

1SMS

# Installation Guide

WildFly

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# 1 Introduction

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This guide explains how to install the 1Spatial Management Suite.

For more information about new features and changes in this release, and hardware and software requirements, refer to the provided release notes.

## Audience

This guide is intended for personnel responsible for the installation, configuration, and administration of software.

The procedures detailed in the guide should be performed by a system administrator who is familiar with the application environment of the organisation.

## Licenses

1Spatial Management Suite licences will be issued via email.

## 1Spatial Product Support

If assistance is required during installation, please call 1Spatial support on +44 (0)1223 423069, or visit the support section of the 1Spatial website via the Services menu at [www.1spatial.com](http://www.1spatial.com).

# 2 Installation

## Prerequisites

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Before installing 1Spatial Management Suite, ensure that the following prerequisites have been met (in accordance with the *1Spatial Management Suite Release Notes*):

- ▶ The appropriate application servers have been configured (this is required for the installation of 1Workflow on WebLogic, see the **1SMS Installation Guide: WebLogic** for more information)
- ▶ The correct version of Java has been installed
- ▶ The database schemas have been set up (see "Database Creation" on page 11)
- ▶ Individual component requirements (see individual release notes for details)

## Installation Package

### Unpacking the Installation


A single delivery file is provided that includes a zipped installation directory containing the components for which you are licensed.

Unzip the delivery file to an installation directory on your server. It is recommended that this is in a fixed and known location, as the installer produces configuration files and logs that may be useful for your records and will be used by future upgrades to the products. Do not unzip the files within the installation directory, as this is done by the installation application.

### config.json file

The installation reads a **.json** file to provide the settings for your installation. This file is a record of your current configuration.


The **.json** file will be written out to the installation directory, a template file is supplied with the release notes to be tailored to your installation.

 **Note:** Passwords are in the **.json** file.


 **Note:** It is important that the **.json** file is saved for future use as it will be used when any software upgrade is installed, ensuring that settings are maintained between versions.


## GO Publisher and GO Loader

1Exchange can be configured by setting up GO Loader and GO Publisher *Products* to define how data is loaded and extracted, plus files to enable conflict resolution and to define the target GML schema as an XSD. When deploying 1Exchange with these **Products**, by default, FME Server will also be available for data conversion.

 **Note:** In this instance, a **Product** refers to a configuration file that defines the way that data is published and imported using **GO Loader** and **GO Publisher**. For more information please refer to [Snowflake documentation](#).

If setting 1Exchange up to work in this way, these files are required as part of the initial installation and can also be further configured later as required.

 **Note:** 1Exchange requires GO Loader Desktop v 1.8 and GO Publisher Desktop v 4.0.

 **Note:** For more information on configuring these files, see "1Exchange Product Configuration " on page 52.

# System Requirements

Please see the *1SMS Release Notes* for specific system requirements for this release.

Please see the provided release notes for specific system requirements for this release.

The minimum and recommended system requirements for the entire 1SMS suite are as follows:

Component	Memory Minimum	Memory Recommended	Core Minimum	Core Recommended	Clustering
1SMS Suite	12GB	16GB	8	16, especially with additional session queues	Use these guidelines for each instance.

If installing individual components then the system requirements are as follows:

Component	Memory Minimum	Memory Recommended	Core Minimum	Core Recommended	Clustering
1Workflow	4GB	6GB	2	N/a	Use these guidelines for each instance.
1Plan	1.5GB	2GB	1	N/a	Use these guidelines for each instance.



Component	Memory Minimum	Memory Recommended	Core Minimum	Core Recommended	Clustering
1Transact	1.5GB	2GB	1	N/a	Use these guidelines for each instance.
1Exchange without Snowflake	1.5GB	2GB	1	N/a	Use these guidelines for each instance.
1Exchange with Snowflake	3GB	4GB	2	N/a	Use these guidelines for each instance.
1Integrate	3GB	4GB	2	If using more than 1 engine, then 1 core + 1 additional for each engine used.	Use these guidelines for each instance.
1Validate	3GB	4GB	2	If using more than 1 engine, then 1 core + 1 additional for each engine used.	Use these guidelines for each instance.
1Generalise	3GB	4GB	2	If using more than 1 engine, then 1 core + 1 additional for each engine used.	Use these guidelines for each instance.



# Database Creation

1Spatial Management Suite components require access to a database to store configuration data.

Users and schemas must be created in advance of product installation, during which you will be prompted for database locations, schema names and passwords.

The following table suggests name for the schemas to provide consistency, but for security purposes, does not suggest a password.

Schema	Use	Suggested name
<b>For specific 1Spatial Management Suite products</b>		
1Plan Repository	Storing configuration for 1Plan as well as all job metadata	sms_plan
1Exchange Repository	Stores 1Exchange configuration and job package metadata	sms_exchange
1Exchange GO Loader database	GO Loader is a component used by 1Exchange and normally it is given its own schema	sms_goloader
1Exchange GO Publisher database	GO Publisher is another component used by 1Exchange and again it is normally is given its own schema	sms_gopublisher
1Validate/1Intergrate Repository	Stores the repository of 1Validate/1Integrate rules and is used to store data validation sessions	sms_validate
1Workflow Repository	Stores the configuration for the 1Workflow component	sms_workflow

Schema	Use	Suggested name
1Transact Repository		
<b>For all 1Spatial Management Suite products</b>		
Feature data	<p>The main location of the feature data being managed by 1SMS.</p> <p>This value is used by 1Transact to make calls to Oracle Workspace Manager and is the main schema from which data will be read from and written to by 1Exchange.</p> <div style="border: 1px solid black; padding: 5px;"> <p> <b>Note:</b> During 1Exchange configuration (see "1Exchange Product Configuration " on page 52), GO Publisher and GO Loader products can override this in order to read and write from different schemas within the same database.</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p> <b>Note:</b> This usually already exists and will be site-specific. Tables to be managed must be version-enabled.</p> </div>
Security schema	Storage space for security tokens created when users log on to applications	sms_security

## Configuring Oracle

All necessary tables will be created within the schemas.

Normally, all schemas are created in the same database instance, and the GO Loader and GO Publisher schemas must be in the same instance as the feature data. The database location is prompted whenever the schema user name or password is prompted.

This database location must be in the jdbc thin client format: `jdbc:oracle:thin:@[hostname]:[port]:[service_name]`

# 3 Pre-Install Configuration

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Some additional configuration steps are required once the software components have been installed.

## Installation Setup

The installation of 1SMS on WildFly requires, at a minimum, the set-up of a configuration file. In order to facilitate the ease of installation a minimum requirements template file is supplied. A number of parameters will need to be defined in order to install the full 1SMS suite.

During initial configuration refer to the template and this document. Configuration should be carried out in a single **config.json** file, but for clarity of documentation has been split into the individual sections:

- ▶ Master Domain Configuration
- ▶ LDAP Configuration
- ▶ Clustering Configuration (Optional)
- ▶ Product Configuration
  - ▶ 1Exchange
  - ▶ 1Workflow
  - ▶ 1Transact
  - ▶ 1Plan
  - ▶ 1Validate/1Integrate
  - ▶ 1Validate node/1Integrate Queue
- ▶ Snowflake Products

## Access Through a Proxy or Load Balancer

If you are going to access 1SMS through a proxy or load balancer, then the download URL for 1Exchange packages will need to be adjusted to use the proxy or load balancer URL. t

**Example:**

1Exchange is installed on `machine1.myCompany.local/1exchange`, but proxy access is via `1sms.myCompany.com/1exchange`.

To ensure the connection will work as expected, use the `restBaseURL` parameter to specify the external service address to be used by clients for the download of job packages.

## Template File

The template file supplied includes the Elements required for minimum installation. These can be configured alone for a basic installation of 1SMS. If further customisation is desired then there are a number of additional optional parameters that can be implemented.

The file is called **example-configuration.json** and is supplied with the release notes.



**Note:** Once you have edited this file, it must be renamed to **config.json**

Upon completion of configuration, place the file next to the installer **JAR**.

# Master Domain Configuration


The parameters below are for the Domain creation. If the suite is to be clustered these are the settings applicable to the Master Domain. For information regarding the clustering of 1SMS on WildFly, please refer to "Clustering 1SMS" on page 47.

Element	Description	Type	Required	Notes
"host"	The name of the host machine	string	Required	N/a
"nodeType"	The designation for the master node	string	Required	Default value is "master"
"domainDatasources"	The sources of data used by the domain.	string	Required	N/a
"name"	The name of the domain datasource	string	Required	N/a
"url"	The location of the domain datasource	string	Required	N/a
"user"	The username required to access the datasource	string	Required	N/a
"password"	The password required to access the datasource	string	Required	N/a

If you are not clustering your installation, please continue to the "Installing 1SMS" on page 50.

# LDAP Configuration

1SMS on WildFly is a secured system using an LDAP server to provide the authentication. The services that make up 1SMS need to connect to the LDAP server using an authentication provider.

 **Note:** Ensure that the groups filter returns a reasonable amount of groups. For very large organisations or organisations who are part of a larger LDAP directory, a suitable filter will ensure that only relevant groups are listed. If there are many groups in your LDAP system then ask your IT department (or search online for LDAP filter definitions) for help with defining the groups filter.

The settings below are standard settings required to access an LDAP server. Please consult with your IT department for details of your organisation's LDAP server.

## LDAP in the configuration template

Element	Description	Type	Required	Notes
"ldap"	Top level.	ldap object	Required	N/a
"url"	The location of the LDAP server.	string	Required	N/a
"principal"	The username required for access to the LDAP server.	string	Required	N/a
"credential"	The password required for access to the LDAP server.	string	Required	N/a

Element	Description	Type	Required	Notes
"userDn"	The base DN of the tree in the LDAP directory that contains users.	string	Required	N/a
"groupDn"	The base DN of the tree in the LDAP directory that contains groups.	string	Required	N/a
"userAttribute"	The LDAP attribute to use as the login name.	string	Required	N/a
"memberDn"	The base DN of the tree in the LDAP directory that contains members.	string	Required	N/a
"groupMemberDn"	The base DN of the tree in the LDAP directory that contains members groups.	string	Required	N/a
"groupAttribute"	The LDAP attribute to use as the group name.	string	Required	N/a
"referral"	Indicates how to manage referrals.	string	Required	The possible property settings are: ignore, follow and throw.
"groupFilter"	The filter used to search groups.	string	Required	N/a



Element	Description	Type	Required	Notes
"userFilter"	The filter used to search users.	string	Required	N/a
"displayName"	The LDAP attribute to be used when populating the 1Plan user dropdowns	string	Required	N/a
"pageSize"	Define the size of each page of results to be returned when querying the LDAP server.	integer	Optional	The default value is "1000". If used, you must set this to be the same or less than the "size limit" defined on your server.

# Product Configuration

## Product Setup

Each product in 1SMS requires a minimum configuration for installation.

Element	Description	Type	Required	Notes
"products"	Top Level object under which all product configuration will be defined.	array of product objects	Required	N/a

## 1Exchange Configuration

Element	Description	Type	Required	Notes
"name"	"exchange", the name of the product. Top Level.	string	Required	The name value of "exchange" is required.
"datasources"	The datasources used by 1Exchange. Top Level.	array of datasource objects	Required	1Exchange requires five datasources in order to work. Each is organised as per this guide and included in the template config file.

Element	Description	Type	Required	Notes
"name"	The name of the datasource.	string	Required	Values include: <ul style="list-style-type: none"> <li>▶ "ExchangeRepository"</li> <li>▶ "ExchangeFeatureDS"</li> <li>▶ "GPConfigDS"</li> <li>▶ "GoLoaderRepository"</li> <li>▶ "GoPublisherRepository"</li> </ul>
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the data store.	string	Required	N/a
"password"	The password to access the data store.	string	Required	N/a
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "7115".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "8115".

Element	Description	Type	Required	Notes
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "512m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "1536m".
"serversPerHost"	The number of servers to be used, per host.	integer	Optional	Default is 1.
"hosts"	The target hosts on which to install exchange.	string	Required	N/a
"goloaderLicence"	The location of the GO Loader Licence.	string	Required	This is the local location of the GO Loader licence to be used in the installation of 1SMS.
"gopublisherLicence"	The location of the gopublisher Licence.	string	Required	This is the local location of the gopublisher licence to be used in the installation of 1SMS.
"jvmArgs"	exchanges server start parameters.	object array	Required	N/a

Element	Description	Type	Required	Notes
name	The name of the JVM argument.	string	Required	Both the "publisherUrl" and the "loaderUrl" will need to be specified.  If 1Exchange is to be behind a proxy or a load balancer, "restBaseUrl" will need to be specified.
value	Parameter value	string	Required	URLs for the "publisherUrl" and the "loaderUrl" will need to be specified as [localhost]:7115 or [machinename]:7115  The restBaseUrl for proxy or load balancer will need the value: "http://_[loadbalancer/proxy]_/restview/rest"  The restBaseUrl parameter can be used to control the URL from which your packages are downloaded.

# 1Workflow Configuration

Element	Description	Type	Required	Notes
"name"	"workflow-worklist ", the name of the product.	string	Required	N/a
"datasources"	The datasources used by 1Workflow.Top Level.	array of datasource objects	Required	1Workflow requires a single datasource in order to work.
"name"	The name of the datasource.	string	Required	The value is "MsWorkflowDs".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datastore.	string	Required	N/a
"password"	The password to access the datastore.	string	Required	N/a
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "7122".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "8122".
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "128m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "256m".

Element	Description	Type	Required	Notes
"serversPerHost"	The number of servers to be used, per host.	integer	Optional	Default is 1.
"hosts"	The name of the host machine.	string	Required	N/a

## 1Transact Configuration

Element	Description	Type	Required	Notes
"name"	"transact", the name of the product.	string	Required	N/a
"datasources"	The datasources used by 1Transact- Top Level.	array of datasource objects	Required	1Transact requires a single datasource in order to work.
"name"	The name of the datasource.	string	Required	The value is "TransactRepository".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datastore.	string	Required	N/a
"password"	The password to access the datastore.	string	Required	N/a
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "7007".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "8007".
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "128m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "256m".



Element	Description	Type	Required	Notes
"serversPerHost"	The number of servers to be used, per host.	string	Optional	Default is 1.
"hosts"	The name of the host machine.	string	Required	N/a

## 1Plan Configuration

Element	Description	Type	Required	Notes
"name"	"plan", the name of the product.	string	Required	N/a
"datasources"	The datasources used by 1Plan.Top Level.	array of datasource objects	Required	1Plan requires a single datasource in order to work.
"name"	The name of the datasource.	string	Required	The value is "MsPlanDS".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datasource.	string	Required	N/a
"password"	The password to access the datasource.	string	Required	N/a
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "7112".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "8112".
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "256m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "1024m".

Element	Description	Type	Required	Notes
"serversPerHost"	The number of servers to be used, per host.	string	Optional	Default is 1
"hosts"	The name of the host machine.	string	Required	N/a
"jvmArgs"	1Plan server start parameters.	array	Required	N/a
"name"	The name of the machine arguments.	string	Required	The six required object "name" values are:  <ol style="list-style-type: none"> <li>1. "jgroups.udp.infinispan.mcast_addr"</li> <li>2. "jgroups.udp.infinispan.mcast_port"</li> <li>3. "jgroups.udp.hibernate_mcast_addr"</li> <li>4. "jgroups.udp.hibernate_mcast_port"</li> <li>5. "jgroups.udp.mcast_addr"</li> <li>6. "jgroups.udp.mcast_port"</li> </ol>
"value"	The location value of the machine argument.	integer	Required	These need to be unique values within your environment.  The location value of the specified jvmArgs.

## 1Validate Configuration

Element	Description	Type	Required	Notes
"name"	"validate" the name of the product.	string	Required	N/a
"datasources"	The sources of data used by 1Validate- Top Level.	array of datasource objects	Required	1Validate requires two datasources in order to work.
"name"	The name of the datasource.	string	Required	The value of the datasources are: "ValidateRepository" and "ValidateRepositoryLocal".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datasource.	string	Required	N/a
"password"	The password to access the datasource.	string	Required	N/a
"deployments"	The deployment object.	object	Required	N/a
"name"	The name of the 1Validate deployment.	string	Required	Do not change.
"extensions"	The locations of any custom built-ins or datastores.	string	Optional	Default value is null [].

Element	Description	Type	Required	Notes
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "8021".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "9021".
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "256m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "512m".
"serversPerHost"	The number of servers to be used, per host.	string	Optional	Default is 1.
"hosts"	The name of the host machine.	string	Required	N/a
"jvmArgs"	The array of Java machine arguments.	array	Required	N/a
"name"	The name of the machine argument to be accessed.	string	Required	The three required object "name" values are: <ul style="list-style-type: none"> <li>1. "max.errors"</li> <li>2. "ls_license"</li> <li>3. "cache.directory"</li> </ul>

Element	Description	Type	Required	Notes
"value"	The location value of the machine argument.	string	Required	<p>The location value of the specified jvmArgs. The values, which correspond with the numbered names above, are:</p> <ol style="list-style-type: none"> <li>1. "1000" this is a default value</li> <li>2. "LOCATION/license.lic"</li> <li>3. "[LOCATION]/[cachedirectory]"</li> </ol>

## 1Validate Node Configuration

Element	Description	Type	Required	Notes
"name"	"validate-node", the name of the product.	string	Required	N/a
"datasources"	The sources of data used by 1Validate nodes- Top level.	array of datasource objects	Required	N/a
"name"	The name of the datasource.	string	Required	The name values of the datasources are: "ValidateRepository" and "ValidateRepositoryLocal".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datasource.	string	Required	N/a
"password"	The password to access the datasource.	string	Required	N/a
"deployments"	The deployment object.	object	Optional	N/a
"name"	The deployment name if custom extensions are to be added.	string	Optional	N/a

Element	Description	Type	Required	Notes
"extensions"	A string array of JAR files that extend 1Validate.	string array	Optional	N/a
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "8051".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "9051".
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "256m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "512m".
"serversPerHost"	The number of servers to create, per host. each server requires a unique port, which starts from the starting port values.	integer	Optional	The default is 2.
"hosts"	The name of the host machine.	string	Required	N/a
"jvmArgs"	1Validate server start parameters.	array	Required	N/a



Element	Description	Type	Required	Notes
"name"	The name of the JVM argument.	string	Required	The three required object "name" values are: <ul style="list-style-type: none"> <li>1. "max.errors"</li> <li>2. "ls_license"</li> <li>3. "cache.directory"</li> </ul>
"value"	The location value of the machine argument.	string	Required	The location value of the specified jvmArgs. The values, which correspond with the numbered names above, are: <ul style="list-style-type: none"> <li>1. "1000" this is a default value</li> <li>2. "[LOCATION]/[license].lic"</li> <li>3. "[LOCATION]/[cachedirectory]"</li> </ul>

## 1Integrate Configuration

Element	Description	Type	Required	Notes
"name"	"1Integrate" the name of the product.	string	Required	N/a

Element	Description	Type	Required	Notes
"datasources"	The sources of data used by 1Integrate- Top Level.	array of datasource objects	Required	1Integrate requires two datasources in order to work.
"name"	The name of the datasource.	string	Required	The value of the datasources are: "IntegrateRepository" and "IntegrateRepositoryLocal".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datasource.	string	Required	N/a
"password"	The password to access the datasource.	string	Required	N/a
"deployments"	The deployment object.	object	Required	N/a
"name"	The name of the 1Integrate deployment.	string	Required	Do not change.
"extensions"	The locations of any custom built-ins or datastores.	string	Optional	Default value is null [ ].
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "7004".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "8004".

Element	Description	Type	Required	Notes
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "512m".
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "1024m".
"serversPerHost"	The number of servers to be used, per host.	string	Optional	Default is 1.
"hosts"	The name of the host machine.	string	Required	N/a
"jvmArgs"	The array of Java machine arguments.	array	Required	N/a
"name"	The name of the machine argument to be accessed.	string	Required	The three required object "name" values are: <ol style="list-style-type: none"> <li>1. "max.errors"</li> <li>2. "ls_license"</li> <li>3. "cache.directory"</li> </ol>

Element	Description	Type	Required	Notes
"value"	The location value of the machine argument.	string	Required	<p>The location value of the specified jvmArgs. The values, which correspond with the numbered names above, are:</p> <ol style="list-style-type: none"> <li>1. "1000" this is a default value</li> <li>2. "LOCATION/license.lic"</li> <li>3. "[LOCATION]/[cachedirectory]"</li> </ol>

## 1 Integrate Queue Configuration

Element	Description	Type	Required	Notes
"name"	"1Integrate-queue", the name of the product.	string	Required	N/a
"datasources"	The sources of data used by 1Integrate nodes- Top level.	array of datasource objects	Required	N/a

Element	Description	Type	Required	Notes
"name"	The name of the datasource.	string	Required	The name values of the datasources are: "IntegrateRepository" and "IntegrateRepositoryLocal".
"url"	The location of the datasource.	string	Required	N/a
"user"	The username to access the datasource.	string	Required	N/a
"password"	The password to access the datasource.	string	Required	N/a
"deployments"	The deployment object.	object	Optional	N/a
"name"	The deployment name if custom extensions are to be added.	string	Optional	N/a
"extensions"	A string array of JAR files that extend 1Validate.	string array	Optional	N/a
"httpPort"	The starting HTTP port.	integer	Optional	The default value is "7009".
"httpsPort"	The starting HTTPS port.	integer	Optional	The default value is "8009".
"minHeap"	The minimum memory settings of the server.	integer	Optional	The default value is "512m".

Element	Description	Type	Required	Notes
"maxHeap"	The maximum memory settings of the server.	integer	Optional	The default value is "1024m".
"serversPerHost"	The number of servers to create, per host. each server requires a unique port, which starts from the starting port values.	integer	Optional	The default is 2.
"hosts"	The name of the host machine.	string	Required	N/a
"jvmArgs"	1 Integrate server start parameters.	array	Required	N/a
"name"	The name of the JVM argument.	string	Required	The three required object "name" values are: <ul style="list-style-type: none"> <li>1. "max.errors"</li> <li>2. "ls_license"</li> <li>3. "cache.directory"</li> </ul>

Element	Description	Type	Required	Notes
"value"	The location value of the machine argument.	string	Required	<p>The location value of the specified jvmArgs. The values, which correspond with the numbered names above, are:</p> <ol style="list-style-type: none"> <li>1. "1000" this is a default value</li> <li>2. "[LOCATION]/[license].lic"</li> <li>3. "[LOCATION]/[cachedirectory]"</li> </ol>

# Snowflake Configuration

Element	Description	Type	Required	Notes
"snowflakeProducts"	Top level	snowflake object	Required	N/a
"name"	Name of the Snowflake Products	string	Required	N/a
"translationConfigFile"	Location of the file	string	Optional	If this is not specified, any conflict resolution jobs (created when an exchange package tries to modify a feature that has already been modified since the data was extracted) cannot be uploaded.
"goLoaderProjectFile"	Location of the file that has been configured to load the uploaded GML into the feature database tables.	string	Required	N/a



Element	Description	Type	Required	Notes
"goLoaderSchemaDirectory"	Location of the file that describes the feature data to be uploaded by GO Loader.	string	Required	N/a
"goPublisherProjectFile"	Location of the file that has been configured to extract GML from the feature database tables.	string	Required	N/a
"goPublisherSchemaDirectory"	Location of the file project file that has been configured to extract GML from the feature database tables.	string	Required	N/a
"goPublisherRootSchemaFile"	Location of the file	string	Required	N/a
"goPublisherFeatureRelationsFile"	Location of the file	string	Required	N/a
"datasource"	The data source used by the Snowflake products	object	Required	N/a
"name"	The name of the datasource in use	string	Required	N/a
"url"	The location of the datasource in use	string	Required	N/a
"user"	The username required for access to the datasource	string	Required	N/a
"password"	The password required	string	Required	N/a
"jndi"		string	Required	N/a

Element	Description	Type	Required	Notes
"driver"	The JDBC driver in WildFly to use for the database connection	string	Required	The value must be set to "oracle"

# Security Settings

If you need to secure your environment the following can be used:

## HTTPS Setup

If you want to set up an HTTPS domain then the following will need to be included in the `config.json`. This is included in the `example-configuration-secure-[version].json`.


Element	Description	Type	Required	Notes
"https"		dictionary	Optional	
"keystoreLocation"	The location of the keystore file	string	Required if https specified	This can be an absolute path or relative to the working directory of the installer.
"keystorePassword"	The password to the keystore	string	Required if https specified	N/A
"keyAlias"	The alias of the key you wish to use within the keystore	string	Required if https specified	N/A
"keyPassword"	The password for the key you wish to use within the keystore	string	Required if https specified	N/A

It is recommended that you also set the flag below to stop cookies from being transmitted over HTTP.


## Secure Cookies

If you are managing an HTTPS enabled domain, it is recommended that you set a flag which will stop cookies from being transmitted over HTTP.

Before launching the installer, open the `config.json` and add the following to the `jvmArgs` section of each product you wish to secure:

 **Note:** It is not recommended that you apply the flag to Snowflake products.

```
"jvmArgs": [  
  {  
    "name": "1sms.cookie.secure",  
    "value": "true"  
  }  
]
```


 **Note:** If you would like to secure products that have already been installed, this can be achieved by adding the `jvmArg` manually to each product you wish to secure (within the WildFly console).

# 4 Creating a Domain

Once the set up of your configuration JSON is complete, the following steps will install 1SMS on WildFly.

## Installation of Domain

1. Open the relevant Command-Line Interpreter (e.g Windows PowerShell) within the .jar directory.
2. Type `java -jar [Installer_Filename] -o domain`

 **Note:** When the domain creation line is run (-o domain), the directory will download automatically.

3. This should now install create the relevant domain node for your installation of 1SMS.

 **Note:**

The port for WildFly defaults to 9001, but this can be overwritten in JAR properties.

The domain creation will automatically create an admin user, with a random password, this can also be overwritten in the JAR properties. The random password is created in a file within the directory called "Secrets".

To overwrite the port or create your own password enter:

- ▶ `-Dadmin.password.override=[OPTIONAL_PASSWORD]`
- ▶ `-Dwildfly.console.port=[OPTIONAL_PORT]`

eg: `java -jar -Dadmin.password.override=[OPTIONAL_PASSWORD] -Dwildfly.console.port=[OPTIONAL_PORT] [Installer_Filename] -o domain`

# 5 Clustering 1SMS

In order to create a clustered domain, you will need to configure and add the slave nodes.

The process is similar to the configuration and installation of the domain on the "master" node, and the config file can be re-used, with the following caveats and changes, replacing the parameters defined in "Master Domain Configuration" on page 15 with the following:

Element	Description	Type	Required	Notes
"host"	The name of the slave host machine	string	Required	N/a
"nodeType"	The designation for the slave node	string	Required	The value required for a clustered node is "slave"
"slave"	The slave object	object	Required	N/a
"masterHost"	The host name where the "master" domain was installed	string	Required	N/a

Element	Description	Type	Required	Notes
"masterPass"	Password required to access the master host	string	Required	The masterPass is a randomly generated password that can be found in that "secrets" file on the master node

The rest of the configuration file copied from the master node will need to remain the same.

### Clustering process:

1. For Exchange, ensure the `restBaseUrl` is set in the config file and pointing at the load balanced URL.
2. Install the master domain on the node you're designating as the primary node (see the steps in "Master Domain Configuration" on page 15).
3. Install the Slave domains on the nodes you wish to join to the cluster.
4. Install the products on the Master domain see "Product Configuration" on page 19. This will only automatically start the servers on the Master Domain, but will distribute the product to the Slave Nodes.
5. Install the Snowflake Products, see: "1Exchange Product Configuration " on page 52.
6. Take the **cluster\_patch.zip** file (produced by the installation steps) in the WildFly home directory: wildfly-11.0.0.Final and place it in the WildFly home directories of each of the slave nodes.
7. Extract the directories from the **cluster\_patch.zip** file, ensuring to choose to replace all pre-existing files.

8. On each slave machine, edit the file `jackrabbit\repository\repository.xml` (specifically the cluster ID on line 44) to point to the relevant host.
9. From the WildFly management console on the master node, start the remaining servers.



# 6 Installing 1SMS

Once initial configuration and the domain creation is complete, the following steps will install 1SMS on WildFly.

**Note:** 1Workflow must always be installed in a WebLogic environment. We recommend this is installed after every other component is installed on WildFly, so that the WSDLs can be tested before entering them into the installation wizard. For more information on this installation process, see the *1SMS Installation Guide: WebLogic*.

## Installation of Products

1. Open the relevant Command-Line Interpreter (e.g Windows PowerShell) within the .jar directory.
2. Type `java -jar [Installation_Filename] -o install`

**Note:** If you wish to install one component at a time, rather than the entire suite, enter the name of the product(s) you wish to install. You will need to call the product list by typing `-p` e.g: `-o install -p transact`. Multiple products can be entered in sequence if required. The product elements corresponding to the product for install are:

- ▶ `1Exchange= exchange`
- ▶ `1Plan= plan`
- ▶ `1Transact= transact`
- ▶ `1Workflow Worklist= workflow-worklist`
- ▶ `1Validate= validate`
- ▶ `1Validate Processing Node= validate-node`
- ▶ `1Integrate=1Integrate`
- ▶ `1Integrate Queue=1Integrate-queue`


3. This will now install the suite of 1SMS products.

# 7 Configuration

## 1SMS Roles

1SMS creates roles for access to different levels of functionality for each product.


Each user who needs to use 1SMS must be allocated the appropriate roles.


 **Note:** This role allocation is typically performed by the IT department.

The list of roles and their corresponding permissions are displayed below.

Interface	Roles						
	1SMS_admin	exchange_user	planner	transact_user	validate_user	worker	global_supervisor
<b>1Exchange</b>							
/1exchange	✓	✓	✗	✗	✗	✗	✗
/admin	✓	✗	✗	✗	✗	✗	✗
SOAP	✓	✓	✗	✗	✗	✗	✗
<b>1Plan</b>							
/1plan	✓	✗	✓	✗	✗	✗	✗
/1plan/jobsummary/	✓	✗	✓	✗	✗	✗	✓
/admin	✓	✗	✗	✗	✗	✗	✗
SOAP	✓	✗	✓	✗	✗	✗	✗
<b>1Transact</b>							
/1transact	✓	✗	✗	✓	✗	✗	✗
SOAP	✓	✗	✗	✓	✗	✗	✗
<b>1Validate</b>							
/admin	✓	✗	✗	✗	✗	✗	✗
SOAP	✓	✗	✗	✗	✓	✗	✗


Interface	Roles						
	1SM S_ admin	exchan ge_ user	plann er	transa ct_ user	validat e_ user	work er	global_ supervi sor
<b>1Workflow</b>							
/1sms	✓	✗	✗	✗	✗	✓	✗
/admin	✓	✗	✗	✗	✗	✗	✗
SOAP	✓	✗	✗	✗	✗	✓	✗

 **Note:** 1Workflow uses SOAP to access the components.


 **Note:** In order to progress a job from ALLOCATED to COMPLETED, a user requires the following roles: exchange\_user, planner, transact\_user, validate\_user and worker.


## 1Exchange Product Configuration

The **Products** configuration process allows you to define an **Exchange Product**. Multiple products can be created, each referencing a **GO Publisher Project** (.gpp) and a **GO Loader Project** (.glp) and (optionally) each reading and writing to a different database schema.

 **Note:** In this instance, a **Product** refers to a configuration file that defines the way that data is published and imported using **GO Loader** and **GO Publisher**. For more information please refer to [Snowflake documentation](#).

In turn, these **Products** are used when configuring **Exchange Policies** in the 1Exchange administration page (see "Exchange Policies" on the facing page).

 **Note:** 1Exchange requires GO Loader Desktop v 1.8 and GO Publisher Desktop v 4.0.

 **Note:** A set of GO Loader and GO Publisher *Products* can be configured at install time. Any additional products must be configured using this process. Policy configuration will still need to be performed for these products (including any from the installation process), via the admin page (see "Managing Exchange Policies" on page 55).

In order to perform the product configuration, you will require the following:

- ▶ Feature Schema XSD
- ▶ GO Loader project (.glp)
- ▶ GO Publisher project (.gpp)
- ▶ (optional) Conflict resolution name mappings (.xml)

## Perform 1Exchange Product Configuration

1. Open the relevant Command-Line Interpreter (e.g Windows PowerShell) within the .jar directory.
2. Type `java -jar [Installation_Filename] -o exchange ] -product`
3. This will now install the relevant 1Exchange Products for your installation of 1SMS.

## Exchange Policies


An **Exchange Policy** specifies settings regarding the data that is extracted from and imported to the feature database schema. This could potentially be different for different job types, so multiple policies can be configured. And Exchange Policy is created in the 1Exchange Admin UI.

## URL Locations

The 1Exchange administration page is available at: [http://\[server\]:7115/1exchange/admin/](http://[server]:7115/1exchange/admin/)

The SOAP web service is located at: [http://\[server\]:7115/soapview/ExchangeService?WSDL](http://[server]:7115/soapview/ExchangeService?WSDL)

The REST web service is located at: [http://\[server\]:\[port\]/restview/rest/](http://[server]:[port]/restview/rest/)

 **Note:** The ports used here are the default and you may have changed them during installation.

## FME Server

If using FME Server to convert data from the Oracle Database into any format and back again, each Exchange Policy will need to specify the FME Server instance and workspaces.

Using the 1Exchange admin UI you can input the parameters of your FME Server and Workspace. An example set up is shown below:

---

Policy Type:

Snowflake

FME

FME Server Url:

FME Server Username:

FME Server Password:

FME Server Extraction Workspace:

FME Server Submission Workspace:

Automatically Grow Extents:

Buffer Distance in metres (mandatory):


Geometry Columns to Use (optional):

✓

Figure 7-1: Example parameters for an FME Exchange Policy

## GO Loader and GO Publisher

Each **Exchange Policy** references a GO Publisher and a GO Loader configuration that defines how the data is converted from the database into GML and back again. These configurations are called **Products** (see "1Exchange Product Configuration " on page 52).

 **Note:** In this instance, a **Product** refers to a configuration file that defines the way that data is published and imported using **GO Loader** and **GO Publisher**. For more information please refer to [Snowflake documentation](#).


An example of the implementation of multiple policies using **GO Loader** and **GO Publisher** would be where the **Exchange Policy** defines an optional buffer surrounding the job extents to bound the features extracted. This may be significantly different for different job types. Similarly, there could be multiple

products exporting different feature classes and the Exchange policy sets up the mapping between job type and the features products used.

## Managing Exchange Policies

At least one Exchange policy must be configured using the administration interface to use 1Exchange and the 1Spatial Management Suite, however multiple policies can be configured.

The 1Exchange administration interface is accessed from: [http://\[machine\]:\[port\]/1exchange/admin](http://[machine]:[port]/1exchange/admin)

 **Note:** The port number is defined during installation, but by default this is set to 7115.




There are two different Exchange Policy types available:

- ▶ Snowflake
- ▶ FME Server

1Workflow administrators can configure which Exchange policy to use for each job type, via the Workflow admin page.

### Creating an Exchange Policy

#### Create an Exchange Policy:

1. Navigate to the 1Exchange Administration interface.
2. Click  and enter a name in the **Policy Name** field.  
Click  to confirm the policy name.
3. Enter the policy details (see "Snowflake Exchange Policy Parameters" below or [FME Exchange Policy Parameters](#)).
4. Click  to save the policy.

#### Snowflake Exchange Policy Parameters:

Parameter	Description	Typical Value
Extraction Buffer	The distance by which to extend the extraction window when extracting features.  This can be useful to ensure that an extract contains more data than in the originally provided geometry extent.	0

Parameter	Description	Typical Value
SRS	<p>The SRS to be applied to the geometry when using a MBR or string of coordinates.</p> <p>When passing in the geometry through the user interface, this OGC SRS name is used to construct a valid GML geometry so that the extraction process can extract the correct data.</p> <p>This value is not used when calling the 1Exchange web service because the SRS name will already have been embedded in the GML geometry. For example, <code>urn:ogc:def:crs:EPSG::4326</code>.</p>	
Extraction Project	<p>A GO Publisher product registered during or after installation.</p> <p>A list of available products is available for selection.</p>	
Submission Project	<p>A GO Loader product registered during or after installation.</p> <p>A list of available products is available for selection. When only one product is available, this is automatically selected.</p>	
Extraction Adaptor	<p>Adaptor to be applied to extracted features to convert from GML to a different required format.</p> <p>The parameters depend on each particular adaptor. For example, the standard FME server adaptor requires the URL, user name, and password for FME server and the name of the extraction workspace.</p>	
Submission Adaptor	<p>Adaptor to be applied to features before submission to transform the returned data back into change only GML 3.2 as expected by GO Loader.</p> <p>If the returned updated data includes all the data for the job, this process will also need to compare with the originally delivered file to detect the differences and generate a change-only GML file.</p>	

Parameter	Description	Typical Value
Grow Extents Buffer	Applied when growing extents (see "Grow Extents" on page 63).	
Grow Extents Geometries	A list of geometry columns that are queried to find intersecting features to use to grow the job extent before buffering it (see "Grow Extents" on page 63).	

### FME Exchange policy Parameters:


Parameter	Description	Typical Value
FME Url	The location of the FME server	http://[hostname]: [optionalport]
FME Username	The username associated with the FME Server	
FME Password	The password associated with the FME Server	
FME Extraction Workbench	The repository and file location of the extraction workbench	[MyRepository]/ [MyWorkspace.fmw]
FME Submission Workbench	The repository and file location of the submission workbench	[MyRepository]/ [MyWorkspace.fmw]
<b>Automatically Grow Extents</b>		
Buffer Distance in metres (mandatory)	Applied when growing extents (see "Grow Extents" on page 63).	
Geometry Columns to Use (optional)	A list of geometry columns that are queried to find intersecting features to use to grow the job extent before buffering it (see "Grow Extents" on page 63).	


### Updating or Deleting an Exchange Policy


To update an Exchange policy, select an existing policy and modify the parameters as required (see "Snowflake Exchange Policy Parameters" on



page 55).

To confirm your changes, click .

 **Note:** If you navigate away from the current policy (for example, by selecting another Exchange policy), you must confirm whether or not you want to discard or save your changes.

To delete an Exchange policy, select an existing Exchange policy, click  and confirm the deletion when prompted.

## Copying an Exchange Policy

To copy an Exchange policy, select an existing policy and click .

The name for the new Exchange policy is displayed. A default name consisting of a prefix `Copy_of_` and the name of the original Exchange policy is given.

With the exception of its name, the new policy will have the same attribute values as the original policy.

## Applying Adaptors to an Exchange Policy (GO Loader and GO Publisher)


An exchange policy can optionally specify Extraction and/or Submission adaptors. These will be applied to the data after each extraction and before each submission.

To use an *Extraction Adaptor*, select **Use Extraction Adaptor**. This is carried out within the 1Exchange Admin Policy configuration window.

Once an Adaptor type has been selected, a list of available adaptors is displayed; by default this is the FME adaptor.

Select an adaptor from the list and the list of input parameters is displayed. In the case of the FME Adaptor, these are:

Parameter	Description	Typical Value
FME Url	The location of the FME server	https://<machine>:<port>
FME username	The username for the FME server pointed to by FME Url	N/a
FME password	The password for the FME server pointed to by FME Url	N/a

Parameter	Description	Typical Value
Workspace name	The name of the extraction/submission workspace.	Including containing repository (e.g. [repository]/[extraction_workspace]).
Overwrite features	<p>If selected, the <code>features.zip</code> in the job package will be replaced by the file returned from FME Server.</p> <p>If left un-checked, then the <code>features.zip</code> remains unchanged, with the file returned from FME Server packaged as <code>adapted_features.zip</code>.</p> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p> <b>Note:</b> This option will only appear on Extraction Adaptors.</p> </div>	Boolean


To use a *Submission Adaptor*, select **Use Submission Adaptor**, also located within the 1Exchange Admin Policy configuration window. A list of available adaptors is displayed.

Select an adaptor from the list and the list of input parameters is displayed.

If you are using the FME Adaptor, the list of parameters is the same as above, but the workspace will differ to the extraction workspace as it will be performing the reverse translation.

Additional adaptors can be added to 1Exchange as REST services. By default, 1Exchange includes a FME Server adaptor but other software can be used for converting data by implementing the REST service to invoke that software.

#### Setting up an FME Workspace for use as an Adaptor:

 **Note:** Ensure that any translated files end up in the root directory of the zip created by the **Data Download service**.

There are number of requirements on the FME Workspace that are needed in order for an exchange adaptor to work.

1Exchange will call FME Server to run the Workspace and will provide a number of parameters:

**Extraction FME Workspace Published Parameters**

Parameter	Type	Required	Description
Extraction_ File	Filename (Multiple)	Required	The GML 3.2.1 features file.
Job_ Metadata_ File	Filename (Multiple)	Required	An XML file containing the job metadata
Validation_ Report_File	Filename (Multiple)	Optional	A validation report generated by 1Validate or 1Integrate. Only supplied for child jobs, or where pre-validation is carried out.

The job metadata file and validation report can be ignored, or can be processed in the workspace as required.

The extraction workspace should carry out any required translation on the supplied GML 3.2.1 file and needs to output to a file which is returned to 1Exchange by FME Server. 1Exchange will package up the returned file into adapted\_features.zip.

**Submission FME Workspace Published Parameters**

Parameter	Type	Required	Description
Updates_ File	Filename (Multiple)	Required	The edited file which the user uploaded through the Worklist.
Extraction_ File	Filename (Multiple)	Required	The original GML 3.2.1 features file.

The submission workspace should carry out any required translations on the updates file to make it schema compatible with the original GML 3.2.1. It should then compare Updates\_File to Extraction\_File to determine the changes and then generate a **GML** change only file which is returned to 1Exchange.

Both the submission and extraction workspace must be published to FME Server with services: **Data Download** and **Job Submitter**.

**Add an Adaptor Implementation:**

1. Add an entry in the adaptors.properties file in the form [adaptor-label]=[adaptor-url].

For example, for the FME adaptor the entry is:

```
FME\
Adaptor=http://localhost:7115/adaptor/fme/rest/fme_adaptor
```

## 2. Define the REST service implementation.

The API is:

```
public interface ExchangeAdaptorRestService
{
    @GET
    @Produces({ MediaType.APPLICATION_XML,
    MediaType.APPLICATION_JSON })
    Capabilities getCapabilities();

    @GET
    @Path("/{processId}")
    @Produces({ MediaType.APPLICATION_XML,
    MediaType.APPLICATION_JSON })
    AdaptorProcess describeProcess(@PathParam
    ("processId") String processId);

    @POST
    @Path("/{processId}")
    @Produces({ MediaType.APPLICATION_XML,
    MediaType.APPLICATION_JSON })
    @Consumes(MediaType.MULTIPART_FORM_DATA)
    Response execute(@PathParam("processId")
    String processId, @Context HttpServletRequest
    request) throws Exception;
}
```

Where:

- ▶ `getCapabilities` - returns a `Capabilities` object that represents `List<AdaptorProcesses>`
- ▶ `describeProcess(processId)` - returns an `AdaptorProcess`, that contains the following information:
  - ▶ `id` - unique ID to identify the process in this adaptor
  - ▶ `description` - description of the process
  - ▶ `inputs` - list of input parameters
  - ▶ `output` - output parameter of the process

- ▶ `execute(processId, request)` - indicates the process to execute using the parameters in the request

As an example, for the FME adaptor the process is:

id	fme_adaptor
description	Converts data using an FME workspace
inputs	FME server URL, user name and password, workspace name
output	Currently unused, but could be the name of adapted file inside features.zip on extraction

All adaptors also have fixed inputs that do not need to be specified. These are:

- ▶ **Extraction adaptor** - file containing the extracted GML 3.2.1 data to be converted.

For the FME adaptor provided, this is a published parameter of the workspace with name `Extraction_file`.

- ▶ **Submission adaptor** - A file containing the original data after it was converted by the Extraction adaptor and a file containing the feature updates.

If the feature updates are provided in a change-only format then the adaptor only needs to convert the updates file to GML 3.2.1. If the feature updates are provided as a full file including the changes, the adaptor can compare against the original file to detect the changes and create a change-only GML file.

For the FME adaptor provided, this is a published parameter of the workspace with name `Updates_file`.

## Policy Metadata

To see all metadata for an Exchange policy, select the policy. A panel is displayed on the right-hand side showing the following attributes of the Exchange policy:

### FME Exchange Policy metadata:


- ▶ **Name** - Name for the Exchange policy
- ▶ **Path** - URL for the Exchange policy
- ▶ **Created by** - User who created the Exchange policy
- ▶ **Created date** - Timestamp when the Exchange policy was created
- ▶ **Policy buffer** - Distance by which to buffer the extraction window

- ▶ **Policy srs\_name** - Default SRS for the Exchange policy
- ▶ **Policy grow\_extents\_list**
- ▶ **Policy grow\_extents\_buffer**
- ▶ **Policy fme\_url**
- ▶ **Policy fme\_username**
- ▶ **Policy fme\_password**
- ▶ **Policy fme\_extraction\_workbench**
- ▶ **Policy fme\_submission\_workbench**

#### Snowflake Exchange Policy Metadata:

- ▶ **Name** - Name for the Exchange policy
- ▶ **Path** - URL for the Exchange policy
- ▶ **Created by** - User who created the Exchange policy
- ▶ **Created date** - Timestamp when the Exchange policy was created
- ▶ **Policy go\_publisher\_project** - Name of the GoPublisher product
- ▶ **Policy go\_loader\_project** - Name of the GoLoader product
- ▶ **Policy buffer** - Distance by which to buffer the extraction window
- ▶ **Policy srs\_name** - Default SRS for the Exchange policy

Some attributes are configurable, however others (such as the creation user name and timestamps) are assigned by the system.


To hide the metadata panel, click . To display the metadata, re-select the Exchange policy.

## Grow Extents

1Workflow can automatically grow the extent of a job. This is useful to ensure that enough data is extracted to allow all the features that are wholly or partially within the original area of interest to be safely edited and validated.

Often, validation rules require all the features that surround a feature to be available to perform the validation. To guarantee that a feature can be edited and validated, administrators usually require that jobs are automatically expanded to include all the features that surround those that are partially within the original area of interest. To achieve this, 1Workflow asks 1Exchange to query the base data for features to use to grow the job extent, and then adds a buffer to the result.

1Workflow contains a setting to indicate whether or not the original job extents should be grown automatically.

 **Note:** Activating a job takes slightly longer if job extents are being grown.

For each Exchange policy, an administrator can define how the job extent should be grown. The Exchange policy in the administration page contains the following fields:

- ▶ **Grow Extents Buffer** (mandatory) - Real with default value of 0.1, expressed in meters.


If a value is entered with a value lower than 0.1, it will automatically be set back to 0.1.

A buffer is always applied when growing extents. If no geometry columns are specified below, only the buffer will be applied to the original geometry.

- ▶ **Grow Extents Geometries** (optional) - Comma separated list of geometry columns that are queried to find intersecting features to use to grow the job extent before buffering it.

The format of this setting is `[table_name].[geometry_name]`, for example `LAND.GEOMETRY.WATER.POLY_GEOM`.

Any geometries (points or lines) from these geometry columns that intersect the boundary of the original job extent are used to grow the job extent to ensure enough data is available for editing and validation. Any holes in the resulting enlarged job extent are removed to ensure complete data.

 **Note:** 1Plan and 1Edit will continue to display the original unexpanded area of interest (as this defines where the edits should be happening), however the enlarged extent is used when extracting data and identifying the data to use for validation.

Additional extraction rules are applied by 1Exchange as normal after identifying the initial set of target features using the enlarged extent (rules such as including additional features that are referenced by those within the extraction extent).

## 1Plan Configuration


Some post-installation configuration is required before 1Plan can be used.

Please refer to the *1Spatial Management Suite Administration Guide* for the following configuration instructions:

- ▶ Adding job metadata
- ▶ Adding map base layers
- ▶ Adding map overlays
- ▶ Configuring the Gazetteer

## Initial Install

If you are installing 1Plan for the first time, the following configurations must also be performed in the 1Plan administration page. If you are upgrading from a previous version, these steps are unnecessary.


 **Note:** See the 1Plan online help for further information on these tasks.

1. Set up the mandatory map parameters.  
Within the **Map Parameters Configuration** page, define **Maximum map extent** and **Map projection**.
2. Set up at least one basemap.  
Within **Map > Layers**, define a basemap.
3. Restart 1Plan from the Application Server Management Console.  
1Plan will create a spatial index in the correct projection for the job extents using the parameters you entered.

## Installing Validation Rules

Validation rules are written in the 1Validate administration interface.

Validation rules to be run when data is submitted need to be carefully planned and written to ensure that they have sufficient coverage of possible issues.

 **Note:** In order to be run within the 1Spatial Management Suite, rules must be placed in a subfolder of a root folder called PRODUCTION (for example `\\PRODUCTION\MyRules`).

## Uploading Validation Rules

Rules can be uploaded into the system from an XML backup. This backup contains the rules and any metadata stores used by these rules.


If 1Validate rules need to be modified, they can be updated while the system is still running. By modifying rules in the live ruleset (or adding or removing rules from this folder), the next time a job is submitted it will use the new set of rules.



1Spatial recommends that rules are managed more formally by copying old sets of rules into folders with a relevant version name, so the rules that have been run on particular jobs is traceable and transparent.

### Upload Validation Rules:

1. In the 1Validate administration interface, navigate to the **Rules** page.
2. Select **Tools > Upload**.
3. **Browse** to the backup file and select it.  
The file name is displayed next to the **Browse** button.
4. Click **Submit**.  
A table of rules is displayed.
5. Click **Close**.
6. If necessary, move the new rules to the correct folder.

 **Note:** In order to be run within the 1Spatial Management Suite, rules must be placed in a subfolder of a root folder called **PRODUCTION** (for example `\\PRODUCTION\MyRules`).

## Configuring Email Notifications

1Workflow has the ability to send email notifications on job state changes and in the event of errors. An example email can be seen below:


```
From: integration@domain.com
[mailto:integration@domain.com]
Sent: DATE TIME
To: Worker
Subject: [1Workflow] Info: Job 25 -> ACTIVATED
Job 25 (Digitise New Road) has transitioned from
ALLOCATED to ACTIVATED.
Job is assigned to: Job Worker

You can access this job in 1SMS Worklist by clicking
this link.

OPTIONAL: Table
OPTIONAL: Footer
```

In order to use this feature, you must first set up the User Messaging Email Driver and the Workflow Notification Properties within the Oracle Enterprise Manager page.


For more information about the configuration of email notifications, please see [Oracle documentation](#).

 **Note:** As well as configuring the workflow, the administrator will need to set up an E-Mail driver in the SOA Suite. This is documented further in [Oracle documentation](#).

## Notifications Settings

The following settings are available in the Notifications tab of the 1Workflow Admin pages. For more information please refer to 1Workflow Administration.

Setting	Description
Send email notifications	Turn email notifications on.
Notification Recipient Configuration	Using the matrix, select which users receive notification upon a job reaching the relevant state or upon the completion of an action. For more information see "Notification Recipient Configuration " on the next page.
Number of days before (-) or after (+) the planned completion date to send the late job alert as configured in the table above	Configure when a late email is sent: before, after or on the planned completion day. The planned completion day is represented by "0" and the email will always be sent at 00:00.
Notify an administrator on error	Controls whether or not a named administrator is emailed when a workflow contains an error. When it is switched on, the admin is prompted to select the username of the administrator from a dropdown box. The list is populated by users in your LDAP directory.

Setting	Description
Notify the worker on error	This setting controls whether or not the Worker is sent an email to indicate that an error has occurred with one of their jobs. If this occurs, it is likely to happen after they have submitted a job and it may be useful to record that the issue has been handled by the administrator.
Include a footer in all email notification	<p>You also configure emails to include a Notification Footer with fully customisable HTML.</p> <div data-bbox="866 808 1334 1055" style="border: 1px solid gray; padding: 5px;"> <p> <b>Note:</b> There is a maximum 4000 character limit for the HTML appended to notification emails.</p> </div>
Include a tabular representation of the current job metadata in all email notifications	This can be turned on to include job metadata as a table of values after an email, but above the footer.

## Notification Recipient Configuration

The notification recipient configuration matrix allows for the selection of multiple users and job states or actions.

Notification recipient configuration

State Change	Worker	Planner	Worker Group	Embargo Reviewer	Quarantine Reviewer
Allocated	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downloaded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uploaded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Committed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Validation Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conflict Resolution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Revoked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relinquished	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abandoned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quarantined	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quarantine Correction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corrections Required	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discarded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Embargoed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Late Completion Alert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 7-2: Notifications Configuration

# 8 Testing the Installation

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 **Note:** Empty your browser cache before testing your installation.

## Testing the 1Exchange Installation

 **Note:** Empty your browser cache before testing your installation.

1Exchange can be accessed through the following sites:

- ▶ User Interface: [http://\[machine\]:\[service\\_port\]/1exchange](http://[machine]:[service_port]/1exchange)
- ▶ Administration: [http://\[machine\]:\[service\\_port\]/1exchange/admin](http://[machine]:[service_port]/1exchange/admin)

 **Note:** Use the port number specified during installation, by default this is 7115.

If you need to access the 1Exchange Web Services API, then the WSDL document can be found at:


[http://\[machine\]:\[service\\_port\]/soapview/ExchangeService?WSDL](http://[machine]:[service_port]/soapview/ExchangeService?WSDL)

## Testing the 1Integrate Installation

 **Note:** Empty your browser cache before testing your installation.

1Integrate can be accessed through the following site:

[http://\[machine\]:\[service\\_port\]/1Integrate](http://[machine]:[service_port]/1Integrate)

 **Note:** Use the port number specified during installation, by default this is 8080.

Log in as a user with administrator permissions. The home page displays a traffic light system:

- ▶ If the status traffic light icon displayed on the page is green, 1Integrate has been successfully installed.
- ▶ If the traffic light icon is amber or red, click on it to display information for any configuration errors.

To verify the session queue installations, click the **Admin** tab and check that the Grid Topology matches the number of interfaces and session queues installed.

If you need to access the 1Integrate Web Services API, then a web page with documentation and a link to the WSDL document can be found at:


[http://\[machine\]:\[service\\_port\]/soap](http://[machine]:[service_port]/soap)

## Testing the 1Plan Installation

 **Note:** Empty your browser cache before testing your installation.

1Plan can be accessed through the following sites:

- ▶ User Interface: [http://\[machine\]:\[service\\_port\]/1plan](http://[machine]:[service_port]/1plan)
- ▶ Administration: [http://\[machine\]:\[service\\_port\]/1plan/admin](http://[machine]:[service_port]/1plan/admin)

 **Note:** Use the port number specified during installation, by default this is 7112.

If you need to access the 1Plan Web Services API, then the WSDL document can be found at:


[http://\[machine\]:\[service\\_port\]/pcs/JobSoapService?WSDL](http://[machine]:[service_port]/pcs/JobSoapService?WSDL)

## Testing the 1Transact Installation

 **Note:** Empty your browser cache before testing your installation.

1Transact can be accessed through the following site:

[http://\[machine\]:\[service\\_port\]/1transact](http://[machine]:[service_port]/1transact)

 **Note:** Use the port number specified during installation, by default this is 7007.

If you need to access the 1Transact Web Services API, then the WSDL document can be found at:


[http://\[machine\]:\[service\\_port\]/ms-transact-soapview/TransactService?WSDL](http://[machine]:[service_port]/ms-transact-soapview/TransactService?WSDL)

## Testing the 1Validate Installation

 **Note:** Empty your browser cache before testing your installation.

1Validate can be accessed through the following site:

[http://\[machine\]:\[service\\_port\]/admin](http://[machine]:[service_port]/admin)

 **Note:** Use the port number specified during installation, by default this is 8021.


Log in as a user with administrator permissions.

To verify the processing node installations, click the **Admin** tab and check that the Grid Topology matches the number of interfaces and processing nodes installed.

If you need to access the 1Validate Web Services API, then the WSDL document can be found at:


[http://\[machine\]:\[service\\_port\]/soap/ValidationService?WSDL](http://[machine]:[service_port]/soap/ValidationService?WSDL)

## Testing the 1Workflow Installation

 **Note:** Empty your browser cache before testing your installation.

1Workflow can be accessed through the following sites:


- ▶ User Interface: [http://\[machine\]:\[service\\_port\]/1sms](http://[machine]:[service_port]/1sms)
- ▶ Administration: [http://\[machine\]:\[service\\_port\]/1sms/admin](http://[machine]:[service_port]/1sms/admin)


 **Note:** Use the port number specified during installation, by default this is 7122.

If you need to access the 1Workflow Web Services API, then the WSDL document can be found at:

[http://\[machine\]:\[service\\_port\]/wf/WorkflowConfigSoapService?WSDL](http://[machine]:[service_port]/wf/WorkflowConfigSoapService?WSDL)


# 9 Upgrading an Installation

 **Note:** Before performing an upgrade to an existing installation, ensure **all sessions are stopped** and perform a **backup** of your repository.

 **Note:** These instructions apply when upgrading from one version to the immediately subsequent release only (e.g. from 1.1 to 1.2). If you are performing an upgrade from any older version, please consult your release notes or contact 1Spatial Support.

## Upgrade an Installation:

Upgrading an installation on WildFly consists of unpacking your new release folder, copying across your existing settings files, and editing the Java location in your interface and session queue component files.

 **Note:** The following instructions use an example where currently version 1.A is installed, and we want to upgrade to 1.B. We have used **C:\1Spatial** as a directory within which to store our installation package files, organised into **C:\1Spatial\Product-1.A** and **C:\1Spatial\Product-1.B**.

1. Unzip your new Release Package, and the WildFly folder within it (e.g. **C:\Program Files\1Spatial\Product-1.B\Product-1.B\_wildfly\wildfly-[version]**).
2. Copy the following properties files from the **SETTINGS** folder in your *existing* installation directory (e.g. **C:\Program Files\1Spatial\Product-1.A\Product-1.A\_wildfly\wildfly-[version]\SETTINGS**), into the **SETTINGS** folder in your *new* installation directory:
  - ▶ **settings.properties**
  - ▶ **roles.properties**
  - ▶ **users.properties**
3. Copy any built-ins and custom data stores (**.jar** files) from your *existing* installation directory (e.g. **C:\Program Files\1Spatial\Product-1.A\Product-1.A\_wildfly\wildfly-[version]\standalone\deployments\Product-1.A.ear\lib** and



**C:\Program Files\1Spatial\Product-1.A\Product-1.A\_wildfly\wildfly-[version]\standalone-sessionqueue\deployments\Product-1.A.ear\lib)** into the corresponding **lib** folders within your new installation directory.

4. Before opening the component files, they must first be configured to refer to the correct version of Java.

The procedure is different for Windows and Linux.

### Windows:

1. Edit **start-Interface.cmd** and **start-SessionQueue.cmd**.
2. Locate the following lines:

```
@REM Uncomment and set this path to be
correct for your environment
REM SET "JAVA_HOME=C:\PROGRA~1\Java\jdk1.8.0_
141"
```

3. Uncomment the second line and remove "REM", so that it begins with "SET". Ensure that it is pointing to the location of Java home for the correct version of Java installed as part of the pre-requisites. The resulting line should appear as follows:

```
SET "JAVA_HOME=C:\PROGRA~1\Java\jdk1.8.0_141"
```

4. Once configured, open the files to start the 1Integrate components.

### Linux:

1. Edit **start-Interface.sh** and **start-SessionQueue.sh**.
2. Uncomment the line just below "#Uncomment and set this path to be correct for your environment":

```
export JAVA_HOME="/usr/java/jdk1.8.0_141"
```

3. Once configured, open the files to start the 1Integrate components.

# 10 Uninstalling 1SMS

The process for uninstalling the 1SMS is similar to installation.

## Uninstallation of Products

1. Open the relevant Command-Line Interpreter (e.g Windows PowerShell) within the .jar directory.
2. Type `java -jar [Installation_Filename] -o uninstall`

### Note:

If you wish to uninstall one component at a time, rather than the entire suite, enter the name of the product(s) you wish to uninstall. You will need to call the product list by typing `-p` e.g: `-o uninstall -p transact`. Multiple products can be entered in sequence if required. The product elements corresponding to the product for uninstallation are:

- ▶ `1Exchange= exchange`
- ▶ `1Plan= plan`
- ▶ `1Transact= transact`
- ▶ `1WorkflowWorklist= workflow-worklist`
- ▶ `1Validate= validate`
- ▶ `1Validate Processing Node= validate-node`
- ▶ `1Integrate= 1Integrate`
- ▶ `1Integrate= 1Integrate-queue`

3. This should now uninstall the suite of 1SMS products.