



Cisco CallManager Dialed Number Analyzer Guide

Software Release 4.2 (1)

Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

Customer Order Number:
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Cisco CallManager Dialed Number Analyzer Guide

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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](#)
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- [Organization, page viii](#)
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Purpose

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

Audience

The Cisco CallManager Dialed Number Analyzer Guide provides information to network administrators who administer the Cisco CallManager 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	Installing Cisco CallManager Dialed Number Analyzer
Chapter 3	Accessing Dialed Number Analyzer
Chapter 4	Analyzing Cisco CallManager Dial Plan Configuration

Related Documentation

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

- *Installing Cisco CallManager*
- *Release Notes for Cisco CallManager*
- *Cisco CallManager System Guide*
- *Cisco CallManager Administration Guide*
- *Cisco CallManager Features and Services Guide*
- *Cisco CallManager Serviceability Administration Guide*
- *Cisco CallManager Serviceability System Guide*
- *Troubleshooting Guide for Cisco CallManager*

- *Cisco IP Phone Administration Guide for Cisco CallManager*
- *Cisco IP Phone 7970 Guide*
- *Cisco IP Phone 7970 Administration Guide for Cisco CallManager*
- *Bulk Administration Tool User Guide for Cisco CallManager*

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[]	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.
screen font	Terminal sessions and information the system displays are in <code>screen font</code> .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
→	This pointer highlights an important line of text in an example.

Convention	Description
^	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 any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Obtaining Documentation

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 any 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>



Introduction

This chapter presents Cisco CallManager 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 1-2](#)
- [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

You can install Dialed Number Analyzer as a plug-in to Cisco CallManager. The tool allows you to test a Cisco CallManager dial plan configuration prior to 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 it is deployed.

Additional Information

See the [“Related Topics”](#) section on page 1-3.

Key Features

Cisco Dialed Number Analyzer runs as a service that can be accessed from the server on which it is installed or from a remote PC. It runs on low priority and does not affect Cisco CallManager performance.

Cisco Dialed Number Analyzer allows analysis of inbound and outbound calls in a Cisco CallManager 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.

Analysis

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

Cisco CallManager 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 CallManager 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 displays in the form of an XML file for easy retrieval and use.

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

Additional Information

See the [“Related Topics”](#) section on page 1-3.

Related Topics

- [Installing Cisco CallManager Dialed Number Analyzer, page 2-1](#)
- [Dialed Number Analyzer, page 1-1](#)

- [Key Features, page 1-2](#)
- [Analysis, page 1-2](#)
- [Digit Discard Instructions and Dialing Patterns, page 1-3](#)
- [Analysis Output, page 1-3](#)

Additional Cisco Documentation

- *Installing Cisco CallManager*
- *Cisco CallManager System Guide*
- *Cisco CallManager Administration Guide*
- *Cisco CallManager Serviceability System Guide*
- *Cisco CallManager Serviceability Administration Guide*



Installing Cisco CallManager Dialed Number Analyzer

Dialed Number Analyzer includes a separate executable that is available in Cisco CallManager. You can install Dialed Number Analyzer 4.2 (1) only if Cisco CallManager version 4.2 (1) or later has been installed.

Use the following topics to install and uninstall Dialed Number Analyzer:

- [Installing Cisco CallManager Dialed Number Analyzer, page 2-1](#)
- [Uninstalling Cisco CallManager Dialed Number Analyzer, page 2-3](#)

Installing Cisco CallManager Dialed Number Analyzer

Dialed Number Analyzer 4.2 (1) installs on Cisco CallManager version 4.2 (1) and later. You can install Dialed Number Analyzer on any Cisco CallManager node in a cluster, either Publisher or Subscriber. Install Dialed Number Analyzer preferably on a Publisher. It installs as an NT service on the Cisco CallManager server and can be accessed directly from the server where it is installed or from a remote PC through a web URL.

This section describes how to install the tool on a Cisco CallManager server.

Procedure

- Step 1** Access Cisco CallManager and choose **Application > Install Plugins**.
The Install Plugins window displays.
- Step 2** Locate the Dialed Number Analyzer Plugin.
- Step 3** Click the executable icon for Dialed Number Analyzer Plugin to launch the InstallShield Wizard.
- Step 4** Click **Open**. The InstallShield Wizard for Cisco Dialed Number Analyzer window displays.
- Step 5** Click **Next** at the Welcome to the InstallShield Wizard for Cisco Dialed Number Analyzer window.
The Enter Private Phrase window displays.
- Step 6** Enter the private phrase for this cluster in the Enter Private Phrase window.
- Step 7** Click **Next**.
If the private phrase is incorrect, a message displays. Return to [Step 6](#). If the private phrase is correct, the Ready to Install the Program window displays.
- Step 8** Click **Install** at the Ready to Install the Program window.
- Step 9** Click **Finish** at the InstallShield Wizard Completed window.
The tool installs the Cisco Dialed Number Analyzer service on the machine.
-

When installation is successful, the Dialed Number Analyzer service installs and starts. The service startup type gets set to Automatic.

Additional Information

See the [“Related Topics”](#) section on page 2-3.

Uninstalling Cisco CallManager Dialed Number Analyzer

Uninstalling Dialed Number Analyzer uninstalls the tool. Use either of the following procedures to uninstall Dialed Number Analyzer.

Procedure 1

- Step 1** Choose **Start > Settings > Control Panel > Add/Remove Programs**.
 - Step 2** The Add/Remove Programs dialog displays and shows a list of programs that are installed on the machine.
 - Step 3** Choose Cisco Dialed Number Analyzer from the list.
 - Step 4** Click **Remove**.
-

Procedure 2

- Step 1** Choose **Start > Programs > Dialed Number Analyzer > Uninstall Cisco Dialed Number Analyzer**.
 - Step 2** Follow the instructions to uninstall Dialed Number Analyzer.
-

Additional Information

See the [“Related Topics”](#) section on page 2-3.

Related Topics

- [Installing Cisco CallManager Dialed Number Analyzer](#), page 2-1
- [Uninstalling Cisco CallManager Dialed Number Analyzer](#), page 2-3

Additional Cisco Documentation

- *Cisco CallManager Administration Guide*

- *Cisco CallManager System Guide*
- *Cisco CallManager Features and Services Guide*
- *Cisco CallManager Serviceability Administration Guide*



Accessing Dialed Number Analyzer

When Dialed Number Analyzer is installed, it installs as a service called Cisco Dialed Number Analyzer. This chapter describes how to start and stop the service and how to log in to Dialed Number Analyzer.

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

- [Logging On, page 3-1](#)
- [Starting Dialed Number Analyzer Service, page 3-3](#)
- [Stopping and Logging Out of Dialed Number Analyzer, page 3-4](#)

Logging On

You can start and log in to Dialed Number Analyzer from the server on which it is installed or from a remote PC by using a web browser (Internet Explorer 6.0 or later versions).



Note

Dialed Number Analyzer does not support Netscape Navigator.

This section describes the procedure to log in to Dialed Number Analyzer from the server on which it was installed.

Procedure

-
- Step 1** Choose **Start > Programs > Cisco Dialed Number Analyzer > Cisco Dialed Number Analyzer**.
- The Enter Network Password dialog displays.
- Step 2** In the User Name field, enter a valid user ID.
- Use administrator as the user ID.
- Step 3** In the Password field, enter the password that corresponds to the administrator log in ID for that machine.
- Step 4** Click **OK**.
- Step 5** You are now logged in to Dialed Number Analyzer.
-

This section describes the procedure to log in to Dialed Number Analyzer from a remote PC.

Procedure

-
- Step 1** Access Dialed Number Analyzer by using the following URL:
- `https://<cmaddress>/dna/main.asp`
- where <cmaddress> specifies the node name or IP address on which Dialed Number Analyzer is installed.
- The Enter Network Password dialog displays.
- Step 2** In the User Name field, enter a valid user ID.
- Use administrator as the user ID.
- Step 3** In the Password field, enter the password that corresponds to the administrator log 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 3-5.

Starting 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’s status. To check the status, go to **Start > Settings > Control Panel > Administrative Tools > Services** and check the status of the service. It must display as Started.

You can start and stop the service from Dialed Number Analyzer. This section describes the procedure to start the Dialed Number Analyzer service from the tool.

You can start the Dialed Number Analyzer service from within the tool, after you have accessed it by using the appropriate URL. Use the following procedure to start the service.

Procedure

Step 1 Access Dialed Number Analyzer by using the following URL:

`https://<cm-machine>/dna/main.asp`

where *<cm-machine>* specifies the IP address or name of the Cisco CallManager server on which Dialed Number Analyzer is installed.

Step 2 Choose **Service > Control Center**.

The Control Center window displays. Dialed Number Analyzer displays under the Service Name-NT Service column.



Note If the Services dialog has already been used to start the service, the status will display as Started.

Step 3 In the corresponding Action column, click **Start**.

Step 4 The service starts and the Status column displays the status as Started.

**Note**

Every time that the service is started, the system synchronizes Dialed Number Analyzer with Cisco CallManager database.

**Caution**

The Dialed Number Analyzer service runs in idle priority after it is started. Changing the priority to Normal or above Normal may affect Cisco CallManager performance. Although the service runs on low priority, Cisco recommends that you do not start the service during peak-hour usage of Cisco CallManager.

Additional Information

See the [“Related Topics”](#) section on page 3-5.

Stopping and Logging Out of Dialed Number Analyzer

You can stop the Dialed Number Analyzer service when you do not require it. This section describes the procedures to stop the Dialed Number Analyzer service and log out of the tool.

Procedure

-
- Step 1** In Dialed Number Analyzer, choose **Service > Control Center**.
- The Control Center window displays. Dialed Number Analyzer displays under the Service Name-NT Service column. The Status displays as Started.
- Step 2** In the corresponding Action column, click **Stop**.
- The service stops, and the Status column displays the status as Stopped.
- To exit from Dialed Number Analyzer, after the service is stopped, close the browser window.
-

Additional Information

See the [“Related Topics”](#) section on page 3-5.

Related Topics

- [Logging On, page 3-1](#)
- [Starting Dialed Number Analyzer Service, page 3-3](#)
- [Stopping and Logging Out of Dialed Number Analyzer, page 3-4](#)



Analyzing Cisco CallManager Dial Plan Configuration

Dialed Number Analyzer allows analysis of a configured Cisco CallManager dial plan and provides details on 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.

When you use Dialed Number Analyzer to analyze dial plans for a cluster of Cisco CallManager systems and numerous devices, you may be able to access the windows and enter data for analysis quickly. However, you may not be able to see any results when you perform the analysis. The following message displays:

```
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.
```

This message displays because Dialed Number Analyzer is registering the devices in the Cisco CallManager system. Clear the message and wait for a few minutes before you perform analysis.

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

- [Database Synchronization, page 4-2](#)
- [Simple Analysis by Using the Analyzer Window, page 4-4](#)
- [Analysis by Using Phones, page 4-6](#)

- [Analysis by Using Gateways, page 4-12](#)
- [Analysis by Using Trunks, page 4-27](#)
- [Understanding Analysis Output, page 4-31](#)
- [Dumping Digit Discard Instructions and Dialing Patterns, page 4-60](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-61](#)
- [Analysis by Using Multiple Analyzer, page 4-62](#)
- [Viewing Trace Configuration Files, page 4-72](#)

Database Synchronization

Dialed Number Analyzer replicates and uses the Cisco CallManager database configuration to analyze calls in a dial plan. For this reason, make sure that Dialed Number Analyzer is in sync with the Cisco CallManager database before you use the tool to perform any analysis. When changes are made to the Cisco CallManager 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.

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Enabling Database Change Notification

You can enable Dialed Number Analyzer to receive database change notifications from Cisco CallManager whenever database changes are made by using Cisco CallManager 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 displays. Database Synchronization displays 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 CallManager database. For instructions on starting the Dialed Number Analyzer service, see [“Starting Dialed Number Analyzer Service” section on page 3-3](#).
-

Additional Information

See the [“Related Topics” section on page 4-73](#).

Disabling Database Synchronization

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

Procedure

- Step 1** Choose **Service > Control Center**.
- The Control Center window displays. Database Synchronization displays under the Service Name-Database column.
- Step 2** In the corresponding Action column, click **Disable**.
-

Additional Information

See the [“Related Topics” section on page 4-73](#).

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 any 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 any device that is configured in the Cisco CallManager 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 displays. 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 displays in this field.

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

Step 4 From the Calling Search Space drop-down list box, choose the calling search space that is to be 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 5** From the Device Time Zone drop-down box, choose the time zone of the calling party. The time zone displays by default. This time zone represents the time zone information from the operating system of the server where Cisco CallManager 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 CallManager.

- Step 6** If Time of Day routing is enabled in Cisco CallManager, 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 and date information from the operating system of the server where Cisco CallManager is installed.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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** to start the analysis or click **Clear** to clear the fields and to reenter data.

When you click **Do Analysis**, Dialed Number Analyzer analyzes the dialed digits and displays the results in a new window that is called Analyzer 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, in the upper, right corner of the Analyzer Output window, click the **Save Result** link.

The File Download dialog displays.

- Step 9** Click **Save**.

The Save As dialog displays. Browse to a location on your PC where you want to save the file.

Step 10 Click **Save**.

The system saves the results in an XML file on your PC. The saved file uses the following naming convention:

DialedNumberAnalyzerOutput_<dialedldigits>.xml

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

Step 11 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 12 Close the Analyzer Output window.**Additional Information**

See the [“Related Topics”](#) section on page 4-73.

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 4-7](#)
- [Choosing a Phone Line, page 4-9](#)
- [Performing Analysis by Using Phones, page 4-9](#)

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 displays.

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
- Common Profile
- Device Type
- Call Pickup Group Name
- LSC Status
- Device Security Mode



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



Note If you choose Directory Number, Calling Search Space, or Call Pickup Group Name, 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, Common Profile, or Call Pickup Group Name 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 any 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 displays.

This window also lists the total number of phones and windows in this window.

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 Line Selection window displays.

Step 8 Continue with [“Choosing a Phone Line” section on page 4-9](#).

Additional Information

See the [“Related Topics” section on page 4-73](#).

Choosing a Phone Line

After you have identified 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 described in the [“Finding a Phone”](#) section.
- In the Phone Line Selection window, the phone ID number, registration details, and IP address of the server on which the phone is registered display.
- Under the Phone Configuration column, information on the device displays. The address of the machine, 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 In the upper, right corner or lower, right corner of the window, click the **Back to Find/List Phones** link to return to the Find and List Phones window.

- Step 3** Continue with the procedure in [“Performing Analysis by Using Phones”](#) section on page 4-9.
-

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Performing Analysis by Using Phones

After you have identified 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 Line Selection window displays.



Note The time zone that is configured for the phone in Cisco CallManager displays 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 that are to be dialed from the chosen phone line.
- Step 4** If Time of Day routing is enabled in Cisco CallManager, 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 CallManager is installed.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. The time zone, GMT Monrovia, Casablanca, displays 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 5** 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 Analyzer 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 [6](#), [7](#), [8](#), and [9](#); otherwise skip to [Step 10](#).

- Step 6** To save the results, in the upper, right corner of the window, click the **Save Result** link.

The File Download dialog displays.

Step 7 Click **Save**.

The Save As dialog displays. Browse to a location on your PC where you want to save the file.

Step 8 Click **Save**.

The results get saved in an XML file on your PC. The saved file uses the following naming convention:

DialedNumberAnalyzerOutput_<dialeddigits>.xml

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

Step 9 Click **Close** in the Download Complete dialog box 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 10 Close the Analyzer Output window.



Note You can use the Analyzer 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 4-73.

Analysis by Using Gateways

Dialed Number Analyzer allows you to find and list gateways through which Cisco CallManager 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 CallManager system. You can choose gateway endpoints that are configured in the Cisco CallManager system.

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

- [Finding a Gateway, page 4-12](#)
- [Choosing Gateway Endpoints and Entering Analysis Input, page 4-14](#)
- [Performing Analysis by Using Gateways, page 4-25](#)

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 displays.
- Step 2** From the first Find gateways where drop-down list box, choose one of the following criteria:
- Device Name
 - Description
 - DN/Route Pattern
 - Calling Search Space
 - Device Pool
 - Common Profile
 - Route Group

- Device Type



Note The criterion that you choose in this drop-down list box specifies how the list of gateways displays. For example, if you choose Device Name, the Device Name column will display 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
- ends with
- is exactly
- is not empty
- is empty



Note If you choose Calling Search Space, Device Pool, Route Group, Common Profile, 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 any 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 displays. The information that displays 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 4-73.

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 displays in the Find and List Gateways window, choose a gateway. Choose from the following types:

- 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 displays.

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

- [Choosing Cisco IOS MGCP / Cisco IOS SCCP Gateways, page 4-15](#)
- [Choosing Non-IOS MGCP Gateways, page 4-18](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-20](#)

- [Choosing Analog Access Gateways, page 4-21](#)
- [Choosing Cisco VG248 Analog Phone Gateways, page 4-23](#)

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
- Cisco ICS77XX-AS1160, Cisco ICS77XX-AS181, Cisco ICS77XX-MRP2xx, Cisco ICS77XX-MRP3-16FXS, Cisco ICS77XX-MRP3-8FXO-M1, Cisco ICS77XX-MRP3-8FXS, Cisco ICS77XX-MRP3xx gateways

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 Information 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 displays in the Find and List Gateways window, click the gateway that you want to use.

- The Gateway Information window displays 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 displays and shows gateway information and port information.



Note The time zone that is configured for the phone in Cisco CallManager displays in the Device Time Zone field.

- In the Calling Party field, the calling party number that is configured for this endpoint displays.
- In the Dialed Digits field, enter the digits to be dialed.
- Choose the time zone, date, and time settings for analysis, only if Time of Day routing is enabled in Cisco CallManager. 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 CallManager is installed display by default. You can choose time and date settings that differ from the Cisco CallManager system time.

From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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**.
- To complete the analysis procedure, use the steps in [“Performing Analysis by Using Gateways”](#) section.

Procedure 2

- From the list of records that displays 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 Information window displays and shows Gateway Information and Port Information.



Note The time zone that is configured for the endpoint in Cisco CallManager displays in the Device Time Zone field.

- In the Calling Party field, the calling party number that is configured for this endpoint displays.
- In the Dialed Digits field, enter the digits to be dialed.
- If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, 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 CallManager is installed display by default. You can choose time and date settings that differ from the Cisco CallManager system time.

From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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**.

To complete the analysis procedure, use the steps in [“Performing Analysis by Using Gateways”](#) section.



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 Information window. Click another endpoint to go to that endpoint Gateway Information window.



Note In the upper, right corner or the lower, right corner of the Gateway Information window, click **Back to main Gateway Information** link to return to the Gateway Information window or **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 4-73.

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 displays in the Find and List Gateways window, click the Non-IOS MGCP gateway that you want to use.

The Gateway Information window displays and shows Device Information and Call Routing Information.



Note The time zone that is configured for the gateway in Cisco CallManager displays in the Time Zone field. GMT Monrovia, Casablanca displays by default

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

Step 4 In the Dialed Digits field, enter the digits to be dialed.

Step 5 If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, 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 CallManager is installed displays by default. You can choose time and date settings that differ from the Cisco CallManager system time.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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 To analyze the call flow for the dialed digits, click **Do Analysis**.

Step 7 To complete the analysis procedure, follow the steps in “[Performing Analysis by Using Gateways](#)” section.



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 4-73.

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 displays in the Find and List Gateways window, click the Cisco IOS H.323 gateway that you want to use. The Gateway Information window displays and shows Device Information and Call Routing Information.



Note The time zone that is configured for the gateway in Cisco CallManager displays in the Time Zone field. GMT Monrovia, Casablanca displays by default.

- Step 3** In the Calling Party field, the calling party number that is configured for this endpoint displays.
- Step 4** In the Dialed Digits field, enter the digits to be dialed.
- Step 5** If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, 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 CallManager is installed display by default. You can choose time and date settings that differ from the Cisco CallManager system time.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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 To analyze the call flow for the dialed digits, click **Do Analysis**.

Step 7 To complete the analysis procedure, use the steps in “[Performing Analysis by Using Gateways](#)” section.



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 4-73.

Choosing Analog Access Gateways

After you find a list of gateways that match your search criteria, you can choose Analog Access gateway endpoints. The following list comprises Analog Access gateways:

- Cisco Catalyst 6000 24 Port FXS Gateway
- Analog Access AS-2, AS-4, AS-8, AT-2, AT-4, AT-8

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 displays in the Find and List Gateways window, click the Analog Access gateway that you want to use.

The Gateway Information window displays 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 CallManager displays in the Time Zone field. GMT Monrovia, Casablanca displays by default

- Step 3** Click the port that you require to make a call.
The Gateway Information window displays.
- Step 4** In the Calling Party field, the calling party number that is configured for this endpoint displays.
- Step 5** In the Dialed Digits field, enter the digits to be dialed.
- Step 6** If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, 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 CallManager is installed display by default. You can choose time and date settings that differ from the Cisco CallManager system time.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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 To complete the analysis procedure, use the steps in “[Performing Analysis by Using Gateways](#)” section.



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 4-73.

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 displays in the Find and List Gateways window, click the gateway that you want to use.

The Gateway Information window displays and shows all ports that are configured for the selected gateway.



Note The time zone that is configured for the gateway in Cisco CallManager displays in the Time Zone field. GMT Monrovia, Casablanca displays by default.

- Step 3** Choose and click the port that you require.
- If you click a port that is not configured, a message displays to inform you that the port is not configured.
- If you choose a configured port, the Phone Line Selection window displays.
- 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 to be dialed.
- Step 6** If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, 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 CallManager is installed display by default. You can choose time and date settings that differ from the Cisco CallManager system time.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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** To complete the analysis procedure, use the steps in [“Performing Analysis by Using Gateways”](#) section.



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 4-73.

Performing Analysis by Using Gateways

After you have chosen 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 Information 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 4-15](#)
 - [Choosing Non-IOS MGCP Gateways, page 4-18](#)
 - [Choosing Cisco IOS H.323 Gateways, page 4-20](#)
 - [Choosing Analog Access Gateways, page 4-21](#)
 - [Choosing Cisco VG248 Analog Phone Gateways, page 4-23](#)
- Step 3** If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, 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 CallManager is installed display by default. You can choose time and date settings that differ from the Cisco CallManager system time.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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 Analyzer 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 the **Save Result** link.

The File Download dialog displays.

Step 6 Click **Save**.

The Save As dialog displays. 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:

DialedNumberAnalyzerOutput_<dialeddigits>.xml

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

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 Analyzer Output window.

Additional Information

See the “[Related Topics](#)” section on page 4-73.

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 4-27](#)
- [Performing Analysis by Using Trunks, page 4-29](#)

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 displays.

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
- Common Profile
- Route Group
- Device 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 will display 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, Common Profile, 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 any 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 displays.

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

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

Step 7 From the list of records, choose a trunk by clicking the required record.
The Trunk Information window displays.

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Performing Analysis by Using Trunks

After you have identified and chosen 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.

The Trunk Information window displays. Device and Call Routing information for the chosen trunk displays.



Note The time zone that is configured for the trunk in Cisco CallManager displays in the Device Time Zone field.

Step 2 In the Calling Party field, enter the calling party number.

Step 3 In the Dialed Digits field, enter the digits to be dialed.

Step 4 If Time of Day routing is enabled in Cisco CallManager, choose the time zone, date, and time settings for analysis. If Time of Day routing is not enabled in Cisco CallManager, leave the default settings.



Note GMT Monrovia displays by default. You can choose time and date settings that differ from the default Cisco CallManager system time.

- From the Time Zone drop-down list box, choose the time zone that Dialed Number Analyzer must use for analysis. GMT Monrovia, Casablanca displays 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 5 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 Analyzer 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 6, 7, 8, and 9; otherwise, skip to [Step 10](#).

Step 6 To save the result, in the upper, right corner of the window, click the **Save Result** link.

The File Download dialog displays.

Step 7 Click **Save**.

The Save As dialog displays. Browse to a location on your PC where you want to save the file.

Step 8 Click **Save**.

The result gets saved as 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 9 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 10 Close the Analyzer Output window.**Additional Information**

See the [“Related Topics”](#) section on page 4-73.

Understanding Analysis Output

The results of analysis that you perform contain information on 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 CallManager 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 4-31](#)
- [Results Summary, page 4-50](#)
- [Call Flow Details, page 4-52](#)
- [Alternate Matches, page 4-59](#)

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 CallManager:

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, RG2, AND RG3.

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. RG3 configuration includes on Cisco AT gateway and one Cisco AS gateway.

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 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 CallManager 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 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 displays, both Expand All and Collapse All buttons are enabled.

See [Example 4-1](#) for the results.

Example 4-1 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
```

Understanding Analysis Output

```

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
AAR Group Name =
AAR Calling Search Space =
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
RouteGroup :RouteGroup Name= RG3
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= CiscoASGateway
End Device Name = SAA2433E7636576
PortNumber = 0
Device Status = UnKnown
AAR Group Name =
AAR Calling Search Space =
  AAR Prefix Digits =
Device :Type= CiscoATGateway
End Device Name = SAA498968343345
PortNumber = 0
Device Status = UnKnown
AAR Group Name =
AAR Calling Search Space =
  AAR Prefix Digits =
Alternate Matches
  Note: Information Not Available

```

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Example 2

This example assumes the following setup in Cisco CallManager:

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. RG3 configuration includes on Cisco AT gateway and one Cisco AS gateway.

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. The phone's Ignore Presentation Indicators (internal calls only) check box is checked. Translation pattern 972813XXXX exists in partition 'DallasPartition' with Called Party Transformations configured with DN 254564.

Provide Outside dial tone does not 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 gateways that are configured by using the procedure in the [“Finding a Trunk”](#) section.
 - Step 3** From the list of records that displays in the Find and List Trunks window, choose gateway 10.77.31.206. The Trunk Information window displays.
 - 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 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 displays, both Expand All and Collapse All buttons are enabled.

See [Example 4-2](#) for the results.

Example 4-2 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 =
    ForwardUnregistered
      Internal : DN = VoiceMail = No VoiceMailBoxNumber = 254564 CSS =
      External : DN = VoiceMail = No CSS =
    Pickup Group Number =
Device :Type= Cisco 7960
  Device Status = UnKnown
  Device Name = SEP487698944444
  Ignore Presentation Indicators = Enabled
  LoggedIntoHuntGroups = Yes
  Alerting Name =
  AAR Group Name =
  AAR Calling Search Space =
  AARVoiceMailEnabled = Yes
  AARDestinationMask = 5656
  AAR Prefix Digits =
Alternate Matches
  Note: Information Not Available
```

Additional Information

See the [“Related Topics”](#) section on page 4-73

Example 3

This example shows how hunt pilot information displays in the analysis results, if your dial plan configuration includes hunt lists. This sample assumes the following setup in Cisco CallManager:

Hunt pilot—9043.

10 voice mail ports get configured from 90431 through 90440.

Line Group VMLG includes the 10 ports.

Hunt List VMHL includes Line Group VMLG.

Forward Hunt No Answer setup is as follows:

Use Personal Preference is checked.

Destination = 30129.

CSS = None.

Forward Hunt Busy setup is as 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 displays.
- Step 2** In the Calling Party field, enter a calling party number (1000 displays 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 CallManager is installed displays by default. You can choose time and date settings that differ from the Cisco CallManager 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 first displays, both Expand All and Collapse All buttons are enabled.

See [Example 4-3](#) for the results. The results section details only the Call Flow section that includes Hunt List information.

Example 4-3 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
```

Understanding Analysis Output

```

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 =
            AAR Calling Search Space =
            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 displays for the remaining ports that are configured.

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Example 4

This example shows how time-of-day settings information displays in the analysis results, when the time zone setting for a phone is set to a specific time zone in Cisco CallManager 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 CallManager:

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 displays.
- Step 2** In the Calling Party field, enter a calling party number (1000 displays 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 CallManager system date settings.
- Step 7** From the Time drop-down list boxes, choose 11:30:0:0 as the Cisco CallManager 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** 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 displays, both Expand All and Collapse All buttons are enabled.

See [Example 4-4](#) for the results.

Example 4-4 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 =
  ForwardUnregistered
    Internal : DN = VoiceMail = No VoiceMailBoxNumber = 36201 CSS =
    External : DN = VoiceMail = No CSS =
  Pickup Group Number =
Device :Type= Cisco 7960
  Device Status = UnKnown
  Device Name = SEP000000036201
  LoggenIntoHuntGroups = Yes
  Ignore Presentation Indicators = Disabled
  Alerting Name =
  AAR Group Name =
  AAR Calling Search Space =
```

```
AARVoiceMailEnabled = Yes
AARDestinationMask = 5656
AAR Prefix Digits =
```

Alternate Matches

Note: Information Not Available

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Example 5

This example shows how time-of-day settings information displays 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 CallManager:

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 displays.

- Step 2** In the Calling Party field, enter a calling party number (1000 displays 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 first displays, both Expand All and Collapse All buttons are enabled.

See [Example 4-5](#) for the results.

Example 4-5 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
```

Understanding Analysis Output

```

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 =
  ForwardUnregistered
    Internal : DN = VoiceMail = No VoiceMailBoxNumber = 36201 CSS =
    External : DN = VoiceMail = No CSS =
  Pickup Group Number =
Device :Type= Cisco 7960
Device Status = UnKnown
Device Name = SEP000000036201
Ignore Presentation Indicators = Disabled
LoggedIntoHuntGroups = Yes
Alerting Name =
AAR Group Name =
AAR Calling Search Space =
AARVoiceMailEnabled = Yes
AARDestinationMask = 5656
AAR Prefix Digits =
Alternate Matches
Note: Information Not Available

```

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Example 6

This example shows how directed callpark settings displays when you park a call and transfer the parked call to a pre-selected park code. This example assumes the following setup in Cisco CallManager:

Directed CallPark Number/Range = 2200

Partition—None

Reversion Number:

Select the check box for Use Specified Number

Number = 2345

Calling Search Space—None

Retrieval Prefix = 1145

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 1000 in the Calling Party field.
- Step 3** In the Dialed Digits field, enter 2200.
- Step 4** In the Time Zone, Date, and Time drop-down list boxes, leave the default values.
- Step 5** 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 6** 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 displays, both Expand All and Collapse All buttons are enabled.

See [Example 4-6](#) for the results.

Example 4-6 Analysis Results for Example 4

Results Summary

```
Calling Party Information
  Calling Party = 1000
  Partition =
  Device CSS =
  Line CSS =
  AAR Group Name =
  AARCSS =
Dialed Digits = 2200
Match Result = BlockThisPattern
Called Party Number =
Matched Pattern Information
  Pattern = 2200
  Partition =
  Time Schedule =
  Pattern Type = Directed CallPark Code Number
ReversionNumber
  Type = UseSpecifiedNumber
  Number = 2345
RetrievalPrefix = 1145
Time Zone =
InterDigit Timeout = NO
Allow Device Override = Disabled
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 4-73.

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 CallManager Administration. For information on these fields, see the *Cisco CallManager 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 that is associated with the calling device.

Line CSS—The Calling Search Space that is associated with the calling party number.

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

AAR CSS—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 will be routed or blocked.

RouteThisPattern or BlockThisPattern displays.

**Note**

Line- and device- specific information display 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 any device that is configured in Cisco CallManager. 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—The partition where this ultimate pattern exists.
- Time Schedule—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, Directed Call Park, and Call Pickup Number display. This field displays 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—Specifies the time delay in routing the call to the final device.

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

OffNetPattern (OutsideDialTone)—Displays OffNet/OnNet, depending on whether this field is checked or unchecked in Cisco CallManager Administration.

**Note**

For intercept patterns, device-specific information will not display, and instead, a tag that indicates the Pattern Type will display.

Additional Information

See the [“Related Topics”](#) section on page 4-73.

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 4-53](#)
- [Route Pattern, page 4-54](#)
- [Hunt Pilot, page 4-55](#)
- [Directory Number, page 4-57](#)
- [Device Information, page 4-58](#)

**Note**

Fields that do not contain a description in this section display data as specified in Cisco CallManager Administration. For information on these fields, see the *Cisco CallManager 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 on 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: This section displays calling party transformation settings of the Translation Pattern.
 - External Phone Number Mask—Displays Yes/No, depending on whether this field is checked or unchecked in Cisco CallManager 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. This section displays 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 on 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—Displays 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—Displays Yes/No, depending on whether this field is checked or unchecked in Cisco CallManager Administration.
- Authorization Level—Displays the authorization level that is specified in Cisco CallManager Administration.
- Require Client Matter Code—Displays Yes/No, depending on whether this field is checked or unchecked in Cisco CallManager 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—Displays Yes/No, depending on whether this field is checked or unchecked in Cisco CallManager 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. Displays 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 on 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. This section displays 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 CallManager 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. This section displays 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—Displays Yes/No, depending on whether this field is checked or unchecked in Cisco CallManager Administration.

Destination—Displays the destination number for the call forward when there is no answer.

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

- Forward Hunt Busy—
Use Personal Preferences—Displays Yes/No, depending on whether this field is checked or unchecked in Cisco CallManager Administration.
Destination—Displays the destination number for the call forward when there is no answer.
Calling Search Space—Displays the Calling Search Space where the forward destination, either Busy or No Answer, whichever is applicable, is present.
- Maximum Hunt Timer—Displays the value that is specified in the Maximum Hunt Timer field in Cisco CallManager 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—Displays 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

- Forward Unregistered
Internal : DN
External : DN

Device Information

- Device :Type—The type of device.
 - End Device Name—The name of the endpoint device.
 - Device Status—Indicates whether the status of the end device is Registered/Unregistered/Unknown.
 - Logged Into Hunt group—Displays Yes/No depending on whether the LoggedIntoHuntGroup is checked or unchecked in Cisco CallManager Administration.
 - 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 Voice Mail Enabled—Displays Yes/No depending on whether the AAR Voice Mail Enabled is checked or unchecked in Cisco CallManager Administration.
 - AAR Destination Mask—AAR destination mask that is used to determine the AAR Destination to be dialed.
 - AAR Prefix Digits—The prefix digits that are used for automated alternate routing within this AAR group.
 - Caller ID DN—The mask that is used to format the caller ID on outbound calls from a trunk.
- Inbound Fast Start—Displays Enabled/Disabled depending on whether the Inbound Fast Start field is checked or unchecked in Cisco CallManager Administration.
- Outbound Fast Start—Displays Enabled/Disabled depending on whether the Outbound Fast Start field is checked or unchecked in Cisco CallManager Administration.
- Codec For Outbound FastStart—Displays the value that is specified in the Codec for Outbound FastStart in Cisco CallManager Administration.

- Call Classification—Displays OffNet/OnNet/Use System Default/None, depending on the value that is chosen in Cisco CallManager Administration.
- Tunneled Protocol—Displays QSIG/none depending on the value that is configured in the Tunneled Protocol field in Cisco CallManager Administration.
- Ignore Presentation Indicators—Indicates whether presentation settings of the calling party must be ignored for internal calls.
- Alerting Name—Indicates the name of the alerting party that is chosen for a phone in Cisco CallManager.

Additional Information

See the “[Related Topics](#)” section on page 4-73.

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 CallManager Administration. For information on these fields, see the *Cisco CallManager Administration Guide*.

The output displays 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.
 - CallManager 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 4-73.

Dumping Digit Discard Instructions and Dialing Patterns

Each Cisco CallManager dial plan configuration has 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 CallManager 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 CallManager 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 displays.
- Step 2** In the Select Dump Option field, click the **Discard Digit Instructions** or the **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 on 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 displays. Use the following procedure to save the file:

- a. Click **Save**.

The Save As dialog displays. 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 4-73.

Viewing Dialed Number Analyzer Output Files

When you store results of analysis that you have performed 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 displays.
- 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 displays 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 4-73.

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. DNA will then process the CSV file and display the bulk output results.

During installation, DNATemplate.xlt is installed as DNATemplate.zip on the Server. Using this template, you can create a CSV file containing 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 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 4-63](#)
- [Creating a Text-Based CSV File for Multiple Analysis, page 4-64](#)
- [Multiple Analyzer CSV File Format, page 4-65](#)
- [Uploading Input Files, page 4-68](#)
- [Viewing CSV File Content, page 4-69](#)
- [Deleting Uploaded CSV Data Files, page 4-70](#)
- [Analyzing the Uploaded CSV Data File, page 4-71](#)

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 page. For more details, see [“Uploading Input Files” section on page 4-68](#).

The zip file, when extracted, will give 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. When you export the information in the DNA template to CSV format, this date populates all the rows 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. For Device Time Zones, and their corresponding index values, see [Table 4-1](#).

- 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 the Cisco CallManager administration. For more information on calling search space, refer to the *Cisco CallManager 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 displays, enter the location to save the CSV file.

Additional Information

See the [“Related Topics” section on page 4-73](#).

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 any 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 CallManager.

- Always include comma separators, even if a field is blank.
- An error occurs when you insert a CSV file with blank lines.

See [“Multiple Analyzer CSV File Format” section on page 4-65](#) for information about the CSV data file formats.

Step 3 Save the completed file.

Additional Information

See the [“Related Topics”](#) section on page 4-73.

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 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 that is configured in Cisco CallManager 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 4-1](#) to determine the index value (1 to 53) corresponding to the time zone for the Device Time Zone and Time Zone fields.

Table 4-1 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

Table 4-1 Device Time Zone Index Values (continued)

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

Table 4-1 Device Time Zone Index Values (continued)

Device Time Zone	Index Value
(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, Volgograd	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

Table 4-1 Device Time Zone Index Values (continued)

Device Time Zone	Index Value
(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 4-73.

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 CallManager publisher database server.

Use the following procedure to upload a CSV data file.

Procedure

- Step 1** Choose **Analysis > Multiple Analyzer**.
- Step 2** Click the **Upload/Download Input Files** link in the upper, right corner of the window.
- Step 3** The Upload/Download Input Files window displays.
- 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 4-73.

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 have been uploaded to the Cisco CallManager server by using [“Uploading Input Files”](#) section on page 4-68.
- Step 3** Click **View File Contents**.

- Step 4** The information in the chosen CSV file displays in a separate window.
-

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Deleting Uploaded CSV Data Files

Use the following procedure to delete any uploaded CSV files.

Procedure

- Step 1** Choose **Analysis > Multiple Analyzer**.
- Step 2** Click the **Upload/Download Input Files** link in the upper, right corner of the window.
- Step 3** The Upload/Download Input Files window displays.
- Step 4** Click **Delete Uploaded Files** link in the upper, right corner of the window.
- Step 5** The View/Delete Uploaded Files window displays 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(s) that you want to delete from the list by checking the check box next to the file name.
- Step 7** Click **Delete Selected**.
- Step 8** To delete the chosen file(s), click **OK** in the confirmation dialog box. To cancel file deletion, click **Cancel**.
-

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Analyzing the Uploaded CSV Data File

Multiple analysis for the different sets of input provides 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 analysis consumes enormous CPU resources and greatly impacts the database performance. Perform multiple analysis only when minimal traffic exists 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 files are located at
C:\CiscoWebs\DialedNumberAnalyzer\Results\MultiAnalysis_Date_Time.
Date and time in the location refer to the date and time at which the analysis is started.

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

Additional Information

See the [“Related Topics”](#) section on page 4-73.

Viewing 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 when you install Dialed Number Analyzer. 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 Dialed Number Analyzer, choose **Service > Control Center**.
The Control Center window displays the current status of the Trace Configuration option.

Step 2 If the current status is Disabled, click **Enable** in the corresponding Action column.

The system enables the feature, and the trace files get written to the following location on your PC:

C:\Program Files\Cisco\Trace\DNA

The file appears in the following format:

DNA_indexNo.txt

where *<indexNo>* ranges from 1- 250.

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

Procedure

Step 1 In Dialed Number Analyzer, choose **Service > Control Center**.
The Control Center window displays the current status of the Trace Configuration option. The current status displays as Enabled.

Step 2 In the corresponding Action column, click **Disable**.

This action means that the feature is disabled.

Additional Information

See the “[Related Topics](#)” section on page 4-73.

Related Topics

- [Database Synchronization](#), page 4-2
- [Simple Analysis by Using the Analyzer Window](#), page 4-4
- [Analysis by Using Phones](#), page 4-6
- [Analysis by Using Gateways](#), page 4-12
- [Analysis by Using Trunks](#), page 4-27
- [Understanding Analysis Output](#), page 4-31
- [Dumping Digit Discard Instructions and Dialing Patterns](#), page 4-60
- [Viewing Dialed Number Analyzer Output Files](#), page 4-61
- [Analysis by Using Multiple Analyzer](#), page 4-62
- [Viewing Trace Configuration Files](#), page 4-72



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