Using ControlPoint effectively in a large SharePoint farm

A large SharePoint farm can quickly grow to encompass many thousands or even tens of thousands of sites and Site Collections. Tools like ControlPoint that allow you to analyze and act on the entire farm or large portions of the farm in a single operation provide a lot of power and flexibility, but because of the scope, they can trigger analyses or actions that take a long time and/or generate very large reports. ControlPoint has been designed with a number of features that allow it to work effectively in a large farm, and allow you to tune the behavior of ControlPoint to your needs and expectations.

The purpose of this technical note is to provide background and guidelines to help you to use ControlPoint in a way that works well for your environment. Because absolute performance is dependent on many environmental factors, it is impossible to provide specific numerical guidelines. Consequently, this paper concentrates on general principles, tradeoffs and guidelines.

For more detailed instructions on configuring your environment, refer to the ControlPoint Administration Guide. If you have questions with how this works in your environment, contact Metalogix Support.

Generally, issues of size affect the following aspects of the product, and we will discuss each in turn:

- Navigation
- Analysis
- Actions
- Finding Sites
- Active Directory

Navigation

The SharePoint Hierarchy

The SharePoint Hierarchy panel of ControlPoint is designed to use progressive retrieval of information: as you open elements of the hierarchy, ControlPoint will retrieve from the server only those elements of the hierarchy (e.g. the Site Collections in a Web Application, or the sites in a Site Collection) that you have asked for. This means that the interface does not waste time fetching large amounts of...
information that you may never need in this session, and it means that you are able to start using ControlPoint much more quickly. Once an element of the hierarchy (such as a large Web Application or Site Collection) has been loaded into the browser, it is held in cache there until the next time ControlPoint is restarted or the next “Refresh SharePoint Hierarchy” – this caching means that if you return to a Site Collection, or another element you have visited, it will open quickly.

When any level of the SharePoint Hierarchy contains more items than a tunable limit, the items are presented in the form of dynamic folders which may be individually opened to view only the part of the list that is of interest. In the illustration below, the Site Collection Beta Aquatics has 16 sites, and we have the threshold set at 5 (only to illustrate the concept – the default threshold is 45). Sites beginning with “b” through “i” are included in the first folder, and sites beginning with “j-p” through the end of the alphabet are included in the second folder. Two levels of foldering are supported - at the default threshold this allows browsing of a single Web Application which contains over 90,000 Site Collections – this might be important for a Web Application that contains MySites.

Note that the threshold of 45 was chosen partly to optimize performance, and partly to avoid limitations imposed by the browser on the number of JavaScript statements (within the Ajax controls) that can be executed. Generally we don’t recommend raising it past 100, but it can be raised as high as 200 for most environments. The threshold is set in the parameter **Maximum Number of Objects to Display Before Foldering (NAVCAP)** set in the ControlPoint Configuration Settings UI. If you get the message “A
script on this page is causing Internet Explorer to run slowly”, you may have raised the threshold too high for your environment.

**For MySites or other large Web Applications**

(True for any Web Application with a very large number of Site Collections.) As the number of Site Collections grows, so does the time it takes to map out the list of folders and their content. Depending on the performance of your server, network and browser, at about 1000 Site Collections the time to expand a Web Application can approach a minute. Note that sub-sites will not affect the speed of expanding the Web Application.

When the time that it takes to expand a Web Application becomes intrusive, there are two possibilities:

1. In the ControlPoint Configuration Settings UI, set the value of the parameter **Preload All Site Collections in Servier-side Cache (PRELOADSITECACHE)** and set the value to true. With this parameter set, then on the first request to the ControlPoint Web Application (normally the Schedule Monitor which runs every 10 minutes) it will pre-load the list of Site Collections and pre-build the list of folders in an in-memory cache on the server, so that this information will be immediately available when you open a Web Application. This does mean that the list of Site Collections displayed will be the ones that existed at the time the cache was loaded – normally this time would be shortly after the IIS recycle event that happens in the early hours of the morning – a menu option (“Reload server-side hierarchy cache”) is available on the Manage ControlPoint menu to re-load the cache of Site Collection names. Note that the display of sub-sites within the Site Collection is done in real-time, so will not become “stale”.

2. Another alternative that may also be useful is to use Advanced Search. If you know at least part of the name of the site or part of the URL, you can enter that known part into the Advanced Search. If you click on the site title (the tooltip will read “Open & Manage”), then a new window will open with a trimmed version of the SharePoint Hierarchy displayed (which permits access to all ControlPoint functions on the selected site and its parents).

**For Business Administrators**

For the sake of performance, when creating the SharePoint Hierarchy shown to Business Administrators, ControlPoint will show only Site Collections where the user has access rights, and normally will show the tree only down to the first nesting level where the Business Administrator does NOT have management rights. If the Business Administrator has management rights to a sub-sub-site, this could be hidden. Setting the ControlPoint Configuration Site settings list parameter **Show Full Hierarchy of Business Admin Sites (ShowAllBASites)** will cause ControlPoint to look to ALL levels of the tree, but this takes some additional performance.

**Configuration Settings for Optimizing Navigation**

For a summary of Configuration Settings that can be tuned to optimize Navigation, refer to Appendix B of this document.
Analysis

Part of the power of ControlPoint is that it makes it very easy to request analysis for a very large farm, Web Application or even Site Collection. In some cases, this generates a very large report that can take a very long time to process. This section provides some guidance on using analysis.

While a report (or any other action) is underway, as ControlPoint walks through the farm or selected scope collecting information, it will display a short indication of the progress at the top of the window:

While the collection of information is underway, if it is taking longer than you expected, you can cancel the analysis using the Cancel button on the right side of the page. (Note that if you close the browser or navigate away from the screen, the analysis will continue in the background.)

Configuration Settings for Optimizing Analyses

For a summary of Configuration Settings that can be tuned to optimize analysis processing, refer to Appendix B of this document

The ControlPoint Database Cache

The ControlPoint Service (xcAdmin) database stores information about the farm that can be used for ControlPoint analyses and reporting. The information that populates this database is collected by the ControlPoint Discovery process. Nightly Full Discovery is performed via the ControlPoint Discovery timer job, which is configured in SharePoint Central Administration. However, because the Discovery of all sites in a very large farm can be resource-intensive, as of version 5.3 this timer job is disabled by default. It can be enabled via the Central Administrations Job Definitions page.
Features and parameters that rely on the data collected by Discovery are also disabled by default.
Once Discovery has been run and the data cache has been populated, these features and parameters can be enabled via the ControlPoint Setting **Enable Options that Require Discovery (DiscoveryEnabled)**.

Note that, if you installed ControlPoint for the first time *prior to* version 5.3, both the Discovery timer job and the features/parameters are *enabled by default*.

**Tips for Optimizing Discovery Performance**

For tips on optimizing ControlPoint Discovery in a large farm environment, refer to Appendix A of this document.

**Running Analyses in Real Time**

If Discovery has not been run and/or a real-time analysis is important to the task at hand, two options are recommended:

- Limit the scope of the analysis to specific Web Application(s) or specific Site Collection(s). As mentioned above, it is common for your MySites Web Application to have the most Site Collections, which can have a big impact on real-time analysis performance – if you don’t need information from MySites, omitting it from your analysis may significantly speed up the analysis.
- Use the Schedule tab to request that the report be prepared in the background and placed into a SharePoint folder, In emailed to you, or written as rows of a SharePoint list. This means that
your workstation is not tied up waiting for the generation of the report, and a pdf version of a large report is generally easier to work with than HTML.

**Size**

Even when run from the cache, an analysis run on a full farm or a large Web Application can be VERY large (sometimes thousands or tens of thousands of pages). To help you avoid the surprise of an exceptionally large report (which can be hard to manage, view, print or save), ControlPoint allows you to set a limit on the size of a report. If a report would be larger than the specified threshold, ControlPoint will return the information that was below the threshold, accompanied by a warning message instead of an entire oversized report.

By default, this threshold limit is set to 10000 line items for interactive generation of reports, which is normally a report of well over 200 printed pages.

If you are running into this limit, some or all of the options below are available to you:

- Limit the scope of the analysis (in the SharePoint Hierarchy, right-click on an element lower in the tree and request the report from there; so for example, instead of requesting a Web Parts report on the entire farm, request it on a single Web Application or Site Collection.)
- Limit the report to a specific individual or item – notice that Web Parts analyses can be limited to a specific Web Part, and Permissions analyses can be limited to a specific users or users that meet specific criteria (such as specifying a User Profile Property or using a wildcard). (See the **ControlPoint User Guide** for details on “Selecting Users On Which to Perform a ControlPoint Operation.”)
• Limit the options for the report. In the case of Web Parts, you can limit the report to only Web Parts that have been used, and in the case of permissions, you can limit the report to unique permissions only (e.g. so that the report does not repeat information about permissions to sub-sites, lists, or list items that inherit permissions).

• Use the Schedule tab to request that the report be prepared as a .pdf file in the background and placed into a SharePoint folder or emailed to you. When a report is generated in the background as a scheduled job, the threshold is based on the ControlPoint Configuration Setting Maximum Line Items in Scheduled Report Ret (SCHEDULEDREPCAP) set in the ControlPoint Settings list in the ControlPoint configuration site; the default is 40,000.

• If you need to run the report interactively, raise the interactive size threshold – this is set in the ControlPoint Configuration Setting Maximum Line Items in Real-time Reports (REPCAP).

**Extremely large reports:**

**Comprehensive Permissions Reports, Audit Reports and others**

By their very nature, the Comprehensive Permissions reports and Audit reports tend to generate massive amounts of data – it is easy to generate reports with 15,000 pages or more, or many tens of thousands of rows in a .csv version. Note that depending on the scope and options chosen, some other reports can be very large as well. In some cases Web Parts reports can be large. As another concrete example, a Permissions by List Item report on a list containing 13,000 items, with permissions granted to only 100 users generates 1.3 million entries, which will generate a .csv file of approximately 1.3 Gigabytes, although choosing to show unique permissions only will normally reduce the size of this report dramatically.

Almost always, you will want to run these very large reports on a scheduled basis. If you run the report interactively, do so only on fairly small scopes, until you are familiar with the performance in your environment.

Other recommendations follow:

• For very large reports, do NOT use Excel, as this is slower to generate, slower to open, and can exceed the 64,000 row limit of an .xls file.

• PDF is better (faster to generate, and smaller) than Excel for large reports.

• **For the largest reports, normally the best choice for a scheduled report is a CSV file** – this will generate much more quickly, will be a smaller file, and will allow much larger files to be generated. Excel can import more data from a .csv than it can from an .xls.

• If appropriate to your need, omit the “Include users with AD group membership” option (expanding Active Directory groups usually will generate much more information in the reports) and/or check the “Show Unique Permissions only” option (this won’t repeat data for inherited sites and lists).

• If you schedule a report and ask to place it into a SharePoint document library, and encounter the message “The form submission cannot be processed because it exceeded the maximum length” then this indicates that the report has exceeded the limit set by SharePoint on the maximum size file
that can be uploaded – you will need to increase the limit for the Web Application into which you are trying to place the generated report. To do this, you need to set it in two locations:

- In the Web Application General Settings for the Web Application – the setting is Maximum Upload Size, and is expressed in Megabytes.
- In the web.config file for the Web Application – this is the web.config file that is in the web site’s directory within C:\inetpub\wwwroot\wss\VirtualDirectories. The parameter is maxRequestLength, which is in an entry of the form <httpRuntime maxRequestLength="51200" />. This parameter is expressed in Kilobytes – the 51200 in the example represents 50 Mb.

Finally, for many reports, the setting Maximum Number of Operations to Process in Parallel (MaxParallelProcs) can significantly speed up the execution of the report by utilizing multiple threads; note that there is a corresponding increased load on the server.

**Audit and Change Log Analysis**

*(Because audit data can grow to be immense, the section above also applies to audit reports)*

Note that the length of time that it takes to generate a report depends more on the number of audit records that have been captured at the Site Collection level, than on the number of audit records that were selected for inclusion in the report. Selecting a narrow date range or selecting a specific event will reduce the time required to generate the report (internally, we are able to reduce the number of records that need to be reviewed). Because the audit and change records are collected at the Site Collection level, limiting the scope to an individual site can help limit the size of the results, but will not shorten the time required to generate them.

Note that ControlPoint is able to purge audit records older than a specified threshold – this is done in the nightly Discovery. The threshold is set in the ControlPoint Setting *Number of Days to Keep Audit Records (AUDITMAXDAYS)* (a value of 0 specifies that no purging should be done). Purging records to an appropriate level can help the time it takes to perform an audit analysis. If it is important to retain the audit records, ControlPoint can also archive audit records to a separate “Data Warehouse” database.

For both audit reports and the process of archiving audit data, the biggest impact on performance is the process of fetching the name of the individual sub-site in which the action took place – if it is sufficient to have a blank value for the site name, then performance can be dramatically improved by setting the ControlPoint Configuration Setting *Process Names of Sites in Audit Log and Archive (PROCESSAUDITNAMES)* to false. Note that this will affect only the display name of the site – the URL column (which will let you know the specific sub-site in which the action took place) will be accurate regardless of the setting. If set to false, the audit reports will no longer be security trimmed (since trimming depends on the site identity).
**Duplicate Files Report**

In a very large farm, the number of files that need to be reviewed to identify duplicates can be immense. To avoid overwhelming memory consumption and the server as a whole, ControlPoint has implemented a threshold, so that if the total number of files being evaluated exceeds that threshold, a warning message will be displayed of the form “The total number of fetched files has exceeded the maximum allowed limit of 3000000. Please refine the file selection criteria”. If this message appears, normally you will want to narrow the scope by:

- Limiting the selection (e.g. focusing on an individual Web Application, or Site Collection)
- Choosing to limit the report to one or more specific file extensions
- For the Exclude File Names list, if you have chosen “<NONE>”, select at least “<All common/built-in names>”
- In the File Name Contains field, enter a string that all files being evaluated must contain.

**Most/Least Reports and the Duplicate Files Report**

These reports make use of some very powerful SQL statements - because of this, in a very large environment and/or when the SQL server has limited resources, it may be necessary to bump the ControlPoint Configuration (Advanced) Setting **SQL Command Timeout Value (CommandTimeout)**.

**User to Group Analysis**

This report performs some very involved analysis, and so can take a long time to complete, particularly for a large scope.

**Report Results Cache**

In order to provide better performance and utility, ControlPoint maintains a cache of report results that it uses when drilling down from a report and when extracting report results into a CSV file. By default, in each Web front end, the system will maintain the last 10 of the results fetched in that Web front end. If the size of the ControlPoint application pool process is too great, you can adjust this limit downward. If a user attempts to:

- Download the CSV values for a report, OR
- Click on a link in a report to drill-down to a related report

and gets the message that the session has expired, then the size of the cache may be too small, and should be adjusted upwards.

The number of report results that should be kept are set in the ControlPoint Configuration (Advanced) Setting **Number of Reports to Keep in Memory After Drill-Down (RVSESSIONSKEPT)**.
**Actions**

As with analyses, actions taken across a large scope (e.g. an entire large farm or a large Web Application) can take time to carry out. And as with analyses, ControlPoint allows you to tune the behavior of the system to your needs, expectations and tradeoffs.

A very practical option for taking an action on a large scope is to schedule the job to run in the background, either immediately, or at a time when the system is less busy. Results of the action will be visible in the ControlPoint Task Audit report, which is available from Manage ControlPoint > Schedule Management and Logging.

If it is important to run the action interactively, a tunable parameter allows you to specify when the browser should stop waiting for the server to complete a request. (Note that this threshold also applies to analyses and searches as well as actions). By default, in ControlPoint this timeout is set to 60 minutes (considerably greater than the browser default of 2.5 minutes). If a server request takes longer than the threshold, ControlPoint will display the message “An action or analysis you requested took longer than expected. If you requested an analysis, try changing the option to use data from the cache, or narrow the scope of the analysis. If Discovery was running at the time you made your request, try again after Discovery completes. If this message is displayed during the execution of an action request, then the change requested in the action request will continue to be made, and you can subsequently check on the success and/or warnings about the action by looking at the task audit report for the action.

To avoid this warning message for interactive execution:

- Choose a smaller scope for the action, for example act on a Web Application instead of the farm, or even act on one or more Site Collections.
- Increase the timeout threshold – this can be done by changing the value of the ControlPoint Configuration (Advanced) Setting Number of Seconds After Which Browser Reports Server Timeout (SERVERTIMEOUT).

**Very time consuming actions**

The Cleanup User Permissions action performs some very involved and data-intensive analysis, and may take a long time, particularly for the initial preparation of possible cleanup choices (i.e. when clicking the Get Permissions button).

**Finding Sites**

ControlPoint provides a couple of powerful search mechanisms that help you to locate sites that need management attention – this can be a much faster alternative to browsing within a large Web Application, such as MySites.

Advanced Search is available in the ControlPoint header (when invoked there, it searches across the entire farm) and from context menus within the SharePoint Hierarchy (when invoked there, it is limited
to the element of the hierarchy from which it is invoked). Advanced Search utilizes information in the
 cache database, and so is able to locate sites within a very large farm efficiently.

Search Hierarchy is available from the panel with that name on the left side, from context menus within
the SharePoint Hierarchy, and from a number of dialogs such as “Customize Selection” and the
destination selection in Copy and Move. By default this search is performed real-time, and thus in a
larger farm will tend to perform more slowly. If your farm is large enough that the real-time search
typically takes too long, you can set the ControlPoint Setting Search Using Cached Data
(CACHEDSEARCH) to true – with this change, the Search Hierarchy function will be based on data
collected by the last Discovery.

If the real-time nature of the search is important to you and you have a large farm, your performance
will be best if you narrow the scope of your search as much as possible, e.g. if you know the site you are
looking for is within the “extranet” Web Application, choose Search Hierarchy from that element.

**Active Directory**

(Active Directory issues are not strictly related to the size of the farm, but often are a concern in a large
environment.)

Both SharePoint and ControlPoint work well out of the box with multiple domains that have a two-way
trust relationship. If a forest in your environment has only a one-way trust relationship with the domain
in which SharePoint has been located, then without any further configuration:

- You may be able to validate an account name in that farm (although the validated name will be
  represented only in the form domain\account).
- ControlPoint reports will continue to show permissions granted to users and to groups within
  that domain, and will properly report on orphans within that domain.
- But ControlPoint will NOT be able to display the membership of groups within that domain, or
  show users who have been granted permissions only through membership in groups in that
domain.
- The Orphaned Domain Users report may incorrectly report that users in the remote (untrusting)
domain are orphans.

If the ability to display group membership in a forest with a one-way trust relationship is important, then
you can use the ControlPoint action “Manage Forest Access” to supply the credentials of an account
within that forest that has permissions to read Active Directory entries in that forest. This utility is not
normally included in the ControlPoint menus – if you need it, we recommend that you place it onto a
custom menu and restrict access to that menu to the ControlPoint Application Administrators group, or
simply enter the URL directly (it is a minor edit to the main ControlPoint URL). The Manage Forest
Access function is available at the url:

The copy/move functionality can also be used in an environment with a one-way trust relationship. The user requesting the copy can supply credentials for the non-trusting domain; this is done in the “Advanced” section either on the source screen, or the destination screen, depending on the direction of the copy and the direction of the trust. The help links on the page itself will provide assistance in entering the credentials in the correct location.

Performance: in an environment containing a large number of domains (dozens to hundreds of domains), the Orphaned Domain User report can be impacted. When a user is not found in Active Directory at his/her original location, ControlPoint needs to contact all known domains to determine whether the user was renamed, or actually orphaned – this can take a long time (up to 4 minutes or more for each potential orphan). If the Orphaned Domain User report takes a very long time, the best recommendation is to keep up with orphans, and to use the Migrate User function on renamed users to eliminate costly lookups for renamed users.
Appendix A  
Tips for Optimizing Discovery

Discovery is the process that collects the data that populates the historical record. Because it crawls the entire farm, Discovery tends to be a resource-intensive process. This database serves at least three purposes:

- Allowing the completion of large analyses much more quickly than if they were based on real-time data.
- For some data (particularly activity and storage), providing an historical record of the farm that can be used for point-in-time historical reports and for trending reports.
- For Business Administrators, quickly determine what sites and Site Collections should be shown to the user, based on access rights to sub-sites deep within the SharePoint Hierarchy.

Normally, Discovery is triggered by a SharePoint timer job (ControlPoint Discovery) scheduled by the installer to run at the beginning of the next hour after the end of SharePoint Usage Analysis. If Discovery begins to interfere with daily processing of your farm because of the length of time it takes and/or the start time, the following are some options:

**Timing:**
If you want finer control over the start time of Discovery. Metalogix includes a utility that can be scheduled to run under Windows Scheduled tasks – this allows you to more precisely control the time that Discovery starts; it also allows you to control on which web front end Discovery will be initiated if that is important. Contact Metalogix Support for detailed instructions.

**Duration:**
Because Discovery touches every site in the farm, it tends to multiply small differences in performance. Normally Discovery will run faster on a production system than on a development or evaluation system – occasionally the difference is dramatic.

The following summarizes the steps that can be taken to manage the duration of the Discovery process (details are in the following paragraphs):

- **Web Applications to Exclude from Discovery (WAPEXCLUDE) or Site Collections to Exclude from Discovery (URLEXCLUDE)** - the excluded portions can be processed during a Partial Discovery. (To clarify terminology: the term “Full Discovery” is used when the selection tab includes only the full farm; exclusions set in the Settings list are honored by Full Discovery. The term “Partial Discovery” is used when the selection tab specifies only specific Web Applications or Site Collections – in this case, exclusions set in the Settings list are ignored.)
- Limit the time spent each session - this allows a large Discovery to proceed over the course of more than a single day. (This is referred to as multi-part Discovery.)
- Specify the use of multiple threads.
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Exclude Web Applications or Site Collections: Typically Web Applications containing MySites take considerably longer to be processed in Discovery than any other Web Application (more generally, if a content database contains more than 1000 Site Collections, the performance of Discovery on that content database begins to decline). This sometimes is true of other particularly large Web Applications or even Site Collections. If this is true for you, then you may want to:

- Exclude selected Web Applications, such as the MySites Web Application, from the normal nightly Full Discovery (whichever way it is scheduled). This can be done by entering the GUID of the Web Application(s) into the ControlPoint Configuration Setting Web Applications to Exclude from Discovery (WAPEXCLUDE); you can determine the GUID by selecting the Web Application in the SharePoint Hierarchy, and right-clicking to display Properties.
- Exclude selected Site Collections from the normal nightly Full Discovery. This can be done by entering a comma-delimited list of strings into the ControlPoint configuration setting Site Collections to Exclude from Discovery (URLEXCLUDE). During Full Discovery, any Site Collection whose URL contains one of the strings in this setting will be excluded from the Discovery process.
- Schedule a Partial Discovery for the excluded Web Applications or Site Collections, typically to run on the weekend when there is less activity on the system and a long Discovery would have less impact on the business. Partial Discovery is specified by invoking Discovery from Manage ControlPoint > ControlPoint > Discovery, and using “Change Selection” to choose a particular Web Application(s), and then (as above) using the Schedule panel to choose when it will run. If you choose anything other than the full farm, the Exclude settings are not utilized (so that you can perform a Partial Discovery on an otherwise excluded Web Application or Site Collection).

Note that in general if you schedule both a Full Discovery and a Partial Discovery, the Full Discovery should be run first.

Limit the time in each session: The exclusion mechanism described above will reduce the scope of the content to be “discovered” in the normal Full Discovery process. In addition, it is possible to specify a maximum amount of time that Full Discovery should run in each invocation (note that this limit is not applied to Partial Discovery). So for example, if you have scheduled Full Discovery to start at 7 pm, you could specify that Discovery is to run for a maximum of 12 hours each day, so that it will stop processing at 7 am. If this maximum time limit is specified, then when Discovery is started the next time (normally the next day), it will resume processing at the point where it stopped the prior day. When necessary, this allows the Full Discovery process to run over the course of more than one day, while at the same time accommodating other activities on the Web front end and the farm as a whole. (Note, this resumption of an interrupted Discovery also works even if the interruption was unscheduled or unplanned, such as an unplanned power failure – in this case the xcAdmin log may include some innocuous error messages when the resumed process re-synchronizes with the partial data from the interrupted processing.) The maximum processing time is specified in the setting Maximum Discovery Run Time (DISCOVERYTIMERESTRICTION); the default value is 1410 minutes, which is 23.5 hours. This
setting applies only to Full Discovery, not to Partial Discovery (in which something less than the full farm has been chosen).

To deal with the possibility of "stale" data that could occur if the machine is off-line or Discovery cannot be run for several days, the system includes an aging threshold - when Discovery is run, if a previous run of Discovery was interrupted before completion, then if the oldest data is older than the parameter value Maximum Number of Days Before Restarting Incomplete Discovery (DISCOVERYDAYS), then that previous data will be discarded and Discovery will be restarted from the beginning. The default value for Maximum Number of Days Before Restarting Incomplete Discovery (DISCOVERYDAYS) is 3.

If you have an exceptionally large Site Collection (containing many thousands of sub-sites), you may want to set Depth at Which to Stop Discovery When Time Restriction is Reached (DiscoveryResumeLevel), which allows the Discovery to pause and then resume at a lower level than the Site Collection; contact Metalogix Support for assistance in setting this parameter.

If the machine on which Discovery will be run has multiple processor cores, and if it has sufficient CPU cycles during the time Discovery is being run, you can specify that Discovery use multiple threads (and therefore multiple processor cores); this can be done by changing the setting Maximum Number of Objects to Process in Parallel (MaxParallelProcs) to a value greater than 1 – the value will be the number of threads that Discovery will use. In general, you should not set it to a value greater than the number of cores on the machine. Note that this will increase the Processing load on the web front end on which Discovery is run, and on the SQL server, so after increasing the value, monitor the performance of the web front end and of the farm to confirm that it is acceptable.

As you plan the timing, duration, and location of Discovery, Metalogix Support can be available for a discussion of the options, tradeoffs and how best to fit those choices into your specific environment.

**Performance impact**

Because Discovery is collecting data from the entire farm, while it is running it is utilizing resources (mostly CPU) on the web front end on which Discovery is running. This can have some impact on the interactive performance seen by users connected to that web front end – generally, we have found very little impact on the retrieval of pages that are active (i.e. in cache), but somewhat greater impact on pages that are less active and need to be fetched from the database. You have some control over this impact:

- It is possible to tune the balance between Discovery consuming system resources vs releasing resources for other interactive processes. This is done using the ControlPoint Configuration Setting Discovery Pause Time to Allow Other Operations (DISCOVERYSLEEP). The default value is 30, which will generally optimize the speed of Discovery so that it will complete quickly. Increasing the value of this setting to 1000 will approximately double the time that Discovery takes to complete, but will release resources for use by interactive processes.
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- If you have more than one Web front end and would like to control which one will run Discovery, set that machine as the URL for the Default Zone within the Alternate Access Mappings for the ControlPoint Web Application.

- As noted above, the setting **Maximum Number of Objects to Process in Parallel (MaxParallelProcs)** can have an impact on the processing burden of Discovery.

Note that if you start ControlPoint while Discovery is running, a message will be displayed in red in the ControlPoint header area, telling you when Discovery started – this will alert you that there will be some impact on the performance of the system, and as you gain experience with ControlPoint on your system, the start time will allow you to gauge when it is likely to complete.

Because of the potential impact on the system of Discovery, Scheduled jobs (reports or actions), and audit archiving normally will not start if Discovery is running – this is a safeguard to prevent excessive load on your system. However, if you want to run scheduled jobs at the same time as Discovery, you should do so cautiously, and monitor the impact on your system; there are two steps that you can take to accomplish this:

- Use xcUtilities to carry out the Scheduled Job Review and/or the audit archiving on a different web front end from the one running Discovery – this will bypass the interlock between the two processes.

- If the web front end is able to handle multiple processes, schedule the scheduled jobs, or start the audit archiving **before** the start time for Discovery – because Discovery will not wait for the other jobs, it will start up and run in parallel with the other tasks.

If you need to run Discovery interactively, consider whether a Partial Discovery will accomplish your goals. For example, if you have just granted a business administrator access permissions to a site and want that site to appear in that business administrator’s browse tree, you could run an interactive Discovery just on the Site Collection containing the site – that will take considerably less time and be less disruptive than Discovery on the full farm.
## Appendix B

### Summary of configuration parameters

The following table summarizes the configuration parameters mentioned above that may be useful in tuning your ControlPoint system for scalability. Except as noted, these parameters are set in the ControlPoint Configuration Settings UI.

### Actions and Analyses

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td>Maximum Line Items in Real-time Reports (REPCAP)</td>
<td>Specifies the maximum number of line items that will be included in a report when run interactively—allows you to prevent run-away reports that would otherwise overwhelm the browser. Default: 10000</td>
</tr>
<tr>
<td>Number of Reports to Keep in Memory After Drill-Down (RVSESSIONSKEPT)</td>
<td>The number of report results that will be cached in memory in each Web front end, to be used for report drill-down operations and/or for extracting data as a CSV file. The default value is 10. Note: This is an Advanced Setting</td>
</tr>
</tbody>
</table>
## Application Performance

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sql Command Timeout Value (COMMANDTIMEOUT)</td>
<td>This parameter controls the time, in seconds, that SQL will allow for completion of individual SQL statements before timing out. May need to be increased for particularly large or complex environments, including Most/Least Reports in large environments. Default is 100. Note: This is an Advanced Setting.</td>
</tr>
<tr>
<td>Maximum Number of Operations to Process in Parallel (MaxParallelProcs)</td>
<td>Specifies the number of threads (and therefore processor cores) to be used for Discovery and most other operations that crawl the SharePoint Hierarchy. A value of 0 or 1 will use a single thread. Monitor the impact if you set to a value greater than 1. Don’t set to a value greater than the number of cores available. Will not have a significant impact on cached reports, Most/Least, Duplicate Files, and Storage by File Types reports. Note: This setting is used in conjunction with Operations Using Parallel Processing (ParallelProcs).</td>
</tr>
</tbody>
</table>
| Operations Using Parallel Processing (ParallelProcs) | Specified the operations for which parallel processing should be used. Defaults are:  
  - D (Discovery)  
  - A (Actions)  
  - R (Reports)  
  (If the Parameter Value is blank, parallel processing will apply to Discovery only.)                                                                                                                                                                                      |
| Time to Run an Operation Before Timing Out (OPERATIONTIMEOUT) | Controls how long ControlPoint will wait for the completion of a WCF request (used to carry out an action or an analysis) to the home farm or a remote farm. Normally should be set to a value that corresponds to the executionTimeout (although note that this setting is in hours, not seconds). The ControlPoint default is 24 (hours). |
| Number of Seconds After Which Browser Reports Server Timeout (SERVERTIMEOUT) | Controls when the browser should stop waiting for a server to complete a request. Expressed in seconds. The ControlPoint default is 3600 (60 minutes). Increase this if you have very large reports or actions that you need to run interactively and want the browser to wait for them. Note: This is an Advanced Setting. |
### Appendix B

#### Summary of configuration parameters

##### Using ControlPoint in a large farm environment

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Web.config Settings</strong></td>
<td></td>
</tr>
<tr>
<td>executionTimeout</td>
<td>Controls how long a server process will execute before the system shuts it down. Expressed in seconds. The default value is 85000 (just under 24 hours). Note that this should normally be greater than ServerTimeout – generally an action initiated by a browser will continue to operate even if the browser times out. Also, note that this parameter affects Discovery, so should be set greater than the maximum time Discovery is expected to take. This parameter is set in the SharePoint hive, in the subdirectory \TEMPLATE\LAYOUTS\Axceler\web.config. After the heading &lt;system.web&gt; is the line: &lt;httpRuntime executionTimeout=&quot;85000&quot; /&gt;</td>
</tr>
<tr>
<td>Session state timeout</td>
<td>This can be found in the SharePoint hive in the subdirectory \TEMPLATE\LAYOUTS\Axceler\web.config. In the line: &lt;sessionState mode=&quot;InProc&quot; timeout=&quot;85000&quot; partitionResolverType=&quot;&quot; /&gt; Change the timeout value – it is expressed in seconds. Normally a this should match executionTimeout</td>
</tr>
</tbody>
</table>

#### Audit Log

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Names of Sites in Audit Log Archive (PROCESSAUDITNAMES)</td>
<td>Values are true or false (default value is true). This affects both SharePoint Audit analysis and the archiving of SharePoint audit records. If true, ControlPoint will determine the name of the sub-site on which the activity occurred and include that in the report and/or the archive and use that for security trimming. Unfortunately, this slows down the report and the archiving. If false, ControlPoint will leave the site name blank. The URL field will contain the proper value (which will provide information about the sub-site). Setting this to false will save considerable time in generating the audit report and in archiving audit records, but will disable security trimming within the Audit report.</td>
</tr>
</tbody>
</table>
## Discovery Performance

<table>
<thead>
<tr>
<th>Setting Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Number of Days Before Restarting Incomplete Discovery (DISCOVERYDAYS)</td>
<td>The maximum age of data from previous partial runs of Discovery – if the age exceeds this value when Discovery is invoked, the previous data will be discarded and a new Discovery will be started.</td>
</tr>
<tr>
<td>Enable Options that Require Discovery (DiscoveryEnabled)</td>
<td>Specifies whether menu items and parameters that rely on Discovery should be enabled or disabled in the ControlPoint UI, based on whether Discovery is being run.</td>
</tr>
<tr>
<td>Discovery Pause Time to Allow Other Operations (DISCOVERYSLEEP)</td>
<td>Controls how much time Discovery will release for other processes running at the same time. A larger number will slow down Discovery, but improve the performance of other interactive processes.</td>
</tr>
<tr>
<td>SQL Command Timeout for Discovery Process (DISCOVERYTIMEOUT)</td>
<td>This setting is comparable to Sql Command Timeout Value (COMMANDTIMEOUT), but is specific to Discovery, where the SQL commands are likely to take a bit longer. Default is 1200.</td>
</tr>
<tr>
<td>Maximum Discovery Run Time (DISCOVERYTIMERESTRICTION)</td>
<td>Specifies the maximum time, in minutes, that the Discovery process should be allowed to run before bookmarking its current location and then shutting down.</td>
</tr>
<tr>
<td>Site Collections to Exclude from Full Discovery (URLEXCLUDE)</td>
<td>Comma separated list of urls to exclude from normal nightly Full Discovery processing. All Site Collections whose url includes any value from the list (as a substring) will be excluded from Full Discovery. Note: This setting is Ignored for Partial Discovery, for which a specific scope other than the full farm has been chosen.</td>
</tr>
</tbody>
</table>
**Appendix B**

**Summary of configuration parameters**

<table>
<thead>
<tr>
<th>Setting Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Applications to Exclude from Full Discovery (WAPEXCLUDE)</td>
<td>Allows you to specify the GUID of a Web Application that should be excluded from Discovery. If you want to exclude more than one Web Application, enter the GUIDs in a comma-delimited list. This is ignored for a Partial Discovery. Note that if necessary it is possible to grow the size of the value field to accommodate more GUIDs, contact Metalogix Support for instructions on using xcUtilities to accomplish this.</td>
</tr>
</tbody>
</table>

**Navigation**

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Using Cached Data (CACHEDSEARCH)</td>
<td>When set to true, will cause Search Hierarchy and the search in Change Selection and the destination selection for Copy/Move operations to use the cache database. The default is true, which means that Search Hierarchy will be based on real-time search.</td>
</tr>
<tr>
<td>Preload All Site Collections in Server-side Cache (PRELOADSITECACHE)</td>
<td>If true, specifies that ControlPoint should pre-load the list of Site Collections and pre-build the foldering hierarchy – this will be triggered on the first request to the ControlPoint application, normally the first run of the Schedule Monitor (which runs by default every 10 minutes) If false (the default), the list of Site Collections will be loaded each time the user starts a new browser session or refreshes the SharePoint Hierarchy.</td>
</tr>
</tbody>
</table>
### Scheduled Operations

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Number of Scheduled jobs to Submit at One Time (SCHEDULEDREPCAP)</td>
<td>Specifies the maximum number of line items that will be included in a report that is run on a schedule. Default: 40000</td>
</tr>
</tbody>
</table>

### SharePoint Settings

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Upload Size</td>
<td>Set in the SharePoint Central Administration Web Application General Settings – may need to be raised if scheduled reports are larger than the default limit; set this for the Web Application containing the document library in which the reports will be placed.</td>
</tr>
<tr>
<td>maxRequestLength</td>
<td>Controls the maximum size of a document that can be uploaded into a document library. Expressed in Kilobytes. Placed in the “upper” web.config for the Web application containing the document library into which the reports will be placed (e.g. the web.config will be in a folder underneath C:\inetpub\wwwroot\wss\VirtualDirectories). The entry is of the form: &lt;httpRuntime maxRequestLength=&quot;51200&quot; /&gt; (This example represents 50 Mb.)</td>
</tr>
</tbody>
</table>
Appendix C
Cached vs Real-Time reports

The tables below list the analyses and reports available in ControlPoint and whether they are based on Cached data, Real-Time data, or a choice of either. Note that when a report is run from cache, any historical data (e.g. for storage and activity) is available only back to the date that ControlPoint was installed.

**Activity**

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most/Least</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td></td>
</tr>
<tr>
<td>Site Collection Activity Analysis</td>
<td>Cache</td>
<td>Cache</td>
<td>Cache</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Activity Analysis</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td></td>
</tr>
<tr>
<td>Trend Analysis for Activity</td>
<td>Cache</td>
<td>Cache</td>
<td>Cache</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity by Document</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
</tr>
<tr>
<td>Activity by User</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
<td>Real-time*</td>
</tr>
<tr>
<td>Blog Post Activity</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
<tr>
<td>Inactive Users</td>
<td>Cache</td>
<td>Cache</td>
<td>Cache</td>
<td>Real-time*</td>
<td></td>
</tr>
<tr>
<td>Social Activity</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
</tbody>
</table>
Appendix C
Cached vs Real-Time reports

* The table below describes how each of the Activity Reports, especially those marked “Real-time” are handled for different versions of SharePoint

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Collection Trend for Activity</td>
<td>Source: Cache Range: Number of days specified in SharePoint Page Requests setting (14 days by default)</td>
<td>Source: Cache Range: Number of days specified in SharePoint Page Requests setting (14 days by default)</td>
<td>Source: Cache Range: Number of days specified in SharePoint Page Requests setting (14 days by default)</td>
<td>Source: Cache Range: Number of days specified in SharePoint Page Requests setting (14 days by default)</td>
<td>Source: Cache Range: Number of days specified in SharePoint Page Requests setting (14 days by default)</td>
</tr>
<tr>
<td>List (Most/Least)</td>
<td>Source: SSP Database Range: 31 Days</td>
<td>Source: Logging database Range: up to 31 days</td>
<td>Source: Logging database Range: up to 31 days</td>
<td>Source: Logging database Range: up to 31 days</td>
<td></td>
</tr>
<tr>
<td>Document / List Item (Activity by Document)</td>
<td>Source: SSP Database Range: 31 Days</td>
<td>Source: Logging database Range: up to 31 days</td>
<td>Source: Web Analytics if available** and if start date &gt; 30 days into the past, otherwise Logging database Range: 25 Months (for Web Analytics)</td>
<td>Source: Logging database Range: up to 31 days</td>
<td></td>
</tr>
<tr>
<td>Users (Activity by User, Most/Least)</td>
<td>Source: SSP Database Range: 31 Days</td>
<td>Source: Logging database Range: up to 31 days</td>
<td>Source: Web Analytics if available and start &gt;30 days ago**, otherwise Logging Range: 25 Months (for Web Analytics)</td>
<td>Source: Logging database Range: up to 31 days</td>
<td></td>
</tr>
<tr>
<td>Inactive Users</td>
<td>Source: Cache data for permissions SSP for activity Real-time access to Active Directory to expand group membership</td>
<td>Source: Cache data for permissions Logging for activity Real-time access to Active Directory to expand group membership Range: up to 31 days</td>
<td>Source: Cache data for permissions Web Analytics if available for activity information Real-time access to Active Directory to expand group membership Range: up to 31 days</td>
<td>Source: Cache data for permissions Logging for activity information Real-time access to Active Directory to expand group membership</td>
<td></td>
</tr>
</tbody>
</table>

Using ControlPoint in a large farm environment 25
### Appendix C

**Cached vs Real-Time reports**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 31 days</td>
<td></td>
<td></td>
<td>expand group membership range: 25 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range: up to 31 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For WSS version 3, Site Collection Activity Reports contain cumulative hits only – trend reports are not available. Note also that SharePoint counts “hits” differently from “requests”.

** On SharePoint 2010, ControlPoint will choose to use Web Analytics data if it is available for the specific Web Application, or fail over to get data from the Logging database on a per-Web Application basis, so the basis for results may be different from one Web Application to another if they are configured differently.

*** On SharePoint 2013, the Search database is used with similar rules. The search database contains aggregated data that matches what SharePoint shows; the logging database reports non-aggregated data which normally shows a higher rate of individual “hits” than the data shown by SharePoint. For the most recent 14 days, the Search database contains information for individual days (and ControlPoint is able to report on individual days). Beyond the most recent 14 days, information is held only for complete months and is reported by ControlPoint for the complete months containing the requested date range.

**Notes on availability of data:**

Information taken from the SharePoint 2010 and 2013 Logging database is normally available within approximately 1-2 hours of when the activity occurs (this depends on the exact timing of SharePoint timer jobs, so is not precise). Note that information taken from the Logging database is limited to the last 31 days, but it may be purged by SharePoint in as little as 15 days, depending on the amount of data in the logging database.

Information taken from the SharePoint 2013 Search database, SharePoint 2010 Web Analytics database and the SharePoint 2007 MOSS Shared Service Provider database is generally available after a once-nightly SharePoint analysis job, so is generally available for the previous day and before.

Information taken from the ControlPoint cache database is available after the ControlPoint Discovery process runs, so normally will provide information for the previous day and before.

### Audit and Change Log

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Log</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
<tr>
<td>Change Log</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix C
Cached vs Real-Time reports

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>SharePoint Alerts by Site</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
<tr>
<td>SharePoint Alerts by User</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
</tbody>
</table>

### Automation

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>ControlPoint Policies</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
<tr>
<td>User to Group Analysis</td>
<td></td>
<td></td>
<td></td>
<td>Real-time</td>
<td></td>
</tr>
</tbody>
</table>

### Change Management

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
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<th>List</th>
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</thead>
<tbody>
<tr>
<td>Content Types</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
<tr>
<td>Web Parts by Part</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
<td></td>
</tr>
<tr>
<td>Web Parts by Site</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
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</tr>
<tr>
<td>Workflow Analysis</td>
<td>Real-time</td>
<td>Real-time</td>
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</tbody>
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### Content

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metadata Usage</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
</tbody>
</table>
### Cached vs Real-Time reports

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend Analysis for Site Count</td>
<td><em>Cache</em></td>
<td><em>Cache</em></td>
<td><em>Cache</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broken Links</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
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<td></td>
</tr>
<tr>
<td>Solution Summary</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
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</tr>
</tbody>
</table>

### Configuration

<table>
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<tr>
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<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
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</thead>
<tbody>
<tr>
<td>SharePoint Hierarchy</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
<tr>
<td>Site Collection Properties</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Properties</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
<tr>
<td>List Properties</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
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<td>Real-time</td>
</tr>
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</table>

### Farm-Level Reports

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SharePoint Summary Report</td>
<td><em>Cache</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>(Server Properties are real-time)</em></td>
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<td></td>
</tr>
</tbody>
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### Storage

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most/Least Storage Analysis</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
<tr>
<td>Site Collection Storage Analysis</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
<td>Cache or Real-time</td>
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</tr>
<tr>
<td>Site Storage Analysis</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
<tr>
<td>Content Database Storage</td>
<td>Cache</td>
<td>Cache</td>
<td>Cache</td>
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</tr>
<tr>
<td>Trend Analysis for Storage</td>
<td>Cache</td>
<td>Cache</td>
<td>Cache</td>
<td></td>
</tr>
<tr>
<td>Duplicate Files Report</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
<tr>
<td>Storage by File Type</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
</tr>
<tr>
<td>Recycle Bins</td>
<td>Real-time</td>
<td>Real-time</td>
<td>Real-time</td>
<td></td>
</tr>
<tr>
<td>Site Lists and Libraries Storage</td>
<td></td>
<td></td>
<td></td>
<td>Real-time</td>
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</tbody>
</table>
## Users and Permissions

<table>
<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Web Application</th>
<th>Site Collection</th>
<th>Site</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orphaned Domain Users</td>
<td><strong>Real-time</strong></td>
<td><strong>Real-time</strong></td>
<td><strong>Real-time</strong></td>
<td><strong>Real-time</strong></td>
<td></td>
</tr>
<tr>
<td>Site Permissions</td>
<td>Cache or</td>
<td><strong>Real-time</strong></td>
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(Document last modified March 17, 2016)