Parameters and Defaults

This section provides information on the parameters and defaults that you can use to create your own Cisco ATA configuration file. This section also includes the voice configuration menu code for each parameter that has such a code.

Parameters are divided into categories based on their functionality. The following categories of parameters are covered in this section:

The following list contains general configuration information:

- Your configuration file must begin with **#txt**.
- The Cisco ATA uses the following parameter types:
  - Alphanumeric string
  - Array of short integers
  - Boolean (1 or 0)
  - Bitmap value—unsigned hexadecimal integer (for specifying bits in a 32-bit integer)

Note Bits are numbered from right to left, starting with bit 0.

Note A tool called bitaid.exe is bundled with your Cisco ATA software. You can use this tool to help you configure values of Cisco ATA bitmap parameters. The tool prompts you for the necessary information.

- Extended IP address—IP address followed by port number (for example, 192.168.2.170.9001)
- IP address (e.g. 192.168.2.170)
- Integer (32-bit integer)
- Numeric digit string

Note The term *Cisco ATA* is used throughout this manual to refer to both the Cisco ATA 186 and the Cisco ATA 188, unless differences between the Cisco ATA 186 and Cisco ATA 188 are explicitly stated.

Note This section contains recommended values for the United States and other countries as configuration examples for certain parameters. For detailed recommendations of tone-parameter values by country, see Appendix E, "Recommended Cisco ATA Tone Parameter Values by Country."

Configuration Text File Template

This is a listing of the h323_example.txt text file, without its annotations, that comes bundled with the Cisco ATA software.

You can make a copy of this file and use it as a template for creating your own default configuration file or Cisco ATA-specific configuration file. For instructions on how to create these configuration files, see the "Creating Unique and Common Cisco ATA Configuration Files" section on page 3-9.

The h323_example.txt file contains all the Cisco ATA default values. The sections that follow this listing describe all the parameters in this file.

```
#txt
UIPassword:0
UseTftp:1
TftpURL:0
cfgInterval:3600
EncryptKey:0
EncryptKeyEx:0
upgradecode:0,0x301,0x0400,0x0200,0.0.0.0,69,0,none
upgradelang:0,0x301,0x0400,0x0200,0.0.0.0,69,0,none
Dhcp:1
StaticIp:0
StaticRoute:0
StaticNetMask:0
NTPIP:0.0.0.0
AltNTPIP:0.0.0.0
DNS1IP:0.0.0.0
DNS2IP:0.0.0.0
VLANSetting:0x0000002b
GkOrProxy:0
GkId:.
GkTimeToLive:0
AltGk:0
AltGkTimeOut:0
```

```
UID0:0
UID1:0
UseLoginID:0
LoginID0:0
LoginID1:0
PWD0:0
PWD1:0
AutMethod:0x00000000
GateWay:0
MediaPort:16384
RxCodec:1
TxCodec:1
LBRCodec:0
AudioMode:0x00150015
NumTxFrames:2
TOS:0x0000A8B8
CallFeatures:0xffffffff
PaidFeatures:0xffffffff
CallCmd:Af;AH;BS;NA;CS;NA;Df;EB;Ff;EP;Kf;EFh;HH;Jf;AFh;HQ;I*67;gA*82;fA#90v#;OI;H#72v#;
bA#74v#;cA#75v#;dA#73;eA*67;gA*82;fA*70;iA*69;DA*99;xA;Uh;GQ;
FeatureTimer:0x00000000
FeatureTimer2:0x0000001e
SigTimer:0x01418564
ConnectMode:0x00060400
OpFlags:0x00000002
TimeZone:17
CallerIdMethod:0x00019e60
Polarity: 0
FXSInputLevel:-1
FXSOutputLevel:-4
DialTone:2,31538,30831,1380,1740,1,0,0,1000
BusyTone:2,30467,28959,1191,1513,0,4000,4000,0
ReorderTone:2,30467,28959,1191,1513,0,2000,2000,0
RingBackTone:2,30831,30467,1943,2111,0,16000,32000,0
CallWaitTone:1,30831,0,5493,0,0,2400,2400,4800
AlertTone:1,30467,0,5970,0,0,480,480,1920
RingOnOffTime:2,4,25
DialPlan:*St4-|#St4-|911|1>#t8.r9t2-|0>#t811.rat4-|^1t4>#.-
IPDialPlan: 1
NPrintf:0
TraceFlags:0x00000000
SyslogIP:0.0.0.0.514
SyslogCtrl:0x00000000
```

The sections that follow describe these parameters.

User Interface (UI) Security Parameter

This section contains only one parameter—UIPassword.

UIPassword

Description

This parameter controls access to web page or voice configuration menu interface. To set a password, enter a value other than zero. To have the user prompted for this password when attempting to perform a factory reset or upgrade using the voice configuration menu, see the "OpFlags" section on page 5-34.

To clear a password, change the value to 0.

You cannot recover a forgotten password unless you reset the entire configuration of the Cisco ATA (see the "Resetting the Cisco ATA to Factory Default Values" section on page 3-23).

Note When UIPassword contains letters, you cannot enter the password from the telephone keypad.

Value Type

Alphanumeric string

Range

Maximum nine characters

Default

0

Voice Configuration Menu Access Code

7387277

Related Parameter

OpFlags, page 5-34—Bit 7

Parameters for Configuration Method and Encryption

This section describes parameters for instructing the Cisco ATA about how to locate its TFTP server and how to encrypt its configuration file:

UseTFTP

Settings

1—Use the TFTP server for Cisco ATA configuration.

0—Do not use the TFTP server for Cisco ATA configuration.

Value Type

Boolean

Range

0 or 1

Default

1

Voice Configuration Menu Access Code

305

Related Parameters

- TftpURL, page 5-5
- EncryptKey, page 5-6
- EncryptKeyEx, page 5-7
- OpFlags, page 5-34—bits 0 and 3
- CfgInterval, page 5-6

TftpURL

Description

Use this parameter to specify the IP address or URL of the TFTP server. This string is needed if the DHCP server does not provide the TFTP server IP address. When the TftpURL parameter is set to a non-zero value, this parameter has priority over the TFTP server IP address supplied by the DHCP server.

Optionally, you can include the path prefix to the TFTP file to download.

For example, if the TFTP server IP address is 192.168.2.170 or www.cisco.com, and the path to download the TFTP file is in /ata186, you can specify the URL as 192.168.2.170/ata186 or www.cisco.com/ata186.

Note From the voice configuration menu, you can only enter the IP address; from the web server, you can enter the actual URL.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

905

Related Parameters

- UseTFTP, page 5-4
- CfgInterval, page 5-6

CfgInterval

Description

Use this parameter to specify the number of seconds between each configuration update. The Cisco ATA will also upgrade its signaling image if it detects that the TFTP server contains an upgraded image.

For example, when using TFTP for configuration, the Cisco ATA contacts TFTP each time the interval expires to get its configuration file.

You can set CfgInterval to a random value to achieve random contact intervals from the Cisco ATA to the TFTP server.

Value Type

Decimal

Range

60 to 4294967295

Default

3600

Voice Configuration Menu Access Code

80002

Related Parameters

- UseTFTP, page 5-4
- TftpURL, page 5-5

EncryptKey

Description

This parameter specifies the encryption key that is used to encrypt the Cisco ATA configuration file on the TFTP server.

The cfgfmt tool, which is used to create a Cisco ATA binary configuration file (see the "Using Encryption With the cfgfmt Tool" section on page 3-12), automatically encrypts the binary file when the EncryptKey parameter has a value other than 0. The cfgfmt tool uses the rc4 encryption algorithm.

If this parameter value is set to 0, the Cisco ATA configuration file on the TFTP server is not encrypted.

Note Cisco recommends using the stronger Cisco ATA encryption method, which requires the use of the EncryptKeyEx parameter. For more information, see the "EncryptKeyEx" section on page 5-7.

For examples on how to upgrade from the EncryptKey parameter to the stronger encryption method that uses the EncryptKeyEx parameter, see the "Examples of Upgrading to Stronger Encryption Key" section on page 3-15.

Value Type

Hexadecimal string

Range

Maximum number of characters: 8

Default

0

Voice Configuration Menu Access Code

320

Related Parameters

- UseTFTP, page 5-4
- TftpURL, page 5-5
- EncryptKeyEx, page 5-7

EncryptKeyEx

Description

This parameter specifies an encryption key that is stronger than the key specified with the EncryptKey parameter. This stronger key is used to encrypt the Cisco ATA configuration file on the TFTP server.

Note Cisco recommends using the EncrpytKeyEx parameter instead of the EncryptKey parameter for the strongest possible encryption of the Cisco ATA configuration file.

When the EncryptKeyEx parameter is set to a non-zero value, the Cisco ATA uses this value as the encryption key and ignores any value that has been set for the EncryptKey parameter. The cfgfmt tool, which is used to create a Cisco ATA binary configuration file (see the "Using Encryption With the cfgfmt Tool" section on page 3-12), automatically encrypts the binary file using the stronger rc4 encryption algorithm.

When EncryptKeyEx is used for encryption, the Cisco ATA searches for the configuration file with the format ata<*macaddress*>.x. on the TFTP server.

If the value of the EncryptKeyEx parameter is 0, then the Cisco ATA uses the value of the EncryptKey parameter for encryption.

Note The cfgfmt tool (version 2.3) program generate an ata<*macaddress*>.x file in addition to an ata<*macaddress*> file if the EncryptKeyEx parameter is specified. You should place both such configuration files on the TFTP server.

For examples on how to upgrade from the EncryptKey parameter to the stronger encryption method that uses the EncryptKeyEx parameter, see the "Examples of Upgrading to Stronger Encryption Key" section on page 3-15.

Value Type

Hexadecimal string of the form:

Rc4PasswdInHex/macinHex_*12*

- rc4KeyInHex_n is a hexadecimal string of one to 64 characters.
- /macInHex_12 is the optional extension consisting of a forward slash (/) followed by the six-byte MAC address of the Cisco ATA to which the configuration file will be downloaded.

Range

Maximum number of characters: 64

Default

0

Voice Configuration Menu Access Code

Not applicable for this parameter.

Related Parameters

- UseTFTP, page 5-4
- TftpURL, page 5-5
- EncryptKey, page 5-6

Network Configuration Parameters

This section includes the parameters for enabling or disabling the use of a DHCP server to obtain IP address information, and parameters that you need to statically configure if you disable DHCP:

DHCP

Description

A DHCP server can be used to automatically set the Cisco ATA IP address, the network route IP address, the subnet mask, DNS, NTP, TFTP, and other parameters.

- 1—Enable DHCP
- 0—Disable DHCP

Value Type
Boolean

Range
0 or 1

Default
1

Voice Configuration Menu Access Code
20

Related Parameters
- StaticIp, page 5-9
- StaticRoute, page 5-9
- StaticNetMask, page 5-10
- OpFlags, page 5-34—Bits 3 and 11

StaticIp

Description
Use this parameter to statically assign the Cisco ATA IP address if the DHCP parameter is set to 0.

Value Type
IP address

Default
0.0.0.0

Voice Configuration Menu Access Code
1

Related Parameters
- DHCP, page 5-8
- StaticRoute, page 5-9
- StaticNetMask, page 5-10

StaticRoute

Description
Use this parameter to statically assign the Cisco ATA route if the DHCP parameter is set to 0.

Value Type
IP address

Default
0.0.0.0

Voice Configuration Menu Access Code
2

Related Parameters
- DHCP, page 5-8
- StaticIp, page 5-9
- StaticNetMask, page 5-10

StaticNetMask

Description
Use this parameter to statically assign the Cisco ATA subnet mask if the DHCP parameter is set to 0

Value Type
IP address

Default
255.255.255.0

Voice Configuration Menu Access Code
10

Related Parameters
- DHCP, page 5-8
- StaticIp, page 5-9
- StaticRoute, page 5-9

NTPIP

Description
This parameter is the NTP IP address, required if DHCP server does not provide one.

The Cisco ATA requires an NTP Server from which to obtain Coordinated Universal Time (UTC) to time-stamp incoming calls (H.323 and SIP) to drive an external Caller-ID device.

DHCP may also supply a NTP server. If NTPIP is specified, it overwrites the value supplied by DHCP. NTPIP is ignored if its value is 0 or 0.0.0.0.

The user *must not* specify a port parameter. The Cisco ATA uses the default NTP port only.

Value Type
IP address

Default
0.0.0.0

Voice Configuration Menu Access Code
141

Related Parameters
- AltNTPIP, page 5-11
- TimeZone, page 5-36

AltNTPIP

Description
This parameter is the alternate NTP IP address, if you want redundancy. You can set this parameter to 0 or point to the same NTPIP if only one NTP server exists.

Value Type
IP address

Default
0.0.0.0

Voice Configuration Menu Access Code
142

Related Parameters
- NTPIP, page 5-10
- TimeZone, page 5-36

DNS1IP

Description
This parameter is for setting the primary domain name server (DNS) IP address, if the DHCP server does not provide one. If DHCP provides DNS1IP (and if it is non-zero), this parameter overwrites the DHCP-supplied value. You *cannot* specify a port parameter. The Cisco ATA uses the default DNS port only.

Value Type
IP address

Default
0.0.0.0

Voice Configuration Menu Access Code
916

DNS2IP

Description

This parameter is for setting the secondary domain name server (DNS) IP address, if the DHCP server does not provide one. If DHCP provides DNS2IP (if it is non-zero), this parameter overwrites the DHCP-supplied value. You cannot specify a port parameter. The Cisco ATA uses the default DNS port only.

Value Type

IP address

Default

0.0.0.0

Voice Configuration Menu Access Code

917

VLANSetting

Description

This parameter is for firmware version 2.15 and above.

Bitmap definitions are as follows for the VLANSetting parameter:

- Bits 0-2—Specify VLAN Class of Service (CoS) bit value (802.1P priority) for signaling IP packets.
- Bits 3-5—Specify VLAN CoS bit value (802.1P priority) for voice IP packets.
- Bits 6-17—Reserved.
- Bits 18-29—User-specified 802.1Q VLAN ID.
- Bits 30-31—Reserved.

Value Type

Bitmap

Default

0x0000002b

Voice Configuration Menu Access Code

324

Related Parameter

OpFlags, page 5-34

H.323 Parameters

This sections describes the following parameters, which include H.323 Gatekeeper configuration parameters:

GkOrProxy

Description

This parameter is the IP address of the primary H.323 gatekeeper.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0—Disables gatekeeper-routed calls.

Voice Configuration Menu Access Code

5

Related Parameters

- AltGk, page 5-14
- AltGkTimeOut, page 5-15
- GkTimeToLive, page 5-14
- GkId, page 5-14

GkId

Description

This parameter is the identifier for the primary H.323 gatekeeper.

Value Type

Alphanumeric string

Default

. (not specified)

Range

Maximum 31 characters

Voice Configuration Menu Access Code

91

GkTimeToLive

Description

This parameter specifies the “time to live” value that is used when the Cisco ATA registers with the H.323 gatekeeper. The registration is valid until the configured time expires.

Value Type

Integer

Default

0

Range

30 to 4294967295 seconds

Voice Configuration Menu Access Code

250

AltGk

Description

You have the option of using this parameter to statically specify the IP address of an alternate H.323 gatekeeper.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

6

Related Parameter

AltGkTimeOut, page 5-15

AltGkTimeOut

Description

You can use this parameter to specify the timeout in seconds before the Cisco ATA fails back to the primary gatekeeper from the backup gatekeeper. When the Cisco ATA switches to a different H.323 gatekeeper, the setting of Bit 3 of the ConnectMode parameter (see the "ConnectMode" section on page 5-32) determines whether the Cisco ATA re-registers with the H.323 gatekeeper.

Value Type

Integer

Default

0—The Cisco ATA continues to use the backup gatekeeper until it fails before attempting to fail back to the primary gatekeeper.

Range

30 to 4294967295 seconds

Voice Configuration Menu Access Code

251

Related Parameters

- AltGk, page 5-14
- ConnectMode, page 5-32—Bit 3

UID0

Description

This parameter is the User ID (E.164 phone number) for the **Phone 1** port. If the value is set to zero, the port will be disabled and no dial tone will sound.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

3

Related Parameters

- UID1, page 5-17
- PWD0, page 5-16
- PWD1, page 5-18
- UseLoginID, page 5-19
- LoginID0, page 5-18
- LoginID1, page 5-19

PWD0

Description

This parameter is the password for the **Phone 1** port.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

4

Related Parameters

- UID0, page 5-16
- UID1, page 5-17
- PWD1, page 5-18
- UseLoginID, page 5-19
- LoginID0, page 5-18
- LoginID1, page 5-19
- AutMethod, page 5-20

UID1

Description

This parameter is the User ID (E.164 phone number) for the **Phone 2** port. If the value is set to zero, the port will be disabled and no dial tone will sound.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

13

Related Parameters

- UID0, page 5-16
- PWD0, page 5-16
- PWD1, page 5-18
- UseLoginID, page 5-19
- LoginID0, page 5-18
- LoginID1, page 5-19

PWD1

Description

This parameter is the password for the **Phone 2** port.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

14

Related Parameters

- UID0, page 5-16
- UID1, page 5-17
- PWD0, page 5-16
- UseLoginID, page 5-19
- LoginID0, page 5-18
- LoginID1, page 5-19
- AutMethod, page 5-20

LoginID0

Description

This parameter is the H.323 login ID for the **Phone 1** port of the Cisco ATA.

This value is used for registration and authentication if the UseLoginID parameter is set to 1.

If the LoginID0 and LoginID1 parameter values are identical, only one gatekeeper registration is performed for both ports, in which case the LoginID0 value is used as the H.323 ID, and the UID0 and UID1 parameter values are used for the two E.164 phone numbers.

Value Type

Alphanumeric string

Range

Maximum number of characters: 51

Default

0

Voice Configuration Menu Access Code

46

Related Parameters

- LoginID1, page 5-19
- PWD0, page 5-16
- PWD1, page 5-18
- UseLoginID, page 5-19
- AutMethod, page 5-20

LoginID1

Description

This parameter is the H.323 login ID for the **Phone 2** port of the Cisco ATA.

This value is used for registration and authentication if the UseLoginID parameter is set to 1.

If the LoginID0 and LoginID1 parameter values are identical, only one gatekeeper registration is performed for both ports, in which case the LoginID0 value is used as the H.323 ID, and the UID0 and UID1 parameter values are used for the two E.164 phone numbers.

Value Type

Alphanumeric string

Range

Maximum number of characters: 51

Default

0

Voice Configuration Menu Access Code

47

Related Parameters

- LoginID0, page 5-18
- PWD0, page 5-16
- PWD1, page 5-18
- UseLoginID, page 5-19
- AutMethod, page 5-20

UseLoginID

Description

0—Use UID0 and UID1 as the authentication ID.

1—Use LoginID0 and LoginID1 as the authentication ID.

Value Type
Boolean

Range
0 or 1

Default
0

Voice Configuration Menu Access Code
93

AutMethod

Description
Use this parameter to select the desired authentication method, with the following possible values:

- 0—Do not use authentication (default)
- 1—Use Cisco registration-level security
- 2—Use Cisco administration-level security on a per-call basis

Value Type
Bitmap

Default
0x00000000

Voice Configuration Menu Access Code
92

Related Parameters
- LoginID0, page 5-18
- LoginID1, page 5-19
- PWD0, page 5-16
- PWD1, page 5-18
- NTPIP, page 5-10
- AltNTPIP, page 5-11

Gateway

Description
Use this parameter to specify the H.323 gateway IP address if the network does not contain an H.323 gatekeeper. In this scenario, all calls originating from the Cisco ATA will be directed to the gateway specified in this parameter.

Value Type

Alphanumeric string

Range

Maximum number of characters: 31

Default

0

Voice Configuration Menu Access Code

11

Audio Configuration Parameters

This section describes the following audio parameters, which allow you to configure such items as codecs and silence suppression:

MediaPort

Description

Use this parameter to specify the base port where the Cisco ATA transmits and receives RTP media. This parameter *must* be an even number. Each connection uses the next available even-numbered port for RTP.

Value Type

Integer

Range

1 to 65535

Default

16384

Voice Configuration Menu Access Code

202

Related Parameters

- TOS, page 5-26
- VLANSetting, page 5-12

RxCodec

Description

Use this parameter to specify receiving-audio codec preference. The following values are valid:

- 0—G.723 (can be selected only if LBRCodec is set to 0)
- 1—G.711A-law
- 2—G.711µ-law
- 3—G.729A (can be selected only if LBRCodec is set to 3)

Value Type

Integer

Range

0-3

Default

2

Voice Configuration Menu Access Code

36

Related Parameters

- LBRCodec, page 5-23
- NumTxFrames, page 5-25
- TxCodec, page 5-22
- AudioMode, page 5-24

TxCodec

Description

Use this parameter to specify the transmitting-audio codec preference. The following values are valid:

- 0—G.723 (can be selected only if LBRCodec is set to 0)
- 1—G.711A-law
- 2—G.711µ-law
- 3—G.729A (can be selected only if LBRCodec is set to 3)

Value Type

Integer

Range
0-3

Default
2

Voice Configuration Menu Access Code
37

Related Parameters
- LBRCodec, page 5-23
- NumTxFrames, page 5-25
- RxCodec, page 5-22
- AudioMode, page 5-24

LBRCodec

Description
This parameter allows you to specify which low-bit-rate codecs are available. The Cisco ATA is capable of supporting two G.723.1 connections or one G.729 connection. When G.723.1 is selected as the low-bit-rate codec, each FXS port is allocated with one G.723.1 connection. When G.729 is selected, only one FXS port is capable of operating with the G.729 codec. The allocation of the G.729 resource to the FXS port is dynamic. The G.729 resource, if available, is allocated to an FXS port when a call is initiated or received; the resource is released when a call is completed.

The following values are valid:

- 0—Select G.723.1 as the low-bit-rate codec.
- 3—Select either G.729 as the low-bit-rate codec.

Value Type
Integer

Range
0 or 3

Default
0

Voice Configuration Menu Access Code
300

Related Parameters
- AudioMode, page 5-24—Bits 1 and 17
- TxCodec, page 5-22
- RxCodec, page 5-22
- NumTxFrames, page 5-25

AudioMode

Description

This parameter represents the audio operating mode. The lower 16 bits are for the **Phone 1** port, and the upper 16 bits are for the **Phone 2** port. Table 5-1 on page 5-24 provides definitions for each bit.

Value Type

Bitmap

Default

0x00150015

Voice Configuration Menu Access Code

312

Related Parameters

- LBRCodec, page 5-23
- ConnectMode, page 5-32
- RxCodec, page 5-22

Table 5-1 AudioMode Parameter Bit Definitions

Bit Number	Definition
0 and 16	0/1—Disable/enable silence suppression for all audio codecs. Silence suppression is enabled by default.
1 and 17	0—Enable selected low-bit-rate codec in addition to G.711. This setting is the default. 1—Enable G.711 only.
2 and 18	0/1—Disable/enable fax CED tone detection. This feature is enabled by default.
3 and 19	Reserved.
4-5 and 20-21	DTMF Transmission Method: • 0—Always in-band. • 1—By negotiation. • 2—Always out-of-band. • 3—Reserved.
6-7 and 22-23	Hookflash Transmission Method: • 0—Disable sending OOB hookflash message. • 1—By negotiation (H.245 message). • 2—Always out-of-band (H.245 message). • 3—Use Q931message to send user keypad information for DTMF or hookflash transmission.
8-15 and 23-31	Reserved.

NumTxFrames

Description

Use this parameter to select the number of frames per packet that the Cisco ATA transmits:

- The frame size for each G.729 data packet is 10 ms.
- The frame size for each G.723 data packet is 30 ms.

Note The frame size for G.711 is fixed at 20 ms per packet and is not configurable.

Examples

- To obtain 60 ms of G.723 audio, set the parameter value to 2.
- To obtain 120 ms of G.723 audio, set the parameter value to 4.

Note Cisco recommends using the default value of 2.

Value Type

Integer

Range

1-6

Default

2

Voice Configuration Menu Access Code

35

Related Parameters

- LBRCodec, page 5-23
- RxCodec, page 5-22
- TxCodec, page 5-22

TOS

Description

This parameter allows you to configure Type of Service (ToS) bits by specifying the precedence and delay of audio and signaling IP packets, as follows:

- Bits 0-7—These bits are for the ToS value for voice data packets.

  Range: 0-255

  Default: 184
- Bits 8-15—These bits are for the ToS value for signaling-data packets

  Range: 0-255

  Default: 168
- Bits 16-31—Reserved.

Value Type

Bitmap

Default

0x0000A8B8

Voice Configuration Menu Access Code

255

Note This parameter is called UDPTOS in previous Cisco ATA releases. If you are performing a Cisco ATA upgrade, the previous value of the UDPTOS parameter is carried forward to the TOS parameter.

Operational Parameters

This section describes the following parameters, which allow you to configure such items as call features and various timeout values:

CallFeatures

Description

Disable/enable CallFeatures by setting each corresponding bit to 0 or 1.

The lower 16 bits are for the **Phone 1** port, and the upper 16 bits are for the **Phone 2** port. Table 5-2 provides definitions of each bit.

Note The subscribed features that can be permanently disabled by the user are CLIP_CLIR, call waiting and Fax mode. A subscribed service enable/disabled by the user can be disabled/enabled dynamically on a per-call basis.

Value Type

Bitmap

Default

0xffffffff

Voice Configuration Menu Access Code

314

Related Parameters

- PaidFeatures, page 5-28
- CallCmd, page 5-29
- CallerIdMethod, page 5-38

Table 5-2 CallFeatures Parameter Bit Definitions

Bit Number	Definition
0 and 16	Not used for H.323.
1 and 17	Not used for H.323.
2 and 18	Not used for H.323.
3 and 19	Caller Line Identification Restriction (CLIR)—0; Caller Line Identification Presentation (CLIP)—1
4 and 20	Call waiting
5 and 21	Three-way calling
6 and 22	Not used for H.323.
7 and 23	Not used for H.323.
8 and 24	Caller ID. This service enables the Cisco ATA 186 to generate a Caller ID signal to drive a Caller ID display device attached to the FXS line.
9 and 25	Not used for H.323.
10 and 26	Not used for H.323.
11 and 27	Call Waiting Caller ID. This is available only if the Method bit in CallerIdMethod is set to Bellcore (FSK).

Table 5-2 CallFeatures Parameter Bit Definitions (continued)

Bit Number	Definition
12-14 and 28-30	Reserved.
15 and 31	Fax mode. This service allows the user to set the Cisco ATA to Fax mode on a per-call basis. For Fax mode, use the following settings: • G711 codec only • No silence suppression • No FAX tone detection

PaidFeatures

Description

Unsubscribe/subscribe to CallFeatures by setting each corresponding bit to either 0 or 1. The lower 16 bits are for the **Phone 1** port, and the upper 16 bits are for the **Phone 2** port. Table 5-3 provides definitions of each bit.

Value Type

Bitmap

Default

0xffffffff

Voice Configuration Menu Access Code

315

Related Parameters

- CallFeatures, page 5-27
- CallCmd, page 5-29
- CallerIdMethod, page 5-38
- SigTimer, page 5-31

Table 5-3 PaidFeatures Parameter Bit Definitions

Bit Number	Definition
0 and 16	Not used for H.323.
1 and 17	Not used for H.323.
2 and 18	Not used for H.323.
3 and 19	Caller Line Identification Restriction (CLIR)—0; Caller Line Identification Presentation (CLIP)—1
4 and 20	Call waiting
5 and 21	Three-way calling

Table 5-3 PaidFeatures Parameter Bit Definitions (continued)

Bit Number	Definition
6 and 22	Not used for H.323.
7 and 23	Not used for H.323.
8 and 24	Caller ID. This service enables the Cisco ATA 186 to generate a Caller ID signal to drive a Caller ID display device attached to the FXS line.
9 and 25	Not used for H.323.
10 and 26	Not used for H.323.
11 and 27	Call Waiting Caller ID.
12-14 and 28-30	Reserved.
15 and 31	Fax mode. This service allows the user to set the Cisco ATA to Fax mode on a per-call basis. For Fax mode, use the following settings: • G711 codec only • No silence suppression • No FAX tone detection

CallCmd

Description

Command table that controls call commands such as turning on/off caller ID.

For detailed information on the CallCmd parameter, see Chapter 6, "Call Commands."

Value Type

Alphanumeric string

Range

Maximum of 248 characters

Default

U.S. Call Command Default

Af;AH;BS;NA;CS;NA;Df;EB;Ff;EP;Kf;EFh;HH;Jf;AFh;HQ;I*67;gA*82;fA#90v#;OI;H#72v#;bA#74v#;cA#75v#;dA#73;eA*67;gA*82;fA*70;iA*69;DA*99;xA;Uh;GQ;

Voice Configuration Menu Access Code

930

Related Parameters

- CallFeatures, page 5-27
- PaidFeatures, page 5-28
- CallerIdMethod, page 5-38
- SigTimer, page 5-31

FeatureTimer

Description

This parameter provides configurable timing values for various telephone features, as described below:

- Bits 1-15—Reserved.
- Bits 16-18—Configurable call waiting ring timeout. When a call arrives for a Cisco ATA port that is in use and has call-waiting enabled, the Cisco ATA plays a call-waiting tone. If the incoming call is not answered within a specified period of time, the Cisco ATA can reject the call by returning a "486 Busy" response to the remote user agent.

  You can configure FeatureTimer parameter bits 16-18 to specify the ringing period for incoming call-waiting calls.

  This feature can be disabled by either using the default value 0 or by setting bits 16-18 to a value greater than the standard timeout for an incoming call as specified in SigTimer parameter bits 14-19. When this feature is disabled, a "480 Temporarily Not Available" response is returned to the remote user agent when the standard ring times out.

  – Range: 0 - 7
  – Factor: 10-second increments
  – Values: 0 to 70 seconds
  – Default: 0 (never timeout)
- Bits 19-31—Reserved.

Value Type

Bitmap

Default

0x00000000

Voice Configuration Menu Access Code

317

FeatureTimer2

Description

This parameter provides configurable timing values for various Cisco ATA features, as described below:

- Bits 0-7—Maximum time that the Ethernet connection can be disconnected before the Cisco ATA automatically reboots.
  - Range: 0 - 255
  - Factor: one-second increments
  - Values: 0 - 255 seconds
  - Default: 30 (equals 30 seconds)

Note To disable this feature, set the value of bits 0-7 to 0.

Value Type

Bitmap

Default

0x0000001e

Voice Configuration Menu Access Code

361

SigTimer

Description

This parameter controls various timeout values. Table 5-4 on page 5-32 contains bit definitions of this parameter.

Value Type

Bitmap

Default

0x01418564

Voice Configuration Menu Access Code

318

Table 5-4 SigTimer Parameter Bit Definitions

Bit Number	Definition
0-7	Call waiting period—The period between each burst of call-waiting tone. Range: 0 to 255 in 0.1 seconds Default: 100 (0x64=100 seconds)
8-13	Reorder delay—The delay in playing the reorder (fast busy) tone after the far-end caller hangs up. Range: 0 to 62 in seconds Default—5 (seconds) 63—Never play the reorder tone.
14-19	Ring timeout—When a call is not answered, this is the amount of time after which Cisco ATA rejects the incoming call. Range—0 to 63 in 10 seconds Default—6 (60 seconds) 0—Never times out
20-25	Not used by H.323.
26-27	Minimum hook flash time—The minimum on-hook time required for hook flash event. Range: 0 to 3 Default: 0 (60 ms) Other possible values: 1=100 ms, 2=200 ms, 3=300 ms.
28-31	Maximum hook flash time—The maximum on-hook time allowed for hook flash event. Range: 0 to 15 Default: 0 (1000 ms) Other possible values: 1=100 ms, 2=200 ms, 3=300 ms, 4=400 ms, 5=500 ms, 6=600 ms, 7=700 ms, 8=800 ms, 9=900 ms, 10=1000 ms, 11=1100 ms, 12=1200 ms, 13=1300 ms, 14=1400 ms, 15=1500 ms.

ConnectMode

Description

This parameter is a 32-bit bitmap used to control the connection mode of the selected call signaling protocol. Table 5-5 on page 5-33 provides bit definitions for this parameter.

Value Type

Bitmap

Default

0x00060400

Voice Configuration Menu Access Code

311

Table 5-5 ConnectMode Parameter Bit Definitions

Bit Number	Definition
0	0—Use slow-start procedure (for H.225/Q.931 and H.245). 1—Use fast-start procedure (for H.225/Q.931). Default: 0
1	0/1—Disable/enable h245 tunneling. Default: 0
2	0—Use the dynamic payload type 126/127 as the RTP payload type (fax pass-through mode) for G.711 µ-law/G.711 A-law. 1—Use the standard payload type 0/8 as the RTP payload type (fax pass-through mode) for G.711 µ-law/G.711 A-law. Default: 0
3	0—Do not perform full gatekeeper registration when the Cisco ATA switches to an alternate H.323 gatekeeper. 1—Perform full gatekeeper registration when the Cisco ATA switches to an alternate H.323 gatekeeper. Default: 0
4	0—Denotes a non-Cisco CallManager environment. 1—Enable the Cisco ATA to operate in a Cisco CallManager environment. Default: 0
5	0/1—Enable/disable two-way cut-through of voice path before the Cisco ATA receives the CONNECT message. Default: 0
6	0/1—Disable/enable using the Progress Indicator to determine if ringback is supplied by the far end with RTP. Default: 0
7	0/1—Disable/enable fax pass-through redundancy. Default: 0
8-12	Specifies the fax pass-through NSE payload type. The value is the offset to the NSE payload base number of 96. The valid range is 0-23; the default is 4. For example, if the offset is 4, the NSE payload type is 100.
13	0—Use G.711µ-law for fax pass-through codec. 1—Use G.711A-law for fax pass-through codec. Default: 0
14-15	0—Use fax pass-through. 1—Use codec negotiation in sending fax. 2—Reserved. 3—Reserved. Default: 0

Table 5-5 ConnectMode Parameter Bit Definitions (continued)

Bit Number	Definition
16	0/1—Disable check-bearer capability in the received Q.931 Setup message. If this setting is enabled, the Cisco ATA returns the value *65* as the release-complete cause if the Information Transfer Capability (ITC) is “unrestricted digital information” or “restricted digital information.” The Cisco ATA returns the value *100* as the release-complete cause if the ITC is “unrestricted digital information with tones/announcements” or "video." Default: 0
17—18	Not used for H.323.
19	0—Disable sending ringback tone to the caller. 1—Enable sending ringback tone to the caller. Default: 0
20-22	Not used by H.323.
23	0/1—Disable/enable user-configurable setting for call-waiting default. If this value is 0 (default), the end user cannot configure the permanent default call-waiting setting for every call. Instead, the service provider's default call-waiting setting is used for every call. If this value is 1, the end-user can configure the permanent default call-waiting setting for every call, thus overriding the value set by the service provider. Default: 0
24	0/1—Disable/enable the mixing of audio and call waiting tone during a call. Default: 0
25 to 31	Reserved.

OpFlags

Description

This parameter enables/disables various operational features.

See Table 5-6 on page 5-35 for bit definitions of this parameter.

Value Type

Bitmap

Default

0x2

Voice Configuration Menu Access Code

323

Related Parameters

- TftpURL, page 5-5
- DHCP, page 5-8
- VLANSetting, page 5-12

Table 5-6 OpFlags Parameter Operational Features to Turn On or Off

Bit Number	Definition
0	If Bit 0 = 0, the TFTP configuration filename supplied by the DHCP server overwrites the default filename for each Cisco ATA. If Bit 0 = 1, the default Cisco ATA filename is always used. Default: 0
1	If Bit 1 = 0, the Cisco ATA probes the static network router during the power-up process. If Bit 1 = 1, static network router probing is disabled. Default: 1
2	Reserved.
3	If Bit 3=1, the Cisco ATA does not request DHCP option 150 in the DHCP discovery message; some DHCP server do not respond if option 150 is requested. Default: 0
4	If Bit 4 = 1, the Cisco ATA use the VLAN ID specified in the VLANSetting parameter for VLAN IP encapsulation (see the "VLANSetting" section on page 5-12). Default: 0
5	If Bit 5=1, the Cisco ATA does not use VLAN IP encapsulation. Default: 0
6	If Bit 6=1, the Cisco ATA does not perform CDP discovery. Default: 0
7	If Bit 7=1, the Cisco ATA does not allow web configuration. Once the web server is disabled, you must configure the Cisco ATA with the TFTP or voice configuration menu methods. **Examples** 1. If the existing OpFlags value is 0x2, select menu option 323 from the voice configuration menu and enter the value 130 (0x82). This disables web configuration. If you later attempt to access the Cisco ATA web configuration page, the following error messages will be displayed. – `Netscape: The document contained no data. Try again later, or contact the server's administrator.` – `Internet Explorer: The page cannot be displayed.` 2. If the existing OpFlags value is 0x82, select menu option 323 from the voice configuration menu and enter the value 2 (0x2). This disables web configuration. Default: 0
8	If Bit 8=1, the Cisco ATA does not allow HTTP refresh access with the http://ip/refresh command. Default: 0
9	If Bit 9=1, the Cisco ATA does not allow HTTP reset access with the http://ip/reset command. Default: 0
10	Reserved.

Table 5-6 OpFlags Parameter Operational Features to Turn On or Off (continued)

Bit Number	Definition
11	If Bit 11=0, the Cisco ATA requests the device hostname from the DHCP server. If Bit 11=1, the Cisco ATA uses the device hostname that is specified in DHCP option 12. Default: 0
12	Reserved.
13	DNS Servers For Name Resolution If Bit 13=0 (default), use statically configured DNS IP addresses, if available, for name resolution. If statically configured DNS servers are not available, use DHCP-provided DNS IP addresses for name resolution. If Bit 13=1, use both statically configured DNS IP addresses and as many as two DHCP-provided DNS IP addresses. Therefore, the Cisco ATA can query as many as four DNS IP addresses in one DNS query. For more information about statically configured DNS IP addresses, see the "DNS1IP" section on page 5-11 section and the "DNS2IP" section on page 5-12 section. Default: 0
14	DNS Servers For Name Resolution 2 If Bit 14=0 (default), use statically configured DNS IP addresses (DNS1IP and DNS2IP), if available, for name resolution; otherwise, use DHCP-provided DNS IP addresses. If Bit 14=1, use both statically configured (DNS1IP and DNS2IP) and DHCP-provided DNS IP addresses (maximum of two) for name resolution. **Note** This configuration bit gives precedence to statically provided DNS IP addresses over DHCP-provided DNS IP addresses. This bit also overrides the value of OpFlags parameter bit 13.
15	Disable UDP Checksum Generation If Bit 13=0, generate UDP checksum in outgoing UDP packets. If Bit 13=1, disable generation of of UDP checksum in outgoing UDP packets. Default: 0
16-27	Reserved.
28-31	To configure the Cisco ATA to prompt the user for the UIPassword when the user attempts to perform a factory reset or upgrade using the voice configuration menu, configure bits 28 to 31 with the value of 6. Any other value for these bits means that the Cisco ATA will not prompt the user for the UIPassword in these cases.

TimeZone

Description

This parameter is the timezone offset (in hours) from Greenwich Mean Time (GMT) for time-stamping incoming calls with local time (to use for Caller ID display, for example). See the "Additional Description" heading later in the description of this parameter for selecting time offsets for timezones that have 30-minute-factor or 45-minute-factor offset from GMT.

Local time is generated by the following formula:

- Local Time=GMT + TimeZone, if TimeZone <= 12
- Local Time=GMT + TimeZone - 25, if TimeZone > 12

Value Type

Integer

Range

0-24

Default

17

Voice Configuration Menu Access Code

302

Additional Description

Use the following list to select Timezone offset (in minutes) from GMT for the following cities and countries that have 30-minute-factor and 45-minute-factor time zone offsets. These values are integers and can range from -720 through -60, and from 60 through 780.

- Tehran—210 = GMT + 3:30
- Kabul— 270 = GMT + 4:30
- Calcutta, Chennai, Mumbai, and New Delhi—330 = GMT + 5:30
- Kathmandu—345 = GMT + 5:45
- Rangoon—390 = GMT + 6:30
- Darwin and Adelaide—570 = GMT + 9:30
- Newfoundland— -210 = GMT - 3:30

Note Negative timezone values must be configured through the Cisco ATA Web configuration page and cannot be configured with the voice configuration menu.

Related Parameters

- NTPIP, page 5-10
- AltNTPIP, page 5-11

Telephone Configuration Parameters

This section includes the following parameters, which allow you to configure items such as generating caller ID format and controlling line polarity:

- CallerIdMethod, page 5-38
- Polarity, page 5-39
- FXSInputLevel, page 5-40
- FXSOutputLevel, page 5-40

CallerIdMethod

Description

This 32-bit parameter specifies the signal format to use for both FXS ports for generating Caller ID format. Possible values are:

- Bits 0-1 (method)—0=Bellcore (FSK), 1=DTMF, 2=ETSI, and 3 is reserved.

If *method*=0 (default), set the following bits:

- Bit 2—Reserved.
- Bit 3 to 8—Maximum number of digits in phone number (valid values are 1 to 20; default is 12)
- Bit 9 to 14—Maximum number of characters in name (valid values are 1 to 20; default is 15)
- Bit 15—If this bit is enabled (it is by default), send special character **O** (out of area) to CID device if the phone number is unknown.
- Bit 16—If this bit is enabled (it is by default), send special character **P** (private) to CID device if the phone number is restricted.
- Bits 17 to 27—Reserved.

If *method*=1, set the following bits:

- Bit 2—Reserved.
- Bits 3-6—Start digit for known numbers (valid values are **12** for “A,” **13** for “B,” **14** for “C,” and **15** for “D.”)
- Bits 7-10—End digit for known numbers (valid values are **11** for “#,” **12** for “A,” **13** for “B,” **14** for “C,” and **15** for “D.”)
- Bits 11—Polarity reversal before and after Caller ID signal (value of 0/1 disables/enables polarity reversal)
- Bits 12-16—Maximum number of digits in phone number (valid values are 1 to 20; default is 15)
- Bits 17 to 19—Start digit for unknown or restricted numbers (valid values are **4** for “A,” **5** for “B,” **6** for “C,” and **7** for “D.”)
- Bits 20 to 22—End digit for unknown or restricted numbers (valid values are **3** for “#,” **4** for “A,” **5** for “B,” **6** for “C,” and **7** for “D.”)
- Bits 23 to 24—Code to send to the CID device if the number is unknown (valid values are **0** for “00,” **1** for “0000000000,” and **2** for “2.” **3** is reserved and should not be used.
- Bits 25 to 26—Code to send to the CID device if the number is restricted (valid values are **0** for “10,” and **1** for “1.” **2** and **3** are reserved and should not be used.
- Bits 27 to 31—Reserved.

If *method=2*, set the following bits:

- Bit 2—Set to 0 to have the Cisco ATA transmit data prior to ringing by using the Ring-Pulse Alerting Signal (RP-AS); set to 1 to have the Cisco ATA transmit data after the firsr ring.
- Bits 3-8—Maximum number of digits in a phone number (valid values are 1 to 20; default is 12).
- Bits 9-14—Maximum number of characters in a name (valid values are 1 to 20; default is 15).
- Bit 15—If this bit is enabled (it is enabled by default), send special character **O** (out of area) to CID device if telephone number is unknown.

- Bit 16—If this bit is enabled (it is enabled by default), send special character **P** (private) to CID device if telephone number is restricted.
- Bits 17-27 are reserved.

Examples

The following examples are recommended values for the CallerID Method parameter:

- USA = 0x00019e60
- Sweden = 0x006aff79 or 0x006aff61
- Denmark = 0x0000fde1 or 0x033efde1
- Germany = 0x00019e62
- Austria = 0x00019e66

Value Type

Bitmap

Default

0x00019e60

Voice Configuration Menu Access Code

316

Polarity

Description

You can control line polarity of the Cisco ATA FXS ports when a call is connected or disconnected by configuring the Polarity bitmap parameter as follows:

- Bit 0: CALLER_CONNECT_POLARITY. Polarity to use when the Cisco ATA is the caller and the call is connected.
  - 0 =Use forward polarity (Default)
  - 1 =Use reverse polarity
- Bit 1: CALLER_DISCONNECT_POLARITY. Polarity to use when the Cisco ATA is the caller and the call is disconnected.
  - 0 =Use forward polarity (Default)
  - 1 =Use reverse polarity
- Bit 2: CALLEE_CONNECT_POLARITY. Polarity to use when the Cisco ATA is the callee and the call is connected.
  - 0 =Use forward polarity (Default)
  - 1 =Use reverse polarity

- Bit 3: CALLEE_DISCONNECT_POLARITY. Polarity to use when the Cisco ATA is the callee and the call is disconnected.
  - 0 =Use forward polarity (Default)
  - 1 =Use reverse polarity

Note Bits 4-31 are reserved.

Value Type

Bitmap

Default

0x00000000

Voice Configuration Menu Access Code

304

FXSInputLevel

Description

Use this parameter to specify the input level control (analog-to-digital path) of the Cisco ATA FXS ports.

Value Type

Integer

Range

-9 to 2 dB

Default

-1

Voice Configuration Menu Access Code

370

Related Parameter

FXSOutputLevel, page 5-40

FXSOutputLevel

Description

Use this parameter to specify the output level control (digital-to-analog path) of the Cisco ATA FXS ports.

Value Type

Integer

Range

-9 to 2 dB

Default

-4

Voice Configuration Menu Access Code

371

Related Parameter

FXSInputLevel, page 5-40

Tone Configuration Parameters

The Cisco ATA supports the following tone parameters:

- DialTone
- BusyTone
- ReorderTone
- RingBackTone
- CallWaitTone
- AlertTone

The Cisco ATA supports two types of tone-parameter syntax—basic format and extended format. Basic format is used in most countries; use the extended format only if the country in which the Cisco ATA is used requires this format.

This section covers all the call-progress tones that the Cisco ATA supports, and contains the following topics:

- Tone Parameter Syntax—Basic Format, page 5-41
- Tone Parameter Syntax—Extended Formats, page 5-43
- Recommended Values, page 5-48
- Specific Tone Parameter Information, page 5-48

This section also covers the following parameter, which is for configuring phone-ringing characteristics:

- RingOnOffTime, page 5-51

Note For detailed recommendations of tone-parameter values by country, see Appendix E, "Recommended Cisco ATA Tone Parameter Values by Country."

Tone Parameter Syntax—Basic Format

Each tone is specified by nine integers, as follows:

```
parametername: NumOfFreqs,Tfreq1,Tfreq2,Tamp1,Tamp2,Steady,OnTime,OffTime, TotalToneTime
```

- *parametername* is the name of the tone.

- *NumOfFreqs* is the number of frequency components (0, 1 or 2).
- *Tfreq1* and *Tfreq2* are the transformed frequencies of the first and second frequencies, respectively. Their values are calculated with the following formula:

  32767 * cos (2*pi*F/8000)

  where ***F*** is the desired frequency in Hz. Set this value to **0** if the frequency does not exist.

  The range of each value is –32768 to 32767.

  For negative values, use the 16-bit 2's complement value. For example, enter **–1** as 65535 or as 0xffff.
- *Tamp1* and *Tamp2* are the transformed amplitudes of the first and second frequencies, respectively. Their values are calculated with the following formulas:

  32767 * A * sin(2*pi*F/8000)

  A (amplitude factor) = 0.5 * 10^((k+10-(n-1)*3)/20)

  where ***F*** is the desired frequency in Hz, ***k*** is the desired volume in *dBm*, and ***n*** is the number of frequencies. The ^ symbol means *to the order of*.
- *Steady* controls whether the tone is constant or intermittent. A value of **1** indicates a steady tone and causes the Cisco ATA to ignore the on-time and off-time parameters. A value of **0** indicates an on/off tone pattern and causes the Cisco ATA to use the on-time and off-time parameters.
- *OnTime* controls the length of time the tone is played in milliseconds (ms).

  Specify each value as a number of samples with a sampling rate of 8 kHz. The range of each value is 0 to 0xffff. For example, for a length of 0.3 seconds, set the value to 2400.
- *OffTime* controls the length of time between audible tones in milliseconds (ms).

  Specify each value as a number of samples with a sampling rate of 8 kHz. The range of each value is 0 to 0xffff. For example, for a length of 0.3 seconds, set the value to 2400.
- *TotalToneTime* controls the length of time the tone is played. If this value is set to 0, the tone will play until another call event stops the tone. For DialTone, DialTone2, BusyTone, ReorderTone, and RingBackTone, the configurable value is the number of 10 ms (100 = 1 second) units.

  For the remaining tones, the configurable value is the number of samples with a sampling rate of 8 kHz.

Note All tones are persistent (until the Cisco ATA changes state) except for the call-waiting tone and the confirm tone. The call-waiting tone, however, repeats automatically once every 10 seconds while the call-waiting condition exists.

Tone Parameter Syntax—Extended Formats

Two types of extended format exist for the Cisco ATA tone parameters:

- Extended Format A, page 5-43—This format can be used for the following tone parameters:
  - DialTone
  - BusyTone
  - RingbackTone
  - CallWaitTone
  - AlertTone
- Extended Format B, page 5-44—This format can be used only for the ReorderTone parameter.

Extended Format A

Each tone is specified by 11 integers, as follows:

```
parametername:NumOfFreqs,Tfreq1,Tamp1,Tfreq2,Tamp2,NumOfOnOffPairs,OnTime1,
OffTime1,OnTime2,OffTime2,TotalToneTime
```

- *parametername* is the name of the tone.
- *NumOfFreqs* = 100 + the number of frequencies in the tone. (Therefore, *NumOfFreqs* = 101 for one frequency, and 102 for two frequencies.)
- *Tfreq1* and *Tfreq2* are the transformed frequencies of the first and second frequencies, respectively. Their values are calculated with the following formula:

  32767 * cos (2*pi*F/8000)

  where ***F*** is the desired frequency in Hz. Set this value to **0** if the frequency does not exist.

  The range of each value is –32768 to 32767.

  For negative values, use the 16-bit 2's complement value. For example, enter **–1** as 65535 or as 0xffff.
- *Tamp1* and *Tamp2* are the transformed amplitudes of the first and second frequencies, respectively. Their values are calculated with the following formula:

  32767 * A * sin(2*pi*F/8000)

  A (amplitude factor) = 0.5 * 10^((k+10-(n-1)*3)/20)

  where ***F*** is the desired frequency in Hz, ***k*** is the desired volume in *dBm*, and ***n*** is the number of frequencies. The ^ symbol means *to the order of*.
- *NumOfOnOffPairs* is the number of on-off pairs in the cadence of the tone.

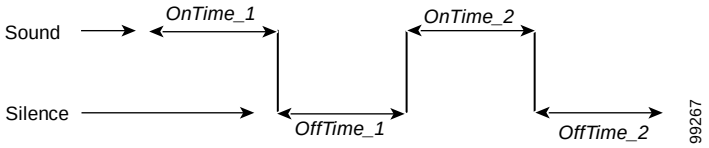
  Valid values are 0, 1 and 2. Use 0 if the tone is steady.
- *OnTime1* and *OnTime2* values are the lengths of time the tone is played for the first and second on-off pairs of a cadence, respectively. (See Figure 5-1 for a graphical representation.)

  Specify each value as a number of samples with a sampling rate of 8 kHz. The range of each value is 0 to 0xffff. For example, for a length of 0.3 seconds, set the value to 2400.

- *OffTime1* and *OffTime2* values are the lengths of time that silence is played for the first and second on-off pairs of a cadence, respectively. (See Figure 5-1 for a graphical representation.)

  Specify each value as a number of samples with a sampling rate of 8 kHz. The range of each value is 0 to 0xffff. For example, for a length of 0.3 seconds, set the value to 2400.

Figure 5-1 Cadence With Two On-Off Pairs



- *TotalToneTime* controls the length of time the tone is played. If this value is set to 0, the tone will play until another call event stops the tone. For DialTone, DialTone2, BusyTone, ReorderTone, and RingBackTone, the configurable value is the number of 10 ms (100 = 1 second) units.

  For the remaining tones, the configurable value is the number of samples with a sampling rate of 8 kHz.

Note All tones are persistent (until the Cisco ATA changes state) except for the call-waiting tone and the confirm tone. The call-waiting tone, however, repeats automatically once every 10 seconds while the call-waiting condition exists.

Extended Format B

The ReorderTone parameter specifies the tone that the Cisco ATA plays when the called number is not available or the external circuit is busy. This tones can consist of:

- Up to three frequencies played simultaneously and a cadence of up to three on-off pairs. The first on-off pair can repeat multiple times before the second on-off pair plays.

  For example, a 400 Hz frequency plays four times for 0.75 second followed by 0.1 second of silence after each play and then plays one time for 0.75 second followed by 0.4 second of silence. This pattern can be set to repeat until another call event stops the pattern.

- Up to three frequencies played sequentially with a cadence of up to three on-off pairs

  For example, the frequencies 900 Hz, 1400 Hz, and 1800 Hz play sequentially for 0.33 seconds each with no silence after the first and second frequencies but one second of silence after the third frequency.

The syntax of the ReorderTone parameter is specified by 17 integers, as follows:

```
ReorderTone:Sequential,NumOfFreqs,TFreq1,Tamp1,TFreq2,
Tamp2,TFreq3,Tamp3,NumOfOnOffPairs,OnTime1,OffTime1,
OnTime2,OffTime2,OnTime3,OffTime3,NumOfRepeats,TotalToneTime
```

where:

- *Sequential* specifies whether multiple frequencies in a tone play simultaneously (100) or sequentially (101). Set to 100 for a tone with one frequency. If *Sequential* is 101, the number of frequencies (*NumOfFreqs*) has to be the same value as the number of on-off pairs in a cadence (*NumOfOnOffPairs*).
- *NumOfFreqs* is the number of frequencies in the tone (1, 2, or 3). The frequencies can play simultaneously or sequentially, depending on the *Sequential* setting.

- *TFreq1*, *TFreq2*, and *TFreq3* are the transformed frequencies of the first, second, and third frequencies, respectively. Calculate each value with the following formula:

  32767 * cos (2 * pi * F/8000)

  where ***F*** is the desired frequency in Hz. Set this value to **0** if the frequency does not exist.

  The range of each value is –32768 to 32767.

  For negative values, use the 16-bit 2's complement value. For example, enter –1 as 65535 or as 0xffff.

- *Tamp1*, *Tamp2* and *Tamp3* are the transformed amplitudes of the first, second and third frequencies, respectively. Their values are calculated with the following formula:

  32767 * A * sin(2*pi*F/8000)

  A (amplitude factor) = 0.5 * 10^((k+10-(n-1)*3)/20)

  where ***F*** is the desired frequency in Hz, ***k*** is the desired volume in dBm, and **n** is the number of frequencies (If *Sequential* is set to 101, n is equal to 1). The ^ symbol means *to the order of*.

- *NumOfOnOffPairs* is the number of on-off pairs in the cadences of the tone (0, 1, 2, or 3). For a steady tone, use 0.

  If this value is 0, the *OnTime1*, *OnTime2*, *OnTime 3*, *OffTime1*, *OffTime2*, and *OffTime3* values must also be 0.

- *OnTime1*, *OnTime2*, and *OnTime3* are the lengths of time that the first, second, and third on-off pairs of a cadence play a sound, respectively. (See Figure 5-2 for a graphical representation.)

  Specify each value as a number of samples with the sampling rate of 8 kHz. The range of each value is 0 to 0xffff.

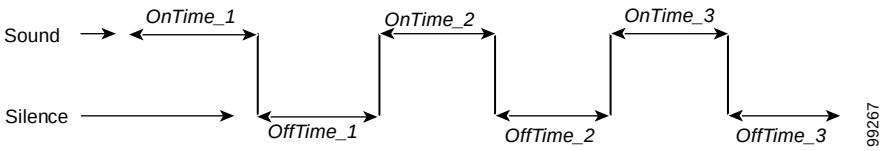
  For example, for a length of 0.3 seconds, set a value to 2400.

- *OffTime1*, *OffTime2*, and *OffTime3* are the lengths of silence after the sound of the first, second, and third on-off pairs of a cadence, respectively.

  Specify each value as a number of samples with the sampling rate of 8 kHz. The range of each value is 0 to 0xffff.

  For example, for a length of 0.3 seconds, set a value to 2400. (See Figure 5-2 for a graphical representation.)

Figure 5-2 Cadence with Three On-Off Pairs



- *NumOfRepeats* is the number of times that the first on-off pair of the cadence (specified by *OnTime1*, *OffTime1*) repeats before the second on-off pair (specified by *OnTime2*, *OffTime2*) plays.

  For example, if *NumOfRepeats* is 2, the first on-off pair will play three times (it will play once and then repeat two times), then the second on-off pair will play.

- *TotalToneTime* is the total length of time that the tone plays. If this value is 0, the tone will play until another call event stops the tone.

  This value is in 10 ms units (100 ms = 1 second).

Two examples of Extended Format B, both using the Reorder tone, follow.

ReorderTone Parameter Example1

Assume that you want a reorder tone in which:

- The frequencies 900 Hz, 1400 Hz, and 1800 Hz play sequentially.
- Each frequency plays once for 0.33 seconds.
- There is no silence after the first and the second frequencies.
- There is 1 second of silence after the third frequency (before the first frequency starts again)
- The volume of each frequency is –19 dBm.
- The tone plays until another call event stops the tone.

For this reorder tone, make the following setting. See Table 5-7 for a detailed explanation.

```
ReorderTone:101,3,24917,3405,14876,4671,5126,5178,3,2640,0,2640,0,
2640,8000,0,0
```

Table 5-7 Reorder Tone Parameter Example 1 Explanation

Component	Setting	Explanation
Sequential	101	Frequencies play sequentially
NumOfFreqs	3	Three frequencies in the tone
TFreq1	24917	First frequency is 900 Hz
TAmpl1	3405	First frequency volume is –19 dBm
TFreq2	14876	Second frequency is 1400 Hz
TAmp2	4671	Second frequency volume is –19 dBm
TFreq3	5126	Third frequency is 1800 Hz
TAmp3	5178	Third frequency volume is –19 dBm
NumOfOnOffPairs	3	Three on-off pairs in the cadence of the tone
OnTime1	2640	Sound in first on-off pair plays for 0.33 seconds
OffTime	0	No silence after the first sound (the second sound plays immediately)
OnTime2	2640	Sound in second on-off pair plays for 0.33 seconds
OffTime2	0	No silence after the second sound (the third sound plays immediately)
OnTime3	2640	Sound in third on-off pair plays for 0.33 seconds
OffTime3	8000	1 second of silence after the sound in the third on-off pair (before the pattern repeats, beginning with the first on-off pair)

Table 5-7 Reorder Tone Parameter Example 1 Explanation (continued)

Component	Setting	Explanation
NumOfRepeats	0	First on-off pair of the cadence plays once (does not repeat), then the second on-off pair plays
TotalToneTime	0	Tone plays continuously (set of three on-off pairs of the cadence repeat continuously) until another call event stops the tone

ReorderTone Parameter Example 2

Assume that you want a reorder tone in which:

- The only frequency is 400 Hz.
- The frequency plays six times, each time for 0.1 second followed by 0.9 second of silence.
- The frequency then plays once for 0.3 second followed by 0.7 second of silence.
- The volume of the frequency is –19 dBm.
- The tone plays until another call event stops the tone.

For this reorder tone, make the following setting. See Table 5-8 for a detailed explanation.

```
ReorderTone:100,1,31164,1620,0,0,0,0,2,800,7200,2400,5600, 0,0,5,0
```

Table 5-8 Reorder Tone Parameter Example 2 Explanation

Component	Setting	Explanation
Sequential	100	Required setting for a tone with one frequency
NumOfFreqs	1	One frequency in the tone
TFreq1	31164	First frequency is 400 Hz
TAmp1	1620	First frequency volume is –19 dBm
TFreq2	0	No second frequency
TAmp2	0	No second frequency
TFreq3	0	No third frequency
TAmp3	0	No third frequency
NumOfOnOffPairs	2	Two on-off pairs in the cadence of the tone
OnTime1	800	Sound in first on-off pair plays for 0.1 second
OffTime1	7200	Sound in first on-off pair is followed by 0.9 second of silence
OnTime2	2400	Sound in second on-off pair plays for 0.3 seconds
OffTime2	5600	Sound in second on-off pair is followed by 0.7 second of silence
OnTime3	0	No third on-off pair in the cadence
OffTime3	0	No third on-off pair in the cadence

Table 5-8 Reorder Tone Parameter Example 2 Explanation (continued)

Component	Setting	Explanation
NumOfRepeats	5	First on-off pair of the cadence plays six times (plays once and then repeats five times), then the second on-off pair plays
TotalToneTime	0	Tone plays continuously (set of two on-off pairs of the cadence repeat continuously) until another call event stops the tone

Recommended Values

The following settings are recommended for the US:

- DialTone = "2,31538,30831,1380,1740,1,0,0,1000" (approximately -17 dBm)
- BusyTone = "2,30467,28959,1191,1513,0,4000,4000,0" (approximately -21 dBm)
- ReorderTone = "2,30467,28959,1191,1513,0,2000,2000,0" (approximately -21 dBm)
- RingBackTone = "2,30831,30467,1943,2111,0,16000,32000,0" (approximately -16 dBm)
- CallWaitTone = "1,30831,0,5493,0,0,2400,2400,4800" (approximately -10 dBm)
- AlertTone = “1,30467,0,5970,0,0,480,480,1920”

Note For detailed recommendations of tone-parameter values by country, see Appendix E, “Recommended Cisco ATA Tone Parameter Values by Country.”

Specific Tone Parameter Information

Brief descriptions, and lists of default values and the voice configuration menu code for each Cisco ATA tone parameter, appear in the following sections:

DialTone

Description

The Cisco ATA plays the dial tone when it is ready to accept the first digit of a remote address to make an outgoing call.

Default values (using the Basic format)

- NumOfFreqs—2

- Tfreq1—31538
- Tfreq2—30831
- Tamp1—1380
- Tamp2—1740
- Steady—1
- OnTime—0
- OffTime—0
- TotalToneTime—1000

Voice Configuration Menu Access Code

920

BusyTone

Description

The Cisco ATA plays the busy tone when the callee is busy.

Default values (using the Basic format)

- NumOfFreqs—2
- Treq1—30467
- Tfreq2—28959
- Tamp1—1191
- Tamp2—1513
- Steady—0
- OnTime—4000
- OffTime—4000
- TotalToneTime—0

Voice Configuration Menu Access Code

921

ReorderTone

Description

The Cisco ATA plays the reorder tone (also known as congestion tone) if the outgoing call failed for reasons other than busy. This is a fast-busy tone.

Default values (using the Basic format)

- NumOfFreqs—2
- Treq1—30467
- Treq2—28959
- Tamp1—1191

- Tamp2—1513
- Steady—0
- OnTime—2000
- OffTime—2000
- TotalToneTime—0

Voice Configuration Menu Access Code

922

RingbackTone

Description

The Cisco ATA plays the ring-back tone when the callee is being alerted by the called device.

Default values (using the Basic format)

- NumOfFreqs—2
- Tfreq1—30831
- Tfreq2—30467
- Tamp1—1943
- Tamp2—2111
- Steady—0
- OnTime—16000
- OffTime—32000
- TotalToneTime—0

Voice Configuration Menu Access Code

923

CallWaitTone

Description

The Cisco ATA plays the call-waiting tone when an incoming call arrives while the user is connected to another party.

Default values (using the Basic format)

- NumOfFreqs—1
- Tfreq1—30831
- Tfreq2—0
- Tamp1—5493
- Tamp2—0
- Steady—0
- OnTime—2400

- OffTime—2400
- TotalToneTime—4800

Voice Configuration Menu Access Code

924

AlertTone

Description

The Cisco ATA plays the alert tone as a confirmation tone that a special event, such as call forwarding, is in effect.

Default values (using the Basic format)

- NumOfFreqs—1
- Tfreq1—30467
- Treq2—0
- Tamp1—5970
- Tamp2—0
- Steady—0
- OnTime—480
- OffTime—480
- TotalToneTime—1920

Voice Configuration Menu Access Code

925

RingOnOffTime

Description

This parameter specifies the ringer cadence pattern, expressed as a triplet of integers “a,b, and c”.

- a—Number of seconds to turn the ring ON.
- b—Number of seconds to turn the ring OFF.
- c—The ring frequency, fixed at 25.

Value Type

List of three integer values, separated by commas

Range

1-65535

Default

2, 4, 25

Recommended Values:

- United States —2,4,25
- Sweden — 1,5,25

Voice Configuration Menu Access Code

929

Dial Plan Parameters

This section describes the configurable parameters related to dial plans:

- DialPlan, page 5-52
- DialPlanEx, page 5-60
- IPDialPlan, page 5-60

DialPlan

Description

The programmable dial plan is designed for the service provider to customize the behavior of the Cisco ATA for collecting and sending dialed digits. The dial plan allows the Cisco ATA user to specify the events that trigger the sending of dialed digits. These events include the following:

- The termination character has been entered.
- The specified dial string pattern has been accumulated.
- The specified number of dialed digits has been accumulated.
- The specified inter-digit timer has expired.

Value Type

Alphanumeric string

Range

Maximum number of characters is 199.

Note If the dial plan exceeds 199 characters, use the DialPlanEx parameter instead of the DialPlan parameter. For more information, see the "DialPlanEx" section on page 5-60.

Default

*St4-|#St4-|911|1>#t8.r9t2-|0>#t811.rat4-|^1t4>#.-

Voice Configuration Menu Access Code

926

Additional DialPlan Information

The DialPlan section contains the following additional topics that describe commands and rules for creating your own dial plan, and includes many examples:

Dial Plan Commands

The following list contains commands that can be used to create you own dial plans:

- **.** —Wildcard, match any digit entered.
- **-** —Additional digits can be entered. This command can be used only at the end of a dial plan rule (for example, 1408t5- is legal usage of the - command, but 1408t5-3... is illegal).
- [ ]—Range, which means to match any single digit in the list. Use an underscore (_) to indicate a range of digits. For example, [135] matches the digits 1, 3, and 5. Also, [1_5] matches the digits 1, 2, 3, 4 and 5. The pound key (#) and asterisk (*) are not allowed in the Range command. Also, the Repeat (rn) command does not apply to range, and range cannot include the Subrule matching command.
- (subrule0| subrule1| ...|subruleN)—Subrule matching. Using the *( )* and | operators allows you to specify multiple subrules within a dial plan rule so that a subrule match is reached if the entered digits fit one of the subrules. This can be used to reduce the length of the desired dial plan rule by concatenating the group of the subrules with the common rule.

  For example, a dial plan rule of (1900|1800|17..)555.r3 or three dial plan rules of 1900555.r3|1800555.r3|17..555.r3 are equivalent. A match is reached if 11 digits are entered and the first three digits are either 1900, 1800, or 17..., and the fifth, sixth, and seventh digits are all 5.
- >#—Defines the # character as a termination character. When the termination character is entered, the dial string is automatically sent. The termination character can be entered only after at least one user-entered digit matches a dial plan rule. Alternatively, the command **>*** can be used to define ***** as the termination character.
- tn— Defines the timeout value **n**, in the unit of seconds, for the interdigit timer. Valid values are 0-9 and a-z, where a-z indicates a range of 10 to 35.
- rn—Repeat the last pattern n times, where **n** is 0-9 or a-z. The values a-z indicate a range of 10 to 26. Use the repeat modifier to specify more rules in less space.

  Note The commands ***>#*** and ***tn*** are modifiers, not patterns, and are ignored by the ***rn*** command.
- |—Used to separate multiple dial plan rules.
- ^—Logical not. Match any character except the character immediately following the ^ command. The ^ command can also be used as a negation instruction before the range or subrule matching commands.
- S—Seize rule matching. If a dial plan rule matches the sequence of digits entered by the user to this point, and the modifier S is the next command in the dial plan rule, all other rules are negated for the remainder of the call (for example, a dial plan beginning with ***S** will be the only one in effect if the user first enters the ***** key).

Note All rules apply in the order listed (whichever rule is completely matched first will immediately send the dial string).

Note No syntax check is performed by the actual implementation. The administrator has the responsibility of making sure that the dial plan is syntactically valid.

Dial Plan Rules

The Cisco ATA supports the following dial plan rules:

(I*n* Rule) for Dial Plan Blocking

Dial plan blocking can be used to reduce the occurrences of invalid dialed digits being sent and can prevent the dialed string of a specified pattern from being sent. By adding dial plan blocking, dialed digits are discarded after the interdigit timer expires unless one of the specified matching rules is met.

In addition, the default nine-second global interdigit timeout value is also modified with the value specified in the dial plan blocking command:

Syntax

```
In
```

where *n* specifies the global interdigit timeout and the valid values are 1-9 and a-z (10-35).

Example

```
Ic| 911
```

This command specifies an interdigit timeout of 12 seconds, and will discard dialed digits unless 911 is entered.

Specifying your own interdigit timeout also changes the behavior of the dial plan so that the entire dial string, rather than being sent at timeout, is sent only as a result of a matching rule or time intended by a matching rule.

'H' Rule to Support Hot/Warm Line

Hotline/Warmline, also known as Private Line Automatic Ringdown (PLAR), is a line used for priority telephone service. If the Hotline feature is configured, the Cisco ATA immediately dials a pre-configured number as soon as the handset goes off hook. If the Warmline feature is configured, the Cisco ATA dials a pre-configured number if no digits were entered before the specified timer value expired when the handset went offhook.

Syntax

H*dnnnn*

where *d* is a delay-in-seconds parameter 0-9,a-z (to support 0 to 35 seconds delay), and *nnnn* is the variable-length phone number to call when no digits are entered for *d* seconds after offhook.

Example 1

```
H05551212
```

This is a hotline configuration; the Cisco ATA immediately dials 555-1212 when the handset goes off hook.

Example 2

```
H55551212
```

This is a warmline configuration; the Cisco ATA waits for five seconds and dials 555-1212 if no digits were entered when the handset went off hook.

'P' Rule to Support Dial Prefix

This rule is for automatic pre-pending the dial string as entered by the user with a specified prefix.

Syntax

P*tnnnn*

where *t* is a single leading trigger character; if *t* is the *first* entered digit when making a new call, it triggers the prepending of a variable-length prefix (as specified by *nnnn*) in the dial string. The *t* character can take one of the following values:

0-9,*,#, 'n' (= any of 1-9), 'N' (any of 'n' and 0), 'a' (any of 'n',* and #), or 'A' (any of 'a' and 0);

Example

```
Pn12345
```

This rule prepends 12345 to the dial string when the first entered digit is any of 1-9. The triggered digit is not removed from the dial string.

'R' Rule for Enhanced Prefix

This enhanced prefix rule matches entire strings, whereas the 'P' rules matches only a single digit. The 'R' rule is for automaticly prepending a specified prefix to the dialed string. The string must be an exact match to trigger the rule. If more than one 'R' rule matches, the first matched 'R' rule is triggered.

The 'R' rule also uses negation to exclude one or more leading digits before prepending the defined prefix string.

The number of dashes (-) after the *R* represents the number of leading digits that will be removed preceding the prefix.

Syntax

R*nnnn(tttt)*

where *tttt* is a trigger string. If the dialed numbers match this string, this match triggers the prepending of a variable-length prefix (as specified by *nnnn*) to the dial string. The triggered string is not removed from the dial string. The negation, subrule matching and range patterns can be applied to the trigger strings.

Example 1

```
R1212([2_9]-)
```

This rule prepends 1212 to dial strings that have a leading digit of 2 to 9.

Note Note: 'R' rules can replace most 'P' rules; for example, *Pn12345* is the same as *R12345([1_9]-)*.

Example 2

```
R-0033(0[1-9].r7)
```

This removes the first dialed digit, then prepends 0033 to the dialed string. For example, if the number 0148336134 is dialed, the resulting string becomes 0033148336134.

Example 3

```
R----0(0033[1-9].r7)
```

This removes the first four dialed digits, then prepends 0 to the dialed string. For example, if the number 0033148336134 is dialed, the resulting string becomes 0148336134.

Log Information

The *Call Prefix <prefix>+<num>* is shown in the prserv log.

'C' Rule for Call Blocking

This rule is for blocking call numbers.

Syntax

Cnnnn

where *nnnn* is the leading set of digits of the blocked call number; *nnnn* can be composed with subrule matching and range. The rule is triggered when the leading digits of a dialed string match the string *nnnn*.

The 'C' rule does not work with negation.

Example:

```
C1900|C1888 or C(1900|1888)
```

This rule blocks call numbers beginning with 1900 or 1888.

Log Information

The *Call Block <num>* is shown in the prserv log, and a busy tone is being played.

'F' Rule for Call Forwarding Blocking

This rule is for blocking call forwarding numbers.

Syntax

Fnnnn

where *nnnn* is the leading set of digits of the blocked call forwarding number; *nnnn* can be composed with subrule matching and range. The rule is triggered when the leading digits of a dialed forwarding number match the string *nnnn*. The 'F' rule does not work with negation.

Example:

```
F1900|F1888 or F(1900|1888)
```

These rules block call forwarding numbers beginning with 1900 or 1888.

Log Information

The *CFWD Block:<num>* is shown in the prserv log, and a busy tone is being played.

'X' Rule for Call Blocking and Call Forwarding Blocking

This rule is for blocking call numbers and call forwarding numbers.

Syntax

X*nnnn*

where *nnnn* is the leading set of digits of the blocked call number and blocked call forwarding number; *nnnn* can be composed with subrule matching and range. The rule is triggered when the leading set of digits of a dialed call number or forwarding number match the string *nnnn*. The 'F' rule does not work with negation.

Example

```
X1900|X1888 or X(1900|1888)
```

This rule blocks the call numbers and call forwarding numbers beginning with 1900 or 1888.

'D' Rule for Displaying Caller ID

This rule is for displaying caller ID at the remote site. The number must be an exact match to trigger the rule.

Syntax

D*nnnn*

where *nnnn* is the callee number. The caller ID will show to the callee; *nnnn* automatically becomes a valid calling number. Also, *nnnn* can be composed with negation, subrule matching and range. The 'D' rule is checked before the 'R' and 'P' rules.

Example

```
D911
```

This rule shows the caller ID at the remote side when if the call number is 911.

Log Information

SCC Cmd[]:CLIP or *CLIP:<num>* are shown in the prserv log.

Dial Plan Examples

This section contains three dial plan examples that use many different rules and commands.

Dial Plan Example 1 (Default Dial Plan)

The following dial plan:

```
*St4-|#St4-|911|1>#t8.r9t2-|0>#t811.rat4-|^1t4>#.-
```

consists of the following rules:

- ***St4-**—If the first digit entered is *****, all other dial plan rules are voided. Additional digits can be entered after the initial ***** digit, and the timeout before automatic dial string send is four seconds.
- **#St4**—Same as above, except with **#** as the initial digit entered.
- **911**—If the dial string 911 is entered, send it immediately.
- **1>#t8.r9t2**—If the first digit entered is 1, the timeout before automatic send is eight seconds. The terminating character **#** can be entered at any time to manually send the dial string. After the 11th digit is entered, the timeout before an automatic send changes to two seconds. The user can enter more digits until the dial string is sent by the timeout or by the user entering the # character.
- **0>#t811.rat4**—If the first digit entered is 0, the timeout before automatic send is eight seconds, and the terminating character **#** can be entered at any time to manually send the dial string. If the first three digits entered are 011, then, after an additional 11 digits are entered, the timeout before an automatic send changes to four seconds. The user can enter more digits until the dial string is sent by the timeout or by the user entering the **#** character.
- **^1t4>#.**—If the first digit entered is anything other than 1, the timeout before an automatic send is four seconds. The terminating character # can be entered at any time to manually send the dial string. The user can enter more digits until the dial string is sent by the timeout or by the user entering the # character.

Dial Plan Example 2

The following dial plans:

```
.t7>#......t4-|911|1t7>#..........t1-|0t4>#.t7-
```

or

```
.t7>#r6t4-|911|1t7>#.r9t1-|0t4>#.t7-
```

consist of the following rules:

- **.t7>#r6t4-**—You must enter at least one digit. After the first digit is entered and matched by the dial plan, the timeout before an automatic send is seven seconds, and the terminating character **#** can be entered at any time to manually send the dial string. After seven digits are entered, the timeout before an automatic send changes to two seconds. The **- symbol** at the end of the rule allows further digits to be entered until the dial string is sent by the timeout or the user entering the # character.
- **911**—If the dial string 911 is entered, send this string immediately.
- **1t7>#.r9t1**—If the first digit entered is 1, the timeout before an automatic send is seven seconds, and the terminating character **#** can be entered at any time to manually send the dial string. After the 11th digit is entered, the timeout before an automatic send changes to one second. The user can enter more digits until the dial string is sent by the timeout or by the user entering the # character.
- **0t4>#.t7**—If the first digit entered is 0, the timeout before an automatic send is four seconds, and the terminating character **#** can be entered at any time to manually send the dial string. After the second digit is entered, the timeout before an automatic send changes to seven seconds. The user can enter more digits until the dial string is sent by the timeout or by the user entering the **#** character.

Dial Plan Example 3

The following dial plan:

```
R1408([2_9].r5|[2_9].r6)|R9^(911|.r4)|X(1900|1888)|F011
```

consists of the following rules:

- **R1408([2_9].r5|[2_9].r6)**—The prefix 1408 will be added to any call numbers with seven or eight digits where the leading digit is in the range of 2 to 9. For example, 5551234 will become 14085551234, but 555123 does not match this rule.
- **R9^(911|.r4)**— The prefix 9 will added to any numbers except 911 and five-digit numbers. For example, 911 will still be 911, and 51234 will still be 51234.
- **X(1900|1888)**— There will be no calls or call forwarding to numbers beginning with 1900 or 1888.
- **F011**—There will be no call forwarding to numbers beginning with 011.

In Dial Plan Example 3, there are two ‘R’ rules, so the first matched rule is triggered. Therefore, 5551234 becomes 14085551234. However, 555123 will then become 9555123 because it matches the second rule.

DialPlanEx

If your dial plan exceeds 199 characters, then use must use the DialPlanEx parameter to configure your dial plans. The DialPlanEx parameter supports dial plans up to 499 characters in length. This range in the number of characters is the only difference between the DialPlanEx and DialPlan parameters. Therefore, all the information about the DialPlan parameter applies to the DialPlanEx parameter. For more information, see the "DialPlan" section on page 5-52.

Note If you are not using this parameter for dial plan configuration, be sure this parameter is set to 0.

IPDialPlan

Description

This Iparameter allows for detection of IP-like destination address in DialPlan. Three values are valid:

- 0—String is dialed as is and not treated as an IP address.
- 1—When the Cisco ATA detects two asterisks (**), IPDialPlan takes over. The user enters the pound (#) key to terminate the digit collection, and the interdigit timeout default is not used.
- 2—When IPDialPlan is set to 2, three asterisks (***) are required for IPDialPlan to take effect.

All other values are currently undefined.

Value Type

Integer

Range

0, 1 or 2

Default

1

Voice Configuration Menu Access Code

310

Diagnostic Parameters

This section describes the following parameters, which are used for diagnostic purposes:

NPrintf

Description

Use this parameter to specify the IP address and port of a host to which all Cisco ATA debug messages are sent. The program *prserv.exe*, which comes bundled with the Cisco ATA software, is needed to capture the debug information.

Syntax

`<HOST_IP>,<HOST_PORT>`

Example

If the program *prserv.exe* is running on a host with IP address 192.168.2.170 and listening port 9001, set NPrintf to 192.168.2.170.9001. This causes the Cisco ATA to send all debug traces to that IP address.

Value Type

Extended IP address

Default

0

Voice Configuration Menu Access Code

81

SyslogIP

Description

Use this parameter for diagnostic purposes; specify the IP address and port number to which the Cisco ATA should send its *syslog* output information.

The program *prserv.exe*, which is included in all Cisco ATA software upgrade packages, can be used to capture syslog information if you do not have a syslog server.

Syntax

<HOST_IPaddress>.<HOST_PORT>

Example

If you want to send syslog information to the host at IP address 192.168.2.170 and port number 514, do the following:

- Configure the value of this parameter as 192.168.2.170.514
- On your PC, run the command:

  ```
  prserv 514
  ```

Value Type

Extended IP address

Default

0.0.0.0.514

Voice Configuration Menu Access Code

7975640

Related Parameter

SyslogCtrl, page 5-62

SyslogCtrl

Description

Use this parameter to turn on specific syslog traces. All traces are sent to the syslog server specified in the SyslogIP parameter.

See Table 5-9 for bit values and the corresponding types of messages to turn on for tracing.

Value Type

Bitmap

Default

0x00000000

Voice Configuration Menu Access Code

7975641

Related Parameter

SyslogIP, page 5-61

Table 5-9 SyslogCtrl Parameter Definitions

Bit Number	Type of Messages to Trace
0	ARP messages.
1	DHCP messages
2	TFTP messages
3	Cisco ATA configuration-update messages.
4	System reboot messages
5-8	Reserved.
9	Cisco ATA event messages.
10	FAX messages.
11-15	Reserved.
16	RTP statistics messages.
17-31	Reserved.

CFGID—Version Parameter for Cisco ATA Configuration File

Description

CFGID is a 32-bit unsigned-value parameter whose purpose is to allow the local administrator to track the version of the Cisco ATA configuration file. This parameter-value assignment is entirely the responsibility of the local administrator, and has no significance to the operation of the Cisco ATA.

Value Type

Bitmap

Default

0x00000000