

# 3-Way Calling on MediaPacks – MP-11x and MP-124 Gateways



**Applicable Products:** MediaPack™ MP-11x; MediaPack™ MP-124  
**Software version:** 5.8

## WHAT IS 3-WAY CALLING?

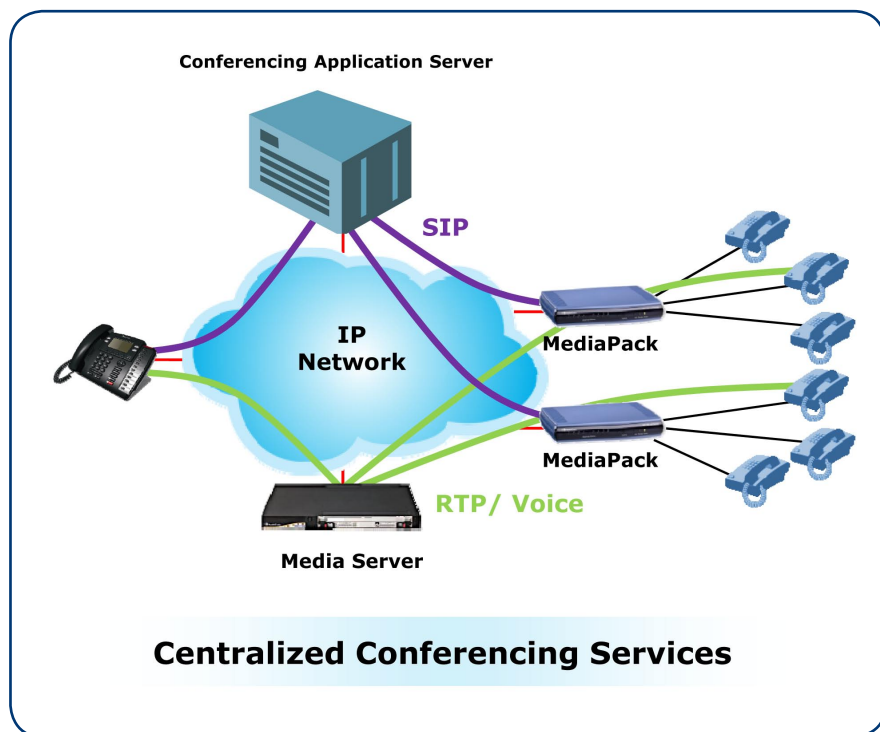
3-Way Calling (3WC) is a feature that lets you talk to two people at the same time. 3WC can be a service provider network feature, typically available (usually at an extra charge) for most customers on their phone lines or it can be a feature implemented on an Enterprise PBX or a Key-system. In a VoIP system the 3WC can also be done locally by the VoIP phone or the Analog Media Gateway. To create a 3-Way call, the first person one wishes to contact is dialed and connected. Then the Hook Flash button is pressed and the third person's phone number is dialed. Once the third party answers, the Hook Flash is pressed again. This will join the three parties together. This option allows callers to add a second outgoing call to an already connected call.

## WHAT ARE THE TWO WAYS FOR 3-WAY CALLING IMPLEMENTATION IN A SIP-BASED SERVICE PROVIDER'S CLASS 5 NETWORK?

Service providers implementing 3-Way Calling service for their Class 5 customers usually use one of two primary models for implementation: A Network Conferencing Platform providing centralized conferencing services, or a distributed conferencing solution, implemented locally in the analog Media Gateways to which the end users are connected. The user experience is identical for both methods.

### CENTRALIZED CONFERENCING SERVICES – THE NETWORK CONFERENCING PLATFORM

When using a Network Conferencing Platform, the service provider can transparently provide conferencing services to all of its Class 5 SIP users, including IP Phones, and Analog Phones connected to Media Gateways. The conferencing service is achieved using a centralized IP-based Conferencing platform, typically integrated into the central SoftSwitch or application server. In other cases the service is provided by a dedicated conference application server, which typically provides scalable conferencing services for more than three users at a time. When using a centralized Network Conferencing Platform, the Media Gateways do not need to implement any specific conferencing feature. The user's "Hook Flash" and dialing commands are translated into SIP messages that are sent to the Softswitch or application server. The Softswitch is in charge of establishing the 3-Way Calling and mixing the voice streams, i.e., all three RTP streams are mixed and relayed by the centralized Softswitch / application server. In the case when different users participating in the conference call use different voice coders, the Softswitch is also in charge of the transcoding function, using internal software resources or an external Media Server.



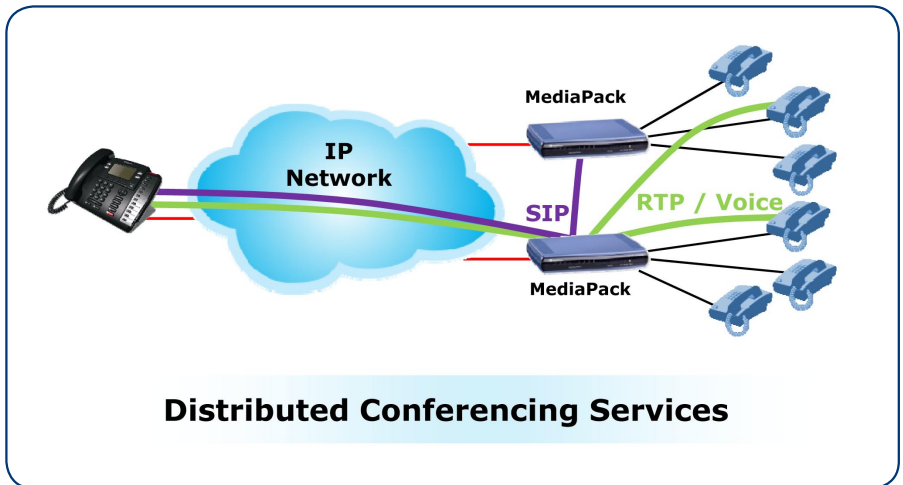
In the case when different users participating in the conference call use different voice coders, the Softswitch is also in charge of the transcoding function, using internal software resources or an external Media Server.

# 3-Way Calling on MediaPacks – MP-11x and MP-124 Gateways



## DISTRIBUTED CONFERENCING SERVICES – MEDIA GATEWAY WITH LOCALLY IMPLEMENTED 3-WAY CALLING

When using a distributed conferencing service, 3-Way Calling services can still be provided to all of the SIP users, based on the distributed Media Gateways to which the analog users are connected. The conferencing service is created on demand by the Media Gateways at the edge. The Media Gateway with the locally implemented 3-Way Conference feature needs to fully support the creation and tear-down of the 3-Way Call, based on the user's "Hook Flash" and dialing commands. In some cases, the 3-Way Call can be internal to the Media Gateway, and in other cases, one or more of the 3-Way Conference users can be located somewhere else on the IP network – IP Phones or other analog users connected to other Media Gateways. In this case, the Media Gateway is in charge of translating the "Hook Flash" commands into appropriate SIP messages and directly signaling the other parties of the conference call. In addition to establishing the 3-Way Call the edge Media Gateway is in charge of mixing the voice streams. The other two RTP streams (in case the other parties are not internal to the Media Gateway) are sent to the initiating Media Gateway. In order to perform the voice mixing, some of the Media Gateway's DSPs are allocated for this purpose, disabling some of the Media Gateway's ports (e.g., no dial tone) for the duration of the conference call. The DSPs assigned in the edge Media Gateway will also be managing the jitter buffer, echo cancelation, silence suppression, and packet interpolation.



In the case when different users participating in the conference call use different voice coders, the edge Media Gateway is also responsible for the transcoding function, using the same DSP resources.

In the case when different users participating in the conference call use different voice coders, the edge Media Gateway is also responsible for the transcoding function, using the same DSP resources.

## AUDIOCODES IMPLEMENTATION OF 3-WAY CALLING

AudioCodes MediaPack (MP-11x/124) Analog Media Gateways are widely used for Class 5 Service Provider applications, where 3-Way Calling is a required feature. Up until recently, only centralized conferencing services were supported by the MediaPack 11x/MediaPack 124.

Recently, based on requirements from Tier-1 service providers, AudioCodes has added the locally implemented 3-Way Calling feature to the MediaPack 11x/MediaPack 124. This feature includes all the functionalities described above, including local mixing and transcoding of the 3-Way Call legs on the Media Gateway, and even allowing multi-codec conference calls. The MediaPack also supports highly sophisticated resource management, which ensures that even if DSP ports were allocated to perform 3WC, the service won't be affected on the Media Gateway's remaining ports.