



Creating Custom Historical Reports for Cisco Customer Response Applications

You can create your own Cisco Customer Response Applications (CRA) historical reports and add them to the Report Type drop-down list on the Cisco CRA Historical Reports main window.

When you create a custom report, you follow these general steps:

1. Use Crystal Reports, a generally available third-party application, to create and save the report. For instructions, see the “Creating a Report” section on page 2.
2. Create an XML report definition file for the report. For instructions, see the “Creating a Report Definition File” section on page 5.
3. Update the reports catalog file if you are using Cisco CRA release 3.0(2) or later. For instructions, see the “Updating the Reports Catalog File” section on page 11.
4. Make sure that the report generates properly. For troubleshooting information, see the “Troubleshooting” section on page 13.

CISCO SYSTEMS



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Creating a Report

Use Crystal Reports, a generally available third-party application, to create and save the report.

For information about creating reports with Crystal Reports, refer to your Crystal Reports documentation. For information about the tables and records in the Cisco CRA databases, refer to the *Cisco CRA Database Schema* document.

To create a report, follow these steps:

Procedure

- Step 1** Use Crystal Reports to create two versions of the report that you want to add. The versions should be identical, except that one version should contain charts.



Tip Build the report with charts first and save it with the appropriate name for a report with charts as explained in Step 2. Then, delete the charts and save the modified report with the appropriate name for a report without charts as explained in Step 2.

When you create a report, follow these guidelines:

- When you set the database location with Crystal Reports, make sure to select **Active Data**, then select **ActiveX Data Objects (ADO)** for the data source type.
- Create the report based on one SQL command. This command can be either a simple SQL query or a stored procedure that hides multiple SQL queries.
- If your report will be based on multiple queries, use one stored procedure to perform report field calculations. (This stored procedure can call other stored procedures.) Specify the call to this stored procedure as the SQL command on which the report is based.
- If you create the report based on a stored procedure, do not use cursors in the stored procedure. As an alternative to cursors, you can use temporary database tables.

- Step 2** Save the report in the following directory under the directory in which you installed the client system. (By default, the client system installs in the Program Files directory.) Replace *Language* with the name of the appropriate language directory.

Cisco CRA Historical Reports\ Report Templates*Language*

Name the report as follows:

Category_ReportDisplayName_ReportFormat_Locale.rpt

Replace *Category*, *ReportDisplayName*, *ReportFormat*, and *Locale* with appropriate values as explained in Table 1.

Table 1 File Name Components

Component	Explanation	Valid Values
Category	Cisco CRA application package with which to associate this report. Users with access to this package will be able to generate this report.	CCR —ICD Enhanced ICD —ICD Standard IVR —IP IVR
ReportDisplayName	In CRA releases prior to 3.0(2), name of the report as you want it to appear in the Report Type drop-down list on the Cisco CRA Historical Reports main window. In CRA release 3.0(2) and later, you can use any name. This name will be replaced with the name specified by <i>vFileName</i> in the reports catalog file line that you add for this report. If a name has more than one word, separate each word with an underscore (_).	—

Table 1 File Name Components (continued)

Component	Explanation	Valid Values
ReportFormat	Whether the report includes charts.	Chart —Report includes charts Table —Report does not include charts
Locale	Locale ISO string. Specifies the language in which you created the field names, headings, and other static items in the report. Consists of an ISO language code followed by an underscore (_) and then an ISO country code.	Languages installed on the Cisco CRA client system. For example: en_US —English de_DE —German es_ES —Spanish fr_FR —French To see the languages installed on the client system, look at the folder names in the Cisco CRA Historical Reports\ Report Templates directory.

The following is an example of a report name:

CCR_My_New_Report_Chart_en_us.rpt

In this example:

- Users who have access to the Cisco ICD Enhanced application package will be able to generate this report
- The report will appear as My New Report in the Report Type drop-down list on the Cisco CRA Historical Reports main window
- The report includes one or more charts
- The report is designed to run on a system with a system locale of English
- The extension .rpt indicates that this file is a report file

Now you should create a report definition file as described the “Creating a Report Definition File” section on page 5.

Creating a Report Definition File

A report definition file is in XML format and contains information that the Cisco CRA Historical Reports client system needs to generate a report.

As the following steps show, when you create a report definition file for a custom report, you begin with an existing Cisco CRA Historical Reports definition file. You save the existing file under a new name, and then you modify the new file as needed. It is suggested that you begin with the `CCR_Agent_Summary_en_us.xml` file because this file contains examples of most of the XML tags.

To create a report definition file, follow these steps:

Procedure

- Step 1** Use a Windows text editor to open an existing report definition file.
- Report definition files are located in the Cisco CRA Historical Reports\Report Templates*Language* directory under the directory in which you installed the client system. (By default, the client system installs in the Program Files directory.) *Language* is the name of the directory in which you saved the report as described in the “Creating a Report” section on page 2.
- Step 2** Before you make any changes, choose **File > Save As** to save the file under a new name. Save the file in the directory that contains the original file, and give the new file the following name:
- Category_ReportDisplayName_Locale.xml*
- Replace *Category*, *ReportDisplayName* and *Locale* with the same values that you used when you created the report as described in the “Creating a Report” section on page 2.
- Step 3** Edit the new file by changing the appropriate XML tag attributes or tag values as explained in Table 2. Make sure to surround all XML attribute values with quotation marks (“”).
- There are other values in this file. Do not change these values.

Table 2 Report Definition XML Attributes and Tags

XML Tag or Attribute	Explanation
Report	<p>Defines the report by describing its SQL command, parameter filters, and sort criteria. Includes these attributes:</p> <ul style="list-style-type: none"> • ReportName • ReportCategory • BasetemplateFile
ReportName	<p>Name of the report as it will appear in the Report Type drop-down list on the Cisco CRA Historical Reports main window.</p> <p>In CRA releases prior to 3.0(2), this value should be the same as the value that you specified for <i>ReportDisplayName</i> when you created the report file as explained in the “Creating a Report” section on page 2. However, replace any underscore (_) with a space. For example, if the value for <i>ReportDisplayName</i> is My_Report, the value for the ReportName attribute should be My Report.</p> <p>In CRA release 3.0(2) and later, you can specify any name for the report.</p>
BasetemplateFile	<p>This value should be the same as the value that you specified for <i>ReportDisplayName</i> when you created the report file as explained in the “Creating a Report” section on page 2.</p>
ReportCategory	<p>Cisco CRA application package with which to associate this report. This value should be the same as the value that you specified for <i>Category</i> when you created the report file as explained in the “Creating a Report” section on page 2. Users with access to this package will be able to generate this report.</p> <p>Valid values:</p> <p>CCR—ICD Enhanced</p> <p>ICD—ICD Standard</p> <p>IVR—IP IVR</p>
ReportDescription	<p>Brief description of the report. This description will appear on the Cisco CRA Historical Reports main window when the report is selected from the Report Type drop-down list.</p>

Table 2 Report Definition XML Attributes and Tags (continued)

XML Tag or Attribute	Explanation
ReportSQLCommand	<p>SQL command (query or stored procedure) upon which the report is based. You can follow this name with any number of parameters. When this report is generated, the Cisco CRA Historical Report client will replace each parameter with its value.</p> <p>Each parameter must follow these conventions:</p> <ul style="list-style-type: none"> • A parameter must begin with a dollar sign (\$) • A parameter may contain only alphabetic characters and underscores (_) <p>At a minimum, the SQL command requires the following parameters:</p> <p>\$StartDate—First date of the date range for which to generate information in the report, as specified by a user</p> <p>\$EndDate—Last date of the date range for which to generate information in the report, as specified by a user</p> <p>\$SortBy—Sort method that a user specifies for the report</p> <p>If the command includes characters that the XML processor might interpret as markup characters, use the standard XML entity references for the characters or use hexadecimal character references. Refer to your XML documentation for more information.</p>
ReportParameterList	<p>Defines each parameter that is specified in the SQL command (see the ReportSQLCommand tag), except for \$StartDate, \$EndDate, and \$SortBy.</p>
MutualExclusive	<p>Defines whether the filter parameters specified in the ReportParameterList field are mutually exclusive. If the parameters are mutually exclusive, the filter parameter that appears in the Filter Parameter field on the Cisco CRA Historical Reports Detailed Report Settings window will be used in the SQL command when the report generates. Other parameters will be set to their default values as specified by the ParamDefaultValue attribute. If the parameters are not mutually exclusive, all filter parameters that are set will be used in the SQL command when the report generates.</p> <p>Valid values:</p> <p>True—Parameters are mutually exclusive</p> <p>False—Parameters are not mutually exclusive</p>

Table 2 Report Definition XML Attributes and Tags (continued)

XML Tag or Attribute	Explanation
SQLParameter	<p>Defines a SQL parameter that is specified in the ReportSQLCommand tag. There must be one SQLParameter tag for each parameter that is defined in the ReportSQLCommand tag, except for \$StartDate, \$EndDate, and \$SortBy. (See the ReportSQLCommand tag for information about the \$StartDate, \$EndDate, and \$SortBy parameters.) Includes these attributes:</p> <ul style="list-style-type: none"> • ParamName • ParamDefaultValue <p>Includes these XML tags:</p> <ul style="list-style-type: none"> • ParamNameText • ParamHelpText • Either DBListToList or TextBox
ParamName	<p>Defines the name of the parameter as specified in the ReportSQLCommand tag. Must match the parameter name exactly, including the leading dollar sign (\$).</p>
ParamDefaultValue	<p>Default value of the parameter specified in the SQLParameter field. Used if a value is not specified when settings are made for the report. Also used if the MutualExclusive attribute is set to true and this parameter does not appear in the Filter Parameter field on the Cisco CRA Historical Reports Detailed Report Settings window when the report generates.</p>
ParamNameText	<p>Name of the filter parameter that appears on the Filter Parameter drop-down list on the Cisco CRA Historical Reports Detailed Report Settings window.</p>
ParamHelpText	<p>Brief description of the parameter. This description appears as a tool tip when you place the cursor over a filter parameter name in the Filter Parameter field on the Cisco CRA Historical Reports Detailed Report Settings window.</p>

Table 2 Report Definition XML Attributes and Tags (continued)

XML Tag or Attribute	Explanation
DBListToList	<p>Specifies that filter parameters can be selected using the Available or the Selected list on the Cisco CRA Historical Reports Detailed Report Settings window. Filter parameters in the Available list come from the SQL tag or from the SourceListValues tag. Contains these attributes:</p> <ul style="list-style-type: none"> • GUIComponentName • SingleSelection (applies to Cisco CRA release 3.0(2) and later) <p>Contains these tags:</p> <ul style="list-style-type: none"> • Either SQL or SourceListValues • selectedListOperations
GUIComponentName	<p>Defines the name of the parameter selection interface. You must specify a name, but this attribute is reserved for future use.</p>
SingleSelection	<p>Specifies whether the DBListToList tag allows a single selection or multiple selections from a drop-down list of values. This attribute applies to Cisco CRA release 3.0(2) and later only.</p> <p>Valid values:</p> <p>1—DBListToList allows a single selection from a list of values</p> <p>0—DBListToList allows multiple selections from a list of values</p>
SQL	<p>Defines the SQL command used to generate values that appear in the Available list on the Cisco CRA Historical Reports Detailed Report Settings window.</p>
SourceListValues	<p>Defines values that appear in the Available list on the Cisco CRA Historical Reports Detailed Report Settings window. Contains one or more ListOption tags. Refer to the CCR_Priority_Summary_Activity_en_us.xml file for an example of how this tag is used.</p>
selectedListOperations	<p>Specifies the operation that is included with the values in the Selected list on the Cisco CRA Historical Reports Detailed Report Settings window when the report is generated. Valid operations are AND and OR.</p> <p>When the report is generated, the value of the SQL parameter containing a DBListToList tag will be <i>Operation Value1, Value2, Value3, . . .</i>, where <i>Operation</i> is AND or OR, and <i>Value1, Value2, Value3</i>, and so on are the values in the Selected list.</p>

Table 2 Report Definition XML Attributes and Tags (continued)

XML Tag or Attribute	Explanation
TextBox	<p>Specifies that filter parameters can be selected in the Enter Parameter Value field on the Cisco CRA Historical Reports Detailed Report Settings window. Contains these attributes:</p> <ul style="list-style-type: none"> • GUIComponentName • Type
Type	<p>Specifies whether the value entered in the Enter Parameter Value field is a number or text.</p> <p>Valid values:</p> <p>INT—Positive integer value</p> <p>STRING—Text value</p>
ReportSortBy	<p>Defines a list of fields by which a user can sort the report. This list will appear in the Sort Report By drop-down list on the Cisco CRA Historical Reports Detailed Report Settings window. Contains one or more ListOption tags.</p>
ListOption	<p>Defines a list of options. Contains these attributes:</p> <ul style="list-style-type: none"> • OptionsSelected • OptionValue
OptionsSelected	<p>Specifies the value that is selected by default from the list of options specified by the ListOption tag. The last ListOption tag with an OptionsSelected value of True will be displayed.</p> <p>ListOption tags are included in SourceListValues and ReportSortBy.</p>
OptionValue	<p>Specifies the value of this list option. This value is used when the SQL command executes.</p>

Step 4 Save the file and exit the editor.

If you are using Cisco CRA release 3.0(1) or earlier, your new report should appear on the Report Type drop-down list the next time you start the Cisco CRA Historical Reports client. If the report does not appear on this list or if the report does not generate properly, see the “Troubleshooting” section on page 13.

If you are using Cisco CRA release 3.0(2) or later, you should now update the Reports Catalog File as described in the “Updating the Reports Catalog File” section on page 11.

Updating the Reports Catalog File



Note

This section applies to Cisco CRA release 3.0(2) and later only.

The reports catalog file is in XML format and maps each report definition file to the associated report name that appears on the Report Type drop-down list. If you create a new report definition file, you must update the reports catalog file.

The reports catalog file is located in the Cisco CRA Historical Reports\Report Templates*Language* directory under the directory in which you installed the client system. (By default, the client system installs in the Program Files directory.) *Language* is the name of the directory in which you saved the report as described in the “Creating a Report” section on page 2.

The reports catalog file is named as follows:

`hrcReportCatalog_Locale.xml`

For an explanation of *Locale*, see Table 1 on page 3.

To update the reports catalog file for a new report definition file, follow these steps:

Procedure

- Step 1** Use a Windows text editor to open the reports catalog file.
- Step 2** Add a line in the reports catalog file for the new report definition file. Enter the line in the following format, and place it immediately before the line `</ReportCatalog>`, which appears at the end of the file. There must be a space before `pFileName` and a space before `vFileName`.
- ```
<ReportFileName pFileName="Category_ReportDisplayName_Locale.xml"
vFileName="ReportName"/>
```
- Replace *Category*, *ReportDisplayName* and *Locale* with same values that you used when you created the report and the report definition file. See Table 1 for an explanation of these values.
- Replace *ReportName* with the same name that you specified with the `ReportName` XML attribute in the Report Definition file. See the explanation of the `ReportName` attribute in Table 2.
- Here is an example of a line in the reports catalog file for a report that will appear on the Report Type drop-down list in a US English locals as My New Report:
- ```
<ReportFileName pFileName="CCR_My_New_Report_en_us.xml"
vFileName="My New Report"/>
```
- Step 3** Save the file and exit the editor.
- Your new report should appear on the Report Type drop-down list the next time you start the Cisco CRA Historical Reports client. If the report does not appear on this list or if the report does not generate properly, see the “Troubleshooting” section on page 13.
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Troubleshooting

After you create a report and create a report definition file, the following files should exist in the Cisco CRA Historical Reports\ Report Templates*Language* directory under the directory in which you installed the client system. (By default, the client system installs in the Program Files directory.) These files must follow these naming conventions exactly or the report will not generate. For an explanation of *Language*, *Category*, *ReportName*, and *Locale*, see Table 1 on page 3.

Category_ReportName_Chart_Locale.rpt

Category_ReportName_Table_Locale.rpt

Category_ReportName_Locale.xml

In addition, an entry for the report should exist in the reports catalog file.

If the report does not appear on the Report Type drop-down list on the Cisco CRA Historical Reports main window or if the report does not generate,

- Make sure that the entry for the report in the reports catalog file is in the correct format and that this file is located in the correct directory.
- Make sure that the report files and the XML report definition file have the correct names and are located in the correct directory.

If the report files and the XML report definition file have the correct names and are located in the correct directory but the report does not generate or you receive an error message when you select the report from the Report Type drop-down list, perform the following steps to locate the problem. You perform these steps on the computer on which you are trying to generate the report.

Procedure

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- Step 1** Edit the *hrcConfig.ini* configuration file and set the *logLevel* parameter to 3.
For information about the *hrcConfig.ini* file and how to edit it, refer to *Cisco CRA Historical Reports User Guide*.
 - Step 2** Stop and restart the Cisco CRA Historical Reports client so that your change to the *hrcConfig.ini* file takes effect.
 - Step 3** Try again to generate the new report.

- Step 4** Open the Historical Reports log file and find the SQL command used to generate the report. Check the command for errors, and make necessary corrections in the XML report definition file.

For information about the Historical Reports log file, refer to *Cisco CRA Historical Reports User Guide*.

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 websites can be accessed from this URL:

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 regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order monthly or quarterly subscriptions 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

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>
- 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.

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

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

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.

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- 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://tools.cisco.com/RPF/register/register.do>

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The type 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. There is little or no impact to your business operations.
- Priority level 3 (P3)—Operational performance of the network is impaired, but most business operations remain functional. You and Cisco are willing to commit resources during normal business hours to restore service to satisfactory levels.
- Priority level 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively impacted by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.
- Priority level 1 (P1)—An existing network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Cisco TAC Website

The Cisco TAC website provides online documents and tools to help troubleshoot and resolve technical issues with Cisco products and technologies. 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/tac/caseopen>

If you have Internet access, we recommend that you open P3 and P4 cases online so that you can fully describe the situation 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 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

- 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 quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips,

configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access *Packet* magazine at this URL:

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

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

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

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

http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

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