



# Cisco CallManager Dialed Number Analyzer Guide

Software Release 1.0

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*Cisco CallManager Dialed Number Analyzer Guide*

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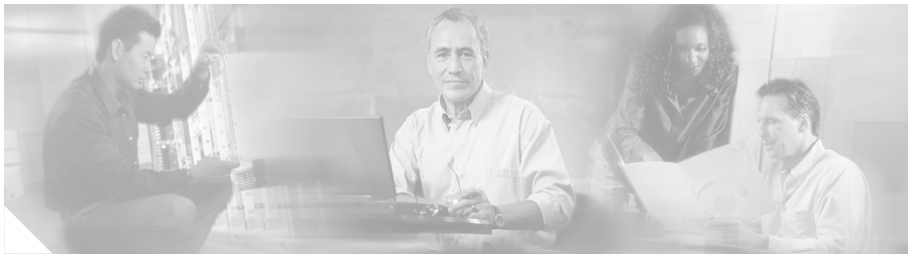
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# Preface

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This preface describes the purpose, audience, organization and conventions used in this guide. The preface also describes how to obtain related documentation.

- [Purpose, page vii](#)
- [Audience, 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 | <a href="#">Introduction</a>  |
| Chapter 2 | <a href="#">Installing Cisco CallManager Dialed Number Analyzer</a> |
| Chapter 3 | <a href="#">Accessing Dialed Number Analyzer</a>                    |
| Chapter 4 | <a href="#">Analyzing Cisco CallManager Dial Plan Configuration</a> |

# Related Documentation

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


- *Installing Cisco CallManager 3.3(4)*
- *Release Notes for Cisco CallManager 3.3(4)*
- *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*
- *Release Notes for Cisco IP Phone 7960G and 7940G for Cisco CallManager Release 3.3.4*
- *Release Note Updates for Cisco IP Phone Models 7902G/7905G/7912G for Cisco CallManager Release 3.3(4)*
- *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   |
|-----------------------------|---|
| <b>boldface font</b>        | Commands and keywords are in <b>boldface</b> .  |
| <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> .                                     |
| <b>boldface screen font</b> | Information you must enter is in <b>boldface screen font</b> .  |
| <i>italic screen font</i>   | Arguments for which you supply values are in <i>italic screen font</i> .  |

| Convention  | Description  |
|---|--|
|  | This pointer highlights an important line of text in an example.   |
| ^   | The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key. |
| < >   | Nonprinting characters, such as passwords, are in angle brackets.  |

Notes use the following conventions:




---

**Note**

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

---

Timesavers use the following conventions:




---

**Timesaver**

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

---

Tips use the following conventions:




---

**Tip**

Means *the information contains useful tips*.

---

Cautions use the following conventions:




---

**Caution**

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

---

Warnings use the following conventions:



Warning

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

## Obtaining Documentation

Cisco provides several ways to obtain documentation, 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 on the World Wide Web at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco web sites can be accessed from this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

### Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) through the online Subscription Store:

<http://www.cisco.com/go/subscription>

## Ordering Documentation

You can find instructions for ordering documentation at this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/pdi.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm)

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:  
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) through the online Subscription Store:  
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit your comments by mail by using the response card 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.

# Obtaining Technical Assistance

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) Website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

## Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

To obtain customized information and service, you can self-register on Cisco.com at this URL:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

## Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

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

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

<http://www.cisco.com/en/US/support/index.html>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

## Obtaining Additional Publications and Information

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

- 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://www.cisco.com/en/US/products/products\\_catalog\\_links\\_launch.html](http://www.cisco.com/en/US/products/products_catalog_links_launch.html)

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and the *Internetworking Design Guide*. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:

[http://www.cisco.com/en/US/about/ac123/ac114/about\\_cisco\\_packet\\_magazine.html](http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html)

- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:

[http://business.cisco.com/prod/tree.taf%3fasset\\_id=44699&public\\_view=true&kbns=1.html](http://business.cisco.com/prod/tree.taf%3fasset_id=44699&public_view=true&kbns=1.html)

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

[http://www.cisco.com/en/US/about/ac123/ac147/about\\_cisco\\_the\\_internet\\_protocol\\_journal.html](http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html)

- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:

[http://www.cisco.com/en/US/learning/le31/learning\\_recommended\\_training\\_list.html](http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.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](#)
- [Where to Find More Information, 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.

# 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.

## 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 like Call Park, MeetMe, Message Waiting Indicator (MWI) and Call Pickup Patterns.

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.

# Digit Discard Instructions and Dialing Patterns

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

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

## Analysis Output

Dialed Number Analyzer displays analysis results in the same browser window that you use to perform analysis. You can either view the results online or save the output displayed 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.

## Where to Find More Information

### Related Topic

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

### 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

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Dialed Number Analyzer includes a separate executable that is available in Cisco CallManager. You can install Dialed Number Analyzer only if Cisco CallManager version 3.3(4) 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 installs on Cisco CallManager version 3.3(4) 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 that you used at the time of installing Cisco CallManager Administration in the Enter Private Phrase window.
- Step 7** Click **Next**.  
If the private phrase is incorrect, an error 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.



---

**Note** After the tool installs, you must manually restart the Cisco Database Layer Monitor service on all Cisco CallManager nodes. Refer to the *Cisco CallManager Serviceability Administration Guide* for information on accessing the Cisco Database Layer Monitor service.

---

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

### Related Topics

- [Uninstalling Cisco CallManager Dialed Number Analyzer, page 2-3](#)
- [Where to Find More Information, page 2-4](#)

# 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**.
  - Step 2** Follow the instructions to uninstall Dialed Number Analyzer.
- 

### Related Topics

- [Installing Cisco CallManager Dialed Number Analyzer, page 2-1](#)
- [Where to Find More Information, page 2-4](#)

# Where to Find More Information

## Related Topic

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

## 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 3-5](#)

## 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).

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 the user name that you use to access Cisco CallManager Administration.
- Step 3** In the Password field, enter a valid password for the user ID.  
Use the password that you use to access Cisco CallManager Administration.
- 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:  
`http://<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 the user name that you use to access Cisco CallManager Administration.
- Step 3** In the Password field, enter a valid password for the user ID.  
Use the password that you use to access Cisco CallManager Administration.
- Step 4** Click **OK**.
- Step 5** You are now logged in to Dialed Number Analyzer.
- 

### Related Topics

- [Starting Dialed Number Analyzer Service, page 3-3](#)
- [Stopping and Logging Out of Dialed Number Analyzer, page 3-5](#)

# Starting Dialed Number Analyzer Service

After you have logged in, you need to start the Dialed Number Analyzer service to use the tool for analysis. You can start and stop the service from Dialed Number Analyzer or from Cisco CallManager Serviceability. This section describes the two procedures to start the Dialed Number Analyzer service.

## Starting the Service from Dialed Number Analyzer

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

### Procedure

---

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

`http://<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** Each time the service is started, Dialed Number Analyzer is synchronized with Cisco CallManager database.

---

**Caution**

The Dialed Number Analyzer service runs in low priority after it is started. Changing the priority to Normal or above Normal may affect Cisco CallManager performance.

**Related Topics**

- [Logging On, page 3-1](#)
- [Stopping and Logging Out of Dialed Number Analyzer, page 3-5](#)

## Starting the Service from Cisco CallManager Serviceability

Cisco CallManager Serviceability provides a web-based Service Activation tool that is used to activate and deactivate Cisco CallManager services for servers. This section describes the procedure to start the Dialed Number Analyzer service from Cisco CallManager Serviceability. You must have installed Dialed Number Analyzer on the Cisco CallManager server.

**Procedure**

- 
- Step 1** Access Cisco CallManager Administration on the server where you have installed Dialed Number Analyzer.
  - Step 2** Choose **Application > Cisco CallManager Serviceability**.  
The Cisco CallManager Serviceability window displays.
  - Step 3** Choose **Tools > Control Center**.  
The Control Center window displays the list of configured Cisco CallManager servers in the left pane.
  - Step 4** Choose the server where you have installed Dialed Number Analyzer.  
The window displays the service names for the server that you choose, the current activation status of the services, and the Tomcat Web Server Information.
  - Step 5** Check the check box next to the Dialed Number Analyzer service.
  - Step 6** Click **Update**. The window displays the services that you chose with an activation status of Activated.

**Caution**

Activate/deactivate services only from the Service Activation pages. If you activate/deactivate services from the Windows Service Control Manager instead of from Service Activation, entries do not get added to/removed from the database table; therefore, services do not get properly configured or started and may be out of sync with the Cisco CallManager database.

**Note**

The Cisco CallManager services will not start until you activate them by using Service Activation.

## 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.

### Related Topics

- [Logging On, page 3-1](#)
- [Starting Dialed Number Analyzer Service, page 3-3](#)





# 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 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 error 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 error 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 4-3](#)
- [Analysis by Using Phones, page 4-5](#)

- [Analysis by Using Gateways, page 4-11](#)
- [Analysis by Using Trunks, page 4-23](#)
- [Understanding Analysis Output, page 4-27](#)
- [Dumping Digit Discard Instructions and Dialing Patterns, page 4-42](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)
- [Viewing Trace Configuration Files, page 4-44](#)

## 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 changes are reflected in Dialed Number Analyzer to facilitate analysis by using current data. Examples of database changes include addition or deletion of devices, modification of route patterns, modification of gateway configuration settings, and so on.

You can enable Dialed Number Analyzer to receive database change notifications from Cisco 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**

Each 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](#).

**Related Topics**

- [Disabling Database Synchronization, page 4-3](#)
- [Starting Dialed Number Analyzer Service, page 3-3](#)

## 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** Click **Disable** in the corresponding Action column.

---

**Related Topic**

- [Database Synchronization, page 4-2](#)

## 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 and selecting a calling search space. 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. This is because you do not choose a specific device to dial digits, instead you enter a calling party number that is not associated with any device configured in the Cisco CallManager system.

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. This number does not have to be associated with a device.
- By default, 1000 displays in this field.
- Step 3** In the Dialed Digits field, enter the digits that are to be called by the calling party.
- 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** Click **Do Analysis** to start the analysis or click **Clear** to clear the fields and to re-enter data.
- When you click **Do Analysis**, Dialed Number Analyzer analyzes the dialed digits and displays the results in a new window 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 6, 7, 8, and 9; otherwise skip to Step 10.
- Step 6** 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 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 has the following naming convention:

DialedNumberAnalyzerOutput\_<dialeddigits>.xml

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

**Step 9** 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 10** Close the Analyzer Output window.

---

#### Related Topics

- [Database Synchronization, page 4-2](#)
- [Analysis by Using Phones, page 4-5](#)
- [Analysis by Using Gateways, page 4-11](#)
- [Analysis by Using Trunks, page 4-23](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 4-6](#)
- [Choosing a Phone Line, page 4-8](#)
- [Performing Analysis by Using Phones, page 4-9](#)

#### Related Topics

- [Simple Analysis by Using the Analyzer Window, page 4-3](#)
- [Analysis by Using Gateways, page 4-11](#)
- [Analysis by Using Trunks, page 4-23](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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

- Device Type
- Call Pickup Group



---

**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, the options that are available in the database display.

---

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

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



---

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

---

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

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



---

**Tip** To find all phones, click **Find** without entering 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 links that are available for the record that matches your search criteria.
- The Phone Line Selection window displays.
- Step 8** Continue with the procedure that is described in [“Choosing a Phone Line” section on page 4-8](#).

#### Related Topics

- [Choosing a Phone Line, page 4-8](#)
- [Performing Analysis by Using Phones, page 4-9](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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.
- The Phone Line Selection window displays. 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, and Media Resource Group List details display.
- Step 2** From the list of records, choose the phone line by clicking the **Line** radio button for the phone line 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](#).

---

#### Related Topics

- [Finding a Phone, page 4-6](#)
- [Performing Analysis by Using Phones, page 4-9](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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.
- 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** 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 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 results, 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 results get saved in an XML file on your PC. The saved file has the following naming convention:

DialedNumberAnalyzerOutput\_<dialeddigits>.xml

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

**Step 8** 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 9** 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.

---

#### Related Topics

- [Finding a Phone, page 4-6](#)

- [Choosing a Phone Line, page 4-8](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 4-11](#)
- [Choosing Gateway Endpoints and Entering Analysis Input, page 4-13](#)
- [Performing Analysis by Using Gateways, page 4-21](#)

## 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
- 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, 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 and windows.

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

**Related Topics**

- [Choosing Gateway Endpoints and Entering Analysis Input, page 4-13](#)
- [Performing Analysis by Using Gateways, page 4-21](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 of gateways:

- Cisco IOS MGCP Gateway
- Non-IOS MGCP Gateway
- Cisco IOS H.323 Gateway

- Analog Access Gateway
  - Cisco VG248 Analog Phone 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 Gateways, page 4-14](#)
- [Choosing Non-IOS MGCP Gateways, page 4-16](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-18](#)
- [Choosing Analog Access Gateways, page 4-19](#)
- [Choosing Cisco VG248 Analog Phone Gateways, page 4-20](#)

## Choosing Cisco IOS MGCP Gateways

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

- Cisco Voice Gateway 200 (VG200)
- Cisco IOS 269X, 26XX, 362X, 364X, 366X, 3725, 3745 gateways
- Cisco Catalyst 4000 Access Gateway Module
- Cisco Catalyst 4224 Voice Gateway Switch
- Communication Media Module
- Cisco IAD2400
- Cisco ICS77XX-ASI160, Cisco ICS77XX-ASI81, 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 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 gateway endpoints. You can directly access the Endpoint Identifiers from the Gateway Information page, 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 Cisco IOS MGCP 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.
  - 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.
  - Click **Do Analysis** to analyze the call flow for the dialed digits.
  - Use the steps in [“Performing Analysis by Using Gateways”](#) section to complete the analysis procedure.

### Procedure 2

- From the list of records that 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.

- 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.

- 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.
  - Click **Do Analysis** to analyze the call flow for the dialed digits.
- Use the steps in “[Performing Analysis by Using Gateways](#)” section to complete the analysis procedure.

**Note**

---

Gateways have 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

---

### Related Topics

- [Choosing Cisco IOS MGCP Gateways, page 4-14](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-18](#)
- [Choosing Analog Access Gateways, page 4-19](#)
- [Choosing Cisco VG248 Analog Phone Gateways, page 4-20](#)
- [Performing Analysis by Using Gateways, page 4-21](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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.
  - 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** Click **Do Analysis** to analyze the call flow for the dialed digits.
  - Step 6** Follow the steps in [“Performing Analysis by Using Gateways”](#) section to complete the analysis procedure.



---

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

---

### Related Topics

- [Choosing Cisco IOS MGCP Gateways, page 4-14](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-18](#)
- [Choosing Analog Access Gateways, page 4-19](#)
- [Choosing Cisco VG248 Analog Phone Gateways, page 4-20](#)

- [Performing Analysis by Using Gateways, page 4-21](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 shows Device Information and Call Routing Information.
  - 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** Click **Do Analysis** to analyze the call flow for the dialed digits.
  - Step 6** Use the steps in [“Performing Analysis by Using Gateways”](#) section to complete the analysis procedure.



---

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

---

### Related Topics

- [Choosing Cisco IOS MGCP Gateways, page 4-14](#)
- [Choosing Non-IOS MGCP Gateways, page 4-16](#)
- [Choosing Analog Access Gateways, page 4-19](#)

- [Choosing Cisco VG248 Analog Phone Gateways](#), page 4-20
- [Performing Analysis by Using Gateways](#), page 4-21
- [Viewing Dialed Number Analyzer Output Files](#), page 4-43

## 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.
  - 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** Click **Do Analysis** to analyze the call flow for the dialed digits.
  - Step 7** Use the steps in [“Performing Analysis by Using Gateways”](#) section to complete the analysis procedure.



---

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

---

### Related Topics

- [Choosing Cisco IOS MGCP Gateways, page 4-14](#)
- [Choosing Non-IOS MGCP Gateways, page 4-16](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-18](#)
- [Choosing Cisco VG248 Analog Phone Gateways, page 4-20](#)
- [Performing Analysis by Using Gateways, page 4-21](#) [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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.
- 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** Click **Do Analysis** to analyze the call flow for the dialed digits.
- Step 7** Use the steps in “[Performing Analysis by Using Gateways](#)” section to complete the analysis procedure.



---

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

---

#### Related Topics

- [Choosing Cisco IOS MGCP Gateways, page 4-14](#)
- [Choosing Non-IOS MGCP Gateways, page 4-16](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-18](#)
- [Choosing Analog Access Gateways, page 4-19](#)
- [Performing Analysis by Using Gateways, page 4-21](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 Gateways, page 4-14](#)
- [Choosing Non-IOS MGCP Gateways, page 4-16](#)
- [Choosing Cisco IOS H.323 Gateways, page 4-18](#)
- [Choosing Analog Access Gateways, page 4-19](#)
- [Choosing Cisco VG248 Analog Phone Gateways, page 4-20](#)

**Step 3** 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 [4](#), [5](#), [6](#) and [7](#); otherwise skip to [Step 8](#).

**Step 4** To save the result, in the upper, right corner of the window, click the **Save Result** link.

The File Download dialog displays.

**Step 5** Click **Save**.

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

**Step 6** 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 7** 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 8** Close the Analyzer Output window.

---

### Related Topics

- [Finding a Gateway, page 4-11](#)
- [Choosing Gateway Endpoints and Entering Analysis Input, page 4-13](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 4-23](#)
- [Choosing a Trunk, page 4-25](#)
- [Performing Analysis by Using Trunks, page 4-26](#)

## 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
- 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, 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**.

---

#### Related Topics

- [Choosing a Trunk, page 4-25](#)
- [Performing Analysis by Using Trunks, page 4-26](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## Choosing a Trunk

After you find the trunks that you require, you need to choose a trunk. Use the following procedure to choose a trunk.

#### Procedure

---

**Step 1** Find the trunk that you want to use for analysis by using the procedure in the [“Finding a Trunk”](#) section.

The Find and List Trunks window displays and shows trunk information.

**Step 2** From the list of records, choose a trunk by clicking the required record.

The Trunk Information window displays.

---

#### Related Topics

- [Finding a Trunk, page 4-23](#)
- [Performing Analysis by Using Trunks, page 4-26](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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.
- Step 2** From a list of discovered trunks, choose the trunk that you require by using the steps in the [“Choosing a Trunk”](#) section.
- The Trunk Information window displays. Device and Call Routing information for the chosen trunk displays.
- Step 3** In the Calling Party field, enter the calling party number.
- Step 4** In the Dialed Digits field, enter the digits to be dialed.
- 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 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** 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.

---

#### Related Topics

- [Finding a Trunk, page 4-23](#)
- [Choosing a Trunk, page 4-25](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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 4-28](#)
- [Results Summary, page 4-34](#)
- [Call Flow Details, page 4-36](#)
- [Alternate Matches, page 4-41](#)

#### Related Topics

- [Simple Analysis by Using the Analyzer Window, page 4-3](#)

- [Analysis by Using Phones, page 4-5](#)
- [Analysis by Using Gateways, page 4-11](#)
- [Analysis by Using Trunks, page 4-23](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)
- [Analysis Results Examples, page 4-28](#)

## Analysis Results Examples

This section provides two examples of the results 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 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, RG2, AND RG3.

RG1 configuration includes Inter Cluster Trunk as 10.77.31.206, with route group level calling and called party transformations. RG2 configuration includes two MGCPFXOPort ports. RG3 configuration includes one CiscoAT Gateway and one CiscoAS Gateway.

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** Click **Do Analysis**.

The results display in a new window called Dialed Number Analyzer Results window. Click the nodes in the tree structure of the results to expand the results and view all values. See [Example 4-1](#) for the results.

---

### **Example 4-1 Analysis Results for Example 1**

```
Results Summary
Calling Party Information
  Calling Party = 1360064
  Partition = DallasPartition
  Device CSS =
  Line CSS = ALL
  AAR Group Name =
  AARCSS =
Dialed Digits = 914089027872
Match Result = RouteThisPattern
Matched Pattern Information
  Pattern = 9.@
  Partition = SJPartition
Called Party Number = 914089027872
End Device = RL1
Device Location = OffNet
InterDigit Timeout = NO
Call Flow
Route Pattern :Pattern= 9.@
  Positional Match List = 9:1:408:902:7872
  DialPlan = NANP
  Route Filter
    Filter Name = RF-SJ
    Filter Clause = (LONG-DISTANCE-DIRECT-DIAL EXISTS AND AREA-CODE == 408)
  PreTransform Calling Party Number = 1360064
  PreTransform Called Party Number = 914089027872
  Calling Party Transformations
    External Phone Number Mask = YES
    Calling Party Mask =
    Prefix =
    Calling Party Presentation = Default
    Calling Party Number = 1360064
  Called Party Transformations
    Called Party Mask =
```

## Understanding Analysis Output

```

Digit Discarding Instruction =
Prefix =
Called Number = 914089027872
RouteList :RouteList 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 = 972813XXXX
  Prefix =
  Calling Party Number = 9728130064
Called Party Transformations
  Called Party Mask = XXXXX
  Digit Discarding Instructions =
  Prefix =
  Called Number = 27872
Device :Type= InterClusterTrunk-NonGatekeeperControlled
End Device Name = 10.77.31.206
Device Status = UnKnown
AAR Group Name =
AAR Calling Search Space =
AAR Prefix Digits =
Calling Party Transformations
  PreTransform Calling Party Number = 9728130064
  Calling Party Selection = Originator
  Calling Party Presentation = Default
  CallerID DN =
  Calling Party Number = 9728130064
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 = 972813XXXX
  Prefix =
  Calling Party Number = 9728130064
Called Party Transformations
  Called Party Mask =
  Discard Digits Instructions = PreDot
  Prefix =
  Called Number = 914089027872
Device :Type= MGCPFXOPort
End Device Name = AALN/S1/SU0/0@CSEVCMS2600
Device Status = UnKnown
AAR Group Name =
AAR Calling Search Space =
AAR Prefix Digits =

```

```

Device :Type= MGCPFXOPort
  End Device Name = AALN/S1/SU0/1@CSEVCMS2600
  Device Status = UnKnown
  AAR Group Name =
  AAR Calling Search Space =
  AAR Prefix Digits =
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 = 972813XXXX
    Prefix =
    Calling Party Number = 9728130064
  Called Party Transformations
    Called Party Mask =
    Discard Digits Instructions = PreDot
    Prefix =
    Called Number = 914089027872
Device :Type= CiscoATGateway
  End Device Name = SAA0009034EF141
  Device Status = UnKnown
  AAR Group Name =
  AAR Calling Search Space =
  AAR Prefix Digits =
Device :Type= CiscoASGateway
  End Device Name = SAA0003094A24EF
  Device Status = UnKnown
  AAR Group Name =
  AAR Calling Search Space =
  AAR Prefix Digits =

```

Alternate Matches

Note: Information Not Available

## Example 2

This sample result assumes the following setup in Cisco CallManager:

Phone—1360064 in partition 'DallasPartition'

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

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 Inter Cluster Trunk as 10.77.31.206, with route group level calling and called party transformations.

Translation pattern 972813XXXX exists in partition 'DallasPartition' with Called Party Transformations configured.

Use the following procedure to run this example:

### Procedure

- 
- Step 1** Access Dialed Number Analyzer and choose **Analysis > Gateways**.
  - Step 2** Find a list of gateways that are configured by using the procedure in the [“Finding a Gateway”](#) section.
  - Step 3** From the list of records that displays in the Find and List Gateways window, choose gateway 10.77.31.206. The Gateway Information window displays.
  - Step 4** In the Gateway Information window, enter 9728130064 in the Calling Party field.
  - Step 5** In the Dialed Digits field, enter 9728135054.
  - Step 6** Click Do Analysis.

The results display in a new window called Dialed Number Analyzer Results window. Click the nodes in the tree structure of the results to expand the results and view all values. See [Example 4-2](#) for the results.

---

### Example 4-2 Analysis Results for Example 2

```
Results Summary
Calling Party Information
  Calling Party = 9728135054
  Partition =
  Device CSS = ALL
  Line CSS =
  AAR Group Name =
  AARCSS =
Dialed Digits = 9728130064
Match Result = RouteThisPattern
Matched Pattern Info
  Pattern = 1360064
  Partition = DallasPartition
Called Party Number = 1360064
InterDigit Timeout = NO
```

## Call Flow

```

TranslationPattern :Pattern= 972813XXXX
  Positional Match List = 1360064
  DialPlan = NANP
  Route Filter
    Filter Name =
    Filter Clause =
  PreTransform Calling Party Number = 9728135054
  PreTransform Called Party Number = 9728130064
  Calling Party Transformations
    External Phone Number Mask = NO
    Calling Party Mask =
    Prefix =
    Calling Party Presentation = Default
    Calling Party Number = 9728135054
  Called Party Transformations
    Called Party Mask = 136XXXX
    Digit Discarding Instruction =
    Prefix =
    Called Number = 1360064
Directory Number :DN= 1360064
  Partition = DallasPartition
  Device Type = UserDevice
  Device Location = OnNet
  Forwarding Info
    CFA : DN = VoiceMail = No CSS =
    CFB : DN = VoiceMail = No CSS =
    CFNA : DN = VoiceMail = No CSS =
    Pickup Group Number =
  Device :Type= PhoneDevice
    Device Status = UnKnown
    Device Name = SEP0009B7DA098E
    AAR Group Name =
    AAR Calling Search Space =
    AAR Prefix Digits =

```

## Alternate Matches

```

Partition :Name= SJPartition
  Pattern
    Route Pattern = @
    Pattern = ([2-9]X[02-9])([2-9]XX)(XXXX)
    Pattern Type = Translation
    TranslationPartition = ALL
    Called Prefix Digits = 1
    Cgpn Presentation = NotSelected
    CallManager Device Type = AccessDevice
Partition :Name= SJPartition
  Pattern

```

```

Route Pattern = @
Pattern = ([2-9][02-9]X)([2-9]XX)(XXXX)
Pattern Type = Translation
TranslationPartition = ALL
Called Prefix Digits = 1
Cgpn Presentation = NotSelected
CallManager Device Type = AccessDevice

```

### Related Topics

- [Simple Analysis by Using the Analyzer Window, page 4-3](#)
- [Analysis by Using Phones, page 4-5](#)
- [Analysis by Using Gateways, page 4-11](#)
- [Analysis by Using Trunks, page 4-23](#)
- [Understanding Analysis Output, page 4-27](#)
- [Viewing Dialed Number Analyzer Output Files, page 4-43](#)

## 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.

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

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

Match Result—Specifies whether the call 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.

Pattern Type—The Meet-Me Conference Number, Call Park Code Number, 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.

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.

Device Location—Indicates the network location of the device, whether it is OnNet or OffNet. This field displays only if the matched pattern is a route pattern.

**Note**

---

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

---

**Related Topics**

- [Understanding Analysis Output, page 4-27](#)

- [Analysis Results Examples, page 4-28](#)
- [Call Flow Details, page 4-36](#)
- [Alternate Matches, page 4-41](#)

## 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 4-36](#)
- [Route Pattern, page 4-37](#)
- [Route List, page 4-38](#)
- [Directory Number, page 4-40](#)



### 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*.

---

## Translation Pattern

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

The following fields display:

- Translation Pattern—The translation pattern matched.
- Positional Match List—Displays 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.

- 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.
- 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. This section 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. This section displays the called party transformation settings of the Route Pattern, such as the following settings:
  - Called Party Mask
  - Digit Discard Instruction
  - Prefix
  - Called Number—The calling party number after the calling party transformation settings of the Route Pattern are applied.

## Route List

If the dialed digits match a route pattern and if a route list is configured for the route pattern, this section shows details of the route list.

- Route List: RouteList Name—The name of the Route List
- RouteGroup: RouteGroup 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
- Device : Type—The type of device that was added to the Route Group.
  - End Device Name—The name of the endpoint device that is included in the Route Group.
  - Device Status—Indicates whether the status of the end device is Registered/Unregistered/Unknown.
  - 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 Prefix Digits—The prefix digits that are used for automated alternate routing within this AAR group.
  - 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
- CallerId DN
- Calling Party Number—The calling party number after the calling party transformation settings of the End Device are applied.

## 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 forward settings that are associated with the DN, such as:
    - CFA
    - CFB
    - CFNA
    - Pickup Group Number
  - Device : Type—The type of device.
    - Device Name—The name of the device.
    - Device Status—Indicates whether the status of the end device is Registered/Unregistered/Unknown.
    - AAR Group Name—The AAR Group to which this device belongs.
    - AAR Calling Search Space—The AAR Calling Search Space that is associated with the device.
    - AAR Prefix Digits

### Related Topics

- [Understanding Analysis Output, page 4-27](#)
- [Analysis Results Examples, page 4-28](#)
- [Results Summary, page 4-34](#)
- [Alternate Matches, page 4-41](#)

## 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

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

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### Related Topics

- [Understanding Analysis Output, page 4-27](#)
- [Analysis Results Examples, page 4-28](#)

- [Results Summary, page 4-34](#)
- [Call Flow Details, page 4-36](#)

## 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. To save the file, do the following.

- 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](#).

---

#### Related Topic

- [Understanding Analysis Output, page 4-27](#)

## 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** Click **Browse** in the Select a File to View field. 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.
- 

#### Related Topics

- [Simple Analysis by Using the Analyzer Window, page 4-3](#)
- [Analysis by Using Phones, page 4-5](#)
- [Analysis by Using Gateways, page 4-11](#)
- [Analysis by Using Trunks, page 4-23](#)
- [Understanding Analysis Output, page 4-27](#)

## 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**.  
The feature is disabled.
-





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