

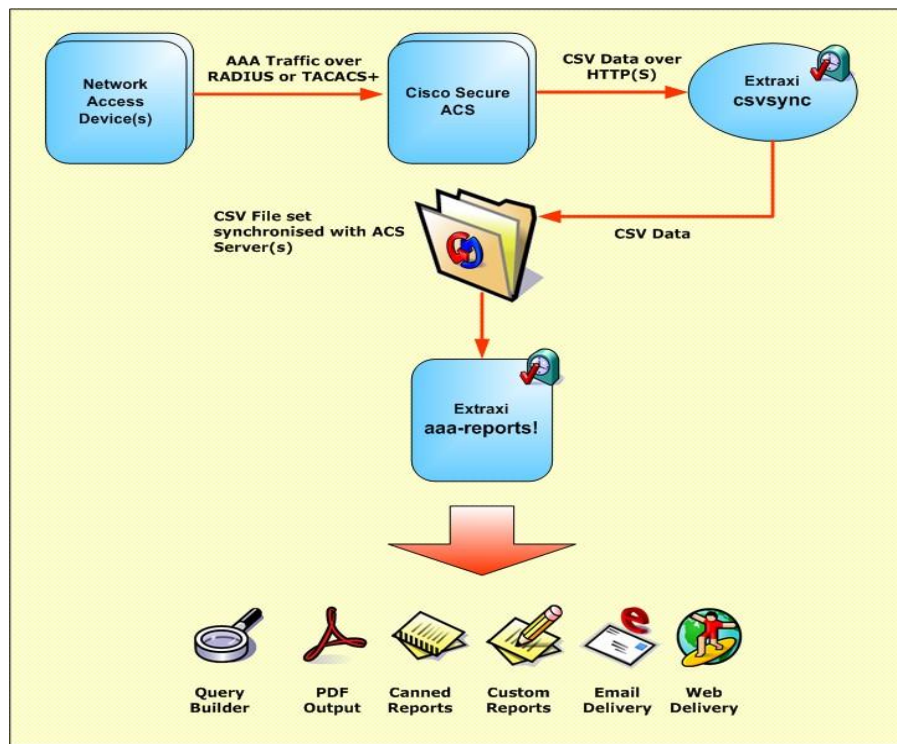
Extraxi aaa-reports! Automation Configuration Guide

Introduction	2
System Requirements	3
Reporting Server Computer	3
Email Server Details	3
Web/Shared Folders	3
Windows Scheduler Service	4
Activation	4
aaa-reports! Automation Configuration	5
Email Configuration	6
Setting up mail server details	6
Testing email alerts	7
Recipient Lists	7
Report Batches	8
Adding a new batch	8
Selecting delivery options	9
Adding canned reports	10
Adding custom reports	11
Setting billing rates	11
Executing a report batch	11
Example report email	12
aaa-reports! Command Line Options	12
Importing Logs	12
Running Reports	12
Script Example	13
Using aaa-reports! With CSVSync	13
The Windows Scheduler	14
Windows XP & Windows Server 2003	14
Windows 2000	14
Caveats	15
Database Size	15
Multiple Instances of aaa-reports!	15
Troubleshooting	15

Introduction

The automation module within aaa-reports! allows you to import new AAA server logs and run batches of reports automatically at pre-defined times. When used in conjunction with Extraxi CSVSync it offers end-to-end automation covering:

- Collection of logs from any number of ACS servers/appliances
- Import of new logs
- Generation of required reports via one or more report “batches”
- Email/Web folder delivery to report recipients



Automation and CSVSync are available as a separately purchased “add on” modules for aaa-reports! Full details and pricing are available from www.extraxi.com.

The configuration tasks associated with automation are:

1. Collect details of SMTP email server and create an account for aaa-reports!
2. Configure the email settings within aaa-reports!
3. Create the recipient lists for reports
4. Create the required report batches and set delivery/publishing options
5. Create a script to execute aaa-reports from the command line
6. Optionally extend the script to include log collection from ACS Servers (eg using CSVSync, FTP or other)
7. Configure the Windows Scheduler to execute the aaa-reports! script on the required schedule.

System Requirements

When generating scheduled reports aaa-reports! can either send reports as email attachments and/or publish to a folder location which can be made available via a network share or web server such as Microsoft IIS.

Reporting Server Computer

aaa-reports! does not require a server version of Windows however, you may still choose this over a desktop edition for higher reliability. Either way the computer on which aaa-reports! is installed is referred throughout this document as the “reporting server”.

The recommended specification for a reporting server is:

- P4 3GHz, 1GB Ram, 60GB HDD
- Windows 2000/XP/2003
- Optionally a caching RAID HD controller & 2nd HDD if the computer is to be used as a primary location for the storage of AAA logs.

Due to the high CPU workloads that database applications like aaa-reports! can cause, it is not recommended to run an automated installation on the same computer as ACS.

Email Server Details

aaa-reports! automation makes extensive use of email – for sending diagnostic alerts and for delivery of reports to end recipients. Before attempting to configure aaa-reports! you will need the following information:

- IP Address/DNS Name or your SMTP server (eg smtpmail.myco.com)
- Email account name, address and password for aaa-reports! to send from (eg aaa-reports@myco.com)
- Authentication type required by the SMTP server (None, Plain or Login)
- Email address for aaa-reports! to send event notifications to (eg critical errors)

Web/Shared Folders

To allow aaa-reports! to publish reports to a shared/web folder you will need both the private folder name and public URL for the destination folder. The private folder is where aaa-reports! copies the generated reports to while the public URL is embedded into any emails sent to end users and allows them to view the report simply by clicking on the hyperlink inside the email message.

If you are giving end users access the reports folder directly (via network share) the private/public URLs might look like the following example:

```
C:\PublicShare\reports  
\\RptSrv\PublicShare\reports
```

If you are planning to make reports available via a web server, the private/public URLs might look like:

```
C:\IIS\WebRoot\reports  
http://wwwin.myco.com/reports
```

Windows Scheduler Service

aaa-reports! automation scheduling is performed using the Windows Scheduler Service (available on Windows 2000, XP and 2003). Before aaa-reports! can be scheduled you will need to create a user account (on the server running aaa-reports!) that has sufficient privileges to run aaa-reports! and copy generated reports to the desired folder. To avoid problems the account created should be a member of the administrators group.

Once the account has been created, login to the account and check that access to the web/shared publish folders is allowed from the account.

Activation

Before the automation features can be used you must first enter your activation key. Because automation is an “add-on” module it has its own specific activation key that will have been supplied to you at the point of purchase.

To activate the automation module:

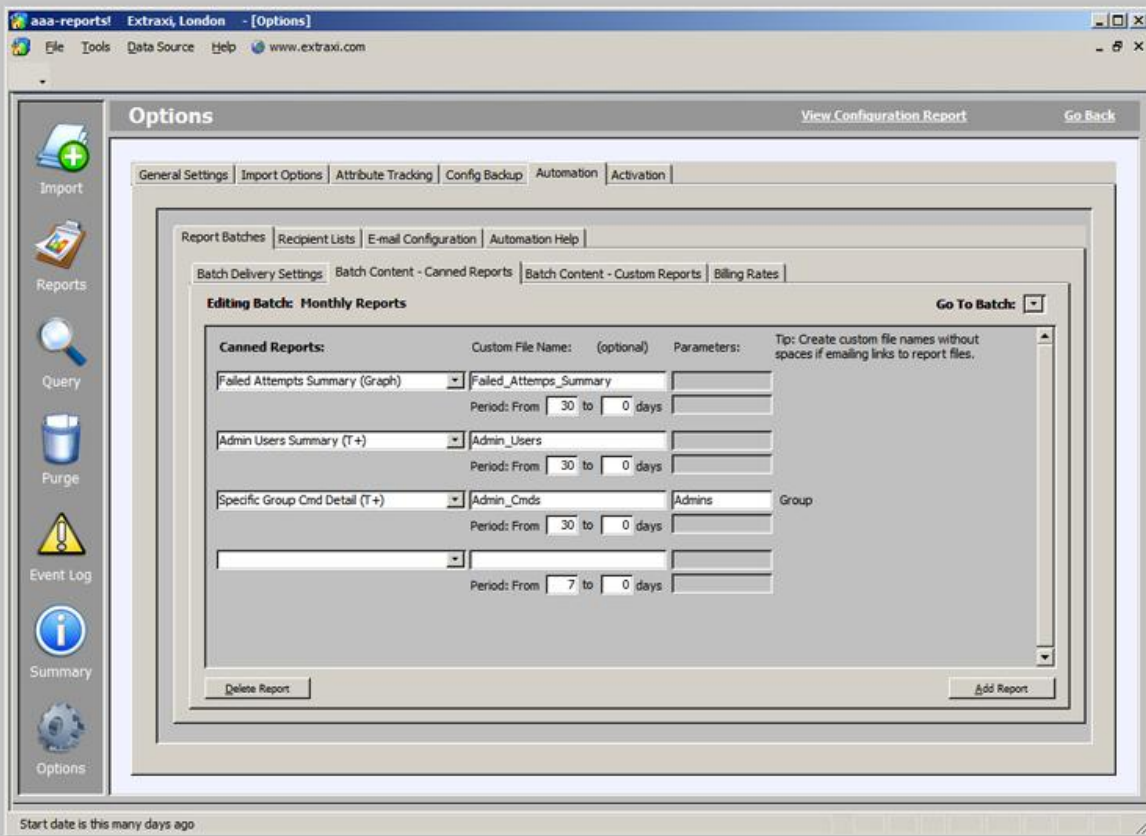
1. Click on the “Options” button in the shortcut panel
2. Next click on the “Activation” tab in the configuration window.
3. Select “Enter New Key” and enter the key in the “Automation Key” field
4. Select “Activate”

aaa-reports! will then validate the activation key. Once validation all features of automation will be fully unlocked.

aaa-reports! Automation Configuration

All of the various automation configuration options are co-located within aaa-reports! Click on the “Options” button in the shortcut panel, then click the “Automation” tab in the right hand pane. The automation configuration page will then display several sub-tabs:

- Report Batches – used to create batches, specify their content & delivery options.
- Recipient Lists – used to create email address lists for report end-users.
- Email Configuration – used to enter details of your organisations email server.
- Automation Help



aaa-reports! automation configuration pages

Email Configuration

Although not mandatory it is strongly advised to configure the email settings so that when running un-attended aaa-reports! can advise you of any warning or error messages that are generated. If you plan to deliver reports via email then you will need to configure the email settings.

General Settings | Import Options | Attribute Tracking | Config Backup | Automation | Activation

Report Batches | Recipient Lists | E-mail Configuration | Automation Help

E-mail Account Settings:

SMTP Mail Server: Enter your mail server type.

E-mail From: This account will be used to send report files.

User Name:

Password:

Authentication:

E-mail Event Notification Settings:

E-mail To: Enter the administrator's email addresses according to your recipient lists. sent completely separate recipient lists.

Cc To:

Notification Level: Set the level of E-mail events. If "If No Logs Found" option is found to import. This option is only available if you have selected "Notify If No Logs Found".

Notify If No Logs Found

Setting up mail server details

Selecting the "Email Configuration" sub-tab will display the email account settings page. Enter the details of your SMTP email server and the email account created for use by aaa-reports!

1. Enter the IP address or name of your mail server (eg smtpmail.myco.com)
2. Enter the "Email from" address – this is the address that aaa-reports! will use when sending emails (published reports and alerts)
3. Enter the "User Name" (ie the account name in the SMTP server) or, if using an un-authenticated connection leave empty.
4. Enter the "Password" field (for the named account) or, if using an un-authenticated connection leave empty.
5. Select the appropriate "Authentication" method from None, Plain or Login. Refer to your email server administrators for information about which method to use.
6. Supply an administrator's email address in the "Email To" field and optionally the "CC To" field. aaa-reports! will send alert (eg error notifications) and test messages to these addresses.

7. Select the appropriate “Notification Level” to control which events are emailed to the administrators email. Selecting “All” is recommended as this will send confirmation emails when automated imports & batch reports occur.

Testing email alerts

Having supplied the required email configuration you can test the settings by clicking on the “Test Account Settings” button. This will attempt to send a test message to the administrative email account.

If this fails, one or more of the settings are incorrect, or the aaa-reports! email account has not been created on the smtp mail server correctly.

Recipient Lists

Clicking on the “Recipient Lists” sub-tab will display the Recipient List page. Here you can configure one or more email group lists, each with multiple email addresses. Create a list for each distinct group of users who are to receive emailed reports. When creating report batches you then select the recipient list that is to receive that batch.

The screenshot shows the 'Recipient Lists' configuration page. At the top, there are navigation tabs: 'General Settings', 'Import Options', 'Attribute Tracking', 'Config Backup', 'Automation', and 'Activation'. Below these, there are sub-tabs: 'Report Batches', 'Recipient Lists', 'E-mail Configuration', and 'Automation Help'. The main content area is divided into two columns. The left column is labeled 'List Name:' and contains two text input fields with the values 'Management' and 'ACS_Admins'. The right column is labeled 'Recipients:' and contains a text input field with the value 'abaker@myco.com, greynolds@myco.com'. Below this, there are 'To:' and 'Cc:' labels with corresponding text input fields. The 'To:' field for the first list contains 'abaker@myco.com, greynolds@myco.com'. The 'To:' field for the second list contains 'acs_admins@myco.com'. The 'Cc:' fields are currently empty.

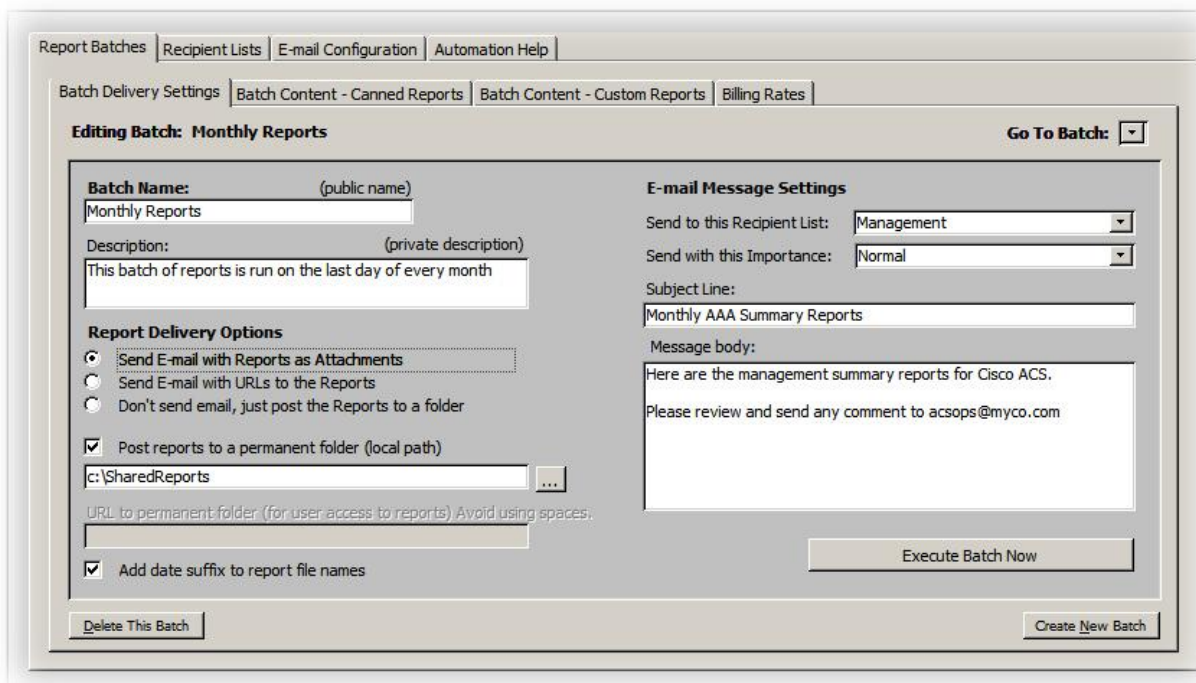
1. Click “Add List” to create an empty list entry
2. Enter the “List Name”
3. Enter a comma separated list of recipient email addresses
4. Optionally enter a comma separated list of CC’d email addresses
5. The settings are automatically saved

To remove a list select the desired list, then click “Delete List”.

Report Batches

A report batch represents an “atomic” schedulable work item for aaa-reports! automation. When aaa-reports! is started in automation mode it will generate all the reports in the named batch. Each batch comprises

- One or more canned reports
- One or more custom reports
- A recipient list
- Publishing settings



The screenshot shows the 'Editing Batch: Monthly Reports' configuration window. The window has several tabs: 'Report Batches', 'Recipient Lists', 'E-mail Configuration', and 'Automation Help'. Under 'Report Batches', there are sub-tabs: 'Batch Delivery Settings', 'Batch Content - Canned Reports', 'Batch Content - Custom Reports', and 'Billing Rates'. The 'Batch Delivery Settings' sub-tab is active.

The window is titled 'Editing Batch: Monthly Reports' and includes a 'Go To Batch:' dropdown menu. The main configuration area is divided into two columns:

- Left Column:**
 - Batch Name:** (public name) - 'Monthly Reports'
 - Description:** (private description) - 'This batch of reports is run on the last day of every month'
 - Report Delivery Options:**
 - Send E-mail with Reports as Attachments
 - Send E-mail with URLs to the Reports
 - Don't send email, just post the Reports to a folder
 - Post reports to a permanent folder (local path)
 - Path: 'c:\SharedReports'
 - URL to permanent folder (for user access to reports) Avoid using spaces.
 - Add date suffix to report file names
- Right Column:**
 - E-mail Message Settings:**
 - Send to this Recipient List: 'Management'
 - Send with this Importance: 'Normal'
 - Subject Line: 'Monthly AAA Summary Reports'
 - Message body: 'Here are the management summary reports for Cisco ACS. Please review and send any comment to acsops@myco.com'

Buttons at the bottom include 'Delete This Batch', 'Execute Batch Now', and 'Create New Batch'.

To start configuring report batches click on the “Report Batches” tab of the Automation page. The following sub-tabs will then be displayed:

- Batch Delivery Settings
- Batch Content – Canned Reports
- Batch Content – Custom Reports
- Billing Rates

Adding a new batch

To create a new batch

1. Click on the “Batch Delivery Settings” sub-tab of the “Report Batches” page
2. Click “Create New Batch” and enter a batch name when prompted.

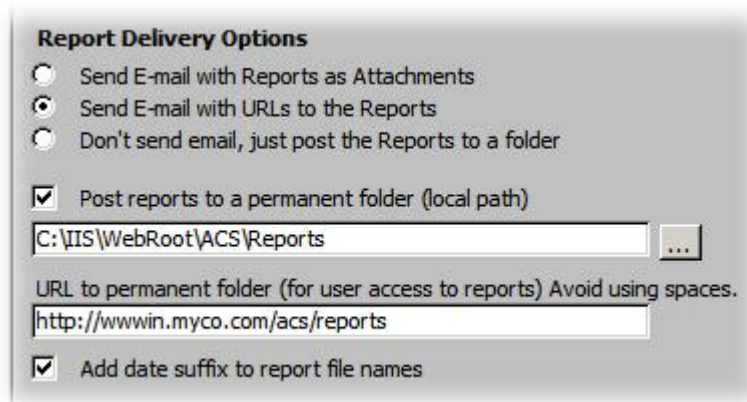
3. Enter a “Description” for the batch

Selecting delivery options

Having created a new batch the next step is to configure how the generated reports will be published/delivered to end users. Reports can either be

- Sent as an attachment in an email, or
- Linked via URL in an email (requires reports to be published to a permanent folder), or
- Just copied to a permanent folder

If reports are to be copied (published) to a permanent folder a full path to the physical destination folder must be supplied – typically this is a folder on the same server or a network share. If reports are to be linked via a URL in an email the public URL must be specified – typically this is an http address that accesses the reports via a web server. In this case the permanent physical location of the reports will be a sub-folder of the web root folder.



Report Delivery Options

Send E-mail with Reports as Attachments
 Send E-mail with URLs to the Reports
 Don't send email, just post the Reports to a folder

Post reports to a permanent folder (local path)
 ...

URL to permanent folder (for user access to reports) Avoid using spaces.

Add date suffix to report file names

For example, reports may be published to an IIS web sub-folder on the same server using a local path such as

```
C:\IIS\webroot\acs\reports
```

And then using the public URL

```
http://www.myco.com/acs/reports
```

Using the paths above, users would receive an email containing a list of reports to click on that look like:

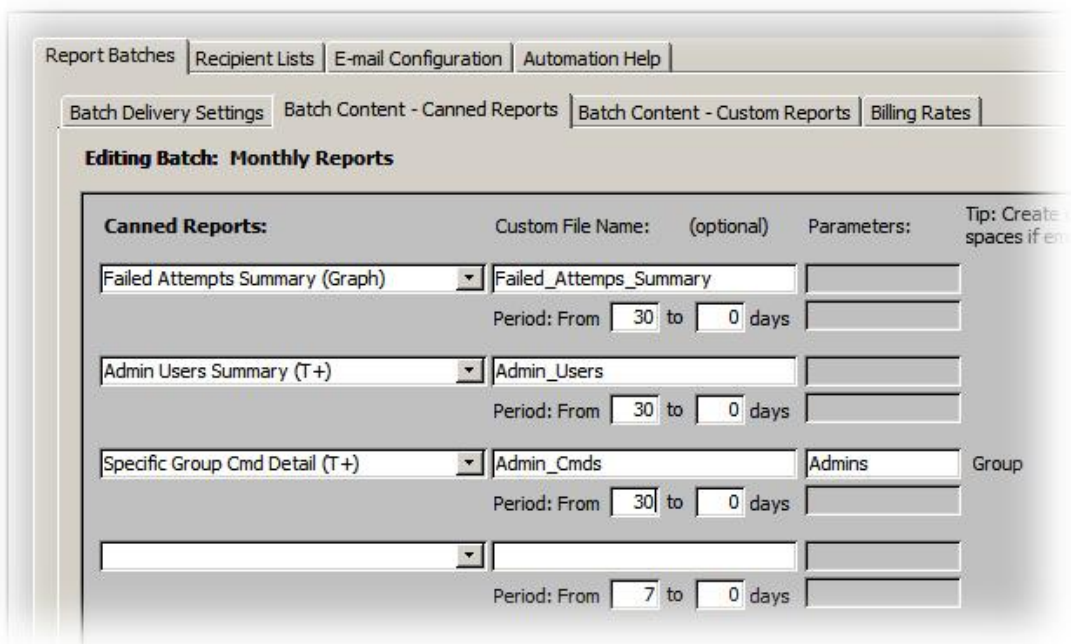
```
http://wwwin.myco.com/reports/failed_attempts_summary.pdf
http://wwwin.myco.com/reports/device_usage_summary.pdf
```

To configure the report delivery options:

1. Select the appropriate delivery option radio button (email + attachments, email + URL or no email, just publish)
2. Specify the local path where published reports will be copied
3. Specify the linking URL embedded into emails
4. Select whether to add the current date to the report filenames (useful if the same reports are to be run on multiple days)
5. Select the recipient list for the batch
6. Specify the importance of report emails (Normal, Low, High)
7. Specify the subject line for report emails
8. Specify text added to the start of the email message body

Adding canned reports

Clicking the “Batch Content – Canned Reports” tab of the “Report Batches” page will display the “Canned Report” selection page. On this page one or more reports can be picked from the list of available canned reports.



Report Batches | Recipient Lists | E-mail Configuration | Automation Help

Batch Delivery Settings | Batch Content - Canned Reports | Batch Content - Custom Reports | Billing Rates

Editing Batch: Monthly Reports

Canned Reports: Custom File Name: (optional) Parameters: Tip: Create spaces if en

Report Name	Custom File Name	Parameters	Period: From	to	days
Failed Attempts Summary (Graph)	Failed_Attempts_Summary		30	0	
Admin Users Summary (T+)	Admin_Users		30	0	
Specific Group Cmd Detail (T+)	Admin_Cmds	Admins	30	0	
			7	0	

1. Select “Add Report” to add a new blank entry
2. Choose the desired report from the report drop down list
3. Optionally specify a filename for the report (if left empty aaa-reports! will assign a default name)
4. Depending on the report chosen one or more report parameter entry boxes will be displayed. For example a report on a specific username will require the username to be supplied. Enter the desired parameters in the box or boxes displayed.
5. Specify the date range that the report will be run against. The start and stop days are entered as the number of days PRIOR to the current date. For example to run a report against the last 7 days the values 7 to 0 are entered.

It is possible to run the same report against multiple date ranges. For example a batch could be run quarterly but with reports set to run against date ranges for each month, eg

“90 to 61”, “60 to 31” and “30 to 0”

To remove a report from the batch, select the report then click “Delete Report”.

Adding custom reports

Clicking the “Batch Content – Custom Reports” tab of the “Report Batches” page will display the “Custom Report” selection page. On this page one or more reports can be picked from the list of available custom reports. Custom reports are created using the Query Builder page (refer to the aaa-reports! documentation for the Query Builder).

1. Select “Add Report” to add a new blank entry
2. Choose the desired report from the report drop down list
3. Optionally specify a filename for the report (if left empty aaa-reports! will assign a default name)
4. Select the require output format type (text, csv, html, excel or word).
5. Specify the date range that the report will be run against.

To remove a report from the batch, select the report then click “Delete Report”.

Setting billing rates

The group of reports for Billing require settings for cost per Mb or Min of service. These values may be set on a per-batch basis. Clicking the “Billing Rates” tab of the “Report Batches” page displays the Billing page.

If billing reports are not being used, these sections can be left empty.

Executing a report batch

To test a batch prior to deploying via a schedule, click on the “Batch Delivery Settings” tab of the “Report Batches” page and then click “Execute Batch Now”.

This will generate all the reports in the batch and publish/email are configured.

Example report email

Below is an example of a typical report email – note that in this example URLs to published reports have been included rather than report attachments.

Subject: Monthly ACS Reports
From: aaa-reports!@myco.com
To: auser@myco.com

Here are your reports for the previous month:

http://wwwin.myco.com/acs/reports/Failed_Attempts_Summary.pdf
http://wwwin.myco.com/acs/reports/Session_Traffic_Summary.pdf
http://wwwin.myco.com/acs/reports/Device_Usage_Summary.pdf

Aaa-reports! from Extraxi – <http://www.extraxi.com>
Software Registered to MyCo – London

aaa-reports! Command Line Options

To support scheduled execution via the windows scheduler service (or other 3rd party scheduling software) aaa-reports! can now be run from the command line using RunAAAR.exe which is located in the aaa-reports! install folder. When launching aaa-reports! normally from the Windows Start menu this is known as “interactive mode”. When starting from the command line, this is known as “automation mode”.

RunAAAR.exe supports two command line switches:

- /ImportLogs
- /RunReports(<batch name>)

Importing Logs

To launch aaa-reports! from the command line and start a log file import, type the following command:

```
C:\Program Files\aaa-reports> RunAAAR.exe /ImportLogs
```

aaa-reports! will start, import any new logs and then exit.

Running Reports

To launch aaa-reports! and run a report batch, type the following command

```
C:\Program Files\aaa-reports> RunAAAR.exe /RunReports(Monthly)
```

aaa-reports! will start, execute the batch and then exit.

Script Example

Having created a set of report batches it is possible to create a single script that imports new logs and then executes the batches:

```
@echo off

Rem import logs
"C:\Program Files\aaa-reports\RunAAAR.exe" /ImportLogs

Rem run reports
"C:\Program Files\aaa-reports\RunAAAR.exe" /RunReports (Batch1)
"C:\Program Files\aaa-reports\RunAAAR.exe" /RunReports (Batch2)
"C:\Program Files\aaa-reports\RunAAAR.exe" /RunReports (Batch3)
```

Using aaa-reports! With CSVSync

Being able import logs and generate reports automatically still leaves the task of collecting logs from your ACS servers before a fully automated solution is achieved. CSVSync is Extraxi's custom http client designed specifically for collecting csv files from any number of local/remote ACS servers and appliances. For more information about using CSVSync refer to <http://www.extraxi.com/utills.htm>

The script in the previous section could be modified to include calls to CSVSync to download logs:

```
@echo off

Rem setup some shortcuts to AAAR install dir and import dir
set aaarpath = C:\Program Files\aaa-reports
set logpath  = C:\Program Files\aaa-reports\AAALogs

Rem download logs from ACS Servers
"%aaarpath%\CSVSync.exe" -i 212.34.123.4 -u user -p passwd -f %logpath%

Rem import logs
"%aaarpath%\RunAAAR.exe" /ImportLogs

Rem run reports
"%aaarpath%\RunAAAR.exe" /RunReports (Batch1)
"%aaarpath%\RunAAAR.exe" /RunReports (Batch2)
"%aaarpath%\RunAAAR.exe" /RunReports (Batch3)
```

The Windows Scheduler

The last step in aaa-reports! automation is to configure the Windows Scheduler Service to execute the aaa-reports! script at the required intervals. How this is configured depends on which version of Windows is installed on the reporting server.

Windows XP & Windows Server 2003

On Windows XP and Server 2003 use the Start Menu to select:

All Programs → Accessories → System Tools → Scheduled Tasks

This will launch the Scheduled Tasks window. To schedule aaa-reports!

1. Click "Add Scheduled Task". This will start the new task wizard
2. Click "Next"
3. On the program selection window select "Browse" then use the File Open dialog to choose the aaa-reports .bat script then click "Open"
4. Edit the scheduled task name as desired eg "Weekly ACS Reports" and select the desired frequency (daily, weekly, monthly etc) then click "Next"
5. Specify the time at which the task will run and any other options (these will differ depending on which frequency was selected). Click "Next".
6. Enter the Windows account name and password used to execute the task. Click "Next".
7. Click "Finish"

The new task will then be displayed in the scheduled task list. Right clicking on the task and selecting "Properties" will allow more advanced settings to be set. Of particular use are settings to:

- Wake computer up if in standby
- Only start task if computer has been idle for a certain time
- Stop the task if runs for more than a certain time (eg 8hrs)

Once the task has been scheduled you may logoff the reporting server. Note that aaa-reports! will start at the scheduled time without any need for the server to be left "logged in".

Windows 2000

Windows 2000 does support scheduling but does not feature the Scheduled Tasks GUI application. Instead the "at" command must be used or, alternatively a 3rd party GUI application such as the Freeware utility "WinAT".

Below is an example command line (assuming RunMyReports.bat contained the calls to aaa-reports! automation) to run a daily schedule at 11pm:

```
at 23:00 /every:M,T,W,Th,F,S,Su C:\Scripts\RunMyReports.bat
```

Caveats

Database Size

Leaving aaa-reports! unattended for months on end, importing new logs every day will eventually result in its internal database becoming full. Rather than just stop working at this point aaa-reports! will attempt to auto-purge the oldest log data.

At the start of each import cycle aaa-reports! will estimate how much space is required (for the new logs) and purge just enough old records to cover the new requirement. In some circumstances aaa-reports! may need to purge data several times during an import cycle to free up additional space. Depending on the specification of the reporting server this import-auto-purge-import cycle can take some time.

Multiple Instances of aaa-reports!

Only a single instance of aaa-reports! may be run on the same PC at any one time. Attempting to launch a second instance will cause the aaa-reports! “bootstrap” program (RunAAAR.exe) to stop and wait, for up to 60 minutes, for the first instance to finish.

If you routinely use aaa-reports! both interactively and automated on the same computer you should be aware that leaving the interactive copy running will prevent the scheduled execution from occurring and conversely if the automated instance of aaa-reports! is running in the background you will not be able to use an interactive instance until the scheduled operations have completed.

It is recommended that automated imports/report generations are scheduled for “out of office” hours to avoid such potential clashes. Alternatively, install another copy of aaa-reports! on your desktop computer and import the same logs into this copy.

Troubleshooting

aaa-reports! maintains a diagnostic event log with variable level logging (1 to 9) which can be configured in the “General Settings” tab on the “Options” page. It is also possible to view the contents of log by clicking “Open Log”.

In event of a support case being opened with Extraxi, you will be asked for a copy of this log (AAARLog.txt) which can be found in the aaa-reports! install folder.