SIP Interoperability

All Mediatrix Products

DGW 49.2.2941

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Basic Concepts

Interoperability

Interoperability is the ability of computer systems or software to exchange information and to be able to use the information that has been exchanged.

For example, when deploying a SIP trunk, information must be exchanged between the SIP trunking service provider or ITSP offering the SIP trunk service, the IP-PBX, and the Mediatrix device located on the edge of the network. If the information cannot be understood, processed and exchanged by every component, customers will experience interoperability issues that can translate into:

- Device and user registration issues
- Problems when trying to transfer calls
- Increased vulnerability to VoIP cyber attacks
- Messaging delays or failure

Basic Tasks

Setting the SIP INVITE for T.38 Fax Error Behavior

Steps

1) Go to **SIP/Interop**.
2) In the **Behavior on T.38 INVITE Not Accepted** table, set the behavior of each SIP error code.
3) Click **Apply**.

Result

When an error is received as a response to an INVITE for T.38 fax, the selected behavior will be applied.

Behavior on T.38 INVITE Not Accepted		
SIP Error Code	Behavior	
406	Re-INVITE For Clear Channel Only	
415	Re-Establish Audio	
488	Drop Call	
606	Re-INVITE For Clear Channel Only	

Configuring SIP Interoperability

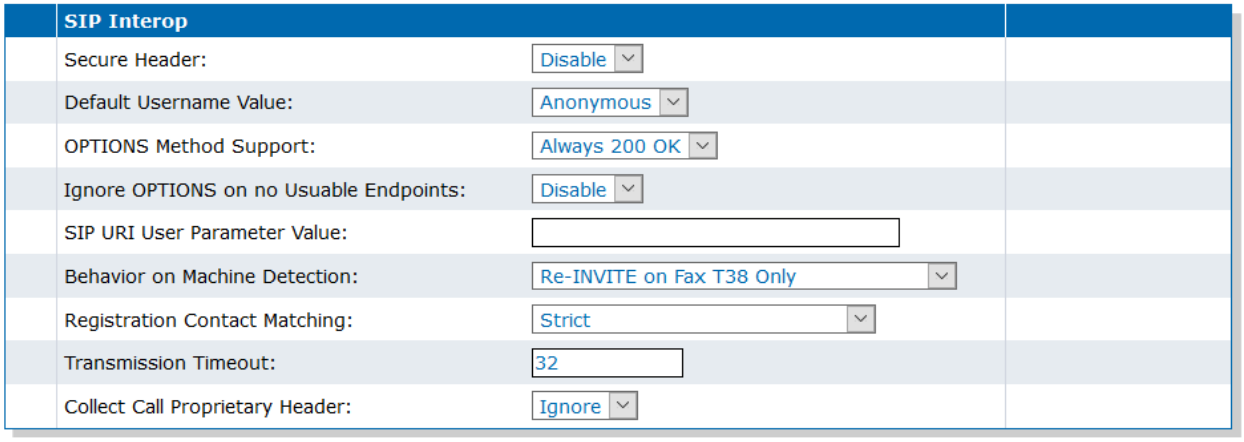
Before you start

Before configuring SDP interoperability, you must first read the online help available for each field and parameter as important information on limitations, instructions, exclusions, and proscriptions are mentioned. Click **Show Help** located at the top right of the screen.

Steps

1) Go to **SIP/Interop**.
2) In the **SIP Interop** table, set each parameter as required.
3) Click **Apply**.

Result



SIP Interop	
Secure Header:	Disable
Default Username Value:	Anonymous
OPTIONS Method Support:	Always 200 OK
Ignore OPTIONS on no Usuable Endpoints:	Disable
SIP URI User Parameter Value:	
Behavior on Machine Detection:	Re-INVITE on Fax T38 Only
Registration Contact Matching:	Strict
Transmission Timeout:	32
Collect Call Proprietary Header:	Ignore

Configuring SDP Interoperability

Before you start

Before configuring SDP interoperability, you must first read the online help available for each field and parameter as important information on limitations, instructions, exclusions, and proscriptions are mentioned. Click **Show Help** located at the top right of the screen.

Steps

1) Go to **SIP/Interop**.
2) In the **SDP Interop** table, set each parameter as required.
3) Click **Apply**.

Result

SDP Interop	
Offer Answer Model:	
Answer Codec Negotiation:	All Common - Local Priority
Enforce Offer Answer Model:	Enable
Allow Less Media In Response:	Disable
Allow Media Reactivation in Answer:	Disable
Multiple Active Media:	
Allow Audio and Image Negotiation:	Disable
Allow Multiple Active Media In Answer:	Enable
Other:	
On Hold SDP Stream Direction in Answer:	RecvOnly

Selecting the Security Level to Validate TLS Server Certificates

Before you start

- At least one certificate must be returned by the peer even if no validation is made.
- **No Validation** and **Trusted Certificate** certificate validation should only be used for lab purposes.
- The Host name must absolutely be known by the DNS server the unit is contacting.
- The certificate authority (CA) must be added to the Cert service.

Information

For more details on Transport Layer Security (TLS), refer to the DGW Configuration Guide -Transport Layer Security published on the Media5 Documentation Portal. This configuration is mandatory for certificate validation.

Steps

1) Go to **SIP/Interop**.
2) In the **TLS Interop** table, set **Certificate Validation** parameter as required.

   Note: This parameter has no effect on the TLS client authentication when the unit is acting as a TLS server. Refer to the **Interop.TlsClientAuthenticationEnable** parameter in the Reference Guide published on the Media5 documentation portal.

3) Click **Apply**.

Result

TLS Interop	
Certificate Validation:	Host Name

Configuring Miscellaneous Interoperability Parameters

Before you start

Before configuring SDP interoperability, you must first read the online help available for each field and parameter as important information on limitations, instructions, exclusions, and proscriptions are mentioned. Click **Show Help** located at the top right of the screen.

Steps

1) Go to **SIP/Interop**.
2) In the **Misc Interop** table, set each parameter as required.
3) Click **Apply**.

Result

Misc Interop	
Map Plus To TON International:	Enable
Ignore Plus In Username:	Disable
Escape Pound (#) In SIP URI Username:	Enable
Escape Format:	Lower Hexadecimal

Advanced Interoperability Interface Parameters

Although the services can be configured in great part in the Web browser, some aspects of the configuration can only be completed with the configuration parameters by :

- using a MIB browser
- using the CLI
- creating a configuration script containing the configuration parameters

For more details on the following parameters, refer to the DGW Configuration Guide - Reference Guide published on the Media5 Documentation Portal.

Direction Attributes

- Defining the direction attribute when putting a call on hold: **SipEp.InteropOnHoldSdpStreamDirection**
- Defining if the direction attribute is present: **SipEp.InteropSdpDirectionAttributeEnable**
- Enable/Disable SDP Detect Peer Direction Attribute Support: **SipEp.InteropSdpDetectPeerDirectionAttributeSupportEnable**
- Defining the SDP direction attribute level: **SipEp.InteropSdpDirectionAttributeLevel**
- Defining the behaviour with the “sendonly” direction attribute: **SipEp.InteropOnHoldAnswerSdpStreamDirection**

On hold

- Defining the on hold SDP connection address: **SipEp.InteropOnHoldSdpConnectionAddress**

Headers

- Max-Forwards Header: **SipEp.InteropMaxForwardsValue** Max-Forwards serves to limit the number of hops a request can make on the way to its destination. It consists of an integer that is decremented by one at each hop. If the Max-Forwards value reaches 0 before the request reaches its destination, it is rejected with a “483 (Too Many Hops)” error response. The Max-Forwards SIP header is always present and the default value is 70.
- Resolving the route header: **SipEp.InteropResolveRouteHeaderEnable**
- Setting whether or not to ignore the Require header: **SipEp.InteropIgnoreRequireHeaderEnable**
- Setting the SIP User-Agent header format: **SipEp.InteropUaHeaderFormat**

SIP INFO

- Set the call waiting Private Number Criteria for SIP INFO: **SipEp.InteropCallWaitingSipInfoPrivateNumberCriteria**

- Defining the SIP INFO Without Content Answer behaviour: **SipEp.InteropSipInfoWithoutContentAnswer**

Others

- Defining the local ring behaviour on provisional response: **SipEp.InteropSdpDirectionAttributeLevel**
- Setting the maximum length of the session ID and the session version number: **SipEp.InteropSdpOriginLineSessionIdAndVersionMaxLength**
- Overriding the register home domain value: **SipEp.InteropRegisterHomeDomainOverride**
- Enabling the DNS SRV record lock feature: **SipEp.InteropLockDnsSrvRecordPerCallEnable**
- Enabling the Early RTP feature: **SipEp.InteropListenForEarlyRtpEnable**

  Note: Do not enable this feature unless the server supports early RTP (or early media). Failing so prevents any ringing to be heard for outgoing calls.

- Setting ACK branch matching: **SipEp.InteropAckBranchMatching**
- Setting the reject code: **SipEp.InteropRejectCodeForUnsupportedSdpOffer**
- Setting the keep alive option format: **SipEp.InteropKeepAliveOptionFormat**
- Defining the unsupported Content-Type behaviour: **SipEp.InteropUnsupportedContentType**
- If the configured DTMF transport is "Out-of-band using RTP", the unit rather uses the payload type found in the answer: **SipEp.InteropUseDtmfPayloadTypeFoundInAnswer**
- Determine the behaviour of the device when answering a request offering more than one active media: **SipEp.InteropAllowMultipleActiveMediaInAnswer**
- Enabling this parameter may improve interoperability with VoLTE endpoints: **SipEp.InteropSend183WithSdpBefore180WithoutSdp**

Troubleshooting SIP Interoperability

Problem	Solution
Media negotiation problems because the Mediatrix unit sends a BYE after receiving a 200 OK.	Set the **Enforce Offer Answer Model** value to **Disable** and the **Allow Less Media In Response** value to **Enable**.
No ringing is heard for outgoing calls	The Early RTP feature was enabled (**SipEp.InteropListenForEarlyRtpEnable**) although the server does not support early RTP (or early media).

Online Help

If you are not familiar with the meaning of the fields and buttons, click **Show Help**, located at the upper right corner of the Web page. When activated, the fields and buttons that offer online help will change to green and if you hover over them, the description will bedisplayed.

DGW Documentation

Mediatrix devices are supplied with an exhaustive set of documentation.

Mediatrix user documentation is available on the Media5 Documentation Portal.

Several types of documents were created to clearly present the information you are looking for. Our documentation includes:

- **Release notes**: Generated at each GA release, this document includes the known and solved issues of the software. It also outlines the changes and the new features the release includes.
- **Configuration notes**: These documents are created to facilitate the configuration of a specific use case. They address a configuration aspect we consider that most users will need to perform. However, in some cases, a configuration note is created after receiving a question from a customer. They provide standard step-by-step procedures detailing the values of the parameters to use. They provide a means of validation and present some conceptual information. The configuration notes are specifically created to guide the user through an aspect of the configuration.
- **Technical bulletins**: These documents are created to facilitate the configuration of a specific technical action, such as performing a firmware upgrade.
- **Hardware installation guide**: They provide the detailed procedure on how to safely and adequately install the unit. It provides information on card installation, cable connections, and how to access for the first time the Management interface.
- **User guide**: The user guide explains how to customise to your needs the configuration of the unit. Although this document is task oriented, it provides conceptual information to help the user understand the purpose and impact of each task. The User Guide will provide information such as where and how TR-069 can be configured in the Management Interface, how to set firewalls, or how to use the CLI to configure parameters that are not available in the Management Interface.
- **Reference guide**: This exhaustive document has been created for advanced users. It includes a description of all the parameters used by all the services of the Mediatrix units. You will find, for example, scripts to configure a specific parameter, notification messages sent by a service, or an action description used to create Rulesets. This document includes reference information such as a dictionary, and it does not include any step-by-step procedures.

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