browser and the IP addresses of the web server hosting the site whose URL is entered in the web browser.

DNS SRV

Domain Name System service record. A service record (SRV record) defines the location (the host name and port number) of a server in a DNS.

FTP

File Transfer Protocol. A network-based protocol designed for transferring data using a client–server architecture.

H.264

Also known as Advanced Video Coding (AVC), ISO/IEC MPEG-4 AVC, and ISO/IEC 14496–10:2012. An MPEG standard for video compression most commonly used for high–definition video, such as Blu-ray Disc. The standard was developed jointly by the International Telecommunication Union (ITU) and ISO/IEC MPEG.

HD

High definition.

HTTP

Hypertext Transfer Protocol. An application protocol for hypermedia information systems, and the foundation for data communication for the World Wide Web.

HTTPS

Hypertext Transfer Protocol Secure. An application protocol for secure communication over a network and the Internet that provides authentication of websites and keeps user information private.

IP

Internet Protocol.

IP address

Internet Protocol address. A numerical identifier assigned to a device that is a member of a network that uses the IP for communication.

kbps

Kilobits per second.

LDAP

Lightweight Directory Access Protocol. An application protocol for querying or modifying items in corporate directories that allows sharing of information about users, devices, and applications on a network.

LED

Light-emitting diode.

LLDP

Link Layer Discovery Protocol . A vendor-neutral link layer protocol for Ethernet network devices such as switches, routers, and wireless local area network (LAN) access points to announce information about themselves to other nodes on the network and store the information they discover, as defined in IEEE 802.1AB.

NTLMv2

A Microsoft security protocol that provides authentication, integrity, and confidentiality to users. NTLMv2 is part of Windows NT LAN Manager, which is a suite of security protocols.

NTP

Network Time Protocol. A network protocol for clock synchronization on computers.

NUC

Next Unit of Computing. A small-form-factor personal computer designed by Intel.

PAC

Proxy automatic configuration. A file that defines how web browsers and other user agents can automatically choose the appropriate proxy server (access method) for fetching a given URL.

PBX

Private branch exchange. A phone system that is delivered as a hosted service.

PC

Personal computer.

PKI

Public key infrastructure. A set of roles, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates and manage public-key encryption.

PoE

Power over Ethernet. A solution in which an electrical current is run to networking hardware over Ethernet category 5 or higher data cabling.

RPM

RPM Package Manager. A system for managing Linux software installation packages.

RTCP

RTP Control Protocol. A protocol for communicating quality-of-service information about Real-time Transport Protocol (RTP) sessions.

RTP

Real-time Transport Protocol. An IP network audio and video protocol.

SIP

Session Initiation Protocol. An application-layer communications protocol used for signaling and controlling communications sessions.

TCP/IP

Transmission Control Protocol/Internet Protocol. Communications protocols that specify how data should be formatted, addressed, transmitted, routed, and received at the destination. Part of the Internet protocols communications suite.

TLS

Transport Layer Security. A cryptographic protocol designed to provide communications security over a computer network.

UDP

User Datagram Protocol. A communications protocol that uses no handshaking dialogues to establish a connection with the remote host. UDP is a member of the IP suite.

URL

Uniform resource locator.

VLAN

Virtual LAN. Any broadcast domain that is partitioned and isolated in a computer network at the data link layer (OSI layer 2).

WPAD

Web Proxy Automatic Discovery. An Internet protocol that enables a web browser to automatically connect to a cache server (or proxy server) location in a network to retrieve stored web pages more quickly by than leaving the network to request the web page from the site of the originating web server.