



Micro Focus Security ArcSight Connectors

SmartConnector for Microsoft SharePoint Server DB

Configuration Guide

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Revision History

Date	Description
10/24/2018	Added support for SharePoint 2016.
10/17/2017	Added encryption parameters to Global Parameters.
07/15/2017	Updated JDBC download information.
11/30/2016	Updated installation procedure for setting preferred IP address mode.
02/15/2016	Removed ODBC support due to Java 8 implementation.
05/15/2015	Clarified example in configuring the JDBC driver and Windows authentication section and updated troubleshooting information.
02/16/2015	Removed Device Custom Number 3 Group ID mapping from Audit Data mappings.
02/14/2014	Added support for SharePoint 2013. Updated parameter screen image.
09/30/2013	Added troubleshooting information regarding connection failure. Added audit event mappings.
08/15/2013	First release of SmartConnector documentation.


SmartConnector for Microsoft SharePoint Server DB

This guide provides information for installing the SmartConnector for Microsoft SharePoint Server DB and configuring the device for event collection. Microsoft SharePoint Server 2010, 2013 and 2016 are supported.

Product Overview

Microsoft SharePoint Server is a Web application platform associated with intranet content management and document management. SharePoint provides central management, governance, and security controls.

Microsoft SharePoint logs events that monitor usage and performance. It also logs events that monitor and audit resources. The SmartConnector for SharePoint parses audit logs.


 The preferred SharePoint setup method is to use SQL Server Authentication.

Configuration

This section provides instructions for configuring the Microsoft SharePoint Server Database to send events to the ArcSight SmartConnector.

SharePoint can be implemented in two ways: as a stand-alone server or as part of a new or existing server farm. As a stand-alone server, the enterprise features will not be available and everything is done on the same box. This implementation is not supported because you cannot log to a SQL Database Server whether remote or local. (However, during the stand-alone installation, an SQL Server Express Edition is automatically installed locally.) Also, in a stand-alone configuration, you cannot create a server farm or join one.

As part of a new or existing server farm, SharePoint installs with all of its features. This is the implementation that the connector supports.


 Supporting audit logs in a stand-alone implementation requires an API that communicates with the internal database.

If you are using the Audit Collection Services (ACS) agent with Microsoft SharePoint, use the SmartConnector for Microsoft Audit Collection System DB.

Download and Install a JDBC Driver

During the installation process, you will be directed to leave the wizard and copy the JDBC driver file you download to a SmartConnector folder. For information about and to download the MS SQL Server JDBC Driver, see:

<http://msdn.microsoft.com/en-us/sqlserver/aa937724>

 Different versions of the JDBC driver are required for different SQL Server database versions; be sure to use the correct driver for your database version. The name of the jar file may be different for some JDBC driver versions.

When you download the JDBC driver, the version of the jar file depends on the version of the JRE the connector uses:

- Version 7.2.1 and later use JRE 1.8 and require sqljdbc42.jar (available with Microsoft JDBC Driver 6.0 for SQL Server)
- Version 7.1.2 and later use JRE 1.7 and require sqljdbc41.jar (available with Microsoft JDBC Driver 6.0 for SQL Server)
- Prior versions, which run JRE 1.6, require sqljdbc4.jar (available with Microsoft JDBC Driver 4.0 for SQL Server)

Install the driver.

For software connectors, copy the jar file appropriate for your SQL Server version from the installation folder for the SQL Server JDBC driver to a temporary location; you will copy this file to `$ARCSIGHT_HOME/current/user/agent/lib`, (where `$ARCSIGHT_HOME` refers to the SmartConnector installation folder, such as `c:\ArcSight\SmartConnectors`) after the core SmartConnector software has been installed at step 3 of Install the SmartConnector. Copy only the jar file associated with the version of the driver to be installed to this location.

Add a JDBC Driver to the Connector Appliance/ArcSight Management Center


After downloading and extracting the JDBC driver, upload the driver into the repository and apply it to the appropriate container or containers, as described in this section.

- 1 From the Connector Appliance/ArcSight Management Center, select **Setup -> Repositories**.
- 2 Select **JDBC Drivers** from the left pane and click the **JDBC Drivers** tab.
- 3 Click **Upload to Repository**.
- 4 From the **Repository File Creation Wizard**, select **Individual Files**, then click **Next**.
- 5 Retain the default selection and click **Next**.
- 6 Click **Upload** and locate and select the `.jar` file you downloaded in step 3 of SmartConnector Installation.
- 7 Click **Submit** to add the specified file to the repository and click **Next** to continue.
- 8 After adding all files you require, click **Next**.

- 9 In the **Name** field, enter a descriptive name for the zip file (`JDBCdriver`, for example). Click **Next**.
- 10 Click **Done** to complete the process; the newly added file is displayed in the **Name** field under **Add Connector JDBC Driver File**.
- 11 To apply the driver file, select the driver .zip file and click the up arrow to invoke the **Upload Container Files** wizard. Click **Next**.
- 12 Select the container or containers into which the driver is to be uploaded; click **Next**.
- 13 Click **Done** to complete the process.
- 14 Add the connector through the Connector Appliance/ArcSight Management Center interface; see the *Connector Appliance/ArcSight Management Center Online Help* for detailed information. Descriptions of parameters to be entered during connector configuration are provided in the "Install the SmartConnector" section of this guide.


Configure the JDBC Driver and Windows Authentication

This section provides guidance on how to use a JDBC driver with SmartConnectors that connect to Microsoft SQL Servers using Windows Authentication only. As previously described, download the SQL JDBC drivers from Microsoft and install the driver before beginning this procedure.

 The JDBC driver does not provide function to supply Windows authentication credentials such as user name and password. In such cases, the applications must use SQL Server Authentication. When installing the connector on a non-Windows platform, configure the Microsoft SQL Server for Mixed Mode Authentication or SQL Server Authentication.

Microsoft Type 4 JDBC drivers (versions 4.0 or later) support integrated authentication. Windows Authentication works only when using one of these drivers. You also will need to add `;integratedSecurity=true` to the JDBC URL entry for the connection to your database.

- 1 Copy the `sqljdbc_auth.dll` file from the JDBC driver download to the `$ARCSIGHT_HOME\jre\bin` directory. For example, the JDBC driver download path for SQL JDBC driver version 4.0 for 32-bit environment would be `sqljdbc_4.0\enu\auth\x86\sqljdbc_auth.dll` and, for 64-bit environment, `sqljdbc_4.0\enu\auth\x64\sqljdbc_auth.dll`.

 When upgrading a connector, the `$ARCSIGHT_HOME\jre\bin` directory is overwritten; therefore, you will need to copy the authentication file to this folder again after update.

- 2 Go to `$ARCSIGHT_HOME\current\bin` and double-click `runagentsetup` to continue the SmartConnector installation.

- 3 When entering the connector parameters, in the **JDBC Database URL** field, append `;integratedSecurity=true` to the end of the URL string.

The following is an example; note that the name or instance of the database configured at installation/audit time should be used.

```
jdbc:sqlserver://mysqlserver:1433;DatabaseName=mydatabase;integratedSecurity=true
```

- 4 Complete the remaining connector wizard configuration steps.
- 5 After completing the connector installation, if running on a Windows Server, change the service account to use the Windows account that should login to the database. The Connector will use the account used to start the service, regardless of the account value setting entered in the connector setup process.

Install the SmartConnector

The following sections provide instructions for installing and configuring your selected SmartConnector.

ArcSight recommends you do not install database connectors on the database server or any mission critical servers as this could cause performance issues.

Prepare to Install Connector

Before you install any SmartConnectors, make sure that the ArcSight products with which the connectors will communicate have already been installed correctly (such as ArcSight ESM or ArcSight Logger).

For complete product information, read the *Administrator's Guide* as well as the *Installation and Configuration* guide for your ArcSight product before installing a new SmartConnector. If you are adding a connector to the ArcSight Management Center, see the *ArcSight Management Center Administrator's Guide* for instructions, and start the installation procedure at "Set Global Parameters (optional)" or "Select Connector and Add Parameter Information."

Before installing the SmartConnector, be sure the following are available:

- Local access to the machine where the SmartConnector is to be installed
- Administrator passwords

Install Core Software

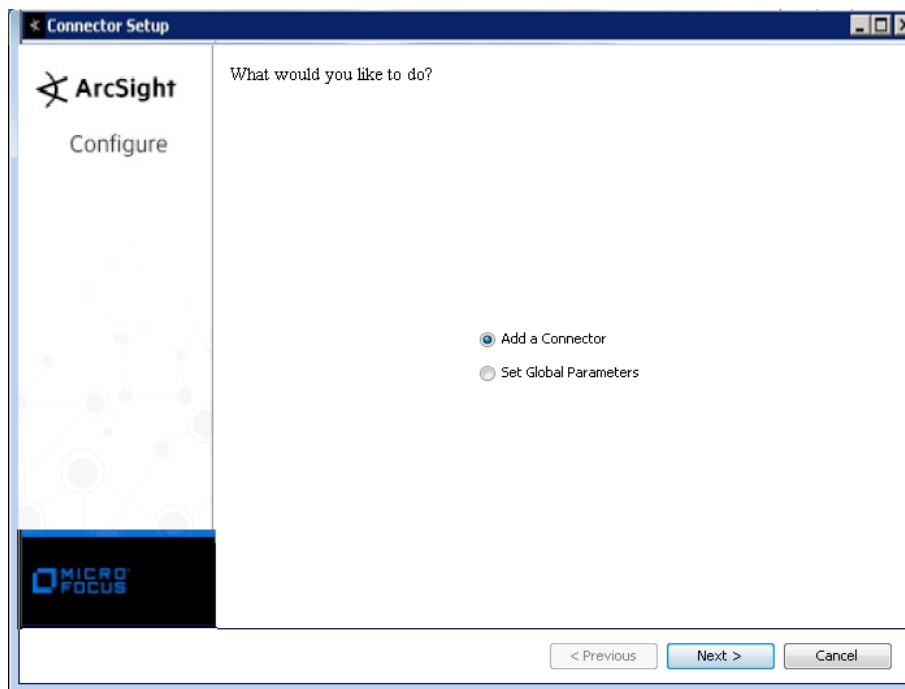
Unless specified otherwise at the beginning of this guide, this SmartConnector can be installed on all ArcSight supported platforms; for the complete list, see the *SmartConnector Product and Platform Support* document, available from the Micro Focus SSO and Protect 724 sites.

- 1 Download the SmartConnector executable for your operating system from the Micro Focus SSO site.
- 2 Start the SmartConnector installation and configuration wizard by running the executable.

Follow the wizard through the following folder selection tasks and installation of the core connector software:

Introduction
Choose Install Folder
Choose Shortcut Folder
Pre-Installation Summary
Installing...

- 3 When the installation of SmartConnector core component software is finished, the following window is displayed:



Download SQL Server JDBC Driver

To download a Microsoft SQL Server JDBC driver, click **Cancel** to leave the configuration wizard at this point and copy the jar file you downloaded earlier (see "Download and Install a JDBC Driver") to `$ARCSIGHT_HOME/current/user/agent/lib`.

From `$ARCSIGHT_HOME/current/bin`, double-click `runagentsetup` to return to the SmartConnector Configuration Wizard.

Set Global Parameters (optional)

If you choose to perform any of the operations shown in the following table, do so before adding your connector. You can set the following parameters:

Parameter	Setting
FIPS mode	Select 'Enabled' to enable FIPS compliant mode. To enable FIPS Suite B Mode, see the SmartConnector User Guide under "Modifying Connector Parameters" for instructions. Initially, this value is set to 'Disabled'.
Remote Management	Select 'Enabled' to enable remote management from ArcSight Management Center. When queried by the remote management device, the values you specify here for enabling remote management and the port number will be used. Initially, this value is set to 'Disabled'.
Remote Management Listener Port	The remote management device will listen to the port specified in this field. The default port number is 9001.
Preferred IP Version	When both IPv4 and IPv6 IP addresses are available for the local host (the machine on which the connector is installed), you can choose which version is preferred. Otherwise, you will see only one selection. The initial setting is IPv4.

The following parameters should be configured only if you are using Micro Focus SecureData solutions to provide encryption. See the *Micro Focus SecureData Architecture Guide* for more information.

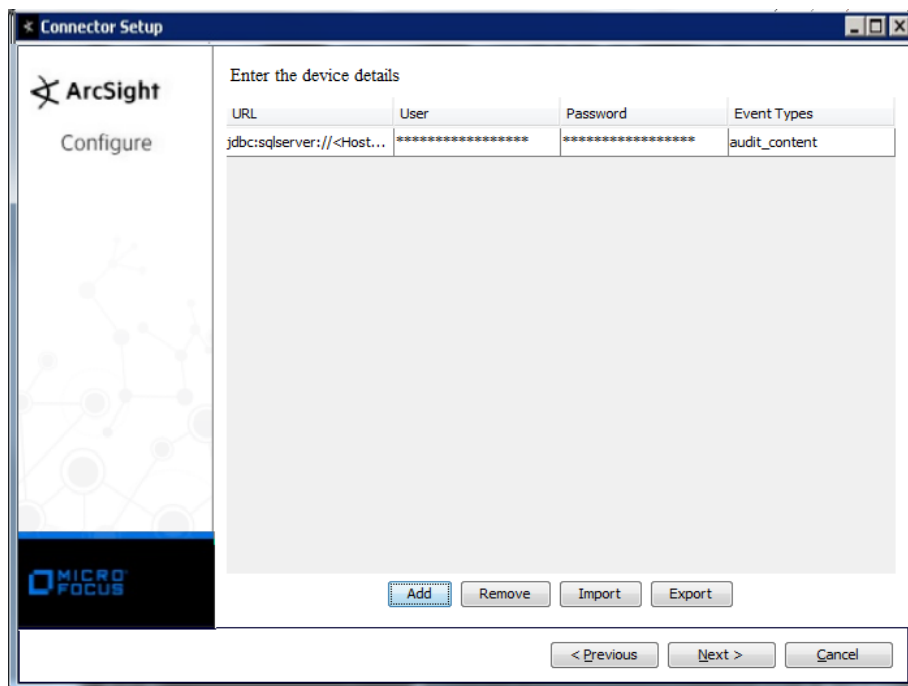
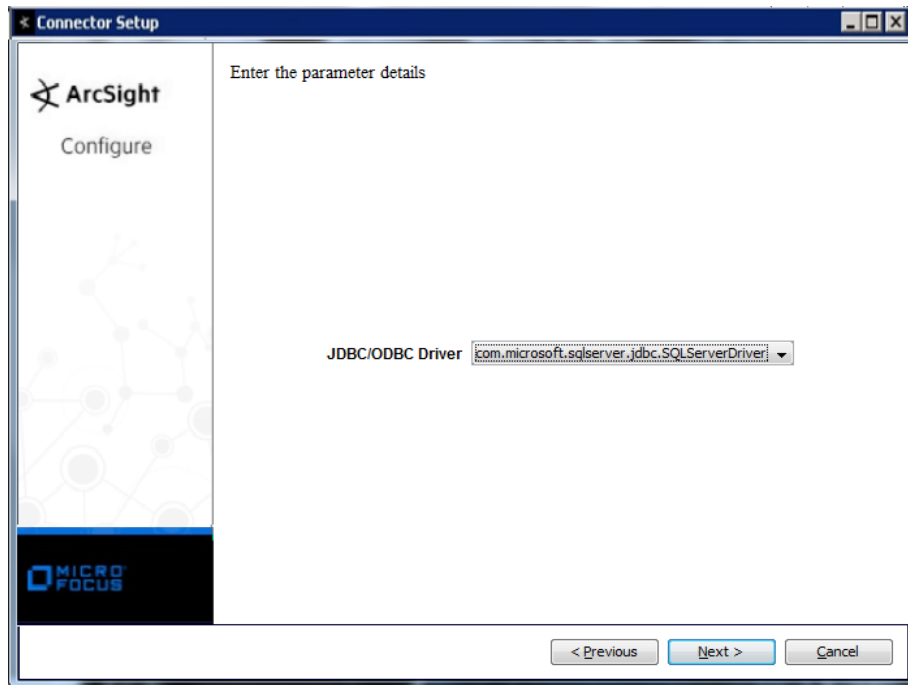
Parameter	Setting
Format Preserving Encryption	Data leaving the connector machine to a specified destination can be encrypted by selecting 'Enabled' to encrypt the fields identified in 'Event Fields to Encrypt' before forwarding events. If encryption is enabled, it cannot be disabled. Changing any of the encryption parameters again will require a fresh installation of the connector.
Format Preserving Policy URL	Enter the URL where the Micro Focus SecureData Server is installed.
Proxy Server (https)	Enter the proxy host for https connection if any proxy is enabled for this machine.
Proxy Port	Enter the proxy port for https connection if any proxy is enabled for this machine.
Format Preserving Identity	The Micro Focus SecureData client software allows client applications to protect and access data based on key names. This key name is referred to as the identity. Enter the user identity configured for Micro Focus SecureData.
Format Preserving Secret	Enter the secret configured for Micro Focus SecureData to use for encryption.
Event Fields to Encrypt	Recommended fields for encryption are listed; delete any fields you do not want encrypted and add any string or numeric fields you want encrypted. Encrypting more fields can affect performance, with 20 fields being the maximum recommended. Also, because encryption changes the value, rules or categorization could also be affected. Once encryption is enabled, the list of event fields cannot be edited.

After making your selections, click **Next**. A summary screen is displayed. Review the summary of your selections and click **Next**. Click **Continue** to return to proceed with "Add a Connector" window. Continue the installation procedure with "Select Connector and Add Parameter Information."

Select Connector and Add Parameter Information

- 1 Select **Add a Connector** and click **Next**. If applicable, you can enable FIPS mode and enable remote management later in the wizard after SmartConnector configuration.

- 2 Select **Microsoft SharePoint Server DB** and click **Next**.
- 3 Enter the required SmartConnector parameters to configure the SmartConnector, then click **Next**.



Parameter	Description
JDBC/ODBC Driver	Select the 'com.microsoft.sqlserver.jdbc.SQLServerDriver' driver.
URL	Enter: 'jdbc:sqlserver://<MS SQL Server Host Name or IP Address>:1433;DatabaseName=<MS SQL Server Database Name>,' substituting actual values for <MS SQL Server Host Name or IP Address> and <MS SQL Server Database Name>.
User	Enter the user name of the MS SQL Server DB user with appropriate database privilege.
Password	Enter the password for the database user.
Event Types	Specify the appropriate event types. The default event type is audit_content.

The SmartConnector settings must match the settings you entered in the data source configuration for the machine upon which you are installing the SmartConnector. Also, you can click the 'Export' button to export the host name data you have entered into the table into a CSV file; you can click the 'Import' button to select a CSV file to import into the table rather than add the data manually. See the "SmartConnector User Guide" for more information.

Select a Destination


- 1 The next window asks for the destination type; select a destination and click **Next**. For information about the destinations listed, see the *ArcSight SmartConnector User Guide*.
- 2 Enter values for the destination. For the ArcSight Manager destination, the values you enter for **User** and **Password** should be the same ArcSight user name and password you created during the ArcSight Manager installation. Click **Next**.
- 3 Enter a name for the SmartConnector and provide other information identifying the connector's use in your environment. Click **Next**. The connector starts the registration process.
- 4 If you have selected ArcSight Manager as the destination, the certificate import window for the ArcSight Manager is displayed. Select **Import the certificate to the connector from destination** and click **Next**. (If you select **Do not import the certificate to connector from destination**, the connector installation will end.) The certificate is imported and the **Add connector Summary** window is displayed.

Complete Installation and Configuration

- 1 Review the **Add Connector Summary** and click **Next**. If the summary is incorrect, click **Previous** to make changes.
- 2 The wizard now prompts you to choose whether you want to run the SmartConnector as a stand-alone process or as a service. If you choose to run the connector as a stand-alone process, select **Leave as a standalone application**, click **Next**, and continue with step 5.
- 3 If you chose to run the connector as a service, with **Install as a service** selected, click **Next**. The wizard prompts you to define service parameters. Enter values for **Service Internal Name** and **Service Display Name** and select **Yes** or **No** for **Start the service automatically**. The **Install Service Summary** window is displayed when you click **Next**.

- 4 Click **Next** on the summary window.
- 5 To complete the installation, choose **Exit** and Click **Next**.

For instructions about upgrading the connector or modifying parameters, see the *SmartConnector User Guide*.

 When using Windows authentication, after completing the connector installation, if running on a Windows Server, change the service account to use the Windows account that should log in to the database. The connector will use the account used to start the service, regardless of the account value setting entered in the connector setup process.

Run the SmartConnector

SmartConnectors can be installed and run in stand-alone mode, on Windows platforms as a Windows service, or on UNIX platforms as a UNIX daemon, depending upon the platform supported. On Windows platforms, SmartConnectors also can be run using shortcuts and optional Start menu entries.

If the connector is installed in stand-alone mode, it must be started manually and is not automatically active when a host is restarted. If installed as a service or daemon, the connector runs automatically when the host is restarted. For information about connectors running as services or daemons, see the *ArcSight SmartConnector User Guide*.

To run all SmartConnectors installed in stand-alone mode on a particular host, open a command window, go to `$ARCSIGHT_HOME\current\bin` and run: `arcsight connectors`

To view the SmartConnector log, read the file `$ARCSIGHT_HOME\current\logs\agent.log`; to stop all SmartConnectors, enter `Ctrl+C` in the command window.

Device Event Mapping to ArcSight Fields

The following section lists the mappings of ArcSight data fields to the device's specific event definitions. See the *ArcSight Console User's Guide* for more information about the ArcSight data fields.

SharePoint 2016/2013/2010 Audit Data Mappings

ArcSight ESM Field	Device-Specific Field
Additional data	UserType
Additional data	webDescription
Additional data	webID
Device Custom String 2	Event ID
Device Custom String 3	Item Version

ArcSight ESM Field	Device-Specific Field
Device Custom String 4	Database Name
Device Custom String 6	Group Name
Device Event Category	One of("Custom Audit Event", "Internal Audit Event")
Device Event Class ID	Custom_Event_Name
Device Product	'SharePoint'
Device Receipt Time	Time_Occured
Device Vendor	'Microsoft'
External ID	Item_ID
File Id	Doc_Location
File ModificationTime	Doc_Time
File Name	Doc_Location
File Path	Doc_Location
File Type	Item_Type (1=Document, 3=Item, 4=List, 5=Folder, 6=Site, or 7=Site Collection)
Message	Event_Data
Name	Custom_Event_Name
Old FileId	Doc_ID
Old FileName	UI_Version
Old FileType	Doc_Type
Request Context	All of (EventData, Event_ID, Permission, EventMessage)
Source Address	Machine_IP
Source Host Name	Machine_Name
Source NT Domain	Extract NTDomain (User_Name)
Source Process Name	Event_Source
Source User Id	User_ID
Source User Name	Extract User Name(User_Name)
Source User Privileges	Permission

SharePoint Query General Mappings

ArcSight ESM Field	Device-Specific Field
Device Custom Number 1	Permission Level ID
Device Custom Number 2	New Audit Mask
Device Custom String 2	Event ID
Device Custom String 3	Item Version

Mappings for Audit Event 2

ArcSight ESM Field	Device-Specific Field
Message	All of (VersionMajor, '.', VersionMinor, 'is the new version of the document.')

Mappings for Audit Event 3

ArcSight ESM Field	Device-Specific Field
Message	'Viewed item'

Mappings for Audit Event 4

ArcSight ESM Field	Device-Specific Field
Message	One of ('All versions were deleted and moved to the Recycle Bin', 'All versions were deleted completely')

Mappings for Audit Event 5

ArcSight ESM Field	Device-Specific Field
Device Custom Number 3	Group ID
File Name	EventMessage
Message	'Updated Item'

Mappings for Audit Event 6

ArcSight ESM Field	Device-Specific Field
File Name	ProfileTargetName
File Type	FileID
Message	All of (ProfileDescriptionin, 'The location is', ProfileTargetName)

Mappings for Audit Event 7

ArcSight ESM Field	Device-Specific Field
File ID	RelatedItemID
File Type	RelatedItemType (1=Document, 3=Item, 4=List, 5=Folder, 6=Site, 7=Site Collection)
FileName	RelatedItemLocation
Message	All of ('Deleted child at', RelatedItemLocation, 'GUID=', RelatedItemID)

Mappings for Audit Event 8

ArcSight ESM Field	Device-Specific Field
Message	All of ('Change in the schema of the object on those columns:', FieldRefColName, FieldColName)
Request URL	FieldSourceID

Mappings for Audit Event 12

ArcSight ESM Field	Device-Specific Field
Message	Both ('Copying object to', EventMessage)
Request URL	EventMessage

Mappings for Audit Event 13

ArcSight ESM Field	Device-Specific Field
File Name	NewRelativeURL
Message	All of ('Moving object to', NewRelativeURL)

Mappings for Audit Event 14

ArcSight ESM Field	Device-Specific Field
Device Custom Number 2	New Audit Mask
Message	Both ('The new audit mask is', NewAuditMask)

Mappings for Audit Event 15

ArcSight ESM Field	Device-Specific Field
Additional data	EventMessage
Message	'The search term and the object that is searched.'

Mappings for Audit Event 16

ArcSight ESM Field	Device-Specific Field
File ID	RelatedItemID
File Name	RelatedItemNewName
Message	All of ('Moved child to', RelatedItemNewName, 'GUID=', RelatedItemID)

Mappings for Audit Event 30

ArcSight ESM Field	Device-Specific Field
Destination User ID	UserID
Device Custom Number 3	Group ID
Device Custom String 6	Group Name
Message	All of ('New group', NewGroupName, '(Group ID=', NewGroupID,) was created by user ID', UserID)

Mappings for Audit Event 31

ArcSight ESM Field	Device-Specific Field
Device Custom Number 3	Group ID
Message	All of ('Group ID', NewGroupID, 'was deleted')

Mappings for Audit Event 32

ArcSight ESM Field	Device-Specific Field
Destination NT Domain	UserName
Destination User ID	NewUserID
Destination User Name	UserName
Device Custom Number 3	Group ID
Message	All of ('Member ID', NewUserID, 'was added to group ID', NewGroupID)

Mappings for Audit Event 33

ArcSight ESM Field	Device-Specific Field
Destination User ID	UserID
Device Custom Number 3	Group ID
Message	'Member ID', UserID, 'was deleted from group ID', NewGroupID)

Mappings for Audit Event 34

ArcSight ESM Field	Device-Specific Field
Device Custom Number 1	Permission Level ID
Message	All of ('New permission level:', PermissionLevelName, 'was created. The ID is', PermissionLevelID)
Source User Privileges	PermissionLevelName

Mappings for Audit Event 35

ArcSight ESM Field	Device-Specific Field
Device Custom Number 1	Permission Level ID
Message	All of ('Permission level ID', PermissionLevelID, 'was deleted')

Mappings for Audit Event 36

ArcSight ESM Field	Device-Specific Field
Device Custom Number 1	Permission Level ID
Message	All of ('Updated permission:', PermissionLevelName, 'level ID', PermissionLevelID)
Source User Privileges	PermissionLevelName

Mappings for Audit Event 38

ArcSight ESM Field	Device-Specific Field
Additional data	SubsiteGUID
Destination User Privileges	Permission
Device Custom Number 3	Group ID

ArcSight ESM Field	Device-Specific Field
Message	All of ('Updated permission (Permission ID =', RoleID, 'for group or user ID', PrincipalID)

Mappings for Audit Events 39, 40

ArcSight ESM Field	Device-Specific Field
Additional data	URL
Additional data	SubsiteGUID
Message	All of ('The URL of the subsite is', URL, 'GUID of the subsite is', SubsiteGUID)

Mappings for Audit Event 50

ArcSight ESM Field	Device-Specific Field
End Time	DeleteEntriesEndDate
Message	All of ('Deleted', DeleteEntriesRows', entries at ', DeleteEntriesEndDate)

Mappings for Audit Event 100

ArcSight ESM Field	Device-Specific Field
Device Custom String 1	Policy Name
Device Custom String 5	Policy ID
Message	Both (CustomPolicyDescription, CustomPolicyStatement)

Troubleshooting

"What do I do when the connector can't reconnect to the MS SQL Server database?"

In some cases, connectors using MS SQL Server databases are unable to reconnect to the database after losing and reacquiring network connection. Restarting the connector will resolve this problem.

"How do I deploy SQL Server Native Client?"

When deploying an application that is dependent on SQL Server Native Client, you will need to redistribute SQL Server Native Client with your application. Unlike Microsoft Data Access Components (MDAC), which is now a component of the operating system, SQL Server Native Client is a component of SQL Server. Therefore, it is important to install SQL Server Native Client in your development environment and redistribute SQL Server Native Client with your application.

The SQL Server Native Client redistributable installation program, named sqlIncli.msi, is available on the SQL Server installation media and is available as one of the SQL Server Feature Pack components on the Microsoft Download site. For more information about deploying SQL Server

Native Client with your application, see "Deploying Applications with SQL Server Native Client" available from Microsoft.

"Why does my connection to SQL Server fail/hang?"

Oracle has released Java 6 update 30 (6u30) that behaves differently from JRE 6u29, causing possible database connection problems for SQL Server database connectors using JDBC connection. These connection problems can occur with JRE 1.6.0_29 (6u29) and later versions.

Microsoft recommends using JRE 6u30 (and above) instead of JRE 6u29. Apply the "SQL Server 2008 R2 Service Pack 1 Cumulative Update 6" patch to the SQL server if you are experiencing connection failures or hangs.

"Why am I receiving the message 'Login failed for user 'sqluser'. The user is not associated with a trusted SQL Server connection.'"

Only Microsoft JDBC driver v4 or later support integrated authentication. The driver also does not provide function to supply Windows authentication credentials such as user name and password. In such cases, the applications must use SQL Server Authentication. When installing the connector on a non-Windows platform, configure the Microsoft SQL Server for Mixed Mode Authentication or SQL Server Authentication.

"How can I keep the connector from becoming clogged with events after being shut down for awhile?"

If the connector is shut down for some time on an active database, a lot of events can accumulate that can clog the connector on restart. The `preservestate` parameter can be used to avoid this situation. This parameter is enabled (true) by default. Setting `preservestate` to disabled (false) in the `agent.properties` file allows the connector to skip the old events and start from real time. The `agent.properties` file is located in the `$ARCSIGHT_HOME\current\user\agent` folder. Restart the connector for your change to take effect.

"What do I do when I receive "Connector parameters did not pass the verification with error ..." message?"

You may not have the correct version of jar file. When you download the JDBC driver, the version of the jar file depends on the version of JRE the connector uses. Versions 7.2.1 and later use JRE 1.8 and require `sqljdbc42.jar`. Versions 7.1.2 and later use JRE 1.7 and require `sqljdbc41.jar`. Prior versions of the connector that run JRE 1.6 require `sqljdbc4.jar`.