# Cisco Unified Communications Manager Dialed Number Analyzer Guide, Release 10.0(1)

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# Preface


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## Purpose

The *Cisco Unified Communications Manager Dialed Number Analyzer Guide* provides information about using Dialed Number Analyzer to test and diagnose a deployed Cisco Unified Communications Manager dial plan configuration, analyze the test results and use the results to tune the dial plan.

## Audience

The *Cisco Unified Communications Manager Dialed Number Analyzer Guide* provides information to network administrators who administer the Cisco Unified Communications Manager configuration. This guide requires knowledge of telephony and IP networking technology.

## Organization

The following table shows the organization of this guide:

| Chapter | Description |
|---|---|
| Introduction, on page 1 | Provides a description of Cisco Unified Communications Manager Dialed Number Analyzer concepts and discusses its key features. |
| Dialed Number Analyzer Service, on page 5 | Describes how to sign in, activate, deactivate, start, and stop the Dialed Number Analyzer service. |
| Dial Plan Configuration, on page 9 | Describes how Dialed Number Analyzer service analyzes configured Cisco Unified Communications Manager dial plan and provides details about the call flow of dialed digits. |

# Related Documentation

See the following documents for further information about related Cisco IP telephony and applications and products:

- *Installing Cisco Unified Communications Manager*
- *Release Notes for Cisco Unified Communications Manager*
- *Cisco Unified Communications Manager System Guide*
- *Cisco Unified Communications Manager Administration Guide*
- *Cisco Unified Communications Manager Features and Services Guide*
- *Cisco Unified Serviceability Administration Guide*
- *Cisco Unified Communications Manager Serviceability System Guide*
- *Troubleshooting Guide for Cisco Unified Communications Manager*
- *Cisco Unified Communications Manager Bulk Administration Guide*

# Conventions

This document uses the following conventions

| Convention | Description |
|---|---|
| **boldface** font | Commands and keywords are in **boldface**. |
| *italic* font | Arguments for which you supply values are in *italics*. |
| [ ] | Elements in square brackets are optional. |
| { x \| y \| z } | Alternative keywords are grouped in braces and separated by vertical bars. |
| [ x \| y \| z ] | Optional alternative keywords are grouped in brackets and separated by vertical bars. |

| Convention | Description |
|---|---|
| string | A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks. |
| `screen` font | Terminal sessions and information the system displays are in `screen` font. |
| boldface screen font | Information you must enter is in boldface screen font. |
| *italic screen* font | Arguments for which you supply values are in *italic screen* font. |
| ^ | The symbol ^ represents the key labeled Control - for example, the key combination ^D in a screen display means hold down the Control key while you press the D key. |
| < > | Nonprinting characters, such as passwords, are in angle brackets. |

Notes use the following conventions:

**Note** Means reader take note. Notes contain helpful suggestions or references to material not covered in the publication.

Timesavers use the following conventions:

**Timesaver** Means the described action saves time. You can save time by performing the action described in the paragraph.

Tips use the following conventions:

**Tip** Means the information contains useful tips.

Cautions use the following conventions:

**Caution** Means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data.

Warnings use the following conventions:

**Warning** This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

# Support

For information about obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

## Online Documentation

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

## Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

# Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems

Attn: Customer Document Ordering

170 West Tasman Drive

San Jose, CA 95134-9883

We appreciate your comments.

# Cryptographic Features

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: http://www.cisco.com/wwl/export/crypto/tool/stqrg.html. If you require further assistance please contact us by sending email to export@cisco.com.

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

# Security

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies - security-alert@cisco.com

  An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies - psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

**Tip** We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

**Tip** Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

**Tip** http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

**Tip** The link on this page has the current PGP key ID in use.

# Technical Support

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

## Online Support

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

## Service Requests

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC

engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

## Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1) - Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2) - Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3) - Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4) - You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

# Additional Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- Cisco Press publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- Packet magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

http://www.cisco.com/packet

- iQ Magazine is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

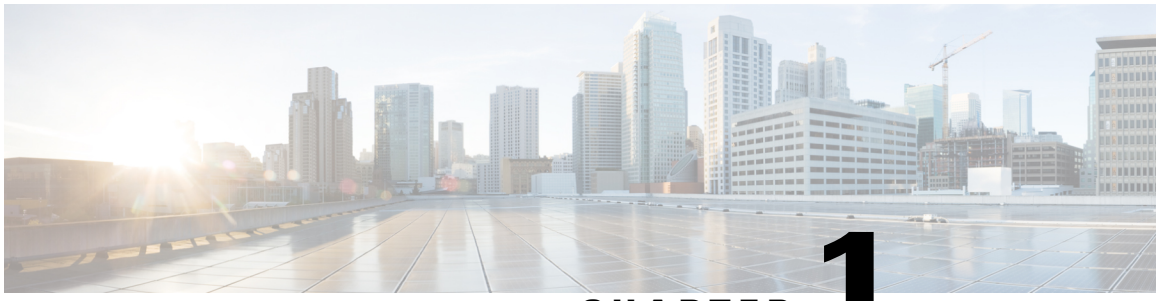
  http://www.cisco.com/go/iqmagazine

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html



CHAPTER 1

# Introduction


- Dialed Number Analyzer, page 1
- Features, page 1
- Related Topics, page 3


## Dialed Number Analyzer

Dialed Number Analyzer installs as a feature service along with Cisco Unified Communications Manager. The tool allows you to test a Cisco Unified Communications Manager dial plan configuration before deploying it. You can also use the tool to analyze dial plans after the dial plan is deployed.

Because a dial plan can be complex, involving multiple devices, translation patterns, route patterns, route lists, route groups, calling and called party transformations, and device level transformations, a dial plan may contain errors. You can use Dialed Number Analyzer to test a dial plan by providing dialed digits as input. The tool analyzes the dialed digits and shows details of the calls. You can use these results to diagnose the dial plan, identify problems if any, and tune the dial plan before you deploy it.

### Related Topics

Related Topics, on page 3

## Features

Cisco Unified Communications Manager Dialed Number Analyzer runs as a Cisco Unified Communications Manager feature service that can be accessed from a remote server.

Cisco Dialed Number Analyzer allows analysis of inbound and outbound calls in a Cisco Unified Communications Manager dial plan. It analyzes the calls and provides results that show complete details of calls, including call patterns and calling and called party transformations that are applied to the dialed digits.

The following sections describe specific features of the tool.

### Related Topics

Related Topics, on page 3

# Accessibility Compliance

The design of the Dialed Number Analyzer web pages make them user friendly and compatible with most accessibility requirements. Skip Navigation links on all pages help screen reader users to navigate easily and to complete forms. All text fields accept high contrast Windows system settings for fonts and colors. Dialed Number Analyzer also provides high contrast implementation for the final output page.

In the final output page, the screen reader application users cannot access information about the hierarchical results (all icons are read as bullets), and cannot selectively access information at different levels. However, because DNA uses XML data structure in the final results output pages, this represents a limitation. To alleviate the issue of level accessibility to some extent, a standard tree-control image icon provides level information. Also, when a screen reader is used, regardless of whether the **Expand All** button or **Collapse All** button is clicked, the screen reader still reads the entire contents of the XML tree data structure in the output page.

### Related Topics

Related Topics, on page 3

# Analysis

Cisco Unified Communications Manager Dialed Number Analyzer allows selection of specific devices that act as calling parties and called parties to test the dial plan. It allows analysis of calls from devices such as IP phones, CTI ports, and gateways.

The tool allows you to perform a simple analysis by directly entering dialed digits as input and choosing a calling search space within which the analysis must be performed. If you choose a device, the tool uses the calling search space that is associated with the device to perform the analysis.

The tool also allows analysis of calling party numbers that are not bound to a device.

Dialed Number Analyzer analyses calls to feature-specific patterns such as Call Park, MeetMe, Message Waiting Indicator (MWI), and Call Pickup.

Dialed Number Analyzer applies calling and called party transformations to dialed digits at various stages just as Cisco Unified Communications Manager does in a deployed system. The analysis output includes end-to-end details of the dialed digits.

### Related Topics

Related Topics, on page 3

# Discard Digit Instructions

The Cisco Unified Communications Manager database stores called party transformation information such as discard digit instructions (DDIs) that are specified for Cisco Unified Communications Manager dial plans. Because Dialed Number Analyzer uses the Cisco Unified Communications Manager database to analyze dial plans, the tool also allows you to view discard digit instructions that are specified for the dial plans.

Cisco Unified Communications Manager uses route patterns to route or block internal and external calls. Route patterns get assigned to Cisco Access Gateways, phones and route lists. Dialed Number Analyzer allows you to view dialing patterns that are associated with devices that are configured in the Cisco Unified Communications Manager dial plan that you are analyzing.

### Related Topics

Related Topics, on page 3

# Analysis Output

Dialed Number Analyzer displays analysis results in a new browser window that you use to perform analysis. You can either view the results online or save the output that is displayed in the form of an XML file for easy retrieval and use.

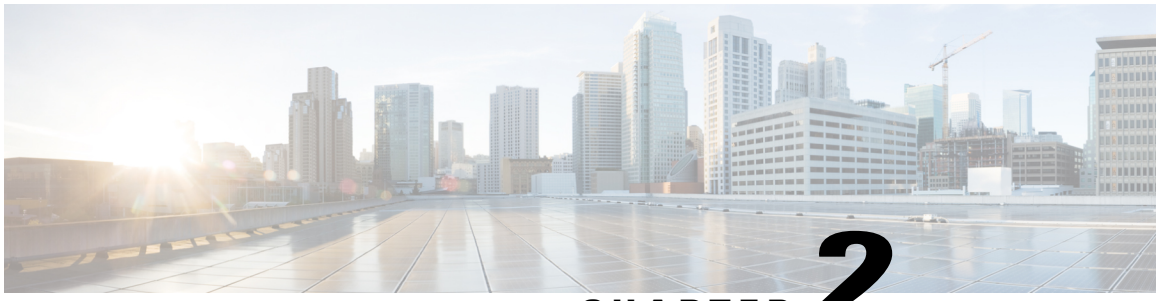
You can find information about how to use these features later in this guide.

### Related Topics

Related Topics, on page 3

# Related Topics


- Dialed Number Analyzer, on page 1
- Features, on page 1



CHAPTER 2

# Dialed Number Analyzer Service


- Log On, page 5
- Activate Dialed Number Analyzer Service, page 6
- Start or Stop Dialed Number Analyzer, page 6
- Deactivate Dialed Number Analyzer, page 7
- Related Topics, page 7


## Log On

This section describes the procedure to sign in to Dialed Number Analyzer from a remote server.

### Procedure

**Step 1** To access DNA, go to Cisco Unified Communications Manager Serviceability and choose **Tools** > **Dial Number Analyzer**.
You can also use the following URL:

https://<cm-machine>/dna

where <cm-machine> specifies the node name or IP address on which Dialed Number Analyzer is installed.

The Enter Network Password dialog is displayed.

**Step 2** In the User Name field, enter a valid user ID.
Use Unified CMAdministrator as the user ID.

**Step 3** In the Password field, enter the password that corresponds to the Unified CMAdministrator sign-in ID for that machine.

**Step 4** Click **OK**.

**Step 5** You are now logged in to Dialed Number Analyzer.

### Related Topics

Related Topics, on page 7

# Activate Dialed Number Analyzer Service

After Dialed Number Analyzer installs as a service, it starts automatically. You can confirm that the service is started by checking the tool status.

You can activate and deactivate Dialed Number Analyzer service by using Cisco Unified Communications Manager Serviceability after you access it by using the appropriate URL. Use the following procedure to activate the service.

### Procedure

**Step 1** Access Cisco Unified Communications Manager Serviceability.

**Step 2** Choose **Tools** > **Service Activation**.
The Service Activation window is displayed.

**Step 3** Select Cisco Dialed Number Analyzer from the Unified CMServices list and click **Save**.
**Note** If the service is already activated, the Activation Status is displayed as Activated.

**Step 4** The service gets activated and the Activation Status column displays the status as Activated.
**Note** The DNA service starts automatically after the service is activated. See the Start or Stop Dialed Number Analyzer, on page 6 to stop, start, or restart the service.
**Note** Every time that the service is started, Dialed Number Analyzer synchronizes with Cisco Unified Communications Manager database.

### Related Topics

Related Topics, on page 7

# Start or Stop Dialed Number Analyzer

The Dialed Number Analyzer service starts automatically after the service is activated by using Cisco Unified Communications Manager Serviceability. This section describes the procedures to stop or restart the Dialed Number Analyzer service.

### Procedure

**Step 1** In Cisco Unified Communications Manager Serviceability, choose **Tools** > **Control Center - Feature Services.**
The Control Center - Feature Services window is displayed.

**Step 2** From the Servers drop-down list box, choose the Cisco Unified Communications Manager server.
Dialed Number Analyzer is displayed in list under Service Name column, in the Unified CMServices.

**Note** If you activate the Dialed Number Analyzer by using Activate Dialed Number Analyzer Service, on page 6, the Status is displayed as Activated.

**Step 3** Check the checkbox that corresponds to Dial Number Analyzer.

**Step 4** If you want to restart the Dialed Number Analyzer service, click **Restart**.
The service restarts, and the message, Service Successfully Restarted, is displayed.

**Step 5** If you want to stop the Dialed Number Analyzer service, click **Stop**.
The service stops, and the message, Service Successfully Stopped, is displayed.

**Step 6** If you want to start a stopped Dialed Number Analyzer service, click **Start**.
The service starts, and the message, Service Successfully Started, is displayed.

### Related Topics

Related Topics, on page 7

# Deactivate Dialed Number Analyzer

You can deactivate the Dialed Number Analyzer service when you do not require it. This section describes the procedure to deactivate the Dialed Number Analyzer service and sign out of the tool.

### Procedure

**Step 1** In Cisco Unified Communications Manager Serviceability, choose **Tools** > **Service Activation**.
The Service Activation window is displayed.

**Step 2** From the Servers drop-down list box, choose the Cisco Unified Communications Manager server.
Dialed Number Analyzer is displayed in list under Service Name column, in the Unified CMServices. The Status is displayed as Activated.

**Step 3** Uncheck the checkbox that corresponds to the Dial Number Analyzer and click **Save**.
The service deactivates, and the Status column displays the status as Deactivated.

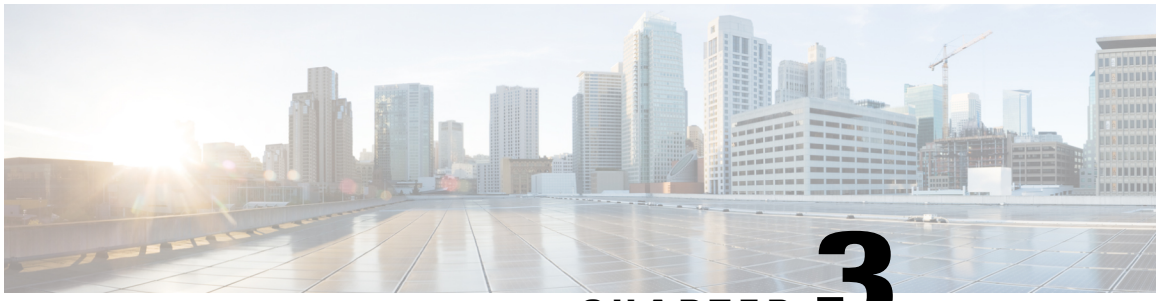
To exit from Dialed Number Analyzer, after the service is stopped, close the browser window.

### Related Topics

Related Topics, on page 7

# Related Topics


- Log On, on page 5
- Activate Dialed Number Analyzer Service, on page 6
- Start or Stop Dialed Number Analyzer, on page 6
- Deactivate Dialed Number Analyzer, on page 7



CHAPTER 3

# Dial Plan Configuration

Dialed Number Analyzer allows analysis of a configured Cisco Unified Communications Manager dial plan and provides details about the call flow of dialed digits. In the predeployment stage, you can use the tool to identify problems in a complex dial plan and fine tune the dial plan. You can also use the tool, after the dial plan is deployed, to identify real-time problems in the call flow of dialed digits.

Using Dialed Number Analyzer to analyze dial plans for a cluster of Cisco Unified Communications Manager systems and numerous devices may enable you to access the windows and enter data for analysis quickly. However, you may not be able to see results after you perform the analysis. The following message is displayed:


- Enable Database Synchronization, page 9
- Disable Database Synchronization, page 10
- Learned Patterns, page 11
- Perform Simple Analysis, page 11
- Phone Analysis, page 14
- Gateway Analysis, page 17
- Trunk Analysis, page 27
- Multiple Analysis, page 30
- Analysis Output, page 37
- Dump Discard Digit Instructions, page 65
- View Output Files, page 66
- Enable Trace Configuration Files, page 67
- Related Topics, page 68


# Enable Database Synchronization

Dialed Number Analyzer replicates and uses the Cisco Unified Communications Manager database configuration to analyze calls in a dial plan. For this reason, make sure that Dialed Number Analyzer is in sync with the Cisco Unified Communications Manager database before you use the tool to perform an analysis. When

changes are made to the Cisco Unified Communications Manager database, ensure that Dialed Number Analyzer reflects the changes to facilitate analysis by using current data. Examples of database changes include addition or deletion of devices, modification of route patterns, modification of gateway configuration settings, and so on.

You can enable Dialed Number Analyzer to receive database change notifications from Cisco Unified Communications Manager whenever database changes are made by using Cisco Unified Communications Manager Administration. Use the following steps to enable database change notifications to Dialed Number Analyzer.

### Procedure

**Step 1** In Dialed Number Analyzer, choose **Service** > **Control Center**.
The Control Center window is displayed. Database Synchronization is displayed under the Service Name-Database column.

**Step 2** By default, the system enables Database Synchronization when Dialed Number Analyzer is installed. To keep database synchronization enabled, do not modify this setting.

**Note** Every time that you disable and enable database synchronization again, stop and start the Dialed Number Analyzer service to ensure that Dialed Number Analyzer is in sync with the Cisco Unified Communications Manager database. For instructions on starting the Dialed Number Analyzer service, see Activate Dialed Number Analyzer Service, on page 6.

### Related Topics

Related Topics, on page 68

# Disable Database Synchronization

You can choose not to notify Dialed Number Analyzer of changes that are made to the Cisco Unified Communications Manager database. Use the following steps to disable notification of database changes.

### Procedure

**Step 1** Choose **Service** > **Control Center**.
The Control Center window is displayed. Database Synchronization is displayed under the Service Name-Database column.

**Step 2** Click **Disable** in the corresponding Action column.

### Related Topics

Related Topics, on page 68

# Learned Patterns

If Call Control Discovery is configured on a Cisco Unified Communications Manager cluster, you can dynamically insert learned patterns (hosted DN patterns from remote call-control entities) into the digit analysis Digit Analysis cache.

You can view learned patterns in RTMT.

Adding/Removing/Updating Learned Patterns

The following procedures add, remove and update learned patterns.

### Procedure

**Step 1** To add/remove/update learned patterns, from the DNA UI, select **Service** > **Control Center**.

**Step 2** The Control Center window is displayed.

a) To add learned patterns, in the Learned Patterns field, click **Add**.
After the Learned Patterns get added, the DNA Control Center window reloads, displaying an **Update** option and a **Remove** option.

**Note** If you restart DNA, you must add the learned patterns again.

b) To remove learned patterns, in the Learned Patterns field, click **Remove**.
After the Learned Patterns get removed, the DNA Control center windows reloads, displaying only the **Add** option.

c) To update the learned patterns, in the Learned Patterns field, click **Update**.
After the Learned Patterns get updated, the DNA Control center window reloads, displaying the **Update** and **Remove** options.

**Note** Be aware that DNA does not automatically update after a new list of learned patterns gets generated. You must click **Update** to update the learned patterns.

For more information

Call Control Discovery chapter of the *Cisco Unified Communications Manager Features and Services Guide*.

# Perform Simple Analysis

Simple analysis involves entering calling party and called party digits in Dialed Number Analyzer and choosing a calling search space for the analysis. Dialed Number Analyzer uses this calling search space and analyzes the dialed digits. You need not choose specific devices or provide other input. Dialed Number Analyzer allows analysis of a route pattern, translation pattern, phone DN, or CTI Route Point.

Use this procedure only when you want to perform a quick analysis by entering dialed digits, selecting a calling search space, and entering the time and date of the calling party for analysis. Analysis results that are obtained by using this procedure do not display details like partitions, AAR calling search space details, and so on in the Calling Party Information section. Enter a calling party number that is not associated with a device that is configured in the Cisco Unified Communications Manager system, because you do not choose a specific device to dial digits.

You can enter numerals, the symbols # and *, and the alphabet letters A, a, B, b, C, c, D, and d in the Dialed Digits and Calling Party fields for analysis.

Access Dialed Number Analyzer and use the following procedure to perform a simple analysis.

### Before You Begin

**Note** If time of day routing is enabled in Cisco Unified Communications Manager, you must choose the time zone, date, and time settings for analysis. Even when you select a specific time zone for analysis, the DNA output varies—for example, "Blocking the call" when the call is actually routed for the desired time zone.

Consider this example:

- Greenwich Mean Time (GMT) is the default time zone in DNA and is used to compute the time of day.
- For time of day settings to take effect, you must configure the day and time settings with reference to GMT.
- For a time zone of GMT+9, a business hour time schedule of 9:00 am to 6 pm (0900 to 1800) GMT will route the call from 6:00 pm to to 3:00 am (18:00-03:00), which is GMT+9.

### Procedure

**Step 1** Choose **Analysis** > **Analyzer**.
The Analyzer window is displayed. Enter input for the analyzer in this window.

**Step 2** Under Analyzer Input, enter the calling party information in one of the following fields:

- If you want to use either a phone number, directory number, or SIP route pattern for the calling party information, enter the digits in the Calling Party field. By default, this option is selected with 1000 displayed in the field.
- If you want to use a directory URI, click the Directory URI radio button and enter a URI address in the Directory Number URI field.

**Step 3** Under Dialed Digit Settings, enter the information for the called party in the relevant fields:

- If you want to dial a phone number or directory number, enter the digits for the number you are dialing in the Dialed Digits field. By default, this option is selected.
- If you want to dial a directory URI, click the Directory URI radio button and enter the URI address in the Directory Number URI field.
  **Note** If you want to perform analysis on a third party +E.164 imported pattern in fully qualified format (for example, pattern@domain), you must enter the pattern in the directory URI field and use domain routing. Otherwise, you can enter the pattern in the Dialed Digits field.

**Step 4** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if applicable, and choose Domain Route or IP Route.
**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Step 5** From the Calling Search Space drop-down list box, choose the calling search space used to analyze the dialed digits. A calling search space comprises a collection of partitions that are searched to determine how a dialed number should be routed.

**Step 6** From the Device Time Zone drop-down box, choose the time zone of the calling party. The time zone is displayed by default. This time zone represents the time zone information from the operating system of the server where Cisco Unified Communications Manager is installed.

**Note** The system uses this time zone for analysis only when the partition time zone setting is configured to Originating Device, in the Partition Configuration window in Cisco Unified Communications Manager.

**Step 7** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled, leave the default settings.
The local time and date display by default in the Date and Time drop-down list boxes. This time and date represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Standard Time (GMT) is displayed by default.
b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.
c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 8** To start the analysis, click **Do Analysis** or to clear the fields and to reenter data, click **Clear**.
After you click **Do Analysis**, Dialed Number Analyzer analyzes the dialed digits and displays the results in a new window that is called DNA Analysis Output window. You can simply view the results or save the results in a file format on your PC for later use.

**Step 9** To save the results, in the upper, right corner of the DNA Analysis Output window, click **Save**.
The File Download dialog is displayed.

**Step 10** Click **Save**.
The Save As dialog is displayed. Browse to a location on your PC where you want to save the file.

**Step 11** Click **Save**.
The system saves the results in an XML file on your PC. The saved file has the following naming convention:

dnaOutput_<callingparty>_<dialeddigits>.xml

where <callingparty> and <dialeddigits> specify the digits that are entered in the Calling Party and Dialed Digits fields, respectively.

**Step 12** In the Download Complete dialog box, click **Close** to complete the Save As procedure.

**Note** For instructions on how to view the saved XML file in the browser, see the View Output Files, on page 66 section.

**Step 13** Close the DNA Analysis Output window.

### Related Topics

Related Topics, on page 68

# Phone Analysis

Dialed Number Analyzer provides a Phones window where you can find and list phones by device name, description, directory number, Directory URI, calling search space device pool, device type, and call pickup group. You can find a phone and choose it as a calling device for the analysis that you want to perform. You can further choose a configured phone line (directory number) and use it as a calling party number.

Use the following topics to choose a phone and a phone line and to carry out analysis by using that phone line:


- Find Phone, on page 14
- Choose Phone Line, on page 15
- Perform Analysis by Phone, on page 16


# Find Phone

Dialed Number Analyzer allows you to locate a phone that you can use to analyze dialed digits from that phone. Use the following procedure to locate a phone.

### Procedure

**Step 1** Choose **Analysis** > **Phones**.
The Find and List Phones window is displayed.

**Step 2** From the first Find Phones where drop-down list box, choose one of the following criteria:

a) Device Name
b) Description
c) Directory Number
d) Directory URI
e) Alternate Number
f) Calling Search Space
g) Device Pool
h) Phone Type
i) Call Pickup Group
j) LSC Status
k) Authentication String
l) Device Protocol
m) Security Profile

**Note** The criterion that you choose in this drop-down list box specifies how the list of phones is displayed. For example, if you choose Device Name, the Device Name column is displayed as the left column of the results list.

**Note** If you choose Directory Number, Calling Search Space, or Call Pickup Group, the options that are available in the database display.

**Step 3** From the second Find Phones where drop-down list box, choose one of the following criteria:

a) begins with

b) contains
c) ends with
d) is exactly
e) is not empty
f) is empty

**Note** If you choose Calling Search Space, Device Pool, Device Type, or Call Pickup Group in the first field, you can choose a value from the drop-down list for this field.

**Step 4** Specify how many items per window to display.

**Step 5** Specify the appropriate search text, if applicable, and click **Find**.

**Tip** To find all phones, click **Find** without entering search text or choose Device Name in the first Find Phones where drop-down list box and "is not empty" in the second Find Phones where drop-down list box.

A list of discovered phones that match the criteria is displayed.

This window also lists the total number of records that are displayed.

**Step 6** To view the next set of discovered phones, click **Next**.

**Step 7** From the list of records, click the record that you want to open.
The Phone Configuration window is displayed.

**Step 8** Continue with Choose Phone Line, on page 15.

### Related Topics

Related Topics, on page 68

# Choose Phone Line

After you identify a phone to use for analysis, you need to choose a phone line that is configured in the system. Use the following procedure to choose a phone line as the calling party.

### Procedure

**Step 1** Find the phone that you want to use as a calling party device by using the procedure that the Find Phone, on page 14 section describes.
In the Phone Configuration window, under the Device Information column, information about the device is displayed. The address of the machine (MAC Address), the device pool to which the phone belongs, calling search space, AAR calling search space, Media Resource Group List details, and device time zone display.

**Step 2** From the list of records, choose the phone line by clicking the **Line** radio button for the phone line that you require.

**Note** To return to the Find and List Phones window, in the upper, right corner of the window, choose **Back to Find/List Phones** from the drop-down list box and click **Go**.

**Step 3** Continue with the procedure in Perform Analysis by Phone, on page 16.

### Related Topics

Related Topics, on page 68

# Perform Analysis by Phone

After you identify a phone and chosen a phone line, you can enter dialed digits for analysis. This section describes how to perform analysis by using the chosen phone line.

### Procedure

**Step 1** Find the phone that you want to use as a calling party device by using the procedure in the Find Phone, on page 14 section. The Phone Configuration window is displayed.

**Note** The time zone that is configured for the phone in Cisco Unified Communications Manager is displayed in the Device Time Zone field.

**Step 2** Choose a phone line by using the procedure in the Choose Phone Line, on page 15 section.

**Step 3** Under Dialed Digits settings, enter the information for the called party in the relevant field:

- If you are dialing a phone number, directory number, or SIP route pattern, enter the digits for the number you are dialing in the Dialed Digits field. By default, this option is selected.
- If you are dialing a directory URI, click the Directory URI radio button and enter the URI address in the Directory Number URI field.

**Step 4** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Step 5** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled, leave the default settings.
The local time and date display by default. This time and date represent the time zone information from the operating system of the server where Cisco Unified Communications Manager is installed.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.
b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.
c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 6** Click **Do Analysis**.
Dialed Number Analyzer chooses the Calling Search Space of the chosen phone line and device for the analysis. The results display in a new window that is called the DNA Analysis Output window. You can simply view the results or save the results in a file format on your PC for later use.

**Step 7** To save the results, in the upper, right corner of the window, click **Save**.
The File Download dialog is displayed.

**Step 8** Click **Save**.
The Save As dialog is displayed. Browse to a location on your PC where you want to save the file.

**Step 9** Click **Save**.
The results get saved in an XML file on your PC. The saved file has the following naming convention:

DialedNumberAnalyzerOutput_<dialeddigits>.xml

where <dialeddigits> specifies the dialed digits that are entered in the Dialed Digits field.

**Step 10** To complete the Save As procedure, click **Close** in the Download Complete dialog box.

**Note** For instructions on how to view the saved XML file in the browser, see the View Output Files, on page 66 section.

**Step 11** Close the DNA Analysis Output window.

**Note** You can use the DNA Analysis Output window to enter new data in the fields and perform another analysis by using the steps in the Phone Analysis, on page 14 section.

### Related Topics

Related Topics, on page 68

# Gateway Analysis

Dialed Number Analyzer allows you to find and list gateways through which Cisco Unified Communications Manager receives inbound calls. From the list of gateways, you can choose gateway endpoints to dial digits and analyze the call flow of inbound calls to a Cisco Unified Communications Manager system. You can choose gateway endpoints that are configured in the Cisco Unified Communications Manager system.

Use the following topics to find gateways, choose gateway endpoints, enter dialed digits, and perform analysis:

- Find Gateway, on page 17
- Choose Gateway Endpoints, on page 18
- Perform Gateway Analysis, on page 25

# Find Gateway

You can find and list gateways by device name, description, DN/route pattern, device type, calling search space, route group, and device pool. This section describes the procedure to find gateways.

### Procedure

**Step 1** Choose **Analysis** > **Gateways**.
The Find and List Gateways window is displayed.

**Step 2** From the first Find gateways where drop-down list box, choose one of the following criteria:

a) Name
b) Description

c) DN/Route Pattern
d) Calling Search Space Name
e) Device Pool Name
f) Route Group Name
g) Gateway Type

**Note** The criterion that you choose in this drop-down list box specifies how the list of gateways is displayed. For example, if you choose Device Name, the Device Name column is displayed as the left column of the results list.

**Note** If you choose DN/Route Pattern, Calling Search Space, or Route Group, the options that are available in the database display.

**Step 3** From the second Find gateways where drop-down list box, choose one of the following criteria:

a) begins with
b) contains
c) is exactly
d) ends with
e) is not empty
f) is empty

**Note** If you choose Calling Search Space, Device Pool, Route Group, or Device Type in the first field, you can choose a value from the drop-down list for this field.

**Step 4** Specify how many items per window to display.

**Step 5** Specify whether endpoints of gateways must be shown or hidden.

**Step 6** Specify the appropriate search text, if applicable, and click **Find**.

**Tip** To find all gateways, click Find without entering search text or choose Device Name in the first Find gateways where drop-down list box and "is not empty" in the second Find gateways where drop-down list box.

A list of gateways that matches the criteria is displayed. The information that is displayed differs for different gateway models.

This window also lists the total number of devices.

**Step 7** To view the next set of discovered gateways, click **Next**.

# Choose Gateway Endpoints

After you find gateways that match your search criteria, you need to choose gateway endpoints and enter calling and called party information. Use the following steps to choose gateway endpoints.

### Procedure

**Step 1** Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section.

**Step 2** From the list of records that is displayed in the Find and List Gateways window, choose a gateway. Choose from the following types of gateways:

a) Cisco IOS MGCP Gateway
b) Non-IOS MGCP Gateway
c) Cisco IOS H.323 Gateway

d) Analog Access Gateway
e) Cisco VG248 Analog Phone Gateway
f) Cisco IOS SCCP Gateway
Depending on the type of gateway, different information is displayed.

Use the following topics to choose gateway endpoints for each gateway type:

g) Choose IOS gateways, on page 19
h) Choose Non-IOS Gateways, on page 21
i) Choose IOS H.323 Gateways, on page 22
j) Choose Analog Access Gateways, on page 23
k) Choose Analog Phone Gateways, on page 24

## Choose IOS gateways

After you find gateways that match your search criteria, you can choose Cisco IOS MGCP gateway endpoints and Cisco IOS SCCP Gateways. The following list comprises Cisco IOS MGCP gateways:

- Cisco Voice Gateway 200 (VG200)
- Cisco IOS 269X, 26XX, 364X, 366X, 3725, 3745 gateways
- Cisco Catalyst 4000 Access Gateway Module
- Cisco Catalyst 4224 Voice Gateway Switch
- Communication Media Module
- Cisco IAD2400

Use the following steps to choose Cisco IOS MGCP/IOS SCCP gateway endpoints for analysis.

### Procedure

Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section. You can use two ways to access Cisco IOS MGCP/IOS SCCP gateway endpoints. You can directly access the Endpoint Identifiers from the Gateway Configuration window, or you can first see a list of all the configured endpoints in a new window and then choose one of them.

Use one of the following procedures.

a) From the list of records that is displayed in the Find and List Gateways window, click the gateway that you want to use.
   - The Gateway Configuration window is displayed and lists the installed Voice Interface Cards and Endpoint Identifiers for each card. The endpoint identifiers represent configured ports for the chosen devices.
   - From the list of endpoint identifiers, click the required endpoint. The appropriate window is displayed and shows gateway information and port information.
     **Note** The time zone that is configured for the gateway in Cisco Unified Communications Manager is displayed in the Device Time Zone field.
   - In the Calling Party field, the calling party number that is configured for this endpoint is displayed.

- In the Dialed Digits field, enter the digits you want to dial.
- In the Pattern Analysis field, check the check box corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

  **Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

  **Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

- Choose the time zone, date, and time settings for analysis only if Time of Day routing is enabled in Cisco Unified Communications Manager. If not, leave the default settings.

  **Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

  From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.

  From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.

  From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.
- Click **Do Analysis** to analyze the call flow for the dialed digits.
- Use the steps in Perform Gateway Analysis, on page 25 section to complete the analysis procedure.

b) From the list of records that is displayed in the Find and List Gateways window, click the See Endpoints link in the record that you want to use.
The endpoints display in a new window. You can choose BRI and analog endpoints for analysis.

- From the list of endpoints in the new window, click the record that you want to use. The Gateway Configuration window is displayed and shows Gateway Information and Port Information.

  **Note** The time zone that is configured for the endpoint in Cisco Unified Communications Manager is displayed in the Device Time Zone field.
- In the Calling Party field, the calling party number that is configured for this endpoint is displayed.
- In the Dialed Digits field, enter the digits you want to dial.
- In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

  **Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

  **Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

- If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

  **Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.

From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.

From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

- To analyze the call flow for the dialed digits, click **Do Analysis**.
  Use the steps in Perform Gateway Analysis, on page 25 section to complete the analysis procedure.

**Note** Gateways include one or more configured ports with multiple endpoints. All ports for the chosen gateway display in the left frame of the Gateway Configuration window. Click another endpoint to go to that endpoint Gateway Configuration window.

**Note** In the upper, right corner or the lower, right corner of the Gateway Configuration window, choose **Back to MGCP Configuration** from the Related Links drop-down list box to return to the Gateway Configuration window. To return to the discovered gateways on the Find and List Gateways window, choose **Back to Find/List Gateways**.

### Related Topics

Related Topics, on page 68

## Choose Non-IOS Gateways

After you find gateways that match your search criteria, you can choose Non-IOS MGCP gateway endpoints. The following list comprises Non-IOS MGCP gateways:

- Cisco Catalyst 6000 E1 VoIP Gateway
- Cisco Catalyst 6000 T1 VoIP Gateway
- Cisco DT-24+ or DE-30+ Digital Access Trunk Gateway

Use the following procedure to choose Non-IOS MGCP gateway endpoints for analysis.

### Procedure

**Step 1** Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section.

**Step 2** From the list of records that is displayed in the Find and List Gateways window, click the Non-IOS MGCP gateway that you want to use.
The Gateway Configuration window is displayed and shows Device Information and Call Routing Information.

**Note** The time zone that is configured for the gateway in Cisco Unified Communications Manager is displayed in the Time Zone field.

**Step 3** In the Calling Party field, the calling party number that is configured for this endpoint is displayed.

**Step 4** In the Dialed Digits field, enter the digits you want to dial.

**Step 5** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Step 6** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

**Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.

b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.

c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 7** To analyze the call flow for the dialed digits, click **Do Analysis**.

**Step 8** Follow the steps in Perform Gateway Analysis, on page 25 section to complete the analysis procedure.

**Note** In the upper, right corner or the lower, right corner of the window, choose **Back to Find/List Gateways** from the Related Links drop-down list box to return to the discovered gateways on the Find and List Gateways window.

### Related Topics

Related Topics, on page 68

## Choose IOS H.323 Gateways

After you find a list of gateways that match your search criteria, you can choose Cisco IOS H.323 gateway endpoints. Use the following procedure to choose Cisco IOS H.323 gateway endpoints for analysis.

### Procedure

**Step 1** Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section.

**Step 2** From the list of records that is displayed in the Find and List Gateways window, click the Cisco IOS H.323 gateway that you want to use. The Gateway Configuration window is displayed and shows Device Information and Call Routing Information.

**Note** The time zone that is configured for the gateway in Cisco Unified Communications Manager is displayed in the Time Zone field.

**Step 3** In the Calling Party field, the calling party number that is configured for this endpoint is displayed.

**Step 4** In the Dialed Digits field, enter the digits you want to dial.

**Step 5** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Step 6** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

**Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.

b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.

c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 7** To analyze the call flow for the dialed digits, click **Do Analysis**.

**Step 8** Use the steps in Perform Gateway Analysis, on page 25 section to complete the analysis procedure.

**Note** In the upper, right corner or the lower, right corner of the window, click the **Back to Find/List Gateways** link to return to the discovered gateways on the Find and List Gateways window.

### Related Topics

Related Topics, on page 68

## Choose Analog Access Gateways

After you find a list of gateways that match your search criteria, you can choose Analog Access gateway endpoints. Analog Access gateways comprises of Cisco Catalyst 6000 24 Port FXS Gateways.

Use the following procedure to choose Analog Access gateway endpoints for analysis.

### Procedure

**Step 1** Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section.

**Step 2** From the list of records that is displayed in the Find and List Gateways window, click the Analog Access gateway that you want to use.
The Gateway Configuration window is displayed and shows all the ports that are configured for the gateway in the left frame.

**Note** The time zone that is configured for the gateway in Cisco Unified Communications Manager is displayed in the Time Zone field.

**Step 3** Click the port that you require to make a call.
The Gateway Configuration window is displayed.

**Step 4** In the Calling Party field, the calling party number that is configured for this endpoint is displayed.

**Step 5** In the Dialed Digits field, enter the digits you want to dial.

**Step 6** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Note** The outgoing SIP call must go through a SIP trunk.

**Step 7** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

**Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.

b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.

c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 8** To analyze the call flow for the dialed digits, click **Do Analysis**.

**Step 9** Use the steps in Perform Gateway Analysis, on page 25 section to complete the analysis procedure.

**Note** In the upper, right corner or the lower, right corner of the window, click the **Back to Find/List Gateways** link to return to the discovered gateways on the Find and List Gateways window.

### Related Topics

Related Topics, on page 68

## Choose Analog Phone Gateways

After you find a list of gateways that matches your search criteria, you can choose Cisco VG248 Analog Phone gateway endpoints that are applicable to a Cisco VG248 Analog Phone gateway. Use the following procedure to choose Cisco VG248 Analog Phone gateway endpoints for analysis.

### Procedure

**Step 1** Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section.

**Step 2** From the list of records that is displayed in the Find and List Gateways window, click the gateway that you want to use.
The Gateway Configuration window is displayed and shows all ports that are configured for the chosen gateway.

**Note** The time zone that is configured for the gateway in Cisco Unified Communications Manager is displayed in the Time Zone field.

**Step 3** Choose and click the port that you require.
If you click a port that is not configured, a message is displayed to inform you that the port is not configured.

If you choose a configured port, the Phone Line Selection window is displayed.

**Step 4** From the list of records, click the **Line** radio button for the phone line that you require.

**Step 5** In the Dialed Digits field, enter the digits you want to dial.

**Step 6** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Step 7** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

**Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.
b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.
c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 8** To analyze the call flow for the dialed digits, click **Do Analysis**.

**Step 9** Use the steps in Perform Gateway Analysis, on page 25 section to complete the analysis procedure.

**Note** In the upper, right corner or the lower, right corner of the window, click the **Back to Find/List Gateways** link to return to the discovered gateways on the Find and List Gateways window.

### Related Topics

Related Topics, on page 68

# Perform Gateway Analysis

After you choose a gateway endpoint and entered input for analysis, you can analyze the dialed digits. Use the following procedure to do the analysis.

### Procedure

**Step 1** Find the gateway that you want to use by using the procedure in the Find Gateway, on page 17 section.

**Step 2** From the Find and List Gateways window, choose gateway endpoints. In the Gateway Configuration window, enter calling party or called party information by using the procedures in the following sections for different types of gateways:

a) Choose IOS gateways, on page 19
b) Choose Non-IOS Gateways, on page 21
c) Choose IOS H.323 Gateways, on page 22
d) Choose Analog Access Gateways, on page 23
e) Choose Analog Phone Gateways, on page 24

**Step 3** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

**Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.
b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.
c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 4** Click **Do Analysis**.
Dialed Number Analyzer uses the Calling Search Space that is specified for the chosen endpoint and analyzes the dialed digits. The results display in a new window called the DNA Analysis Output window. You can simply view the results or save the results in a file format on your PC for later use.

**Step 5** To save the result, in the upper, right corner of the window, click **Save**.
The File Download dialog is displayed.

**Step 6** Click **Save**.
The Save As dialog is displayed. Browse to a location on your PC where you want to save the file.

**Step 7** Click **Save**.
The result gets saved as an XML file on your PC. The saved file has the following naming convention:

dnaOutput_<callingparty>_<dialeddigits>.xml

where <callingparty> and <dialeddigits> specify the calling party and the dialed digits that are entered in the Dialed Digits and Calling Party fields, respectively.

**Step 8** In the Download Complete dialog box, click **Close** to complete the Save As procedure.

**Note** For instructions on how to view the saved XML file in the browser, see the View Output Files, on page 66 section.

**Step 9** Close the DNA Analysis Output window.

### Related Topics

Related Topics, on page 68

# Trunk Analysis

Dialed Number Analyzer provides a Trunks window where you can find and list trunks through which inbound dialed digits can be analyzed. Use the following topics to find and choose a trunk and analyze dialed digits:


- Find Trunk, on page 27
- Choose Trunk, on page 28
- Perform Trunk Analysis, on page 28


# Find Trunk

You can find and list trunks by device name, description, calling search space, route pattern, device pool, route group, and device type. This section describes the procedure to find trunks.

### Procedure

**Step 1** Choose **Analysis** > **Trunks.**
The Find and List Trunks window is displayed.

**Step 2** From the first Find trunks where drop-down list box, choose one of the following criteria:

a) Device Name
b) Description
c) Calling Search Space
d) Route Pattern
e) Device Pool
f) Route Group
g) Trunk Type

**Note** The criterion that you choose in this drop-down list box specifies how the list of gateways display. For example, if you choose Device Name, the Device Name column is displayed as the left column of the results list.

**Note** If you choose Route Pattern, Calling Search Space, or Route Group, the options that are available in the database display.

**Step 3** From the second Find trunks where drop-down list box, choose one of the following criteria:

a) begins with
b) contains
c) ends with
d) is exactly
e) is not empty
f) is empty

**Note** If you choose Calling Search Space, Device Pool, Route Group, or Device Type in the first field, you can choose a value from the drop-down list for this field.

**Step 4** Specify how many items per window to display.

**Step 5** Specify the appropriate search text, if applicable, and click **Find**.

**Tip** To find all trunks, click Find without entering search text or choose Device Name in the first Find trunks where drop-down list box and “is not empty” in the second Find trunks where drop-down list box.

A list of trunks that match the search criteria is displayed.

This window also lists the total number of records in this window.

**Step 6** To view the next set of discovered trunks, click **Next**.

### Related Topics

Related Topics, on page 68

# Choose Trunk

After you find the trunks that you require, you need to choose a trunk. Use the following procedure to choose a trunk. You can perform analysis for SIP trunks.

### Procedure

**Step 1** Find the trunk that you want to use for analysis by using the procedure in the Find Trunk, on page 27 section.
The Find and List Trunks window is displayed and shows trunk information.

**Step 2** From the list of records, choose a trunk by clicking the required record.
The Trunk Configuration window is displayed.

### Related Topics

Related Topics, on page 68

# Perform Trunk Analysis

After you identify and choose a trunk, you need to enter input for analysis. Use the following procedure to enter input and perform analysis.

### Procedure

**Step 1** Find the trunk that you require by using the procedure in the Find Trunk, on page 27 section.

**Step 2** From a list of discovered trunks, choose the trunk that you require by using the steps in the Choose Trunk, on page 28 section.
The Trunk Configuration window is displayed. Device and Call Routing information for the chosen trunk is displayed.

**Note** The time zone that is configured for the trunk in Cisco Unified Communications Manager is displayed in the Device Time Zone field.

**Step 3** Under Analyzer Input enter the calling party information in one of the following fields:

- If want to use either a phone number, directory number, or SIP route pattern for the calling party information, enter the digits in the Calling Party field. By default, the Dialed Number Analyzer selects this option.
- If you want to use a directory URI, click the Directory URI radio button and enter a directory URI in the Directory URI field.

**Step 4** Under Dialed Digit Settings, enter the information for the called party in one of the following fields:

- If you are dialing either a phone number or a directory number, enter the digits for the number you are dialing in the Dialed Digits field. By default, this option is selected.
- If you are dialing a directory URI, click the Directory URI radio button and enter the directory URI in the Directory URI field.

**Step 5** In the Pattern Analysis field, check the checkbox corresponding to SIP Analysis, if required, and choose Domain Route or IP Route.

**Note** If you want to perform a Session Initiation Protocol (SIP) analysis, make sure that you configure a SIP Route Pattern in Cisco Unified Communications Manager Administration. For more details, see Cisco Unified Communications Manager Administration Guide.

**Note** The outgoing SIP call must go through a SIP trunk.

**Note** You can perform SIP analysis only for phones that support SIP and for SIP trunks.

**Step 6** If Time of Day routing is enabled in Cisco Unified Communications Manager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco Unified Communications Manager, leave the default settings.

**Note** The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the default Cisco Unified Communications Manager system time.

a) From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. Greenwich Median Time (GMT) is displayed by default.
b) From the Date drop-down list boxes, choose the year, month, and date that Dialed Number Analyzer must use for analysis.
c) From the Time drop-down list boxes, choose the hour, minute, second, and millisecond that Dialed Number Analyzer must use for analysis.

**Step 7** Click **Do Analysis**.
Dialed Number Analyzer uses the Calling Search Space that is specified for the trunk and analyzes the dialed digits. The results display in a new window that is called the DNA Analysis Output window. You can simply view the results or save the results in a file format on your PC for later use.

**Step 8** To save the results, click **Save** in the upper, right corner of the window.
The File Download dialog is displayed.

**Step 9** Click **Save**.
The Save As dialog is displayed. Browse to a location on your PC where you want to save the file.

**Step 10** Click **Save**.
The result gets saved as an XML file on your PC. The saved file has the following naming convention:

dnaOutput_<callingparty>_<dialeddigits>.xml

where <callingparty> and <dialeddigits> specify the calling party and the dialed digits that are entered in the Dialed Digits and Calling Party field, respectively.

**Step 11** To complete the Save As procedure, click **Close** in the Download Complete dialog box.
**Note** For instructions on how to view the saved XML file in the browser, see the View Output Files, on page 66 section.

**Step 12** Close the DNA Analysis Output window.

### Related Topics

Related Topics, on page 68

# Multiple Analysis

Multiple Dial Plan support feature allows you to perform multiple analysis and bulk testing of dial plans.

Dialed Number Analyzer (DNA) provides a Multiple Analyzer window where you can choose a CSV file that contains a list of data that is required for analysis. Then, DNA processes the CSV file and displays the bulk output results.

During installation, DNATemplate.xlt installs as DNATemplate.zip on the server. Using this template, you can create a CSV file that contains multiple sets of calling party numbers with corresponding dialed digits, calling search spaces, device time zones, time zones, and date and time information.

You can upload or download these files by using the Multiple Analyzer window in DNA.

Use the following topics for creating a CSV input file by using the DNA template, uploading or downloading the input files, viewing the file contents, and analyzing the chosen input file.


- Create CSV File for Multiple Analysis, on page 30
- Create Text File for Multiple Analysis, on page 32
- Upload Input Files, on page 35
- View CSV File, on page 35
- Delete CSV Files, on page 36
- Analyze CSV File, on page 37


# Create CSV File for Multiple Analysis

To create a comma separated value (CSV) data file, use the DNATemplate.xlt file that is stored in the server during DNA installation.

You can download DNATemplate.zip file on the local machine from Upload/Download Input File. For more details, seeCreate Text File for Multiple Analysis, on page 32.

The zip file, after extracted, gives the DNATemplate.xlt file.

Use the following procedure to create the CSV data file by using the DNA template.

### Procedure

**Step 1** To open the DNA template, locate and double-click the **DNATemplate.xlt** file.

**Step 2** When prompted, click **Enable Macros** to use the spreadsheet capabilities.

**Step 3** To display the DNA options, click the **DNA** tab at the bottom of the spreadsheet.

**Step 4** In Section 1–Default Fields, enter any default values that you want to apply to your queries:

- Calling Party Number—Enter a phone number or SIP address to represent the caller. If you want to use a directory URI to represent the caller, check the directory URI check box and enter a directory URI in the corresponding field.
- Dialed Digits—Enter a phone number or SIP address to represent the called party. If you want to use a directory URI to represent the called party, check the directory URI check box and enter the directory URI in the corresponding field.
- SIP Analysis—If you want to perform SIP Analysis on dialed numbers, check the SIP Analysis check box and select the Domain Route or IP route radio button. SIP Analysis is only a valid option if the dialed number uses numeric digits—it is not a valid option if the dialed number is a directory URI. If you check SIP Analysis, the digits that you enter in the Dialed Digits (Numeric Values Only) field must be in a SIP address format (for example, sip: 2000@ip_address).

For example, if you enter bob@cisco.com as the default Calling Party Number, after you export the information in the DNA template to a CSV file, bob@cisco.com populates all the rows that are created as the Calling Party Number for any DNA queries, unless a different value is populated in the Multiple Analyzer Query Table row that corresponds to that query.

**Note** To enter Device Time Zone and Time Zone values, you can either use the corresponding drop-down lists or enter the index number from the list on the TimeZone Index tab on DNATemplate.xlt.

**Step 5** If required, in Section 2–Multiple Analyzer Query Table, enter non-default information in the corresponding column. Each row in the table represents a single DNA query. If you leave the values blank for any row, the default values will be pulled from Section 1 when you export to CSV.

**Note** For the Calling Party Number and Dialed Digits parameters, you cannot enter both a numeric phone number and a directory URI.

**Note** If you want to associate a calling search space (CSS) with calling party and dialed digits, enter the correct CSS values, as configured on Cisco Unified Communications Manager administration. For more information about calling search space, see the Cisco Unified Communications Manager Administration Guide.

**Note** You can add a maximum of 500 entries in the CSV file for multiple analysis.

**Step 6** Click **Export to CSV Format**. In the dialog box that is displayed, enter the location to save the CSV file.

### Related Topics

Related Topics, on page 68

# Create Text File for Multiple Analysis

Instead of using the DNA template for data input for multiple analysis, you can create the comma separated values (CSV) file by using lines of ASCII text with commas separating the values.

Use the following procedure to create a CSV text file for multiple analysis.

### Procedure

**Step 1** Open a text editor or application that allows you to export or create a CSV file.

**Step 2** Use a separate line to enter the values for each analysis that you want to add to Cisco Unified Communications Manager.

a) Specify all checkbox values with the Boolean values of True or False.

b) Always include comma separators, even if a field is blank.

c) An error occurs after you insert a CSV file with blank lines.
See CSV File Format for Multiple Analysis, on page 32 for information about the CSV data file formats.

**Step 3** Save the completed file.

### Related Topics

Related Topics, on page 68

# CSV File Format for Multiple Analysis

The following sample shows the field length, and whether the field is optional or mandatory for a text-based CSV file for CTI ports and H.323 clients format.

**Calling Party Number** (Mandatory, Numeric, #, *, A, B, C, or D, up to 24 characters), **Dialed Digits** (Mandatory, Numeric, #, *, A, B, C, or D, up to 24 characters), **Calling Search Space** (Optional, Should be a valid CSS name configured in Cisco Unified Communications Manager Administrator), **Device Time Zone** (Optional, Numeric 1 to 53), **Time Zone** (Optional, Numeric 1 to 53), **Date For Analysis** (Optional, should be in the format YYYY-MMM-DD)**, Time For Analysis (Optional**, should be in the format HH:MM:SS)

Use Table 1: Device Time Zone Index Values, on page 32 to determine the index value (1 to 53) corresponding to the time zone for the Device Time Zone and Time Zone fields.

***Table 1: Device Time Zone Index Values***

| Device Time Zone | Index Value |
|---|---|
| (GMT-12:00) Eniwetok, Kwajalein | 1 |
| (GMT-11:00) Midway Island, Samoa | 2 |
| (GMT-10:00) Hawaii | 3 |
| (GMT-09:00) Alaska | 4 |

| Device Time Zone | Index Value |
|---|---|
| (GMT-08:00) Pacific Time (US & Canada); Tijuana | 5 |
| (GMT-07:00) Arizona | 6 |
| (GMT-07:00) Mountain Time (US & Canada) | 7 |
| (GMT-06:00) Central Time (US & Canada) | 8 |
| (GMT-06:00) Mexico City, Tegucigalpa | 9 |
| (GMT-06:00) Saskatchewan | 10 |
| (GMT-05:00) Bogata, Lima | 11 |
| (GMT-05:00) Eastern Time (US & Canada) | 12 |
| (GMT-05:00) Indiana (East) | 13 |
| (GMT-04:00) Atlantic Time (Canada) | 14 |
| (GMT-04:00) Caracas, La Paz | 15 |
| (GMT-03:30) Newfoundland | 16 |
| (GMT-03:00) Brasilia | 17 |
| (GMT-03:00) Buenos Aires, Georgetown | 18 |
| (GMT-02:00) Mid-Atlantic | 19 |
| (GMT-01:00) Azores, Cape Verde Is. | 20 |
| (GMT) Greenwich Mean Time; Dublin, Edinburgh, London, Lisbon | 21 |
| (GMT) Monrovia, Casablanca | 22 |
| (GMT+01:00) Amsterdam, Berlin, Stockholm, Rome, Bern, Vienna | 23 |
| (GMT+02:00) Athens, Helsinki, Istanbul | 24 |
| (GMT+02:00) Cairo | 25 |
| (GMT+02:00) Eastern Europe | 26 |
| (GMT+01:00) Brussels, Paris, Madrid, Copenhagen | 27 |
| (GMT+01:00) Prague, Warsaw, Budapest | 28 |

| Device Time Zone | Index Value |
|---|---|
| (GMT+02:00) Harare, Pretoria | 29 |
| (GMT+02:00) Israel | 30 |
| (GMT+03:00) Baghdad, Kuwait, Nairobi, Riyadh | 31 |
| (GMT+03:00) Moscow, St. Petersburg, Kazan, Volgorad | 32 |
| (GMT+03:30) Tehran | 33 |
| (GMT+04:00) Baku, Yerevan, Tbilisi | 34 |
| (GMT+04:30) Kabul | 35 |
| (GMT+05:00) Islamabad, Karachi, Tashkent | 36 |
| (GMT+05:30) Bombay, Calcutta, Madras, New Delhi, Colombo | 37 |
| (GMT+06:00) Almaty, Dhaka | 38 |
| (GMT+07:00) Bangkok, Jakarta, Hanoi | 39 |
| (GMT+08:00) Beijing, Chongqing, Urumqi | 40 |
| (GMT+08:00) Hong Kong, Perth, Singapore, Taipei | 41 |
| (GMT+09:00) Tokyo, Osaka, Sapporo, Seoul, Yakutsk | 42 |
| (GMT+09:30) Adelaide | 43 |
| (GMT+09:30) Darwin | 44 |
| (GMT+10:00) Brisbane | 45 |
| (GMT+10:00) Melbourne, Sydney | 46 |
| (GMT+10:00) Guam, Port Moresby, Vladivostok | 47 |
| (GMT+10:00) Hobart | 48 |
| (GMT+11:00) Magadan, Solomon Is., New Caledonia | 49 |
| (GMT+12:00) Fiji, Kamchatka, Marshall Is. | 50 |
| (GMT+12:00) Wellington, Auckland | 51 |

| Device Time Zone | Index Value |
|---|---|
| (GMT+04:00) Abu Dhabi, Muscat | 52 |
| (GMT+05:00) Ekaterinburg | 53 |

### Sample 1

```
1000,20,,4,37,2005-Jun-9,3:00:59,1000,30,,4,37,2005-Jun-9,3:00:59,
1000,40,CSS1,4,37,2005-Jun-9,3:00:59,
```

**Note** Make sure that you enter a comma at the end of each line of input data.

### Related Topics

Related Topics, on page 68

# Upload Input Files

To allow DNA access to the CSV data file, you must upload the data file that was created in the previous procedure to the Cisco Unified Communications Manager publisher database server.

Use the following procedure to upload a CSV data file.

### Procedure

**Step 1** Choose **Analysis** > **Multiple Analyzer**.

**Step 2** Select **Upload/Download Input Files** from the drop-down list box in the upper, right corner of the window and click **Go**.

**Step 3** The Upload/Download Input Files window is displayed.

**Step 4** To upload input files, enter the directory where the CSV file is stored or use the **Browse** button to choose the directory.

**Step 5** Click **Upload File**. The CSV file uploads to the server.

**Note** To download the DNA template to create a CSV data file, click the **Download** link below Download Template Files and save the file to your local machine.

### Related Topics

Related Topics, on page 68

# View CSV File

You can view the content of the CSV file before doing the analysis.

Use the following procedure to view the CSV file content.

### Procedure

**Step 1** Choose **Analysis** > **Multiple Analyzer**

- .

**Step 2** In the File Name field, choose the CSV file from the drop-down list box. This box should list all the files that were uploaded to the Cisco Unified Communications Manager server by using Create Text File for Multiple Analysis, on page 32.

**Step 3** Click **View File Contents**.

**Step 4** The information in the chosen CSV file is displayed in a separate window.

### Related Topics

Related Topics, on page 68

# Delete CSV Files

Use the following procedure to delete uploaded CSV files.

### Procedure

**Step 1** Choose **Analysis** > **Multiple Analyzer**

**Step 2** Select **Upload/Download Input Files** from the drop-down list box in the upper, right corner of the window and click **Go**.

**Step 3** The Upload/Download Input Files window is displayed.

**Step 4** Click **Delete Uploaded Files** in the upper, right corner of the window.

**Step 5** The View/Delete Uploaded Files window is displayed a list of all the CSV files that are uploaded on the server.

**Note** You can search for a particular file by entering criteria in the text box on the top of the window and clicking **Find**.

**Step 6** Choose the file or files that you want to delete from the list by checking the checkbox next to the file name.

**Step 7** Click **Delete Selected**.

**Step 8** To delete the chosen file or files, click **OK** in the confirmation dialog box. To cancel file deletion, click **Cancel**.

### Related Topics

Related Topics, on page 68

# Analyze CSV File

Multiple analyses for the different sets of input provide a consolidated result that consists of Calling Party Number, corresponding Dialed Digits, CSS, and final analysis result (Route/Block), in a row-by-row fashion for each set of input.

Use the following procedure to analyze the uploaded CSV data file.

### Procedure

**Step 1** Choose **Analysis** > **Multiple Analyzer**

- .

**Step 2** From the File Name drop-down list box, chose the CSV file that you want to analyze.

**Step 3** Click **Do Analysis**. The analysis results display in a separate window.

**Caution** Multiple analyses consume enormous CPU resources and impact the database performance severely. Perform multiple analyses only during times of least traffic on the network.

**Note** You can perform only one multiple analysis at a time.

**Step 4** To view the detailed analysis for each row of results, click **Details**.

**Note** The system stores files at file list activelog /tomcat/logs/dna/Results.

**Step 5** To save the results file in the CSV format, click **Save**.

### Related Topics

Related Topics, on page 68

# Analysis Output

The results of analysis that you perform contain information about the dialed digits call flow. This section provides two examples of analysis results that were obtained by using Dialed Number Analyzer. Each example shows results that were obtained by using different types of inputs and Cisco Unified Communications Manager configuration data. This section also describes each value in the analysis output.

Three sections provide the description of the results: Results Summary, Call Flow, and Alternate Matches. Use the following topics to understand the information in the analysis output:

- Analysis Examples, on page 38
- Results Summary, on page 58
- Call Flow Details, on page 59
- Alternate Matches, on page 64

# Analysis Examples

This section provides a few examples to help you understand the results that you could obtain with different inputs by using Dialed Number Analyzer. The Results Summary, Call Flow, and Alternate Matches sections describe all the values that could display in analysis results. The sample results may include only values that result from the type of input that is provided to Dialed Number Analyzer.

## Example 1

This example assumes the following setup in Cisco Unified Communications Manager:

Phone - 1360064 in partition “DallasPartition”

Line Calling Search Space - ALL (ALL CSS has DallasPartition and SJPartition)

Route Filter - RF-SJ (LONG-DISTANCE-DIRECT-DIAL EXISTS AND AREA-CODE == 408). This route pattern selects RouteList “RL1”. RL1 uses RG1 and RG2.

RG1 configuration includes an intercluster trunk as 10.77.31.206, with route group level calling and called party transformations. RG2 configuration includes an intercluster trunk 10.77.31.231, with QSIG tunneled protocol.

Route Pattern - 9.@ in partition “SJPartition”, where:

- Offnet Pattern (Outside Dial Tone) is checked.
- Require Forced Authorization Code is checked.
- Require Client Matter Code is checked.
- Authorization Level equals 155.

Associate the route pattern with the RL1 route list and route filter RF-SJ.

Configure the intercluster Trunk 10.77.31.206 as follows:

- Tunneled Protocol - QSIG
- Call Classification - Use System Default
- Inbound Fast Start - Disabled
- Outbound Fast Start - Enabled
- Codec For Outbound FastStart - G711 mu-law 64k

Configure the intercluster Trunk 10.77.31.231 as follows

- Tunneled Protocol - QSIG
- Call Classification - Use System Default
- Inbound Fast Start - Disabled
- Outbound Fast Start - Disabled

Use the following procedure to run this example:

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Analyzer**.

**Step 2** In the Analyzer window, enter 1360064 in the Calling Party field.

**Step 3** In the Dialed Digits field, enter 914089027872.

**Step 4** From the Calling Search Space drop-down list box, choose ALL.

**Step 5** Leave the default values in the Device Time Zone field, Cisco Unified Communications Manager system Time Zone, Date, and Time fields.

**Step 6** Click **Do Analysis**.
The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 7** To expand all the nodes in the window and view all values, click **Expand All** or to close all the nodes in the window, click **Collapse All**.

**Note** When the Dialed Number Analyzer Results window is first displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

#### Analysis Results for Example 1

```
Results Summary Calling Party Information
Calling Party = 1360064
Partition =
Device CSS =
Line CSS = ALL
AAR Group Name =
AARCSS =
Dialed Digits = 914089027872
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = 9.@
Partition = SJPartition
Time Schedule =
Called Party Number = 914089027872
Time Zone = (GMT+05:30) Bombay, Calcutta, Madras, New Delhi, Colombo
End Device = RL1
CallClassification = OffNet
InterDigit Timeout = NO
Provide Outside Dial Tone)
PlayedAfter = 9
Call Flow
Route Pattern :Pattern= 9.@
Positional Match List = 9:1:408:902:7872
DialPlan = North American Numbering Plan
Route Filter
   Filter Name = RF-SJ
   Filter Clause = (LONG-DISTANCE-DIRECT-DIAL EXISTS AND AREA-CODE ==
408)
Require Forced Authorization Code = Yes
Authorization Level = 155
```

```
Require Client Matter Code = Yes
Network Location = OffNet
PreTransform Calling Party Number = 1360064
PreTransform Called Party Number = 914089027872
Calling Party Transformations
   External Phone Number Mask = NO
   Calling Party Mask =
   Prefix =
   CallingLineId Presentation = Default
   CallingName Presentation = Default
   Calling Party Number = 1360064
ConnectedParty Transformations
   ConnectedLineId Presentation = Default
   ConnectedName Presentation = Default
Called Party Transformations
   Called Party Mask =
   Discard Digits Instruction =
   Prefix =
   Called Number = 914089027872
Route List :Route List Name= RL1
RouteGroup :RouteGroup Name= RG1
   PreTransform Calling Party Number = 1360064
   PreTransform Called Party Number = 914089027872
   Calling Party Transformations
      External Phone Number Mask = Default
      Calling Party Mask =
      Prefix =
      Calling Party Number = 1360064
   Called Party Transformations
      Called Party Mask =
      Discard Digits Instructions =
      Prefix =
      Called Number = 914089027872
   Device :Type= InterClusterTrunk-NonGatekeeperControlled
      End Device Name = 10.77.31.206
      PortNumber = 0
      Device Status = UnKnown
      AAR Group Name =
      AAR Calling Search Space =
      AAR Prefix Digits =
      Inbound Fast Start = Disabled
      Outbound Fast Start = Enabled
      Codec For Outbound FastStart = G711 u-law 64K
      Call Classification = Use System Default
      Tunneled Protocol = QSIG
      Calling Party Transformations
         PreTransform Calling Party Number = 1360064
         Calling Party Selection = Originator
         Calling Party Presentation = Default
         CallerID DN =
         Calling Party Number = 1360064
RouteGroup :RouteGroup Name= RG2
   PreTransform Calling Party Number = 1360064
   PreTransform Called Party Number = 914089027872
   Calling Party Transformations
      External Phone Number Mask = Default
      Calling Party Mask =
      Prefix =
```

```
      Calling Party Number = 1360064
   Called Party Transformations
      Called Party Mask =
      Discard Digits Instructions =
      Prefix =
      Called Number = 914089027872
   Device :Type= InterClusterTrunk-NonGatekeeperControlled
      End Device Name = 10.77.31.231
      PortNumber = 0
      Device Status = UnKnown
      Automated Alternate Routing (AAR)
         AAR Group Name =
         AAR Calling Search Space =
         AAR VoiceMail Status = Disabled
         AAR Destination Mask =
         AAR Prefix Digits =
      Inbound Fast Start = Disabled
      Outbound Fast Start = Disabled
      Call Classification = Use System Default
      Tunneled Protocol = QSIG
      Calling Party Transformations
         PreTransform Calling Party Number = 1360064
         Calling Party Selection = Originator
         Calling Party Presentation = Default
         CallerID DN =
         Calling Party Number = 1360064
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

## Example 2

This example assumes the following setup in Cisco Unified Communications Manager:

Route Pattern - 9.@ in partition 'SJPartition'

Route Filter - RF-SJ (LONG-DISTANCE-DIRECT-DIAL EXISTS AND AREA-CODE == 408). This route pattern selects RouteList 'RL1'. RL1 uses RG1.

RG1 configuration includes an intercluster trunk as 10.77.31.206, with route group level calling and called party transformations. Configure 10.77.31.206 gateway with CSS-AALL. (ALL CSS has DallasPartition and SJPartition.)

RG2 configuration includes an intercluster trunk 10.77.31.231, with QSIG tunneled protocol.

Route Pattern - 9.@ in partition 'SJPartition', where

- Offnet Pattern (Outside Dial Tone) is checked.
- Require Forced Authorization Code is checked.
- Require Client Matter Code is checked.
- Authorization Level = 155

Associate the route pattern with the RL1 route list and route filter RF-SJ.

Configure the intercluster Trunk 10.77.31.206 as follows:

- Tunneled Protocol - QSIG
- Call Classification - Use System Default
- InBound Fast Start - Disabled
- OutBound Fast Start - Enabled
- Codec For Outbound Fast Start - G711 mu-law 64k

Configure the intercluster Trunk 10.77.31.231 as follows:

- Tunneled Protocol - QSIG
- Call Classification - Use System Default
- InBound Fast Start - Disabled
- OutBound Fast Start - Disabled

Configure a phone with DN 254564. Ensure that the phone Ignore Presentation Indicators (internal calls only) checkbox is checked. Translation pattern 972813XXXX exists in partition 'DallasPartition' with Called Party Transformations configured with DN 254564.

Provide Outside dial tone does not get checked for the translation pattern.

Use the following procedure to run this example:

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Trunks**.

**Step 2** Find a list of trunks that are configured by using the procedure in the Find Trunk, on page 27 section.

**Step 3** From the list of records that is displayed in the Find and List Trunks window, choose gateway 10.77.31.206. The Trunk Information window is displayed.

**Step 4** In the Trunk Information window, enter 9728130064 in the Calling Party field.

**Step 5** In the Dialed Digits field, enter 9728135054.

**Step 6** Leave the default values in the Time Zone, Date, and Time drop-down list boxes.

**Step 7** Click **Do Analysis**.
The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 8** To expand all the nodes in the window and view all values, click **Expand All** or to close all the nodes in the window, click **Collapse All**.

**Note** When the Dialed Number Analyzer Results window is first displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

### Analysis Results for Example 2

```
Results Summary Calling Party Information
Calling Party = 9728130064
Partition =
Device CSS = ALL
Line CSS =
AAR Group Name =
AARCSS =
Dialed Digits = 9728135054
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = 254564
Partition =
Time Schedule =
Called Party Number = 254564
Time Zone =
InterDigit Timeout = NO
Provide Outside Dial Tone = NO
Call Flow
TranslationPattern :Pattern= 972813XXXX
Positional Match List = 254564
DialPlan = North American Numbering Plan
Route Filter
   Filter Name =
   Filter Clause =
PreTransform Calling Party Number = 9728130064
PreTransform Called Party Number = 9728135054
Calling Party Transformations
   External Phone Number Mask = NO
   Calling Party Mask =
   Prefix =
   CallingLineId Presentation = Default
   CallingName Presentation = Default
   Calling Party Number = 9728130064
ConnectedParty Transformations
   ConnectedLineId Presentation = Default
   ConnectedName Presentation = Default
Called Party Transformations
   Called Party Mask = 254564
   Discard Digits Instruction =
   Prefix =
   Called Number = 254564
Directory Number :DN= 254564
Partition =
Call Classification = OnNet
Forwarding Information
   ForwardAll : DN = VoiceMail = No CSS =
   ForwardBusy
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   ForwardNoAnswer
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   ForwardNoCoverage
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   CFDF : DN = VoiceMail = No CSS =
```

```
   Pickup Group Number =
Device :Type= Cisco 7960
Device Status = UnKnown
Device Name = SEP487698944444
Ignore Presentation Indicators = Disabled
Logged Into Hunt Groups = Enabled
Alerting Name =
Dual Mode = Disabled
Do Not Disturb(DND)
DND Status = Disabled
DND Option = Ringer Off
DND Incoming Call Alert =
DND Timeout (minutes) = 0
Automated Alternate Routing (AAR)
AAR Group Name =
AAR Calling Search Space =
AAR VoiceMail Status = Disabled
AAR Destination Mask =
AAR Prefix Digits =
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

## Example 3

This example shows how hunt pilot information is displayed in the analysis results if your dial plan configuration includes hunt lists. This sample assumes the following setup in Cisco Unified Communications Manager:

Hunt pilot - 9043.

10 voice mail ports from 90431 through 90440 get configured.

Line Group VMLG includes the 10 ports.

Hunt List VMHL includes Line Group VMLG.

Forward Hunt No Answer setup follows:

Use Personal Preference is checked.

Destination = 30129.

CSS = None.

Forward Hunt Busy setup follows:

Use Personal Preference is checked

Destination = 30139

CSS = None

Maximum Hunt Timer = 5

Use the following procedure to run this example:

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Analyzer**.
The Analyzer window is displayed.

**Step 2** In the Calling Party field, enter a calling party number (1000 is displayed by default).

**Step 3** In the Dialed Digits field, enter 9043.

**Step 4** In the Device Time Zone field, leave the default values.
The local time and date that represent the time and date information from the operating system of the server where Cisco Unified Communications Manager is installed display by default. You can choose time and date settings that differ from the Cisco Unified Communications Manager system time.

**Step 5** In the Time Zone, Date, and Time fields, leave the default settings.

**Step 6** Click **Do Analysis**.

**Step 7** The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 8** Click **Expand All** to expand all the nodes in the window and view all values or click **Collapse All** to close all the nodes in the window.

**Note** When the Dialed Number Analyzer Results window is first displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results. The results section details only the Call Flow section that includes Hunt List information.

### Analysis Results for Example 3

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS =
AAR Group Name =
AARCSS =
Dialed Digits = 9043
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = 9043
Partition =
Time Schedule =
Called Party Number = 9043
Time Zone =
End Device = VMHL
Call Classification = OffNet
InterDigit Timeout = YES
Provide Outside Dial Tone = NO
Call Flow
Hunt Pilot :Pattern= 9043
Positional Match List = 9043
DialPlan = North American Numbering Plan
Route Filter
```

```
   Filter Name =
   Filter Clause =
Hunt Forward Settings
   Forward Hunt No Answer
      Use Personal Preferences = Yes
      Destination = 30129
      Calling Search Space =
   Forward Hunt Busy
      Use Personal Preferences = Yes
      Destination = 30139
      Calling Search Space =
   Maximun Hunt Timer = 5
Network Location = OffNet
PreTransform Calling Party Number = 1000
PreTransform Called Party Number = 9043
Calling Party Transformations
   External Phone Number Mask = NO
   Calling Party Mask =
   Prefix =
   CallingLineId Presentation = Default
   CallingName Presentation = Default
   Calling Party Number = 1000
ConnectedParty Transformations
   ConnectedLineId Presentation = Default
   ConnectedName Presentation = Default
Called Party Transformations
   Called Party Mask =
   Discard Digits Instruction =
   Prefix =
   Called Number = 9043
Hunt List :HuntListName= VMHL
Line Group :LineGroupName= VMLG
   Directory Number :DN= 90431
      Partition =
      Call Classification = OnNet
      Device :Type= Cisco Voice Mail Port
         Device Status = UnKnown
         Device Name = CiscoUM1-VI1
         Ignore Presentation Indicators = Disabled
         Alerting Name =
      Automated Alternate Routing (AAR)
         AAR Group Name =
         AAR Calling Search Space =
         AAR VoiceMail Status = Disabled
         AAR Destination Mask =
         AAR Prefix Digits =
   + Directory Number :DN= 90432
   + Directory Number :DN= 90433
   + Directory Number :DN= 90434
   + Directory Number :DN= 90435
   + Directory Number :DN= 90436
   + Directory Number :DN= 90437
   + Directory Number :DN= 90438
   + Directory Number :DN= 90439
   + Directory Number :DN= 90440
Alternate Matches
Note: Information Not Available
```

**Note** The last section of the preceding sample shows detailed Directory Number information for the first port. Similar information is displayed for the remaining ports that are configured.

### Related Topics

Related Topics, on page 68

## Example 4

This example shows how time-of-day settings information is displayed in the analysis results after the time zone setting for a phone is set to a specific time zone in Cisco Unified Communications Manager Administration. In this example, the analysis uses the time zone, date, and time settings that the **Analysis** > **Analyzer** window specifies. This sample assumes the following setup in Cisco Unified Communications Manager:

Time Period - DNATimePeriod1

Configure DNATimePeriod1 as follows:

- Start Time = 9.00
- End Time = 12.00
- Repeat Every = Year On: Jun 15

Time Schedule - DNATimeSchedule1

Configure DNATimeSchedule1 to DNATimePeriod1.

Partition - DNAPartition1

Configure DNAPartition1 to DNATimeSchedule1.

Ensure DNAPartition1 configuration is as follows:

- Time Zone = Specific Time Zone, (GMT+5.30) Bombay, Calcutta, Madras, New Delhi, Colombo

Configure DNACSS1 with DNAPartition1.

Phone - Configure an SEP000000036201 with DN 36201.

Partition for the SEP000000036201 phone = DNAPartition1

Use the following procedure to run this example:

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Analyzer**.
The Analyzer window is displayed.

**Step 2** In the Calling Party field, enter a calling party number (1000 is displayed by default).

**Step 3** In the Dialed Digits field, enter 36201.

**Step 4** From the Calling Search Space drop-down list, choose DNACSS1.

**Step 5** From the Time Zone drop-down list, choose a specific time zone, (GMT+5.30) Bombay, Calcutta, Madras, New Delhi, Colombo.

**Step 6** From the Date drop-down list boxes, choose 2004, Jun, and 15 as the Cisco Unified Communications Manager system date settings.

**Step 7** From the Time drop-down list boxes, choose 11:30:0:0 as the Cisco Unified Communications Manager system time settings.

**Step 8** Click **Do Analysis**.

**Step 9** The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 10** To expand all the nodes in the window and view all values, click **Expand All** or to close all the nodes in the window, click **Collapse All**.

**Note** When the Dialed Number Analyzer Results window is first displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

### Analysis Results for Example 4

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS = DNACSS1
AAR Group Name =
AARCSS =
Dialed Digits = 36201
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = 36201
Partition = DNAPartition1
Time Schedule = DNATimeSchedule1
Called Party Number = 36201
Time Zone = (GMT+05:30) Bombay, Calcutta, Madras, New Delhi, Colombo
InterDigit Timeout = NO
Provide Outside Dial Tone = NO
Call Flow
Directory Number :DN= 36201
Partition = DNAPartition1
Call Classification = OnNet
Forwarding Information
   ForwardAll : DN = VoiceMail = No CSS =
   ForwardBusy
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   ForwardNoAnswer
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   ForwardNoCoverage
```

```
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   CFDF : DN = VoiceMail = No CSS =
   Pickup Group Number =
Device :Type= Cisco 7960
   Device Status = UnKnown
   Device Name = SEP000000036201
   Ignore Presentation Indicators = Disabled
   Alerting Name =
   Do Not Disturb(DND)
     DND Status = Disabled
     DND Option = Ringer Off
     DND Incoming Call Alert =
     DND Timeout (minutes) = 0
   Automated Alternate Routing (AAR)
     AAR Group Name =
     AAR Calling Search Space =
     AAR VoiceMail Status = Disabled
     AAR Destination Mask =
     AAR Prefix Digits =
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

## Example 5

This example shows how time-of-day settings information is displayed when a call is made between two phones in the same time period with the time zone that is specified as Originating Device. This example assumes the following setup in Cisco Unified Communications Manager:

Configure a Time Period DNATimePeriod1 as follows:

Start Time=9.00

End Time=12.00

Repeat Every Year=Jun 15

Configure a Time schedule DNATimeSchedule1 as follows:

Time period=DNATimePeriod1

Insert a partition called DNAPartition1.

Configure DNAPartition1 as follows:

- Time Schedule=DNATimeSchedule1
- Time Zone=Originating Device

Insert a Calling Search Space called DNACSS-1. Add the DNAPartition1 partition to this CSS.

Insert a Phone SEP000000036201 and assign a DN, 36201, to it.

Choose DNAPartition1 as the partition for the phone.

Use the following procedure to run this example

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Analyzer**.
The Analyzer window is displayed.

**Step 2** In the Calling Party field, enter a calling party number (1000 is displayed by default).

**Step 3** In the Dialed Digits field, enter 36201.

**Step 4** From the Calling Search Space drop-down list, choose DNACSS1.

**Step 5** From the Device Time Zone drop-down list box, choose Greenwich Mean Time (GMT); Dublin, Edinburgh, London, Lisbon.

**Step 6** From the Time Zone drop-down list, choose (GMT+05:30): Bombay, Calcutta, Madras, New Delhi, Colombo.

**Step 7** From the Date drop-down list boxes, choose 2004, Jun, and 15.

**Step 8** From the Time drop-down list boxes, choose 15:30:0:0.

**Step 9** Click **Do Analysis**.

**Step 10** The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 11** Click **Expand All** to expand all the nodes in the window and view all values or click **Collapse All** to close all the nodes in the window.

**Note** When the Dialed Number Analyzer Results window is first displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

### Analysis Results for Example 5

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS = DNACSS1
AAR Group Name =
AARCSS =
Dialed Digits = 36201
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = 36201
Partition = DNAPartition1
Time Schedule = DNATimeSchedule1
Called Party Number = 36201
Time Zone = (GMT) Greenwich Mean Time; Dublin, Edinburgh, London, Lisbon

InterDigit Timeout = NO
Provide Outside Dial Tone = NO
Call Flow
Directory Number :DN= 36201
Partition = DNAPartition1
Call Classification = OnNet
Forwarding Information
   ForwardAll : DN = VoiceMail = No CSS =
```

```
   ForwardBusy
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   ForwardNoAnswer
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   ForwardNoCoverage
      Internal : DN = VoiceMail = No CSS =
      External : DN = VoiceMail = No CSS =
   CFDF : DN = VoiceMail = No CSS =
   Pickup Group Number =
Device :Type= Cisco 7960
   Device Status = UnKnown
   Device Name = SEP000000036201
   Ignore Presentation Indicators = Disabled
   Alerting Name =
   Do Not Disturb(DND)
      DND Status = Disabled
      DND Option = Ringer Off
      DND Incoming Call Alert =
      DND Timeout (minutes) = 0
   Automated Alternate Routing (AAR)
      AAR Group Name =
      AAR Calling Search Space =
      AAR VoiceMail Status = Disabled
      AAR Destination Mask =
      AAR Prefix Digits =
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

## Example 6

This example shows how SIP analysis settings display in the analysis results when SIP route pattern is configured with domain routing. This example assumes the following setup in Cisco Unified Communications Manager:

Pattern Usage = Domain Routing

Pattern = cisco.com

Route Partition = None

SIP Trunk = SIPTrunk

Calling Line ID Presentation = Default

Calling Line Name Presentation = Default

Connected Line ID Presentation = Default

Connected Line Name Presentation = Default

Use the following procedure to run this example.

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Analyzer**.
The Analyzer window is displayed.

**Step 2** In the Calling Party field, enter a calling party number (1000 is displayed by default).

**Step 3** Check the checkbox corresponding to SIP Analysis and choose Domain Route.

**Step 4** In the Dialed Digits field, enter sip:1001@cisco.com where, cisco.com represents the gateway mapped to the SIP route pattern through which the call is directed out. 1001 represents the destination address within the other network to the destination where the SIP call gets routed out from the SIP trunk.

**Note** Make sure that you check the checkbox corresponding to SIP analysis before entering Dialed Digits information. If the checkbox is not checked, the Dialed Digits field accepts only numerical values, A–D, a–d, #, and *.

**Step 5** From the Calling Search Space drop-down list, choose None.

**Step 6** From the Device Time Zone drop-down list box, choose Greenwich Mean Time (GMT); Dublin, Edinburgh, London, Lisbon.

**Step 7** From the Time Zone drop-down list, choose (GMT+05:30): Bombay, Calcutta, Madras, New Delhi, Colombo.

**Step 8** From the Date drop-down list boxes, choose 2005, Nov, and 24.

**Step 9** From the Time drop-down list boxes, choose 15:30:0:0.

**Step 10** Click **Do Analysis**.

**Step 11** The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 12** Click **Expand All** to expand all the nodes in the window and view all values or click **Collapse All** to close all the nodes in the window.

**Note** When the Dialed Number Analyzer Results window first is displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

**Note** The analysis results are based only on configuration settings that are available in Cisco Unified Communications Manager database. For Gateway outbound calls, call details might differ depending on the Gateway's settings

### Analysis Results for Example 6

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS =
AAR Group Name =
AARCSS =
Dialed Digits = sip:1001@cisco.com
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = ([mM][oO][cC].[oO][cC][sS][iI][cC])
Partition =
Time Schedule =
Called Party Number =
```

```
Time Zone =
Call Classification = OnNet
InterDigit Timeout = NO
Device Override = Disabled
Outside Dial Tone = NO
Call Flow
RouteDomainPattern :Pattern= ([mM][oO][cC].[oO][cC][sS][iI][cC])
Positional Match List =
Calling Party Transformations
External Phone Number Mask = NO
Calling Party Mask =
Prefix =
CallingLineId Presentation = Default
CallingName Presentation = Default
Calling Party Number = 1000
ConnectedParty Transformations
ConnectedLineId Presentation = Default
ConnectedName Presentation = Default
Called Party Transformations
Called Party Mask =
Discard Digits Instruction =
Prefix =
Called Number =
Device :Type= SIPTrunk
End Device Name = SIPTrunk
PortNumber =
Device Status = UnKnown
Automated Alternate Routing (AAR)
   AAR Group Name =
   AAR Calling Search Space =
   AAR VoiceMail Status = Disabled
   AAR Destination Mask =
   AAR Prefix Digits =
Call Classification = Use System Default
Calling Party Selection = Originator
CallingLineId Presentation = Default
CallerID DN =
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

## Example 7

This example shows how SIP analysis settings display in the analysis results when SIP route pattern is configured with IP address routing. This example assumes the following setup in Cisco Unified Communications Manager:

Pattern Usage = IPAddress Routing

Pattern = 10.77.21.22

Route Partition = None

SIP Trunk = SIPTrunk

Calling Line ID Presentation = Default

Calling Line Name Presentation = Default

Connected Line ID Presentation = Default

Connected Line Name Presentation = Default

Use the following procedure to run this example.

### Procedure

**Step 1** Access Dialed Number Analyzer and choose **Analysis** > **Analyzer**.
The Analyzer window is displayed.

**Step 2** In the Calling Party field, enter a calling party number (1000 is displayed by default).

**Step 3** Check the checkbox corresponding to SIP Analysis and choose IP Route.

**Step 4** In the Dialed Digits field, enter sip:1001@10.77.21.22 where, 10.77.21.22 represents the gateway mapped to the SIP route pattern through which the call is directed out. 1001 represents the destination address within the other network to the destination where the SIP call gets routed out from the SIP trunk.

**Note** Make sure that you check the checkbox corresponding to SIP analysis before entering Dialed Digits information. If the checkbox is not checked, the Dialed Digits field accepts only numerical values, A–D, a–d, #, and *.

**Step 5** From the Calling Search Space drop-down list, choose None.

**Step 6** From the Device Time Zone drop-down list box, choose Greenwich Mean Time (GMT); Dublin, Edinburgh, London, Lisbon.

**Step 7** From the Time Zone drop-down list, choose (GMT+05:30): Bombay, Calcutta, Madras, New Delhi, Colombo.

**Step 8** From the Date drop-down list boxes, choose 2005, Nov, and 15.

**Step 9** From the Time drop-down list boxes, choose 15:30:0:0.

**Step 10** Click **Do Analysis**.

**Step 11** The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 12** Click **Expand All** to expand all the nodes in the window and view all values or click **Collapse All** to close all the nodes in the window.

**Note** When the Dialed Number Analyzer Results window first is displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

**Note** The analysis results are based only on configuration settings that are available in Cisco Unified Communications Manager database. For Gateway outbound calls, call details might differ depending on the Gateway's settings

### Analysis Results for Example 7

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS =
AAR Group Name =
AARCSS =
```

```
Dialed Digits = sip:1001@10.77.21.22
Match Result = RouteThisPattern
Matched Pattern Information
Pattern = (00001010010011010001010100010110)
Partition =
Time Schedule =
Called Party Number =
Time Zone =
Call Classification = OnNet
InterDigit Timeout = NO
Device Override = Disabled
Outside Dial Tone = NO
Call Flow
RouteIPNetPattern :Pattern= (00001010010011010001010100010110)
Positional Match List =
Calling Party Transformations
External Phone Number Mask = NO
Calling Party Mask =
Prefix =
CallingLineId Presentation = Default
CallingName Presentation = Default
Calling Party Number = 1000
ConnectedParty Transformations
ConnectedLineId Presentation = Default
ConnectedName Presentation = Default
Called Party Transformations
Called Party Mask =
Discard Digits Instruction =
Prefix =
Called Number =
Device :Type= SIPTrunk
End Device Name = SIPTrunk
PortNumber =
Device Status = UnKnown
Automated Alternate Routing (AAR)
   AAR Group Name =
   AAR Calling Search Space =
   AAR VoiceMail Status = Disabled
   AAR Destination Mask =
   AAR Prefix Digits =
Call Classification = Use System Default
Calling Party Selection = Originator
CallingLineId Presentation = Default
CallerID DN =
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

## Example 8

This example shows how to use the multiple analyzer feature to perform multiple analysis and bulk testing of dial plans.

Create a CSV file by using the Create CSV File for Multiple Analysis, on page 30 or Create Text File for Multiple Analysis, on page 32.

For this example, the CSV file should contain the following three lines for the fields - Calling Party Number, Dialed Digit, Device Time Zone, Time Zone, Date for Analysis, Time for Analysis:

1000,20,,4,37,2005-Jun-9,3:00:59,

1000,30,,4,37,2005-Jun-9,3:00:59,

1000,40,CSS1,4,37,2005-Jun-9,3:00:59,

Use the following procedure to run this example:

### Procedure

**Step 1** Choose **Analysis** > **Multiple Analyzer**

**Step 2** Choose **Upload/Download Input Files** from the drop-down list box in the upper, right corner of the window and click **Go**.

**Step 3** The Upload/Download Input Files window is displayed.

**Step 4** To upload input files, enter the directory where the CSV file is stored or use the **Browse** button to choose the directory.

**Step 5** Click **Upload File**. The CSV file uploads to the server.

**Note** On the server, the uploaded files get stored in the results directory. The results directory can be accessed from the CLI as file list activelog /tomcat/logs/dna/Results. You can collect and view trace files by using the trace and log central option in the Real-Time Monitoring Tool (RTMT). For more information, see *Cisco Unified Real-Time Monitoring Tool Administration Guide*.

**Step 6** Choose **Analysis** > **Multiple Analyzer**

**Step 7** From the File Name drop-down list box, chose the CSV file that you want to analyze.

**Step 8** Click **Do Analysis**. The analysis results display in a separate window called Multiple Analyzer Results. This window is displayed concise information to determine if the pattern can be routed.
To view the detailed analysis for each row of results, click **Details**.

**Step 9** The results display in a new window that is called Dialed Number Analyzer Results window. The Results Summary section expands and shows summary information.

**Step 10** To expand all the nodes in the window and view all values, click **Expand All** or to close all the nodes in the window, click **Collapse All**.

**Note** When the Dialed Number Analyzer Results window is first displayed, both Expand All and Collapse All buttons are enabled.

See the following for the results.

### Analysis Results for Example 8

Results for the first line of input data in the uploaded CSV file

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS =
```

```
AAR Group Name =
AARCSS =
Dialed Digits = 20
Match Result = BlockThisPattern
Called Party Number =
Matched Pattern Information
Pattern =
Partition =
Pattern Type =
Time Zone =
Outside Dial Tone = NO
Call Flow
Note: Information Not Available
Alternate Matches
Note: Information Not Available
```

Results for the second line of input data in the uploaded CSV file

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS =
AAR Group Name =
AARCSS =
Dialed Digits = 30
Match Result = BlockThisPattern
Called Party Number =
Matched Pattern Information
Pattern =
Partition =
Pattern Type =
Time Zone =
Outside Dial Tone = NO
Call Flow
Note: Information Not Available
Alternate Matches
Note: Information Not Available
```

Results for the third line of input data in the uploaded CSV file

```
Results Summary Calling Party Information
Calling Party = 1000
Partition =
Device CSS =
Line CSS =
AAR Group Name =
AARCSS =
Dialed Digits = 40
Match Result = BlockThisPattern
Called Party Number =
Matched Pattern Information
Pattern =
Partition =
Pattern Type =
Time Zone =
Outside Dial Tone = NO
Call Flow
```

```
Note: Information Not Available
Alternate Matches
Note: Information Not Available
```

### Related Topics

Related Topics, on page 68

# Results Summary

The Results Summary section of the analysis results provides a summary of the dialed digits analysis results and displays Calling Party Information and Matched Pattern Information.

**Note** Fields that do not contain a description in this section display data as specified in Cisco Unified Communications Manager Administration. For information about these fields, see the Cisco Unified Communications Manager Administration Guide.

### Calling Party Information

Calling Party - The calling party number after all the transformations are applied.

Partition - The partition to which the final calling party belongs.

Device CSS - The calling search space (CSS) that is associated with the calling device.

Line CSS - The CSS that is associated with the calling party number.

AAR Group Name - The automated alternate routing (AAR) group to which this pattern belongs.

AARCSS - The calling search space that the calling party device uses when performing AAR.

Dialed Digits - The digits that the user entered in the Dialed Digits field.

Match Result - Specifies whether the call is routed or blocked. RouteThisPattern or BlockThisPattern is displayed.

**Note** Line- and device- specific information is displayed in the results when you perform analysis by using **Analysis** > **Phones**, **Analysis** > **Gateways** and **Analysis** > **Trunks** windows because a specific device was chosen as a calling entity. When you perform analysis from the **Analysis** > **Analyzer** window, you enter a calling party number that is not linked to a device that is configured in Cisco Unified Communications Manager. Line- and device- specific information does not display in the Results Summary section of the analysis results that are obtained by using this procedure.

### Matched Pattern Information

- Pattern - Specifies the ultimate pattern matches.
- Partition - Specifies the partition where this ultimate pattern exists.
- Time Schedule - Specifies the name of the time schedule that was chosen for the partition where this pattern exists.

Pattern Type - The Meet-Me Conference Number, Call Park Code Number, and Call Pickup Number display. This field is displayed only when the dialed digits match a feature pattern type.

Called Party Number - The final called party number.

Time Zone - Time zone information of the device that is associated with the matched pattern.

Interdigit Timeout - The time delay in routing the call to the final device.

End Device - The final device to which the call was routed. This field is displayed only if the dialed digits match a route pattern.

OffNetPattern (OutsideDialTone) - OffNet/OnNet, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.

**Note** For intercept patterns, device-specific information does not display, and instead, a tag that indicates the Pattern Type is displayed.

### Related Topics

Related Topics, on page 68

# Call Flow Details

The Call Flow section of the results provides detailed information about all the stages that a call goes through, such as translation patterns, route patterns, route lists, route groups, and end devices.

Use the following topics to understand the results that display in the Call Flow section:


- Translation Pattern, on page 60
- Route Pattern, on page 61
- Hunt Pilot, on page 62
- Directory Number, on page 63
- Device Information, on page 63


**Note** Fields that do not contain a description in this section display data as specified in Cisco Unified Communications Manager Administration. For information about these fields, see the Cisco Unified Communications Manager Administration Guide.

- Calling Party Transformation - The transformation that is specific to the end device such as the following transformations:
- Pretransform Calling Party Number - The calling party number before the calling party transformation settings of the End Device are applied.
- Calling Party Selection - The selection that can be Originator/Last Redirect Number, and so on.
- Calling Party Presentation

- Calling Party Number - The calling party number after the calling party transformation settings of the End Device are applied.

## Translation Pattern

The Translation Pattern section provides information about dialed digits, if the dialed digits match a configured translation pattern.

The following fields display:

- Hunt Pilot :Pattern - The hunt pilot pattern that is matched.
- Positional Match List - The position of the dialed digits in association with a pattern.
- DialPlan - The Numbering Plan in which this translation pattern resides.
- Route Filter - The route filter that is applied to the dialed digits.
    - Filter Name - The Route Filter name that is associated with the Translation Pattern.
    - Filter Clause - The Route Filter Clause that is associated with the Translation Pattern.
        - Pretransform Calling Party Number - The calling party number before the calling party transformation settings of the Translation Pattern are applied.
        - Pretransform Called Party Number - The called party number before the called party transformation settings of the Translation Pattern are applied.
        - Calling Party Transformations - The calling party transformation settings of the Translation Pattern.
    - External Phone Number Mask - Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.
    - Calling Party Mask
    - Prefix
    - Calling Party Presentation
    - Calling Party Number - The calling party number after the calling party transformation settings of the Translation Pattern are applied.
        - Called Party Transformations - The called party transformation settings of the Translation Pattern, such as the following settings:
    - Called Party Mask
    - Discard Digit Instructions
    - Prefix
    - Called Number - The calling party number after the calling party transformation settings of the Translation Pattern are applied.

## Route Pattern

The Route Pattern subsection provides information about route pattern details for the dialed digits, if the dialed digits match a route pattern.

- Route pattern:Pattern - The matched route pattern.
- Positional Match List - The position of the dialed digits in association with a pattern.
- DialPlan - The Numbering Plan in which this route pattern resides.
- Route Filter
    - Filter Name - The Route Filter name that is associated with the Route Pattern.
    - Filter Clause - The Route Filter Clause that is associated with the Route Pattern.
        - Require Forced Authorization Code - Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.
        - Authorization Level - The authorization level that is specified in Cisco Unified Communications Manager Administration.
        - Require Client Matter Code - Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.
        - Pretransform Calling Party Number - The calling party number before the calling party transformation settings of the Route Pattern are applied.
        - Pretransform Called Party Number - The called party number before the called party transformation settings of the Route Pattern are applied.
        - Calling Party Transformations. Displays the calling party transformation settings of the Route Pattern, such as the following settings:
    - External Phone Number Mask - Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.
    - Calling Party Mask
    - Prefix
    - Calling Party Presentation
    - Calling Party Number - The calling party number after the calling party transformation settings of the Route Pattern are applied.
        - Called Party Transformations - The called party transformation settings of the Route Pattern, such as the following settings:
    - Called Party Mask
    - Digit Discarding Instructions
    - Prefix
    - Called Number - The calling party number after the calling party transformation settings of the Route Pattern are applied.

## Hunt Pilot

This section includes information about Hunt Lists, Line Groups, and Hunt Forward Settings.

- Hunt List: HuntList Name - The name of the Route List.
- LineGroup: LineGroup Name - The name of the Route Group that is contained within this Route List.
- Pretransform Calling Party Number - The calling party number before the calling party transformation settings of the Route Group are applied.
- Pretransform Called Party Number - The called party number before the called party transformation settings of the Route Group are applied.
- Calling Party Transformations - The calling party transformation settings of the Route Group, such as the following settings:
    - External Phone Number Mask - Displays Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.
    - Calling Party Mask
    - Prefix
    - Calling Party Number - The calling party number after the calling party transformation settings of the Route Group are applied.
        - Called Party Transformations - The called party transformation settings of the Route Group such as the following settings:
    - Called Party Mask
    - Discard Digit Instructions
    - Prefix
    - Called Number - The calling party number after the calling party transformation settings of the Route Group are applied
        - Hunt Forward Settings
    - Forward Hunt No Answer - The call forwarding settings when a hunt pilot is matched.

      Use Personal Preferences - Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.

      Destination - The destination number for the call forward when there is no answer.

      Calling Search Space - The Calling Search Space where the forward destination, either Busy or No Answer, whichever is applicable, is present.
    - Forward Hunt Busy -

      Use Personal Preferences - Yes/No, depending on whether this field is checked or unchecked in Cisco Unified Communications Manager Administration.

      Destination - The destination number for the call forward when there is no answer.

      Calling Search Space - The Calling Search Space where the forward destination, either Busy or No Answer, whichever is applicable, is present.

- Maximum Hunt Timer - The value that is specified in the Maximum Hunt Timer field in Cisco Unified Communications Manager Administration.

## Directory Number

The Directory Number (DN) subsection provides details about the DN, if the dialed digits match a DN number.

- Directory Number: DN - The directory number.
  - Partition - The partition in which the DN resides.
  - Device Location
    - Forwarding Information - The forwarding settings that are associated with the DN. The forwarding behavior differs depending on whether the call is from an internal or external user. The following forwarding settings display:
  - Forward All: DN
  - Forward Busy

    Internal: DN

    External: DN
  - Forward No Answer

    Internal: DN

    External: DN
  - Forward No Coverage

    Internal: DN

    External: DN

## Device Information

- Device:Type - The type of device.
  - End Device Name - The name of the endpoint device.
  - Device Status - The status of the end device as Registered/Unregistered/Unknown.
  - Caller ID DN - The mask that is used to format the caller ID on outbound calls from a trunk.
    - Inbound Fast Start - Enabled/Disabled depending on whether the Inbound Fast Start field is checked or unchecked in Cisco Unified Communications Manager Administration.
    - Outbound Fast Start - Enabled/Disabled depending on whether the Outbound Fast Start field is checked or unchecked in Cisco Unified Communications Manager Administration.
    - Codec For Outbound FastStart - The value that is specified in the Codec for Outbound FastStart in Cisco Unified Communications Manager Administration.

- Call Classification - OffNet/OnNet/Use System Default/None, depending on the value that is chosen in Cisco Unified Communications Manager Administration.
- Tunneled Protocol - QSIG/none depending on the value that is configured in the Tunneled Protocol field in Cisco Unified Communications Manager Administration.
- Ignore Presentation Indicators - Presentation settings of the calling party that must be ignored for internal calls.
- Alerting Name - The name of the alerting party that is chosen for a phone in Cisco Unified Communications Manager.
- Dual Mode - Enabled/Disabled, depending on option that was chosen in Cisco Unified Communications Manager Administration.

### Do Not Disturb (DND)

- DND Status - Enabled/Disabled based on the status of DND.
- DND Option - The option to have DND ringer on or off.
- DND Incoming Call Alert - No Beep/Flash notification/Beep only/Flash only depending on the type of alert chosen when the ringer in off.
- DND Timeout (minutes) - The time interval after which the phone receives a reminder tone that DND is on.

### Automated Alternate Routing (AAR)

AAR Group Name - The AAR Group to which this device belongs.

AAR Calling Search Space - The AAR Calling Search Space where this end device belongs.

AAR VoiceMail Status - Enabled/Disabled. The AAR voice mail status of the device.

AAR Destination Mask - The mask that is used to format the AAR destination.

AAR Prefix Digits - The prefix digits that are used for automated alternate routing within this AAR group.

### Intercom DN Pattern

- CSS - The calling search space of the intercom DN.
- Presence Group - The presence group to which the intercom DN belongs.

See the Related Topics, on page 68.

## Alternate Matches

This section provides all the alternate matches that the analysis process looked up while finding the best match for the dialed digits.

**Note** Fields that do not contain a description in this section display data as specified in Cisco Unified Communications Manager Administration. For information about these fields, see the Cisco Unified Communications Manager Administration Guide.

The output is displayed in the following format:

- Partition : Name - The partition where the route pattern exists.
- Pattern
  - Route Pattern - The name of the route pattern.
  - Pattern Type - The pattern type, either Translation or Enterprise.
  - Network Location - Indicates the network location of the route pattern, either OffNet or OnNet.
  - Communications Manager Device Type - Specifies whether the device matched is an Access Device or a User Device.

**Note** Other parameters may display, depending on the settings that are associated with the pattern.

### Related Topics

Related Topics, on page 68

# Dump Discard Digit Instructions

Each Cisco Unified Communications Manager dial plan configuration specifies called party transformation information that includes discard digit instructions (DDIs). Dialed Number Analyzer allows you to view the DDIs that are specified for the Cisco Unified Communications Manager dial plan that you are analyzing.

The tool also allows you to view all the dialing patterns that are associated with gateways and phones that are configured in the Cisco Unified Communications Manager dial plan that you are analyzing. Use the following procedure to view DDIs or dialing pattern information that is specified for a dial plan.

### Procedure

**Step 1** Choose **Analysis** > **Dump DA Information**.
The Dump Options window is displayed.

**Step 2** In the Select Dump Option field, click the **Discard Digit Instructions**, **Dialing Forest** or **Learned Patterns Dialing Forest** radio button.

**Step 3** In the Select Viewing Option field, do one of the following actions:

a) To view the discard digit instructions or dialing forest information in the browser window, click the **Open File in Browser** button.

b) To save the discard digit instructions or dialing forest information to a file, click the **Save File** radio button.

**Step 4** Click **Finish**.

If you chose to view the discard digit instructions or dialing forest information about the browser, the results display in the same window.

If you chose to save the discard digit instructions or dialing forest information to a file, the File Download dialog box is displayed. Use the following procedure to save the file:

a) Click **Save**.
The Save As dialog is displayed. Browse to a location on your PC where you want to save the file.

b) Click **Save**.
The result gets saved as a text file called DialPlanForest.txt or DiscardDigitInstructions.txt, depending on whether you chose discard digit instructions or dialing forest.

### Related Topics

Related Topics, on page 68

# View Output Files

When you store results of analysis that you perform by using phones, gateways, or trunks, the results get saved as XML files on your PC. You can retrieve and view these output files on the browser by using Dialed Number Analyzer. Use the following procedure to view output files.

### Procedure

**Step 1** Choose **Analysis** > **View File**.

**Step 2** The View File window is displayed.

**Step 3** In the Select a File to View field, click **Browse**. Browse to the location on your PC where the required output file is located and choose it. An example of an output file follows.
DialedNumberAnalyzerOutput_1001.xml

where 1001 represents the dialed digits that are specified during analysis.

**Step 4** Click **View File**.
The output file is displayed in a new window called Dialed Number Analyzer Results.

The Results Summary section expands to show the summary. Click the plus icon to expand the required results section to view the details.

**Step 5** Close the Dialed Number Analyzer Results window after viewing the results.

### Related Topics

Related Topics, on page 68

# Enable Trace Configuration Files

Trace files provide a means of tracking problems in the functioning of a tool. The system writes trace files for Dialed Number Analyzer to the server on which Dialed Number Analyzer is installed. You can choose to enable or disable the writing of trace files feature from the Service Control window in Dialed Number Analyzer. This section describes the procedure to enable and disable the writing of trace files.

Use the following procedure to enable the feature.

### Procedure

**Step 1** In Cisco Unified Communications Manager Serviceability, choose **Trace** > **Trace Configuration**.
The Trace Configuration window is displayed.

**Step 2** Choose the server from the Server drop-down list box.

**Step 3** Choose Cisco Dialed Number Analyzer from the Configured Services drop-down list box.

**Step 4** To activate the trace feature, click the Trace On checkbox.

**Step 5** In the Trace Filter Settings, choose the trace level that you want to set from the Debug Trace Level drop-down list box. Click the desired debug trace level as described in the following table.

***Table 2: Debug Trace Levels***

| Level | Description |
|---|---|
| Fatal | Traces very severe error events that may cause the application to abort. |
| Error | Traces alarm conditions and events. Used for all traces that are generated in abnormal path. Uses minimum amount of CPU cycles. |
| Warn | Traces potentially harmful situations. |
| Info | Traces the majority of servlet problems and has a minimal effect on system performance. |
| Debug | Traces all State Transition conditions plus media layer events that occur during normal operation.<br>Trace level that turns on all logging. |

**Step 6** In the Trace Output Settings, enter values for the maximum number of files, maximum number of lines per file, and maximum number of minutes per file.

**Step 7** Click **Save**.
The system enables the feature, and the trace files get written to the following location on the server:

activelog/tomcat/logs/dna/log4j

The trace files for the Multiple Analyzer feature get written to the following location on the server:

activelog/tomcat/logs/dna/Results

The file is displayed in the following format:

DNA_indexNo.txt

where <indexNo> ranges from 1- 250.

After you configure information that you want to include in the trace files, you can collect and view trace files by using the trace and log central option in the Real-Time Monitoring Tool (RTMT). For more information, see *Cisco Unified Real-Time Monitoring Tool Administration Guide*.

Use the following procedure to disable the writing trace files feature.

**Step 8** In Cisco Unified Communications Manager Serviceability, choose **Trace** > **Trace Configuration**.
The Trace Configuration window is displayed.

**Step 9** Choose the server from the Server drop-down list box.

**Step 10** Choose Cisco Dialed Number Analyzer from the Configured Services drop-down list box.

**Step 11** To deactivate the trace feature, uncheck the Trace On checkbox.

**Step 12** Click **Save**.
This action means that the feature is disabled.

### Related Topics

Related Topics, on page 68

# Related Topics


- Enable Database Synchronization, on page 9
- Perform Simple Analysis, on page 11
- Phone Analysis, on page 14
- Gateway Analysis, on page 17
- Trunk Analysis, on page 27
- Multiple Analysis, on page 30
- Analysis Output, on page 37
- Dump Discard Digit Instructions, on page 65
- View Output Files, on page 66
- Enable Trace Configuration Files, on page 67

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