CardioLog 2011 Administrator Handbook

Enterprise, Professional, Standard

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1. Contacting Intlock

Web site: http://www.intlock.com/intlocksite/contactUs.asp

Contacting Intlock Support

Intlock Support is available to customers who have installed the CardioLog 2010 evaluation version or who have purchased a commercial version - and have a valid maintenance contract. Intlock Support provides help with the ongoing configuration and maintenance, including periodic upgrades and service packs.

View the CardioLog 2010 User Guide for a detailed description of the product.

Web site: http://www.intlock.com/intlocksite/Support/Request-Support.asp

2. Introduction

CardioLog 2010 is a complete web analytics solution, with its own tracking agent and data repository. It is designed for Microsoft SharePoint and includes numerous usage reports. This guide describes the CardioLog 2010 maintenance procedures for system administrators:

CardioLog 2010 Overview

- System Architecture
- System Requirements- including a database sizing formula and payload analysis.
- Usage Reports Overview-including guidelines for creating efficient reports and scheduling them.

Daily Maintenance Tasks

- CardioLog 2010 Diagnostics - how to detect and correct faults in the CardioLog 2010 system components and tracking agents.
- System Health and Performance Monitoring - infrastructure recommendations for the operating system maintenance, database maintenance, system monitoring and backup policy.
- System Redundancy – how to configure network load balancing and usage tracking in a case of a SharePoint farm failover.

Event-driven Maintenance Tasks

Configuration, Customization and Optimization Tasks

- Monitoring a New Environment - how to collect data for a SharePoint based web site, a non-SharePoint web site and for banner clicks.
- Data Collection Filters - how to define rules for excluding usage events from the monitored environments with the Black List, and how to configure the tracking agent.
- Fine Tuning **-** how to ensure qualitative and accurate reporting data using URL mappings.
- Permissions - how to define system roles and report permissions.
- CardioLog SDK – how to send events with the CardioLog API and create your own custom reports.
- Sending Events with the CardioLog API - how to create your own data collection mechanism and custom events.

- Enhanced Visitor Segmentation - how to collect visitor data from custom Active Directory attributes, SharePoint user profiles, and external schemas (as opposed to Active Directory) - such as department, region, etc.
- Troubleshooting Empty Usage Reports
- Data Integrity Tests - how to compare the CardioLog 2010 page views and unique users reports with metrics generated by other reporting tools.
- Uninstalling the CardioLog Tracking Agent - how to remove the CardioLog tracking code from the portal.
- Data Archiving - how to delete raw history data in order to save disk space and maintain database health.
- Product License – how to view information about the licensed components and modules, and how to install a new license.

2.1 Common Maintenance Tasks Reference

2.1.1 Troubleshooting

CardioLog 2010 system components are monitored by the CardioLog Diagnostics Service. System administrators receive error alerts via e-mail and can view the status of the CardioLog 2010 system components in the Diagnostics Dashboard.

How to detect and correct faults in the CardioLog 2010 system components, tracking agents and CardioLog UI:

- Troubleshooting errors in the CardioLog Services
- Troubleshooting errors in the Tracking Agents
- Troubleshooting errors in the CardioLog UI
- Troubleshooting empty usage reports

2.1.2 Testing scenarios

It is recommended to perform the following maintenance tasks in your testing environment and follow the successful measurement check list - before the implementation in production environment:

1. Monitoring a new environment with CardioLog 2010:
   - Non-SharePoint web sites (such as ASP .NET based web site)
   - Banner Clicks and Referrers (such as links to external sites)

2. Enhanced Visitor Segmentation with CardioLog 2010:
   - How to collect data about visitor attributes from external schemas - such as department, region, etc.
   - How to collect data about visitors from external schemas (as opposed to Active Directory).

3. CardioLog 2010 Overview

CardioLog 2010 is an integrative solution which offers monitoring and reporting for enterprise portals of various technologies such as Microsoft SharePoint 2010, Microsoft SharePoint 2007 and Microsoft Dynamics CRM.

Unlike other web analytic tools, CardioLog 2010 offers statistical aggregations based on the logical structure of the monitored environment, in addition to aggregations which are based on a physical structure (URL address). Working directly with a tree which represents the logical structure of the organization - enables users to view accurate data according to the familiar organization structure (and not according to the URL addresses of the various applications in the organization - which do not necessarily illustrate the hierarchal relationship between the applications).

CardioLog 2010 fully supports the Microsoft SharePoint object models and hierarchies, including the various portal objects (such as Wikis, Blogs, Sites, Documents, etc.) Moreover, CardioLog 2010 supports any custom portal hierarchy, which can be defined either manually or through an API - for environments which are not shipped with the product.

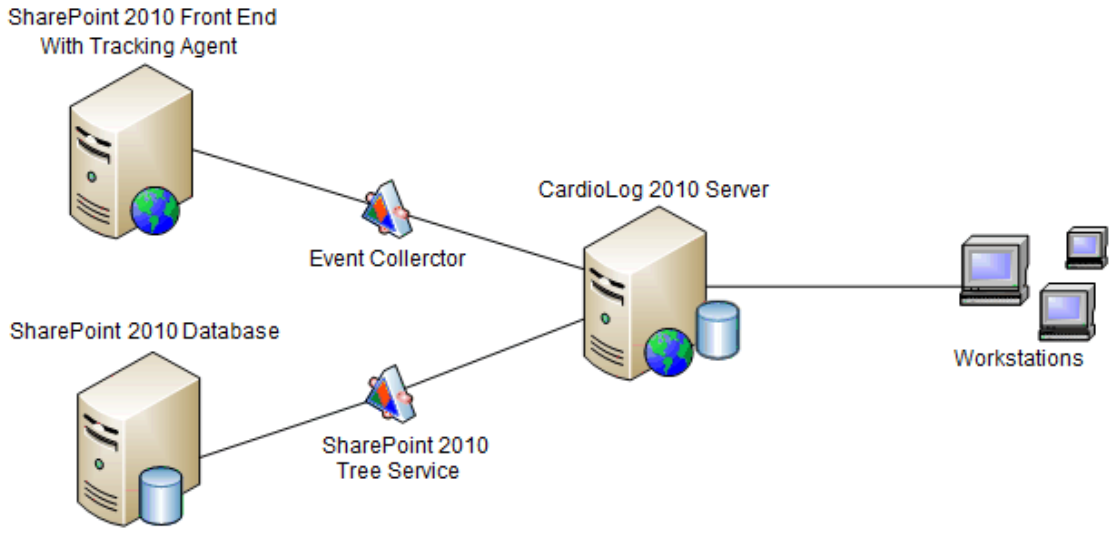
CardioLog 2010 ships with full support for integration with multiple Active Directories, and offers data filtering by users and groups in the organization. In addition, CardioLog 2010 offers:

- Monitoring of portal events such as - views, updates, and searches - in various time intervals and for any object in the organization's hierarchal tree.
- Generation of queries about portal usage and displaying them as tables, charts or meters (gauges) - and distributing them throughout the organization in various ways, such as: web interface, Email, and SharePoint Web Parts.

CardioLog 2010 is designed for IT managers and content managers. The product's working environment includes an easy-to-operate user interface and administration interface.

3.1 System Architecture

This is the basic CardioLog 2010 configuration for SharePoint 2007 within the intranet environment:



The CardioLog 2010 solution includes the following separate components:

1. **CardioLog 2010 Database** - A repository for storing all tracking and reporting data. Contact Intlock for a list of the database tables used in a CardioLog 2010 topology.
2. **CardioLog 2010 UI –** A web application for configuring and viewing the web analytics reports.
3. **Portal Tree Service**- A web service which provides the structure of the monitored environment. CardioLog 2010 includes several off-the-shelf portal tree services, such as the SharePoint 2010 Tree Service and the SharePoint 2007 Tree Service. They provide the structure of the monitored environment.
   You can create your own custom tree web service to provide the hierarchal (logical) structure of a non-SharePoint website.
4. **Tracking Agent** - A JavaScript tag which is included in the portal pages and monitors site usage. CardioLog 2010 includes several off-the-shelf tracking agents, such as the SharePoint 2010 Agent which monitors visitor behavior in SharePoint 2010 (The tracking code is added to your SharePoint 2010 INIT.js

file), MOSS 2007 Agent which monitors visitor behavior in SharePoint 2007 (The tracking code is added to your SharePoint 2007 CORE.js file) and the Basic Agent which monitors visitor behavior in non-SharePoint web sites (The tracking code is added to common page component such as Master pages).

The tracking agent sends data to the Event Collector web application. The CardioLogAgent IIS virtual directory (aka, the usage tracking application) requires user authentication, and thus is set to Windows Authentication. Just like any SharePoint page request, a request for a CardioLog Agent resource (including JS files) requires user authentication. Therefore the response includes a WWW-Authenticate header field containing a challenge applicable to the requested resource. The client then repeats the request with a suitable Authorization header field.

5. **Event Collector** - A web service which sends tracking data from the tracking agent to the main CardioLog 2010 database.
   This web service must have Anonymous Access enabled in order enable the collection of data from various monitored environments.
6. **CardioLog API** - A set of web services provided by CardioLog 2010, which include functionalities such as -system health checks and API calls and sending custom events and create custom data queries.
7. **CardioLog Scheduling Service** - A Windows services which runs scheduled jobs, such as: report creation, report distribution via email, usage data processing, portal structure updates, Active Directory data updates, and more. The service login account must have db_owner permissions for the CardioLog 2010 database, and read permissions for all SharePoint configuration and content databases.

   The CardioLog Scheduling Service includes the following separate components:
   - **Usage Data Processing** - processes incoming tracking data from Event Collector.
   - **Portal Tree Updates**- retrieves the structure of the portal (monitored environments). This is done by creating an XML file which portrays the hierarchal structure of the portal, and then translating the XML data into relational data. This structure is the basis for usage data aggregations.
   - **Report Scheduling**- responsible for the automatic generation of scheduled reports and their distribution through Email.

- **Active Directory Updates**- CardioLog 2010 provides the ability to segment authenticated visitors by their user names and the groups they belong to. The Active Directory Updates service component retrieves the list of users and groups directly from Active Directory.
- **User Categories Updates**- CardioLog 2010 provides the ability to segment visitors by any custom category. The User Categories Updates service component retrieves the list of custom categories from a designated web service.
- **Usage Data Processing (Remote Environments)**- CardioLog 2010 can monitor external environments (such as DMZ, internet sites) and store the tracking data in a temporary repository (Offsite Database). The Usage Data Processing (Remote Environments) service component imports data from the temporary repository to the CardioLog 2010 database.

8. **CardioLog Diagnostics Service** - A Windows service which runs the health checks for the system.
9. **Offsite Application** - A web application which sends tracking data from tracking agents located in DMZ - to the Offsite database.
10. **Offsite Database** – A repository of tracking data in DMZ.

The Data Collection Process

1. The CardioLog JavaScript tracking code is added to a SharePoint common page component and is downloaded with each portal page request.
2. Information about user actions within the portal pages is sent to the CardioLogAgent web application – via asynchronous JavaScript calls (AJAX).
3. The CardioLogAgent application passes on the usage information, via HTTP web requests, to the EventCollector application - which writes the data into the CardioLog database.
4. The Usage Data Processing service processes incoming tracking data from Event Collector (every rounded hour by default).
5. The processed data is visible in the Report Center and Analysis Center. The period expected when selecting each one of the date range options is as follows:
   - This Hour - shows cached data until the last rounded minute.
   - This Day - shows cached data until the last rounded hour.
   - This Week - shows cached data until last rounded hour.
   - This Month - shows cached data until last rounded day.

- This Quarter - shows cached data until last rounded day.
- This Year - shows cached data until last rounded day.

3.2 System Requirements

To ensure optimal operation, it is recommended to install the CardioLog application and database on dedicated servers.

Make sure that your system meets the following minimum hardware and software requirements:

	Professional Edition	**Enterprise Edition**
Platform	64-bit	64-bit
Operating System	Windows 2003/2008 Server or Windows 2003 R2/2008 R2 Server Standard Edition (fully patched)	Dedicated Windows Server: 2003/2008 or 2003 R2/2008 R2 Standard Edition (fully patched)
Application Memory*	8 GB	Minimum** - 16 GB Recommended - 32 GB
Processors*	2xQUAD	Minimum** - 2xQUAD Recommended - 4xQUAD
SQL Edition	Microsoft SQL Server 2005/2008 Standard Edition (fully patched)	Minimum** - Microsoft SQL Server 2005/2008 Standard Edition (fully patched) Recommended - Microsoft SQL Server 2005/2008 Enterprise Edition (fully patched)
SQL Memory	4 GB	16 GB
SQL Processors	2xQUAD	Minimum** - 2xQUAD Recommended - 4xQUAD
SQL Storage		
System Disk	10 GB	10 GB
Page File Disk	10 GB	10 GB
Database Disk	~150 GB (depending on the monitored environment)	~150 GB (depending on the monitored environment)
Transaction Log Disk	According to the backup policy	According to the backup policy
RAID	Raid 5/10 or similar	Raid 5/10 or similar

Additional Software & Services	• Microsoft .NET Framework 3.5 Service Pack 1 • Microsoft Chart Controls for Microsoft .NET Framework 3.5 • IIS 6.0, IIS 7.0 or IIS 7.5 • Microsoft Internet Explorer 7.0 or higher	• Microsoft .NET Framework 3.5 Service Pack 1 • Microsoft Chart Controls for Microsoft .NET Framework 3.5 • IIS 6.0, IIS 7.0 or IIS 7.5 • Microsoft Internet Explorer 7.0 or higher

* This refers to hardware allocated for the CardioLog application pool and services (and not for the CardioLog SQL server)

** For up to 2,000,000 page views per month

*** The CardioLog application and database servers can be installed on virtual machines (which meet the above minimum hardware and software requirements

System Performance

The amount of resources needed for the CardioLog Scheduling Service nightly processing depends on -

- Number of portals
- Portal size
- Number of scheduled reports
- The timeframe for the reports (reports for 365 days demand more resources then reports for 30 days)
- The number of events (traffic) coming in from the portal at the time of report processing

The more resources allocated the better.

If the CardioLog application is hosted on one server, while the CardioLog database resides on a second server, then the server hosting the CardioLog database should be the powerful one, in terms of allocated resources - processors, memory (RAM) and hard disk space.

An installation with over 1 million portal items requires the allocation of over 4GB for the SQL Server process.

The CardioLog Application User Account

It is recommended to create a dedicated user account for the CardioLog application. The CardioLog user account should have the following permissions and roles:

1. db_owner for the CardioLog database
2. processadmin for the CardioLog SQL server.
3. db_datareader for the SharePoint configuration and content databases
4. Read access for the SharePoint TEMPLATE share.
5. Member of the CardioLog application administrators group (role).
6. Member of the local IIS_WPG group (for Windows Server 2003 only).
7. Full Control permissions for the CardioLog Installation Folder.
8. Permissions for starting and stopping the CardioLog services.

Note: If the CardioLog user account is used for the installation of the CardioLog application, make sure it is a member of the local Administrators group (on the CardioLog server) and is assigned with the create database, alter any login permissions on the CardioLog SQL server.

3.2.1 Database Sizing

Hard disk allocation depends on the size of the monitored environment and the level of activity taking place in the portal. Additional factors that should be considered are the backup and clean-up policies and the amount of data accumulated over time. For example, an installation with 270MB of monitored data per day requires a total disk space of about 100GB for a single year of data. An installation with 10 million usage events per month requires a total disk space of about 240 GB for a single year of data.

In practice, the estimated database size depends on the size of the CardioLog 2010 event tables. The following formula depicts the sizing calculation for the database:

$$Sd = (Srd + Sri) \times Nu \times (Ns + Nsr + (Ne \times 2)) \times P$$

Where:

Sd = estimated size of the database

Srd = average size of data per event (0.806 KB)

Sri = average size of index per event (0.666 KB)

Nu = number of users in the monitored environment

Ns = average number of search operations per day per user (each search operation generates 1 event)

Nsr = average number of search results clicks per day per user (each search results

click generates 1 event)

Ne = average number of non-search operations (views, duration) per day per user (each non-search operation generates 2 events by default)

P = length of the monitoring period – in days

3.2.2 Portal Page Performance

CardioLog operates in a non-invasive transparent manner and does not affect the monitored portal's overall performance and response time. The product has a marginal footprint on the portal environment and can be turned off instantly should a diagnosis is required.

CardioLog's execution is asynchronous to the monitored portal's execution and users' activity and thus CardioLog has no direct impact on the monitored environment.

Tracking Code - Portal usage tracking is performed by the CardioLog Agent - which is a 55Kb piece of JavaScript tracking code, added to the portal pages. 10Kb of this code is cached in the client browser. The agent is built from several files (total of 55K). The agent is cached so that the user will have to download 55K the first time and after that the browser will execute calls just to make sure there is no newer version (you should see those calls with 304 status instead of 200 status and the response should be only few hundred bytes).

CardioLog Agent File	Bytes Sent	Bytes Received
/CardioLogAgent/AgentEmbed.aspx	906	6,499
/CardioLogAgent/MOSS2007_1.2.js	730	10,550
/CardioLogAgent/agentBaseEmbed.aspx	734	39,374
/CardioLogAgent/CustomAgent_1.2.js	733	586
/CardioLogAgent/tunnel.aspx	1,287	295

The download time for the CardioLog Agent JavaScript code is dependent upon multiple factors - such as network connectivity and band width. Generally, the download time is almost negligible.

The CardioLog Agent JavaScript code is loaded on page-onload, and sends usage data to the CardioLog server - asynchronously. The calls to the CardioLog server **do not** affect the page response time.

In cases where the CardioLog Agent fails to connect to the CardioLog server (the EventCollector web application), it retries to connect after 60 seconds (configurable), to avoid unwanted overhead.

Intlock encourages each customer to perform his/her own performance tests.

3.3 Basic Usage Report Overview

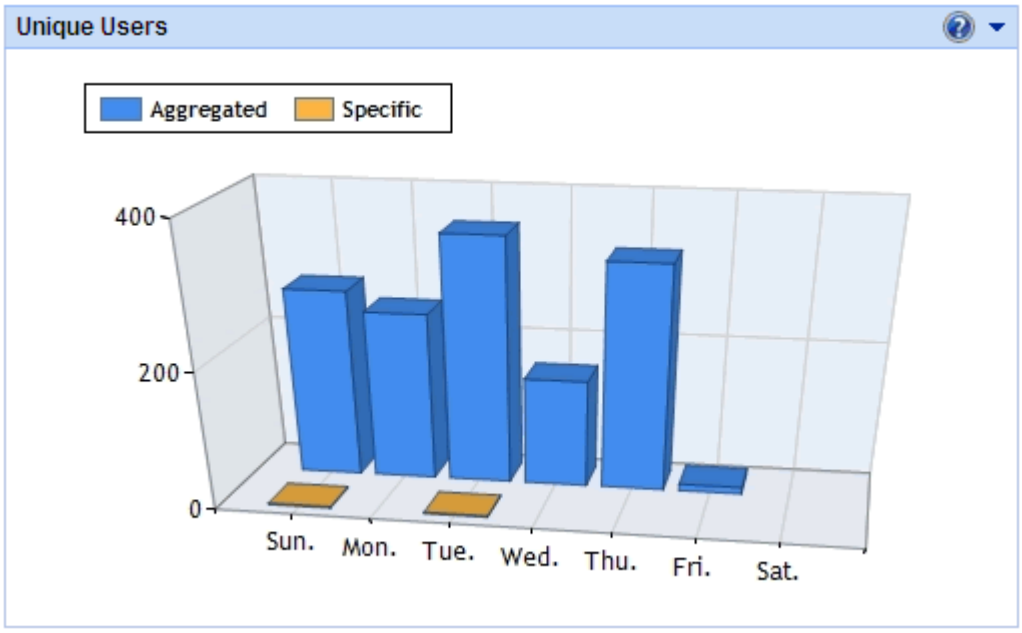
A report created in the CardioLog 2010 Report Center can be scheduled and distributed once a day/week/month. It includes several visual controls.

A visual control is a visual component which displays the results for a query. There are 3 types of components: meter, chart, and table.

The report can be viewed in the CardioLog 2010 Report Center, or by browsing directly to the report's URL address.

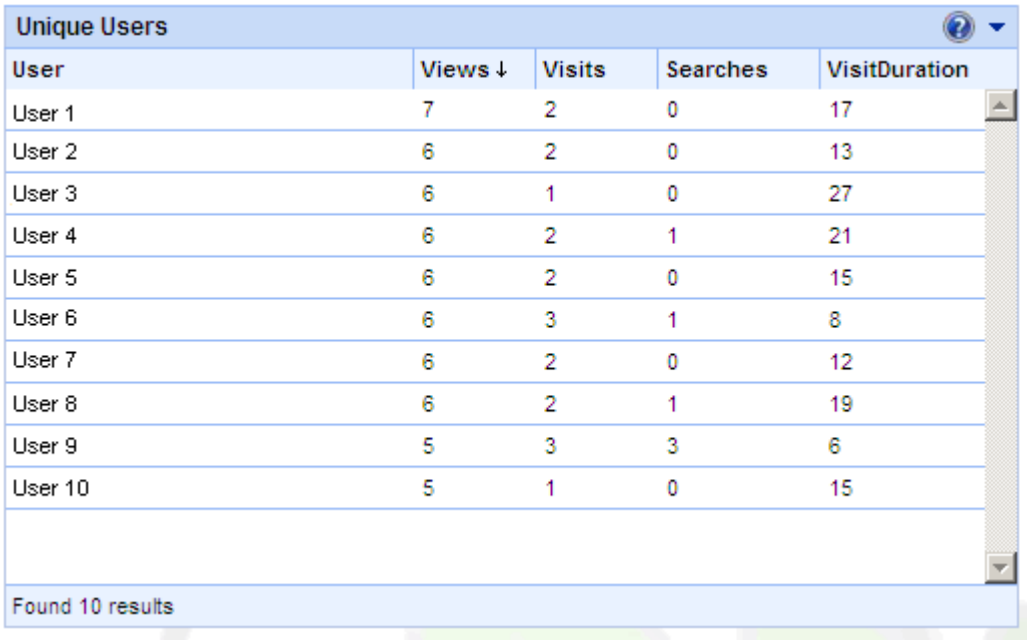
3.3.1 Basic Reports

Unique Users - **The number of individuals (uniquely identified clients) who visited the web site.**



This chart displays:
Home Page (Specific) series - number of individuals who visited the home page of the web site.

All Pages (Aggregated) series - number of individuals who visited any of the web site pages.



Unique Users

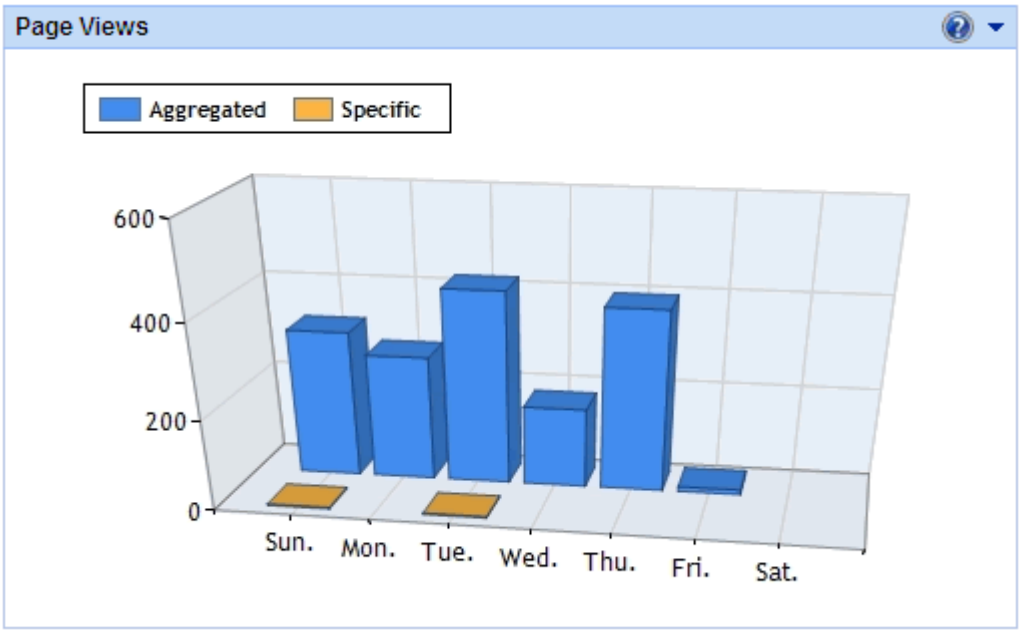
User	Views ↓	Visits	Searches	VisitDuration
User 1	7	2	0	17
User 2	6	2	0	13
User 3	6	1	0	27
User 4	6	2	1	21
User 5	6	2	0	15
User 6	6	3	1	8
User 7	6	2	0	12
User 8	6	2	1	19
User 9	5	3	3	6
User 10	5	1	0	15

Found 10 results

This table displays:

- *Display names* of the visitors to the web site.
- *View*(or Page View) is a request for a web page.
- *Visit* is a series of requests from the same unique user with a set timeout. The browser session timeout is 30 minutes. A visit contains multiple page views.
- *Visit duration* is the average time (in seconds) spent in a visit.

Page Views- **The number of requests for web pages in the web site**



This chart displays:

Home Page (Specific) series - number of views on the home page of the web site.

All Pages (Aggregated) series - number of views on all the web site pages.

Page Views

Title	Views ↓	UniqueUsers	Duration	ExitRate
Announcements	9	9	5	11%
Lists	8	8	4	25%
Image Library	8	8	3	38%
Image Library	8	8	3	0%
Lists	7	7	5	14%
Site Content and Structure: Delete	7	7	6	29%
Operations	7	7	4	43%
My New Site #2	7	7	4	43%
Document Library	7	7	5	29%
Announcements	7	7	3	43%

Found 10 results

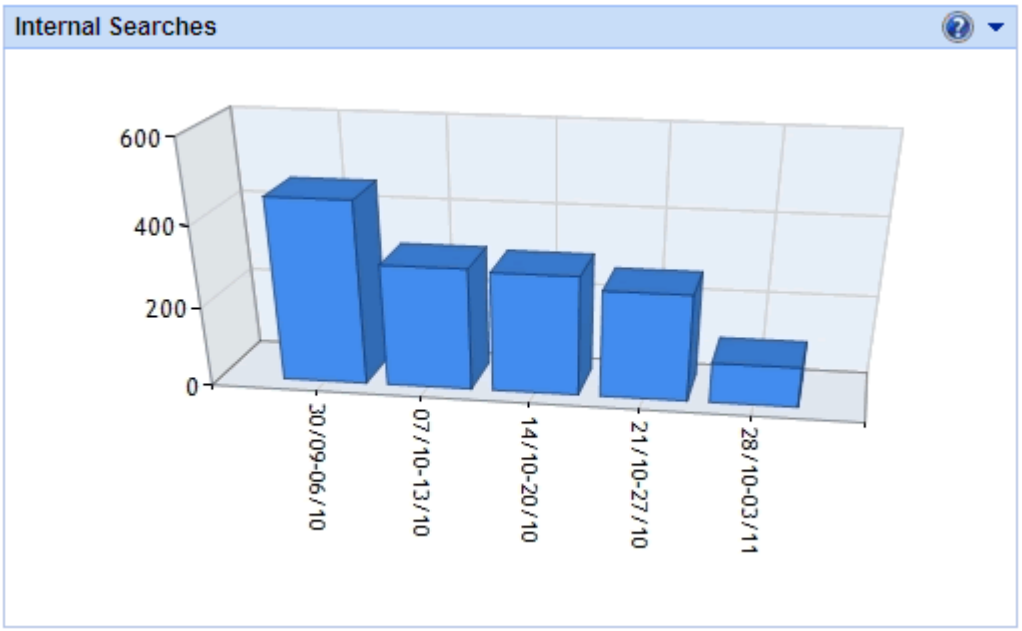
This table displays:

- *Display names* of the web site pages.
- *View* is a request for a web page - similar to a click/hit.
- CardioLog identifies entities in the portal. For SharePoint 2007, these entities can be blogs, wikis, publishing sites, personal spaces, document centers, etc.
- The number of views on each entity in the table is **specific** (on the home page of the entity).
- *Unique Users* is the number of individuals (a uniquely identified client) who visited the web page.
- *Visit duration* is the average time (in seconds) spent in a web page.
- *Exit Rate* is the percentage of times a specific web page was last in a visit.

3.3.2 Search Report Template

Internal Searches

The number of times users searched the web site.



This chart displays:

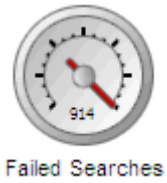
Home Page (Specific) series - number of searches on the home page of the web site.

All Pages (Aggregated) series - number of searches on all the web site pages.

Internal Searches

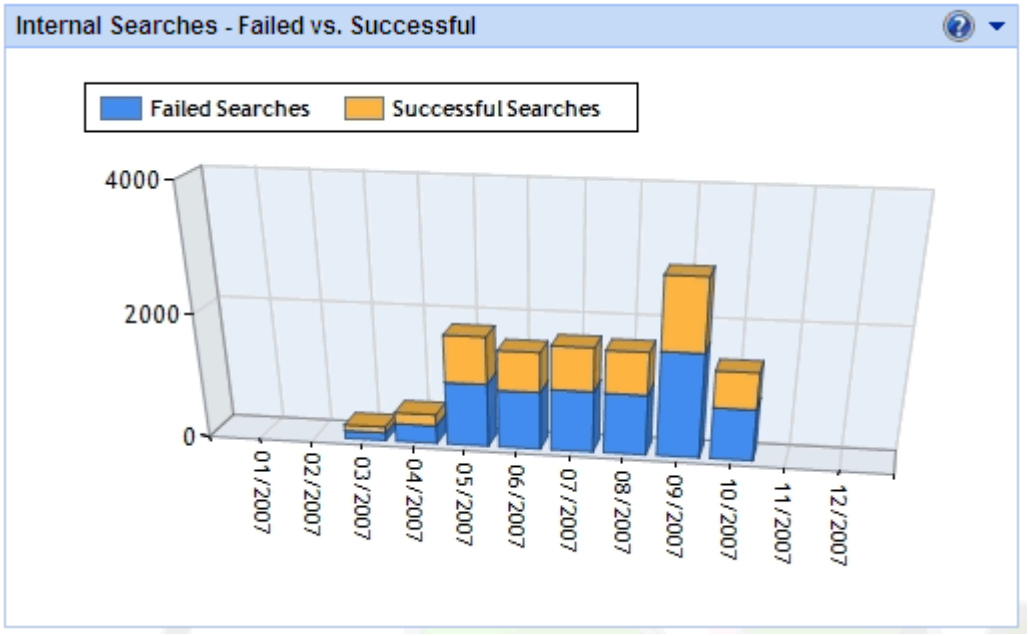
This meter displays the number of searches performed on all the web site pages.

Failed Internal Searches



This meter displays the number of times users searchedthe web site - and did not find what they were looking for. Failed searches occur when the number of search results is below a predefined minimum value or exceeds a predefined maximum value.
These can be set in the "Advanced" preferences (Min Failure and Max Failure fields).

Internal Searches - Failed vs. Successful



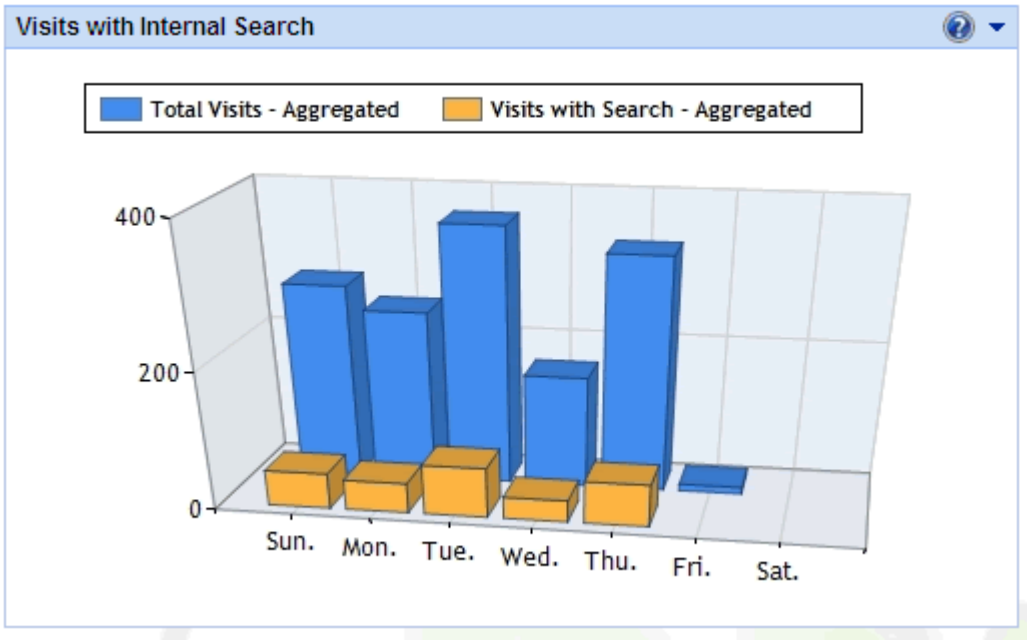
This chart displays the number of searches vs. failed searches for all of the web site pages, for a predefined time period. Failed searches occur when the number of search results is below a predefined minimum value or exceeds a predefined maximum value.
These can be set in the "Advanced" preferences (Min Failure and Max Failure fields).

Internal Searches - Failure Rate

Search Failure Rate

This meter displays the ratio of failed to all searches performed on all the web site pages.

Visits with Internal Search

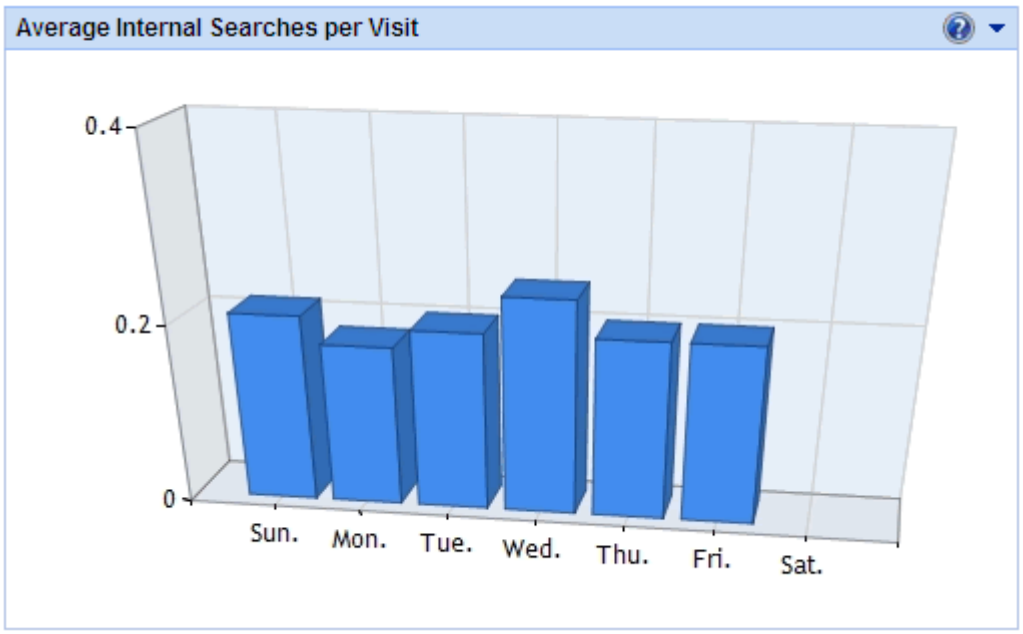


This chart displays the number of visits to the web site, which included an internal search.

Visit is a series of requests from the same unique user with a set timeout (the activity of one visitor within a single browser session). The browser session timeout is 30 minutes. A visit contains multiple page views.

Visit with Search contains one or more searches.

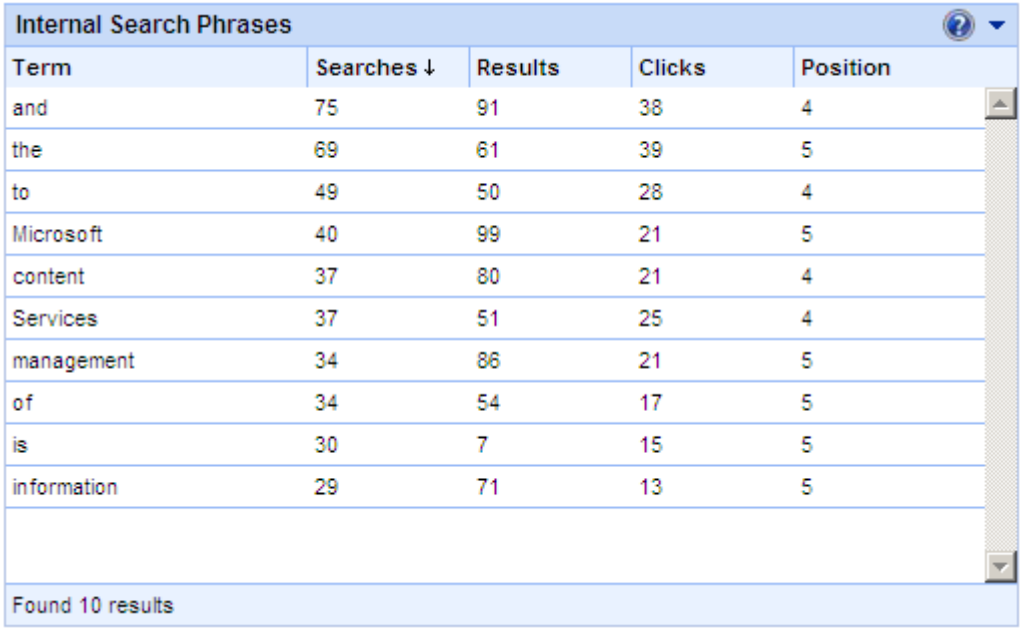
Average Internal Searches per Visit



This chart displays the average number of searches per visit.

Visit is a series of requests from the same unique user with a set timeout (the activity of one visitor within a single browser session). The browser session timeout is 30 minutes. A visit contains multiple page views.

Internal Search Phrases



Internal Search Phrases

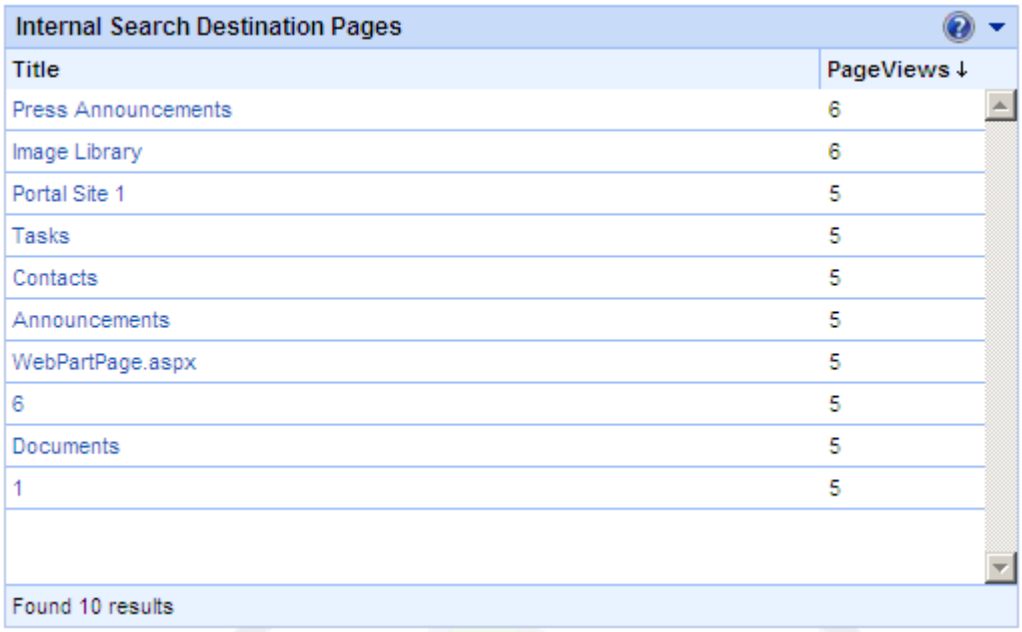
Term	Searches ↓	Results	Clicks	Position
and	75	91	38	4
the	69	61	39	5
to	49	50	28	4
Microsoft	40	99	21	5
content	37	80	21	4
Services	37	51	25	4
management	34	86	21	5
of	34	54	17	5
is	30	7	15	5
information	29	71	13	5

Found 10 results

This table lists the top search phrases (keywords) searched for all o f the web site pages, ranked by:

- *Searches* - the number of searches.
- *Results* - the average number of search results.
- *Clicks* - the average number of clicks on the search results.
- *Position* - the average position of the search results which were clicked.

Internal Search Destination Pages



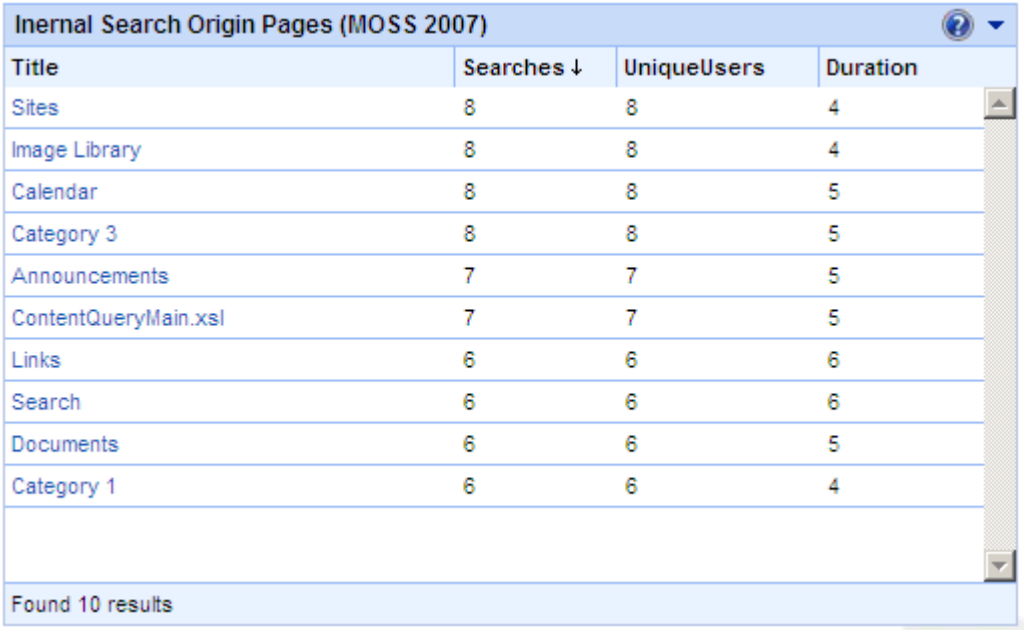
Internal Search Destination Pages

Title	PageViews ↓
Press Announcements	6
Image Library	6
Portal Site 1	5
Tasks	5
Contacts	5
Announcements	5
WebPartPage.aspx	5
6	5
Documents	5
1	5

Found 10 results

This table lists the top web site pages accessed from internal search.

Internal Search Origin Pages (MOSS 2007)



Inernal Search Origin Pages (MOSS 2007)

Title	Searches ↓	UniqueUsers	Duration
Sites	8	8	4
Image Library	8	8	4
Calendar	8	8	5
Category 3	8	8	5
Announcements	7	7	5
ContentQueryMain.xsl	7	7	5
Links	6	6	6
Search	6	6	6
Documents	6	6	5
Category 1	6	6	4

Found 10 results

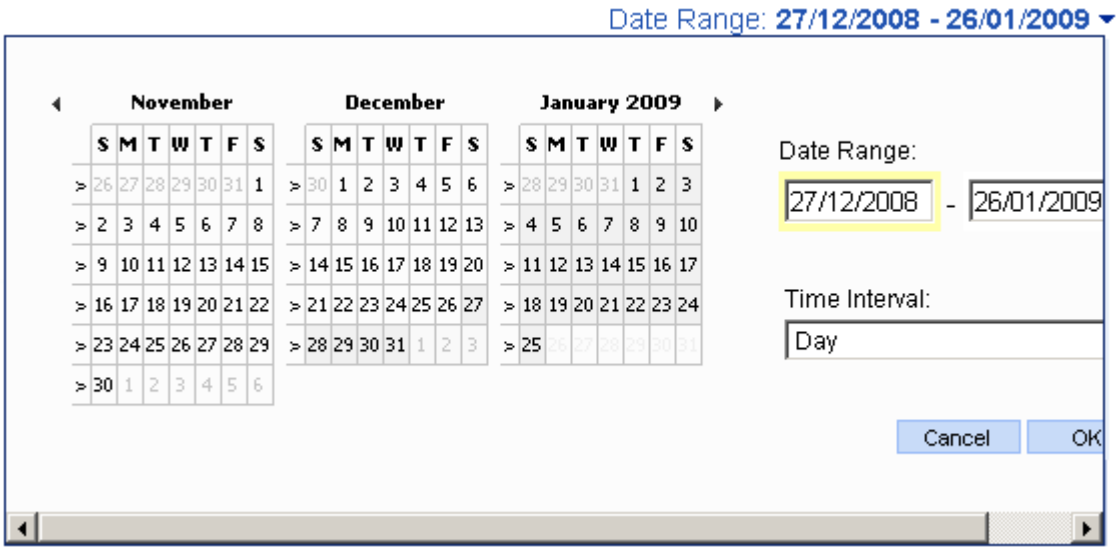
This table lists the top web site pages, from which an internal search was submitted. Pages are ranked by:

- *Searches* is the number of searches.
- *Unique Users* is the number of individuals (a uniquely identified client) who visited the web page.
- *Visit duration* is the average time (in seconds) spent on a web page.

3.3.3 Report Operations

When directly accessing a report link (distributed by Email) you can:

1. Change the date range and the time interval of the report - by clicking on **Date Range**- on the top right hand side of the page.



2. Export the report to Microsoft Excel by right clicking the report and selecting **Export...**
3. Sort tables by clicking on any column name.

When accessing a report from Report Center- you can: edit its appearance and data filters (date range, SharePoint item, users and groups, user categories), add/remove visual controls, distribute the report, export to web part and define report permissions.

For more details see the CardioLog 2010 User Guide.

The amount of resources needed for report processing depends on the number of scheduled reports, the number of database queries for each report and the timeframe selected for the reports (reports for 365 days require more resources then reports for 30 days). To assure optimal operation, make sure you follow these recommendations:

1. **Number of Queries (Visual Controls) per Report** - Limit the number of controls in a report to a maximum of 6.
2. **Number of Results (Rows) per Query** - Display only the top 100 rows in tables. You will be able to view all of the results when exporting to Excel.
3. **Report Filters** - Define a black list rule when possible and avoid using the NOT (!) condition in the report filters.
4. **Report Scheduling Type** - Make sure that the report scheduling type (daily/weekly/monthly) is in correspondence to the report date range, for example:
   When a report's date range is "Last Month", schedule it to run once a month.
   When a report's date range is "Last 30 Days",schedule it to run once a day.
5. **Report Type ("By URL" Visual Controls)** - Avoid using the "By URL" visual controls (for example - "Page Views by URL") unless needed. When creating a report for a web site, search the website in Object Explorer (CardioLog 2010 Analysis Center), and use the appropriate tree item as the source of your report.

   Use the "By URL" reports only for:
   - Web sites which do not exist in Object Explorer
   - Retrieving URL Parameters in the report
   - Tracking banner and button clicks
   - Tracking custom events
6. **Number of Scheduled Reports-**Delete un-used scheduled reports. Use the CardioLog 2010 Analysis Center for real time queries or create an Ad-Hoc report and generate it manually on demand.

4. Daily Maintenance Tasks

To best maintain your system, perform the maintenance tasks in this section every day. You can automate these tasks by scheduling them to run on a daily basis:

- CardioLog 2010 Diagnostics
- System Health and Performance Monitoring
- System Redundancy

The maintenance tasks should be performed by a user with a local administrator account on the CardioLog server and with a CardioLog Administrator role.

4.1 CardioLog 2010 Diagnostics

To monitor the CardioLog 2010 System components:

1. Configure the CardioLog services.
2. Detect and handle faults with the Diagnostics Dashboard:
   - Viewing the current status of the CardioLog Scheduling Service components and tracking agents
   - Troubleshooting errors in the CardioLog Services.
   - Troubleshooting errors in the Tracking Agents.
   - Troubleshooting errors in the CardioLog UI.

4.1.1 Configuring the CardioLog Services

The CardioLog Diagnostics Service checks the status of the CardioLog Scheduling Service components and tracking agents, and sends errors alerts via e-mail.

By default, all of the CardioLog Scheduling Service components run every day at 12:00 AM, not including the Usage Data Processing - which runs every hour, and the CardioLog Diagnostics Service - which runs every day at 08:30 AM.

To configure the CardioLog Services:

1. For better resource utilization, calculate the amount of time needed for each service component to run, and schedule them to run one at a time.
2. Schedule the CardioLog Diagnostics Service to run after all the CardioLog Scheduling Service components have finished running.

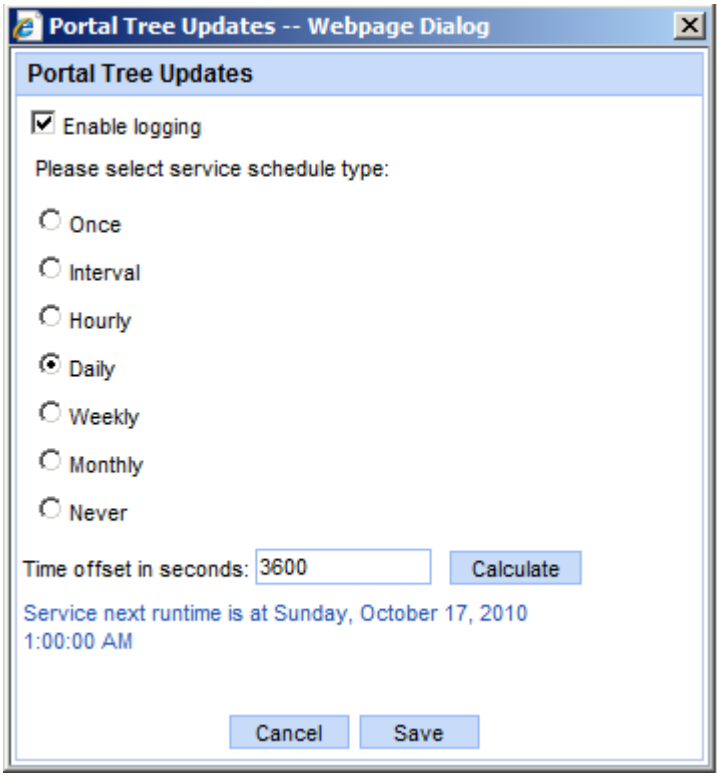
3. The CardioLog Diagnostics Service errors alerts are sent via e-mail. Configure e-mail alert settings (SMTP server, e-mail recipients).
4. Define a threshold for each monitored website- to be notified when the event count for the monitored websites has not reached a specified minimum count.

4.1.1.1 Scheduling the CardioLog Scheduling Service Components

Each service component can be scheduled to run at defined time intervals.

1. In the **General Administration** pane, expand **CardioLog Scheduling Service**.
2. Right click a service component and select **Edit**, or click the service component.
3. The **Edit Service** dialog includes the following fields:
   - **Enable Logging** - the component's activity is logged. The default log file path is at <CardioLog Installation Directory>\CardiologScheduleServices\Logs
   - **Service Schedule Type** - defines the time interval to run the service component:
     - **Once** - one time only, once the service is restarted
     - **Interval** - defined in the **Time offset in seconds** fields
     - **Hourly** - Every hour, on the hour
     - **Daily** - Every day at 12:00 AM
     - **Weekly** - Every Sunday at 12:00 AM
     - **Monthly** - Every month, on the 1st, at 12:00 AM
     - **Never** – not at any time
   - **Time offset in seconds**- time (in seconds) added for the selected schedule type.

     Example 1: If the schedule type is Daily, and Time offset in seconds is 3600, then the service component will run every day a 01:00 AM.
     Example 2: If the schedule type is Interval and Time offset in seconds is 1800, then the service component will run every 30 minutes.



Edit Service dialog

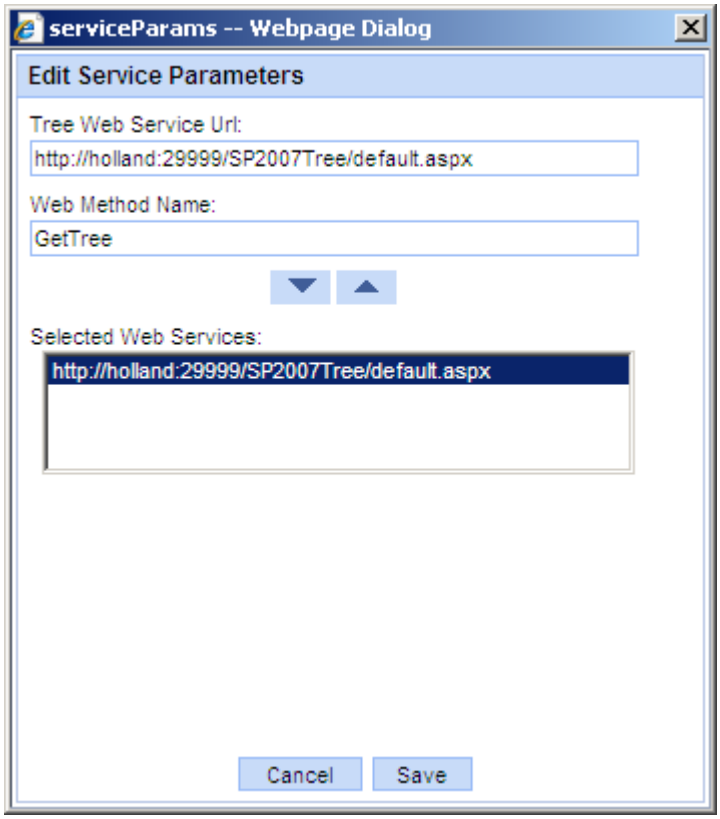
4. In order to commit changes in the service components, you must restart the **CardioLog Scheduling Service**. Click on **Start**>**Run**> services.msc
5. Right click on **CardioLog Scheduling Service** and select **Restart.**

4.1.1.2 Configuring the Service Components Parameters

- **Portal Tree Updates -** The Portal Tree Updates service component retrieves the structure of the portal (monitored environments). This is done by creating an XML file which portrays the hierarchal structure of the portal, and then translating the XML data into relational data. This structure is the basis for data aggregations.

  1. In the **General Administration** pane, expand **CardioLog Scheduling Service**.
  2. Click **Portal Tree Updates**.
  3. Set the schedule type and then click **Next**.
  4. In the **Edit Service Parameters** dialog, enter a URL for your Portal Tree Web Service. If the web service has an .asmx extension, enter the Web Method name.

5. Click the down arrow to add the Portal Tree Web Service to the selected web services.
6. Repeat steps 4-5 for each Portal Tree Web Service.
7. Click **Save**, and restart **CardioLog Scheduling Service**.



Portal Tree Updates - Edit Service Parameters dialog

Transferring the portal structure through file system

By default, the SP20XXTree application exposes the portal hierarchal structure through an HTTP web service. For large portals, where the resources allocated for the web request (2 GB of memory) are insufficient for holding the structure of the portal, CardioLog can transfer the portal structure via the file system. To do so, add the following parameters to the Tree Web Service Url field:

http://<CardioLogServer>:<port>/SP20XXTree/default.aspx**?output=file&logFilePath=[CardioLog Installation Folder]\CardioLogScheduleServices\Logs\SP20XXTree.xml**

Collecting document versioning information for your SharePoint lists and libraries

In order to take full advantage of document modification reports, turn on versioning for your SharePoint lists and libraries.

To collect document versioning information from SharePoint, add the docVersion=true parameter to the Tree Web Service Url field:

```
http://<CardioLogServer>:<port>/SP20XXTree/default.aspx?docVersion=true&output=file&logFilePath=[CardioLog Installation Folder]\CardioLogScheduleServices\Logs\SP20XXTree.xml
```

- **Report Scheduling** - The Report Scheduling component is responsible for the automatic generation of scheduled reports and their distribution through Email.

1. In the **General Administration** pane, expand **CardioLog Scheduling Service**.
2. Click **Report Scheduling**.
3. Set the schedule type and then click **Next**.
4. In the **Edit Service Parameters** dialog, fill out the following fields:
   - **SMTP Mail Server** - A full DNS name for the SMTP Server. *Example: "mycompany.com"*
   - **SMTP User Name, SMTP Password -** these are optional fields, for supplying credentials.
   - **System Administrator e-mail address -** a recipients list of service error alerts. Click on the right arrow to select Email addresses.
5. Click the down arrow to add the e-mail address to the selected recipients list.
6. Click **Save**, and restart **CardioLog Scheduling Service**.

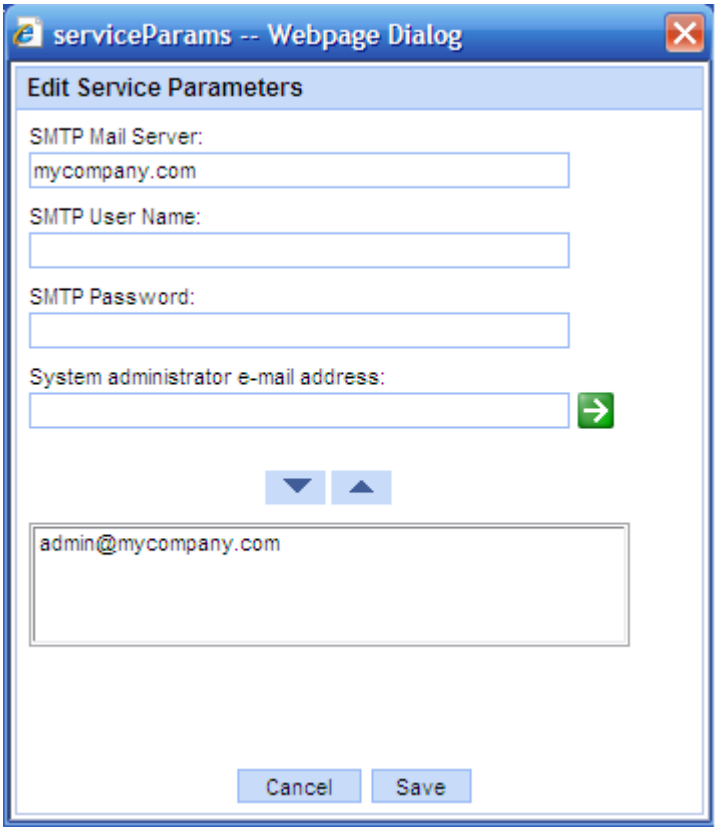
To configure a secure SMTP server with a non-default port, or the CardioLog reports email sender and subject, edit the following keys in the [CardioLog Installation Folder]\CardioLogSchedulingService\Settings.config file in the <handlersParams> section:

```
<param>
    <handlerId>6</handlerId>
```

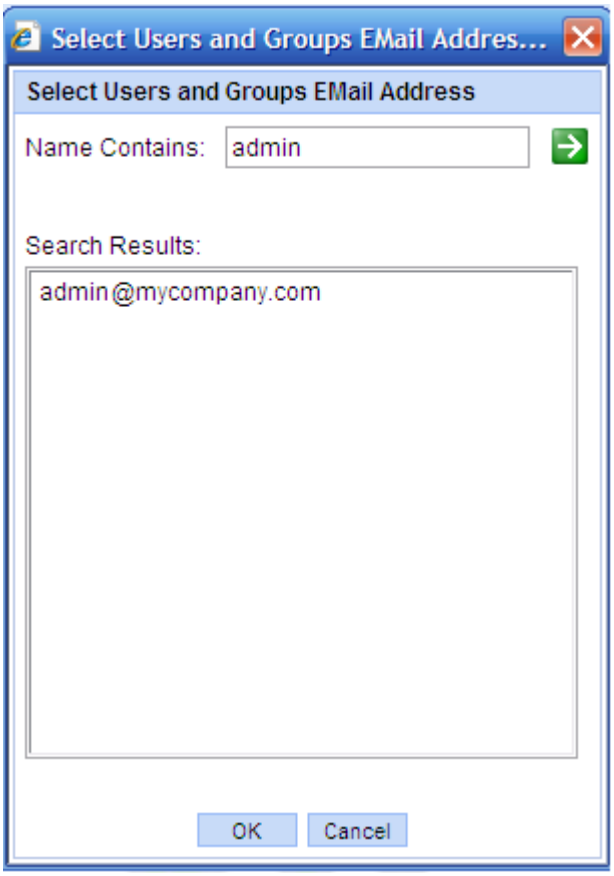
```
    <name>SMTPMailFrom</name>
    <val><![CDATA[CardioLog_Reports@intlock.com]]></val>
</param>
<param>
    <handlerId>6</handlerId>
    <name>SMTPUseSSL</name>
    <val><![CDATA[0]]></val>
</param>
<param>
    <handlerId>6</handlerId>
    <name>SMTPPort</name>
    <val><![CDATA[25]]></val>
</param>
<param>
    <handlerId>6</handlerId>
    <name>SMTPMailSubject</name>
    <val><![CDATA[CardioLog Report]]></val>
</param>
```

Note that the <handlerId> should be the CardioLogScheduler id in the <handlers> section:

```
<handler>
    <handlerId>6</handlerId>
    <handlerName>CardioLogScheduler</handlerName>
...
```



Report Scheduling - Edit Service Parameters dialog



Select Users and Groups - E-mail Address dialog

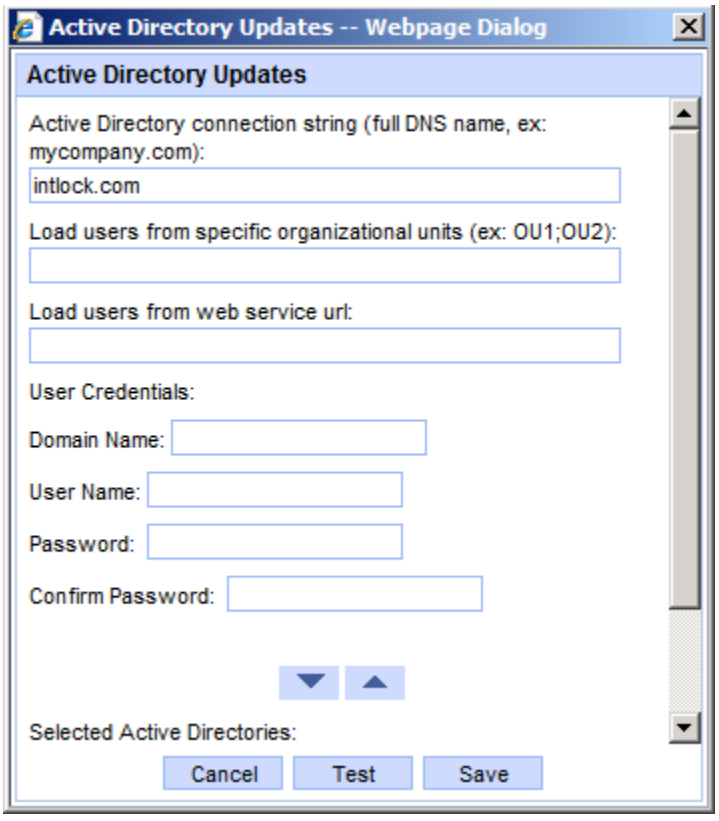
- **Active Directory Updates** - CardioLog 2010 provides the ability to segment authenticated visitors by their user names and the groups they belong to. The Active Directory Updates service component retrieves the list of users and groups directly from Active Directory.

  1. In the **General Administration** pane, expand **CardioLog Scheduling Service**.
  2. Click **Active Directory Updates**.
  3. Set the schedule type and then click **Next**.
  4. In the **Edit Service Parameters** dialog, fill out the following fields:
     - **Active Directory Connection String** - A full DNS name for the Active Directory Server. *Example: "mycompany.com"*
     - **Load Users From Specified Organizational Units -** A list of semicolon-separated organizational units. *Example: "OU1;OU2"*

By default the Active Directory Updates service component loads users from the entire Active Directory.

- **Load from external Web service URL -** this is an optional field, for loading users from an Active Directory which is located in DMZ (using a designated web service).
- **Active Directory Credentials –** this is an optional field. If the CardioLog Scheduling Service account is a member of your domain, there is no need to supply credentials.

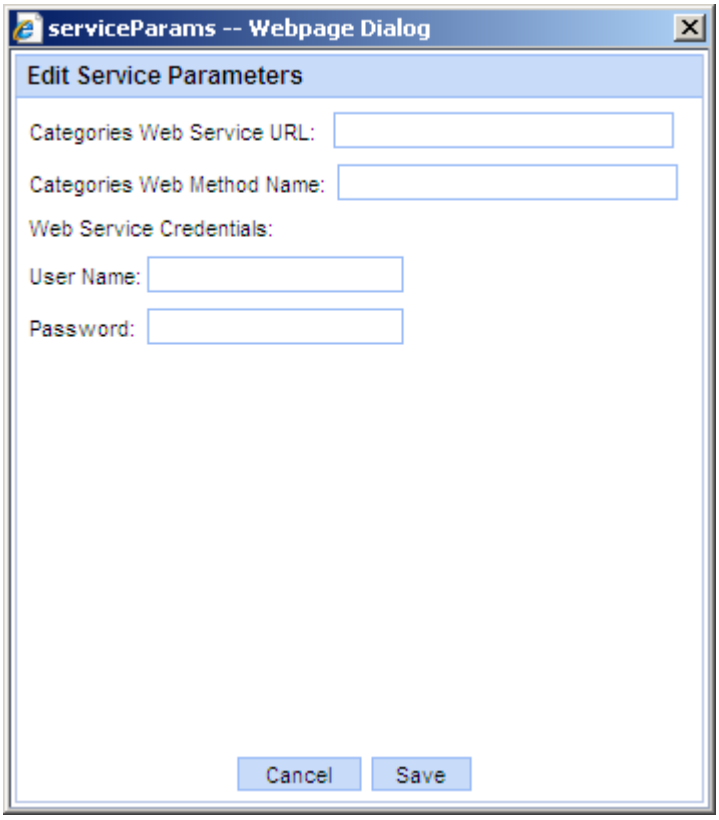
5. Click the down arrow to add the Active Directory to the selected Active Directories.
6. Select the Active Directory domain in the selected Active Directories box and click **Test** to test the connection to your domain.
7. Repeat steps 4-6 for each Active Directory domain.
8. Click **Save**, and restart **CardioLog Scheduling Service**.



Active Directory Updates - Edit Service Parameter dialog

- **User Categories Updates** - CardioLog 2010 provides the ability to segment visitors by any custom category. The User Categories Updates service component retrieves the list of custom categories from a designated web service.

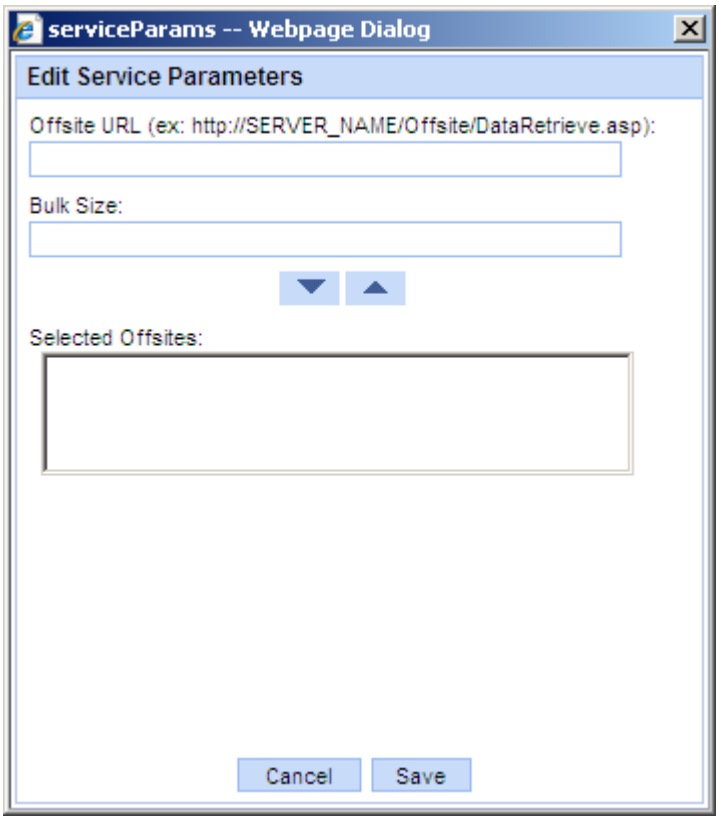
1. In the **General Administration** pane, expand **CardioLog Scheduling Service**.
2. Click **User Categories Updates**.
3. Set the schedule type and then click **Next**.
4. In the **Edit Service Parameters** dialog, fill out the following fields:
    1. **Categories Web Service URL**
    Example: "http://<SERVER_NAME>/CardioLogAPI/Categories.asmx"
    - **Web Method Name** - optional
    Example: GetCategories
    - **User Name -** optional
    - **Password -** optional
5. Click **Save**, and restart **CardioLog Scheduling Service**.



Category Agent - Edit Service Parameters dialog

- **Usage Data Processing (Remote Environments) -** CardioLog 2010 can also monitor external environments (such as internet sites) and store the tracking data in a temporary repository (CardioLog Offsite DB). The Usage Data Processing (Remote Environments) service component imports data from the temporary repository to the CardioLog 2010 database.

1. In the **General Administration** pane, expand **CardioLog Scheduling Service**.
2. Click **Usage Data Processing (Remote Environments)**.
3. Set the schedule type and then click **Next**.
4. In the **Edit Service Parameters** dialog, fill out the following fields:
    2. **Offsite URL -** the Offsite web application URL
    Example: "http://<SERVER_NAME>/OffsiteSQL/DataRetrieve.aspx"
    - **Bulk Size** - the number of events to transfer in each bulk
    Example: 100
5. Click the down arrow to add the Offsite URL to the selected Offsite URLs.
6. Click **Save**, and restart **CardioLog Scheduling Service**.



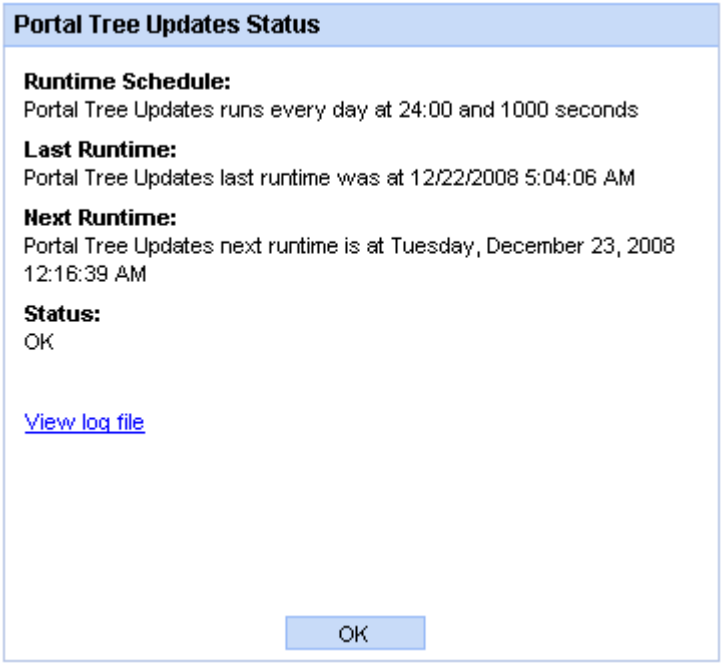
Usage Data Processing (Remote Environments) - Edit Service Parameters dialog

4.1.1.3 Calculating the Service Component Runtime

You can calculate the amount of time needed for each service component to run via the service component status window in the Diagnostics Dashboard:

1. In the **General Administration** pane, expand **System Diagnostics**.
2. Click on **Diagnostics Dashboard** and select the service component.
3. The start time is the **Runtime Schedule** and the end time is the **Last Runtime**.

For example, **Portal Tree Updates** runs 5 hours for a tree with 2,000,000 objects. It starts every day at 12:00 + 1000 seconds (12:16 A.M) and finishes at 05:04 A.M, thus the total runtime is 5 hours.



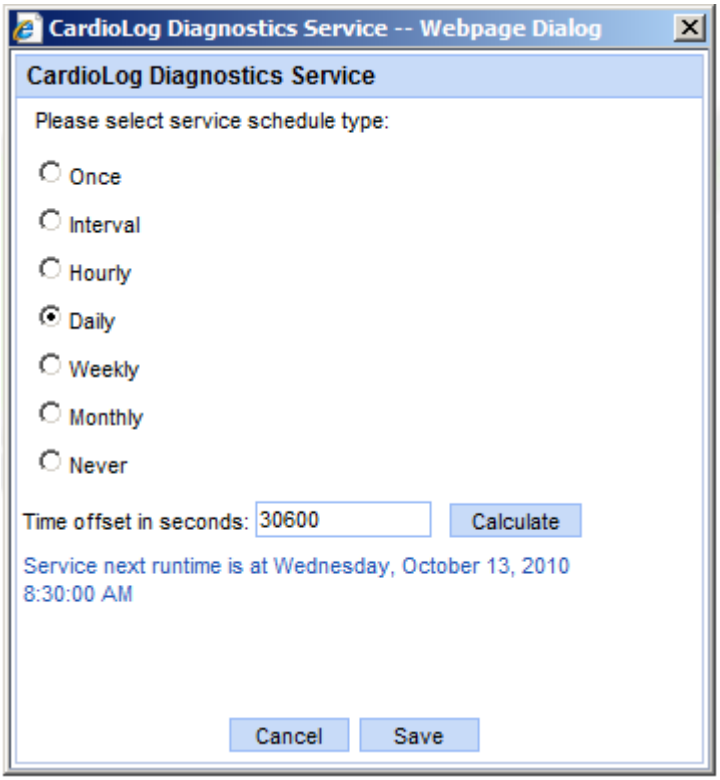
Service component status window

4.1.1.4 Scheduling the CardioLog Diagnostics Service

Schedule the CardioLog Diagnostics Service to run after the CardioLog Scheduling Service components have finished running. By default, the CardioLog Diagnostics Service runs every day at 08:30 AM.

1. In the **General Administration** pane, under **System Diagnostics** click on **CardioLog Diagnostics Service**.
2. The **CardioLog Diagnostics Service** dialog includes the following fields:
   - **Service Schedule Type** - defines the time interval to run the service component:
     - **Once** - one time only, once the service is restarted
     - **Interval** - defined in the **Time offset in seconds** fields
     - **Hourly** - Every hour, on the hour
     - **Daily** - Every day at 12:00 AM
     - **Weekly** - Every Sunday at 12:00 AM
     - **Monthly** - Every month, on the 1st, at 12:00 AM
     - **Never** – not at any time
   - **Time offset in seconds-**time (in seconds) added for the selected schedule type. Example 1: If the schedule type is Daily, and Time offset in seconds is 3600, then the service component will run every day a 01:00 AM.

Example 2: If the schedule type is Interval and Time offset in seconds is 1800, then the service component will run every 30 minutes.

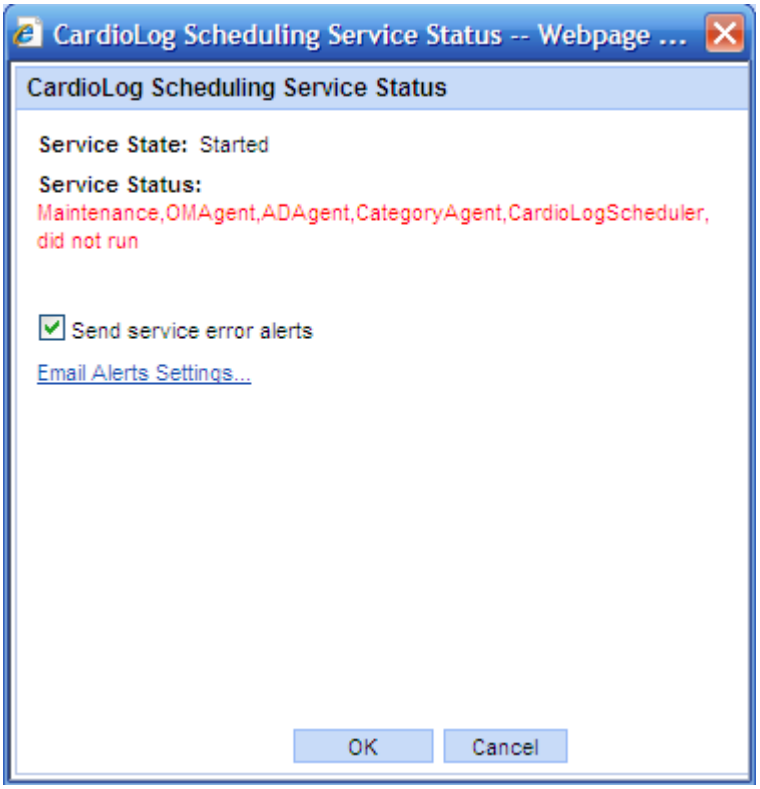


CardioLog Diagnostics Service dialog

3. In order to commit changes, you must restart the 'CardioLog Diagnostics Service' service. Click on **Start**>**Run**> services.msc
4. Right click on **CardioLog Diagnostics Service** and select **Restart.**

4.1.1.5 Configuring E-mail Alert Settings

1. In the **General Administration** pane, under **System Diagnostics** click on **Diagnostics Dashboard**.
2. In the **Services** table, click on **CardioLog Scheduling Service** in order to view the status of the service.



Diagnostics Service Status dialog

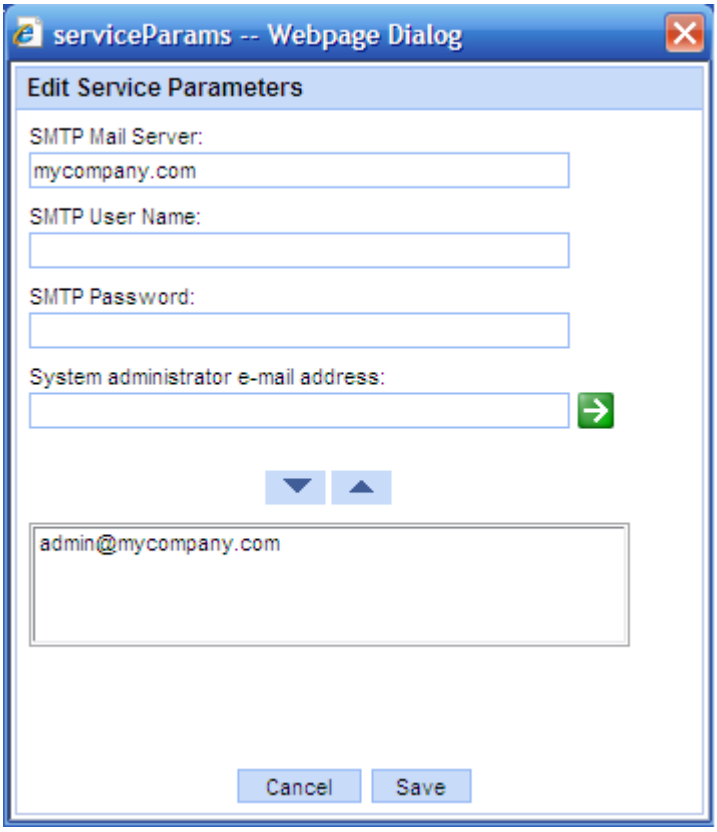
3. In the **CardioLog Scheduling Service Status** dialog, check the **Send service error alerts** checkbox.
4. Click on **Email Alerts Settings** to configure the e-mail settings.
5. In the **Configure Email Settings** dialog, fill out the following fields:
   - **SMTP Mail Server** - A full DNS name for the SMTP Server. *Example: "mycompany.com"*
   - **SMTP User Name, SMTP Password -** these are optional fields, for supplying credentials.
   - **System Administrator e-mail address -** recipients list for service error alerts. Click on the right arrow to select Email addresses.
6. Click the down arrow to add the e-mail address to the selected recipients list.
7. Click **Save**, and restart **CardioLog Scheduling Service**.

To configure a secure SMTP server with a non-default port, or the CardioLog reports email sender and subject, edit the following keys in the [CardioLog Installation Folder]\CardioLogSchedulingService\Settings.config file in the <handlersParams> section:

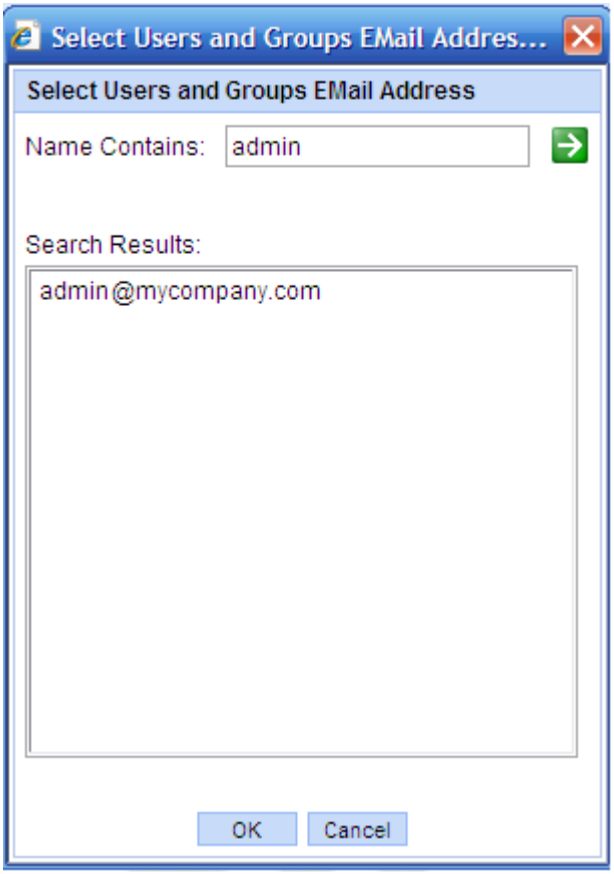
```
<param>
    <handlerId>6</handlerId>
    <name>SMTPMailFrom</name>
    <val><![CDATA[CardioLog_Reports@intlock.com]]></val>
</param>
<param>
    <handlerId>6</handlerId>
    <name>SMTPUseSSL</name>
    <val><![CDATA[0]]></val>
</param>
<param>
    <handlerId>6</handlerId>
    <name>SMTPPort</name>
    <val><![CDATA[25]]></val>
</param>
<param>
    <handlerId>6</handlerId>
    <name>SMTPMailSubject</name>
    <val><![CDATA[CardioLog Report]]></val>
</param>
```

Note that the <handlerId> should be the CardioLogScheduler id in the <handlers> section:

```
<handler>
    <handlerId>6</handlerId>
    <handlerName>CardioLogScheduler</handlerName>
…
```



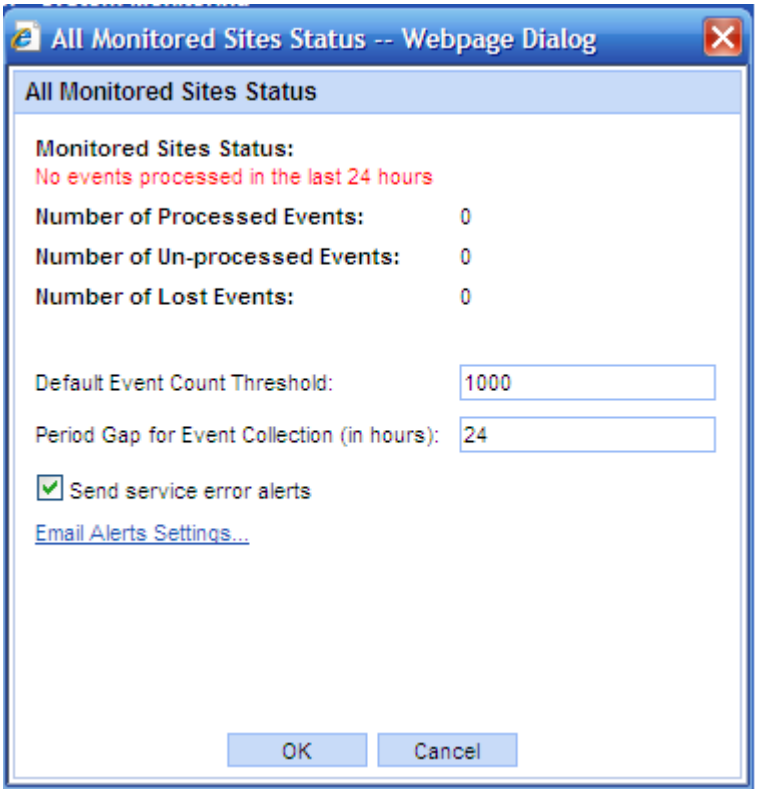
Configure Email Settings dialog



Select Users and Groups E-mail Address dialog

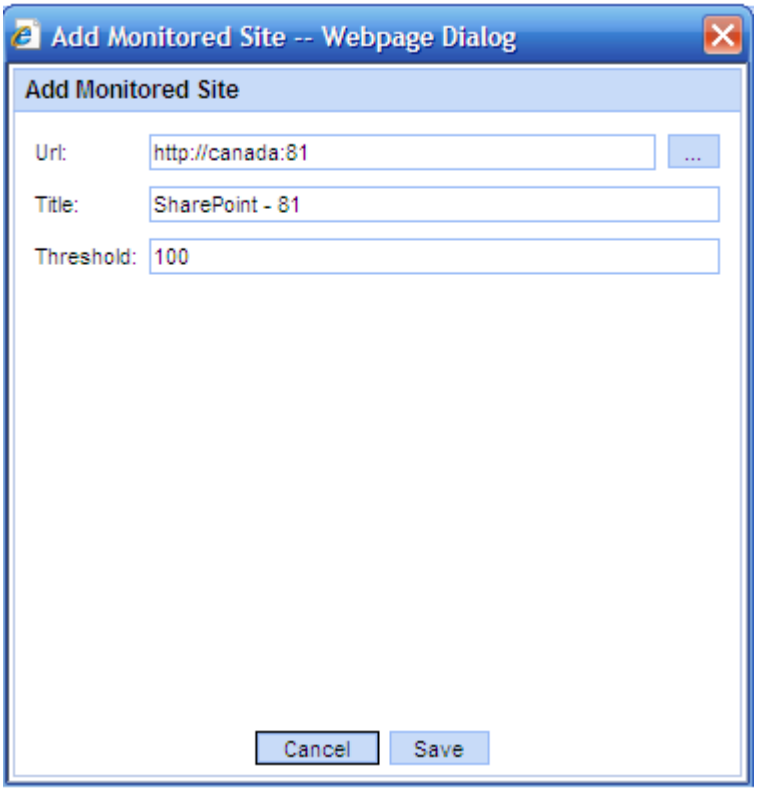
4.1.1.6 Defining a threshold for each monitored web site

1. In the **General Administration** pane, under **System Diagnostics** click on **Diagnostics Dashboard**.
2. In the **Tracking Agents** table, click on **All Monitored Sites Status** dialog to define the **Default Event Count Threshold** and the **Event Count Period (in hours)**for all web sites.



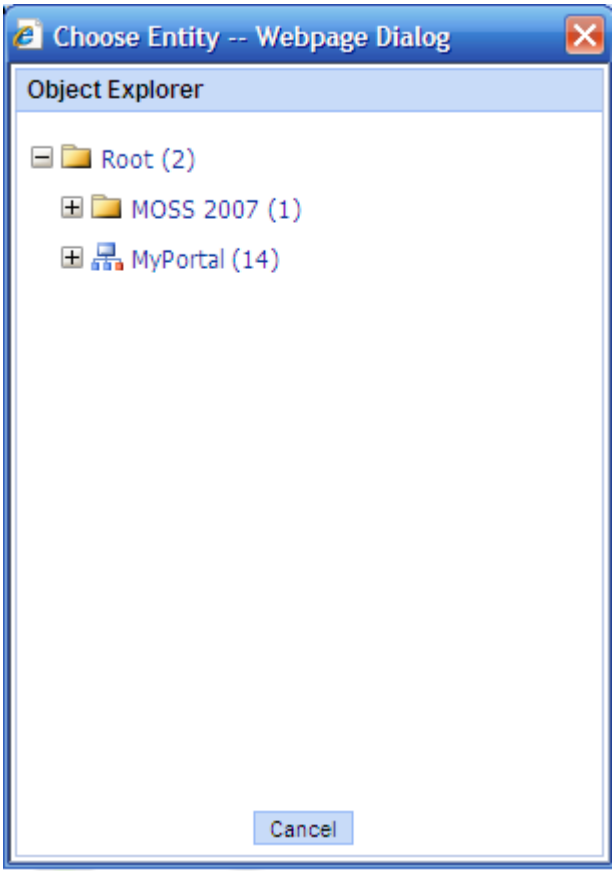
All Monitored Sites Status dialog

3. In the **All Monitored Sites Status** dialog, select the **Send service error alerts** in order to get service error alerts via e-mail. These alerts are sent when the event count for all monitored sites is under the threshold.
4. Click on **Email Alerts Settings** to configure the e-mail settings.
5. In the **Tracking Agents** table, click on **Add a Monitored Site**.



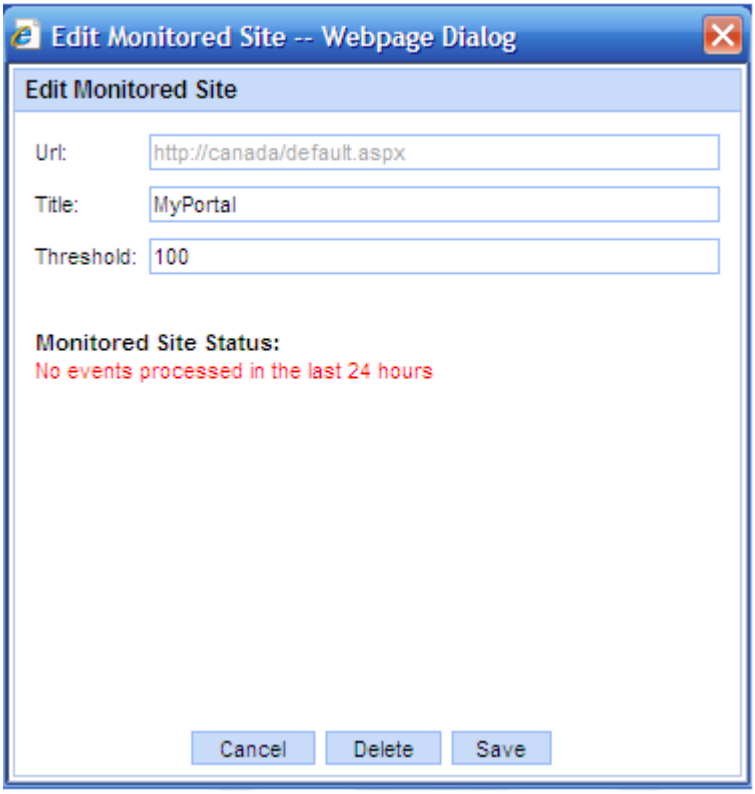
Add Monitored Site dialog

6. In the **Add Monitored Site** dialog, click on Browse (...) in order to select a site from Object Explorer. Enter the default event count threshold for this site in the **Threshold** field.



Choose a site from the Object Explorer dialog

7. In the **Tracking Agents** table, click on each **Monitored Site** in order to edit or delete it.



Edit Monitored Site dialog

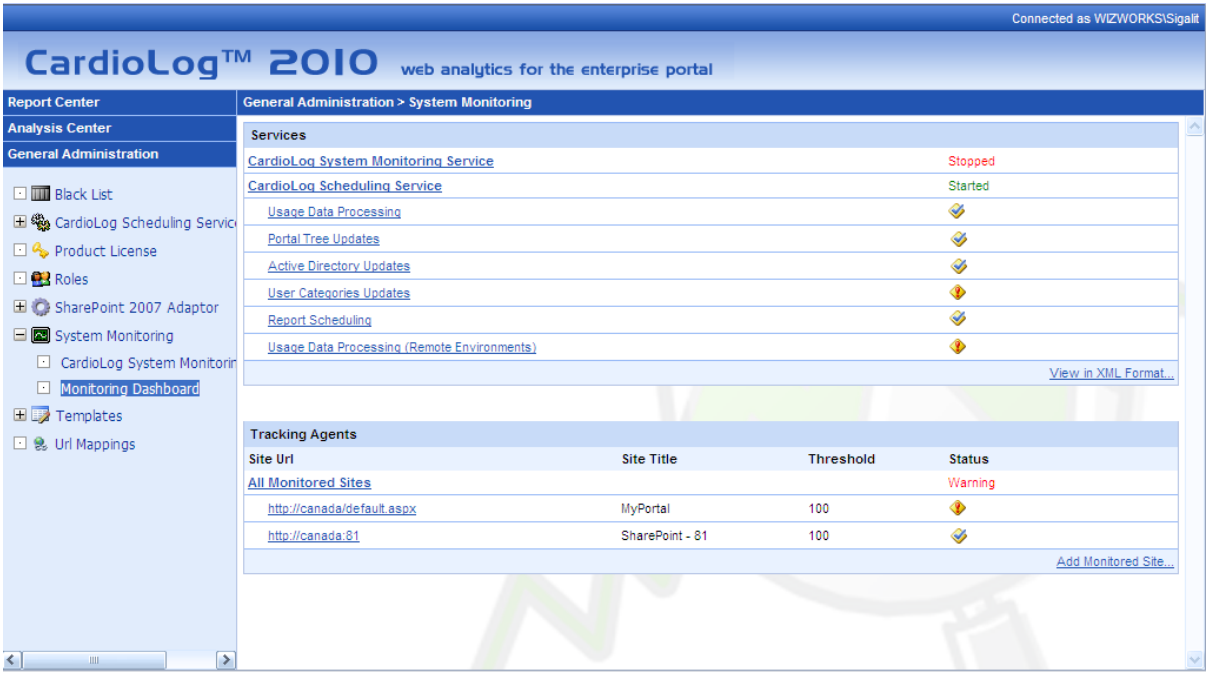
4.1.2 Diagnostics Dashboard

The Diagnostics Dashboard enables the detection and correction of faults in the CardioLog Scheduling Service components and tracking agents.

3. Viewing the current status of the CardioLog Scheduling Service components and tracking agents
4. Troubleshooting errors in the CardioLog Services
5. Troubleshooting errors in the Tracking Agents
6. Troubleshooting errors in the CardioLog UI

4.1.2.1 Viewing the status of the CardioLog Scheduling Service components

1. In the **General Administration** pane, under **System Diagnostics** click on **Diagnostics Dashboard**.

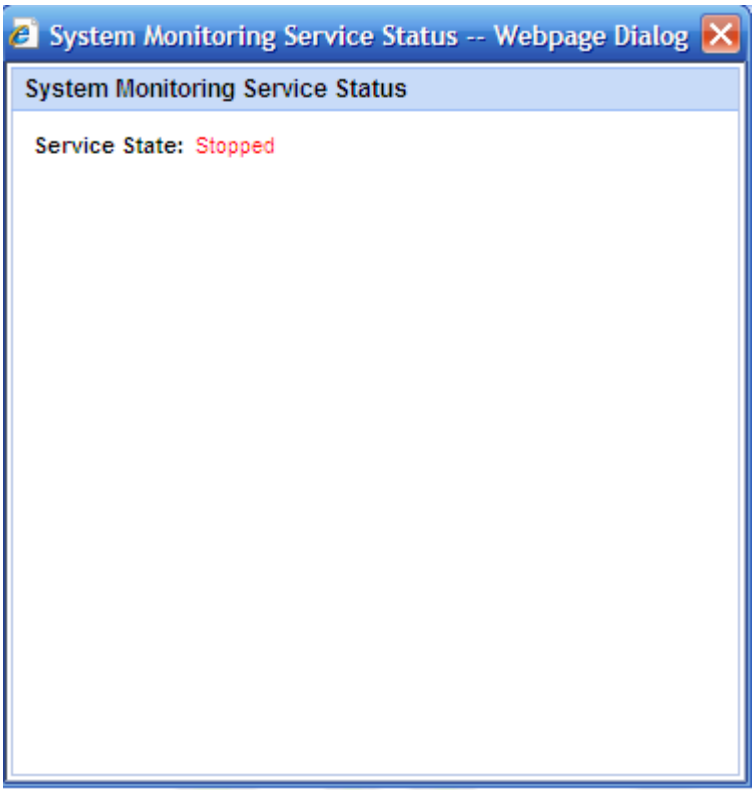


Diagnostics Dashboard dialog

2. In the **Services** table, click on **CardioLog Diagnostics Service** in order to view the status of the service.

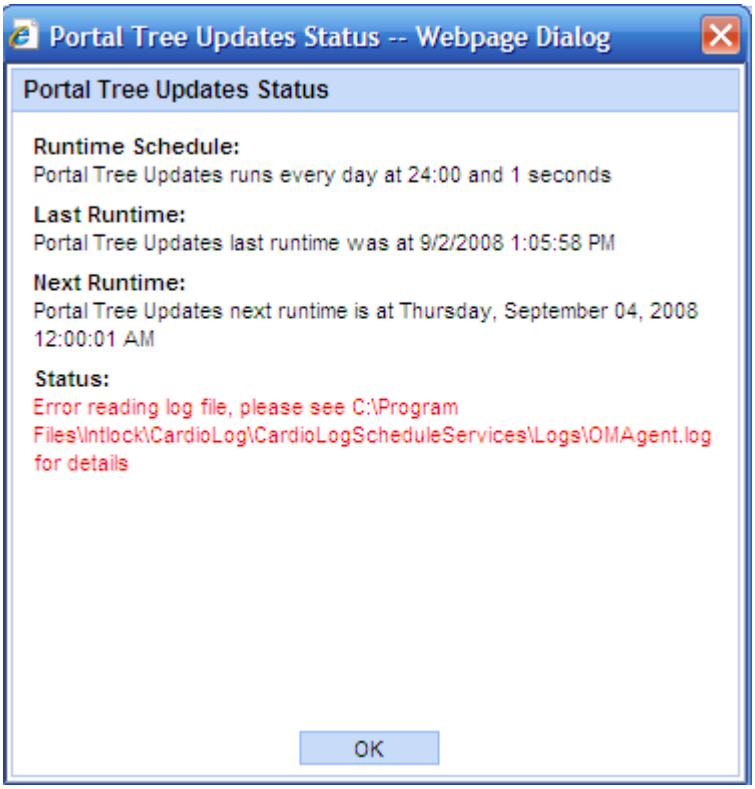
Services	
CardioLog System Monitoring Service	Started
CardioLog Scheduling Service	Started
Portal Tree Updates	
Usage Data Processing	
Report Scheduling	
Usage Data Processing (Remote Environments)	
Active Directory Updates	
User Categories Updates	
	View in XML Format...

CardioLog Services Diagnostics Dashboard



Diagnostics Service Status dialog

2. In the **Services** table, click on each service component to view its status.



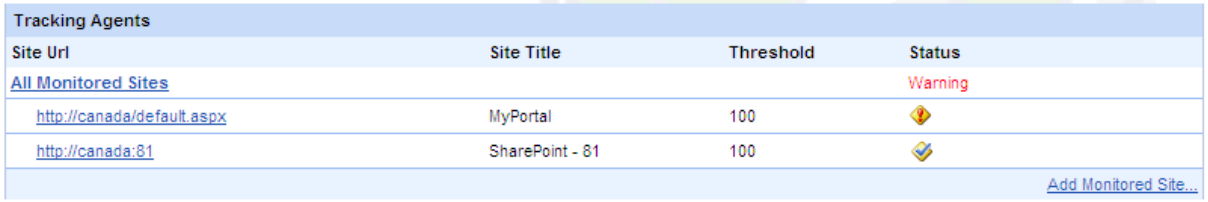
Portal Tree Updates dialog

3. In the **Service Component** dialog, click on **View log file** to view the service component log file.
4. In the **Services** table, click on **View in XML Format** to view the status of all service components - in a single XML web page. This web page can be used by other monitoring systems in your organization as well.

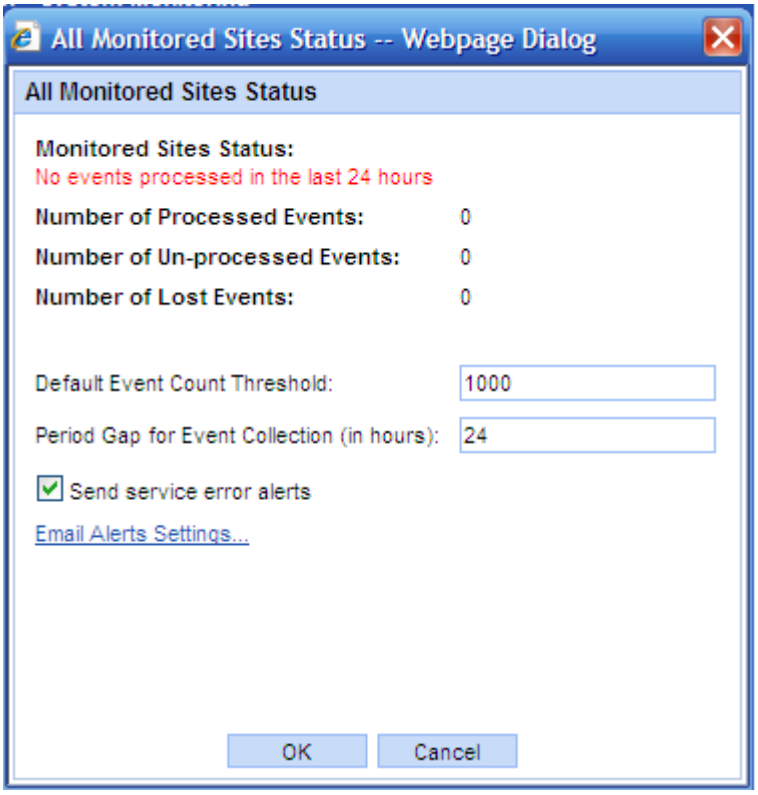
4.1.2.2 How to view the status of the monitored websites

By default, alerts are sent via e-mail when the event count for all monitored websites is under the defined threshold. It is recommended to define a threshold for each monitored website - to better isolate usage tracking issues.

1. In the **General Administration** pane, under **System Diagnostics** click on **Diagnostics Dashboard**.
2. In the **Tracking Agents** table, click on **All Monitored Sites** to view the status of all of the monitored websites.

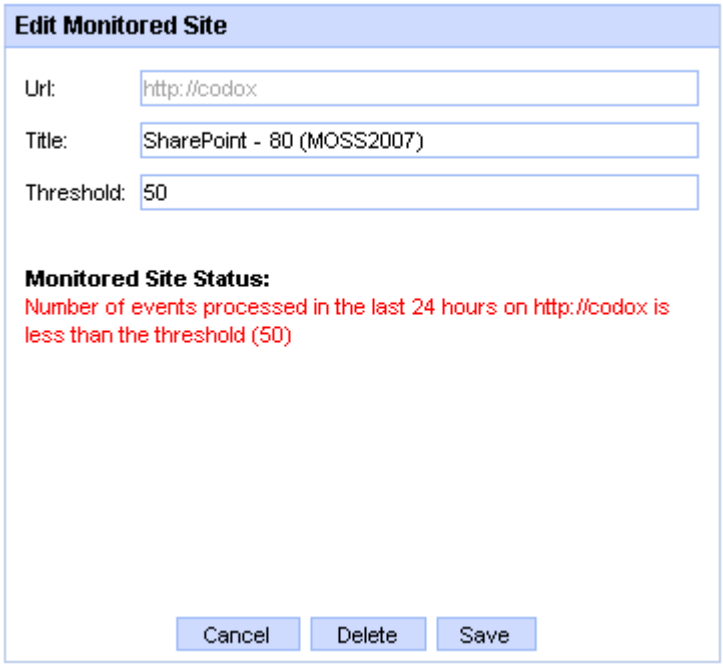


CardioLog Tracking Agents Diagnostics Dashboard



All Monitored Sites Status dialog

3. In the **Tracking Agents** table, click on each of the **Monitored Sites** to view its status.



Monitored Site Status dialog

4.1.2.3 Troubleshooting Errors in the CardioLog Services

Both the CardioLog Scheduling Service and the CardioLog Diagnostics Service write messages to log files. You can view the log files:

- Locally on the CardioLog server in the service logs file path.
- Remotely from the Diagnostics Dashboard.

Viewing logs can be performed by a user with a local administrator account on the CardioLog server and with a CardioLog Administrator role.

4.1.2.3.1 CardioLog Scheduling Service

Log File - CardioLogServices.log:

```
_____________________________________________
// Service started successfully
Time    : 27/01/2009 08:29:49
Message : Started
_____________________________________________
// Service stopped successfully
Time    : 27/01/2009 08:39:27
Message : Stopped
```

Possible Faults

Starting the service may fail due to:

- Database connection problem -verify that the CardioLog Scheduling Service login account can connect to the CardioLog database.

```
Error   : Could not load HandlersInstances: An error has occurred while establishing a connection to the server. When connecting to SQL Server 2005, this failure may be caused by the fact that under the default settings SQL Server does not allow remote connections. (provider: Named Pipes Provider, error: 40 - Could not open a connection to SQL Server)
```

4.1.2.3.2 CardioLog Diagnostics Service

Log File - CardioLogSystemMonitoringServices.log:

```
_____________________________________________
// Service started successfully
Time    : 27/01/2009 08:29:49
```

```
Message : Started

_____________________________________________

// Service stopped successfully
Time    : 27/01/2009 08:39:27
Message : Stopped
```

Possible Faults

Starting the service can fail due to:

- Internal error – verify that the diagnostics web service is available by browsing to the following Url:
  http://<cardiologserver>:<port>/CardioLogAPI/Monitor/Logs/Monitor.aspx
  Contact Intlock if you receive an error message.

```
Error   : Internal error in the CardioLog Monitoring Service. (Exception: The remote server returned an error: (500) Internal Server Error.)
```

- SMTP not configured -Configure the e-mail alert settings.

```
Error   : CardioLog Diagnostics Service failed to start.  (Exception: SMTP mail server is not configured)
```

Sending e-mail alerts can fail due to:

- SMTP connection problem - verify that the CardioLog Scheduling Service login account can connect to the SMTP services.

```
Error   : Failed to send an email alert to the system administrator. (Exception: System.ApplicationException: Send Mail Exception: Failed to connect to SMTP mail server
   at CardioLog.API.Util.SendMail(String SMTPMailServer, String SMTPUser, String SMTPPassword, String from, String to, String subject, String body, MessageType type)
   at CardioLog.Services.CardioLogMonitoringServices.OnStart(String[] args))
```

4.1.2.3.3 Active Directory Updates

Log File - ADAgent.log:

```
_____________________________________________

// Loading users and groups from Active Directory
Time    : 6/19/2008 12:00:07 AM
Message : Loading directory: corp.compay.com

_____________________________________________
```

```
// Loading users and groups from CardioLog database
Time    : 6/19/2008 12:25:38 AM
Message : Loading xml to db…
Time    : 6/19/2008 12:25:42 AM
Message : Loading xml to db: Success
_____________________________________________
// Comparing both repositories and updating CardioLog database
Time    : 6/19/2008 12:25:50 AM
Message : Refreshing users and groups…
_____________________________________________
Time    : 6/19/2008 12:25:50 AM
Message : Refreshing users and groups: Success
_____________________________________________

// Updating service last run time in CardioLog database
Time    : 6/19/2008 12:28:02 AM
Message : Updating last run global setting
_____________________________________________
// Service finished successfully
Time    : 6/19/2008 12:28:02 AM
Message : Done
```

Possible Faults

Loading from Active Directory can fail due to:

- Invalid parameters-verify that the Active Directory connection string is in a FQDN format (corp.mycompany.com). If you have defined specific organizational units to load from, verify that they exist.

```
Error    : Exception: There is no such object on the server.
, Stack Trace:    at System.DirectoryServices.DirectoryEntry.Bind(Boolean throwIfFail)
   at System.DirectoryServices.DirectoryEntry.Bind()
   at System.DirectoryServices.DirectoryEntry.get_AdsObject()
   at System.DirectoryServices.DirectorySearcher.FindAll(Boolean findMoreThanOne)
   at System.DirectoryServices.DirectorySearcher.FindAll()
   at CardioLog.API.DirectoryServices.DirectoryServices.LoadUsers(String userAlias, Boolean verbose)
   at CardioLog.API.DirectoryServices.DirectoryServices.Load(String DN, String userAlias, Boolean verbose)
   at CardioLog.Services.SystemServices.ADAgent.ActivateService()
```

- Insufficient permissions - verify that the CardioLog Scheduling Service login account has read access to Active Directory. If you have supplied credentials, verify that they are valid (if the CardioLog Scheduling Service login account is in the same domain, there is no need to supply credentials).

```
Error   : Exception: Logon failure: unknown user name or bad password.
, Stack Trace:    at System.DirectoryServices.DirectoryEntry.Bind(Boolean throwIfFail)
   at System.DirectoryServices.DirectoryEntry.Bind()
   at System.DirectoryServices.DirectoryEntry.get_AdsObject()
   at System.DirectoryServices.DirectorySearcher.FindAll(Boolean findMoreThanOne)
   at System.DirectoryServices.DirectorySearcher.FindAll()
   at CardioLog.API.DirectoryServices.DirectoryServices.LoadUsers(String userAlias, Boolean verbose)
   at CardioLog.API.DirectoryServices.DirectoryServices.Load(String DN, String userAlias, Boolean verbose)
   at CardioLog.Services.SystemServices.ADAgent.ActivateService()
```

- Timeout caused by a slow network - increase the tree web service timeout.
  The AD tree web service timeout can be configured in the **Web.config** file:
  In [CardioLog Installation Folder]\ADDataService\Web.config, edit the <httpRuntime> element in the <system.web>section:
  ExecutionTimeout property - indicates the maximum number of seconds a request is allowed to execute before being automatically shut down by ASP.NET. The default timeout is 90 seconds.

```
<system.web>
<httpRuntime executionTimeout="7200" maxRequestLength="2000000"/>
</system.web>
```

```
Error   : Exception: The operation has timed out, Stack Trace:    at
System.Net.HttpWebRequest.GetResponse()
   at CardioLog.Services.SystemServices.ADAgent.ActivateService() in
C:\Data\Development\CardioLogSolution\SystemServices\ADAgent.cs:line 113
```

- Network errors -make sure the FQDN name you defined exists in the DNS. You also need to make sure that TCP port 389 is open to the DC, as your traffic might be getting blocked by the firewall.

```
Error   : Exception: The server is not operational.
, Stack Trace:    at System.DirectoryServices.DirectoryEntry.Bind(Boolean throwIfFail)
   at System.DirectoryServices.DirectoryEntry.Bind()
   at System.DirectoryServices.DirectoryEntry.get_AdsObject()
   at System.DirectoryServices.PropertyValueCollection.PopulateList()
   at System.DirectoryServices.PropertyValueCollection..ctor(DirectoryEntry entry, String propertyName)
   at System.DirectoryServices.PropertyCollection.get_Item(String propertyName)
   at CardioLog.API.DirectoryServices.DirectoryServices.LoadUsers(String userAlias, Boolean verbose)
   at CardioLog.API.DirectoryServices.DirectoryServices.Load(String DN, String userAlias, Boolean verbose)
   at CardioLog.Services.SystemServices.ADAgent.ActivateService()
```

Reading and writing to the CardioLog database can fail due to:

- Insufficient permissions -verify that the CardioLog Scheduling Service login account is assigned a db_owner role for the CardioLog database.
- Insufficient resources -verify that your system has enough resources according to system requirements.
- Internal service error-contact Intlock

```
Error   : Exception: Loadind directory failed with error:Validating AD xml failed with error:The 'log' element is not declared., Stack Trace:    at CardioLog.API.DirectoryServices.DirectoryServices.Load(String xml) in C:\Data\Development\CardioLogSolution\API\DirectoryServices\DirectoryServices.cs:line 713
   at CardioLog.Services.SystemServices.ADAgent.ActivateService() in C:\Data\Development\CardioLogSolution\SystemServices\ADAgent.cs:line 119
```

4.1.2.3.4 Portal Tree Updates

Log File - OMAgent.log

```
_____
// Loading SharePoint 2007 tree (to SP2007Tree.xml)
Time    : 11/26/2008 12:18:25 AM
Message : Loading from:
http://CardioLogServer/SP2007Tree/default.aspx?output=file&logFilePath=D:\CardioLog Services\Logs\sp2007Tree.xml

_____
// Loading custom trees
Time    : 11/26/2008 12:35:34 AM
Message : Loading from: http://CardioLogServer/companymsstree/default.aspx

_____
Time    : 11/26/2008 12:46:42 AM
Message : Get Tree: Success

_____
// Loading trees xml (OMTree.xml) to a temporary table (tab_sharepoint_tree_load) in CardioLog database
Time    : 11/26/2008 12:46:42 AM
Message : Loading Xml to DB...

_____
Time    : 26/11/2008 02:32:48
Message : Load Xml to DB: Success

_____
```

// Checking for duplicate URLs in tree in CardioLog database (the URL is the unique identifier for tree objects)
Time : 26/11/2008 02:32:48
Message : No Duplicate Urls.

// Shrinking SQL log file
Time : 26/11/2008 02:32:48
Message : Shrinking SQL Log File...

Time : 26/11/2008 02:32:48
Message : Shrink Log File: Success

// Updating the old tree (located in the tab_sharepoint_tree table) after comparing it with the new tree (located in the tab_sharepoint_tree_load table) in CardioLog database
Time : 26/11/2008 02:32:48
Message : Refreshing OM Tree...

Time : 26/11/2008 04:13:28
Message : Refresh OM Tree: Success

// Updating inventory count for tree item types
Time : 26/11/2008 04:13:28
Message : Counting Inventory

// Fixing lost events (events that are not associated with tree items)
Time : 26/11/2008 04:13:43
Message : Fixing lost events and cached data...

Time : 26/11/2008 04:14:56
Message : Fix lost events: Success

// Updating service last run time in CardioLog database
Time : 26/11/2008 04:14:56
Message : Updating last run global settings.

```
Time    : 26/11/2008 04:14:56
Message : Service run complete.

_____________________________________________
// Checking if tree structure is valid (lost branch - a tree item with no parent item)
Time    : 26/11/2008 04:14:56
Message : Finding lost branches

_____________________________________________
Time    : 26/11/2008 04:15:19
Message : No lost branches found.

_____________________________________________
// DeleteAnalysisCenter html tree cache
Time    : 26/11/2008 04:15:26
Message : Clean CardioLog tree cache

_____________________________________________
// Service finished successfully
Time    : 26/11/2008 04:15:26
Message : OMAgent run complete.
```

Possible Faults

Loading from the SharePoint tree web service can fail due to: (For more details view the SP20XXTree web application log file - SP20XXTree.log)

- Insufficient permissions - verify that the CardioLog Scheduling Service login account has read access to all the admin and content SharePoint databases, and read access to the SharePoint TEMPLATE path: *\\sharepointserver\C$\Program Files\Common Files\Microsoft Shared\web server extensions\1X\TEMPLATE*

```
Error   : Exception: An error has occurred while establishing a connection to the server.  When connecting to SQL Server 2005, this failure may be caused by the fact that under the default settings SQL Server does not allow remote connections. (provider: Named Pipes Provider, error: 40 - Could not open a connection to SQL Server), Stack Trace:    at System.Data.ProviderBase.DbConnectionPool.GetConnection(DbConnection owningObject)
   at System.Data.ProviderBase.DbConnectionFactory.GetConnection(DbConnection owningConnection)
   at System.Data.ProviderBase.DbConnectionClosed.OpenConnection(DbConnection outerConnection, DbConnectionFactory connectionFactory)
   at System.Data.SqlClient.SqlConnection.Open()
   at Microsoft.ApplicationBlocks.Data.SqlHelper.ExecuteReader(String connectionString, CommandType commandType, String commandText, SqlParameter[] commandParameters)
   at CardioLog.API.GlobalSettings.Load(String category, String name)
   at CardioLog.API.GlobalSettings..ctor(String category, String name)
```

```
   at CardioLog.Services.SystemServices.OMAgent.GetXml()
   at CardioLog.Services.SystemServices.OMAgent.ActivateService()
```

- Timeoutcaused by a slow network -increase the tree web service timeout.
  The tree web service timeout can be configured in the **Web.config** file:
  In [CardioLog Installation Folder]\SP20XXTree\Web.config, edit the <httpRuntime> element in the <system.web>section:
  ExecutionTimeout property - indicates the maximum number of seconds a request is allowed to execute before being automatically shut down by ASP.NET. The default timeout is 90 seconds.

```
<system.web>
<httpRuntime executionTimeout="7200" maxRequestLength="2000000"/>
</system.web>
```

```
Error   : Exception: The operation has timed out, Stack Trace:    at
System.Web.Services.Protocols.WebClientProtocol.GetWebResponse(WebRequest request)
   at System.Web.Services.Protocols.HttpWebClientProtocol.GetWebResponse(WebRequest request)
   at System.Web.Services.Protocols.SoapHttpClientProtocol.Invoke(String methodName, Object[] parameters)
   at TreeWS.Invalidate()
   at CardioLog.Services.SystemServices.OMAgent.ActivateService()
```

- Insufficient resources-verify that your system has enough resources according to system requirements.

```
Error   : Exception: There is insufficient system memory to run this query.
Warning! The maximum key length is 900 bytes. The index 'IDX_SHAREPOINT_TREE_LOAD_LOCATION' has
maximum length of 1000 bytes. For some combination of large values, the insert/update operation will fail.
Warning! The maximum key length is 900 bytes. The index 'IDX_SHAREPOINT_TREE_LOAD_URL' has
maximum length of 2000 bytes. For some combination of large values, the insert/update operation will fail.
The statement has been terminated., Stack Trace:    at CardioLog.API.OMLoader.LoadXmlToDB()
   at CardioLog.Services.SystemServices.OMAgent.ActivateService()
```

- Network errors

```
Error   : Exception: A transport-level error has occurred when sending the request to the server. (provider:
Shared Memory Provider, error: 0 - No process is on the other end of the pipe.), Stack Trace:    at
CardioLog.API.OMLoader.LoadXmlToDB()
   at CardioLog.Services.SystemServices.OMAgent.ActivateService()
```

- Internal web service error -contact Intlock

Loading from a custom tree web services can fail due to:

- Network errors
- Internal web service error - contact the web service developer.

Reading and writing to the CardioLog database can fail due to:

- Insufficient permissions -verify that the CardioLog Scheduling Service login account has a db_owner role on the CardioLog database.
- Insufficient resources -verify that your system has enough resources according to the system requirements.
- Internal service error -contact Intlock

Delete html tree cache can fail due to:

- Clean tree cache web service URL is unavailable -verify you can browse to *http://CardioLogServer/CardioLog/Tree/TreeWS.asmx*

```
Error   : Failed to clean CardioLog tree cache, check cache directory path
```

Extended Logging for the SP20XXTree web application

Turn on message logging in order to trace the SP20XXTree web application:

Add the "Message" switch in [CardioLog Installation Folder]\SP20XXTree\Web.config:

```
<add key="logType" value="Message,Warning,Error" />
```

4.1.2.3.5 Usage Data Processing

Log File -Maintenance.log:

```
_____________________________________________
// Executing the usage data processing procedure (stp_eventlog_migrate), including the black list filters (which data not to collect), on CardioLog database
Time    : 29/01/2009 13:01:00
Message : Starting
_____________________________________________
// Archiving history events and verifying events quota (according to product edition license)
```

```
Time    : 29/01/2009 13:01:00
Message : Archiving events...

_____________________________________________

Time    : 29/01/2009 13:01:03
Message : Archiving successful.

_____________________________________________

Time    : 29/01/2009 13:01:03
Message : Verifying page views monthly quota...

_____________________________________________

// Updating service last run time in CardioLog database
Time    : 29/01/2009 13:01:03
Message : Updating last run global setting

_____________________________________________

// Service finished successfully
Time    : 29/01/2009 13:01:04
Message : Finished
```

Possible Faults

Execution of the Usage Data Processing procedure the CardioLog database can fail due to:

- Insufficient permissions -verify that the CardioLog Scheduling Service login account is assigned a db_owner role for the CardioLog database.
- Internal service error -contact Intlock

```
Error : Failed to migrate temp EventLog items: A severe error occurred on the current command.  The results, if any, should be discarded.
A severe error occurred on the current command.  The results, if any, should be discarded.
step #1
step #2
step #3
```

4.1.2.3.6 Report Scheduling

Log File - CardioLogScheduler.log:

```
_____________________________________________

Time    : 10/28/2008 4:59:59 AM
Message : Start Scheduler

_____________________________________________
```

// Deleting cached reports versions (controls data and charts images)
Time : 10/28/2008 4:59:59 AM
Message : Deleting Temp Images

Time : 10/28/2008 5:00:03 AM
Message : Deleting Controls Cache

// Getting all the reports that should be generated automatically
Time : 10/28/2008 5:00:03 AM
Message : Getting scheduled reports

// Generating the reports and sending emails to their distribution lists
Time : 10/28/2008 5:00:12 AM
Message : Report Id: 1a88f32d-fb86-4346-bcfb-005ed2661083 was generated successfully.

Time : 10/28/2008 5:00:15 AM
Message : Report Id: bd3496ae-8e08-4df8-b1ab-027b4959d63a was generated successfully.

Time : 10/27/2008 6:12:38 AM
Message : Mail sent to: RuthD@company.com

// Updating service last run time in CardioLog database
Time : 10/27/2008 6:12:38 AM
Message : Updating last run global setting

// Service finished successfully
Time : 10/27/2008 6:12:38 AM
Message : End Scheduler

Possible Faults

The Generation of reports on the CardioLog database can fail due to:

- Insufficient permissions - verify that the CardioLog Scheduling Service login account is assigned a db_owner role on the CardioLog database.

- Internal error caused by a "heavy" report – view the "recommendations for efficient report creation" or contact Intlock

```
Error   : Report Id: 060ad715-cd6e-4e02-9e3a-b94ab3f63d8f failed. Exception: The remote server returned an error: (500) Internal Server Error., Stack Trace:    at System.Net.HttpWebRequest.GetResponse()
   at CardioLog.Services.SystemServices.CardioLogScheduler.ActivateService()
```

- Timeoutcaused by a "heavy" report - view efficient report creation recommendations or contact Intlock

```
Error   : Report Id: 3dc7a74d-3445-450a-ad43-405fd2ad1ce8 failed. Exception: The operation has timed out, Stack Trace:    at System.Net.HttpWebRequest.GetResponse()
   at CardioLog.Services.SystemServices.CardioLogScheduler.ActivateService() in C:\Data\Development\CardioLogSolution\SystemServices\CardioLogScheduler.cs:line 98
```

- Internal service error - verify that you can browse to *http://CardioLogServer/CardioLog/data/generateReports.aspx* or contact Intlock

```
Error   : Report Id: d4d722e8-c96f-4c01-824a-87f92d104610 failed. Exception: The remote server returned an error: (500) Internal Server Error., Stack Trace:    at System.Net.HttpWebRequest.GetResponse()
   at CardioLog.Services.SystemServices.CardioLogScheduler.ActivateService() in C:\Data\Development\CardioLogSolution\SystemServices\CardioLogScheduler.cs:line 98
```

In order to identify the report causing the problem, run the following query against the CardioLog database (use the [report id] from the error message):

```
select [name] from tab_virtual_tree
where EntityId='[the report id]'
```

Sending emails to report distribution lists can fail due to:

- SMTP connection problem - verify that the CardioLog Scheduling Service login account can connect to the SMTP services.

4.1.2.3.7 Usage Data Processing (Remote Environments)

Log File - OffsiteAgent.log:

```
_____________________________________

Time    : 2/11/2009 2:00:00 PM
Message : Offsite URL is http://OffsiteServer/CardioLogOffsite/DataRetrieve.asp and bulk size is 100

_____________________________________
```

// Getting events count from offsite web service
Time : 2/11/2009 2:00:01 PM
Message : Offsite count is 95

// Transferring bulks of events (according to bulk size) to CardioLog database and deleting them from the offsite repository
Time : 2/11/2009 2:00:01 PM
Message : Starting event transfer...

Time : 2/11/2009 2:00:43 PM
Message : Events from 0 to 100 transfered successfully, deleting from Offsite event id from 8990955 to 8991049

// Service finished successfully
Time : 2/11/2009 2:00:44 PM
Message : Done.

OR

Time : 7/14/2008 11:16:53 PM
Message : Offsite URL is http://OffsiteServer/CardioLogOffsite/DataRetrieve.asp and bulk size is 100

Time : 7/14/2008 11:16:56 PM
Message : Offsite count is 0

// Service finished successfully
Time : 7/14/2008 11:16:56 PM
Message : No events to transfer.

Possible Faults

The transferring of offsite events can fail due to:

- Timeout caused by a slow network- decrease the events bulk size in the Usage Data Processing (Remote Environments) service parameters.

- Internal service error -verify that you can browse to the Offsite URL or contact Intlock

```
Message : Exception: The remote server returned an error: (500) Internal Server Error., Stack Trace:    at
System.Net.HttpWebRequest.GetResponse()
   at System.Xml.XmlDownloadManager.GetNonFileStream(Uri uri, ICredentials credentials)
   at System.Xml.XmlDownloadManager.GetStream(Uri uri, ICredentials credentials)
   at System.Xml.XmlUrlResolver.GetEntity(Uri absoluteUri, String role, Type ofObjectToReturn)
   at System.Xml.XmlTextReaderImpl.OpenUrlDelegate(Object xmlResolver)
   at System.Threading.CompressedStack.runTryCode(Object userData)
   at System.Runtime.CompilerServices.RuntimeHelpers.ExecuteCodeWithGuaranteedCleanup(TryCode code,
CleanupCode backoutCode, Object userData)
   at System.Threading.CompressedStack.Run(CompressedStack compressedStack, ContextCallback callback,
Object state)
   at System.Xml.XmlTextReaderImpl.OpenUrl()
   at System.Xml.XmlTextReaderImpl.Read()
   at System.Xml.XmlLoader.Load(XmlDocument doc, XmlReader reader, Boolean preserveWhitespace)
   at System.Xml.XmlDocument.Load(XmlReader reader)
   at System.Xml.XmlDocument.Load(String filename)
   at CardioLog.Services.SystemServices.OffsiteAgent.ActivateService()
```

4.1.2.3.8 User Categories Updates

Log File - CategoryAgent.log:

```
_____________________________________________
// Loading user categories data from custom web service (to categories.xml)
Time    : 11/23/2008 12:59:58 AM
Message : Loading from:
http://CategoriesServer/UserCategoriesHR/categories.asmx/GetEmployees
_____________________________________________
// Loading user categories data from CardioLog database
Time    : 11/23/2008 1:00:31 AM
Message : Creating category manager
_____________________________________________
// Comparing both repositories and updating CardioLog database
Time    : 11/23/2008 1:00:32 AM
Message : Persisting
_____________________________________________
// Updating service last run time in CardioLog database
Time    : 11/23/2008 1:00:40 AM
Message : Updating last run global setting
_____________________________________________
// Service finished successfully
```

```
Time    : 11/23/2008 1:00:40 AM
Message : Persist finished.

_____________________________________________
// Adding new users to the CardioLog database
Time    : 10/5/2008 12:58:47 AM
Message : User: 'MyCompany\RONMEY' does not exist in the system - Adding.
User: ' MyCompany\SIGHAS' does not exist in the system - Adding.
```

Possible Faults

Loading from the User Categories web service can fail due to:

- Timeout caused by a slow network -contact the web service developer to increase the categories web service timeout.

  The categories web service timeout can be configured in the **Web.config** file.
  Edit the <httpRuntime> element in the <system.web>section:
  Execution Timeout property - indicates the maximum number of seconds a request is allowed to execute before being automatically shut down by ASP.NET. The default timeout is 90 seconds.

```
<system.web>
<httpRuntime executionTimeout="7200" maxRequestLength="2000000"/>
</system.web>
```

- Internal web service error - Verify that you can browse to the user categories URL http://CategoriesServer/UserCategoriesHR/categories.asmx or contact a web service developer.

Reading and writing to the CardioLog database can fail due to:

- Insufficient permissions -verify that the CardioLog Scheduling Service login account is assigned a db_owner role on the CardioLog database.
- Internal service error -contact Intlock

4.1.2.4 Troubleshooting Errors in the Tracking Agents

If e-mail alerts are configured and threshold for monitored websites are defined, alerts will be sent via e-mail when the event count for a monitored websites is under the threshold.

Test the Tracking Agent

To test the Tracking Agent, go to a page which includes the tracking agent code. Press Ctrl+F12 (or Alt+F12). The Tracking Agent Console should pop-up, displaying the ID number for the most recent monitored action (event). To close the console, press Ctrl+F12 (or Alt+F12).

Do you see the SharePoint Agent Console pop-up?

1. *Yes*
2. *Yes, But the 'Last Event #' is 'None'*
3. *No*

The 'Last Event #' is 'None'

1. Verify that the EventCollector web application directory security allows Anonymous Access:
   Go to IIS Manager > Web Sites > CardioLog > EventCollector > Properties > Directory Security > Edit > Check 'Enable anonymous access'
2. If this did not solve the problem, then go to a portal page which includes the tracking agent code, press Ctrl+F10, copy the script prompt text and send it to Intlock Support.

What happens when you press Ctrl+F12?

1. Nothing happens - no pop-up appears
2. I get a login box
3. I get a JavaScript error on the page
4. I get a browser security message - because my SharePoint portal runs on SSL

Nothing happens when I click Ctrl+F12. No pop-up appears.

1. Delete your Internet Explorer Temporary Internet Files:
   In Internet Explorer, click Tools >Internet Options > Delete.
2. If this is a SharePoint portal, verify that you have added the tracking agent code to all of the SharePoint front-ends in your farm. For each front-end - browse to the

common .js file and verify that the Intlock tracking code has been added to the end of the file.

3. If you have copied the tracking code on your own - to a common .js file, verify that you have removed the opening and closing <script> tags.
4. If this is a non-SharePoint website, verify that you have added the tracking agent code to a common .js file, and that you have removed the opening and closing <script> tags.

I get a login box.

1. The monitored website and the CardioLog tracking module are two separate web applications, residing in different sub-domains, therefore they require two separate authentication procedures. IE handles this in a transparent way (if not, click Tools > Internet Options > Security > Custom Level > User Authentication > Logon > 'Choose Automatic logon with user name and password'), while FireFox, by default prompts for credentials. To resolve the Firefox prompt, either set Firefox preferences, through group policy, to avoid being prompted for logon (network.automatic-ntlm-auth.trusted-uris), or pace the CardioLogAgent virtual directory under the monitored website (see section 5).
2. Verify that all portal users, including the CardioLogApplicationPool account,have Read permissions for the CardioLogAgent directory files (under the CardioLog Installation Directory).
3. Verify that the CardioLog website authentication provider is set to "NTLM":
   Run the following from Command Line to get the website authentication type -
   C:\Inetpub\AdminScripts>cscript adsutil.vbs get w3svc/[website ID]/Root/NTAuthenticationProviders
   Replace [website ID] with the CardioLog website ID as it appears in IIS Manager.
4. If the authentication type is not set to "NTLM", run the following from Command Line:
   C:\Inetpub\AdminScripts>cscript adsutil.vbs set w3svc/[website id]/Root/NTAuthenticationProviders "NTLM"
   Replace [website ID] with the CardioLog website ID as it appears in IIS Manager).
5. If you still get a login box, place the CardioLogAgent web application on the SharePoint machine – (This procedure does not require a full CardioLog installation,it involves the creation of a CardioLogAgent virtual directory on the SharePoint server):
   - Create a new CardioLogAgent virtual directory on the SharePoint machine. Set the following properties for the new virtual directory - *ASP.NET 2.0*, *Inetgrated Windows Authentication (un-check anonymous)*

- Copy the files from [CardioLog Installation Directory]\CardioLogAgent to the new virtual directory.
- If the SharePoint web sites or site collections have multiple host headers, place the CardioLogAgent virtual directory under the "/_layouts" share, to ensure that the tracking agent's domain is identical to the calling SharePoint web site domain.
- Modify the CardioLog tracking code: in your SharePoint common .js file (or in your website master page), change the domain and port to the new CardioLogAgent location:

```
script.src =
"http://server:port/CardioLogAgent/AgentEmbed.aspx?env=[MOSS2007|SP2010]&r="+Math.random()*100000;
```

- In the new CardioLogAgent directory, open the AgentEmbed.aspx file and change the domain and port:-

```
element.TunnelPath = 'http://server:port/CardioLogAgent/tunnel.aspx';
element.AgentDirectory = 'http://server:port/CardioLogAgent';
element.AgentBaseLocation = 'http://server:port/CardioLogAgent/agentBaseEmbed.aspx';
```

I get a JavaScript error on the page.

1. Send the JavaScript error message to Intlock Support.
2. Remove the tracking code from your SharePoint portal.

I get a browser security message.

The CardioLog tracking agent can be easily configured to work with SSL. Do the following:

1. Configure the CardioLog web site to enable both http and https calls (set an SSL port and add a server certificate).
2. Change the URL protocol and port in the following locations:
   SharePoint common .js file (on all web-fronts) -

```
script.src =
"https://server:port/CardioLogAgent/AgentEmbed.aspx?env=[MOSS2007|SP2010]&r="+Math.random()*100000;
```

[CardioLog installation directory]\CardioLogAgent\AgentEmbed.aspx -

```
element.TunnelPath = 'https://server:port/CardioLogAgent/tunnel.aspx';
element.AgentDirectory = 'https://server:port/CardioLogAgent';
element.AgentBaseLocation = 'https://server:port/CardioLogAgent/agentBaseEmbed.aspx';
```

4.1.2.5 Troubleshooting Errors in the CardioLog UI

1. .NET Errors

   Example - "Object reference not set to an instance of an object" error message in Analysis Center (instead of showing Object Explorer).

Server Error in '/CardioLog' Application.

Object reference not set to an instance of an object.

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.NullReferenceException: Object reference not set to an instance of an object.

Source Error:

```
Line 442:                                                    <div
id="unmanagedDiv" style="padding:10px;height:100%; width:199px; overflow:auto;
display:none;">

Line 443:
<CARDIOLOG:TREENEW cached="true" type="0" id="unmanaged"
rccallbackpre="rightClickPre" callback="callFromTree"
imagesPath="/CardioLog/Images/Tree/">

Line 444:                                                                    <%=
drawTreeNew() %>

Line 445:
</CARDIOLOG:TREENEW>

Line 446:                                                    </div>
```

Source File: d:\Inetpub\wwwroot\CardioLog\Tree\index.aspx **Line:** 444

Version Information: Microsoft .NET Framework Version:2.0.50727.42; ASP.NET Version:2.0.50727.42

Recycle the CardioLog Application Pool:
Go to IIS Manager > Application Pools > CardioLogApplicationPool > Right Click > Recycle.

If this does not solve the problem, send the .NET error message and the error details from the CardioLog server application EventLog to Intlock Support.

Error details from the CardioLog server application EventLog are of an ASP.NET error type and usually contain the following fields:

Application Virtual Path: /CardioLog

Process name: w3wp.exe

Request URL: http://CardioLogServer/CardioLog/

Request path: /CardioLog/

2. SQL Errors
   - Example - "Could not get context based report." error message in a report when trying to change the date range.

Could not get context based report. Server response: Could not create context based report. Error: Violation of PRIMARY KEY constraint 'PK_tab_admin_virtual_tree'. Cannot insert duplicate key in object 'dbo.tab_virtual_tree'. The statement has been terminated

Verify that you are browsing to the original report link (Example - *http://CardioLogServer/CardioLog/clreport/index.aspx?entityId=7aaee011-53a2-457f-b7c6-46e195604820*) and not to a temporary version of the report (Example - *http://CardioLogServer/CardioLog/clreport/contextbasedreport.aspx?reportId=354e2fb3-766e-4d4a-9c64-2c37bb121a57&startDate=21/12/2008&endDate=07/01/2009&timeInterval=864000000000*)

If this did not solve the problem, delete all of the temporary reports versions (context-based reports) by running the following SQL script on the CardioLog database:

```
Use CardioLog
GO

delete      tab page controls rules
where controlInstanceId in(   select      controlInstanceId
                                  from  tab_page_controls
                                  where username ='CONTEXT_BASED')

delete      tab_page_controls
where username ='CONTEXT_BASED'

delete      tab_page
where username ='CONTEXT_BASED'

deletefrom tab_reports_history
where username ='CONTEXT_BASED'
```

```
delete      tab_virtual_tree
where username ='CONTEXT_BASED'

deletefrom tab_context_based_reports
```

If this did not solve the problem, send the error message to Intlock Support.

3. Java Script Errors
   - Example - Java Script alert message in Report Center when trying to change control preferences.

Delete your Internet Explorer Temporary Internet Files:

In Internet Explorer, click Tools ->Internet Options -> Delete.

If this did not solve the problem, send the error message to Intlock Support.

Extended Logging for the CardioLog web application

Turn on message logging in order to trace the CardioLog web application:

Add the "Message" switch in [CardioLog Installation Folder]\CardioLog\Web.config:

```
<add key="logType" value="Message,Warning,Error" />
```

4.2 Server Health and Performance Monitoring

It is the customer's responsibility to maintain the CardioLog 2010 server health and performance, including software and hardware upgrades.

4.2.1 Monitoring the Operating System and Database

1. Monitor the IIS service and the CardioLog services (CardioLog Scheduling Service and CardioLog Diagnostics Service).
2. Monitor the server performance (CPU and memory usage).
3. Monitor the Logs directory size (log files growth is restricted to 8MB each).
4. Monitor the database size – a very rough growth estimation is 1.75GB of storage per 1,000,000 page views. See the database sizing formula in order to allocate enough storage.
5. Monitor the SQL database services.

4.2.2 Backup Policy

4.2.2.1 Database Backup

1. The CardioLog database is updated on a daily basis. The database recovery model should be set to simple because of its update behavior. Do not change the CardioLog recovery model.
2. A full database backup should be taken before the nightly processesrun (verify the nightly processing schedule). In order to backup the CardioLog database, schedule the following command:

```
Backup database cardiolog  to disk ='<Path>\cardolog.bak'
```

   It is the customer's responsibility to keep the CardioLog database backup in a safe location. For more information about the database backup procedure please consult your local DBA or Intlock support.

4.2.2.2 Application Backup

Backup the CardioLog installation directory after every software update.

4.2.3 Database Maintenance

4.2.3.1 Index Maintenance

1. Creating and dropping Indexes:

   Creating or dropping indexes from the CardioLog database is prohibited. Please consult Intlock support if a DROP or CREATE operation is needed.

2. Rebuilding Indexes:

   Indexes are rebuild on a weekly basis by the CardioLog automated maintenance procedure (available soon). Rebuild can be also performed manually (consult your local DBA about index rebuild), with the following considerations taken into account:

   - Index Rebuild can affect the reporting performance.
   - Index Rebuild should be done after the automated nightly process have run.

4.2.3.2 Table Maintenance

CardioLog does not support manual table reorganization. In cases of a major table fragmentation or when a database table needs to be regionalized - please consult Intlock support.

4.2.3.3 Shrink Database/Data Files

CardioLog shrinks the database log file automatically.

To disable this option run the following command against the CardioLog database:

```
update tab_global_settings
set Value='false'
where Category='OMAgent'and Name='ShrinkLogFile'
```

It is permitted to shrink the database/Data files without consulting Intlock support.

4.2.3.4 Query Optimizer Statistics

It is recommended to use auto-statistics update. Disabling/Changing the statistics gathering process can affect the application performance - and is not recommended.

In addition to the above recommendations, the following T/SQL procedures can be used to monitor and maintain the CardioLog database.

DBCC SHOWCONTIG	Displays fragmentation information for the data and indexes of the specified table.

DBCC DBREINDEX	Rebuilds one or more indexes for a table in the specified database.
DBCC INDEXDEFRAG	Defragments clustered and secondary indexes of the specified table or view. DBCC INDEXDEFRAG is an online operation, so it does not hold long-term locks that can block running queries or updates. DBCC INDEXDEFRAG can be considerably faster than running DBCC DBREINDEX because a relatively unfragmented index can be defragmented much faster than a new index can be built.
DBCC SHOW_STATISTICS	Displays the current distribution statistics for the specified target on the specified table.
UPDATE STATISTICS	Updates information about the distribution of key values for one or more statistics groups in the specified table or indexed view.
sp_updatestats	Displays or changes the automatic UPDATE STATISTICS setting for a specific index and statistics, or for all indexes and statistics for a given table or indexed view in the current database.
sp_updatestats	Runs UPDATE STATISTICS against all user-defined tables in the current database.

4.3 System Redundancy

It is the customer's responsibility to maintain redundancy for the CardioLog 2010 server. To ensure optimal operation, follow the following procedures:

4.3.1 How to Configure NLB for Data Collection

For large portals, with over 5 million events per month, Intlock recommends using NLB for usage data collection.

Data collection is handled by the EventCollector and CardioLogAgent web applications. Multiple instances of these web applications can work in parallel - each one writing its own data into the CardioLog database.

The architecture for NLB should be as follows:

1. Main server hosting a full CardioLog installation.
2. Additional WFE which hosts the EventCollector and CardioLogAgent web applications.

4.3.1.1 How to install the CardioLog data collection web applications on a WFE

1. Create a new EventCollector virtual directory on the WFE. For the new virtual directory, set ASP.NET version to 2.0, and set the authentication method to anonymous access (un-check Integrated Windows Authentication).
2. Copy the files from the CardioLog server [CardioLog Installation Directory]\EventCollector to the new directory.
3. Create a new CardioLogAgent virtual directory on the WFE. For the new virtual directory, set ASP.NET version to 2.0, and set the authentication method to Integrated Windows Authentication (un-check Enable anonymous access).
4. Copy the files from the CardioLog server [CardioLog Installation Directory]\CardioLogAgent to the new directory.
5. Open \CardioLogAgent\AgentEmbed.aspx and enter the NLB FQDN:

```
element.EventCollectorPath = "http://domain:port/EventCollector/monitor.aspx";
element.TunnelPath = "http://domain:port/CardioLogAgent/tunnel.aspx"; element.AgentDirectory =
"http://domain:port/CardioLogAgent"; element.AgentBaseLocation =
"http://domain:port/CardioLogAgent/agentBaseEmbed.aspx";
```

6. Change the URL domain and port to the NLB FQDN in the CardioLog tracking code for each WFE (by default, the tracking code is located in the SharePoint common .js file):

```
script.src="http://domain:port/CardioLogAgent/AgentEmbed.aspx?env=[MOSS2007|SP2010]&r="
+Math.random()*100000;
```

An Active-Active configuration for the entire CardioLog solution is not supported.

An Active-Passive configuration for the entire CardioLog solution is available for additional cost (the dormant server requires a production license).

4.3.2 Usage Tracking in the Event of a SharePoint Farm Failover

Assuming that the SharePoint backup farm has an identical set of portal URLs to the live farm, follow this procedure to prepare the backup farm for usage data collection:

1. Keep an alternate Web.config file for the CardioLog SP20XXTree web application, which includes the proper configuration settings for connecting to the SharePoint backup farm servers.
2. Verify that the CardioLog user account has read permissions to the SharePoint databases and TEMPLATE folder on the backup farm.
3. Test the configuration of the alternate Web.config file by dropping the file to the SP20XXTree directory and browsing to http://server:port/SP20XXTree/default.aspx.Verify you get an XML response displaying the portal tree structure.
4. Add the CardioLog tracking code to the SharePoint common .JS file on all WFE which belong to the backup farm.
5. In case of a failover - do not use the Configuration Wizard, just drop the alternate Web.config file into the SP20XXTree directory.

5. Configuration, Customization and Optimization Tasks

There are some maintenance tasks which are associated with specific events. Depending on the results of the tasks, you might need to perform additional tasks in order to make adjustments and handle problems.

For example, adding a new monitored environment is an event that might require you to run the fine tuning process and define data collection filters.

This section describes events and the tasks needed to be performed when these events occur:

- Monitoring a New Environment- how to collect data for a SharePoint based web site, a non-SharePoint web site and for banner clicks.
- Data Collection Filters - how to define rules for excluding usage events from the monitored environments with the Black List, and how to configure the tracking agent.
- Fine Tuning **-** how to ensure qualitative and accurate reporting data using URL mappings.
- Permissions- how to define system roles and report permissions.
- CardioLog SDK – how to send events with the CardioLog API and create your own custom reports.
- Enhanced Visitor Segmentation - how to collect visitor data from Active Directory attributes, SharePoint user profiles and external schemas (as opposed to Active Directory) - such as department, region, etc.
- Troubleshooting Empty Usage Reports
- Data Integrity Tests - how to compare the CardioLog 2010 page views and unique users reports with other tools.
- Uninstalling the CardioLog Tracking Agent - how to remove the CardioLog tracking code from the portal.
- Data Archiving - how to delete raw history data in order to save disk space and maintain database health.
- Product License – how to view information about the licensed product components, and install new licenses.

5.1 Monitoring a New Environment

A new environment is essentially a web site which has not been added yetto the collection of monitored environments, or any type of UI component defined within your web site- linking to an external site.

This section describes how to monitor a new environment with CardioLog 2010:

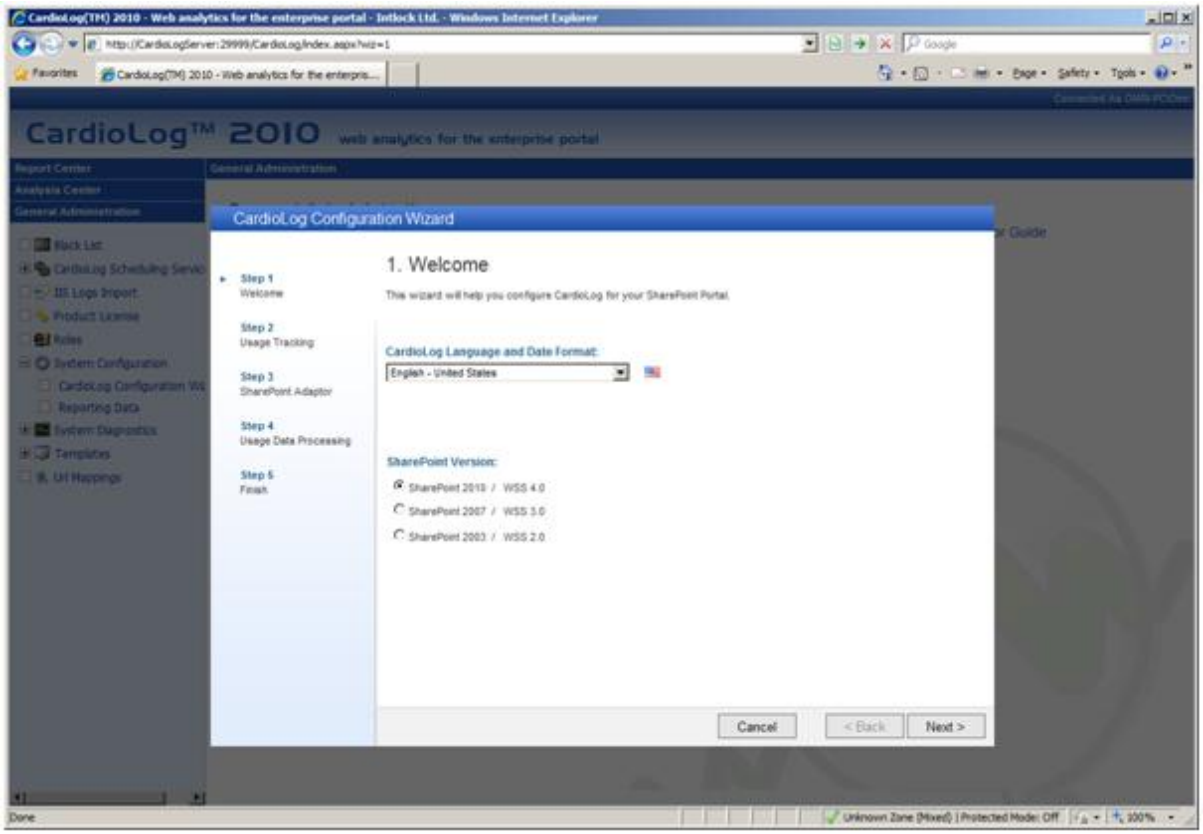
1. Configuring data collection for:
   - SharePoint based web sites
   - Document Access (track SharePoint document access from non-browser sources such as Windows Explorer or Outlook).
   - Non-SharePoint web sites (such as ASP .NET based web site)
   - Banner Clicks and Referrers (such as links to external sites)
2. Defining data collection filters and performing fine tuning
3. Creating reports for unstructured data (banner clicks and referrers)

5.1.1 Monitoring a SharePoint Based Web Site

5.1.1.1 Configuring Usage Tracking and Reporting

The CardioLog Configuration Wizard helps with configuring the CardioLog modules for your SharePoint Portal. These include the **SharePoint Tracking Agent** - which is designed to monitor visitor behavior in SharePoint, and the **SharePoint Adaptor** - which provides the structure of your SharePoint portal.

1. Launch CardioLog.
2. In the **General Administration** pane, under **System Configuration,** click on **CardioLog Configuration Wizard**.
3. Go through the wizard steps.



5.1.1.2 Configuring Multiple Farms in the SharePoint Tree Service

Multiple SharePoint farms can be configured within the **Tree Service Web.config** file:

In [CardioLog Installation Folder]\SP20XXTree\Web.config, add the following keys to the <appSettings>section:

profile_1_outputFilePath - this is the output tree xml file path.
profile_1_includedWebApps – this is a star separated list of web applications (virtual servers) to include in the tree.
profile_1_SharePointTemplatePath-this is the full path for the SharePoint 'TEMPLATE' directory.

```
<appSettings>
        <add key="profile_1_outputFilePath" value="[CardioLog Installation
Folder]\CardioLogScheduleServices\Logs\SP20XXTree_1.xml" />
        <add key="profile_1_includedWebApps" value="http://<sharepoint server name>:<port>*" />
        <add key="profile_1_SharePointTemplatePath" value="\\<sharepoint server name>\C$\Program
Files\Common Files\Microsoft Shared\Web Server Extensions\1X\TEMPLATE\" />
</appSettings>
```

In [CardioLog Installation Folder]\SP20XXTree\Web.config ,add the following keys to the <connectionStrings>section:

profile_1_configDB – this is the connection string for the SharePoint configuration database.

profile_1_contentDB – this is a place holder for creating connection strings to the SharePoint content databases. *Note: Leave "Initial Catalog={0};Data Source={1}" as it is.*

```
<connectionStrings>
<add name="profile_1_configDB" connectionString="Integrated Security=SSPI;Persist Security
Info=False;Initial Catalog=<sharepoint config database name>;Data Source=<database server name>" />
<add name="profile_1_contentDB" connectionString="Integrated Security=SSPI;Persist Security
Info=False;Initial Catalog={0};Data Source={1}" />
</connectionStrings>
```

Configure the Portal Tree Updates Parameters and add the profile to the Portal Tree Web Services list.

http://CardioLogServer/SP20XXTree/default.aspx?**profile=1**

5.1.1.3 Configuring External SharePoint Farms

In order to monitor an external SharePoint farm you will need to:

- Install the CardioLog Tracking Agent, which monitors visitor behavior in SharePoint web sites (The tracking code is added to a common page component such as Master pages) on all the SharePoint WFEs.
- Install the SharePoint Adaptor which returns a logical tree representing the hierarchical structure of the portal on one of the WFEs.

5.1.1.3.1 Installing the CardioLog Tracking Agent

Note: The CardioLogAgent installation does NOT require reboot or downtime.

1. Install the CardioLogAgent web application on the external SharePoint server:

- Create a new CardioLogAgent virtual directory on the external SharePoint machine.
- For the new virtual directory, set ASP.NET version to 2.0, and set the authentication method to *Integrated Windows Authentication(un-check Enable anonymous access*). If your portal is anonymous, configure the CardioLogAgent with anonymous access.
- Copy the files from [CardioLog Installation Directory]\CardioLogAgent to the new directory.
- Verify that the folder permissions allow read access for *Everyone*.
- Edit theSharePoint URL domain and port in the following locations:
  [CardioLog Installation Directory]\CardioLogAgent\AgentEmbed.aspx -

```
element.TunnelPath = "http://domain:port/CardioLogAgent/tunnel.aspx";
element.AgentDirectory = "http://domain:port/CardioLogAgent";
element.AgentBaseLocation =
"http://domain:port/CardioLogAgent/agentBaseEmbed.aspx";
```

- Edit the CardioLog URL domain and port in the following locations:
  [CardioLog Installation Directory]\CardioLogAgent\AgentEmbed.aspx -

```
element.EventCollectorPath =
"http://cardiologserver:port/EventCollector/monitor.aspx";
```

- Verify that the CardioLogAgent web application has access to the EventCollector web application installed on the CardioLog server - http://cardiologserver:port/EventCollector/monitor.aspx

2. Copy the **core_js_tracking_code.txt** file and change the server name to your SharePoint URL domain and port:

```
script.src =
"http://domain:port/CardioLogAgent/AgentEmbed.aspx?env=[MOSS2007|SP2010]&r="+Math.ra
ndom()*100000;
```

3. Add the edited tracking code to a common Java Script file, or add it to a non-Java Script common page component (in this case you need to add the opening and closing <script> tags).When adding the code to a master page - insert it before the closing</head> tag, and use opening and closing <script> tags.
4. To test the CardioLog Tracking Agent, go to a web site page which includes the tracking agent code. Press Ctrl+F12 (or Alt+F12). The CardioLog Tracking Agent Console should pop-up, displaying the ID number for the most recent monitored action (event). To close the console, press Ctrl+F12 (or Alt+F12).
5. Repeat steps 1-4 for each SharePoint WFE.

5.1.1.3.2 Installing the SharePoint Adaptor

Note: The SharePoint Adaptor installation does NOT require reboot or downtime.

1. Install the SP20XXTree web application on one of the external SharePoint:

   - Create a new SP20XXTree virtual directory on the external SharePoint machine.
   - For the new virtual directory, set ASP.NET version to 2.0.
   - Verify that the application pool account has read only access to the SharePoint configuration and content databases.
   - Copy the files from [CardioLog Installation Directory]\SP20XXTree to the new directory.
   - Copy the following files from the [CardioLog Installation Folder]\CardioLogScheduleServices\ folder to the new SP20XXTree\bin folder:API.dll, Microsoft.Licensing.LicAdmin.exe, Microsoft.Licensing.Permutation_c035c_2.0.DLL, Microsoft.Licensing.Runtime2.0.dll, Microsoft.Licensing.Utils2.0.dll, your permanent license files (*.bin files)
   - Run Microsoft.Licensing.LicAdmin.exe on the external server and click File -> Open -> License File to install your permanent license files.

2. Configure the new SP20XXTree web application on the external environment:

- In \SP20XXTree\Web.config, add the following keys to the <appSettings>section:

profile_1_outputFilePath - this is the output tree xml file path.
profile_1_includedWebApps – this is a star separated list of web applications(virtual servers) to include in the tree.
profile_1_SharePointTemplatePath - this is the full path for the SharePoint 'TEMPLATE' directory.

```
<appSettings>
        <add key="profile_1_outputFilePath" value="[SP20XXTree Installation
Folder]\SP20XXTree_1.xml" />
        <add key="profile_1_includedWebApps" value="http://<sharepoint server name>:<port>*" />
        <add key="profile_1_SharePointTemplatePath" value="\\<sharepoint server name>\C$\Program
Files\Common Files\Microsoft Shared\Web Server Extensions\1X\TEMPLATE\" />
</appSettings>
```

- In \SP20XXTree\Web.config, add the following keys to the <connectionStrings>section:

profile_1_configDB – this is the connection string for the SharePoint configuration database.
profile_1_contentDB – this is a place holder for creating connection strings to the SharePoint content databases. *Note: Leave "Initial Catalog={0};Data Source={1}" as it is.*

```
<connectionStrings>
<add name="profile_1_configDB" connectionString="Integrated Security=SSPI;Persist Security
Info=False;Initial Catalog=<sharepoint config database name>;Data Source=<database server name>"
/>
<add name="profile_1_contentDB" connectionString="Integrated Security=SSPI;Persist Security
Info=False;Initial Catalog={0};Data Source={1}" />
</connectionStrings>
```

3. Verify that the CardioLog "Portal Tree Updates" service on the CardioLog server has access to the SP20XXTree web application installed on the external environment - http://domain:port/SP20XXTree/default.aspx?profile=1, then configure the Portal Tree Updates Parameters and add the profile to the Portal Tree Web Services list.

5.1.2 Document Usage Tracking

By default, the SharePoint Agent tracks document usage for documents which are accessed through the browser. This is achieved by tracking browser clicks in document libraries (which are not displayed in Explorer view).

In order to track document access from non-browser sources - such as Windows Explorer or Outlook, you need to install the **CardioLog 2010 HttpModule for SharePoint**.

1. In the SharePoint server, add **CardioLogHttpModule.dll** to the GAC. The dll can be found at the CardioLog 2010 installation folder: \CardioLog\CardioLogScheduleServices\CardioLogHttpModule.dll
2. In the SharePoint server, for each web site, modify Web.config:
   In the <httpModules> section, add:

```
<add name="CardioLogHttpModule" type="CardioLog.HttpModules.EventsModule,CardioLogHttpModule,
Version=1.19.154.6, Culture=neutral, PublicKeyToken=56b51e29d93ab3fb" />
```

   In the <appSettings> section, add:

```
<add key="CardioLog.Events.DocExtensions" value=".doc*.docx*.ppt*.pptx*.pps*.ppsx*.txt*.pdf*"/>
<add key="CardioLog.Events.ExcludeUserAgents" value="Microsoft Office Existence Discovery*"/>
<add key="CardioLog.API.EventsServiceUrl" value="http://localhost:29999/CardioLogAPI/Events.asmx"/>
<add key="CardioLog.Events.LogFile" value="C:\CardioLogHttpModule.log"/>
<add key="CardioLog.Events.LogLevel" value="None"/><!--None,Error,Message-->
```

   Enter you own values for:
   - CardioLog.Events.DocExtensions (a list of star separated file extensions to track)
   -CardioLog.Events.LogFile

3. In the CardioLog 2010 installation folder, open this file for editing: \CardioLog\CardioLogAgent\AgentEmbed.aspx
4. In **AgentEmbed.aspx**, set element.HandleFileExtension to false:
   `element.HandleFileExtension = false;`
5. Restart the SharePoint IIS server (iisreset).

Note: In case of multiple servers in your SharePoint farm, consider using the HttpModule as a farm scoped SharePoint solution. SharePoint has a class that will deal

with Web.config issues in a way that handles rollback and recovery and ensures that all sites are configured the same.

5.1.3 Monitoring Non-SharePoint Web Sites

In order to monitor a non-SharePoint web site you will need to:

- Install the Basic Agent, which monitors visitor behavior in non-SharePoint web sites (The tracking code is added to a common page component such as Master pages).
- Create a Custom Tree Web Service which returns a logical tree representing the hierarchical structure of the web site.
- Follow the monitoring a new environment check list for success measurement.

5.1.3.1 Installing the Basic Agent

Note: The CardioLogAgent installation does NOT require reboot or downtime.

4. Only if the CardioLogAgent web application - which installed on your CardioLog server -is not accessible from the web site server (Browse to: http://server:port/CardioLogAgent/agentEmbed.aspx), install the CardioLogAgent web application on the web site server:

   - Create a new CardioLogAgent virtual directory on the web site machine.
   - For the new virtual directory, set ASP.NET version to 2.0, and set the authentication method to *Integrated Windows Authentication(un-check Enable anonymous access*).
   - Copy the files from [CardioLog Installation Directory]\CardioLogAgent to the new directory. Verify that the **BasicAgent_*.*.js**file resides in the folder.
   - Verify that the folder permissions allow read access for *Everyone*.
   - Change the URL domain and port in the following locations: [CardioLog Installation Directory]\CardioLogAgent\AgentEmbed.aspx -

```
element.TunnelPath = "http://domain:port/CardioLogAgent/tunnel.aspx";
element.AgentDirectory = "http://domain:port/CardioLogAgent";
element.HelpletFile = "";
element.AgentBaseLocation =
"http://domain:port/CardioLogAgent/agentBaseEmbed.aspx";
```

5. Copy the **core_js_tracking_code.txt** file and change the server name to your CardioLog server name or your web site server name (depending on the CardioLogAgent web application location):

```
script.src =
"http://domain:port/CardioLogAgent/AgentEmbed.aspx?env=BasicAgent&r="+Math.random()*
100000;
```

6. Add the edited tracking code to a common Java Script file, or add it to a non-Java Script common page component (in this case you need to add the opening and closing <script> tags).When adding the code to a master page - insert it before the closing</head> tag, and use opening and closing <script> tags.
7. To test the Basic Agent, go to a web site page which includes the tracking agent code. Press Ctrl+F12 (or Alt+F12). The Basic Agent Console should pop-up, displaying the ID number for the most recent monitored action (event). To close the console, press Ctrl+F12 (or Alt+F12).

5.1.3.2 The Custom Tree Web Service

CardioLog uses a logical tree which represents the hierarchical structure of the monitored website. Whenever a usage event is being sent to CardioLog it includes a mapping to the relevant item in the website hierarchy. This allows CardioLog to present aggregated and specific reports for any level of the portal hierarchy.

The CardioLog Portal Tree Updates service component - is responsible for retrieving the necessary hierarchal data from the website. Out of the box, this component generates the hierarchal structure for the SharePoint portal. In case you wish to retrieve the structure of a non-SharePoint website, you can specify an external web service to provide the hierarchal (logical) structure of your website.

In order to load your custom hierarchal structure to CardioLog, you need to specify a Web Service from which the CardioLog **Portal Tree Updates** service component -will consume the hierarchal data. This is done through the CardioLog **General Administration** user interface.

1. Create the custom tree web service for your web site.
2. Browse to **CardioLog**>**General Administration**>**CardioLog Scheduling Service**>**Portal Tree Updates**.
3. Click **Next**.
4. Enter the custom tree web service URL in the **Tree Web Service URL** textbox and then click the down arrow (acceptable file extensions: "aspx", "asmx", "xml").
5. Click **Save** and restart the **CardioLog Scheduling Service**.

5.1.3.3Create the Custom Tree Web Service

The Custom Tree Web Service should be exposed by a web page which provides an Xml string response according to the following schema:

```
<?xmlversion="1.0"encoding="utf-8" ?>
<xs:schemaid="OMTreeXmlSchema"elementFormDefault="qualified"
      xmlns:mstns="http://tempuri.org/OMTreeXmlSchema.xsd"
      xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:elementname="tree">
            <xs:complexType>
                  <xs:sequence>
                        <xs:elementname="item"type="XmlNode" />
                  </xs:sequence>
            </xs:complexType>
      </xs:element>
      <xs:complexTypename="XmlNode">
            <xs:all>
                  <xs:elementname="url"type="xs:string" />
                  <xs:elementname="title"type="xs:string" />

      <xs:elementname="entitytype"type="xs:string"minOccurs="0"maxOccurs="1
" />

      <xs:elementname="owner"type="xs:string"minOccurs="0"maxOccurs="1" />

      <xs:elementname="version"type="xs:string"minOccurs="0"maxOccurs="1"
/>

      <xs:elementname="template"type="xs:string"minOccurs="0"maxOccurs="1"
/>

      <xs:elementname="created"type="xs:string"minOccurs="0"maxOccurs="1"
/>

      <xs:elementname="modified"type="xs:string"minOccurs="0"maxOccurs="1"
/>
                  <xs:elementname="permissions"minOccurs="0"maxOccurs="1">
                        <xs:complexType>
                              <xs:sequence>

      <xs:elementname="user"type="UserNode"minOccurs="0"maxOccurs="unbounde
d"/>

      <xs:elementname="group"type="GroupNode"minOccurs="0"maxOccurs="unboun
ded"/>
                              </xs:sequence>
                        </xs:complexType>
                  </xs:element>
                  <xs:elementname="items"minOccurs="0"maxOccurs="1">
                        <xs:complexType>
                              <xs:sequence>

      <xs:elementname="item"type="XmlNode"minOccurs="0"maxOccurs="unbounded
" />
                              </xs:sequence>
                        </xs:complexType>
                  </xs:element>
            </xs:all>
```

```
      </xs:complexType>
      <xs:complexTypename="UserNode">
            <xs:sequence>

      <xs:elementname="username"type="xs:string"minOccurs="1"maxOccurs="1"/
>

      <xs:elementname="permission"type="PermissionEnum"minOccurs="1"maxOccu
rs="1"/>
            </xs:sequence>
      </xs:complexType>
      <xs:complexTypename="GroupNode">
            <xs:sequence>

      <xs:elementname="groupname"type="xs:string"minOccurs="1"maxOccurs="1"
/>

      <xs:elementname="permission"type="PermissionEnum"minOccurs="1"maxOccu
rs="1"/>
            </xs:sequence>
      </xs:complexType>
      <xs:simpleTypename="PermissionEnum">
            <xs:restrictionbase="xs:string">
                  <xs:enumerationvalue="R"/>
                  <xs:enumerationvalue="W"/>
            </xs:restriction>
      </xs:simpleType>
</xs:schema>
```

Field Definitions:

item- represents an item in the custom tree hierarchy.

URL- item's full URL path

title- item's title as will be displayed in CardioLog reports

entitytype - item's type:

0 - Area

1 - Site

2 - List

4 - External Page

5 - Folder

6 - List Item

9 - Document

10 - My Site

11 - Web Part Page

12 - Web Page

100 - Wiki

101 - Blog

102 - Publishing Site

103 - Report Center

104 - Records Center

105 - Search Center

106 - Document Center

You can define your own custom entity types in coordination with Intlock.

owner-item's owner/creator

version **-** item's version

template- item's template

created- item's creation date

modified- item's modification date

Sample Data:

```
<item>
      <url>http://www.example.com</url>
      <title>Example Root</title>
      <entitytype>5</entitytype>
      <owner>INTLOCK\Sigalit</owner>
      <version>1</version>
      <template>Site</template>
      <created>01/01/2007 00:00:00</created>
      <modified>08/01/2007 10:37:35</modified>
      <items>
            <item>
                  <url>http://www.example.com/Item1.aspx</url>
                  <title>Item1</title>
                  <entitytype>9</entitytype>
                  <owner>INTLOCK\Sigalit</owner>
                  <version>1</version>
                  <template>Web Page</template>
                  <created>01/01/2007 00:00:00</created>
                  <modified>08/01/2007 10:59:16</modified>
                  <items />
            </item>
      </items>
</item>
```

5.1.3.4 A 'Monitoring a New Environment' Check List

1. **Event Collection**-
   - Test the Basic Agent to make sure it collects usage data on your web site.
2. **Web Site Tree Structure**-
   - Verify that the tree structure is valid, according to the XML schema.

- Verify that the custom tree web service returns a valid XML response and that the CardioLog Scheduling Service user account has sufficient permissions to access (request) the web service.

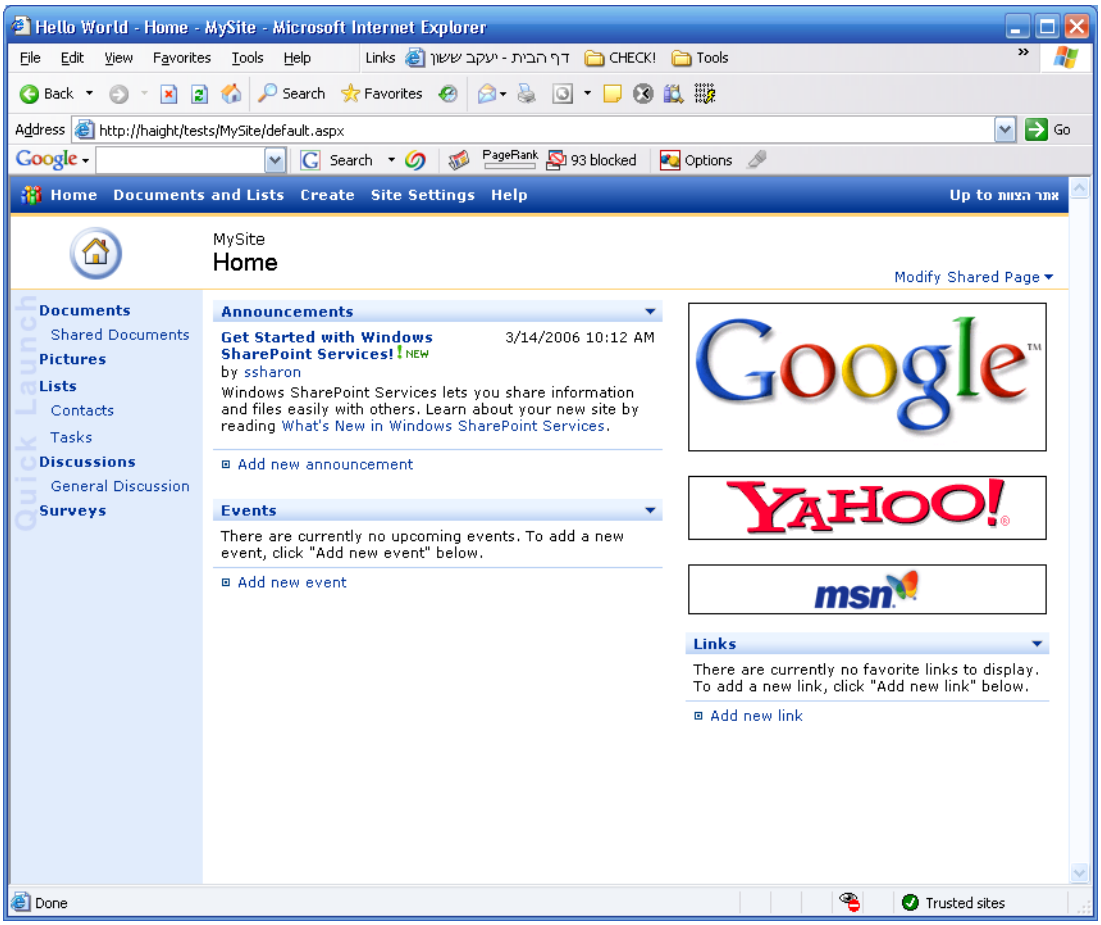
3. **Fine Tuning**-
   - Verify that the URLs collected by the Basic Agent match the URLs in the web site tree structure and perform fine tuning if needed.

5.1.4 Banner Clicks and Referrers

The CardioLog client-side API allows to easily monitor any type of UI component defined within your SharePoint portal.

5.1.4.1 Monitoring Banner Clicks

In our example, the right column of the screen includes a set of banners, each linking to an **external site**:



Generally speaking, these banners link to areas which are not in the scope of the CardioLog monitored environment. Since we cannot monitor the destination pages (Google, Yahoo and MSN), we will need to monitor the actual banner clicks.

Click Capturing

Assuming a banner is implemented with simple HTML, using the following syntax:

```
<a href="http://www.google.com"><img src="google_logo.gif"></a>
```

In order to capture the click before redirecting the user to the external destination page, make a call to the CardioLog API:

```
<a href="http://www.google.com" onclick="document.__Page.SendEvent('Visit', 'Banners > MySite > Google.com');"><img src="google_logo.gif"></a>
```

document.__Page.SendEvent

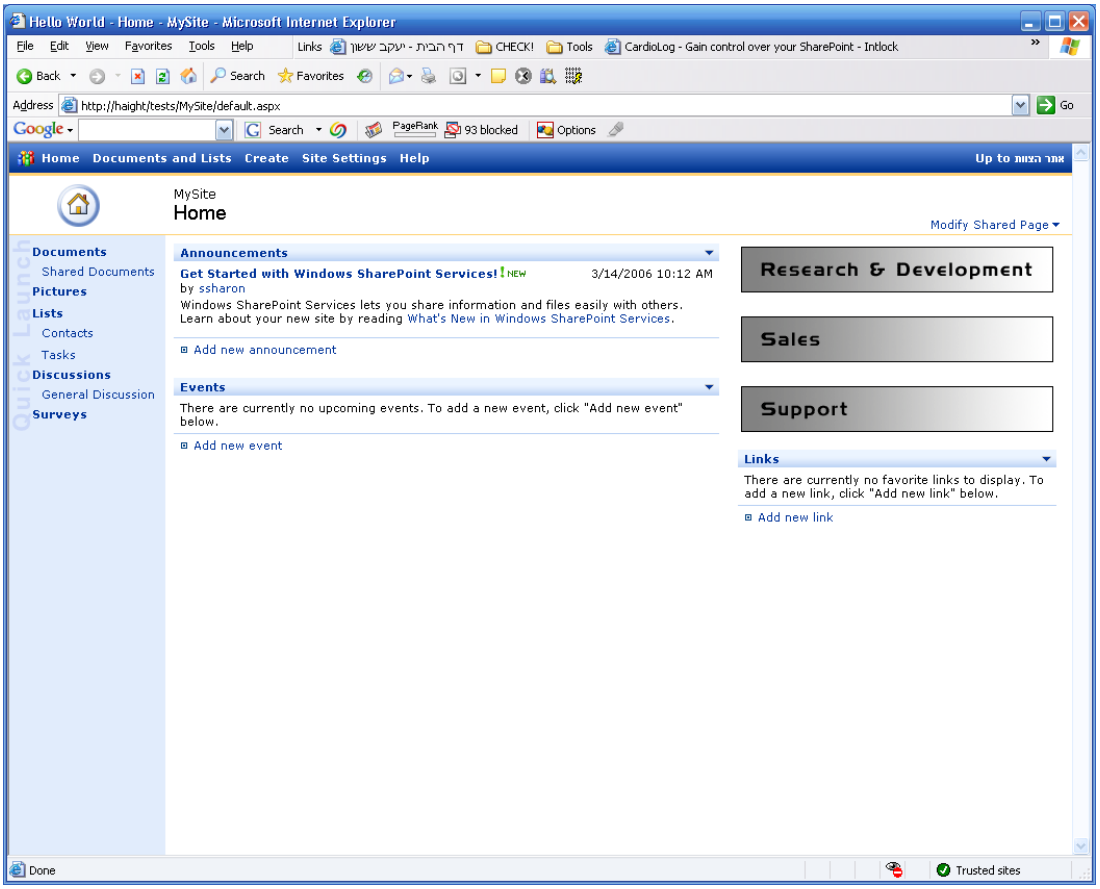
This method allows you to send events via CardioLog's client-side agent - using Ajax (Asynchronous JavaScript and XML) - to the CardioLog server, in a transparent way which does not affect the user's experience whatsoever.

In our example, whenever a user clicks on the banner, before redirecting to Google, CardioLog will send an event of type "Visit" to the server, specifying which banner has been clicked by the user (in this case, "Banners > MySite > Google.com").

Make sure to define a unique prefix for each logical group of UI components (in this case - "Banners") for optimal reports.

5.1.4.2 Monitoring UI Referrers

The above example demonstrates how to monitor links to external pages. Although you can use the same mechanism for monitoring internal destination pages, you do not have to do so - since CardioLog provides this capability (view referring and destination pages with the "Previous Pages" and "Next Pages" reports).
When dealing with internal links, besides monitoring the referring pages, you can monitor the referring navigation component (in our case - banners).
In our example, each banner links the user to a different site inside the portal.



Capturing the Referrer Component

Assuming the banner was implemented with simple HTML using the following syntax:

```
<a href="http://myportalserver/sites/rnd/default.aspx"><img src="/_layouts/images/rnd.gif"></a>
```

In order to capture the referring component before redirecting the user, we will make a call to the CardioLog API:

```
<a href=" http://myportalserver/sites/rnd/default.aspx" onclick="document.__Page.SetReferrer('Banners > MySite > Research and Development);"><img src="/_layouts/images/rnd.gif"></a>
```

5.1.4.3 Capturing Referrers from External Links

The CardioLog API supports the __Referrer parameter to capture the external (non-portal) referring page. Use this parameter whenever you publish a link to the portal and you wish to track the source of the referring page (e.g. email).

For example, you have included the following link in your promotion email:

```
http://myportalserver/sites/rnd/default.aspx
```

Add the __Referrer parameter to be able to track the number of visits this link produced:

http://myportalserver/sites/rnd/default.aspx?__Referrer=email_promotion

5.1.4.4 Monitoring E-Mail Campaigns using the __Referrer parameter

Add the __Referrer parameter to a URL in order to track the number of views coming from this URL:

Define a unique referrer name that will be displayed in reports, such as __Referrer=email_promotion_12_Dec_2008.

Example:

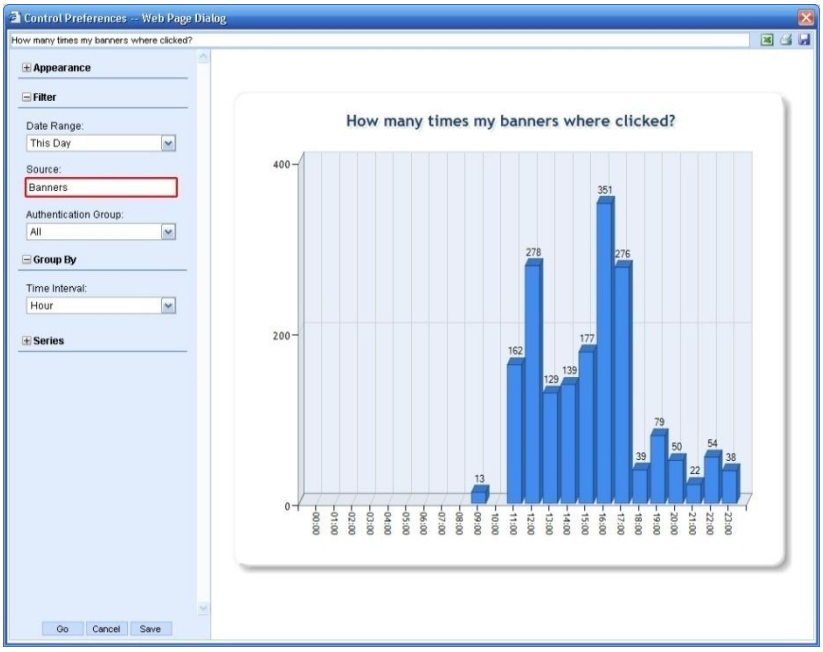
```
http://portal/sites/site/default.aspx?__Referrer=email_promotion_12_Dec_2008
```

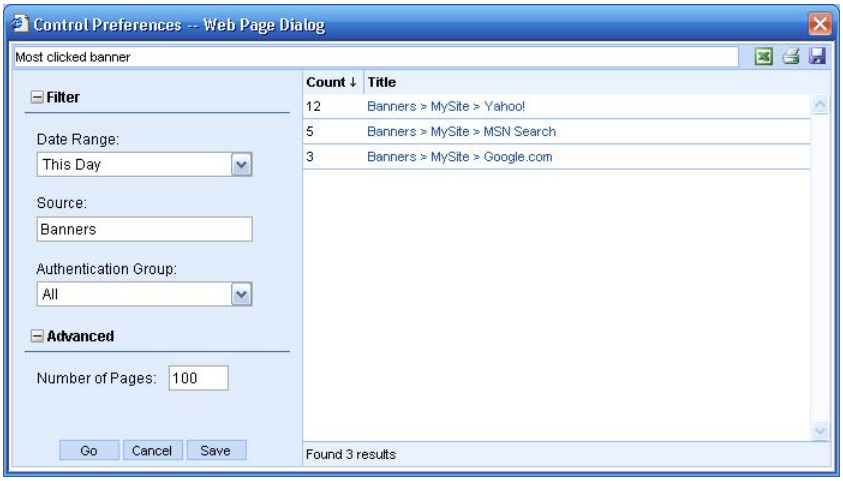
5.1.5 Creating Reports for Unstructured Data

In our example, the monitored object (e.g., Google.com banner) is not listed in the portal's hierarchical tree (which represents the overall monitored environment in a structured format) and therefore is not recognized as a valid CardioLog object. Events associated with such "unrecognized" objects are considered as "Lost Events" and can be retrieved with reports which fetch data according to page URL (such as "Page Views by URL" and "Unique Visitors by URL").

5.1.5.1 How many times where my banners clicked?

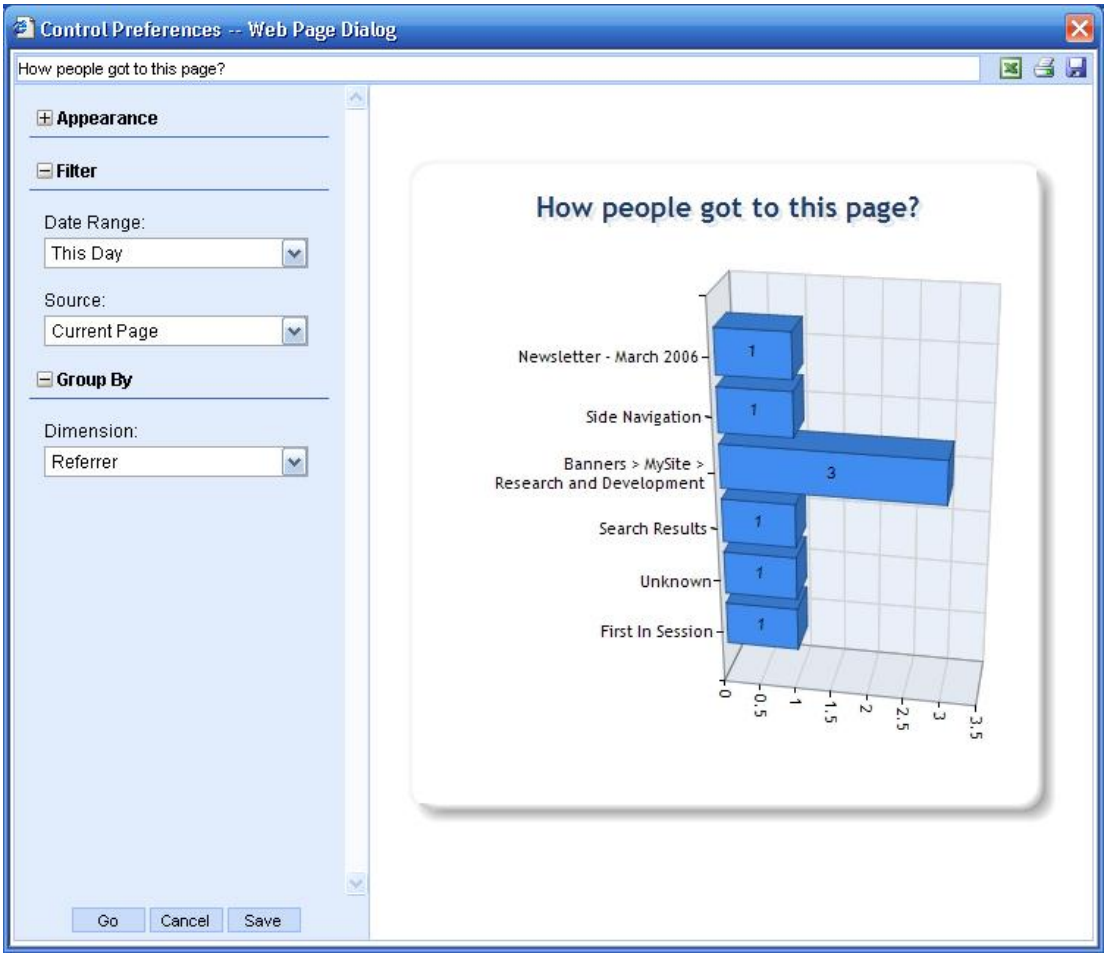
Create a "Page Views by URL" report (either chart or table), and enter "Banners" in the Source field.





5.1.5.2 How did people arrive at my page?

Create an "Internal Traffic Sources" report (either chart or table).


Control Preferences -- Web Page Dialog
How people got to this page?
Appearance
Filter
Date Range:
This Day
Source:
Current Page
Group By
Dimension:
Referrer
Go
Cancel
Save
How people got to this page?
Newsletter - March 2006
Side Navigation
Banners > MySite > Research and Development
Search Results
Unknown
First In Session
1
1
3
1
1
1
0
0.5
1
1.5
2
2.5
3
3.5

5.2 Data Collection Filters

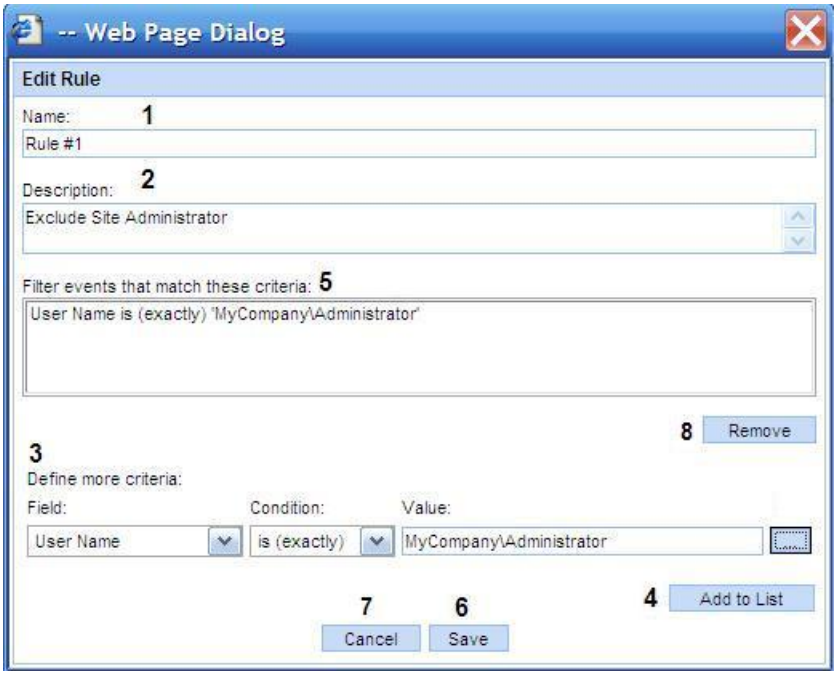
Out of the box, CardioLog 2010 collects all types of usage data (views, visits, duration, search, actions etc.) from the monitored environments. You can define which data should not be collected from the monitored environments by adding black list rules and/or configuring the tracking agents.

5.2.1 Black List

The Black List defines rules for data which should not be collected from the monitored environments. For example, data on views for a specific user in a specific time frame, etc. The actual application of a Black List rule is done from the moment the rule is created (and not retroactively).

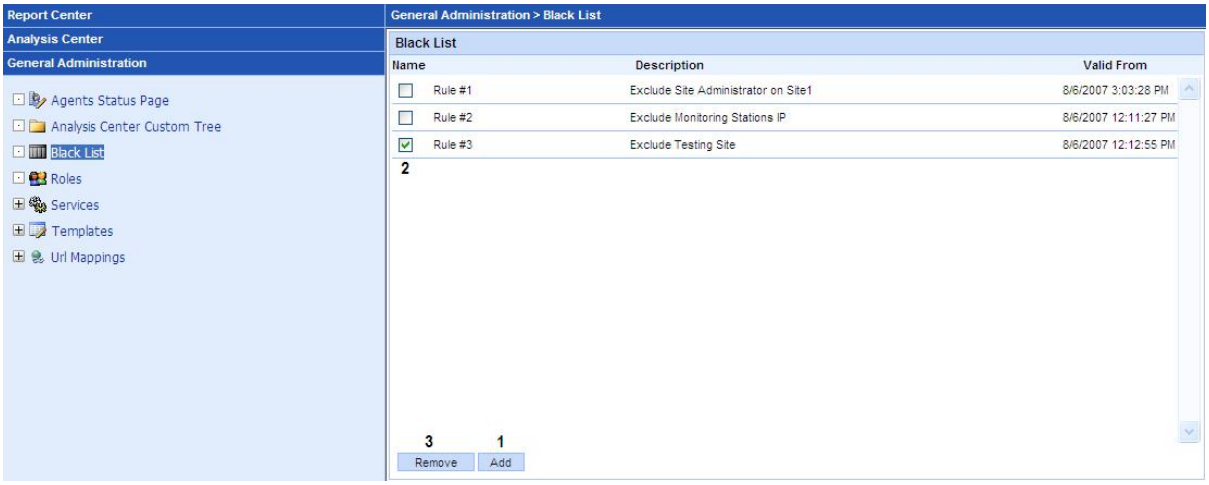
5.2.1.1 Creating Rules

1. In **General Administration**, click **Black List**.
2. In the Central Area, click **Add**.
3. In the **Add Rule** dialog, enter the **Name** and **Description** fields.
4. In the **Add Rule** dialog, under **Define more criteria**, select values for the **Field**, **Condition** and **Value** fields (see the next sections in this guide for details on these fields).



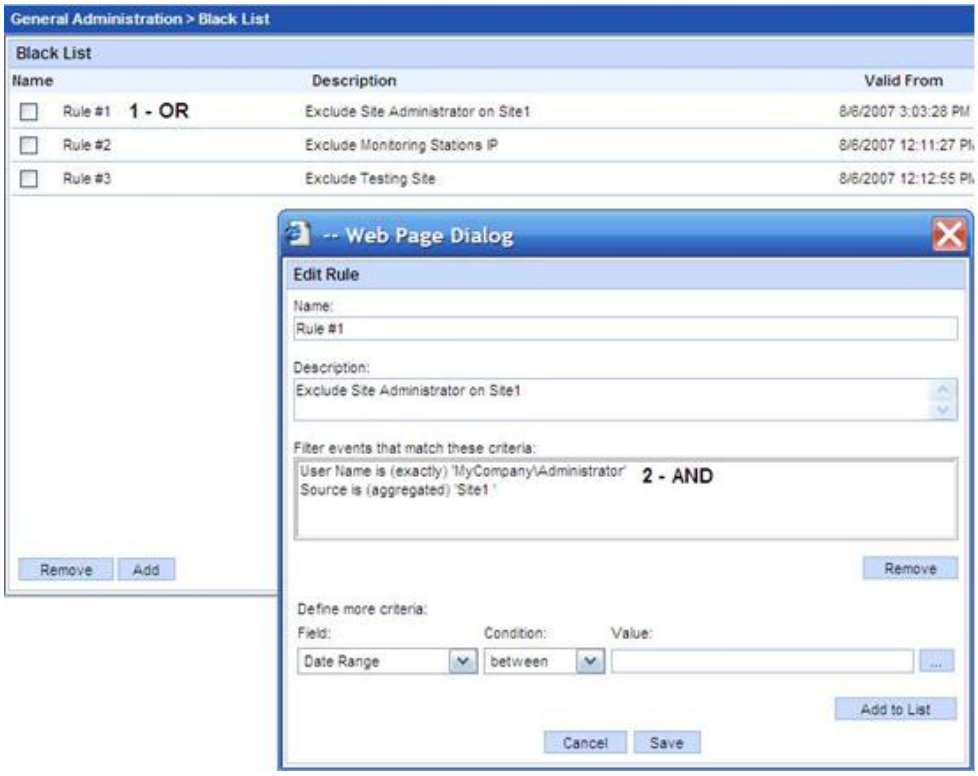
Create Rule dialog

5. Click **Add to List**.
6. Click **Save**.
7. The new rule is added to the Black List. The **Valid From** Column in the Central Area displays the date from which the rule is applied.



Black List dialog

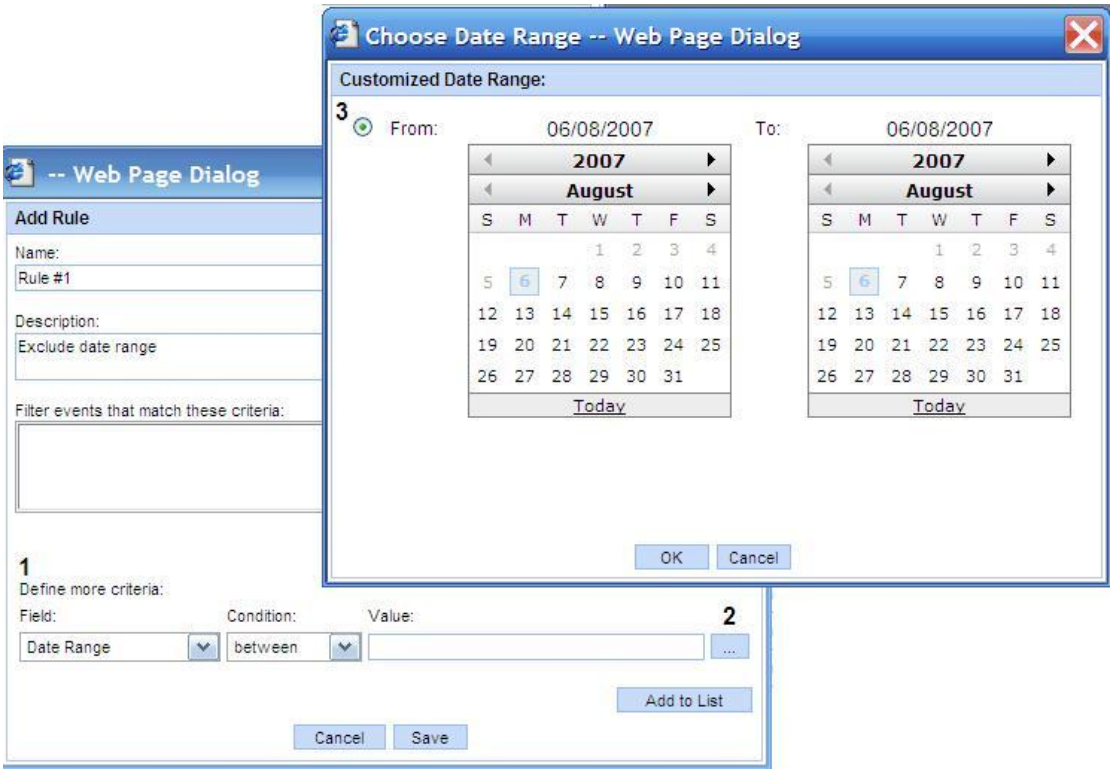
Note: The rules in the Black List have an OR (1) relationship, while the criteria for a rule have an AND (2) relationship.



The relationship between rules and criteria

5.2.1.2 How to set a date range criterion for a Black List rule

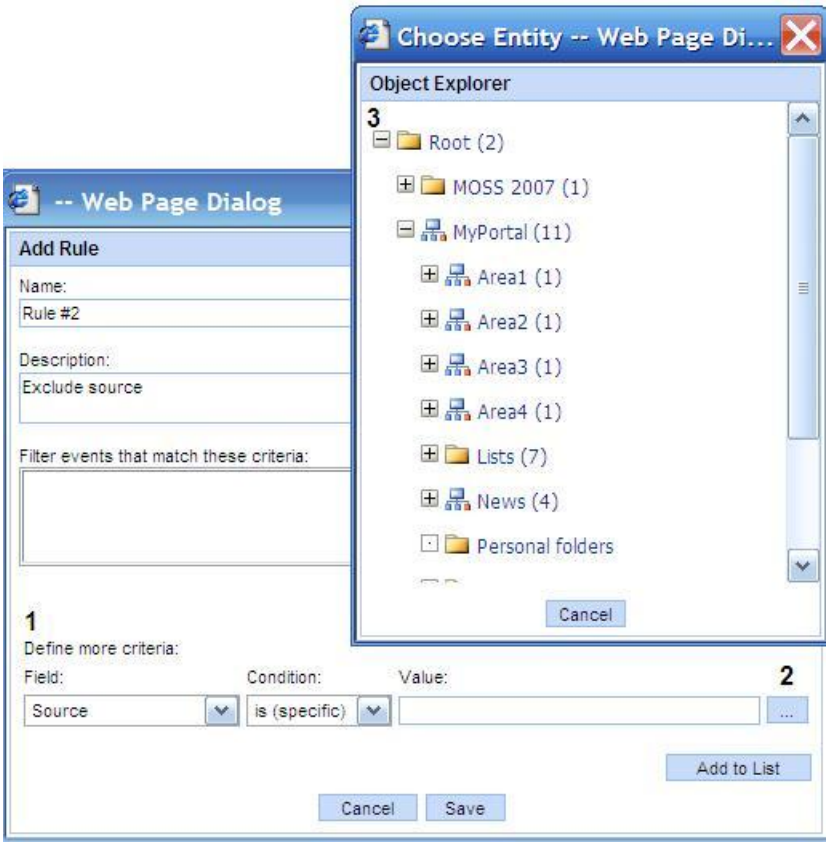
1. In the **Add Rule** dialog, in the **Field** drop down list, select **DateRange**.
2. Click on Browse (**...**) and select a date range.



Setting a date range criterion for a Black List rule

5.2.1.3 How to set a source criterion for a Black List rule

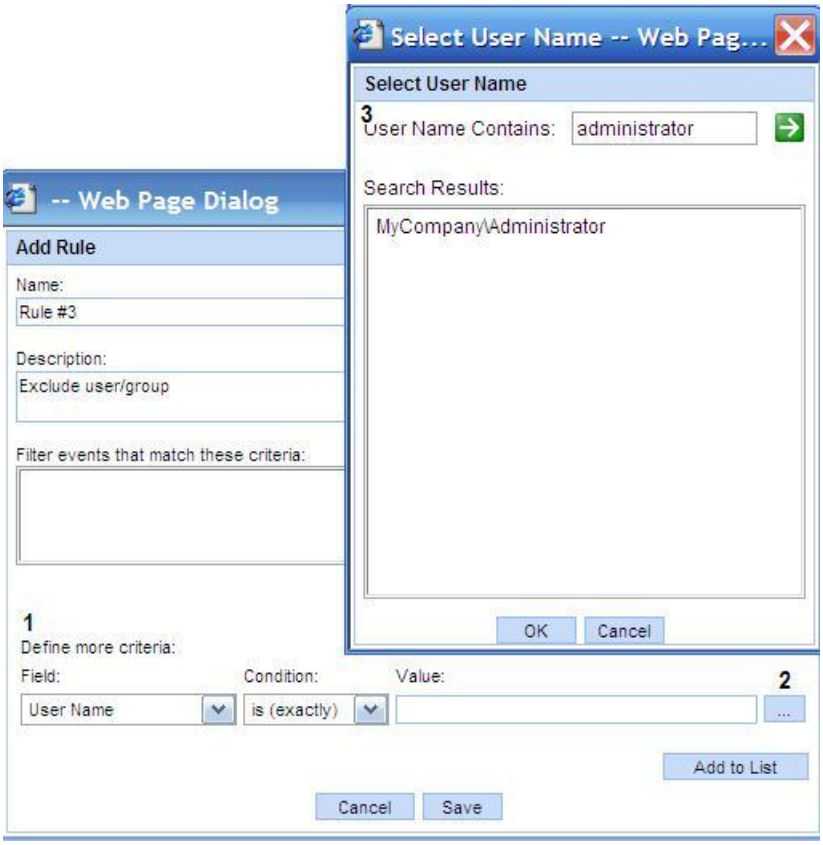
1. In the **Add Rule** dialog, in the **Field** drop down list, select **Source**.
2. In the **Condition** drop down list, select **is (specific)** to select a specific item, or select **is (aggregated)** to include also child items.
3. Click on Browse (**...**) and select the desired item.



Setting a source criterion for a Black List rule

5.2.1.4 How to set a user criterion for a Black List rule

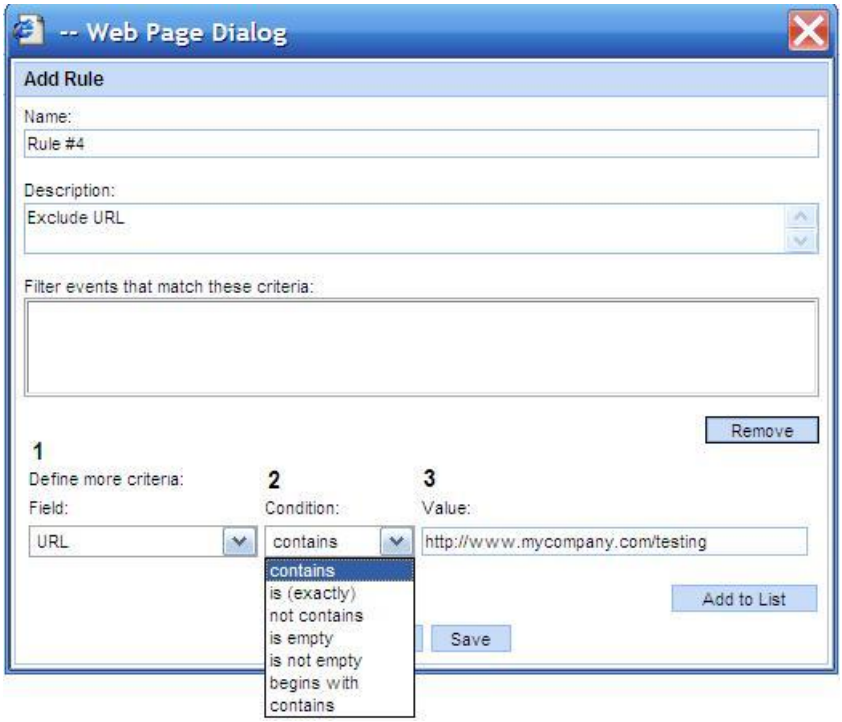
1. In the **Add Rule** dialog, in the **Field** drop down list, select User **Name** or **Authentication Group**.
2. In the **Condition** drop down list, select the desired condition.
3. Click on Browse (**...**) and select the desired user/group.



Setting a user criterion for a Black List rule

5.2.1.5 How to set a URL criterion for a Black List rule

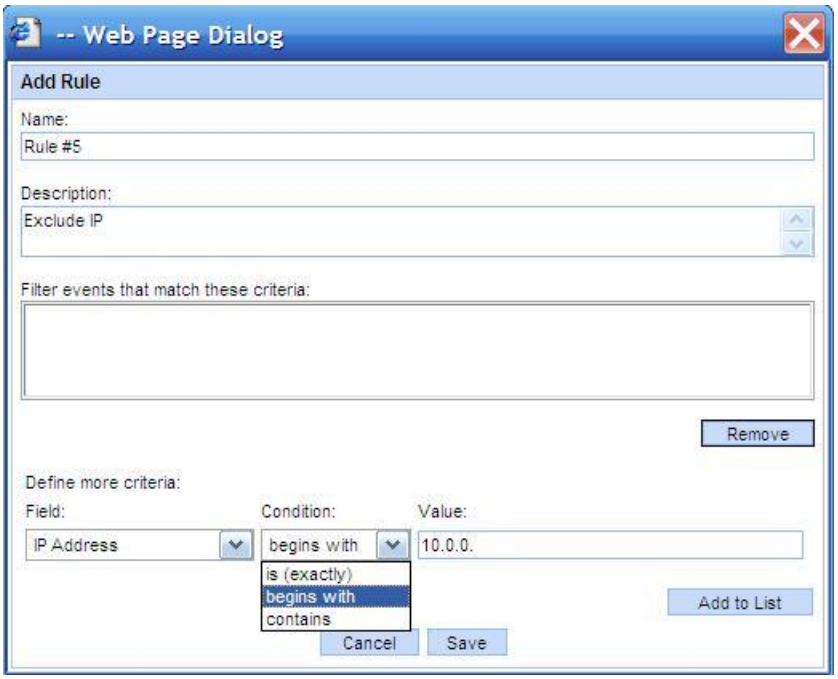
1. In the **Add Rule** dialog, in the **Field** drop down list, select **URL**.
2. In the **Condition** drop down list, select the desired condition.
3. Enter a URL address in the **Value** text box.



Setting a URL criterion for a Black List rule

5.2.1.6 How to set an IP Address criterion for a Black List rule

1. In the **Add Rule** dialog, in the **Field** drop down list, select **IP Address**.
2. In the **Condition** drop down list, select the desired condition.
3. Enter an IP address in the **Value** text box.



Setting an IP Address criterion for a Black List rule

5.2.2 Tracking Agent Configuration

5.2.2.1 Enable/Disable Data Collection by Event Type

To configure which data should not be collected by the tracking agent, set the appropriate parameters to "false" in the following file:
[CardioLog installation directory]\CardioLogAgent\AgentEmbed.aspx

```
element.Event_Visit = true; // Views events
element.Event_Leave = true; // Duration events
element.Event_Search = true; // Search events
element.Event_SearchResultItem = true; // Search Results Items events
element.Event_SearchResultClick = true; //Search Results Clicks events
element.HandleFileExtension= true; // Documents usage
```

5.2.2.2 Enable/Disable Data Collection for Anonymous Users

To configure data collection for anonymous users:

1. Set the "SupportAnonymousUsers" parameter to "true" in the following file:

[CardioLog installation directory]\CardioLogAgent\AgentEmbed.aspx

```
element.SupportAnonymousUsers = true;
```

2. Verify that the CardioLogAgent directory security allows access for anonymous users:
   Go to CardioLogAgent > Properties > Security > Add > Add the ANONYMOUS LOGON user.
3. Verify that the CardioLogAgent web application directory security allows Anonymous Access:
   Go to IIS Manager > CardioLogAgent > Properties > Directory Security > Edit > Check 'Enable anonymous access'.
4. Set the "overwriteConnectedUser" parameter to "true" in the following file:

[CardioLog installation directory]\CardioLogAgent\Web.config

```
<appSettings>
```

```
<add key="overwriteConnectedUser" value="true" />
</appSettings>
```

5.2.2.3 Configuring timeout for the CardioLogAgent web application

To configure the timeout settings for the CardioLogAgent (when the EventCollector web application is not available) edit the following keys in [CardioLog Installation Folder]\CardioLogAgent\Web.config (values are in milliseconds):

```
<!--- Timeout in case the EventCollector web application is not available
(the default is 10 seconds).-->
<add key="requestTimeOut" value="10000" />
<!- How long to wait before trying again to access the EventCollector web
application (the default is one minute).-->
<add key="serverResponseTimeOut" value="60000" />
```

5.3 Fine Tuning

The fine tuning process is primarily a matter of resource management and adjusting system settings. This process is essential to ensure qualitative and accurate data, and to save a significant amount of disk space for maintaining database health.

CardioLog 2010 collects usage data for the following 'events': views, visits, duration, search, actions (add/remove/modify) etc. The Usage Data Processing service component matches events to their corresponding SharePoint tree item. An event which's URL does not match any tree item (for instance, a URL address which includes a list of parameters, or a URL which is not part of the monitored environments) is called a "Lost Event".

Tuning the data and the system for efficient resource use includes of the following steps:

1. Determining which data should not be collected and define data collection filters.
2. Identifying Lost Events and defining URL address modifications.

This section provides detailed instructions on how to perform the fine tuning process. It is recommended to perform this process 1 week after the initial installation on the production environment, or after adding a new monitored environment to CardioLog.

Fine tuning should be performed by a user with a local administrator account on the CardioLog server and with a CardioLog Administrator role.

5.3.1 Lost Events

Run the following procedures:

5.3.1.1 Backup the Database

Make sure that there is a full backup of the CardioLog database and create a copy of the events table before you continue to the next step.

```
USE [CardioLog]
GO

Select * into tab_event_log_backup from tab_event_log
```

5.3.1.2 Identifying Lost Events

1. Get a list of the monitored environments distinct URLs:

```
Select distinct(casewhen(charindex('/', url, 9)> 0)then
                        substring(url, 0,charindex('/', url, 9))
                        else URL
                        end)as env
from tab_sharepoint_tree
where len(location)<= 18
and URL not like'http://Root/'
and URL not like'http://moss2007%'
and URL not like'http://sharepoint2010%'
orderby env
```

Query Results Example:

```
http://central
http://south
http://CMS
http://Portal
http://news
http://command
http://CMS-1
http://art
http://Sales
https://worldwide
https://myservice
```

2. Get a list of the lost events URLs. This can be done for a specific period (edit the timestamp in the SQL query) and for each monitored environment separately (uncomment and edit the URL in the SQL query):

```
select url, count(url)
from tab_event_log
      where timestamp>='2008-01-01 00:00:00'/* Edit Date */
      and entityid ='00000000-0000-0000-0000-000000000000'
      and (eventtype not between 6 and 9)
      --and SEARCHURL like 'http:// Portal/%' /* Uncomment and edit URL for
a specific monitored environment */
      --and SEARCHURL not like '%/_layouts/%' /* Uncomment to ignore
SharePoint administration pages */

Group by url
Order by count(url)desc
```

Query Results Example:

```
/* Example #1: URL with parameters */
http://portal/C1/shortcuts bar/default.aspx?pagemode=personalize
```

```
/* Example #2: Custom View */
http://portal/C1/Image Library/Forms/User View.aspx

/* Example #3: Administration Page */
http://portal/_layouts/viewlsts.aspx

/* Example #4: Access from the internal server */
http://websrv/Pages/default.aspx

/* Example #5: Access from an insecure channel (for SSL monitored
environments) */
http://biz/

/* Example #6: External events (non-monitored environments) */
http://www.ynet.co.il
```

3. Check if the URL does not match a SharePoint tree item and identify the reason for the missing URL:

1. URL with parameters
2. URL for a custom view of a page
3. URL for an administration page
4. URL with an internal server name (instead of FQDN)
5. URL with a non-secure channel (instead of a secure channel and vice-versa)
6. URL for a non monitored environment

```
/* Check if the URL does not match a tree item */

/* Example #1: URL with parameters - http://portal/C1/shortcuts
bar/default.aspx?pagemode=personalize */

-- Step 1 - URL as is
Select * from tab_sharepoint_tree
where URL like 'http://portal/C1/shortcuts
bar/default.aspx?pagemode=personalize%'

-- Step 2 - URL without parameters
Select * from tab_sharepoint_tree
where URL like'http://portal/C1/shortcuts bar/default.aspx%'

/* Example #2: URL of a custom view of a page - http://portal/C1/Image
Library/Forms/User View.aspx  */

-- Step 1 - URL as is
Select * from tab_sharepoint_tree
where URL like'http://portal/C1/Image Library/Forms/User View.aspx%'

-- Step 2 - URL without page
Select * from tab_sharepoint_tree
where URL like'http://portal/C1/Image Library/Forms/%'
```

```
/* Example #3: URL of an administration page -
http://portal/_layouts/viewlsts.aspx  */

-- Step 1 - URL as is
Select * from tab_sharepoint_tree
where URL like'http://portal/_layouts/viewlsts.aspx%'

/* Example #4: URL with an internal server name -
http://websrv/Pages/default.aspx  */

-- Step 1 - URL as is
Select * from tab_sharepoint_tree
where URL like'http://websrv/Pages/default.aspx%'


/* Example #5: URL with a non-secure channel - http://biz/  */

-- Step 1 - URL as is
Select * from tab_sharepoint_tree
where URL like'http://biz%'

-- Step 2 - URL with a secure channel
Select * from tab_sharepoint_tree
where URL like'https://worldwide%'

/* Example #6: URL from a non-monitored environment - http://www.ynet.co.il
*/

-- Step 1 - URL as is
Select * from tab_sharepoint_tree
where URL like'http://www.ynet.co.il%'
```

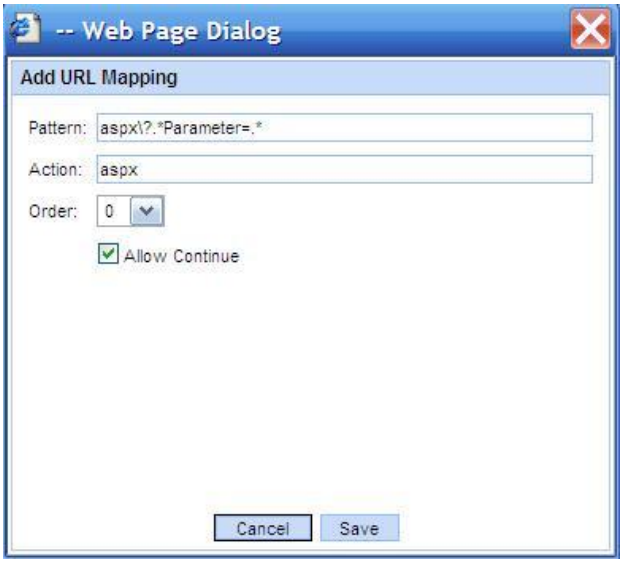
5.3.1.3 Creating URL Mappings

The URL Mappings list defines the modifications that should be done to URL address while collecting data from the monitored environments. For instance, views for a page whose URL address includes a list of parameters - will be written (after mapping) to the system without the URL parameters.

CardioLog 2010 ships with a list of default URL mappings (grayed out) for Microsoft SharePoint 2010, Microsoft SharePoint 2007 and Microsoft SharePoint 2003.

The URL Mappings Central Area

1. In **General Administration**, click URL **Mappings**.
2. In the bottom of the Central Area, click **Add.**
3. In the **Add URL Mapping** dialog, in the **Pattern** text box, enter the string to replace. Use a regular expression format.
4. In the **Action** text box, enter the replacement string.
5. You can set the order of mappings in the **Order** drop down list, and whether to continue with additional mappings - in **Allow Continue**.
6. Click **Save**.

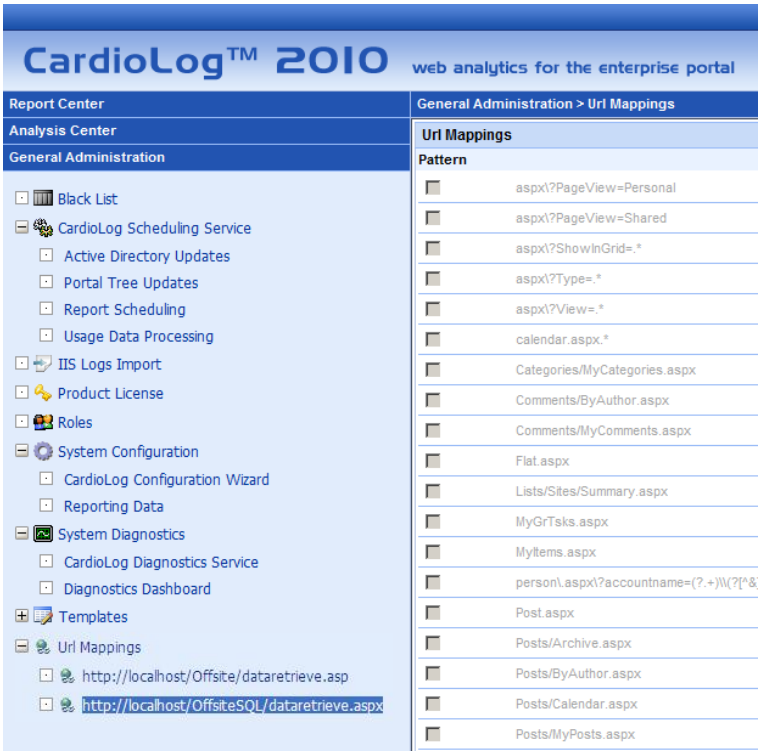


Add URL Mapping dialog

7. To immediately apply the URL mapping, restart IIS on the CardioLog 2010 Server.
8. To edit a mapping, in the Central Area - click the mapping, then enter the fields in the Edit URL dialog, and then click **Save**.
9. To delete a mapping, in the Central Area - click the mapping, then click **Delete** in the Edit URL dialog.

Editing a URL mapping

If the CardioLog 2010 installation includes Offsite Environments, then the URL mappings for these environments are also displayed under URL **Mappings** in General Administration.



Offsite Environments URL Mappings

Examples:

1. URL with parameters:
   "aspx\?pagemode =.*" > "aspx"
2. URL for a custom view of a page:
   "http://portal/C1/Image Library/Forms/User View.aspx" > "http://portal/C1/Image Library/Forms/AllItems.aspx"
3. URL foran administration page: Add the administration portal to your monitored environments or use "By URL"reports.
4. URL with an internal server name (instead of FQDN):
   "http://websrv/" > "http://central/"
5. URL with a non-secure channel (instead of a secure channel and vice-versa):
   "http://biz/" > "https://worldwide/"

6. URL for a non monitored environment: Add the portal to your monitored environments (if possible) or use "By URL" reports.

5.3.1.4 Fixing Lost Events

1. Fix events according to the URL Mappings:

```
/* Fix events according to the URL Mappings */

/* Example #1: Remove parameters from URL - http://portal/C1/shortcuts
bar/default.aspx?pagemode=personalize */
Begin tran
UPDATE tab_event_log
SET URL = left([Url],(charindex('?',[Url])-1)),
SET SEARCHURL = left(left([Url],(charindex('?',[Url])-1)),400)
WHERE SEARCHURL like 'http://portal/%.aspx?pagemode=%'
      And timestamp>='2008-01-01 00:00:00'/* Edit Date */
commit

/* Example #2: Replace the custom view page with the default view page -
http://portal/C1/Image Library/Forms/User View.aspx  */
Begin tran
UPDATE tab_event_log
SET URL = replace(Url,'User View.aspx','AllItems.aspx'),
SET SEARCHURL = left(replace(Url,'User View.aspx','AllItems.aspx'),400)
WHERE SEARCHURL like'http://portal/C1/Image Library/Forms/User View.aspx'
      And timestamp>='2008-01-01 00:00:00'/* Edit Date */
commit

/* Example #3: URL of an administration page -
http://portal/_layouts/viewlsts.aspx  */
/* For usage data on administration pages, add the administration portal to
your monitored environments or use "by URL" reports */

/* Example #4: Replace the internal server name to the portal name -
http://websrv/Pages/default.aspx  */
Begin tran
update tab_event_log
set URL = replace(url,'http://websrv/','http://central/'),
SET SEARCHURL = left(replace(url,'http://websrv/','http://central/'),400)
where SEARCHURL like 'http://websrv/%'
      and timestamp >='2008-01-01 00:00:00'/* Edit Date */
commit

/* Example #5: Replace the URL with the non-secure channel to a secure
channel - http://biz/  */
Begin tran
update tab_event_log
set URL =replace(url,'http://biz/','https://worldwide/'),
set SEARCHURL =left(replace(url,'http://biz/','https://worldwide/'),400)
where SEARCHURL like 'http://biz/%'
      and timestamp >='2008-01-01 00:00:00'/* Edit Date */
commit

/* Example #6: URL from a non-monitored environment - http://www.ynet.co.il
```

```
*/
/* For usage data on a non-monitored environment, add it to your monitored
environments (if possible) or use "by URL" reports */
```

2. Migrate the Lost Events: This can be done for a specific period (edit the timestamp in the SQL query) and for each monitored environment separately (uncomment and edit the URL in the SQL query):

```
Begin tran
update LG
set LG.entityid = TR.id, LG.splocation = TR.location, LG.EntityType =
TR.entityType
from
      tab_event_log LG
            join
      tab_sharepoint_tree TR on LG.url = TR.url
            and LG.entityid ='00000000-0000-0000-0000-000000000000'
            and(LG.eventtype notbetween 6 and 9)
            and LG.timestamp >='2008-01-01 00:00:00'/* Edit Date */
            --and LG.url like 'http://Portal/%' /* Uncomment and edit URL
for a specific monitored environment */
            and TR.isdeleted = 0
commit
```

5.3.1.5 Refreshing the Report's Data

1. Clear the reports data cache:
   Go to General Administration > System Configuration > Reporting Data and click on Clear Cache OR:

```
Delete from tab_controls_cache
```

2. Delete history versions of the report:
   Go to Report Center, right click the report and click on Delete Historical Data.
3. Regenerate reports:
   In CardioLog Lite reports are generated automatically on each access. In CardioLog 2010 reports are generated automatically by the Report Scheduling Service. To regenerate a report by yourself, right click the report and choose Regenerate Report.

5.4 Permissions

Permissions are available in CardioLog 2010 installations which include integration with Active Directory.
An administrator can assign roles to users and groups in CardioLog 2010 General Administration (see role types).

A user with the Information Worker role can create reports and set permissions for his reports.

5.4.1 Role Types

CardioLog 2010 includes 3 role types:

Information Worker

This role is designed for content administrators, managers and other users who need access to the CardioLog 2010 reports. Reports can be distributed in the following ways:

- Exporting the report data to a SharePoint Web Part.
- Exposing report links in a SharePointWeb Part.
- Automatic distribution of report links through Email.
- CardioLog 2010 user interface.

The reports presented to Information Workers are clear and simple, and do not require any prior knowledge in using CardioLog 2010 (not including the CardioLog 2010 user interface).

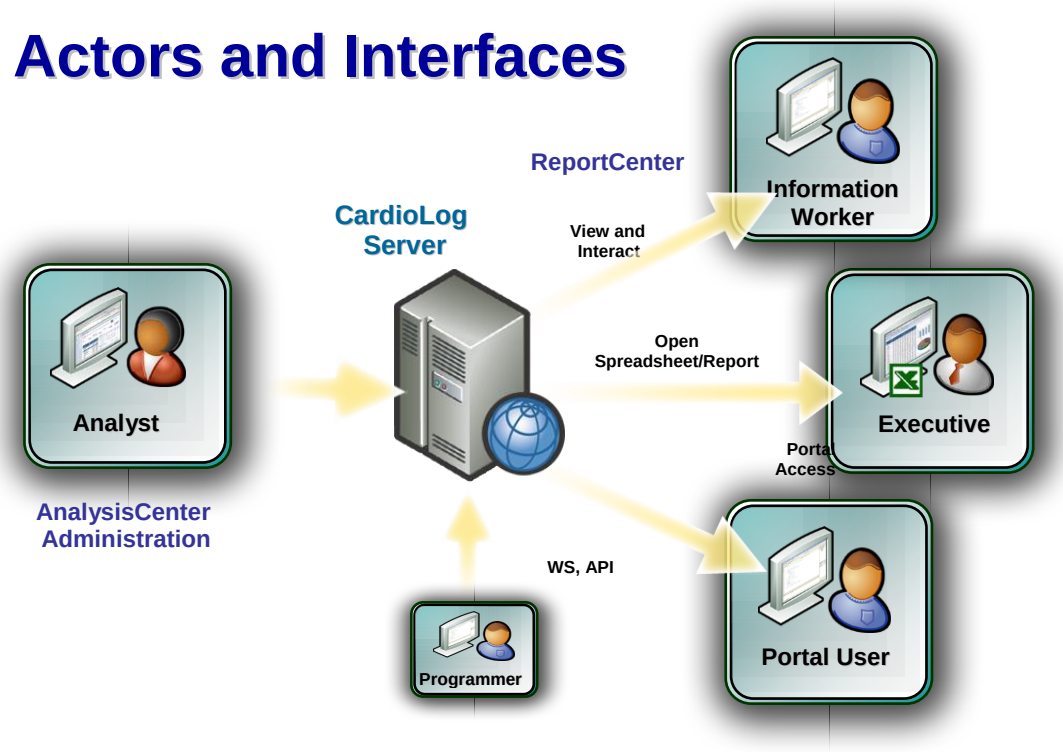
Analyst

This role is designed for the website administrators and other IT managers which are responsible for creating and sending scheduled reports. In addition to using the interface for scheduled reports, analyst can create and view real-time reports for all items (pages) in the monitored environments, in accordance with their permissions in Object Explorer.

Administrator

Users with the administrator role can set login permissions for the different levels of the system; they can set read permissions for the various items in Object Explorer, and also define criteria for tracking and processing usage events (black list).

Note: The Administrator Role is automatically assigned tothe user who installs the product.

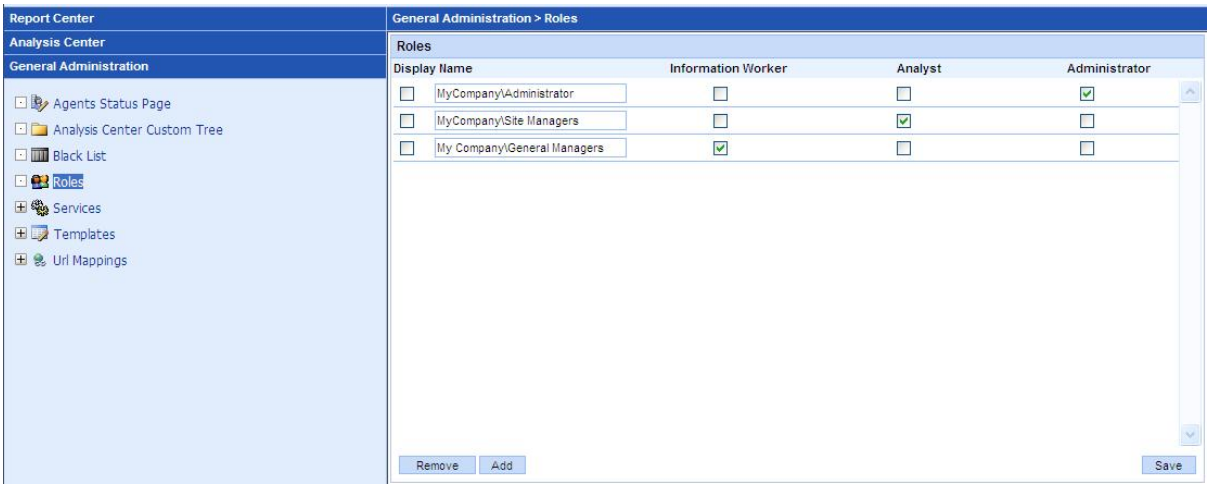


5.4.2 How to set System Roles in CardioLog 2010

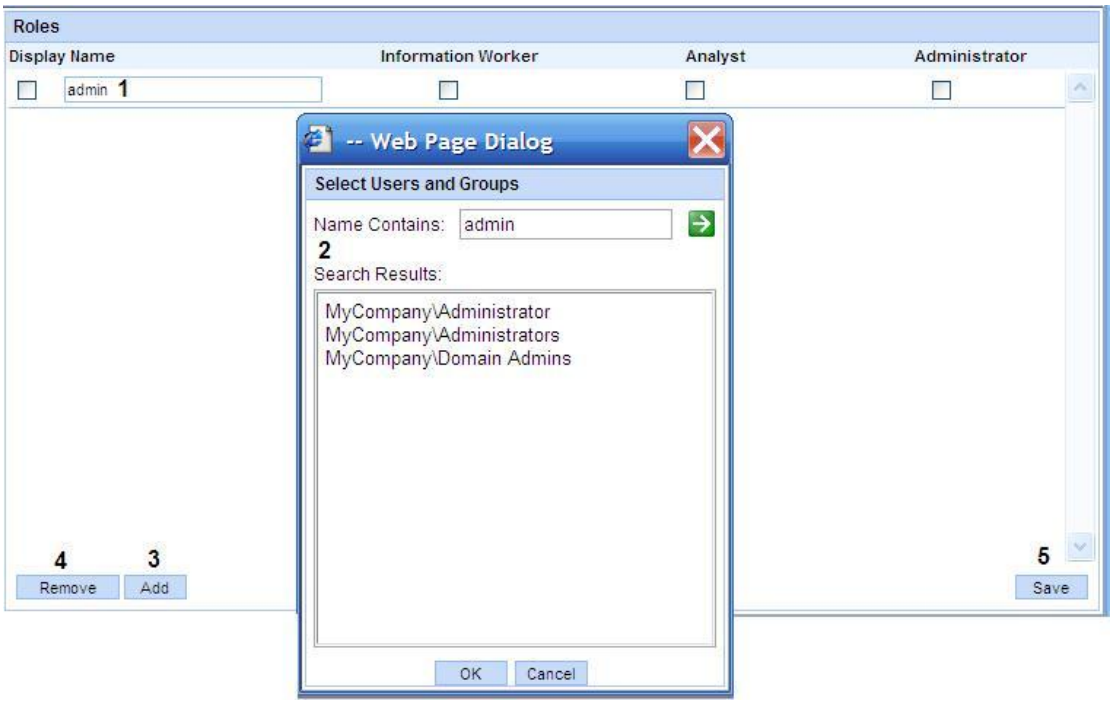
An administrator can assign roles to users and groups in the CardioLog 2010 General Administration.

Note: An Administrator role is automatically assigned tothe user who installs the product. By default, access to the CardioLog 2010 UI is denied for users and groups that are not assigned with a system role - or which are not defined in Active Directory (user names are retrieved by the Active Directory Updates service).

1. In the Navigation pane, under **General Administration**, click **Roles**.
2. In the Central Area, click **Add**.
3. Enter a user/group name in the **Display Name** text box.
4. Select the check boxes to assign permissions to the user/group.
5. At the bottom-right of the Central Area, click **Save**.



Roles window



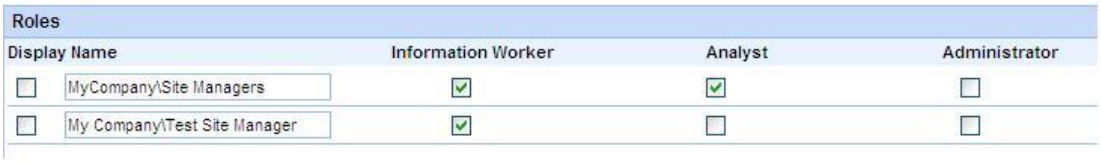
Select users and groups for assigning permissions

6. To remove permissions, select a user/group, then click **Remove**, and then click **Save**.

Note: user permissions precede group permissions.

Permission Assignment Samples

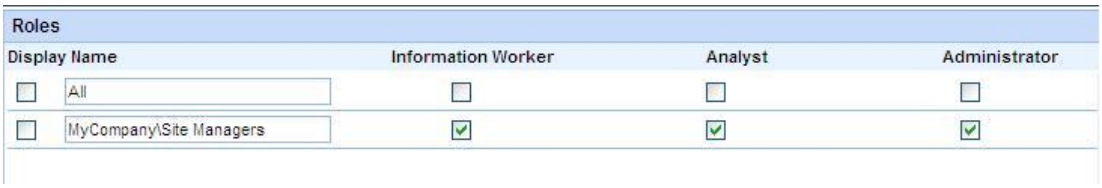
1. In order to grant permissions for Analysis Center to all users in the MyCompany\Site Managers group - excluding a specific user, set the following permissions:



Permission assignment sample

- Assign the Analyst and Information Worker roles for the group
- Assign the Information Worker role for the user (which belongs to the above group)

2. The default group "All" is used to assign roles to all users. To prevent all users from using CardioLog 2010, and to assign a specific group permissions to use the system, set the following permissions:



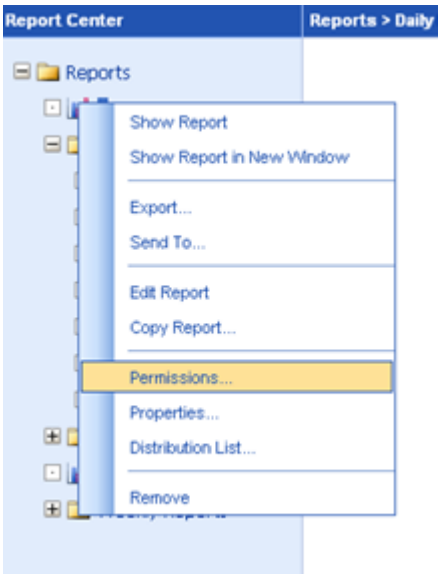
Using the "All" default group to assign permissions to all users in Active Directory

- Un-check all roles for the "All" group
- Check roles for a specific user group

5.4.3 How to Set Permissions for a Report

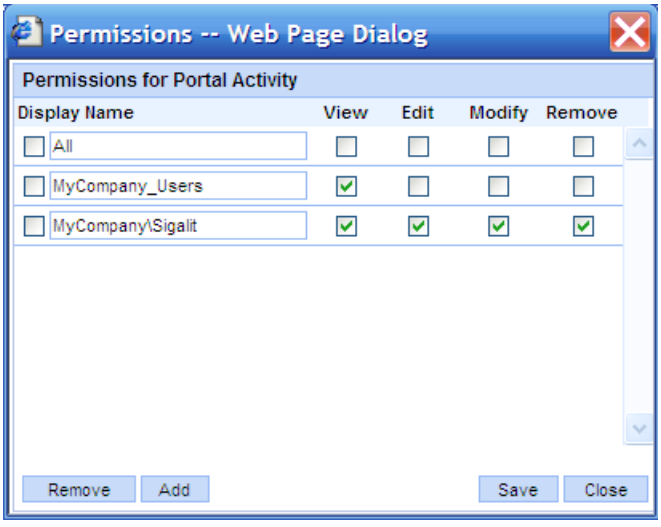
You can set view, edit (Edit Mode), modify (modify report preferences) and delete permissions for a specific report in the CardioLog 2010 Report Center for any user or group in Active Directory. By default, view permissions are given to everyone. In addition, you can add new users and groups, delete users and groups, or modify existing permissions.

1. In the Navigation pane, under Report Center, right click a report from the Reports tree and select **Permissions...**



Report Permissions menu option

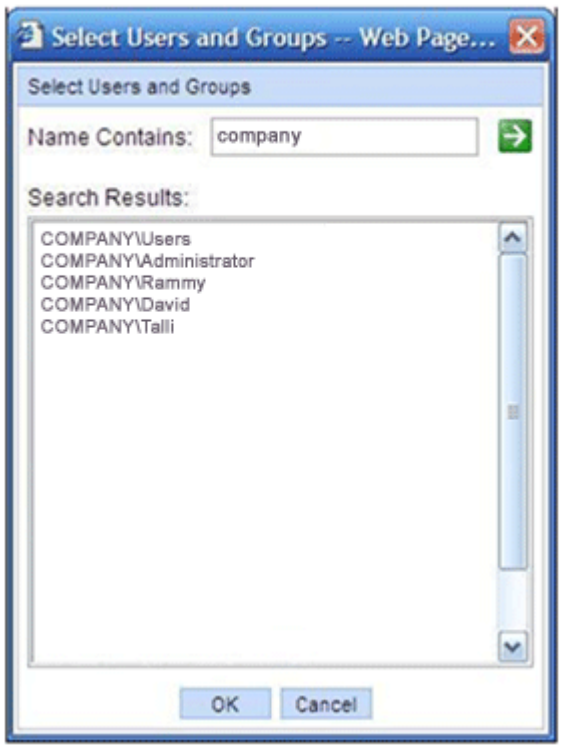
2. In the Permissions dialog, click **Add** and then enter the user/group name and the desired permissions.
   You can assign View, Edit, Remove and Modify permissions. User permissions precede group permissions. To assign permissions for all users use the default "**All**" group.



Permissions dialog

3. While entering the user/group name, click Ctrl+K to search for users/groups.

4. Select the desired results and click **OK**.



Select Users and Groups dialog

5. Click **Save** to save the permissions

5.5 The CardioLog SDK

The CardioLog 2010 SDK allows users to –

1. Send usage events with the CardioLog API. It enables the generation of usage events:
   - CardioLog API Web Service - Server Side
   - CardioLog JavaScript Agent API - Client Side
2. Create custom reports.

By Using the **SendEvent** method you can send *view*, *duration* and *search* events, and track the URL of the referrer page.

5.5.1.1 SendEvent Method

The SendEvent method accepts the following parameters:

- UserName - Optional. The user associated with the event. If not passed, the method will use the current user credentials.
- SessionId - Required. The unique session Id associated with the event.
- Event Type - Required. The event type Id.
- URL - Required. The URL associated with the event.
- UserAgent - Optional. The user details, such as browser type and OS version.
- ClientIP - Optional. The IP address of the client station.
- Param1, Param2 - Optional.

When the event is sent, the web service XML response will include the event identifier forfuture use (You can later on send events related to this event).

```
<agent>
<log>
<status id='0'>OK</status>
<event id='211022'/>
</log>
</agent>
```

In case of an error, the XML response will include the error description:

```
<agent>
<log>
<status id='-1'>Invalid Path</status>
</log>
</agent>
```

5.5.1.2 Event Types

The SendEvent method supports the following event types:

1. **View Event -**
    - Event Type - "0"

    To set the page referrer, use the following optional parameters for trackingthe source of the page:
    - Param1 -The related view event Id or a string representing referrer types (traffic sources such as navigation toolbars, campaigns, banners etc.).
    - Param2 -The referrer page URL

    Referrer pages can be retrieved in CardioLog 2010 with the "Navigation" visual controls.
2. **Duration Event -**
    - Event Type - "1"
    - URL - The related view event URL.
    - Param1 - Duration in seconds.
    - Param2 - The related view event Id.
3. **Search Event -**
    - Event Type - "2"
    - URL - The related view event URL.
    - Param1 - Search keyword/phrase.
    - Param2 - Number of search results.

    Search events can be viewed in CardioLog 2010with the "Internal Searches" visual control. The popular search terms are displayed in the "Internal Search Phrases" visual control.
4. **Search Result Click Event -**
    - Event Type - "5"
    - URL - The search result URL.
    - Param1 - The search result position within search results.
    - Param2 - The related search event Id.

5.5.2 CardioLog JavaScript Agent API

The CardioLog tracking agent exposes a client-side API for sending events. In any monitored page, you can call the following JavaScript methods:

- __Page.SendEvent
- __Page.SetReferrer

5.5.2.1 The SendEvent JavaScript Function

This function allows sending events via the client agent. The Agent uses Ajax (Asynchronous JavaScript and XML) to send the event to the server and does not affect the user interaction with the page in any way.

Example:

```
<input type="button" value="Send Event"
onclick="document.__Page.SendEvent('Visit', document.location.href);" />
```

The SendEvent function accepts the following parameters:

- Event Type - Required. The event type Id.
- Id- Required. This is usually the URL of the visited page, but can be any string representation (make sure to define a unique prefix for each logical group of objects for optimal reports).
- Param1 - Optional. Additional custom data associated with the event.
- Param2 - Optional. Additional custom data associated with the event.

5.5.2.2 Event Types

The SendEvent function supports the following event types:

1. **View Event -**
   - Event Type - "Visit"

   To set the page referrer, use the following optional parameters for tracking the source of the page:
   - Param1 -The related view event Id or a string representing referrer types (traffic sources such as navigation toolbars, campaigns, banners etc.).
   - Param2 -The referrer page URL
2. **Duration Event -**
   - Event Type - "Leave" Required.

- URL - The related view event URL.
- Param1 - Duration in seconds.
- Param2 - The related view event Id.

3. **Search Event -**
   - Event Type - "Search" Required.
   - URL - The related view event URL.
   - Param1 - Search keyword/phrase.
   - Param2 - Number of search results.
4. **Search Result Click Event -**
   - Event Type - "SearchResultClick".
   - Id - The search result URL.
   - Param1 - The search result position within search results.
   - Param2 - The related search event id.

5.5.2.3 The SetReferer JavaScript Function

This function allows setting custom page referrers. For example, to track the number of clicks for a banner, use the SetReferer function to identify the click actions.

Example:

```
<a href="/mysite/"><img src="banner.gif" border="0"
onclick="__Page.SetRefferer('banner.gif');"></a>
```

5.5.3 Custom Reports

The creation of a custom report requires the following:

1. Setting the report properties
2. Setting the report preferences
3. Creating an SQL stored procedure to populate the report
4. Registering the report in the CardioLog UI

5.5.3.1 Setting the Report Properties

The properties for a custom report should be defined in the following file –
[CardioLog Installation Directory]\CardioLog\Data\SpecialReportsCustom.xml

5.5.3.1.1 Report – Required fields

```
<?xml version="1.0" encoding="utf-8"?>
<specialReports>
      <specialReport id="[report_id]" title="[report_title]" type="[Table |
      Chart | Meter]" cmdText="sql_stored_procedure" />
</specialReports>
```

id: **report id must be over 9999**
cmdText: the stored procedure used by the report
type: report type

Example:

```
<specialReport id="10000" title="My Custom Report" type="Table"
cmdText="stp_my_sql_procedure" />
```

5.5.3.1.2 Report – Optional fields

<param>

This field maps custom params in Report Preferences (see section 2.2) to the actual SQL stored procedure parameters.

```
<param name="[stored_procedure_param]" rulePref="[CustomParam[num] |
entityInfo | entityType]" prefType="[Int | Url | String ]"
defaultVal="[number]" />
```

name: mapping to the stored procedure parameter

rulePref:

CustomParam: a reference to a <customparam> in Report Preferences

entityInfo: a reference to a <entityUrl> in Report Preferences

entityType: used by reports which have an item-type filter

Example:

```
<specialReport id="10002" title="Top Users By Url Table" type="Table" cmdText="stp_
visits_top_users_by_url_table" >
	<param name="@url" rulePref="entityInfo" prefType="Url" defaultVal="http://" />
</specialReport>

<specialReport id="10003" title="Top Content Contributors Table" type="Table" cmdText="stp_
portal_top_content_contributors_table" >
<param name="@entityType" rulePref="CustomParam0" prefType="Int" defaultVal="-1" />
</specialReport>
```

5.5.3.2 Setting the Report Preferences

The appearance of the report is formatted using an Xml string.

5.5.3.2.1 Table Report

```
<prefs>
<showhelp>false</showhelp>
<showpreferences>false</showpreferences>
<timeframe>36000000000</timeframe>
<timeinterval>36000000000</timeinterval>
<maxrows>10</maxrows>
<mincount>1</mincount>
<reporttype>10001</reporttype>
<columns>
<column id="User" title="User" type="text" width="35%" />
<column id="views" title="Views" width="15%" type="number"
      sorted="true" />
<column id="visits" title="Visits" width="15%"
      type="number" />
<column id="searches" title="Searches" width="15%"
      type="number" />
<column id="avgVisitDuration" title="Visit Duration"
      width="20%" type="number" />
</columns>
<ctitle>Unique Users</ctitle>
</prefs>
```

5.5.3.2.2 Required Preferences fields

<timeframe>

The date period for the report.

```
<timeframe>[milliseconds]</timeframe>
This hour: 600000000
Last hour: -600000000
This day: 36000000000
```

```
Last day: -36000000000
This month: 6048000000000
Last month: -6048000000000
This quarter: 25920000000000
Last quarter: -25920000000000
This year: 77760000000000
Last year: -77760000000000
Custom timeframe: 0
```

Example:`<timeframe>36000000000</timeframe>`

<timeframe_START>

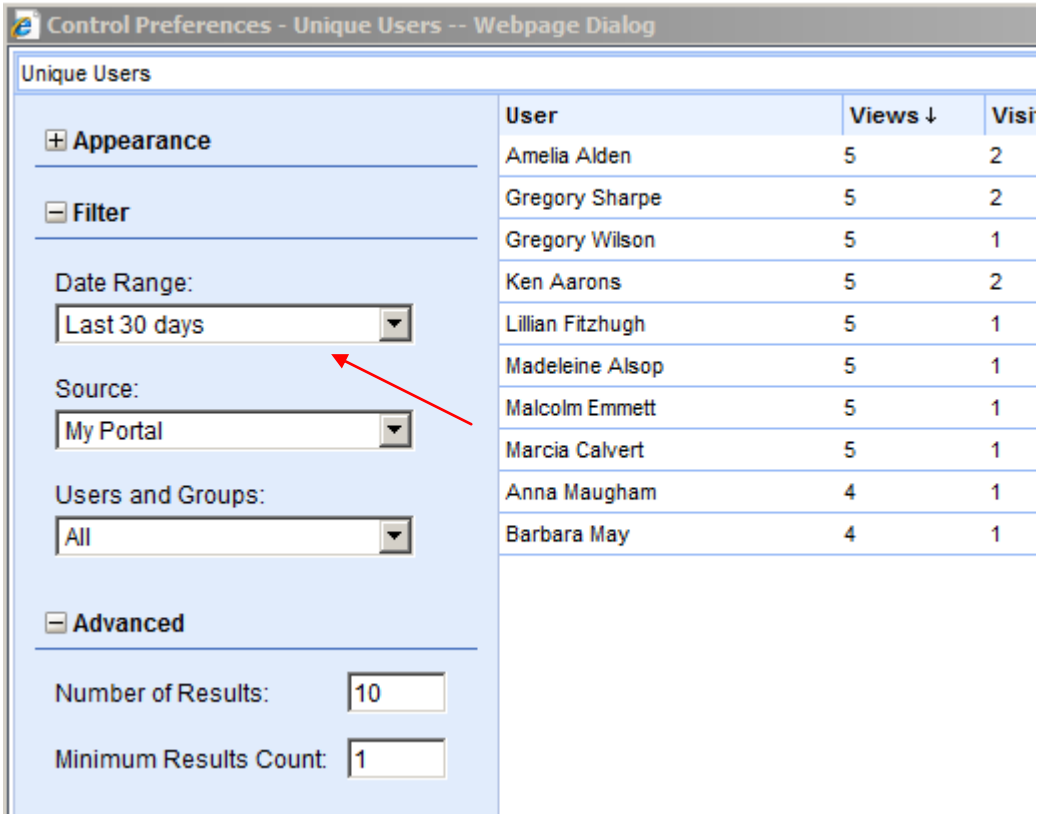
Dynamic time period for the report.

```
<timeframe_START>[number]d</timeframe_START>
<timeframe_END>today</timeframe_END>
<timeframe_TITLE>Last [number] days</timeframe_TITLE>
```

Note: These tags are used whenever timeframe is set to 0. All three tags are required

Example:

```
<timeframe_START>30d</timeframe_START>
<timeframe_END>today</timeframe_END>
<timeframe_TITLE>Last 30 days</timeframe_TITLE>
```

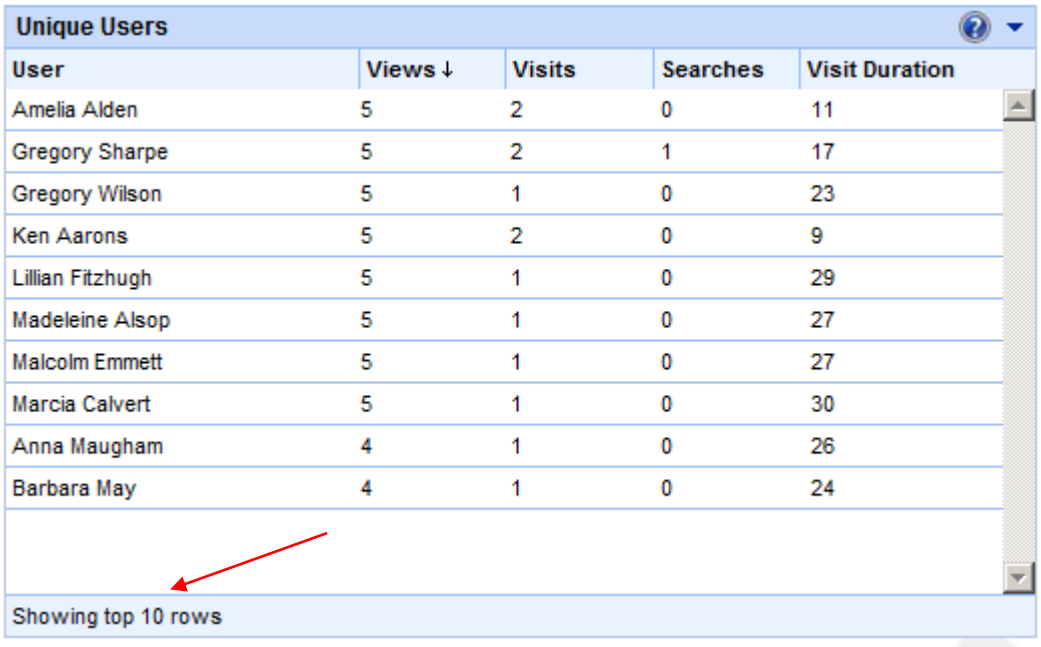


<maxrows>

The number of rows displayed by the report.

`<maxrows>[number]</maxrows>`

Example:`<maxrows>10</maxrows>`



Unique Users

User	Views ↓	Visits	Searches	Visit Duration
Amelia Alden	5	2	0	11
Gregory Sharpe	5	2	1	17
Gregory Wilson	5	1	0	23
Ken Aarons	5	2	0	9
Lillian Fitzhugh	5	1	0	29
Madeleine Alsop	5	1	0	27
Malcolm Emmett	5	1	0	27
Marcia Calvert	5	1	0	30
Anna Maugham	4	1	0	26
Barbara May	4	1	0	24

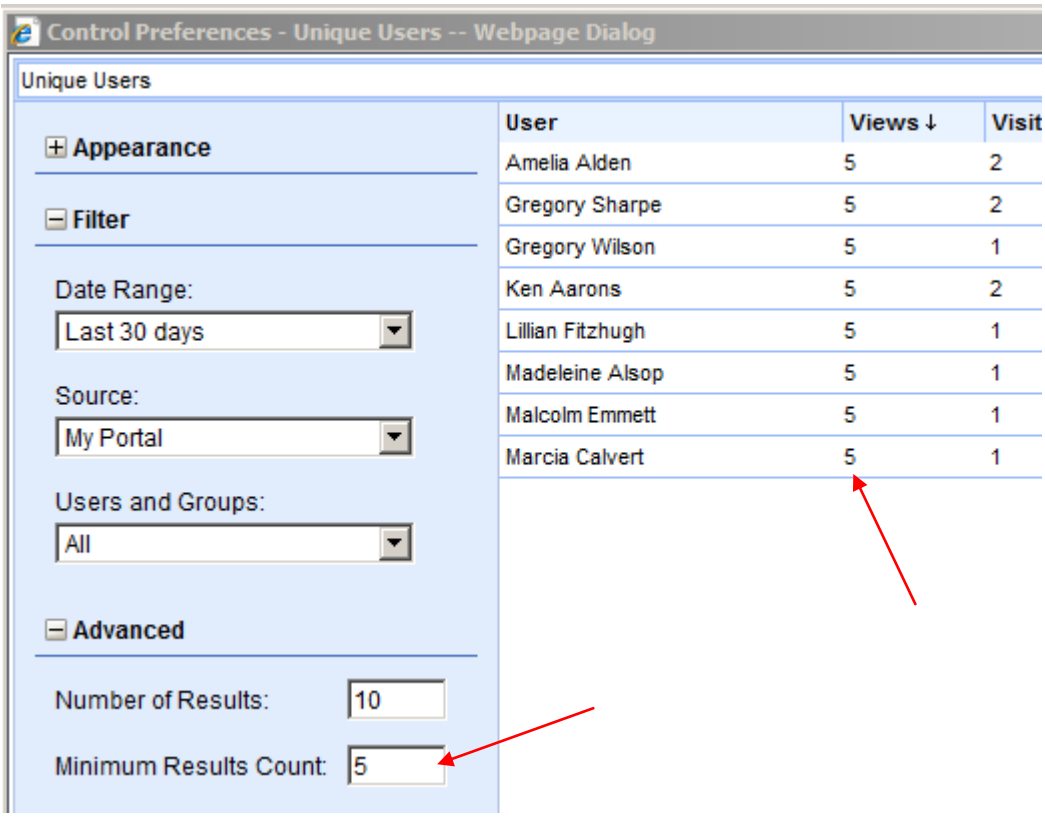
Showing top 10 rows

<mincount>

Show rows with a minimum results count.

`<mincount>[number]</mincount>`

Example: `<mincount>5</mincount>`



<reporttype>

This is a reference to the report properties – as defined in SpecialReportsCustom.xml. See the "Setting the report properties" section – 2.1.

```
<reporttype>[number]</reporttype>
```

Example:`<reporttype>1000</reporttype>`

<columns>

Definition of report columns.

```
<columns>
    <column id="[column id]" title="[column name]" width="[px | %]"
    type="[text | SPPage | number | hidden | user]" sorted="[true | false]"
    />
</columns>
```

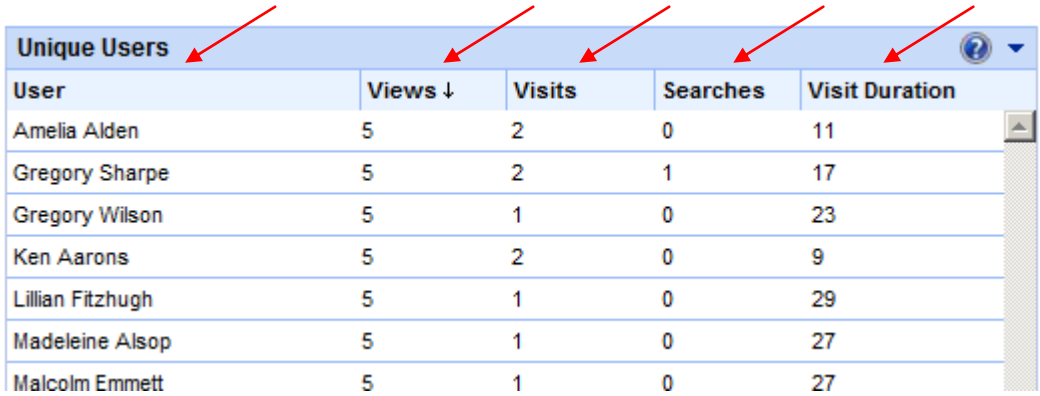
`id: corresponds to the column name returned by the SQL query`

title: display name for the column

sorted: results are sorted by the specified column

Example:

```
<columns>
      <column id="title" title="User" width="30%" type="text" />
      <column id="views" title="Views" sorted="true" width="15%"
            type="number" />
      <column id="visits" title="Visits" width="15%" type="number" />
      <column id="searches" title="Searches" width="15%" type="number" />
            <column id="duration" title="Visit Duration" width="15%"
            type="number" />
</columns>
```



Unique Users

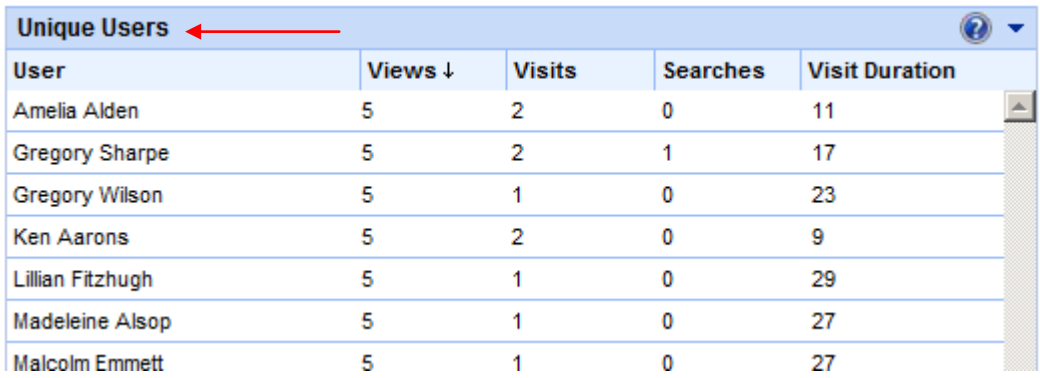
User	Views ↓	Visits	Searches	Visit Duration
Amelia Alden	5	2	0	11
Gregory Sharpe	5	2	1	17
Gregory Wilson	5	1	0	23
Ken Aarons	5	2	0	9
Lillian Fitzhugh	5	1	0	29
Madeleine Alsop	5	1	0	27
Malcolm Emmett	5	1	0	27

<ctitle>

The report title.

```
<ctitle>[report_name]</ctitle>
```

Example:`<ctitle>Unique Users</ctitle>`



Unique Users

User	Views ↓	Visits	Searches	Visit Duration
Amelia Alden	5	2	0	11
Gregory Sharpe	5	2	1	17
Gregory Wilson	5	1	0	23
Ken Aarons	5	2	0	9
Lillian Fitzhugh	5	1	0	29
Madeleine Alsop	5	1	0	27
Malcolm Emmett	5	1	0	27

5.5.3.2.3 Optional Preferences Fields

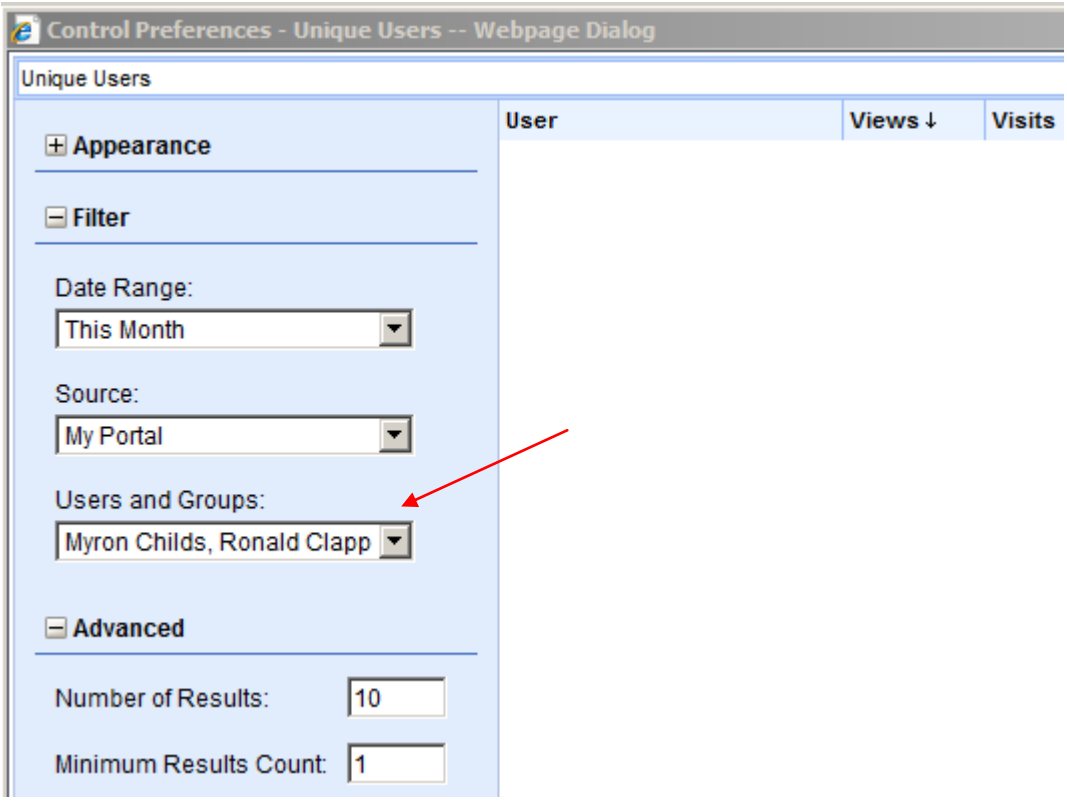
<aduser>

Active Directory users filter.

```
<aduser>userid [,userid]</aduser>
<adusername>username [,username]</adusername>
```

Example:

```
<aduser>123267,123171</aduser>
<adusername>Myron Childs, Ronald Clapp</adusername>
```



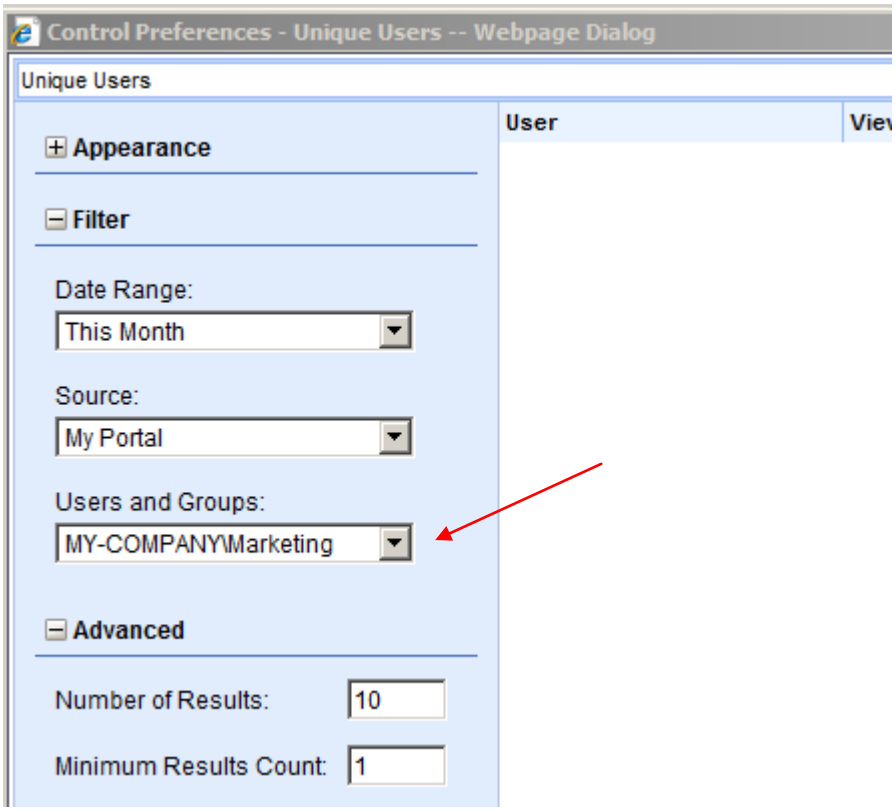
<adgroup>

Active Directory groups filter.

```
<adgroup>[groupid [,groupid]]</adgroup>
<adgroupname>[group_name]</adgroupname>
```

Example:

```
<adgroup>16202</adgroup>
<adgroupname>MY-COMPANY\Marketing</adgroupname>
```



<categories>

User categories filter.

```
<categories>
      <category id='[category_id]' value='[valueid
      [,valueid]'>[category_name, [category_name]]</category>
</categories>
```

Example:

```
<categories>
<category id='1' value='10,6'>Development, PostSales</category>
</categories>
```

<customparam>

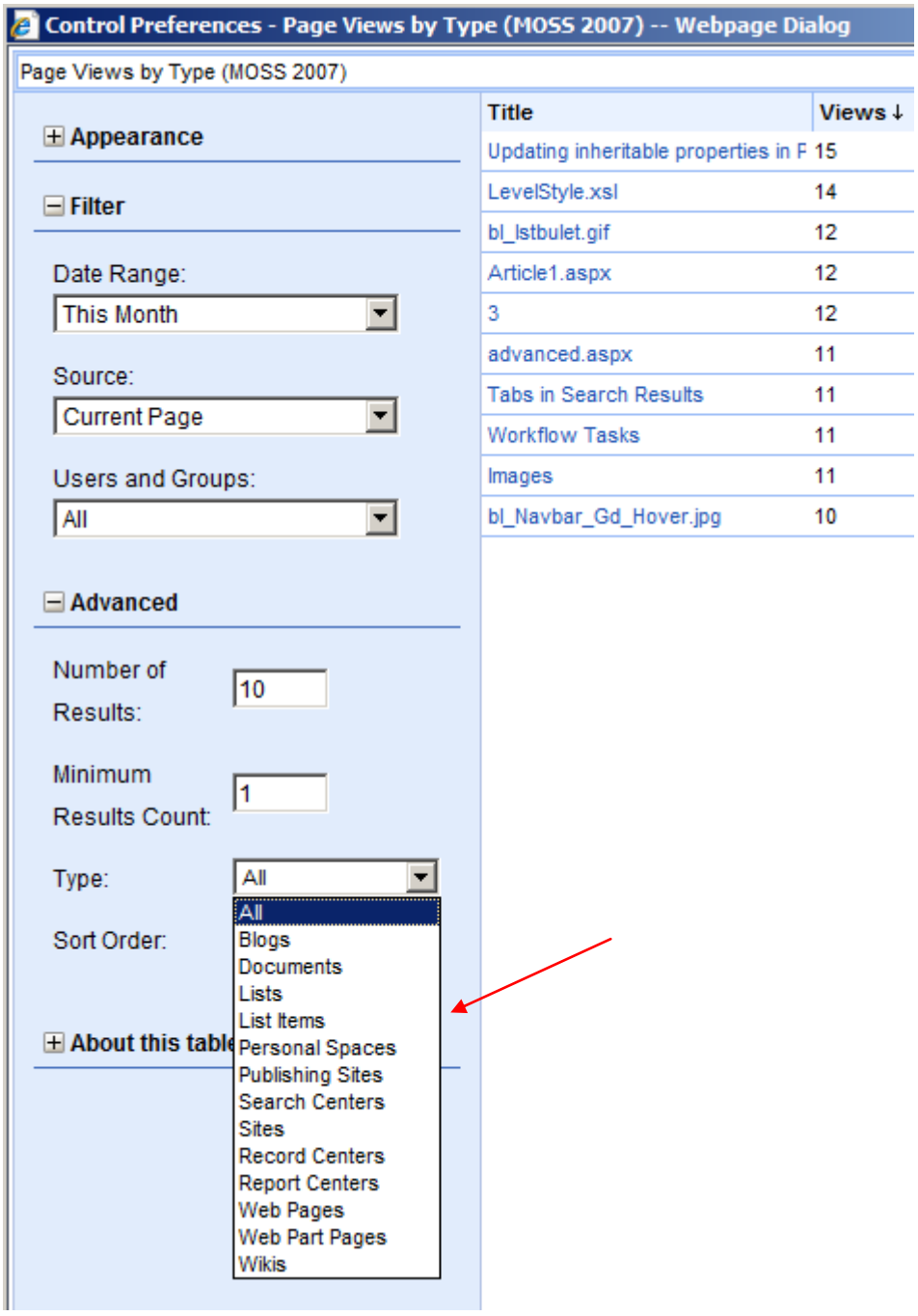
Custom report filters.

```
<customparam0 title="[filter_name]" type="select"
```

```
  selectValues="[name1]:[value1]|[name2]:[value2]">
[default_value]
</customparam0>
```

Example:

```
<customparam0 title="$Type$" type="select"
  selectValues="All:-1|Blogs:101|Documents:9|Lists:2|List Items:6|Personal
  Space:10|Publishing Sites:102|Search Centers:105|Sites:1|Record
  Centers:104|Report Centers:103|Web Page:107|Web Part Pages:11|Wikis:100">
  -1
</customparam0>
```


Control Preferences - Page Views by Type (MOSS 2007) -- Webpage Dialog
Page Views by Type (MOSS 2007)
Appearance
Filter
Date Range:
This Month
Source:
Current Page
Users and Groups:
All
Advanced
Number of Results:
10
Minimum Results Count:
1
Type:
All
Sort Order:
About this table
All
Blogs
Documents
Lists
List Items
Personal Spaces
Publishing Sites
Search Centers
Sites
Record Centers
Report Centers
Web Pages
Web Part Pages
Wikis
Title
Views
Updating inheritable properties in F 15
LevelStyle.xsl 14
bl_lstbulet.gif 12
Article1.aspx 12
3 12
advanced.aspx 11
Tabs in Search Results 11
Workflow Tasks 11
Images 11
bl_Navbar_Gd_Hover.jpg 10

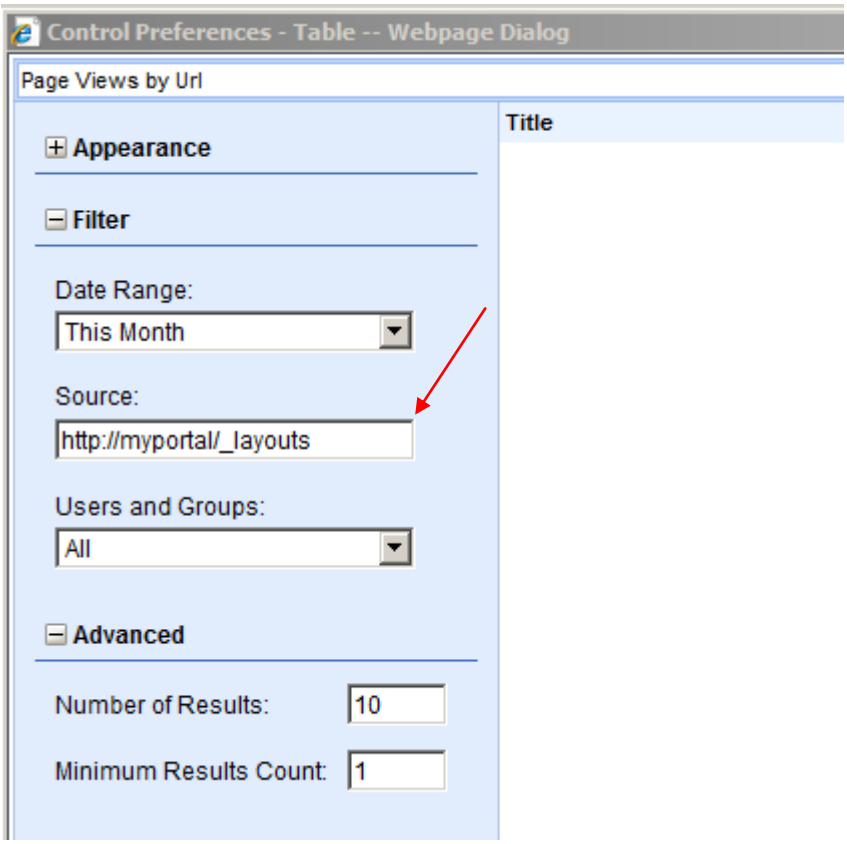
<entityUrl>

Report filtering by URL. Use this option for reporting on pages which are not included in the portal tree (Object Explorer).

```
<entityUrl>[url]</entityUrl>
```

Example:

```
<entityUrl>http://myportal/_layouts</entityUrl>
```



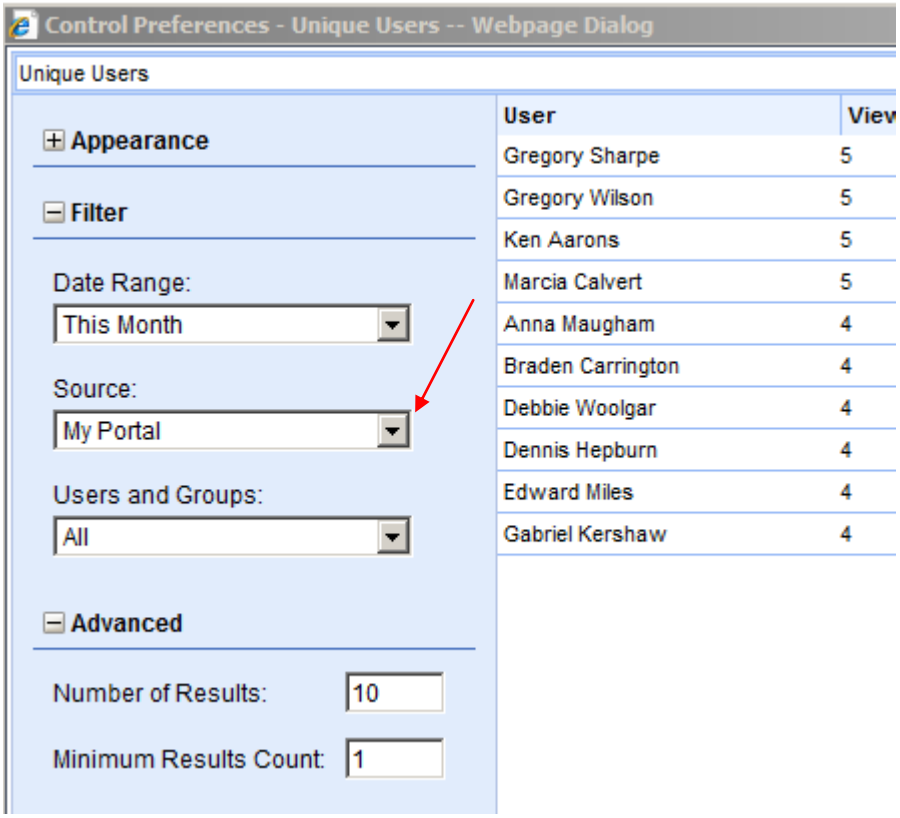
<entityId>

Report filtering by a specific item from the portal tree (Object Explorer).

```
<entityId>0:[item_id] [,0:[item_id]]</entityId>
<entityName>[item_name [,[item_name]]</entityName>
<entityTree>0[,0]</entityTree>
```

Example:

```
<entityId>0:34d2534b-8bee-4b6c-968d-efbc7841a1a4</entityId>
<entityName>My Portal</entityName>
<entityTree>0</entityTree>
```

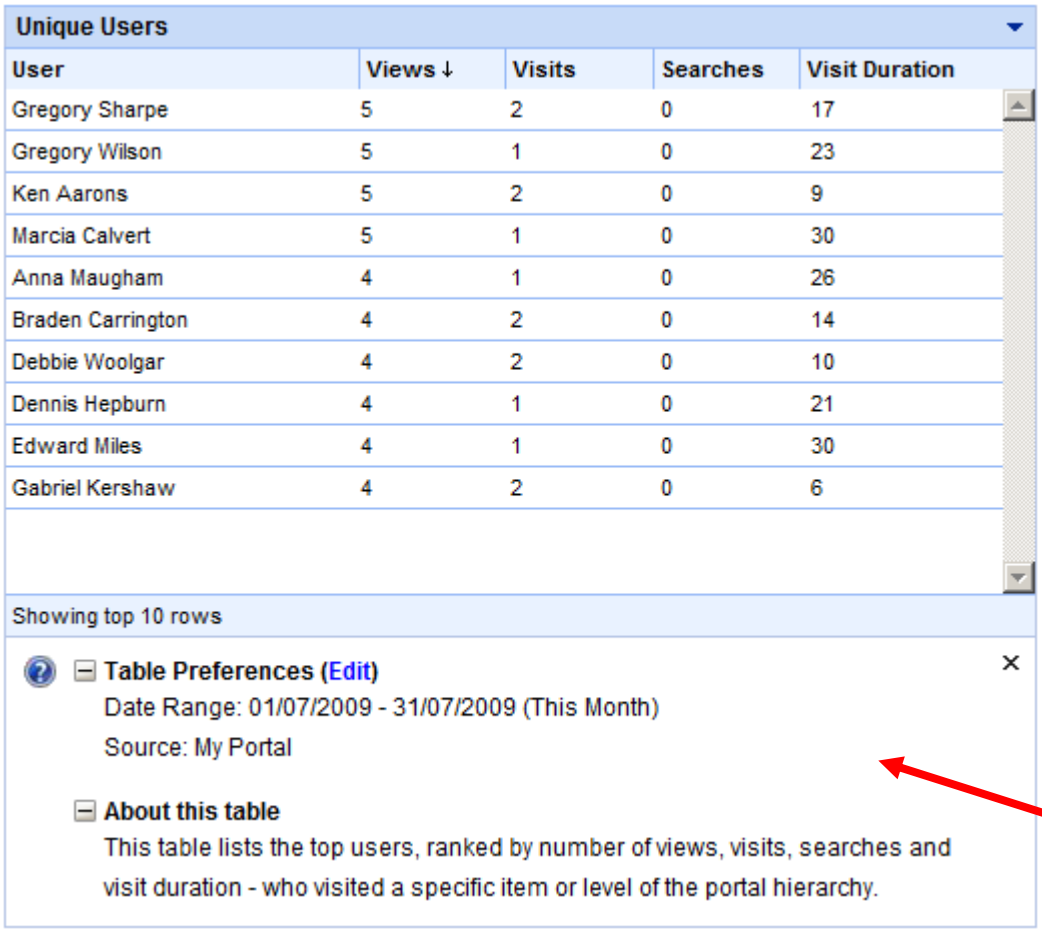


<showhelp>

Show/hide help for the report.

```
<showhelp>[false | true]</showhelp>
```

Example:`<showhelp>false</showhelp>`



Unique Users

User	Views ↓	Visits	Searches	Visit Duration
Gregory Sharpe	5	2	0	17
Gregory Wilson	5	1	0	23
Ken Aarons	5	2	0	9
Marcia Calvert	5	1	0	30
Anna Maugham	4	1	0	26
Braden Carrington	4	2	0	14
Debbie Woolgar	4	2	0	10
Dennis Hepburn	4	1	0	21
Edward Miles	4	1	0	30
Gabriel Kershaw	4	2	0	6

Showing top 10 rows

Table Preferences (Edit)
Date Range: 01/07/2009 - 31/07/2009 (This Month)
Source: My Portal

About this table
This table lists the top users, ranked by number of views, visits, searches and visit duration - who visited a specific item or level of the portal hierarchy.

5.5.3.3. Creating the SQL Stored Procedure

The stored procedure should query the main SQL Usage Events table, named – CardioLog.dbo.tab_event_log. This table can be joined with other tables (from within the CardioLog database or from External databases) for richer reports.

For more details about the CardioLog database tables, see the CardioLog 2010 Database Structure document.

5.5.3.3.1 Table Report

The guidelines for creating a stored procedure for a table report are as follows:

8. The stored procedure should be created in the CardioLog database.
9. The stored procedure should return a table with columns as defined in the <columns> report preferences field.
10. The stored procedure should include a list of required parameters (see next section).

11. The stored procedure should include a list of optional parameters defined in the report properties.

Example:

Stored Procedure:

```
Use [CardioLog]
GO

CREATE procedure [dbo].[stp_top_documents_table]
  --required parameters
  @startTime datetime,
  @endTime datetime,
  @groupIds varchar(2000),
  @userIds varchar(2000),
  @categoryIds varchar(2000),
  @eventType smallint,
  @spLocation varchar(500),
  @aggregated tinyint,
  @maxRows int,
  @minCount int,

  --optional parameter
  @entityType smallint
AS
SELECT
  url, title, views
FROM
  --code…
```

Report Properties:

```
<specialReport id="10000" title="Top Documents Table" type="Table"
   cmdText="stp_top_blogs">
<param name="@entityType" rulePref="entityType" prefType="Int"
  defaultVal="9" />
</specialReport>
```

Report Preferences:

```
<prefs>
<showhelp>false</showhelp>
<timeframe>36000000000</timeframe>
<maxrows>10</maxrows>
<mincount>1</mincount>
<reporttype>10000</reporttype>
<columns>
<column id="title" title="Title" width="80%" type="SPPage" />
<column id="url" title="Url" width="0" type="hidden" />
<column id="views" title="Views" sorted="true" width="20%"
    type="number" />
</columns>
<ctitle>Top Documents</ctitle>
</prefs>
```

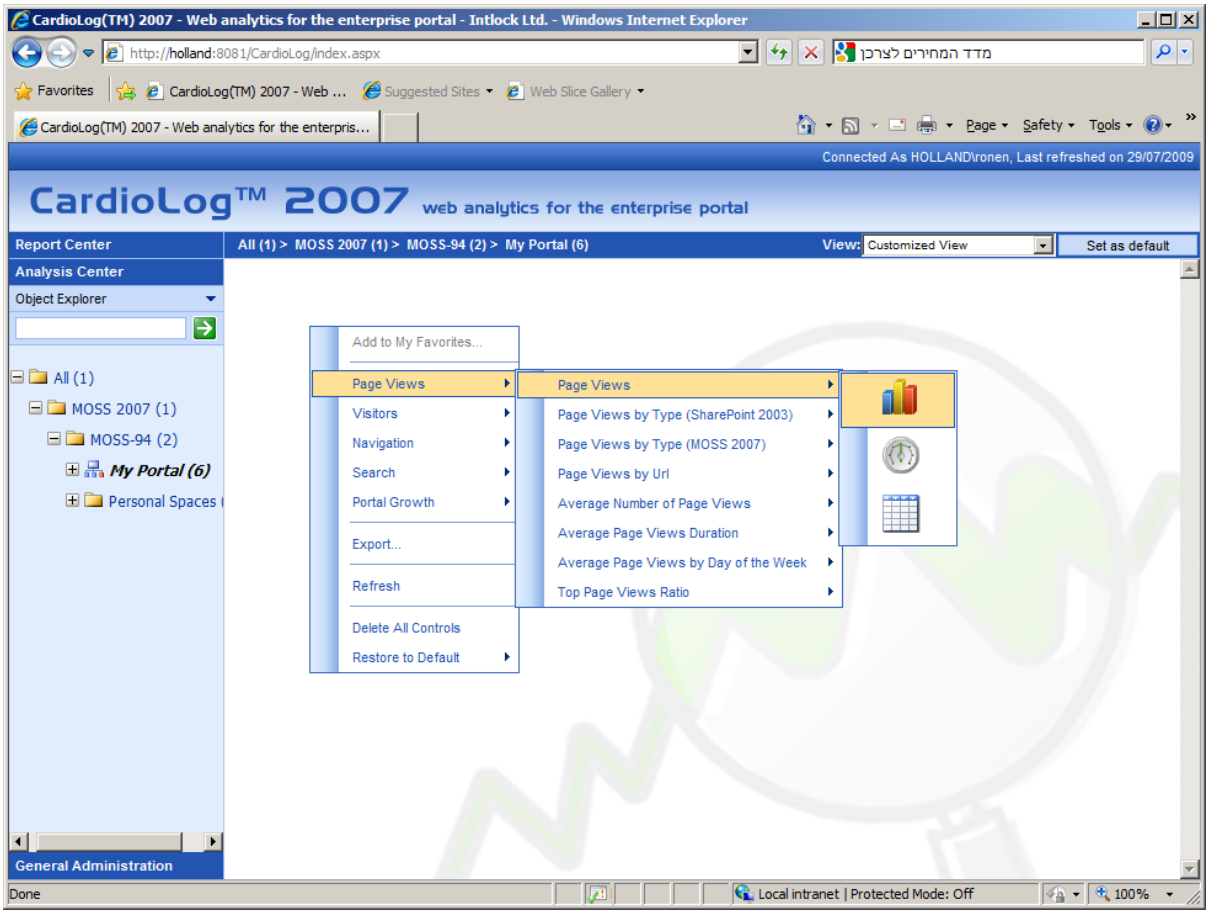
Required stored procedure parameters

The following parameters are required. They are populated automatically by the reporting engine:

```
@startTime datetime,
@endTime datetime,
@groupIds varchar(2000),
@userIds varchar(2000),
@categoryIds varchar(2000),
@eventType smallint,
@spLocation varchar(500), or @url varchar(500)
@aggregated tinyint,
@maxRows int,
@minCount int,
```

5.5.3.4. Registering a Report in the CardioLog UI

In the CardioLog UI, reports can be added to dashboards in Report Center and Analysis Center. This is done by right clicking the Central Area and selecting a report.



To make a new report available for selection in the UI, the following is required:

1. Optional: create a submenu (directory) for the report
2. Inserting the Report Into tab_catalog_controls
3. Creating the Report Rule
4. Linking Directory-Report and Report-Rule

5.5.3.4.1 Creating a Report Sub-Menu

The creation of a report sub-menu is done with an SQL batch.

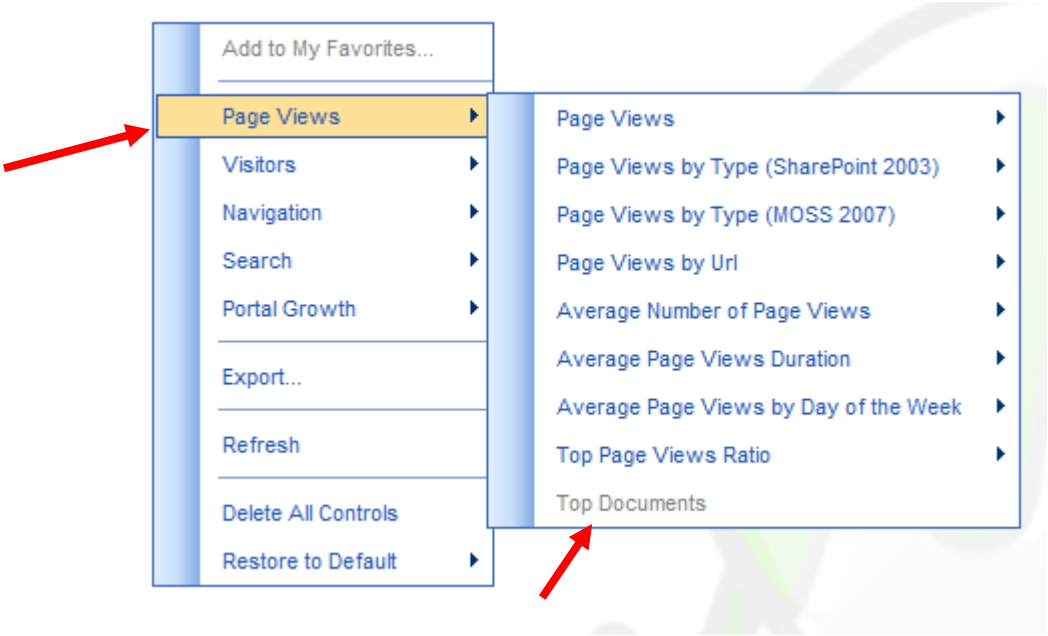
Example:

```
Use [CardioLog]
GO
```

```
SET IDENTITY_INSERT [dbo].[tab_catalog_dir] ON

INSERT [dbo].[tab_catalog_dir]
   ([DirectoryId], [Name], [ParentId], [order])
VALUES
   (2500, N'Top Documents', 2040, 100)

SET IDENTITY_INSERT [dbo].[tab_catalog_dir] OFF
GO
```

Note: DirectoryId should be > 2499

In this example, the parent directory (2040) is "Page Views".



5.5.3.4.2 Inserting a Report into the CardioLog Database

5.5.3.4.2.1 Inserting the Report Into tab_catalog_controls

```
Use [CardioLog]
GO

INSERT [dbo].[tab_catalog_controls]
  ([controlId],
  [Type],
  [viewerType],
  [title],
```

```
  [description],
  [prefs],
  [reportPrefs])
VALUES
  ([number],
  N'[report | graph | meter]',
  N'[Report | SimpleChart | Meter]',
  N'[Table | Chart | Meter]',
  N'[report_description]',
  N'[report_prefrences]',
  N'<prefs/>')
```

controlId: should be > 9999

prefs: this column holds the report preferences Xml

Table Report Example:

```
Use [CardioLog]
GO

INSERT [dbo].[tab_catalog_controls]
  ([controlId],
  [Type],
  [viewerType],
  [title],
  [description],
  [prefs],
  [reportPrefs])
VALUES
   (10000,
   N'report',
   N'Report',
   N'Table',
   N'This is my custom report.',
   N'<prefs><showhelp>false</showhelp><timeframe>36000000000</timeframe><ma
   xrows>10</maxrows><mincount>1</mincount><reporttype>10000</reporttype><c
```

```
  olumns><column id="title" title="Title" width="80%" type="SPPage"
  /><column id="url" title="Url" width="0" type="hidden" /><column
  id="views" title="Views" sorted="true" width="20%"type="number"
  /></columns><ctitle>Top Documents</ctitle></prefs>',
  N'<prefs/>')
```

5.5.3.4.2.2 Creating the Report Rule

The report rule holds additional properties for the report.

```
Use [CardioLog]
GO

INSERT [dbo].[tab_rule]
  ([RuleId],
  [deleted],
  [RuleType],
  [UserLogMethod],
  [EntityLogMethod],
  [LastAnalysisTime],
  [UserInfo],
  [EntityInfo],
  [Prefs],
  [Title],
  [IsIndexed],
  [eventType])
VALUES
  ([number],
  0,
  5,
  -1,
  [2 | 3],
  getdate(),
  N'',
  N'***DYN_PARAM***',
  N'<prefs><reportType>[number]</reportType></prefs>',
  N'[title]',
```

```
  0,
  [0 | 1 | 2])
```

RuleId: should be > 9999

EntityInfo: 2=specific (homepage), 3=aggregated (all pages)

Prefs: number=same as <reporttype> value in the Report Preferences.

eventType: 0=view, 1=duration, 2=search

Table Report Example:

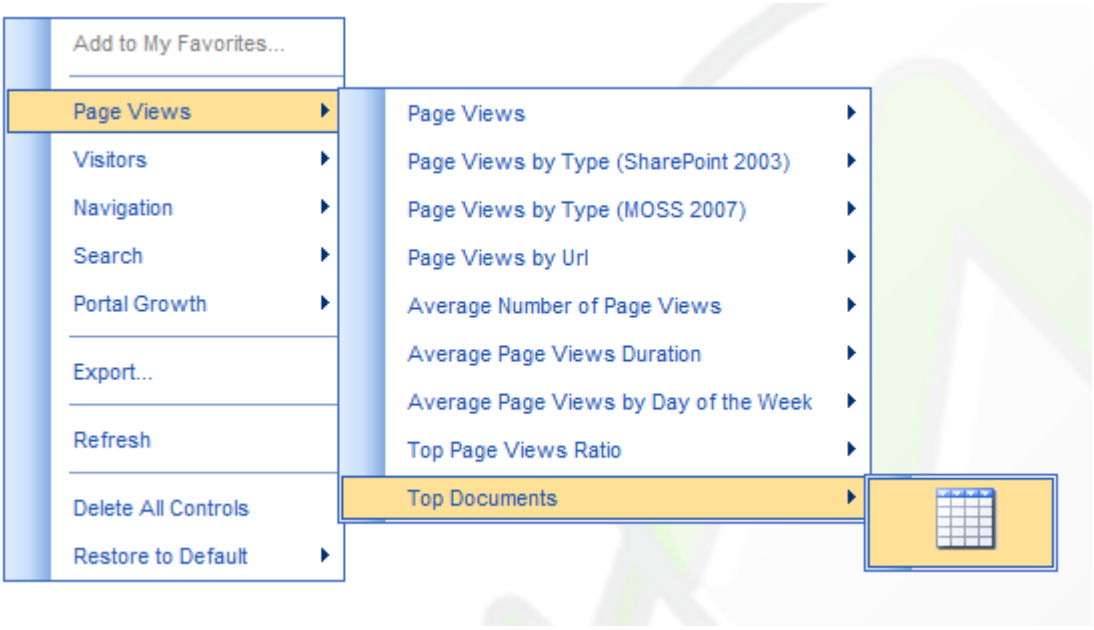
```
Use [CardioLog]
GO

INSERT [dbo].[tab_rule]
   ([RuleId],
   [deleted],
   [RuleType],
   [UserLogMethod],
   [EntityLogMethod],
   [LastAnalysisTime],
   [UserInfo],
   [EntityInfo],
   [Prefs],
   [Title],
   [IsIndexed],
   [eventType])
VALUES
  (2162,
  0,
  5,
  -1,
  3,
  getdate(),
  N'',
  N'***DYN_PARAM***',
  N'<prefs><reportType>2162</reportType></prefs>',
  N'Top Documents - Table - Aggregated',
```

```
0,
0)
```

5.5.3.4.2.3 Linking Report-Rule and Directory-Report

```
INSERT [dbo].[tab_catalog_controls_rules]
   ([controlId], [ruleId], [order])
VALUES
   (10000, 10000, 1)
```

```
INSERT [dbo].[tab_catalog_controls_dirs]
   ([controlId], [directoryId], [order], [hide])
VALUES
   (10000, 2500, 10, 0)
```



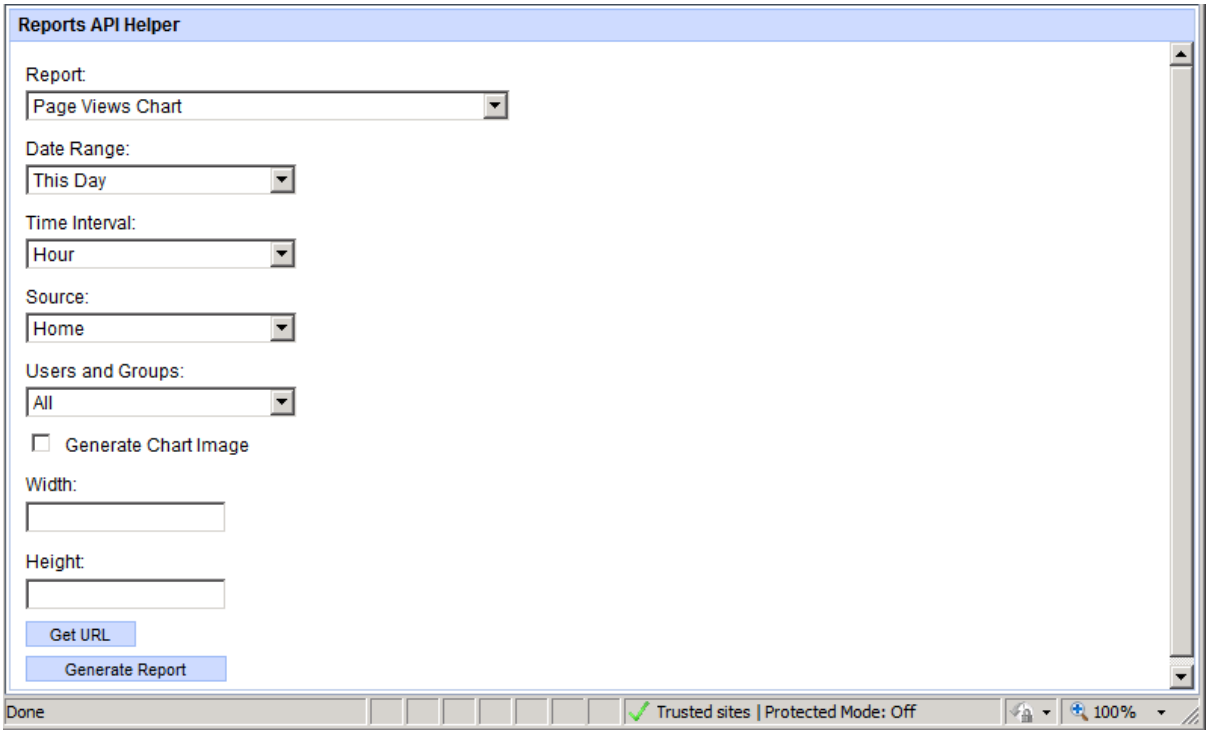
5.5.4 The Data Export API

With the Data Export API you can develop client applications to request data from the CardioLog reporting engine, and refine the results of the request using query parameters.

The CardioLog reporting engine generates the report in XML format and as a chart image

Use the Reports API Helper to generate a URL which can be embedded in a client application. When calling this URL the report will be generated based on the selected parameters.

1. Browse to: http://<cardiolog_server>:<port>/CardioLog/CLReport/ReportsAPIHelper.aspx



2. Select a **Report**.
3. Select the report parameters – **Date Range**, **Time Interval**, **Source, Users and Groups**
4. Check **Generate Chart Image** to create an image and set its **Width** and **Height** (pixels).
5. Click **Get URL** to generate the report URL
6. Click **Generate Report** to generate the report.

5.5.4.1 The CardioLog Report XML Schema

The CardioLog report XML contains a preferences (prefs node) and a data section (data node).

Chart

The chart x-axis values are displayed in the categories node, while y-axis values are displayed in the dataset node (each chart series is represented by a dataset node).

```
<xml id="root">
<report>
<call controlId="410" action="get" cached="False"><controlTitle>Chart</controlTitle><title>Page
Views</title>
<prefs>
<prefs><enable3D>true</enable3D><perspective>true</perspective><legend>true</legend><l_INSIDECH
ART>false</l_INSIDECHART><l_STYLE>row</l_STYLE><l_DOCKING>top</l_DOCKING><labels>false</label
s><showtitle>false</showtitle><showhelp>false</showhelp><showpreferences>false</showpreferences><ti
meframe>864000000000</timeframe><timeInterval>864000000000</timeInterval><rules><rule id="2022"
status="on" title="Aggregated" type="Column" /><rule id="2021" status="on" title="Specific" type="Column"
/><rule id="2046" status="off" title="Aggregated" type="Column" period="1" /><rule id="2129" status="off"
title="Specific" type="Column" period="1" /></rules><ctitle>Page
Views</ctitle><type>Column</type><palette>BrightPastel</palette><adgroup>2</adgroup><adgroupnam
e>Domain Users</adgroupname><categories></categories><entityId>0:01264d16-4641-465a-bdfe-
459f1cb10d35</entityId><entityName>Collaboration
Portal</entityName><entityTree>0</entityTree></prefs></prefs>
<data>
<categories>
        <category name='Sun.'/>
        <category name='Mon.'/>
        <category name='Tue.'/>
        <category name='Wed.'/>
        <category name='Thu.'/>
        <category name='Fri.'/>
        <category name='Sat.'/>
</categories>
<dataset ruleId='2021' seriesname='Specific' type='Column'>
        <set value='100' />
        <set value='212' />
        <set value='343' />
        <set value='256' />
        <set value='347' />
        <set value='103' />
        <set value='120' />
</dataset>
<dataset ruleId='2022' seriesname='Aggregated' type='Column'>
        <set value='1390' />
        <set value='1456' />
        <set value='1437' />
        <set value='1367' />
```

```
        <set value='1278' />
        <set value='800' />
        <set value='678' />
</dataset>
</data></call></report></xml>
```

Table

The data section for Table reports is ready for HTML deployment.

```
<xml id="root">
<report>
<call controlId="411" action="get" cached="True">
<controlTitle>Table</controlTitle><title>Page Views</title>
<prefs>
<prefs><showhelp>false</showhelp><showpreferences>false</showpreferences><timeframe>3600000000
0</timeframe><timeInterval>36000000000</timeInterval><maxrows>10</maxrows><mincount>1</minco
unt><reporttype>120</reporttype><columns><column id="title" title="Title" width="35%" type="SPPage"
/><column id="url" title="Url" width="0" type="hidden" /><column id="views" title="Views" sorted="true"
width="15%" type="number" /><column id="users" title="Unique Users" sorted="false" width="20%"
type="number" /><column id="avgDuration" title="Duration" sorted="false" width="15%" type="string"
/><column id="exitRate" title="Exit Rate" sorted="false" width="15%" type="number"
/></columns><ctitle>Page
Views</ctitle><chartType>static</chartType><adgroup></adgroup><adgroupname></adgroupname><cate
gories></categories><entityId>0:b0426e68-8f34-4eb2-8702-
012d5de1c143</entityId><entityName>All</entityName><entityTree>0</entityTree></prefs>
</prefs>
<data>
<![CDATA[<table cache='True'>
        <prefs><showhelp>false</showhelp><showpreferences>false</showpreferences><timeframe>360
00000000</timeframe><timeInterval>36000000000</timeInterval><maxrows>10</maxrows><mincount>
1</mincount><reporttype>120</reporttype><columns><column id="title" title="Title" width="35%"
type="SPPage" /><column id="url" title="Url" width="0" type="hidden" /><column id="views" title="Views"
sorted="true" width="15%" type="number" /><column id="users" title="Unique Users" sorted="false"
width="20%" type="number" /><column id="avgDuration" title="Duration" sorted="false" width="15%"
type="string" /><column id="exitRate" title="Exit Rate" sorted="false" width="15%" type="number"
/></columns><ctitle>Page
Views</ctitle><chartType>static</chartType><adgroup></adgroup><adgroupname></adgroupname><cate
gories></categories><entityId>0:b0426e68-8f34-4eb2-8702-
012d5de1c143</entityId><entityName>All</entityName><entityTree>0</entityTree>
</prefs>
        <thead>
                <td type='SPPage' width='35%' id='title'>Title</td>
                <td type='hidden' width='0' id='url'>Url</td>
```

```
                <td type='number' width='15%' sorted='true' direction='-1' id='views'>Views</td>
                <td type='number' width='20%' id='users'>Unique Users</td>
                <td type='string' width='15%' id='avgDuration'>Duration</td>
                <td type='number' width='15%' id='exitRate'>Exit Rate</td>
        </thead>
        <tbody from='0' to='10' total='10'>
        <tr>
                <td>bl_SecondaryNav_Divider.jpg</td>
                <td>http://scotland:81/Style Library/Images/bl_SecondaryNav_Divider.jpg</td>
                <td>3</td>
                <td>3</td>
                <td>00:00:04</td>
                <td>0%</td>
        </tr>
        <tr>
                <td>Links</td>
                <td>http://scotland:81/Lists/Links/AllItems.aspx</td>
                <td>3</td>
                <td>3</td>
                <td>00:00:02</td>
                <td>0%</td>
        </tr>
        <tr>
                <td>Workflow Tasks</td>
                <td>http://scotland:81/News/WorkflowTasks/AllItems.aspx</td>
                <td>3</td>
                <td>3</td>
                <td>00:00:07</td>
                <td>0%</td>
        </tr>
        <tr>
                <td>Total Problems</td>
                <td>http://scotland:81/Reports/Lists/Sample Dashboard KPI
Definitions/DispForm.aspx?ID=1</td>
                <td>3</td>
                <td>3</td>
                <td>00:00:05</td>
                <td>0%</td>
        </tr>
        <tr>
                <td>My Tasks</td>
                <td>http://scotland:81/Reports List/DispForm.aspx?ID=4</td>
                <td>2</td>
```

```
            <td>2</td>
            <td>00:00:00</td>
            <td>0%</td>
        </tr>
        <tr>
            <td>All</td>
            <td>http://Root/</td>
            <td>2</td>
            <td>2</td>
            <td>00:00:05</td>
            <td>0%</td>
        </tr>
        <tr>
            <td>Lists</td>
            <td>http://scotland:81/Pages/Default.aspx/Lists</td>
            <td>2</td>
            <td>2</td>
            <td>00:00:04</td>
            <td>0%</td>
        </tr>
        <tr>
            <td>6</td>
            <td>http://scotland:81/Lists/Reporting Metadata/DispForm.aspx?ID=6</td>
            <td>2</td>
            <td>2</td>
            <td>00:00:07</td>
            <td>0%</td>
        </tr>
        <tr>
            <td>LevelStyle.xsl</td>
            <td>http://scotland:81/Style Library/XSL Style Sheets/LevelStyle.xsl</td>
            <td>2</td>
            <td>2</td>
            <td>00:00:05</td>
            <td>50%</td>
        </tr>
        <tr>
            <td>bl_Tab_Left.jpg</td>
            <td>http://scotland:81/Style Library/Images/bl_Tab_Left.jpg</td>
            <td>2</td>
            <td>2</td>
            <td>00:00:05</td>
            <td>0%</td>
```

```
        </tr>
        </tbody>
<startTime>1/1/0001 12:00:00 AM</startTime><endTime>1/1/0001 12:00:00
AM</endTime><rules>1</rules></table>]]>
</data>
</call>
</report>
</xml>
```

Meter

The Meter data is displayed in the value node.

```
<xml id="root">
<report>
<call controlId="412" action="get" cached="True">
<controlTitle>Meter</controlTitle><title>Page Views</title>
<prefs>
<prefs><showhelp>false</showhelp><showpreferences>false</showpreferences><timeframe>3600000000
0</timeframe><timeInterval>36000000000</timeInterval><minvalue>0</minvalue><maxvalue>100</max
value><undershoot>0</undershoot><overshoot>100</overshoot><ctitle>Page
Views</ctitle><chartType>static</chartType><adgroup></adgroup><adgroupname></adgroupname><cate
gories></categories><entityId>0:b0426e68-8f34-4eb2-8702-
012d5de1c143</entityId><entityName>All</entityName><entityTree>0</entityTree></prefs>
</prefs>
<data>
<![CDATA[<meter>
        <value>105</value>

<prefs><showhelp>false</showhelp><showpreferences>false</showpreferences><timeframe>3600000000
0</timeframe><timeInterval>36000000000</timeInterval><minvalue>0</minvalue><maxvalue>100</max
value><undershoot>0</undershoot><overshoot>100</overshoot><ctitle>Page
Views</ctitle><chartType>static</chartType><adgroup></adgroup><adgroupname></adgroupname><cate
gories></categories><entityId>0:b0426e68-8f34-4eb2-8702-
012d5de1c143</entityId><entityName>All</entityName><entityTree>0</entityTree></prefs>
        <startTime>5/23/2010 12:00:00 AM</startTime>
        <endTime>5/23/2010 4:59:59 PM</endTime>
        <rules>1</rules>
</meter>]]>
</data>
</call>
</report>
</xml>
```

5.6 Enhanced Visitor Segmentation

CardioLog 2010 provides advanced visitor segmentation capabilities by integrating organizational user data into reports. Retrieval of the organizational hierarchy (users and groups) is performed by the Active Directory Updates service- which consumes the data directly from Active Directory.

The Active Directory Updates service can also consume the data from external web services which supply the custom organization structure (users and groups).Additional user data(such as department, gender, etc.) can be retrieved by the User Categories Updates service, which consumes custom user data from a designated external Web Service.
Follow the Visitor Segmentation check list for success measurement.

5.6.1 The Custom Organization Structure (Users and Groups) Web Service

In order to load your custom organization structure(users and groups) to CardioLog, it is required to specify a Web Service from which the **Active Directory Updates** service - will consume the organization's data. This is done through the CardioLog **General Administration** user interface:

1. Create the custom organization structure web service for your organization.
2. Browse to **CardioLog**>**General Administration**>**CardioLog Scheduling Service**>**Active Directory Updates**.
3. Click **Next**.
4. Enter the custom web service URL in the **External Web Service URL** textbox and then click the down arrow (acceptable file extensions: "aspx", "asmx", "xml").
5. Click **Save** and restart the **CardioLog Scheduling Service**.

5.6.2 Creating the custom organization structure web service

The Users and Groups Web Service should be exposed by a web page which provides an Xml string response according to the following schema:

```
<?xmlversion="1.0"encoding="Windows-1252"?>
<xs:schema
elementFormDefault="qualified"
xmlns:mstns="http://tempuri.org/ADXmlSchema.xsd"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
<xs:elementname="tree">
<xs:complexType>
<xs:sequence>
<xs:elementname="users">
<xs:complexType>
<xs:sequence>
<xs:elementmaxOccurs="unbounded"name="user">
<xs:complexType>
<xs:sequence>
<xs:elementname="accountName"type="xs:string" />
<xs:elementname="displayName"type="xs:string" />
<xs:elementname="userMail"type="xs:string" />
<xs:elementname="memberOf"type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:elementname="groups">
<xs:complexType>
<xs:sequence>
<xs:elementmaxOccurs="unbounded"name="group">
<xs:complexType>
<xs:sequence>
<xs:elementname="groupName"type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

Field Definitions:

User ***accountName***: the user portal login account.

User ***displayName***: the user name (displayed in CardioLog 2010 reports).

User ***userMail***: the user mail account.

User ***memberOf***: a semicolon separated list of groups (as in ***groupName***) associated with the user.

Sample Data:

```
<tree>
<users>
<user>
<accountName>MyCompany\Sigalit</accountName>
<displayName>Sigalit Hassid</displayName>
<userMail>sigalit.hassid@mycompany.com</userMail>
<memberOf>Administrators;Domain Company Users</memberOf>
</user>
<user>
<accountName>MyCompany\SsharonShay</accountName>
<displayName>Shay Sharon</displayName>
<userMail>shay.sharon@mycompany.com</userMail>
<memberOf>Domain Company Users</memberOf>
</user>
</users>
<groups>
<group>
<groupName>Domain Company Users</groupName>
</group>
<group>
<groupName>Administrators</groupName>
</group>
</groups>
</tree>
```

5.6.3 The Custom User Data Web Service

In order to load additional user data from an external Web Service, specify a Web Service from which the **User Categories Updates** service -will consume the user data. This is done through the CardioLog **General Administration** user interface:

1. Create the user data web service for your organization.
2. Browse to **CardioLog**>**General Administration**>**CardioLog Scheduling Service**>**User Categories Updates**.
3. Click **Next**.
4. Enter the custom web service URL in the **Categories Web Service URL** textbox (acceptable file extensions: "aspx", "asmx", "xml").
5. Click **Save** and restart the **CardioLog Scheduling Service.**

5.6.4 Creating the custom user data web service

The User Category Web Service should be exposed by a web page which provides an Xml string response, according to the following schema:

```
<?xmlversion="1.0"encoding="utf-8" ?>
<xs:schemaid="CategoryXmlSchema"
elementFormDefault="qualified"
xmlns:mstns="http://tempuri.org/CategoryXmlSchema.xsd"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
<xs:elementname="tree">
<xs:complexType>
<xs:sequence>
<xs:elementname="item"type="UserCategoryXmlNode"minOccurs="0"maxOccurs="unb
ounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:complexTypename="UserCategoryXmlNode">
<xs:sequence>
<xs:elementname="userName"type="xs:string" />
<xs:elementname="categories"minOccurs="0"maxOccurs="1">
<xs:complexType>
<xs:sequence>
<xs:elementname="categoryValue"type="categoryNode"minOccurs="0"maxOccurs="u
nbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexTypename="categoryNode">
<xs:sequence>
<xs:elementname="categoryName"type="xs:string"minOccurs="1"maxOccurs="1" />
<xs:elementname="categoryValue"type="xs:string"minOccurs="1"maxOccurs="1"
/>
</xs:sequence>
</xs:complexType>
</xs:schema>
```

Field Definitions:

username: the user portal login account.

categoryName: the category name (displayed in the CardioLog 2010 reports).

categoryValue: the category value (displayed in the CardioLog 2010 reports).

Sample Data:

```
<tree>
<item>
<userName>MyCompany\Sigalit</userName>
<categories>
<categoryValue>
<categoryName>Department</categoryName>
<categoryValue>Sales</categoryValue>
</categoryValue>
<categoryValue>
<categoryName>Gender</categoryName>
<categoryValue>Female</categoryValue>
</categoryValue>
</categories>
</item>
<item>
<userName>MyCompany\Shay</userName>
<categories>
<categoryValue>
<categoryName>Department</categoryName>
<categoryValue>Development</categoryValue>
</categoryValue>
<categoryValue>
<categoryName>Gender</categoryName>
<categoryValue>Male</categoryValue>
</categoryValue>
</categories>
</item>
</tree>
```

5.6.5 The Enhanced Visitor Segmentation Check List

1. **Custom Web Service** -
   - Verify that the XML structure is valid, according to the XML schema.
   - Verify that the custom web service returns a valid XML response and that the CardioLog Scheduling Service user account has sufficient permissions to access (request) the web service.

5.6.6 Visitor Segmentation by Active Directory Attributes

1. Configure the "VisitorSegments" web application - edit the following key values in [CardioLog Installation Folder]\VisitorSegments\web.config:

<add key="adConnStr" value="" />

Value should show the fully qualified domain name (ex: "mycompany.com")

To retrieve your domain name, open Administrative

Tools> Active Directory Users and Computers

<add key="delimiter" value="*" />

A delimiter for attribute names.

<add key="attributeNames" value="" />

A list (delimiter separated) of user attributes which should be imported into CardioLog. To view the available user attributes: open ADSIEdit and connect to your domain. Right click Properties on a user object to see its list of attributes.

2. Add the "User Categories Updates" service component (detailed in section 5.1.1 on the CardioLog 2010 Administrator Guide).
3. Edit the "User Categories Updates" service parameters (detailed in section 5.7 on the CardioLog 2010 Administrator Guide). Fill in the "VisitorSegments" web application URL in the "Categories Web Service URL" field - "http://cardiologserver:port/VisitorSegments/ADCategories.aspx".
4. Restart the "CardioLog Scheduling Service". After the next "User Categories Updates" run, your Active Directory attributes will be added as user categories to the "Filter" section of each report.

5.6.7 Enhanced Visitor Segmentation by SharePoint User Profiles

1. Configure the "VisitorSegments" web application - add the following keys and edit their values to the <appSettings> section in the [CardioLog Installation Folder]\VisitorSegments\web.config:

<add key="sspDBConn" value="Integrated Security=SSPI;Persist Security Info=False;Initial Catalog=[Shared_Services_DB];Data Source=[SQL_Instance]"/>
A list (delimiter separated) of connection strings for the desired SharePoint SSP databases.

<add key="sspPropertyNames" value=""/>
A list (delimiter separated) of user properties which should be imported into CardioLog. To view the available user property names: go to Shared Service Administration > User Profiles and Properties > View Profile Properties.
To retrieve the property name, click the desired property > Edit > Name field.
You can also view the raw property names directly in the Shared Services database > table PropertyList > column PropertyName.

<add key="sspDelimiter" value="*"/>
Delimiter for sspDBConn and sspPropertyNames.

2. Add the "User Categories Updates" service component (detailed in section 5.1.1 on the **CardioLog 2010 Administrator Guide**).
3. Edit the "User Categories Updates" service parameters (detailed in section 5.7 on the **CardioLog 2010 Administrator Guide**). Fill in the "VisitorSegments" web application URL in the "Categories Web Service URL" field - "http://cardiologserver:port/VisitorSegments/SSPProfiles.aspx".
4. Restart the "CardioLog Scheduling Service". After the next "User Categories Updates" run, your SharePoint User Profile properties will be added as user categories to the "Filter" section of each report.

5.7 Troubleshooting Empty Reports

Follow this check list for troubleshooting reports:

1. **Report Cached Data**-
   - Browse to the CardioLog 2010 Report Center and view the empty report in edit mode (right click the report and select **Edit Report**). For enhanced performance and quick loading, visuals controls are displayed in cached mode while editing an existing report. Controls in cached mode display old data, and are presented with a white filter layer. To view current data for a visual control, click **Refresh**. To refresh data for all controls in an edited report, right click the Central Area and select **Refresh**.
   - If you can see data in the report, right click it and select **Regenerate Report.**
   - If you cannot see data in the report, refresh the report data.
2. **Report Scheduling Type**-
   - Make sure that the report scheduling type (daily/weekly/monthly) is in correspondence with the report date range.

     Example: When creating a daily report, scheduled once a day, use the "Last Day" date range (and not "This Day"). By default, the report scheduling service is scheduled to run once a day at 00:00, so in this case the report will be empty.
3. **Report Type ("By URL" Visual Controls)**-
   - If you are viewing a report for unstructured data (banner clicks and referrers or non-SharePoint based web site - with no custom tree).
4. **Report Web Site (Source Filter)**-
   - Make sure that the web site on which the report is based, has not been changed (deleted or updated, or its URL changed)
5. **Web Site Event Collection** -
   - Test the tracking agent. If you cannot see the agent console popup, verify the CardioLogAgent web application is installed and enabled on your web site.
   - Verify that the CardioLog Scheduling Service is started and the Usage Data Processing status is OK.
   - Verify that events are collected for the report "Source" by running the following query against the CardioLog database:

```
Select top 100 *from tab_temp_event_log
where EventType = 0 /* Views */
and Timestamp>=GETDATE()/* Edit date range */
and Timestamp<=GETDATE()- 7
and Url like'http://myportal/%'/* Edit according to Source */
```

- Verify that events are processed for the report "Source" by running the following query against the CardioLog database:

```
Select top 100 * from tab_event_log
where EventType = 0 /* Views */
and Timestamp>=GETDATE()/* Edit date range */
and Timestamp<=GETDATE()- 7
and SearchUrl like'http://myportal/%'/* Edit according to Source */
```

5.8 Data Integrity Tests

CardioLog 2010 reports may show different numbers for page views and unique users - in comparison with other tools. The reasons for this discrepancy are outlined here:

5.8.1 Comparing the CardioLog Reports with the SharePoint Usage Reports

Technology used for Data Collection

With SharePoint, usage data is collected by the web server - which creates an entry in a SharePoint log file. CardioLog, on the other hand, uses client side JavaScript code to capture usage data and send it to the CardioLog server. These two technologies have different data capturing behavior in the following areas:

- **Cached web pages** - usage data for web pages which are either cached at the proxy servers or at the web browser - is only logged by CardioLog.
- **Partially loaded pages** - usage data is collected by CardioLog only for pages which were fully loaded to the browser. This behavior is by design, to filter out very short visits (~1-2 seconds).
- **Requests -** SharePoint occasionally logs images and other page components - as hit counts. This is not done by CardioLog 2010.

Usage Analysis Calculations

Some of the differences in usage data are due to the unique way by which each tool defines and calculates the usage metrics:

- **Page refresh** - CardioLog 2010 treats consecutive views of a single page - as a single page view (by design) - while SharePoint logs this behavior as multiple views.

View the CardioLog Reports vs. SharePoint Analytics Reports for a detailed description.

5.8.2 Comparing the CardioLog Reports with Google Analytics

CardioLog, unlike Google analytics, is specifically designed for SharePoint. It provides true and insightful information about your SharePoint implementation, based on the

structure of your SharePoint hierarchy and content. Here are CardioLog's unique features - in comparison with Google Analytics.

Ownership of Business Data

Usage data for company intranets contains information such as employee names, employee roles, document names, and more. Being an in-house hosted solution, CardioLog stores all analytic data within the organization, and thus ensures data privacy.

Ownership of the Tracking Code

CardioLog enables full control over the JavaScript tracking code - allowing the elimination and addition of monitoring features - according to business needs and privacy policy.

Single Reports for Multiple Websites

CardioLog's reports can aggregate data for multiple websites - encompassing different domains. For example, in a Microsoft SharePoint portal, a single "Page Views" report can display aggregated data for all web sites in a farm.

Sub-sites Analysis (Enhanced Content Drilldown)

The reporting features and dashboards can be applied to sub-sites, sub-directories, single web pages, documents, or any other level of the portal hierarchy. This is achievable due to CardioLog's familiarity with the portal structure (through portal adaptors).

Custom Aggregation of Usage Data

Reports can provide aggregated data for any combination of sites and directories. For example, in a Microsoft SharePoint portal, a single "Page Views" report can provide usage data for a selection of separated sub-sites. This enables content owners to view usage reports for the content they own, regardless of where their content resides.

Report-Filtering by Page Metadata

Due to its familiarity with the website structure (through portal adaptors), CardioLog provides the capability to filter usage data according to page metadata. For example, in a Microsoft SharePoint portal, reports can be filtered by page type, such as team site, blogs, lists, list-items, documents, etc.

Authenticated Visitors Reports

In websites with authenticated visitors, CardioLog provides report filtering by visitor attributes, such as name, group, gender, department, etc. This is achievable by CardioLog's off-the-shelf integration with Active Directory, and through integration with **custom data sources. Report users can drill down on specific visitors, to see their** personal usage behavior.

Capturing Document Usage

CardioLog provides document usage data off-the-shelf. Clicks on document links within a website are all captured and analyzed.

Administrative Reports

Portal managers can easily see how fast their portal is growing (numbr of items), who are the top content contributors and what is the magnitude of editorial actions performed throughout the portal (additions, deletions, modifications, etc.).

Unused Pages Reports

Thanks to its familiarity with the portal structure, CardioLog provides lists of unused directories (sub-sites), pages and documents.

External Destinations Reports

CardioLog tracks visitors who click on links to external websites, and provides reports for this action.

Content Areas Reports

CardioLog provides reports about the usage of various content areas in the pages, such as toolbars, menus, headers, footers, etc.

Report Permissions

Through its seamless integration with Active Directory, CardioLog provides the ability to set Report permission levels to users and groups within the organization.

Report Distribution

By setting read permissions to reports, it is possible to control their distribution throughout the organization. Reports can be automatically emailed, exported to web parts, or launched directly from portal pages.

Report Customization and API

One of CardioLog's most prominent features is its ease of customization:
By customizing the JavaScript tracking code, it is possible to track any type of page interaction. CardioLog's API provides a mechanism of creating custom reports, and enables access report data from external resources.

History Data - Importing IIS Log Files

In order to view usage reports for the period prior to the implementation of the CardioLog tracking agent, CardioLog includes an IIS log import feature. The IIS log entries are available for reporting after they are processed, analyzed and linked to the structure of the portal.

5.9 Uninstalling the CardioLog Tracking Agent

In order to stop data collection, uninstall the CardioLog Tracking Agent. By default, the CardioLog Tracking Agent for SharePoint is installed as Java Script code in SharePoint's main JS file (suggested) - OWS.js (SharePoint 2003) / CORE.js (SharePoint 2007) / INIT.js (SharePoint 2010).

To uninstall the Tracking Agent and stop data collection, replace the OWS.js / CORE.js / INIT.js file with the OWS/CORE/INIT.js_YYYYMMDDT000000 backup file.

The file is usually located at:
SharePoint 2003- C:\Program Files\Common Files\Microsoft Shared\web server extensions\60\templates\layouts\[lang code] (1033 is for English)

SharePoint 2007 - C:\Program Files\Common Files\Microsoft Shared\web server extensions\12\templates\layouts\[lang code] (1033 is for English)

SharePoint 2010 - C:\Program Files\Common Files\Microsoft Shared\web server extensions\14\templates\layouts\[lang code] (1033 is for English)

It is also possible to locate and remove the tracking code from within the JavaScript file:Starts with "//Intlock tracking code start" and ends with "//Intlock tracking code end".

For either method, make sure that you uninstall the tracking code on all SharePoint front-ends.

To verify that the code is uninstalled, browse to the portal and click Ctrl+F12/Alt+F12. You should not see the Agent pop-up console.

5.10 Data Archiving

CardioLog 2010 Enterprise edition saves history data for 5 years. To best maintain database health and save disk space, backup & delete raw usage data which is not in use (and the related reports). Note that only **raw** data is deleted. Old versions of generated reports will still be accessible.

This should be performed by a user with a local administrator account on the CardioLog server and with a CardioLog Administrator role.

5.10.1 Deleting History Raw Data

Determine which events (raw data) should be deleted **for each** monitored environment. It is recommended to save history data for 2 years.

Make a full backup of the CardioLog database and create a copy of the events table before you continue to the next step.

```
select url
from tab_sharepoint_tree
where len(location)<= 12
```

Query Results Example:

```
http://Sales/default.aspx
http://moss2007
https://worldwide
http://command
https://myservice
http://moss20071
http://Portal/default.aspx
```

2. Get the location for the monitored environment.

```
Select location
from tab_sharepoint_tree
where URL like'http://Portal/default.aspx'/* Edit monitored environment URL
*/
```

Query Results Example:

```
000000000001
```

3. Get the number of events per year (raw data) for the monitored environment.

```
Select count(1),year(timestamp)
from tab_event_log
where eventtype in(0,1,2,4,5,10)
and splocation like'000000000001%' /* Edit monitored environment location
*/
groupby year(timestamp)
```

4. Delete events per year (raw data) for the monitored environment.

```
Delete from tab_event_log_users
where EventLogId in(
      select EventLogId from tab_event_log
      where eventtype in(0,1,2,4,5,10)
      and splocation like'000000000001%' /* Edit monitored environment
location */
      and year(timestamp)in(2004, 2005) /* Edit years to delete */
)

Delete from tab_event_log
where eventtype in(0,1,2,4,5,10)
and splocation like'000000000001%' /* Edit monitored environment location
*/
and year(timestamp)in(2004, 2005) /* Edit years to delete */
```

5.10.2 Deleting Staging Data

Intlock encourages customers to try out CardioLog 2010 and evaluate the solution on a staging environment before installing CardioLog on the production environment.

If you plan to use a single CardioLog installation to monitor your staging environment, and then connect it to your production environment, it is recommended to delete the staging usage data and reports**.** This should be performed by a user with a local administrator account on the CardioLog server and with a CardioLog Administrator role.

To delete the staging data, run the following SQL batches:

Note: Before you run the SQL script, verify that you have a full backup of the CardioLog database and that the CardioLog tracking code has been removed from the staging environment. Only the raw usage data and the SharePoint portal tree structure for the staging environment will be deleted. Old report versions should be deleted manually.

```
Use CardioLog

/*** Backup - Use this section only if you wish to keep an additional  backup of the tree and data ***/
Begin tran
Select * into tab_event_log_backup from tab_event_log
Select *I nto tab_sharepoint_tree_backup from tab_sharepoint_tree
commit

/*** Delete Tree ***/
Begin tran
delete tab_page_defaults
commit

begin tran
delete from tab_sharepoint_tree
where ParentId notlike'00000000-0000-0000-0000-000000000000'
commit

/*** Delete Favorites relatd to deleted tree ***/
Begin tran
Delete from tab_virtual_tree
where username notin('CARDIOLOG_REPORTS','CONTEXT_BASED')
commit

/*** Delete Events ***/
Begin tran
Delete from tab_event_log_users
commit

begin tran
delete from tab_event_log
commit

begin tran
```

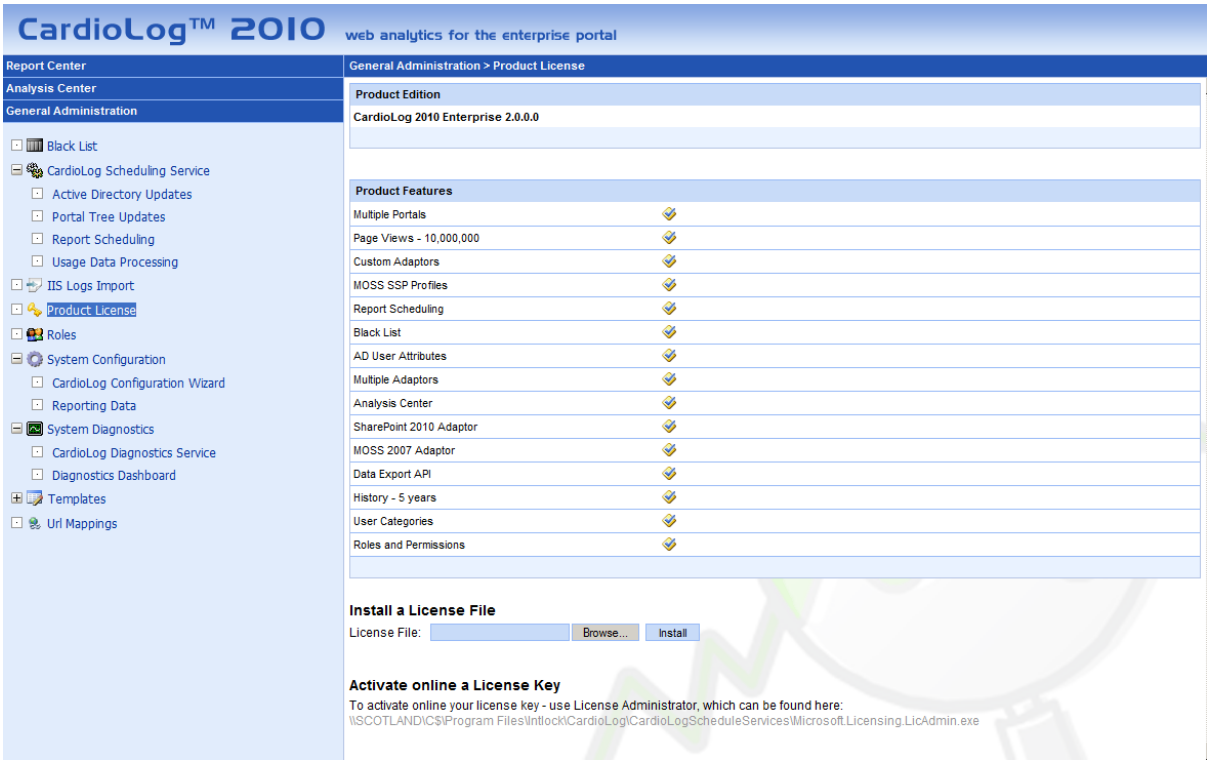
```
delete from tab_temp_event_log

commit
```

5.11. Product License

The Product License page provides information about the licensed product components, and enables the installation of new licenses.

5.11.1 Product Features

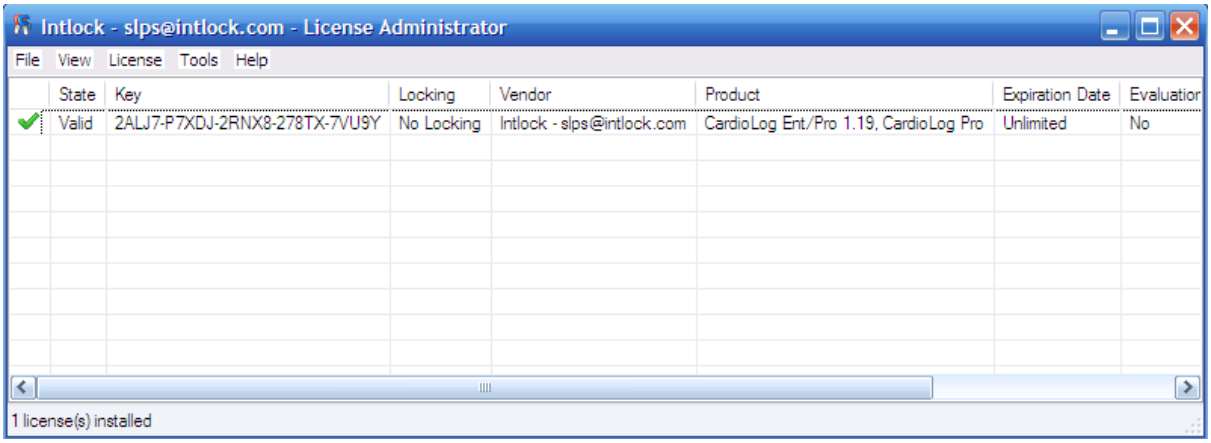
1. In the **General Administration** pane, click **Product License**.
2. The product features for CardioLog 2010 are listed in the **Product Features** table.



Product License dialog

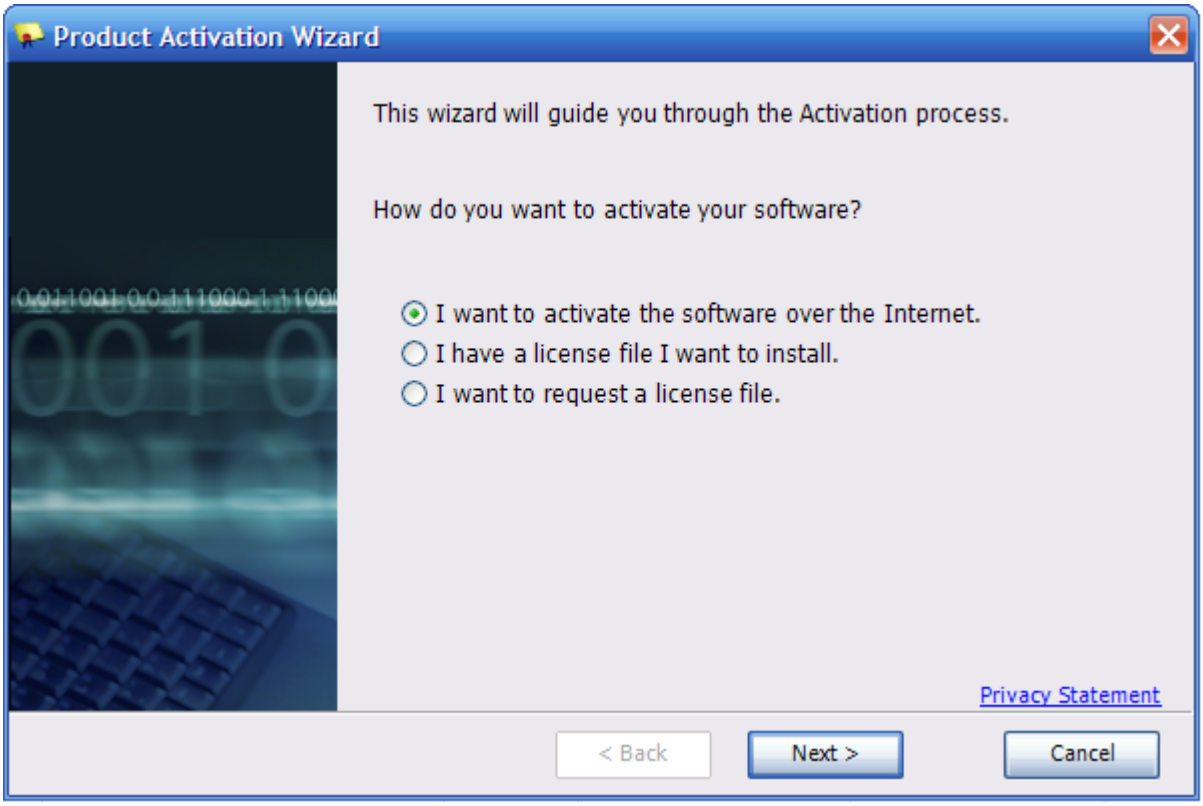
5.11.2 Installing Purchased Product Features

1. In the **General Administration** pane, click **Product License**.
2. To Activate your purchased license key, use **License Administrator**, which can be found at <CardioLog 2010 Installation Directory>\CardiologScheduleServices\Microsoft.Licensing.LicAdmin.exe.



License Administrator dialog

3. In the **File** menu, select **Activation Wizard**.



Activation Wizard dialog

4. Select **I want to activate the software over the Internet** and then click **Next**.
5. In the **License Activation** dialog, enter your activation code and then click **Next**.

License Activation dialog

6. Migration Tasks

6.1 How to Migrate the CardioLog Database

To migrate the CardioLog database to another server, follow this procedure:

1. Verify that there is a full backup for the CardioLog database.
2. Stop the CardioLog Windows services (CardioLog Diagnostics Service, CardioLog Scheduling Service) on the CardioLog server.
3. Stop IIS on the CardioLog server (in order to stop data collection and http requests to the CardioLog application during the move).
4. Detach the CardioLog database from the origin server.
5. Copy the database files (data + log) to the destination server.
6. Attach the CardioLog database to the destination server.
7. Edit the database connection string in the following configuration files:

```
<add key="connStr" value="Integrated Security=SSPI;Persist Security Info=False;Initial Catalog=CardioLog;Data Source=[server name] />
```

   - [CardioLog Installation Folder]\CardioLog\Web.config
   - [CardioLog Installation Folder]\CardioLogAPI\Web.config
   - [CardioLog Installation Folder]\CardioLogMonitoringServices\CardioLog.System.Monitoring.Services.exe.config
   - [CardioLog Installation Folder]\CardioLogScheduleServices\CardioLog.Services.exe.config
   - [CardioLog Installation Folder]\EventCollector\Web.config
   - [CardioLog Installation Folder]\VisitorSegments\Web.config
   - [CardioLog Installation Folder]\ADTree\Web.config
   - [CardioLog Installation Folder]\SP20XXTree\Web.config
8. Start the CardioLog Windows services (CardioLog Diagnostics Service, CardioLog Scheduling Service) on the CardioLog server.
9. Start IIS on the CardioLog server.

6.2 How to Migrate the CardioLog Application

To migrate the CardioLog application to another server, using the existing database, follow this procedure:

1. Export the CardioLog registry key to a *.reg file:
   - 32-bit machine – HKEY_LOCAL_MACHINE\SOFTWARE\Intlock\CardioLog
   - 64-bit machine – HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Intlock\CardioLog
2. Edit the CardioLog registry key (*.reg file):

```
"DATABASEINSTANCE"="[CardioLog Database Server Name]"
"TARGETDIR"="[CardioLog Installation Folder]"
```

3. Import the CardioLog registry key to the new server(copy the *.reg file to the new server and double click on it).
4. Disable the CardioLog Windows services (CardioLog Diagnostics Service, CardioLog Scheduling Service) on the old CardioLog server
5. Run the CardioLog installer on the new server. Go through the Installation Wizard steps.
6. Edit the database connection string in the following configuration files:

```
<add key="connStr" value="Integrated Security=SSPI;Persist Security Info=False;Initial
Catalog=CardioLog;Data Source=[CardioLog Database Server Name] />
```

   - [CardioLog Installation Folder]\CardioLog\Web.config
   - [CardioLog Installation Folder]\CardioLogAPI\Web.config
   - [CardioLog Installation Folder]\CardioLogMonitoringServices\CardioLog.System.Monitoring.Services.exe.config
   - [CardioLog Installation Folder]\CardioLogScheduleServices\CardioLog.Services.exe.config
   - [CardioLog Installation Folder]\EventCollector\Web.config
   - [CardioLog Installation Folder]\VisitorSegments\Web.config
   - [CardioLog Installation Folder]\ADTree\Web.config
   - [CardioLog Installation Folder]\SP20XXTree\Web.config

7. Create a backup of the [CardioLog Installation Folder]\CardioLogScheduleServices\Settings.config on the new server.
8. Copy the [CardioLog Installation Folder]\CardioLogScheduleServices\Settings.config from the old server to the new server and edit all occurrences of the **[CardioLog server URL]** (http://cardiologserver:port/) and the **[CardioLog Installation Folder]** path.

6.3 How to Configure CardioLog in case of a SharePoint Farm Migration

To configure the CardioLog application in case of a SharePoint Farm migration, follow this procedure:

1. Edit the database connection string in the following configuration file:
   - [CardioLog Installation Folder]\SP20XXTree\Web.config

```
<connectionStrings>
<add name="configDB" connectionString="Integrated Security=SSPI;Persist Security
Info=False;Initial Catalog=[SharePoint Configuration Database Name];Data Source=
[SharePoint Database Server Name]" />
<add name="contentDB" connectionString="Integrated Security=SSPI;Persist Security
Info=False;Initial Catalog={0};Data Source={1}" />
</connectionStrings>
```

2. Edit the following keys in the following configuration file:
   - [CardioLog Installation Folder]\SP20XXTree\Web.config

```
<add key="includedWebApps" value="[SharePoint Portal URL*]" />
<add key="SharePointTemplatePath" value="[\\SharePointServerName\C$\Program Files\Common
Files\Microsoft Shared\Web Server Extensions\1X\TEMPLATE\]" />
```

3. Add the **CardioLog Tracking Code** to each SharePoint WFE (by default, the tracking code is located in the SharePoint common .js file) and edit the URL domain and port to the CardioLog server:

```
//Intlock tracking code start
function __initCardioLogAgent() {
   if (typeof(document.__cardiolog) == "undefined") {
      document.__cardiolog = true;
            var script = document.createElement("script");
            script.src
="http://[cardiologserver:port]/CardioLogAgent/AgentEmbed.aspx?env=[MOSS2007|SP2010]&r="+
```

```
Math.random()*100000;
document.body.appendChild(script);
            }
}
if (typeof(document.__jsloaderInterval) == "undefined") {
   if (navigator.userAgent.match(/Safari/i)) {
               document.BrowserType = "safari";
               document.__jsloaderInterval = window.setInterval(function() {
                                                                  if(document.readyState == "loaded"
|| document.readyState == "complete") {

window.clearInterval(document.__jsloaderInterval);
                                                                        __initCardioLogAgent();
                                                                  }}, 10);
   } else if (document.addEventListener) {
               document.BrowserType = "ff";
               document.addEventListener("DOMContentLoaded", __initCardioLogAgent, false);
   } else if (document.all && !window.opera) {
               document.BrowserType = "ie";
               document.__jsloaderInterval = window.setInterval(function() {
                                                                  if(document.readyState == "loaded"
|| document.readyState == "complete") {

window.clearInterval(document.__jsloaderInterval);
                                                                        __initCardioLogAgent();
                                                                  }}, 10);
   }
}
//Intlock tracking code end
```