Security Classification: CallCopy Confidential.

Distribution: Approved internal CallCopy staff only and licensed CallCopy customers.

Note: Applicable non-disclosure agreements must be in force for authorization.

Revision History			
Revision	**Change Description**	**Author**	**Effective Date**
0	Initial release.	MBuckingham	2013-05-31
1	Updated to include Fusion Script Server configuration.	MBuckingham	2013-08-09

Table of Contents

Introduction

This document is for cc: Fusion administrators. It explains:

- System components
- System requirements
- How to install and configure the application

For information on creating scripts for cc: Fusion, contact your CallCopy representative and see the *cc: Fusion Scripts Guide.*
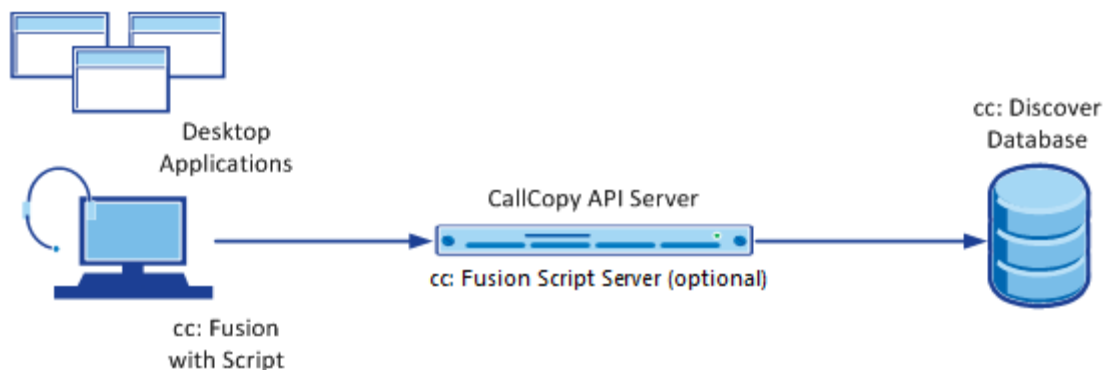
This installation can be performed two different ways: cc: Fusion Server and Client, or cc: Fusion Client only. The Server and Client setup uses a server-side service to distribute centrally stored script updates to clients when they log in, whereas a client-only version requires customers to deploy any script updates manually.

Product Technical Overview

cc: Fusion is a desktop application that detects information in other applications and then performs actions based on that information. The actions performed are controlled by a script. Possible actions include

- Adding the information as metadata to a call recording in progress.
- Starting or stopping call recording.
- Triggering recording blackouts for compliance.

These diagrams illustrate the product's components, their interactions, and deployment scenarios.

Component	Function
cc: Fusion	Desktop application controlled by a script. Detects information in other desktop applications and performs actions specified in a script. The script is installed and managed locally, and can be updated at each login as needed from a central scripts folder if with cc: Fusion Script Server. On startup, the script is updated, read, and compiled automatically.
cc: Discover Server	Includes the cc: Voice recorder that records the audio and creates the raw call audio files. Creates call record files in the database.
Desktop Applications	See the "Requirements" section for information on the applications from which data can be captured.
CallCopy API Server/Script Server	Used to write information from cc: Fusion application to the database. If used, the Script Server service can be configured to run on the same system as the API server, or any other CallCopy server.
cc: Discover Database	Stores call records associated with call audio WAV files. Data collected by the cc: Fusion client can be written to the call records.

Requirements

These requirements are only for cc: Fusion. For additional information, see the *cc: Discover Requirements* document. Final hardware specifications are determined by the CallCopy Sales Engineering team during the sales process.

Compatible Desktop Applications

CallCopy requires prospective customers to test if cc: Fusion is compatible with their applications. To test compatibility, the cc: Fusion Test Tool must be used to try to capture information from an application.

cc: Fusion has been compatible with applications written using versions of the items listed below:

- Win32
- Microsoft Foundation Class (MFC)
- Visual Basic 6
- Windows WinForms
- Java
- FoxPro
- WPF
- Flash
- Silverlight

Data has also been captured from within versions of

- Terminal emulators (green screen emulators)
- Adobe Acrobat Reader
- Internet Explorer
- FireFox

cc: Fusion is currently not compatible with Google Chrome and Microsoft Excel.

Microsoft Outlook is not fully supported. If message windows (i.e., popup windows) are opened from Outlook, the windows title number will not be identified consistently. Outlook arbitrarily assigns popup windows numbers (i.e., <wnd cls="_WwB" title="Document12"). For example, a message is opened, assigned Document1, and then closed. A second message is opened and assigned Document2. If the original message is reopened, it will be assigned the title Document3. Fusion cannot associate different captures from the original message.

Deployment and Redundancy Guidelines

CallCopy Sales Engineers consult with customers to determine the most effective deployment to meet performance, redundancy, and security needs. Some guidelines include

- cc: Fusion supports only one script per installation. In the typical installation, all users logging into a PC will automatically have the application running with that script.
- Bandwidth usage depends heavily on the number of users and the amount of data written to the database.
- Network layout (e.g., branches, firewalls) affects the application's ability to write data to the database.

Security

cc: Fusion relies on the security and auditing measures of cc: Discover, the Windows server hosting the applications, and the Windows PCs on which the desktop application is installed.

These points also must be considered:

- Access to script files should be restricted to administrators. If scripts are installed on PCs, users should not have Administrator permissions to the machines.
- In order for the Fusion application on the PC to log events, the user must have access to the Fusion log file's location. (See the "Fusion Log File" section.)
- See the "Install and Configure cc: Fusion Client" section for install permissions information.

No specific cc: Discover user permission settings have to be configured to enable cc: Fusion.

See the *cc: Discover Administration Manual* for information on the system's auditing.

Install and Configure cc: Fusion Script Server

> **Important** The following steps are only for installing the cc: Fusion Script Server. For a standalone, client-only setup, skip to the section "Install and Configure cc: Fusion Client."

The cc: Fusion Script Server service can be run on any existing CallCopy servers and functions as a link between the cc: Fusion client and the scripts directory. In previous versions of cc: Fusion, if script changes were made or the client was updated, new scripts would have to be manually deployed to each affected workstation. The cc: Fusion Script Server stores scripts in a central location from which the client can check for and retrieve updated scripts each time a cc: Fusion client user logs into their computer, requiring that new scripts only need to be deployed to one directory instead of being pushed to several separate systems. Development is responsible for providing and updating scripts used by the cc: Fusion client.

In environments with multiple API servers communicating with cc: Fusion, cc: Fusion Clients can be assigned to specific API servers using Subnets or Locations. Subnets can group clients together using a range of IP addresses. Locations can group clients by assigning them to numbered groups regardless of network location.

Register Service

To register the Fusion Script Server, open a Command Prompt window on the server that will run the service. Change to the CallCopy Recorder directory. From the directory, run the following command:

```
FusionServer\cc_fusionScriptServer.exe –svcinst –autostart
```

If successful, the Command Prompt will display the message "Service Installed." You will be returned to the working directory prompt.

> **Note** If upgrading to a newer version of the service, the existing service must be stopped from the Windows Services Manager (services.msc) and uninstalled using the same command as above, but using only the **–svcuninst** parameter.

Configure INIs

The Fusion Script Server's settings are stored in the CallCopy database and in two separate INI files. Open the location **\CallCopy\Recorder\FusionServer** and locate the files **CC_FusionScriptServer.ini.dist** and **Fusion.ini.dist**. Remove the .dist from the end and apply the appropriate configuration changes below.

Fusion Script Server INI

This is an example **CC_FusionScriptServer.ini** configuration file, with important settings detailed in the table to the right:

`[database]`	
`DBType=mssql`	CallCopy database type. Should always be MSSQL.
`host=xx.xx.xx.xx`	IP address or server name of the system hosting the CallCopy database.
`password=`	Password to access the CallCopy database.
`Database=`	Name of the CallCopy database.
`[fusionserver]`	
`listening_port=`	Port configured to listen for requests from the Fusion client.
`fusion_client_script_folder=C:\Program Files\CallCopy\Content\fusionscripts`	Path to the directory (local or UNC path) containing the Fusion scripts, no quotes required.
`fusion_client_ini_file=Fusion.ini`	Path to the INI file for the Fusion client. If stored in the "\CallCopy\Recorder\FusionServer" directory (common), only the filename is required.
`Api_server_filter_type=#`	Used in multiple API server environments to set which cc: Fusion Clients communicate with which API. The value corresponds to configured subnets or locations in the server-side Fusion.ini (see next section). Acceptable values are: • 0 = none • 1 = subnet • 2 = location

Server-Side Fusion INI

This is an example server-side **Fusion.ini** configuration file, with important settings detailed in the table to the right:

`[CallCopy]`	
`Host=xx.xx.xx.xx`	Default API server host IP address.
`Port=5620`	Default API server host port number.
`LoadImmediately=true`	If set to 'true', the application connects to the API server when it starts. If set to 'false', the application does not connect until the first time the Fusion script detects content that should be blacked out or recorded.
`Heartbeat=3000`	Frequency in milliseconds (ms) that the application sends a 'heartbeat' message to the API server to test the connection.
`ReadTimeout=3000`	Time in milliseconds (ms) that the application waits for a read response from the API server. If this time is exceeded, the application throws an exception.
`SendTimeout=3000`	Time in milliseconds (ms) that the application waits for a send response from the API server. If this time is exceeded, the application throws an exception.
`[Logging]`	
`Location=%appdata%\FusionLog_ ${shortdate}.log`	CallCopy strongly recommends not changing this location. The default entry creates a different log for each day, which is useful for troubleshooting. It also is accessible for both PC and terminal server uses. Changing the entry may cause logs not to be written for all users. To change this value, set the value in the NLog.config file and then update this setting.
`ClearOnStartup=true`	Clear the log file on application startup.
`LogPerformance=false`	Log script execution metrics to the log file.
`[System]`	

`MinPollTime = 500`	Forces a minimum polling interval for checking the user's screen for content to block or record, overriding the script setting. Time in milliseconds (ms).
`HideTrayIcon=true`	Hides/displays the Fusion icon in the system tray.
`HideBalloonTips=true`	Prevents/enable balloon tips from popping up.
`RunInTerminalServer=false`	Only needed for users running terminals.
`MaxRamAllow=150000000`	Maximum bytes of RAM Fusion can use.
`[Subnet01]`	Optional. This section is only required in multiple API environments using the **Subnet** filter type (refer to the setting `Api_server_filter_type=` in **CC_FusionScriptServer.ini**). The total number of subnets may vary depending on the customer's environment. If there is only one API server, omit this section.
`Subnet=xx.xx.xx.xx/24`	cc: Fusion Clients within this range of IPs will communicate with this particular API. This can be useful for assigning certain agents to a specific API server.
`Host=xx.xx.xx.xx`	IP address of API server for this subnet.
`Port=5620`	Port of API server for this subnet.
`[Location01]`	Optional. This section is only required in multiple API environments using the **Location** filter type (refer to the setting `Api_server_filter_type=` in **CC_FusionScriptServer.ini**). The total number of locations may vary depending on the customer's environment. If there is only one API server, omit this section.
`Location=`	Location number corresponds to the **ClientLocation=** value specified in the client-side **Fusion.ini**. The total number of locations may vary depending on the customer's environment.
`Host=xx.xx.xx.xx`	IP address of API server for this location.
`Port=5620`	Port of API server for this location.

Add the Application to the Service Manager

To add the service to the Service Manager, follow the listed steps.

1. Click **Administration** tab > Tools > Service Manager.
2. Locate and expand the node created earlier.
3. Click **Add Application**.
4. In the new line, enter the following information:

   - **Application Name:** Enter **cc_fusionScriptServer.exe**
   - **Auto-Restart:** Select **Yes** to have the service restarted automatically if it is stopped.

5. Click **Save**.

Web Portal Settings

In the cc: Discover Web Portal, navigate to Adminstration tab > Web Portal Settings > Web Portal. Enter the path to the directory containing the Fusion scripts. This will be the same path used for the **fusion_client_script_folder=** value in the **cc_FusionScriptServer.ini** above.

Install and Configure cc: Fusion Client

This section explains how to install and configure the cc: Fusion client. Once it is installed on an end user's PC, the application can be used by any user that logs into the PC.

Permissions Needed for Installation

The installer must have Administrator permissions on the client PC.

The Administrator must have permission to modify or access these registry settings:

- HKEY_LOCAL_MACHINE\SOFTWARE
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\CLSID\
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
- HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Runtime Environment – The installer does not modify any value under this setting. It accesses it for reading java version and java_home value.

Fusion Log File

The location of the Fusion log file (FusionLog_yyyy_mm_dd.log) is configured during installation. The user being recorded must have access the directory where the file is located in order for logging to occur.
- For most versions of Windows, the file is stored in the user's application data directory (%appdata%).
- For Windows XP, the file is stored here: C:\Documents and Settings\[CURRENT_USER]\Application Data.

    Note CallCopy does not recommend the following option because of possible inconsistency in configuring multiple PCs and the resulting problems that can occur in recording and software maintenance.

If administrators do not want users to have access to the %appdata% or Application Data directories, log files can be written to another location.

1. Create the alternate directory.
2. Assign the user Full Control to this directory.
3. After Fusion is installed, confirm that NLog.config has the correct path to the directory. Example: filename=*D:path_name*.

    ```
    <targets>
            <target name="logfileDebug" xsi:type="File"
    fileName="${specialfolder:folder=ApplicationData}\FusionLog_${shortdate}.txt"
    />
    </targets>
    ```

4. Confirm that the Fusion.ini file's Logging > Location setting has the directory path. Refer to the INI configuration section relevant to the installation type:

    - Client-Only Fusion INI
    - Script Server-Side Fusion INI

The NLog.config and Fusion.ini files will be located in the directory where you install Fusion.

Uninstall the Application

Before installing a new version of the application, older versions must be uninstalled. Follow these steps to uninstall the software.

1. Open the Add/Remove Programs applet in the Control Panel.
2. Click **CallCopy Fusion Software** from the programs list.
3. Click **Uninstall**.
4. You will be prompted to remove the software. Click **Yes**.

The software will be automatically uninstalled, and the entry on the Programs list will be removed once the process is complete.
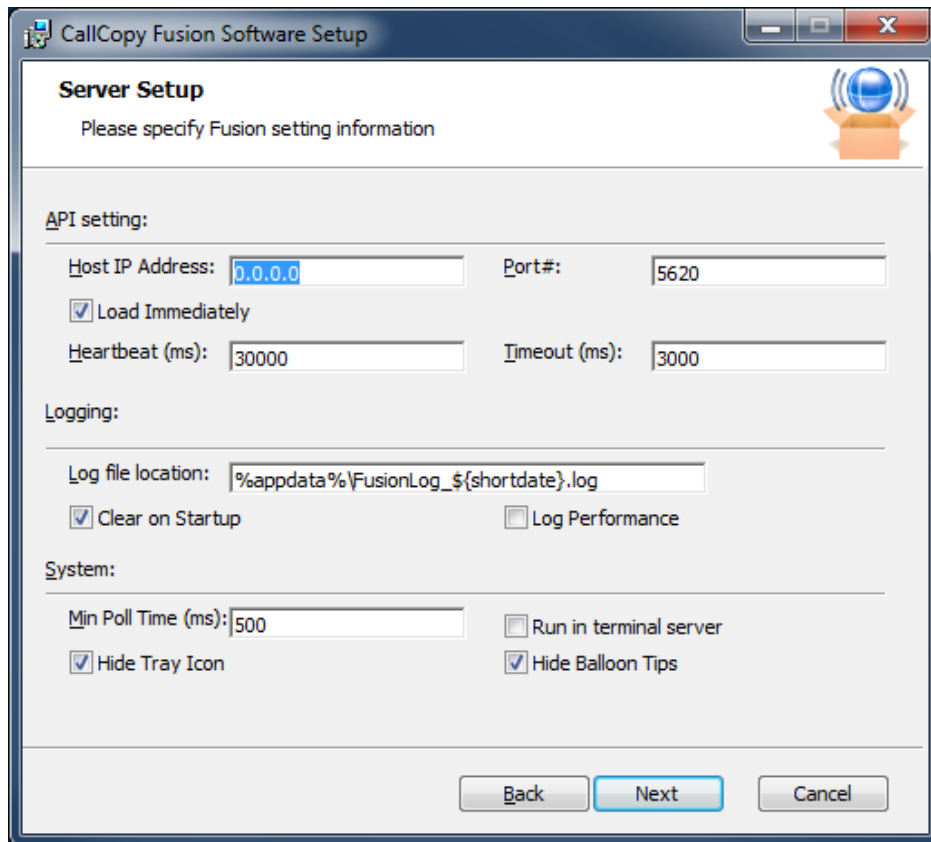
Run the Client Installation Package

Notes

- If a new version of the application is installed on a machine with an older version, the existing scripts must be tested and probably edited to work with the new application.
- Uninstall older versions of the application before installing a newer version.

Follow these steps for manually installing the cc: Fusion application.

1. Logon to the PC using an account with Administrator privileges.
2. Access the FusionSetup.msi file and double-click it. The MSI file can be located on the PC or a remote location.
3. On the Welcome step, click **Next**.
4. Accept the Licensing Agreement. Click **Next**.
5. Do not change any settings on the Custom Setup step. Click **Next**.

6. How the Server Setup page displays depends on whether the setup is client-only or uses the script server.

   a. **Client-only:** Configure the API server and client settings. See "Configure the Fusion INI File" section for definitions of each setting.

      - **Log file location:** CallCopy strongly recommends not changing this location. (See the "Fusion Log File" section for more information.)
      - **Hide Balloon Tips:** This option also can be set by users by right-clicking the Fusion icon in the system tray and selecting Hide Balloon Popups.


cc: Fusion Administration Guide, v5.2 R1

b. **Script Server Client:**

- **Fusion Server Host:** IP of the server hosting the cc: Fusion Server service.
- **Fusion Server Port:** Communication port of the server hosting the cc: Fusion Server service.
- **Fusion Client Location:** Optional, only used with script server configured to use Location-based API servers. This value is the same as the `Location=` value in the Server-Side Fusion INI. This will set the `ClientLocation=` value in the client-side Fusion.ini file. If using only one API server or it is Subnet-based, this field should be left blank.
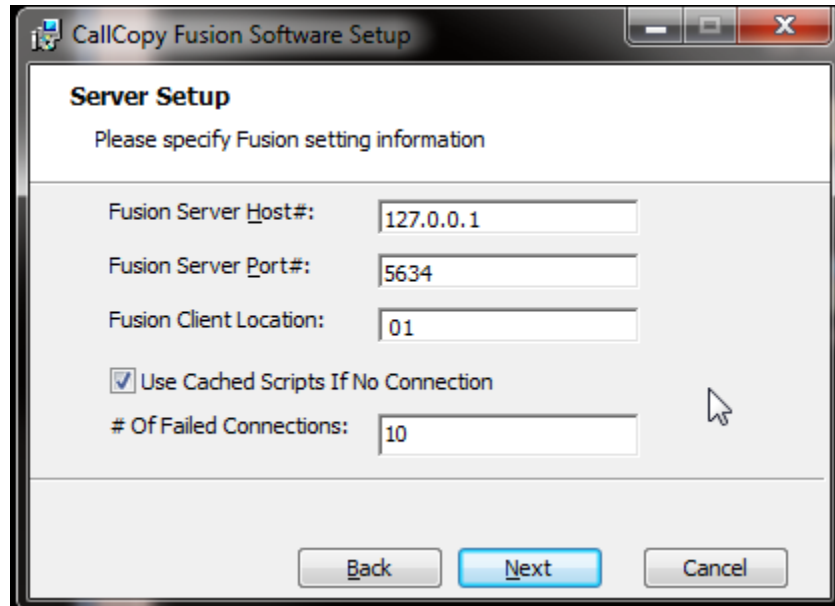
7. Click **Install**.
8. If Windows prompts to allow the installer to run, click **Yes**.
9. Click **Finish**.

By default, the installer creates application files in the directory C:\Program Files (x86)\CallCopy\Fusion.

Note Windows Installer Error 160 – This is a general error code that indicates a problem occurred during the installation. During cc: Fusion installation, this error may occur if the installer does not have adequate permissions, especially for the registry. In order for better trouble shoot this general error code, enable Windows Installer logging, which will allow you to view a log of all attempts and failures related to an installation. You can disable it after the installation is complete.

Configure INI

The application settings are read from a configuration file that is stored in the application installation directory (typically C:\Program Files (x86)\CallCopy\Fusion\). The file is named **Fusion.ini**. The contents of the file vary significantly depending on whether this is a standalone client-only installation or script server setup, so be sure to **ONLY** use the settings appropriate to the configuration being done.

Client-Only Fusion INI

`[CallCopy]`	
`Host=0.0.0.0`	API server host IP address.
`Port=5620`	API server host port number.
`LoadImmediately=true`	If set to 'true', the application connects to the API server when it starts. If set to 'false', the application does not connect until the first time the Fusion script detects content that should be blacked out or recorded.
`Heartbeat=3000`	Frequency in milliseconds (ms) that the application sends a 'heartbeat' message to the API server to test the connection.
`ReadTimeout=3000`	Time in milliseconds (ms) that the application waits for a read response from the API server. If this time is exceeded, the application throws an exception.
`SendTimeout=3000`	Time in milliseconds (ms) that the application waits for a send response from the API server. If this time is exceeded, the application throws an exception.
`[Logging]`	
`Location=%appdata%\FusionLog_${shortdate}.log`	CallCopy strongly recommends not changing this location. The default entry creates a different log for each day, which is useful for troubleshooting. It also is accessible for both PC and terminal server uses. Changing the entry may cause logs not to be written for all users. To change this value, set the value in the NLog.config file and then update this setting.
`ClearOnStartup=true`	Clear the log file on application startup.

`LogPerformance=false`	Log script execution metrics to the log file.
`[System]`	
`MinPollTime = 500`	Forces a minimum polling interval for checking the user's screen for content to block or record, overriding the script setting. Time in milliseconds (ms).
`HideTrayIcon=true`	Hides/displays the Fusion icon in the system tray.
`HideBalloonTips=true`	Prevents/enable balloon tips from popping up.
`RunInTerminalServer=false`	Only needed for users running terminals.
`MaxRamAllow=150000000`	Maximum bytes of RAM Fusion can use.

Script Server Fusion INI

`[FusionScriptServer]`	
`Host=xx.xx.xx.xx`	API server host IP address.
`Port=5634`	API server host port number.
`ClientLocation=100`	Optional. Only required if Location was configured in the server-side **Fusion.ini**, and is equivalent to Location # value there. Determines which API server the client will connect to. This value is set when the client installer runs and does not need to be set manually. The value can be modified to direct the client to communicate with a different API server as needed. This setting is ignored if using Subnet.

Install Java Support

> **Note** These instructions are for 64-bit Windows PCs.

If cc: Fusion will be used to capture any data from Java based applications, Java Access Bridge (JAB) software must be enabled on the PC. JAB is a library that allows Microsoft based applications to interact with Java based applications. Fusions uses Screen Scraper Studio's ScreenScrapeJavaSupport executable to install JAB software for Java Runtime Environments (JREs).

More information is available at http://www.oracle.com/technetwork/java/javase/tech/index-jsp-136191.html

Find the JRE Path

Each Java application on a PC may use a different JRE. The path for each JRE used must be identified.

1. From the Start menu, run regedit.
2. Navigate to HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Runtime Environment.
3. Click the default JRE to display its properties. The JavaHome property shows the path needed to install JRE support.

Install Support for the JRE

1. On the client machine, open a command prompt.
2. Navigate to c:\Program Files(x86)\CallCopy\Fusion\ScraperLib\Java Support.
3. Run this command using the path located earlier:

```
ScreenScrapeJavaSupport.exe /install /jrepath "<path>"
```

4. If prompted by Windows to approve running the install, click **Yes**.

   Note If screen scrape support must be uninstalled, run this command:

```
ScreenScrapeJavaSupport.exe /uninstall /jrepath "<path>"
```

Test Java Support

After the tasks above are completed, the installation must be tested for each Java application from which data will be captured. Testing involves attempting to capture window information for an application. See the "Capture Window ID" section of the *cc: Fusion Scripts Guide* for instructions on capturing the necessary application information.

If no Window information is captured or only the Window frame/header information is captured

- JAB support is not enabled for the JRE the application uses. In this case, repeat the tasks above to identify the JRE path and run the Screen Scrape executable.
- The application was created using an early Java version. In this case, Fusion may not be able to work with the application. CallCopy Development will have to investigate the customer's application to determine a conclusive answer.
- The application may be a network application. CallCopy Development would have to investigate.

Security and PCI Compliance

Interactions between the cc: Discover suite components (e.g., servers, Web Portal), file servers, and archive devices use SSL and TLS for data in transit, which is encrypted to disk when written. More information on cc: Discover's PCI Compliance status and how to configure components to utilize encryption/SSL/TLS is available in the *cc: Discover Administration Manual.*

Troubleshooting

This section provides troubleshooting guidance that can be used by both administrators and script programmers.

Screen/Application Flickers When Fusion Pulls Data

If users experience this issue, try to capture using the fulltext method instead of the native method. In some applications, the native setting sometimes causes the application to repaint. This is the flicker that is sometimes visible.

When switching to fulltext, you may need to create a new capture identifier.

COM Class Error

If you see a COM class error, then the COM components didn't register properly. This is usually caused by the client application not being installed as a system administrator account.

Plan A: Run the COM Component Registration Fix Utility

To fix this automatically, run the application cc_FusionRegisterComComponents.exe with administrator privileges. To do this, right-click the executable and select "Run as administrator". Select "Yes" or "Allow" on any popup dialogs. After running the application, try running cc: Fusion again.
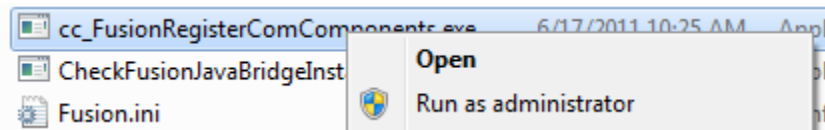
Plan B: Register the COM Components Manually

You can always register the COM components manually. To do this, open a command prompt in privileged mode: Right-click on a command prompt shortcut and select Run as administrator.

TCaptureX.dll, **TSelection.dll**, **UIElement.dll** and **SSSystemObj.dll** will need to be registered. These will be located in the ScraperLib subfolder where fusion is installed

Registration on 64-bit

```
%windir%\syswow64\regsvr32 <fusion path>\ScraperLib\TCaptureX.dll

%windir%\syswow64\regsvr32 <fusion path>\ScraperLib\UIElement.dll

%windir%\syswow64\regsvr32 <fusion path>\ScraperLib\TSelection.dll

%windir%\syswow64\regsvr32 <fusion path>\ScraperLib\SSSystemObj.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\TCaptureX_x64.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\UIElement_x64.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\TSelection_x64.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\SSSystemObj_x64.dll
```

Registration on 32-bit (x86)

```
%windir%\system32\regsvr32 <fusion path>\ScraperLib\TCaptureX.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\UIElement.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\TSelection.dll

%windir%\system32\regsvr32 <fusion path>\ScraperLib\SSSystemObj.dll
```

About CallCopy

CallCopy, a leading provider of innovative call recording and contact center solutions, is dedicated to ensuring the highest standards of customer and employee satisfaction. The award-winning, enterprise-proven cc: Discover suite delivers advanced call recording, screen capture, quality management, speech analytics, performance management, customer survey and workforce management capabilities to organizations of all sizes and industries across the globe.

CallCopy empowers these organizations to gather business intelligence, which is leveraged to maximize operational performance, reduce liability, achieve regulatory compliance and increase customer satisfaction.

For more information, visit www.callcopy.com.