

ART Logic: How Calls are Classified

Document ID: 5300

Introduction

Prerequisites

Requirements

Components Used

Conventions

ART 1.1(1)

Logic Followed to Classify Calls in ART 1.1(1)

Some Things to Take into Account with ART 1.1(1)

ART 1.0(1)

Logic Followed to Classify Calls in ART 1.0(1)

Some Things to Take into Account with 1.0(1)

Related Information

Introduction

This document explains the criteria used by the Administrative Reporting Tool (ART) to classify calls in the reports.

Prerequisites

Requirements

Readers of this document should have general familiarity with Cisco CallManager administration and ART interfaces.

Components Used

The information in this document is based on these software and hardware versions:

- ART 1.0(1) and ART 1.1(1)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

ART 1.1(1)

Logic Followed to Classify Calls in ART 1.1(1)

The logic that ART follows in ART 1.1(1) to classify calls is explained below. It is directly based on Gateway Device Names from the Cisco CallManager configuration. It supports any numbering plan that is configured in Dial Plan.

ART checks the Origin Device Name and Destination Device Name and compares it with the names of Gateways configured in the system.

- If there are no gateways configured in the system, then classify call as: *Internal*
- In case both match that of Gateways: *Tandem*
- In case both do not match that of Gateways: *Internal*
- In case the Origin Device Name matches, but the Destination Device Name does not match: *Incoming*
- In case the Origin Device Name does not match, but the Destination Device Name matches: *Outgoing*. The Outgoing calls are further classified according to the Dial Plan configured in ART.

Some Things to Take into Account with ART 1.1(1)

- Configuration of the Dial Plan is needed if you are not using the NANP and want to define the On Net, Local, Long Distance, International and Others categories for your reports. Go to **System > System Parameters > Dial Plan Configuration**.
- Configuration of the Gateway within ART is needed to specify the Area Codes for each gateway in the system. The maximum number of ports has to be configured to provide utilization reports and does not affect Call Classification. Go to **System > System Parameters > Gateway Configuration**.
- If there is more than one user associated with a device (MAC address), the ART report will only give results from the first user associated with the given device. For example, if there are two users associated with the same device, the reports for all other associated users will always be empty, depending on which user the database sees as "first".
- Due to bug CSCdw13363 in Cisco CallManager, the outgoing calls through Skinny Gateways may not be properly counted in long distance calls. In Cisco CallManager version 3.1(3a) and later this is resolved.

ART 1.0(1)

Logic Followed to Classify Calls in ART 1.0(1)

The logic that ART follows to classify calls is explained below.

1. ART checks the Origin IP address and Destination IP address and compares it with the Gateway IP address set in the Gateway Configuration screen.
 - ◆ In case both do not match that of Gateways: *Internal*
 - ◆ In case Origin IP matches, but Destination IP does not match: *Incoming*
 - ◆ In case Origin IP does not match, but Destination IP matches: *Outgoing*
 - ◆ In case both match that of Gateways: *Tandem*
2. After this check, ART checks if the number of digits in the directory number is the same as in an internal number (default is 5). If so, classify it as *On Net*.
 - ◆ If the number of digits in the directory number is 7, then it's classified as *Local*.
 - ◆ If the number of digits in the directory number is 10 and:
 - ◇ The number has toll free numbers (default is 1800, 1880), then classify as *Others*.
 - ◇ The number has Gateway AreaCode, then classify as *Local*.
 - ◇ Something else (since it has neither toll free numbers nor a Gateway Area Code), classify as *Long Distance*.
 - ◆ If the number of digits in the directory number is 11 and:
 - ◇ The number has toll free numbers (default is 1800,1880), then classify as *Others*.
 - ◇ The number has Gateway AreaCode, then classify as *Local*.

◇ Something else (since it has neither toll free numbers nor a Gateway Area Code), classify as *Long Distance*.

- ◆ If the number of digits in the directory number is less than 3, then classify as *Others*.
- ◆ If the directory number starts with 011, then classify as *International*.
- ◆ If none from the above matches, then classify as *Others*.

Some Things to Take into Account with 1.0(1)

- ART 1.0(1) only supports NANP as a Dial Plan and this has some limitations. One of the major ones is having long distance calls improperly classified as *internal* if the PSTN gateway wasn't configured within the ART's Gateway configuration. The workaround can be found in Administrative Reporting Tool Reports Display Long Distance Calls as "Internal" or "Other".
- ART needs the number of digits in an internal number and the toll free numbers. Both these parameters are set in **ART Menu System > System Parameters > System Preferences screen**.
- The Gateway Area Codes and their IP addresses are set in the Gateway Configuration screen.
- ART assumes that the access code (#9) is not written in Call Detail Records (CDRs). In case there is some way where an access code can be part of CDRs, then ART needs to modify its logic of call classification. If the access code is getting written because none of the call classification logic would go through, all such calls would be classified as Others by default.

Related Information

- **Configuring ART**
- **Administrative Reporting Tool Guide for Cisco CallManager**
- **Voice Technology Support**
- **Voice and Unified Communications Product Support**
- **Recommended Reading: Troubleshooting Cisco IP Telephony**
- **Technical Support – Cisco Systems**

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