Cisco Unified Communications Manager Dialed Number Analyzer Guide 8.6(1)

Software Release 8.6(1)

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Preface

This section explains the objectives, intended audience, and organization of this publication and describes the conventions that convey instructions and other information.

This section provides the following information:

- Purpose, page vii
- Audience, page vii
- Organization, page viii
- Related Documentation, page viii
- Conventions, page viii
- Obtaining Documentation, Obtaining Support, and Security Guidelines, page x
- Cisco Product Security Overview, page xi
- Obtaining Technical Assistance, page xii
- Obtaining Additional Publications and Information, page xiii

Purpose

The *Cisco Unified Communications Manager Dialed Number Analyzer Guide 8.6(1)* 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 8.6(1)* 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
Chapter 1	Introduction
Chapter 2	Accessing Dialed Number Analyzer
Chapter 3	Analyzing Cisco Unified Communications Manager Dial Plan Configuration

Related Documentation

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

- *Installing Cisco Unified Communications Manager 8.0(1)*
- *Release Notes for Cisco Unified Communications Manager 8.0(1)*
- *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.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Convention	Description
`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.
➔	This pointer highlights an important line of text in an example.
^	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.**

Obtaining Documentation, Obtaining Support, and Security Guidelines

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.

Cisco.com

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.

Cisco Product Security Overview

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

Reporting Security Problems in Cisco Products

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*.

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:

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

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

Obtaining Technical Assistance

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.

Cisco Technical Support Website

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

Submitting a Service Request

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

Definitions of 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.

Obtaining Additional Publications and 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

This chapter presents Cisco Unified Communications Manager Dialed Number Analyzer concepts and discusses key features. Use the following topics to understand Dialed Number Analyzer:

- Dialed Number Analyzer, page 1-1
- Key Features, page 1-1
- Accessibility Compliance, page 1-2
- Analysis, page 1-2
- Digit Discard Instructions and Dialing Patterns, page 1-3
- Analysis Output, page 1-3
- Related Topics, page 1-3

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.

Additional Information

See the"Related Topics" section on page 1-3.

Key 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.

Additional Information

See the"Related Topics" section on page 1-3.

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.

Additional Information

See the"Related Topics" section on page 1-3.

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.

Additional Information

See the"Related Topics" section on page 1-3.

Digit Discard Instructions and Dialing Patterns

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.

Additional Information

See the"Related Topics" section on page 1-3.

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.

Additional Information

See the"Related Topics" section on page 1-3.

Related Topics

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

Additional Cisco Documentation

- *Installing Cisco Unified Communications Manager*
- *Cisco Unified Communications Manager System Guide*
- *Cisco Unified Communications Manager Administration Guide*
- *Cisco Unified Communications Manager Serviceability System Guide*
- *Cisco Unified Communications Manager Serviceability Administration Guide*

CHAPTER 2

Accessing Dialed Number Analyzer

Dialed Number Analyzer gets installed as part of the Cisco Unified Communications Manager. See *Cisco Unified Communications Manager Administration Guide* for more information.

Dialed Number Analyzer installs as a feature service on Cisco Unified Communications Manager. This chapter describes how to activate, deactivate, start, and stop the service and how to sign in to Dialed Number Analyzer.

Use the following topics to access Dialed Number Analyzer and control the service:

- Logging On, page 2-1
- Activating Dialed Number Analyzer Service, page 2-2
- Starting/Stopping/Restarting Dialed Number Analyzer, page 2-2
- Deactivating Dialed Number Analyzer, page 2-3

Logging 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.

Additional Information

See the "Related Topics" section on page 2-4.

Activating 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 "Starting/Stopping/Restarting Dialed Number Analyzer" section on page 2-2 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.

Additional Information

See the "Related Topics" section on page 2-4.

Starting/Stopping/Restarting 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 "Activating Dialed Number Analyzer Service" section on page 2-2, 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.

Additional Information

See the "Related Topics" section on page 2-4.

Deactivating 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.

Additional Information

See the "Related Topics" section on page 2-4.

Related Topics

- Logging On, page 2-1
- Activating Dialed Number Analyzer Service, page 2-2
- Starting/Stopping/Restarting Dialed Number Analyzer, page 2-2
- Deactivating Dialed Number Analyzer, page 2-3

Additional Cisco Documentation

- *Installing Cisco Unified Communications Manager*
- *Cisco Unified Communications Manager System Guide*
- *Cisco Unified Communications Manager Administration Guide*
- *Cisco Unified Communications Manager Serviceability System Guide*
- *Cisco Unified Communications Manager Serviceability Administration Guide*

CHAPTER 3

Analyzing Cisco Unified Communications Manager 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:

```
Check if the DNA service is running. If the DNA service is running, then Dialed
Number Analyzer is still initializing. Wait for a few minutes for Dialed Number
Analyzer to initialize and try again.
```

Use the following topics to understand how to use the Service Control window and how to use Dialed Number Analyzer to analyze a Cisco Unified Communications Manager dial plan configuration:

- Database Synchronization, page 3-2
- Disabling Database Synchronization, page 3-2
- Learned Patterns, page 3-3
- Simple Analysis by Using the Analyzer Window, page 3-4
- Analysis by Using Phones, page 3-5
- Analysis by Using Gateways, page 3-9
- Analysis by Using Trunks, page 3-21
- Analysis by Using Multiple Analyzer, page 3-25
- Understanding Analysis Output, page 3-31
- Dumping Digit Discard Instructions and Dialing Patterns, page 3-58
- Viewing Dialed Number Analyzer Output Files, page 3-59
- Trace Configuration Files, page 3-59

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 "Activating Dialed Number Analyzer Service" section on page 2-2.

Additional Information

See the "Related Topics" section on page 3-61.

Disabling 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.

Additional Information

See the "Related Topics" section on page 3-61.

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.

- 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.

- 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.

- 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*.
- Will insert mention of the chapter in the RTMT Guide that explains how to view learned patterns.

Simple Analysis by Using the Analyzer Window

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.

Procedure

Step 1 Choose **Analysis > Analyzer**.

The Analyzer window is displayed. Enter input for the analyzer in this window.

Step 2 In the Calling Party field, enter the calling party digits. You do not have to associate this number with a device.

By default, 1000 is displayed in this field.

Step 3 In the Dialed Digits field, enter the digits that the calling party is to call.

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.

- 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.
- 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.

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.

To save the results, use Steps 9, 10, 11, and 12; otherwise, skip to Step 13.

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 "Viewing Dialed Number Analyzer Output Files" section.

Step 13 Close the DNA Analysis Output window.

Additional Information

See the "Related Topics" section on page 3-61.

Analysis by Using Phones

Dialed Number Analyzer provides a Phones window where you can find and list phones by device name, description, directory number, 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:

- Finding a Phone, page 3-6
- Choosing a Phone Line, page 3-7
- Performing Analysis by Using Phones, page 3-8

Finding a 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:

- Device Name
- Description
- Directory Number
- Calling Search Space
- Device Pool
- Phone Type
- Call Pickup Group
- LSC Status
- Authentication String
- Device Protocol
- 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:

- begins with
- contains
- ends with
- is exactly

- is not empty
- 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 "Choosing a Phone Line" section on page 3-7.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing a 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 "Finding a Phone" 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 "Performing Analysis by Using Phones" section on page 3-8.

Additional Information

See the "Related Topics" section on page 3-61.

Performing Analysis by Using Phones

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 "Finding a Phone" 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 "Choosing a Phone Line" section.

Step 3 In the Dialed Digits field, enter the digits you want to dial from the chosen phone line.

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.

- 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.

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.

To save the results, use Steps 7, 8, 9, and 10; otherwise, skip to Step 11.

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 "Viewing Dialed Number Analyzer Output Files" 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 "Analysis by Using Phones" section.

Additional Information

See the "Related Topics" section on page 3-61.

Analysis by Using Gateways

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:

- Finding a Gateway, page 3-10
- Choosing Gateway Endpoints and Entering Analysis Input, page 3-11
- Performing Analysis by Using Gateways, page 3-20

Finding a 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:

- Name
- Description
- DN/Route Pattern
- Calling Search Space Name
- Device Pool Name
- Route Group Name
- 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:

- begins with
- contains
- is exactly
- ends with
- is not empty
- 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**.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing Gateway Endpoints and Entering Analysis Input

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 "Finding a Gateway" 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:

- Cisco IOS MGCP Gateway
- Non-IOS MGCP Gateway
- Cisco IOS H.323 Gateway
- Analog Access Gateway
- Cisco VG248 Analog Phone Gateway
- 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:

- Choosing Cisco IOS MGCP / Cisco IOS SCCP Gateways, page 3-12
- Choosing Non-IOS MGCP Gateways, page 3-14
- Choosing Cisco IOS H.323 Gateways, page 3-16
- Choosing Analog Access Gateways, page 3-17
- Choosing Cisco VG248 Analog Phone Gateways, page 3-18

Choosing Cisco IOS MGCP / Cisco IOS SCCP 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

Step 1 Find the gateway that you want to use by using the procedure in the "Finding a Gateway" 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.

Procedure 1

- 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 "Performing Analysis by Using Gateways" section to complete the analysis procedure.

Procedure 2

- 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 "Performing Analysis by Using Gateways" 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**.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing Non-IOS MGCP 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 "Finding a Gateway" 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.

- 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.

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

Step 8 Follow the steps in "Performing Analysis by Using Gateways" 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.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing Cisco 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 "Finding a Gateway" 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.

- 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.

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

Step 8 Use the steps in "Performing Analysis by Using Gateways" 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.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing 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 "Finding a Gateway" 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.

- 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.

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

Step 9 Use the steps in "Performing Analysis by Using Gateways" 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.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing Cisco VG248 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 "Finding a Gateway" 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.

- 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.

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

Step 9 Use the steps in "Performing Analysis by Using Gateways" 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.

Additional Information

See the "Related Topics" section on page 3-61.

Performing Analysis by Using Gateways

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 "Finding a Gateway" 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:

- Choosing Cisco IOS MGCP / Cisco IOS SCCP Gateways, page 3-12
- Choosing Non-IOS MGCP Gateways, page 3-14
- Choosing Cisco IOS H.323 Gateways, page 3-16
- Choosing Analog Access Gateways, page 3-17
- Choosing Cisco VG248 Analog Phone Gateways, page 3-18

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.

- 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.

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.

To save the results, use Steps 5, 6, 7 and 8; otherwise skip to Step 9.

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 "Viewing Dialed Number Analyzer Output Files" section.

Step 9 Close the DNA Analysis Output window.

Additional Information

See the "Related Topics" section on page 3-61.

Analysis by Using Trunks

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:

- Finding a Trunk, page 3-21
- Choosing a Trunk, page 3-23
- Performing Analysis by Using Trunks, page 3-23

Finding a 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:

- Device Name

- Description
- Calling Search Space
- Route Pattern
- Device Pool
- Route Group
- 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:

- begins with
- contains
- ends with
- is exactly
- is not empty
- 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**.

Additional Information

See the "Related Topics" section on page 3-61.

Choosing a 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 "Finding a Trunk" 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.

Additional Information

See the "Related Topics" section on page 3-61.

Performing Analysis by Using Trunks

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 "Finding a Trunk" section.

Step 2 From a list of discovered trunks, choose the trunk that you require by using the steps in the "Choosing a Trunk" 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 In the Calling Party field, enter the calling party number.

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 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.

- 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.

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.

To save the results, use Steps 8, 9, 10, and 11; otherwise, skip to Step 12.

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 "Viewing Dialed Number Analyzer Output Files" section.

Step 12 Close the DNA Analysis Output window.

Additional Information

See the "Related Topics" section on page 3-61.

Analysis by Using Multiple Analyzer

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.

- Using DNA Template to Create the CSV Data File for Multiple Analysis, page 3-25
- Creating a Text-Based CSV File for Multiple Analysis, page 3-26
- Uploading Input Files, page 3-29
- Viewing CSV File Content, page 3-29
- Deleting Uploaded CSV Data Files, page 3-30
- Analyzing the Uploaded CSV Data File, page 3-30

Using DNA Template to Create the CSV Data 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, see"Creating a Text-Based CSV File for Multiple Analysis" section on page 3-26.

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 the default values column, the fields Calling Party Number, Dialed Digits, Device Time Zone, Time Zone, Date for Analysis, and Time For Analysis display. Enter the corresponding default values for those fields that need not be changed for each record in the input file.

For example, if you want to analyze data for the date 2004-Dec-12, enter this value in the Date For Analysis default value field or choose this date from the popup calendar. After you export the information in the DNA template to CSV format, this date populates all the rows that are created.

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, enter information in the non-default fields in the corresponding columns.

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.

Additional Information

See the "Related Topics" section on page 3-61.

Creating a Text-Based CSV 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.

- Specify all checkbox values with the Boolean values of True or False.
- Always include comma separators, even if a field is blank.
- An error occurs after you insert a CSV file with blank lines.

See "Multiple Analyzer CSV File Format" section on page 3-27 for information about the CSV data file formats.

Step 3 Save the completed file.

Additional Information

See the "Related Topics" section on page 3-61.

Multiple Analyzer CSV File Format

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 3-1 to determine the index value (1 to 53) corresponding to the time zone for the Device Time Zone and Time Zone fields.

Table 3-1 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
(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

Table 3-1 Device Time Zone Index Values (continued)

Device Time Zone	Index Value
(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
(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
(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.

Additional Information

See the "Related Topics" section on page 3-61.

Uploading 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.

Additional Information

See the "Related Topics" section on page 3-61.

Viewing CSV File Content

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

Use the following procedure to view the CSV file content.

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 "Creating a Text-Based CSV File for Multiple Analysis" section on page 3-26.

Step 3 Click **View File Contents**.

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

Additional Information

See the "Related Topics" section on page 3-61.

Deleting Uploaded CSV Data 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**.

Additional Information

See the "Related Topics" section on page 3-61.

Analyzing the Uploaded CSV Data 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**.

Additional Information

See the "Related Topics" section on page 3-61.

Understanding 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 Results Examples, page 3-31
- Results Summary, page 3-51
- Call Flow Details, page 3-53
- Alternate Matches, page 3-57

Analysis Results 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 Example 3-1 for the results.

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-1 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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 "Finding a Trunk" 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 Example 3-2 for the results.

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-2 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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 Example 3-3 for the results. The results section details only the Call Flow section that includes Hunt List information.

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-3 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.

Additional Information

See the "Related Topics" section on page 3-61.

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 Example 3-4 for the results.

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-4 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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 Example 3-5 for the results.

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-5 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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 Example 3-6 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

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-6 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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 Example 3-7 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

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-7 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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 "Using DNA Template to Create the CSV Data File for Multiple Analysis" section on page 3-25 or "Creating a Text-Based CSV File for Multiple Analysis" section on page 3-26.

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 Communications Manager *Serviceability System 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 Example 3-8 for the results.

Additional Information

See the "Related Topics" section on page 3-61.

Example 3-8 Analysis result 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
```

Additional Information

See the "Related Topics" section on page 3-61.

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.

Additional Information

See the "Related Topics" section on page 3-61.

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, page 3-53
- Route Pattern, page 3-54
- Hunt Pilot, page 3-55
- Directory Number, page 3-56
- Device Information, page 3-56

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.

Additional Information

See the "Related Topics" section on page 3-61.

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.

Additional Information

See the "Related Topics" section on page 3-61.

Dumping Digit Discard Instructions and Dialing Patterns

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:

- To view the discard digit instructions or dialing forest information in the browser window, click the **Open File in Browser** button.
- 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 in Step 2.

Additional Information

See the "Related Topics" section on page 3-61.

Viewing Dialed Number Analyzer 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.

Additional Information

See the "Related Topics" section on page 3-61.

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 Table 3-2.

Table 3-2 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. 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 Communications Manager *Serviceability System Guide*.

Use the following procedure to disable the writing trace files 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 deactivate the trace feature, uncheck the Trace On checkbox.

Step 5 Click **Save**.

This action means that the feature is disabled.

Additional Information

See the "Related Topics" section on page 3-61.

Related Topics

- Database Synchronization, page 3-2
- Simple Analysis by Using the Analyzer Window, page 3-4
- Analysis by Using Phones, page 3-5
- Analysis by Using Gateways, page 3-9
- Analysis by Using Trunks, page 3-21
- Analysis by Using Multiple Analyzer, page 3-25
- Understanding Analysis Output, page 3-31
- Dumping Digit Discard Instructions and Dialing Patterns, page 3-58
- Viewing Dialed Number Analyzer Output Files, page 3-59
- Trace Configuration Files, page 3-59

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