ControlPoint

Software Version 5.7.0

Installation Guide

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Documentation updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

You can check for more recent versions of a document through the MySupport portal. Many areas of the portal, including the one for documentation, require you to sign in with a Software Passport. If you need a Passport, you can create one when prompted to sign in.

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Many areas of the portal require you to sign in with a Software Passport. If you need a Passport, you can create one when prompted to sign in. To learn about the different access levels the portal uses, see the Access Levels descriptions.

Contents

Chapter 1: Introduction

This chapter provides an overview of Micro Focus ControlPoint.

ControlPoint product suite

ControlPoint delivers a broad set of features targeted at addressing information management and governance challenges within the enterprise.

- **Break the silos of information**. Break down information silos and enforce consistent information governance across the entire corporate infrastructure. ControlPoint helps you achieve this using its inbuilt connectivity to the most commonly used data repositories and its capability to address many others.
- **Apply information lifecycle management**. Analyze all your documents to determine if they hold business value, constitute a record, or hold no value. Identify orphaned and unknown data. Develop a taxonomy and apply a complex policy to impose the most appropriate retention to each document.
- **Enforce compliance and security**. Use the ControlPoint analysis and entity extraction capability to identify potentially sensitive documents that need to be protected. Leverage the available policies to ensure that all the documents are properly secured in the desired locations.
- **Optimize storage and application performance**. Manage and delete data that hold no value. Implement a hierarchical storage management strategy to ensure a better utilization of your storage and to improve your backup and application performance.

ControlPoint enables you to understand the value of your data, and thereby gain control of your valuable information and achieve better data management.

The Micro Focus IDOL platform

For the purposes of full text analysis, ControlPoint utilizes the Micro Focus *Intelligent Data Operating Layer* (IDOL), which gathers and processes unstructured, semi-structured, and structured information in any format from multiple repositories using a global relational index.

As a next step, IDOL forms a contextual understanding of the information in real time, connecting disparate data sources together based on the concepts contained within them. For example, IDOL can automatically link concepts contained in an email message to a recorded phone conversation, which can be associated with a stock trade. This information is then imported into a format that is easily searched, adding advanced retrieval, collaboration, and personalization to any application that integrates the technology.

For more information on IDOL, see the *IDOL Concepts Guide* and the *IDOL Server Getting Started Guide*.

ControlPoint architecture

ControlPoint has a web application user interface. Functionality is available through several Dashboards in the user interface.

ControlPoint components

ControlPoint includes the following components:

- ControlPoint Dashboard
- ControlPoint Engine
- ControlPoint Data Analysis
- ControlPoint IDOL
- ControlPoint Database
- ControlPoint MetaStore
- ControlPoint Redirector
- ControlPoint Connectors

ControlPoint Dashboard

The ControlPoint Dashboard interface allows users to view repositories, to establish and review allocation of policy, to administer Micro Focus IDOL categories, and to monitor system activity and health, depending on their roles.

The following services are included in the ControlPoint Dashboard.

- **ControlPoint Web Interface**. IIS web application that serves as the ControlPoint user interface.
- **CPWS (optional)**. Set of web services that provides access to ControlPoint resources for ControlPoint Workflow capability.

ControlPoint Engine

The ControlPoint Engine provides the central capability to manage policy content within an organization. It includes the following services:

- **ControlPoint Engine service**. Windows service that executes all scheduled tasks.
- **CallbackHandler**. IIS web application that receives notifications from IDOL connectors.
- **ControlPoint LicenseService**. Windows service that tracks the data usage details of your ControlPoint environment. The data populates the Usage Details page in the ControlPoint

Dashboard.

This service is separate from the ControlPoint License Server service packaged with ControlPoint, which controls IDOL licensing.

ControlPoint Data Analysis

ControlPoint Data Analysis allows your organization to analyze and understand, and to deal with the unstructured data contained within legacy repositories. ControlPoint uses IDOL connectors to scan and capture metadata and (optionally) content of files in the repository to analyze them, and then to present the results of the statistical analysis visually in a dynamic user interface.

ControlPoint IDOL

ControlPoint IDOL delivers an analysis of all content that ControlPoint manages. All repositories that are to be considered by ControlPoint for policy application must be scanned into IDOL.

The following connector types can be deployed from ControlPoint IDOL Deploy Tool:

- **ControlPoint IDOL service**. Contains the central index.
- **ControlPoint Content services**. Index all of the content and serves search requests.
- **ControlPoint Content Manager Trim connector service**. Scans and performs actions on items in Content Manager repositories. This connector type has a connector framework deployed alongside.

> **NOTE:**
> Starting in ControlPoint 5.4, the Content Manager connector replaces the Micro Focus Records Manager and TRIM connectors. The Content Manager connector is compatible with Content Manager, Records Manager, and TRIM repositories.

- **ControlPoint DataAnalysis Store service**. Analyzes, understands, and deals with the unstructured data contained in legacy repositories.
- **ControlPoint Distributed connector service**. Distributes connector calls to the appropriate connector.
- **ControlPoint Documentum connector service**. Scans and performs actions on items in Documentum repositories.
- **ControlPoint Exchange connector service**. Scans and performs actions on items in Exchange repositories.
- **ControlPoint FileSystem connector service**. Scans and performs actions on items in file shares.
- **ControlPoint Hadoop connector service**. Scans and performs actions on items in Hadoop repositories.
- **ControlPoint IDOL License Server service**. Controls the licensing of all ControlPoint functionality.
- **ControlPoint OGS (Omni Group Server) service**. Collects and aggregates user and group security information from a variety of repositories.

- **ControlPoint Notes connector service**. Scans and performs actions on items on a Notes server.
- **ControlPoint SharePoint Remote connector service**. Scans and performs actions on items in SharePoint and SharePoint Remote sites.

ControlPoint Database

The ControlPoint Database provide storage for all policies, repository definitions, configuration settings, schedule tasks, and security information.

ControlPoint MetaStore

ControlPoint MetaStore is a relational database used to store information about all files in repositories that are being managed or analyzed by ControlPoint. Information stored includes document and repository metadata such as file create date, document author, and so on. Policy execution status is also stored in ControlPoint MetaStore.

ControlPoint Redirector

ControlPoint Redirector service retrieves file contents when a shortcut established by a Secure Shortcut policy is clicked.

ControlPoint Connectors

ControlPoint connectors and accompanying connector framework services scan and extract metadata and (optionally) content from files in source repositories. Connectors are also used to action policy execution instructions such as dispose or secure.

Connectors are specific to the repository type. The following connectors are provided with ControlPoint:

- **ControlPoint Content Manager connector**. Scans and performs actions on items in Content Manager repositories. This connector type has a connector framework deployed alongside.

  > **NOTE:**
  > Starting in ControlPoint 5.4, the Content Manager connector replaces the Records Manager and TRIM connectors. The Content Manager connector is compatible with Content Manager, Records Manager, and TRIM repositories.

- **ControlPoint Distributed connector**. Distributes connector calls to the appropriate connector.
- **ControlPoint Documentum connector**. Scans and performs actions on items in Documentum repositories. This connector type has a connector framework deployed alongside.
- **ControlPoint Edge Filesystem connector**. Scans and performs actions on items in file shares. This connector type has a connector framework deployed alongside.
- **ControlPoint Exchange connector**. Scans and performs actions on items in Exchange repositories. This connector type has a connector framework deployed alongside.

- **ControlPoint FileSystem connector**. Scans and performs actions on items in file shares. This connector type has a connector framework deployed alongside.
- **ControlPoint Hadoop connector**. Scans and performs actions on items in Hadoop repositories. This connector type has a connector framework deployed alongside.
- **ControlPoint Notes connector**. Scans and executes policy on messages, appointments, contacts, and other items from a Notes server. This connector type has a connector framework deployed alongside.
- **ControlPoint SharePoint Remote connector** scans and performs actions on items in SharePoint and SharePoint Remote sites. This connector type has a connector framework deployed alongside.

Chapter 2: Installation overview

The ControlPoint installation process consists of installing and configuring several different types of components in your environment.

The high-level tasks to install ControlPoint are as follows:

1. Review the *ControlPoint Support Matrix* and ensure your environment meets all requirements.

   As the *Support Matrix* notes, ControlPoint provides some required software in the ControlPoint IDOL deployment packages you create. If you want to install that software now, download a copy of it from the Internet. Otherwise, you can wait until after you create the deployment packages and it becomes available.

2. Plan your ControlPoint deployment.

   Before installing ControlPoint, plan the topology and identify IDOL content size and scale considerations for maximum performance.

3. Install SQL Server.
4. Install ControlPoint databases.
5. Install ControlPoint IDOL and connectors using the included Deploy Tool package.
6. Install ControlPoint components.
7. Install the ControlPoint Edge Filesystem connector.
8. (Optional) Optimize IDOL configuration.
9. (Optional) Configure IDOL for HTTPS.
10. (Optional) Set up IDOL distributed mirror / non-mirror modes.
11. Adjust antivirus software monitoring.

    There are adjustments you can make to prevent antivirus software from impacting the performance of ControlPoint host machines.

12. (Optional) Configure Advanced IDOL distribution.

Plan your ControlPoint deployment

To maximize the performance of your ControlPoint environment, think about its topology and review size and scale considerations for IDOL content before starting to install ControlPoint.

The following topicsprovide information in these areas:

- Sample ControlPoint topology
- Size and scale considerations for IDOL content

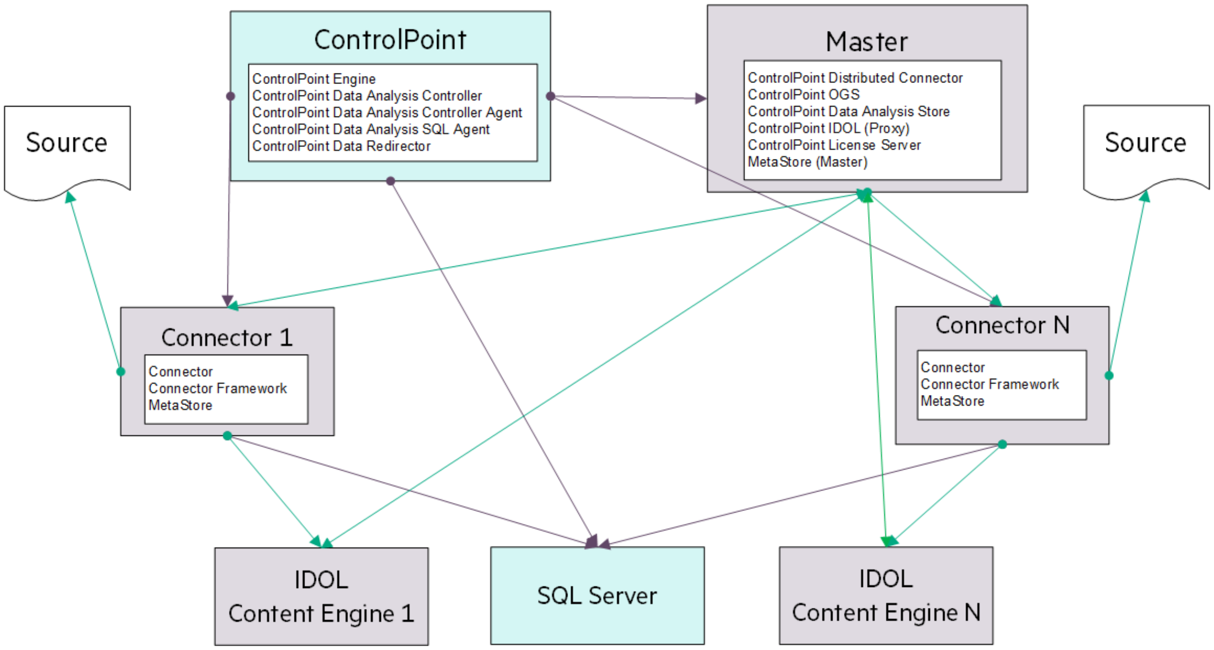
If you have any questions while planning your ControlPoint environment, contact Micro Focus ControlPoint Support.

Sample ControlPoint topology

This section provides an example of a distributed ControlPoint topology that adheres to the guideline of deploying SQL Server and the ControlPoint databases on a server that does not host any other ControlPoint components. This type of deployment provides optimal database performance.

> **NOTE:**
> The following topology is intended as an example. Your ControlPoint environment might be different based on your size and scale requirements. For questions regarding sizing your environment, contact Micro Focus Support.

ControlPoint system topology


ControlPoint
ControlPoint Engine
ControlPoint Data Analysis Controller
ControlPoint Data Analysis Controller Agent
ControlPoint Data Analysis SQL Agent
ControlPoint Data Redirector
Master
ControlPoint Distributed Connector
ControlPoint OGS
ControlPoint Data Analysis Store
ControlPoint IDOL (Proxy)
ControlPoint License Server
MetaStore (Master)
Source
Source
Connector 1
Connector
Connector Framework
MetaStore
Connector N
Connector
Connector Framework
MetaStore
IDOL
Content Engine 1
SQL Server
IDOL
Content Engine N

Size and scale considerations for IDOL content

> **NOTE:**
> For more information on IDOL Content, see the *IDOL Explorer* and the *IDOL Getting Started Guide.*

A major part of the design of an IDOL-based architecture depends on:

- How many documents you need to index into each instance of Content.
- How many Content servers that must run on each physical server, or equivalently, how many documents in total you need to index on each physical server.

If you know the total number of documents, the total number of physical servers required follows easily from these two points. However, in many cases you do not know the final number of documents, but instead need to scale the systems over time.

The upper limit on the number of documents for a server is likely to be determined by performance requirements. Multiple smaller servers tend to perform better than a single large one, because they can work in parallel on queries.

The key question is how many documents a server can index while remaining small. This value is tied to the local IDOL configuration, the type of data that you want to index, the type of queries that you will use, and the pattern of indexing and querying.

While you can derive very rough estimate figures by comparing with similar systems on similar hardware, the only reliable way to get useful statistics is to test your proposed system. That is, run an instance of ControlPoint and IDOL in the configuration you intend to use, on candidate hardware, and monitor performance while you index realistic data and send realistic queries.

When simulating load and assessing performance, you might also want to consider the following questions:

- Do you need query servers during indexing, or can you set up indexing to occur only during quiet times when query load is low (for example, overnight)?
- How many queries do you expect IDOL to handle simultaneously?

These statistics can give you a sensible maximum size for a single instance of Content, and also its likely system resource usage (footprint on disk, process memory size). After these values are known, you can determine the key values above.

Obviously, total disk usage by all Content servers on a machine cannot exceed the space available. Normal memory usage by all IDOL processes on a server ideally must fit in the machine’s physical RAM, with enough free space remaining for the OS to effectively cache file system data.

Chapter 3: Install SQL Server

Before you install ControlPoint databases, you must install and configure SQL Server.

To install and configure SQL Server

1. Install SQL Server software.
2. Configure SQL Server memory options.

   These options control the amount of memory that the SQL Server Memory Manager manages for a SQL Server process.
3. Set the Windows power plan for the server.

   Changing the power plan provides SQL Server additional processing capacity.

Install SQL Server software

When installing SQL Server, adhere to the following guidelines:

- Use one of the supported versions of SQL Server, as listed in the *ControlPoint Support Matrix*.
- Install SQL Server on a server dedicated to ControlPoint databases.

  For optimal performance, install SQL Server on a server that will host only ControlPoint databases and no other ControlPoint components, such as connectors. Otherwise, to support other ControlPoint components on the same server, you must configure SQL Server to limit the resources it consumes.
- Ensure that SQL Server is accessible from the server that will host ControlPoint software.

To install SQL Server software

1. Install the SQL Server software, including Server Native Client.

   For information about how to install the software, see the SQL Server documentation.
2. Apply the latest SQL Server service packs for your edition and version.

   This included all currently-available and pushed SQL Server updates (critical updates and publicly-pushed individual updates) from Windows Update.

Configure SQL Server memory options

SQL Server Memory Manager uses two server memory options, **min server memory** and **max server memory** to manage the amount of memory allocated to a SQL Server process.

After installing SQL Sever, set the maximum amount of server memory instead of using the default value. For example, reserve 1 GB of RAM for the OS, 1 GB for each 4 GB of RAM installed from 4 to 16 GB, and then 1 GB for every 8 GB RAM installed over 16 GB RAM.

For information about how SQL Server uses these options to allocate memory and the default value for each option, see your SQL Server documentation.

> **TIP:**
> You can configure this memory option on either new or existing installations of ControlPoint.

Set the Windows power plan for the server

In Windows, the default power settings balance power efficiency and performance. For SQL Server to have consistent, predictable, and high performance, set the Windows power plan on the server to **High performance**. This additional processing capacity comes with higher power utilization.

> **TIP:**
> You can set the power plan on either new or existing installations of ControlPoint.

To set the Windows power plan

1. Open **Control Panel** > **Power Option**.
2. Click **High performance**, and then click **OK**.

   The server power options are set.

Chapter 4: Install ControlPoint databases

The first step in installing ControlPoint is to install and configure its databases.

To install and configure ControlPoint databases

1. Learn about the ControlPoint databases and their use of file groups.

   ControlPoint has several databases, each supporting database partitioning and file groups that you must configure during installation.

2. Prepare to install ControlPoint databases.
3. Configure the ControlPoint data source.
4. Install the ControlPoint databases.
5. Perform post-installation database tasks.

After installing and configuring ControlPoint databases, you are ready to install ControlPointIDOL and connectors.

> **TIP:**
> The *ControlPoint Best Practices Guide* contains helpful information for working with ControlPoint databases.

ControlPoint databases

The ControlPoint environment contains the following five databases.

- ControlPoint
- ControlPoint Audit
- ControlPointMetaStore
- ControlPointMetaStore Tags
- ControlPoint Tracking

Database overview

ControlPoint supports SQL Server storage separation for multiple storage paths per database. This enables you to use more of the discrete, concurrent disk I/O available on your SQL Server host and can significantly increase performance.

Benefits of database partitions and file groups

Using database partitions and file groups provide the following benefits to all ControlPoint database implementations, regardless of size:

- Reduces the storage capacity required to operate the largest ControlPoint database, ControlPointMetaStore.

  In addition, the storage structure of the databases is in smaller, more manageable files. This enables you to make use of smaller, more independent logical volumes.

- Reduces the storage throughput required for ControlPoint operations.

  This reduction results from taking advantage of the concurrent storage channels/volumes usually available to production servers.

- Separates the structure of the database storage into multiple discrete files.

  Having multiple files lets you more accurately monitor your server for I/O hotspots while under load and to easily relocate component files to additional volumes. It also allows you to preserve a standard logical internal structure and facilitates future upgrades, even if you performed custom reorganization of the storage files.

- Reduces SQL Server memory utilization.
- Adds SQL table and index partitioning.

  This reduces the necessary SQL index maintenance windows and allows for more processing hours in a given day.

- Adds maintenance plans to all ControlPoint databases.

  The maintenance plans can be tailored by database administrators as needed. These scheduled jobs, run by the native SQL Agent, intelligently perform rebuild, re-index, statistic calculation, and index compression tasks automatically and in an optimized fashion for both standard and partitioned objects, utilizing online index maintenance operations when available. For more information on SQL Server Agent jobs, see your SQL Server documentation.

  By default, all of the new scheduled jobs run at 10 pm server time. If desired, you can adjust the nightly schedule times for each database. These start times may be staggered if desired, but it is important to ensure that the jobs are set to run at least once per day.

Logical file groups

The ControlPoint databases installation program prompts you for multiple paths per database, one for each logical file group defined in the database. These are then grouped by the three types of corresponding pages stored by SQL Server:

- Data
- Index
- Text (This covers both the now deprecated `text` and `ntext` SQL column data types, but also long `char`, `nchar`, `varchar` and `nvarchar` column types).

As the different databases that are used by ControlPoint are also segmented by schema, one file group per schema per type is available to be defined.

In each of the logical file groups, in the paths entered, multiple files will be placed in the target location in accordance with SQL Server best practices. For example, the number of files per file group equals the number of available processor cores up to a maximum of 16 per file group. After the database is created, the Database Administrator can move the individual files to any other storage target to further spread and control the SQL I/O utilization.

In addition, the installation program gives you the option to automatically *interleave* files from select file groups to multiple storage path targets. When this option is selected, paths that participate in the interleaving process are indicated in the database installer. Files from within each of these file groups will be spread evenly across all the participating paths.

File groups example

For the ControlPointMetaStore database on an 8 core SQL Server, when the interleave option is selected, causes two files from each of the `Metadata.data`, `Metadata.index`, `MetaStore.data`, and `MetaStore.index` file groups to be placed on each of their defined paths.

For small sized ControlPoint environments, or those without segmented performance disk storage attached, all file groups and their component files may be placed together in a single path.

However, to achieve optimal performance and scalability, particularly for large size databases, separation of storage to multiple paths, both by database and by file groups within each database, is strongly recommended.

Consult your systems architect for planning and guidance in this area, specific to your ControlPoint use and growth projections.

Prepare to install ControlPoint databases

Before you install the ControlPoint databases, there are a few tasks you must do to prepare your environment.

To prepare for ControlPoint databases

1. Verify the SQL Server sa account.
2. Configure minimum SQL permissions.
3. Grant permissions on database file locations.
4. Start the SQL Server Agent service.

Verify the SQL Server sa account

Ensure that the SQL Server **sa** account exists with its regular class of permissions and is not disabled.

This account will own the ControlPoint database maintenance jobs the installation process creates. If the account is removed, renamed, or disabled, the steps that create maintenance jobs will fail.

Configure minimum SQL permissions

Ensure the user account that deploys or upgrades the ControlPoint databases has permissions equivalent to the **sysadmin** default SQL login role, including the following permissions configured in SQL Server:

- **Dbcreator, public**. Required to create the ControlPoint databases.
- **SecurityAdmin**. Required to create users in the ControlPoint databases.

> **NOTE:**
> Db_owner permissions are the minimum SQL permissions that can be used after the initial deployment.

Grant permissions on database file locations

Grant the appropriate read and write permissions on the directories you will configure for the database file groups. Permissions include standard permissions on the objects and UAC access (usually controlled by ownership inheritance), if applicable.

Follow these guidelines:

- **When utilizing a SQL user account**. Read and write access (and UAC access) granted to both the user account that runs the database installation program on the SQL server and the user account that operates the SQL Server instance.
- **When utilizing a Windows user account**. Read and write access (and UAC access) granted to the user account that runs the installation program.

These are the minimum permissions and access controls required for the directory targets. You can allow additional access to the directories if necessary.

Start the SQL Server Agent service

Ensure that the SQL Server Agent service is set for automatic start and that the service is running. The installation of the databases creates several SQL Server Agent maintenance jobs.

Configure the ControlPoint data source

Configure the ControlPoint data source in SQL Server Reporting Services (SSRS) to allow administrators to run ControlPoint reports from the ControlPoint Administration Console.

To configure the ControlPoint data source

1. Open **SQL Server Reporting Services Configuration Manager**.
2. Connect to the report server and instance.

3. On the Report Server Status page, verify that the Report Service is started.
4. Click the **Web Service URL** tab, where the virtual directory of the Report Server Web Service is defined.

   Take note of the **Virtual Directory** name for later use during the configuration of the ControlPoint databases. In this example, the virtual directory name is **ReportServer**.
5. Click the **Report Manager URL** tab, where the URL to access Report Manager is defined.

   Take note of the following information for use later during the configuration of the ControlPoint databases:

   - **Virtual Directory**. In this example, the virtual directory name is **Reports**.
   - **Report Manager URL**. In this example, the Report Manager URL is `http://<localhost>:80/Reports`
6. Using a web browser, access the Report Manager URL.

   The startup page of Report Manager appears. It contains the **Home** folder of the Report Manager.
7. Navigate to the **Micro Focus ControlPoint Reports > DataSource** folder.
8. Click the **ControlPointAudit** data source.

   By default, the **Properties** tab of the ControlPointAudit data source appears.
9. Select one of the following connection options under the **Connect using** option:

Option	Description
Credentials supplied by the user running the report	User is prompted to specify credentials when the report is run.
Credentials stored securely in the report server	Credentials are used regardless of who requests a ControlPoint Audit report.
Windows integrated security	Every user who requests a ControlPoint Audit report must have an account in SQL Server with the Read permission to ControlPointMetaStore and ControlPoint Audit databases.
Credentials are not required	The configured unattended execution account is used. This must be an account in SQL Server with the Read permission to ControlPointMetaStore and ControlPoint Audit databases.

Install the ControlPoint databases

After configuring the ControlPoint data source, you are ready to install the ControlPoint databases.

Before you begin

Ensure you have a plan for defining multiple file paths per database because you must specify those paths during the installation process. For more information, see Logical file groups, on page 19.

To install ControlPoint databases

1. Navigate to the `\ControlPoint` directory and run `ControlPoint Database Installer.exe.`

   > **NOTE:**
   > If Windows UAC is enabled on the server, ensure that the user account running the installation program is also a user account in SQL Server that has sufficient permissions to update databases and sufficient permission to the database file locations.

   The database installer opens.

2. Click **Next**.

   The Log Directory page opens.

3. Change the path of the setup log file, if necessary, and then click **Next**.

   The SQL Connection page opens.

4. Enter the required **SQL Server** and **instance** names, or select them from the list.

5. Select the required authentication method: **Windows** or **SQL Server**.

   If you select **SQL Server Authentication**, enter a **Login ID** and **Password**.

6. If only one disk is present, clear the **Enable interleaving for database transactions** option.

   This option, selected by default, automatically interleaves files from select file groups to multiple storage path targets. Paths that participate in the interleaving process are indicated on each of the following Database Configuration pages.

   Files from within each of these file groups will be spread evenly across all the participating paths.

7. Click **Test Connection** to verify the server details.

8. In the **Job Owner Username** field, enter a SQL Server user name for an account that has System Administrator access to SQL Server.

   > **NOTE:**
   > The ControlPoint Database installation program uses this account to create and configure several SQL Server Agent maintenance jobs.
   >
   > This user account must exist in SQL Server; the installation program does not verify it exists.

9. Click **Next**.

10. On each of the next several database configuration pages, specify the path to the files listed, and then click **Next**.

    You will configure database files for the following:

- ControlPoint Database
- ControlPoint Audit Database
- ControlPoint Tracking Database
- ControlPointMetaStore Database
- ControlPointMetaStoreTags Database

> **NOTE:**
> When specifying data paths, keep the following in mind:
>
> - If you selected the option to interleave database transaction interleaving in step 6, each page indicates the paths participating in the interleaving.
> - Specify paths local to the server where SQL Server is installed.
> - Place Index files on a different volume than the other components in the file group.
> - Place Log files on a different volume than the other database files.

11. The ControlPoint Audit Reports page opens.
12. To upload audit reports to SQL Server Reporting Services (SSRS), select **Upload Reports** and click **Next**.

    > **NOTE:**
    > This step requires that you configured a data source in SQL Server Reporting Services (SSRS). For more information, see Configure the ControlPoint data source, on page 21.

    If you select **Upload Reports**, the Reports Configuration page opens.

    a. In the **Audit Reports Installation** area, enter the installation path in the **Install reports to** field.

    b. In the Report Manager Server Settings area, enter the following information:

       i. **Report Manager URL**

       ii. **Report Manager Virtual Directory**

       iii. **Report Webservice Virtual Directory**

    > **NOTE:**
    > For **Report Manager Virtual Directory** and **Report Webservice Virtual Directory**, enter the values you previously defined on the SSRS Configuration Manager's **Report Manager URL** and **Web Service URL** tabs, respectively.

13. Click **Next**.
14. Verify the details on the Installation Confirmation page, and click **Install**.

    The databases are installed.

    > **IMPORTANT:**
    > Several SQL scripts are run as part of the database installation. If the scripts encounter

> problems during execution, the database installation program displays a dialog box prompting you to **Retry** or **Abort**.
>
> If you choose **Abort**, the installation program attempts to drop the databases. If it cannot drop the databases, you will need to perform the following steps:
>
> a. In SQL Server Management Studio, ensure that there are no temporary tables in the **dbo.Temp_DBNames** path.
>
>   **System databases > msdb > Tables > dbo.Temp_DBNames**
>
> b. Manually drop the affected ControlPoint databases.
>
> c. Manually drop the **temp_db** database.
>
>   Dropping the databases avoids inconsistencies resulting from incomplete script executions.
>
> d. Restart the database installation program.

15. Review the installation log.
16. Either write down the hyperlinked connection string or click it to copy the string to your clipboard.

    The ControlPointMetaStore service requires this connection string to access the ControlPointMetaStore database. You must save this connection string so you can use it during the Configure deployment packages, on page 30 task to configure the ControlPointMetaStore component's SQL connection string to the MetaStore database.
17. Click **Finish**.

    The installation wizard closes.

Complete the ControlPoint installation process by performing a few post-installation tasks.

Perform post-installation database tasks

After installing the ControlPoint databases, there are a few additional tasks to perform.

1. Verify the new SQL maintenance jobs.
2. If you did not install the **ControlPointMetaStore** and **tempDB** databases on dedicated hard drives, move them so each is on its own dedicated hard drive.

   For more information, see Move the ControlPoint databases.
3. Configure the recovery model for ControlPoint databases.

   The default recovery model for all ControlPoint databases is **Simple**.

Verify the new SQL maintenance jobs

Verify that the installation process created the SQL maintenance jobs for ControlPoint.

To verify the SQL maintenance jobs

1. In SQL Server Management Studio, navigate to **SQL Server Agent > Jobs**.
2. Verify the existence of ControlPoint database maintenance jobs.

   For each ControlPoint database, two maintenance jobs are created:

   - **<databaseName>_db_maint_3.0**. The database maintenance job that runs by default automatically at 10 pm every night.
   - **<databaseName>_db_maint_all**. The database maintenance job that you can run manually as needed.

   W here

   <databaseName> is the name of the ControlPoint database.

   For example:

   `ControlPoint_db_maint_3.0` and `ControlPoint_db_maint_all`

   > **NOTE:**
   > The **_all** version of the maintenance script does not have a schedule defined because it is intended that you run it manually.

Move the ControlPoint databases

Due to high disk usage of the **ControlPointMetaStore** and **tempDB** databases, Micro Focus recommends that you allocate these databases their own dedicated hard drive.

For improved read and write performance of the **ControlPointMetaStore** database, Micro Focus also recommends the use of an enterprise-level solid-state drive (SSD).

> **NOTE:**
> The following information illustrates how to move the **ControlPointMetaStore** and **tempDB** databases if they were not initially configured on dedicate hard drives.
>
> The procedures are based on information provided in SQL Server documentation. For more information, see https://docs.microsoft.com/en-us/sql/relational-databases/databases/move-user-databases?view=sql-server-2014.

Example

This example describes how to move the **ControlPointMetaStore** and **tempDB** databases to dedicated hard drives E and F, respectively.

1. In SQL Server Management Console, run the following statement:

   ```
   ALTER DATABASE ControlPointMetaStore SET OFFLINE;
   ```

> **IMPORTANT:**
> **TempDB** cannot be set offline or online, so it is excluded from steps 1 and 4.

The database is set offline.

2. Move the file or files to the new location.

   For example:

   - Move `ControlPointMetaStore.mdf` to the `E:` volume
   - Move `tempdb.mdf` to the `F:` volume.

3. For each file moved, run the following statement:

```
ALTER DATABASE ControlPointMetaStore MODIFY FILE ( name =
ControlPointMetaStore_data, FILENAME =
'E:\sqldata\ControlPointMetaStore.mdf' );
```

```
ALTER DATABASE tempdb MODIFY FILE ( name = tempdev, FILENAME =
'F:\sqldata\tempdb.mdf' );
```

4. Run the following statement:

```
ALTER DATABASE ControlPointMetaStore SET ONLINE;
```

   The database is set online.

5. Verify the file change by running the following query:

```
SELECT name, physical_name AS CurrentLocation, state_desc
FROM sys.master_files
WHERE database_id = DB_ID(N'ControlPointMetaStore');
```

```
SELECT name, physical_name AS CurrentLocation, state_desc
FROM sys.master_files
WHERE database_id = DB_ID(N'tempdb');
```

6. Stop and restart the instance of SQL Server for the change to take effect on **TempDB**.

Configure the recovery model for ControlPoint databases

The recovery model defines the type of transaction log the database maintains and therefore determines the restore options available should you need to restore the database. The default recovery model for all ControlPoint databases is automatically set to **Simple**. You can change the model to either **Full** or **Bulk-Logged** for each database to better meet your recovery needs.

To configure the recovery model

- For each ControlPoint, configure the recovery model using either SQL Server Management Studio or Transact-SQL.

For information about each type of recovery model and how to set one, see your SQL Server documentation.

Chapter 5: Install ControlPoint IDOL and connectors

This chapter describes how to install ControlPoint IDOL and connectors using deployment packages.

To install ControlPoint IDOL and connectors

1. Create deployment packages for the target servers.
2. Ensure your environment meets *all* requirements for ControlPoint IDOL, Metastore, and connectors, as listed in the *ControlPoint Support Matrix*.

   Requirements include software necessary for all connectors as well as software, user account provisioning, and license keys for specific connectors only. If you waited to install Microsoft Visual C++ Redistributable Packages and SQL Native Client from the deployment packages you created, be sure to install those components now.
3. Install deployment packages by copying them to them to the target servers, and then installing them.
4. (Optional) Configure the Documentum connector.

   If you installed the Documentum connector, configure it now.
5. (Optional) Set up IDOL Content language types.

   English is the only language provided by default.
6. Start Windows services.

After installation, you can also do the following:

- Deploy multiple MetaStore services
- Stop Windows services
- Uninstall deployment packages

Create deployment packages

The ControlPoint IDOL Deploy Tool automates the creation of deployment packages for ControlPoint IDOL and connectors. This tool does not install the IDOL software directly; rather, it builds the deployment packages that you must copy to the target servers for subsequent installation.

To create deployment packages

1. Configure deployment packages.

   The Deploy Tool configures the deployment packages, which require no further configuration for use with ControlPoint after the installation on target servers.

2. Save deployment package configuration.
3. Build deployment packages.

Configure deployment packages

Use the information in this section to run the Deploy Tool to configure deployment packages.

> **NOTE:**
> You can run the Deploy Tool on any server to create ControlPoint IDOL deployment packages.

To configure deployment packages

1. Start the ControlPoint IDOL Deploy Tool by running `ControlPoint IDOL Deploy Tool.exe`.

   The file is located in the `ControlPoint IDOL Deploy tool` directory.

   The ControlPoint IDOL Deploy Tool is a self-extracting executable .

   The Deploy Tool package build dialog box displays with four tabs: **General**, **IDOL**, **Connectors**, and **Components**.

2. On the **General** tab, enter the following information.

   - **Deployment Mode**.
     - **Pilot**. Select **Pilot** to configure an IDOL system appropriate for a pilot or model office environment. The following defaults are used.
       - Log levels for all services are set to FULL.
       - The number of threads is reduced for applicable services for use on a small or shared server.
       - Memory usage is decreased for applicable services for use on a small or shared server.
       - The synchronization times for services are reduced so that analysis data is updated frequently.
     - **Production**. Select to configure an IDOL system appropriate for a production environment.
   - **Advanced Idol Distribution**. Select this checkbox if you plan to enable Advanced IDOL distribution. You will finish the configuration in a later task.
   - **Host Installation Directory**. Specify the directory for installing components on the target deployment servers.

     The default location is: `C:\Program Files\Micro Focus\ControlPoint\`.
   - **Host Package Build Location**. Specify the directory creating deployment packages when you run the Deploy Tool.

     The default location is: `C:\temp\ControlPoint\`.
   - **Zip File**. This option generates the deployment packages as compressed (ZIP) archives.

This option is useful when you plan to transfer deployment packages to different servers. The package size can exceed 1 GB.

- **Default Deployment Host**. Enter the name of the server that the ControlPoint IDOL Server software will be installed on.

> **NOTE:**
> You will define the names of servers to host other components on the **Components** tab.

3. On the **IDOL** tab, enter the following information.
   - **Number of IDOL Content Engines**. Enter the number of ControlPoint Content services to create.
   - **Default Language Type**. Enter the default language type to be used by the ControlPoint IDOL Server.

     The default language is **englishUTF8**.
   - **Advanced Idol Distribution**. If you selected the **Advanced Idol Distribution** checkbox on the **General** tab, enter a name for the new IDOL database.

     Make note of the name you use because you must specify the same name during a later configuration task. The default name is **ContentRepo**.
4. On the **Connectors** tab, select the connectors to deploy. Click **Config** to configure selected connectors, as follows:
   - **File System Connector**
     - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
     - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
   - **Content Manager Connector**
     - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
     - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
   - **SharePoint Remote Connector**
     - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
     - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.

  - **SharePoint Credentials Username**. Enter the name of the user to use when authenticating with the SharePoint server.
  - **SharePoint Credentials Password**. Enter the password for the user to use when authenticating with the SharePoint server.
  - **SharePoint Credentials Domain**. Enter the domain of the specified user.
- **Exchange Connector**
  - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
  - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
  - **LDAP and Exchange Web Service User Domain**. Enter the user domain to use when connecting to both LDAP and the Exchange web service.
  - **LDAP and Exchange Web Service Username**. Enter the user name to use when connecting to both LDAP and the Exchange web service.
  - **LDAP and Exchange Web Service Password**. Enter the password to use when connecting to both LDAP and the Exchange web service.
- **Documentum Connector**
  - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
  - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
  - **Documentum Hosts**. Enter the name of the Documentum server.
  - **Documentum Credentials Username**. Enter the name of the user to use when authenticating with the Documentum server..
  - **Documentum Credentials Password**. Enter the password for the user to use when authenticating with the Documentum server.

    > **NOTE:**
    > All information entered related to Documentum Connector are case-sensitive.
- **Hadoop Connector**
  - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
  - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.

    - **Hadoop Root URI**. Enter the root URI of the file system to which to connect.
    - **Hadoop Path**. Enter the path in the file system to process for files.
  - **Notes Connector**
    - **Number of Connectors in Group**. Enter the number of connectors in the group. The maximum number is 9.
    - **Deployment Hosts**. Enter the server names to which to deploy the connectors. Each server hosts one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.

5. On the **Components** tab, click **Config** next to a component name to configure that component.

   You can configure the following items for each component.

   - **Host**. The name of the server to which to deploy this component.
   - **Path**. The installation location for this component.

6. For the **ControlPointMetaStore** component, specify the SQL connection string to use when connecting to the MetaStore database.

   Enter the connection string you previously saved or copied to clipboard during the Install ControlPoint databases task. Make any required adjustments.

   The connection string has the following general format when ControlPoint databases are configured to use Windows authentication:

   ```
   Driver={SQL Server Native Client 11.0};App=ControlPoint;Server=
   servername;Database=ControlPointMetaStore;Trusted_Connection=yes
   ```

   Alternatively, to specify a connection to a specific named SQL instance instead of the default one, use the following format:

   ```
   Driver={SQL Server Native Client 11.0};App=ControlPoint;Server=
   servername\instancename;Database=ControlPointMetaStore;Trusted_Connection=yes
   ```

Save deployment package configuration

After configuring your deployment packages, save the settings to a file.

To save all configuration settings:

- Select **Save** or **Save As** from the Deploy Tool's File menu.

Build deployment packages

The last step in the process of creating deployment packages is to build them.

To build deployment packages

- Click **Deploy**, or select **Deploy** from the Deploy Tool's Actions menu.

  The tool creates the packages as either directories or .ZIP files (if you selected the **Zip File** option) in the location you specified for the **Host Package Build Location** option. The default location is: `C:\temp\ControlPoint\`.

Install deployment packages

After using the Deploy Tool to create deployment packages, use the information in this section to install them.

Before you begin

Do the following:

- Ensure that your environment meets all requirements for ControlPoint IDOL and connectors, as listed in the *ControlPoint Support Matrix*.

  Requirements include software, account provisioning, and IDOL license keys.

- Move the deployment packages to each target server so they are available for installation.

  The Deploy Tool creates the packages as either directories or .ZIP files in the location you specified for the **Host Package Build Location** option.

To install a deployment package

1. As the local administrator, run the `_deploy_services.bat` Windows batch file.

   The batch script copies the components to the location defined in **Host Installation Directory**.

   > **NOTE:**
   > If Windows UAC is enabled on the server, you must run the batch file manually from the command line.
   >
   > a. Open a command prompt as an Administrator.
   >
   > b. Change the directory to the temporary location that contains the batch file.
   >
   > c. Run `_deploy_services.bat`.

2. As the local administrator, run the `_install_services.bat` file to install the Windows services.

3. When prompted, enter the credentials for the first connector in the deployment package.

   Enter the credentials in the following format.

   ```
   Please enter username: domain\username
   Please enter password: password
   ```

   Ensure that you include the domain or host name when entering the user name.

4. When prompted, decide whether to use the same credentials for all other connectors.

If you use different credentials for other connectors, enter them in the same format.

5. When prompted, enter the credentials to use for your ControlPointMetaStore service.

   Enter the required user name and password.

6. Copy the IDOL license file to the IDOL License Server directory after installation but before services start.

   Rename the IDOL license key to `licensekey.dat` and place it into the `LicenseServer` directory at the following location:

   ```
   Program Files\Micro Focus\ControlPoint\LicenseServer
   ```

Configure the Documentum connector

If you deployed the Documentum connector, there are a few additional configurations to perform before using it.

Before you begin

Ensure you have the set of .Jar files that the Documentum connector requires. This task requires you to copy them into a specific folder.

> **NOTE:**
> ControlPoint does not provide these files. For information or help obtaining these files, contact the Documentum Support team.

To configure the Documentum connector

1. In a text editor, update the `Program Files\Micro Focus\ControlPoint\Indexer\Documentum Connector\dfc.properties` file to include your Documentum server's host and port:

   ```
   dfc.docbroker.host[0]=DocumentumHostName
   dfc.docbroker.port[0]=DocumentumPort
   ```

2. Copy the `dfc.properties` and `dfc.keystore` files from:

   ```
   Program Files\Micro Focus\ControlPoint\Indexer\Documentum Connector
   ```

   to the following two locations:

   - `Program Files\Micro Focus\ControlPoint\Indexer\OGS`
   - `Program Files\Micro Focus\ControlPoint\Commons\dfc`

3. Add the .Jar files required by the Documentum connector to the `Program Files\Micro Focus\ControlPoint\Commons\dfc` folder.

Set up IDOL Content language types

By default, the IDOL Content configuration file contains only an entry for English in the `[LanguageTypes]` section. If you need to support other languages, identify those languages and update the Content configuration file accordingly. For more information, see the IDOL documentation or contact Support.

Start Windows services

You can start all Windows services on a host or only services for a specific component.

To start all Windows services

- As the local administrator, run `_start_services.bat`, located in `\temp\ControlPoint\host_`*`hostName`*.

To start Windows services for a specific component

- As the local administrator, run `_start_service.bat`, located in the component-specific `\temp\ControlPoint\host_`*`hostName`*`\`*`component`* folder.

> **NOTE:**
> If IDOL content engines are on a different server than the IDOL connectors, Micro Focus recommends that you start and verify the IDOL services before the connectors start.
>
> Starting the connectors starts the analysis process for the locations specified when configuring connectors in the Deploy Tool.

Stop Windows services

You can stop all Windows services on a host or only services for a specific component.

To stop all Windows services

- As the local administrator, run `_stop_services.bat`, located in `\temp\ControlPoint\host_`*`hostName`*.

To stop Windows services for a specific component

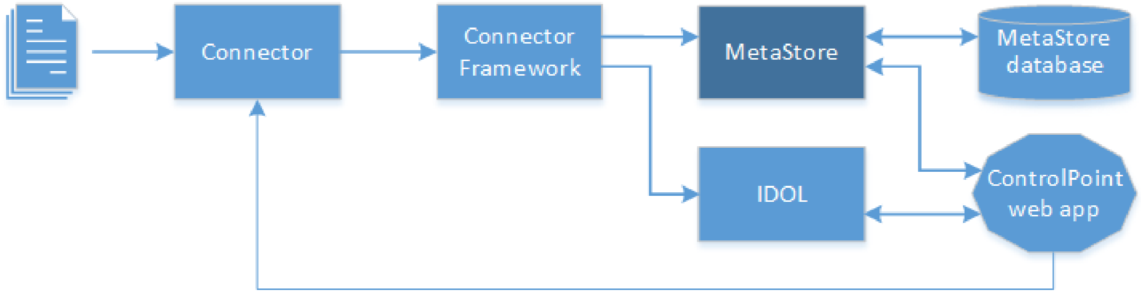
- As the local administrator, run `_stop_service.bat`, located in the component-specific `\temp\ControlPoint\host_`*`hostName`*`\`*`component`* folder.

Deploy multiple MetaStore services

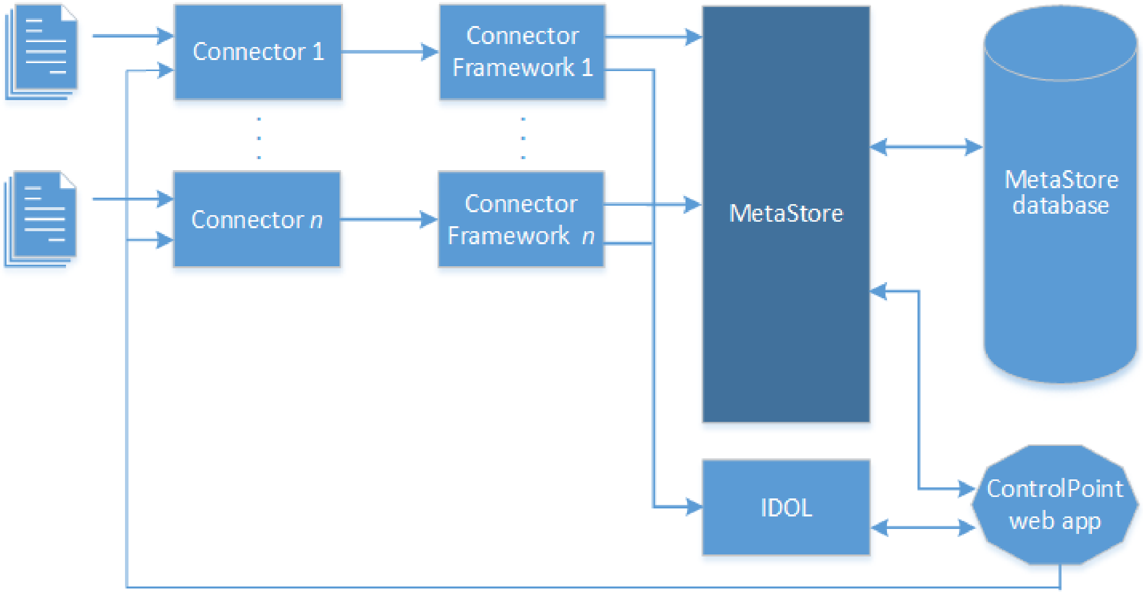
The default ControlPoint deployment contains a single MetaStore service node. However, if you add multiple connectors to your deployment to ingest different types of documents, deploying additional MetaStore nodes will improve performance.

Overview

The ControlPoint installation process deploys a single MetaStore service node. This node ingests data from the Connector Framework and communicates with the MetaStore database (to store data) and the ControlPoint web application (to get user-created rules and policies for document management). The following figure illustrates the data flow in the default deployment.

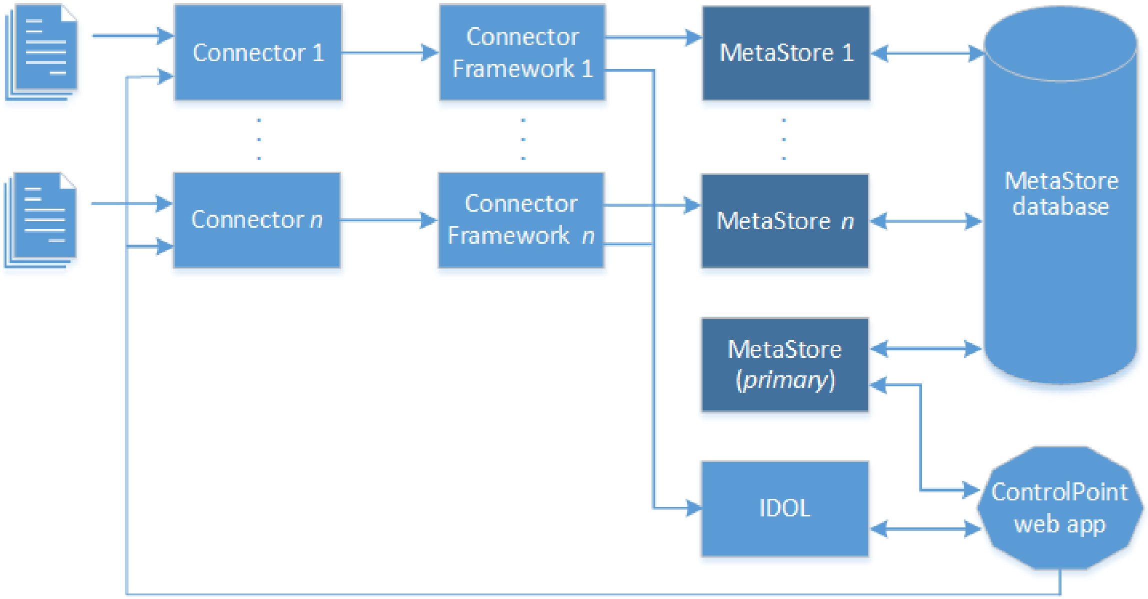


To support a variety of document types, you can add additional connectors that each feed the single MetaStore, as shown.



However, as the system grows, the MetaStore becomes a bottleneck as it tries to process data from all connectors in addition to interacting with data from the web application.

To prevent this issue and enhance the system's document ingestion performance, you can deploy additional MetaStore service nodes so that there is a 1-to-1 relationship between connectors and MetaStore components. In this type of deployment, the original MetaStore node remains and serves as the primary. It is dedicated to control the operations users perform through the ControlPoint web application, such as creating, updating, and deleting policies or repositories. The additional MetaStore nodes handle ingestion of documents and policy execution.



> **NOTE:**
> There is no direct communication between the primary MetaStore node and IDOL. Instead, both components provide the web application with information needed by the tasks the user performs. In return, the web application sends them component-specific instructions to carry out in order to help fulfill the user's chosen task.

The following sections explain how to the deploy additional MetaStore nodes into your ControlPoint environment. You should deploy these nodes only after you deploying all other connectors and IDOL components.

Prepare for deployment

1. Decide whether the additional MetaStore service node will reside on the same server as the other IDOL engines, or on a separate server.

   > **NOTE:**
   > Micro Focus recommends that you deploy the additional MetaStore component on same machine as the Connectors performing the ingestion actions.

2. If needed, install the SQL Server Native Client software to the MetaStore host. For more information, see your SQL Server documentation.

3. The MetaStore component requires two unused port during configuration.

Verify the unused ports by running the following command:

```
netstat -anob | findstr "4500"
```

If the ports are already used, select two different ones and verify that they are unused.

Deploy the additional MetaStore component

To deploy multiple MetaStore components

1. Stop the MetaStore service.
2. Copy the `MetaStore` folder to a new location.

   For example:

   Copy `Program Files\Micro Focus\ControlPoint\Indexer\MetaStore` to `<newPath>\MetaStore2`

   where

   `<newPath>` is the new path for MetaStore2.

   > **TIP:**
   > If you are copying the `MetaStore` folder to another server, Micro Focus recommends that you still rename the folder and components to `MetaStore2`, in order to uniquely identify the additional components.

3. Navigate to the `MetaStore2` folder and rename the files as follows:
   - `ControlPoint MetaStore.exe` to `ControlPoint MetaStore2.exe`
   - `ControlPoint MetaStore.cfg` to `ControlPoint MetaStore2.cfg`
4. Open `ControlPoint MetaStore2.cfg` in a text editor and edit the following settings:
   a. In the `[Server]` section, change the port number to an unused port number.
   b. In the `[Service]` section, change the port number to another unused port number.
5. Save the file.

Modify the Install and Uninstall MetaStore scripts

The scripts for installing and uninstalling IDOL components must be modified to include the additional MetaStore component.

1. On the server hosting the MetaStore**2** component, navigate to Navigate to the `MetaStore2` folder.

   For example:

   `Program Files\Micro Focus\ControlPoint\Indexer\MetaStore2`.
2. Open `install_metastore.bat` in a text editor.
3. Update the following path to reference the path to MetaStore2:

```
pushd "E:\Program Files\Micro Focus\ControlPoint\Indexer\Metastore2"
```

4. Open `uninstall_metastore.bat` in a text editor.
5. Update the following path to reference the path to MetaStore2:

   For example:

   ```
   pushd "E:\Program Files\Micro Focus\ControlPoint\Indexer\Metastore2"
   ```
6. Save the file.

Modify the Install Services script

1. Open the `_install_service.bat` in a text editor.
2. Update the following paths to reference the path to MetaStore**2.**

   For example:

   ```
   echo y| cacls "E:\Program Files\Micro Focus\ControlPoint\Indexer\Metastore2" /E
   /T /G %wsmssvcun:~2%:F
   ```

   ```
   echo y| cacls "E:\Program Files\Micro Focus\ControlPoint\Indexer\Metastore2" /E
   /T /G %wsmssvcun%:F
   ```
3. Update all service names from Metastore to Metastore**2**:

   ```
   "ControlPoint MetaStore2.exe" -install
   ```

   ```
   sc config "ControlPoint MetaStore2" obj= "%wsmssvcun%" password= "%wsmssvcpw%"
   ```

   ```
   sc failure "ControlPoint MetaStore2" reset= 0 actions= restart/60000
   ```
4. Save the file.

Modify the Start Services script

1. Navigate to the `MetaStore2` folder.

   For example:

   `Program Files\Micro Focus\ControlPoint\Indexer\MetaStore2`.
2. Open `_start_service.bat` in a text editor.
3. Update all service names from Metastore to Metastore**2**:

   ```
   net start "ControlPoint MetaStore2"
   ```
4. Save the file.

Modify the Stop Services script

1. Open `_stop_service.bat` in a text editor.
2. Update the URLs with the host name and new port number.

   ```
   http://hostname:4512/action=stop
   ```

   where

   - Hostname is the MetaStore server
   - 4512 is the new port number
3. Save the file.

Associate Connector Framework Services (CFS) to the new MetaStore component

To complete the configuration of multiple MetaStore components, you must update the Connector Framework Services to use the new MetaStore component.

1. On the Connector, open the CFS configuration file.

   For example, for a Filesystem connector, open the `ControlPoint FileSystem Connector Framework.cfg` located in the following directory:

   ```
   \Program Files\Micro Focus\ControlPoint\Indexer\FileSystem Connector Framework
   ```
2. Update the [MyMetaStoreIndex] section to reference the new MetaStore. In this example, it is MetaStore.

   ```
   [MyMetaStoreIndex]
   Type=MetaStore
   Host=hostname
   Port=4512
   ```
3. On the MetaStore servers, start the MetaStore services.

Uninstall deployment packages

To upgrade or remove IDOL or specific components, uninstall the appropriate deployment packages.

To uninstall all components

- As the local administrator, run the `_uninstall_services.bat` script, located in `\temp\ControlPoint\host_`*`hostName`*.

To uninstall a specific component

- As the local administrator, run `_uninstall_service.bat`, located in the component-specific `\temp\ControlPoint\host_`*`hostName`*`\`*`component`* folder.

Chapter 6: Install ControlPoint components

This chapter describes process of installing ControlPoint components.

To install ControlPoint components

1. Ensure your environment meets *all* software requirements for ControlPoint, as listed in the *ControlPoint Support Matrix*.

   Requirements include Microsoft Visual C++ Redistributable Packages and SQL Native Client. If you waited to install these components from the ControlPoint IDOL and connectors deployment packages you created, be sure to install them now.

2. Enable Federal Information Processing Standards (FIPS) security mode.
3. Install ControlPoint and the ControlPoint Engine.
4. Configure ControlPoint.
5. If you enabled ControlPoint security, update ControlPoint configuration files as described in Configure ControlPoint security settings.

After installation, you can also perform the following optional task:

- Deploy ControlPoint by enabling HTTPS

Enable Federal Information Processing Standards (FIPS) security mode

The Federal Information Processing Standard (FIPS) is a United States government standard that specifies best practices for implementing cryptographic algorithms, handling key material and data buffers, and working with the operating system. ControlPoint uses the SHA-1 encryption algorithm in a FIPS-compliant library.

> **NOTE:**
> If you do not plan to use FIPS in your ControlPoint environment, ignore this section and proceed to Install ControlPoint and the ControlPoint Engine.

Limitations

ControlPoint has the following limitations when interacting with FIPS:

- ControlPoint does not support changing the FIPS security mode after ControlPoint has been deployed to the environment. After the selection has been made in Configuration Manager, it cannot be changed by redeploying ControlPoint.

- The Remote Analysis Agent (RAA) utility does not support running with the FIPS security mode.

Enable FIPS

To install ControlPoint on FIPS-enabled Windows servers, you must enable FIPS on the servers before you install and deploy ControlPoint.

To enable FIPS

- Follow the steps that your Windows documentation provides for enabling FIPS encryption.

After installing ControlPoint, you will enable FIPS in your ControlPoint environment when configuring ControlPoint using Configuration Manager.

Install ControlPoint and the ControlPoint Engine

This section describes how to install ControlPoint and the ControlPoint Engine.

Before you begin

Ensure that the server you plan to install the software on meets all ControlPoint requirements listed in the *ControlPoint Support Matrix*.

To install ControlPoint Console and Engine

1. Run `setup.exe` as the Administrator.

   The file is located in the `ControlPoint x64\` directory.

   The Welcome page opens.

2. Click **Next**.

   The License Agreement page opens.

3. Select **I accept the terms** in the license agreement, and then click **Next**.

   The Customer Information dialog box appears.

4. Enter your User Name and Organization, and then click **Next**.

   The Setup Type page opens.

5. Select the setup type that meets your requirements.

   - **Typical** installs ControlPoint and the ControlPoint Engine.
   - **Complete** installs ControlPoint, Engine, and Web Services.
   - **Custom** allows the selection of individual components, as required.

6. Click **Next**.

The Destination Folder dialog box appears.

7. *(Optional)* Click **Change** to change the default installation location.
8. Click **Next**.
9. Review the installation settings that you provided, and then click **Install**.
10. Click **Finish** to exit the installer.

    If you select **Launch ControlPoint Configuration Manager**, the Configuration Manager starts.

Configure ControlPoint

You can configure the ControlPoint system centrally using ControlPoint Configuration Manager.

> **NOTE:**
> This task assumes that you are configuring the Content Manager environment on one server.

Before you begin

Ensure the user account that you will use to run Configuration Manager is also a SQL Server user and has permissions equivalent to the **sysadmin** default SQL login role, including the following permissions configured in SQL Server:

- **Dbcreator, public**. Required to create the ControlPoint databases.
- **SecurityAdmin**. Required to create users in the ControlPoint databases.

To configure ControlPoint

1. Launch ControlPoint Configuration Manager.

   You can launch the Configuration Manager from the ControlPoint program group.

   > **NOTE:**
   > Settings in Configuration Manager are grouped by configuration area. Use the left panel navigation tabs to configure each group of settings.
   >
   > You must complete all mandatory settings before you can deploy the ControlPoint components by clicking **Deploy**.

2. Enter the **SQL Server** and **instance**, or select it from the list.
3. Specify the connection method: **Windows Authentication** or **SQL Server Authentication**.

   If you select **SQL Server Authentication**, enter a Login ID and a Password.

4. Click **Connect**.

   The ControlPoint Configuration Manager opens to the **Database Settings** tab.

5. The **Database Settings** tab displays the connection settings entered during the database installation.

> **NOTE:**
> If you use **SQL Server Authentication**, you can provide alternate login and password credentials. The login credentials must exist in SQL Server.

6. On the **IIS Settings** tab, specify the following settings:

   a. Specify the website to deploy the ControlPoint web applications to.

   > **NOTE:**
   > The deployed web applications can subsequently be retracted by selecting **Not Deployed** from the list.

   b. Specify the **User Account settings** for the IIS Application Pool to use. Each of the ControlPoint web applications use the IIS Application Pool.

   Enter the **Domain**, **Username** and **Password** in the appropriate boxes.

7. On the **Engine** tab, specify the following settings:

   a. To update the account used as the identity for the ControlPoint Engine service, select **Update Engine Service Account**, and then enter the appropriate account information.

   > **NOTE:**
   > The Engine Service account identity will be used for user impersonations in ControlPoint, regardless of the account set for the Application Pool.

   b. Enter the number of threads for the Engine to use.

   > **NOTE:**
   > Micro Focus recommends that the number of threads to be the number of processors in the ControlPoint Engine server.

   c. Policy execution requires a temporary location that is accessible by all ControlPoint connectors. The Configuration Manager can create and use a default network share named `ControlPointTempLocation` on the local server or you can chose an alternate network share that you created.

8. On the **Data Analysis** settings tab, specify the following settings:

   a. Select **Make this system the active Data Analysis Controller**.

   This setting determines whether the current system should be the active Data Analysis Controller or not.

   The SQL server name is the **Data Analysis Controller Host**.

   b. Enter a port number in the **Data Analysis Controller Port** box.

   c. In the IDOL Statistics Server Settings section, specify the **Statistics Host, Port**, and **Index Port** for the statistics server.

9. On the **IDOL** settings tab, enter the settings:

   a. Enter the **DIH Host**, **Port**, and **Index Port** numbers.

   b. Enter the **Distributed Connector Host** and its **Port** number.

c. Enter the **DAH Host** name and **Port** number your Micro Focus IDOL DAH component.

d. Enter the name of the **Agent Store Host**, **Port**, and **Index Port** numbers.

e. Enter the **Category Host** name and its **Port** number.

f. Enter the **Community Host** name and its **Port** number.

g. Enter the **View Host** and its **Port** number.

h. Enter the name of the **OGS Host** and its **Port** number..

i. In the MetaStore Service Settings section, enter the **MetaStore Host** name and **Port** number.

> **NOTE:**
> Do not enable Advanced IDOL Distribution at this point in the installation process. A post-installation task, which involves more than just selecting this option, covers the complete process of how to enable it.

10. On the **Security** settings tab, specify options for enabling security:

- To enable ControlPoint security, select **Enable Security**.

  If enabled, specify the ControlPoint system administrator account, the Active Directory server, and a distinguished name.

  You will complete the process of enabling security during the post-install step Configure ControlPoint security settings.

  > **NOTE:**
  > If enabling ControlPoint security, you must disable ASP.NET Impersonation in Internet Information Server (IIS).
  >
  > In IIS, go to **Sites > Default Web Site > Click ControlPoint > Authentication >** and ensure that **ASP.NET Impersonation** is disabled.

- To enable Federal Information Processing Standards (FIPS) security mode, select **Enable FIPS**.

> **NOTE:**
> When FIPS security is used in combination with the **Make this system the active Data Analysis Controller** option on the Data Analysis tab, the active controller is the master, and FIPS security works seamlessly.
>
> If the **Make this system the active Data Analysis Controller** option is cleared, this server acts as a subordinate node. The host name of a master controller is extracted from the database and displayed in Configuration Manager and the **Enable FIPS** option is disabled.

> **NOTE:**
> After FIPS is enabled as the security mode and the ControlPoint environment is deployed, the FIPS security mode cannot be changed. For more information, see Enable Federal Information Processing Standards (FIPS) security mode.

11. On the **Mail Server** settings tab, specify the following settings to enable email notifications.

    - **Server**. Enter the server name of an SMTP mail server. For example, `mySMTPserver.mycompany.com`
    - **From**. Enter an email address from which messages will be sent. For example, `myAdmin@mycompany.com`.

      The settings are used for the Notify Policy Approvers scheduled task. The scheduled task sends out email notifications for policies configured for Review before execution. For more information on scheduled tasks, see the *ControlPoint Administration Guide* or the Administration Console Help Center.

12. Click **Deploy**.

    The ControlPoint components are deployed.

    > **NOTE:**
    > If you uninstall and reinstall the ControlPoint software for any reason, the Add/Remove Programs dialog displays an option to retain or remove the FIPS security mode. Click **Yes** to retain the FIPS security mode, or **No** to remove it.

Deploy ControlPoint by enabling HTTPS

This section provides the information required to deploy ControlPoint by enabling HTTPS in the environment.

1. Enable HTTPS.
2. Redeploy ControlPoint when HTTPS is enabled.
3. (Optional) Enable ControlPoint workflow capability with ControlPoint HTTPS deployment.
4. Configure the Redirector service for HTTPS.

Enable HTTPS

To enable HTTPS in the environment, you must perform the following tasks.

1. Create certificates to sign the server and client certificates.

   These certificates must be added to the certificate stores.

2. Configure certificate usage in IIS Manager.
3. Update ControlPoint component configuration files.

Create certificates

Create a certificate authority to sign the server and client certificates. The server certificate is required for authentication. The client certificate is optional.

> **NOTE:**
> When generating the certificates, do not use the SHA-1 algorithm as it has been deprecated.

To create the certificates

1. Import the `pfx` file for the Certificate Authority to the Local Computer's Trusted Root Certification Authorities.
2. Import the `pfx` file for the Server certificate to the Local Computer's Personal certificate store.
3. *(Optional)* Import the `pfx` file for the Client certificate to the Current User Personal certificate store and into the browser's certificate store.

Configure certificate usage in IIS Manager

Import the certificates to IIS Manager and configure bindings and application settings.

To import certificates to IIS

1. In the IIS Manager, from the navigation pane on the left, select the server and select the Server Certificates.
2. Select **Import** and locate the `.pfx` file. This is the Personal Information Exchange file generated as part of the certificate making process.
3. Enter the file **Password**.

To configure the bindings

1. In the IIS Manager, from the navigation pane on the left, select the website.
2. In the right pane, from Edit Site, select **Bindings**.
3. Click **Add** and in the Edit Site Binding window, set **Type** to HTTPS.
4. Enter the host name.
5. Select **Require Server Name Indication** and select your certificate.
6. Click **OK**.

To configure IIS to require certificates

Configure the ControlPoint, DataAnalysisService and CPWS apps in IIS Manager to require certificates.

ControlPoint app

1. Click **SSL Settings**.
2. Select **Require SSL**.
3. Under **Client Certificates**, select **Accept**.

To disable client certificate popup when accessing the ControlPoint from browser

1. Go to **IIS**.
2. In IIS, go to **Sites >** select **ControlPoint >** Double click on **SSL Settings** from the middle pane.
3. Under **Client Certificates**, select **Ignore**.

Data AnalysisService app

1. Click **SSL Settings**.
2. Select **Require SSL**.
3. Under **Client Certificates**, select **Accept**.

CPWS app

1. Click **SSL Settings**.
2. Select **Require SSL**.
3. Under **Client Certificates**, select either **Ignore** or **Accept**.

Update ControlPoint component configuration files

Configure the ControlPoint Administration Console to communicate with the Dashboard and Data Analysis Services using HTTPS and to require user authentication.

To update the Dashboard: Web.config file

1. Navigate to: `\Program Files\Micro Focus\ControlPoint\Dashboard\Web.config` in the production environment.
2. Comment out the `system.serviceModel` tag located below the `Begin HTTP Service Model` comment.
3. Uncomment the `system.serviceModel` tag located below the `Begin HTTPS Service Model with certificate` comment.

   There are two similar tags so be sure to uncomment the certificate-related one.
4. In the two `endpoint` tags, replace the address's value of `localhost` with the host name of your environment. For example, `server1.XYZCorp.com`.
5. In the `clientCertificate` tag, do the following:
   - If you did *not* import the `pfx` file for the Client certificate to the Current User Personal certificate store when creating the certificates, change the value of `storeLocation` from `CurrentUser` to `LocalMachine`.
   - Change `findValue` to be the thumbprint of your client certificate.

     Locate your client certificate thumbprint by opening your client certificate and navigating to the details.

     > **TIP:** Other methods of finding the certificate can also be used. For more information, see https://msdn.microsoft.com/en-us/library/ms731323(v=vs.110).aspx

> **CAUTION:**
> When entering the thumbprint:
>
> - Enter the value manually by typing it into the file.
>
>   **Do not** copy and paste this value from the certificate because the encoding adds hidden characters that will cause issues.
>
> - Do not include whitespace in the thumbprint value you enter.
>
>   For example, if the thumbprint from the certificate begins with: **`a1 b2 c3 d4 e5`**...
>
>   Enter: **`a1b2c3d4e5`**...

To update the DataAnalysis Service: Web.config file

1. Navigate to: `\Program Files\Micro Focus\ControlPoint\DataAnalysis\Service\Web.config` in the production environment.
2. Comment out the `system.serviceModel` tag located below the `Begin HTTP Service Model` comment.
3. Uncomment the `system.serviceModel` tag located below the `Begin HTTPS Service Model with certificate` comment.

   There are two similar tags so be sure to uncomment the certificate-related one.

To update ControlPoint Timer: `app.config` file

1. Navigate to: `\Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPointTimer.exe.config` in the production environment.
2. Comment out the `system.serviceModel` tag located below the `Begin HTTP Service Model` comment.
3. Uncomment the `system.serviceModel` tag located below the `Begin HTTPS Service Model with certificate` comment.

   There are two similar tags so be sure to uncomment the certificate-related one.
4. In the two `endpoint` tags, replace the address's value of `localhost` with the host name of your environment. For example, `server1.XYZCorp.com`.
5. In the `clientCertificate` tag, do the following:
   - If you did *not* import the `pfx` file for the Client certificate to the Current User Personal certificate store when creating the certificates, change the value of `storeLocation` from `CurrentUser` to `LocalMachine`.
   - Change `findValue` to be the thumbprint of your client certificate.

To update WebService: Web.config file

1. Navigate to: `\Program Files\Micro Focus\ControlPoint\WebService\Web.config` in the production environment.
2. Comment out the `system.serviceModel` tag located below the `Begin HTTP Service Model` comment.
3. Uncomment the `system.serviceModel` tag located below the `Begin HTTPS Service Model with certificate` comment.

   There are two similar tags so be sure to uncomment the certificate-related one.
4. In the two `endpoint` tags, replace the address's value of `localhost` with the host name of your environment. For example, `server1.XYZCorp.com`.
5. In the `clientCertificate` tag, do the following:
   - If you did *not* import the `pfx` file for the Client certificate to the Current User Personal certificate store when creating the certificates, change the value of `storeLocation` from `CurrentUser` to `LocalMachine`.
   - Change `findValue` to be the thumbprint of your client certificate.

     After you reset IIS, ControlPoint requests and is accessible using the created certificates.

Redeploy ControlPoint when HTTPS is enabled

If you need to redeploy ControlPoint, then you must change HTTP to HTTPS in the configuration files.

You must change HTTP back to HTTPS in the **https** service section of the Dashboard, Timer, and WebService `web.config` file.

Enable ControlPoint workflow capability with ControlPoint HTTPS deployment

This task is optional.

To update ControlPoint Timer: `app.config` file

1. Navigate to `\Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPointTimer.exe.config` in the production environment.
2. Copy the `system.serviceModel -> bindings -> basicHttpBinding -> SOAPManagerIFV3PortSoapBinding` binding block from the HTTP service model in the same `app.config` file to the HTTPS service model.

Configure the Redirector service for HTTPS

The ControlPoint Redirector service is used to redirect users to a shortcut of a document created using a Secure Shortcut policy.

> **NOTE:**
> Shortcut redirection to the new location supports only IE browsers.

To access a redirect link securely, you must configure the service for HTTPS.

To configure the Redirector service for HTTPS

1. Create certificates.
2. Bind certificate with a port.
3. Configure the Redirector service for HTTPS.

Create certificates

You must create a certificate authority (CA) to sign the server certificates. These certificates are required for authentication.

> **NOTE:**
> When generating the certificates, do not use the SHA-1 algorithm as it has been deprecated.

To create certificates

1. Import the `cer` file for the Certificate Authority to the Local Computer's Trusted Root Certification Authorities.
2. Import the `cer` file for the Server certificate to the Local Computer's Personal certificate store.

Bind certificate with a port

After creating the certificate, bind it to Redirector service port 7050.

To bind the certificate

1. Open PowerShell and run the following command:

   ```
   netsh http add sslcert ipport=<localhostIP>:7050 certhash=<Thumbprint of a
   server certificate> appid=<GUID of application>
   ```

   Example

   ```
   netsh http add sslcert ipport=10.10.10.1:7050
   certhash=6b58bff0b663d452a32bdcdff4ba72ba8f18ce79 appid={4f3f8d5c-c5a9-4ecc-
   85fb-b17db658f246}
   ```

   > **NOTE:**
   > The appid for Redirector service is: {4f3f8d5c-c5a9-4ecc-85fb-b17db658f246}

Configure the Redirector service for HTTPS

To edit the Redirector service configuration file

1. Open the `\Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPointTimer.exe.config` file in a text editor.
2. Add the following parameter:

   ```
   <add key="RedirectorHttps" value="false"/>
   ```

   For HTTPS, set the parameter to `"true"`.
3. Save the file.
4. Open the `Program Files\Micro Focus\ControlPoint\Engine\Redirector.exe.config` file in a text editor.
5. Add the following parameters:

   ```
   <add key="SecurePorts" value="false"/>
   <add key="RedirectorHttps" value="false"/>
   ```

   For HTTPS, set the parameters to `"true"`.
6. Save the file.
7. Restart the Redirector service and ControlPoint Engine service.

Chapter 7: Install the ControlPoint Edge Filesystem connector

The Edge Filesystem connector is used to run Archive policies on documents and files located on Windows and Linux file shares. This chapter describes how to install the Edge Filesystem connector. It also provides information about how to uninstall it.

To install the ControlPoint Edge Filesystem connector

1. Install Edge Filesystem connector software
2. Configure the Edge Filesystem Connector for HTTPS

Install Edge Filesystem connector software

To run archive policies, you need to install the ControlPoint Edge Filesystem connector.

Before you begin

Ensure the following:

- The ControlPoint software is installed and configured.
- The server for the Edge Filesystem connector meets all hardware, software, and third-party component requirements listed in the *ControlPoint Support Matrix*.

You can install this connector on servers running:

- Windows
- Linux

To install the ControlPoint Edge Filesystem Connector on Windows

1. Run the ControlPoint Edge Filesystem Connector installer, `ControlPoint File System Agent Installer.exe`.

   You can find the installer at `ControlPoint x64\ControlPoint \Agents\ControlPoint File System Agent\Windows`.

   The setup wizard appears.

2. Click **Next**.

   The Log Directory page opens.

3. Select a directory for the installation setup log files, and click **Next**.

   The Installation Location page opens.

4. Specify a location to install the Edge Filesystem Connector software.

   The default installation location is `C:\Program Files\Micro Focus\ControlPoint\Edge`.

5. Click **Next**.

   The Server page opens.

6. Specify the name of the ControlPoint server.

   The ControlPoint Edge Filesystem Connector service needs to connect to this ControlPoint server to execute the archive policies.

7. For ControlPoint environments running with HTTPS, click **HTTPS Enabled.**

8. Click **Next**.

   The Service User page opens.

9. Specify the credentials that will be used to run the ControlPoint Edge Filesystem Connector services and to connect to the ControlPoint server.

10. Click **Next**.

    The Installation Confirmation page opens.

11. Click **Install**.

    After the connector is installed, you are prompted to restart the system to complete the installation.

To install the ControlPoint Edge Filesystem Connector on Linux

1. Open the Edge Filesystem Connector ports: 7210 and 7212.

2. Run the ControlPoint Edge Filesystem Connector, `SORHELInstall.tar.gz`.

   You can find the installer at `ControlPoint x64\ControlPoint\ Agents\ControlPoint File System Agent\Red Hat Linux`

   or

   `ControlPoint x64\ControlPoint\ Agents\ControlPoint File System Agent\SUSE Linux`.

3. Extract and install the tarball as follows:

   a. `tar -xvzf SORHELInstall.tar.gz`

   b. `cd SORHELInstall`

   c. `sh sosetup.sh install`

4. Create a mount directory using the following command:

   ```
   mkdir /opt/mount
   ```

5. Run the configuration scripts that configure and start the services as follows:

   a. `sh /opt/Micro\ Focus/Edge/Agent/resources/deployLoggedFS.sh`

      When prompted, enter the mount location created in Step 3.

b. `sh /opt/Micro\ Focus/Edge/EdgeFSConnector/deployFSConnector.sh`

    i. When prompted, enter the ControlPoint server, domain, username, and password.

    ii. When prompted, specify whether or not to use enable HTTPS:

    - Enter **y** for ControlPoint environments running with HTTPS.
    - Enter **n** for environments running with HTTP.

Configure the Edge Filesystem Connector for HTTPS

The Edge Filesystem Connector configuration file for Windows and Linux contains the following "EnableSSL" config section, which is disabled by default.

```
[EnableSSL]
SSLEnabled=false
```

If IDOL on the ControlPoint server is already using HTTPS, you should set `SSLEnabled` to `true` so the Edge Filesystem Connector appears in the connection list on the Repository page of the ControlPoint Dashboard.

All other HTTPS configurations to run the Edge Filesystem Connector on HTTPS are similar to the configuration of a regular Filesystem connector.

Uninstall the Edge Filesystem connector

To uninstall the ControlPoint Edge Filesystem Connector on Windows

1. Uninstall the Edge Filesystem Connector and then the archive service from the Windows **Add/Remove** Programs option.
2. Restart the system.

To uninstall the ControlPoint Edge Filesystem Connector on Linux

1. Change the directory to the `SORHELInstall` directory and run the following command: `sh sosetup.sh remove`
2. Stop the `EdgeConnectorFramework.exe` process or reboot the system.

Chapter 8: Optimize IDOL configuration

> **NOTE:**
> This content is applicable only to ControlPoint Content. The following section includes limited and specific information on IDOL server configuration parameters, which can help you optimize the configuration for ControlPoint.
>
> For detailed information on these parameters, see the *IDOL Server Reference Guide*.

To make the analysis process efficient and fast, you must optimize your IDOL configuration.

Modify the following parameters to optimize the configuration:

Parameter	Description
`SplitNumbers`	Use this parameter to reduce the analysis size and RAM consumption, which will speed up analyzing. Set `SplitNumbers` to `False` if you need numeric wild card searching. **Example:** `SplitNumbers=false`
`FlushLockFile`	Use this parameter to specify the lock file, which prevents two or more analyzing engines that share the same physical disk from flushing at the same time. This will speed up analyzing substantially. **Example:** `FlushLockFile=\\host1\Lock\SanLockFileHost1.txt` Even when an IDOL server is using physical disks, where multiple Content Engines are using storage on the same physical drive channel, this setting prevents concurrent flushing. As an example, on a server with three independent RAID arrays, all the Content Engines on each disk should share a lock file. You can trigger this behavior by adding this parameter to each Content Engine’s configuration.

`IndexCacheMaxSize`	Use this parameter to determine how much memory the IDOL Server uses to cache data for analyzing. It is available under the `[IndexCache]` section of the IDOL Server configuration file.
	Example:
	`[IndexCache]`
	` IndexCacheMaxSize=102400`

Parameter	Description
	Setting the `IndexCacheMaxSize` option requires knowledge of the system. • If `IndexCacheMaxSize` is too small, indexing becomes slow. • Ideally `IndexCacheMaxSize` = amount of free RAM. However, if `IndexCacheMaxSize` is greater than the amount of free RAM, it pages the RAM to disk, which slows the system.

Chapter 9: Configure IDOL for HTTPS

This section provides information on the following:

Configure IDOL and connectors for HTTPS

To establish secure connection with IDOL and connectors, complete the following tasks.

1. Create SSL certificates in the environment.
2. Update the IDOL configuration.
3. Optionally, enable TLS 1.2 protocol.
4. Configure ControlPoint to enable IDOL in HTTPS mode.

Create SSL certificates

1. Create a self-signed Certificate Authority (CA) certificate.
2. Create a server key and server certificate signed by CA.
3. Copy these certificates to a directory that can be accessed by the ControlPoint installation.

Update the IDOL configuration

> **NOTE:**
> The IDOL configuration files may not contain some of the sections by default. These sections must be added manually to the configuration files.

1. Stop the IDOL, Connector, and ControlPoint related services. This can be done in either of the following ways:

   - As the local administrator, run `_stop_service.bat`, which is located in `\temp\ControlPoint\host_`*`hostName`*

   or

   - Using Services, manually stop the services in the following order:

- FileSystem Connector
- FileSystem Connector Framework
- Distributed Connector
- SharePoint Remote Connector
- SharePoint Remote Connector Framework
- MetaStore
- IDOL
- OGS
- Statistics
- Content
- LicenseServer

2. Modify the configuration (`.cfg)` files located in the installation directory.

   For example, `Program Files\Micro Focus\ControlPoint\Indexer`.

   The default or generic configuration files are:

   - `ControlPoint IDOL.cfg`
   - `ControlPoint Content.cfg`
   - `ControlPoint Distributed Connector.cfg`
   - `ControlPoint FileSystem Connector.cfg`
   - `agentstore.cfg`
   - `ControlPoint Filesystem Connector Framework.cfg`
   - `ControlPoint DataAnalysis Store.cfg`
   - `ControlPoint OGS.cfg`

   > **NOTE:**
   > Depending on the number of connectors in the environment, there may be additional configuration files. Update the corresponding connector configuration files in the same manner as the `File System connector.cfg` file.

   ControlPoint IDOL.cfg

   a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\IDOL` and open `ControlPoint IDOL.cfg`.

   b. Add the location of the server certificate and server key:

   ```
   [SSLOption0]
   SSLMethod=SSLV23
   SSLCertificate=<location>\server.crt
   ```

```
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLIDOLComponents=TRUE
Add SSLConfig=SSLOption0
```

[Service] section

```
Add SSLConfig=SSLOption0
```

[DataDRE] section

```
Add SSLConfig=SSLOption0
```

[CatDRE] section

```
Add SSLConfig=SSLOption0
```

[AgentDRE] section

```
Add SSLConfig=SSLOption0
```

[Viewing] section

```
Add SSLConfig=SSLOption0
```

[IndexServer] section

```
Add SSLConfig=SSLOption0
```

[Agent] section

```
Add SSLConfig=SSLOption0
Add IndexSSLConfig=SSLOption0
```

> **NOTE:** If you are working on a unified DIH/DAH environment, then all the DIH/DAH related configurations will be present in the `IDOL.cfg` file

[DAHEngine0] section

```
Add SSLConfig=SSLOption0
```

[DIHEngine0] section

```
Add SSLConfig=SSLOption0
Add ServiceSSLConfig=SSLOption0
```

> **NOTE:** This setting enables DIH to communicate securely with child engines.

ControlPoint Content.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\Content` and open `ControlPoint Content.cfg`.

b. Add the location of the server certificate and server key:

```
[SSLOption0]
SSLMethod=SSLV23
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLConfig=SSLOption0
```

[Service] section

```
Add SSLConfig=SSLOption0
```

[IndexServer] section

```
Add SSLConfig=SSLOption0
```

ControlPoint Distributed Connector.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\Distributed Connector` and open `ControlPoint Distributed Connector.cfg`.

b. Add the location of the server certificate and server key :

```
[SSLOption0]
SSLMethod=SSLV23
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLConfig=SSLOption0
```

[Service] section

```
Add SSLConfig=SSLOption0
```

[IndexServer] section

```
Add SSLConfig=SSLOption0
```

[Idol] section

```
Add SSLConfig=SSLOption0
```

[Fetch] section

```
Add SSLConfig=SSLOption0
```

[DistributedConnector] section

```
Add ConnectorSSLConfig=SSLOption0
Add SSLConfig=SSLOption0
```

ViewServer section

```
Add SSLConfig=SSLOption0
```

ControlPoint xxx Connector.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\xxx Connector\ControlPoint xxx Connector.cfg`

   where

   `xxx` is the Connector name.

b. Add the location of the server certificate and server key:

   ```
   [SSLOption0]
   SSLMethod=SSLV23
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Server section

   `Add SSLConfig=SSLOption0`

   Service section

   `Add SSLConfig=SSLOption0`

   IndexServer section

   `Add SSLConfig=SSLOption0`

   Fetch section

   `Add SSLConfig=SSLOption0`

   ViewServer section

   `Add SSLConfig=SSLOption0`

   FetchTasks section

   `Add SSLConfig=SSLOption0`

   DistributedConnector section

   `Add SSLConfig=SSLOption0`

   Ingestion section

   `Add IngestSSLConfig=SSLOption0`

   Connector section

   `Add IngestSSLConfig=SSLOption0`

   > **NOTE:**
   > Similarly, other connector `cfg` files can be modified to enable secure connection.

ControlPoint xxx Framework.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\xxx Connector Framework\ControlPoint xxx Framework.cfg`

   where `xxx` is the connector.

b. Add the location of the server certificate and server key :

```
[SSLOption0]
SSLMethod=SSLV23
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

   Server section

```
Add SSLConfig=SSLOption0
```

   Service section

```
Add SSLConfig=SSLOption0
```

   MyIdolIndexer section

```
Add SSLConfig=SSLOption0
```

   Categorizer section

```
Add SSLConfig=SSLOption0
```

   > **NOTE:**
   > Similarly, other connector `cfg` files can be modified to enable secure connection.

c. Edit the `category.lua` file for the Connector Framework

To edit the LUA file on each Connector Framework

i. Navigate to the file location:

```
Program Files\Micro
Focus\ControlPoint\Indexer\<connectorFramework>\lua\Category.lua
```

   For example:

```
Program Files\Micro Focus\ControlPoint\Indexer\FileSystem Connector
Framework\lua\Category.lua
```

ii. Search for the line:

```
local categorize = document:getFieldValue("AUTN_CATEGORIZE",false)
```

iii. Insert a new statement after the statement in step 2:

```
local sslParameters =
 {
       SSLMethod = "SSLV23",
 }
```

iv. Edit the line:

```
local xmlString = send_aci_action(hostName, port,
"CategorySuggestFromText", {querytext = content, NumResults =
maxCategories, textparse = "true", agentBoolean = "true", anylanguage =
"true", FieldText = "NOT EXISTS{}:CONTAINERCAT AND NOT EXISTS
{}:SHADOWCATEGORYOF"}, timeout, retries )
```

to

```
local xmlString = send_aci_action(hostName, port,
"CategorySuggestFromText", {querytext = content, NumResults =
maxCategories, textparse = "true", agentBoolean = "true", anylanguage =
"true", FieldText = "NOT EXISTS{}:CONTAINERCAT AND NOT EXISTS
{}:SHADOWCATEGORYOF"}, timeout, retries, sslParameters )
```

v. Save the file.

agentstore.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\IDOL\agentstore\agentstore.cfg`.

b. Add the location of the server certificate and server key:

```
[SSLOption0]
SSLMethod=SSLV23
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLConfig=SSLOption0
Add SSLIDOLComponents=TRUE
```

[Service] section

```
Add SSLConfig=SSLOption0
```

ControlPoint DataAnalysis Store.cfg

a. Navigate to : `Program Files\Micro Focus\ControlPoint\Indexer\Statistics\ControlPoint DataAnalysis Store.cfg`

b. Add the location of server certificate and server key :

```
[SSLOption0]
SSLMethod=SSLV23
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLConfig=SSLOption0
```

[Service] section

```
Add SSLConfig=SSLOption0
```

[IndexServer] section

```
Add SSLConfig=SSLOption0
```

ControlPointOGS.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\OGS\ControlPoint OGS.cfg`

b. Add the location of server certificate and server key:

```
[SSLOption0]
SSLMethod=SSLV23
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLConfig=SSLOption0
```

[Service] section

```
Add SSLConfig=SSLOption0
```

Default section

```
Add GroupServerSSLConfig=SSLOption0
```

ControlPoint MetaStore.cfg

a. Navigate to: `Program Files\Micro Focus\ControlPoint\Indexer\metaStore\ControlPoint metastore.cfg`

b. Add the location of server certificate and server key:

```
[SSLOp[SSLOption0] SSLMethod=SSLV23 SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

[Server] section

```
Add SSLConfig=SSLOption0
```

[Service] section

```
Add SSLConfig=SSLOption0
```

[IndexServer] section

```
Add SSLConfig=SSLOption0
```

[Actions] section

```
Add SSLConfig=SSLOption0
```

[IngestAction] section

```
Add SSLConfig=SSLOption0
```

3. In order to make MetaStore working in SSL mode, you must remove the following:

   ```
   <add key="MetaStorePort" value="4500" />
   ```

   and update the configurations in the `appSettings` section of the following files:

   ```
   ControlPointTimer.exe.config (..\Program Files\Micro
   Focus\ControlPoint\Engine\Scheduler)

   Web.config (..\Program Files\Micro Focus\ControlPoint\Dashboard)

   Web.config (..\Program Files\Micro Focus\ControlPoint\Engine\CallBack)

   Web.config (..\Program Files\Micro Focus\ControlPoint\DataAnalysis\Service)

   Web.config (..\Program Files\Micro Focus\ControlPoint\WebService)

   Autonomy.ControlPoint.DataAnalysis.Controller.BundledAgent.exe.config
   (..\Program Files\Micro Focus\ControlPoint\DataAnalysis\Agent)

   Web.config (..\Program Files\Micro Focus\ControlPoint\Mvc)

   Autonomy.ControlPoint.DataAnalysis.Controller.BundledSqlAgent.exe.config
   (..\Program Files\Micro Focus\ControlPoint\DataAnalysis\SqlAgent)
   ```

4. Start the IDOL, Connector and ControlPoint related services. This can be done in either of the following ways:

   - As the local administrator, run `_start_service.bat`, which is located in `\temp\ControlPoint\host_`*`hostName`*

   or

   - Manually start the services in the following order:
     - LicenseServer
     - Content
     - Statistics
     - OGS
     - IDOL
     - Distributed Connector
     - FileSystem Connector Framework
     - FileSystem Connector
     - MetaStore

5. If there are any additional connectors or connector framework configuration files configured with

SSL, then start them manually.

6. Restart the related services to access all ports securely.

Enable TLS 1.2 protocol

Optionally, you can enable the TLS 1.2 protocol for several ControlPoint connectors in your environment.

> **IMPORTANT:**
> Support for the TLS 1.2 protocol is limited only to the Distributed Connector, Documentum Connector, File System Connector, and SharePoint Remote Connector.

To enable TLS 1.2 support

1. Update the `Program Files\Micro Focus\ControlPoint\Indexer\Distributed Connector\ControlPoint Distributed Connector.cfg` configuration file with the following settings (in bold):

   ```
   [SSLOption0]
   SSLMethod=TLSV1.2
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

2. Update the `Program Files\Micro Focus\ControlPoint\Indexer\Documentum Connector\ControlPoint Documentum Connector.cfg` configuration file with the following settings (in bold):

   ```
   [SSLOption0]
   SSLMethod=TLSV1.2
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

3. Update the `Program Files\Micro Focus\ControlPoint\Indexer\Documentum Connector Framework\ControlPoint Documentum Connector Framework.cfg` configuration file with the following settings (in bold):

   ```
   [SSLOption0]
   SSLMethod=TLSV1.2
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

4. Update the `Program Files\Micro Focus\ControlPoint\Indexer\SharePoint Remote Connector\ControlPoint SharePoint Remote Connector.cfg`. configuration file with the

following settings (in bold):

```
[SSLOption0]
SSLMethod=TLSV1.2
SSLCertificate=<location>\server.crt
SSLPrivateKey=<location>\server.key
```

Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

5. Update the `Program Files\Micro Focus\ControlPoint\Indexer\SharePoint Remote Connector Framework\ControlPoint SharePoint Remote Framework.cfg` configuration file with the following settings (in bold):

   ```
   [SSLOption0]
   SSLMethod=TLSV1.2
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

6. Update the `ControlPoint FileSystem Connector.cfg` configuration file with the following settings (in bold):

   ```
   [SSLOption0]
   SSLMethod=TLSV1.2
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

7. Update the `ControlPoint FileSystem Connector Framework.cfg` configuration file with the following settings (in bold):

   ```
   [SSLOption0]
   SSLMethod=TLSV1.2
   SSLCertificate=<location>\server.crt
   SSLPrivateKey=<location>\server.key
   ```

   Where for `SSLMethod`, the supported protocols are: `SSLV23`, `TLSV1`, `TLSV1.1`, or `TLSV1.2`.

Configure ControlPoint to enable IDOL in HTTPS mode

1. Stop the application pool for the ControlPoint website in IIS.

2. Stop ControlPoint Engine in Services.

3. Configure the following ControlPoint settings to establish a secure connection to IDOL and the connector ports:

   - The MetaStore port is specified in the ports.

     If the MetaStore port is customized or different, update the port:

```
<add key="MetaStorePort" value="4500"/>
```

- To specify the IDOL setup to use HTTPS mode, define the `"SecurePorts"` parameter to be true for `<add key="SecurePorts" value="true"/>` present in `<appSettings>`.

  For example:

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

- Change the configurations in the `appSettings` section of the following files:
  - `ControlPointTimer.exe.config` in `..\Program Files\Micro Focus\ControlPoint\Engine\Scheduler`
  - `Web.config` in `..\Program Files\Micro Focus\ControlPoint\Dashboard`
  - `Web.config` in `..\Program Files\Micro Focus\ControlPoint\Engine\CallBack`
  - `Web.config` in `..\Program Files\Micro Focus\ControlPoint\DataAnalysis\Service`
  - `Web.config` in `..\Program Files\Micro Focus\ControlPointWebService`
  - `Autonomy.ControlPoint.DataAnalysis.Controller.BundledAgent.exe.config` in `..\Program Files\Micro Focus\ControlPoint\DataAnalysis\Agent`
- In the `appSettings` section of the following configuration files, add the specified parameters:

  ```
  <add key="SecurePorts" value="true" />
  <add key="MetaStorePort" value="4500" />
  ```

  - `Web.config` in `..\Program Files\Micro Focus\ControlPoint\Mvc`
  - `Autonomy.ControlPoint.DataAnalysis.Controller.BundledSqlAgent.exe.config` in `..\Program Files\Micro Focus\ControlPoint\DataAnalysis\SqlAgent`

2. Start the ControlPoint website in IIS.
3. Start ControlPoint Engine in Services.
4. If required, restart the server for a clean start of all services.

> **NOTE:**
> If you uninstall and reinstall ControlPoint software for any reason, the changes to configure IDOL for HTTPS are lost. You will need to repeat the preceding steps.

Stop IDOL services running with HTTPS

To stop individual services when IDOL is running with HTTPS:

1. Open Services on Windows and select the service that needs to be stopped.
2. Right-click the service and click **Stop**.
3. Stop the following services in order:

- FileSystem Connector
- MetaStore
- Distributed Connector
- FileSystem Connector Framework
- IDOL

  > **NOTE:**
  > This stops the IDOL proxy server. To stop the sub processes of IDOL, see the next step.

- OGS
- Statistics
- Content
- LicenseServer

4. In Task Manager, stop the following IDOL child processes:
   - `agentstore.exe`
   - `category.exe`
   - `community.exe`
   - `dah.exe`
   - `dih.exe`
   - `view.exe`

Run ControlPoint Configuration Manager with HTTPS enabled

> **NOTE:**
> You can configure IDOL to use HTTPS and can configure ControlPoint to use either HTTP or HTTPS.

If you configured all IDOL components and connectors to work with HTTPS, then you must perform the following steps:

1. Import the Certificate Authority (CA) certificate (created for the IDOL SSL setup) to the Microsoft Management Console under **Trusted Root Certification Authorities** on your local computer.
2. Open the Microsoft Management Console. You can also run `mmc.exe` from **Start** > **Run**.
3. From the File menu, click **Add/Remove Snap-in**.

   The Add / Remove Snap-in window appears.
4. Select **Certificates** from the Available snap-ins pane and click **Add**, then click **OK**.

5. Next, in the Certificates snap-in window select **Computer account** and click **Next** to finish.
6. In the Microsoft Management Console, right-click the **Trusted Root Certificate Authority**, select **All Tasks** and **Import**.

   The Certificate Import Wizard window appears.
7. Browse to select the CA certificate and click **Finish**.

   A confirmation window appears after successfully importing the certificate.
8. Navigate to:`Program Files\Micro Focus\ControlPoint\Configuration.`

   Change the following configuration settings in the file, `ControlPointConfiguration.exe.config` in the `appSettings` section.

   ```
   <add key="SecurePorts" value="true" />
   ```
9. Launch the ControlPoint Configuration Manager and click **Deploy**.

Troubleshooting

This chapter provides troubleshooting information related to IDOL integration with ControlPoint.

Verify HTTPS setup for IDOL

Description

Verify that all the ports are up and running with HTTPS.

Solution

1. Modify the configuration files for connectors and IDOL with SSL settings.
2. Verify that all the ports are up and running with HTTPS. Run the following commands:
   a. DC port : `https://localhost:7000/a=getstatus`
   b. File system connector : `https://localhost:7200/a=getstatus`
   c. IDOL port: `https://localhost:9000/a=getstatus`
      i. Category DRE: `https://localhost:9020/a=getstatus`
      ii. Community: `https://localhost:9030/a=getstatus`
      iii. agentstore: `https://localhost:9050/a=getstatus`
      iv. DAH: `https://localhost:9060/a=getstatus`
      v. DIH :`https://localhost:9070/a=getstatus`

      ```
      <engine>
              <number>0</number>
              <group>0</group>
              <host>TestVM</host>
      ```

```
            <port>32000</port>
            <status>UP</status>
            <updateonly>false</updateonly>
            <weight>1</weight>
            <disabled>false</disabled>
    </engine>
```

vi. Verify the status of the engine. It should be up and running.

View: `https://localhost:9080/a=getstatus`

3. Content Engine : `https://localhost:32000/a=getstatus`
4. DataAnalysis DataStore: `https://localhost:31500/a=getstatus`
5. Similarly, for other connectors that are installed, perform a check on the respective port numbers.

   Port numbers can be found in the configuration file under the `[Server]` section.

Repository page does not list registered repositories after changing the IDOL setup on HTTPS

Problem

You have registered repositories, but after changing the IDOL setup on HTTPS, the repository page is not listing the registered repositories.

Description

This issue could happen in the following circumstances:

1. A caching issue in the browser.
2. A repository created with a connector, which is not configured with SSL settings. The repository page makes a call to `ListConnectors` and waits for all connectors with repositories to return.

Solutions

- Clear the browser cache and reload the page.
- Verify the SSL settings in the connector configuration file.

ControlPoint Configuration Manager cannot establish trust relationship

Problem

The ControlPoint Configuration Manager displays the following error message when you click **Deploy**.

```
Could not establish trust relationship for the SSL / TLS secure channel
```

Solution

1. Ensure that the CA certificate for IDOL is imported to the Trusted root authority certificate store on your local computer.
2. Double click the certificate file to verify the details of the Server certificate for IDOL.
3. Ensure that ControlPoint Configuration Manager has the same name as provided in the certificate on the host for DataAnalysis, IDOL server settings and for MetaStore.

Chapter 10: Set up IDOL distributed mirror / non-mirror modes

This chapter describes the procedure to set up multi-layer IDOL DIH/DAH to get better performance and scalability.

Introduction

The Distributed Handler mode is generally installed when an organization wants to employ a fail-over, load-balanced or combined fail-over or load-balanced architecture. It is common practice to install the Distributed Handler mode when organizations own large quantities of data, which need to be indexed into the IDOL server.

This requires the installation of multiple distributed content engines to support the large quantities of documents that need to be indexed into the meaning-based computing layer of IDOL.

For more information, see the Distributed Handlers training material, and the Distributed Setup section in the *IDOL Getting Started, Micro Focus DIH Administration*, and *Micro Focus DAH Administration* guides.

Set up mirror mode

To set up mirror mode with one tier DIH/DAH and two content engines

1. Install IDOL and ControlPoint.

   Select two content engines when running `ControlPoint IDOL Deploy Tool.exe`.

2. Stop the ControlPoint IDOL service.

3. Navigate to the IDOL installation path at the following location:

   `C:\Program Files\Micro Focus\ControlPoint\Indexer\IDOL`.

4. Open `ControlPoint IDOL.cfg` and remove or comment `VirtualDatabases` and all `[vdb]`, as shown in the following example:

   ```
   //VirtualDatabases=2
   //[vdb0]
   ```

```
//DbName=News
//Internal=False
//Type=combinator
//MapsTo=0:News,1:News
//[vdb1]
//DbName=Archive
//Internal=False
//Type=combinator
//MapsTo=0:Archive,1:Archive
```

5. Change the following parameters:

Section	Parameter	Value
[DistributionSettings]	DistributeByReference	FALSE
	UseConsistentHashing	false
	MirrorMode	true

6. Navigate to the IDOL DIH installation path:

   `C:\Program Files\Micro Focus\ControlPoint\Indexer\IDOL\dih`

7. Delete the `main` directory.

8. Start the ControlPoint IDOL service.

Set up non-mirror simple combinator mode

The structure for the non-mirror simple combinator mode is similar to the mirror mode setup. This section explains the tasks needed for non-mirror simple combinator mode, with examples.

1. Configure three virtual machines as required using Windows Server 2012 R2.

2. On the first virtual machine (VM1), install ControlPoint and IDOL with one content engine.

   If you have ControlPoint and IDOL on different systems, then the IDOL deployment host should be on VM1.

3. Install IDOL DIH/DAH and the three content engines on the other two virtual machines (VM2 and VM3).

4. On all three virtual machines, modify the host file `(C:\Windows\System32\drivers\etc)` to include all of the IP addresses and host names in the host file.

5. Install ControlPoint and IDOL.

   > **CAUTION:**
   > Do not delete the IDOL deploy `temp` directory. You need to copy the content engine software from here.

6. Open the browser query control URL and ensure that it works without any problems.

7. Stop the IDOL services by navigating to the `dih` and `dah` directories available at the following location:

   ```
   %IDOL_INSTALL_PATH%\Indexer\IDOL
   ```

   Run the following command:

   ```
   run _cleanup.dat
   ```

8. Remove all of the Content Engine services that are managed by the first tier DIH / DAH.

   From the content engine directory, as the local administrator, run the `_stop_service.bat` and `_uninstall_service.bat` batch files.

9. Copy the `Standlone DIH DAH` directory available at the following location:

   `ControlPoint\ControlPoint 5.3.Utilities\Standlone DIH DAH`)

   As the local administrator, run the batch files:

   - `DIH\_install_service.bat`. DIH is installed as a Windows service.
   - `DAH\_install_service.bat`. DAH is installed as a Windows service.

10. For the content engine, copy the following directories from the IDOL `temp` directory to VM2 and VM3:

    - `Content` directory: `temp\ControlPoint\host_`*`hostName`*`\Indexer` .
    - `langfiles` directory: `temp\ControlPoint\host_`*`hostName`*`\Commons\langfiles`.

11. Run the script to install the engine service.

12. If more than one content engine is required, then do the following:

    a. Rename the content engine executable (`.exe`) file and the configuration (`.cfg`) file.

    b. Update the `LanguageDirectory` in the configuration file.

    c. Update the batch scripts in the `content` directory.

13. Edit the DAH configuration files on VM2 and VM3 to enable non-mirror simple combinator mode. In this mode, DAH does not need to set up the virtual database.

    Modify as shown:

Section	Parameter	Value
[Service]	ServiceStatusClients	*.*.*.*
	ServiceControlClients	*.*.*.*
	Access-Control-Allow-Origin	*

[Server]	AdminClients	*.*.*.*
	QueryClients	*.*.*.*
	IndexClients	*.*.*.*
	MirrorMode	False
	SimpleCombinatorMode	true

14. In the `[DistributionIDOLServers]`section, configure the content engines.

```
[Service]
ServicePort=9062
ServiceStatusClients=*.*.*.*
ServiceControlClients=*.*.*.*
Access-Control-Allow-Origin=*
XSLTemplates=TRUE
[Server]
Port=9060
AdminClients=*.*.*.*
QueryClients=*.*.*.*
IndexClients=*.*.*.*
MirrorMode=FALSE
SimpleCombinatorMode=true
[DistributionIDOLServers]
Number=3
[IDOLServer0]
Host=localhost
Port=32000
[IDOLServer1]
Host=localhost
Port=32050
[IDOLServer2]
Host=localhost
Port=33000
```

15. Edit the DIH configuration files on VM2 and VM3.

    Modify as shown:

Section	**Parameter**	**Value**
[Service]	ServiceStatusClients	*.*.*.*
	ServiceControlClients	*.*.*.*
	Access-Control-Allow-Origin	*

[Server]	AdminClients	*.*.*.*
	IndexClients	*.*.*.*
	QueryClients	*.*.*.*
	MirrorMode	False

16. In the **`[DistributionIDOLServers]`** section, configure the content engines.

```
[Service]
ServicePort=9072
ServiceStatusClients=*.*.*.*
ServiceControlClients=*.*.*.*
Access-Control-Allow-Origin=*
[Server]
Port=9070
DIHPort=9071
AdminClients=*.*.*.*
IndexClients=*.*.*.*
QueryClients=*.*.*.*
MirrorMode=FALSE
DistributeByReference=TRUE
UseConsistentHashing=TRUE
[DistributionIDOLServers]
Number=3
[IDOLServer0]
Host=localhost
Port=32000
[IDOLServer1]
Host=localhost
Port=32050
[IDOLServer2]
Host=localhost
Port=33000
```

17. Modify the configuration file in the IDOL server on VM1.

    Modify as shown:

Section	Parameter	Value
[DistributionSettings]	MirrorMode	false
	DistributionMethod	1

18. In the **`[DAHEngines]`** section, configure the DAH servers.

    In the **`[DIHEngine1]`** section, configure the DIH servers.

```
[DistributionSettings]
DistributeByReference=TRUE
DistributeReplaceData=FALSE
UseConsistentHashing=FALSE
MirrorMode=false
DistributionMethod=1
[DAHEngines]
Number=2
[DAHEngine0]
Host=idol-child2
Port=9060
[DAHEngine1]
Host=idol-child3
Port=9060
[DIHEngines]
Number=2
[DIHEngine0]
Host=idol-child2
Port=9070
[DIHEngine1]
Host=idol-child3
Port=9070
```

19. Restart the IDOL server and then restart all DIHs, DAHs and content engine services in VM2 and VM3.

20. On VM2 and VM3, for each content engine, open `http://localhost:Content_Service_Port/a=getstatus` to verify if the status is `SUCCESS`.

    > **NOTE:**
    > The port can be found in the content engine configuration file under `[server] Port=XXX`.

21. On VM2 and VM3. for each DIH / DAH, open `http://localhost: DIH/DAH_service_Port/a=getstatus` to verify if the status is `SUCCESS`.

    All content engines that are managed by DIH/DAH will be listed and status should be `Up`.

    > **NOTE:**
    > The port can be found in DIH/DAH configuration file under [server] Port=XXX.

22. On VM1, open `http://localhost:9000/a=getstatus` to verify Micro Focus IDOL server. Verify all components status are `RUNNING`.

Add exception in Windows Firewall

To enable DIH, DAH and the Content Engine in Windows firewall

1. Go to Firewall settings and Allow an app or feature through Firewall.
2. Click **Allow another application** and point to `dih.exe, dah.exe` and content `engine.exe`.
3. Click **Network types** and select all "Domain, public, private", then click **Add**. Repeat these steps in all the child nodes.

Chapter 11: Adjust antivirus software monitoring

For performance reasons, if you are running antivirus software on the ControlPoint host machines, ensure that it does not monitor the ControlPoint directories and any file shares that have been indexed.

Advanced antivirus software can scan the network and might block some ControlPoint traffic, which can cause errors.

Where possible, exempt the ControlPoint and IDOL processes from this kind of network traffic analysis.

Chapter 12: Configure Advanced IDOL distribution

This chapter describes how to configure ControlPoint 5.7.0 for Advanced IDOL distribution. You can perform this optional task after either installing ControlPoint for the first time or upgrading from a previous version.

> **IMPORTANT:**
> If you encounter a script error during this task, contact Micro Focus Support before proceeding to the next step.

To configure Advanced IDOL distribution:

1. Ensure there are no outstanding ingestions or other connector-related activity in progress.
   - **Ingestions**
     - View queued ingestions:
       `http://localhost:7200/a=QueueInfo&QueueAction=GetStatus&QueueName=Fetch&state=queued`
     - View active ingestions:
       `http://localhost:7200/a=QueueInfo&QueueAction=GetStatus&QueueName=Fetch&state=running`
     - Stop scheduled ingestions:
       `http://localhost:7200/action=PauseSchedules&Sections=MyTask,AnotherTask`
   - **Policies**
     - Check the `[ControlPoint].[dbo].[CPExecutionLog]` table to ensure that no policies are in progress.
2. Use Window Services to manually stop the following:
   - All Connector services
   - Connector Framework services
   - MetaStore service
   - ControlPoint Engine service
3. Open SQL Server Management Studio, and complete the following steps:
   1. Create a temporary folder for the script to use, such as `C:\tmp`, and ensure the current Windows user account has full access rights to this location.
   2. Run the "`1. updateReferenceHash.sql`" script.

   All SQL and PowerShell scripts required for this task are located in the `ControlPoint\5.7.0\Utilities\Advanced IDOL Distribution Upgrade Scripts` folder.

4. Export all IDOL data by Repo Name (IDOL database name) into separate folders:

   a. Create a folder on the local computer to hold the exported data and log files this task will create. For example: `C:\IDXExport`

      Ensure the current user has full access rights to this folder. Exported data will be placed into subfolders specific to each repository. For example:

      `C:\IDXExport\`*`RepoName1`*, `C:\IDXExport\`*`RepoName2`*, and so on.

   b. Open the "`2. Export_IDX_ByRepoName.ps1`" script in a text editor and set the following:

      - **IdolHost**: List of Content Engine hosts. For example:

        `$IdolHost = @("`*`hostname1`*`", "`*`hostname2`*`");`

      - **IdolPort**: List of Content Engine Index ports on each host. The default port is 32001. For example:

        `$IdolPort = @("11001","12001","13001");`

      - **LogOutputPath**: Full path of the log folder you created in the previous step.

   c. Open the "`2.1 ThreadedExport.ps1`" script in a text editor and set the following:

      - **MaxThreads**: Maximum number of concurrent threads for this script to use. The default is five threads.

      - **IdolRepoNames**: List of all IDOL databases associated with ControlPoint repositories. For example:

        `$IdolRepoNames = @("`*`Repo1`*`", "`*`Repo2`*`", "`*`Repo3`*`")`

        You can identify the databases using the following command:

        `http://`*`hostname`*`:32000/a=getstatus`

   d. Open PowerShell, and then run the "`2.1 ThreadedExport.ps1`" script.

      > **NOTE:**
      > Check Indexer Status to ensure the export tasks are complete before moving to the next step. To do so:
      >
      > i. Go to `http://`*`ContentEngineHostname`*`:32000/a=admin`
      >
      > ii. Click **Monitor** > **Indexer Status**.
      >
      > iii. Ensure the **Status** column indicates all tasks have finished.

5. Use Window Services to manually stop the following:

   - IDOL services

   - ControlPoint Content services

6. Update the IDOL configuration file to include a new central IDOL database, such as one named `ContentRepo`.

> **NOTE:**
> Examples in this task use `ContentRepo` as the database name.

a. Open the `C:\Program Files\Micro Focus\ControlPoint\Indexer\IDOL\ControlPoint IDOL.cfg` file in a text editor.

b. Locate the `VirtualDatabases` section and compete the following steps:

   i. Delete any existing virtual database sections under it other than `Archive` and `News`—keep only those two sections.

   ii. Add a virtual database section that maps to the new database.

   iii. Set `VirtualDatabases=3`

   For example:

```
VirtualDatabases=3  <--set to "3"
[vdb0]
DbName=News
Internal=False
Type=combinator
MapsTo=0:News

[vdb1]
DbName=Archive
Internal=False
Type=combinator
MapsTo=0:Archive

[vdb2]  <--add
DbName=ContentRepo
Internal=False
Type=combinator
MapsTo=0:ContentRepo
```

c. Save the file.

7. Add the new IDOL database to the content engine configuration file.

   a. Open the `C:\Program Files\Micro Focus\ControlPoint\Indexer\Content\ControlPoint Content.cfg` file in a text editor.

   b. In the `SetDatabaseFields` section, update the line shown in bold:

```
[SetDatabaseFields]
Property=DatabaseFields
PropertyFieldCSVs=*/DREIDOLDBNAME
```

   c. Locate the `[Databases]` section and complete the following steps:

      i. Delete any existing IDOL database entries other than `News` and `Archive`—keep only those two.

      ii. If you deleted any items, delete their corresponding section, which appears after the

`[Databases]` section.

For example, if from the `[Databases]` section you delete the entry `2=MyIdolDB`, also delete the corresponding `[MyIdolDB]` section.

iii. Add a database-specific section for the new database.

iv. In the `[Databases]` section, set `NUMDBS=3`.

For example:

```
[Databases]
NUMDBS=3   <--set to "3"
0=News
1=Archive
2=ContentRepo   <--add

[ContentRepo]   <--add
DatabaseReadOnly=FALSE
Internal=FALSE
InvertedAgent=FALSE
```

d. Save the file.

8. In non-proxy based configurations only, remove existing IDOL databases from each `DAH.cfg` file and add the new one, as described in steps 7c and 7d.

9. For the following components, delete the subfolders listed:

- **Indexer\Content**
  - Default location: `C:\Program Files\Micro Focus\ControlPoint\`
  - Delete: `actions`, `bitfield`, `dynterm`, `indextmp`, `logs`, `main`, `nodetable`, `numeric`, `refindex`, `secindex`, `sortfield`, `status`, `storedstate`, and `tagindex`
- **IDOL\DAH**
  - Default location: `C:\Program Files\Micro Focus\ControlPoint\Indexer\IDOL\dah`
  - Delete: `logs`, `statetokens`, and `status`
- **IDOL\DIH**
  - Default location: `C:\Program Files\Micro Focus\ControlPoint\Indexer\IDOL\dih`
  - Delete: `archive`, `failed`, `incoming`, `logs`, and `main`

> **NOTE:**
> If your environment contains multiple DAH or DIH components, delete the subfolders from each component location.

10. Update all Connector configuration files in your environment with the new IDOL database:

a. Create a temporary folder on the local computer and copy all Connector configuration files to it. For example:

```
C:\CP_AdvIDOLDistrib\ConnectorCFGs
```

Having all configuration files in one folder enables a script you run to easily update them.

b. Open the "`3. UpdateConnectorCFGs.ps1`" script in a text editor, and set the following:

   i. **FolderPathWin**: Full path of the folder you created in the previous step.

   ii. **MoveFromNonAdvancedMode**: If upgrading from Standard to Advanced IDOL distribution, set to `$TRUE`. Otherwise, set to `$FALSE`.

   iii. **IdolRepoNames**: List of all IDOL databases associated with ControlPoint repositories.

   iv. **IDOLDBName**: The name of the new single IDOL database, such as **`ContentRepo`**.

   v. (Optional) **BackupOriginal**: To create backups of the Connector configuration files in **FolderPathWin** before updating them, set to `$TRUE`. Otherwise, set to `$FALSE`.

   vi. (Optional) **importedPath**: If **BackupOriginal** is set to `$TRUE`, specify a folder to hold backup copies of the configuration files. For example:

   ```
   [string] $importedPath = (".\backupOriginal\")
   ```

c. Open PowerShell, and then run the "`3. UpdateConnectorCFGs.ps1`" script.

d. Copy the updated Connector configuration files from **FolderPathWin** back to their original locations.

11. Using a text editor, update each CFS configuration file:

    a. Add `ModifyReference.lua` to the end of the `[ImportTasks]` section.

    b. Move the existing `Eduction.lua` section after the new `ModifyReference.lua` section.

    For example, an `[ImportTasks]` section that contains the following:

    ```
    Post2=lua:lua/Eduction.lua
    Post3=lua:lua/MetadataProvider.lua
    Post4=lua:lua/IndexingTarget.lua
    Post5=lua:lua/CFSFixup.lua
    Post6=lua:lua/Category.lua
    ```

    Results in the following:

    ```
    Post2=lua:lua/MetadataProvider.lua    <--renumbered
    Post3=lua:lua/IndexingTarget.lua
    Post4=lua:lua/CFSFixup.lua
    Post5=lua:lua/Category.lua
    Post6=lua:lua/ModifyReference.lua    <--added
    Post7=lua:lua/Eduction.lua    <--moved from beginning
    ```

12. Use Windows Services to start the following:

    - All Connector services
    - Connector Framework services
    - IDOL services
    - ControlPoint Content services

- MetaStore service
- ControlPoint Engine service

> **NOTE:**
> Verify that all services have started.

13. Run the IDOL database's update and import script:

    a. Create a folder on the local computer to hold the logs this script creates.

    b. Open the "`4. UpdateAndImportIDX.ps1`" script in a text editor, and set the following:

    - **FolderPathWin**: Full path of the folder that contains the exported repository data. This is the folder you created in step 4a and assigned to **LogOutputPath** in step 4b. For example:

      ```
      [string] $FolderPathWin = "C:\IDXExport\"
      ```

    - **IdolHost**: IDOL Data Indexer (DIH) host.
    - **IdolPort**: DIH Index port. The default port is 9071.
    - **IdolACIPort**: DIH ACI port. The default port is 9070.
    - **IDOLDBName**: Name of the new single IDOL database, **ContentRepo**.
    - **LogPath**: Full path of the log folder you created in the previous step in which the script will create `QueryResults_Import_`*`repoName`*`.txt` to hold the Index IDs it imports to DIH.
    - **LogOutputPath**: Full path of the log folder you created in the previous step in which the script logs any failures to `UpdateAndImportIDX_`*`repoName`*`.log`.

    c. Open the "`4.1 ThreadedImport.ps1`" script in a text editor, and set the following:

    - **IdolRepoNames**: List of all IDOL databases associated with ControlPoint repositories. For example:

      ```
      $IdolRepoNames = @("Repo1", "Repo2", "Repo3")
      ```

      You can identify the databases using the following command:

      ```
      http://hostname:32000/a=getstatus
      ```

    d. Open PowerShell, and then run the "`4.1 ThreadedImport.ps1`" script.

14. Run the categories migration script:

    a. Create a folder on the local computer to hold the logs this script creates, such as `C:\tmp\`. Ensure the current Windows user account has full access rights to this location.

    b. Open the "`5.MigrateCategories.ps1`" script in a text editor, and set the following:

    - **IdolHost**: IDOL Data Indexer (DIH) host.
    - **IdolPort**: DIH Index port. The default port is 9071.
    - **IDOLDBName**: Name of the new single IDOL database, **ContentRepo**.
    - **OutputPath**: Full path of the folder created in the previous step in which the script logs

category migration status.

c. Open PowerShell, and then run the "`5.MigrateCategories.ps1`" script.

15. If upgrading from a ControlPoint 5.6.1 environment that has Advanced IDOL mode configured, disable it.

    To do so, open SQL Server Management Studio, and then run the "`5.disableAdvancedMode.sql`" script.

16. Launch ControlPoint Configuration Manager and do the following on the **IDOL** settings tab:

    a. Click **Enable Advanced IDOL Distribution**.

    b. In the **Advanced IDOL Distribution Database** field, enter the name of the IDOL database name that you specified on the **IDOL** tab of the IDOL Deploy Tool while configuring the deployment packages.

       For example: `ContentRepo`

Chapter 13: Upgrade ControlPoint

This chapter describes how to upgrade to ControlPoint 5.7.0 from a previous version.

To upgrade ControlPoint:

1. Ensure your environment meets all ControlPoint requirements, including the requirements for ControlPoint IDOL and connectors.

   For information about the hardware, software, and third-party components necessary for ControlPoint and ControlPoint IDOL and connectors, see the *ControlPoint Support Matrix*.

2. If upgrading from ControlPoint 5.4 or later, run the Support Utility.
3. Note the current databases for post-upgrade verification.
4. Prepare the ControlPoint environment for upgrade.
5. Uninstall the current ControlPoint software.
6. Upgrade to ControlPoint 5.7.0 software.
7. For environments with Edge Filesystem connectors, upgrade those connectors.
8. If you enabled ControlPoint security, update ControlPoint configuration files as described in Configure ControlPoint security settings.

Run the Support utility

When upgrading from ControlPoint 5.4 or later, you can run the Support Utility before and after upgrade to compare the system information and configuration (`.cfg` and `.config`) file information to identify any differences.

For more information, see ControlPoint Support utility, on page 151.

To run the Support utility

- Run the Support utility from the command line as the Administrator.

  ```
  ControlPointSupportUtility.exe -c
  ```

  The utility gathers a copy of all system and configuration file information and stores it labeled as `Pre` capture data in `<systemroot>\Users\<user>\AppData\Local\Temp`.

Note the current databases

Before upgrading ControlPoint, make note of the current IDOL and MetaStore databases so that you can confirm they are available after upgrade.

To note the databases

1. Issue a `GETSTATUS` command for the following databases using HTTP or HTTPS, depending on which protocol your environment uses:

    - **IDOL**: `http|https://`*`IDOLServerName`*`:9000/a=getstatus`
    - **MetaStore**: `http|https://`*`MetaStoreServerName`*`:4500/a=getstatus`

2. Save the list of the databases displayed for future reference.

    You will compare this list with the one you generate during the post-upgrade process.

Prepare the ControlPoint environment for upgrade

Prepare the ControlPoint environment for the upgrade by disabling any scheduled tasks, stopping services, uninstalling software, and removing websites.

To prepare the environment

1. Allow any executing policy phases to complete.

    > **NOTE:**
    > Ensure all items in the existing policies are in the `executed` or `failed` status, before the upgrade.

2. In the ControlPoint Administration dashboard, disable the **Assign Policies** and **Execute Policies** scheduled tasks using the **Scheduled Tasks** settings. This prevents new policies from being assigned to documents.

    > **NOTE:**
    > Be sure to disable all of the scheduled tasks: Normal, Low, and High priority.

3. Ensure that all ingestion jobs are complete.

    > **NOTE:**
    > If ingestion jobs are still running, wait for them to complete before proceeding.

4. Check the **Distributed Connector** queue by issuing one of the following commands, depending on whether the connector is working with HTTP or HTTPS:

    - `http://distributedConnectorHost:port/a=queueinfo&queuename=fetch&queueaction=getstatus`
    - `https://distributedConnectorHost:port/a=queueinfo&queuename=fetch&queueaction=getstatus`

    The default port number is 7000.

    All actions should be `Finished`.

5. When all connector actions and executing policy phases have completed, stop the following services:

- ControlPoint Engines
- Distributed Connector
- Individual connectors and Connector Framework Services.

6. Back up the following folders so you can reapply existing values from them after upgrade:

   - `Program Files\<companyName>\ControlPoint\Indexer`

     This folder contains subfolders with IDOL and connector configuration files (`.cfg`) and statistic files (`.db`).

   - If your environment contains Insert Configurations:

     `Program Files\<companyName>\ControlPoint\InsertConfig`

   Where *<companyName>* is one of the following, depending on your previous version of ControlPoint software:

   `Autonomy`, `Hewlett Packard`, `Hewlett Packard Enterprise`, or `Micro Focus`.

   > **TIP:**
   > Files marked by a modification date later than the date of deployment indicates that it was modified manually or through the use of ControlPoint software.

7. Back up the ControlPoint databases:

   - ControlPoint
   - ControlPoint Audit
   - ControlPointMetaStore
   - ControlPointMetaStore Tags
   - ControlPoint Document Tracking
   - ReportServer. *Available only if your environment is configured for reports.*
   - ReportServerTempDB. *Available only if your environment is configured for reports.*

8. Start the SQL Server Agent service.

   By default, the service is set to start manually. Change the service to start automatically and start the service now. The upgrade process requires it to be running.

Uninstall the current ControlPoint software

After the environment is prepared, you can uninstall the current ControlPoint software and remove ControlPoint websites.

1. Uninstall the ControlPoint software using the Windows **Add/Remove Programs** option.

   > **NOTE:**
   > Starting with ControlPoint 5.4, the Add/Remove Programs dialog displays an option to retain or remove the FIPS security mode. Click **Yes** to retain the FIPS security mode, or

> **No** to remove it.
>
> - If you select **Yes**, the ControlPoint installation will be considered as a fresh installation and you have the option to select or clear the **Enable FIPS security mode** checkbox.
> - If you select **No**, the previous setting for **Enable FIPS security mode** is retained and you are not able to change its value. For more information, see Enable Federal Information Processing Standards (FIPS) security mode, on page 43.

2. Remove the ControlPoint websites.

   a. Identify all applications in the `ControlPointAppPool40` application pool running on your Internet Information Services (IIS) and remove them.

   b. Remove the `ControlPointAppPool40` application pool.

   It may include some or all of the following:

   - ControlPoint
   - Classifier
   - CPWS
   - Callback Handler
   - Category
   - Data Analysis Service

   The environment is ready for upgrade.

Upgrade to ControlPoint 5.7.0 software

The installers for the ControlPoint database and software are located in the ControlPoint installation package.

To upgrade to ControlPoint 5.7.0 software

1. Upgrade the ControlPoint databases.

   a. To upgrade from a version earlier than 5.4, first upgrade the databases to ControlPoint 5.4. Then, continue with the next step to upgrade the databases to 5.7.0.

   b. To upgrade from version 5.4.x or later, upgrade the databases to 5.7.0.

   c. To increase database performance after upgrade if you have not done so during a previous upgrade, Micro Focus strongly recommends that you run the database conversion packages included in with ControlPoint software.

   > **NOTE:**
   > This is a one-time process. If you ran these packages during a previous ControlPoint upgrade, skip this step.

- For more information on the benefits of converting the databases to use database partitioning and file groups in SQL Server, see Database overview and Consider ControlPoint database partitioning and file groups.
- For detailed instructions on database conversion tasks and associated downtime, see the *ControlPoint Database Conversion Guide*.

2. Install the ControlPoint software, which includes optionally enabling HTTPS.
3. Upgrade IDOL data and software.
4. Complete the IDOL software upgrade manually.
5. Update configuration files with settings from the previous environment.
6. Update Content Manager Connector configuration files with settings from Records Manager and TRIM connectors.
7. If while upgrading IDOL you changed its location, update IDOL files.

   To provide IDOL access to files generated or customized by the previous installation, manually copy them from the backup you created to the new IDOL location.
8. (Optional) Reconfigure the Documentum connector.

   If you upgraded the Documentum connector, reconfigure it now.
9. Integrate IDOL proxy updates.
10. Perform post-upgrade steps.
11. Start Windows services.
12. (Optional) Configure Advanced IDOL distribution.

Upgrade the ControlPoint databases to version 5.4

> **IMPORTANT:**
> To upgrade ControlPoint from a version earlier than 5.4, you must first upgrade the databases to version 5.4, as this section describes.

Obtain the ControlPoint 5.4 software

To obtain the ControlPoint 5.4 software package, download it from the MySupport portal.

Alternately, the ControlPoint 5.4 Database Installer utility is available in the following location within the 5.7.0 software package:

```
ControlPoint\Utilities\CP 5.4 DB Installer\HPE ControlPoint 54 Database
Installer.exe
```

Upgrade the ControlPoint databases to 5.4

To upgrade the ControlPoint databases

1. Navigate to the `\ControlPoint` directory in the 5.4 package and run `ControlPoint Database Installer.exe.`
2. Follow the instructions in the wizard.

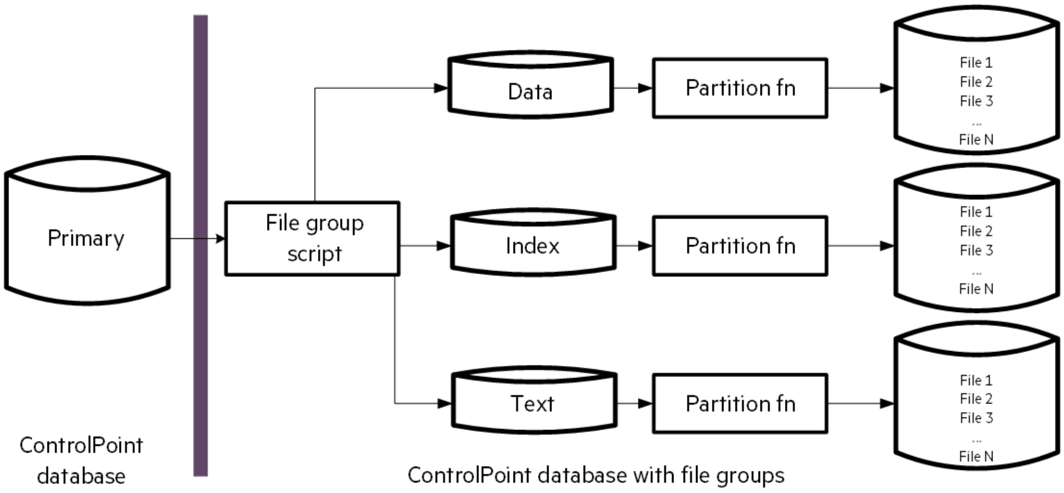
   > **NOTE:**
   > For upgrades from version 4.5 or earlier, two additional databases are created for ControlPoint 5.4:
   >
   > - `ControlPointMetaStore`
   > - `ControlPointMetaStoreTags`
   >
   > `ControlPointMetaStore` holds key metadata for all analyzed content and should be sized appropriately. Verify that the security settings in SQL Server are correct for these two databases.

   The databases are upgraded to the 5.4 release.

When the upgrade to 5.4 databases completes, you are ready to upgrade the databases to 5.7.0.

Upgrade ControlPoint databases to 5.7.0

ControlPoint 5.7.0 supports database partitions and file groups. If you are upgrading from a version that did not support those items, the following figure identifies how each ControlPoint database is upgraded and separated into file groups.



Prepare to upgrade ControlPoint databases

Before you upgrade the ControlPoint databases, there are a few tasks you must do to prepare your environment.

To prepare for database upgrade

1. Ensure the ControlPoint databases in your environment are at version 5.4.x or later.

   If not, upgrade them to version 5.4 before continuing.

2. Verify the SQL Server sa account.

3. Configure minimum SQL permissions.

4. Grant permissions on database file locations.

Verify the SQL Server sa account

Ensure that the SQL Server **sa** account exists with its regular class of permissions and is not disabled.

This account will own the ControlPoint database maintenance jobs the installation process creates. If the account is removed, renamed, or disabled, the steps that create maintenance jobs will fail.

Configure minimum SQL permissions

Ensure the user account that deploys or upgrades the ControlPoint databases has permissions equivalent to the **sysadmin** default SQL login role, including the following permissions configured in SQL Server:

- **Dbcreator, public**. Required to create the ControlPoint databases.
- **SecurityAdmin**. Required to create users in the ControlPoint databases.

> **NOTE:**
> Db_owner permissions are the minimum SQL permissions that can be used after the initial deployment.

Grant permissions on database file locations

Grant the appropriate read and write permissions on the directories you will configure for the database file groups. Permissions include standard permissions on the objects and UAC access (usually controlled by ownership inheritance), if applicable.

Follow these guidelines:

- **When utilizing a SQL user account**. Read and write access (and UAC access) granted to both the user account that runs the database installation program on the SQL server and the user account that operates the SQL Server instance.
- **When utilizing a Windows user account**. Read and write access (and UAC access) granted to the user account that runs the installation program.

These are the minimum permissions and access controls required for the directory targets. You can allow additional access to the directories if necessary.

Grant permissions on database file locations

Grant the appropriate read and write permissions on the directories you will configure for the database file groups. Permissions include standard permissions on the objects and UAC access (usually controlled by ownership inheritance), if applicable.

Follow these guidelines:

- **When utilizing a SQL user account**. Read and write access (and UAC access) granted to both the user account that runs the database installation program on the SQL server and the user account that operates the SQL Server instance.
- **When utilizing a Windows user account**. Read and write access (and UAC access) granted to the user account that runs the installation program.

These are the minimum permissions and access controls required for the directory targets. You can allow additional access to the directories if necessary.

Upgrade the databases to 5.7.0

Before you begin

Ensure that a data source in SQL Server Reporting Services is still configured from your previous installation. For more information, see Configure the ControlPoint data source, on page 21.

To upgrade ControlPoint databases to 5.7.0

1. Navigate to the `\ControlPoint` directory and run `ControlPoint Database Installer.exe`.

   > **NOTE:**
   > If Windows UAC is enabled on the server, ensure that the user account running the installation program is also a user account in SQL Server that has sufficient permissions to update databases and sufficient permission to the database file locations.

   The database installer opens.

2. Click **Next**.

   The Log Directory page opens.

3. Change the path of the setup log file, if necessary, and then click **Next**.

   The SQL Connection page opens.

4. Enter the required **SQL Server** and **instance** names, or select them from the list.
5. Select the required authentication method: **Windows** or **SQL Server**.

   If you select **SQL Server Authentication**, enter a **Login ID** and **Password**.

6. If only one disk is present, clear the **Enable interleaving for database transactions** option.

This option, selected by default, automatically interleaves files from select file groups to multiple storage path targets. Paths that participate in the interleaving process are indicated on each of the following Database Configuration pages.

Files from within each of these file groups will be spread evenly across all the participating paths.

7. Click **Test Connection** to verify the server details.

8. In the **Job Owner Username** field, enter a SQL Server user name for an account that has System Administrator access to SQL Server.

   > **NOTE:**
   > The ControlPoint Database installation program uses this account to create and configure several SQL Server Agent maintenance jobs.
   >
   > This user account must exist in SQL Server; the installation program does not verify it exists.

9. Click **Next**.

10. On each of the next several database configuration pages, specify the path to the files listed, and then click **Next**.

    You will configure database files for the following:

    - ControlPoint database
    - ControlPoint Audit database
    - ControlPoint Tracking database
    - ControlPointMetaStore database
    - ControlPointMetaStore Tags database

      > **NOTE:**
      > When specifying data paths, keep the following in mind:
      >
      > - If you selected the option to interleave database transaction interleaving in step 6, each page indicates the paths participating in the interleaving.
      > - Specify paths local to the server where SQL Server is installed.
      > - Place Index files on a different volume than the other components in the file group.
      > - Place Log files on a different volume than the other database files.

11. To confirm that you have backed up the databases before upgrade, on the Backup Confirmation page, click **I have backed up the databases**.

12. Click **Next**.

    The ControlPoint Audit Reports page opens.

13. To upload audit reports to SQL Server Reporting Services (SSRS), select **Upload Reports**, and then click **Next**.

    If you select **Upload Reports**, when the Reports Configuration page opens do the following:

a. In the **Audit Reports Installation** area, enter the installation path in the **Install reports to** field.

b. In the Report Manager Server Settings area, enter the following information:

   i. **Report Manager URL**

   ii. **Report Manager Virtual Directory**

   iii. **Report Webservice Virtual Directory**

> **NOTE:**
> For **Report Manager Virtual Directory** and **Report Webservice Virtual Directory**, enter the values you previously defined on the SSRS Configuration Manager's **Report Manager URL** and **Web Service URL** tabs, respectively.

14. Click **Next**.

15. Verify the details on the Installation Confirmation page, and click **Install**.

    The databases are installed.

> **IMPORTANT:**
> Several SQL scripts are run as part of the database upgrade. If the scripts encounter problems during execution, the database installation program displays a dialog box prompting you to **Retry** or **Abort**.
>
> If you choose **Abort**, the installation program attempts to drop the databases. If it cannot drop the databases, you will need to perform the following steps:
>
> a. In SQL Server Management Studio, ensure that there are no temporary tables in the **dbo.Temp_DBNames** path.
>
>   **System databases > msdb > Tables > dbo.Temp_DBNames**
>
> b. Manually drop the affected ControlPoint databases.
>
> c. Manually drop the **temp_db** database.
>
>   Dropping the databases avoids inconsistencies resulting from incomplete script executions.
>
> d. Restore the ControlPoint databases from the backups you made during the preparation to upgrade.
>
> e. Restart the database installation program.

16. Review the installation log.

17. Either write down the hyperlinked connection string or click it to copy the string to your clipboard.

    The ControlPoint MetaStore service requires this connection string to access the ControlPoint MetaStore database. You must save this connection string so you can use it during the Configure deployment packages task to configure the ControlPoint MetaStore component's SQL connection string to the MetaStore database.

18. Click **Finish**.

The installation wizard closes.

Post database upgrade tasks

After the database upgrade completes, do the following:

1. Verify the SQL maintenance jobs.
2. If the **ControlPointMetaStore** and **tempDB** databases were not installed on dedicated hard drives, move them to their own dedicated hard drives.

   For example, ensure **ControlPointMetaStore** is located on its own dedicated drive and **tempDB** is located on its own dedicated drive.
3. (Optional) Configure the recovery model for ControlPoint databases.

   The default recovery model for all ControlPoint databases is automatically set to SIMPLE. If necessary, you can change the recovery model to meet your needs.

Verify the SQL maintenance jobs

After the database upgrade completes, verify the SQL maintenance jobs.

To verify the SQL maintenance jobs

1. In SQL Server Management Studio, navigate to **SQL Server Agent > Jobs**.
2. Verify the existence of ControlPoint database maintenance jobs.

   For each ControlPoint database, two maintenance jobs are created:

   - **<databaseName>_db_maint_3.0**. The database maintenance job that runs by default automatically at 10 pm every night.
   - **<databaseName>_db_maint_all**. The database maintenance job that you can run manually as needed.

   W here

   <databaseName> is the name of the ControlPoint database.

   For example:

   `ControlPoint_db_maint_3.0` and `ControlPoint_db_maint_all`

   > **NOTE:**
   > The **_all** version of the maintenance script does not have a schedule defined because it is intended that you run it manually.

Move ControlPoint databases

Due to high disk usage of the **ControlPointMetaStore** and **tempDB** databases, Micro Focus recommends that you allocate these databases their own dedicated hard drive.

For improved read and write performance of the **ControlPointMetaStore** database, Micro Focus also recommends the use of an enterprise-level solid-state drive (SSD).

> **NOTE:**
> The following information illustrates how to move the **ControlPointMetaStore** and **tempDB** databases if they were not initially configured on dedicate hard drives.
>
> The procedures are based on information provided in SQL Server documentation. For more information, see https://docs.microsoft.com/en-us/sql/relational-databases/databases/move-user-databases?view=sql-server-2014.

Example

This example describes how to move the **ControlPointMetaStore** and **tempDB** databases to dedicated hard drives E and F, respectively.

1. In SQL Server Management Console, run the following statement:

   ```
   ALTER DATABASE ControlPointMetaStore SET OFFLINE;
   ```

   > **IMPORTANT:**
   > **TempDB** cannot be set offline or online, so it is excluded from steps 1 and 4.

   The database is set offline.

2. Move the file or files to the new location.

   For example:

   - Move `ControlPointMetaStore.mdf` to the `E:` volume
   - Move `tempdb.mdf` to the `F:` volume.

3. For each file moved, run the following statement:

   ```
   ALTER DATABASE ControlPointMetaStore MODIFY FILE ( name =
   ControlPointMetaStore_data, FILENAME =
   'E:\sqldata\ControlPointMetaStore.mdf' );
   ```

   ```
   ALTER DATABASE tempdb MODIFY FILE ( name = tempdev, FILENAME =
   'F:\sqldata\tempdb.mdf' );
   ```

4. Run the following statement:

   ```
   ALTER DATABASE ControlPointMetaStore SET ONLINE;
   ```

   The database is set online.

5. Verify the file change by running the following query:

   ```
   SELECT name, physical_name AS CurrentLocation, state_desc
   FROM sys.master_files
   WHERE database_id = DB_ID(N'ControlPointMetaStore');
   ```

   ```
   SELECT name, physical_name AS CurrentLocation, state_desc
   FROM sys.master_files
   ```

```
WHERE database_id = DB_ID(N'tempdb');
```

6. Stop and restart the instance of SQL Server for the change to take effect on **TempDB**.

Configure the recovery model for ControlPoint databases

The recovery model defines the type of transaction log the database maintains and therefore determines the restore options available should you need to restore the database. The default recovery model for all ControlPoint databases is automatically set to **Simple**. You can change the model to either **Full** or **Bulk-Logged** for each database to better meet your recovery needs.

To configure the recovery model

- For each ControlPoint, configure the recovery model using either SQL Server Management Studio or Transact-SQL.

  For information about each type of recovery model and how to set one, see your SQL Server documentation.

Consider ControlPoint database partitioning and file groups

You should determine whether you want to take full advantage of the database partitioning and file groups that ControlPoint supports.

These features are especially important for the performance and scalability of large-scale ControlPoint environments.

For information on taking full advantage of SQL file groups and database partitioning with your ControlPoint databases, see the *ControlPoint Database Conversion Guide*. This guide details the advantages of converting the databases to using file SQL Server database partitioning and file groups, detailed conversion steps using database conversion scripts, and so on.

Install the ControlPoint software

After upgrading the ControlPoint databases, install the software.

To install the ControlPoint software

1. From the `\ControlPoint x64` directory, run `Setup.exe` as the Administrator, and then follow the instructions in the installer.
2. While the IDOL software from the previous version is still running, run the **Configuration Manager** to deploy ControlPoint:
   a. If IDOL is enabled with HTTPS in your environment, do the following:
      i. Open the `ControlPointConfiguration.exe.config` file in a text editor.
      ii. In the `<appSettings>` section, set the `SecurePorts` value to `true`:

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

iii. Save the file.

b. Run **Configuration Manager**.

The ControlPoint software installs.

> **NOTE:**
> If ControlPoint was running on HTTPS before the upgrade and you want to enable it again, follow the instructions in Enable HTTPS.

Upgrade IDOL data and software

Use this task to upgrade the IDOL data and software.

To upgrade the IDOL data and software

1. Run the **ControlPoint IDOL Upgrade** program and follow the instructions. The program is available from the following location:

   ```
   Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPoint IDOL Upgrade.exe
   ```

   Depending on which version of ControlPoint you are upgrading from, the ControlPoint IDOL Upgrade program might include one or more of the following steps:

   a. Back up IDOL.

   > **NOTE:**
   > If you have an existing backup strategy, skip this step.

   b. Upgrade the IDOL content (required fields).

   c. Upgrade the IDOL software.

   After you start the program you can save progress so you can resume from the same step in the future.

   > **NOTE:**
   > The program automates much of the upgrade process but you must update the IDOL software manually when prompted.

2. When the program completes, if IDOL is enabled with HTTPS in your environment, do the following:

   a. Open the `\Install\Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPointConfiguration.exe.config` file in a text editor.

   b. In the `<appSettings>` section, set the `SecurePorts` value to `true`:

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

   c. Save the file.

3. If your environment has multi-layer IDOL DIH/DAH, do the following:

   a. Open the `ControlPointIDOL Upgrade.exe.config` file in a text editor.

   b. Edit the settings to reference the machine and correct port for the top-layer IDOL proxy.

   c. Save the file.

Complete the IDOL software upgrade manually

When the ControlPoint IDOL Upgrade program has finished,update the IDOL software manually. If you are upgrading from ControlPoint 4.5 or earlier, this step also deploys an additional service, ControlPoint MetaStore.

To manually update the IDOL software

1. Stop the IDOL services.

   To do so, as the local administrator, run the `_stop_services.bat` batch file generated by the IDOL deploy tool. This batch file is available at `\temp\ControlPoint\host_`*`hostName`*.

   > **NOTE:**
   > If IDOL is running with HTTPS, stop IDOL services from Services and Processes manually.

2. Uninstall existing services by running `_uninstall_services.bat` as the local administrator.

   Executing the file that was built for your current deployment will ensure spurious errors are not reported.

3. Prepare a new IDOL deployment using the **ControlPoint IDOL Deploy Tool** from the release media.

   > **NOTE:**
   > To ensure your IDOL data migrates correctly, use the same Host Installation Directory as your current deployment:
   >
   > `Program Files\<`*`companyName`*`>\ControlPoint`
   >
   > Where `<`*`companyName`*`>` is one of the following, depending on your current version of ControlPoint software:
   >
   > `Autonomy`, `Hewlett Packard`, `Hewlett Packard Enterprise`, or `Micro Focus`.

   The deployment is prepared.

4. Do the following:

   a. Manually replace the `INSTALLATION_PATH\ControlPoint\Commons\jre` folder with a copy of the `temp\ControlPoint\host_`*`hostName`*`\Commons\jre` folder.

   b. As the local administrator, run the `_deploy_services.bat` file and choose to overwrite all files.

5. As the local administrator, run the `_install_services.bat` batch file.

   The new services are installed.

Update configuration files

The upgrade process installs new configuration files. To reuse custom values from the previous versions of these files, you must port those settings to the new files.

Update Connector configuration files

Update the new Connector and Connector framework configuration files with specific configurations from your previous deployment.

The new files are located in component-specific subfolders under `Program Files\Micro Focus\ControlPoint\Indexer`. The previous versions of these files, which contain the values to port, are located in the backup copy of this folder you created while preparing your environment for upgrade.

To update Connector configuration files

1. Perform the following key changes to the new configuration files after deployment:

   - **Contents**. Do the following:

     - Copy over the `[Databases]` section, for example:

       ```
       [Databases]
       NUMDBS=4
       0=News
       1=Archive
       2=FS
       3=SPS
       ```

     - Copy over the `[Repositories]` section at bottom.

     > **NOTE:**
     > Starting with ControlPoint 5.6.1, the IDOL Content configuration file contains only an entry for English in the `[LanguageTypes]` section. To support other languages, identify the languages you need and update the Content configuration file accordingly. For more information, see the IDOL documentation or contact Support.

   - **IDOL**. Copy over details of all virtual databases, both the count and each `vdb` section. New `vdb` sections are typically added at the end of the file, for example:

     ```
     VirtualDatabases=4
     [vdb2]
     ```

```
dbname=FS
type=combinator
mapsto=0:FS
[vdb3]
type=combinator
mapsto=0:SPS
```

- **Each connector**. Copy over every `Task` section.

  For example:

  ```
  [TaskFS]
  DirectoryRecursive=True
  ExtractOwner=True
  PathRegEx=.*
  DirectoryFileAttributeFilter=-1
  IngestActions=META:ENFORCESECURITY=false,META:CPREPOSITORYTYPEID=3,LUA:lua\Ex
  tractFileData.lua,META:AUTN_CATEGORIZE=false,META:AUTN_EDUCTION=false
  DirectoryPathCSVs=\\v-cptrim\FS
  ScheduleStartTime=now
  ScheduleCycles=1
  ScheduleRepeatSecs=3600
  IndexDatabase=FS
  ```

- **For some connector types (such as SharePoint)**, additionally copy over all `Groups` task sections.

  For example:

  ```
  [Groups_TaskSPS]
  FetchMode=0
  IncludeEmptyFields=True
  ExtractSubfiles=True
  MappedWebApplicationPolicies=True
  IgnorePublishingPagesAspx=True
  SecurityType=SharePointSecurity
  IngestActions=META:CPREPOSITORYTYPEID=2,META:AUTN_NO_FILTER=true
  StartURL=http://v-cptrim:8081
  ScheduleStartTime=now
  ScheduleCycles=1
  ScheduleRepeatSecs=3600
  IndexDatabase=SPS
  ```

  By default, ControlPoint 5.7.0 takes care of index synchronization. Therefore, you do not need to include entries for each task section in the `[FetchTasks]` section:

  ```
  [FetchTasks]
  Number=0
  SynchronizeGroupsnnn=Groups_Taskxxxx
  where nnn represents the incremental number from the last line and xxxx is
  the name of the repository
  ```

After completion of the above task, the total number must be increased as shown below:
`SynchronizeGroupsNumber=totalNumber`

> **NOTE:**
> Ensure that the task configuration of each connector matches the configuration used in the previous deployment to prevent re-scanning of previously analyzed content.
>
> In version 4.2, the default task name changed from **MyTask** to **MyTask0**, so if you use default tasks and upgrade from a version earlier than 4.2, you must change the new connector configuration files accordingly.

- **Each connector framework**. Copy over each Eduction settings section.

  For example:

  ```
  [FSEductionSettings]
  SearchFields=DRECONTENT
  Entity0=number/ssdh/us
  EntityField0=CPED_NUMBER_SS_US
  Entity1=number/ssds/us
  EntityField1=CPED_NUMBER_SS_US
  Entity2=number/ssdn/us
  EntityField2=CPED_NUMBER_SS_US
  Entity3=number/ss/us
  EntityField3=CPED_NUMBER_SS_US
  Entity4=number/medicareid/us
  EntityField4=CPED_NUMBER_SS_US
  ResourceFiles=eduction\number_ss_us.ecr
  ```

2. **Connector Framework**. Copy over any custom LUA added after installation, along with any corresponding `[ImportTasks]` section entries.

   > **NOTE:**
   > If you install a new version of ControlPoint in an installation directory which is different from the previous installation directory, then ensure you place the backed up `categories` directory in the new path.

3. **SharePoint2007, 2010, and 2013**. For new installations, only the SharePoint Remote connector type is supported. However, for upgrades, you can retain existing connector configuration files for the SharePoint versions listed. To do so, you must edit the appropriate SharePoint connector configuration files as follows:

   a. Add the following section anywhere in the file:

   ```
   [Eduction]
   DefaultMaxMatchesPerDoc=10000
   ```

   b. Update the `[ImportTasks]` section to contain the following lines:

   ```
   Post2=lua:lua/Eduction.lua
   Post3=lua:lua/MetadataProvider.lua
   Post4=lua:lua/IndexingTarget.lua
   ```

```
Post5=lua:lua/CFSFixup.lua
Post6=lua:lua/Category.lua
```

c. Update the `[MyIdolIndexer]` section to append the following line after last entry in section:

```
ACIPort=9070
```

d. Update `[Categorizer]` section to append the following line after last entry in section:

```
ACIPort=9020
```

Update Insert Configuration files

If your environment contains Insert Configurations, update the Insert Configuration files by replacing them with those from your previous deployment.

The new files are located in component-specific subfolders under `Program Files\Micro Focus\ControlPoint\Indexer`. The previous versions of these files, which contain the values to port, are located in the backup copy of this folder you created while preparing your environment for upgrade.

To update Insert Configuration files

1. Replace the `Program Files\Micro Focus\ControlPoint\InsertConfig` folder with the backup copy of that folder you created while preparing your environment for upgrade.
2. Ensure that insert configurations are enabled by verifying that the `InsertConfigEnabled` parameter in the `<AppSettings>` section of the following file is set to **true**:

   ```
   Program Files\Micro
   Focus\ControlPoint\Engine\Scheduler\ControlPointTimer.exe.config
   ```

Update Insert Configurations for Micro Focus Content Manager connectors

If needed, update the Content Manager insert configuration file with the custom insert configuration from your existing environment.

> **NOTE:**
> Starting with version 5.4, the Content Manager connector uses the `TRIM` folder in the insert configuration. In releases before version 5.4, the name of the Content Manager connector was TRIM.

To update Insert Configurations for Content Manager connectors

1. On the **Administration** tab of ControlPoint Console, go to the Insert Configurations page.
2. In the **CONNECTOR GROUP** list, select Content Manager.
3. In the **FIELD MAPPING** section, recreate all the TRIM custom field mappings you need.

   For each mapping, do the following:

a. In **Source Field**, enter or select the appropriate TRIM-related field name.

b. In **Target Name** and **Metadata Type**, enter the appropriate values to recreate your previous mappings.

For more information on Insert Configurations, see the *ControlPoint Administration Guide* or the ControlPoint Console Help Center.

Update Content Manager Connector configuration files

> **NOTE:**
> This task applies only if you are upgrading from a version of ControlPoint earlier than 5.4. Otherwise, you can skip this section.

In ControlPoint 5.4, the Content Manager connector replaced the Records Manager and TRIM connectors. To support this change, extra configurations in the Content Manager connector configuration file are required for existing Records Manager or TRIM connectors to work with the Content Manager connector.

To configure the Content Manager connector

1. Copy all `SynchronizeGroups` settings from the `FetchTasks` section of existing Records Manager and TRIM configuration files to the `FetchTasks` section of the Content Manager configuration file and increment the settings as needed.

   Example

   In this example, the upgraded environment includes one Records Manager connector and one TRIM connector with the following settings.

   Original Records Manager settings

   ```
   SynchronizeGroupsNumber=4
   SynchronizeGroups0=Groups_TaskCm_1
   SynchronizeGroups1=Groups_TaskCm_2
   SynchronizeGroups2=Groups_TaskCm_3
   SynchronizeGroups3=Groups_TaskCm_4
   ```

   Original TRIM settings

   ```
   SynchronizeGroupsNumber=4
   SynchronizeGroups0=Groups_Tasktrim_1
   SynchronizeGroups1=Groups_Tasktrim_2
   SynchronizeGroups2=Groups_Tasktrim_3
   SynchronizeGroups3=Groups_Tasktrim_4
   ```

   Copy the settings from Records Manager and TRIM `[FetchTasks]` sections to the Content Manager `[FetchTasks]` setting and increment the `SynchronizeGroups` numbers as needed.

   Set `SynchronizeGroupsNumber` to the total number of groups. In this example, set it to 8.

   Resulting configuration settings

```
[FetchTasks]
SynchronizeGroupsNumber=8
SynchronizeGroups0=Groups_TaskCm_1
SynchronizeGroups1=Groups_TaskCm_2
SynchronizeGroups2=Groups_TaskCm_3
SynchronizeGroups3=Groups_TaskCm_4
SynchronizeGroups4=Groups_Tasktrim_1
SynchronizeGroups5=Groups_Tasktrim_2
SynchronizeGroups6=Groups_Tasktrim_3
SynchronizeGroups7=Groups_Tasktrim_4
```

2. **For Records Manager connectors**

   In each `IngestAction` entry at the end of the Content Manager configuration file, change the value of `META:CPREPOSITORYTYPEID` from **8** to **6**, as follows:

   ```
   IngestActions=META:CPREPOSITORYTYPEID=8,META:AUTN_NO_FILTER=true
   ```

   to

   ```
   IngestActions=META:CPREPOSITORYTYPEID=6,META:AUTN_NO_FILTER=true
   ```

   > **NOTE:**
   > Formatting differences between older and newer This configuration is required because of differences in formatting of the older configurations in relation to version 5.7.0.

3. **For Records Manager and TRIM connectors prior to 5.x only.**

   Copy all `SynchronizeGroups` settings from the `FetchTasks` section of existing Records Manager and TRIM configuration files to the `FetchTasks` section of the Content Manager configuration file and increment the settings as needed.

Example

In this example, the upgraded environment includes one Records Manager connector and one TRIM connector with the following settings.

Original Records Manager settings

```
SynchronizeGroupsNumber=4
```

```
SynchronizeGroups0=Groups_TaskCM
0=TaskCM
SynchronizeGroups1=Groups_TaskCM_1
1=TaskCM_1
SynchronizeGroups2=Groups_TaskCM_2
2=TaskCM_43_2
SynchronizeGroups3=Groups_TaskCM_3
3=TaskCm_3
```

Original TRIM settings

```
SynchronizeGroupsNumber=4
SynchronizeGroups0=Groups_TaskTRIM
0=TaskTRIM
SynchronizeGroups1=Groups_Tasktrim_2
```

```
1=Tasktrim_2
SynchronizeGroups2=Groups_Tasktrim_3
2=Tasktrim_3
SynchronizeGroups3=Groups_Tasktrim_4
3=Tasktrim_4
```

Copy the settings from Records Manager and TRIM `[FetchTasks]` sections to the Content Manager `[FetchTasks]` setting and increment the `SynchronizeGroups` numbers as needed.

Set `SynchronizeGroupsNumber` to the total number of groups. In this example, set it to 8.

Resulting configuration settings

```
[FetchTasks]
SynchronizeGroupsNumber=8
SynchronizeGroups0=Groups_TaskCM
0=TaskCM
SynchronizeGroups1=Groups_TaskCm_1
1=TaskCm_1
SynchronizeGroups2=Groups_TaskCm_2
2=TaskCm_43_2
SynchronizeGroups3=Groups_TaskCm_3
3=TaskCm_3
SynchronizeGroups4=Groups_TaskTRIM
4=TaskTRIM
SynchronizeGroups5=Groups_Tasktrim_2
5=Tasktrim_2
SynchronizeGroups6=Groups_Tasktrim_3
6=Tasktrim_3
SynchronizeGroups7=Groups_Tasktrim_4
7=Tasktrim_4
```

Update IDOL files (new IDOL locations only)

If while upgrading IDOL you changed its location, such as if you installed it on a different drive, you must manually copy some files from the previous installation so it can continue to access them:

- **Statistics `.db` files**. Copying these files from the previous version prevents IDOL from re-analyzing your repositories.
- **IDOL Category subfolders**. Copying these subfolders (`category, cluster, imex` and `taxonomy`) ensures that you can view your existing categories.

The previous versions of these items are located in the backup copy you created while preparing your environment for upgrade.

To update IDOL files

1. Copy all `.db` files from the following folders in your backup copy of `Indexer\Statistics` to the corresponding ones in `Program Files\Micro Focus\ControlPoint\Indexer\Statistics` of

your new IDOL installation:

- `dynterm`
- `indexqueuepath`
- `main`
- `modules`
- `nodetable`
- `numeric`
- `refindex`
- `secindex`
- `tagindex`

While copying files, overwrite any that exist in the new location.

2. Replace the following folders in `Program Files\Micro Focus\ControlPoint\Indexer\IDOL\category` of your new IDOL installation with the corresponding ones from your backup copy of `Indexer\IDOL\category`:

   - `category`
   - `cluster`
   - `imex`
   - `taxonomy`

Reconfigure the Documentum connector

If you deployed the Documentum connector, there are a few additional configurations to perform before using it.

Before you begin

Ensure you have the set of .Jar files that the Documentum connector requires. This task requires you to copy them into a specific folder.

> **NOTE:**
> ControlPoint does not provide these files. For information or help obtaining these files, contact the Documentum Support team.

To configure the Documentum connector

1. In a text editor, update the `Program Files\Micro Focus\ControlPoint\Indexer\Documentum Connector\dfc.properties` file to include your Documentum server's host and port:

   ```
   dfc.docbroker.host[0]=DocumentumHostName
   dfc.docbroker.port[0]=DocumentumPort
   ```

2. Copy the `dfc.properties` and `dfc.keystore` files from:

   `Program Files\Micro Focus\ControlPoint\Indexer\Documentum Connector`

   to the following two locations:

   - `Program Files\Micro Focus\ControlPoint\Indexer\OGS`
   - `Program Files\Micro Focus\ControlPoint\Commons\dfc`

3. Add the .Jar files required by the Documentum connector to the `Program Files\Micro Focus\ControlPoint\Commons\dfc` folder.

Integrate IDOL proxy updates

IDOL proxy updates in ControlPoint 5.4.1 required manual updates to all installed Connector and CFS configuration files. If you have not done so in a previous upgrade, update these files now as follows:

- **Connector configuration files**. Update the `[ViewServer]` port with VIEW server port number.
- **CFS configuration files**. Update the following:
  - `[MyIdolIndexer]` port with the DIH server port number.
  - `[Categorizer]` port with the CATEGORY server port number.

Perform post-upgrade steps

After the software upgrade completes, perform the following tasks:

1. Start the following services, in the specified order:
   - ControlPoint License Server
   - ControlPoint Content Engines
   - ControlPoint DataAnalysis Store
   - ControlPoint OGS
   - ControlPoint IDOL
   - ControlPoint MetaStore
2. If you are installing ControlPoint in a directory other than your previous installation directory, copy all `connector_`*`repositoryname`*`_datastore.db` files to the new installation directory.
3. When IDOL starts successfully, issue a **GETSTATUS** command to verify that all services are running and that all IDOL databases that were available before the upgrade are present.

   For HTTP: `http://`*`IDOLServerName`*`:9000/a=getstatus`

   For HTTPS: `https://`*`IDOLServerName`*`:9000/a=getstatus`

   > **NOTE:**
   > If one or more expected IDOL databases are not present, do not proceed to the next step

> before resolving the problem.

4. When the MetaStore service successfully starts, issue a **GETSTATUS** command to verify that all services are running and that all MetaStore databases (which were available before the upgrade) are present.

   ```
   http://MetaStoreServerName:4500/a=getstatus
   ```

   > **NOTE:**
   > If one or more expected MetaStore databases are not present, do not proceed to the next step before resolving the problem.

   If you are upgrading from ControlPoint 4.5 or earlier, then no MetaStore databases will be present at this point.

5. Start the connectors in the following order:

   a. Distributed Connector

   b. Connector Framework Services

   c. Connectors

   > **CAUTION:**
   > Do not start the ControlPoint Engine until the full upgrade process completes.

6. Enable scheduled tasks.

7. To view previously updated repositories in the ControlPoint Dashboard, clear your browser cache, restart the browser, and then navigate to the repositories.

   For specific details on clearing the cache for your browser, see your browser's documentation.

8. If you are upgrading Records Manager or TRIM connectors from ControlPoint 4.5 or 4.5.x, do the following through the ControlPoint Console:

   - On the Edit Target Location page of the **Administration** tab, edit the target locations to use the Content Manager connector and origin name.

     The **Connector Group** and **Origin Name** fields are located on the Edit Target Location page.

     For more information on editing target locations, see the *ControlPoint Administration Guide* or the Console Help Center.

   - On the Policy Phase page of the **Policy** tab, edit the associated policies' **Target locations** field to the new connector. This field may be blank due to the change in connectors.

   For more information on editing target location or policies, see the *ControlPoint Administration Guide* or the Console Help Center.

9. If you are upgrading from Micro Focus Storage Optimizer to ControlPoint, rescan your existing scanned repositories and reanalyze the existing analyzed repository to check the analysis summary.

Rescan repositories having custom properties

> **IMPORTANT:**
> This procedure applies only when upgrading to a ControlPoint 5.5 (or later) environment in which you have *not* performed the database conversions documented in the *ControlPoint Database Conversion Guide*.
>
> Skip this section if you have already converted your databases using the database conversion scripts provided with the ControlPoint software. For more information, see Consider ControlPoint database partitioning and file groups, on page 103 and the *ControlPoint Database Conversion Guide.*

If your ControlPoint environment has been configured with custom properties in repositories, additional steps are required after upgrading to 5.7.0.

For more reference material on configuring MetaStore for metadata ingestion, see Configure ControlPoint MetaStore for metadata ingestion, on page 135 or the *ControlPoint Administration Guide* and ControlPoint Console Help Center.

To support custom property mapping after upgrade

1. In SQL Server, configure data mapping using the `MetaStore.MapField` stored procedure.

   In this example, `AU_DOCUMENT_EDITOR_STRING` is the custom field that requires configuration.

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.MapField
   @SourceName            = 'AU_DOCUMENT_EDITOR_STRING',
   @TargetTable           = 'ControlPointMetadata.Additional',
   @TargetColumn          = 'LastEditedBy',
   @TargetTransform       = 'ToString'
   GO
   ```

2. Refresh document ingest, import and update sequences to support the mapped field in MetaStore.

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.ConfigureAddDocument
   EXEC MetaStore.ConfigureUpdateDocument
   EXEC ControlPointMetadata.ConfigureImportDocument
   GO
   ```

3. Restart the MetaStore service to utilize the refreshed sequences.

4. Rescan the repositories using the ControlPoint Dashboard.

Upgrade the Edge Filesystem connector

> **NOTE:**
> Skip this step if you do not have ControlPoint Edge Filesystem connectors in your environment.

To upgrade the Edge Filesystem connector

1. Back up the Edge Filesystem Connector `.config` and `.db` files.
2. Uninstall the Edge Filesystem Connector and then the archive service:
   - **Windows**. Uninstall the connector from the **Add/Remove Programs** option.
   - **Linux**. Change the directory to the `SORHELInstall` directory and run the following command:

     ```
     sudo sh sosetup.sh remove
     ```
3. Restart the system.
4. Install the new version of the Edge Filesystem Connector and archive service, then restart the system.

   For more information, see Install Edge Filesystem connector software.
5. After the system restarts, stop the Edge Filesystem Connector and copy the `task` section and any other manual modifications from the backup copy of the `.config` file to the new version of the `config` file. Also copy the `.db` files into the connector directory.
6. Start the Edge Filesystem Connector.

Configure the Edge Filesystem Connector for HTTPS

The Edge Filesystem Connector configuration file for Windows and Linux contains the following "EnableSSL" config section, which is disabled by default.

```
[EnableSSL]
SSLEnabled=false
```

If IDOL on the ControlPoint server is already using HTTPS, you should set `SSLEnabled` to `true` so the Edge Filesystem Connector appears in the connection list on the Repository page of the ControlPoint Dashboard.

All other HTTPS configurations to run the Edge Filesystem Connector on HTTPS are similar to the configuration of a regular Filesystem connector.

Chapter 14: Troubleshooting

This section provides troubleshooting information on the following:

- Databases, below
- Connectors
  - Edge Filesystem Connectors
  - SharePoint Connectors
  - Content Manager connectors, on page 126
- Proxy server interactions
- IDOL
  - Remote connectors
  - HTTPS setup for IDOL
  - IDOL distributed mirror / non- mirror setup
- Policy execution
- Diagnostics logs
  - Policy Execution Logs
  - Data Analysis logs
  - Statistics Export utility trace logs

Databases

This section describes some items for your ControlPoint databases.

Compact stored procedure

The Compact stored procedure takes more than several days to complete

Problem

When a Compact stored procedure job does not complete before the next scheduled run, then both instances of Compact will run. This slows down the database performance and may prevent ingestion and other operations from running.

Scenario

In the ControlPointMetaStore database, the Compact stored procedure runs once a week, and its purpose is two-fold:

- To delete any deleted repositories and their associated document-related information which exist in several tables.
- To remove unused hashes for deleted documents as a result of incremental scans or policy executions.

Solution

In the 5.7.0 release, several modifications have been made to the Compact stored procedure:

- Prevent more than one Compact job from running at a time.
- Always delete all repositories that are marked for deletion.
- Perform the cleanup of unused hashes on a limited number of repositories.

Two new settings have been introduced to the **ControlPointMetaStore.Metadata.Settings** table to control the Compact stored procedure. You can adjust the settings for your particular ControlPoint environment.

Setting Name	Description
Compact NoIngestTimeMins	The number of minutes of no ingestion activity to wait before unused hash cleanup runs. **Default:** 15 **NOTE:** This setting was hardcoded in previous releases.
CompactNumReposToCleanupUnusedHash	The maximum number of repositories to perform the cleanup of unused hashed cleanup on. **Default:** -1 (all repositories) **NOTE:** This setting was hardcoded in previous releases.

If you feel the Compact stored procedure is stuck and not completing after one week, you can clear the IsRunning flag.

To clear the flag, run the following SQL command

```
UPDATE [ControlPointMetaStore].[Metadata].[CompactLock] set IsRunning = 0
```

> **IMPORTANT:**
> Use caution when deciding to clear the **IsRunning** flag. Ensure that you have waited long enough for the Compact operation to complete.

If you find that the Compact job is taking longer than several days to complete and is affecting the operation of your ControlPoint environment, adjust the Compact stored procedure settings.

To adjust the Compact stored procedure settings

- Set the **CompactNumReposToCleanupUnusedHash** to 25 percent of the number of repositories.

Example

For 100 repositories, set the CompactNumReposToCleanupUnusedHash to 25.

```
update [ControlPointMetaStore].[MetaStore].[Setting] SET Value=5
where name='CompactNumReposToCleanupUnusedHash'
```

Connectors

KeyView import.log failure if File System connector framework account and share permissions are not sufficient

Symptom

For shares in certain secure Connector environments, files could not be viewed in the ControlPoint user interface.

The File System connector framework service `import.log` displayed failures in the IDOL KeyView subcomponent's ability to create temporary files and scan the share.

For example:

```
17/02/2017 10:42:19 [2] 70-Error: Failed to open KV stream: Unable to create temp
file [\\CR-WIN2008-61.swlab.net\FileShare2\Investigating network performance
issues.docx]
...
17/02/2017 10:42:19 [2] 70-Error: KV: FilterInterface.fpGetDocInfoFile() failed
```

Solution

- Ensure that the Connector Framework service and the Connector are configured to use the same service account.
- Ensure that the service account for the Connector and Connector Framework service has full rights to the Connector's share location.

CPCategory field is missing from the Advanced Properties during rescan of Connectors configured in SSL environments

Problem

When ControlPoint is enabled with SSL, you do not see CPCATEGORYTAG under the Advanced Properties of a document. Instead, you see CPDEFAULTCATEGORYTAG under IDOL Properties section in the Advanced Properties with the name of the parent category.

Scenario

The following scenario can exhibit the problem:

1. Create two content repositories with text (`.txt`) files.
2. Create a category, which is treated as the parent category.
3. Create another category under the parent with criteria for the file type .txt and use Repository 1 for training.
4. Edit Repository 2 and CP adds the Default category for the repository, as seen on the Analysis page, as the parent repository name.

Expected behavior

When a repository is assigned a category and a document satisfies a category criteria, the category name should be displayed for the CPCATEGORYTAG field in Advanced Properties.

Solution

The Category LUA file on the Connector Framework must be edited to include extra parameters for SSL communications in the environment.

To edit the LUA file on each Connector Framework

1. Navigate to the file location:

   ```
   Program Files\Micro
   Focus\ControlPoint\Indexer\<connectorFramework>\lua\Category.lua
   ```

   For example:

   ```
   Program Files\Micro Focus\ControlPoint\Indexer\FileSystem Connector
   Framework\lua\Category.lua
   ```

2. Search for the line:

   ```
   local categorize = document:getFieldValue("AUTN_CATEGORIZE",false)
   ```

3. Insert a new statement after the statement in step 2:

```
local sslParameters =
 {
       SSLMethod = "SSLV23",
 }
```

4. Edit the line:

   ```
   local xmlString = send_aci_action(hostName, port, "CategorySuggestFromText",
   {querytext = content, NumResults = maxCategories, textparse = "true",
   agentBoolean = "true", anylanguage = "true", FieldText = "NOT EXISTS
   {}:CONTAINERCAT AND NOT EXISTS{}:SHADOWCATEGORYOF"}, timeout, retries )
   ```

   to

   ```
   local xmlString = send_aci_action(hostName, port, "CategorySuggestFromText",
   {querytext = content, NumResults = maxCategories, textparse = "true",
   agentBoolean = "true", anylanguage = "true", FieldText = "NOT EXISTS
   {}:CONTAINERCAT AND NOT EXISTS{}:SHADOWCATEGORYOF"}, timeout, retries,
   sslParameters )
   ```

5. Save the file.

Stop and start the Connector services, in order:

1. Stop the Filesystem Connector service.
2. Stop and start the Filesystem Connector Framework service.
3. Start the Filesystem Connector service.

Temporary files accumulate in different locations when indexing repositories

Problem

When indexing repositories, temporary files can accumulate in different locations. This may impact performance, create out-of-disk conditions, or cause corruption in IDOL.

Symptoms

The following symptoms may occur:

- On Connectors, temporary files may accumulate in the Connector's `\Temp` directory.

  For example, on a File System connector:

  ```
  C:\Program Files\Micro Focus\ControlPoint\Indexer\FileSystem Connector\Temp
  ```

- In the operating system temporary files location, usually set in the environment variables, ControlPoint temporary files may accumulate.

  For example, in Windows:

  ```
  C:\Users\%serviceaccount%\AppData\Local\Temp
  ```

Solutions

For Connectors:

- Ensure that the Connector Framework service and the Connector are configured to use the same service account.
- Ensure that the service account for the Connector and Connector Framework service has full rights to the Connector's `\Temp` location.

For the operating system temporary location:

- Utilize all of the following parameters in all CFG framework files

  ```
  [ImportService]
  KeyviewTemporaryPath=<full path to CFS folder+specific folder>
  KeyviewDirectory=<full path to CFS folder+specific folder>
  WorkingDirectory=<full path to CFS folder+specific folder>
  ExtractDirectory=<full path to CFS folder+specific folder>
  ```

  where

  - `KeyviewTemporaryPath` is the path KeyView uses for extraction.
  - `WorkingDirectory` is the path where temporary files are extracted and then copied to the extracted directory when finished.
  - `ExtractDirectory` is the path used for the extracted files, for example, email attachments or zip files.

    > **NOTE:**
    > Temporary files are not deleted for particular KeyView processes if filtering fails. It may be related to particular files which need to be identified and analyzed in more detail.
    >
    > To proceed with further investigations, set the following parameters and ensure that you have enough space, because the original files will be kept.
    >
    > ```
    > [ImportService]
    > KeepExtractedFiles=true
    > [Logging]
    > LogLevel=full
    > ```
    >
    > This test should be processed with clean temporary folders and logs. When the fetch cycle is complete, attach all logs and temporary folders for analysis.

ControlPoint MetaStore service shows sustained very high memory and CPU usage and the Connector Framework service shows very high CPU usage

Problem

The documents ingested by a Connector from the source repository are processed by a Connector Framework service that then forwards them in batches to the ControlPoint MetaStore service. The metadata associated with each document varies considerably depending on, for example, whether eduction grammars have been selected for the source repository and how many educed fields are discovered within each document. If the total size of data in each batch of documents the Connector Framework service sends to the ControlPoint MetaStore service is very large, it can affect the CPU and memory usage of both services.

Symptoms

During ingestion, the Connector Framework service shows periods of very high CPU usage and the ControlPoint MetaStore service shows sustained very high CPU and memory usage.

Solutions

To prevent the Connector Framework and ControlPoint MetaStore services from using an excessively high amount of CPU and memory when you know in advance that document batches are likely to be large, decrease the batch size. For example, if it is known in advance that eduction grammars will be specified that will likely generate a lot of metadata for each document then you should decrease the batch size. To do so, modify the IndexBatchSize setting in the [Indexing] section of the Connector Framework service configuration file. This setting controls the number of documents per batch. For example, the following configures a maximum batch size of 10 documents per batch:

```
[Indexing]

IndexBatchSize=10
```

Edge Filesystem Connectors

Linux Edge Filesystem Connector in a distributed connector system does not belong to the same domain as ControlPoint

Problem

The Edge Filesystem Connector is installed on a Linux environment in a distributed connector system that does not belong to the same domain as ControlPoint.

Solution

1. Stop the Edge Filesystem Connector.
2. On the Distributed Connector system, edit the `hosts` file to add the Edge Filesystem Connector.
3. On the Distributed Connector system, ensure that ports 7210 and 7212 are enabled with the Edge Filesystem Connector machine, or turn off the firewall.
4. On the Edge Filesystem Connector system, ensure that ports 7210 and 7212 are enabled, or turn off the firewall.
5. Start the Edge Filesystem Connector.

Unable to remove the DeleteArchive Policy once it is applied

Problem

After you edit the Edge Connector repository and remove the Archive Policy or DeleteArchive policy and rescan the repository, you will see that the removed policies are still in effect.

Solution

Remove the `LuaCache.cache` from the Edge Connector directory and then rescan.

SharePoint Connectors

`EncryptACLEntries=False` does not work if it is in the `[Connector]` section.

Problem

`EncryptACLEntries=False` does not work if it is in the `[Connector]` section.

Affects

All SharePoint connectors.

Solution

The `EncryptACLEntries` parameter must be set in the `[TaskName]` section for the Sharepoint Connectors. If the parameter is in the `[Connector]`section, it will not work as expected.

Content Manager connectors

Insert into Content Manager fails when document title exceeds 128 characters

Symptom

Items whose titles exceed 128 characters fail to be ingested into Content Manager through a ControlPoint policy.

The policy logs may display error messages in the following manner:

```
30-Normal: FETCHTASKS: Inserting 1 document
70-Error: Insert Failed": file specified for insertion doesn't exist.
```

Problem

This is a Windows limitation in the overall length of a file path plus file name.

When an insert into a Content Manager location is performed, two more levels of folders are appended to the file name by the ControlPoint connector software. In addition, the actual file name is prefixed with additional characters when it is inserted.

This causes long file names or file paths to exceed the Windows MAX_PATH=260 limitation.

Workaround

The workaround is to create a new policy for the insert action and to create new policy-based temporary location using a shorter path.

For more information on creating a new policy with a policy-based temporary location, see the *ControlPoint Administration Guide* or Console help system.

Proxy server interactions

Proxy server blocks traffic of Data Analysis service

Problem

The system was routing all calls to the Data Analysis service through a proxy server, which was blocking certain calls.

Solution

1. Open the `\Program Files\Micro Focus\ControlPoint\DataAnalysis\Service\web.config` file.
2. Add the following section between the `</system.web>` and `<system.ServiceModel>` sections:

```
<system.net>
 <defaultProxy>
  <bypasslist>
   <add address="1.2.3.4"/>
   <add address="5.6.7.8"/>
  </bypasslist>
 </defaultProxy>
</system.net>
```

3. Save the file.

4. Reset IIS to allow the environment to load the changes.

IDOL

This section provides troubleshooting information for the IDOL components.

Remote connectors

Preview of items on remote connectors

Problem

In the Console, when you attempt to preview a document residing on a remote connector, the document is not displayed.

Scenario

By default, the IDOL component runs under the Local System identity. This works for files that reside on shares on the same system as the IDOL component.

However, when IDOL attempts to access a file in its physical location on a remote connector server, it will fail unless the computer account of the IDOL server is given permission to that share.

Solution

- Ensure that the IDOL components and the Connector services are configured to use the same service account.
- Ensure that the service account has full rights to the Connector's share location.

HTTPS setup for IDOL

Verify HTTPS setup for IDOL

Description

Verify that all the ports are up and running with HTTPS.

Solution

1. Modify the configuration files for connectors and IDOL with SSL settings.
2. Verify that all the ports are up and running with HTTPS. Run the following commands:
    a. DC port : `https://localhost:7000/a=getstatus`
    b. File system connector : `https://localhost:7200/a=getstatus`
    c. IDOL port: `https://localhost:9000/a=getstatus`
        i. Category DRE: `https://localhost:9020/a=getstatus`
        ii. Community: `https://localhost:9030/a=getstatus`
        iii. agentstore: `https://localhost:9050/a=getstatus`
        iv. DAH: `https://localhost:9060/a=getstatus`
        v. DIH :`https://localhost:9070/a=getstatus`

        ```
        <engine>
                <number>0</number>
                <group>0</group>
                <host>TestVM</host>
                <port>32000</port>
                <status>UP</status>
                <updateonly>false</updateonly>
                <weight>1</weight>
                <disabled>false</disabled>
        </engine>
        ```

        vi. Verify the status of the engine. It should be up and running.

        View: `https://localhost:9080/a=getstatus`
3. Content Engine : `https://localhost:32000/a=getstatus`
4. DataAnalysis DataStore: `https://localhost:31500/a=getstatus`
5. Similarly, for other connectors that are installed, perform a check on the respective port numbers.

    Port numbers can be found in the configuration file under the `[Server]` section.

Repository page does not list registered repositories after changing the IDOL setup on HTTPS

Problem

You have registered repositories, but after changing the IDOL setup on HTTPS, the repository page is not listing the registered repositories.

Description

This issue could happen in the following circumstances:

1. A caching issue in the browser.
2. A repository created with a connector, which is not configured with SSL settings. The repository page makes a call to `ListConnectors` and waits for all connectors with repositories to return.

Solutions

- Clear the browser cache and reload the page.
- Verify the SSL settings in the connector configuration file.

ControlPoint Configuration Manager cannot establish trust relationship

Problem

The ControlPoint Configuration Manager displays the following error message when you click **Deploy**.

```
Could not establish trust relationship for the SSL / TLS secure channel
```

Solution

1. Ensure that the CA certificate for IDOL is imported to the Trusted root authority certificate store on your local computer.
2. Double click the certificate file to verify the details of the Server certificate for IDOL.
3. Ensure that ControlPoint Configuration Manager has the same name as provided in the certificate on the host for DataAnalysis, IDOL server settings and for MetaStore.

IDOL distributed mirror / non- mirror setup

DAH stops working after the Content Engine stops running

Problem

DAH stops working after the Content Engine stops running.

Description

DAH requires at least one content engine to be running. If only one content engine is running and manages DAH, then DAH will not work after that content engine stops running. The health check does not check those components that are not configured in the IDOL proxy server configuration file.

Solution

> **NOTE:**
>
> **Micro Focus recommends that you set up more than one content engine under each second-tier DIH/DAH.**

To temporarily resolve the issue

1. Check if there are any components under `<components>` that are not running.

   `http://IDOL_PROXY_SERVER_HOST:9000/a=getstatus`

2. Verify the DIH status:

   `http://STANDALONE_DIH_INSTALLATION_HOST:SERVER_PORT/a=getstatus`

3. Verify the DAH status:

   `http://STANDALONE_DIH_INSTALLATION_HOST:SERVER_PORT/a=getstatus`

4. Verify the content engine status:

   `http://CONTENT_ENGINE_HOST:SERVER_PORT/a=getstatus`

5. Locate the stopped content engine and start it.

Policy execution

This section describes some items for ControlPoint policy executions.

Documents remain at 'Executing' state

Problem

Residual locks in the ExecutionLog table caused by engine crashes can cause documents to be stuck in the 'Executing' state.

Solution

To enable the clearing of locks on the ExecutionLog table at Engine startup, enable the ClearLocksAtStartUp option in the `ControlPointtimer.exe.config` file.

1. Navigate to `\Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPointTimer.exe.config` in the production environment.

2. Open the file in a text editor and enable the `ClearLocksAtStartUp` setting.

3. Save the file.

   For more information on individual settings in `ControlPointtimer.exe.config`, see the appendixes in the *ControlPoint Best Practice Guide*.

4. Restart the ControlPoint Engine service.

Policy execution phase fails to acquire locks on any items

Problem

Items are stuck in the ExecutionLog table and the policy execution log shows the policy execution phase failed to acquire locks on any items.

Symptoms

The log displays `No items to process` in the trace logging mode.

Scenarios and solutions

Scenario	Solutions
To avoid overloading the connector, the engine stops sending more document actions to the connector if there are too many items in State 30 (pending callback) for each connector group.	You need to wait until the connector callback are processed.
Restarting the engine caused some locks to be left on certain items.	See Documents remain at 'Executing' state.
Erroneous GlobalSettings table settings.	For more information on global settings, see the *ControlPoint Best Practice Guide*.

Delay in showing failed items as 'Failed' in the policy details page

Problem

There is a delay in showing failed items as Failed on the Policy Details page, even if the items in ExecutionLog table show 'items received issue' messages from the connector.

Explanation

This is not an issue and it is expected behavior.

The Process Issues scheduled task processes failed callbacks and shows the failed results in the UI and displays the issue message in the Issues Management page in the Administration Dashboard.

When you specify to abort or retry the issue, the scheduled task must run once before it will process your requests to retry or abort the issue.

If you specify to abort the policy execution for some documents, the documents will be unassigned from the policy.

If you specify to retry, after the scheduled task is run, the Execute Policies scheduled task will need to run to retry the policy execution for those documents.

Solution

The Process Issues scheduled task can be set to run in a higher frequency to avoid the delay.

Communications errors attempting to execute an action

Problem

The policy execution logs display one of several communications errors while attempting to execute an action:

- `A communications error has occurred attempting to execute an action`
- `Unable to connect to the remote server`

Solution

Verify that both the MetaStore and IDOL services are running. They need to be running for the policy execution engine to function.

Diagnostics logs

This section provides information on the following diagnostics logs for ControlPoint.

Policy Execution Logs

As part of investigation and diagnostics of policy execution issues, you can change the logging level of the ControlPoint Engine. Logging levels can be changed with the Configuration Manager or by editing the configuration file.

To change the logging level with Configuration Manager

1. Open the ControlPoint Configuration Manager.
2. In the **Engine** section, click **Logging**.

   The Logging tab opens.
3. Click **Execute Policies** and select a logging level setting from the **Log Level** list. The default level is Information. The available logging levels are:
   - All

     > **NOTE:**
     > Micro Focus recommends to set the logging level to **All** when your ControlPoint environment is encountering issues with policy execution. This level gathers the most diagnostic information.

- Verbose
- Information
- Warning
- Error
- Off

4. Click **Deploy.**

   ControlPoint redeploys.

To change the logging level in the configuration file

1. Navigate to `\Program Files\Micro Focus\ControlPoint\Engine\Scheduler\ControlPointTimer.exe.config` in the production environment.
2. Edit one of the following settings in the `<categorySources>` section of the configuration file to the desired logging level:
   - `<add switchValue="Information" name="Execute Policies">`

     > **NOTE:** This setting applies the logging level across all policy execution schedules.

     For example:

     `<add switchValue="All" name="Execute Policies">`
   - `<add switchValue="Information" name="Execute Policies (High)">`
   - `<add switchValue="Information" name="Execute Policies (Normal)">`
   - `<add switchValue="Information" name="Execute Policies (Low)">`

     The above three settings apply the logging level to each schedule frequency level individually.
3. Save the file.
4. Restart the **ControlPoint Engine** service.

   The configuration changes take effect.

Data Analysis logs

Data Analysis Service and Data Analysis Controller logs have been improved so you can use them as part of investigation and diagnostics of Data Analysis issues.

Data Analysis service logs

Logs for the Data Analysis service can be found at the following location:

```
\Program Files\Micro Focus\ControlPoint\DataAnalysis\Service\Logs\Logs.log
```

> **NOTE:**
> The Data Analysis service logs contain only errors.

Data Analysis Controller logs

Logs for the Data Analysis Controller have been improved for events for Analysis jobs.

- Error messages - for events such as OnFailed or OnIssues.
- Informational messages - for events such as OnProgressUpdate, OnJobComplete, OnJobCancelled, and so on.

Logs for the Data Analysis Controller can be found at the following location:

```
\Program Files\Micro Focus\ControlPoint\DataAnalysis\Controller\Logs\controller_
<GUID>.log
```

Statistics Export utility trace logs

As part of investigation and diagnostics of Statistics Export issues, you can enable a System.Diagnostics trace log in the Statistics Export utility.

To enable trace logs

1. Edit the Statistics Export utility configuration file, which is available at the following location:

   ```
   ControlPoint x64\ControlPoint Utilities\Statistics Export
   Utility\ControlPointStatisticsUtility.exe.config
   ```

2. In the `<Configuration>` section, add the following parameters:

   ```
   <!--
   System.diagnostics-- to be removed once problem is resolved
   -->
     <system.diagnostics>
      <trace autoflush="false" indentsize="4">
        <listeners>
           <add name="myListener"
   type="System.Diagnostics.TextWriterTraceListener"
   initializeData="TextWriterOutput.log" />
           <remove name="Default" />
        </listeners>
      </trace>
     </system.diagnostics>
   ```

3. Save the file.

4. Run the Statistics Export utility.

   The utility runs with an increased level of logging.

Chapter 15: Configure ControlPoint MetaStore for metadata ingestion

This section provides an overview of the steps necessary for configuring ControlPoint MetaStore to capture additional data during document ingestion. A set of examples will be used to show where and how this data can be captured.

Data Mapping

Document metadata is captured by a list of instructions dynamically generated based on information held in the **MetaStore.MapTable** and **MetaStore.MapColumn** tables.

A stored procedure named **MetaStore.MapField** handles the complexity of these mapping tables. Run this stored procedure to register data mappings for any additional document metadata to be captured into ControlPoint MetaStore.

MetaStore.MapColumn

Field	Description
GroupNumber	Used when a source field is mapped to multiple times the same target table. For example, use GroupNumber for a complex field such as “ADDRESS” with a value {CITY=”Boston”, NUMBER=10, STREET=”Main”}. The inclusion of the same GroupNumber for the separate address parts keeps the information together within

Field	Description
	the one row in the target table. Default: 1
SourceName	The field to be extracted from the source document.
ExtractPath	The value of this field is typically null, except when a value is to be parsed from the source field.
TargetColumn	The name of the column where the captured value is to be stored.
TargetTransform	The type of transformation to be used before storing the captured value.
TargetTransformParams	When a transformation requires additional configuration, the configuration can be placed in the TargetTransformParams field. The value of this field is typically null.
SupportingTable	The name of the target hash table, if any. This field should be populated when the extracted data is to be hashed into a separate hash table.
CanUpdate	Indicates whether the information captured to the target column can be modified after creation.
Inherit	Indicates whether the information captured to the target column, when modified, should be captured to child documents. Examples of such inheritance would be security.
AlternativeFieldSource	The alternate field to be extracted from the source document when SourceName cannot be extracted.
AlternativeFieldSourceTransform	The alternate transform to be used when AlternativeFieldSource is specified.

MetaStore.MapTable

Field	Description
GroupNumber	See GroupNumber
SourceName	See SourceName
TargetType	The TargetType values are as follows: • “MVF” if the table can capture multiple values for the same

Field	Description
	document. For example, more than one row can exist for a given document. - "SVF" if the table can capture single values for the same document. For example, a maximum of one row can exist per document.
TargetTable	The name of the table to populate.

TargetMVPSuffix	Supports the extraction of a suffix from the source field name to further populate a column in the target table.
	For example, assuming data exists in the source document like:
	CPPATH1=\\c\
	CPPATH2=\\c\test\
	CPPATH3=\\c\test\folder\
	Then it is possible to map CPPATH* as the SourceName and indicate that the value extract from * should be placed in the field configured by TargetMVPSuffix, for example "Level".

TargetMVPSuffixTransform	Specifies the transform to use when extracting a suffix. See TargetMVPSuffix.

MetaStore.MapField

The stored procedure **MetaStore.MapField** handles the complexity of the mapping tables by defaulting a number of optional parameters to typical values.

Parameter Name	Required	Default Value
@GroupNumber	No	(1), defaults to a single field mapping
@SourceName	Yes	
@TargetType	No	('SVF') , defaulting Single-valued Field(SVF)
@TargetTable	Yes	
@TargetMVPSuffix	No	(NULL), defaults to not specified
@TargetMVPSuffixTransform	No	(NULL), defaults to not specified
@ExtractPath	No	(NULL), defaults to not specified
@TargetColumn	Yes	
@TargetTransform	Yes	

Parameter Name	Required	Default Value
@TargetTransformParams	No	(NULL), defaults to not specified
@SupportingTable	No	(NULL), defaults to not specified
@CanUpdate	No	(1) , defaults to TRUE
@Inherit	No	(0), defaults to FALSE
@AlternativeFieldSource	No	(NULL), defaults to not specified
@AlternativeFieldSourceTransform	No	(NULL) , defaulting to not specified

Additional data capture

ControlPoint MetaStore includes the database schemas, **Metadata** and **ControlPointMetadata**.

Metadata and the corresponding tables (for example, **Metadata.Document**) are used for the default set of captured properties only. Extensions to this default set must be captured into the **ControlPointMetadata** schema instead.

- If the additional data to be captured is a single value field (SVF), then it must be captured in the **ControlPointMetadata.Additional table**.
- If the additional data to be captured is a multivalue field (MVF) instead, then a new table must be created within the **ControlPointMetadata** schema to accommodate the multiple values for each document.

All multivalue tables should also include a repository identifier and a MD5 hash of the document DREREFERENCE. **ControlPointMetadata** also comprise of hash table types. These tables are utilized to reduce the storage footprint for information that is readily repeated. Each hash table has the same basic format comprising a repository identifier, a raw value and a MD5 hash of the raw value.

Examples

This section documents the steps required to capture additional metadata into ControlPoint MetaStore. It uses a number of examples to do so and includes corresponding SQL statements that need to be loaded and executed.

The examples make use of metadata fields `AU_DOCUMENT_EDITOR_STRING` and `AU_DOCUMENT_AUTHOR_STRIN`G to illustrate the differences between SVF and MVF table setup.

For any new field that is added to metadata, it needs to be added to the appropriate field type in `FieldTypeInfo`.

> **NOTE:**
> `AU_DOCUMENT_AUTHOR_STRING` is already captured in ControlPoint MetaStore by default.

Example 1: Single value for the same document

Documents comprise a single `AU_DOCUMENT_EDITOR_STRING` value.

This will be recorded in the **ControlPointMetadata.Additional** table in a new field named **LastEditedBy**. Data mappings must be configured to instruct the MetaStore service on how to capture and record this field value during document ingestion.

To map data

1. In SQL Server, add a new column to the **ControlPointMetadata.Additional** table to support the capture of the `AU_DOCUMENT_EDITOR_STRING` string value:

   ```
   USE ControlPointMetaStore
   GO
   ALTER TABLE ControlPointMetadata.Additional
   ADD LastEditedBy NVARCHAR(255) NULL
   GO
   ```

2. Configure `AU_DOCUMENT_EDITOR_STRING` data mapping using the `MetaStore.MapField` stored procedure:

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.MapField
   @SourceName            = 'AU_DOCUMENT_EDITOR_STRING',
   @TargetTable           = 'ControlPointMetadata.Additional',
   @TargetColumn          = 'LastEditedBy',
   @TargetTransform       = 'ToString'
   GO
   ```

3. Refresh document ingest, import and update sequences to support the newly captured `AU_DOCUMENT_EDITOR_STRING` field in MetaStore.

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.ConfigureAddDocument
   EXEC MetaStore.ConfigureUpdateDocument
   EXEC ControlPointMetadata.ConfigureImportDocument
   GO
   ```

4. Restart the ControlPoint MetaStore service to utilize the refreshed sequences.

5. If you add custom fields in Insert Configuration, you must restart the ControlPoint Engine.

Example 2: Single value hash for the same document

Documents comprise a single `AU_DOCUMENT_EDITOR_STRING` value. This example assumes that this string value is readily repeated throughout.

A new hash table, **ControlPointMetadata.EditorHash**, will be created to help reduce storage footprint.

A MD5 hash of `AU_DOCUMENT_EDITOR_STRING` will be recorded in the **ControlPointMetadata.Additional** table in a new field named **LastEditedByHash**. Data mappings must be configured to instruct the MetaStore service on how to capture and record this field value during document ingestion

To map data

1. Create a new hash table, **ControlPointMetadata.EditorHash**, to support the `AU_DOCUMENT_EDITOR_STRING` string value and MD5 hash value mappings.

   ```
   USE ControlPointMetaStore
   GO
   IF OBJECT_ID(N'ControlPointMetadata.EditorHash', N'U') IS NULL
   BEGIN
   CREATE TABLE ControlPointMetadata.EditorHash
   (
        RepositoryId   INTEGER        NOT NULL,
        HashKey    BINARY(8)          NOT NULL,
        Value          NVARCHAR(255)      NOT NULL,
        CONSTRAINT  ControlPointMetadata_EditorHash_PK
        PRIMARY KEY NONCLUSTERED(RepositoryId, HashKey) WITH FILLFACTOR = 80
   )
   END
   GO
   ```

2. Add a new column to the **ControlPointMetadata.Additional** table to support the MD5 hash of the `AU_DOCUMENT_EDITOR_STRING` string value.

   ```
   USE ControlPointMetaStore
   GO
   ALTER TABLE ControlPointMetadata.Additional
   ADD LastEditedByHash BINARY(8) NULL
   GO
   ```

3. Create a foreign key relationship from the source table to the corresponding hash table.

   ```
   USE ControlPointMetaStore
   GO
   ALTER TABLE ControlPointMetadata.Additional
   ADD CONSTRAINT  ControlPointMetadata_Additional_FK_LastEditedByHash
   FOREIGN KEY (RepositoryId, LastEditedByHash)
   REFERENCES ControlPointMetadata.EditorHash(RepositoryId, HashKey)
   GO
   ```

4. Configure `AU_DOCUMENT_EDITOR_STRING` data mapping using the `MetaStore.MapField` stored procedure.

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.MapField
   @SourceName            = 'AU_DOCUMENT_EDITOR_STRING',
   @TargetTable           = 'ControlPointMetadata.Additional',
   ```

```
@TargetType             = 'SVF',
@TargetColumn           = 'LastEditedByHash',
@TargetTransform        = 'HashValue',
@SupportingTable        = 'ControlPointMetadata.EditorHash'
GO
```

5. Refresh document ingest, import and update sequences to support the newly captured AU_DOCUMENT_EDITOR_STRING field in ControlPoint MetaStore.

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.ConfigureAddDocument
   EXEC MetaStore.ConfigureUpdateDocument
   EXEC ControlPointMetadata.ConfigureImportDocument
   GO
   ```

6. Restart the ControlPoint MetaStore service to utilize the refreshed sequences.

7. If you add custom fields in Insert Configuration, you must restart the ControlPoint Engine.

Example 3: Multiple values for the same document

Documents can comprise multiple AU_DOCUMENT_AUTHOR_STRING values. These will be recorded in the **ControlPointMetadata.Author** table. Data mappings must be configured to instruct the MetaStore service on how to capture and record these field values during document ingestion.

To map data

1. Create a table, **ControlPointMetadata.Author** to record all AU_DOCUMENT_AUTHOR_STRING values for each document.

   ```
   USE ControlPointMetaStore
   GO
   IF OBJECT_ID(N'ControlPointMetadata.Author', N'U') IS NULL
   BEGIN
   CREATE TABLE ControlPointMetadata.Author
   (
          RepositoryId            INTEGER         NOT NULL,
          DocKey                  BINARY(8)               NOT NULL,
          Author                  NVARCHAR(255)           NOT NULL
          CONSTRAINT  ControlPointMetadata_Author_PK
          PRIMARY KEY CLUSTERED(RepositoryId, DocKey, Author)
          WITH FILLFACTOR = 80
   )
   END
   GO
   ```

2. Configure AU_DOCUMENT_AUTHOR_STRING data mapping using the MetaStore.MapField stored procedure.

```
USE ControlPointMetaStore
GO
EXEC MetaStore.MapField
       @SourceName                     = 'AU_DOCUMENT_AUTHOR_STRING',
       @TargetTable                    = 'ControlPointMetadata.Author',
       @TargetType                     = 'MVF',
       @TargetColumn                   = 'Author',
       @TargetTransform               = 'ToString'
GO
```

3. Refresh document ingest, import and update sequences to support the newly captured `AU_DOCUMENT_AUTHOR_STRING` field in MetaStore.

```
USE ControlPointMetaStore
GO
EXEC MetaStore.ConfigureAddDocument
EXEC MetaStore.ConfigureUpdateDocument
EXEC ControlPointMetadata.ConfigureImportDocument
GO
```

4. Restart the ControlPoint MetaStore service to utilize the refreshed sequences.

5. If you add custom fields in Insert Configuration, you must restart the ControlPoint Engine.

Example 4: Multiple values hashed for the same document

Documents can comprise multiple `AU_DOCUMENT_AUTHOR_STRING` values. This example assumes that these string values are readily repeated throughout.

A new hash table, **ControlPointMetadata.AuthorHash**, will be created to help reduce storage footprint. Hashed `AU_DOCUMENT_AUTHOR_STRING` values for each document will be stored in **ControlPointMetadata.Author**. Data mappings need configured to instruct the MetaStore service on how to capture and record these field values during document ingestion.

To map data

1. Create a new hash table, **ControlPointMetadata.AuthorHash**, to support the `AU_DOCUMENT_AUTHOR_STRING` string value and MD5 hash value mappings.

```
USE ControlPointMetaStore
GO
IF OBJECT_ID(N'ControlPointMetadata.AuthorHash', N'U') IS NULL
BEGIN
CREATE TABLE ControlPointMetadata.AuthorHash
(
       RepositoryId    INTEGER         NOT NULL,
       HashKey BINARY(8)               NOT NULL,
       Value           NVARCHAR(255)           NOT NULL,
       CONSTRAINT  ControlPointMetadata_AuthorHash_PK
       PRIMARY KEY NONCLUSTERED(RepositoryId, HashKey) WITH FILLFACTOR = 80
)
END
GO
```

2. Create a table, **ControlPointMetadata.Author** to record all MD5 hashes for `AU_DOCUMENT_AUTHOR_STRING` values for each document.

   ```
   USE ControlPointMetaStore
   GO
   IF OBJECT_ID(N'ControlPointMetadata.Author', N'U') IS NULL
   BEGIN
   CREATE TABLE ControlPointMetadata.Author
   (
          RepositoryId            INTEGER         NOT NULL,
          DocKey                  BINARY(8)               NOT NULL,
          AuthorHash              BINARY(8)               NOT NULL
          CONSTRAINT  ControlPointMetadata_Author_PK
          PRIMARY KEY CLUSTERED(RepositoryId, DocKey, AuthorHash)
          WITH FILLFACTOR = 80,
          CONSTRAINT  ControlPointMetadata_Author_FK_AuthorHash
          FOREIGN KEY (RepositoryId, AuthorHash)
          REFERENCES ControlPointMetadata.AuthorHash(RepositoryId, HashKey)
   )
   END
   GO
   ```

3. Configure `AU_DOCUMENT_AUTHOR_STRING` data mapping using the `MetaStore.MapField` stored procedure.

   ```
   USE ControlPointMetaStore
   GO
   EXEC MetaStore.MapField
          @SourceName                     = 'AU_DOCUMENT_AUTHOR_STRING',
          @TargetTable                    = 'ControlPointMetadata.Author',
          @TargetType                     = 'MVF',
          @TargetColumn                   = 'AuthorHash',
          @TargetTransform                = 'HashValue',
          @SupportingTable                = 'ControlPointMetadata.AuthorHash'
   GO
   ```

4. Refresh document ingest, import and update sequences to support the newly captured `AU_DOCUMENT_AUTHOR_STRING` field in MetaStore.
5. Restart the ControlPoint MetaStore service to utilize the refreshed sequences.
6. If you add custom fields in Insert Configuration, you must restart the ControlPoint Engine.

Existing data and re-ingestion

The steps outlined in the examples ensure that the new field, `AU_DOCUMENT_EDITOR_STRING`, is captured for new document files being ingested.

Existing data will need to be re-ingested in order to capture values for this new metadata field.

> **NOTE:**
> If you add custom fields in Insert Configuration, you must restart the ControlPoint Engine so that ControlPoint picks up the new custom fields.

To re-ingest data

- select **Re-Index Repository** on the Repositories dashboard.
- remove the connector database file from the connector installation directory, followed by a connector service restart.

Field text and advanced properties

The new metadata has been captured into ControlPoint MetaStore through document ingestion. In order to make use of this new data for field text purposes and to return as part of the Properties/Advanced Properties within the ControlPoint Dashboard, a number of further changes are required.

Field Text

In order to make the new field available within the category field text builder, a new Rule Builder Fields mapping must be configured within the ControlPoint Administration Dashboard.

To support this, a database view modification must be made to ensure the new field is available from the list of rule builder available fields in the ControlPoint UI.

To add a new field within the category field text builder

1. Open SQL Management Studio and expand **Databases > ControlPointMetaStore > Views**.

   a. Select **MetaStorePro.FieldTypeInfo**, right click and click **Script View as > Alter To > New Query Editor Window**.

      > **NOTE:**
      > For any new field that is added, it needs to be added to the appropriate field type in `FieldTypeInfo`.

      Examples:

      - A new field, `AU_DOCUMENT_EDITOR_STRING`, must be appended to both 'Match' and 'RulesBuilderInc' FieldType list of supported fields and then executed.

- A new date field must be appended to both the ‘NumericDate’ and ‘RulesBuilderInc’ FieldType list of supported fields and then executed.

2. On the ControlPoint Administration dashboard, click **Settings**.

   The Settings page opens.

   a. On the General tab, select **Fields**. In the Rule Builder section, add a new field by clicking **Add** (+).

      The Add New Field page opens.

   b. Enter a name for the new field in the **Display Name** box.

   c. Select the new metadata field from the **Fields** list.

   d. Click **Add**.

      After the new field mapping is added, the new metadata captured into MetaStore can be used for category training purposes.

Properties and Advanced Properties

The new field is available within the ControlPoint UI in the Advanced Properties list after you restart Internet Information Service (IIS).

To configure a new property mapping

1. On the ControlPoint Administration dashboard, click **Settings.**

   The Settings page opens.

2. On the General tab, select **Fields**. In the Item Properties section, add a new item property by clicking **Add** (+).

   The Add Property page opens.

3. Enter a name for the new property in the **Display Name** box.

4. Select the type from the **Type** list.

5. Select the new metadata field from the **Fields** list.

6. Click **Add**.

Chapter 16: ControlPoint multi-domain configuration

This chapter describes the procedure to set up and use the multi-domain feature.

To configure the ControlPoint domain feature

1. Prepare your environment with all required prerequisites.
2. Configure multi-domain support.
3. Test your multi-domain configuration

Prerequisites

This section lists the prerequisites for setting up the multi-domain feature.

1. Deploy ControlPoint on machines under primary domain only.
2. For any machine under non-primary domain, deploy only the Connector and Connector framework.
3. Ensure that a two-way trust relationship exists between the primary domain and all non-primary domains. You must also ensure that all the primary domain user s that use ControlPoint, can query all non-primary domains LDAP/AD.
4. For all non-primary domains, create a domain user to install and run Connector and Connector framework. This user should able to query LDAP/AD to get all domain user information.
5. Ensure all machines with CointolPoint or IDOL components installed can communicate with each other.
6. In order to move files successfully across different domains, ensure the temp location is accessible by all domain users that runs Connector.
7. Ensure the domain name and domain root **DN** are ready to use. For example, for domain `cp.test.com`, the
   domain name is `cp` and the domain root DN is `DC=cp,DC=test,DC=com`.
8. To scan the source files, it is strongly recommended to use Connector under same domain .

Configure multi-domain support

To configure multi-domain support

1. In the ControlPoint user interface, click **Administration** -> **Additional Domain Registration**, and the set the non-primary domain for ControlPoint with domain name and domain root DN.

2. Install the Connector and Connector frameworks on machines under non-primary domain. Ensure that you copy the **commons** folder to the installed machine and update the following parameters with correct information in Connector configuration file. You must also ensure that this machine can communicate with all other machines that appear in the configuration.

```
[License]

LicenseServerHost=HOSTNAME  //in Primary Domain

.....

[DistributedConnector]

Host=HOSTNAME               //in Primary Domain

Port=PORT_NUMBER

ConnectorGroup=Filesystem_DOMAINNAME

.....

[Ingestion]

IngestHost=CFS_HOSTNAME  //in Secondary Domain

IngestPort=PORT_NUMBER

.....

[Connector]

FieldNameDictionaryPath=COMMONS_FOLDER_PATH\fieldNormalizationData/connectors_dictionary.xml

.....

[ImportService]

KeyviewDirectory=COMMONS_FOLDER_PATH\filters

.....

[FetchTasks]

PathRegEx=.*

ForceDelete=true

MappedSecurity=True

GroupServerHost=OGS_HOSTNAME  //in Primary Domain

GroupServerPort=OGS_PORT

GroupServerRepository=LDAP

.....

[ViewServer]

EnableViewServer=TRUE
```

```
Host=VIEWER_HOSTNAME    //in Secondary Domain

Port=PORT_NUMBER
```

3. Update the following parameters in the CFS configuration files.

```
[License]

LicenseServerHost=HOSTNAME  //in Primary Domain

.....

[ImportService]

KeyviewDirectory=COMMONS_FOLDER_PATH\filters

FieldNameDictionaryPath=COMMONS_FOLDER_PATH\fieldNormalizationData/connectors_dictionary.xml

.....

[MyIdolIndexer]

DREHost=HOSTNAME  //in Primary Domain

ACIPort=PORT

[MyMetastoreIndexer]

Type=Metastore

Host=HOSTNAME   //in Primary Domain

Port=PORT

[Categorizer]

DREHost=HOSTNAME    //in Primary Domain

ACIPort=PORT
```

4. Set OGS to support multiple domains. The file contains more than one LDAP section so you must use `[LDAP]` for the name of the combined repository. It returns combined results from each `[LDAPX]` section.

   Also, the order set for the `GroupServerDefaultRepositories` is very important. Ensure that you add the individual repositories before the combined one. For example:

```
GroupServerDefaultRepositories=LDAP1,LDAP2

Number=3

0=LDAP1

1=LDAP2

2=LDAP

[LDAP]

GroupServerJobType=LDAP
```

```
GroupServerSections=LDAP1,LDAP2

GroupServerStartDelaySecs=10

GroupServerCycles=-1

[LDAP1]

GroupServerLibrary=ogs_ldap.dll

LDAPServer=LDAP_SERVER_HOST

LDAPPort=PORT

LDAPBase=LDAP_BASE

LDAPType=MAD

LDAPUsername=LDAP_DISTINGUISHED_NAME (e.g., LDAPUsername=CN=CPADMIN
CPADMIN,DC=qa,DC=englab,DC=local)

LDAPPassword=PASSWORD

LDAPBindMethod=NEGOTIATE

GroupServerAllUserGroups=NT AUTHORITY\AUTHENTICATED USERS

GroupServerCycles=-1

UseDomainPrefix=True

DomainPrefix=DOMAIN_NAME     //e.g., Primary Domain

[LDAP2]

GroupServerLibrary=ogs_ldap.dll

LDAPServer=LDAP_SERVER_HOST

LDAPPort=PORT

LDAPBase=LDAP_BASE

LDAPType=MAD

LDAPUsername=LDAP_DISTINGUISHED_NAME

LDAPPassword=PASSWORD

LDAPBindMethod=NEGOTIATE

GroupServerAllUserGroups=NT AUTHORITY\AUTHENTICATED USERS

GroupServerCycles=-1

UseDomainPrefix=True

DomainPrefix=DOMAIN_NAME    //e.g., Secondary Domain
```

5. Restart the OGS service and ensure the OGS can create a database for each `[LDAPX]`

6. Create a non-primary domain through the ControlPoint admin interface. There is cache for domain information, which gets updated periodically. You can change the timeout value in the

ControlPoint database. If you want the change to be taken effect immediately instead of waiting for cache timeout, restart IIS.

Test your multi-domain configuration

After set up, Micro Focus strongly recommends you test your multi-domain configuration.

To test your multi-domain configuration

1. Ensure the Connector and CFS deployed on the non-primary domain are running and work without any problems.
2. Ensure all Connectors are registered. To verify, distribute Connector with query `http://hostname:7000/Action=getstatus.`
3. Ensure OGS captures the correct information. To do so, use the query `http://hostname:4057/Action=GetGroups&UserName=DOMAINUSERNAME&Repository=LDAP`
4. In ControlPoint, create a domain user in the non-primary domain and log in as that user to ensure login works correctly.
5. Create a repository in the non-primary domain with the correct Connector. If you get an error message that states " `shared location may not be reached`", ignore it and click **Save**.
6. Verify the Connector and ensure ingestion works.
7. Open the browser repository and ensure that the system administrator can view all documents.
8. Open the browser repository as user (not a superuser) and ensure the user can access only their documents.

Appendix A: ControlPoint Support utility

The ControlPoint Support utility captures system information and configuration file information from your ControlPoint environment.

The utility supports the following modes:

- **User interface**. Captures the information and generates a ZIP archive of the results and the report file.
- **Command line**. See Synopsis, below for command line options and examples.

> **NOTE:**
> Command line enhancements are supported for ControlPoint 5.4 and later. For versions 5.3 or earlier, run the utility with the user interface.

Location

```
\Program Files\Micro
Focus\ControlPoint\Engine\Scheduler\ControlPointSupportUtility.exe
```

Synopsis

```
ControlPointSupportUtility.exe
```

```
ControlPointSupportUtility.exe -c
```

Options

- **No option**. Generates a ZIP archive of the results and the xml/xslt browser report file.
- **`-c`**. Moves the data to the `<systemroot>\<user>\AppData\Local\Temp` directory for comparison. Does not generate a ZIP archive of the results or the report file.

  To generate a report that contains comparison results, you must run the utility with the `-c` option twice.

Example

> **NOTE:**
> The following example applies to ControlPoint versions 5.4 and later. If you are running version 5.3 or earlier, this example does not apply.

Run the utility as a preparatory step when changing the ControlPoint environment.

1. Run the Support utility from the command line as the Administrator.

   ```
   ControlPointSupportUtility.exe -c
   ```

   The utility gathers a copy of all system and configuration file information and stores it labeled as `Pre` capture data.

2. Perform the changes to the environment.

3. Run the Support utility to gather the data and label it as `Post` data.

   ```
   ControlPointSupportUtility.exe -c
   ```

   The utility runs a comparison feature, which generates a report named `diffReport.txt`. The ControlPoint Support utility creates the report in the same directory as the utility.

   The report lists any differences between the two `SystemInfo.xml` files, including changes, additions, and deletions. In addition, it lists any differences between all configuration files located in the ControlPoint installation directory.

Results

When the utility is run with the `-c` option, it stores the `Pre` and `Post` data files in `<systemroot>\Users\<user>\AppData\Local\Temp`.

Appendix B: Configure ControlPoint security settings

If you enabled ControlPoint security while installing ControlPoint or had it previously enabled and then upgraded ControlPoint, you must finish configuring security by updating settings in several configuration files.

> **NOTE:**
> After updating all files, restart the ControlPoint services for each component whose file you updated. For information how to do this, see Start Windows services, on page 36.

Update the following ControlPoint configuration files with the settings **in bold**:

- ControlPoint IDOL configuration
- ControlPoint OGS configuration
- Filesystem Connector configuration
- SharePoint Remote Connector configuration
- Documentum Connector configuration

ControlPoint IDOL configuration

File: `Program Files\Micro Focus\ControlPoint\Indexer\IDOL\ControlPoint IDOL.cfg`

```
9=NT
[NT]
GroupServerHost=OGSHostName
GroupServerPort=OGSPort
GroupServerRepository=LDAP

[LDAP]
LDAPServer=LDAPServerHostName
LDAPPort=389

[SharePoint]
GroupServerHost=OGSHostName
GroupServerPort=OGSPort
GroupServerRepository=Combine

[Documentum]
DocumentSecurity=TRUE
GroupServerHost=OGSHostName
GroupServerPort=OGSPort
SecurityFieldCSVs=username
DocumentSecurityType=Documentum_V4
CaseSensitiveUserNames=FALSE
```

```
CaseSensitiveGroupNames=FALSE
GroupServerPrefixDomain=FALSE
GroupServerOpApplyTo0=USER
GroupServerOp0=Prepend
GroupServerOpParam0=YourDomainName\    (Example: GroupServerOpParam0=myCompany\)
```

ControlPoint OGS configuration

File: `Program Files\Micro Focus\ControlPoint\Indexer\OGS\ControlPoint OGS.cfg`

```
[Repositories]
GroupServerDefaultRepositories=HPRecordsManager,TRIM,SharePoint2007,SharePoint2010,
SharepointRemote,WorkSite,SharePoint2013,Documentum,LDAP,Combine
Number=10
0=HPRecordsManager
1=TRIM
2=Sharepoint2007
3=Sharepoint2010
4=SharepointRemote
5=WorkSite
6=Sharepoint2013
7=Documentum
8=LDAP
9=Combine

[LDAP]
GroupServerLibrary=ogs_ldap.dll
LDAPServer=LDAPServerHostName
LDAPPort=389
LDAPBase=DC=BaseDN     (Example: LDAPBase=DC=myCompany,DC=com)
LDAPType=MAD
LDAPBindMethod=NEGOTIATE
GroupServerAllUserGroups=NT AUTHORITY\AUTHENTICATED USERS
GroupServerCycles=-1
UseDomainPrefix=TRUE
DomainPrefix=DomainPrefix     (Example: DomainPrefix=myCompany)

[Combine]
GroupServerJobType=Combine
GroupServerSections=LDAP,SharepointRemote
GroupServerStartDelaySecs=10
GroupServerCycles=-1

[Documentum]
GroupServerLibrary=ogs_java
JavaGroupServerClass=com.autonomy.groupserver.documentum.DocumentumGroupServer
Docbase=CustomDocBase     (Case-sensitive)
Username=UserName     (Case-sensitive)
```

```
Password=********     (Unencrypted plain text)
GroupServerCycles=-1
GroupServerQueryOp0=StartAfter
GroupServerQueryOpApplyTo0=USER
GroupServerQueryOpParam0=0;\
GroupServerShowAlternativeNames=TRUE
UserNameFields=user_login_name

[SharepointRemote]
GroupServerLibrary=ogs_text.dll
GroupServerIncremental=TRUE
Textfile=SharepointRemoteGS.txt
ConnectorHost=ConnectorHostName
ConnectorPort=ConnectorPort
```

Filesystem Connector configuration

File: `Program Files\Micro Focus\ControlPoint\Indexer\FileSystem Connector\ControlPoint FileSystem Connector.cfg`

```
[Ingestion]
IngestActions=META:ENFORCESECURITY=True,META:CPREPOSITORYTYPEID=3,META:SECURITYTYPE
=NT

[FetchTasks]
MappedSecurity=TRUE
GroupServerHost=OGSHostName
GroupServerPort=OGSPort
GroupServerRepository=LDAP
```

SharePoint Remote Connector configuration

File: `Program Files\Micro Focus\ControlPoint\Indexer\SharePoint Remote Connector\ControlPoint SharePoint Remote Connector.cfg`

```
[Ingestion]
IngestActions=META:ENFORCESECURITY=True,META:CPREPOSITORYTYPEID=9,META:SECURITYTYPE
=SharePointSecurity

[FetchTasks]
GroupServerHost=OGSHostName
GroupServerPort=OGSPort
GroupServerRepository=SharepointRemote
EncryptACLEntries=FALSE
MappedSecurity=TRUE
```

Documentum Connector configuration

File: `Program Files\Micro Focus\ControlPoint\Indexer\DocumentumConnector\ControlPoint Documentum Connector.cfg`

```
[Ingestion]
IngestActions=META:ENFORCESECURITY=True,META:CPREPOSITORYTYPEID=17,META:SECURITYTYP
E=Documentum

[FetchTasks]
GroupServerHost=
GroupServerPort=
GroupServerRepository=
HoldUseRetentionPolicy=
HoldUseFreeze=
HoldAllVersions=
HoldUpdateAcl=
mappedsecurity=
```

Appendix C: Configure ControlPoint with IDOL Media Server

ControlPoint features include the ability to extract text from electronic formats such as documents, emails, and spreadsheets, as well as many other formats. You can perform sensitive data analysis on the extracted text using Eduction grammars and use Auto-Categorization of file content to organize the repository for policy execution. If the source repository contains scanned images, you can extract text from them by configuring the IDOL Media Server with the supported ControlPoint connectors. The extraction process uses Optical Character Recognition (OCR) from the scanned documents for Eduction and Categorization.

The default ControlPoint license package does not include an IDOL Media Software license. You must download, install, and obtain a license for IDOL Media Server in addition to ControlPoint. This appendix provides the steps to configure the IDOL Media Server to enable OCR of source repositories within ControlPoint. You can find detailed documentation about the IDOL Media Server on the MySupport portal.

Before you begin

Ensure you have the following items:

- IDOL Media Server software

  You can download this software from the MySupport portal.

- An IDOL license with media server enabled

If you need help obtaining any of these items, contact your ControlPoint support representative.

To configure ControlPoint with IDOL Media Server

1. Extract the IDOL Media Server from its package, and then install it on the same server as ControlPoint.

   After extraction, the application's root folder contains an `install.txt` file with installation instructions.

2. Configure the *`mediaServerInstallPath`*`/MediaServer.cfg` file:

   a. Open the `MediaServer.cfg` file in a text editor.

   b. Locate the `[Channels]` section and ensure its properties are set as follows:

   ```
   [Channels]
   # Make sure enough license channels are available to cover Process threads
   VisualChannels=1
   SurveillanceChannels=1
   AudioChannels=0
   VideoManagementChannels=0
   ```

c. Locate the `[Server]` section and make note of the specified port number.

   You will use this value in subsequent steps.

d. Save the file.

3. Configure the `ControlPoint\Indexer\FileSystem Connector Framework\ControlPoint Filesystem Connector framework.cfg` file:

   a. Open the file in a text editor.

   b. Locate the `[ImportTasks]` section and add the following tasks to it:

   ```
   PreX=lua:lua/OCR_Scan.lua
   PreX+1=lua:scripts/ImageAnalysis.lua
   ```

   Where ***X*** is the next number following the last existing task. For example, if a `Pre1` task exists, add the following:

   ```
   Pre2=lua:lua/OCR_Scan.lua
   Pre3=lua:scripts/ImageAnalysis.lua
   ```

   c. Add the following `[MediaServerSettings]` section:

   ```
   [MediaServerSettings]
   MediaServerHost=localhost:port
   MediaServerConfigurationName=ocrdoc.cfg
   MediaServerSharedPath=\\hostname\ocrSharedFolderPath
   MediaAnalysisTransform=./xslt/mediaserver_cfs_ocr.xsl
   ```

   where:

   - ***port*** is the port number specified in the `[Server]` section of the `MediaServer.cfg` file.

     For example: `MediaServerHost=localhost:14000`

   - ***hostname*\ *ocrSharedFolderPath*** is an accessible path to an existing folder in which to store OCR documents.

     For example the following sets it to the `ocrdocuments` folder on a host named `jmc-srv2012-1`:

     ```
     MediaServerSharedPath=\\jmc-srv2012-1\ocrdocuments
     ```

   d. Save the file.

4. Create the `OCR_Scan.lua` file.

   a. Create an `OCR_Scan.lua` file in the `ControlPoint\Indexer\FileSystem Connector Framework\lua` folder.

   b. Open the file in a text editor, and then copy and paste the following into it:

   ```
   -- Initialization lua
   dofile("lua/initialize.lua")
   require("constants")
   require("UtilityFunctions")
   ```

```
-- Handler
function handler(document)
   local extensions_for_ocr = { jpeg = 1, tif = 1, bmp = 1, png = 1, jpg =
1, pdf = 1};
   local filename = document:getFieldValue("DREREFERENCE");
   local extension, extension_found = filename:gsub("^.*%.(%w+)$", "%1", 1);

   if extension_found > 0 then
      if extensions_for_ocr[extension:lower()] ~= nil then
         document:addField("AUTN_NEEDS_IMAGE_SERVER_ANALYSIS", "");
      end
   end

   return true;
   end
```

   c. Save the file.

5. Create the `Mediaserver_cfs_ocr.xsl` file:

   a. Create a `Mediaserver_cfs_ocr.xsl` file in the `ControlPoint\Indexer\Filesystem Connector Framework\xslt` folder.

   b. Open the file in a text editor, and then copy and paste the following into it:

```
<?xml version="1.0" encoding="utf-8"?>
<xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="xml" indent="yes"/>
  <xsl:template match="/">
    <document>
      <DRECONTENT>
        <xsl:for-each
select="/autnresponse/responsedata/actions/action/output/record/OCREvent">
          <xsl:if test="event/eventType = 'begin'">
            <xsl:value-of select="text"/><xsl:text> </xsl:text>
          </xsl:if>
        </xsl:for-each>
      </DRECONTENT>
    </document>
  </xsl:template>
</xsl:stylesheet>
```

   c. Save the file.

6. Create the `ocrdoc.cfg` file:

   a. Create an `ocrdoc.cfg` file in the `ControlPoint\Indexer\Filesystem Connector Framework` folder.

   b. Open the file in a text editor, and then copy and paste the following into it:

```
// Example showing how to OCR document-style files

// ======================= Ingest ========================
[Ingest]
IngestEngine0 = Read

[Read]
// Ingest image and document file formats
Type = image

// ======================= Analysis =======================
[Analysis]
AnalysisEngine0 = OCR

[OCR]
Type = ocr

// Process printed document pages (rather than generic photos)
OCRMode = document

// Add any relevant languages to this list
Languages = en

// Filter out lower confidence words
WordRejectThreshold = 60

// ======================= Output =======================
[Output]
OutputEngine0 = response

[TextOut]
Type = xml
Input = OCR.Event
XMLOutputPath = output/%source.filename%.txt

// Extract just the text from output
XSLTemplate = xsl/toText.xsl

[response]
Type=response
```

c. Save the file.

d. Copy the `ocrdoc.cfg` file you just created to the *mediaServerInstallPath*`/configurations` folder.

   This file is required in two locations.

7. Configure the `ImageAnalysis.lua` file, located in the `ControlPoint\Indexer\Filesystem Connector Framework/scripts` folder:

a. Open the `ImageAnalysis.lua` file in a text editor.

b. Replace the contents of the entire file with the following:

```
-- This script uses Media Server to analyse images and PDF files. Any
-- information discovered by the analysis will be added to the document
-- metadata. Other documents will be filtered by keyview as normal.

-- These are the KeyView DocumentTypes that should be sent to Media
-- Server for analysis:
local supportedDocumentTypes = {
    ["83"] = true, -- tiff
    ["5"] = true, -- bmp
    ["152"] = true, -- ico
    ["153"] = true, -- cur
    ["143"] = true, -- jpg
    ["143"] = true, -- jpeg
    ["230"] = true, -- pdf
    ["238"] = true, -- png
    ["333"] = true, ["334"] = true, -- pbm
    ["335"] = true, ["336"] = true, -- pgm
    ["337"] = true, ["338"] = true, -- ppm
    ["26"] = true, ["27"] = true, -- gif
}

function mediaServerSupportsTypeInDocument(document)
    local docType = document:getFieldValue("DocumentType");
    return supportedDocumentTypes[docType];
end

function handler(document)
    document:addField("Enter_Image_Analysis", "true");
    if mediaServerSupportsTypeInDocument(document) then
        -- Send the file to Media Server for analysis.  This will throw
        -- on failure resulting in an error being logged and the
        -- document being filtered by KeyView as normal (provided no
        -- later tasks disable filtering).
        document:addField("Enter_Analyze_Media", "true");
        document:addField("Shared folder",
        [[\\localhost\ocrSharedFolderPath]])
        document:addField("Shared OCR file",
        [[ocrSharedFilePath\ocrdoc.cfg]])
        -- geServerHost='localhost';
        -- geServerPort=port;
        -- geServerSharedPath=\\localhost\\ocrSharedFolderPath;
        analyze_media_in_document(document, {
        section = "MediaServerSettings",
        taskSections = dococrtask,
        server = {host="localhost",
        port = port,
        sharedPath = [[\\localhost\\ocrSharedFolderPath]] }} );
        document:addField("Enter_Analyze_Media_Complete", "true");

        -- If analysis was performed successfully, don't extract
        -- text using KeyView, just get the metadata.

    document:addField("AUTN_FILTER_META_ONLY", "");

    end
    return true;
end
```

where:

- ***ocrSharedFolderPath*** is the path to the folder that stores OCR documents. For example: `ocrdocuments`.

  > **NOTE:**
  > This must be the same folder path you set for ***ocrSharedFolderPath*** in the `ControlPoint Filesystem Connector framework.cfg` file (Step 3c).

- ***ocrSharedFilePath*** is the path of the folder that contains the `ocrdoc.cfg` file you created in the previous step. For example:

  `C:\newdisk\services\MediaServer_11.4.0\configurations`

- ***port*** is the port number specified in the `[Server]` section of the `MediaServer.cfg` file. For example: `14000`.

c. Save the file.

Send documentation feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Installation Guide (Micro Focus ControlPoint 5.7.0)

Add your feedback to the email and click **Send**.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to swpdl.controlpoint.docfeedback@microfocus.com.

We appreciate your feedback!