



12d Synergy Administration Guide

Version 3.0

April 17



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DEVELOPED BY

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12d Synergy Administration Guide Manual

V3.0 April 17

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TABLE OF CONTENTS

1	OVERVIEW	9
2	SYSTEM ARCHITECTURE	9
2.1	Server Architecture	9
2.2	Components	9
2.3	Required Ports	10
2.3.1	Security.....	10
2.3.2	WAN / Internet Access.....	10
2.4	Client Architecture	10
2.4.1	Components.....	10
2.4.2	The Local Workspace.....	10
2.4.3	The Local Database.....	11
2.4.4	Other Important Local Files.....	11
3	INFORMATION ARCHITECTURE	12
3.1	Overview	12
3.2	Jobs	12
3.3	Folders	12
4	THE 12D SYNERGY ADMINISTRATOR TOOL	13
5	GENERAL INFORMATION	13
5.1	Overview	13
5.2	Viewing General Statistics	13
5.3	Viewing Connections	14
5.4	Viewing and Cancelling Events	14
6	MAINTENANCE AND LOGGING	14
6.1	Indexing	14
6.2	Tuning	14
6.3	Logging	14
6.3.1	File Logs.....	14
6.3.2	Queue Logs.....	15
7	USERS, CONTACT AND GROUPS	15
7.1	Contacts	15
7.1.1	Overview.....	15
7.1.2	Defining Contact Attributes.....	15

7.2	Users	15
7.2.1	Overview.....	15
7.2.2	User Authentication.....	15
7.2.3	Windows Authentication.....	15
7.2.4	Custom Authentication.....	16
7.2.5	User Types.....	16
7.2.6	Personal Jobs.....	16
7.2.7	Creating Users.....	17
7.2.8	Editing Users.....	17
7.3	Groups	19
7.3.1	Overview.....	19
7.4	Groups with Active Directory	19
7.5	Assigning Users to Groups	19
7.6	Groups without Active Directory	19
7.7	Assigning Users to Groups	19
8	CERTIFICATES	19
8.1	Overview	19
8.2	Setting up a Certificate	20
8.2.1	Create via a Certificate Authority.....	20
8.2.2	Create a Self Signed Certificate.....	20
8.2.3	Use an Existing Certificate.....	21
9	LICENSING	21
9.1	Overview	21
9.2	Viewing your License	21
9.3	Upgrading/Installing a License	22
9.4	Users and Module Enrolment	22
9.4.1	Via the License Screen.....	22
9.4.2	Via the User Editing/Creation screen...	22
10	PERMISSIONS	23
10.1	Overview	23
10.2	Permission Inheritance	23
10.3	Types of Permissions	23
10.3.1	Explicit Permission.....	23
10.3.2	Permission Sets.....	23
10.4	Permission Merging	24
10.5	Editing Permissions	24
10.5.1	The Editor.....	24
10.5.2	Evaluating Permissions.....	25
10.6	Administrative Permissions	26
10.7	Additional Permissions and Restrictions	26

11	ATTRIBUTES	26
<hr/>		
11.1	Overview	26
11.2	Attribute Structure	26
11.3	System Attributes	27
11.4	Attributes with Extensions	27
12	JOBS	27
<hr/>		
12.1	Overview	27
12.2	Permissions	27
	12.2.1 General Job Permissions.....	27
12.3	Categories	28
	12.3.1 Creating or Editing a Category.....	29
12.4	Creating Top Level Jobs	29
12.5	Editing Jobs	31
	12.5.1 Editing a job in the 12d Synergy Client	31
	12.5.2 Editing a job in the 12d Synergy Administrator	31
	12.5.3 The Job Editor.....	31
	12.5.4 Job Attributes.....	31
	12.5.5 File Change Attributes.....	32
12.6	Creating Sub Jobs	33
	12.6.1 Creating Sub Jobs in the 12d Synergy Client	33
	12.6.2 Creating Sub Jobs in the 12d Synergy Administrator	33
12.7	System Level Job Attributes	33
12.8	Job Templates	33
	12.8.1 Match Attributes.....	33
	12.8.2 Naming Rule.....	34
	12.8.3 Template Job.....	34
	12.8.4 Template Variables.....	34
12.9	Job Roles and Teams	34
12.10	Job Dashboard	35
12.11	Reindexing	36
13	FOLDERS	36
<hr/>		
13.1	Overview	36
13.2	Folder Permissions	36
13.3	Folder Attributes	36
13.4	File and File Change Attributes	36
13.5	File Naming Rules	37
13.6	Active Checkouts	37
13.7	Purging Files	37
13.8	Column Layouts	37
	13.8.1 Overview.....	37

	13.8.2 Customizing the Layout.....	37
13.9	Utilities	38
	13.9.1 Delete.....	38
	13.9.2 Attributes.....	38
14	12D MODEL PROJECTS	38
14.1	Overview	38
14.2	Attributes	38
14.3	Permissions	39
14.4	Sharing Permissions	39
14.5	Utilities	39
15	TASKS AND TASK TYPES	39
15.1	Overview	39
15.2	States and State Transitions	40
15.3	Attributes	41
15.4	Actions	41
	15.4.1 Dependencies Closed.....	41
	15.4.2 Task due to start.....	41
15.5	Reminders	41
15.6	Task Templates	41
16	NAMING RULES	42
16.1	Overview	42
16.2	Job Naming Rules	42
	16.2.1 Overview.....	42
	16.2.2 Naming Rule Components.....	42
16.3	File Naming Rules	43
	16.3.1 Overview.....	43
	16.3.2 Extensions.....	44
	16.3.3 Naming Rule Components.....	44
17	TRACKING ISSUED FILES AND DOCUMENT	
TRANSMITTALS	45	
17.1	Overview	45
17.2	Concepts	46
	17.2.1 File Set Types.....	46
	17.2.2 File Sets.....	46
	17.2.3 Versioning.....	46
17.3	Issue Attributes	46
17.4	File Attribute Prompting	46
17.5	Issued File Names	46

17.6	Issued File Settings	47
17.6.1	Enabling the Issued Files Registry.....	47
17.6.2	Enabling Issue Versioning.....	47
17.6.3	Showing the Issued Files Registry only at the top level	48
18	SETTING UP EMAIL TRACKING	48
18.1	Overview	48
18.2	Exclusions	48
19	CUSTOMIZING OUTGOING EMAILS	48
19.1	Overview	48
19.2	Common Variables	50
19.3	Customizable Templates	50
19.3.1	Headers and Footers.....	50
19.3.2	File Email Templates.....	50
19.3.3	Folder Email Templates.....	53
19.3.4	Forum Email Templates.....	54
19.3.5	General Email Templates.....	55
19.3.6	Note Email Templates.....	55
19.3.7	Task Email Templates.....	55
19.3.8	12d Model Project Email Templates..	56
19.4	Logic in Templates	57
19.4.1	If Statements.....	57
19.4.2	Link Statements.....	57
20	FILES OVER THE WEB	57
20.1	Overview	57
20.1.1	File Publishing.....	57
20.1.2	File Drops.....	58
20.2	Setup	58
20.2.1	HTTPS Setup.....	58
20.2.2	Setting up File Publishing.....	59
20.2.3	Setting up File Drops.....	59
21	CLIENT DATA CLEANING	60
21.1	Overview	60
21.2	Clean Unused Files	61
21.3	Clean Small Files	61
22	FILE CONVERSIONS	61
22.1	Overview	61
22.2	Installed Conversions	62
22.3	Custom Conversions	62

23	CUSTOMIZING SEARCH	63
	23.1 Overview	63
	23.2 Job Searches	64
	23.3 File Searches	64
	23.4 System Searches	64
24	REPORTING	64
	24.1 Overview	64
	24.2 Standards Reports	64
	24.3 Custom Reports	64
	24.3.1 Overview.....	64
	24.3.2 Adding a Compiled Report Assembly	64
	24.3.3 Generating a Report.....	65
25	SCRIPTING	65
	25.1 Overview	65
	25.2 Events	65
	25.3 Task Libraries	65
26	FILE STORES	65
	26.1 Overview	65
	26.2 Types of File Stores	65
	26.2.1 Delta Store.....	66
	26.2.2 Full Store.....	66
	26.3 File Store Bindings	66
27	FILE REPLICATION SERVERS	66
	27.1 Overview	66
	27.2 Terminology	66
	27.3 Synchronization	67
	27.3.1 File On Demand.....	67
	27.3.2 Scheduled Synchronization.....	67
	27.3.3 Adhoc Synchronization.....	68
	27.3.4 Transferred Data.....	68
	27.4 Connecting to a File Server as a user	68
	27.5 Routing and Metrics	70
	27.6 Data Cleaning	70
	27.7 Creating Servers	70
	27.8 Managing Servers	71
	27.8.1 Viewing Statistics.....	71
	27.8.2 Viewing Transfers.....	71

27.8.3	Editing.....	71
27.8.4	Links.....	71
27.8.5	Performing an Adhoc Synchronization	72

28	WATCH FOLDERS	72
29	ARCHIVING FILES	73
29.1	Overview	73
29.2	Archiving Files	73
29.3	Restoring Archived Files	74
30	CHANGE DESCRIPTIONS	74
30.1	Overview	74
30.2	Description Modes	75
30.3	Predefined Change Descriptions	75
30.3.1	Wizard Mode.....	76
30.3.2	Data Capture.....	76
31	SYSTEM SETTINGS	77
32	CONNECTORS	80
32.1	Overview	80
32.2	First Steps – Using a New Connector	80
32.2.1	Determine requirements.....	80
32.2.2	Apply for external access.....	81
32.2.3	Apply for a new 12d Synergy license.	81
32.2.4	Download and load the connector.....	81
32.2.5	Configure the connector and mappings	81
32.2.6	Backup the 12d Synergy server database	81
32.2.7	Do a connector test run.....	81
32.2.8	Setup a schedule.....	81
32.3	Connector Setup	82
32.4	Run Test	82
32.5	Run Now	82
32.6	Run on a Schedule	82
32.7	Run As	83
32.8	Configuration	83
32.9	Data Mappings	83
32.10	Target Attributes	84
32.11	Automatic Mapping	84
32.12	Deactivating Entire Entities	84
32.13	Constants	85
32.14	Logs	86

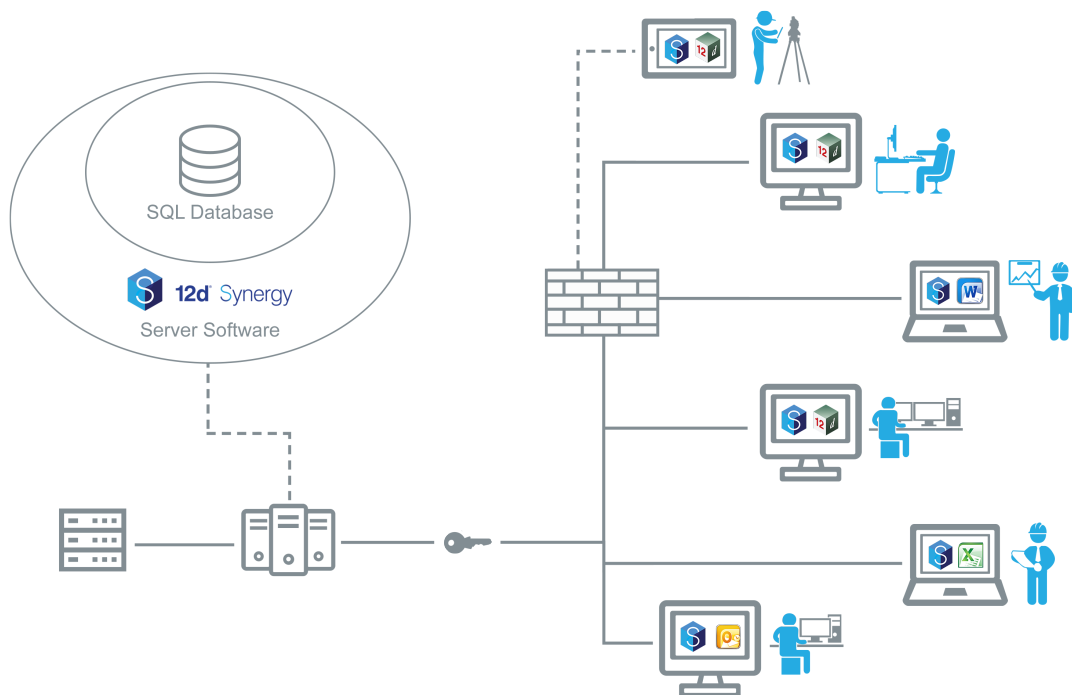
32.15	Avoiding Duplication of Data	86
32.16	GeneralStorage setting	87
33	BACKUP PROCEDURES	87
<hr/>		
34	TROUBLESHOOTING	87
<hr/>		
34.1	Error Logging	87
34.2	What to do	87
34.2.1	If the service won't start.....	88
34.2.2	If the service is started but users can't connect	88
34.2.3	If the service is crashing.....	88
34.2.4	If a user's client is sitting at a 'please wait' window	88

1 OVERVIEW

12d Synergy is a complex system with many different methods of configuration. This manual will guide you through how to configure each part of the system to suit your needs. Many of these tasks can only be accomplished from within the 12d Synergy Administrator, but some configuration can also be completed in the main 12d Synergy Client tool.

2 SYSTEM ARCHITECTURE

2.1 Server Architecture



2.2 Components

The server is made up of several components, including:

1. The 12d Synergy Service, which runs the server
2. A SQL Server database, which stores all meta data
3. File storage, which stores all 12d Synergy data files, based on your File Store settings
4. Index data, which stores all search indexes, based on your server settings

2.1 Required Ports

The 12d Synergy server requires Port 1212 and 1250 to be accessible.

If you are using publishing (see Section **Error! Reference source not found.:** Files Over the Web), the port you nominate must also be available and included in any firewall rules.

2.1.1 Security

All connections in 12d Synergy are secured with the Microsoft implementation of TLS/SSL (Transport Layer Security/Secure Sockets Layer).

If you are using Custom Authentication, you will need to set up an X509 Certificate.

2.1.2 WAN / Internet Access

If you wish 12d Synergy to be accessible over the internet, you simply need to open port's in your external facing firewall and forward the requests through to port 1212 and 1250 on your 12d Synergy server.

2.2 Client Architecture

2.2.1 Components

The following components make up the 12d Synergy Client installation.

1. 12d Synergy Client – required
2. 12d Synergy Administrator – optional (required for administration)
3. 12d Synergy plugin for 12d Model – required
4. 12d Synergy plugin for Microsoft Outlook - optional
5. 12d Synergy plugin for Microsoft Word – optional
6. 12d Synergy plugin for Microsoft Excel - optional
7. 12d Synergy plugin for BricsCAD - optional
8. 12d Synergy plugin for AutoCAD – optional

2.1.1 The Local Workspace

The local workspace is where all current working files are stored on the client. This must not change after it is installed. If it is changed, the user will need to delete the local database.

The location of the local workspace can be set at install time, or it can be set via a Windows environment variable: 12dSynergyWorkspaceRoot

Beneath the workspace root, the unique user will be given an identification number to separate their files from any other user who may share this workspace.

It is not important that all users on the same machine share the same workspace area as they will always be partitioned to protect data.

Note: While 12d Synergy supports file paths greater than 256 characters, many programs, such as Microsoft Word, do not. This should be considered when setting your workspace path.

2.1.2 The Local Database

The local database file (12dSynergy.db) keeps track of changes and it is imperative to the smooth running of 12d Synergy. It is found in %localappdata%\12dSynergy.

If the local database is deleted, new copies of working files will be required.

2.1.3 Other Important Local Files

3 Servers.4d

%appdata%\Servers.4d lists the last set of servers the user connected to.

2.4.4.2 Recent_layout.xml

Recent layout is an optional file that may reside in the 12dSynergy\recent_layout.xml folder. This defines how the Recent Jobs screen looks in the main 12d Synergy Client and the Outlook plugin. As a user will not be connected to the server yet, 12d Synergy cannot determine their favourite layout. This file allows a user, or administrator, to configure what fields are presented to them.

If this file does not exist, the standard layout is used.

The format for this file is as files:

```
<Columns>
```

```
  <Column Name="NameField" Width="ColumnWidthInPixels" Attribute="OptionalAttribute">
```

```
</Columns>
```

The name may be a custom name, or a known value including:

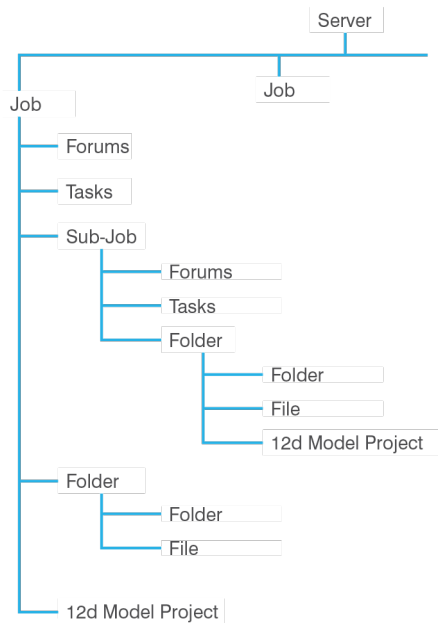
- Job
- Server
- Date
- Folder (only valid for Outlook)

If it is not one of these values, 12d Synergy will look for the last known value of a Job Attribute given by the Attribute field on the node.

4 INFORMATION ARCHITECTURE

4.1 Overview

This section contains a very brief overview of how information is structured inside 12d Synergy.



[Sample hierarchy of 12d Synergy Files](#)

4.2 Jobs

At a logical level, information in 12d Synergy is structured in 'Jobs'. Jobs are containers that can contain:

1. Other jobs
2. Folders
3. 12d Model projects
4. Tasks
5. Forums
6. The Issued File Registry

For more information on jobs, please see section 14 Jobs.

4.1 Folders

Folders can contain:

1. Other folders
2. 12d Model Projects
3. Files

For more information on folders, please see section 15 Folders.

5 THE 12D SYNERGY ADMINISTRATOR TOOL

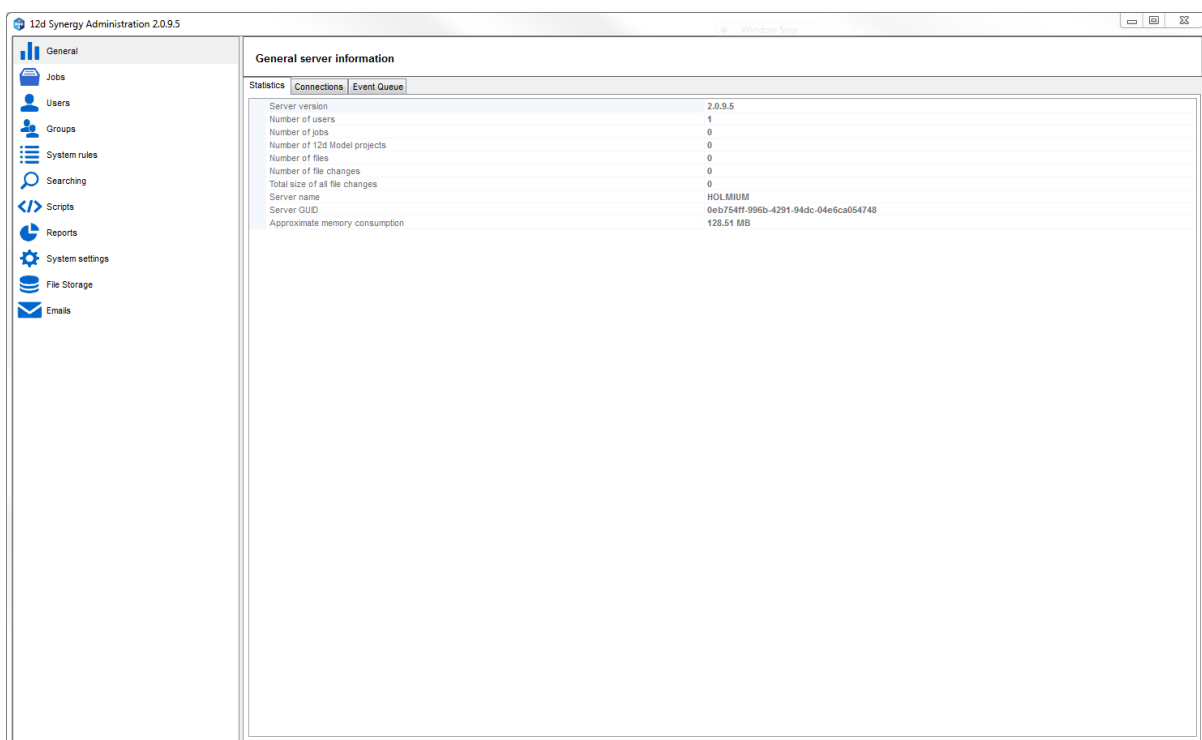
Most administration is performed via the **12d Synergy Administration** tool, although some can be performed by editing the specific editing in the **12d Synergy Client**.

The Administration tool must be installed with the 12d Synergy Client, and can only be accessed by users granted the System Administrator privilege.

6 GENERAL INFORMATION

6.1 Overview

To view general information about the system, such as basic statistics, who is connected and what events are running, please open the **General** section in the **12d Synergy Administrator**.



6.2 Viewing General Statistics

The 'statistics' tab will display high level information about system, including:

1. The current version
2. The number of users
3. The number of jobs
4. The number of 12d Model Projects
5. The number of files
6. The number of file changes across those files
7. How large this collection of file changes is
8. The name of the server
9. The approximate current memory footprint of the server

6.1 Viewing Connections

To see who is currently connected, use the 'Connection' tab. This will display each connected user, when they connected and which software they are using to connect.

6.2 Viewing and Cancelling Events

Use the 'Event Queue' tab to see which events are currently running. 12d Synergy can run events at high speed, so you may either see no events, or they may not be visible for long. To refresh this view, click the 'refresh' button.

Events will display:

1. Who is running them
2. The type of event
3. Limited information about what the event is doing
4. When the event started
5. An option to cancel the event in rare situations, such as a large file transfer by an absent user that needs to be cancelled for someone else to complete their work

7 MAINTENANCE AND LOGGING

7.1 Indexing

12d Synergy uses a search index to speed up searching. While this is generally maintained, external scripts or other processes may cause it to lag behind.

You can rerun your index from the **Maintenance** tab in the **General** section of the **12d Synergy Administrator**. Tick on what you want to index and click Index.

Be aware indexing may take sometime to run, depending on the size of the data involved.

7.2 Tuning

Everybody's use of 12d Synergy is just a little bit different. The 12d Synergy team has setup a database with indexes for general use, but in some cases, these may need to be refreshed or updated. Setting up indexes for a database is complex and requires specialist knowledge.

However, if you feel your database performance is lagging, you can Tune the database on the **Database tab** of the **Maintenance** section in the administrator.

This will rebuild your indexes.

7.3 Logging

The 12d Synergy server provides several logging mechanisms to help understand issues that may arise when running your server.

7.3.1 File Logs

All new installations automatically set a file log, but older installations may need to set one manually. You can do this in the **Logs** tab of the **General** section in the **12d Synergy Administrator**. Set a path to a file that is accessible from your server, such as c:\12dSynergy\log.txt

If required by support, you can turn on Show Debug for more information.

Debug information may grow large and should not be kept on for long.

7.3.2 Queue Logs

The queue log is a useful tool that may be required from time to time by the 12d Synergy support staff. In most cases, you can leave it off but if requested, you can turn it on in the 12d Synergy administrator and download it on request.

The queue log records which operations were run, when, by who, and if they were successful. This can also get large, so should not be left on for too long without clearing the underlying database table.

8 USERS, CONTACT AND GROUPS

8.1 Contacts

8.1.1 Overview

A contact is a record of information about a person or company. It consists, simply of a name and an email address. You can add additional attributes, if you so choose.

A contact does not have login access to the system unless they are also a User.

8.1.2 Defining Contact Attributes

Attributes that must be applied to contacts or users can be defined in the **Users** section of the **12d Synergy Administrator**, under the 'System Attributes' tab.

For more information on attributes and the types of attributes, please see section 13 Folders

8.2 Users

8.2.1 Overview

A user account gives someone the access to login to 12d Synergy. A user account consumes one user license for 12d Synergy.

Even if you are using Active Directory for authentication, all users that can connect must be listed as a user account in 12d Synergy.

All users must be associated with a 12d Synergy Contact record. In other terms, all users are also Contacts within the system, but not all Contacts are users that can log in.

8.2.2 User Authentication

When a user logs in, one of two authentication modes can be applied. This was specified on system setup, but can be modified via the **Settings** section of the **12d Synergy Administrator**.

8.2.3 Windows Authentication

Windows Authentication uses the concept of Single Sign On – if they have logged into Microsoft Windows and their user name has been added to 12d Synergy, then their account should be given access to 12d Synergy.

If you are not using Active Directory, then the user account must be added as a User to the server running 12d Synergy.

8.2.4 Custom Authentication

Custom authentication allows you to define your own user accounts and passwords, but will require the user of a valid x509 certificate to secure the transfer of information. See the section on setting up SSL Certificates for more information.

The user will need to type their login details in at each login.

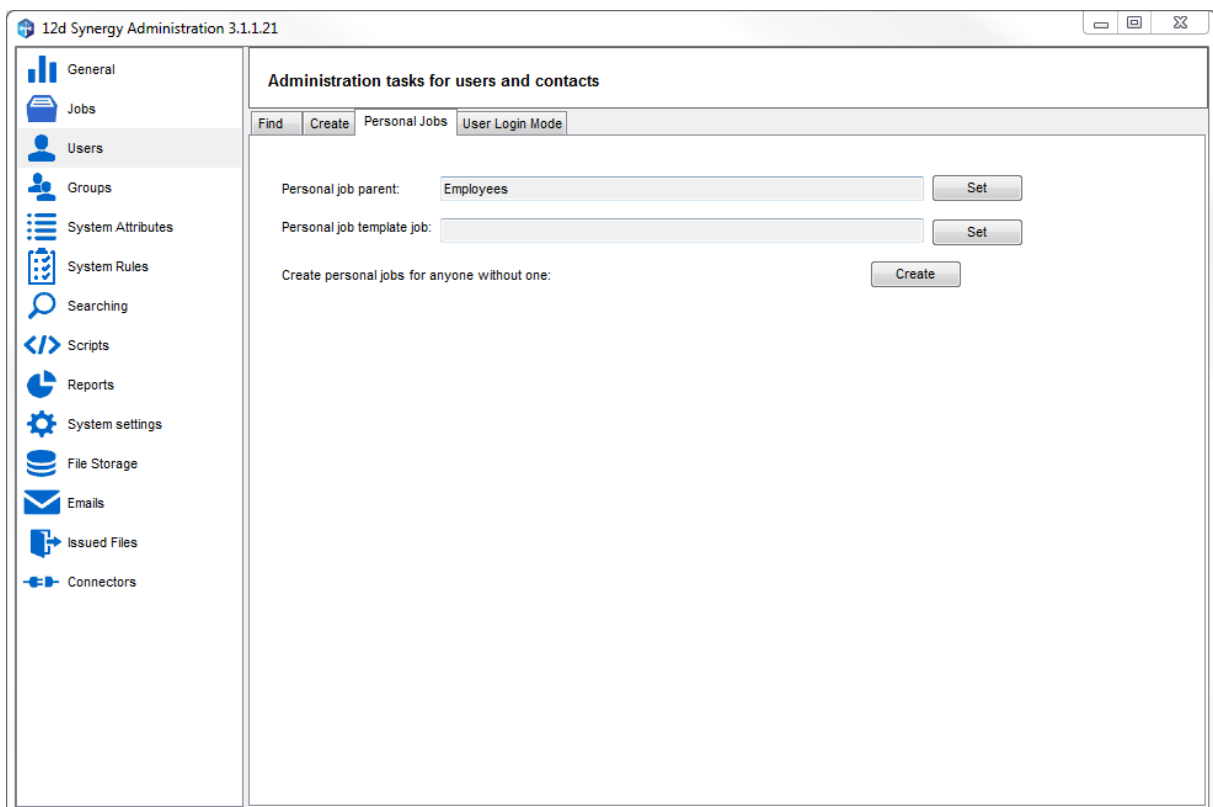
8.2.5 User Types

There are currently three types of users that can be created.

1. A normal user – operates as a normal user with standard permissions applied against them
2. The System Administrator – has complete control of the system and can make any changes
3. Job Creator – the Job Creator user has limited permissions, but can create top level jobs at will

8.1.1 Personal Jobs

It may be desirable to create a job for each user as a personal job, like a scratchpad or personal storage area. This can be nominated creation time, but you may also wish to use a standard format job, which can be achieved with a template.



The screenshot displays the '12d Synergy Administration 3.1.1.21' application window. The left sidebar contains a navigation menu with icons for General, Jobs, Users, Groups, System Attributes, System Rules, Searching, Scripts, Reports, System settings, File Storage, Emails, Issued Files, and Connectors. The main content area is titled 'Administration tasks for users and contacts' and features a tabbed interface with 'Find', 'Create', 'Personal Jobs', and 'User Login Mode' tabs. The 'Personal Jobs' tab is active, showing three configuration fields: 'Personal job parent:' with a dropdown menu set to 'Employees' and a 'Set' button; 'Personal job template job:' with an empty dropdown and a 'Set' button; and 'Create personal jobs for anyone without one:' with a 'Create' button.

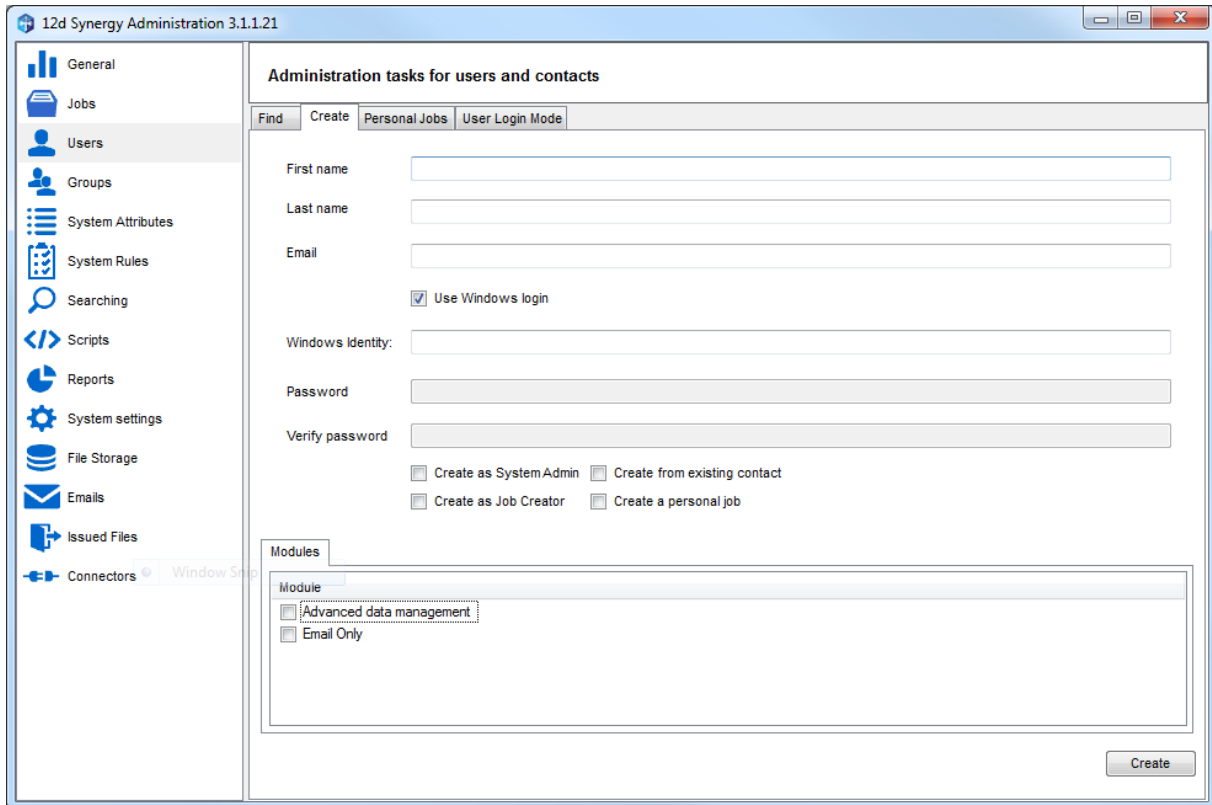
You may wish to make sure that all personal jobs are set below another job, such as Employees.

Lastly, the Personal Jobs area allows you to create personal jobs using the above details for anyone that doesn't have one, which may be useful if you wish to bring them in later.

8.1.2 Creating Users

To create a user, go to the **Users** section in the **12d Synergy Administrator**.

Select the 'create' tab.



The screenshot shows the '12d Synergy Administration 3.1.1.21' window. On the left is a navigation menu with icons for General, Jobs, Users, Groups, System Attributes, System Rules, Searching, Scripts, Reports, System settings, File Storage, Emails, Issued Files, and Connectors. The 'Users' section is selected. The main area is titled 'Administration tasks for users and contacts' and has tabs for 'Find', 'Create', 'Personal Jobs', and 'User Login Mode'. The 'Create' tab is active, showing a form with the following fields and options:

- First name:
- Last name:
- Email:
- Use Windows login
- Windows Identity:
- Password:
- Verify password:
- Create as System Admin
- Create from existing contact
- Create as Job Creator
- Create a personal job

Below the form is a 'Modules' section with a list of modules and checkboxes:

- Advanced data management
- Email Only

A 'Create' button is located at the bottom right of the form area.

If you are upgrading an existing contact to a user, simply tick the 'Create from existing contact' box and search for the Contact to be upgraded.

Along with basic contact information, additional contact attributes may be required if they have been required by the system setup.

You can also choose to enroll a user in license modules, such as Advanced Data Management, or to create a personal job.

Click Create when all appropriate values have been filled out.

9 Creating a user for Windows Authentication

If you are creating a user under Windows Authentication, you must supply the 'Windows identity' – this is the login name the user logs in to their workstation with. It should not include the domain name.

For example, if the user name is **MyOrg\JSmith** then the Windows Identity will be **JSmith**

The password fields are disabled in this case and should not be used.

7.2.7.2 Creating a user for Custom Authentication

When Custom authentication is used, you must enter a user name and a password.

9.1.1 Editing Users

To edit a user, go to the **Users** section in the **12d Synergy Administrator**. Select the 'Find' tab and search for the user you wish to edit.

Edit a User

First name: John

Last name: Smith

Email: john.smith@mycompany.com

Windows identity: jsmith

Personal job: No personal job [Set]

System admin? Is job creator?

Attributes | Group Membership | Log | Modules

Name	Value

[Delete] [Save] [Close]

This screen will allow you to edit basic user information, including contact information, for their first name, last name, email address and their login details (depending on the authentication mode).

You can also edit required attributes or enroll a user to use 12d Synergy licenses.

Note that a system administrator may not downgrade themselves from system administrator status.

10 Group Membership

To see which groups the user belongs to, including active directory groups, click the 'Group Membership' tab.

If you are using Active Directory, you cannot edit which groups this user belongs to.

If you are not using Active Directory, you can add the user to or remove the user from groups here.

7.2.8.2 Logs

You may also use this screen to view user activity for a period of time. To do so, select the 'Log' tab and enter a date range to search through.

7.2.8.3 Modules

The modules tab allows you to enroll users to use certain 12d Synergy licenses/modules, such as Advanced Data Mangement.

7.2.8.4 Deleting Users

A user may be deleted from the system on this screen, but you may not delete your own user account.

Note that deleting a user **does not delete** the contact record. As actions are performed by specific contacts, all contacts remain in the system to track and report those actions.

10.1 Groups

10.1.1 Overview

Groups define collections of Users and are best used for assigning and controlling permissions. For more information on permissions, please see section 9 Permissions

10.2 Groups with Active Directory

If you are using Active Directory, you cannot add new groups via 12d Synergy, but you must still nominate which Active Directory groups are available for use by 12d Synergy.

This is achieved via the **Groups** section in the **12d Synergy Administrator**.

10.3 Assigning Users to Groups

If you are using Active Directory, you cannot assign users to groups via 12d Synergy. This must be achieved in Active Directory itself.

10.4 Groups without Active Directory

If you are not using Active Directory, you can add new groups. This is achieved via the **Groups** section in the **12d Synergy Administrator**.

10.5 Assigning Users to Groups

For more information on how to assign users to groups, please see section 7.2.8.1 Group Membership.

11 CERTIFICATES

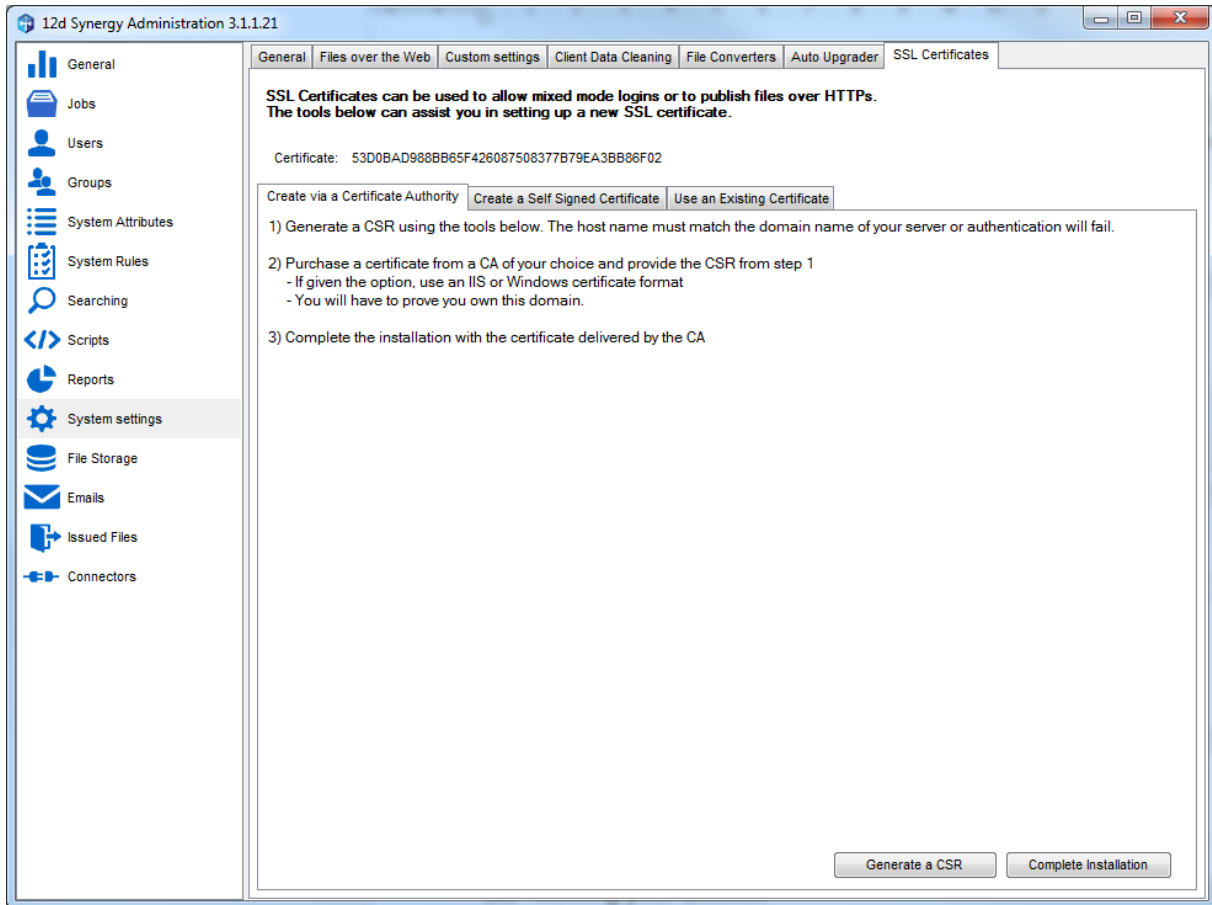
11.1 Overview

If you are using Custom Authentication, or wish to use HTTPS, you may need to set up an X509/SSL Certificate. SSL refers to Secure Socket Locker, and X509 Certificates are the mechanism by which this is achieved.

This is an industry standard process for applying encryption, and uses a third party to help

1. Identify the server you are connecting to
2. Encrypt the data

11.1 Setting up a Certificate



Setting up an SSL Certificate can be a complicated process and should involve your IT group. It is important to realise that as SSL Certificates are used for identity, they must match the domain entered by the user / used as a publishing link.

There are three options:

1. Create via a Certificate Authority
2. Create a Self Signed Authority
3. Use an existing certificate

11.1.1 Create via a Certificate Authority

A Certificate Authority is a third party group, such as Versign, who can provide you with a valid certificate. To do so, you must

1. Generate a Certificate Signing Request using the button on the form
2. Complete the required details
3. Supply the CSR to your Certificate Authority (CA)
4. Download the supplied certificate and complete the installation

You must then restart the 12d Synergy server service to use this certificate.

11.1.1 Create a Self Signed Certificate

It is possible to create a self signed certificate, which means generate your own. However, this will not automatically be trusted by external parties. Users trying to connect to your server, or download a file,

may be presented with a warning to validate the security of your server.

11.1.2 Use an Existing Certificate

If you have previously bought a certificate and installed it, you must make sure it is in the Local Machine / Personal store on the server. If it is, you can get the Hash from the Microsoft Certificate Store and apply it here.

You must then restart the 12d Synergy server service to use this certificate.

12 LICENSING

12.1 Overview

Licensing in 12d Synergy is on a per-user basis. Your license enables you to run the server and allows the creation of a certain number of users.

You will also have a number of modules to which you can enroll a fixed number of users.

If there is a problem with the license, the server will not start and an error will be written to the Windows Event Log.

12.2 Viewing your License

You can view your license in the **12d Synergy Administrator**, in the **General** section.

This will show you when your license expires, how many licensed users you have used, as well as which modules you have and which users are assigned to each.

The screenshot displays the '12d Synergy Administration 3.1.1.21' window. The left sidebar contains a navigation menu with icons for General, Jobs, Users, Groups, System Attributes, System Rules, Searching, Scripts, Reports, System settings, File Storage, Emails, Issued Files, and Connectors. The main content area is titled 'General server information' and includes tabs for Statistics, Connections, Event Queue, License, Maintenance, Logs, and Database Backup. The 'License' tab is active, showing 'Current License' and an 'Upload a new License' button. Below this is a table with two columns: 'Name' and 'Value'. The table contains the following data:

Name	Value
License data	
Expiry date	01-06-2016
Users	14 of 100

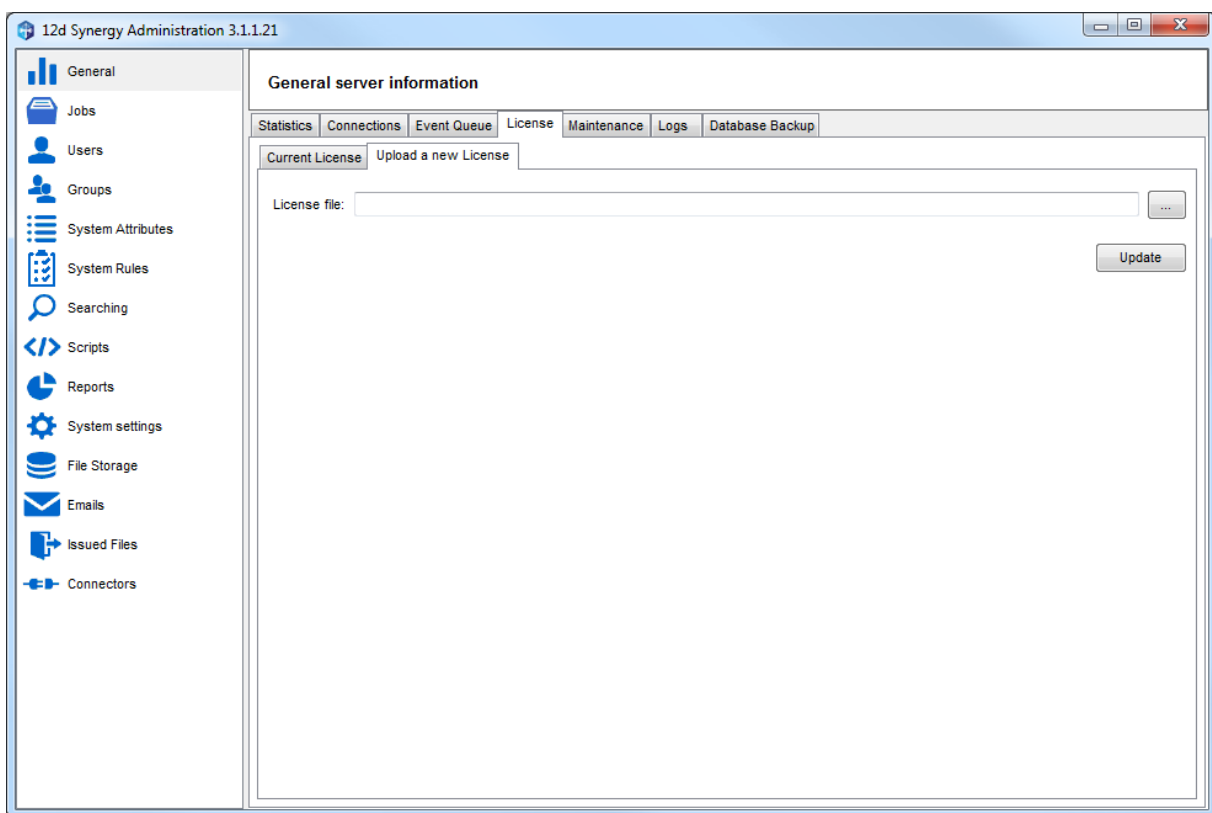
Below the table, there is a section for 'Available Modules' with a list: Advanced data management, DevelopmentFeatures, File Replication Servers, Connector for Workflow Max, Connector for Outlook, and Email Only. To the right of this list, it states 'You are using 0 of 15 users' and there is a table with a single header 'User' and an empty body. At the bottom right of the main content area, there are '+' and '-' buttons.

12.3 Upgrading/Installing a License

When you are supplied a new license by 12d Solutions, you can install it using the 12d Synergy Administrator.

To upgrade or install a license,

1. Open the 12d Synergy Administrator.
2. Go to the General section
3. Select the License tab
4. Select Upload a new License
5. Find the license file and click update
6. If the update is successful, it will be automatically available for use – no service restart is required.



12.1 Users and Module Enrolment

You can modify which users are enrolled to which module from the license screen, when creating users or when editing a user.

12.1.1 Via the License Screen

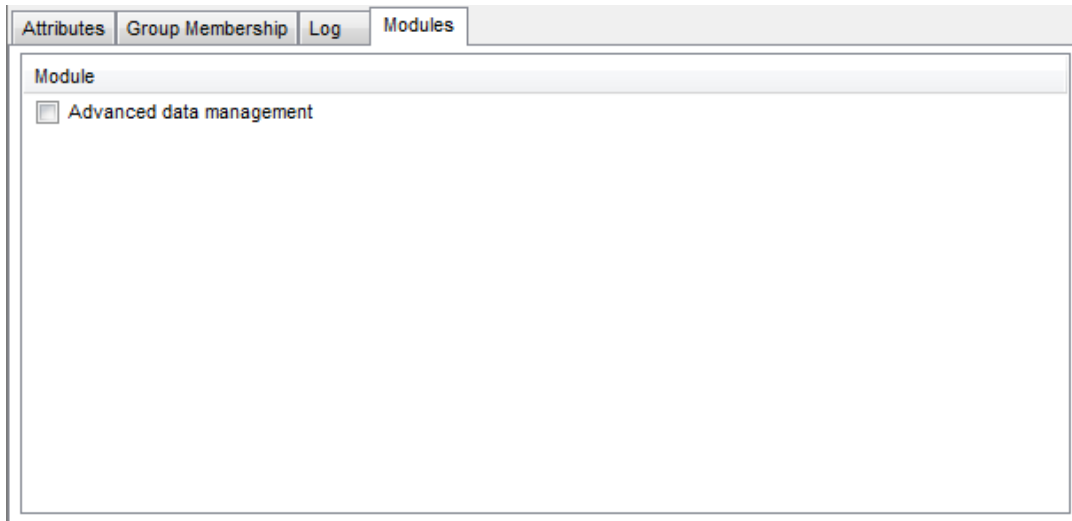
Select the module you wish to change users for

To add users, click 'Plus' and select the users to add to the module

To remove users, select the users to remove and click 'Minus'.

12.1.2 Via the User Editing/Creation screen

You can turn on or off modules for users at creation time, or by finding and editing them. Note that only the modules that have available user counts left will be shown if the user is not enrolled.



13 PERMISSIONS

13.1 Overview

12d Synergy defines different types of permissions for each of the different entities within 12d Synergy. However, these can be broken in to two different types.

1. Visibility – can this entity be seen by a current user or group?
2. Accessibility – how can the current user or group access this entity?

For more information on the permissions available for each entity, please consult the relevant section in this manual.

13.1 Permission Inheritance

Note that permissions can be inherited, but this can be controlled at the appropriate entity. There are three states for any particular permission in the system.

1. Allowed
2. Denied
3. Undefined

Undefined resolves to **denied** if no inheritance is set, otherwise it will use the inherited setting.

13.1 Types of Permissions

13.1.1 Explicit Permission

An explicit permission is a permission applied directly to a user, group or role, such as Read, Write, Create Folder etc. This was the only method of applying permissions before V3.

13.1.2 Permission Sets

V3 introduces a new type of permission, called Permission Sets. Permission Sets are groups of predefined permissions that can be much more easily applied.

For example, you can define a permission set called Data Reader, with the permissions:

- Allow View

- Allow Read

This can be applied against any entity in 12d Synergy. When calculations are calculated, the permission set is checked for its applied permissions.

This means editing the Permission Set, such as denying Write, will automatically change permissions across the system. This makes the process much easier to manage.

13.1 Permission Merging

In some cases, a specific user may be applied permissions from different sources. They may be

1. A combination of explicit permissions and evaluated permission sets
2. Applied permissions from a Group
3. Applied permissions from a job Team

In some cases, it may be any combination of the above, in which case permissions are merged. In this case, the following priorities are used.

1. Allowed always overrides undefined
2. Denied always overrides undefined and allowed

13.1 Editing Permissions

13.1.1 The Editor

While the permissions available for any entity within 12d Synergy may vary from entity to entity, the editors for users, groups and roles are designed to be consistent and simple to use.

Simply click and select the permission set and/or explicit permissions as required, and add new or delete new users / groups by selecting the plus or minus buttons.

Name

John Smith

Permission Sets

Data Reader
 Data Writer
 Job Creator
 Task Manager
 Admin
 12d Model - Operator
 12d Model - Sharer

[Set Info](#)

Explicit Permissions

Permission	Undefined	Allowed	Denied
View?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Write?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Report?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create Folders?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Create Files?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create Jobs?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leave Notes?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Update Attributes?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create 12d Model Pr...	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Admin?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Evaluate](#) [Copy](#) [+](#) [-](#)

13.1.2 Evaluating Permissions

As discussed in section 12.4 Permission Merging, permissions may be merged from multiple sources or even inherited, which may mean the permissions you see are not the effective or resolved permissions. To see the permissions that would occur as the result of inheritance or merging, click the **Evaluate** button in the permissions editor.

Evaluate Permissions

Evaluate permissions for: Users

Sample User [Find](#) [Update](#)

Permission	Value
View	No
Read	No
Write	No
Report	No
Create Folders	No
Create Files	No
Create Jobs	No
Leave Notes	No
Update Attributes	No
Create 12d Model Projects	No
Admin	No
Publish files	No
Create tasks	No
Assign tasks to others	No

[Close](#)

You can choose which user or group you want to find and evaluate permissions for simply and easily to see a complete, final list of their access to the entity (such as a folder or job) in question.

13.2 Administrative Permissions

There are several levels of administration available.

1. System Administrator – complete control over the system
2. Job Creator – can create top level jobs
3. Job Admin – has general control over a job, with some restrictions
4. Folder Admin – has general control over a folder, with some restrictions

13.1 Additional Permissions and Restrictions

There are two additional permission modes that can be applied cross the system.

1. System Administrators cannot edit all files by default. They can give themselves read or write permission as necessary, though this activity is logged.
This setting can be changed in the Settings area of the 12d Synergy Administrator.
2. Only System Administrators can purge data by default. This includes files, folders or jobs.
This setting can be changed in the 12d Synergy Administrator.

14 ATTRIBUTES

14.1 Overview

Attributes are pieces of user defined metadata to help describe your data. They can be applied to most entities within 12d Synergy, including Jobs, Folders, Files, 12d Model Projects, Contacts and Tasks. Attributes are not just informational – they can be used by some external processes and any scripting or workflow you might write.

14.2 Attribute Structure

An attribute is made up of the following:

- A name – used to uniquely identify the attribute
- A display name – how the user will see the attribute in the client
- A type, one of
 - Text
 - Integer
 - Auto incrementing Integer
 - Date / Time
 - Contact
 - User
 - List
 - Coordinate
 - Yes / No
 - Address
- An optional summary

When attaching an attribute to an entity, you can define if it is optional or read only.

14.1 System Attributes

Some attributes can be defined at a system level as well as at an entity level. Setting up a system attribute means that all entities of that type would require the attribute to be set. The following system attributes can be set in the **System Rules** section of the **12d Synergy Administrator**.

1. Job Attributes
2. 12d Model Project Attributes
3. File Attributes – with optional extensions

Note that adding attributes to any of these will always attach them to existing jobs, files or 12d Model Projects. In these cases, attributes must be given a default value or set to optional.

14.1 Attributes with Extensions

Some file attributes and file change attributes allow the use of extensions to constrain them to particular file types. For example, the system is installed with File Attributes for emails. These are set up to be limited to the extension MSG.

However, you may wish to apply extensions to files of all but a certain type, in which case the extension should be preceded by the ! character. EG: !MSG would apply to all files BUT MSG files.

15 JOBS

15.1 Overview

A job is the highest level structure in 12d Synergy – it is an item of work that contains folders, files, tasks, 12d Model Projects and potentially other jobs.

15.2 Permissions

15.2.1 General Job Permissions

The following permissions are available for jobs.

Permission	Definition
View	Can the current user see the specified job?
Read	Can the user read information about the job?
Write	Can the user make changes to information in the job?
Report	Can the user perform reporting on the job?
Create Folders	Can the user create folders in the job?

Create Jobs	Can the user create sub jobs in the job?
Leave Notes	Can the user leave notes in the job?
Update Attributes	Can the user attribute job level attributes?
Create 12d Model Projects	Can the user create 12d Model Projects?
Publish Files	Can the user publish files, if publishing files is enabled?
Create Tasks?	Can the user create tasks in this job?
Assign Tasks?	Can the user assign tasks in this job?
Edit others' tasks?	Can the user edit tasks that are owned by or assigned to someone else?
Delete others' tasks?	Can the user delete tasks that are owned by or assigned to someone else?
Admin?	A combination of all permissions at the job level
Can view 12d Model projects?	Can the user view 12d Model projects?
Can directly open 12d Model projects?	Can the user open a 12d Model project in 12d Model?
Can share from 12d Model projects?	Can the user share from a 12d Model project?

15.3 Categories

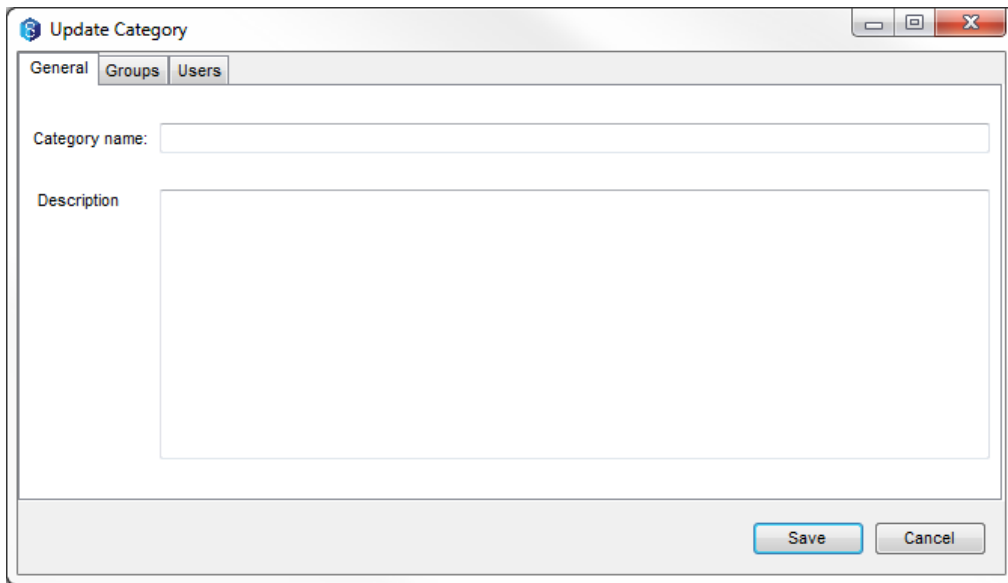
You may have certain types of jobs that should have different sets of permissions. You could apply these individually to each job, which is time consuming, or you could statically define them in a template – but in either case, neither of these sets of permissions will be easily updateable.

Instead, you should consider using 'Categories'. Categories define users and groups permissions for jobs, and they can also be used for quick searching.

A job can belong to many different categories.

To create, edit or delete categories, go to the **Jobs** section of the **12d Synergy Administrator** and select the **Categories** tab.

15.3.1 Creating or Editing a Category



The screenshot shows a window titled "Update Category" with three tabs: "General", "Groups", and "Users". The "General" tab is selected. It contains a "Category name:" label followed by a text input field, and a "Description" label followed by a larger text area. At the bottom right of the window, there are two buttons: "Save" and "Cancel".

A category must define a name with an optional description.

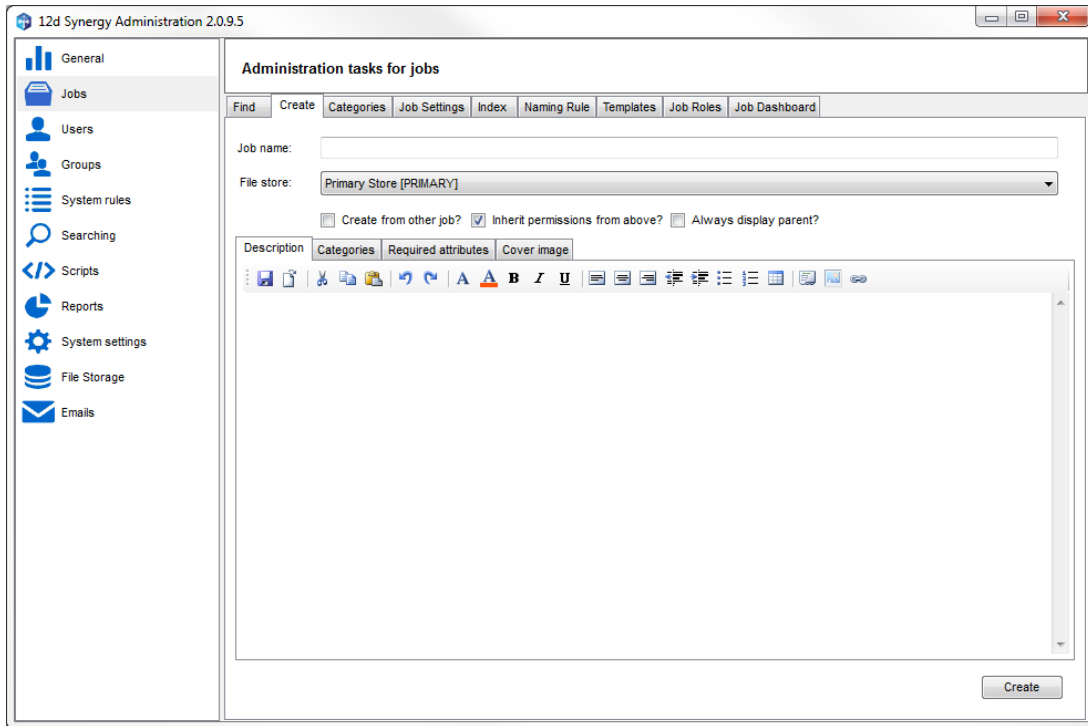
You can also apply permissions for groups or users here. When you are finished, click save.

15.4 Creating Top Level Jobs

Creating a top level job can be achieved in the **Jobs** section in the **12d Synergy Administrator**, or by connecting via the **12d Synergy Client** and selecting **12d Synergy->New Top Level Job**.

To be able to create a Top Level job, you must either be a Job Creator or a System Administrator.

When creating a job in the **12d Synergy Client**, there is a wizard mode available to simplify the job creation process. This manual will discuss the 'advanced' creation mode, which is the only option available in the **12d Synergy Administrator**.



Field	Description	Required
Job name	The name of the job to create – must be unique	Y
File Store	Which file store to use for the job	Y
Create from other job	Should this job be a copy of another existing job?	N
Inherit permissions from above	Should this job inherit its permissions from the job above it? Has no affect if this is a top level job	N
Always display parent	For sub jobs, the parent job can always be forced to appear in the tree when context is important	N
Description	A brief description of the job	N
Categories	Any permission categories	N
Required Attributes	Any attributes that have been required at a system or parent job level	Y
Cover Image	A cover image, which may be sourced from a specific file, google maps or a file already in 12d Synergy	N

15.5 Editing Jobs

Editing a job can be achieved either in the **12d Synergy Client** or in the **12d Synergy Administrator**.

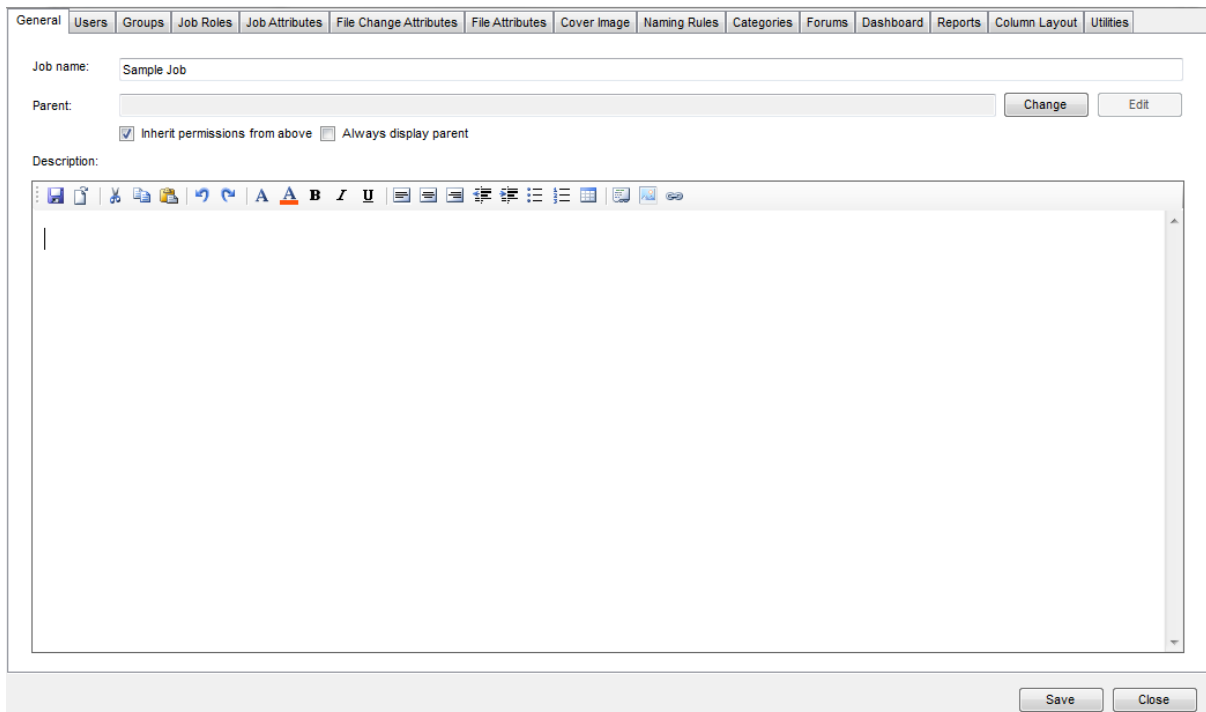
15.5.1 Editing a job in the 12d Synergy Client

To edit a job in the 12d Synergy Client, simply select the job you wish to edit, right click and select 'Edit' from the context menu. This will present you with the Job Editor. Please see section 9.1.6 The Job Editor

15.5.2 Editing a job in the 12d Synergy Administrator

To edit a job in the 12d Synergy Administration, select the **Jobs** section and select the **Find** tab. Locate the job you wish to edit. This will present you with the full tree of the job, including all folders and sub jobs, to allow complete editing.

15.5.3 The Job Editor



The screenshot displays the Job Editor interface. At the top, there is a tabbed menu with the following tabs: General, Users, Groups, Job Roles, Job Attributes, File Change Attributes, File Attributes, Cover Image, Naming Rules, Categories, Forums, Dashboard, Reports, Column Layout, and Utilities. The 'General' tab is active. Below the tabs, there is a 'Job name:' field containing 'Sample Job'. To the right of this field are 'Change' and 'Edit' buttons. Below the job name field is a 'Parent:' field with a dropdown menu and 'Change' and 'Edit' buttons. There are two checkboxes: 'Inherit permissions from above' (checked) and 'Always display parent' (unchecked). Below these is a 'Description:' label and a large text area with a rich text editor toolbar. The toolbar includes icons for undo, redo, bold, italic, underline, text color, background color, bulleted list, numbered list, link, and unlink. At the bottom right of the window are 'Save' and 'Close' buttons.

16 Users

This section allows you to define which users can access this particular job, using the permissions editor. Please see sections 14.1

17 Job Roles

This section defines the permissions for each job role and the number of positions that can be filled. For more information on job roles, see 14.48 Job Roles and Teams. To fill the positions for a job team, please see the 12d Synergy Client guide.

17.1.1 Job Attributes

The job attributes section of the editor allows you to define which attributes must be filled out for this job, and what their values are. For more information on editing attributes, please see section 13 Attributes

17.1.2 File Change Attributes

The file change attributes section of the editor allows you to define which attributes must be filled out for changes to any files in this job, and what their values are. For more information on editing attributes, please see section 13 Attributes

18 File Attributes

The file change attributes section of the editor allows you to define which attributes must be filled out any new files in the job, and what their values are. For more information on editing attributes, please see section 13 Attributes.

19 Cover Image

The cover image section of the editor allows you to define the image that best represents this job – it will be displayed in search results. This image can be sourced from Google maps, an existing external file or a file within 12d Synergy.

20 Naming Rules

Naming rules can be specified specifically for this job. A naming rule defines how entities such as sub jobs or files must be named. For more information on each of the types of naming rules and how they can be defined, please see section 18 Naming Rules.

21 Categories

The categories section of the editor allows you to define which categories this job belongs to. For more information on categories, please see section 14.3 Categories.

22 Forums

Each job can have any number of forums associated with it. A forum is a place where the users with access to a job can discuss ideas, communicate and collaborate. Use the Forums section to create, edit or delete forums. After a forum is added, users may need to reconnect to their current Job to use it correctly.

23 Dashboard

Each job can define its own dashboard to display information to users. Use this section to override it for the current job. For more information on the job dashboard, please see 14.49 Job Dashboard.

24 Reports

Custom report outputs for a job can be defined in the Reports section. For more information on reports and the types of reports that are available, please see section 26 Reporting

25 Utilities

The utilities pane provides additional tools for the maintenance of the job.
Export

This tool allows you to export all files from the job, without metadata, to a location on the server. This could be quite large so will not be downloaded to the local client machine.

26 Delete

This function will permanently purge and delete the job – including all metadata, folders, files, 12d model projects and so on. **No record of the job will exist after this operation completes and cannot be undone without restoring your own company backups.**

27 Attributes

Jobs that were created from Job Templates may need to fetch updated attribute definitions. Use these tools to either copy attributes from the source job template, or to another job.

27.1 Creating Sub Jobs

You can create a sub job either in the **12d Synergy Client** or in the **12d Synergy Administrator**.

27.1.1 Creating Sub Jobs in the 12d Synergy Client

Select the job under which you want a new job to be created.

Click the New Job button or right click and select 'create job'

27.1.2 Creating Sub Jobs in the 12d Synergy Administrator

To create a sub job in the editor, you must first edit the job in question. See section 14.5 Editing Jobs.

To create a job in the **Job Tree**, right click the node and select '**Create Job**'

The creation process is the same as in section 14.4 Creating Top Level Jobs.

27.2 System Level Job Attributes

You may wish to define attributes for every single job in the system. This is especially useful when using the Job Template options.

27.3 Job Templates

It is very common to need to create jobs which follow some specific structure; attributes, folder structures, pre-defined tasks for known activity, and so on. It is also very common to require different pre-defined structures, depending on the type of job.

Job Templates make this process easy.

A job template is defined by a new or existing job, and one or more 'match attributes'.

27.3.1 Match Attributes

A template can define one or more attributes that must be matched to use that template. A match attribute is an attribute and a value for that attribute which is used to determine which template should be used.

For example, let's assume you have three pre-defined templates, one each for administration, survey and design jobs. How does a user select which template to use?

Let's assume you already have a List Attribute called Job Type, which has three values

1. Administration
2. Survey
3. Design

By using this Job Type as a Match Attribute, the user will be forced to fill out the attribute when creating a job. Simply selecting the appropriate value will use the correct template.

You must have at least one match attribute per template, but you can have more.

Note that Match attributes must be system level job attributes (please see section 13 Attributes for more information on attributes)

27.1.1 Naming Rule

You can also specify how the created jobs should be named. For more information on naming rules, please see section 18.2 Job Naming Rules.

27.1.2 Template Job

The job that is used as the 'template' is a real job within 12d Synergy – you can connect to it with the client to add files and so on to customize it as need be. Note that once a job has been created using the template, it is not a 'live' link. Files or modifications you make to the template will not apply to the created jobs later.

27.1.3 Template Variables

When a template is created, you can use the attributes that were set by the user to help name elements of the job. For example, let's assume that there is an attribute called Job Type, as discussed above. You may wish to have a folder called Correspondence that is pre-pended with the job type.

To do so, simply name the folder \$Job Type\$ Correspondence

27.2 Job Roles and Teams

Each job can define its own team from a set of known roles, with a number of positions for each. This can be used for applying permissions, contacting team members and working with tasks. The roles can be applied globally for all jobs in the 12d Synergy Administrator, or when editing each individual job.

The screenshot shows a web interface for defining job roles and teams. At the top, there are two tabs: "Global Teams" and "All Roles". Below the tabs, there is a large text area labeled "Name" for entering the role name. To the right of this area is a text input field labeled "Number of positions:" with the value "1" entered. Below these elements is a table with two columns: "Permission" and "Mode". The table is currently empty. At the bottom right of the interface, there are two buttons: a blue "+" button and a blue "-" button, and a grey "Save" button.

Each role is defined by optional permissions, which are applied against the job (or in the case of global teams, every job), and a number of positions that can be filled.

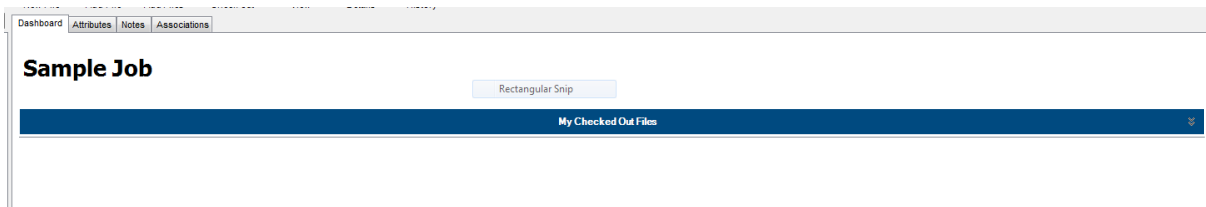
For example, you could have one team manager, but three surveyors, for each job.

Note that a role accepts a Contact, not a User – so even external parties can be part of a team if need be.

The contacts that fill each role can be filled out in the **12d Synergy Client**.

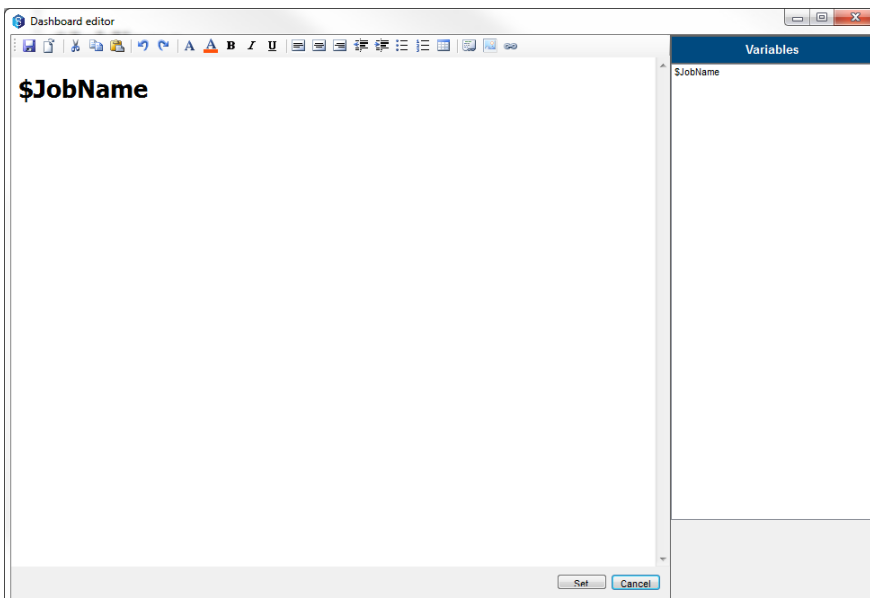
27.3 Job Dashboard

Each job displays with a ‘dashboard’ in the 12d Synergy Client. This is the first thing users see when they login.



This dashboard can be customized at either a system or job level. To edit it at a job level, visit the **Job Editor** and select the **Dashboard** tab.

Any job that does not have a custom dashboard will always use the system dashboard. Click ‘Edit’ to edit the dashboard.



This provides an HTML editor, which allows you complete flexibility. You can also use ‘variables’, such as the Job Name, or attributes that belong to the job. These variables can be selected from the right hand pane of the editor by double clicking on them.

Available variables include:

- \$JobName – the name of the current job
- \$CoverImage – the current cover image for the job, as an image

- \$Attribute – any attribute attached to the current job
-

27.1 Reindexing

In some cases, it may be necessary to reindex search data. This is usually not necessary and can take some time. Examples where this might be needed are:

1. After a major update and on recommendation from 12d Solutions
2. After some third party task or script runs
3. Manual edits on the database (generally not recommended or supported)

You can use the indexing tab to reindex the job when needed.

28 FOLDERS

28.1 Overview

To edit folders, simply find the job in the **12d Synergy Administrator** and select the folder you wish to edit. Alternatively, **right click** and **edit** the folder in the 12d Synergy Client.

28.2 Folder Permissions

Folder permissions can be set for a user, group or job role. For more information on permissions, see section 12 Permissions.

28.3 Folder Attributes

Folders can define their own set of attributes. These can be useful to describe general information about the folder itself. For more information on attributes, see section 13 Attributes.

28.4 File and File Change Attributes

You can define which attributes must be set for all files in a folder, with an optional extension. You can also set what values must be set before a file can be changed. For more information on attributes, see section 13 Attributes.

An example might be modeling an approval workflow with folders

Create a pending folder with a file change attribute 'Status' set to be: Pending

Create an approved folder with a file change attribute 'Status' to set: Approved

When you move the file between folders, the change attributes will be populated.

28.5 File Naming Rules

You can set file naming rules for any files within the folder. For more information on naming rules, please see section 18 Naming Rules.

28.6 Active Checkouts

In some situations, a check out may have to be cancelled. This may happen if a staff member goes on leave without releasing a check out. To do so, go to the **Active Checkouts** tab, select the file to be released and click **Cancel checkout**. Note that may mean the original owner of the checkout may lose data.

28.7 Purging Files

You may need to remove a file permanently from the system. **This cannot be undone.**

To do so, go to the list of files in the folder and select it, and purge it. Alternatively, select the file in the **12d Synergy Client**, access the Details view and purge it.

There are several permissions that control whether or not a file can be purged.

If the **Only System Administrators can Purge Files** setting is on, then only people who have been granted System Administrator privileges can perform this operation.

If **Owner can purge own files** is on, then the file creator may purge their own file – otherwise only Administrators for that folder or System Administrators can purge the file.

28.8 Column Layouts

28.8.1 Overview

In some cases, you may wish to control the layout of columns that appear when looking at a folder.

These can be defined at the following levels:

- A folder layout for every folder in the whole system (via **System Rules**)
- A folder layout for every folder in a job (**via the Job Editor**)
- A folder layout for a specific folder for every user (**via the Folder Editor**)

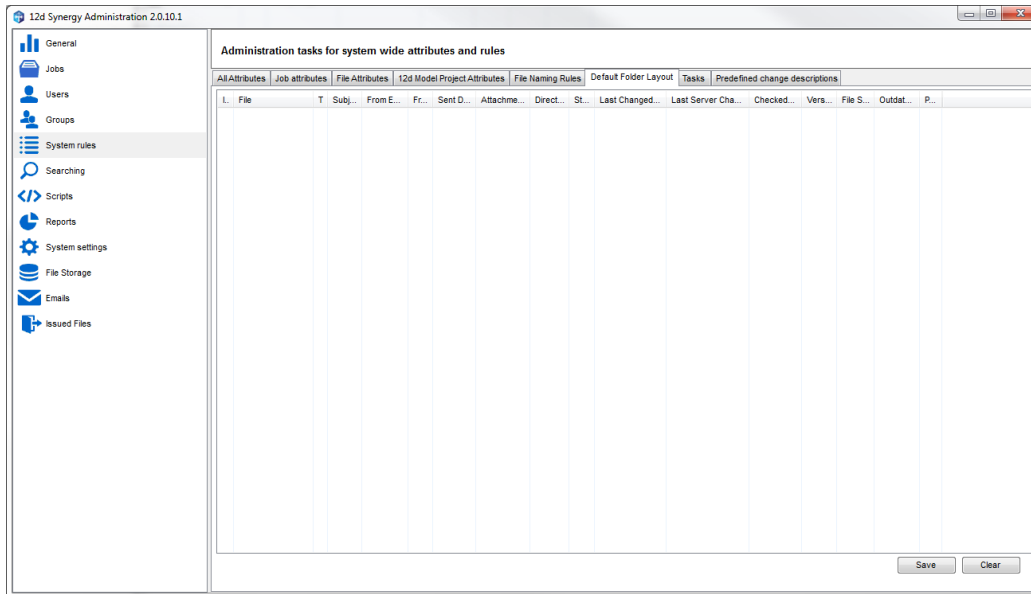
This allows you to control the visibility, order and width of columns, including standard and attribute columns. A common example is controlling which columns are visible on an Email folder so only email related attribute columns are visible.

Generally, it is advised only to customize for specific folders. When applying templates, these layouts are also copied.

A user can always override this themselves, but has the option to revert to the system defaults.

28.1.1 Customizing the Layout

Customizing the folders is a simple drag and drop exercise – visibility can be changed by right clicking the folders.



28.2 Utilities

28.2.1 Delete

To permanently delete a folder, go to the Utilities tab and select Delete. **This will remove all attributes and files and cannot be undone.**

System administrators can always purge folders, but whether or not normal Administrators or the folder creator can delete the folder will depend on whether or not the **Only System Administrators can purge** setting is on.

28.2.2 Attributes

If your folder is a template folder, then you may update its attributes; in which case, you can use the **Copy To** button to push out any updates to any folders that were created from your current folder.

Alternatively, you can choose to update the folder from its origin using the **Copy From** button.

29 12D MODEL PROJECTS

29.1 Overview

12d Model Projects can be created at the Job or Folder level. This can be managed by job administrators, as well as System Administrators, if required.

12d Model projects are edited at the job level.

29.2 Attributes

You can configure system wide attributes for 12d Model projects – meaning that all 12d Model projects must be created with specific attributes. This is accomplished via the **System Rules** section of the **12d Synergy Administrator**.

For more information on attributes, please see section 13 Attributes.

29.3 Permissions

Like most permissions, permissions for 12d Model projects are inherited from their parent folder or job, and can be assigned to users, groups or roles.

The following 12d Model project permissions exist:

1. Can Create 12d Model Projects – whether or not the user has permission to create 12d Model projects in the parent containers
2. Can View 12d Model Projects – whether or not the user can see the 12d Model Project
3. Can Open 12d Model Projects – whether or not the user can open the 12d Model Project in 12d Model
4. Can Share from 12d Model Projects – whether or not the user can share from 12d Model projects

29.1 Sharing Permissions

Sharing can also be controlled – not just which elements in a 12d Model project are available for sharing, which is arguably a job level administrative task, but who can share which elements.

29.2 Utilities

You can use the utilities tab to permanently delete 12d Model Projects. This is permanent and cannot be undone.

30 TASKS AND TASK TYPES

30.1 Overview

Every task must have a type – 12d Synergy comes with one task type, the generic task, unless you have installed the 12d Synergy Seed Data.

This topic will discuss how to configure Task Types and will not cover general day to day use of Tasks. For this information, please see the Getting Started manual.

Tasks Types allow you to categorize and define special information about tasks that might be used for different purposes. They allow you to define, for any new task, the following information:

- States and state transitions
- Attributes
- Actions
- Reminders
- Task Templates

To create a new Task Type or edit an existing Task Type, go to the **System Rules** section of the **12d Synergy Administrator** and select the **Tasks** tab.

You cannot remove a Task Type that has already been used.

Using Task Templates and States, you can easily set up simple workflows for your business processes.

30.1 States and State Transitions

A task must have a state, such as In Progress, or Closed. The default states for the generic task type are:

- Not Started
- In Progress
- Closed

Each state can be a Closure state (sets the task to closed), and it can also require attributes be filled out before the transition can be applied.

Additionally, each State transition can define what it can transition to. For example, consider an Approval task type, with the following states:

- Not Started
- Submitted
- Approved (closure)
- Approved with qualification (closure)
- Rejected (closure)

A valid workflow would require that the task go through several steps before it can be approved or rejected; namely that it must start at Not Started, Progress to Submitted, and then follow through to either Approved, Approved with qualification or Rejected.

By editing each state, you can define these state transitions; simply edit the state and turn on or off the valid transitions.

The screenshot shows a dialog box titled "Create / Edit a Task State". It has a "Name" field containing "Submitted" and a "Closure?" dropdown menu set to "Does not close task". Below these are two tabs: "Transitions" and "Attributes", with "Transitions" selected. A text instruction reads: "Define which states this state can transition to. If no transitions are defined for any states, all states will be available to the". A list of states is shown with checkboxes: "Not Started" (unchecked), "Approved" (checked), "Approved with qualification" (checked), and "Rejected" (checked). At the bottom right are "Set" and "Cancel" buttons.

30.1 Attributes

You can set required or optional attributes for a task, which must be filled out at creation time. For more information on attributes, see section 13 Attributes.

30.2 Actions

Using actions, you can set up basic reactions to any tasks of the supplied type. This is broken into two categories – actions when dependencies are closed, and actions when the task is due to start.

30.2.1 Dependencies Closed

When all dependencies of this task are closed, you can opt to

1. Do nothing
2. Change the state
3. Send an email to the task owner and assignee

30.1.1 Task due to start

When a task is meant to start, you can opt to

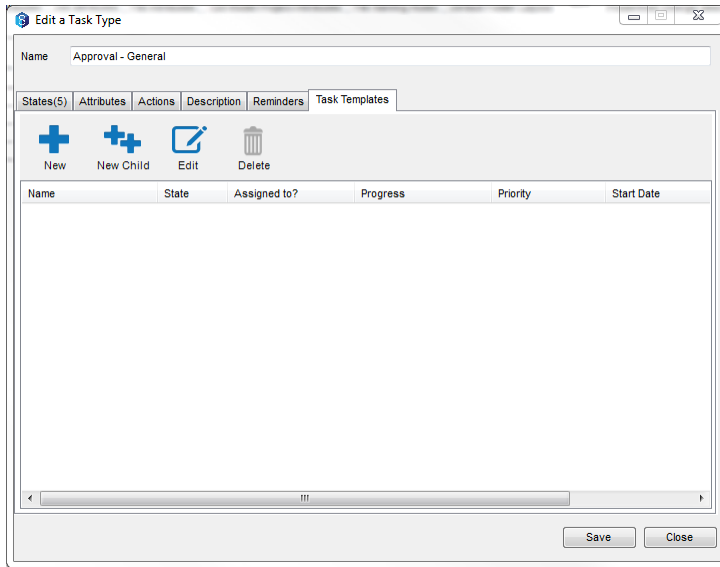
1. Do nothing
2. Change the state
3. Send an email to the task owner and assignee

30.1 Reminders

You can set up default reminders for a task type; for more information on reminders, see the Getting Started guide.

30.2 Task Templates

Task templates allow you to define task structures that will be created as sub-tasks whenever a task of the edited type is created. This allows you to set up known steps to fulfill greater tasks, such as a Consent. This editor operates exactly the same way as the general Task editor in the main 12d Synergy clients, but requires the Task Type to have been saved once.



31 NAMING RULES

31.1 Overview

Naming rules provide the option to control how items, such as Jobs and Files, should be named when they are added to the system.

31.2 Job Naming Rules

31.2.1 Overview

Job naming rules can be defined to control how jobs must be named. Naming rules can be applied at

1. The system level – to apply to all jobs (via the **System Rules** section of the **12d Synergy Administrator**)
2. The job level – to apply to all sub jobs of a job
3. For a job template – so the created jobs match the template name

31.1.1 Naming Rule Components

Naming rules follow a simple syntax, made up of many different parts, but they are best put together using the provided name builder. Some parts are pre-defined, such as when using attribute values, or may be interactive and require input from the user.

The following parts are available:

Part type	Description
Context free attribute	Uses an attribute to help fill out a value – this might be a List attribute, so the user must choose an option from a list of values Syntax: [AttributeName]
Job Variable –	The name of the job being created

Name	Syntax: [Job.Name]
Job Variable – Attribute	The value of an attribute on the job to be created, or inherited from the parent. Syntax: [Job.AttributeName]
User Variable - Name	The name of the user creating the job Syntax: [User.Name]
User Variable - Initials	The initials of the user who created job (from first and last name) Syntax: [User.Initials]
User Variable - Attribute	The value of an attribute attached to the user and their contact record Syntax: [User.AttributeName]
Named Value	This is presented to the user as a free text field with a name, to help describe what it's for Syntax: (Name)
Fixed String	Some fixed string, such as a delimiter like a dash or brackets. This can help break up the resulting name Syntax: Text
Free Text	Any free text the user might type Syntax: *
Timestamp	The value for the time the job is created. There are many different formatting options available to use. Syntax: [Timestamp.Timestamp format string]

Please note that all naming rules that are defined must be valid for the name supplied. If you are using a job template naming rule and a global rule, the given name must be valid for both.

31.2 File Naming Rules

31.2.1 Overview

File naming rules allow you to control how files should be named.

File naming rules can be created at the following levels:

1. The system level – to apply to all files (via the **System Rules** section of the **12d Synergy Administrator**)
2. The job level – to apply to all files in a specific job
3. The folder level – to apply to all files in a folder

Unlike job naming rules, you can create many different naming rule sets – this allows for different naming rules for different file types within one job or folder.

Within each set, you can define multiple extensions and multiple rules; at least one rule must be met for the naming rule conditions to be met.

31.1.1 Extensions

For each naming rule set, you can specify a set of extensions to which the rules apply. If you wish to ignore specific file types, simply prefix the extension with a ! (EG: !MSG to apply to all files other than !MSG)

31.1.2 Naming Rule Components

Naming rules follow a simple syntax, made up of many different parts, but they are best put together using the provided name builder. Some parts are pre-defined, such as when using attribute values, or may be interactive and require input from the user.

The following parts are available:

Part type	Description
Context free attribute	Uses an attribute to help fill out a value – this might be a List attribute, so the user must choose an option from a list of values Syntax: [AttributeName]
Job Variable – Name	The name of the job the file is being added to Syntax: [Job.Name]
Job Variable – Attribute	The value of an attribute on the job the file is being added to. Syntax: [Job.AttributeName]
Job Variable – Counter	A counter unique to that job – increments with each use of the variable – must be named, which provides the option to have many counters per folder. Syntax: [Job.Counter.Name]
Folder Variable – Name	The name of the folder the file is being added to. Syntax: [Folder.Name]
Folder Variable - Attribute	The value of an attribute attached to the folder the folder is being added to Syntax: [Folder.AttributeName]
Folder Variable – Counter	A counter unique to that folder – increments with each use of the variable – must be named, which provides the option to have many counters per folder. Syntax: [Folder.Counter.Name]
User Variable	The name of the user creating the job

- Name	Syntax: [User.Name]
User Variable - Initials	The initials of the user who created job (from first and last name) Syntax: [User.Initials]
User Variable - Attribute	The value of an attribute attached to the user and their contact record Syntax: [User.AttributeName]
User Variable - Counter	A counter unique to the creating user – increments with each use of the variable – must be named, which provides the option to have many counters per folder. Syntax: [User.Counter.Name]
Named Value	This is presented to the user as a free text field with a name, to help describe what it's for Syntax: (Name)
Fixed String	Some fixed string, such as a delimiter like a dash or brackets. This can help break up the resulting name Syntax: Text
Free Text	Any free text the user might type Syntax: *
Timestamp	The value for the time the job is created. There are many different formatting options available to use. Syntax: [Timestamp.Timestamp format string]

Note that file naming rules are only applied to new files added to the folder, not existing files already in the folder.

32 TRACKING ISSUED FILES AND DOCUMENT TRANSMITTALS

32.1 Overview

Keeping track of transmittals or issued files is an incredibly part of an AEC office. It's important to know who was sent which version of which document when.

Tracking of issued files must first be turned on before they can be used. To do so, go to the **System Settings** section of the **12d Synergy Administrator** and set the **Show issued files registry** value to **Yes**. You will need to restart the **12d Synergy Administrator** before the Issued Files options become visible.

32.2 Concepts

32.2.1 File Set Types

Issued Files are broken into 'file set types', which are simply logical categories. How you organise your issued files may depend on your processes, but some suggestions include:

- Architectural
- Surveying
- Design
- Other

Or

- Internal
- Clients
- Other

32.1.1 File Sets

File sets consist of specific versions of files. A file set belongs to a File Set type, and is issued one or more times.

32.1.2 Versioning

There are two types of issue registries – single version and multiple versions.

In the single version mode, once a file set has been issued, it cannot be modified.

In the multiple version mode, it can be modified as many times as a user likes; either by updating the versions of files to be issued, or by adding or removing files from the set.

32.2 Issue Attributes

You can define any number of attributes that must be filled out when issuing documents; this allows you to capture additional information about why or how the data is being issued. To define these attributes, simply go to the **Issue Attributes** tab in the **Issued Files** section of the **12d Synergy Administrator**.

32.3 File Attribute Prompting

In some cases, you may require users to have filled out certain File or File Change attributes before an issue can continue. An example might be an additional **Revision** attribute. You can use the **File Attribute Prompting** tab to set up any attributes that the user may need to be reminded about before issuing.

32.4 Issued File Names

It may be required that the files you issue have a different name to their internal names.

For example, you may wish them to include the version number that was issued, who issued them or some other attribute. In this case, you can use the **Settings** tab. Two options are available for configuration:

File template: for general non packaged files

Set name package template: when a file set is packaged in a zip file for issuing

Any free text or variable can be used to define the structure of your file names.

These can use any of the variables below:

Variable	Description
[Timestamp]	The time of the issue
[File.Name]	The name of the file being issued
[File.Version]	The version of the file being issued
[File.AttributeName]	Any file attribute or file change attribute
[FileSet.Name]	The name of the file set being issued
[FileSet.Created]	The time this issue set was created
[FileSet.CreatedBy.FirstName]	The first name of the creator of the file set
[FileSet.CreatedBy.LastName]	The last name of the creator of the file set
[FileSet.CreatedBy.Name]	The full name of the creator of the file set
[FileSet.CreatedBy.Initials]	The initials of the creator of the file set
[Job.Name]	The name of the job to which this file set belongs
[Job.AttributeName]	Any attribute on the job

For example,

[File.Name] – [File.Version] would issue a file with the name of the original file, followed by its version number: EG: Plot-1.pdf

32.5 Issued File Settings

There are several different settings for the Issued Files Registry, which can be configured in the **System Settings** section of the **12d Synergy Administrator**.

32.5.1 Enabling the Issued Files Registry

To enable the issued files registry, turn on the 'Show issued files registry' setting. You will need to restart the 12d Synergy Administrator for the Issued Files Registry option to be visible.

32.5.2 Enabling Issue Versioning

To enable or change the issue versioning mode, change the value of the 'Use issued file set versioning' in the **System Settings** section of the **12d Synergy Administrator**.

32.5.3 Showing the Issued Files Registry only at the top level

You may wish to only show the issued files registry at the top level of a job tree, rather than for sub jobs. This can help keep a clean consistent structure and ensure all issues are grouped together.

To set this, turn on the 'Show issued files registry at top level jobs only' setting in the **System Settings** section of the **12d Synergy Administrator**.

33 SETTING UP EMAIL TRACKING

33.1 Overview

12d Synergy can track incoming and outgoing emails via Microsoft Outlook. When an email is tracked by 12d Synergy, it is stamped so that any future replies or emails can also be tracked. Settings about how the stamp is defined can be found in the **Emails** section of the **12d Synergy Administrator**.

Stamps can be defined either as the name of the job or a specific attribute of the job. These stamps can take any form you like, though the default stamp is [#*]

For example, if the stamp source is the job name, and you have a job called HR – Training, all emails with the stamp [#HR – Training] will be associated with this job. You can define many different masks, and resolve them to one final stamp as required. This allows for variation or mistakes.

Email tracking is accomplished via the 12d Synergy Outlook plugin.

33.2 Exclusions

It may not be desirable to always attempt to track all emails, especially emails generated automatically by known senders. You can exclude these from tracking by adding their addresses to the Email Exclusions tab.

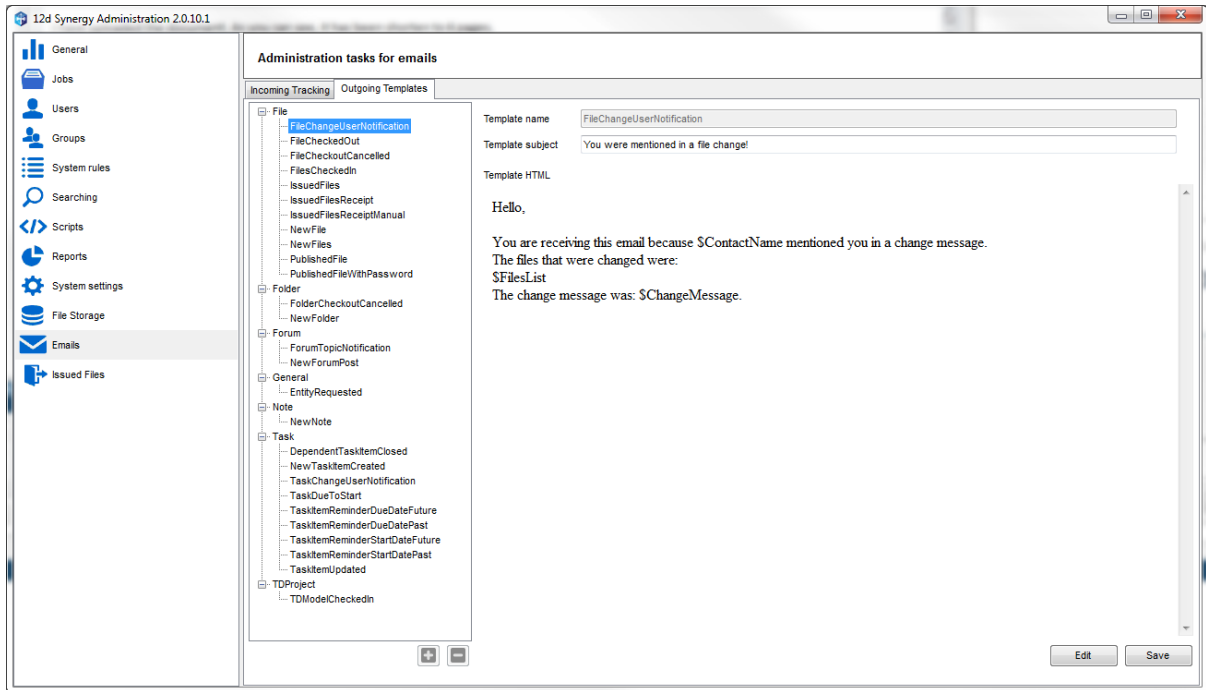
34 CUSTOMIZING OUTGOING EMAILS

34.1 Overview

12d Synergy will send out emails to notify users about important information or changes.

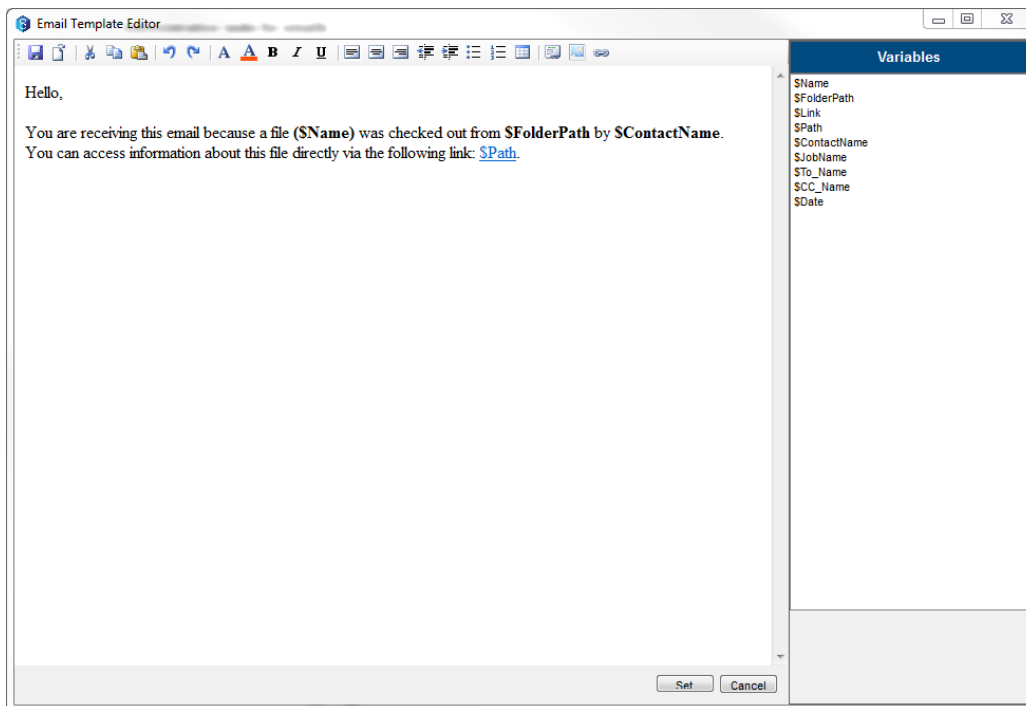
You may wish to customize how these emails look and feel, such as including a company logo, or change the location of information in the email.

To customize outgoing templates, go to the **Emails->Outgoing Emails** section of the **12d Synergy Administrator**.



The list of templates will be displayed there. To edit one, simply click edit.

Each template comes with optional variables that can be used, to display extra or useful information. You can simply double click them to use them in the editor.



When you are finished editing, simply click 'set'.

To save all your template changes back to the server, just hit 'save'.

34.2 Common Variables

All outgoing emails can use the following variables

- \$To_Name – the name of the person receiving the email
- \$CC_Name - the name of the person being CC'd on the email
- \$Date – the date the email was sent

34.1 Customizable Templates

All available templates and their variables are listed below.

34.1.1 Headers and Footers

All outgoing emails use a standard header and footer and logos. These are defined by standard variables in the html

\$StartOfEmail

\$EndOfEmail

\$HeaderLogo

\$FooterLogo

All of these map to specific files in the General Storage area on the server, which can be found on the server. These can be edited to suit your needs, but we recommend taking a safe backup copy first.

34.1.2 File Email Templates

35 FileChangeUserNotification

Sent When: A contact is mentioned using the @ symbol in a file change

Variables:

- \$ChangeMessage – the change message that was used
- \$ContactName – the name of the contact that made the change
- \$FilesList – the list of files that were changed

36 FileCheckedOut

Sent When: A file is checked out and a user has registered for a notification.

Variables:

- \$FileName – the name of the file
- \$FolderPath – the path to the folder containing the file
- \$Link – a 12d Synergy link to the file
- \$Path – the full path, including the file name
- \$ContactName – the name of the contact that checked the file out
- \$JobName – the name of the job in which the file was checked out

37 FileCheckOutCancelled

Sent When: A file you have checked out is cancelled by an administrator.

Variables:

- \$FileName – the name of the file
- \$Link – a 12d Synergy link to the file
- \$Path – the full path, including the file name
- \$ContactName – the name of the contact that cancelled the check out
- \$JobName – the name of the job in which the file was checked out

38 FilesCheckedIn

Sent When: A file you have registered to receive notifications for is checked in, or a file in a folder you have notifications registered is checked in

Variables:

- \$FilesList – the list of files that were checked in
- \$ContactName – the name of the contact that checked the files in

39 IssuedFiles

Sent When: Files are issued to contacts

Variables:

- \$Subject – the subject of the email
- \$AdditionalNote – any additional information added to the issue
- \$JobName – the name of the job from which files were issued
- \$IssuedBy - the name of the user that issued the files
- \$IssuedByEmail – the email address of the user that issued the files
- \$JobStamp – the stamp of the job from which the files were issued
- \$FilesList – the list of files that were issued

You can also display any specific Issue attributes by entering \$AttributeName

40 IssuedFilesReceipt

Sent When: Files are issued to contacts via email or publishing

Variables:

- \$Subject – the subject of the email
- \$AdditionalNote – any additional information added to the issue
- \$JobName – the name of the job from which files were issued
- \$IssuedBy - the name of the user that issued the files
- \$IssuedByEmail – the email address of the user that issued the files
- \$JobStamp – the stamp of the job from which the files were issued
- \$FilesList – the list of files that were issued
- \$SentVia – the mode by which these files were issued

You can also display any specific Issue attributes by entering \$AttributeName

41 IssuedFilesReceiptManual

Sent When: Files are issued to contacts via the manual mode

Variables:

- \$Subject – the subject of the email
- \$AdditionalNote – any additional information added to the issue
- \$JobName – the name of the job from which files were issued
- \$IssuedTo – the list of contacts that this was issued to
- \$IssuedBy - the name of the user that issued the files

- \$IssuedByEmail – the email address of the user that issued the files
- \$JobStamp – the stamp of the job from which the files were issued
- \$FilesList – the list of files that were issued
- \$SentVia – the mode by which these files were issued

You can also display any specific Issue attributes by entering \$AttributeName

42 NewFile

Sent When: A new file is added to a folder you are watching

Variables:

- \$FileName – the name of the file that was added
- \$FolderPath – the path to the folder
- \$Link – a link to the file
- \$Path – a full path to the file, including file name
- \$ContactName – the name of the contact that added the file
- \$JobName – the name of the job to which the file was added

43 NewFiles

Sent When: A number of new files are added to a folder or job you are watching

Variables:

- \$FilesList – the list of files that were added
- \$ContactName – the name of the contact that added the files
- \$JobName – the name of the job to which the files were added

44 PublishedFile

Sent When: A file is published for download

Variables:

- \$Link – the http link to the file being published
- \$FileName – the name of the file that was published
- \$AdditionalNote – any additional notes that were set at publication time

45 PublishedFileWithPassword

Sent When: A file is published for download, with a password

Variables:

- \$Link – the http link to the file being published
- \$FileName – the name of the file that was published
- \$AdditionalNote – any additional notes that were set at publication time
- \$Password – the password, sent in clear text

45.1.1 Folder Email Templates

46 FolderCheckoutCancelled

Sent When: A folder you have checked out is cancelled

Variables:

- \$Name – the name of the folder
- \$Link – the link to the folder
- \$ContactName – the name of the contact that cancelled the check out
- \$Path – the path of the folder

47 NewFolder

Sent When: A new folder is added to a folder or job you are watching

Variables:

- \$Link – a link to the new folder
- \$Path – the path to the new folder
- \$ContactName – the name of the contact that created the folder
- \$JobName – the name of the job

47.1.1 Forum Email Templates

48 Forum Topic Notification

Sent When: Someone is notifying you about a forum topic

Variables:

- \$JobName – the name of the job
- \$NotifierName – the name of the contact that is notifying you
- \$Link – the link to the topic
- \$Description – an additional description about why you are being notified
- \$Category – the category to which the topic belongs
- \$Topic – the name of the topic
- \$JobPath – the full path to the job

49 New Forum Post

Sent When: A new post is added to a forum, category or topic you are watching

Variables:

- \$JobName – the name of the job
- \$Category – the category that has been updated
- \$Topic – the topic that received a new post / was created
- \$Link – the link to the topic
- \$PosterName – the name of the contact that posted

- \$PostBody – the body of the post

49.1.1 General Email Templates

50 EntityRequested

Sent When: An item (file, folder, 12d model project etc) you have checked out is being requested

Variables:

- \$EntityType – the type of entity this is
- \$Path – the path to the entity
- \$ContactName – the name of the contact requesting access
- \$CheckedOutSince – how long this has been checked out for
- \$Reason – why this is being requested

50.1.1 Note Email Templates

51 NewNote

Sent When: A new note is added

Variables:

- \$NoteSubject – the subject of the note
- \$ContactName – the name of the contact leaving the note
- \$TargetName – the item to which the note was attached
- \$NoteMessage – the message of the note

52 \$Link – a link to the item to which the note was attached

52.1.1 Task Email Templates

All tasks carry standard variables that can be used.

These are:

Variables:

- \$Name – the name of the task
- \$Path – the path to the task
- \$Link – the link to the task
- \$StartDate – when the task is due to start
- \$DueDate – When the task is due to be completed
- \$StartDays – how many days until this task is to start
- \$DueDays – how many days until this task is due to be completed
- \$JobName – the name of the job to which this task belongs

- \$Priority – the priority of the task
- \$State – the current state of the task
- \$AssignedTo – the name of the contact or role this is assigned to
- \$AssignedToName – the name of the contact that this is assigned to (including resolved roles)
- \$CreatedBy – the name of the task owner / creator
- \$EditedBy – who edited the task to generate this email

You can also display any specific Task attributes by entering \$AttributeName

53 DependentTaskItemClosed

Sent When: A task's dependencies are all closed

Variables: See common task variables

54 NewTaskItem

Sent When: A new task is created

Variables: See common task variables

55 TaskChangeUserNotification

Sent When: A task is edited and you are mentioned in the change message using the @ symbol

Variables: See common task variables

56 TaskDueToStart

Sent When: A task is about to start and the task action is set to email

Variables: See common task variables

57 TaskItemReminderDueDateFuture

Sent When: A reminder is set before the task is due

Variables: See common task variables

58 TaskItemReminderDueDatePast

Sent When: A reminder is set after the task was meant to be due

Variables: See common task variables

59 TaskItemReminderStartDateFuture

Sent When: A reminder is set before the task is due to start

Variables: See common task variables

60 TaskItemReminderStartDatePast

Sent When: A reminder is set after the task was meant to start

Variables: See common task variables

60.1.1 12d Model Project Email Templates

61 TDModelCheckedIn

Sent When: A 12d model project is checked in

Variables:

- \$Path – the full path to the 12d Model project
- \$Link – the link to the 12d Model project
- \$ContactName – the name of the user checking the 12d Model project in
- \$JobName – the name of the job

61.1 Logic in Templates

Email templates also allow some conditional logic to help customize the output of emails. This is especially useful for Task emails, when you may wish to display different information to the task assignee, rather than the CC's.

All logic commands are placed in `[[]]`

61.1.1 If Statements

You can choose to print something to the email template based on conditions, using If and Elself statements

For example,

```
[[if $AssignedToName = $To_Name]]
```

You are the assignee!

```
[[else]]
```

You are not the assignee!

```
[[endif]]
```

If statements can also use Boolean Logic

```
[[if $AssignedTo = "Design Engineer" OR $AssignedTo = "Surveyor"]]
```

This is assigned to a designer or surveyor

```
[[elseif $AssignedTo != "Project Manager"]]
```

This is not assigned to the project manager, or design engineer, or surveyor.

```
[[endif]]
```

Note: If statements can also be nested.

61.1.2 Link Statements

Rather than using HTML, you can simply specify links using the `[[link]]` command. This takes the syntax:

```
[[link link="the uri here" name="the name to display here"]]
```

62 FILES OVER THE WEB

62.1 Overview

12d Synergy provides a mechanism to allow access to download or submit files via a standard web browser, using mechanisms called Publishing and File Drops.

62.1.1 File Publishing

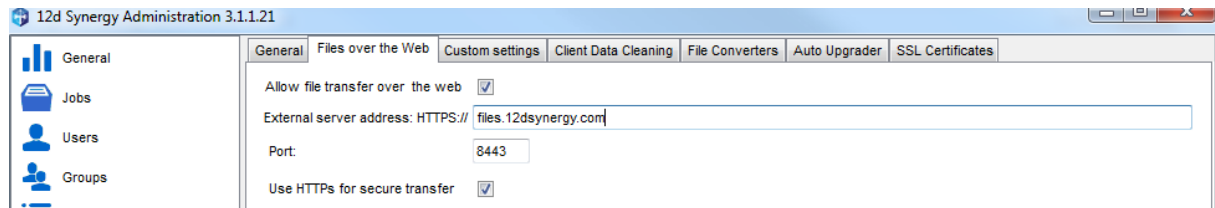
File Publishing allows you to advertise files to external parties for download via their web browser. Downloads can be tracked, password protected and users can receive notifications when files are downloaded.

62.1.2 File Drops

File Drops allows users to request file uploads from external parties. This is useful when you need data submissions that are larger than standard email allowances. Data capture can be set up, so additional attributes etc must be entered at submission time.

62.2 Setup

Files over the Web can be set up in the **Settings** section of the **12d Administrator**.

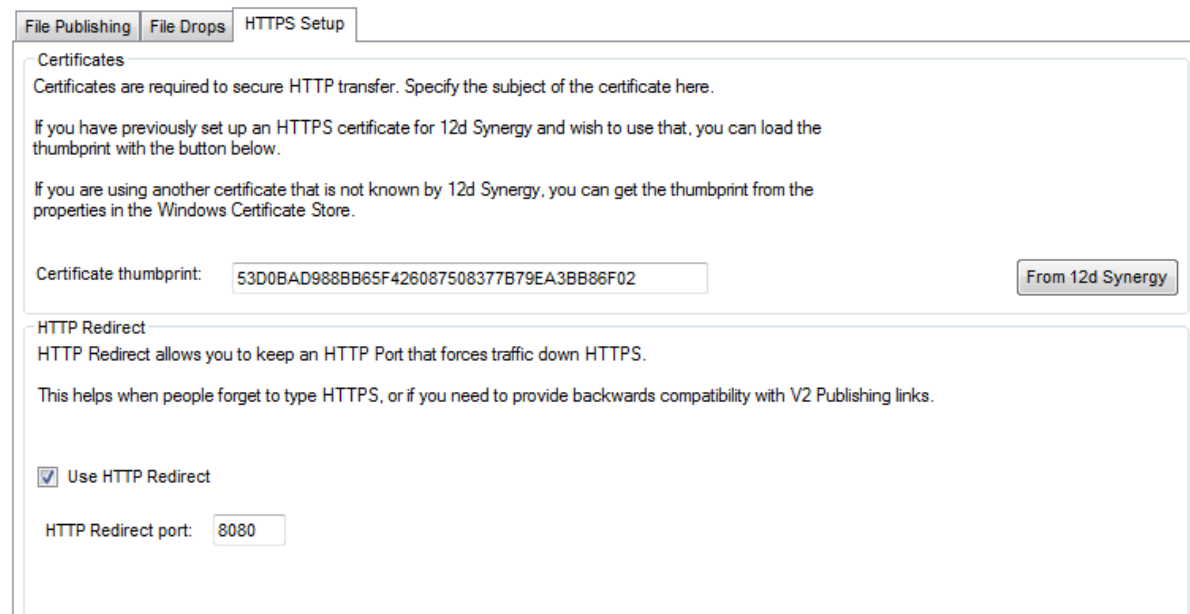


Please note that as this tool is available to external users, you must provide the external address of your server on the Internet. You may need to consult your IT administrator for this information. It may also be necessary for them to make a port available for you to use, as external traffic may need to be redirected through your router or modem to your 12d Synergy Server.

62.2.1 HTTPS Setup

HTTPS is secure HTTP – it ensures the data being sent / received is encrypted to prevent it from being intercepted. To use HTTPS, you must set up an SSL certificate.

It is recommended that you do set up HTTPS when transferring files over the internet, but please note the address in the certificate must match the External Server Address.



To use HTTPS, you must indicate the thumbprint of the certificate. If you have loaded a certificate into 12d Synergy previously (see the section on SSL Setup), you can retrieve this using the 12d Synergy setup.

Otherwise, you can retrieve the thumbprint / hash from the Microsoft Certificate Store.

Note: The certificate must be in the Local Machine / Personal Store.

HTTP Redirects allow you to accept connections on a non-secure HTTP connection and redirect them to HTTPS. This is useful if you have used publishing prior to turning on HTTPS and wish to maintain your existing links.

62.2.2 Setting up File Publishing

The screenshot shows a web-based configuration interface for file publishing. At the top, there are three tabs: 'File Publishing', 'File Drops', and 'HTTPS Setup'. The 'File Publishing' tab is active. Below the tabs, there are several configuration options:

- Allow publishing:** A checkbox that is currently unchecked.
- Relative server path:** A text input field containing the value `/12dSynergy/Publishing`.
- Path base:** A text input field containing the value `https://files.12dsynergy.com:8443/12dSynergy/Publishing`.
- Download page templates:** A dropdown menu with a downward arrow and an 'Edit' button next to it.
- Absolute package path (on server):** An empty text input field.

The relative path is optional and for cosmetic purposes only, to help differentiate publishing from other services.

63 Download Page Templates

It is possible to require that a user goes to an intermediate page before the file download begins. The page templates section of the File Publishing setup allows you to customize these settings to your needs, to include company logos and so on. There are several variables available that can be used.

1. `$FormStart` – must be at the top of the page
2. `$FormEnd` – must be at the bottom of the page
3. `$FileName` – the name of the file being published
4. `$Description` – a description about the file

64 Packages

If you wish to provide multiple files in a zip package, you will need to set a path on the server where these files can be stored.

64.1.1 Setting up File Drops

File Publishing | File Drops | HTTPS Setup

Allow file uploads

Relative server path:

Path base:

Customize:

Colour	Value
Page Background Colour	#FFFFFF
Header Colour - Background	#CDD9EC
Upload Box Colour - Background	#EBEFF7
Upload Box Header Colour - Backgro...	#3a6199
Text Colour	#5c6b80
Text Colour - Title	#000
Text Colour - Faint	#ABB1BA
Title colour - Background	#FFF
Button Colour - Text	#FFF

The relative path is optional and for cosmetic purposes only, to help differentiate publishing from other services.

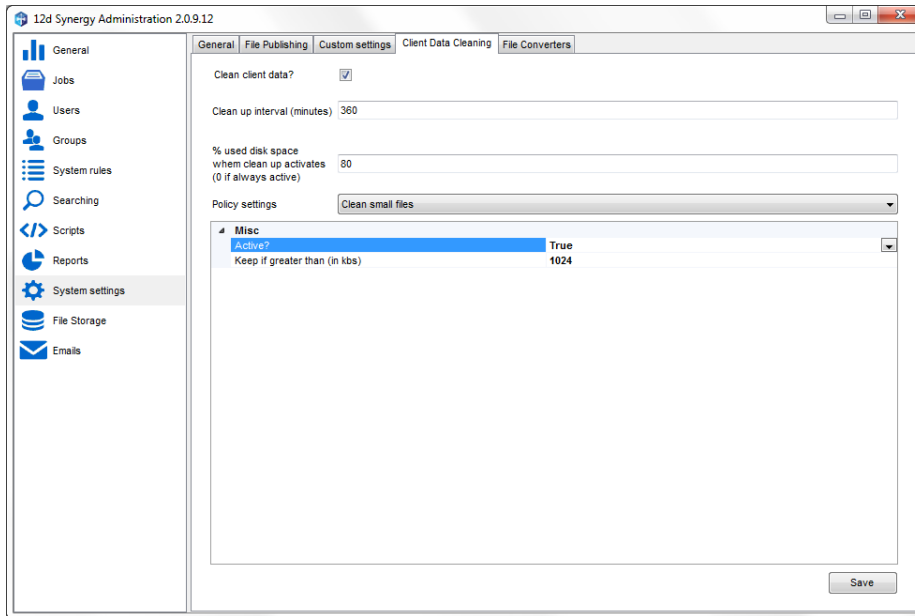
You can also customize various settings such as colour. Most settings are required on each File Drop setup, which can be found in the Advanced User Guide.

65 CLIENT DATA CLEANING

65.1 Overview

As users connect and work with 12d Synergy, local files may be downloaded that may not be needed on their machine anymore. The 12d Synergy Administrator allows you to define clean up policies as to when unneeded files may be removed from client user machines.

To turn on the Client Data Cleaning, go to the **System Settings** section of the **12d Synergy Administrator** and choose the **Client Data Cleaning** tab.



You will need to configure the following values:

1. Clean up interval – how many minutes between clean ups
2. Percentage of used disk space – what percentage of disk space should be used before the cleanup activates. This can be set to if it should always run.

Please see the details below for policies.

65.1 Clean Unused Files

You can tell the cleanup to remove files that have been used after a certain number of days. This defaults to 10 days. Set this by choosing the policy setting 'Clean unused files' and setting the 'Keep if used within' setting.

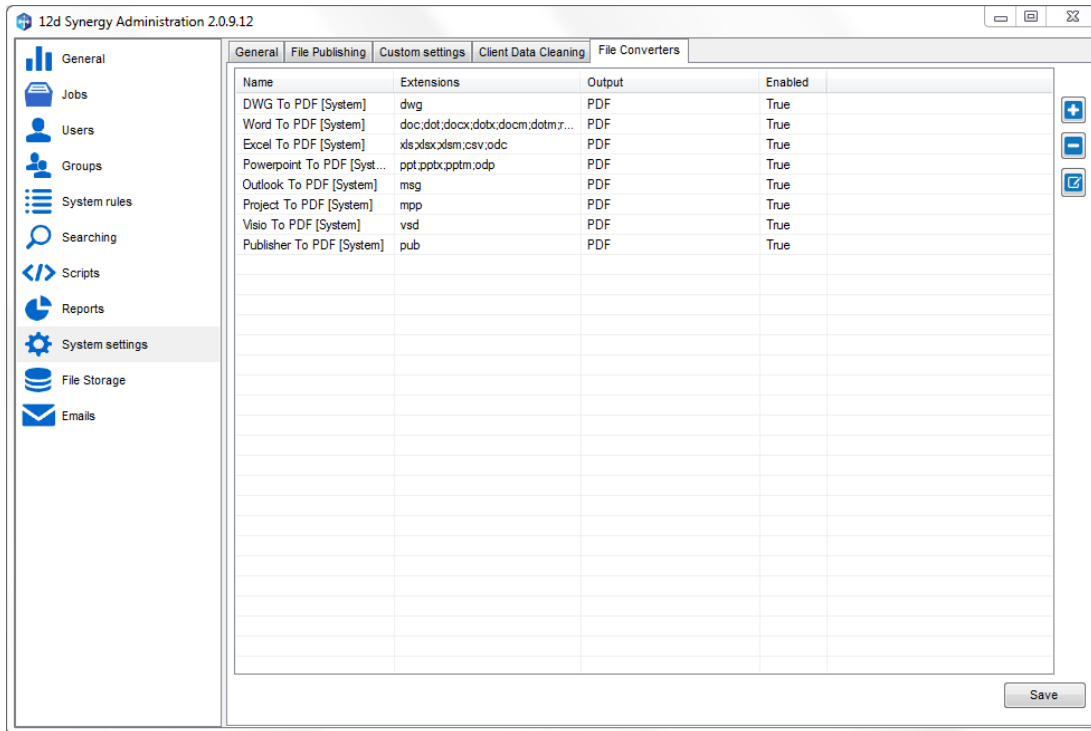
65.2 Clean Small Files

You can tell the cleanup to only clean small files, or rather, you can tell it which files to keep. Set this by choosing the policy setting 'Clean small files' and setting the 'Keep if greater than' size, in kilobytes.

66 FILE CONVERSIONS

66.1 Overview

12d Synergy can provide file conversions for your users. It is common to convert Word or other excel documents into PDF, for example.



66.2 Installed Conversions

The following conversions are available automatically – any Microsoft Office converter requires Microsoft Office 2010 or later to be installed on the same server as the 12d Synergy Server.

1. DWG to PDF
2. Microsoft Word to PDF
3. Microsoft Excel to PDF
4. Microsoft PowerPoint to PDF
5. Microsoft Outlook to PDF
6. Microsoft Project to PDF
7. Microsoft Visio to PDF
8. Microsoft Publisher to PDF

66.1 Custom Conversions

If you need to convert to another format that is not listed above and have access to a program that can provide that conversion for you, you can add a Custom Converter. To do this, go to the **System Settings** section of the **12d Synergy Administrator**.

Click the '+' button

Field	Description
Name	A cosmetic name to describe the converter to users
Input Extension	What types of files this converter can convert – eg: .docx
Output Extension	The type of the converted files – eg: .pdf
Executable or script	The path, on the 12d Synergy server, to the program to run to perform the conversion
Arguments	<p>Any arguments to pass to the conversion. Note that you should use \$IN to represent the file to be converted, and specify \$OUT as an argument for any created file that is the result of the conversion</p> <p>EG:</p> <p>If we have a converter that takes two arguments, the input file and output file like so:</p> <p>ConvertCSVToXlsx.exe -i <i>input</i> -o <i>file output_file</i></p> <p>You would specify arguments of -i \$IN \$OUT -o</p>

67 CUSTOMIZING SEARCH

67.1 Overview

Searching can be customized to provide a quick, better experience for users. As an administrator, you can define the common search fields for most search types and how the results appear to the user. This is available under the **Searching** section of the **12d Synergy Administrator**.

67.2 Job Searches

You can control the list of common attributes that will be displayed when searching, and what fields are displayed in the results.

67.3 File Searches

You can control the list of attributes that are used for File Searches.

67.4 System Searches

You can control the list of file, job and folder attributes that will appear for System wide searches.

68 REPORTING

68.1 Overview

There are two types of reporting in 12d Synergy – standard ‘simple’ reports that ship out of the box and offer limited customization, or customizable reports.

68.2 Standards Reports

Standards reports are shipped out of the box with 12d Synergy. They provide basic information about features such as Folders, Files, Tasks, Issues / Document Registers, or Jobs.

They are delivered as XML, which is passed through a user selected XSLT (Extensible Stylesheet) to provide formatting. If you are not familiar with XSLTs, there are many good online tutorials and open source tools to help build them.

An XSLT can easily and quickly convert XML data into a CSV for import into excel, or into HTML for cosmetic display.

XSLTs for standard reports can be set at the system level, and overridden at the job level, to allow for customization based on your client or business needs. For example, this may be as simple as a logo, or a different presentation of information depending on the context.

At any time, for any Standard Report, you can add a new Format, download the XSLT or update one.

Each report format is defined by:

- A name
- The final output format
- An XSLT to provide the transformation

68.1 Custom Reports

68.1.1 Overview

Currently, custom reports are available via the scripting engine built into 12d Synergy. You can programmatically control exactly what goes into your report, using full API access. For more information on the API, please see the Scripting Reference Manual.

68.1.2 Adding a Compiled Report Assembly

If you have created and compiled a report, these are added in the **Custom Reports** tab of the **Reports** section of the **12d Synergy Administrator**.

68.1.3 Generating a Report

Any reports are available under the **Reports** menu in the **12d Synergy Client**. Depending upon the assembly, they may require user input to generate.

69 SCRIPTING

69.1 Overview

12d Synergy has a full and complex API available for server side scripting use. Besides Custom Reports, there are two main scripting entry points.

- Events
- Task Libraries

These are accessible under the **Scripts** section of the **12d Synergy Administrator**.

69.1 Events

Scripts can be run at trigger points before and after events run. This can be used to validate if an event is allowed to occur, or what to do after an event runs. For more information on this API, please see the 12d Synergy Scripting Reference.

69.2 Task Libraries

A scripted task is an operation that may occur manually or on a schedule; this may be a clean-up task or it may synchronize data with some external system. For more information on this API, please see the 12d Synergy Scripting Reference.

The task libraries tab allows you to:

- Add task libraries
- Update or disable existing libraries
- Configure required inputs
- View logs
- Schedule tasks for regular runs

70 FILE STORES

70.1 Overview

12d Synergy stores its files in a 'file store'. When 12d Synergy is installed, a default File Store was configured. All initial jobs created would have been bound to this file store.

However, you are not limited to one. You may wish to span different jobs across different drives or physical machines. To set up more than one file store, visit the **File Storage** section of the **12d Synergy Administrator**.

Note that once bound, Jobs can currently not be moved to a different file store.

70.2 Types of File Stores

70.2.1 Delta Store

This is the default storage mechanism for 12d Synergy. This file store type cuts down on disk space by only storing the changes between files, though it will occasionally store full versions to cut down on time to reconstruct files when prior versions are requested.

The following settings are required:

File Store Location - where the file store should be located

Cache Retention – how long, in hours, a re-assembled file should be stored

How often to store full versions – after how many versions should a full version be stored to cut down on reassembly time

70.2.2 Full Store

The full store is the most simple time, and the most disk hungry, but the fastest to use. It simply stores a copy of every file.

The following settings are required:

File Store Location - where the file store should be located.

70.3 File Store Bindings

File store bindings describe which files should be stored in which file store. Once a file store is stored in a file store, all changes to that file will also go to that store.

File store bindings are defined by a set of rules, such as “is it an ecw”, or is it a folder named Emails?

The purpose is to allow you to span file storage across different drives, for different purposes. For example, files of high importance may go to faster disk drives etc.

Binding rules are then selected when a job is created, which indicates how the job should determine where files should go.

The following file store bindings are available:

1. File Name
Does the file match a file name? This can be an extension or a full name
2. Folder Name
Does the folder have a certain name?
3. Catch All
Everything else goes here

71 FILE REPLICATION SERVERS

71.1 Overview

V3 introduces File Replication Servers. File Replication Servers, or FRS, allow you to have multiple file servers across different sites. This makes file transfers faster for users in regional or distributed areas, but provides availability to your other sites by replicating data either on demand or on a schedule.

This section describes how to set up and manage a network of File Replication Servers.

71.2 Terminology

The **Master** node is the primary 12d Synergy server, which also servers out metadata.

A **12d Synergy File Replication Server (FRS)** is a file server only, which does not transfer metadata, and is installed at geographically distinct locations.

A **File Server** is any 12d Synergy server component that can transfer files, which includes both an FRS and the 12d Synergy Master

Your FRS network is displayed as a diagram, and is your primary point of management,.

71.3 Synchronization

Synchronization is the mechanism by which two file servers ensure their file versions are being replicated. Synchronizations occur either:

1. File on Demand
2. On a Schedule
3. Adhoc Synchronization

71.1.1 File On Demand

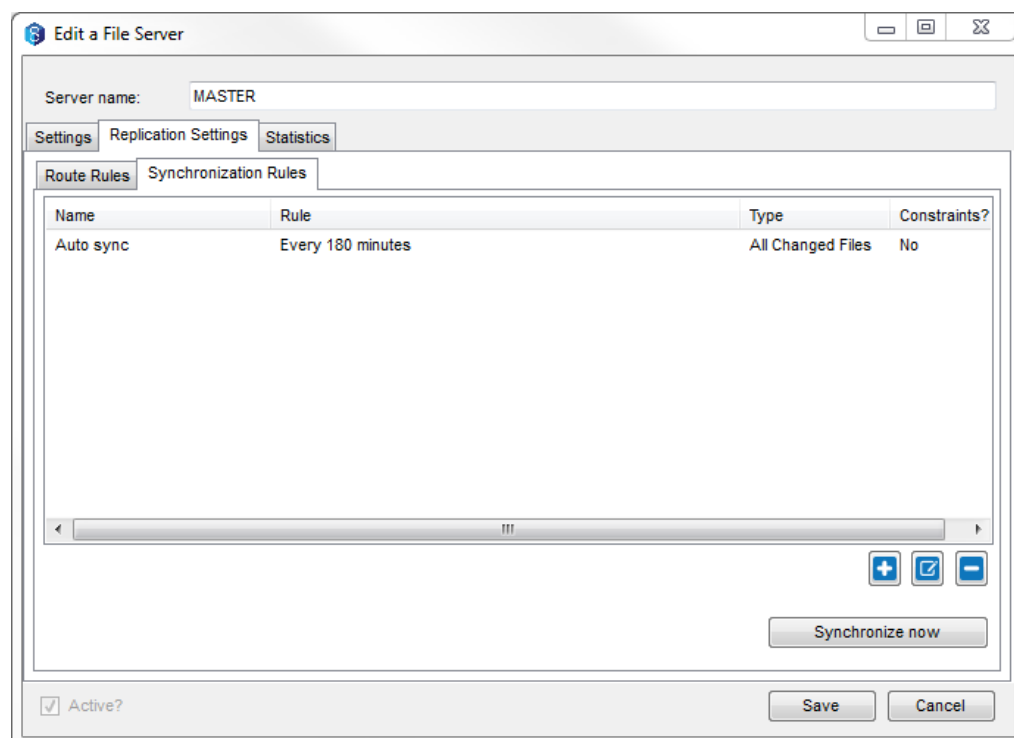
File on Demand synchronization occurs when a user attempts download a version of a file that is not on their nominated File Server. If a synchronization is already taking place, they will simply wait for the synchronization to complete. This may not be ideal for larger files, so a scheduled synchronization is always beneficial.

71.1.2 Scheduled Synchronization

You can set up FRS Synchronizations to run on scheduled as required. This allows you to make sure any changed data on other serves arrives on the target FRS at specific times.

You can set up synchronizations to run

1. On an interval – for example, every 3 hours
2. At specific times – for example, at midnight



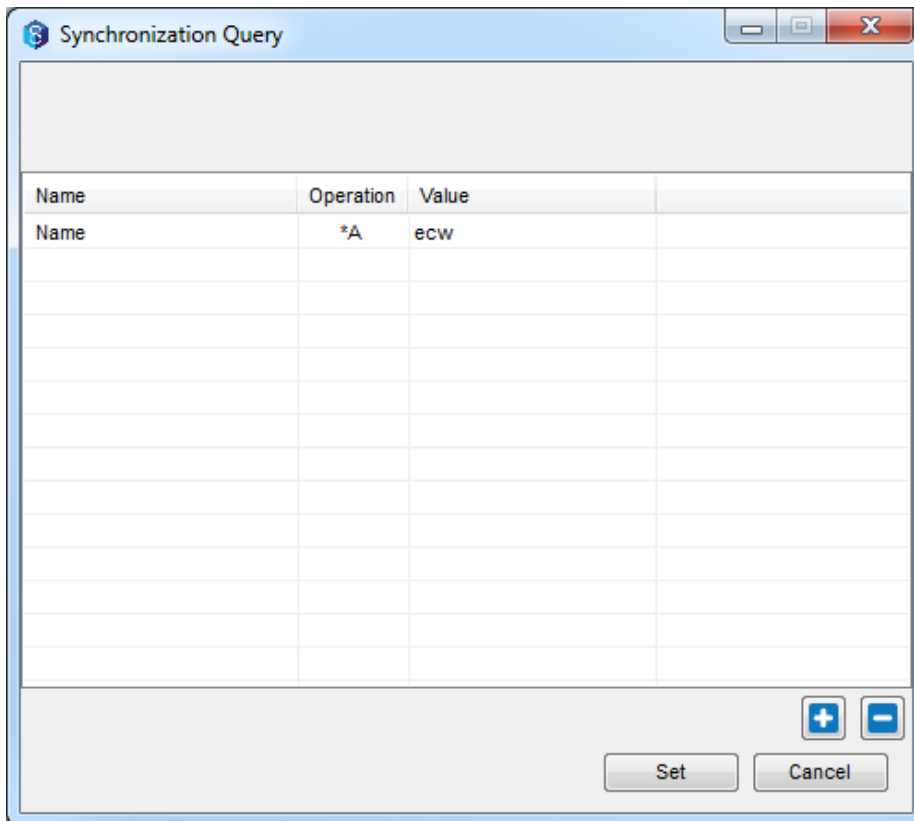
If you are performing a scheduled synchronization, you can choose to synchronize

1. Only the most recent version of each changed file for the last synchronization
2. Every single change since the last synchronization

This distinction is important. Not every FRS needs every single change – communicating that data may be too across a network with high latency. A regional office may very irregularly look at prior changes, so it makes sense to only synchronize the most recent change.

Note that the Master file server will always synchronize every single change, as it is the source of truth for your network.

You can also constrain your data during a synchronization – this allows you to synchronize different types of data at different time. It may make sense to synchronize changes to large files, like ECWs, during out of office times.



71.1.1 Adhoc Synchronization

At any time, via the 12d Synergy Administrator, an administrator may choose to force a server to synchronize missing data.

71.1.2 Transferred Data

Regardless of the type of synchronization, the File Server network will always attempt to send a delta describing how one file may be transformed into the request version, as long as both servers hold a common version.

If a common version is not available, a full copy of the file must be sent.

71.2 Connecting to a File Server as a user

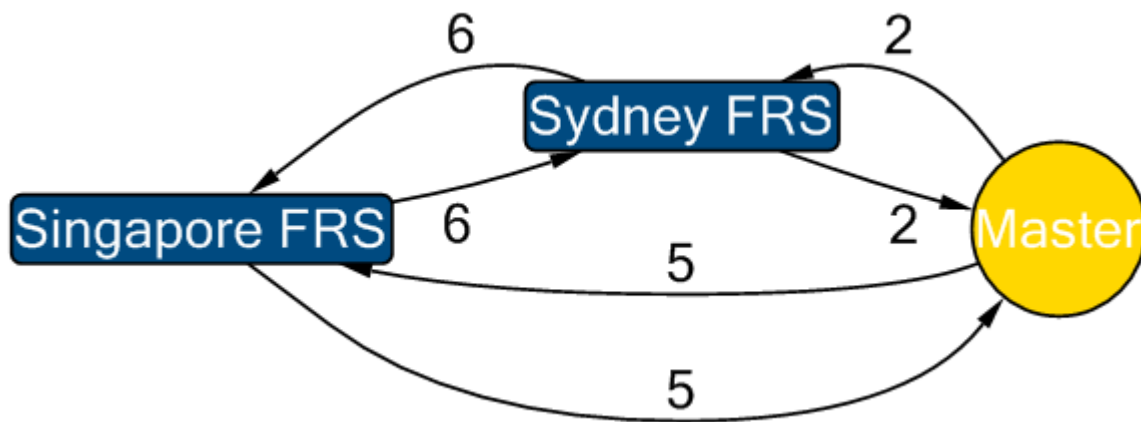
A user can choose to connect to any file server in your network, but should choose the location most appropriate to them. This is done from the Servers option in the main client application.

A file server can be selected for both Local and Remote connections, by clicking the search button.

If no server is specified, the client will always attempt to connect to the master server.

71.3 Routing and Metrics

Your file server network is represented as a weighted graph.



This graph, which is viewable from the administrator, indicates which servers can talk to which other server, and a metric that indicates the cost of doing so.

The metric is user definable, and supplies a ranking system to help dictate the cost of going down a particular path.

This is useful when some servers are in regional areas with slower connections.

For example, in the above example, in the situation where a file required by the Sydney FRS is on both Singapore and the Master server, it is cheaper to go to the Master server, so that route will be favored.

The shortest / cheapest route is always attempted first.

It is possible that a given configuration will require multiple hops to get to a file – in this case, the file transferred will be cached on each File Server on the path back to the user.

By default, any server can talk to any other server, at a default cost of 5.

71.4 Data Cleaning

Only the Master is considered the source of truth for 12d Synergy storage, so any files on an FRS will be cleaned after a period of time where they are not used. This will only occur if they have been successfully synchronized back to the Master server. This process is run automatically every 6 hours.

71.5 Creating Servers

Creating a new File Server requires an FRS License.

You can create a server from the File Servers tab in the File Storage area of the 12d Synergy Administrator. Click the Add button on bottom left.

At a bare minimum, you will need to know the remote address of the server and supply a cosmetic name.

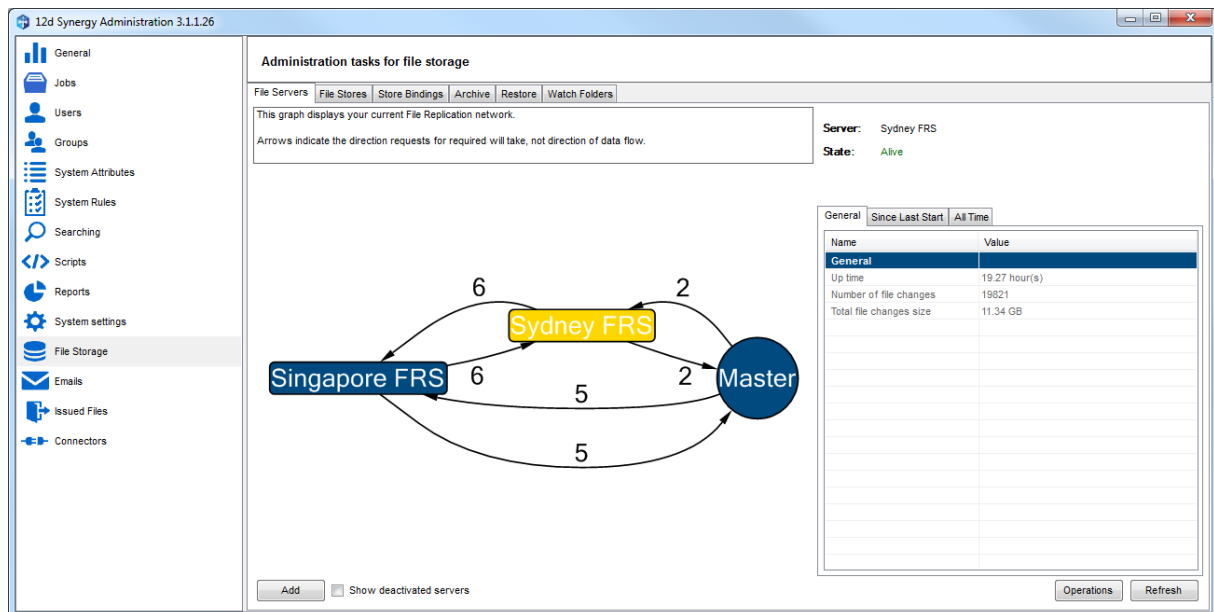
Once you have created the server, you will be supplied an installation file that will be required to install the file server on its remote location. Once this has been received, you can install the server.

71.6 Managing Servers

You can manage and find out information about your servers from the File Servers tab in the File Storage section of the 12d Synergy Administration.

This section shows the server graph, which is interactive, and allows you to either edit or query information on their status.

The server graph nodes will show BLUE if connected, ORANGE if no contact was received in the last minute, or RED if the server is considered disconnected.



71.6.1 Viewing Statistics

Once selected, statistics are displayed if the server connection is currently Alive.

Statistics include general information, such as how long the server has been alive for and how much data it stores.

Alternatively, you can see more detailed information about the server including session statistics (since last start) and statistics gathered since it was installed (all time).

These statistics include the number of files transferred, the size of data, the number of transfers queued and so on.

71.6.2 Viewing Transfers

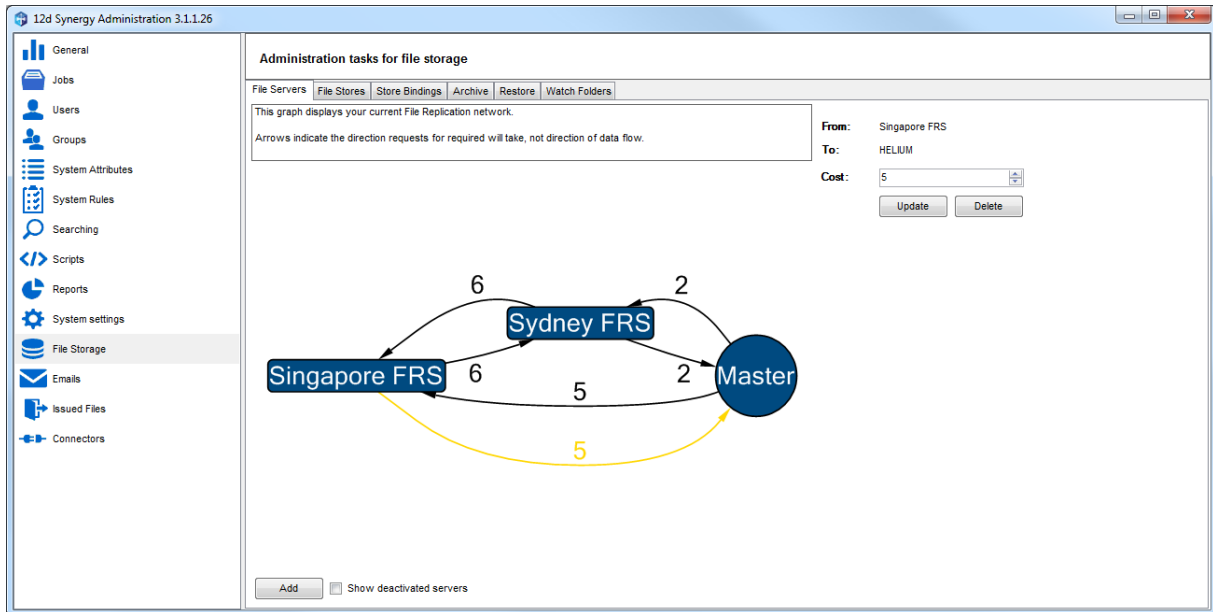
Using the Operations button, you can choose to see the Upload and Download queues for any server, including active transfers. This may help you understand why some servers are performing slowly on your network.

71.6.3 Editing

If you need to change synchronization rules, or other details about the server, click Operations and select Edit.

71.6.4 Links

You can change the weight / metric of a particular link between two file servers, or even delete it, by simply clicking on the connection in the graph.



Alternatively, if you wish to add a new link, click the File Server node in the graph. Click Operations and select “Link”. You can then choose which server to link it to, the cost, and whether or not it’s a two way link.

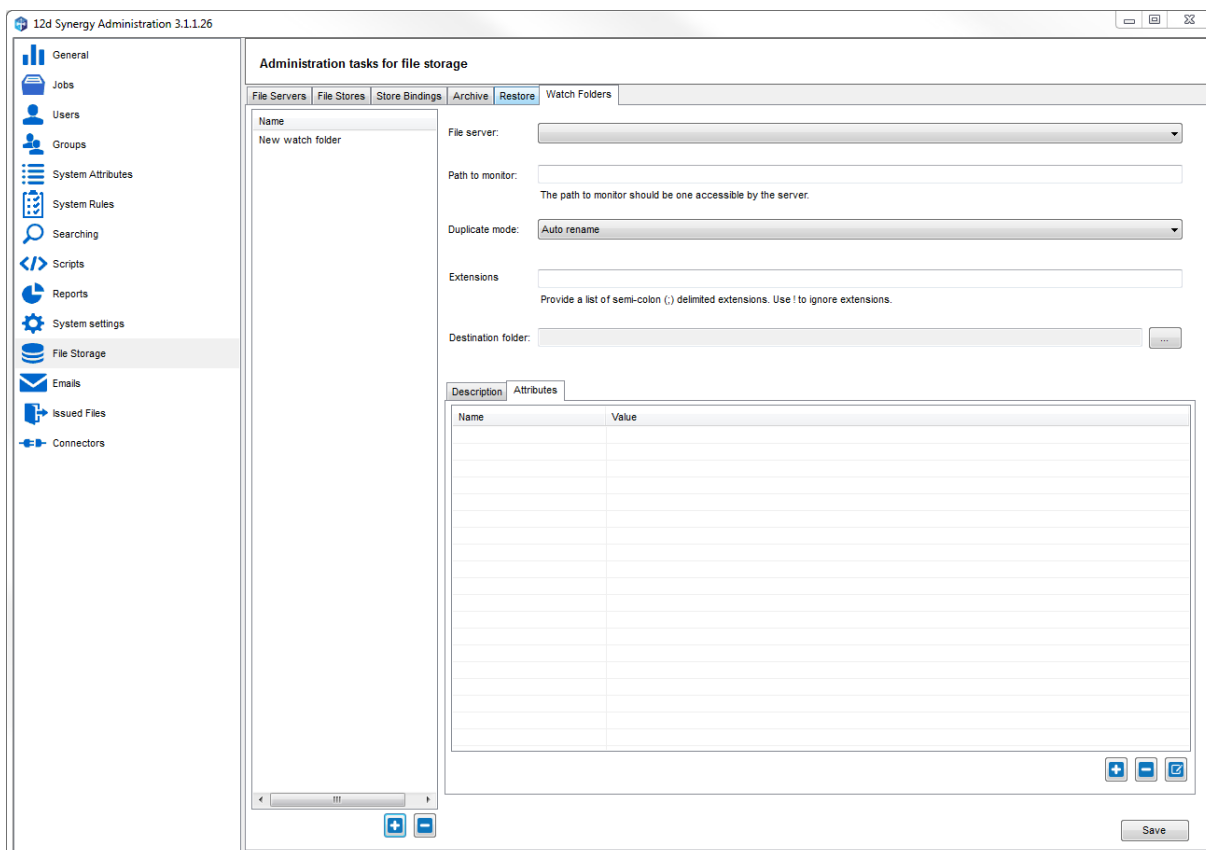
71.6.5 Performing an Adhoc Synchronization

You can perform an adhoc synchronization of the selected server by clicking the Operations button, and selecting “Synchronize”.

72 WATCH FOLDERS

Watch folders allow you to watch for new files added to a network location that the 12d Synergy server can see. Once a new file is added, 12d Synergy can automatically upload this file. This can be useful for network attached scanners.

Watch Folders can be set up in the File Storage area of the 12d Synergy Administrator.



Simply click the plus button and define your watch folder, including the path to monitor and the types of extensions to look for, how to behave when duplicate files are found, and where to put the data.

You must also define a default description to use when adding the files, and any attributes that you want set.

Note that if you are using one or more File Servers, you must specify the file server this is relevant for.

73 ARCHIVING FILES

73.1 Overview

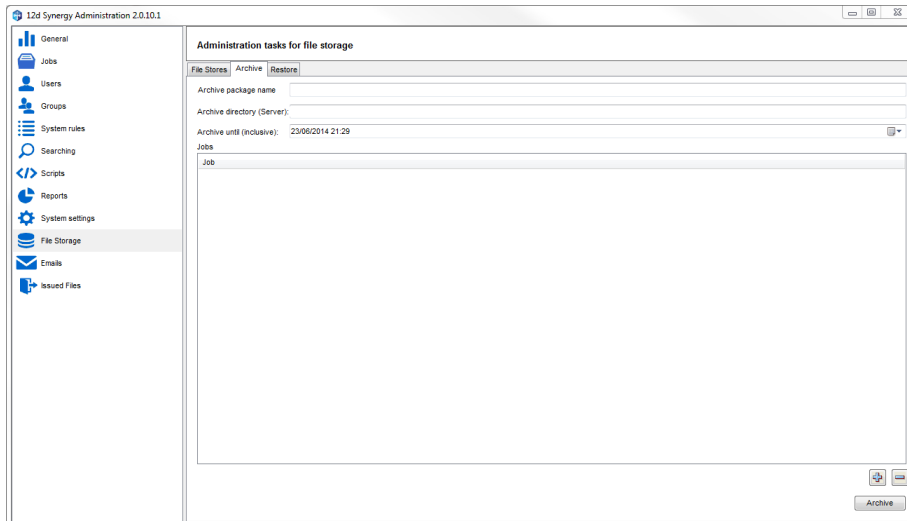
For jobs that have finished, it may make sense to remove all but the last set of files from the disk, or in some cases, just older versions of working files. This may be necessary if disk space is low. A package can be created which can be put on slower or external storage, such as a tape drive.

These 'archived' files can be restored at a later date should you need them again.

Archiving gives you the capability to remove files you do not need, but allows you to keep any metadata, such as history or attributes, that are associated with them.

73.2 Archiving Files

To archive data, visit the **File Storage** section of the **12d Synergy Administrator**.



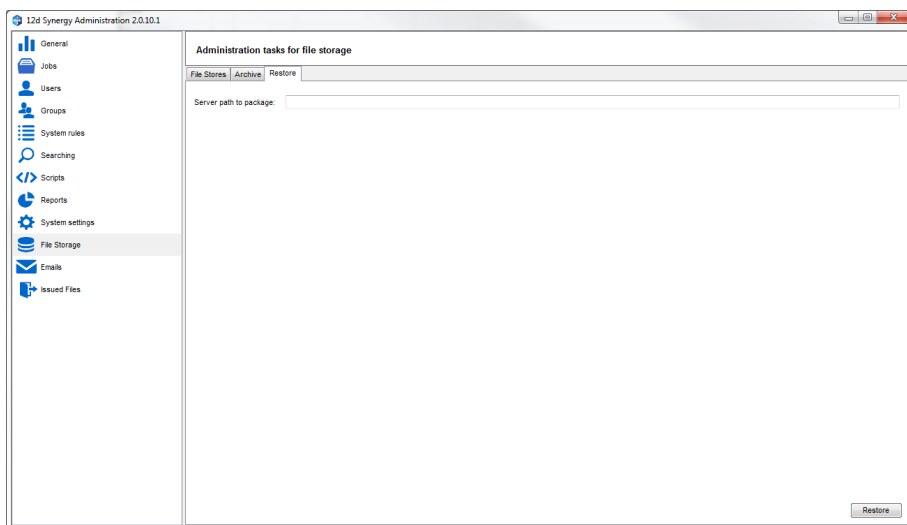
Enter a package name, where you would like the archive to be stored (on the server), and when the system should archive until (the last date before it should stop).

Nominate which jobs you wish to archive, and click the **archive** button to begin.

73.3 Restoring Archived Files

To restore files from an archive, simply nominate the location on the **Restore** tab of the **File Storage** section of the **12d Synergy Administrator**. Click **Restore**.

Note that the files will return to their original file store.



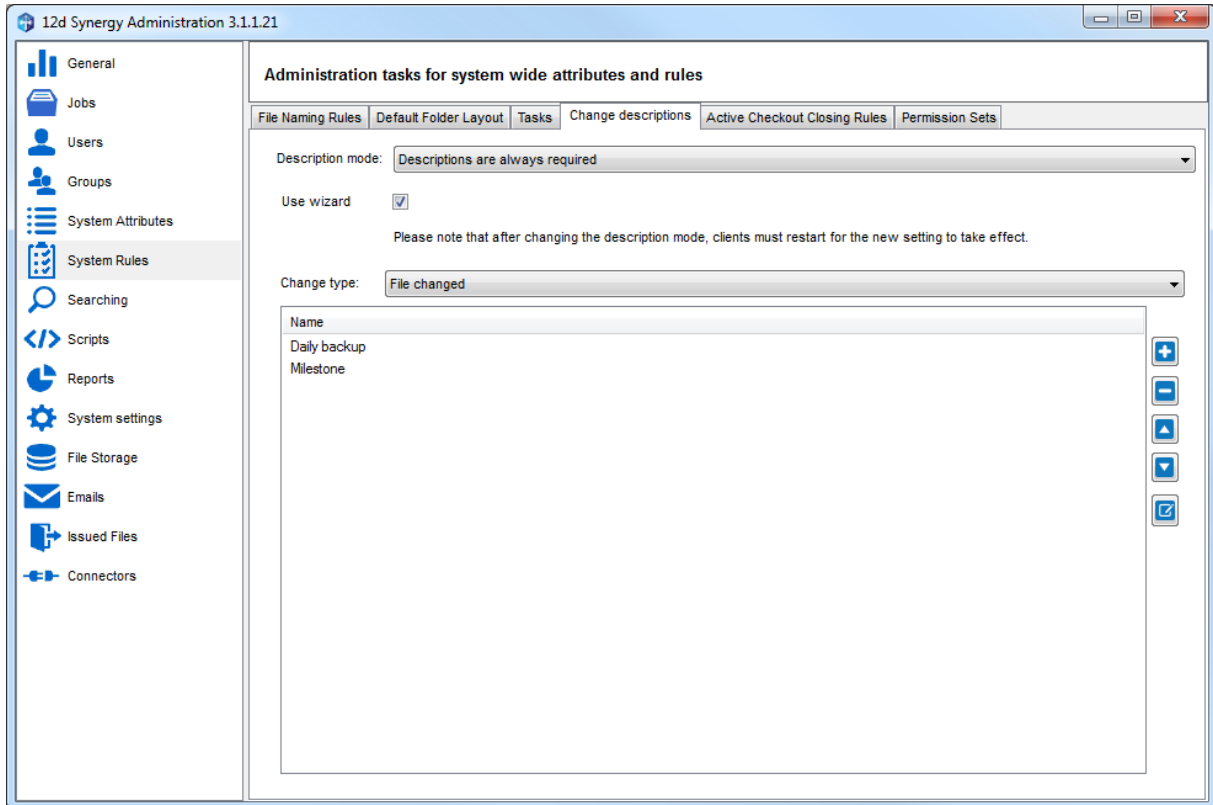
74 CHANGE DESCRIPTIONS

74.1 Overview

A change description is required at most points of change in 12d Synergy, such as:

- Adding a file
- Checking in a file
- Moving a file
- Changing a task
- Checking in a 12d model project

Using the **change description** settings under **System Rules**, you can define how users are able to enter these values.



74.1 Description Modes

The default operation of 12d Synergy is to always ask for, and require, a description at important changes but this can be configured.

The following modes are available:

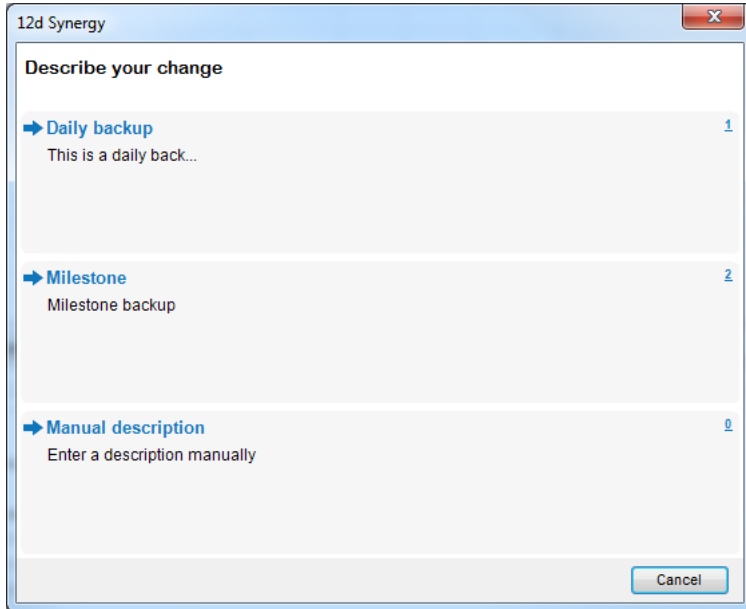
- Descriptions are always required
- **Descriptions are optional**
If the user doesn't fill one out, a default description is used.
- **Descriptions are always required, but enforce the use of predefined descriptions**
This means the user must choose one of the predefined descriptions defined by the administrator.
- **Do not prompt for descriptions.**
Descriptions are never prompted for and a default description is used. This is dangerous, as it may make it difficult to understand why changes have occurred.

74.1 Predefined Change Descriptions

Predefined change descriptions allow you to define a standard set of responses for important events. This can be set for many different change types. At change time, the user can be prompted for the change description to use, or enter their own.

74.1.1 Wizard Mode

If Wizard Mode is turned on, the user will be presented with a very simple dialogue listing the predefined descriptions available, with an option to enter a manual description (depending on the current description mode).



74.1.2 Data Capture

For important predefined change descriptions, it may be desirable to prompt the user for additional information that should make up the description.

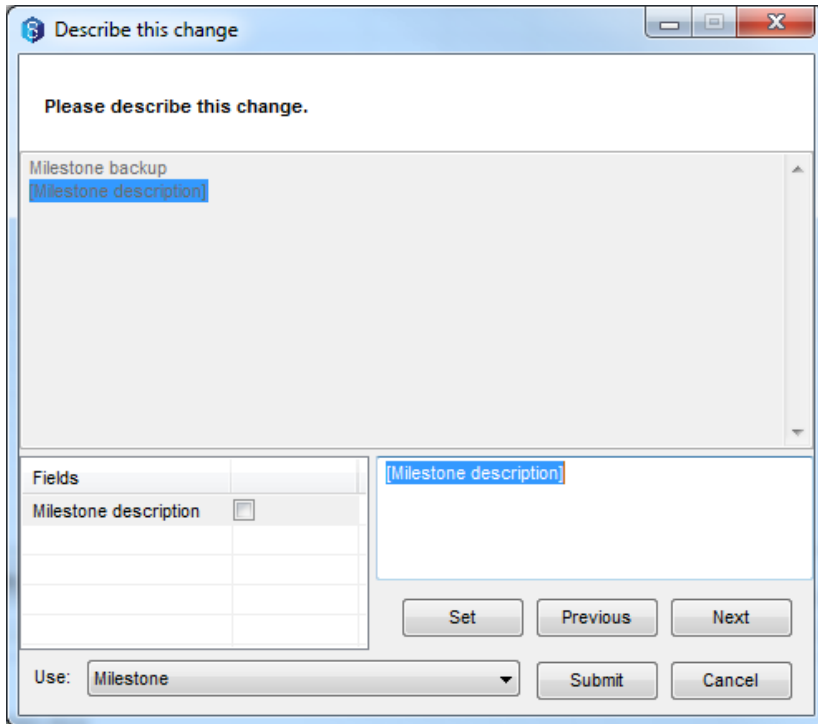
For example, you may have a predefined description entitled Milestone Backup, but you want to capture information on why it is a milestone.

If you create a predefined description with values in square brackets, the user will be required to enter more information at change time.

EG:

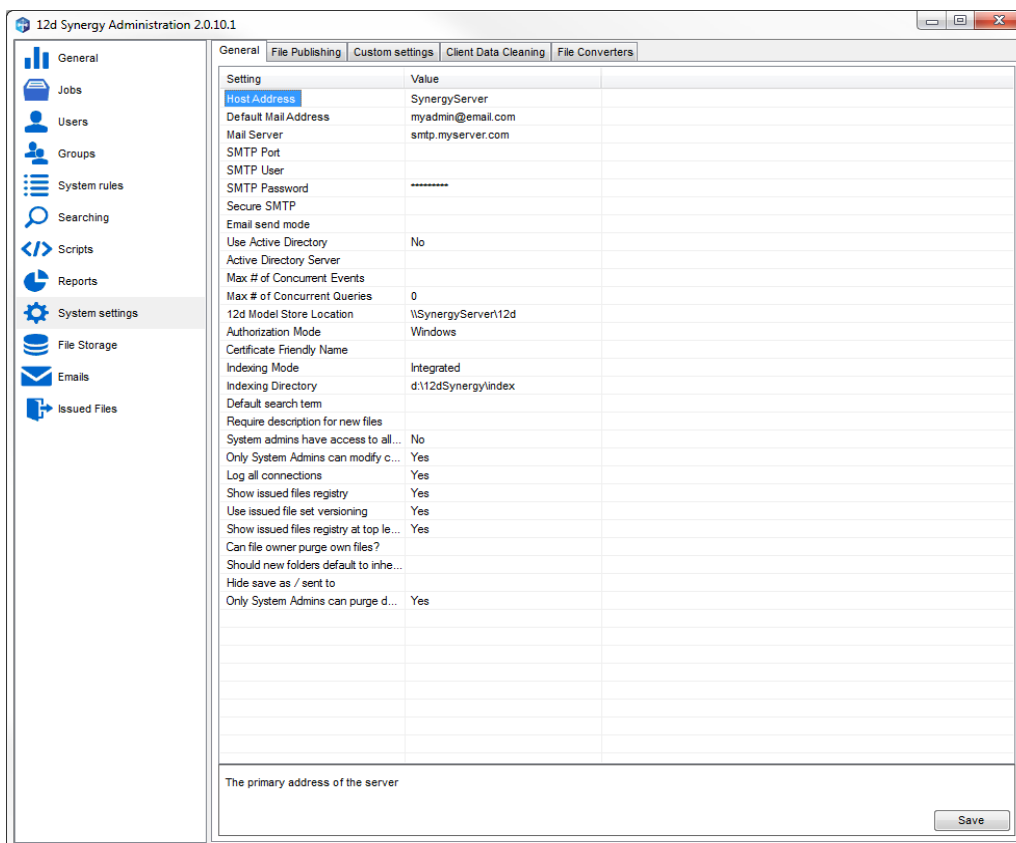
Milestone backup
[Milestone description]

The following window will appear, requiring the user to fill out the Milestone description field, which edits the overall and final description submitted.



75 SYSTEM SETTINGS

Following is a list of all the 12d Synergy Server settings that can be configured via the **System settings** section of the **12d Synergy Administrator**.



Setting	Description
Host address	The name of the server, used in links and emails
Default mail address	The email address outgoing emails will be sent from
Mail server	The address of the server used to send emails
SMTP Port	Used if your SMTP server uses a non-standard SMTP port
SMTP User	Used if your SMTP server requires authentication to send emails
SMTP Password	Used if your SMTP server requires authentication to send emails
Secure SMTP	Used if your SMTP Server uses secure SMTP Default value: no
Email send mode	Whether or not to send separate emails individually, or one email as a group Default value: individual
Use Active Directory	Whether or not your 12d Synergy server uses Active Directory for group membership Default value: No Restart Required

Active Directory Server	The address of the server – note that the user running the 12d Synergy Service must be able to read from AD
Max # of Concurrent Events	The maximum number of events that can be run at once – adjust this with care. You should not need to make changes to this. If your server is running slowly, investigate if there is disk or CPU contention first. Default value: 25
Max # of Concurrent Queries	The maximum number of queries that the server can process at once (this does not refer to SQL queries). Adjust this with care. You should not need to make changes to this. If your server is running slowly, investigate if there is disk or CPU contention first. Default value: 16 * the number of processors
12d Model Store Location	The UNC Path to network based 12d Model projects
Authorization Mode	The mode used for Authorization – Windows (single Sign On) or Custom If you switch to custom, you must specify a Certificate Restart required
Certificate Friendly Name	The name of an X509 Certificate used to encrypt and certify communications when authenticating in Custom Username mode
Indexing Mode	This should always be set to Integrated. Other values are reserved for future development.
Indexing Directory	The location of the index on the server.
Default Search Term	The conjunction used when values are passed into job or file searches that are not phrases Default value: Or
Require descriptions for new files	Whether or not users are prompted for descriptions when a new file is added to the system Default value: Yes
System admins have access to all data	System administrators do not have to have access to read/write all files. If this is set to no, they must have explicit read or write permissions on the file.
Only System admins can modify contacts	Controls whether or not regular users can modify the contacts list
Log all connections	Whether or not all connections are logged when connecting and disconnecting
Show issued files registry	Whether or not to show the files registry option Restarted Required
Use issued file set versioning	Whether or not to use the versioned mode of the issued files registry

Show issued files registry at top level jobs only	Whether or not the issued files registry shows at each level or the top level
Can file owner purge own files?	Whether or not the owner / creator of a file can purge a file Default value: Yes
Should new folders default to inheriting file and file change attributes?	Whether or not new folders will automatically inherit the file and file change attributes of the folder above Default value: No
Hide save as / send to	Whether or not the client should display the save as / send to options Default value: No
Only System Admins can purge data	Whether or not only System Administrators are allowed to purge data Default value: Yes

76 CONNECTORS

76.1 Overview

Connectors allow the 12d Synergy server to communicate with other software products. Data imported via connectors from those products is stored in 12d Synergy. This process allows your data to be synchronised across multiple systems.

Connectors are distributed as individual DLL files that can be plugged into the 12d Synergy server. When they are run, connectors execute within the 12d Synergy server process.

Each connector provides a different set of features and depending on the external system may import 12d Synergy entities such as jobs, tasks, contacts, companies, files, and others.

Connectors are loaded and configured via the 12d Synergy Administrator software.

The connectors that are developed and distributed by 12d are available from <http://www.12dsynergy.com/downloads/connectors/>. Individual help for each connector is also available on the website.

Note that some connectors must be activated in the 12d Synergy license file before being used. Contact your 12d Synergy representative for more information on licensing.

Note that in the Connectors dialog, the **Save** button must be clicked after any fields are updated and before using 'Run Test' or 'Run Now'.

Connectors are provided as a powerful tool to connect 12d Synergy with external systems. 12d Synergy Administrators are responsible for installing and configuring connectors correctly to ensure that good quality data is imported into their systems. A misconfigured connector could create large amount of bad quality data. The directions outlined in this document must be followed by Administrators, especially the sections explaining database backups and use of the Test mode.

76.2 First Steps – Using a New Connector

76.2.1 Determine requirements

Connectors bring data across from external systems into 12d Synergy. The first step is to understand which data you want to transfer. The data will consist of entities and fields. For example, you may

identify the need to bring across:

- Job entities - including Job Name, Create Date and an associated Contact fields
- Supplier Companies entities - including primary Contact and Phone Number fields

Each connector supports a different set of entities and fields that can be transferred into 12d Synergy. Consult <http://www.12dsynergy.com/downloads/connectors/> for each connector's supported fields.

It may be necessary to populate certain attributes for your existing data in 12d Synergy to avoid it being duplicated by the connector. See the **Avoiding Duplication** section below for this important consideration in determining requirements.

76.1.1 Apply for external access

Some connectors require access to an external system to function. For example, if the external system data lives in the cloud then you will need access to its API. Contact the external system provider for any access required.

Consult <http://www.12dsynergy.com/downloads/connectors/> for each connector's required external access.

76.1.2 Apply for a new 12d Synergy license

Most connectors require a new 12d Synergy license file that authorises the connector. Connectors can be used in **Test Mode** (explained below) without a license, but a full import cannot be run.

Contact your 12d Synergy representative to discuss licensing.

76.1.3 Download and load the connector

Connectors are downloaded from <http://www.12dsynergy.com/downloads/connectors/> and loaded into 12d Synergy through 12d Synergy Administrator. See **Load New Connectors** in Figure 1.

76.1.4 Configure the connector and mappings

Before testing it is essential to setup the Configuration, Mappings and Constants panels.

See the following documentation for more information on these sections.

76.1.5 Backup the 12d Synergy server database

Before running a connector for the first time you should always **create a full backup of your 12d Synergy server database**.

76.1.6 Do a connector test run

Most connectors support **Test** mode via the **Run Test** button. This allows you to import a limited amount of data from the external system into 12d Synergy.

Test mode should **always** be used to ensure that good quality data is imported into Synergy, before running a full data import.

After running in **Test** mode use the Logs panel to ensure that the connector ran successfully. Verify that the imported entities and fields are correct by opening the imported entities in 12d Synergy. E.g. Open the jobs or contacts – and make sure that the attributes are correctly imported.

Repeat the **Test** mode and modify data mappings as many times as necessary to ensure good data quality.

76.1.7 Setup a schedule

After configuring mappings and constants, running in **Test** mode and checking the imported data, you are ready to configure the connector on a schedule. See below for instructions.

76.2 Connector Setup

The 12d Synergy Administrator *Connectors* screen is used to configure each connector:

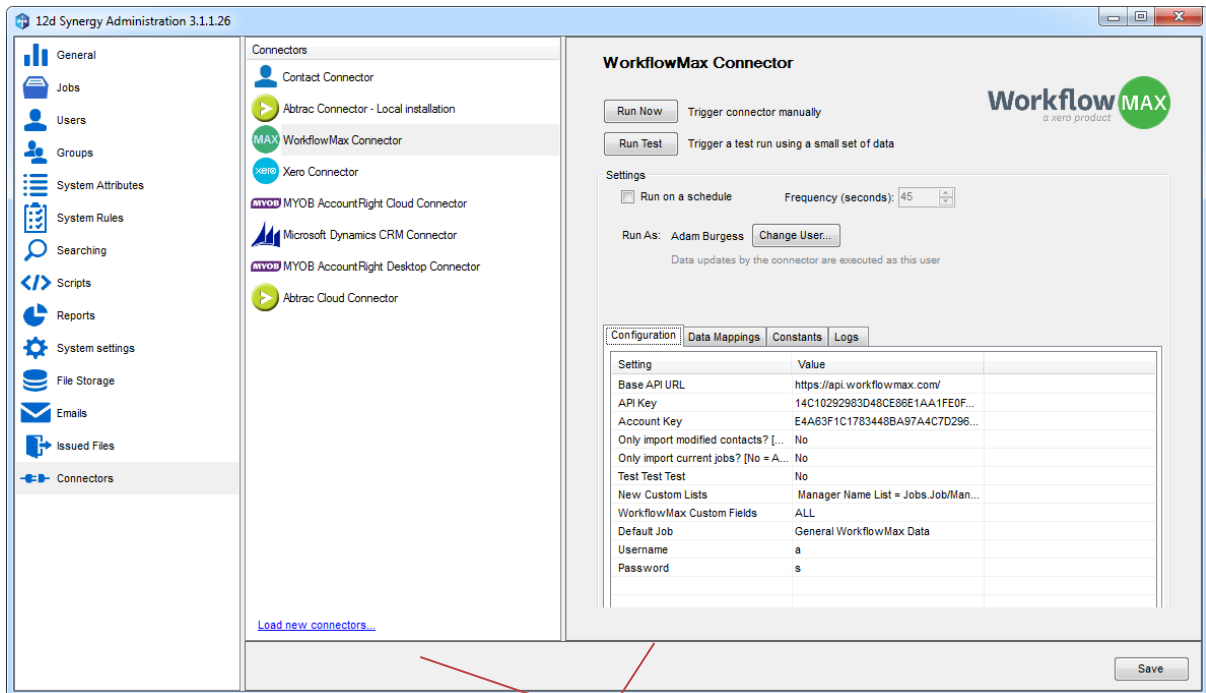


Figure 1 Connector Configuration

76.3 Run Test

Some connectors support **Test** mode. Running in test mode should **always** be used as a first step in confirming that the connector is configured appropriately to your needs. Always use **Run Test** prior to **Run Now** or to setting up a schedule.

If **Test** mode is not used then you risk populating your 12d Synergy database with a large amount of bad quality data.

A window will pop up which prompts for the fields used to limit the entities that are imported as part of the test. Only the entities matching your fields will be imported.

Note that any attached entities will also be imported. For example, if you set the **Test** mode fields to import an individual company then both that company and its attached staff contacts will be imported.

Leaving the **Test** mode fields blank will prevent importing entities of that type.

76.4 Run Now

This executes the connector immediately as a once off run. Execution happens within the 12d Synergy server. To view the results of the run, click into the Logs panel (described below).

76.5 Run on a Schedule

This sets the connector to run every X seconds. Execution happens within the 12d Synergy server. To view the results of each run, click into the Logs panel (described below).

Connectors take a varying period of time from start to finish. This time is spent in either retrieving data from the external systems and/or writing it to the 12d Synergy database. It is important to set the connector schedule to be higher than the time taken to complete an import. It is recommended to set this to 5 minutes (300 seconds) or higher.

76.6 Run As

This field defines which user context all imports by this connector are executed as.

This user will appear in log entries throughout Synergy. You may wish to create a user specific to the connector in order to make its log entries more easily trackable.

The Run As user will usually need to be a system admin user in 12d Synergy.

76.7 Configuration

Each connector offers its own set of configuration settings which are required to successfully complete an import. See <http://www.12dsynergy.com/downloads/connectors/> for details of an individual connector's configuration settings.

76.8 Data Mappings

The screenshot shows the 'WorkflowMax Connector' configuration page in the '12d Synergy Administration 3.1.1.26' application. The 'Data Mappings' tab is selected, showing a table with columns for 'Source Field', 'Type', 'Target Attribute', and 'Import?'. The table is organized into sections: 'Job Mappings', 'Contact Mappings', and 'Company Mappings'. A message at the top of the table asks: '12d Synergy can automatically find existing or create new attributes for unconfigured mappings. Would you like to do this now?' with 'Yes' and 'No' buttons.

Source Field	Type	Target Attribute	Import?
Job Mappings			
Job WorkflowMax ID	String	WorkflowMax ID	Import
Job Type	String	Job Type Enum	
Job Client	Company	Client	
Job Client Order Number	String	Client Order Number	
Job State	String	State	
Job Start Date	Date	Start Date	
Job Due Date	Date	Due Date	
Job Manager	Contact	Manager	
Job Partner	Contact		
Job Contact	Contact	Contact	
Job Hyperlink	String	Hyperlink	
Job Name	String	JobName	
Contact Mappings			
Contact WorkflowMax ID	String	WorkflowMax ID	Do not import
Contact Phone	String	Phone	
Contact Mobile	String	Mobile	
Contact Address	String	Contact Address	
Contact Position	String	Position	
Contact Salutation	String	Salutation	
Contact Addressee	String	Addressee	
Contact Is Primary	Yes/No	IsPrimary	
Contact Hyperlink	String	Hyperlink	
Company Mappings			
Client WorkflowMax ID	String	WorkflowMax ID	Import

Figure 2 Data Mappings

Data mappings provide the link between source fields in an external system and destination attributes in 12d Synergy. Data mappings are one of the most important things to correctly setup before running a connector.

The mappings are broken down by entity – e.g. Job, Contact, Company, and others. For each entity there are one or more fields in the external system which can optionally be imported into 12d Synergy as attributes.

One common use of data mappings is to set job attributes which are match attributes for a template. Using this technique any job imported into 12d Synergy will use the matching job template.

76.9 Target Attributes

To import a source field you must set its Target Attribute. To prevent importing a source field you must clear its Target Attribute.

Click in the Target Attribute column to select whether to map to an existing 12d Synergy attribute, create a new attribute or clear it.

76.10 Automatic Mapping

Automatic Mapping speeds up the data mapping process and does not require you to map each source fields individually.

The Automatic Mapping option is only available when one or more source fields have no Target Attribute set.

To utilise automatic mappings click the Yes button after the message 12d Synergy can automatically find existing or create new attributes for unconfigured mappings. Would you like to do this now?

76.11 Deactivating Entire Entities

The final **Import?** column is used to deactivate the import of entire entities. For example, you could turn off the import of all jobs, contact or companies. In the example picture above Contacts have been deactivated.

Click the [Import](#) or [Do not import](#) link to modify this behaviour.

76.12 Constants

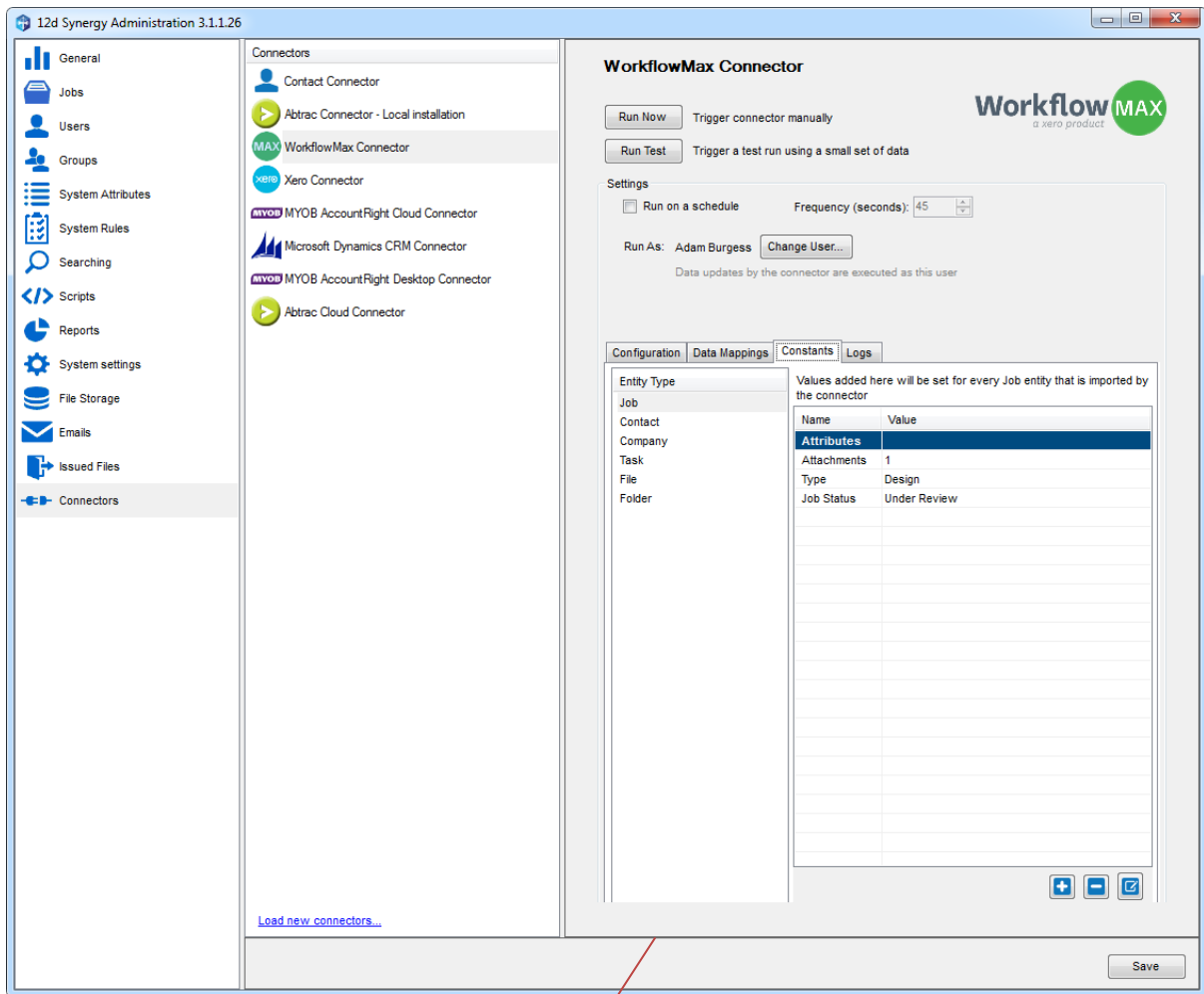


Figure 3 Constants

Constants are similar to mappings in that they control the attributes that are created in 12d Synergy during a connector import. Unlike Data Mappings, Constants are fixed attribute values that are applied to **every** entity created. An example of a common use of constants is to add an attribute called "Data Source" with a value of "Connector" to clearly mark every entity as originating from an external system. Similar to Data Mappings, Constants may be used to set job attributes used to match a job template.

76.13 Logs

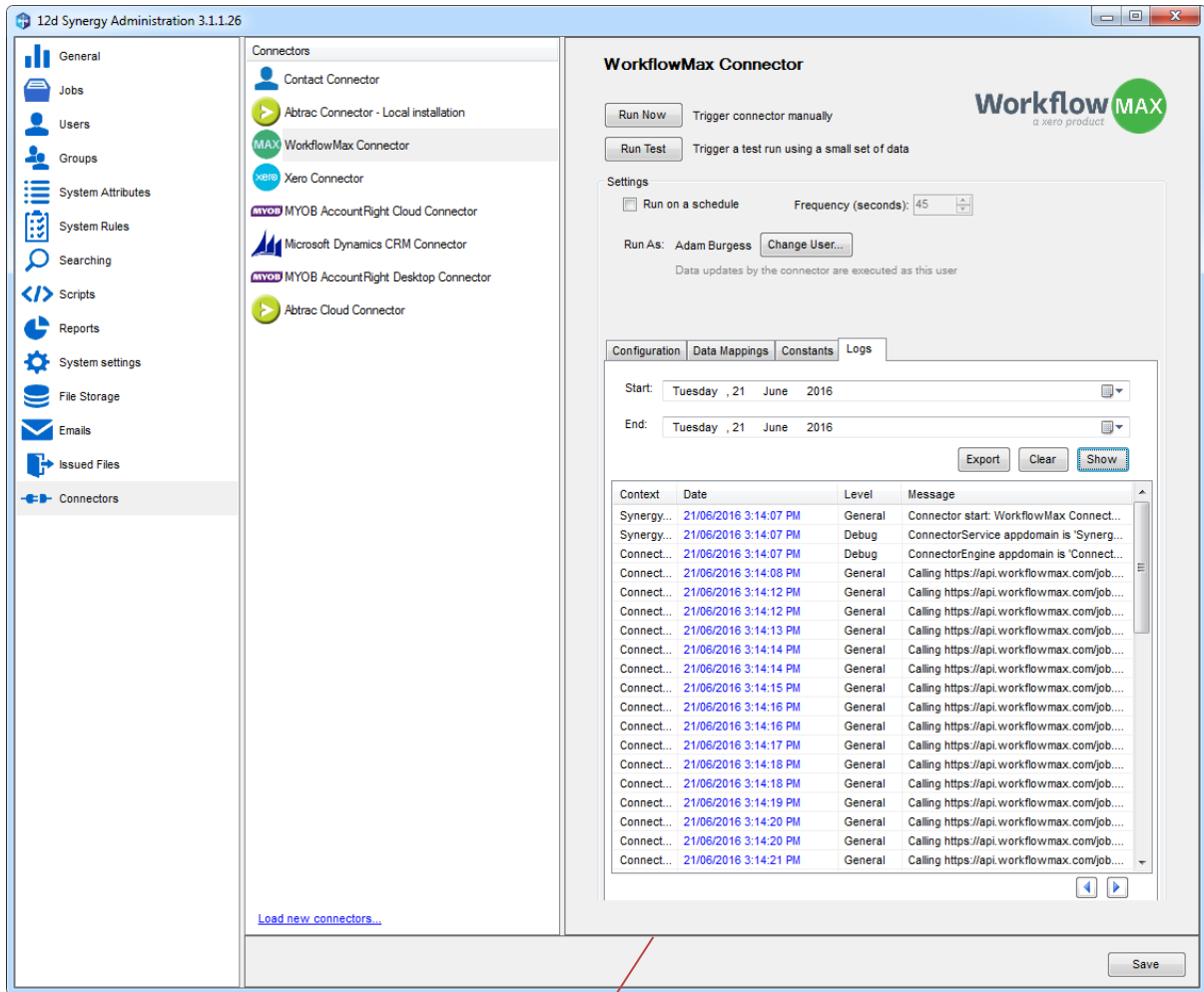


Figure 4 Logs

The Logs panel is used to review the progress and status of runs of connectors. Clicking on a row will pop up a more detailed view of the log entry.

The Export button allows the log entries to be extracted out into other tools for analysis such as Microsoft Excel.

76.14 Avoiding Duplication of Data

Connectors use a unique field mechanism to track individual entities between 12d Synergy and external systems. It is critical to understand which the unique field is for your connector. **Incorrect configuration of the unique field could cause data duplication.**

The following example of the WorkflowMax unique field helps explain this concept more clearly:

WorkflowMax Example

The WorkflowMax connector has a source field named **WorkflowMax ID**. In the connector data mapping panel this source field appears under each entity - jobs, contacts, companies, etc.

It is mandatory to map the **WorkflowMax ID** source field to a destination attribute in 12d Synergy.

The destination attribute name can be customised. E.g. you may choose to name it “WorkflowMax ID” or you may choose “WFM External Identifier” or any other name.

Each time the connector extracts an entity from WorkflowMax it will pull out the **WorkflowMax ID** field. Let’s say the connector encounters a job where the WorkflowMax ID equals 12345.

1. If no job already exists in 12d Synergy with an attribute value of 12345 then the connector **creates** a new job in 12d Synergy
2. If an entity does already exists in 12d Synergy with an attribute value of 12345 then the connector **updates** the existing entity in 12d Synergy

Before running a connector for the first time it is important to understand that If you already have entities in 12d Synergy that correspond to entities in the external system and you do not wish them to become duplicated, you must populate their unique attribute *before* running the connector.

See <http://www.12dsynergy.com/downloads/connectors/> for information on a specific connector’s unique fields.

76.1 GeneralStorage setting

Connectors require a server setting called **GeneralStorage** to be set. This is set through the **Settings** panel in 12d Synergy Administrator. It must be populated with a folder location accessible to your 12d Synergy server.

77 BACKUP PROCEDURES

12d Solutions Pty Ltd does not provide an official backup solution for 12d Synergy – it is the responsibility of the IT team managing the server to provide their own backups.

However, the following data must be backed up:

1. The SQL Server database and/or transactional log
2. All files in your File Store locations
3. All files in the index location
4. Any files in the 12d Model UNC path

78 TROUBLESHOOTING

78.1 Error Logging

Any errors that are generated will be logged to the Windows Event Viewer, under Application. This can be accessed from the Windows Control Panel, under Administrator Tools.

78.2 What to do

78.2.1 If the service won't start

1. Check the Event Viewer – are any errors being shown?
2. Is SQL Server running?

78.1.1 If the service is started but users can't connect

1. Check the Event Viewer – are any errors being shown?
2. It's possible SQL server may be having trouble – restart SQL Server
3. Check for any hanging events in the Event Queue – cancel them
4. Restart the 12d Synergy Service

78.1.1 If the service is crashing

1. Disable any task libraries you may have running
2. Check the Event Viewer for errors
3. Consider restarting the physical machine

78.1.1 If a user's client is sitting at a 'please wait' window

1. Check the Event Queue for any hanging / crashed events – cancel them
2. Restart the 12d Synergy Service