



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



TR-069 Configuration Guide

Release 3.3.1 Service Pack 3

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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
SetParameterValues	Required	Limited to parameters specified in “TR-069 Parameter Descriptions” on page 3 . Note: Users are limited to parameters that are specified by Aastra. Please contact Aastra for a list of these parameters.
GetParameterValues	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
Reboot	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 TUI are still available for configuration and can override what was done 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:

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

Parameter – <i>tr69 server</i>	Configuration Files aastra.cfg, mac.cfg
Description	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.
Format	String
Default Value	Empty
Range	Not Applicable
Example	tr69 server: http://10.30.105.127

Parameter – <i>tr69 server port</i>	Configuration Files aastra.cfg, mac.cfg
Description	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.
Format	String
Default Value	Empty
Range	Not Applicable
Example	tr69 server port:10301

Parameter – <i>tr69 server path</i>	Configuration Files aastra.cfg, mac.cfg
Description	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.
Format	String
Default Value	Empty
Range	Not Applicable
Example	tr69 server path: acs/

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

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

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

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

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

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

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

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 log file upload and the phone responds to the request.

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

- URL
- File type
- Username
- Password

When the phone receives the request to backup, it uploads the file to the TFTP server with the name "**MACADDRESS_local.cfg**". The protocol supported for log file upload from 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 TFTP 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:

Parameter – <i>tr69 trusted certificates</i>	Configuration Files aastra.cfg, mac.cfg
Description	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. Note: The parameter “tr69 server authentication required” must be enabled in order for the phone to do a Client-authenticated TLS handshake.
Format	Alphanumeric String
Default Value	Empty
Range	Not Applicable
Example	tr69 trusted certificates: ftp://admin.admin!@1.2.3.4:50/path/tr69CA.pem Note: In the above example, “path” represents the directory and “tr69CA.pem” represents the filename.

Parameter – <i>tr69 private key</i>	Configuration Files aastra.cfg, mac.cfg
Description	Specifies the file to download. This file contains the private key and the associated certificate. Note: Refer to “privateKey.pem Example” on page 11 for an example of what is contained in the privateKey.pem file.
Format	Alphanumeric String
Default Value	Empty
Range	Not Applicable
Example	tr69 private key: ftp://admin:admin!@1.2.3.4:50/path/privateKey.pem

Parameter – <i>tr69 server authentication required</i>	Configuration Files aastra.cfg, mac.cfg
Description	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..
Format	Boolean
Default Value	0
Range	0 - 1 0 (Simple TLS handshake) 1 (Client-authenticated TLS handshake)
Example	tr69 server authentication required: 1

privateKey.pem Example

The following is an example of the contents of a privateKey.pem file:

```

-----BEGIN CERTIFICATE-----
MIICnTCCAqYCCQCH6qZc+3ElAzANBgkqhkiG9w0BAQUFADCBkjELMAkGA1UEBhMC
Q0ExEDA0BgNVBAgTB09udGFyaW8xEDA0BgNVBAcTB1RvcmludG8xDzANBgNVBAoT
BkFhc3RyYTEQMA4GA1UECzMHSXBQaG9uZTEPMA0GA1UEAxMGYWFzZdHJhMSswKQYJ
KoZlHvcNAQkBFhxndWlsbGF1bWUuaG9ycmVhdUBhYXN0cmEuY29tMB4XDTEyMTEe
OTE5MzI0OV0XDTEzMTExOTE5MzI0OVowZlIxZCZAJBgNVBAYTAkNBMRAdDgYDVQQI
EwdPbnRhcmlvMRAwDgYDVQQHEwdU3JvbnRvMQ8wDQYDVQQKEwZBYXN0cmExEDA0
BgNVBAStB0lwUGhvcmludG8xZANBgNVBAMTBmFhc3RyYTErMCKGCSqGS1b3DQEJARYc
Z3VpbGxhdW11LmhhvcmJlYXVAYWFzdHJhLmNvbTCBnzANBgkqhkiG9w0BAQEFAAOB
jQAwYkCgYEAwFpG4OPqk4IFQQgNKu2fSkEnCkvJNBHGioKitQhb8wABrepOoEcc
PbvsRmctw/P9u3J1G5JIj1fWym2zAdP310+yj+6bwXxFozJVqn1gahuj1eQyHW9P
HbkxtlhH5/ikzprZwXBdcjSwyHsa+uCnvxRliIh3tkYi1ZixtcZmxLkCAwEAATAN
BgkqhkiG9w0BAQUFAAOBgQC0HS0eLvMSQ6em1Sp8zry1FhXFDxcbcQJBoH/pHn7q
JQ1xIuXmV831cvfHkqYfSk9b1rVULImgsIwZaWkKP4Hf5KMT4ACdyEBFufkVMg/H
L4yPkAZeZ95oksbnIBamXo5950dijnlan55HbwX5c7xc23oGR+8oM95BtdocEorv
sw==
-----END CERTIFICATE-----
-----BEGIN RSA PRIVATE KEY-----
MIICXgIBAAKBgQDAWkbg4+qTggVBCA0q7Z9KQScKS8k1scaKggK1CFvzAAGt6k6g
Rwx9u+xGZy3D8/27cnUbkkiPUXBibbMB0/fU77KP7pvBfEWjMlWqfWBqG6PV5DI
db08duTG2WEfn+KT0lFnBcF1yNLDIexr64Ke/FGWIiHe2RiLVmLG1xmbEuQIDAQAB
AoGBALDYDwQh5v+48VWprlmCYAmvntjdVjtWejsU+T2i3rszZ50pdcLqbZE0OU9
ZUEb6HJWt74ijp1dNWL5EjOjCtZdGUH49+/wp1Nr/ug8TkaPE3vUhlVIpOWXpX08
402YDAIZJ4mOnENXvxMSJhdLIb4D/KbNOWfrGnbTnQZUoxRAkEA599AUyX/8FeK
lgOirGe4+oRvJ+p3df+CVJ/QGdjtLQbwft7AuGQDyB2ru2itgjIfQS5Do3KHvi4K
UWo2Nsm15QJBANReSHbSyX5WUVNqJ/UH2ZN75rmNLhHpFFKfFVC2Ir2bo3W8y8L3
dLQn4HdHuUrgn89PyBUoDU7DfUKCyJxZ5kUCQQCKjnOnvBtWivk9D2sTzt9Qg/bQ
SWGdV1OQmfumpwPvfHk090h01IYmplACGs2U7Eth/HPJ89Jq8VqpSdEUgCpAkAY
0LOS/ugAksGKB7uHjFVGQJIjWHXrrdqsfOrlxYKluT/ncBo3PActDgPSrFTghQLn
jKEKp9V2QK2gwfvrGS4pAkeAKA7sttPqPFAM6NtYbZFjvIADCozOEKigfypgpk2
pYy9sYcexvkk4ZiySQtomGnvzyVqMMF1pUfR4m4xWsumOA==
-----END RSA PRIVATE KEY-----

```

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 ACS’s (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
Device				
Device.DeviceSummary	R	string	1024	-
Device.DeviceInfo				
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	-
Device.ManagementServer				
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	-

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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	-
Device.LAN				
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	-
Device.Services				
Device.Services.VoiceServiceNumberOfEntries	R	int	-	-
Device.Services.VoiceService				
Device.Services.VoiceService.1				
Device.Services.VoiceService.1.VoiceProfileNumberOfEntries	R	int	-	-
Device.Services.VoiceService.1.Capabilities				
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	-	-

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	-	-
Device.Services.VoiceService.1.Capabilities.SIP				
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	-	-

Appendix C - Standard Supported TR-069 Parameters

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	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile				
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	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.SIP				
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	-	-

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	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP				
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	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP				
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
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.SRTP				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.RTP.RTCP.SRTP.X_Aastra_SRTP_mode	R/W	int	-	-

Appendix C - Standard Supported TR-069 Parameters

Parameter	Read/Write	Type	Size	Range
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1				
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	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.SIP				
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	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.CallingFeatures				
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	-	-
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.-Ringer				
Device.Services.VoiceService.1.X_Aastra_GlobalVoiceProfile.Line.1.-Ringer.X_Aastra_RingTone	R	int	-	-
Device.Services.VoiceService.1.VoiceProfile				
Device.Services.VoiceService.1.VoiceProfile.i (see note on page C - 8)				
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	-	-
Device.Services.VoiceService.1.VoiceProfile.i.SIP				
Device.Services.VoiceService.1.VoiceProfile.i.SIP.ProxyServer	R/W	string	256	-

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	-
Device.Services.VoiceService.1.VoiceProfile.i.RTP				
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	-	-
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP				
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
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.SRTP				
Device.Services.VoiceService.1.VoiceProfile.i.RTP.RTCP.SRTP.X_Aastra_SRTP_mode	R/W	int	-	-
Device.Services.VoiceService.1.VoiceProfile.i.Line				
Device.Services.VoiceService.1.VoiceProfile.i.Line.1				
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	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.SIP				
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	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.CallingFeatures				
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	-	-
Device.Services.VoiceService.1.VoiceProfile.i.Line.1.-Ringer				
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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