



## Aastra Models 6700i, 6800i, and 9000i Series SIP IP Phones



### TR-069 Configuration Guide

### Release 3.3.1 Service Pack 4

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# Welcome

This document provides information about Technical Report (TR)-069 protocol support for the 9000i Series SIP IP Phones (9143i, 9480i), the 6700i Series SIP IP Phones (6730i, 6731i, 6735i, 6737i, 6739i, 6753i, 6755i, 6757i), and the 6800i Series SIP IP Phones (6863i, 6865i, and 6867i)

## TR-069 Protocol Support

The IP Phones support the TR-069 protocol. This protocol is a bi-directional HTTP-based protocol that provides a means of communication between Customer-Premises Equipment (CPE) (e.g. IP phones) and Auto Configuration Servers (ACSs) over DSL/broadband connections. It includes both safe auto configuration and the control of other CPE management functions within an integrated framework.

### Note:

Implementation of the TR-069 protocol follows TR-104 and TR-106 standards to the extent of data sets applicable to SIP IP phones.

Service providers can, through TR-069, use one common platform to manage (through the internet) all of their customer premise devices, regardless of the device or manufacturer. If TR-069 is enabled on the phones, when the remote ACS boots the phones, they contact the ACS and establish the configuration automatically.

In addition to configuring the phone with TR-069, you can also do the following:

- Reboot the phone
- Reset to factory defaults
- Update the firmware of the device
- Backup/restore configuration
- Upload the log file

An Administrator can configure the TR-069 parameters using the configuration files only. For more information about the TR-069 parameters, see ["TR-069 Parameter Descriptions"](#) on [page 3](#).

## Pre-Staging SIP Phones

There are two options available to enable TR-069 support for the phones:

- a) An Administrator can provide a configuration file (that can be taken from the TFTP site or during RCS provisioning) with parameters that are specified in ["TR-069 Parameter Descriptions"](#) on [page 3](#).
- b) The phones can be branded and the branded default configuration file can contain all the necessary parameters.

After phones (with correct firmware) receive this configuration file, they will start a bootstrap procedure and connect to the ACS server.

## TR-069 Functionality Support

XML-Remote Procedure Call (RPC) is a protocol which uses XML to encode its calls and HTTP as a transport mechanism to make requests to Internet-based servers. The following table identifies the XML-RPC methods supported for the TR-069 functionality on the phones in Release 3.3.1.

XML-RPC Method	CPE Requirement	Supported in this Release 3.3.1
GetRPCMethods	Required	Yes
<b>SetParameterValues</b>	Required	Limited to parameters specified in "TR-069 Parameter Descriptions" on page 3. <b>Note:</b> Users are limited to parameters that are specified by Aastra. Please contact Aastra for a list of these parameters.
<b>GetParameterValues</b>	Required	Limited to parameters specified in "TR-069 Parameter Descriptions" on page 3.
GetParameterNames	Required	Yes
SetParameterAttributes	Required	Yes
GetParameterAttributes	Required	Yes
AddObject	Required	No
DeleteObject	Required	No
<b>Reboot</b>	Required	Yes
Download	Required	Yes
Upload	Optional	Yes
FactoryReset	Optional	Yes
GetQueuedTransfers	Optional	No
GetAllQueuedTransfers	Optional	No
ScheduleInform	Optional	No
SetVouchers	Optional	No
GetOptions	Optional	No

## Limitations

The following is a list of limitations with TR-069:

- TR-111 Part 1 is not supported (only Part 2 - STUN)
- The current release does not support Aastra CT models
- The current release does not have support for the following RPC function calls:
  - AddObject
  - DeleteObject
  - GetQueuedTransfers
  - GetAllQueuedTransfers
  - ScheduleInform
  - SetVouchers
  - GetOptions
- Inform Retry Policy with increasing intervals is not supported (only constant intervals are supported)
- Active Notification is supported only for limited list of parameters
- A subset of Aastra configuration parameters are supported through TR-069
- Only a TR-069 active session is supported (single IP address)
- CPE Identification is made based on OUI + Product Class + MAC (not serial number)
- Each Voice Profile has only 1 line
- VoiceService.X\_Aastra\_GlobalVoiceProfile corresponds to Aastra Sip Global Settings and has only 1 line object
- VoiceService.1.VoiceProfile.{1} corresponds to Aastra SIP settings per line i and has only 1 line object
- Constant number of lines mapped to the number of Voice Profile (profile remove is not supported)

## Behaviors

The following is a list of behaviors with TR-069:

- Web and phone UI are still available for configuration and can override what was configured through TR-069
- The phones will notify ACS though the Active notification process for a limited subset of parameters (as defined)
- Loading of new configuration through TR-069 will require a CPE reboot

## TR-069 Parameter Descriptions

An Administrator can enable/disable and configure the TR-069 protocol using the following parameters in the configuration files:

- **tr69**
- **tr69 server**
- **tr69 server port**
- **tr69 server path**
- **tr69 username**
- **tr69 password**
- **tr69 connection request path**
- **tr69 connection request port**

Each of these parameters are described as follows:

<b>Parameter –</b> <i>tr69</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Enables/disables TR-069 communication.
<b>Format</b>	Boolean
<b>Default Value</b>	0
<b>Range</b>	0-1 0 (disabled) 1 (enabled)
<b>Example</b>	tr69: 1

<b>Parameter –</b> <i>tr69 server</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies the IP or domain name of the TR-069 Auto-Configuration Server (ACS). This is the server to which the phone sends TR-069 messages. Contact your System Administrator for the applicable server to specify for this parameter.
<b>Format</b>	String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 server: http://10.30.105.127

<b>Parameter –</b> <i>tr69 server port</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies the server port of the TR-069 Auto-Configuration Server (ACS). This is the server to which the phone sends TR-069 messages. Contact your System Administrator for the applicable port to specify for this parameter.
<b>Format</b>	String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 server port:10301

<b>Parameter –</b> <i>tr69 server path</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies the server path of the TR-069 Auto-Configuration Server (ACS). This is the path to which the phone sends TR-069 messages. Contact your System Administrator for the applicable path to specify for this parameter.
<b>Format</b>	String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 server path: acs/

<b>Parameter</b> – <i>tr69 username</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Username for HTTP authentication against the ACS
<b>Format</b>	String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 username: Joe

<b>Parameter</b> – <i>tr69 password</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Password for HTTP authentication against the ACS
<b>Format</b>	String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 password: 12345

<b>Parameter</b> – <i>tr69 connection request path</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Path for tr69 connection url
<b>Format</b>	String
<b>Default Value</b>	tr69
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 connection request path: aastra

<b>Parameter</b> – <i>tr69 connection request port</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Port for tr69 connection url
<b>Format</b>	Integer
<b>Default Value</b>	7547
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 connection request port:12345

The following subsections provide additional information and parameters that are requirements for the TR-069.

## **Support for Getting Capabilities, General Profiles, and Other Static Parameters**

When the phone boots up for the first time, it will send an Inform message with the event code BOOTSRAPE to the ACS server. The ACS server will ask for the supporting parameters on the phone. After this initial contact, the ACS server can read or write parameters on the phone.

### **Voice Profile**

There is one global Voice Profile called X\_Aastra\_GlobalVoiceProfile that corresponds to the global line on the phone. For example:

Device.VoiceService.X\_Aastra\_GlobalVoiceProfile corresponds to Global on the Aastra Web UI

Depending on the phone model, there are also up to 9 other Voice Profiles that correspond to a specific line on the phone. They are always located on the VoiceService SubTree, and on each line a SIP account can be configured. For example:

Device.VoiceService.VoiceProfile.1 corresponds to Line 1 on the Aastra Web UI.

Once a SIP account is fully configured, the line will be registered. Administrators also have the option to delete the Voice Profile. When a Voice Profile is deleted, the corresponding line is restored to the default.

### **Handling Dynamic Parameters**

If the ACS modifies a parameter, the SIP line is automatically configured and will register to the server.

### **TR-111**

The phones support the TR-111 protocol as a requirement for TR-069. TR-111 applies the TR-069 to remote manage home networking devices (i.e. it can access a phone that is inside a private network from a server outside). The TR-111 standard defines two ways of managing CPE located behind Network Address Translation (NAT) routers. The parameters are automatically configured for the Administrator.



## Periodic Inform Support

The TR069 stack provides a function that sets up periodic inform support. On the phone, the periodic inform is done so that the phone can periodically send an inform message to the ACS server. For example, for passive notification, the phone will inform the ACS server that one or more parameters is/are modified and will send the new value in the inform message.

### Configuring Periodic Inform Using the Configuration Files

<b>Parameter</b> – <i>tr69 periodic inform enable</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Enable or disable the periodic inform functionality.
<b>Format</b>	Boolean
<b>Default Value</b>	Empty
<b>Range</b>	0 - 1 0 (Disable) 1 (Enable)
<b>Example</b>	tr69 periodic inform enable: true

<b>Parameter</b> – <i>tr69 periodic inform interval</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	The duration in seconds of the interval for which the CPE must attempt to connect with the ACS and call the inform method.
<b>Format</b>	Integer
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 periodic inform interval: 600

<b>Parameter</b> – <i>tr69 periodic inform time</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	An absolute time reference in UTC to determine when the CPE will initiate the periodic inform method calls.
<b>Format</b>	String
<b>Default Value</b>	1970-01-01T00:00:00
<b>Range</b>	The STRING is specified in the following form: “ <b>YYYY-MM-DDThh:mm:ss</b> ” where: <ul style="list-style-type: none"> <li>• YYYY (year)</li> <li>• MM (month)</li> <li>• DD (day)</li> <li>• T (start of the required time section)</li> <li>• hh (hour)</li> <li>• mm (minute)</li> <li>• ss (second)</li> </ul>
<b>Example</b>	tr69 periodic inform time: 0001-01-01T00:00:00

## Inform Upon Receipt of SIP NOTIFY Check-Sync Support

Configuration parameters are available allowing Administrators the ability to specify the behavior of the phones when they receive a SIP NOTIFY containing a check-sync event. In such scenarios, the phones can be configured to behave in one of the following ways:

- Check the configuration files and reboot if changes are detected.
- Redirect the SIP NOTIFY with the check-sync event to the ACS to perform a TR-069 request.
- Redirect the SIP NOTIFY with the check-sync event to the ACS to perform a TR-069 request and trigger an HTTP GET to a defined Action URI (allowing some settings to be changed via XML that cannot be changed through TR-069). A Job ID can be specified as well, allowing the ACS to link the HTTP GET to the initiated TR-069 request.

### Configuring the Inform Upon Receipt of SIP NOTIFY Check-Sync Feature Using the Configuration Files

<b>Parameter –</b> <i>tr69 check sync</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies the behavior of the phone when it receives a SIP NOTIFY containing a check-sync event.
<b>Format</b>	Integer
<b>Default Value</b>	0
<b>Range</b>	0 (When a SIP NOTIFY containing a check-sync event is received the phone will check the configuration files and reboot if changes are detected). 1 (When a SIP NOTIFY containing a check-sync event is received the phone will redirect the SIP NOTIFY with the check-sync event to the ACS to perform a TR-069 request. 2 (When a SIP NOTIFY containing a check-sync event is received the phone will redirect the SIP NOTIFY with the check-sync event to the ACS to perform a TR-069 request and trigger an HTTP GET to the URI configured via the “action uri tr69 check sync” parameter.
<b>Example</b>	tr69 check sync: 2

<b>Parameter –</b> <i>action uri tr69 check sync</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies the URI to be called when the “tr69 check sync” parameter is defined as “2”. A Job ID can be specified allowing the ACS to link the HTTP GET to the initiated TR-069 request.
<b>Format</b>	HTTP(s) server path or Fully Qualified Domain Name
<b>Default Value</b>	N/A
<b>Range</b>	N/A
<b>Example</b>	action uri tr69 check sync: https://acs.example.com/test.php?JobID=\$\$JOBID\$\$

## Configuration Backup and Restore

Administrators can backup and restore the TR-069 configuration on the ACS server. The ACS server makes a request for a configuration file upload and the phone responds to the request.

For a configuration file upload, the server sends the following parameters:

- URL
- File type
- Username
- Password

When the phone receives the request to backup, it uploads the local.cfg or server.cfg file to the server depending on the FileType argument defined (i.e. "1 Vendor Configuration File" = local.cfg, "X\_Aastra Server Configuration File" = server.cfg). The protocol supported for configuration file upload from the CPE are HTTP, TFTP, and FTP.

## Log File Download from CPE

The ACS server can make a request for a log file upload. For a log file upload, the server sends the following parameters:

- URL
- File type
- Username
- Password

When the phone receives this request, it will send the file to the server with the name "**MACADDRESS\_TIME\_crash.log**". The protocol supported for log file upload from CPE are HTTP, TFTP, and FTP.

## Firmware Management

At any point, the ACS can trigger the CPE to upgrade its firmware image. The ACS sends asynchronous connection requests, triggering the CPE to establish a transaction session to receive a download method to upgrade its firmware. The ACS is only responsible for sending the download RPC and retrieving the TransferComplete RPC. The actions taken by the CPE itself depend on the firmware upgrade mechanism, which is not defined by TR-069.

The Administrator can schedule a firmware upgrade from the ACS by properly configuring the ACS server. Once the ACS server is configured, the phone will automatically upgrade the firmware.

The following is the process of how the phone upgrades the firmware:

- The phone receives a download RPC from the ACS.
- If the FileType argument is set to "1Firmware Upgrade Image", a firmware upgrade is started
- The phone checks the version of firmware:
  - If the version is identical to the actual version, the phone will abort the firmware upgrade
  - If the version is different of the actual version, the phone will upgrade/downgrade the firmware
- If the firmware upgrade is successful, a reboot is initiated

## Passive and Active Notification

The phones support active and passive notification. If a parameter is configured to "Active notification", when this parameter is modified through the Aastra Web UI, an inform message with the new value of the parameter is sent to the ACS (the phone does not wait for the periodic inform).

If a parameter is configured to "Passive notification", when this parameter is modified through the Aastra Web UI, the new value of the parameter is sent to the ACS with the periodic inform.

If there is no notification set, no inform message is sent to inform the ACS when the value of the parameter is modified.

For any parameter, the notification type (Active, Passive, or None) is set on the ACS server.

Active and Passive notification is currently supported for the following parameters:

- Global parameters:
  - sip user name
  - sip proxy ip
  - sip proxy port
  - sip registrar ip
  - sip registrar port
  - sip auth name
  - sip password
  - sip stun ip
  - sip stun port
  - dhcp
  - ip
- Parameters for Line 0 to 9 (where N is the line number):
  - sip lineN user name
  - sip lineN proxy ip
  - sip lineN proxy port
  - sip lineN registrar ip
  - sip lineN registrar port
  - sip lineN auth name
  - sip lineN password

## Secured Connection Support

The following parameters have been introduced in Release 3.3.1 allowing Administrators the ability configure a secure connection between the CPE and ACS:

- tr69 trusted certificates
- tr69 private key
- tr69 server authentication required

Each of these parameters are described as follows:

<b>Parameter –</b> <i>tr69 trusted certificates</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies a file name for a .PEM file located on the configuration server. This file contains the User-provided certificates in PEM format. These certificates are used to validate peer certificates. <b>Note:</b> The parameter “tr69 server authentication required” must be enabled in order for the phone to do a Client-authenticated TLS handshake.
<b>Format</b>	Alphanumeric String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 trusted certificates: ftp://admin:admin!@1.2.3.4:50/path/tr69CA.pem <b>Note:</b> In the above example, “path” represents the directory and “tr69CA.pem” represents the filename.

<b>Parameter</b> – <i>tr69 private key</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	Specifies the file to download. This file contains the private key and the associated certificate. <b>Note:</b> Refer to “privateKey.pem Example” on page 12 for an example of what is contained in the privateKey.pem file.
<b>Format</b>	Alphanumeric String
<b>Default Value</b>	Empty
<b>Range</b>	Not Applicable
<b>Example</b>	tr69 private key: ftp://admin:admin!@1.2.3.4:50/path/privateKey.pem

<b>Parameter</b> – <i>tr69 server authentication required</i>	<b>Configuration Files</b> aastra.cfg, mac.cfg
<b>Description</b>	If this parameter is set to 0, Simple TLS handshake will be enabled. If this parameter is set to 1, Client-authenticated TLS handshake will be enabled..
<b>Format</b>	Boolean
<b>Default Value</b>	0
<b>Range</b>	0 - 1 0 (Simple TLS handshake) 1 (Client-authenticated TLS handshake)
<b>Example</b>	tr69 server authentication required: 1



## Factory Reset

The purpose of a factory reset is to restore the configuration to default when it is requested by the ACS server. From the ACS server, make a “factory reset” request. This will set all the parameters to the default value.

**Note:**

A factory reset will result in the phone clearing out all configured parameters, including the TR-069 configured settings.

## Device Data Model Support

For this release, the phones support only the configuration parameters listed in the section, “TR-069 Functionality Support” on page 2, for remote management through the TR-069 Protocol. Some ACSs (e.g. a specific home management device) requires a vendor-specific device data model in XML format before the IP phones can connect to it. See “Appendix B - XML Data Model” on page B-1 for an example of an XML data model.

As defined in this data structure, some parameters have write privileges and can be changed remotely (e.g. DNSServer). However, you may have to reboot the phone in order for the change to take effect.

## OUI and Product Class

The above data structure is common across all the TR-069 supported Aastra SIP phones. The table below summarizes the supported phones and their corresponding OUI and Product Class.

Supported Aastra Models	OUI	Product Class
6730i	00085D	6730i
6731i	00085D	6731i
6735i	00085D	6735i
6737i	00085D	6737i
6739i	00085D	6739i
6753i	00085D	6753i
6755i	00085D	6755i
6757i	00085D	6757i
6863i	00085D	6863i
6865i	00085D	6865i
6867i	00085D	6867i
9143i	00085D	9143i
9480i	00085D	9480i

# Appendix A - Sample Configuration

The following is an example detailing how the TR-069 parameters can be defined within the configuration files:

```
# enable tr69
tr69: 1

#username and password for the ACS
tr69 username: ACS1234
tr69 password: ACS1234
#to modify the path, add the two following parameter
tr69 connection request path: aastra
tr69 connection request port: 12345

#TR-069 ACS URL for secured connection
tr69 server: https://10.10.10.2
tr69 server port: 443
tr69 server path: acs/
#private key, this must contain the private key and the certificate
tr69 private key: http://10.10.10.2/private.key
tr69 trusted certificates: tftp://10.10.10.5/asterisk/ca.crt

tr69 server authentication required: 1
```



# Appendix B - XML Data Model

The following example is a sample of an XML script using TR-069:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<xsi:tr69model xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <entry xsi:type="tr69Object" write="" mode="1">
    <name>Device.</name>
    <description></description>
    <parameter write="" mode="1">
      <name>DeviceSummary</name>
      <description></description>
    </parameter>
    <child write="" mode="1">
      <name>DeviceInfo.</name>
      <description></description>
      <parameter write="" mode="1">
        <name>HardwareVersion</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>Manufacturer</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>ManufacturerOUI</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>ProductClass</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>SerialNumber</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>SoftwareVersion</name>
        <description></description>
      </parameter>
    </child>
    <child write="" mode="1">
      <name>GatewayInfo.</name>
      <description></description>
      <parameter write="" mode="1">
        <name>ManufacturerOUI</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>ProductClass</name>
        <description></description>
      </parameter>
      <parameter write="" mode="1">
        <name>SerialNumber</name>
        <description></description>
      </parameter>
    </child>
    <child write="" mode="1">
      <name>LAN.</name>
      <description></description>
      <parameter write="W" mode="1">
```

```

        <name>AddressingType</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>DNSServers</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>DefaultGateway</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>IPAddress</name>
        <description></description>
    </parameter>
    <parameter write="" mode="1">
        <name>MACAddress</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>SubnetMask</name>
        <description></description>
    </parameter>
    <child write="" mode="1">
        <name>Stats.</name>
        <description></description>
        <parameter write="" mode="1">
            <name>ConnectionUpTime</name>
            <description></description>
        </parameter>
        <parameter write="" mode="1">
            <name>TotalBytesReceived</name>
            <description></description>
        </parameter>
        <parameter write="" mode="1">
            <name>TotalBytesSent</name>
            <description></description>
        </parameter>
        <parameter write="" mode="1">
            <name>TotalPacketsReceived</name>
            <description></description>
        </parameter>
        <parameter write="" mode="1">
            <name>TotalPacketsSent</name>
            <description></description>
        </parameter>
    </child>
</child>
<child write="" mode="1">
    <name>ManagementServer.</name>
    <description></description>
    <parameter write="W" mode="1">
        <name>ConnectionRequestPassword</name>
        <description></description>
    </parameter>
    <parameter write="" mode="1">
        <name>ConnectionRequestURL</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>ConnectionRequestUsername</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">

```

```
        <name>NATDetected</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>ParameterKey</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>Password</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>PeriodicInformEnable</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>PeriodicInformInterval</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>PeriodicInformTime</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>STUNEnable</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>STUNServerAddress</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>STUNServerPort</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>UDPConnectionRequestAddress</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>URL</name>
        <description></description>
    </parameter>
    <parameter write="W" mode="1">
        <name>Username</name>
        <description></description>
    </parameter>
</child>
```

## Appendix C - Standard Supported TR-069 Parameters

The following is a list of the standard supported TR-069 parameters. This list includes the Aastra specific set of extended parameters that Aastra supports (for example, X\_Aastra\_RTCP\_Report).

Parameter	Read/Write	Type	Size	Range
<b>Device</b>				
Device.DeviceSummary	R	string	1024	-
<b>Device.DeviceInfo</b>				
Device.DeviceInfo.Manufacturer	R	string	64	-
Device.DeviceInfo.ManufacturerOUI	R	string	6	-
Device.DeviceInfo.ProductClass	R	string	64	-
Device.DeviceInfo.SerialNumber	R	string	64	-
Device.DeviceInfo.HardwareVersion	R	string	64	-
Device.DeviceInfo.SoftwareVersion	R	string	64	-
Device.DeviceInfo.Description	R	string	256	-
Device.DeviceInfo.ModelName	R	string	64	-
Device.DeviceInfo.SpecVersion	R	string	64	-
Device.DeviceInfo.ProvisioningCode	R	string	64	-
<b>Device.ManagementServer</b>				
Device.ManagementServer.URL	R/W	string	256	-
Device.ManagementServer.Username	R/W	string	256	-
Device.ManagementServer.Password	R/W	string	256	-
Device.ManagementServer.PeriodicInformEnable	R/W	boolean	-	-
Device.ManagementServer.PeriodicInformInterval	R/W	int	-	-
Device.ManagementServer.PeriodicInformTime	R/W	string	256	-
Device.ManagementServer.ParameterKey	R/W	string	256	-
Device.ManagementServer.ConnectionRequestURL	R	string	256	-

Parameter	Read/Write	Type	Size	Range
Device.ManagementServer.ConnectionRequestUsername	R/W	string	256	-
Device.ManagementServer.ConnectionRequestPassword	R/W	string	256	-
Device.ManagementServer.STUNEnable	R/W	boolean	-	-
Device.ManagementServer.STUNServerAddress	R/W	string	256	-
Device.ManagementServer.STUNServerPort	R/W	int	-	-
Device.ManagementServer.NATDetected	R/W	boolean	-	-
Device.ManagementServer.UDPCConnectionRequestAddress	R/W	string	256	-
<b>Device.LAN</b>				
Device.LAN.AddressingType	R/W	string	256	-
Device.LAN.IPAddress	R/W	string	256	-
Device.LAN.SubnetMask	R/W	string	256	-
Device.LAN.DefaultGateway	R/W	string	256	-
Device.LAN.DNSServers	R/W	string	256	-
Device.LAN.MACAddress	R	string	256	-
<b>Device.Services</b>				
Device.Services.VoiceServiceNumberOfEntries	R	int	-	-
<b>Device.Services.VoiceService</b>				
<b>Device.Services.VoiceService.1</b>				
Device.Services.VoiceService.1.VoiceProfileNumberOfEntries	R	int	-	-
<b>Device.Services.VoiceService.1.Capabilities</b>				
Device.Services.VoiceService.1.Capabilities.MaxProfileCount	R	int	-	-
Device.Services.VoiceService.1.Capabilities.MaxLineCount	R	int	-	-
Device.Services.VoiceService.1.Capabilities.MaxSessionsPerLine	R	int	-	-
Device.Services.VoiceService.1.Capabilities.MaxSessionCount	R	int	-	-
Device.Services.VoiceService.1.Capabilities.Regions	R	string	256	-
Device.Services.VoiceService.1.Capabilities.RTCP	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.SRTP	R	boolean	-	-

## Appendix C - Standard Supported TR-069 Parameters

Parameter	Read/Write	Type	Size	Range
Device.Services.VoiceService.1.Capabilities.SRTPKeyingMethods	R	string	256	-
Device.Services.VoiceService.1.Capabilities.SRTPEncryptionKeySizes	R	string	256	-
Device.Services.VoiceService.1.Capabilities.RTPRedundancy	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.DSCPCoupled	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.EthernetTaggingCoupled	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.PSTNSoftSwitchOver	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.FaxT38	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.FaxPassThrough	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.ModemPassThrough	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.ToneGeneration	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.ToneDescriptionsEditable	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.PatternBasedToneGeneration	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.FileBasedToneGeneration	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.RingGeneration	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.RingDescriptionsEditable	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.PatternBasedRingGeneration	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.RingPatternEditable	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.FileBasedRingGeneration	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.DigitMap	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.NumberingPlan	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.ButtonMap	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.X_Aastra_RTCP_Report	R	boolean	-	-
<b>Device.Services.VoiceService.1.Capabilities.SIP</b>				
Device.Services.VoiceService.1.Capabilities.SIP.Role	R	int	-	-
Device.Services.VoiceService.1.Capabilities.SIP.Transports	R	string	-	-
Device.Services.VoiceService.1.Capabilities.SIP.EventSubscription	R	boolean	-	-

Parameter	Read/Write	Type	Size	Range
Device.Services.VoiceService.1.Capabilities.SIP.ResponseMap	R	boolean	-	-
Device.Services.VoiceService.1.Capabilities.SIP.TLSAuthenticationProtocols	R	string	256	-
Device.Services.VoiceService.1.Capabilities.SIP.TLSAuthenticationKeySizes	R	string	256	-
Device.Services.VoiceService.1.Capabilities.SIP.TLSEncryptionProtocols	R	string	256	-
Device.Services.VoiceService.1.Capabilities.SIP.TLSEncryptionKeySizes	R	string	256	-
Device.Services.VoiceService.1.Capabilities.SIP.TLSKeyExchangeProtocols	R	string	256	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Enable	R/W	string	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Reset	R/W	boolean	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.NumberOfLines	R/W	int	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Name	R/W	string	64	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.STUNEnable	R/W	boolean	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.STUNServer	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.X_Aastra_STUNServerPort	R/W	int	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.X_Aastra_DTMFMethod	R/W	int	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.X_Aastra_DTMFOutBand	R/W	int	-	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.ProxyServer	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.ProxyServerPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.RegistrarServer	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.RegistrarServerPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.UserAgentDomain	R	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.OutboundProxy	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.OutboundProxyPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_BackupProxyServer	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_BackupProxyServerPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_BackupOutboundProxySupport	R/W	int	-	-

## Appendix C - Standard Supported TR-069 Parameters

Parameter	Read/Write	Type	Size	Range
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_BackupOutboundProxy	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_BackupOutboundProxyPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_mode	R/W	int	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_centralizedConference	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_listUri	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.TimerT1	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.TimerT2	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.ReInviteExpires	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.RegisterExpires	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.DSCPMark	R/W	int	-	0-63
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_SymmetricUDPSignaling	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_Aastra_SIPTransportProtocol	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_AastraUseBasicCodecs	R/W	int	-	0-65535
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_AastraCustomizedCodecs	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_AastraTaggingEnabled	R/W	int	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP.X_AastraTOSPriorityMap	R/W	string	256	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.DSCPMark	R/W	int	-	0-63
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.VLANIDMark	R/W	int	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.EthernetPriorityMark	R/W	int	-	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.Enable	R/W	boolean	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.LocalCName	R/W	string	64	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.X_AastraRTCPDSCPMark	R/W	int	-	0-64
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.X_AastraRTCPPort	R/W	int	-	0-127
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.SRTP</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.SRTP.X_Aastra_SRTP_mode	R/W	int	-	-



Parameter	Read/Write	Type	Size	Range
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line</b>				
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.X_Aastra_ScreenName	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.X_Aastra_ScreenName2	R/W	string	256	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.SIP</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.SIP.AuthUserName	R/W	string	128	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.SIP.AuthPassword	R/W	string	128	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.SIP.URI	R	string	389	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.CallingFeatures</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.CallingFeatures.Enable	R/W	boolean	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.CallingFeatures.CallerIDName	R/W	string	256	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.CallingFeatures.MWIEnable	R/W	boolean	-	-
<b>Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.-Ringer</b>				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.-Ringer.X_Aastra_RingTone	R	int	-	-
<b>Device.Services.VoiceService.1.VoiceProfile</b>				
<b>Device.Services.VoiceService.1.VoiceProfile.i</b> (see note on <a href="#">page C - 8</a> )				
Device.Services.VoiceService.1.VoiceProfile.i.Enable	R	boolean	-	-
Device.Services.VoiceService.1.VoiceProfile.i.Reset	R	boolean	-	-
Device.Services.VoiceService.1.VoiceProfile.i.NumberOfLines	R	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.Name	R/W	string	64	-
Device.Services.VoiceService.1.VoiceProfile.i.STUNEnable	R	boolean	-	-
Device.Services.VoiceService.1.VoiceProfile.i.STUNServer	R	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.X_Aastra_STUNServerPort	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.X_Aastra_DTMFMethod	R/W	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.X_Aastra_DTMFOutBand	R	int	-	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.SIP</b>				
Device.Services.VoiceService.1.VoiceProfile.i.SIP.ProxyServer	R/W	string	256	-

## Appendix C - Standard Supported TR-069 Parameters

Parameter	Read/Write	Type	Size	Range
Device.Services.VoiceService.1.VoiceProfile.i.SIP.ProxyServerPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIP.RegistrarServer	R/W	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIP.RegistrarServerPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIP.UserAgentDomain	R	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIP.OutboundProxy	R/W	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIP.OutboundProxyPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_BackupProxyServer	R/W	string	-	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_BackupProxyServerPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_BackupOutboundProxySupport	R	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_BackupOutboundProxy	R/W	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_BackupOutboundProxyPort	R/W	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_mode	R/W	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_centralizedConference	R/W	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_listUri	R	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIP.TimerT1	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIP.TimerT2	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIP.ReinviteExpires	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIP.DSCPMark	R	int	-	0-63
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_SymmetricUDPSignaling	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_Aastra_SIPTransportProtocol	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_AastraUseBasicCodecs	R	int	-	0-65535
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_AastraCustomizedCodecs	R	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_AastraTaggingEnabled	R	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.SIPX_AastraTOSPriorityMap	R	string	256	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.RTP</b>				
Device.Services.VoiceService.1.VoiceProfile.i.RTP.DSCPMark	R	int	-	0-63

Parameter	Read/Write	Type	Size	Range
Device.Services.VoiceService.1.VoiceProfile.i.RTP.VLANIDMark	R	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.RTP.EthernetPriorityMark	R	int	-	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP</b>				
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.Enable	R/W	boolean	-	-
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.LocalICName	R/W	string	64	-
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.X_AastraRTCPDSCPMark	R	int	-	0-63
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.X_AastraRTCPPort	R/W	int	-	0-127
<b>Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.SRTP</b>				
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.SRTP.X_Aastra_SRTP_mode	R/W	int	-	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.Line</b>				
<b>Device.Services.VoiceService.1.VoiceProfile.i.Line.1</b>				
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.X_Aastra_ScreenName	R/W	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.X_Aastra_ScreenName2	R/W	string	256	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.Line.1.SIP</b>				
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.SIP.AuthUserName	R/W	string	128	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.SIP.AuthPassword	R/W	string	128	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.SIP.URI	R	string	389	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.Line.1.CallingFeatures</b>				
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.CallingFeatures.Enable	R	boolean	-	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.CallingFeatures.CallerIDName	R/W	string	256	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.CallingFeatures.MWIEnable	R	boolean	-	-
<b>Device.Services.VoiceService.1.VoiceProfile.i.Line.1.-Ringer</b>				
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.-Ringer.X_Aastra_RingTone	R	int	-	-

**Note:**

With parameters containing VoiceProfile.i, the “i” indicates the Voice Profile number. Depending on the phone model, there are up to 9 Voice Profiles corresponding to a specific line on the phone. See for “Voice Profile” on page 6 more information.



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