Vocera Report Server Guide

Version 5.2.0

Notice

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Getting Started

The Vocera Report Server and Report Console enable you to generate reports from data logs created by the Vocera Voice Server. Creating these reports can improve your implementation of Vocera, since you can identify problem areas which can then be addressed.

Report Server Features

Here is a list of important Vocera Report Server features:

- The Vocera Report Server is installed separately and runs outside the Vocera Voice Server.
- The Vocera Voice Server generates log files to support the Vocera Report Server. The Vocera Report Server uses this data to generate reports. Some of the reports can help you diagnose end-user and network issues related to the Vocera system. Other reports can help you spot usage trends, keep track of devices, and monitor call volume.
- The Report Console is a browser-based application that interacts with the Vocera Report Server. Use the Report Console to generate reports and administer the Vocera Report Server.

Report Server Licensing

If you have a Vocera Enterprise License, Vocera Report Server, Device Management and Report Scheduler features are included with your license. If you have a Vocera Standard License, you may purchase Vocera Report Server, the Device Management feature, and the Report Scheduler feature separately. To obtain additional Vocera licenses, contact Vocera.

Quick Start

Here's how to get started with the Vocera Report Server and the Report Console:

1. Install the software.

   See the Vocera Voice Server Installation Guide for system requirements and installation instructions.
2. Log in to the Report Console.

   See **Logging in to the Report Console** on page 15 for instructions.
3. Run reports and interpret the data.

   See **Report Categories** on page 20 for a list of the kind of reports that you can generate.
4. Manage the Report Consoleand data.

   See **Administration Overview** on page 70 Administering Report Server for details.
5. Schedule the automatic generation and distribution of reports.

   See **About Scheduled Reports** on page 77 Scheduling Reports for details.
6. Schedule automatic system tasks, such as backing up Report Server data or loading data from the Vocera Voice Server.

   See **Overview of Task Scheduling** on page 96 Scheduling Tasks for details.

Browser Requirements

To access Vocera Voice Web applications (Administration Console, User Console, Report Console, and Staff Assignment), your computer must have the following required software:

Table 1: Web application software requirements

Applications	Client-side component	Requirement
All applications	Browser	Internet Explorer version 8, or 9. Internet Explorer versions 10 and 11 (compatibility mode only).

Important: Do not install another JRE on the Vocera Voice Server or Vocera Report Server machines. The required version of Java is installed with those servers.

Browser Security Requirements

Configure the following Internet Explorer security settings:

- **Configure the Internet Explorer security level to Medium-low or lower** – Otherwise, Internet Explorer prevents the scripts used by the consoles from executing completely. You can configure security settings through Tools > Internet Options > Security in Internet Explorer. See your Internet Explorer documentation for complete information.
- **Disable the pop-up blocker** – Vocera consoles display information in pop-up windows, so disable pop-up blocking in Internet Explorer (that is, configure the browser to allow pop-up windows). Choose Tools > Internet Options > Privacy, and then uncheck the Turn On Pop-Up Blocker box.

  If you are using a third-party tool to block pop-ups, refer to the tool's documentation.
- **Remove scroll bars from pop-up windows** – Pop-up windows may display scroll bars. To remove the scroll bars, choose Tools > Internet Options > Security, and select the Local Intranet zone. Click Custom Level to display the Security Settings dialog box. Enable Allow script-initiated windows without size or position constraints.
- **If necessary, add the Vocera Voice Server and Vocera Report Server IP addresses to the list of Trusted Sites** – The security policy in certain situations may prevent you from setting the Internet Explorer security level for the local intranet below Medium. If Internet Explorer continues to display pop-up windows with scroll bars, follow these steps to configure a trusted site for the Vocera Voice Server:

  To add the Vocera Voice Server and Vocera Report Server to the list of trusted sites:
  1. In Internet Explorer, choose Tools > Internet Options. The Internet Options dialog box appears.
  2. Click the Security tab.
  3. Click Trusted Sites.
  4. In the Security Level for this Zone box, set the security level to Medium-low, and click Apply.
  5. Click the Sites button. The Trusted Sites dialog box appears.
  6. Type the IP address of the Vocera Voice Server, and click Add.
  7. Type the IP address of the Vocera Report Server, and click Add.
  8. Click Close to close the Trusted Sites dialog box.
  9. Click OK to close the Internet Options dialog box.

  A system administrator can manage the Internet Explorer Trusted Sites for an entire organization using Group Policy Objects (GPOs). .

- **Do not access a Vocera Voice Web application from the server on which it is running** – By default, Windows Server 2008 and Windows Server 2012 ship with Internet Explorer Enhanced Security Configuration enabled, which may display frequent security prompts when you access a Web application from the server on which it is running. Rather than disable Internet Explorer Enhanced Security Configuration on the server, we recommend that you access Vocera Voice Web applications from your desktop or laptop computer.
- **If your Vocera Voice Server or Vocera Report Server has enabled SSL, configure Internet Explorer to NOT save encrypted pages to disk** – If you enable SSL on the Vocera Server or Vocera Report Server, you may need to update the browser security settings for Internet Explorer to make sure the browser does not save encrypted pages to disk. Otherwise, certain pages of the Administration Console, such as the Permission Browser, will not work properly.

  To update Internet Explorer security settings for SSL access:

  1. In Internet Explorer, choose Tools > Internet Options > Advanced.
  2. Make sure the Do not save encrypted pages to disk option is checked.
  3. Click OK.

Understanding Speech Recognition

This section provides the following information about how Vocera speech recognition works, and how recognition results are calculated.

Vocera Grammars

When a user issues a verbal command to the Genie or responds to a question the Genie asks, Vocera attempts to process the utterance by finding a match in the *Vocera grammars*, which include the following components:

- *A static grammar*, which includes commands such as "Call" and "Broadcast" as well as possible responses such as "Yes" and "No", digits such as "One" and "Two", and so forth. The static grammar is installed by Vocera and cannot be changed by a customer.
- *A dynamic grammar*, which includes all the spoken names a user can possibly utter. The dynamic grammar includes the names of users, groups, sites, locations, address book entries, and all their possible alternates, such as spellings of user names and the singular and plural names of groups.

  Each site has its own dynamic grammar. It is completely determined by values that you enter in the database.
- *A personal grammar*, which includes the buddies of an individual user, as well as any personal learned names and learned commands.

  Each user has his or her own personal grammar.

The grammars vary according to the user issuing the command and the site the user is calling. That is, because each site has its own grammar, and each user has a personal grammar, the actual grammars used for recognition are likely to be slightly different for any individual making a call.

How Speech Recognition Rates Are Calculated

Speech recognition rates are calculated based on the number of recognized speech attempts from total number of speech attempts:

Recognition Rate = Number of Recognized Speech Attempts / Number of Speech Attempts

If a Vocera user says a command and the Genie processes the utterance successfully, that counts as recognized speech. On the other hand, if the Genie is unable to process an utterance, it counts as unrecognized speech.

There are many things Vocera users can do to improve speech recognition. For example, users can train the Genie to understand the way they say particular names or commands. The "Troubleshooting Speech Recognition" chapter of the *Vocera Administration Guide* provides more information about how to solve speech recognition problems.

Recognition Result Categories

The following table describes different categories of recognition results:

Table 2: Speech recognition result categories

Category	Description
Recognized	Speech was received and processed by the Genie.
Rejected	Speech was received but it diverged too much from what the recognition engine expected, so it was rejected. Factors that contribute to rejection include: • Getting interrupted by someone (side conversation) • Using the wrong command • Saying an invalid response to a VMItext message • Incorrectly stating a user, group, or address book entry (for example, the user says "Call Doctor Smith" when "Robert Smith" is the correct name in the database) • Pausing, continuing other conversations while giving Genie commands, stumbling • Incorrect position of the device on the lanyard or universal clip • Recognition errors caused by wireless infrastructure issues, heavy accents, carts rolling by during commands or responses, areas with echo such as stairwells, noisy area, wind picked up by headsets with booms
Others	Speech was received, but the Vocera system was unable to process it. This can happen if the duration of the speech exceeds the system's ability to interpret it, or if the speech started earlier than the Genie prompt.
No Speech-Occurrence	Speech was not received, or was received too late for the Genie to process it. Examples include: • The Call button was pushed inadvertently • The caller pressed the Call button, the Genie responded, but the caller did not interact with the Genie before the no speech timeout period. • The caller said the correct response or command but the packet got lost between the device and the server due to wireless/wired network problems • The caller was interrupted by someone and did not respond to the Genie soon enough **Note:** No speech results reflect a no speech timeout when the Call button is pressed. If the user presses the call button and no speech is perceived by the Genie, the call is ended after three attempts to prompt the user for a command.

Recognition results categorized as Rejected or Others reduce the overall speech recognition rate.

Note: When device users respond to Genie prompts, they can press the Call button to signify "Yes" or the DND button to signify "No." Button responses, although they significantly improve task completion and overall efficiency, are not treated as speech recognitions and therefore are not included in the speech recognition reports.

How to Use Speech Recognition Reports

The speech recognition reports are best used as a broad indicator of speech recognition results, that is, how successful the system is in processing speech attempts. The reports highlight recognition rates for particular users, devices, or access points. You can generate recognition data with specific high or low percentages using the details reports. These reports provided insight to deployment speech recognition quality, allowing you to identify and troubleshoot problems.

Recognition results can be filtered to obtain specific detail in the following reports:

- Speech Recognition Results by User Detail Report on page 43
- Speech Recognition Results by Device Report on page 46
- Speech Recognition Results by Access Point Report on page 45

For more information about generating reports with recognition filters see Filtering Recognition Results on page 17.

Because the speech recognition reports do not present information about the recognition accuracy of in-grammar utterances, they should not be used to judge overall speech recognition accuracy and user satisfaction.

Unsupervised versus Supervised Speech Recognition

Speech recognition reports provide statistical calculations of speech recognition results based on logs generated on the server. These statistical results are a measure of *unsupervised speech recognition*, which is the standard method for reporting speech recognition results. In other words, the results reflect how successfully the system has been able to process speech without determining the accuracy of the recognition.

Although unsupervised speech recognition is the standard way to report recognition results, and it is the method used by several other reporting products, it cannot provide details of the overall accuracy of the recognition engine. The only way to determine overall accuracy of speech recognition in the Vocera system is to perform *supervised speech recognition.* Supervised speech recognition involves monitoring and transcribing utterances from end users and comparing the manual transcription against the result of each utterance in the call log. **Vocera Professional Services** can help you perform a supervised speech recognition analysis of your Vocera system to optimize recognition performance using several techniques, including dictionary tuning, multiword modeling, and recognition parameter tuning.

In-Grammar versus Out-Of-Grammar Speech

An *in-grammar* utterance is any utterance that conforms to the Vocera grammars (the combination of the static set of commands, the dynamic grammar for different sites, and the personal grammar of individual users). All other utterances are considered *out-of-grammar*.

In-grammar utterances have a much higher chance of being recognized accurately. To determine whether utterances were in-grammar or out-of-grammar, supervised speech recognition must be performed.

The system can process in-grammar utterances in the following ways:

- **Correct Acceptance**—The Genie has correctly recognized the utterance.
- **False Acceptance**—The Genie has falsely recognized the utterance as something else that is in the Vocera grammars.
- **False Rejection**—The Genie has falsely rejected the utterance.

When an out-of-grammar utterance approximates the grammar but does not match it exactly, the recognition engine may still accept the utterance. For example, a user may say the command “Call Kathy Turner” but “Kathleen Turner” is the name in the database. Although the utterance is out-of-grammar, it may still be accepted. Similarly, the utterance “Hold my calls” is out-of-grammar because the in-grammar commands are “Block all calls” or “Hold all calls.” Still, the utterance is close enough to the grammar that it may be accepted.

In-Grammar Recognition Examples

This section provides a few examples of how in-grammar utterances are recognized by the system, without implying anything about overall recognition accuracy.

- **Correct Acceptance**—When a user says a valid Vocera command, the sequence goes like this:

Genie: Vocera.
User: Call Amy Wilson.
Genie: Finding Amy Wilson.

In the above example, the user's utterance was both recognized and accurate.

- **False Acceptance**—Sometimes when an utterance is recognized by the system, it may be recognized incorrectly. For example, consider the following sequence of speech attempts with the Vocera Genie:

Genie: Vocera.
User: Call Ravi Bashir.
Genie: Did you mean Ron Bishop?
User: No.
Genie: OK, let's try again. Vocera.
User: CALL RAVI BASHIR!
Genie: Did you mean Ron Bishop?
User: NO!!

In the above example, all four user utterances were recognized by the system. However, the first and third utterances ("Call Ravi Bashir") were not recognized *accurately*, although they count as recognized utterances in the speech recognition reports.

Note: Not all false acceptances of in-grammar utterances result in the system prompting the user for confirmation. The system sometimes accepts the utterance with high confidence and does not prompt the user to confirm it.

- **False Rejection**—An in-grammar utterance could be rejected incorrectly, as shown in this example:

Genie: Vocera.
User: Call Al Renda.
Genie: I'm sorry. I do not understand.

In the above example, the name "Al Renda" is in the database, but the Genie was unable to process it, perhaps because there was loud background noise.

Understanding Groups and Departments

A *department group*, also called a *department*, is a group that corresponds to a department within the organization using the Vocera system. By designating a group as a department, you provide accounting features and speech recognition enhancements that are not available to other Vocera groups.

For example, suppose the Midtown Medical Center has units such as ICU, Pediatrics, and Radiology. If your Vocera configuration has corresponding groups, it makes sense to designate those groups as departments. Users at Midtown Medical Center can then take advantage of the extended accounting and speech recognition features of these Vocera departments.

To help you identify a department group, Vocera displays an asterisk (*) next to its name throughout theAdministration Console. Similarly, Vocera displays two asterisks (**) next to a subdepartment name.

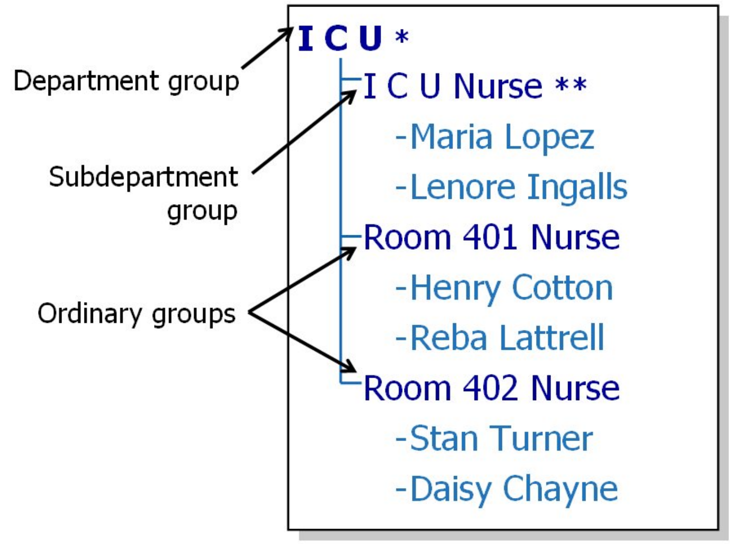

Figure 1: Different types of groups

Subdepartments

A subdepartment is a subgroup of a department group and whose members are also considered to be assigned to the parent department group for purposes of departmental calling or reporting. Vocera displays two asterisks (**) next to the name of a group in theAdministration Console to indicate that it is a subdepartment.

Subdepartment groups, like department groups, are intended to be relatively static. That is, members should not be dynamically assigned to a subdepartment. Only groups that are directly contained within an existing department or subdepartment should have their Group Type field set to Subdepartment. Subdepartments can be nested any number of levels deep within a department.

A subdepartment group should be a member of only one parent department. Otherwise, Report Server will place users that belong to multiple departments into *virtual departments*.

Tip: If your Report Server reports include virtual departments, it may indicate that your Vocera Voice Server database needs some cleanup. The Vocera system administrator can use the Data Check utility in theAdministration Console to check your Vocera Voice Server database for potential problems that could impact usability of the system. For more information, see the *Vocera Administration Guide*.

Filtering by Department

You can filter many Report Server reports by department. When you filter a report by a department, only users that belong exclusively to that department are included in the report.

Important:
Report Server does not maintain historical data on department membership over time. Instead, department membership is determined from the latest dataload of Vocera Server data. The only way to report on department membership at some time earlier than the latest dataload is to restore an earlier Report Server backup file.

You can select multiple departments to include in a report, including *virtual departments*. A virtual department represents users that belong to more than one department. The name of a virtual department includes actual department names separated by plus signs (for example, Marketing +Sales and I C U+Nursing Administration).

Vocera determines department membership as follows:

- Immediate members of a department group are always members of that department. This is true even when the department group is nested under another department group.
- When a department group contains other subdepartment groups, the members of the nested subdepartment groups are members of the *nearest* department above them.

For example, suppose Pediatrics is a department group that contains the Pediatric Nurses group, and suppose Maddie Hall is an immediate member of Pediatric Nurses. The following list describes how calls made to users or groups within Pediatrics are listed in Vocera reports:

- Calls or broadcasts to the Pediatrics department are listed under Pediatrics.
- Calls or broadcasts to the Pediatric Nurses group are listed under its parent department, Pediatrics.
- If Pediatric Nurses is a department group (as indicated by one asterisk), calls to Maddie are listed under the Pediatrics Nurses department.

- If Pediatric Nurses is a subdepartment group (as indicated by two asterisks), calls to Maddie are listed under the Pediatrics department.

- If Pediatric Nurses is an ordinary subgroup (as indicated by no asterisks), and Maddie does not belong to another department, calls to Maddie are listed under "No Department Assigned."

Vocera Connect Apps

Vocera provides Vocera Collaboration Suite apps for iPhone and Android smartphones. With Vocera Connect, you can use your Wi-Fi-enabled phone to connect to the Vocera system over your organization's wireless network, just like a Vocera device. The app allows you to quickly locate other Vocera users from the Contacts menu, as well as read and send Vocera text messages. You can issue many of the voice commands available on Vocera devices. When users are not on site, they can use their phone's cellular network to access Vocera features, providing seamless access to Vocera at all times.

The Vocera Report Server reports include records of speech recognitions, incoming calls, outgoing calls, and voice commands made from all Vocera clients, including Vocera Collaboration Suite apps and Vocera Access Anywhere.

The Device Type Usage report shows usage trends for all Vocera devices, including Vocera Collaboration Suite and Vocera Access Anywhere. See **Device Type Usage Report** on page 21.

Using the Report Console

This section provides information about logging into the Report Console and generating reports.

Logging in to the Report Console

The Report Console is a browser-based application that you can use to generate reports and administer the Vocera Report Server. You can log in to the Report Console using Internet Explorer.

To log in to the Report Console:

1. Open a web browser window.
2. Enter the following in the Address field of the browser window:

   `http://report_server/reportconsole/index.jsp` where report_server is either the numeric IP address or the DNS name of the Vocera Report Server.

   Tip: You might want to create a Favorites link (also called a bookmark) in your browser for the Report Console URL.

   The Report Console login page appears. The Vocera Report Server supports one account only. The user ID for this account is `Administrator`, and it cannot be changed.
3. Enter the password for the built-in administrator account in the password field. The default password is `admin`

   The password is case-sensitive. If you see an error message when you attempt to log in, make sure the Caps Lock key on your keyboard is not turned on.
4. Click Log In.
   The Report Console appears.

   Important: Do not have more than three users logged in and generating reports concurrently.
5. If the password is still set to the default value, change it to something more secure. See Entering Server Information on page 70 for instructions.

Generating a Report

If you have a license for the Scheduler, the Report Console opens to the Report Scheduler page, which is where you schedule reports to run automatically. Otherwise, the Summary Reports page opens.

To the left of this page is a navigation bar with buttons that open the other pages in the Report Console. Buttons with names that include the word Reports open pages that contain reports you can run.

Note: Two different users logged into the Report Console cannot generate the same report at the same time. As a general rule, do not generate reports concurrently. Wait for the Vocera Report Server to finish generating a report before you begin generating another.

To generate a report:

1. Click one of the following buttons in the navigation bar to choose a report category:
   - **Summary Reports** – Generate reports that show snapshots of system call volume and speech recognition rates.
   - **Call Reports** – Generate reports that show call volume and call duration.
   - **Speech Reports** – Generate reports that show speech recognition problems for users, groups, departments, sites, devices and access points.

     Note: If you generate a report for All Sites, the report will include all users, groups, departments, devices and access points. To generate more detailed data generate the report per site.
   - **Integration Reports** – Generate reports that show information about external systems that send messages to Vocera devices.
   - **Asset Tracking Reports** – Generate reports that show which devices are being used, and by which users or departments.
   - **Export Data Reports** – Export selected data to a comma-separated values (CSV) file.
   - **Device Reports** – Generate reports to help you manage and track devices. These reports are similar to Asset Tracking reports, but they are grouped by the owning group instead of the department and they provide additional device information.
   - **Custom Reports** – Generate custom reports for your company using Crystal Reports.
2. Click a radio button to choose a report in the specified page.
3. Click Generate.
   The Report Parameters page opens.
4. Specify report parameters. For example, if the report allows you to specify a date range, specify the upper and lower limits (if any) for the date range. For the Site parameter, select "All Sites" or an individual site.
   For more information about report parameters, see Entering Parameters for Scheduled Reports on page 87.
5. Click Generate to generate the report.

Entering Report Parameters

Most Vocera reports require you to specify a date range, and some also require you to select other parameters, such as the site or department. By specifying a narrow date range and selecting a specific site (instead of "All Sites") and department (instead of "All Departments"), you can generate reports faster.

For example:

1. Click the Generate button on the Summary Reports page with Group Entry Summary selected.
   The Report Parameters page opens.
2. Use this page to enter upper and lower limits (if any) for the date range, and select the site for which you want to generate the report.
3. You can specify that a date range has no lower or upper limit by clicking Range has no lower limit (the range begins with the earliest date for which data has been loaded) or Range has no upper limit (the range ends with the latest date for which data has been loaded), or both. The Include this value check box specifies whether data for the corresponding date is included in the report.

For a complete list of report parameters for all reports, see **Entering Parameters for Scheduled Reports** on page 87

Entering Dates

You can enter dates by typing a date using the specified format (In the US, the default format is m/dd/yyyy format, for example, type `3/21/2006` for March 21, 2006), or by using the following procedure:

1. Use the Calendar tool to choose a date.
2. Open the Calendar tool by clicking the icon next to the date field.
3. Specify a month in one of the following ways:
   - Choose a month from the drop-down list.
   - Click < to choose the previous month.
   - Click > to choose the next month.
   - Click Today to display the current month.
4. Specify a year in one of the following ways:
   - Type a year in the text box.
   - Click << to choose the previous year.
   - Click >> to choose the next year.
   - Click Today to display the current year.
5. Click a number in the Calendar tool to specify a day.
   The Calendar tool enters the date you specify into the corresponding date field, then closes.

Selecting the Site

By default, when you generate a report it is generated for all sites. If your company has multiple sites defined, selecting All Sites on the Report Parameters page can cause the report to take time to generate. To generate a report faster, select an individual site on the Report Parameters page, and then click Generate.

Selecting the Department

You can choose to filter many reports by department. The report will then show data only for users that belong to the selected departments based on the latest data load of Vocera Server data.

The Department drop-down list is a cascading list whose choices are updated based on the value selected in the Site list. If the site is “All Sites,” then only “All Departments” can be selected for the department. If a specific site has been selected instead of “All Sites,” then “All Departments” refers to all departments at that site.

For more information about filtering reports by department, see "Configuring Dynamic Extensions" in the *Vocera Telephony Configuration Guide.*

Filtering Recognition Results

This parameter allows you to generate filtered results to obtain very specific report data. You can filter the results to show only high recognition rates, or filter the information for results specific to devices showing speech recognition problems.

For example, a Recognition Filter set to Below and a Filter Recognition Filter set to 70%, would filter the results to include only data with a recognition rate of 0% to 69.9%. To see all data, set the Recognition Filter to Above and the Recognition Rate to 0.

Report Cover Page

Each Vocera report has a cover page that displays the following information about the report:

- Report description – the brief description of the report that appears in the Report Console.
- Report parameters – the parameters specified for the report.
- Notes for report recipients – optional notes that describe how to read and understand the report. The administrator can enter these notes in the Notes for Report Recipients field when adding a report to a package in the Report Scheduler. Reports that are generated manually outside of the Report Scheduler do not have notes for report recipients.

Navigating in a Report

Use the Crystal Reports toolbar to navigate through the pages in a report. Some reports also provide a Group Tree for quick access to data grouped by site, and, within each site, by department. Click a site name in the Group Tree to display the report data for that site. You can also expand the Group Tree to drill down and display data grouped by department.

The following figure shows the tools for navigating in a report.

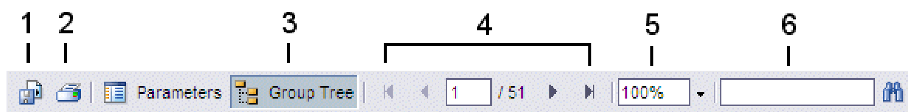

Figure 2: Tools for navigating in a report

Tools for navigating in a report:

- The Export this report button allows you to export the report to a file using one of the following formats:
  - Crystal Reports (RPT)
  - PDF
  - Microsoft Excel (97-2003)
  - Microsoft Excel (97-2003) Data Only
  - Microsoft Excel (97-2003) Editable
  - Rich Text Format (RTF)
  - Separated Values (CSV)

  For most formats, you can export an entire report or specify a range of pages; the Crystal Reports (RPT) and Separated Values (CSV) formats only support exporting the entire report.
- The Print this report button allows you to print a report. It does not output directly to a printer. Instead, it display a dialog box that allows you to specify a page range to print. When you click OK, the report is saved to a temporary Adobe Acrobat (PDF) file. You can then open the PDF file to print it.
- The Show/Hide Group Tree button shows or hides a tree control. You can use this control to display data for a particular site, and for departments within that site.
- The controls in this group are: Go to First Page, the Go to Page field, Go to Previous Page, Go to Next Page, and Go to Last Page. This group of controls is displayed at the top of every report window.

  You can use the Go to Page field to display a specified page. Type the page number in the field, and then press Enter.
- Use the Zoom tool to display a report at different sizes, ranging from 25% to 400%
- Use the Search for text field to search for specified text (for example, a user name or group name) in a report. Type the text to search for, and then press Enter or click the Search for text icon

  

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Displaying Vocera Report Server Documentation and Help

You can display Vocera Report Server documentation online through the Report Console. Vocera Report Server documentation includes manuals in PDF (Portal Document Format) files and context-sensitive help.

You can access PDF (Portable Document Format) versions of Vocera Report Server documentation through the Report Console Documentation screen. The Adobe Reader, a free software program from Adobe Systems Incorporated, is required to display PDF documents. You can download the Adobe Reader or learn more about it from the Adobe Reader [1]home page.

To display the Vocera Report Server documentation and help:

- For the Vocera library PDFs:
    1. Click Documentation on the Vocera Report Server navigation bar.

       The Documentation page appears, displaying links to PDF versions of all the documentation.
    2. Select a PDF from the list of displayed documents. Each PDF opens in a separate window.
- For the context sensitive online help, click the icon to get specific help for a particular topic. A separate browser window opens to display the help topic.

[1] http://www.adobe.com/products/acrobat/readermain.html

Report Gallery

Vocera Report Server generates a wide selection of reports which can be used to get information on the system call volume, detect speech recognition issues, manage devices, export data, troubleshoot problems with running report packages, and finally to create custom reports. This section explains how to interpret reports that chart the usage of the Vocera System.

Report Categories

The following table summarizes the report categories available for the Vocera Report Server:

Table 3: Report categories

Type of Report	Description
Summary Reports on page 20	Snapshots of system call volume and speech recognition rates.
Call Reports on page 36	Information about calls made and received by users, groups, and so on.
Speech Reports on page 42	Pinpoint equipment or users experiencing speech recognition problems.
Integration Reports on page 49	Information about external systems that send messages to Vocera devices.
Device Reports on page 53	Account for devices that have been placed into service with the Vocera server. The reports are filtered by the owning group or department as well as the site.
Asset Tracking Reports on page 57	Account for devices that have been placed into service with the Vocera server. They should be used only if you do not have a Vocera license that includes Device Management.
Exporting Data Reports on page 59	Export selected data to a comma-separated values (CSV) file.
Scheduler Diagnostics Reports on page 64	Assist administrators determine why a scheduled report package or a system task did not run successfully.
Custom Reports on page 65	Custom reports are reports that you create with Crystal Reports and add to the Report Console. A sample custom report is provided.

Summary Reports

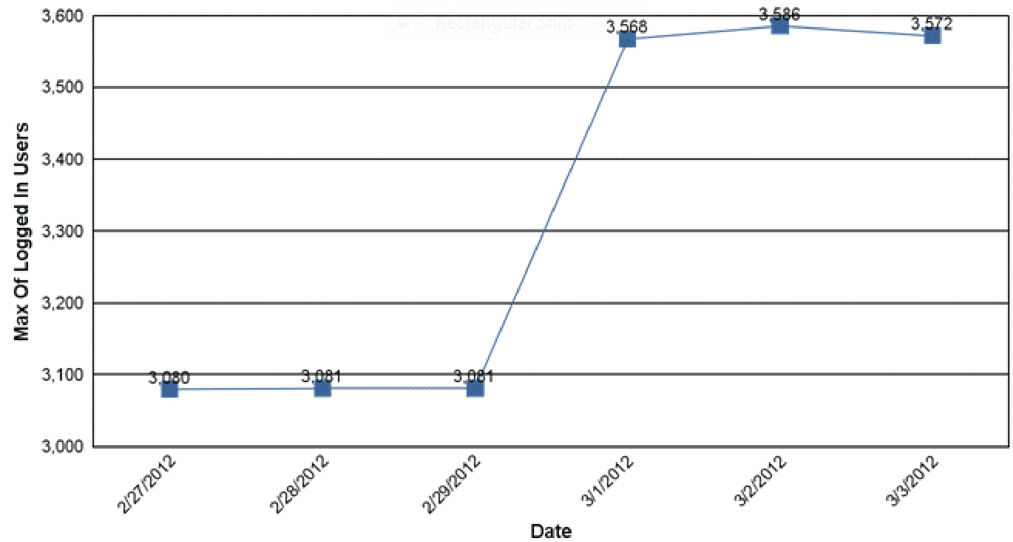
Summary reports provide snapshots of system call volume and speech recognition rates. To access summary reports, click Summary Reports in the navigation bar.

Simultaneous User Login Report

The Simultaneous User Login report shows the number of simultaneous Vocera users trending hourly, daily, or both. You can use this report to determine whether you need to purchase additional Vocera licenses.

Date Range:
2/26/2012 - 3/3/2012

Simultaneous User Login Report



Maximum Number of Licenses Used:	3,586
Total Number of Authorized Licenses:	4,000

Figure 3: Simultaneous User Login report

Device Type Usage Report

The Device Type Usage report shows daily, weekly, or monthly calls made using the following Vocera devices:

- B1000A
- B2000
- B3000
- Vocera Collaboration Suite for Android (Wi-Fi calls only)
- Vocera Collaboration Suite for iPhone (Wi-Fi calls only)
- Vocera Connect for Cisco
- Vocera Smartphone
- Vocera Access Anywhere (includes calls made from Vocera Connect for Cisco and Vocera Collaboration Suite apps over the cellular network)

You can use this report to determine usage trends for Vocera devices. Depending on call volume and the date range you specify, this report can take a long time to generate. Consequently, you should schedule this report to run at periodic intervals.

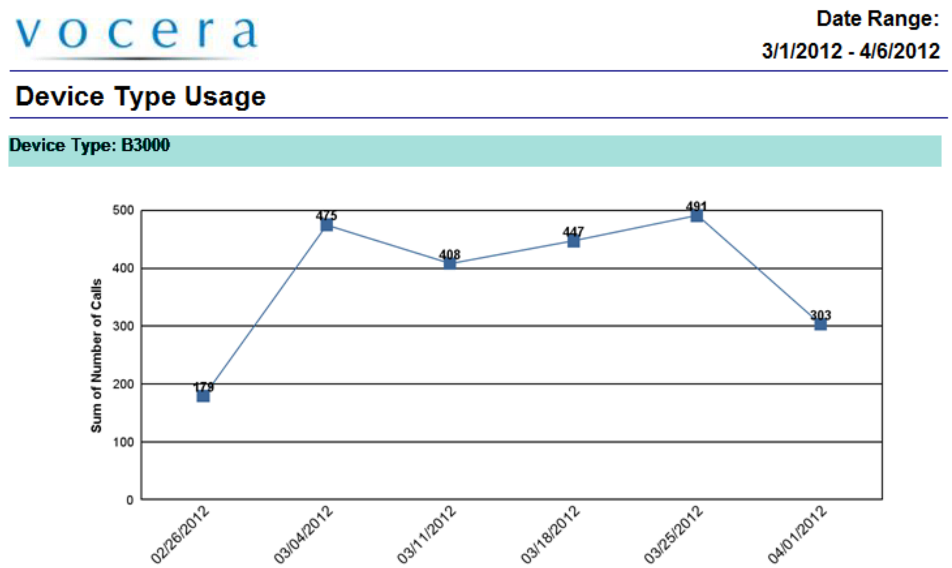


Figure 4: Device Type Usage report

Note: The Device Type Usage report shows only call usage. Call logs saved before the installation of Vocera Server 4.3 do not include device type information and therefore show up as “Unknown” in the report.

Inactive Users Report

The Inactive Users report shows users that have not logged into Vocera during the specified date range. The users are listed by userID, first name, and last name. The users can be grouped by site and department. The report can be used to remove inactive users and improve name recognition.

Note: When you remove inactive users, make sure you do not inadvertently remove Vocera Connect users who connect to the Vocera Server remotely over the cellular network and therefore do not log in.

vocera

Date Range:
11/29/2010 - 12/2/2010

Users not using the Vocera Communications System

Site: Global

C C U+I C U+Nursing Administration

UserID	First Name	Last Name
LGrimes	Lauren	Grimes

Total Inactive Users for Department: 1

C C U+Nursing Administration

UserID	First Name	Last Name
CCampos	Candice	Campos
lhargraves	Lizzie	Hargraves

Total Inactive Users for Department: 2

C T I C U

UserID	First Name	Last Name
memberton	Melisa	Emberton

Total Inactive Users for Department: 1

C T I C U+Nursing Administration

UserID	First Name	Last Name
MBurkhard	Marives	Burkhard
IDalisay-Macavinta	Irene	Dalisay-Macavinta

Total Inactive Users for Department: 2

Figure 5: Inactive Users report

Inactive Groups Report

The Inactive Groups report shows groups that were not called or broadcasted to during the specified date range. The groups can be filtered by site and department. The report can be used to remove inactive groups and improve name recognition. The following figure shows a page from an Inactive Groups report.

Note: A call to a user within a group or department (for example, “Call Amy Wilson in Pharmacy”) is not counted as a call to a group.

vocera

Date Range:
9/1/2010 - 12/10/2010

Groups Not Called - By Site

Global

Department: Inpatient Rehabilitation Services

Group Name

Inpatient Pediatric Physical Therapy
Lift Team
Occupational Therapy
Physical Therapists
Speech Pathologists

Total Inactive Groups for Inpatient Rehabilitation Services : 5

Department: L and D

Group Name

L and D Charge Nurse
L and D Nurse
L and D Nursing Assistant
O B residents
O B G Y N Doctors
Room 1502
Room 1504
Room 1506
Room 1508
Room 1509

Total Inactive Groups for L and D : 10

Figure 6: Inactive Groups report

Inactive Address Book Entries Report

The Inactive Address Book Entries report shows address book entries that were not called during the specified date range. The report can be used to remove inactive address book entries and improve name recognition. The following figure shows a page from an Inactive Address Book Entries report.

Date Range:
9/1/2010 - 12/10/2010

Address Book Entries Not Called - By Site

Site: Global

Address Book Entry	Type
A C T PAT	PLACE
CARE COORDINATION	PLACE
CARPENTER SHOP	PLACE
CENTER FOR HOSPICE	PLACE
CLASSROOM B	PLACE
CLINICAL NUTRITION	PLACE
COMMAND CENTER	PLACE
CONTROL DESK RADIOLOGY	PLACE
CORAM	PLACE
DIETARY OUTPATIENT NUTRITION	PLACE
DIETICIAN OFFICE	PLACE
HEALTH SERVICES LIBRARY	PLACE
HEMODIALYSIS	PLACE
HUDSON HOME CARE	PLACE
KESSLER WEST	PLACE
MATERIALS MANAGEMENT	PLACE
MEDICAL EDUCATION	PLACE
MEDICINE OFFICE	PLACE
NEONATOLOGY	PLACE
NICU Pharmacist	PLACE

Figure 7: Inactive Address Book Entries report

Group Entry Summary Report

The Group Entry Summary report shows the total calls made to a Group entry. You can use this report to find out which groups are getting the most calls. You can also use this report to learn which entries are unused and can be removed from the system. Removing unused Group entries can improve overall name recognition. The following figure shows a page from a Group Entry Summary report.

vocera

Date Range:
11/1/2010 - 11/30/2010

Group Usage Counts

Site: Global

Department: P A C U

	Times Used
P A C U Nurse	8
Room 1524	3
Room 1546	2

Department: P I C U

	Times Used
Room 1901	19
P I C U Nursing Assistant	15
Room 1903	10
Room 1915	4
Room 1906	1

Figure 8: Group Entry Summary report

Address Book Entry Summary Report

The Address Book Entry Summary report shows the total calls made to an Address Book entry. You can use this report to find out which Address Book entries are getting the most calls. You can also use this report to learn which entries are unused and can be removed from the system. Removing unused Address Book entries can improve overall name recognition. The following figure shows a page from an Address Book Entry Summary report.

vocera

Date Range:
12/1/2010 - 12/10/2010

Address Book Entry Usage Counts

Site: Global

	Times Used
CARDIAC SERVICES	5
CHILDRENS CANCER CENTER	4
I C U	4
A C T MAIN	3
CASE MANAGER OFFICE	3
CELLULAR THERAPY	3
I T N and S	3
CARDIAC SERVICES	2
CARE ONE	2
CHAPLAIN	2

Figure 9: Address Book Entry Summary report

Hourly Usage Summary Report

The Hourly Usage Summary report shows the number of Genie sessions per hour during a 24-hour period by each site. The first page of the report charts the information in a graph; the second page tabulates the number of genie sessions each hour. You can use this information to schedule system maintenance. As a best practice, perform maintenance operations when system usage is light. Shows the overall usage of the system by hour.

Based on the data in the report shown in the following figure, system maintenance can be performed starting around 8:00 p.m., as long as it is complete by 6:00 a.m.

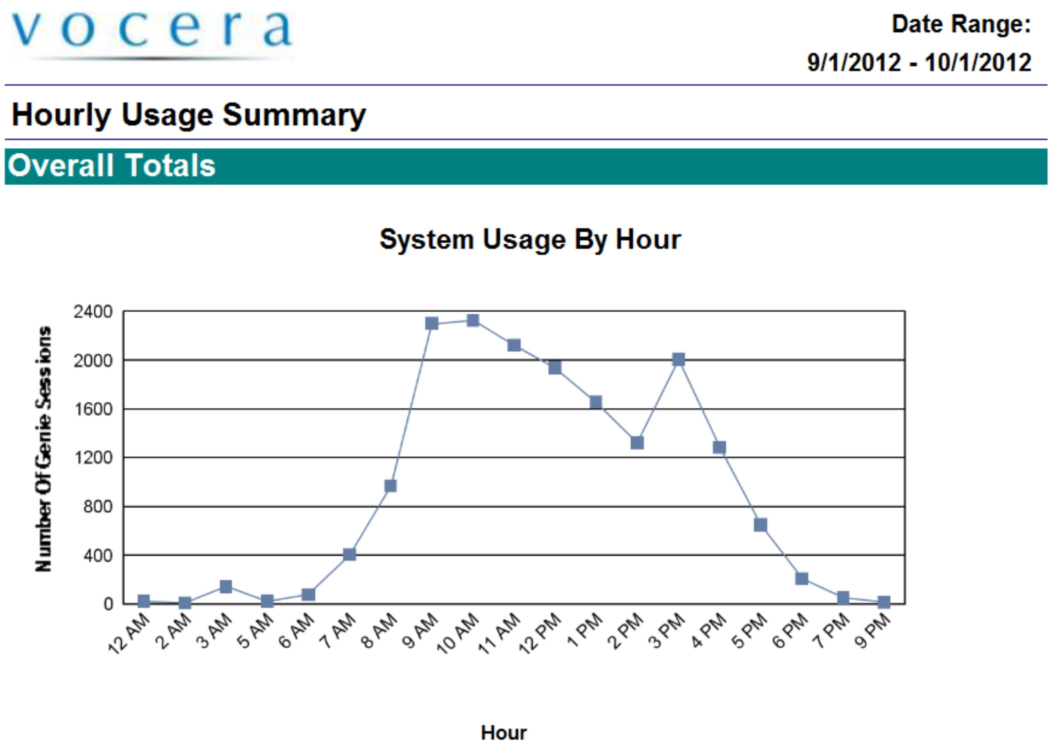


Figure 10: Hourly Usage Summary report

Genie Session Summary Report

The Genie Session Summary report summarizes Genie interaction data for each day in the specified date range. The first page of the report plots the data in a graph; subsequent pages show detailed data in a table. Data includes maximum simultaneous sessions, average session duration, number of unique users, and total sessions. The following figure shows a graph from a sample Genie Session Summary report.

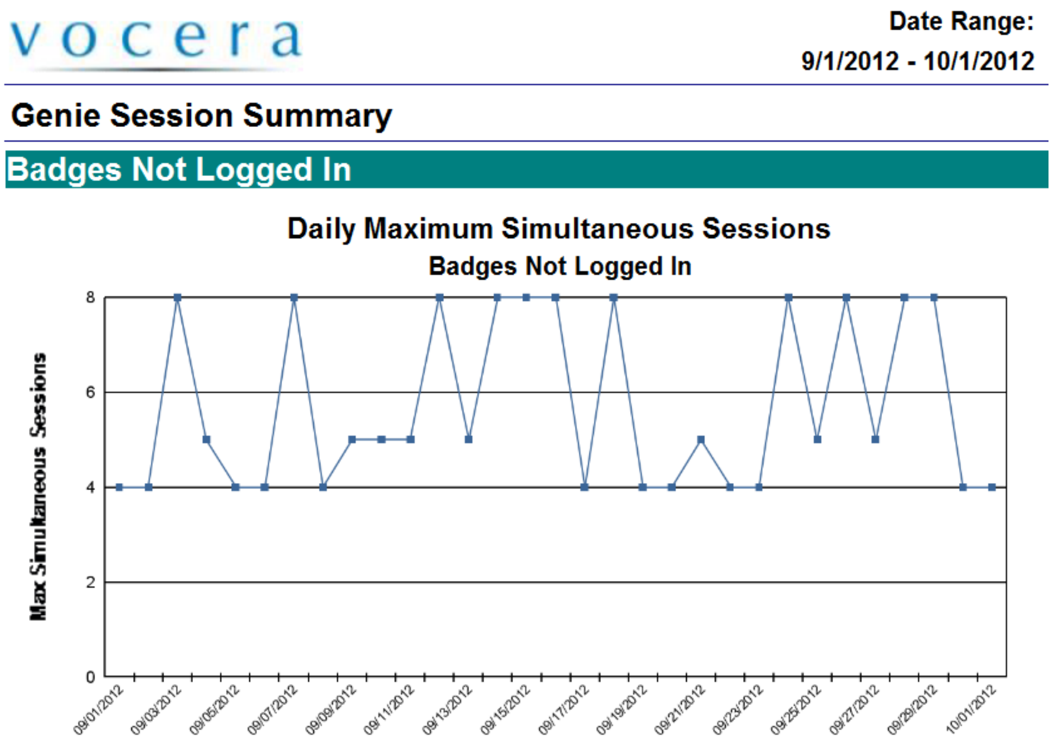
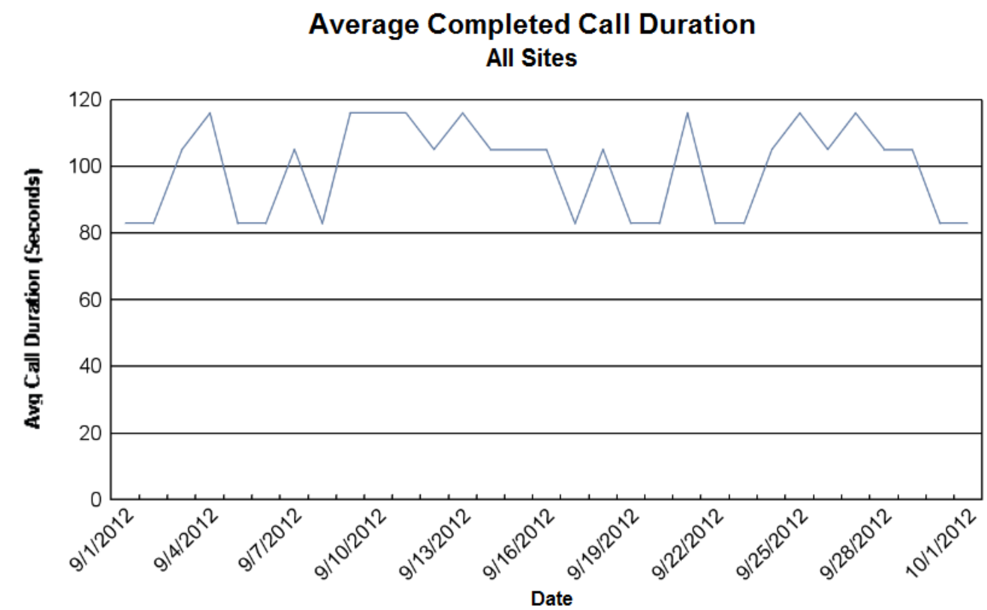


Figure 11: Genie Session Summary report

Average Call Duration Statistics Report

The Average Call Duration Statistics report summarizes the average duration of completed calls for the system in the selected time frame. The report also represents the information in a graph per site and for the overall system. The following figure shows a page from an Average Call Duration Statistics report.

Average Call Duration Statistics report


Date Range:
9/1/2012 - 10/1/2012

Average Call Duration Statistics

Telephony Usage Trend Report

The Telephony Usage Trend report provides data about telephony port usage for each principal site. It can be generated to show daily or weekly trends, or both.

A principal site may share its telephony server with other sites. The Telephony Usage Trend report lists only principal sites, but it shows the cumulative port usage of all sites that share a particular telephony server.

This report can help you determine if the number of licensed telephony ports available is sufficient to meet peak demand. During peak usage periods, calls can be delayed or dropped if the number of calls exceeds the number of ports available. If the number of ports is insufficient to meet your needs, you may want to consider licensing more ports.

The report charts usage based on the maximum number of telephony ports in use on a given date. It also provides the maximum number of ports in use during a specified date range and the total number of ports allocated for each principal site.

Note: For information about configuring telephony see the *Vocera Administration Guide*. For more information about sharing telephony service and servers across multiple sites, see the *Multiple Site Scenarios* section in the *Vocera Installation Guide*.

Following is an example Telephony Usage Trend report:

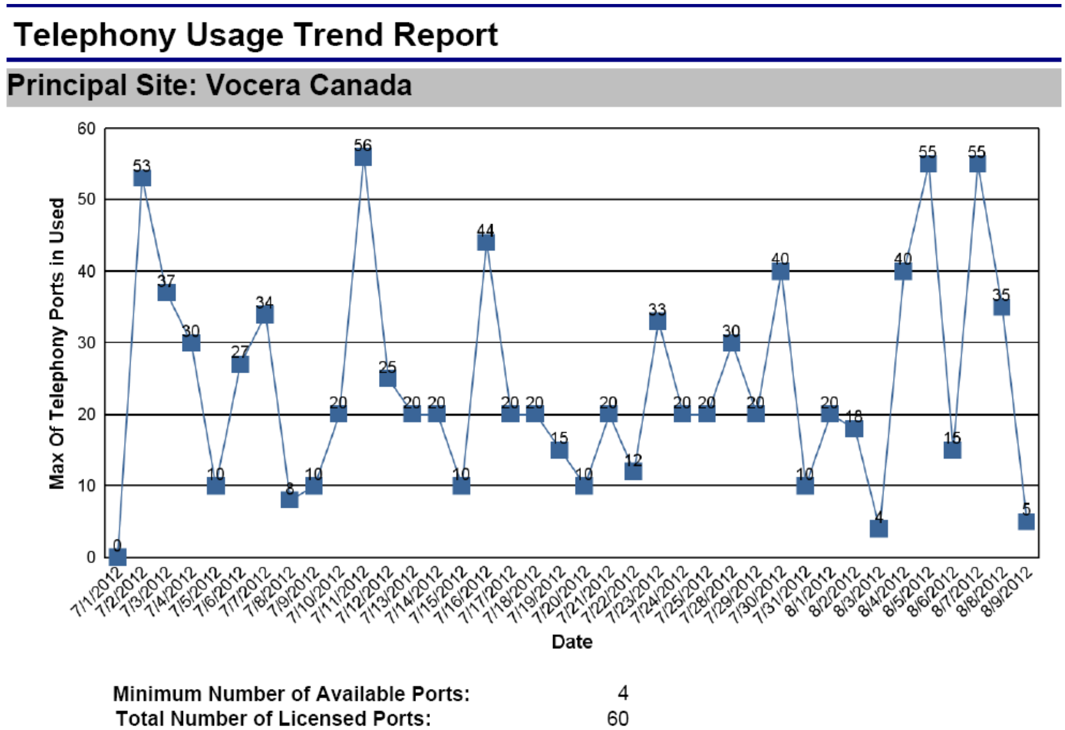


Figure 12: Telephony Usage Trend Report

Tiered Administration Audit Report

The Tiered Administration Audit report shows all modifications and system actions performed via theAdministration Console.

The following figure shows a page from a Tiered Administration Audit report.

vocera

Date Range:
11/1/2010 - 12/2/2010

Admin Console Audit Report

Site: Global

Emergency Department

11/12/2010

Time	Modified By	Operation	Modified Entity Type	Modified Entity
9:04:10AM	David Candelaria	Update	User	Candelaria, David

11/13/2010

Time	Modified By	Operation	Modified Entity Type	Modified Entity
9:31:25AM	Jim McEnrue	Login User Console	User	McEnrue, Jim
9:32:37AM	Jim McEnrue	Update	User	McEnrue, Jim

11/14/2010

Time	Modified By	Operation	Modified Entity Type	Modified Entity
11:04:27AM	Shenma Bernard	Login Admin Console	User	Bernard, Shenma
11:09:02AM	Shenma Bernard	Delete	Location	4BaseTech
11:11:23AM	Shenma Bernard	Update	Location	Mike Kim - Home

11/15/2010

Time	Modified By	Operation	Modified Entity Type	Modified Entity
9:31:25AM	Lizabeth Defillippis	Login User Console	User	Defillippis, Lizabeth
9:32:37AM	Lizabeth Defillippis	Update	User	Defillippis, Lizabeth

11/21/2010

Time	Modified By	Operation	Modified Entity Type	Modified Entity
9:50:08AM	Ray Velez	Update	User	Velez, Ray
9:50:43AM	Ray Velez	Update	User	Velez, Ray
10:21:40AM	Ray Velez	Send Text Message	User	gibson, michele

Figure 13: Tiered Administration Audit report

The following table describes the report columns.

Table 4: Tiered Administration Audit report Columns

Column	Description
Time	The Time column shows when a change was made.
Modified By	The Modified By column shows who made the change. This value corresponds to a User ID specified via theAdministration Console or the User Console on the Vocera server, unless the user logged in with the built-in login ID `Administrator`. If the operation was performed automatically by the Vocera system—for example, an automated restore of the database—the value is `System`. If the operation is a login by Report Server to the Vocera Voice Server to perform a dataload, this value is null.
Operation	The Operation column specifies the operation that changed the Vocera database. Here are some possible values: • Auto Restore—The Vocera system automatically restored data from the database. • Backup—The database was backed up. • Create—An entity was created. • Delete—An entity was deleted. • Login Admin Console—Someone logged in using the default administrator user name and password. • Login Tiered Admin Console—Someone logged in using a user name and password that has administration rights. • **Login User Console**—Someone logged into the Vocera User Console. • **Login VAI**—Someone logged into a Vocera Administration Interface (VAI) client. • Send Text Message—Someone sent a text message to another user's device. • Update—One or more of an entity's property values changed. • Update Conference Group—The list of members of a conference group was changed. • Update System—One or more system property values changed.

Column	Description
Modified Entity Type	The ModifiedEntityType column specifies the type of the entity that was changed. If no entity was changed, this value is empty. Possible values: • AddrBook (address book entry) • Group • User
Modified Entity	The ModifiedEntityID column identifies the entity that was changed. For a user, the value is the user ID. For a group, the value is the group name. For an address book entry, the value is the address book entry name. If the Vocera database was not changed, for example, when a Backup operation occurs, the displayed value is N/A.

Command Usage Report

The Command Usage report shows Vocera voice commands that have been used by each department. The report shows a total of how many times each command was used and the percentage.

This report includes commands that are spoken when users access the Vocera system from a phone using Vocera Access Anywhere.

The following figure shows a page from a Command Usage report, available from the Summary Reports page.

vocera

Date Range:
11/1/2010 - 12/10/2010

Command Usage Summary

Site: Global

Case Management

Command	Number of Times Used	Percentage of Total Commands
Call	178	67.42
PlayVMessages	27	10.23
LogOut	15	5.68
SendMessage	9	3.41
WhereIs	6	2.27
DeleteMessage	5	1.89
Conference	4	1.52
TransferToExtension	3	1.14
Invite	3	1.14
Cancel	3	1.14
RecordName	2	0.76
StopForwarding	2	0.76
DeleteVMessages	2	0.76
Transfer	1	0.38
Broadcast	1	0.38
WhereAmI	1	0.38
WhatTimeIsIt	1	0.38
DeleteTMessages	1	0.38
Total:	**264**	

Total Commands for Site Global: **264**

Total Commands: **264**

Figure 14: Command Usage report

System Call Volume Trend Report

The following figure shows a page from a System Call Volume Trend report, available from the Summary Reports page.

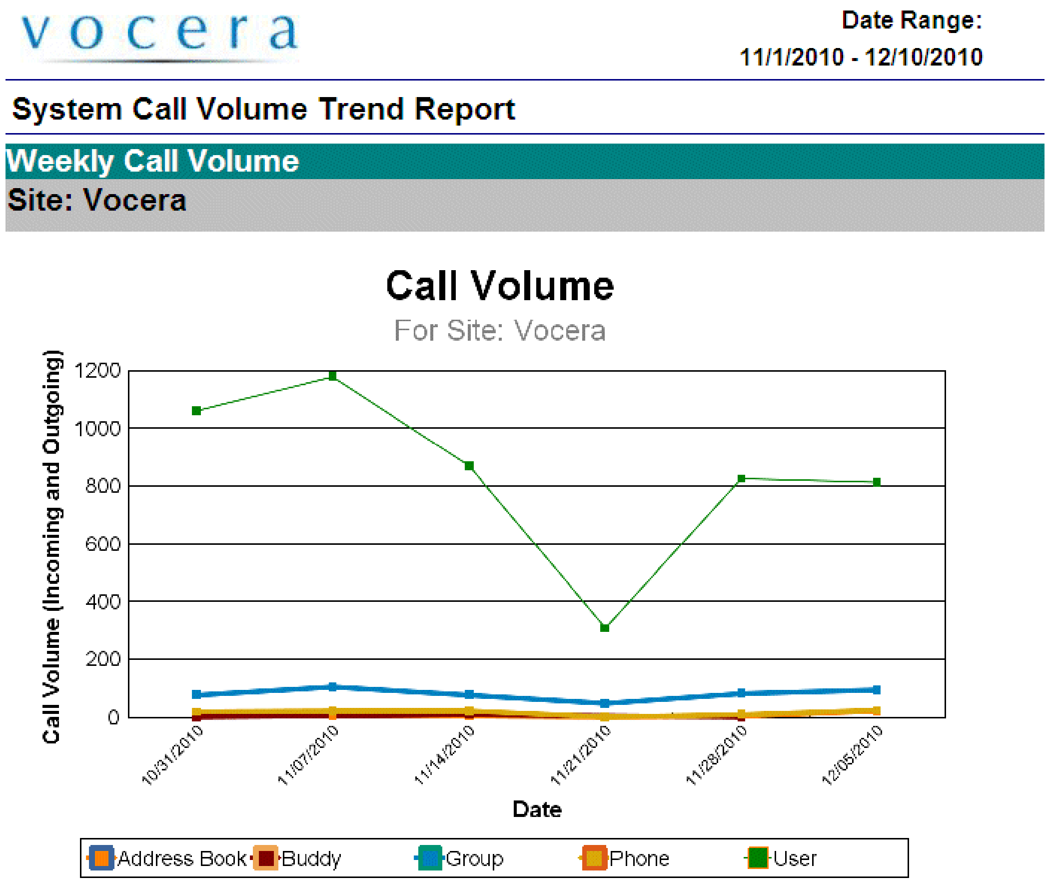


Figure 15: System Call Volume Trend report

The System Call Volume Trend report shows incoming and outgoing call volume trends over a specified date range. It shows all Vocera calls, including PBX calls, and it replaces the daily, weekly, and monthly System Call Volume reports available in previous versions. You can plot the trend over daily, weekly, or monthly periods. If you generate the report for multiple sites, the report provides data for each site as well as the overall system.

Call volume results are grouped by site. For each site, three different reports are provided:

- A line chart showing call volume trends over time
- A pie chart showing slices for each category of call volume results
- A table showing detailed call volume data

Call volume results are categorized as follows:

- To Badge User
- To Group
- To Phone
- To Address Book Entry
- To Personal Buddy

PBX Call Volume Trend Report

The following figure shows a page from a PBX Call Volume Trend report, available from the Summary Reports page.

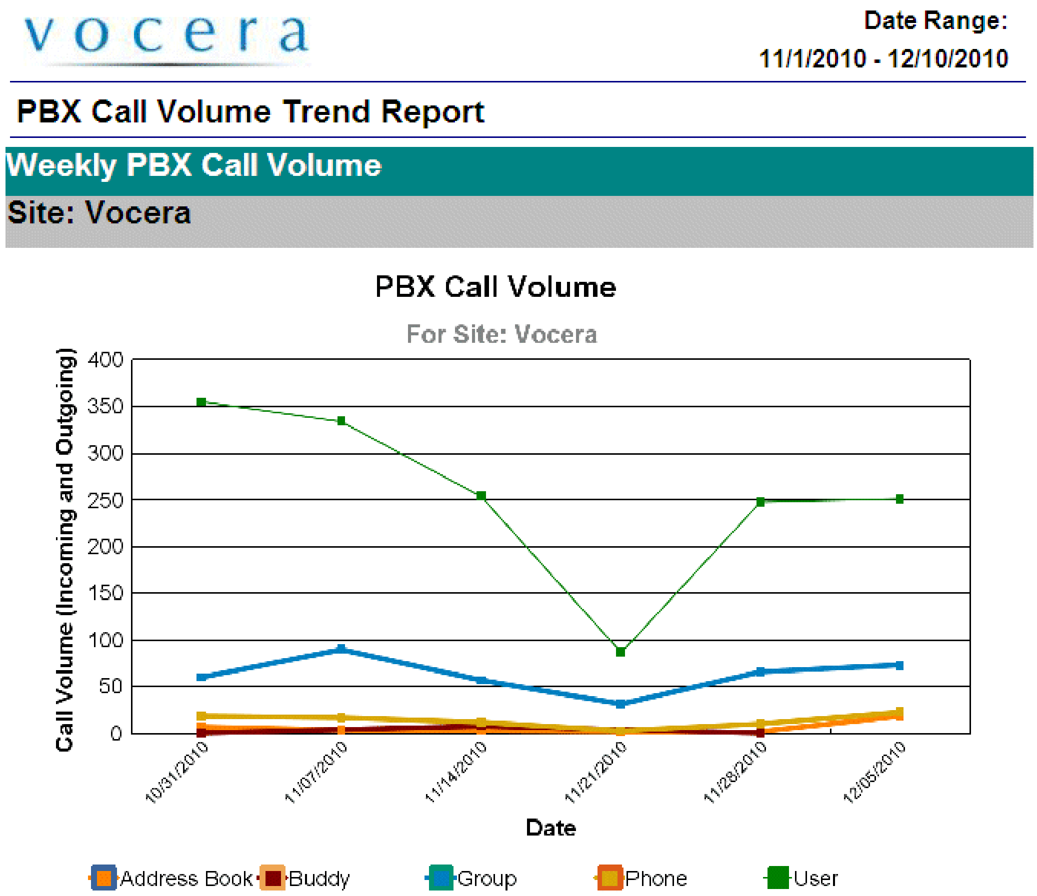


Figure 16: PBX Call Volume Trend report

The PBX Call Volume Trend report shows incoming and outgoing PBX call volume trend over a specified date range. You can plot the trend over daily, weekly, or monthly periods. It replaces the daily, weekly, and monthly PBX Call Volume reports available in previous versions. If you generate the report for multiple sites, the report provides data for each site as well as overall totals.

Call volume results are grouped by site. For each site, three different reports are provided:

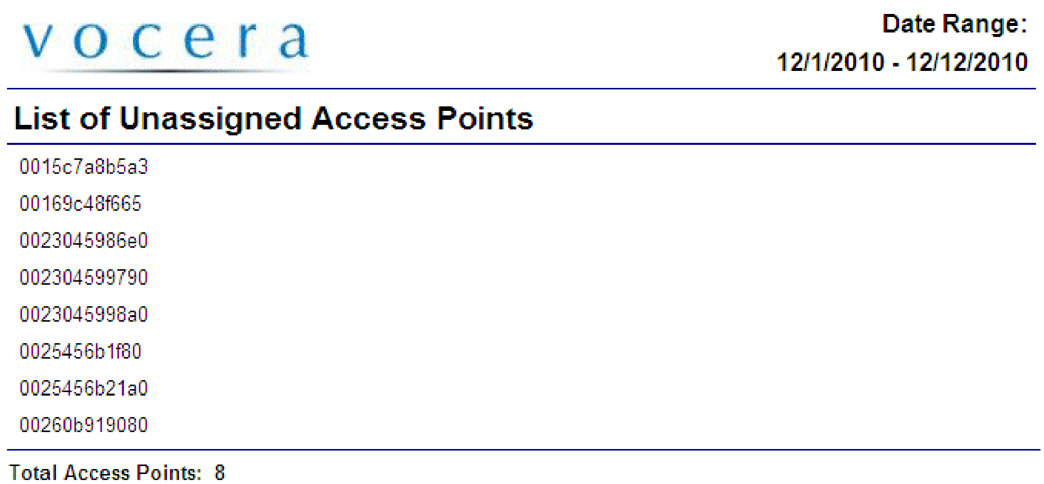
- A line chart showing call volume trends over time
- A pie chart showing slices for each category of call volume results
- A table showing detailed call volume data

Call volume categories are the same as in the System Call Volume Trend report; see **System Call Volume Trend Report** on page 33.

Unassigned APs Report

The Unassigned APs report shows access points that do not have corresponding Vocera locations. Users must have had a Genie interaction within the specified date range while connected to an unassigned AP for the AP to appear in this report. The unassigned access points are sorted by MAC address.

The following figure shows a page from an Unassigned APs report, available from the Summary Reports page.


vocera

Date Range:
12/1/2010 - 12/12/2010

List of Unassigned Access Points

0015c7a8b5a3
00169c48f665
0023045986e0
002304599790
0023045998a0
0025456b1f80
0025456b21a0
00260b919080

Total Access Points: 8

Figure 17: Unassigned APs report

Best practice is to filter this report by a small date range (one or two weeks) to identify unassigned APs. It's possible that an unassigned AP is actually a rogue AP that may be active on your network for a short time and for which you would not want to assign a corresponding Vocera location. Consequently, a rogue AP may appear on the report for a particular date range and then drop off when you run the report for a later date range even though you did not assign the AP to a Vocera location.

Unassigned access points can cause Vocera devices to roam from their current site to the Global site incorrectly, which can result in speech recognition problems because of the difference in site grammars. Each site has its own dynamic grammar, which includes the names of users, groups, sites, locations, address book entries, and all their possible alternates.

Access points without location names also affect the location-related voice commands: Locate, Where Is?, and Where Am I?. These commands allow users to find the physical location of a particular user or member of a group. If an access point is not assigned a location name, the Genie will respond with the MAC address of the access point instead, which is not useful to most Vocera users.

Call Reports

Call reports provide different views of how the system is being used. To access Call reports, click Call Reports in the navigation bar.

Administrators can track call volume and average call duration by department, group, user, and location. Call reports show both completed and incomplete calls. Incomplete calls occur when the caller hangs up before reaching the called party, or when the called party is unavailable (whether or not the caller leaves a message).

User Activity Report

The User Activity report shows the activities of selected users or of all users from selected departments. It provides a detailed view of the following activities of users on each day:

- Incoming Calls
- Outgoing Calls
- Broadcasts
- Login/Logout
- DND (turning Do Not Disturb on or off)
- Push-to-Talk (Instant Conference)
- Voice Messages

- Add/Remove from Group

There are several events the report cannot capture. It only captures events that occur when users are connected to the organization's Wi-Fi network. Consequently, it cannot capture when users roam off network or power off their devices. It also does not report on automatic logouts or on calls made remotely using Vocera Collaboration Suite or Vocera Access Anywhere.

The User Activity report can take a long time to generate. Consequently, you may want to schedule this report to run overnight.

vocera

Date Range:
6/27/2012 - 6/27/2012

User Activity Report

Site: Global

Department: Radiology Department

User: Clavin, Paul

06/27/2012	08:41:03 AM	Missed call from Erin Carroll due to not answered/rejected	00:00:00
	08:53:58 AM	Accepted call from Irene Dalisay	00:00:41
	09:26:15 AM	Accepted call from Erin Carroll	00:00:33
	09:39:35 AM	Called Mary Brady; Incomplete due to not online	00:00:00
	09:39:54 AM	Left message for Mary Brady	00:00:18
	09:41:46 AM	Called Elric Elias; Incomplete due to busy	00:00:00
	09:41:59 AM	Left message for Elric Elias	00:00:05
	09:42:26 AM	Called Erin Carroll; Accepted by Erin Carroll	00:00:13
	10:49:45 AM	Missed call from Erin Carroll due to not answered/rejected	00:00:00
	10:49:49 AM	DND on	
	01:57:31 PM	DND off	
	01:59:10 PM	Called Rachel Holmes; Incomplete due to not answered/rejected	00:00:00
	01:59:30 PM	Left message for Rachel Holmes	00:00:10
	02:09:22 PM	Called Esperanza Sandell; Accepted by Esperanza Sandell	00:01:29
	02:17:19 PM	Accepted call from 4134	00:02:02
	02:45:02 PM	Called Erin Carroll; Incomplete due to not answered/rejected	00:00:00
	02:45:14 PM	Left message for Erin Carroll	00:00:07
	02:48:43 PM	Accepted call from Erin Carroll	00:00:18
	02:50:37 PM	Called Erin Carroll; Incomplete due to call wait rejected	00:00:00
	02:51:05 PM	Left message for Erin Carroll	00:00:04
	03:25:12 PM	Called Stan Alston; Incomplete due to DND/blocked call	00:00:00
	03:25:25 PM	Left message for Stan Alston	00:00:21
	03:27:35 PM	Accepted call from Stan Alston	00:01:18
	04:02:13 PM	Called Erin Carroll; Accepted by Erin Carroll	00:00:08
	04:58:02 PM	Accepted call from Kelsey Kleckner	00:00:25

Figure 18: User Activity report

Incoming Calls Reports

Incoming Calls reports summarize the number of completed and incomplete calls, average duration of each call and the total time spent on the calls by each user or group or address book entry.

Vocera Report Server provides the following incoming call reports:

- Incoming Calls to Users (Summary and Detail)—lists calls made directly to users.

  Note: Calls to groups that are answered by users are NOT included in this report; they are included in the Incoming Calls to Groups reports instead.

- Incoming Calls to Groups (Summary and Detail)—lists calls made to groups.
- Incoming Calls to Address Book Entries (Summary and Detail)—lists calls made to Vocera address book entries.

These Call reports can help you identify users, groups, and address book entries that are not being used. By removing unused entities (groups, users, and address book entries) from the Vocera database, you can improve speech recognition and system performance.

The Incoming Call to Users - Summary provides information on the number of completed calls and incomplete calls, average duration of each call and the total time spent on the calls.

The following figure shows a page from the Incoming Calls to Users summary report.

vocera

Date Range:
11/1/2010 - 11/15/2010

Incoming Calls to Badge Users - Summary

Site: Global

Case Management

Ayala, Cat Total Calls: 4

Completed Calls	1
Incomplete Calls	3

Average Duration: 24 Seconds Total Call Time: 0 Hours 0 Minutes 24 Seconds

Barreiro, Jeff Total Calls: 6

Completed Calls	5
Incomplete Calls	1

Average Duration: 52 Seconds Total Call Time: 0 Hours 4 Minutes 22 Seconds

Bowles, Mary Total Calls: 5

Completed Calls	3
Incomplete Calls	2

Average Duration: 155 Seconds Total Call Time: 0 Hours 7 Minutes 46 Seconds

Brune, Pam Total Calls: 5

Completed Calls	3
Incomplete Calls	2

Average Duration: 142 Seconds Total Call Time: 0 Hours 7 Minutes 5 Seconds

Cavanagh, Claudia Total Calls: 5

Completed Calls	3
Incomplete Calls	2

Average Duration: 77 Seconds Total Call Time: 0 Hours 3 Minutes 51 Seconds

Figure 19: Incoming Calls to Users summary report

The Incoming Call to Users - Detail reports the following information about each call:

- Date and time of the call
- Caller's Name
- Recipient's name or number if call forwarding is set up
- Duration of the call
- Reason the call was not answered if the call was incomplete

The following figure shows a page from the Incoming Calls to Users detail report. This report can take a relatively long time to generate.

vocera

Date Range:
11/1/2010 - 11/15/2010

Incoming Calls to Badge Users - Detailed

Site: Global

Case Management

Barreiro, Jeff — **Total Calls: 6**

Completed Calls

Date / Time	Called By	Accepted By	Duration (Seconds)
11/7/2010 4:21:45PM	Farah Dinvil	Jeff Barreiro	121

Incomplete Calls

Date / Time	Called By	Reason Unanswered
11/6/2010 11:19:19AM	4242	Call rejected

Average Duration: 52 Seconds — **Total Call Time: 0 Hours 4 Minutes 22 Seconds**

Bowles, Mary — **Total Calls: 5**

Completed Calls

Date / Time	Called By	Accepted By	Duration (Seconds)
11/7/2010 11:38:36AM	Evan PECSON	Mary Bowles	95
11/7/2010 12:58:13PM	Sara Pankratz	Mary Bowles	303
11/7/2010 3:13:23PM	Jessica Clarke-Cuffy	Mary Bowles	68

Incomplete Calls

Date / Time	Called By	Reason Unanswered
11/7/2010 9:04:30AM	Genevieve Sakyi	Not online
11/9/2010 8:32:30AM	Betty Ditillo	Not logged in

Average Duration: 155 Seconds — **Total Call Time: 0 Hours 7 Minutes 46 Seconds**

Brune, Pam — **Total Calls: 5**

Completed Calls

Date / Time	Called By	Accepted By	Duration (Seconds)
11/12/2010 10:10:22AM	Lydia Midura	6786124659	5
11/15/2010 10:34:53AM	Mary Brady	Pam Brune	407
11/15/2010 11:00:18AM	Samuel Foster	Pam Brune	13

Incomplete Calls

Date / Time	Called By	Reason Unanswered
11/15/2010 9:11:23AM	Samuel Foster	Call rejected

Average Duration: 142 Seconds — **Total Call Time: 0 Hours 7 Minutes 5 Seconds**

Figure 20: Incoming Calls to Users detail report

In the Completed Calls table for each user, the Accepted By column shows the user or phone that accepted a call. Use the Accepted By column to determine whether a user has forwarded calls to another user or phone.

In the Incomplete Calls table for each user, the Reason Unanswered column shows the reason a call was not answered. Possible reasons a user did not answer a call include:

- Busy—The user was busy on another call.
- Call rejected—The user declined to accept the call.
- Call wait rejected—The call was placed in Call Waiting, but the user did not accept it.
- Caller blocked—The user blocked calls from that caller or was in Do Not Disturb mode.
- Not logged in—The user was not logged into Vocera.
- Not online—The user roamed off network.
- Phone not answered—No one answered the phone.
- Phone line unavailable—All available telephony phone lines are in use.
- Conference too large—Tried to conference too many parties.
- Unavailable—The user was unavailable for another reason.
- Unknown—Report Server cannot determine why the call was not answered.

Outgoing Calls by User Reports (Summary and Detail)

The Outgoing Calls by User report provides information about each outgoing call including the date and time of call, the number or the person called, and the duration of the call. Information on the total number of calls placed by the user and the total time spent on the calls is also provided.

Note: Outgoing Calls reports include calls that were made using Vocera Connect apps and Vocera Access Anywhere.

The following figure shows a page from an Outgoing Calls by User summary report, available from the Call Reports page:

vocera

Date Range:
11/1/2010 - 11/15/2010

Outgoing Calls by User - Summary

Site: Global

O R

Frischman, Rowland — Total Calls: 19

Completed Calls	15
Incomplete Calls	4

Average Duration: 145 Seconds — Total Call Time: 0 Hours 36 Minutes 22 Seconds

Martins, Nancy — Total Calls: 3

Completed Calls	1
Incomplete Calls	2

Average Duration: 340 Seconds — Total Call Time: 0 Hours 5 Minutes 40 Seconds

P A C U

Bushway, Tyrone — Total Calls: 16

Completed Calls	9
Incomplete Calls	7

Average Duration: 25 Seconds — Total Call Time: 0 Hours 3 Minutes 42 Seconds

Mikel, Lucy — Total Calls: 3

Completed Calls	3

Average Duration: 195 Seconds — Total Call Time: 0 Hours 9 Minutes 45 Seconds

Figure 21: Outgoing Calls by User summary report

The following figure shows a page from a detailed report about outgoing calls by a specified user:

vocera

Date Range:
11/1/2010 - 11/15/2010

Outgoing Calls by Users - Detailed

Site: Global

Emergency Department

Fink, Gloria — Total Calls: 14

Completed Calls	Called	Accepted By	Duration (Secs)
11/7/2010 4:27:53PM	Carla DeNunzio	Carla DeNunzio	14
11/7/2010 4:48:55PM	Nicky Jackman	Nicky Jackman	30
11/9/2010 1:16:03PM	Kelly Bajwa	Kelly Bajwa	22
11/10/2010 2:00:56PM	Patty Peirano	Patty Peirano	94

Subtotal: 9

Incomplete Calls	Called	Reason Incomplete
11/7/2010 9:39:46AM	Jackie Anderson	Not logged in
11/7/2010 10:07:25AM	Norma Finlay	Not logged in
11/7/2010 2:05:19PM	Emile Guevara	Call rejected
11/9/2010 9:45:45AM	Jessica Fischer	Call rejected
11/9/2010 2:05:34PM	Lyra Espolong	Not logged in

Subtotal: 5

Average Duration: 37 Seconds — Total Call Time: 0 Hours 5 Minutes 30 Seconds

Galvan, Rossy — Total Calls: 4

Completed Calls	Called	Accepted By	Duration (Secs)
11/12/2010 11:12:41AM	Karen DeFilippis	Karen DeFilippis	23
11/12/2010 1:20:59PM	Tessa Migliaccio	Tessa Migliaccio	57
11/12/2010 3:34:35PM	Jemilat Fadojutimi	Jemilat Fadojutimi	15
11/12/2010 4:38:22PM	Karen DeFilippis	Karen DeFilippis	97

Subtotal: 4

Average Duration: 48 Seconds — Total Call Time: 0 Hours 3 Minutes 12 Seconds

Figure 22: Outgoing Calls by User detail report

Outgoing Calls Summary Report

The Outgoing Calls Summary report summarizes information on each user's outgoing calls. The information is categorized by number of calls placed to another user, to a group, to an Address Book Entry and to a personal buddy.

The following figure shows a page from an Outgoing Calls Summary report.

vocera

Date Range:
11/1/2010 - 11/30/2010

Outgoing Calls Summary by User

Site: Global

Dietary

	Total		To User		To Personal Buddy	
	Total Calls	Avg. Duration (Secs)	Total	Avg. Duration (Secs)	Total	Avg. Duration (Secs)
West, Brenda	5	59	5	59	0	0

Emergency Department

	Total		To User		To Group		To Phone		To Personal Buddy	
	Total Calls	Avg. Duration (Secs)	Total	Avg. Duration (Secs)	Total	Avg. Duration (Secs)	Total	Avg. Duration (Secs)	Total	Avg. Duration (Secs)
Arroyo, Yanni	5	53	5	53	0	0	0	0	0	0
Barnhardt, Rory	19	333	19	333	0	0	0	0	0	0
Bernard, Shenma	15	103	15	103	0	0	0	0	0	0
Candelaria, David	9	151	7	54	0	0	0	0	2	248
Chan, Natalia	11	57	11	57	0	0	0	0	0	0

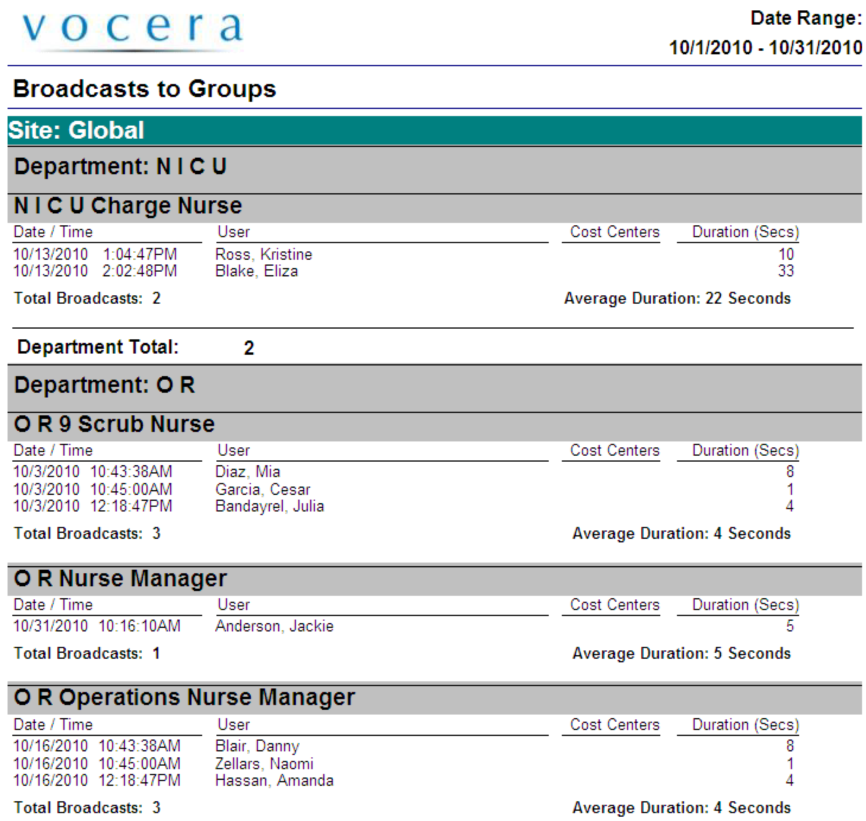
Figure 23: Outgoing Calls Summary Report

Broadcasts Report

The Broadcasts report summarizes the broadcasts sent by a user to groups. The information includes the date and time of each broadcast, the user who initiated the broadcast, and the duration of each broadcast. The information is listed by the group receiving the broadcast.

Note: The Broadcasts report includes broadcasts that were made using Vocera Connect apps.

The following figure shows a page from a Broadcasts report:



vocera

Date Range:
10/1/2010 - 10/31/2010

Broadcasts to Groups

Site: Global

Department: N I C U

N I C U Charge Nurse

Date / Time	User	Cost Centers	Duration (Secs)
10/13/2010 1:04:47PM	Ross, Kristine		10
10/13/2010 2:02:48PM	Blake, Eliza		33

Total Broadcasts: 2 **Average Duration: 22 Seconds**

Department Total: 2

Department: O R

O R 9 Scrub Nurse

Date / Time	User	Cost Centers	Duration (Secs)
10/3/2010 10:43:38AM	Diaz, Mia		8
10/3/2010 10:45:00AM	Garcia, Cesar		1
10/3/2010 12:18:47PM	Bandayrel, Julia		4

Total Broadcasts: 3 **Average Duration: 4 Seconds**

O R Nurse Manager

Date / Time	User	Cost Centers	Duration (Secs)
10/31/2010 10:16:10AM	Anderson, Jackie		5

Total Broadcasts: 1 **Average Duration: 5 Seconds**

O R Operations Nurse Manager

Date / Time	User	Cost Centers	Duration (Secs)
10/16/2010 10:43:38AM	Blair, Danny		8
10/16/2010 10:45:00AM	Zellars, Naomi		1
10/16/2010 12:18:47PM	Hassan, Amanda		4

Total Broadcasts: 3 **Average Duration: 4 Seconds**

Figure 24: Broadcasts report

Speech Reports

Speech reports provide recognition statistics to help pinpoint devices, access points, departments, or users experiencing speech recognition problems. To access Speech Reports, click Speech Reports in the navigation bar.

Speech reports are generated for one or all sites.

Note: For details on how speech recognition results are calculated, see "Understanding Speech Recognition" in the *Vocera Report Server Guide.*

The following table describes the possible fields in the generated report:

Table 5: Recognition Result Report Generation Fields

Field	Description
AP MAC Addr	This report field indicates the MAC address of the AP, for reports that show results by AP.
Department Name	The name of the department, for reports that show results by department.
No. of Total Users	The total number of devices users in the department, for reports that show results by department.
Active Users	The number of active users in the department, based on the report date range, for reports that show results by department.
User Name	The name of the user.
Speech - Recognized	The amount of recognized communication attempts and the percentage of successful attempts, by the user on the indicated device. This field shows the number of occurrences, and the percentage, based on the total number of speech attempts.
Speech - Rejected	The amount of rejected communication attempts, by the user, on the indicated device. This field shows the number of occurrences, and the percentage, based on the total number of speech attempts.
Speech - Others	Speech was received, but the Vocera system was unable to process it. This can happen if the duration of the speech exceeds the system's ability to interpret it, or if the speech started earlier than the Genie prompt.
Speech - Attempts	The amount of communication attempts by the user on the indicated device. This total value includes: • Speech - Recognized • Speech - Rejected • Speech - Others
No Speech - Occurrences	The amount of communication attempts, by the indicated user, where no speech occurred. This field shows the number of occurrences, and the percentage, based on the total number of attempts.
Total Attempts	The total number of Speech Attempts, and No Speech Attempts, by the user, on the indicated device.

Speech Recognition Results by User Detail Report

The Recognition Results by User Detail report provides speech recognition result metrics listed by user and sorted by last name. The report can be generated to show results by site, department, or for one or more specific users.

This report allows you to generate filtered results to obtain very specific report data. You can filter the results to show only high recognition rates, or filter the information for results specific to users with speech recognition problems. For example, a Recognition Filter set to Below and a Recognition Filter Rate set to 70%, would filter the results to include only data with a recognition rate of 0% to 69.9%. To see all data, leave the Recognition Filter set to Above and the Recognition Filter Rate set to 0%.

Login attempts are not included in the recognition results.

Note: No speech results reflect a no speech timeout occurrence. A no speech timeout occurs when the call is ended after three attempts to prompt the user for a command.

When Vocera users respond to Genie prompts, they can press the Call button to signify "Yes" or the DND button to signify "No." These button responses are not treated as speech attempts, and are not included in the speech recognition reports.

The following figure shows a page from a Recognition Results by User - Detail report.

vocera

Date Range:
9/1/2012 - 10/1/2012

Recognition Results by User

Site: Global

Department: Emergency Department

User Name	MAC Addr Device Type	Speech			No Speech		Total Attempts
		Recognized	Rejected	Attempts	Occurrences		
Esquela, Maryann	0009ef065ada B2000	12 80%	3 20%	15	0		15
	0009ef07d8b5 B2000	1 100%	0	1	0		1
	002210b93a32 Smartphone	3 38%	5 63%	8	1	11%	9
	0023a2b063f9 Smartphone	1 50%	1 50%	2	0		2
	Total	**17 65%**	**9 35%**	**26**	**1**	**4%**	**27**
Gray, Sonia	0009ef0341f2 B1000A	1 100%	0	1	0		1
	0009ef0732a2 B2000	8 100%	0	8	0		8
	0009ef079627 B2000	1 50%	1 50%	2	0		2
	002210b93a32 Smartphone	3 38%	5 63%	8	1	11%	9
	Total	**13 68%**	**6 32%**	**19**	**1**	**5%**	**20**
Total		**30** 67%	**15** 33%	**45**	**2**	**4.26%**	**47**

Figure 25: Speech Recognition Results by User Detail Report

Speech Recognition Results by User Report

The Recognition Results by User report describes overall recognition statistics for specific users. The data is sorted by user and provides speech, no speech, and total attempts detail. This report includes speech recognition attempts made after users have successfully logged into the device. Login attempts are not included in the recognition results.

Note: No speech results reflect a no speech timeout occurrence. A no speech timeout occurs when the call is ended after three attempts to prompt the user for a command.

Following is an example of the Recognition Results by User report where the data was filtered by user and two users were selected.

vocera

Date Range:
9/1/2012 - 10/1/2012

Recognition Results by User

Site: Global

Department: P I C U

User Name	Speech			No Speech	Total Attempts
	Recognized	Rejected	Attempts	Occurrences	
Argain, Jody	11 92%	1 8%	12	1 8%	13
Coppola, Joni	13 87%	2 13%	15	1 6%	16
Friedman, Deborah	18 100%	0	18	0 0%	18
Ghaly, Maged	5 100%	0	5	0 0%	5
Midura, Lydia	18 100%	0	18	0 0%	18
Tigner, Helen	11 73%	4 27%	15	0 0%	15
Total	**76 92%**	**7 8%**	**83**	**2 2%**	**85**

Reported Active Users in Department: 6
Total Users in Department: 6

Figure 26: Speech Recognition Results by User report

Speech Recognition Results by Access Point Report

The Recognition Results by Access Point report shows recognition statistics for each access point. This information can help you determine if a specific access point is failing, overloaded, or incorrectly configured, and causing poor speech recognition.

This report allows you to generate filtered results to obtain very specific report data. You can filter the results to show only high recognition rates, or filter the information for results specific to access points with speech recognition problems. For example, a Recognition Filter set to Below and a Recognition Filter Rate set to 70%, would filter the results to include only data with a recognition rate of 0% to 69.9%. To see all data, leave the Recognition Filter set to Above and the Recognition Filter Rate set to 0%.

Because users may experience login issues due to access point issues, this report includes login attempts in the recognition results.

Note: No speech results reflect a no speech timeout occurrence after the Call button is pressed and no speech is recognized by the Genie. A no speech timeout occurs when the call is ended after three attempts to prompt the user for a command.

The following figure shows a page from a Recognition Results by Access Point report.

vocera

Date Range:
7/1/2012 - 10/11/2012

Recognition Results by AP

Site: Global

Location: I C U

AP MAC Addr	Speech				No Speech		Total Attempts
	Recognized	Rejected	Others	Attempts	Occurrences		
001da17587c5	1,302 86%	172 11%	34 2%	1,508	35	2%	1,543
001da1759905	954 82%	205 18%	0	1,159	35	3%	1,194
Total	2,256 85%	377 14%	34 1%	2,667	70	3%	2,737

Figure 27: Speech Recognition Results by AP Report

Speech Recognition Results by Department Report

The Recognition Results by Department report shows recognition statistics for each department, sorted by department name. The report includes speech recognition attempts made after users have successfully logged into the Vocera device. It does not include login attempts in the recognition results.

In addition to the speech recognition statistics for each department, the report provides data on the total number of users in each department, and users that actively placed calls within the specified date range.

The following figure shows a page from a Recognition Results by Department report.

vocera

Date Range:
7/1/2012 - 8/31/2012

Recognition Results by Department

Site: Global

Department	No. Of Total Users	Active Users	Speech				No Speech		Total Attempts
			Recognized	Rejected	Others	Attempts	Occurrences		
Patient Relations	4	4	196 89%	24 11%	0	220	15	6%	235
PET	1	1	61 92%	5 8%	0	66	3	4%	69
Pharmacy Department	19	19	878 91%	90 9%	1 0%	969	80	8%	1,049
Radiation Oncology	1	1	66 97%	2 3%	0	68	1	1%	69
Radiology Department	10	10	554 91%	54 9%	0	608	47	7%	655
Respiratory	13	13	668 90%	71 10%	1 0%	740	77	9%	817
Same Day Surgery	1	1	16 100%	0	0	16	0		16
Standards	1	1	51 88%	7 12%	0	58	1	2%	59
T M S	4	4	178 86%	30 14%	0	208	1	0%	209
TeleCom	2	2	121 93%	9 7%	0	130	5	4%	135
Transportation	11	11	452 89%	57 11%	0	509	77	13%	586
Unit Management	28	28	1,353 91%	136 9%	1 0%	1,490	97	6%	1,587
Total			17,016 91%	1,698 9%	18 0%	18,732	1,176	6%	19,908

Total Departments: 42

Figure 28: Speech Recognition Results by Department report

Speech Recognition Results by Device Report

The Recognition Results by Device report shows speech recognition statistics per device. If devices are shared, the report lists the user of each device. You can use this report to identify if poor speech recognition on a specific device is consistent for all devices or specific to only certain devices. Login attempts are not included in the recognition results.

This report allows you to generate filtered results to obtain very specific report data. You can filter the results to show only high recognition rates, or filter the information for results specific to devices with speech recognition problems. For example, a Recognition Filter set to Below and a Recognition Filter Rate set to 70%, would filter the results to include only data with a recognition rate of 0% to 69.9%. To see all data, leave the Recognition Filter set to Above and the Recognition Filter Rate set to 0%.

Note: When Vocera users respond to Genie prompts, they can press the Call button to signify "Yes" or the DND button to signify "No." These button responses are not treated as speech recognitions and therefore are not included in the speech recognition reports.

The following figure shows a page from a Recognition Results by Device report:

vocera

Date Range:
9/1/2012 - 10/1/2012

Recognition Results by Device

Site: Global

Owner: Emergency Department

MAC Addr Device Type	Speech			No Speech	Total Attempts
	Recognized	Rejected	Attempts	Occurrences	
0009ef0013f1 B1000A	8 100%	0	8	0	8
0009ef0136dd B1000A	12 100%	0	12	0	12
0009ef0246bc B1000A	153 100%	0	153	0	153
0009ef034481 B1000A	16 46%	19 54%	35	0	35
0009ef055bb8 B2000	322 95%	16 5%	338	0	338
0009ef05c91d B2000	38 100%	0	38	0	38
0009ef06b876 B2000	123 82%	27 18%	150	8 5%	158
0009ef0732a2 B2000	64 100%	0	64	0	64
001641f8116c B2000	132 71%	55 29%	187	0	187
002210b939c6 Smartphone	22 50%	22 50%	44	11 20%	55

Figure 29: Speech Recognition Results by Device Report

Speech Recognition Distribution Chart

The Speech Recognition Distribution Chart shows speech recognition distribution statistics for selected sites. The results are represented in two pie charts for each site. If you show all sites, the report also includes charts that summarize results across all sites. The report includes recognition attempts for users who are not assigned to a department.

For more information, see "How Speech Recognition Rates Are Calculated " in the *Vocera Report Server Guide.*

The following table describes the data provided in the two charts that make up the generated report:

Table 6: Speech Recognition Distribution Charts

Chart	Description
Speech Statistics	This chart shows the distribution of recognized speech attempts compared to rejected, and other speech attempts in a pie chart format. The other category considers all other speech attempts that are not otherwise recognized or rejected. The chart includes speech recognition attempts made after users have successfully logged into their devices. It does not include login attempts in the recognition results.
Total Statistics	This chart shows the distribution of total of speech attempts compared to no speech occurrences, in a pie chart format.

Following is an example of the Speech Recognition Distribution report:

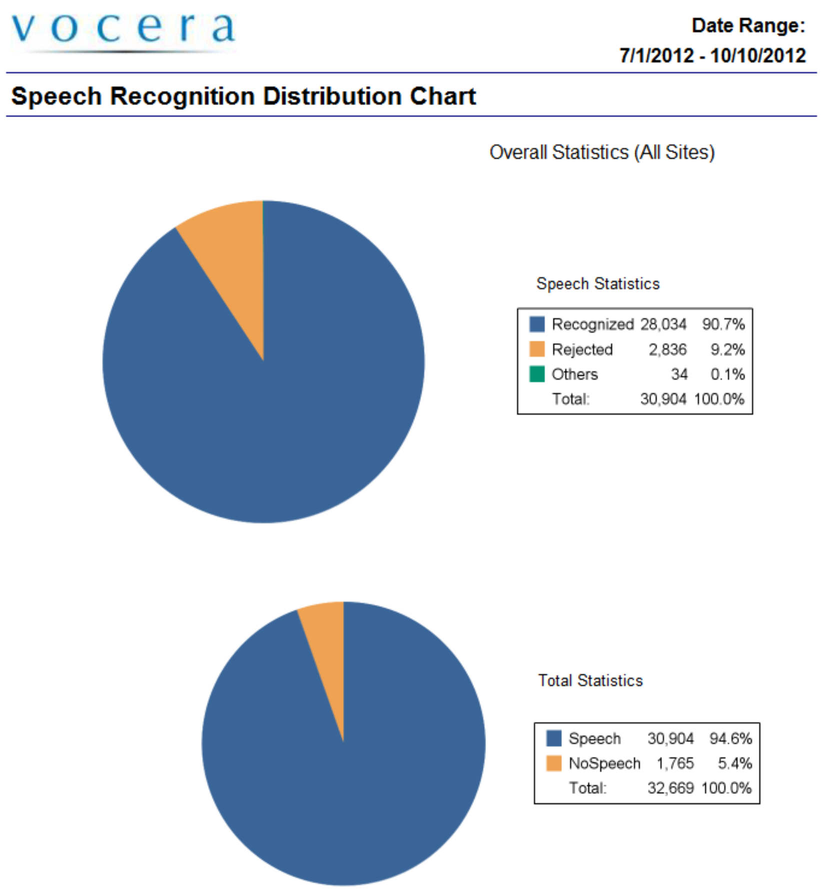


Figure 30: Speech Recognition Distribution chart

Speech Recognition Trend Report

The Speech Recognition Trend report can be configured to show daily, weekly, and monthly speech recognition trends. You can generate results for site and department combinations, or specify one or more users. This report includes two charts:

- % of Recognition Type - This chart shows the distribution of recognized speech attempts compared to rejected, and other speech attempts in a line chart format. The other category considers speech attempts where speech occurred, but was not recognized.
- % of Speech vs. No Speech - This chart shows the percentage of speech attempts compared to no speech occurrences in a line chart format.

In the following Speech Recognition Trend Report example, the report parameters are configured to include data based on site, including one department, and filtered to include a weekly trend type:

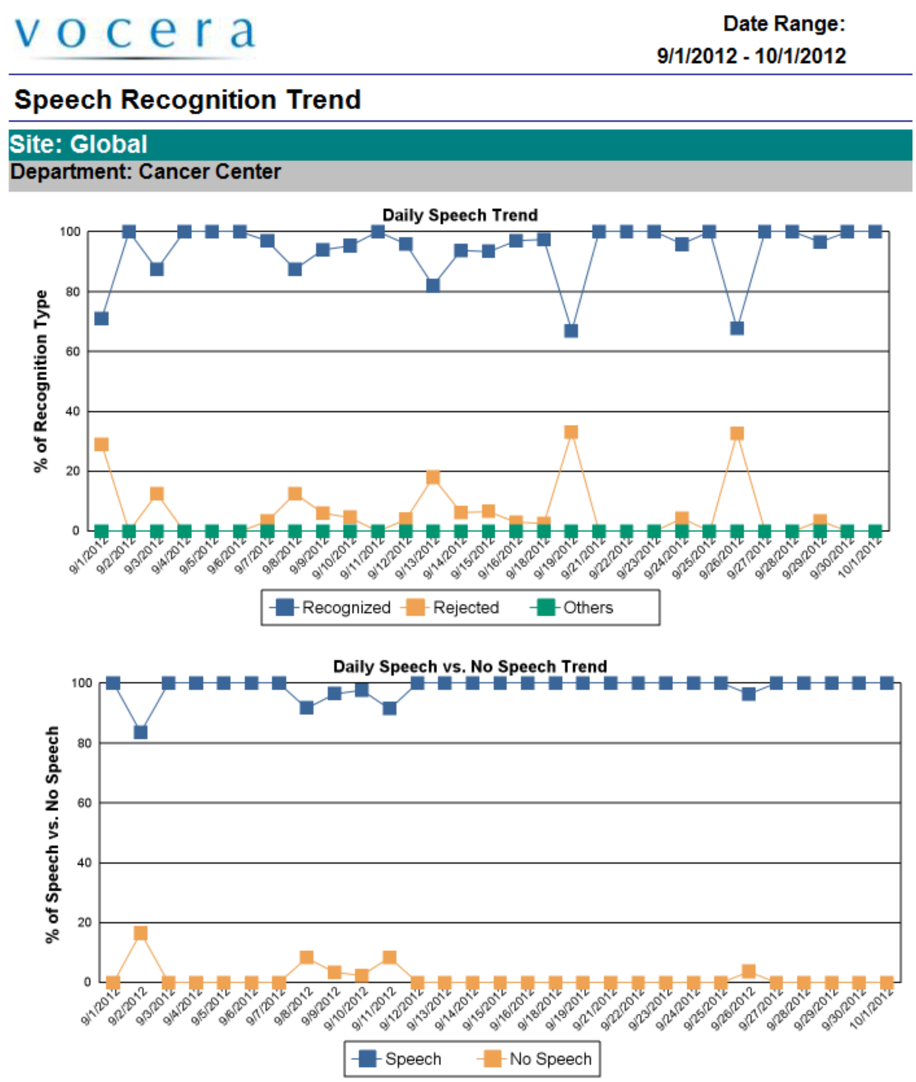


Figure 31: Speech Recognition Trend Report

Integration Reports

Integration Reports provide information about external systems that send messages to Vocera devices. Examples of external systems that integrate with Vocera include nurse call and patient monitoring systems that access Vocera devices using the Vocera Messaging Interface (VMI). To access Integration reports, click Integration Reports in the navigation bar. The Integration reports can be filtered by department, group, or user.

Each of the Integration reports has a Status column that shows the current status of a VMImessage, and a Detail column that shows responses (if any). Here are some possible status values:

- Server Accepted—The message has been received on the Vocera Voice Server.
- Server Rejected—The message has been rejected by the Vocera Voice Server. If the message was sent to a single user, the user may not be logged in. If the message was sent to a group, a user from that group may not be available.
- Delivered to Device—The Vocera Voice Server delivered the message to the recipient.
- Read/Enunciated—The recipient opened the message, or the message was automatically played aloud. However, the Vocera system cannot determine whether the recipient fully read or heard the message.

- Message Response—The recipient replied with a response shown in the Detail column.
- Call Started—The recipient called the optional callback phone number.
- Call Ended—The call to the callback phone number ended.

Important: Integration report data may included Protected Health Information (PHI). Any report that includes PHI data must not be distributed via email. For specific information about PHI regulations, see *HIPAA 'Protected Health Information': What Does PHI Include?* [2]

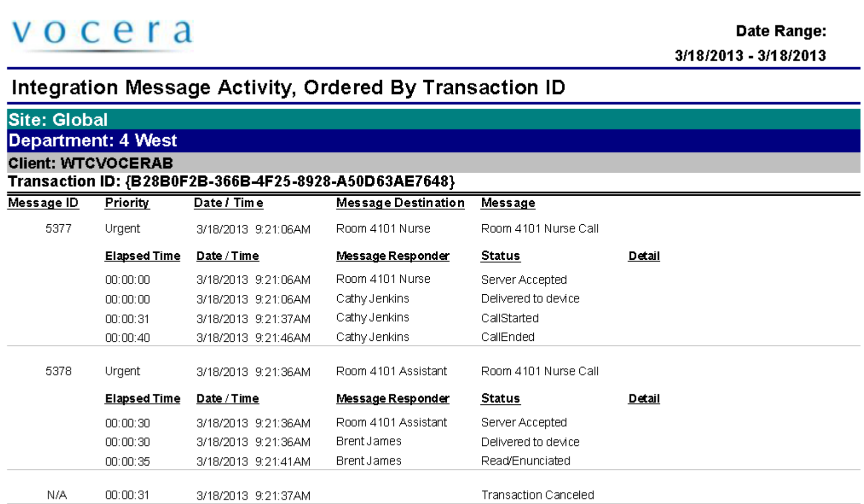
Integration Messages Group Activity, Ordered By Transaction ID

The Integration Messages Activity, Ordered By Transaction ID report lists messages to groups, ordered by the associated Transaction ID. This report reveals integration message activity per client group, with messages listed by message ID.

Note: This report produces data only for integrated systems leveraging the `VMI::LogEvent() method`. For more information about the Vocera Administration Interface, see the *Vocera Messaging Interface Guide*.

This report provides insight into the efficiency of the integrated system workflow. The time lapse data is provided to track workflow forwarding of urgent and non-urgent messages, until the transaction is completed. This information can help you determine the efficiency of the workflow response times.

The following figure shows an example of the generated report:



vocera

Date Range: 3/18/2013 - 3/18/2013

Integration Message Activity, Ordered By Transaction ID

Site: Global
Department: 4 West
Client: WTCVOCERAB
Transaction ID: {B28B0F2B-366B-4F25-8928-A50D63AE7648}

Message ID	Priority	Date / Time	Message Destination	Message	
5377	Urgent	3/18/2013 9:21:06AM	Room 4101 Nurse	Room 4101 Nurse Call	
	Elapsed Time	Date / Time	Message Responder	Status	Detail
	00:00:00	3/18/2013 9:21:06AM	Room 4101 Nurse	Server Accepted	
	00:00:00	3/18/2013 9:21:06AM	Cathy Jenkins	Delivered to device	
	00:00:31	3/18/2013 9:21:37AM	Cathy Jenkins	CallStarted	
	00:00:40	3/18/2013 9:21:46AM	Cathy Jenkins	CallEnded	
5378	Urgent	3/18/2013 9:21:36AM	Room 4101 Assistant	Room 4101 Nurse Call	
	Elapsed Time	Date / Time	Message Responder	Status	Detail
	00:00:30	3/18/2013 9:21:36AM	Room 4101 Assistant	Server Accepted	
	00:00:30	3/18/2013 9:21:36AM	Brent James	Delivered to device	
	00:00:35	3/18/2013 9:21:41AM	Brent James	Read/Enunciated	
N/A	00:00:31	3/18/2013 9:21:37AM		Transaction Canceled	

Figure 32: Integration Messages Group Activity, Ordered By ID report

Integration Messages Group Activity, Ordered By ID

The Integration Messages Group Activity, Ordered By ID report provides details about integration call messages sent to groups. This information can help you determine the efficiency of the workflow.

The generated report data includes:

- Information about the routing and progression of urgent and non-urgent messages.
- Details about message activity data, including activity per group, with messages listed by ID.
- The elapsed time between message initiation and message termination.
- Information about how the message was initiated and the accepting responder.

[2] http://www.hipaa.com/2009/09/hipaa-protected-health-information-what-does-phi-include/

vocera

Date Range:
4/1/2012 - 5/17/2012

Integration Messages Group Activity, Ordered By ID

Site: Global
Department: B I C U
Group: Room 1206
Client: Nurse Call

Message ID	Priority	Date / Time	Message Destination	Message	
508124	*Normal*	5/8/2012 8:47:27AM	*Room 1206*	*Room 1206 pillow*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:05	5/8/2012 8:47:32AM	Ken Griffin	Message Response	Accept
4011210	*Normal*	4/1/2012 11:13:19AM	*Room 1206*	*Room 1206 pillow*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:00	4/1/2012 11:13:19AM	Room 1206	Server Accepted	
4021214	*Urgent*	4/2/2012 4:47:13PM	*Room 1206*	*Room 1206 high heart rate*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:00	4/2/2012 4:47:13PM	Room 1206	Server Accepted	
	00:00:01	4/2/2012 4:47:14PM	Debbie Rosenblatt	Delivered to device	
	00:00:03	4/2/2012 4:47:16PM	Debbie Rosenblatt	Message Response	Accept
4191220	*Urgent*	4/19/2012 10:34:58AM	*Room 1206*	*Room 1206 Code Blue*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:00	4/19/2012 10:34:58AM	Room 1206	Server Accepted	
	00:00:01	4/19/2012 10:34:59AM	Eli Drendall	Delivered to device	

Figure 33: Integration Messages Group Activity, Ordered By ID report

Integration Messages Group Activity, Ordered By Time

The Integration Messages Group Activity, Ordered By Time report provides details about call messages sent to groups, with messages listed in chronological order. This information can help you determine the efficiency staff response times.

The generated report data includes:

- Information about the routing and progression of urgent and non-urgent messages.
- Details about message activity data, including activity per group, with messages ordered by time.
- The elapsed time between message initiation and message termination.
- Information about how the message was initiated and the accepting responder.

vocera

Date Range:
4/1/2012 - 5/17/2012

Integration Messages Group Activity, Ordered By Time

Site: Global
Department: B I C U
Group: Room 1217

05/09/2012	Client ID	Message ID	Priority	Message	Message Responder	Status	Detail	Elapsed Time
12:04:26 PM	Nurse Call	5091215	Urgent	Room 1217 high saturation	Room 1217	Server Accepted		00:00:00
12:04:29 PM	Nurse Call	5091215	Urgent	Room 1217 high saturation	James Franco	Delivered to device		00:00:03
12:04:31 PM	Nurse Call	5091215	Urgent	Room 1217 high saturation	James Franco	Message Response	Accept	00:00:05

05/13/2012	Client ID	Message ID	Priority	Message	Message Responder	Status	Detail	Elapsed Time
06:59:19 AM	Nurse Call	5131213	Urgent	Room 1217 pillow	Room 1217	Server Accepted		00:00:00
06:59:20 AM	Nurse Call	5131213	Urgent	Room 1217 pillow	Debbie Rosenblatt	Message Response	Accept	00:00:01

Department: I C U
Group: Room 2116 B

04/14/2012	Client ID	Message ID	Priority	Message	Message Responder	Status	Detail	Elapsed Time
12:04:26 PM	Nurse Call	4141215	Urgent	Room 2116 B leads off	Room 2116 B	Server Accepted		00:00:00
12:04:29 PM	Nurse Call	4141215	Urgent	Room 2116 B leads off	Eli Drendall	Delivered to device		00:00:03
12:04:31 PM	Nurse Call	4141215	Urgent	Room 2116 B leads off	Eli Drendall	Message Response	Accept	00:00:05

04/26/2012	Client ID	Message ID	Priority	Message	Message Responder	Status	Detail	Elapsed Time
10:34:58 AM	Nurse Call	4261220	Urgent	Room 2116 B leads off	Room 2116 B	Server Accepted		00:00:00
10:34:59 AM	Nurse Call	4261220	Urgent	Room 2116 B leads off	Mary Cherbonneau	Delivered to device		00:00:01
01:38:20 PM	Nurse Call	4261225	Urgent	Room 2116 B IV beeping	Room 2116 B	Server Accepted		00:00:00
01:38:21 PM	Nurse Call	4261225	Urgent	Room 2116 B IV beeping	Amelia Carneiro	Delivered to device		00:00:01
01:38:24 PM	Nurse Call	4261225	Urgent	Room 2116 B IV beeping	Amelia Carneiro	Message Response	Accept	00:00:04

05/02/2012	Client ID	Message ID	Priority	Message	Message Responder	Status	Detail	Elapsed Time
10:53:28 AM	Nurse Call	502126	Urgent	Room 2116 B high heart rate	Room 2116 B	Server Accepted		00:00:00
10:53:38 AM	Nurse Call	502126	Urgent	Room 2116 B high heart rate	Barbara Frischman	Delivered to device		00:00:10

Figure 34: Integration Messages Group Activity, Ordered By Time report

Integration Messages User Activity, Ordered By ID

The Integration Messages User Activity, Ordered By ID report provides information about integration messages received by users. This report provides insight about user message activity, with messages listed by ID.

The generated report data includes:

- Information about the routing and progression of urgent and non-urgent messages
- Details about user message activity, with messages ordered by ID
- The elapsed time between message initiation and message termination
- Information about how the call was initiated and the user activity associated with the message

vocera

Date Range:
4/1/2012 - 5/17/2012

Integration Messages User Activity, Ordered By ID

Site: Global
Department: I C U
User: Angelica Feiger
Client: Nurse Call

Message ID	Priority	Date / Time	Message Destination	Message	
403126	*Urgent*	4/3/2012 10:53:28AM	Room 2123 B	*Room 2123 B leads off*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:10	4/3/2012 10:53:38AM	Angelica Feiger	Delivered to device	
	00:00:12	4/3/2012 10:53:40AM	Angelica Feiger	Message Response	Reject
407125	*Urgent*	4/7/2012 11:09:56AM	Room 1212	*Room 1212 high saturation*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:02	4/7/2012 11:09:58AM	Angelica Feiger	Message Response	Accept
417126	*Urgent*	4/17/2012 10:53:28AM	Room 1210	*Room 1210 IV beeping*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:10	4/17/2012 10:53:38AM	Angelica Feiger	Delivered to device	
	00:00:12	4/17/2012 10:53:40AM	Angelica Feiger	Message Response	Reject
503125	*Urgent*	5/3/2012 11:09:56AM	Room 2124 B	*Room 2124 B high heart rate*	
	Elapsed Time	**Date / Time**	**Message Responder**	**Status**	**Detail**
	00:00:02	5/3/2012 11:09:58AM	Angelica Feiger	Message Response	Accept

Figure 35: Integration Messages User Activity, Ordered By ID report

Integration Messages User Activity, Ordered By Time

The Integration Messages User Activity, Ordered By Time report provides information about integration messages received by users, in chronological order.

The generated report data includes:

- Information about the routing and progression of urgent and non-urgent messages
- Details about user message activity, with messages ordered by time
- The elapsed time between message initiation and message termination
- Information about how the message was initiated and the user activity associated with the call

vocera

Date Range:
4/1/2012 - 5/17/2012

Integration Messages User Activity, Ordered By Time

Site: Global

Department: B I C U

User: Amelia Carneiro

04/01/2012	**Client ID**	**Message ID**	**Priority**	**Message**	**Message Destination**	**Status**	**Detail**	**Elapsed Time**
10:53:38 AM	Nurse Call	401126	Urgent	Room 2124 A IV beeping	Room 2124 A	Delivered to device		00:00:10
10:53:40 AM	Nurse Call	401126	Urgent	Room 2124 A IV beeping	Room 2124 A	Message Response	Reject	00:00:12
04/02/2012	**Client ID**	**Message ID**	**Priority**	**Message**	**Message Destination**	**Status**	**Detail**	**Elapsed Time**
04:49:23 PM	Nurse Call	4021226	Normal	Room 1209 bathe patient	Room 1209	Delivered to device		00:00:01
04:49:24 PM	Nurse Call	4021226	Normal	Room 1209 bathe patient	Room 1209	Read/Enunciated		00:00:02
04/06/2012	**Client ID**	**Message ID**	**Priority**	**Message**	**Message Destination**	**Status**	**Detail**	**Elapsed Time**
08:47:29 AM	Nurse Call	406124	Normal	Room 1211 bathroom assist	Room 1211	Delivered to device		00:00:02
08:47:30 AM	Nurse Call	406124	Normal	Room 1211 bathroom assist	Room 1211	Read/Enunciated		00:00:03
08:47:32 AM	Nurse Call	406124	Normal	Room 1211 bathroom assist	Room 1211	Message Response	Accept	00:00:05
01:38:21 PM	Nurse Call	4061225	Urgent	Room 1211 IV beeping	Room 1211	Delivered to device		00:00:01
01:38:24 PM	Nurse Call	4061225	Urgent	Room 1211 IV beeping	Room 1211	Message Response	Accept	00:00:04
04:47:14 PM	Nurse Call	4061214	Urgent	Room 2123 A high heart rate	Room 2123 A	Delivered to device		00:00:01
04:47:16 PM	Nurse Call	4061214	Urgent	Room 2123 A high heart rate	Room 2123 A	Message Response	Accept	00:00:03
04/13/2012	**Client ID**	**Message ID**	**Priority**	**Message**	**Message Destination**	**Status**	**Detail**	**Elapsed Time**
08:47:29 AM	Nurse Call	413124	Normal	Room 1205 bed pan	Room 1205	Delivered to device		00:00:02
08:47:30 AM	Nurse Call	413124	Normal	Room 1205 bed pan	Room 1205	Read/Enunciated		00:00:03
08:47:32 AM	Nurse Call	413124	Normal	Room 1205 bed pan	Room 1205	Message Response	Accept	00:00:05
01:38:21 PM	Nurse Call	4131225	Urgent	Room 1207 IV beeping	Room 1207	Delivered to device		00:00:01
01:38:24 PM	Nurse Call	4131225	Urgent	Room 1207 IV beeping	Room 1207	Message Response	Accept	00:00:04
04/18/2012	**Client ID**	**Message ID**	**Priority**	**Message**	**Message Destination**	**Status**	**Detail**	**Elapsed Time**
01:38:21 PM	Nurse Call	4181225	Urgent	Room 1211 high saturation	Room 1211	Delivered to device		00:00:01

Figure 36: Integration Messages User Activity, Ordered By Time report

Device Reports

Device reports are similar to Asset Tracking reports except they are grouped by device owner instead of department. If you do not have a Vocera license that includes Device Management, some fields (such as label, owner, and tracking date) will not appear in the reports.

To access Device reports, click Device Reports in the navigation bar.

The Device reports allow you to filter reports by device type. If you choose “All Device Types,” you include all devices, including non-Vocera devices running the Vocera Collaboration Suite app. When a non-Vocera device connects to the Vocera Voice Server, the server automatically assigns it a special 4-character MAC address prefix for identification purposes.

Table 7: MAC address prefixes for non-vocera devices

MAC Address Prefix	Device
aaaa	Apple iPhone, iPod, or iPad
cccc	Cisco Unified Wireless IP Phone 7921G, 7925G, or 7926G
dddd	Android smartphone
eeee	Vocera Smartphone (from Motorola)

Device Last User Access Report

The Device Last User Access report displays the last user to log in to a device. This report can be configured to show all devices that have accessed the Vocera system, devices where users have not logged in for several days (lost devices), and devices that users have logged in for the first time ever (unregistered devices) or for the first time in a long time (lost devices that have been found).

Use the Shared Device parameter to choose whether to report on all devices, devices that are assigned to an individual user, or devices that are shared between multiple users.

Use the Device Last Used and Number of Days parameters to include devices that have not been used less than or equal to or greater than or equal to the specified number of days. To include devices in the report regardless of when they were last used, make sure the Device Last Used parameter is set to "Greater than or equal to" and the Number of Days parameter is set to `0`.

The Device Last User Access report does not provide a date range in its report parameters. Instead, the report's date range is calculated by subtracting the threshold of days the device was not used from today's date.

Devices that have never logged in display in red. If these devices are spares, retired, or RMA'd, the system device manager should select the appropriate device status for them and assign them to an owning group.

The following figure shows a page from a Device Last User Access report:

Device Last User Access

Site: Global Devices never logged in.

Total Devices Used by Owner: 1

I C U

Label	Serial No.	MAC Address	Device Status	Days Since Last Used	Date Device Last Used	Location	User	Department
I C U-001	C3DB1005D57D	0009ef05d57d	Active	3	11/30/2010 1:01:43PM	001da17587c5	Ataide, Katy	Nursing Administration+Sa
I C U-002	B2EC09066C94	0009ef066c94	Active	5	11/28/2010 5:45:05PM	001e4abe4f76	Walcott, Barrie	Central Distribution

Total Devices Used by Owner: 2

L and D

Label	Serial No.	MAC Address	Device Status	Days Since Last Used	Date Device Last Used	Location	User	Department
	A2AA08053321	0009ef053321	Active	3	11/30/2010 1:02:57PM	001e7a276a45	Hassan, Amanda	Inpatient Rehabilitation
L and D-001	A2BC08054A28	0009ef054a28	Active	3	11/30/2010 12:52:50PM	0015c7a8b5a3	Cala, Michigan	Unit Management
L and D-002	B2KA10073BE3	0009ef073be3	Active	3	11/30/2010 12:58:55PM	001da1759905	Ratto, Nelli	Nursing Administration

Total Devices Used by Owner: 3

N I C U

Label	Serial No.	MAC Address	Device Status	Days Since Last Used	Date Device Last Used	Location	User	Department
N I C U-001	A2AM07050F60	0009ef050f60	Active	3	11/30/2010 12:43:47PM	001a30c3cef5	Heiberg, Todd	Emergency Department+Nursi

Figure 37: Device Last User Access report

Device Last Network Access Report

The Device Last Network Access report shows when a device last accessed the Vocera server and what access point or area it was associated with. If a user is not logged in to the device at the last access time, the user is identified as "Not Logged In." Otherwise, the actual user name is displayed. Devices are grouped by the owning group. This report includes more detail than the Device Last User Access report, including the device serial number, the tracking date, and any notes for the device. Each device's data spans two rows to accommodate all of the information. Values in the Days Since Last Used column are red when they are greater than 5.

The following figure shows a page from a Device Last Network Access report.

vocera

Date Range:
11/1/2010 - 11/30/2010

Device Last Network Access

Site: Global — Devices not in use for more than 5 days.

N I C U

Label	Serial Number	MAC Address	Device Status	Days Since Last Used	Date Device Last Used	Last Location
User		Department	Tracking Date	Notes		
N I C U-005		002210b938ef	Active	0	11/30/2010 1:06:12PM	001da17587c5
Carney, Ellen		Administration				
N I C U-006		0023a2b068ba	Active	0	11/30/2010 1:02:49PM	002304598fa0
Lozano, Mary		N I C U+Nursing Administration				

Total Devices Used by Owner: 6

Nursing Administration

Label	Serial Number	MAC Address	Device Status	Days Since Last Used	Date Device Last Used	Last Location
User		Department	Tracking Date	Notes		
Nursing Admin-003	X00983GG0700046	0009ef01c773	Active	0	11/30/2010 1:03:57PM	001e4abe4f76
Zellars, Naomi						
Nursing Admin-004		0009ef01dced	Active	0	11/30/2010 12:12:31PM	001e4abe4f76
Martin, Linda		Nursing Administration+P A C U				
Nursing Admin-005	A00983FA0703566	0009ef0215c3	Active	0	11/30/2010 12:30:57PM	001da174b805

Figure 38: Device Last Network Access report

Device Inventory - Summary Report

The Device Inventory - Summary report summarizes which devices each department is using. Information is grouped by department, and within each department, by label and device MAC address.

The following figure shows a page from a Device Inventory - Summary report.

vocera

Date Range:
11/1/2010 - 11/30/2010

Device Inventory Report - Summary

Site: Global

Owner: O R

Label	Serial Number	MAC Address	Department	Days Used	Date First Used	Date Last Used	% of Days in Use	Device Status
	A2AN07050030	0009ef050030	Emergency Department	30	11/1/2010	11/30/2010	100.00	Active
O R-001		0009ef05459f	Nursing Administration	20	11/1/2010	11/28/2010	66.67	Active

Devices Used by *Owner: O R* : 2

Owner: P A C U

Label	Serial Number	MAC Address	Department	Days Used	Date First Used	Date Last Used	% of Days in Use	Device Status
P A C U-001		0009ef012401	Administration	30	11/1/2010	11/30/2010	100.00	Active

Devices Used by *Owner: P A C U* : 1

Owner: P I C U

Label	Serial Number	MAC Address	Department	Days Used	Date First Used	Date Last Used	% of Days in Use	Device Status
P I C U-001	A00983KE0800003	0009ef034104	Cancer Center	20	11/1/2010	11/30/2010	66.67	Active
P I C U-002	A00983KE0800264	0009ef03434e	Radiology Department	10	11/1/2010	11/28/2010	33.33	Active
P I C U-003		001641f7f2ea	Unit Management	30	11/1/2010	11/30/2010	100.00	Active

Devices Used by *Owner: P I C U* : 3

Figure 39: Device Inventory - Summary report

Device Inventory - Detail Report

The Device Inventory - Detail report shows details about which devices each user in each department is using. Information is grouped by department, and within each department, by device MAC address.

vocera

Date Range:
12/1/2010 - 12/10/2010

Device Inventory Report - Detailed

Site: Global

N I C U

Label: N I C U-001 | MAC Address: 0009ef050f60 | Days Used: 2
Serial Number: A2AM07050F60 | Last Status: Active | Percentage of Days Used: 20.00

Date	User	Department	Cost Centers	Last Location
12/01/2010	Hays, Sarah	N I C U		001a30c3cef5 N I C U
12/03/2010	Gonzalez, Rogelio	N I C U		001a30c3cef5 N I C U

Label: N I C U-002 | MAC Address: 0009ef072322 | Days Used: 2
Serial Number: B2JN09072322 | Last Status: Active | Percentage of Days Used: 20.00

Date	User	Department	Cost Centers	Last Location
12/01/2010	Price, Loretta	N I C U		001da174fc95 N I C U
12/01/2010	Martins, Nancy	N I C U		001da174fc95 N I C U
12/03/2010	Guevara, Emile	Transportation		001da174fc95 N I C U
12/03/2010	Anderson, Jackie	T M S		001da174fc95 N I C U

Figure 40: Device Inventory - Detail report

Device Usage Report

The Device Usage report shows which devices each user in each department is using. This report helps identify devices that have moved to a different department and devices that may not be working properly (based on short periods of use). You can also determine if devices have been returned after each shift.

The following figure shows a page from a Device Usage report:

vocera

Date Range:
12/1/2010 - 12/3/2010

Device Usage Report

Site: Global

Owner: Cancer Center

Label	Serial Number	MAC Address	Device Status
Cancer-001	X3FC0905E457	0009ef05e457	Active
Date / Time Last Used	**User**	**Department**	**Last Location**
12/1/2010 12:55:29PM	Deseo, Alegria	Cancer Center	001e4abe4f76 Cancer Center
12/2/2010 4:55:56PM	Boakye, Akirita	Cancer Center	001e4abe4f76 Cancer Center
12/3/2010 12:55:29PM	Everson, Sandra	Cancer Center	001e4abe3d16 Cancer Center
Label	**Serial Number**	**MAC Address**	**Device Status**
Cancer-003	A00983BA0603513	0009ef0136dd	Active
Date / Time Last Used	**User**	**Department**	**Last Location**
12/1/2010 1:06:20PM	Wong, Yu	Cancer Center	001e4abe4f76 Cancer Center
12/2/2010 4:49:14PM	Gozsa, Peter	Cancer Center	001e4abe4f76 Cancer Center
12/3/2010 1:06:20PM	Grimes, Lauren	Cancer Center	001e4abe3d16 Cancer Center

Total Devices with Owner: 2

Figure 41: Device Usage report

Device Status Tracking Report

The Device Status Tracking report shows the device status changes that occurred for each device. You can track when each status change happened, and you can filter the report by different status types. This report helps identify which devices are currently Unregistered, Lost, In Repair, or RMA'ed. Information is grouped by device owner, changed device MAC Address, and changed date.

The following figure shows a page from a Device Status Tracking report.

vocera

Date Range:
12/1/2010 - 12/2/2010

Device Status Tracking Report

Site: Global

Owner: Administration

Label: Admin-001 **Serial Number:** A00983BK0502900 **MAC Address:** 0009ef011519 **Current Status:** Sent for Repair

Status Changed To	Date Changed
Sent for Repair	12/02/2010

Total Devices for : 1

Owner: P A C U

Label: P A C U-001 **Serial Number:** **MAC Address:** 0009ef012401 **Current Status:** Active

Status Changed To	Date Changed
Active	12/01/2010

Total Devices for : 1

Figure 42: Device Status Tracking report

Asset Tracking Reports

Asset Tracking reports show which devices are being used, and by which users or departments. They can also help you find missing devices. To access Asset Tracking reports, click Asset Tracking Reports in the navigation bar.

Note: The Asset Tracking reports should only be used if your Vocera license does not include Device Management and you have integrated the Asset Tracking reports into internal applications and spreadsheets. Otherwise, use the Device reports instead.

Badge Last Used Report

The Badge Last Used report, available from the Asset Tracking page, shows who last used the device and what access point or area they were last associated with.

The Badge Last Used report can help you find devices that have been placed into service with the Vocera server but are now lost or unaccounted for. In certain workplaces (for example, where groups of people work in shifts), devices are not assigned to specific individuals. Instead, they are stored with battery chargers, used by workers on a shift, and then returned when the shift is over.

If a device hasn't been used for more than five days, it is highlighted in red in the Days Since Last Used column.

The following figure shows a page from a Badge Last Used report:

vocera

Date Range:
12/1/2010 - 12/12/2010

Badge Last Used Report

Site: Global

P I C U **Cost Center: -**

Badge MAC	Serial Number	User	Date Badge Last Used	Days Since Last Used	Last Location
0009ef0741a2	B2KA100741A2	Friedman, Deborah	12/10/2010 4:34:10PM	2	001e7a276ab6 Dietary
0023a2b0690b		Ghaly, Maged	12/10/2010 4:15:06AM	2	0023045986e0

Total Badges Used by Department: 2

Pathology **Cost Center: -**

Badge MAC	Serial Number	User	Date Badge Last Used	Days Since Last Used	Last Location
0009ef0215c3	A00983FA0703566	Anday, Mindy	12/10/2010 4:51:25PM	2	001da174b805 P A C U
0009ef0341f2	A00983KE0800258	Mustacchio, Mark	12/9/2010 9:47:12PM	3	001e4abe4f76 Cancer Center
0009ef05d57d	C3DB1005D57D	Anday, Mindy	12/10/2010 4:03:22PM	2	001da17587c5 I C U
0009ef063eba	C3EB10063EBA	Bouquet, Abby	12/10/2010 12:12:00PM	2	001e13860805 I C U

Total Badges Used by Department: 4

Figure 43: Badge Last Used report

Badge Usage Report

The Badge Usage report shows daily device usage. Information is sorted by device MAC address. Some groups like to have devices returned after each shift. The Badge Usage report available from the Asset Tracking page can help you determine if that is truly occurring.

The following figure shows a page from a Badge Usage report. In this example, devices are being shared.

vocera

Date Range:
9/1/2011 - 9/10/2011

Badge Usage Report

Site: Global

Date / Time Last Used	User	Department	Last Location
MAC: 0009ef05d9bc	**SN: X3FC0905D9BC**		
9/8/2011 4:11:40PM	Velez, Ray	Emergency Department	001e7a276ab6 Dietary
9/3/2011 4:57:42PM	Bernard, Shenma	Emergency Department	001e7a276ab6 Dietary
MAC: 0009ef05e457	**SN: X3FC0905E457**		
9/4/2011 4:55:56PM	Dedios, Gina	Emergency Department	001da174b805 P A C U
9/3/2011 6:30:05PM	Galvan, Rossy	Emergency Department	001e4abe3d16 Cancer Center
MAC: 0009ef060922	**SN: B3FM08060922**		
9/2/2011 12:59:28PM	McEnrue, Jim	Emergency Department	001e7a276b26 Emergency
9/9/2011 6:51:54PM	Bernard, Shenma	Emergency Department	001e7a276b26 Emergency
MAC: 0009ef06ae3b	**SN: B3EE0906AE3B**		
9/6/2011 4:46:41PM	Green, Quianna	Emergency Department	001da1759905 I C U
MAC: 0009ef06bc72	**SN: B3HH0906BC72**		
9/9/2011 6:30:01PM	Go, Becky	Emergency Department	001da1749225 W O D C
9/10/2011 1:05:24PM	Hasan, Nataliya	Emergency Department	001da17516a5 B I C U
MAC: 0009ef0705c6	**SN: B2JK090705C6**		
9/6/2011 5:14:19PM	Barnhardt, Rory	Emergency Department	001e4abe4f76 Cancer Center
9/5/2011 5:14:19PM	Velez, Ray	Emergency Department	001e4abe4f76 Cancer Center
MAC: 0009ef0716e6	**SN: B2JM090716E6**		
9/2/2011 9:23:35AM	Velez, Ray	Emergency Department	001e4abe3d16 Cancer Center

Figure 44: Badge Usage report

Department Inventory - Summary and Detailed Reports

The Department Inventory - Summary report summarizes which devices each department is using. Information is grouped by department, and within each department, by device MAC address. The report gives information on the date the device was first used and the date the device was used last within the specified date range. To see who in that department is using the device, use the detailed version of the report.

The following figure shows the first page of the Department Inventory - Summary report.

vocera

Date Range:
12/1/2010 - 12/10/2010

Department Inventory Report - Summary

Site: Global

L and D+Unit Management

Badge Mac Address	Badge Serial Number	Days Used	Date First Used	Date Last Used
0009ef063eba	C3EB10063EBA	1	12/9/2010	12/9/2010
0009ef065dec	B0EB09065DEC	1	12/2/2010	12/2/2010
0009ef076921		1	12/10/2010	12/10/2010

Badges Used by Department: 3

N I C U

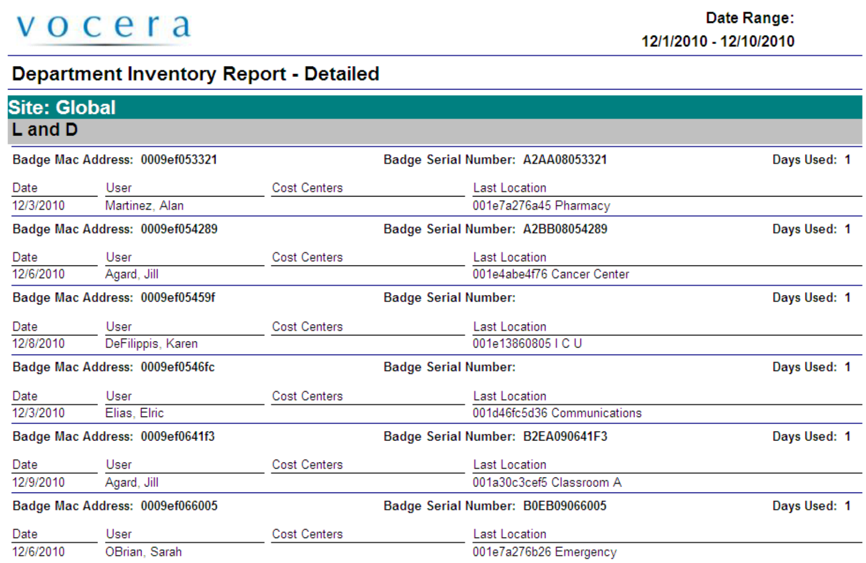
Badge Mac Address	Badge Serial Number	Days Used	Date First Used	Date Last Used
0009ef0246bc		1	12/2/2010	12/2/2010
0009ef0507b9	A1DK070507B9	1	12/6/2010	12/6/2010
0009ef050a17		1	12/5/2010	12/5/2010
0009ef055bb8	A2CD08055BB8	1	12/10/2010	12/10/2010
0009ef058286	A2DF08058286	1	12/8/2010	12/8/2010
0009ef059b6e	C3DB10059B6E	1	12/6/2010	12/6/2010
0009ef05e457	X3FC0905E457	1	12/8/2010	12/8/2010
0009ef063eba	C3EB10063EBA	1	12/7/2010	12/7/2010
0009ef0641f3	B2EA090641F3	1	12/7/2010	12/7/2010
0009ef074301	B2KA10074301	1	12/3/2010	12/3/2010
0009ef078801	B2KC10078801	1	12/2/2010	12/2/2010
001570d36c10		1	12/6/2010	12/6/2010
002180515768		1	12/2/2010	12/2/2010
0023a2b068ba		1	12/3/2010	12/3/2010
0023a2b06982		1	12/8/2010	12/8/2010

Badges Used by Department: 15

Figure 45: Department Inventory - Summary report

The Department Inventory - Detail report shows details about which devices each user in each department is using. Information is grouped by department, and within each department, by device MAC address. This report may take time to generate if there are large numbers of records.

The following figure shows the a page from the Department Inventory - Detail report.



vocera

Date Range: 12/1/2010 - 12/10/2010

Department Inventory Report - Detailed

Site: Global

L and D

Badge Mac Address: 0009ef053321 Badge Serial Number: A2AA08053321 Days Used: 1

Date	User	Cost Centers	Last Location
12/3/2010	Martinez, Alan		001e7a276a45 Pharmacy

Badge Mac Address: 0009ef054289 Badge Serial Number: A2BB08054289 Days Used: 1

Date	User	Cost Centers	Last Location
12/6/2010	Agard, Jill		001e4abe4f76 Cancer Center

Badge Mac Address: 0009ef05459f Badge Serial Number: Days Used: 1

Date	User	Cost Centers	Last Location
12/8/2010	DeFilippis, Karen		001e13860805 I C U

Badge Mac Address: 0009ef0546fc Badge Serial Number: Days Used: 1

Date	User	Cost Centers	Last Location
12/3/2010	Elias, Elric		001d46fc5d36 Communications

Badge Mac Address: 0009ef0641f3 Badge Serial Number: B2EA090641F3 Days Used: 1

Date	User	Cost Centers	Last Location
12/9/2010	Agard, Jill		001a30c3cef5 Classroom A

Badge Mac Address: 0009ef066005 Badge Serial Number: B0EB09066005 Days Used: 1

Date	User	Cost Centers	Last Location
12/6/2010	OBrian, Sarah		001e7a276b26 Emergency

Figure 46: Department Inventory - Detail report

Exporting Data Reports

The Export Data reports allow you to export Vocera Report Server data to a comma-separated values (CSV) file. To access Export Data reports, click Export Data Reports in the navigation bar. After you export report data to a comma-separated values (CSV) file, you can load the exported data into a spreadsheet, database manager, or other application for further processing.

To export data to a CSV file:

1. Click Export Data Reports to display the Export Data page.
2. Choose a report to export.
3. Click Generate.
4. Specify report parameters. See "Using Reports to Answer Questions" in the *Vocera Report Server Guide.*
5. Click Export Data.
6. Specify whether you want to open the generated file immediately or save it to disk.

   If the downloaded report is not shown by the Windows Explorer download manager, type CRTL J on the keyboard to reveal the downloaded report.

   - If you choose to open the generated file immediately, it will be opened using the default application for CSV files, as defined for your computer.
   - If you choose to save the file to disk, specify a destination for the file.

Data - Outgoing Calls by Badge Users Report

The Data - Outgoing Calls by Badge Users report exports a CSV file containing records for calls placed by Vocera users. The following table describes the report columns.

Table 8: Data - Outgoing calls by Badge Users report

Column	Description
TxDateTime	Date and time of the event, accurate to the second.

Column	Description
CallerLastName	The caller's last name.
CallerFirstName	The caller's first name.
CallerDepts	The caller's department(s).
CallerSite	The caller's home site.
CallerCostCtr	The caller's cost center.
Called	User ID, group name, or phone number of the called party.
CalledSite	Site of the called party.
Accepted	Whether the call was accepted (Yes or No).
AcceptedBy	If the call was accepted, the user ID or phone number of the person who accepted the call.
AcceptedBySite	Site of the person who accepted the call.
DurationSecs	Duration of the call in seconds.

Data - Incoming Phone Calls Report

The Data - Incoming Phone Calls report exports a CSV file containing records for incoming phone calls. The following table describes the report columns.

Table 9: Data - Incoming Phone Calls Report

Column	Description
DateTime	Date and time of the event, accurate to the second.
PhoneNo	Outside phone number that placed the call.
Called	User ID, group name, or phone number of the called party.
CalledType	Type of called party. Example values: User, Group, Phone.
CalledSite	Site of the called party.
Accepted	Whether the call was accepted (Yes or No).
AcceptedBy	If the call was accepted, the user ID or phone number of the person who accepted the call.
AcceptedBySite	Site of the person who accepted the call.
DurationSecs	Duration of the call in seconds.

Data - Recognition Results Report

The Data - Recognition Results report exports a CSV file containing records for recognition results for users. The following table describes the report columns.

Table 10: Data - Recognition Results report

Column	Description
DateTime	Date and time of the event, accurate to the second.
UserID	Vocera user ID.
FirstName	The user's first name.
LastName	The user's last name.
DeptName	The user's department(s). If none, the value is "No Department Assigned".
CostCenters	The user's cost centers.
SiteName	The user's home site.
BadgeMACAddr	MAC address of the user's device.
APMACAddr	MAC address of the access point.

Column	Description
RecStatus	Recognition status. Possible values are: Recognized, Rejected, NoSpeech, or SpeechTooEarly.
Score	Confidence score for the utterance. Values range from 0 to 100. The confidence score gives an indication of the reliability that the system attaches to its interpretation of the utterance. By default, any confidence score below 40 causes the speech to be rejected by the system, thus changing the score to 0.
Recognized	The speech that was recognized by the Vocera system. Example values: WhereIs Randy Floren, Call Chris Long, Yes, and LogOut.

Data - Inventory Report

The Data - Inventory report exports a CSV file containing device location records for use with inventory. It includes location information for a device even if no user is logged into the device when it pings the server. For such devices, the UserID for that moment is "__NLI__" and the LastName is "Not Logged In". The following table describes the report columns.

Table 11: Data - Inventory report

Column	Description
DateTime	Date and time of the event, accurate to the second.
UserID	Vocera user ID. If a user is not logged into a device when it pings the server, the UserID is "__NLI__" (for "Not Logged In").
FirstName	The user's first name.
LastName	The user's last name. If a user is not logged into a device when it pings the server, the LastName is "Not Logged In".
DeptNames	The user's department(s). If none, the value is "No Department Assigned".
CostCenters	The user's cost centers.
SiteName	The user's home site.
BadgeMACAddr	MAC address of the user's device.
APMACAddr	MAC address of the access point.
SerialNo	Device serial number.
LocationName	Location name associated with the access point.
UIState	Whether a device is in use (for example, on a call). Example values: Active, Standby.

Data - Broadcasts Report

The Data - Broadcasts report exports a CSV file containing broadcast records. The following table describes the report columns.

Table 12: Data - Broadcasts report

Column	Description
DateTime	Date and time of the event, accurate to the second.
UserID	The caller's Vocera user ID.
FirstName	The caller's first name.
LastName	The caller's last name.
CallerDepartments	The caller's department(s). If none, the value is "No Department Assigned".
CallerCostCenters	The caller's cost centers.
CallerSite	The caller's home site.
GroupName	Vocera group to which the broadcast was sent.

Column	Description
GroupSite	Vocera site associated with the group to which the broadcast was sent. In a single-site installation, this value is null.
Duration	Duration of the broadcast in seconds.

Data - Badge Last Used Report

The Data - Badge Last Used report exports a CSV file containing information about when devices were last used. It can help you find devices that have been placed into service with the Vocera server but are now lost or unaccounted for. The following table describes the report columns.

Table 13: Data - Badge Last Used report

Column	Description
SiteName	Vocera site where the device is located.
Department	Department of the user who last used the device.
BadgeMACAddr	MAC address of the device.
SerialNo	Device serial number.
UserName	User who last used the device.
MaxDateTime	Date and time the device was last used, accurate to the second.
DaysSinceUsed	Number of days since the device was last used.
LastLocation	Location where the device was last used. Includes the MAC address of the access point and the name—if available—of the location.
CostCenters	Cost centers of the user who last used the device.

Data - Device Migration Report

The Data - Device Migration report exports a CSV file containing device information for the specified date range and site. The output conforms to the Vocera devices import template (although it has an additional field, User). The report allows you to migrate your device information into the Device Management solution provided by Version 4.4. After you create the report, fill in any empty fields (such as Label, Status, Owning Group, and Tracking Date), and then use theAdministration Console to update the system data. For more information about importing and updating Vocera data, see the *Vocera Administration Guide* and the *Vocera Data-Loading Reference*.

The following table describes the report columns:

Table 14: Data - Device Migration report

Column	Description
BadgeMACAddr	Media Access Control address (MAC address) is a hardware address that acts like a unique name for the device. The MAC address is 12 characters long. Most Vocera device MAC addresses have the following prefix: `0009ef`. For B3000 and B2000 devices, this field is optional because the MAC address can be derived from the serial number; the last 6 characters of the MAC address and the serial number are identical. For B1000A devices, this field is required; the MAC address and serial number are unrelated for B1000A badges.
SerialNo	Serial number of the device. This field is required. You cannot add a device without the serial number. For B3000 and B2000 badges, the serial number is 12 characters. For B1000A badges, the serial number is 15 characters.
Label	A label that identifies the device. The label must be unique; it cannot be used by another device.

Column	Description
Status	The device status. The value must match one of the existing device status values.
TrackingDate	The date used to track the device, for example, the date it was sent for repair or RMA'ed. The date string uses the following format: United States and Canada: `mm/dd/yyyy` Other locales: `dd/mm/yyyy`
OwningGroup	The group that owns the device. To qualify a group by specifying its site, use a colon to separate the value from the site name (*GroupName:SiteName*). If you do not specify a site, the Global site is assumed by default.
Notes	Provide further information about the device status, for example, "Badge stopped working after accidentally being immersed in water" or "Badge sent to IT to repair the battery latch."
UserSiteName	The site of the user who last used the device.
Shared	Specify `TRUE` if the device is shared between multiple users. Otherwise, specify `FALSE`.
UserName	User who last used the device.

Data - Device Last User Access Report

The Data - Device Last User Access report exports a CSV file containing device information for the last user to log in to a device. It can be configured to show all devices that have accessed the Vocera system, devices where users have not logged in for several days (lost devices), and devices that users have logged in for the first time ever (unregistered devices) or for the first time in a long time (lost devices that have been found). The following table describes the report columns.

Table 15: Data - Device Last User Access report

Column	Description
SiteName	Vocera site where the device is located.
Owner	The group that owns the device.
Label	A label that identifies the device. The label must be unique; it cannot be used by another device.
MAC Address	Media Access Control address (MAC address) is a hardware address that acts like a unique name for the device. The MAC address is 12 characters long. Most Vocera device MAC addresses have the following prefix: `0009ef`.
Device Status	The device status. The value must match one of the existing device status values.
Days Since Last Used	The number of days since the device was last used.
Date Device Last Used	The date on which the device was last used.
Location	Location where the device was last used. Includes the MAC address of the access point and the name—if available—of the location.
User	User who last used the device.
Department	The user's departments. If a user belongs to multiple departments, they are separated by a plus sign (+).

Data - Device Last Network Access Report

The Data - Device Last Network Access report exports a CSV file containing device information for the specified date range, site, device type, owning entity, and device status. The report helps you find devices that have been placed into service with the Vocera server but are now lost or unaccounted for. It is similar to the Badge Last Used report, but it allows you to filter on more fields. The following table describes the report columns.

Table 16: Data - Device Last Network Access report

Column	Description
Site	Vocera site where the device is located.
Label	A label that identifies the device. The label must be unique; it cannot be used by another device.
MAC Address	Media Access Control address (MAC address) is a hardware address that acts like a unique name for the device. The MAC address is 12 characters long. Most Vocera device MAC addresses have the following prefix: `0009ef`.
Serial Number	Serial number of the device. This field is required. You cannot add a device without the serial number. For B3000 and B2000 devices, the serial number is 12 characters. For B1000A devices, the serial number is 15 characters.
Device Status	The device status. The value must match one of the existing device status values.
Owning	The group that owns the device.
User	User who last used the device.
Departments	The user's departments. If a user belongs to multiple departments, they are separated by a plus sign (+).
Date Device Last Used	The date on which the device was last used.
Days Since Last Used	The number of days since the device was last used.
Location Last Used	Location where the device was last used. Includes the MAC address of the access point and the name—if available—of the location.
Notes	Note providing further information about the device status, for example, "Badge stopped working after accidentally being immersed in water" or "Badge sent to IT to repair the battery latch."
Cost Center	Cost centers of the user who last used the device.

Scheduler Diagnostics Reports

Scheduler Diagnostics Reports help administrators determine why a scheduled system task failed to run. To access Scheduler Diagnostics reports, click Scheduler Diagnostics in the navigation bar.

Task Scheduler Diagnostics - Standard Report

The Task Scheduler Diagnostics - Standard report shows the list of exceptions that occurred during the Task Scheduler execution process. Exceptions are listed in reverse chronological order.

Task Scheduler Diagnostics - Filter Report

The report Task Scheduler Diagnostics - Filter Report shows the list of exceptions that occurred during the Task Scheduler execution process. You can filter the report by date range and exception category. Exceptions are listed in reverse chronological order.

Custom Reports

You can customize Vocera Report Server by designing your own reports using Crystal Reports, and then add them to the Report Console. To access custom reports, click Custom Reports in the navigation bar. For more information on how to create custom reports, see the *Vocera Report Server Database Schema*.

Using Reports to Answer Questions

The following topics present questions that might arise as people use the Vocera Communications System, and they describe reports that can help you answer them.

What can I do to improve name recognition?

The following Summary Reports can help you find unused Group and Address Book entries. Removing unused entries can improve overall name recognition.

Table 17: Summary Reports

Report Name	Description
Group Entry Summary Report on page 25	Shows the total calls made to a Group entry. Use this report to learn which entries are unused and can be removed from the system. Removing unused Group entries can improve overall name recognition.
Address Book Entry Summary Report on page 26	Shows the total calls made to an Address Book entry. Use this report to learn which entries are unused and can be removed from the system. Removing unused Address Book entries can improve overall name recognition.
Inactive Groups Report on page 23,**Inactive Users Report** on page 22, and **Inactive Address Book Entries Report** on page 24	These reports show entities that have not been used during a specified date range. Removing these entities can improve overall name recognition.

Are specific users having problems with speech recognition?

The following Speech Recognition reports can help you identify users who are having problems with speech recognition.

Table 18: Speech Recognition reports

Report Name	Description
Speech Recognition Results by User Report on page 44	Use this report to generate user recognition statistics sorted by last name
Speech Recognition Results by User Detail Report on page 43	Use this report to generate user recognition statistics sorted by last name. The detail report includes a configurable recognition rate filter to generated detailed data.
Speech Recognition Results by Department Report on page 46	Use this report to generate user recognition statistics sorted by department name.

If any users fall below normal speech recognition levels, there are several things you can do to correct the problem:

- Determine if a particular device or access point is causing the speech recognition problem.
- Record utterances to identify the user's interactions with the system.
- Use the Data Check feature of the Administrator Console to fix database entries that cause speech recognition conflicts, such as duplicate spoken names.
- Record user-specific alternate pronunciations for commands and names.

For more information about how to correct speech recognition problems, see the Troubleshooting Speech Recognition chapter of the *Vocera Administration Guide*.

A Vocera device is missing. When was it last used? By whom?

The following Asset Tracking and Device Management reports can help you account for missing Vocera devices.

Table 19: Asset Tracking and Device Management reports

Report Name	Description
Badge Last Used Report on page 57	For each device, this report lists the MAC address, the date when the device was last used, and the name of the person who lasted logged in to the device.
Device Last User Access Report on page 53	This report displays the last user to log in to a device based on a threshold period of days during which the device was not used. Set the following report parameters: • Device Status = Active • Device Sharing = Shared Device • Device Last Used = Greater than or equal to • Number of Days = 3 • If Device Sharing = Nonshared Device, set Number of Days to 5.
Device Last Network Access Report on page 54	This report shows when a device last accessed the Vocera server and what access point or area it was associated with. It includes more information than the Badge Last Used or Device Last User Access reports, including the device serial number, the tracking date, and any notes for the device.
Department Inventory - Summary and Detailed Reports on page 58	Summarizes information about which device each user in each department is using. Information is grouped by department, and within each department, by device MAC address.
Device Inventory - Summary Report on page 55	Similar to the Department Inventory - Summary report, but it also includes the device label, status, and percentage of days used.
Device Inventory - Detail Report on page 55	Provides details about which device each user in each department is using. Information is grouped by department, and within each department, by device MAC address.
Department Inventory - Summary and Detailed Reports on page 58	Similar to the Department Inventory - Detail report, but it also includes the device label, status, and percentage of days used.

Are devices being returned at the end of each shift?

The following Asset Tracking and Device Management reports can help you determine whether devices are returned at the end of each shift.

Table 20: Asset Tracking and Device Management reports

Report Name	Description
Device Usage Report on page 56	Shows which devices each user in each department is using. Information is sorted by department, and within each department, by device label.
Badge Usage Report on page 57	Shows who is using each device on a daily basis. Information is sorted by device MAC address.

Who is making the most calls?

The following Calls by Device reports provide information about outgoing calls.

Table 21: Calls By Device reports

Report Name	Description
Outgoing Calls by User Reports (Summary and Detail) on page 39	Summarizes calls placed by device users.
Outgoing Calls by User Reports (Summary and Detail) on page 39	Shows details of calls placed by device users.

Report Name	Description
Outgoing Calls Summary Report on page 41	Summarizes calls placed by device users and shows what types of calls were made. Calls can be made to users, groups, phones, or Address Book entries.

Who is receiving the most calls?

The following Incoming Call reports provide information about incoming calls.

Table 22: Incoming Call reports

Report Name	Description
Incoming Calls Reports on page 37	Shows calls received by device users.
Incoming Calls Reports on page 37	Shows calls received by groups.
Incoming Calls Reports on page 37	Shows calls received by address book entries.

How many calls are made and received in a given time period?

The following Weekly and Monthly Summary reports can help you track calling trends over time.

Table 23: Weekly and Monthly Summary reports

Report Name	Description
Daily System Call Volume	Graphs the total call volume per day for the last two weeks.
Daily PBX Call Volume	Graphs the total PBX call volume per day for the last two weeks.
Weekly System Call Volume	Graphs the total call volume per week for the last 90 days.
Weekly PBX Call Volume	Graphs the total PBX call volume per week for the last 90 days.
Monthly System Call Volume	Graphs the total call volume per month for the last 12 months.
Monthly PBX Call Volume	Graphs the total PBX call volume per month for the last 12 months.

When is the system used most?

The following Usage Summary reports provide information about system usage.

Table 24: Usage Summary reports

Report Name	Description
Hourly Usage Summary Report on page 27	Graphs the overall usage of the system by hour. You could use this information to schedule maintenance during times when usage is light.
Average Call Duration Statistics Report on page 29	Summarizes the average call duration during a specified time frame.

Is equipment causing speech recognition problems?

The following Access Summary reports can help you identify equipment that is causing speech recognition problems.

Table 25: Access Summary reports

Report Name	Description
Speech Recognition Results by Access Point Report on page 45	Recognition statistics for each access point.

Report Name	Description
Speech Recognition Results by Device Report on page 46	Recognition statistics for each device.

Has system data been modified? Who did it? When?

The following Admin Console Summary report can help you track and audit changes to Vocera system data.

Table 26: Admin Console Summary report

Report Name	Description
Tiered Administration Audit Report on page 31	Shows all modifications and system actions performed via the Administration Console.

Administering Report Server

The Administration screen provides pages you can use to perform various administration operations, such as backing up report server data.

Administration Overview

The Report Console Administration button displays a screen that offers the following tabs:

- Server Info, which displays a page where you can specify the Vocera Voice Server log directory, Vocera Voice Server IP address, and Vocera Report Server administrator password.
- Mail Info, which displays a page where you can configure settings for the outgoing mail server.

Entering Server Information

The Server Info tab displays a page where you can enter information about the Vocera Report Server and change the server's password.

To enter server information:

1. Click Administration in the navigation bar.
2. On the Server Info tab, enter the Vocera server IP address in the **Vocera Voice Server IP Address** field. Without access to the Vocera server, the Vocera Report Server cannot load the data files required to run reports. This field cannot be blank; it can be from 1 to 40 characters long, and it must be a valid IP address (for example, `123.101.1.12`).

   For clustered Vocera servers, enter a comma-separated list of IP addresses.
3. Type 5 to 15 alphanumeric characters or symbols in the Administrator Password field. The password you type here replaces the current administrator password. After you save this password, it takes effect the next time an administrator logs in.
4. Confirm the new administrator password by typing it again in the Re-enter Administrator Password field.
5. After you enter data in these fields, click Save Changes to submit the new values, or click Reset to restore previously-saved values.
6. The page also displays the following information:
   - **Company Name** , which is included in the footer on generated reports. **Company Name** is a read-only field. The value is loaded from the Vocera Voice Server during the dataload operation. You can set the company name in the Vocera Administration Console by choosing System > License Info.
   - **License information** , which indicates whether the Scheduler is enabled.

Configuring Outgoing Mail Information

Vocera Report Server allows you to schedule reports to be generated at a specific time and frequency and then to send the resulting output files to a list of email addresses. It also allows you to schedule system tasks to be fired at a specific time and frequency and then to notify alert recipients of completed or failed tasks. However, before Vocera Report Server can email reports to users, or send notification to alert recipients, you must use the Report Console to configure settings for the outgoing mail server.

Your company may have one or multiple mail servers. If you do not know the configuration information for the mail server to use with Vocera Report Server, ask the person who administers the server.

You can specify the same mail server used by your Vocera Voice Server, or you can use a different mail server. For information on configuring email settings for the Vocera Server, see the *Vocera Administration Guide*.

If Vocera Report Server fails to email a scheduled report package for any reason, it sends a notification email to the designated administrator. Based on the settings in the Notifications tab in task Scheduler, it sends notification emails of completed tasks and or failed tasks to the designated administrator.

To configure email host settings:

1. Click Administration in the navigation bar.
2. Click the Mail Info tab.
3. Enter information identifying your mail server. All fields are required.
4. Click Save Changes.

Mail Info Page

Mail Info settings identify your mail server so the Vocera Report Server can communicate with it successfully. All Mail Info fields are required, so make sure you complete them all.

Table 27: Outgoing mail settings

Field	Description
Download Mail Setup from Vocera Voice Server	Check this box if you want to load the mail server settings from the Vocera Voice Server. When the Download Mail Setup from Vocera Server box is checked, mail server settings are downloaded from the Vocera Voice Server during each dataload operation. Important: If you check the **Download Mail Setup from Vocera Voice Server** box, only the Default Alert Recipient field can be modified. All other fields on this page are read-only.
Mail Host Domain Name	Specify the domain name used in email addresses at your site. Example: yourcompany.com.
Enable SMTP Authentication	Check this box if your mail server requires its subscribers to provide authentication when sending email messages.
SMTP Host	Enter the name of the mail server used for outgoing mail. For example: mail.yourcompany.com. SMTP stands for Simple Mail Transfer Protocol, which is used to send email.
SMTP UserName	Enter the user name or address used to login to the outgoing mail server.
Password	Enter the password the Vocera Report Server must use to log in to the outgoing mail server (up to 15 characters). Type the password again in the Re-enter Password field to ensure that you typed it correctly.

Field	Description
Default Alert Recipient(s)	Enter a comma-separated list of email addresses to receive warning messages that the Vocera Report Server can issue. The Vocera Report Server sends alert messages to notify you when a scheduled report package could not be run or delivered. If this field is empty, no one will receive Vocera Report Server alerts. Avoid using email addresses with special characters. For example, do not enter an email address with a piping character (|) because Report Server treats it as a delimiter.
Test Mail Server	Click Test Mail Server to send a test message to the specified default alert recipient. After you click Test Mail Server, Vocera Report Server should display a dialog box saying that the test was successful. Note: If the test message cannot be sent, it may take several seconds for Vocera Report Server to display a dialog saying that the test was unsuccessful and that you should check the SMTP settings.

Adding a Background Watermark to Reports

A watermark is text that appears in the background of a report. You can specify a string to use as a watermark for all reports in the `db.properties` file. For example, you may add a watermark that reads "CONFIDENTIAL" to reports.

Note: Vocera Report Server supports a text watermark only. You cannot select an image file to use for a watermark. You cannot specify the typeface, font size, color, transparency, or layout of the watermark text in the Report Console. However, if you use Crystal Reports to customize a report or create your own report, you can format the report's watermark as you choose.

Use the following steps to specify watermark text for all reports:

1. Open the file `VOCERA_DRIVE:\Vocera\reports\db.properties` in a text editor.
2. Add the following line:

   ```
   Watermark = WatermarkText
   ```

   where *WatermarkText* is a string. Do not enclose the value in quotes. Keep the watermark text short (no more than 50 characters); otherwise, the text may be truncated.

   Note: The name of the Watermark property, like all properties in the `db.properties` file, is case-sensitive. Make sure you type it correctly.

3. Save and close the `db.properties` file.

SSL Access

SSL (Secure Sockets Layer) is a standard Internet protocol for securely exchanging information between two parties. SSL encrypts transmitted data with two keys: a public key known to everyone, and a private key known only to the recipient.

By convention, an SSL connection uses a URL that begins with `https:`, instead of `http:`. For example, use the following URL to open an SSL connection to the Report Console:
`https://report_server_ip_address/reportconsole/index.jsp`

You can optionally enable SSL access in the report console of the Vocera Report Console during installation. After installation, you can enable or disable SSL access as described in this guide in the topic "Changing the SSL Configuration".

If you enable SSL, you will experience a delay every time you save or transmit data. This performance delay is an unavoidable aspect of SSL encryption and can be mitigated somewhat by a high-bandwidth connection to the Vocera Report Server and a fast CPU on the Vocera Report Server.

Changing the SSL Configuration

After installation, you can enable or disable SSL by running the Update SSL utility. If you enable or disable SSL, you need to restart the server.

Use the following steps to enable or disable SSL:

1. In the `\vocera\reports\tools` folder, run `updatessl.exe`. The Update SSL utility appears.
2. If SSL is currently disabled, click Enable SSL to enable it. If SSL is currently enabled, click Disable SSL to disable it.

   Note: When you click Enable SSL or Disable SSL, the Apache2 service will be stopped and the necessary registry entries and shortcuts will be updated.
3. Select Yes, I want to restart my computer now, and then click Finish.

All changes made by the Update SSL utility are saved to a log file named `UpdateSSL.log` in the `[SystemDrive]\InstallLogs-Vocera` directory.

Creating a New SSL Certificate

When you configure SSL on the Apache web server during Vocera installation or afterward, an SSL certificate is created that is set to expire after 1825 days (5 years). The long duration of the certificate is intended for your convenience so that you do not need to replace it frequently. When the SSL certificate expires, you need to create a new one to enable access to the Vocera Report Console. You can create the new SSL certificate while the Vocera Report Server is running. However, you need to stop the Apache2 and Tomcat services temporarily.

If SSL is disabled or the certificate has not expired yet, you do not need to create a new certificate. If the URL you use to access the Report Console starts with `https:` instead of `http:`, SSL is enabled. Another way to check whether SSL is enabled is to look at the value of the VOCERA_SSL environment variable. When VOCERA_SSL is set to ON, SSL is enabled.

Use the following steps to create a new SSL certificate when it has expired:

1. On the Vocera Report Server machine, choose Start > All Programs > Administrative Tools > Services to open the Services console.
2. Stop the Apache2 and Tomcat services. Leave the Services console open.
3. In the `\apache\apache2\bin` folder on the Vocera Report Server, run `cert.bat`.
   This batch file creates a new self-signed certificate named `server.crt` in the `\apache\apache2\conf\ssl` folder. The certificate is valid for 1825 days (5 years) from the creation date. You can verify the expiration date of the certificate by opening the certificate file.
4. In the Services console, start the Apache2 and Tomcat services.
5. Close the Services console.

Maintaining Report Server Data

The Maintenance screen allows you to restore data from a backup file, empty the database, or load data from an archive.

Restoring Data from a Backup File

You can restore data from a specified backup file. When you restore data from a backup, you *replace* all data currently in the system with data from the backup file. If you want to *add* data from a backup file to the current data, restore the data from an archive instead. See "Loading Data from an Archive" in this section for more information.

Use the following steps to restore data from a backup file:

1. Click Maintenance in the Navigation bar.
2. Click the Restore button. The Select Restore Files dialog box opens.
3. Click a file name in the dialog box to choose a backup file.
4. Click Restore. Another dialog box warns you that the operation will temporarily stop the server and system data will be replaced.
5. Click OK to restore data, or click Cancel to cancel the operation. When you click OK, the process begins, and a dialog box displays status messages.

   Important: The time it takes to restore Report Server data depends on the size of the data set.

6. When the process is complete, click OK to close the dialog box.

Deleting Report Data

You can empty the report database by deleting records from all the tables. This operation cannot be undone. If you think you might want to restore this data at a later time, take one of the following actions:

- Create a backup file before you delete the data. See **Scheduling Automatic Backups** on page 100, and **Backing Up Data Manually** on page 105 for more information.
- Create an archive and then purge the data instead of deleting the data. See**About Scheduling Automatic Archiving of Report Data** on page 102, and **Creating an Archive Manually** on page 106 for more information.

Use the following steps to delete report data.

1. Click Maintenance in the Navigation bar.
2. Click Empty.
   A dialog box warns you that this operation removes data from the database permanently.
3. Click OK to delete data, or click Cancel to cancel the operation.
   When you click OK, the process begins, and a dialog box displays status messages.
4. When the process is complete, click OK to close the dialog box.

Loading Data from an Archive

You can add data to the data currently in the system by loading it from an archive. Unlike restoring data from a backup file, which replaces the current system data, loading data from an archive appends data.

Use the following steps to load data from an archive:

1. Click Maintenance in the Navigation bar.
2. Click Load.
   The Select File To Load dialog box opens.
3. Click a file name to choose an archive file.

   Note: The Report Server maintains archive files in the `\vocera\reports\backup` directory.

4. Click Load.

   Another dialog box warns you that the operation will load all data into the current system.
5. Click OK to load data, or click Cancel to cancel the operation.
   When you click OK, the process begins, and a dialog box displays status messages.
6. When the process is complete, click OK to close the dialog box.

Managing Hard Disk Space

Over time, the number of records in the Report Server database increases, which causes backup files to grow progressively larger. Consequently, the Report Server computer can accumulate a considerable amount of data. Performing regular archiving and purging of Report Server data can reduce the disk space required for scheduled backups. See the following topics for information on archiving and purging:

- **About Scheduling Automatic Archiving of Report Data** on page 102
- **Scheduling Automatic Archiving and Purging of Report Data** on page 103

To free up disk space, you may also consider removing files from the following Report Server folders.

Folder	Description
`\vocera\reports\backup`	Contains Report Server backup and archive files. By default, only 10 backup files are preserved, but you can configure the Backup concept to preserve a different number of files. See **Scheduling Automatic Backups** on page 100. There is no limit to the number of archive files you may create. To free up disk space, you can move archive files from the Report Server computer to another disk for backup purposes.
`\vocera\reports\data-`*`datetime`*	Each time you upgrade Report Server, the installer preserves a backup copy of the `\vocera\reports\data` folder and renames it `\vocera\reports\data-`*`datetime`* . To free up disk space, you can delete the `\vocera\reports\data-`*`datetime`* folders or move them to another disk for backup purposes. Important: DO NOT delete the `\vocera\reports\data` folder as it contains the current Report Server data.
`\vocera\reports\data\posted`	Contains report logs that have been uploaded to the Report Server database. These files are preserved because they can be used to restore data if your Report Server database becomes corrupted. However, you can also restore data from backup files, so you may choose to remove files from this folder if you need to free up space.
`\vocera\reports\restore`	Contains data used to restore Report Server to a previous service pack release. Vocera preserves these files in the event that you choose to roll back to a previous release.

Folder	Description
`\Tomcat\logs`	Contains Report Server logs. You may periodically need to remove old log files from this folder to free up space. See **Managing Report Server Logs** on page 76.

Hard Disk Space Needed for Backups

Before scheduling automatic backups of Report Server data or performing a manual backup, check to make sure your server confirms to the minimum system requirements specified in the *Vocera Installation Guide*.

Each time you back up Report Server data, you use roughly *4 times* the size of the `\vocera\reports\data\sqldata` directory. For example, if the `\vocera\reports\data\sqldata` directory currently uses 2 GB of disk space, then *at least* 8 GB free disk space is needed to perform another backup.

The frequency of scheduled backups also affects the disk space required. For example, if you schedule daily backups, you will need much more free disk space than if you schedule weekly or monthly backups.

Performing regular archiving and purging of Report Server data can reduce the disk space required for scheduled backups.

Managing Report Server Logs

The Report Server generates the following log files in the `\Tomcat\logs` folder:

Log Filename	Description
vocera-report-*date-time*.txt	Contains information about Report Server activities, including reports that are generated.
taskname-date-time.txt	Contains detailed information about the execution of a specific system task, including any exceptions that might have occurred. The different system tasks are Archive, Archive and Purge, Backup, Dataload, Package Destination Sweep, and Purge. A separate log file is generated every time a system task runs. For the list of task log file names, see **Viewing the Vocera Report Server Log** on page 95.
restore-*date-time*.txt	Contains information about the execution of restoring the database.
emptyDB-*date-time*.txt	Contains information about the execution of emptying the database.
tomcaterr.txt	Lists tomcat standard errors.
tomcaterr.txt	Lists tomcat standard errors.
tomcatlog.txt	Contains standard tomcat output.

Vocera Report Server does not manage the files in the `\Tomcat\logs` folder. The log files can build up over time and so the Vocera Report Server administrator may have to periodically remove old log files from the folder to keep the disk clean.

Scheduling Reports

The Vocera Report Server Report Scheduler tab allows you to schedule the automatic generation and distribution of reports. You can use the Site Filter package list to filter packages by site. By default, the package list shows packages for all sites.

About Scheduled Reports

Vocera Report Server provides several dozen reports, but trying to manually generate each one on a recurring basis can be time consuming and burdensome. Distributing the reports to multiple people who need to review them can be equally taxing. To free the Vocera Report Server administrator from these tasks, Vocera provides the Report Scheduler, which makes it simple and easy to schedule reports so they are automatically generated and distributed to the appropriate people.

The Report Scheduler allows you to:

- Proactively schedule reports to be distributed to a shared file server or to a mailing list.
- Make more efficient use of reports by distributing them to a variety of different users.
- Reduce administration of Vocera servers.

About Report Packages

At the center of the Report Scheduler is the report package, a collection of reports that share the same schedule and destination. A package can be run on a daily, weekly, or monthly basis. The output files resulting from a scheduled report package are saved to a location on disk, emailed to a list of users or groups, or both.

When you create a package, separate tabs allow you to specify basic package information, scheduling information, the list of reports to include in the package, and the destination.

Note: Packages that appear grayed out (or dimmed) are disabled and are not scheduled to be run. To enable a package, see **Disabling or Enabling a Report Package** on page 92. Packages that contain unsupported reports or reports with undefined parameters display in red. An unsupported report is a report whose report definition file cannot be found. If a package contains an unsupported report, you should open the package and re-select the latest version of the report. Otherwise, the unsupported report will not be generated when the package runs. A package that contains only unsupported reports cannot be enabled.

You can use the Report Scheduler to distribute reports in the following formats:

- PDF – Portable Document Format, which can be opened in Adobe Reader or Adobe Acrobat.
- RTF – Rich Text Format, which can be opened in Microsoft Word.
- CSV – comma-separated values format, which can be opened in a spreadsheet application. CSV format is available only for Export Data reports.

Who Should Receive Scheduled Reports

How you use the Report Scheduler depends on how your company administers Vocera Voice Server and Vocera Report Server, how Vocera groups and departments are structured, and how your company has implemented device management practices.

Generally, the people who will be scheduled to receive reports are

- System Administrator(s) – people responsible for administering Vocera Voice Server and Vocera Report Server. This could also include the Telecom Manager.
- Unit/Department Managers – people with responsibility for managing groups or departments that use Vocera devices.
- System Device Manager(s) – people responsible for entering Vocera devices into the system.
- Group Device Managers – people responsible for managing devices in their group or department.
- Internal Trainers – people responsible for training staff how to use Vocera properly.

The following table shows suggested reports for distribution to System Administrators, System Device Managers, Group Managers, and Group Device Managers.

Role(s)	Suggested Reports
Vocera System Administrator / Telephony Administrator	• Reports that show what changes were made to the system (Tiered Admin Audit report) and summary reports. • Reports that show if speech recognition results are poor in a certain location (could be due to a problem with APs). • Reports that show overall call volume (Daily, Weekly and Monthly Call Volume reports) and usage statistics (Usage Summary and Average Call Duration Statistics).
System Device Manager	• Reports that show overall device inventory (Badge Inventory - Summary and Detail)
Unit/Department Manager	• Reports that help you find missing Vocera devices (Badge Last Used, Department Inventory) • Reports that show who's making outgoing calls and who's receiving incoming calls (Call reports). • Reports that show users with low recognition results (Recognition Results by User and Low Recognition Results by User). • Reports that show if someone's having speech recognition problems with a device (Recognition Results by Device).
Group Device Manager	• Reports that help you find missing devices (Badge Last Used - Standard and Detail). • Reports that show device usage for the group/department (Badge Usage) • Reports that show if someone's having speech recognition problems with a device (Recognition Results by Device).
Internal Trainer	• Reports that show users with low recognition results (Recognition Results by User and Low Recognition Results by User). Users with low recognition rates might need refresher training.

Guidelines for Scheduling Reports

To schedule reports, use the following recommended workflow sequence:

1. Configure settings for the outgoing mail server. See "Configuring Outgoing Mail Information" in this guide.

   Important: An outgoing mail server is required to schedule reports.

2. Set up mailing lists. See **Creating Mailing Lists** on page 79.
3. Set up disk destinations. See "Creating Disk Destinations" in this guide.
4. Create a report package. See **Adding or Editing a Report Package** on page 82.

5. Verify that the report package works.

   Make sure the correct reports are generated using the specified parameters, and make sure the reports are sent to the correct mailing list or disk destination.

Creating Mailing Lists

To simplify distribution of reports emailed from the Report Scheduler, you can define mailing lists. The Mailing Lists page lets you create, edit, and delete mailing lists. A mailing list consists of email addresses, Vocera users, and Vocera groups.

Note: The Report Server does not validate email addresses for Vocera users and groups. Before creating mailing lists that use Vocera users or groups, the system administrator should ensure that valid email addresses have been assigned to users.

To add or edit a mailing list:

1. Click Report Scheduler in the navigation bar.
2. Click the Mailing Lists tab.
3. Click Add New Mailing List to create a mailing list, or select a mailing list and click Edit Mailing List to edit an existing mailing list.
4. The Add/Edit Mailing List dialog box opens. Add or edit data as appropriate. For more information, see **Add/Edit Mailing List** on page 79.
5. Click Save.

Add/Edit Mailing List

The Add/Edit Mailing List dialog box lets you create or modify a mailing list to use for scheduled reports. A mailing list is a list of email addresses, Vocera users, or Vocera groups.

1. Use the following steps to add Vocera users and groups to a new mailing list:
   a. Click Add New Mailing List.
      The Add Mailing List box appears.
   b. Enter a name for the mailing list.
   c. Select a site from the list of available sites.
   d. Click Add Name.
      The Select User or Group dialog box appears.
   e. Select users and groups from the list.
      For complete details on the Select User or Group dialog box, see **Select User or Group** on page 80.
   f. Click Finish .
      The selected users and groups are added to the mailing list.
   g. Click Save in the Edit Mailing List box.
      The selected users and groups are saved to the mailing list.
2. Use the following steps to add Vocera users and groups to an existing mailing list:
   a. Select the mailing list and click Edit Mailing List.
      The Edit Mailing List box appears.
   b. Click Add Name.
      The Select User or Group dialog box appears.
   c. Select users and groups from the list.
      For complete details on the Select User or Group dialog box, see **Select User or Group** on page 80.
   d. Click Finish .
      The selected users and groups are added to the mailing list.
   e. Click Save in the Edit Mailing List box.
      The selected users and groups are saved to the mailing list.

3. Use the following steps to add an email address to the mailing list:
   a. Click Add Email.
      The Add Email Address dialog box opens.
   b. Type an email address. Example: jsmith@yourcompany.com.
   c. Click Add.
      The email address is added to the Email Address list.
   d. Click Finish.
4. To delete entries from the mailing list, select an entry in the User, Group, or Email Address list, and click Delete Name.

Select User or Group

The Select User or Group dialog box lets you select Vocera users and groups to add to a mailing list to use for scheduled reports.

This dialog box displays icons to help you identify the names:

-  identifies users.
-  identifies groups.

The dialog box displays up to 200 users and groups at a time. To see the next group of 200, click Next 200.

By default, the dialog box displays users and groups for all sites. To filter the list by a specific site, select other than "All Sites" from the Sites list at the bottom right.

In the Select User or Group dialog box, you can select multiple mailing lists, users, or groups:

- To select multiple names, hold down the Ctrl key as you click each name.
- To select a range of names, click the first name in the range, and then hold down the Shift key as you click the last name in the range.

To select users or groups:

1. Type the name of a mailing list or group, or the last name of a user.
   As you type a name, the Search field displays a drop-down list of matching names. You can select a name from the drop-down list to go to it.
   If the list contains many users with the same last name, type a comma and space after the last name, and then type the first name (or the start of the first name). Select a name from the drop-down list to go to it.
   Users or groups with matching names appear in the list.
2. Select one or more names.
3. Click Finish to close the dialog box.
   The name(s) appears in the mailing list.

Add Email Address

The Add Email Address dialog box lets you add email addresses to a mailing list to use for scheduled reports.

Type an email address in the text field, and then click Add. The email address is added to the Email Address list.

To remove an email address, select an address in the Email Address list, and then click Delete Name.

To save your changes and return to the Add/Edit Mailing List dialog box, click Finish.

Creating Disk Destinations

When you schedule reports, you can attach the resulting reports to an email message, or you can send a message containing a link to a network folder where recipients can go to view the reports. However, before you can configure a report package to output reports to a network folder, you must define disk destinations on the Disk Destinations page.

To create a disk destination:

1. Click Report Scheduler in the navigation bar.
2. Click the Disk Destinations tab.
3. Click Add New Destination.
   The Add/Edit Disk Destination dialog box opens. Add or edit data as appropriate. For more information, see **Add/Edit Disk Destination** on page 81.
4. Click Save.

Add/Edit Disk Destination

The Add/Edit Disk Destination dialog box lets you specify the name and location of a shared network folder used to store reports.

Table 28: Add/Edit Disk Destination dialog box options

Field	Description
Enabled	Make sure this check box is checked to enable the disk destination. If you later decide to disable the disk destination, you can uncheck the Enabled check box.
Destination Name	Enter the name (up to 45 characters) of the disk destination. This is the name you later use to select the disk destination for a report package.
Destination Folder Path (UNC)	Specify the output folder for report packages. You can specify a local directory on the Vocera Report Server (for example, c:\ReportOutput) or a directory on a shared network server. If you specify a shared network resource, use Uniform Naming Convention (UNC) syntax to specify the path: `\\ComputerName\SharedFolder` If you specify a directory on another network server, make sure Vocera Report Server has access to other network servers. For more information, see **Giving Vocera Report Server Access to Other Network Servers** on page 81.
Enable Sweep for this Destination	To automatically purge older report output files, make sure this box is checked. For information about scheduling the sweep of disk destinations, see **Scheduling Automatic Sweep of Disk Destinations** on page 104.
Delete Reports Older than *n* Days	Enter the number of days after which a report output file will be removed from the destination folder.

Giving Vocera Report Server Access to Other Network Servers

By default, Vocera Report Server uses a local system account instead of a user account. Therefore, Vocera Report Server and its Report Scheduler may not have access to other network servers. To use a disk destination on a network server other than the Vocera Report Server computer, you must change the Tomcat "Log On As A Service" right from a local system account to a user account with permissions to the computer on which the disk destination is located.

To give Vocera Report Server access to disk destinations on other network servers:

1. Open the Tomcat Properties (Local Computer) dialog box:
   a. Choose Start > Control Panel > Administrative Tools > Services.
   b. Double-click Tomcat.
      The Tomcat Properties (Local Computer) dialog box opens.
2. Change the Tomcat "Log On As A Service" right from a local system account to a user account:
   a. Click the Log On tab.
   b. Select This account and click Browse to open the Select User dialog.
   c. In the Select User dialog, select a network account with permissions to the computer on which the disk destination is located. Click OK to save your selection and close the Select User dialog.
   d. In the Password field, enter the password for the account you selected. Enter the same password in the Confirm password field. Click OK to save your selection and close the Tomcat Properties (Local Computer) dialog.
      A message appears to confirm that the account you selected has been granted the Tomcat "Log On As A Service" right. Click OK to close this message.
3. Another message appears to confirm that the new logon name will not take affect until you restart the Tomcat service. Click OK to close this message.
4. Stop and restart the Tomcat service.

Recommended Hard Disk Space for Disk Destinations

Before running report packages that output files to disk destinations, make sure your hard disk space meets the minimum disk space requirements specified in the Vocera Voice Server Sizing Matrix[3].

A minimum of 100 GB of hard disk space is recommended for Vocera Report Server.

The frequency of scheduled report packages also affects the disk space required. For example, if you schedule daily report packages, you will need much more free disk space than if you schedule weekly or monthly report packages. Enabling regular sweeping of older package data from the disk destination is a good housekeeping operation.

For information about scheduling the sweep of disk destinations, see **Scheduling Automatic Sweep of Disk Destinations** on page 104.

Adding or Editing a Report Package

Information in a report package is organized into multiple categories, each with its own page in the Add/Edit Package Schedule dialog box.

To add or edit a report package:

1. Click Report Scheduler in the navigation bar.
2. Click Add New Package to create a report package, or select a report package from the list and click Edit Package to edit an existing report package.
3. The Add/Edit Package Schedule dialog box opens. Add or edit data as appropriate.
   - Package Information page – Specify basic report package information.
   - Schedule Information page – Specify schedule information.
   - Default Parameters page – Specify default report parameters to use for all reports added to the package.
   - Report List page – Specify the reports contained in the package, and set the date range and parameters for reports.
   - Report Destination page – Specify the destination of the package (email, disk, or both).

[3] http://vocera.com/resource/vocera-voice-server-sizing-guidelines

4. When you are finished defining the report package, click Save to save changes, close the Add/Edit Package Schedule dialog box, and display the Package page.

Package Information

The Package Information page of the Add/Edit Package Schedule dialog box lets you specify basic information about the report package.

Field	Description
Enabled	Make sure this check box is checked to enable the package schedule. If you later decide to disable the package schedule, you can uncheck the Enabled check box.
Package Name	Enter a name for the report package (up to 50 characters).
Site	Select a site for the package. The site you select will be used for the Site and Owner's Site report parameters and also to filter email recipients for package destinations. To use all sites for the package, select All. Note: If you change the package site, several other package fields are affected. The Site and Owner's Site report parameters are updated to the package site, and Department and Device Owner report parameters are cleared. Email recipients for package destinations are also cleared.
Description	Enter a description of the report package (up to 250 characters).
Note	Enter any explanatory notes about the report package.

Schedule Information

The Schedule Information page of the Add/Edit Package Schedule dialog box lets you specify schedule information of the report package.

Field	Description
Daily	Click Daily if you want the report package scheduled on a daily basis. To schedule the report package every day, select Every 1 day(s). To skip days, select Every 2 day(s), Every 3 day(s), and so on, up to the number of days you want to skip. To schedule the report package only on weekdays, select Every Week Day.
Weekly	Click Weekly if you want the report package scheduled on a weekly basis. To schedule the report package every week, select Every 1 week(s) on. To skip weeks, select Every 2 week(s) on, Every 3 weeks(s) on, and so on, up to the number of weeks you want to skip. Make sure boxes are checked for the days of the week (Sunday through Saturday) you want to schedule the report package. You can check multiple boxes.
Monthly	Click Monthly if you want the report package scheduled on a monthly basis. Select the day of the month to schedule the report package (1 to 31 or "Last Day"). To schedule the report package every month, select Day ***n*** of Every 1 month(s). To skip months, select Day ***n*** of Every 2 month(s), Day ***n*** of Every 3 month(s), and so on, up to the number of months you want to skip.
Start Date	Select the date on which the report package is scheduled to start. Use the following date format: `MM/DD/YYYY`
End Date	Select the date on which the report package is scheduled to end.

Field	Description
Time of Day to Run Package	Select the time on which you want the report package to run. Note: To generate reports using the latest Vocera Voice Server data, make sure you select a time later than the scheduled dataload time. The package cannot run until the dataload is finished. If you schedule a package to run at the same time as the dataload, it will automatically wait to start until after the dataload is finished.
Package Waiting Time	Select the maximum number of hours this package can be queued and waiting for other packages or system tasks to complete before starting. If the package does not start before the Package Waiting Time is reached, it times out and never starts. If you select Unlimited (the default), it means the package will not time out when it is queued and waiting to run.

Default Parameters

The Default Parameters page of the Add/Edit Package Schedule dialog box lets you specify default parameters for any reports that you add to the package.

Note: Default parameters do not affect parameters that you have set in reports already in the package. Default parameters only affect reports you subsequently add to the package.

To specify default report parameters for a package:

1. In the Add/Edit Package Schedule dialog box, click the Default Parameters tab.
2. Specify the following default parameters for reports in the package:
   - Report Date Range
   - Device Type
   - Department

   Note: The Site parameter cannot be modified. It is set to the site selected for the package. For a description of report parameters, see **Entering Parameters for Scheduled Reports** on page 87.

Report List

The Report List page of the Add/Edit Package Schedule dialog box lets you specify the reports that are included in the report package. For each report, you can specify the output format and runtime parameters.

Important: Unsupported reports or reports with undefined parameters listed on the Report List page display in red. An unsupported report is a report whose report definition file cannot be found. An unsupported report or a report with undefined parameters will not be generated when the package runs. Therefore, you should replace any unsupported reports with valid reports, and you should update any reports that have undefined parameters.

To add one or more reports to the report list:

1. On the Report List page of the Add/Edit Package Schedule dialog box, click Add.

   The Select Report dialog box opens.
2. Select a Report Category, and then select one or more reports from the list.

   To select multiple reports, hold down the Ctrl key as you click each report.

   To select a range of reports, click the first report in the range, and then hold down the Shift key as you click the last report in the range.

   When you are finished selecting reports, click Finish to close the Select Report dialog box and return to the Report List page of the Add/Edit Package Schedule dialog box.
3. To specify the name and format of a report, as well as report parameters, select a report in the Report List, and click Edit.

   The Edit Report dialog box opens.

4. Make sure the Enabled check box is checked.

   If you later decide to disable this report in the package, you can uncheck the Enabled check box.

5. Specify the following options:

   - Report Output Filename – Name of the report output file (up to 100 characters).

     Note: The name you specify also appears in the list of reports included in the message that is sent to package recipients.

   - Notes for Report Recipient – Brief notes for the intended recipients describing how to read and understand the report.
   - Export Only if Data Exists – Check this option to generate an output file only if data exists for the specified parameters.
   - Format – Select either PDF (Adobe Acrobat) or RTF (Microsoft Word - Rich Text Format). For reports from the Export Data category, you must select CSV (Comma-Separated Values) format.

6. Click the Parameters tab, and specify the parameters for the report.

   Parameters vary for reports. For a list of the parameters, see **Entering Parameters for Scheduled Reports** on page 87.

7. Click Save to save changes, close the dialog box, and return to the Report List page of the Add/Edit Package Schedule dialog box.

To specify the filename suffix for reports:

- On the Report List page of the Add/Edit Package Schedule dialog box, click the Append as Suffix to Filename list and select the date format to append to the end of the report filename. Select "mm-dd-yyyy hhmmss" or "mm-dd-yyyy" (the default), or blank (no format).

To add all reports in a package to a ZIP file:

1. On the Report List page of the Add/Edit Package Schedule dialog box, make sure Add all reports to ZIP file is checked.
2. In the Filename field, enter the name of the ZIP file (up to 100 characters).
3. In the Max ZIP Size Limit field, enter the maximum size (in kilobytes) allowed for the report ZIP file. If you don't want to limit the size of the ZIP file, leave the field blank.

To delete reports from a package:

1. On the Report List page of the Add/Edit Package Schedule dialog box, select one or more reports from the list.
2. Click Delete.

   A message box opens to confirm that you want to delete the selected report(s) from the package.

3. Click OK.

To preview a report in a package:

1. On the Report List page of the Add/Edit Package Schedule dialog box, select a report from the list.
2. Click Preview.

   A separate browser window opens to preview the report.

To disable a report in the report list:

1. On the Report List page of the Add/Edit Package Schedule dialog box, select a report from the list.
2. Click Edit.

   The Edit Report dialog box opens.

3. Make sure the Enabled check box is unchecked.

4. Click Save to save changes, close the dialog box, and return to the Report List page of the Add/Edit Package Schedule dialog box.

To modify parameters for multiple reports in a package:

1. On the Report List page of the Add/Edit Package Schedule dialog box, select multiple reports from the list.
2. Click Bulk Parameter Update.

   The Bulk Parameter Update dialog box opens.
3. Modify report parameters as appropriate. For more information, see **Bulk Parameter Update** on page 86.
4. Click Finish to save changes, close the dialog box, and return to the Report List page of the Add/Edit Package Schedule dialog box.

Bulk Parameter Update

When you click the Bulk Parameter Update button on the Report List page of the Add/Edit Package Schedule dialog box, the Bulk Parameter Update dialog box appears. It allows you to modify parameters for multiple reports in a package.

Select a report parameter, and click Edit Parameter to modify its value. For each parameter that you modify, the Update check box is automatically checked.

Note: If you do not want to update a parameter, make sure the Update check box is unchecked.

The Site parameter cannot be modified. It is set to the site selected for the package.

The list of report parameters varies depending on the reports you have selected to perform a bulk parameter update. For a description of report parameters, see **Entering Parameters for Scheduled Reports** on page 87.

To save your changes, click Finish.

Select Report

Select a Report Category, and then select one or more reports from the list.

To select multiple reports, hold down the Ctrl key as you click each report.

To select a range of reports, click the first report in the range, and then hold down the Shift key as you click the last report in the range.

When you are finished selecting reports, click Finish to close the Select Report dialog box and return to the Report List page of the Add/Edit Package Schedule dialog box.

Entering Report Information

The Information page of the Add/Edit Report dialog box lets you specify basic information for the report such as the name and format.

Field	Description
Enabled	Make sure this check box is checked to enable the report. If you later decide to disable the report, you can uncheck the Enabled check box.
Report Name	Click Select to select a report from a list.
Report Output Filename	Enter the name of the report output file (up to 100 characters). The name you specify also appears in the report list in the email sent to recipients.
Notes for Report Recipient	Enter brief notes (up to 200 characters) for the intended recipients describing how to read and understand the report.

Field	Description
Export only if data exists	Check this option to generate an output file only if data exists for the specified parameters.
Format	Select either PDF (Adobe Acrobat) or RTF (Microsoft Word - Rich Text Format). For reports from the Export Data category, you must select CSV (Comma-Separated Values) format.

Entering Parameters for Scheduled Reports

The Parameters page of the Add/Edit Report dialog box lets you specify parameters for the report.

Table 29: Add/Edit Report dialog box

Parameter	Description
Category	Select the exception category to use for the Scheduler Diagnostics - Filter Report. If you do not want to filter the report by exception category, select "All Categories."
Client ID	Select the unique ID for a VMIclient. If you do not want to filter by client ID, select All Clients.
Department	Select the departments included in the report. The default is "All Departments." The departments you can select are pre-filtered based on the site you selected. If the site is "All Sites," then only "All Departments" can be selected for the department. If a specific site has been selected instead of "All Sites," then "All Departments" refers to all departments at that site. Department membership is determined from the latest dataload of Vocera Voice Server data. When you filter a report by a department, only users that belong exclusively to that department are included. You can select multiple departments to include in the report, including virtual departments. A virtual department represents users that belong to more than one department. The name of a virtual department includes actual department names separated by plus signs (for example, Marketing+Sales). Note: For custom reports, the Department parameter could be implemented as a drop-down list parameter, which allows you to select only one department, or a multilist parameter, which allows you to select multiple departments.
Device Last Used	Select “Greater than or equal to” or “Less than or equal to” to determine which devices to include in the report. If you select “Greater than or equal to,” only devices that were idle (not used) during the specified **Number of Days** *or more* will appear in the report. If you select “Less than or equal to,” only devices that were idle during the specified **Number of Days** *or less* will appear in the report.
Device Owner	Select the owning group(s) to include in the report data. To select all groups, select "All Owners" (the default). If you select “All Owners,” the report is NOT filtered by Device Owner or Owner's Site. To show all devices that have not been assigned an owning group, select "Not Assigned." Device management reports allow you to select multiple groups in the Device Owner field.
Device Sharing	If you are generating the Device Last User Access report, specify whether you are reporting on all devices, shared devices, or non-shared devices.
Device Status	Select the device status to include in the report data. If you select a device status other than “All Device Statuses,” devices of other status types will not be included in the report.

Parameter	Description
Device Type	Select the types of devices to include in the report data. Choose between “All Device Types” (the default), “B1000,” “B1000A,” “B2000,” “B3000,” “MC70,” or “Smartphone.” If you choose “All Device Types,” the report may include other devices running the Vocera Connect app.
Filter Type	Select the types of filter to use for the report. For group integration reports, choose “By Departments” or “By Groups.” For user integration reports, choose “For Departments” or “By Users.”
Group	Select the groups to include in the report. The groups you can select are pre-filtered based on the site you selected.
Message Priority	Select the priority of messages to include in the report (All Priorities, Normal, High, or Urgent).
Number of Days	Specify the threshold of days during which devices were not in use. To include devices in the report regardless of when they were last used, make sure Device Last Used equals “Greater than or equal to” and Number of Days equals `0`.
Owner's Site	Select the site of the owning group. The default is “All Sites.” This parameter does not affect filtering of the report. Instead, when you select an Owner's Site, the Device Owner list is populated with values for that site. Select a Device Owner to filter the data.
Recognition Filter Rate and Recognition Filter	These Recognition Filter and the Recognition Filter Rate are configured in tandem to generate specific report data. The Recognition Filter is a drop-down list used to select Above or Below the Recognition Filter Rate. The filter rate is from 0 to 90%. To see all recognition data leave the filter at the default of above 0. An example configuration would be the filter set to below and the rate to 70%. In this case the report would only show data for a recognition rate of 0% to 69.9%.
Report Date Range	Use the date range controls to specify the report's date range: • Click Last ***n*** Days, Last ***n*** Weeks, or Last ***n*** Months to specify a relative date range. Enter a number in the field to specify how large the range is. Last ***n*** Days includes the day that the report is run. If you specify “Last 1 Days” for the date range, the report will include data from the previous day until the time of the scheduled dataload for the current day. • Click Absolute Date Range to specify an absolute range for the report. For the From date, use the Calendar tool to choose a date. As time passes, the From date will not change. However, the To date is always today's date. You can specify that a date range has no lower or upper limit by clicking Range has no lower limit (the range begins with the earliest date for which data has been loaded) or Range has no upper limit (the range ends with the latest date for which data has been loaded), or both. The Include this value check box specifies whether data for the corresponding date is included in the report. For more information, see **Entering Dates** on page 17.
Site	The Site parameter for scheduled reports cannot be modified. It is set to the site selected for the package. or individual reports not contained in a package, you can select a site. The default is “All Sites.” However, selecting “All Sites” could cause the report to take a long time to generate. To generate reports faster, select an individual site.
Trend Selection	Choose Daily, Weekly, or Monthly to select the time period over which to chart trends.
User	Select the users to include in the report. The users you can select are pre-filtered based on the site you selected.

Report Destination

The Report Destination page of the Add/Edit Package Schedule dialog box lets you specify the destination of the report package. You can save the reports to disk, distribute them by email, or both.

To add a destination:

1. On the Report Destination page of the Add/Edit Package Schedule dialog box, click Add Destination.
   The Package Destination dialog box opens.
2. Make sure the Enabled check box is checked.
   If you later decide to disable this destination, you can uncheck the Enabled check box.
3. To add a recipient from a mailing list or from the list of Vocera users and groups, click Add.
   The Select Email Recipients dialog box opens.
4. Click Mailing List to select mailing lists or Users and Groups to select Vocera users and groups.
5. Select one or multiple mailing lists, users, or groups.
   - To select multiple names, hold down the Ctrl key as you click each name.
   - To select a range of names, click the first name in the range, and then hold down the Shift key as you click the last name in the range.
6. To specify the type of email recipient, select To, Cc, or Bcc.
7. Click Finish to save your selections, close the Select Email Recipients dialog box, and return to the Package Destination dialog box.
8. To add a recipient by entering an email address, click Add Email.
   The Add Email Address dialog box opens.
9. Fill in the following:
   a. In the Name of Recipient field, enter the person's name.
   b. In the Email Address field, enter an email address. *Example:jsmith@yourcompany.com.*
   c. Click Add.
      The email address is added to the list.
   d. To specify the type of email recipient, select To, Cc, or Bcc.
   e. Click Finish to save your selections, close the Add Email Address dialog box, and return to the Package Destination dialog box.
10. Select one or both Send options:
    - As attachment – Sends reports as multiple files or as a single ZIP file attached to the email message.
    - As a link to destination folder – Sends a link to the network folder where the report files are generated.
11. Enter the Subject (up to 200 characters) for the email.
    By default, the subject consists of the package name and the site.
12. In the Message box, enter your message to describe the report package. This is the text that appears in the email message sent to the recipients. The list of reports contained in the package is appended below the text of your message.
13. In the Format list, select HTML or Text as the format of the email message.
14. Click Finish to save your selections, close the Package Destination dialog box, and return to the Add/Edit Package Schedule dialog box.

Editing a Destination

To edit a destination:

1. On the Report Destination page of the Add/Edit Package Schedule dialog box, select a destination from the list.
2. Click Edit Destination.

The Package Destination dialog box opens.

3. Edit the dialog box fields as appropriate. For more information about the fields, see **Package Destination** on page 90.
4. Click Finish.

Disabling a Destination

To disable a destination:

1. On the Report Destination page of the Add/Edit Package Schedule dialog box, select a destination from the list.
2. Click Edit Destination.
   The Package Destination dialog box opens.
3. Make sure the Enabled check box is unchecked.
4. Click Finish.

Deleting a Destination

To delete a destination:

1. On the Report Destination page of the Add/Edit Package Schedule dialog box, select a destination from the list.
2. Click Delete Destination.
   A message box opens to confirm you want to delete the destination.
3. Click OK.

Package Destination

The Package Destination dialog box lets you specify how a report package is distributed to users. The package can be sent as an attachment(s) to an email or as an email containing a link to a network folder.

Field	Description
Enabled	Make sure this check box is checked to enable the package destination. If you later decide to disable the package destination, you can uncheck the Enabled check box.
Recipient	Click Add to add a recipient from a mailing list or from the list of Vocera users and groups. Click Add Email to add an email address as a recipient. This is useful if recipients you want to add have not been added to a mailing list, do not have an email address specified in their Vocera accounts, or do not have Vocera accounts. To delete a recipient, select it, and then click Delete.
Send	Select one of the following Send options: • As attachment – Sends reports as multiple files or as a single ZIP file attached to the email message. If multiple files are attached to the message, they appear in alpabetical order by filename. • As a link to destination folder – Sends a link to the network folder where the report files are generated.
Subject	Enter a subject line (up to 200 characters) for the email that will have the report package results attached.

Field	Description
Message	Type a message describing the contents of the report package. This is the email message that package recipients will be sent. The message could also include instructions for what to do with the reports or how to interpret them. If the Format selected is HTML, you can type a message using HTML tags. Carriage returns that you enter in the Message box are converted to HTML <para> tags. If the Format selected is Text, type a plain text message. Note: At the bottom of your message, the list of reports contained in the package will be included. The list will also indicate whether any reports are configured to be sent only when the report has data.
Format	Select HTML or Text. If you select HTML, the Message field can include HTML tags instead of plain text.

Select Email Recipients

The Select Email Recipients dialog box lets you specify the email recipients for a package destination. You can select mailing lists that you previously defined and Vocera users and groups.

This dialog box displays icons to help you identify the names:

-  identifies mailing lists.
-  identifies users.
-  identifies groups.

The dialog box displays up to 200 mailing lists or users and groups at a time. To see the next group of 200, click Next 200.

If you are displaying users and groups, the dialog box displays users and groups for all sites by default. To filter the list by a specific site, select other than "All Sites" from the Sites list at the bottom right.

In the Select Email Recipients dialog box, you can select multiple mailing lists, users, or groups:

- To select multiple names, hold down the Ctrl key as you click each name.
- To select a range of names, click the first name in the range, and then hold down the Shift key as you click the last name in the range.

Note: The Report Server does not validate recipient email addresses.

Field	Description
Mailing List	Allows you to select recipients from mailing lists that you previously defined. Note: Mailing lists are expanded when the report package runs.
Users and Groups	Allows you to select Vocera users and groups as recipients. Note: Vocera groups are expanded when the report package runs.
Search	Type the name of a mailing list or group, or the last name of a user. As you type a name, the Search field displays a drop-down list of matching names. You can select a name from the drop-down list to go to it. If the list contains many users with the same last name, type a comma and space after the last name, and then type the first name (or the start of the first name). Select a name from the drop-down list to go to it.
Add Selected Recipients To	Click To, Cc, or Bcc to specify the type of recipient.

Add Email Address

The Add Email Address dialog box lets you specify email addresses to add as recipients for a report package. You can use this dialog box to add recipients that have not been added to a mailing list, do not have email addresses specified in their Vocera accounts, or do not have Vocera accounts.

Table 30: Add Email Address dialog box choices

Field	Description
Name of Recipient	Enter the name of the recipient (up to 50 characters).
Email Address	Enter an email address. Example: `jsmith@yourcompany.com`. Click Add to add the email address to the list. To delete an email address from the list, select it, and then click Delete.
Add Selected Recipients To	Click To, Cc, or Bcc to specify the type of recipient.

Managing Report Packages

This section explains how to manage report packages.

Running a Report Package

After you create a report package, you may want to run it to see that it works. On the Package page, you can click the Run Package button to run a selected report package.

Important: When you run a report package manually to test it, you send the output results to all of the destinations that have been enabled in the package. If you do not want the output results to be sent to all of the specified email recipients, you should disable those destinations.

To run a report package:

1. Click Report Scheduler in the navigation bar.
2. Select a report package.
3. Click Run Package.
   A message box opens to confirm you want to run the report package.
4. Click OK.

Copying a Report Package

A report package is a complex object consisting of many different settings, so it can take several minutes to create one. To save time and create a similar report package with just a few differences, you can copy an existing package and modify only the parts you need to change.
To copy a report package:

1. Click Report Scheduler in the navigation bar.
2. Select a report package.
3. Click Copy Package.
   A copy of the report package with the name "Copy of [Original Package Name]" is added to the bottom of the list.

Disabling or Enabling a Report Package

A report package will run according to its schedule as long as it is enabled. If you do not want the report package to run anymore, you can disable it.
To disable or enable a report package:

1. Click Report Scheduler in the navigation bar.
2. Select a report package.

3. Click Edit Package.
   The Edit Package Schedule dialog box opens.
4. On the Info tab, disable the package by unchecking the Enabled check box.
   Similarly, to enable the package, make sure the Enabled check box is checked.
5. Click Save.

Deleting a Report Package

If you no longer use a report package, you can delete it. You can delete only one report package at a time. Once you delete a report package, it is removed from the database and cannot be recovered.

Note: If you do not want a report package to run according to its schedule, you can disable it instead of deleting it. See **Disabling or Enabling a Report Package** on page 92.

To delete a report package:

1. Click Report Scheduler in the navigation bar.
2. Select a report package.
3. Click Delete Package.
   A message box opens to confirm whether to delete the report package.
4. Click OK.

Troubleshooting Problems with Scheduled Reports

The Report Scheduler is a sophisticated scheduling engine that has several dependencies on other systems, both internal and external to Vocera Report Server. For example, it depends on the following things to operate successfully:

- The outgoing mail server information must be specified correctly, and the mail server must be running.
- Disk destinations used by packages must be valid and accessible by the Vocera Report Server
- Mailing lists and email addresses for recipients must be defined correctly.
- Reports must have valid queries, and the resulting output must contain data.

These are only some of the dependencies that the Report Scheduler relies upon. Therefore, when a package fails to run at its scheduled time it could be due to several reasons. This section provides guidelines on how to identify and solve problems with scheduled reports.

To troubleshoot problems with scheduled reports:

1. Always run a report package manually before enabling the package schedule to run it automatically. See **Running a Report Package** on page 92.

   When you run a package manually, you can see immediately if there are any problems. Make sure the correct reports are generated using the specified parameters, and make sure the reports are sent to the correct mailing list or disk destination.
2. Run Scheduler Diagnostics reports to list any exceptions that occurred.

   See**Running Scheduler Diagnostics Reports** on page 94.
3. Once you see what the exception is, try one of the recommended solutions to the problem.

   See .**Possible Solutions to Report Scheduler Exceptions** on page 94.
4. If an unknown Report Scheduler exception occurred, view the Vocera Report Server log file to see the root cause of the exception.

   See **Viewing the Vocera Report Server Log** on page 95.

Running Scheduler Diagnostics Reports

If the Report Scheduler did not run a scheduled report package successfully, you can run the Scheduler Diagnostics reports to help determine the cause of the problem.
To generate Scheduler Diagnostics reports:

1. Click the Scheduler Diagnostics in the navigation bar.
2. Click either Report Scheduler Diagnostics - Standard Report or Report Scheduler Diagnostics - Filter Report.
   Both reports display a list of Report Scheduler exceptions. The Standard report filters Report Scheduler exceptions by a specified date range and displays the results in reverse chronological order by Fire Time. The Filter Report, which also displays exceptions sorted in reverse chronological order by Fire Time, lets you filter the report by date range, site, and exception category.
3. Click Generate.
   If you selected the Report Scheduler Diagnostics - Filter Report, the Report Parameters page opens.
4. Specify report parameters.
   For more information about report parameters, see **Entering Dates** on page 17.
5. Click Generate to generate the report.

The following table describes the report columns.

Table 31: Scheduler diagnostic report columns

Column	Description
Package/Job	The name of the scheduled package or job.
Scheduled Time	The time the package or job was scheduled to run.
Fire Time	The actual time the package or job started. The field could be blank if the package/job never started.
Duration (Minutes)	The difference between the Fire Time and the Scheduled Time in minutes. The field could be blank if the package/job never started.
Exception Category	The type of exception. Examples of exception types include Report Failure, Delayed Package, Delayed Report, Email Sending, and Report Timed Out.
Exception Time	The time the exception occurred.
Exception Description	A brief description of the exception.

Possible Solutions to Report Scheduler Exceptions

This section lists common Report Scheduler exceptions you may encounter and possible solutions you can use to correct the problem.

Report Scheduler Exception	Possible Solution or Workaround
The report cannot be exported. The export operation failed.	This error could occur with a report whose parameters have changed due to a Report Server service pack being applied after you added the report to the package. If so, edit the report parameters, making sure all values are specified. If you see a parameter with a question mark (?) for its value, select an appropriate value for the parameter. This error could also occur with a custom report that has been configured incorrectly in the `customconfig.xml` file. Check to make sure report parameters have been specified correctly. For more information about configuring custom reports, see the *Vocera Report Server Database Schema Guide*.
The report cannot be exported because it contains no data.	Change the report date range or other parameters (for example, Site and Department) so that the report includes data.
The package is more than 30 minutes late. It is queued for firing.	The package cannot run until the dataload is finished. Change the scheduled run time of the package so that it occurs after a scheduled dataload is finished.
A report cannot be generated because it is disabled within the package.	Modify the package and make sure the report is enabled.

Report Scheduler Exception	Possible Solution or Workaround
The report cannot be generated because it is past the end date for the package schedule.	If you don't want the package schedule to end, leave the End Date field on the Schedule Information tab of the package empty.
The reports could not be copied to the desired location.	Make sure the hard disk is functioning and has space available.
The schedule is disabled for the package.	Open the package, select the Info tab, and make sure the Enabled check box is checked.
There were problems in reading email addresses.	Make sure email addresses specified in the mailing list or package recipients are valid.
There were problems in sending emails to addresses.	If you selected users or groups as recipients, make sure they have email addresses specified.
The email sending process failed.	Make sure the outgoing mail server is specified correctly. In the Report Console, click Administration, and then click the Mail Info tab. Click Test Mail Server to send a test message to the alert recipient email address.
The zip file size for reports exceeded the given limit.	To make the reports smaller in size, make the date range smaller, or filter the reports by site or department. Otherwise, increase the maximum zip file size.
The report query failed to execute.	If the package includes a custom report, the report may not have a valid SQL query. Make sure you test all custom reports before deploying them on a production server.
One or more database operations failed.	Make sure MySQL is running properly. If necessary, restart the computer.
You tried to run a package that was already running.	A package cannot be run multiple times simultaneously. Therefore, do not manually run a package during the time it is scheduled to launch.
The disk destination list is empty.	Although the package specifies a disk destination by name, it does not contain a destination. Make sure the disk destination is correct.
The specified destination does not exist.	Make sure the disk destination folder exists. If the folder is on another server and it is not shared, Vocera Report Server does not have rights to it.
The specified destination does not have write permission.	Make sure Vocera Report Server has write access to the disk destination. See **Giving Vocera Report Server Access to Other Network Servers** on page 81.
An unknown exception occurred.	Open the latest Vocera Report Server log file in the `\Tomcat\logs` folder to find the root cause of the exception.

Viewing the Vocera Report Server Log

If the Scheduler Diagnostics reports list an unknown exception, it may be helpful to view the Vocera Report Server log file to see the root cause of an exception.

To view the Vocera Report Server log file:

1. Open the `\Tomcat\logs` folder.
2. Open the file named `vocera-report-date.txt`

Note: If Tomcat is running, you cannot open the file because the server is accessing it. In that case, make a copy of the log file, and then open the copy.

Scheduling Tasks

The Vocera Report Server Task Scheduler tab allows you to schedule the following system tasks:

- Back up Vocera Report Server data
- Perform dataloads from the Vocera Voice Server
- Archive old report data
- Archive and purge old report data
- Sweep old output files from disk destinations

Overview of Task Scheduling

The Task Scheduler, which is used to schedule Report Server system tasks, uses the same underlying scheduling engine as the Report Scheduler, making the software more efficient, reliable, and easier to extend. In addition, users can now receive email notifications with details about the success or failure of any system tasks. For example, if a backup, dataload, archive, or purge operation fails, an email notification will be sent to the specified alert recipient. The Task Scheduler is included with the basic Report Server product; you do not need a Report Scheduler license to use the Task Scheduler.

Archiving and purging operations are now controlled by the Task Scheduler. Previously, these were manual processes that could not be scheduled.

Task Scheduler Diagnostic reports help troubleshoot any problems you encounter with scheduled tasks. You can run these two reports (either standard or filtered) to see any exceptions that have occurred with the tasks.

Currently, only Vocera *system* tasks are supported by the Task Scheduler. System tasks cannot be deleted, and only certain fields can be modified:

- The Enabled box on the Task Information page of the Edit Task dialog box allows you to disable or enable a task.
- The Schedule page of the Edit Task dialog box allows you to specify the schedule for the task. This page is nearly identical to the Schedule Information page for a report package.
- Some system tasks have parameter values (such as archive date) that you can modify. See **Entering Parameters to Run Tasks Manually** on page 99.
- The Notifications page of the Edit Task dialog allows you to specify options for email notifications sent when a task completes successfully or fails.

All other task fields are read-only.

Editing a Task

Information in a task is organized into several categories, each with its own page in the Edit Task dialog box. To edit a task:

1. Click Task Scheduler in the navigation bar. The Task Scheduler main screen appears.
2. Select a task.

3. Click Edit Task to edit an existing task. The Edit Task dialog box opens.
4. Add or edit data as appropriate.
   a. Task Information page – Specify basic task information.
   b. Schedule Frequency page – Specify schedule information.
   c. Executable List page – View executable programs used by the task.
   d. Notifications page – Specify options for email notifications sent when a task completes successfully or fails.
5. When you are finished editing the task, click Save to save changes, close the Edit Task dialog box, and display the Task page.

Task Information

The Task Information page of the Edit Task dialog box lets you specify basic information about the task. The following table describes the task information fields:

Field	Description
Enabled	Make sure this check box is checked to enable the task. If you later decide to disable the task, you can uncheck the Enabled check box.
Task Name	This field displays the task name. You can enter a name with up to 50 characters.
Description	This field displays the task description. You can enter a description with up to 250 characters.
Note	Use this field to enter any explanatory notes about the task.
Run in Background	If the Run in Background checkbox is activated, the task runs as a background process. Of the system tasks, only the Backup task runs in the background. When this box is checked, people can still log into the Report Console to generate reports while the task is in process.

Schedule Information

The Schedule Information page of the Edit Task dialog box lets you specify the task's schedule information.

Field	Description
Hourly	Click Hourly if you want to schedule the Dataload task on an hourly basis. Note: Hourly schedule is currently supported only for the Dataload task. To schedule the task every hour, select Every 1 hour(s). To skip hours, select Every 2 hour(s), Every 3 hour(s), and so on, up to the number of hours you want to skip.
Daily	Click Daily if you want the task scheduled on a daily basis. To schedule the task every day, select Every 1 day(s). To skip days, select Every 2 day(s), Every 3 day(s), and so on, up to the number of days you want to skip. To schedule the task only on weekdays, select Every Week Day.
Weekly	Click Weekly if you want the task scheduled on a weekly basis. The Every 1 week(s) on field is read-only. If you select a Weekly schedule, the task is scheduled *every* week. You cannot skip weeks. Make sure boxes are checked for the days of the week (Sunday through Saturday) you want to schedule the task. You can check multiple boxes.

Field	Description
Monthly	Click Monthly if you want the task scheduled on a monthly basis. Select the day of the month to schedule the task (1 to 31 or "Last Day"). To schedule the task every month, select Day ***n*** of Every 1 month(s). To skip months, select Day ***n*** of Every 2 month(s), Day ***n*** of Every 3 month(s), and so on, up to the number of months you want to skip.
Start Date	Select the date on which the task is scheduled to start. Use the following date format: `MM/DD/YYYY`
End Date	Select the date on which the task is scheduled to end.
Time of Day to Run Task	Select the time on which you want the task to run.
Task Waiting Time	Select the maximum number of hours the task can be queued and waiting for other tasks or report packages to complete before starting. If the task does not start before the Task Waiting Time is reached, it times out and never starts. If you select Unlimited (the default), it means the task will not time out when it is queued and waiting to run.

Executable List

The Executable List page of the Edit Task dialog box lists the executable programs that the task runs.

To edit information for an executable program used by a task:

1. In the Edit Task dialog box, click the Executables tab.
2. Select an executable, and then click Edit. The Edit Executable dialog box appears.

Executable Info

The Executable Info page of the Edit Executable dialog box lets you view information about the executable program and change the timeout value.

Field	Description
Enabled	Displays whether the executable program is enabled. By default, all executables for system tasks are enabled and cannot be disabled.
Executable Name	Displays the name of the executable program.
Description	Displays the description of the executable program.
Executable Filename	Displays the executable filename.
Working Directory	Displays the directory where the executable filename is located.
Timeout	Sets the timeout value for the executable. If the program does not execute before the timeout interval elapses, the task stops trying to run the executable.

Executable Parameters

The Executable Parameters page of the Edit Executable dialog box lets you view information parameters for the executable program. Not all executable programs for system tasks have parameters.

The following table lists system tasks that have executable parameters:

Task	Executable	Filename	Parameter	Default Value
Archive	Archive Task	archive.bat	ArchiveDate	Last 12 months
Purge	Purge Task	purge.bat	PurgeDate	Last 12 months
Archive and Purge	Archive Purge Task	archivepurge.bat	ArchivePurgeDate	Last 12 months

Task	Executable	Filename	Parameter	Default Value
Backup	Backup Task	backup.bat	MaxFiles	10

If an executable has parameters, you can select a parameter and then click Edit to modify the parameter. The default value for Archive, Purge and Archive and Purge suggests that all data except for the last 12 months is archived and/or purged.

Entering Parameters to Run Tasks Manually

When you perform a system task manually, you need to enter parameter values. For example, To archive data manually, you can run the task, and the system prompts you to enter a value for the date parameter. What the date parameter means for each system task is described below:

- Archive: Select a date from the calendar tool to archive. Data up to and including this date will be archived.

  For more information, see **Creating an Archive Manually** on page 106.
- Archive and Purge: Select a date from the calendar tool to archive and purge. Data up to and including this date will be archived and then purged from the Report Server database.

  For more information, see **Archiving and Purging Report Data Manually** on page 107.
- Purge: Select a date from the calendar tool to purge. Data up to and including this date will be purged from the Report Server database.

  For more information, see **About Purging Report Data Manually** on page 106.

Notifications

The Notifications page of the Edit Task dialog box lets you specify options for email notifications sent when a task completes successfully or fails. For the Vocera Report Server to send notification, you must configure settings for the outgoing mail server in the Administration > Mail Info tab.

Field	Description
Enable email notification	Make sure this check box is checked to enable email notification. If you later decide to disable email notification, you can uncheck the box.
When task completes successfully	Make sure this check box is checked to send an email notification when the task completes successfully.
When one or more tasks fails	Make sure this check box is checked to send an email notification when the task fails.

Running a Task

After you modify a data management task, you can run it to make sure that it completes successfully.
To run a data management task:

1. Click Task Scheduler in the navigation bar.
2. Select a task.
3. Click Run Task.

   A message box opens to confirm you want to run the task.
4. Click OK.
5. Archive, Purge and Backup tasks require that you to enter a parameter. If you chose to run one of those tasks, enter a parameter, and then click Run Task.

Disabling or Enabling a Task

A task will run according to its schedule as long as it is enabled. If you do not want the task to run anymore, you can disable it.

Note: Disabled tasks appear grayed out in the Tasks table.

To disable or enable a task:

1. Click Task Scheduler in the navigation bar.
2. Select a task.
3. Click Edit Task.
   The Edit Task dialog box opens.
4. On the Info tab, disable the task by unchecking the Enabled check box.
   Similarly, to enable the task, make sure the Enabled check box is checked.
5. Click Save.

Scheduling System Tasks

The Task Scheduler page allows you to schedule the following system tasks to occur automatically:

1. Back up Report Server data.
2. Load data from the Vocera Voice Server.
3. Archive data.
4. Archive and purge data.
5. Perform a sweep of old output files from disk destinations.
6. Purge data.

Scheduling Automatic Backups

You can schedule backups to occur automatically at a specified time. When a backup occurs, data is written to a ZIP file created in the `\vocera\reports\backup` directory. The ZIP file name uses the format "`report-backup-sql-MMMDD-TTTT.zip`" where `MMM` indicates the three-letter abbreviation for the current month, DD indicates the day of the month, and `TTTT` indicates the time the backup operation was completed in the format `HHMM (HH=01-24, MM=00-59)`.

Here is an example file name for a backup file created at 3:13 p.m. on October 4: `report-backup-sql-oct04-1513.zip`.

The Report Server can run only one backup operation at a time. If a backup operation is scheduled to start while another backup operation is still running, the scheduled backup will wait to start until the other backup operation is finished.

The backup operation is performed as a background process. While a backup operation is in progress, people can still log into the Report Console to generate reports and load report data.

A backup file contains system data (such as report packages) and report data loaded at the time the backup operation started. Any data created or loaded after that is not included in the backup.

To work with a subset of report data, use the Archive task, which copies or restores report data up to a specified date. See **About Scheduling Automatic Archiving of Report Data** on page 102.

Make sure you have adequate hard disk space to accommodate backups of Report Server data. See **Hard Disk Space Needed for Backups** on page 76.

Important: The times for scheduled backup and data load operations must be different. For example, a backup and a data load cannot both be scheduled to run at 1:00 a.m. on the same day. In general, you should schedule backups to run *before* data loads.

To schedule a backup of report data:

1. Click Task Scheduler in the navigation bar.

2. Select the Backup task, and then click the Edit Task button.
   The Edit Task dialog box appears.
3. On the Task Information tab, make sure the Enabled check box is checked.

   When this check box is checked, the task runs according to the specified schedule. Otherwise, the task is disabled.
4. Click the Schedule tab.
5. Select Schedule Frequency, Start Date, and End Date options. You can leave the End Date field blank if you don't want the backup schedule to expire.

   By default, the schedule frequency for Backup is every 2 days.
6. In the Time of day to run the task field, select the time to begin the backup task. The first list specifies an hour from 1 to 12, inclusive. The second list specifies minutes in 15 minute intervals (0, 15, 30, or 45). The third list specifies a.m. or p.m.

   The default time for the Backup task is 2 a.m.
7. By default, the Backup task preserves up to 10 backup files. If you want to change that setting, follow these steps:
   a. Click the Executables tab.
   b. Select the Backup Task executable, and then click the Edit button.
      The Edit Executable dialog box appears.
   c. Click the Parameters tab.
   d. Click the MaxFiles parameter, and click the Edit button.
      The Edit Executable dialog box appears.
   e. In the Value field, enter the maximum number of backup files to store (from 1 to 99). The default is 10 files.
      When the specified limit is reached, the oldest file is replaced during the next backup. For example, if you enter 5 in this field, the system stores five backup files. When the sixth backup occurs, the oldest backup file is replaced by the new backup file. The directory still contains only five files.
   f. Click Save to save the new value and close the Edit Executable dialog box.
   g. Click Save to save settings and close the Edit Executable dialog box.
8. Click Save to save settings and close the Edit Task dialog box.

Scheduling Automatic Dataload

The Vocera Report Server can load data from the Vocera server automatically. You can specify how often this happens (for example, every seven days), and you can specify the time when it happens.

Important: The times for scheduled backup and dataload operations must be different. For example, a backup and a dataload cannot both be scheduled to run at 1:00 a.m. on the same day. In general, you should schedule backups to run *before* dataloads.

To schedule the loading of report data:

1. Click Task Scheduler in the navigation bar.
2. Select the Dataload task, and then click the Edit Task button.

   The Edit Task dialog box appears.
3. On the Task Information tab, make sure the Enabled check box is checked.

   When this check box is checked, the task runs according to the specified schedule. Otherwise, the task is disabled.
4. Click the Schedule tab.
5. Select Schedule Frequency, Start Date, and End Date options. You can leave the End Date field blank if you don't want the backup schedule to expire.

   By default, the schedule frequency for Dataload is every day.

6. In the Time of day to run the task field, select the time to begin the dataload task. The first list specifies an hour from 1 to 12, inclusive. The second list specifies minutes in 15 minute intervals (0, 15, 30, or 45). The third list specifies a.m. or p.m.

   The default time for the Dataload task is 5 a.m.
7. Click Save to save settings and close the Edit Task dialog box.

Note: A dataload operation updates the Vocera Report Server with data that is new since the previous dataload was performed. When the Vocera Report Server is first installed, no data is available until a dataload is performed.

About Scheduling Automatic Archiving of Report Data

An archive is much like a backup file. However, a backup file captures all the data that is currently in the system. An archive captures data up to and including a date you specify. An archive does not include information about users and groups.

Performing regular archiving and purging of Report Server data can have the following beneficial results:

1. The number of records in the database will be reduced.
2. The disk space required for scheduled backups will be reduced.
3. The Report Server will use less processing power and RAM to generate reports, and it will generate them faster.
4. The time needed to back up and restore Report Server data will be reduced.

Archive files are saved to the `\vocera\reports\backup` folder on the Report Server computer. To free up disk space, you can move archive files from the Report Server computer to another disk for backup purposes.

Scheduling Report Data Archives

To schedule archiving of report data:

1. Click Task Scheduler in the navigation bar.
2. Select the Archive task, and then click the Edit Task button.
   The Edit Task dialog box appears.
3. On the Task Information tab, make sure the Enabled check box is checked.
   When this check box is checked, the task runs according to the specified schedule. Otherwise, the task is disabled.
4. Click the Schedule tab.
5. Select Schedule Frequency, Start Date, and End Date options. You can leave the End Date field blank if you don't want the backup schedule to expire.
   By default, the schedule frequency for Archive is every month.
6. In the Time of day to run the task field, select the time to begin the backup task. The first list specifies an hour from 1 to 12, inclusive. The second list specifies minutes in 15 minute intervals (0, 15, 30, or 45). The third list specifies a.m. or p.m.
   The default time for the Archive task is 12 a.m.
7. By default, the Archive task archives all data except for the last 12 weeks. If you want to change that setting, follow these steps:
   a. Click the Executables tab.
   b. Select the Archive Task executable, and then click the Edit button.
      The Edit Executable dialog box appears.
   c. Click the Parameters tab.
   d. Click the ArchiveDate parameter, and click the Edit button.
      The Edit Executable Parameters dialog box appears.
   e. In the Value field, specify the last number of days, weeks, or months that you do not want archived.

   f. Click Save to save the new value and close the Edit Executable dialog box.
   g. Click Save to save settings and close the Edit Executable dialog box.
8. Click Save to save settings and close the Edit Task dialog box.

Scheduling Automatic Archiving and Purging of Report Data

By scheduling a task that both archives and purges old report data, you can dramatically improve the performance of your Vocera Report Server. The archive captures data up to and including a date you specify, and once the archive is created the data is purged from the database.

In addition to improving performance, purging old report data will also reduce the time needed to back up and restore Report Server data.

Archive files are saved to the `\vocera\reports\backup` folder on the Report Server computer. To free up disk space, you can move archive files from the Report Server computer to another disk for backup purposes.

Tip: How many months of Vocera data should you keep? That will depend on your company's reporting needs and the Report Server's hard disk capacity. You should decide how much Vocera data you need to maintain for reports. For example, if you never report on data older than six months, schedule a monthly task to archive data older than six months and purge that data from the database. Performing such regular maintenance will help keep your Report Server running smoothly.

To schedule the archiving and purging of report data:

1. Click Task Scheduler in the navigation bar.
2. Select the Archive and Purge task, and then click the Edit Task button.
   The Edit Task dialog box appears.
3. On the Task Information tab, make sure the Enabled check box is checked.
   When this check box is checked, the task runs according to the specified schedule. Otherwise, the task is disabled.
4. Click the Schedule tab.
5. Select Schedule Frequency, Start Date, and End Date options. You can leave the End Date field blank if you don't want the backup schedule to expire.
   By default, the schedule frequency for Archive and Purge is every month.
6. In the Time of day to run the task field, select the time to begin the backup task. The first list specifies an hour from 1 to 12, inclusive. The second list specifies minutes in 15 minute intervals (0, 15, 30, or 45). The third list specifies a.m. or p.m.
   The default time for the Archive and Purge task is 12 a.m.
7. By default, the Archive and Purge task archives and purges all data except for the last day. If you want to change that setting, follow these steps:
   a. Click the Executables tab.
   b. Select the Archive Purge Task executable, and then click the Edit button.
      The Edit Executable dialog box appears.
   c. Click the Parameters tab.
   d. Click the ArchivePurgeDate parameter, and click the Edit button.
      The Edit Executable dialog box appears.
   e. In the Value field, specify the last number of days, weeks, or months that you do not want archived and purged.
   f. Click Save to save the new value and close the Edit Executable dialog box.
   g. Click Save to save settings and close the Edit Executable dialog box.
8. Click Save to save settings and close the Edit Task dialog box.

Scheduling Automatic Sweep of Disk Destinations

When you schedule reports to be ouptut files to disk destinations, those folders can quickly fill up unless you purge older files. Disk destinations allow you to enable daily housekeeping on the folder, to sweep files older than a specified number of days.

Disk destinations accumulate files only when they are used by scheduled packages. If you delete or rename the package that used a disk destination, or you remove a disk destination from a package, the existing directories in that disk destination folder are no longer subject to scheduled sweeps.

To schedule the time of day to sweep disk destinations:

1. Click Task Scheduler in the navigation bar.
2. Select the Package Destination Sweep task, and then click the Edit Task button.

   The Edit Task dialog box appears.
3. On the Task Information tab, make sure the Enabled check box is checked.

   When this check box is checked, the task runs according to the specified schedule. Otherwise, the task is disabled.
4. Click the Schedule tab.
5. Select Schedule Frequency, Start Date, and End Date options. You can leave the End Date field blank if you don't want the backup schedule to expire.

   By default, the schedule frequency for package destination sweep is every day.
6. In the Time of day to run the task field, select the time to begin the backup task. The first list specifies an hour from 1 to 12, inclusive. The second list specifies minutes in 15 minute intervals (0, 15, 30, or 45). The third list specifies a.m. or p.m.

   The default time for the Package Destination Sweep task is 12 a.m.
7. Click Save to save settings and close the Edit Task dialog box.

Scheduling Automatic Purging of Report Data

You can reduce the amount of data in the system by deleting data collected up to and including a specified date. This operation is called *purging*. In addition to improving performance, purging old report data reduces the time needed to back up and restore Report Server data.

A purge cannot be undone. If you think you might want to restore this data at a later time, take one of the following actions *before* purging:

- Create a backup file. See **Backing Up Data Manually** on page 105 for more information.
- Create an archive. See **Creating an Archive Manually** on page 106 for more information.

Note: You can run the Archive And Purge task instead, which combines the Archive and Purge tasks into one task.

To schedule the purging of report data:

1. Click Task Scheduler in the navigation bar.
2. Select the Purge task, and then click the Edit Task button.

   The Edit Task dialog box appears.
3. On the Task Information tab, make sure the Enabled check box is checked.

   When this check box is checked, the task runs according to the specified schedule. Otherwise, the task is disabled.
4. Click the Schedule tab.
5. Select Schedule Frequency, Start Date, and End Date options. You can leave the End Date field blank if you don't want the purge schedule to expire.

   By default, the schedule frequency for Purge is every month.

6. In the Time of day to run the task field, select the time to begin the backup task. The first list specifies an hour from 1 to 12, inclusive. The second list specifies minutes in 15 minute intervals (0, 15, 30, or 45). The third list specifies a.m. or p.m.

   The default time for the Purge task is 12 a.m.

7. By default, the Purge task purges all data except for the last day. If you want to change that setting, follow these steps:

   a. Click the Executables tab.

   b. Select the Purge Task executable, and then click the Edit button.

      The Edit Executable dialog box appears.

   c. Click the Parameters tab.

   d. Click the PurgeDate parameter, and click the Edit button.

      The Edit Executable dialog box appears.

   e. In the Value field, specify the last number of days, weeks, or months that you do not want purged.

   f. Click Save to save the new value and close the Edit Executable dialog box.

   g. Click Save to save settings and close the Edit Executable dialog box.

8. Click Save to save settings and close the Edit Task dialog box.

Performing System Tasks Manually

This section describes how to perform system tasks manually instead of scheduling them to occur automatically at a specified frequency.

Backing Up Data Manually

You can back up data manually at any time. As with a scheduled backup, data is written to a ZIP file created in the `\vocera\reports\backup` directory. The ZIP file name uses the format "report-backup-sql-MMMDD-TTTT.zip" where MMM indicates the three letter abbreviation for the current month, DD indicates the day of the month, and TTTT indicates the time the backup operation was completed in the format HHMM (HH = 01-24, MM = 00-59).

Here is an example file name for a backup file created on at 3:13 p.m. on October 19: `report-backup-sql-oct19-1513.zip`.

The backup operation is performed as a background process. While a backup operation is in progress, people can still log into the Report Console to generate reports and load report data.

A backup file contains system data (such as report packages) and report data loaded at the time the backup operation started. Any data created or loaded after that is not included in the backup.

Note: To work with a subset of report data, use the Archive function, which copies or restores report data up to a specified date. See **About Scheduling Automatic Archiving of Report Data** on page 102 for more information.

Use the following steps to back up data manually:

1. Click Task Scheduler in the Navigation bar.
2. Select the Backup task, and then click the Run Task button.

   A message box opens to confirm you want to run the task.
3. Click OK.

   The Run Task dialog box appears.
4. Specify the maximum number of backup files to maintain (the default is 10), and then click Run Task.

   The Status dialog box appears.
5. When the process is complete, click OK to close the dialog box.

Loading Report Data Manually

In addition to automatic scheduled data loads, you can load report data manually at any time. Backup and data load operations cannot overlap, however. For example, you cannot load data while a backup is in progress. To load report data manually:

1. Click Task Scheduler in the Navigation bar.
2. Select the Dataload task.
3. Click the Run Task button.
   A message box opens to confirm you want to run the task.
4. Click OK.
   The Status dialog box appears.
5. When the process is complete, click OK to close the dialog box.

Creating an Archive Manually

You can create an archive that copies all report data collected up to and including a specified date. When you create an archive, data collected before and including the specified date is written to a ZIP file created in the `\vocera\reports\backup` directory. If you think you might want to restore this data at a later time, you can load the archive file. See **Loading Data from an Archive** on page 75. To create an archive manually:

1. Click Task Scheduler in the Navigation bar.
2. Click the Archive task.
3. Click the Run Task button.
   A message box opens to confirm you want to run the task.
4. Click OK.
   The Run Task dialog box appears.
5. Use the Calendar Tool to choose a date, then click the Run Task button.
   The Status dialog box appears.
6. When the process is complete, click OK to close the dialog box.

About Purging Report Data Manually

You can reduce the amount of data in the system by deleting data collected up to and including a specified date. This operation is called *purging*. A purge cannot be undone. If you think you might want to restore this data at a later time, take one of the following actions *before* purging:

- Create a backup file. See **Backing Up Data Manually** on page 105 for more information.
- Create an archive. See **Creating an Archive Manually** on page 106 for more information.

Manually Purging Data from the Database

The Purge task available on the Task Scheduler page purges data from the database upto and including a specified date. To purge report data manually:

1. Click Task Scheduler in the Navigation bar.
2. Click the Purge task.
3. Click the Run Task button.
   A message box opens to confirm you want to run the task.
4. Click OK.
   The Run Task dialog box appears.
5. Use the Calendar Tool to choose a date. All data that was saved on that date or earlier will be permanently removed from the system. After you specify a date, click the Run Task button.
   The Status dialog box appears.
6. When the process is complete, click OK to close the dialog box.

Archiving and Purging Report Data Manually

You can reduce the amount of data in the system by deleting data collected up to and including a specified date. This operation is called *purging*. The Archive and Purge task available on the Task Scheduler page archives report data up to and including a specified date, and then purges that data from the database. The archive is a ZIP file created in the `\vocera\reports\backup` directory.

If you think you might want to restore this data at a later time, you can load the archive file. See **Loading Data from an Archive**.

To archive and purge report data manually:

1. Click Task Scheduler in the Navigation bar.
2. Click the Archive and Purge task.
3. Click the Run Task button.
   A message box opens to confirm you want to run the task.
4. Click OK.
   The Run Task dialog box appears.
5. Use the Calendar Tool to choose a date. All data that was saved on that date or earlier will be permanently removed from the system. After you specify a date, click the Run Task button.
   The Status dialog box appears.
6. When the process is complete, click OK to close the dialog box.

Sweeping Disk Destinations Manually

If scheduled reports are causing disk destination folders to fill up with files, you can run the Package Destination Sweep task to perform manual housekeeping on the folders.

To sweep disk destinations manually:

1. Click Task Scheduler in the Navigation bar.
2. Click the Sweep Disk Destinations task.
3. Click the Run Task button.
   A message box opens to confirm you want to run the task.
4. Click OK.
   The Status dialog box appears.
5. When the process is complete, click OK to close the dialog box.

Troubleshooting Problems with Scheduled Tasks

The Task Scheduler, which is used to schedule system tasks of the Report Server, uses the same underlying scheduling engine as the Report Scheduler. It enables users to schedule system tasks and receive notifications with details about the success or failure of any system task. For example, if a backup, dataload, archive, or purge operation fails, an email notification will be sent to the specified alert recipient.

The Task Scheduler depends on the following settings to operate successfully:

- The Enabled box on the Task Info page of the Edit Task dialog box is checked.
- The Schedule page of the Edit Task dialog box is specified correctly.
- The Executable Info of the Edit Task dialog box is enabled and provides the correct information.
- Parameter values for system tasks Archive, Archive and Purge, and Backup are defined correctly.
- The Notifications page of the Edit Task dialog is set up to notify success or failure of the scheduled system tasks.

When a system task fails to run at its scheduled time in spite of the right settings, it could be due to other reasons. The following guidelines help you identify and solve problems with failed scheduled tasks.

To troubleshoot failed scheduled tasks:

1. Run a system task manually before enabling the task schedule to run it automatically. See **Running a Task** on page 99.

   When you run a system task manually, you can spot and correct most problems.
2. Run Task Scheduler Diagnostics reports to list any exceptions that occurred.

   See F**Running Task Scheduler Diagnostics Reports** on page 108.
3. Once you see what the exception is, try one of the recommended solutions to the problem.

   See **Possible Solutions to Report Scheduler Exceptions** on page 94.

Running Task Scheduler Diagnostics Reports

If the Task Scheduler did not run a scheduled task successfully, you can run the Task Scheduler Diagnostics reports to help determine the cause of the problem.
Task Scheduler Diagnostic reports help troubleshoot any problems you encounter with scheduled tasks. You can generate standard and filtered reports to see any exceptions that have occurred with the tasks.

To generate Task Scheduler Diagnostics reports:

1. Click the Scheduler Diagnostics in the navigation bar.
2. Click either Task Scheduler Diagnostics - Standard Report or Task Scheduler Diagnostics - Filter Report.

   Both reports display a list of Task Scheduler exceptions. The Standard report filters Scheduler exceptions by a specified date range and displays the results in reverse chronological order by Fire Time. The Filter Report, which also displays exceptions sorted in reverse chronological order by Fire Time, lets you filter the report by date range and exception category.
3. Click Generate.

   If you selected the Task Scheduler Diagnostics - Filter Report, the Report Parameters page opens.
4. Specify report parameters.

   For more information about report parameters, see **Entering Parameters for Scheduled Reports** on page 87.
5. Click Generate to generate the report.

The following table describes the columns in the Task Scheduler Diagnostics Report.

Table 32: Task Scheduler Diagnostics Report Columns

Column	Description
Task	The name of the scheduled task.
Scheduled Time	The time the package was scheduled to run.
Fire Time	The actual time the package or job started. The field could be blank if the task never started.
Duration (Minutes)	The difference between the Fire Time and the Scheduled Time in minutes. The field could be blank if the task never started.
Exception Category	The type of exception.
Exception Description	A brief description of the exception.

Possible Solutions to Task Scheduler Exceptions

This section lists common scheduler exceptions you may encounter while running the system tasks and possible solutions to the problem.

Task Scheduler Exception	Possible Solution or Workaround
The task executable has exceeded the desired timeout period.	Reset the Timeout field in Executable Info tab under the Task Edit dialog box.
The task execution process failed. An unknown exception occurred.	Open the latest Vocera Report Server log file in the `\Tomcat\logs` folder to find the root cause of the exception. See **Viewing the Vocera Report Server Task Log** on page 109. Note: The Task Scheduler accommodates programs that run outside of the Report Server, so the Task Diagnostic reports cannot provide detailed information about a failed task. However, you can investigate the details of a failed task by opening the log file for that task.
The job is removed from the queue as it exceeded the maximum waiting time.	Increase the value of the Task Waiting Time on the Schedule tab of the task.
Could not perform the disk cleanup activity because the Disk Cleanup Agent failed.	• Make sure the disk destination for sweep is specified correctly. • If the disk destination folder is on another server, make sure it is shared. Vocera Report Server does not have rights to access it if it not shared. For information on giving Vocera Report Server access to other network servers, see **Giving Vocera Report Server Access to Other Network Servers** on page 81.

Viewing the Vocera Report Server Task Log

If the Task Scheduler Diagnostics reports list a task execution failure exception or an unknown exception, it may be helpful to view the Vocera Report Server task log file to see the root cause of an exception. The Vocera Report Server writes separate log files each time a task runs. Following is a list of log files that may be opened to troubleshoot the failed tasks.

1. Archive-date-time.txt
2. Archive and Purge-date-time.txt
3. Backup-date-time.txt
4. Dataload-date-time.txt
5. Package Destination Sweep-date-time.txt
6. Purge-date-time.txt