Grandstream Networks, Inc.

IPVT10

Cluster Server Environment Guide

Table of Content

Table of Figures

IPVT10 Cluster Server Environment

INTRODUCTION

Multiple IPVT10 servers can be deployed under the same network to expand MCU capabilities. The Clustering feature allows the load balancing between multiple IPVT10 which will allow the users to make conferences in better conditions and in a balanced environment.

Setup Method

In cluster mode, users could use 1 IPVT10 server as the host server, and the other IPVT10 servers can be used as the slave servers.

There are two ways to connect the host server with the slave servers:

1. Under the same LAN (such as in the same office)

2. Under the external network (such as setup the cluster in different offices)
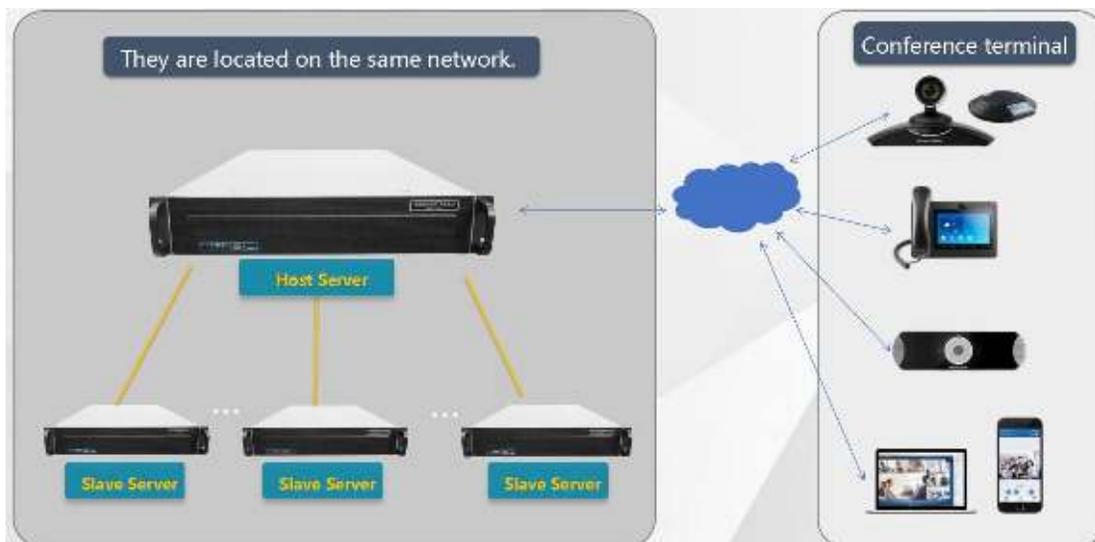
Figure 1: Setup Method

The conferencing capability of the cluster is shown on below table:

Table 1: Cluster Capabilities

MCU Capability	1 Host Server	Adding 1 Slave Server	Adding N Slave Servers
Max Video Feeds	120	+120	+N*120
Max Participants	300 (Dual NICs) 200 (Single NIC)	+200	+N*200
Max Meeting Number	10	+10	+N*10
For Single Meeting	Up to 120 video feeds Up to 300 participants	Up to 120 video feeds Up to 300 Participants	Up to 120 video feeds Up to 300 Participants

Installation Process

The process to setup cluster servers is shown as below:

1. Select an IPVT10 server as the host server, install the IPVT10 server and setup the device.

2. Install the IPVT10 slave servers, and setup the devices.

3. Complete the setup and check the configuration on each device.

HOST SERVER INSTALLATION AND SETUP

Setup Host Server

1. Install the IPVT10 server following the IPVT10 Quick Installation Guide. Please refer to the IPVT10 Quick Installation Guide on http://grandstream.com/support/.

2. Connect your PC to the Network Interface 1 of the IPVT10 server using an Ethernet cable.

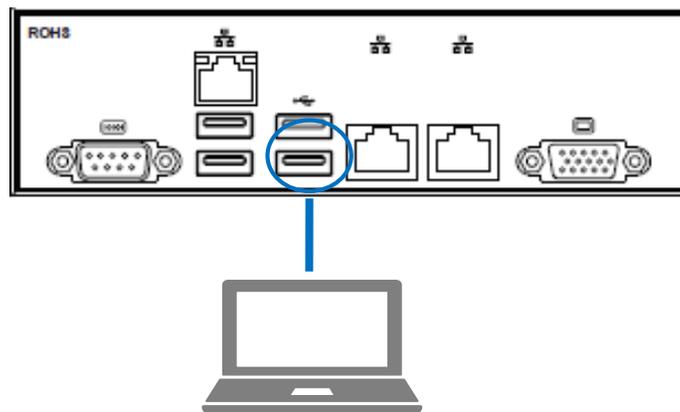**Figure 2: Connect IPVT 10 with a PC Directly**

3. Login the IPVT10 server with your browser, the address is "192.168.88.88/deploy", and the default username and password are "admin/change_me".

4. Access the IPVT10 Deployment Wizard page, and select "Host Server", then click on "Next" to set the IPVT10 server as the host server.
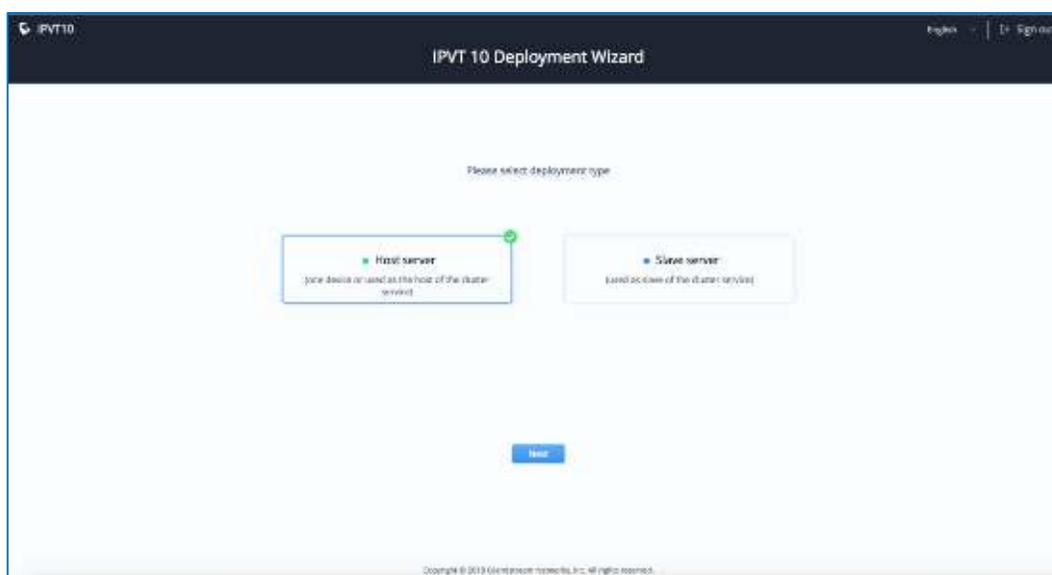

Figure 3: IPVT10 Deployment Wizard

IPVT10 Cluster Server Environment

5. **Network Settings**: The host server allows users to configure dual networks in the device.

6. **Time Settings**, **SMTP Mailbox** and **Meeting Management Platform** are necessary settings. Users need to configure the settings before using the host server.

7. Users must enable the Cluster Service feature in the IPVT10 host server. Users could click on "Cluster Settings", and check the option "Active Cluster Service" to active the Cluster Service in the IPVT10 host server, as the figure shown below:

Figure 4: Active Cluster Service

8. Click on "Apply Now" to apply the configuration in the IPVT10 host server.

Notes:

1. If the cluster service is enabled and NAT is used, the cluster port 3001 need to be configured for NAT.

2. When users finish setup the IPVT10 host server, users need to check and ensure Ethernet Interface 1 and Ethernet Interface 2 connecting with 1000M network.

Enable Cluster Service for Active IPVT10 Server

If users want to enable Cluster Service in an active IPVT10 server, users could follow the steps below:

Prerequisites:

Required system version: 1.0.1.5.

If the system version is too low, please upgrade your IPVT10 device before enabling Cluster Service.

Steps:

1. Login IPVT10 Web UI.

2. Go to "Service Configuration" → "Cluster Settings" options and check the option "Active Cluster Service" to activate Cluster Service in the IPVT10 server, and setup the device as the host server.
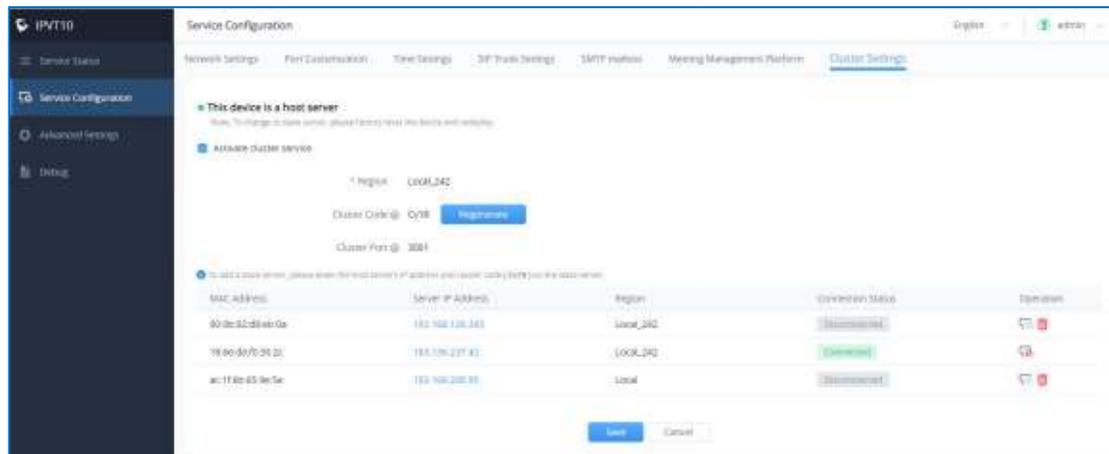

Figure 5: Cluster Service Configuration

3. User must click to save the configuration and click on "Apply Now" to apply the entire configurations. When the deployment is complete, it will take effect immediately.

4. In the slave servers, users need to input the "Cluster Code" (e.g. "Cv1R" in the screenshot above, case sensitive). Then, the connection between the cluster host server and slave server will be established.

Note:

If the cluster service is enabled and NAT is used, the cluster port 3001 need to be configured for NAT.

Change Slave Server to Host Server

If the user wants to change the slave server to the host server, the user could follow the steps below:

1. Login the Web UI of the IPVT10 slave server, go to "Advanced Settings", and click "Factory Reset" option to reset the IPVT10 slave server.

2. Setup the IPVT10 device again following the section HOST SERVER INSTALLATION AND SETUP.

SLAVE SERVER INSTALLATION AND SETUP

Setup Slave Server

1. Install the IPVT10 server following the IPVT10 Quick Installation Guide. Please refer to the IPVT10 Quick Installation Guide on http://grandstream.com/support/.

2. Connect your PC to the Network Interface 1 of IPVT10 device with Ethernet cable. Network Interface 2 of IPVT10 device needs to be connected with 1000M network, and the IPVT10 slave server needs to be able to reach the IPVT10 host server.
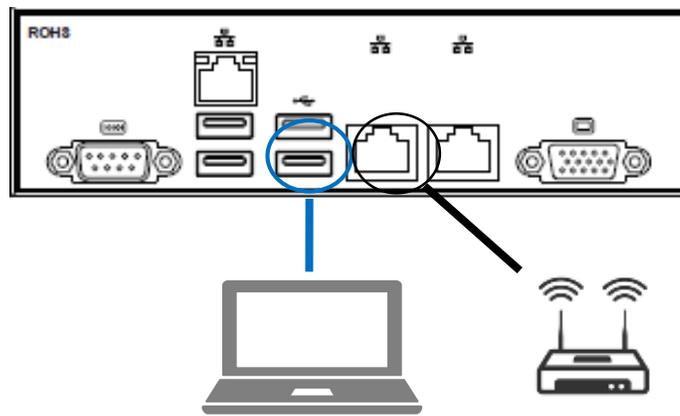

Figure 6: Connect IPVT 10 with a PC Directly

3. Login the IPVT10 server with your browser, the address is "192.168.88.88/deploy", and the default username and password are "admin/change_me".

4. Go to IPVT10 Deployment Wizard page, select "Slave Server", and click "Next" for next step.

Figure 7: Slave Server Setup

IPVT10 Cluster Server Environment

5. **Network Settings**: The IPVT10 slave server only allows users to configure single network. The configured IP address must be able to connect with the host server.

6. **Time Settings** is necessary configuration for IPVT10 slave server.

7. Configure "Cluster Settings" options, as the figure shown below:

Figure 8: Slave Server Cluster Settings

8. The slave server is required to configure the host server IP address and the cluster code:

    (1) Input the IP address of the host server, this IP address must be able to be reached by the slave server.

    (2) Input the Cluster Code of the host server, case sensitive.

9. Click on "Apply Now" to apply the configuration in the IPVT10 slave server.

Note:

Please ensure the Network Interface 2 of IPVT10 slave server needs to be connected with 1000M network, and the IPVT10 slave server needs to be able to reach the IPVT10 host server.

Change Host Server to Slave Server

Steps:

1. Login the Web UI of the IPVT10 host server, go to "Advanced Settings", and click "Factory Reset" option to reset the IPVT10 host server.

2. Setup the IPVT10 device again following the section SLAVE SERVER INSTALLATION AND SETUP.

Note:

When the IPVT10 host server is factory reset and setup as slave server, the original user data may be destroyed. Please back up the user data such as recording files before the operation.

NETWORK CONFIGURATION EXAMPLE

Under Same LAN

The host server and all slave servers are under the same LAN (same office). Users need to assign the IP addresses for each IPVT10 server.

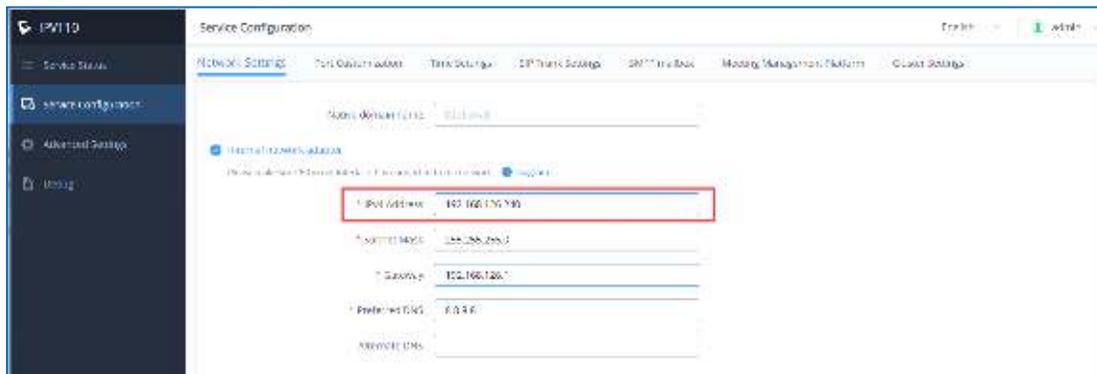1. The host server is configured with an internal IP address, such as 192.168.126.240.

Figure 9: Internal IP Address - Host Server

2. The slave server is configured with the same LAN network, such as 192.168.126.241.
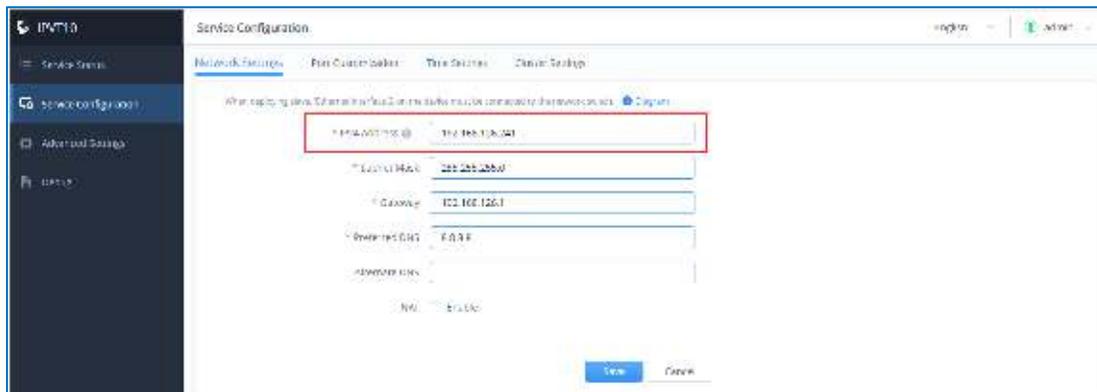

Figure 10: Internal IP Address - Slave Server

3. Configure the host server's IP address in each slave server, such as 192.168.126.240. When users click on "Apply Now" to apply the configuration in the slave server, users could see the host server connection status - "Connected" on the Web UI as the screenshot shows below:
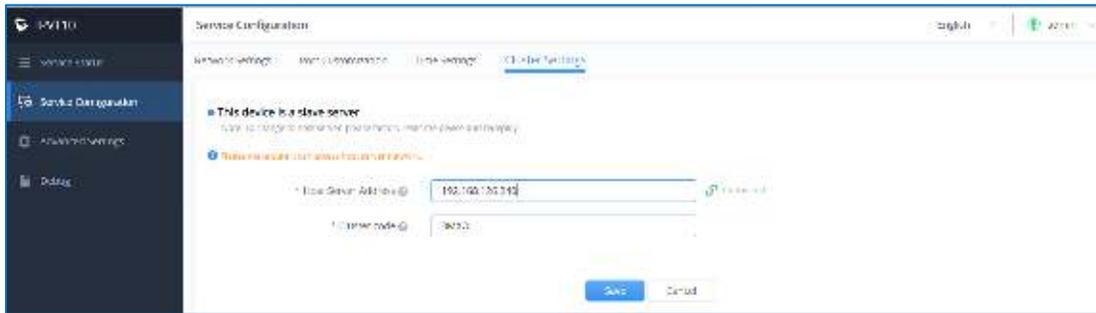
IPVT10 Cluster Server Environment

Figure 11: Host Server Connection Status

Under Different Public Network

The IPVT10 host server could be in the office A, and the other slave servers could be in other different offices. Users could build the cluster servers through the public network with host server and slave servers.

1. Configure the public network IP address in the host server. For example, go to "External Network Adapter", and configure IP address 101.71.248.139 for the host server.

Note: The host server allows users to setup dual networks in the device, which means users could configure both internal network address and external network address in the host server.
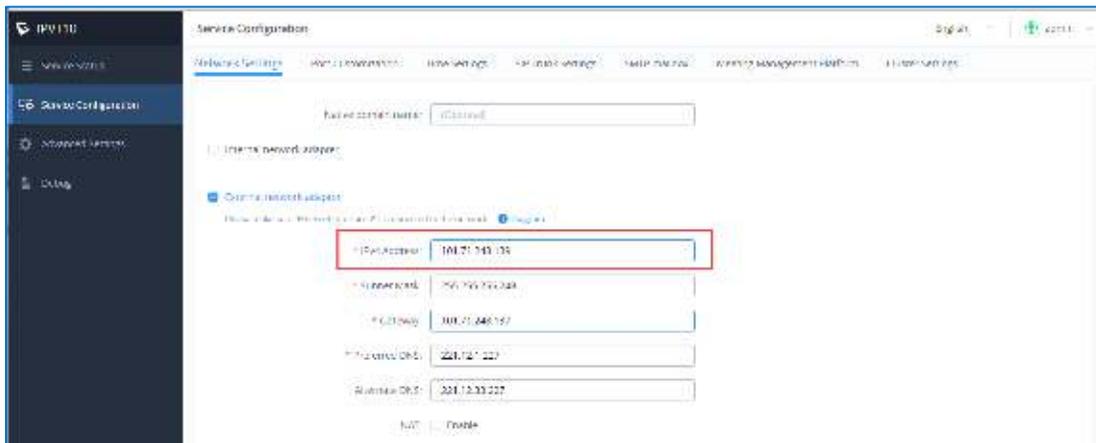

Figure 12: Configure Public Network Address

2. Configure the public network IP address in the slave server, such as 183.136.237.42.
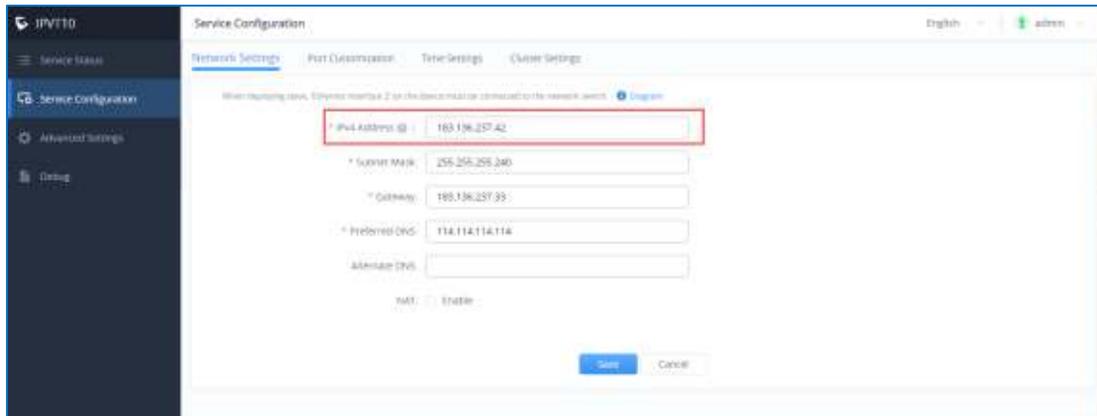
Figure 13: Configure Public Network Address

3. Configure the public network IP address of the host server in each IPVT10 slave server, such as 101.71.248.139. If NAT is configured in host server, users need to input the NAT IP address.
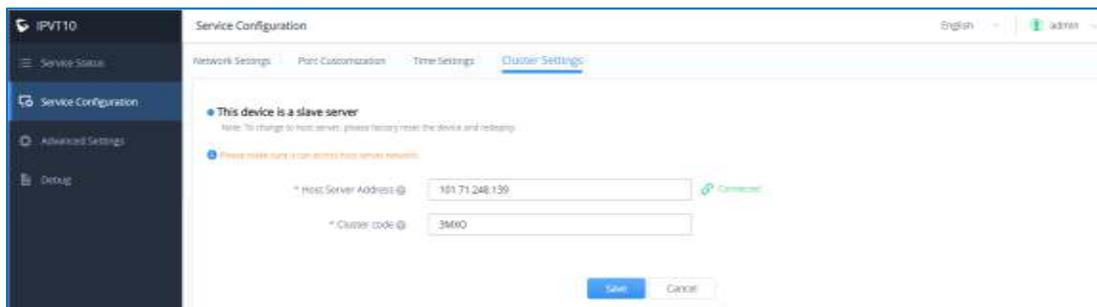

Figure 14 : Host Server Connection Status - Public Network

Note: Since the slave server and host server are not under the same LAN, users cannot use the internal network IP address of the host server. Otherwise, the connection cannot be established.

MANAGEMENT BY REGIONS

Configure IPVT10 Server Region

Users could manage the clustered IPVT10 servers by different regions. For example, if IPVT10 servers A, B, C are assigned to region 1, and IPVT10 servers D, E are assigned to region 2, for the GVC devices or IPVideoTalk IDs which are assigned to region 1 can only use the resources in the IPVT10 servers which belong to region 1, and they cannot access to use the resources in region 2.

1. Login IPVT10 Web UI.

2. Go to "Service configuration" → "Cluster Settings", users could view the Host/Slave Servers List.
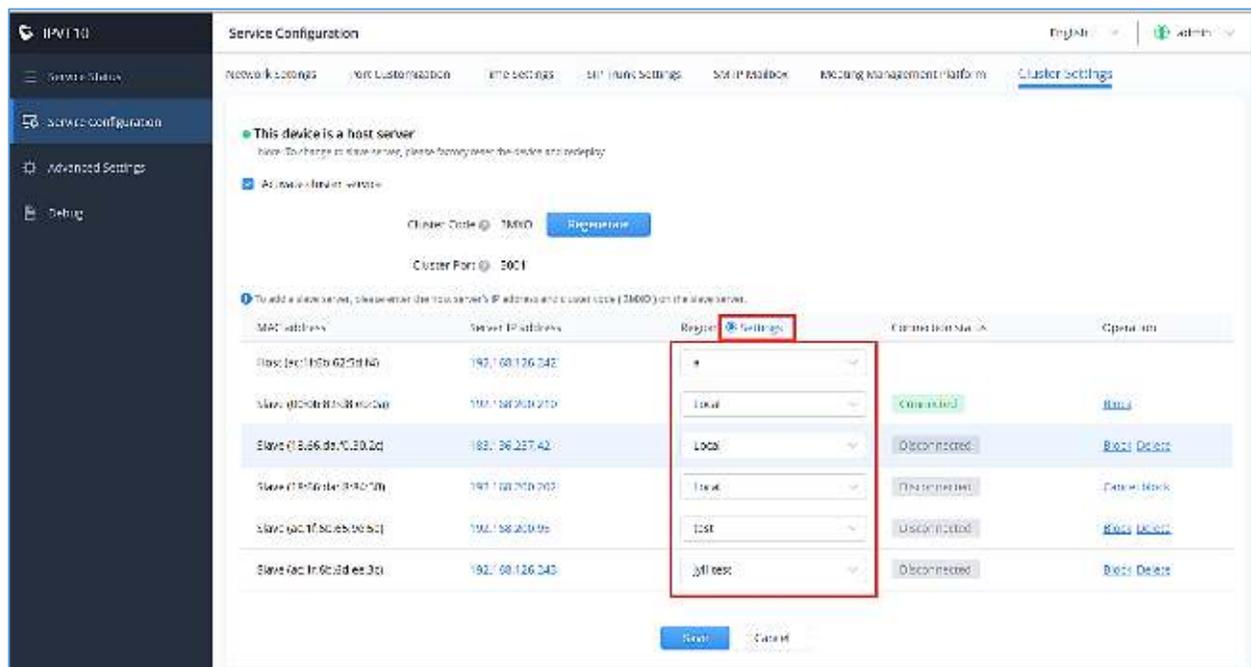

Figure 15: Host/Slave Servers List

3. Users could change the region of the IPVT10 server under "Region" menu by clicking the drop-down menu. The default setting is "Local". If users want to add new region, please click on the "Settings" icon besides "Region" menu option, as the figure shows above.

4. Users need to click on "Save" button to save the configuration, and click on "Apply Now" to effect on the device.

If there is a region that does not include any IPVT10 server, all the scheduled meetings in this region cannot be started, and there will be a prompt to indicate the user that all scheduled meeting in this region will be moved to another region. As the figure shows below:
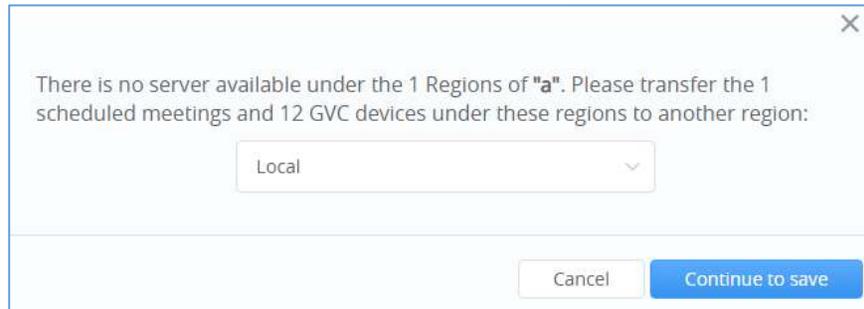
IPVT10 Cluster Server Environment

Figure 16: Move Scheduled Meetings

Add/Edit Regions

Users could add multiple new regions, and change the names of the regions.

1. Login IPVT10 Web UI.

2. Go to "Service configuration" → "Cluster Settings", and click the icon ⚙ Settings besides the Host/Slave Servers List, users could see the prompt as the figure shows below:
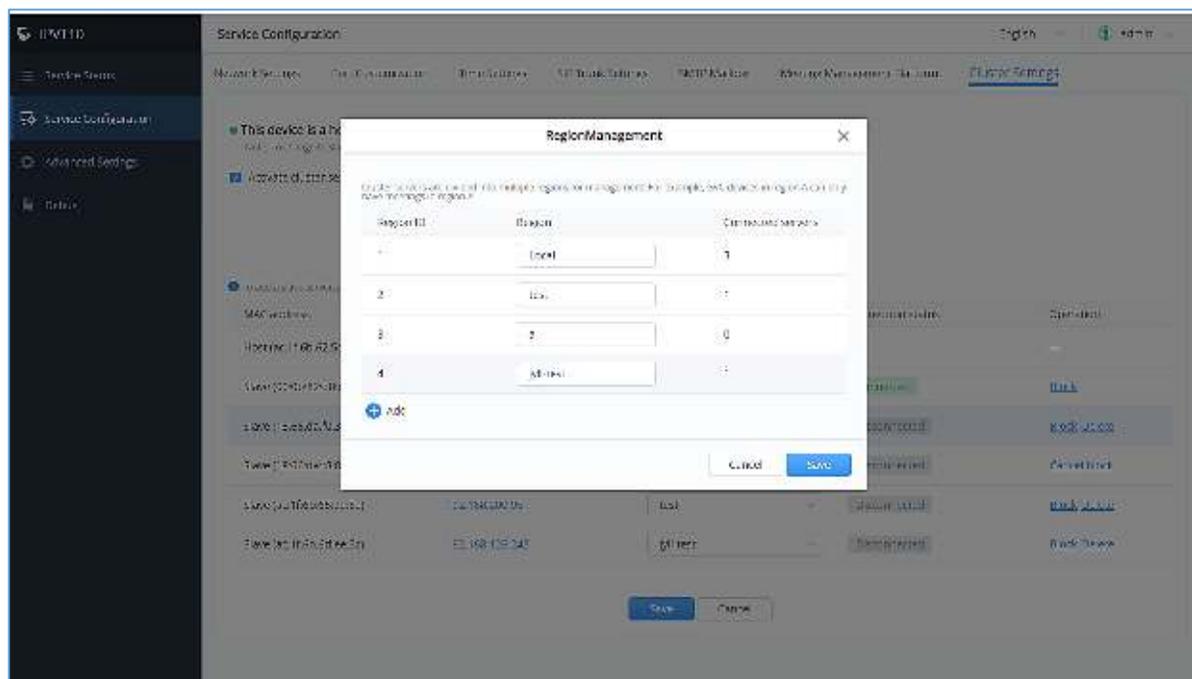

Figure 17: Region Management

Note:

1. The connected IPVT10 servers amount for each region in the list is indicating that the available IPVT10 servers amount, it does not include the blocked servers.
2. Users could add new regions, input the region name and click "Save" button to save the regions.

IPVT10 Cluster Server Environment

3. Users could also update the region name for a certain region, and click "Save" button to save the region name.

4. Users need to click on "Apply Now" to effect on the device.

Configure Device Region

The default region of all devices are the region of the host server. If there is a new adding region, users need to log in the Conference Management Platform to configure the new region of the device. Otherwise, any device cannot use the server in the new region.

Step:

1. Input the IP address or domain name of the IPVT10 server in the browser, and log in the Conference Management Platform.
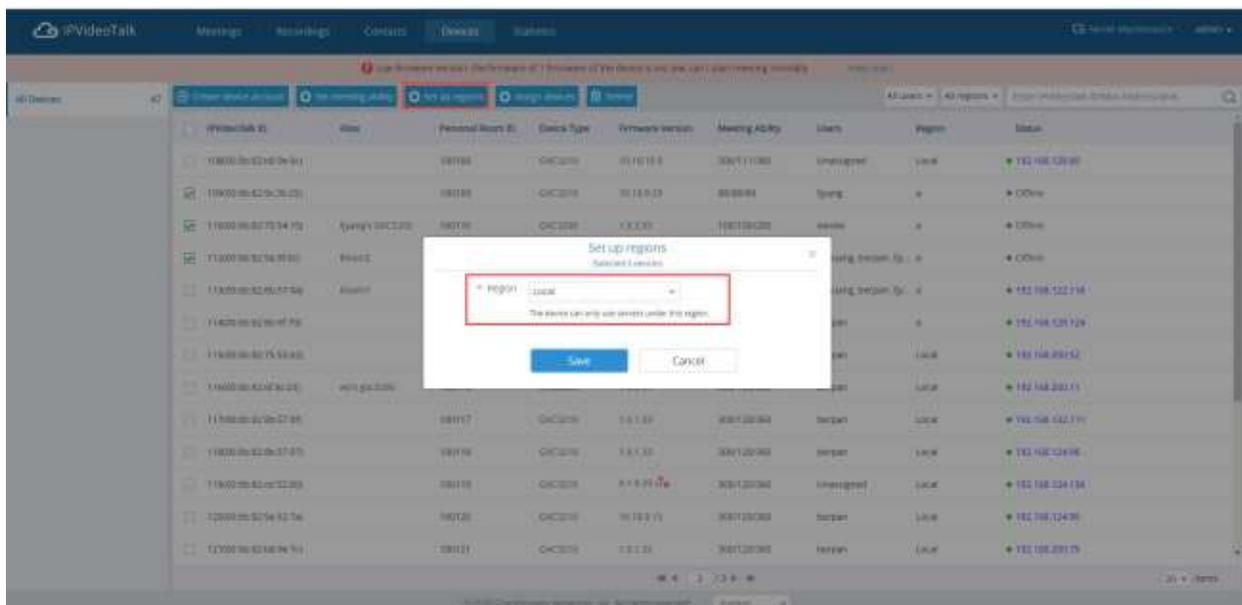

Figure 18: Setup Regions

2. Users could click to access the device detailed information page to update the region of the device. Or, users could select multiple devices, and click on the option "Setup Region" to update the regions for a batch of devices.

3. When the region is updated for a certain device, this device can only use the resources in the updated region for the created meetings, and the device cannot use the resources of the IPVT10 servers in other regions.

Note: If there is no more available resource for the certain device in the IPVT10 server of the region, the certain device cannot create any meeting.

CONFIGURATION REVIEW

After configuring the Cluster, users can verify the configuration and status of the Host/Slave connection. This can be verified from the 2 side, Host side or Slave side.

1. Login the Web UI of the IPVT10 host server and go to "Service Configuration" → "Cluster Settings" to check the connection status of each IPVT10 slave server.
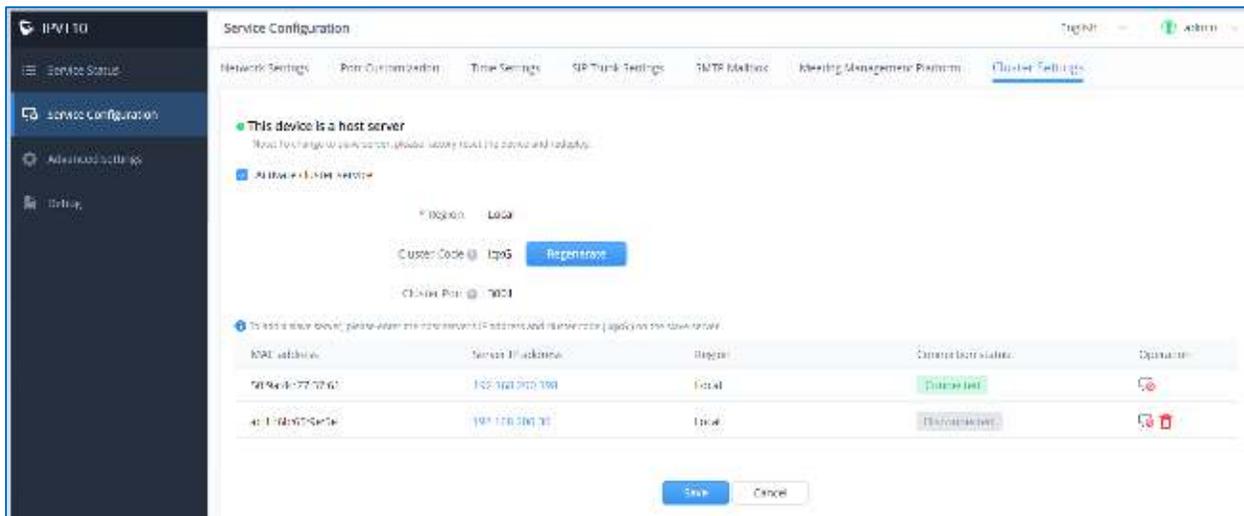

Figure 19: Check Slave Servers' Connection Status

2. Or, users could login the Web UI of the IPVT10 slave server and go to "Service Configuration" → "Cluster Settings" to check the connection status with the host server.
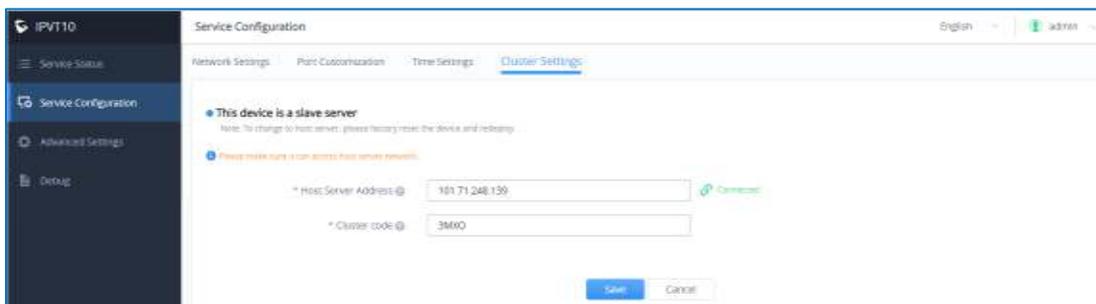

Figure 20: Check Connection Status on Slave Server's Web UI

IPVT10 Cluster Server Environment

CHECK STATUS OF EACH SLAVE SERVER

Users could check the slave server connection status, system version number, number of conferences, network conditions, and the status of the hard disk on IPVT10 host server's Web UI.

1. Login the Web UI of the IPVT10 host server.

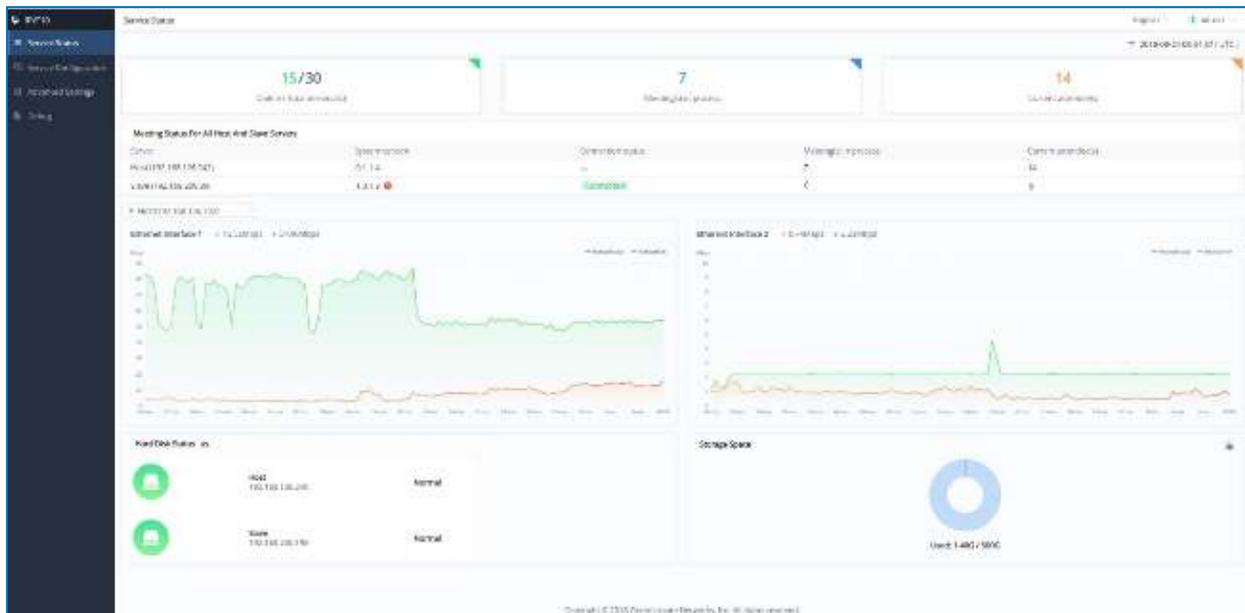2. Go to "Service Status", and check the information of each slave server, as the screenshot shows below:

Figure 21: Service Status

3. If the system version number of the slave server and host server are inconsistent, there will be a prompt ⚠ next to the version number. The recommendation is the host server and slave server are using the same system version.

4. It also displays the number of ongoing conferences and current participants of the host server and each slave server in the real time. If users reboot the server, or update the configuration in the server, the ongoing conference will be forced to end.

5. Users could view the network bandwidth of each slave server. Users could click the drop-down menu to select the host server or certain slave server to view the network bandwidth.

6. **Device Status**: Users could view the status of the hard disk of the host server and all slave servers.

Below the explanations of each Hard Disk status icons:

	This icon represents the normal status of the Hard disk.
	This icon means that the Hard disk status is abnormal, and the specific disk symbol will be displayed.
	This icon means that the drive letter is rebuilt, and the specific disk symbol is displayed. After the reconstruction is successful, it will return to normal.

UPGRADE SYSTEM VERSION

If users need to upgrade the system version, it is recommended that both the host server and the slave

servers are upgraded to the same system version. Otherwise, it may cause some issues for the conference.