



1Spatial Management Suite

Installation Guide

WebLogic

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1 Introduction

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

The procedures apply to both Windows and Linux environments, unless specifically indicated.

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.

2 Installation Prerequisites

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
- The correct version of Java has been installed
- The database schemas have been set up (see ["Database Creation" on page 7](#))
- Individual component requirements (as necessary)

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 along with an installer application.

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.

1Workflow

1Workflow always requires installation on WebLogic. For information about the 1Workflow WebLogic installation please refer to the 1SMS Installation Guide: WebLogic.

Config.properties file

The installation application reads and writes a config.properties file to record the settings for your installation. This file is a record of your current configuration.

The config.properties file will be written out to the installation directory.

 **Note:** Passwords are encrypted in the config.properties file.

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

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 job 1Exchange packages may be different to the installed machine name.

 **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 Address parameter in the Load Balancing section of the installer to specify the external service address to be used by clients for the download of job packages.

System Requirements

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 Engines	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.
1Transact	1.5GB	2GB	1	N/a	Use these guidelines for each instance.

Component	Memory Minimum	Memory Recommended	Core Minimum	Core Recommended	Clustering
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.
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.

Domain Creation

For both WebLogic and Wildfly most of the 1SMS components can sit within standard base domains, apart from the following exception:

- 1Workflow must be held on a domain *with* SOA components (a "SOA" domain).

For details on how to create domains on WebLogic, please refer to the Oracle WebLogic documentation.

For details on how to create domains on Wildfly please follow the domain set up steps in the install guide, unless installing 1Workflow, in which case please refer to Oracle WebLogic documentation as above.

We make the following recommendation for domain setup:

- Install everything on the standard base domain, except 1Workflow.

Database Creation

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

 **Note:** Depending on the components being installed, an Oracle, SQL Server or PostgreSQL database can be used. Please refer to the individual component chapters for clarification.

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

 **Note:** If you are using a PostgreSQL database, it is recommended that you create these as databases in which the public schema will be used to create the tables.

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

Schema	Use	Suggested name
For specific 1Spatial Management Suite products		
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
1Generalise Repository	Stores 1Generalise configuration	sms_generalise
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
1Integrate Repository	Stores the repository of 1Integrate rules and is used	sms_integrate

Schema	Use	Suggested name
	to store data validation sessions	
1Workflow Repository	Stores the configuration for the 1Workflow component	sms_workflow
For all 1Spatial Management Suite products		
Feature data	The main location of the feature data being managed by 1SMS. 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.  Note: During 1Exchange configuration (see "1Exchange Product Configuration " on page 71), GO Publisher and GO Loader products can override this in order to read and write from different schemas within the same database.	 Note: This usually already exists and will be site-specific. Tables to be managed must be version-enabled.
Security schema	Storage space for security tokens created when users log on to applications	sms_security
JMS schema	Storage space for the database persisted JMS messages for 1Exchange, 1Generalise, 1Transact, and 1Integrate.	sms_messaging

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]

Configuring PostgreSQL

All necessary tables will be created within the databases, with the exception of JMS.

Connect to the JMS database and create a table within it using the following SQL:

```
\c sms_jms_store  
  
CREATE TABLE mstransact_wlstore(  
    id INTEGER NOT NULL PRIMARY KEY,  
    type INTEGER NOT NULL,  
    handle INTEGER NOT NULL,  
    record BYTEA NOT NULL);
```


1SMS Installation Wizard

The 1Spatial Management Suite Installation Wizard guides you through the installation of each component and the installation of security providers to allow you to secure your web services.

 **Note:** The wizard also allows you to install individual components or sets of components applicable to the application server on which you are running the installation.

The wizard prompts you for a series of settings. Some are used globally throughout the system, some are specific to individual components.

Launching the wizard

The wizard can be run on both Windows and Linux operating systems.

LAUNCH THE INSTALLATION WIZARD ON WINDOWS

1. Copy and unzip the installation folder on the target server machine.
2. Double-click the 1sms_installer-[version].jar file.

LAUNCH THE INSTALLATION WIZARD ON LINUX

1. Copy and unzip the installation folder on the target server machine.
2. Run the installer.jar file using a Java 1.8 JVM.

For example, from the command line enter: `Java -jar ./1sms_installer-[version].jar`

Installation options

Once launched, the Wizard Options page will prompt you for which operation you wish to perform:

- Authentication Provider Setup (see ["Authentication Provider Setup" on the next page](#))
- WebLogic Installation (see ["Installation of 1Spatial Management Suite" on page 20](#))
- Suite Configuration (see ["Suite Configuration" on page 87](#))

- 1Exchange Product Configuration (see "[1Exchange Product Configuration](#)" on page 71)

The four installation options are generally done in order, first setting up the authentication providers on your server(s), performing the installation of the software, and finally running a suite configuration step and installing customer-specific GoPublisher and GoLoader products required by 1Exchange.

Authentication providers are required to secure 1Spatial Management Suite products. If this is a first time install, you must set up the providers before installing 1SMS. If you are upgrading the software from an older version of the product, the previous authentication providers can be used.

Authentication Provider Setup

1Spatial Management Suite is a secured system using an LDAP server to provide the authentication. The services that make up 1Spatial Management Suite need to connect to the LDAP server using authentication providers.

The authentication providers can be set up directly in WebLogic, however you can also use the 1SMS Installation Wizard.

 **Note:** In order to install 1SMS in an environment secured by SSL, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used *when WebLogic was installed*. This may not be the same as the Java version that is running the installer or the Java running the WebLogic domain. If you are unsure which Java this will be, check the **commEnv** script found in the **oracle_common\common\bin** directory in the WebLogic installation.

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.

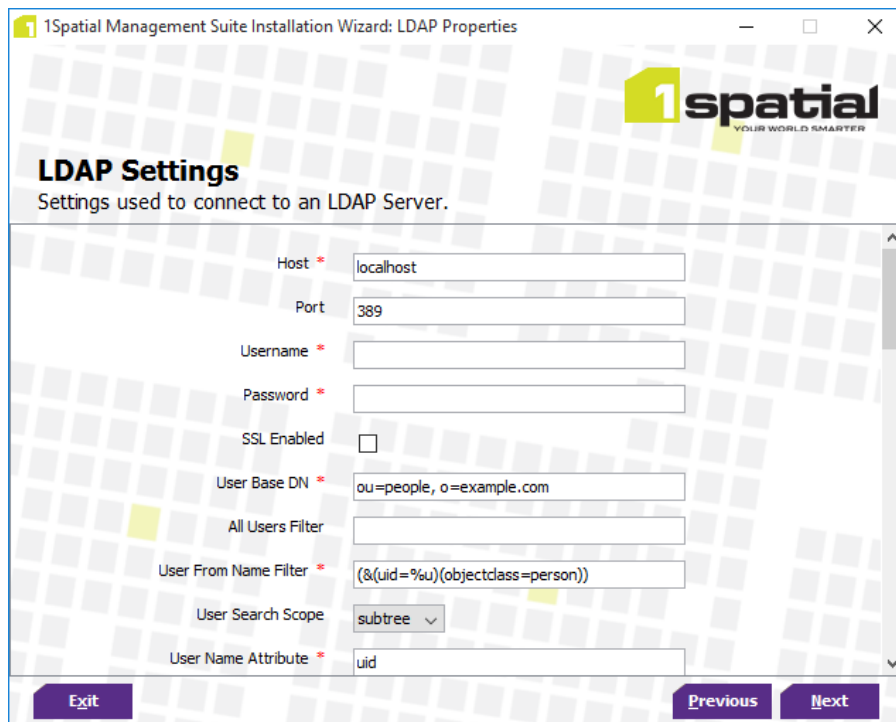
SET UP AUTHENTICATION PROVIDERS

1. Launch the Installation Wizard.
2. On the Wizard Options screen, select **Authentication Provider Setup** and click **Next** to proceed.
3. On the **WebLogic Authentication Provider Setup** screen, select your type of LDAP server from the **LDAP Provider Type** drop-down list. By default, this is

set to Active Directory.

Click **Next** to proceed.

4. Enter all required parameters (see "Authentication Provider Setup Parameters " on the next page).



1Spatial Management Suite Installation Wizard: LDAP Properties

LDAP Settings
Settings used to connect to an LDAP Server.

Host * localhost

Port 389

Username *

Password *

SSL Enabled ☐

User Base DN * ou=people, o=example.com

All Users Filter

User From Name Filter * (&(uid=%u)(objectclass=person))

User Search Scope subtree

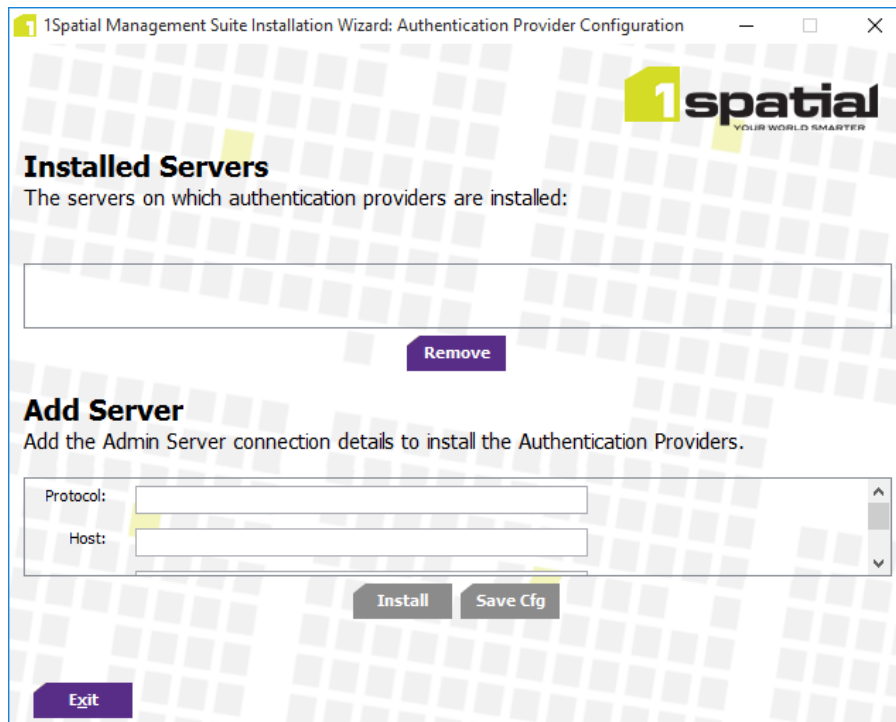
User Name Attribute * uid

Exit Previous Next

LDAP Settings configuration page

5. Click **Next** to proceed.

The Installed Servers page is displayed.



Installed Servers configuration page

6. Enter information for each server in the **Add Server** area:

- **Protocol** - The protocol used for the server (choose "t3" for unsecured, or "t3s" for secured)

 **Note:** If you are using a secured t3s connection, ensure you have installed the certificate in the cacerts trust store for the Java version used *to run the installer* (as well as the cacerts trust store for the Java version used *when WebLogic was installed*).

- **Host** - The domain host
- **Port** - The WebLogic application server port
- **Username** - The WebLogic administrator username
- **Password** - The WebLogic administrator password

Click **Save Cfg** to save the configuration for later use, or click **Install** to add the server to the list of installer servers.

7. After setting up the authentication servers, manually restart the WebLogic administration server for each domain and then click **Exit** to exit the installer.

AUTHENTICATION PROVIDER SETUP PARAMETERS

 **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.

Item	Description	Default Value
Host	The host name or IP address of the LDAP server.	localhost
Port	The port on which LDAP server is listening.	389
Username	The Distinguished Name (DN) of the LDAP user to connect to the WebLogic server.	
Password	The password to connect to the LDAP server.	
SSL Enabled	Tick this option if SSL protocol should be used to connect to the LDAP server.	Off
User Base DN	The base Distinguished Name (DN) of the tree in the LDAP directory that contains users.	ou=people, o=example.com
All Users Filter	If the user object class attribute is not specified, a default search filter is created based on the user schema.	Left blank
User From Name Filter	If the user object class and user name attributes are not specified, a default search filter is created based on the user schema.	(&(uid=%u) (objectclass=person))
User Search Scope	Specifies how deep in the LDAP directory tree the LDAP authentication provider should search for users.	subtree
User Name Attribute	The attribute of an LDAP user object that specifies the name of the user.	uid
User Object Class	The LDAP object class that stores users.	person
Use Retrieved User Name As Principal	Specifies whether or not the user name retrieved from the LDAP server should be used as the Principal in the Subject.	Off
Group Base DN	The base Distinguished Name (DN) of the tree in the LDAP directory that contains groups.	ou=groups, o=example.com

Item	Description	Default Value
All Groups Filter	An LDAP search filter for finding all groups beneath the base group Distinguished Name (DN.) If the attribute is not specified (that is, if the attribute is null or empty), a default search filter is created based on the Group schema.	Left Blank
Group From Name Filter	An LDAP search filter for finding a group given the name of the group. If the attribute is not specified (that is, if the attribute is null or empty), a default search filter is created based on the group schema.	(&(cn=%g) (objectclass=groupofunique names))
Group Search Scope	Specifies how deep in the LDAP directory tree to search for groups. Valid values are subtree and onelevel.	subtree
Group Membership Searching	Specifies if group searches into nested groups are unlimited or limited. Valid values are unlimited and limited.	unlimited
Max Group Membership Search Level	Specifies how many levels of group membership can be searched. This setting is only valid if GroupMembershipSearching is set to limited. Valid values are 0 and positive integers. For example, 0 indicates only direct group memberships will be found and a positive number indicates the number of levels to search.	0
Ignore Duplicate Membership	Determines whether or not duplicate members are ignored when adding groups. The attribute cycles in the Group membership.	Off
Static Group Name Attribute	The attribute of a static LDAP group object that specifies the name of the group.	cn
Static Group Object Class	The name of the LDAP object class that stores static groups.	groupofunique names
Static Member DN Attribute	The attribute of a static LDAP group object that specifies the Distinguished Names (DNs) of the members of the group.	uniquemember
Static Group DNS from Member DN Filter	An LDAP search filter that, given the Distinguished Name (DN) of a member of a group, returns the DN of the static LDAP groups that contain that member.	(&(unique member=%dM) (objectclass=groupofunique names))

Item	Description	Default Value
	If the attribute is not specified (that is, if the attribute is null or empty), a default search filter is created based on the group schema.	
Dynamic Group Name Attribute	The attribute of a dynamic LDAP group object that specifies the name of the group.	Left blank
Dynamic Group Object Class	The LDAP object class that stores dynamic groups.	Left blank
Dynamic Member URL Attribute	The attribute of the dynamic LDAP group object that specifies the URLs of the members of the dynamic group.	Left blank
User Dynamic Group DN Attribute	If this attribute does not exist, the WebLogic Server determines whether or not a user is a member of a group by evaluating the URLs on the dynamic group. If a group contains other groups, the WebLogic Server evaluates the URLs on any of the descendants (indicates parent relationship) of the group.	Left blank
Connection Pool Size	The LDAP connection pool size.	6
Connection Timeout	The maximum time in seconds to wait for the connection to the LDAP server to be established. If this attribute is set to 0, there is not a maximum time limit.	0
Connection Retry Limit	Specifies the number of times to attempt to connect to the LDAP server if the initial connection failed.	1
Parallel Connect Delay	The delay in seconds when making concurrent attempts to connect to multiple LDAP servers.	0
Results Time Limit	The maximum number of milliseconds for the LDAP server to wait for results before timing out. If this attribute is set to 0, there is no maximum time limit.	0
Keep Alive Enabled	Specifies whether to prevent LDAP connections from timing out.	Off
Follow Referrals	Specifies that a search for a user or group within the LDAP authentication provider follows referrals to other LDAP servers or branches within the LDAP directory. By default, this attribute is	On

Item	Description	Default Value
	enabled.	
Bind Anonymously On Referrals	By default, the LDAP authentication provider uses the same DN and password used to connect to the LDAP server when following referrals during a search. Enable this attribute to connect as an anonymous user.	Off
Propagate Cause For Login Exceptions	Specifies whether or not the providers propagate the cause of the LoginException.	Off
Cache Enabled	Specifies whether or not a cache is used with the LDAP server.	On
Cache Size	The size of the cache (in kilobytes) that is used with the LDAP server.	32
Cache TTL	The time-to-live of the cache (in seconds) that is used with the LDAP server.	60
Guid Attribute	Specifies the name of the GUID attribute defined in the LDAP server that corresponds to the LDAP Authentication provider configured in the security realm.	

1Exchange FME Configuration

The following steps are required for the configuration of 1Exchange with FME Server. Much of the configuration takes place within the FME Workspace. For further information about configuring FME Workspaces, please refer to FME documentation.

During the exchange of data, 1Exchange and the FME Workspace have a number of dependencies. These are outlined in the topics below:

- [FME Workspaces compatible with 1Exchange](#)
- [FME summary.json Structure](#)

After configuration, a Policy can be created using the Admin User Interface, for more information please see ["Managing Exchange Policies" on page 74](#).

Linux Only Steps

If you are installing 1Integrate as part of the 1SMS suite on Linux, then there are a number of prerequisites specific to Linux installations.

- ["ICU Libraries \(Linux only\)" below](#)
- ["Open Motif Libraries \(Linux only\)" on the next page](#)

ICU Libraries (Linux only)

ICU libraries are required for data and timestamp support in Linux.

A root user (or a user with root access privileges) is required to copy the files from the installation package and run the `ld_config` command.

INSTALL THE ICU LIBRARIES

1. Run the `su` command to switch to the root user.
2. Copy the `.so` files from the installation folder (within the ICU folder) to the `/usr/local/lib64/` folder.
3. Create a new configuration file: `/etc/ld.so.conf.d/intergrate.conf`

 **Note:** Both the `.so` files and the `.conf` file must have read permissions for all users.

4. Inside the configuration file, reference the location of the ICU libraries, for example: `/usr/local/lib64/*`
5. Enter the following `ld_config` command:

```
/sbin/ldconfig -v /usr/local/lib64/
```

Alternatively, edit `~/.bashrc` or similar for the user used to run `Integrate` to include `/usr/local/lib64` on the `LD_LIBRARY_PATH`, as in the following example:

```
# User specific
if [ -z "$LD_LIBRARY_PATH" ]; then
export LD_LIBRARY_PATH="/usr/local/lib64"
else
```

```
export LD_LIBRARY_PATH="/usr/local/lib64:$LD_LIBRARY_PATH"
fi
```

Open Motif Libraries (Linux only)

The 64-bit Open Motif libraries are a prerequisite for Linux installations of 1Integrate.

The required Open Motif libraries are as follows:

- libX11.so.6
- libm.so.6
- libpthread.so.0
- libnsl.so.1
- libdl.so.2
- libc.so.6
- libcrypt.so.1
- libXau.so.6
- libXdmcp.so.6

3 Installation of 1Spatial Management Suite

 **Note:** If you wish to install one component at a time, rather than the entire suite, please see ["Installation of 1SMS Components" on page 40](#).

The 1Spatial Management Suite Installation Wizard will guide you through the installation of each 1Spatial Management Suite component.

Use the following steps, and the ["1SMS Installation Parameters" on page 22](#), to proceed.

 **Note:** Ensure that the WebLogic Node Manager and Admin Server are running before proceeding with the installation.

 **Note:** If you have your own custom data stores or built-ins, you will need to add these to the installation directory before running the installation wizard.

 **Note:** If you are running the installation on an existing domain, roles and users may already exist in that domain. Only new users and new role mappings will be created in this situation. Existing mappings will be preserved.

INSTALL 1SPATIAL MANAGEMENT SUITE USING THE INSTALLATION WIZARD

1. Launch the Installation Wizard (see ["Launching the wizard" on page 10](#)).
2. Select **WebLogic Installation**, then click **Next**.
3. In the Product Selection page, tick **Install** for all components, then click **Next**.
4. Complete each page of the installation wizard, entering parameters as required.
5. On the Summary page, click **Next**, then click **Begin** to run the installation.

 **Note:** If you encounter the following when clicking **Begin** to run the installation, restart the Admin Server then re-run the installation wizard.

All previously entered data will be preserved.

```
#####
```

```
# Server "AdminServer" must be restarted to activate all configuration changes.
```

```
#####
```

1SMS Installation Parameters

The following table details all required parameters to install all of the 1Spatial Management Suite components.

 **Note:** If you wish to install one component at a time, rather than the entire suite, please see ["Installation of 1SMS Components" on page 40](#).

Common Settings

Parameter	Description	Typical Value
WebLogic 14c		
WebLogic Home		C:/oracle/Middleware
WebLogic Domain Home	This can be an absolute directory or one relative to WebLogic home (relative directories will be converted into absolute directories automatically).	user_project/domains
WebLogic 12c		
WebLogic Home		C:/oracle/Middleware
WebLogic Domain Home	This can be an absolute directory or one relative to WebLogic home (relative directories will be converted into absolute directories automatically).	user_project/domains
WebLogic: Domain Without SOA Components		
Host	Host name	[machine name]
Port	Port number	7001
Protocol	Protocol type to use (t3 or t3s).  Note: If using t3s, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used <i>when WebLogic was installed</i>.	
Admin Username	Admin username for the WebLogic domain.	
Admin Password	Admin password for the WebLogic domain.	
Admin Server Name	Name of the WebLogic domain's Administration Server	AdminServer

Parameter	Description	Typical Value
	 Note: This should be the same for each domain.	
Domain Name	Name of the domain	sms_domain
Node Manager Machine Name	Name of the node manager machine	[machine name]
Node Manager Host	Host of the node manager	localhost
Node Manager Port	Port of the node manager	5556
Node Manager Type	Type of node manager	ssl
WebLogic: Domain With SOA Components		
Host	Host name	[machine name]
Port	Port number	7001
Protocol	Protocol type to use (t3 or t3s).  Note: If using t3s, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used <i>when WebLogic was installed</i> .	
Admin Username	The username associated with the Administration Server	
Admin Password	The password associated with the Administration Server	
Admin Server Name	Name of the WebLogic domain's Administration Server  Note: This should be the same for each domain.	AdminServer
Domain Name	Name of the domain	sms_domain
Feature Schema		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]:[service_name]	
User	The username associated with the Feature Schema	
Password	The password associated with the	

Parameter	Description	Typical Value
	Feature Schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Security Schema		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
User	The username associated with the Security Schema	
Password	The password associated with the Security Schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
JMS Schema		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
User	The username associated with the JMS Schema	
Password	The password associated with the JMS Schema	
Connection Pool	The starting number of connections to	Defaults to 1

Parameter	Description	Typical Value
Initial Capacity	make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15

1Integrate Interface

Item	Description	Typical Value
1SMS Integration	Select to install 1Integrate as part of 1SMS.	Boolean
Server		
Service Port	The port to use to host the 1Integrate interface web service	7004
Listen Address		[machine name]
Server Name	The name of the server to host the 1Integrate interface web service	[server name]
1Integrate Repository		
JDBC Connection string	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum	The maximum number of connections the pool can contain once it has been started.	Defaults to 15

Item	Description	Typical Value
Capacity		
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/ data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Interface JVM Settings		
Initial Heap Size		256MB
Maximum Heap Size		1024MB
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	

1Integrate Engines

Parameter	Description	Typical Value
General		
Number of Nodes	Number of Engines to be created (limited by your licence agreement).	2
Service Port(s)	A list of ports that should be used to host the processing services. This can either be a comma separated list or a range, such as 8022, 8023, or 8024-8027. Ensure the ports are not already in use.	

Parameter	Description	Typical Value
Listen Address		
1Integrate Repository		
 Note: These settings must be entered the same as for the 1Integrate Interface.		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/ data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Engine JVM Settings		
Initial Heap Size	This Initial Heap Size value specifies how much memory a 1Integrate Engine node uses on startup. If it requires more memory, it will grow up to	256MB

Parameter	Description	Typical Value
	the Maximum Heap size.	
Maximum Heap Size	This is the maximum amount of Java memory that can be allocated to the 1Integrate Engine node. If this number is too small then very complex or large processes may fail by running out of memory. The amount of memory is required not directly related to the amount of feature loaded (because they are cached to disk) but is related to the size of individual entities being handled, such as restoring large XML backups or processing very large geometries.	1024MB
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Integrate servers e.g: "1Int_Cluster"
Cluster Address (optional)	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/Multicast
Cluster Broadcast Channel (optional)	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Exchange

Parameter	Description	Typical value
General		
Service Port	The port to use to host the 1Exchange web service	7115
Listen Address	The listen address of the server, for more information about listen addresses please refer to Oracle Documentation	
Server Name	The name of the server on which the application is hosted. There is a 22 character limit.	MSExchange
Exchange Repository		
JDBC Connection string	The connection details of the Exchange repository. This will be in the form: jdbc:oracle:thin:@[hostname]:[port];[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Use Snowflake Components for GML handling		
Configure Snowflake Components	Select whether 1Exchange is installed with Snowflake components	Boolean
Load Balancing		
Using Load Balancer	See " Load Balancing " on page 48	
Address	This is the address of your Load	

Parameter	Description	Typical value
	Balancer or the URL location from which to download your packages	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Exchange servers e.g: "1Exchange_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified then the default is used.

1Exchange Snowflake Configuration

Parameter	Description	Typical value
Licences		
Go Publisher Licence File	Location of the license file	
Go Loader Licence File	Location of the license file	
GO Loader Repository		
JDBC Connection string	The database schema set up for the GoLoader database. This will be in the form: jdbc:oracle:thin:@[hostname]:[port]:[service_name]	
Username	User name for the GoLoader schema	
Password	Password for the schema	

Parameter	Description	Typical value
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
GO Publisher Repository		
JDBC Connection string	The database schema set up for the GoPublisher database. This will be in the form: jdbc:oracle:thin:@[hostname]:[port]:[service_name]	
Username	Username for the GoPublisher schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Configuration		
Configure GoLoader and GoPublisher Products	See "GO Publisher and GO Loader" on page 47	

1Generalise Interface

Parameter	Description	Typical Value
General		
Service Port	The port to use to host the interface web service	8100

Parameter	Description	Typical Value
Listen Address		[machine name]
Server Name	The name of the server on which the application is hosted. There is a 22 character limit.	[server name]
1Generalise Repository		
JDBC Connection string	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]: [service_name]	
Username	User name for the schema	
Password	Password for the schema	
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	MSEXchangeCluster
Cluster Address	The address of the cluster	A unique identifier for the cluster of 1Generalise servers e.g:

Parameter	Description	Typical Value
		"1Gen_Cluster"
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Generalise Processing Nodes

Parameter	Description	Typical Value
General		
Number Of Nodes	The number of processing nodes to install on this machine. The number of processing nodes depends on the expected load and a license is required for each one. For a small to medium-sized system, two processing nodes should be sufficient. For larger systems, contact 1Spatial to discuss the correct sizing.	
Service Port(s)	A list of ports that should be used to host the processing services. This can either be a comma separated list or a range, such as 8022, 8023, or 8024-8027. Ensure the ports are not already in use.	
Listen Address		
1Generalise Repository		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]: [service_name]	
Username	User name for the schema	
Password	Password for the schema	
Cache Data		
Directory	The location of the cache directory.	C:/1spatial/data

Parameter	Description	Typical Value
	When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Generalise servers e.g: "1Gen_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Plan

Parameter	Description	Typical value
General		
Service Port	The port to use for 1Plan	7112
Listen Address	The IP address or DNS name the 1Plan server uses to listen for incoming connections. In a clustered environment, this needs to be unique for each node in that environment. Typically set to the machine name.	
Server Name	Name of the 1Plan server within WebLogic. There is a 22 character limit. In a clustered environment, this needs to be unique for each node in that environment.	
Job Schema		
JDBC Connection string	The connection details of the 1Plan repository schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Plan servers e.g: "1Plan_Cluster"

Parameter	Description	Typical value
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Transact

Parameter	Description	Typical Value
General		
Service port	The port to use to host the 1Transact web service.	7007
Listen Address		
Server Name	The name of the server on which the application is hosted. There is a 22 character limit.	MSTransact
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Transact servers e.g: "1Transact_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast

Parameter	Description	Typical Value
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Workflow Settings

Parameter	Description	Typical value
SOA Server		
SOA Server Protocol	The protocol type to be used (http or https).  Note: If using https, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used <i>when WebLogic was installed</i>.	
SOA Server Name	The name of the SOA server	
SOA Server Host	The machine to host 1Workflow	localhost
SOA Server Port	The port for the SOA service.	7003
SOA Server Username	The user name of the SOA server administrator.	
SOA Server Password	The password for the SOS server administrator.	
Secure with Oracle Web Services Manager Policies	Requires Oracle Web Services Manager license.	
Component WSDLs		
1Exchange		http://[server]:7115/soapview/ExchangeService?WSDL

Parameter	Description	Typical value
1Plan		http://[server]:7112/pcs/JobSoapService?wsdl
1Workflow		http://[server]:7003/soa-infra/services/default/SMSMainWorkflow/SMSMainWorkflowClient_ep?WSDL
Worklist		http://[server]:7122/wf/WorkflowConfigSoapService?wsdl
1Transact		http://[server]:7007/ms-transact-soapview/TransactService?WSDL
1Integrate		http://[server]:8080/soap/validate/ValidationService?WSDL
1Generalise		http://[server]:8100/soap/GeneralisationService?WSDL
Clustering		
Clustered	Select if you are deploying 1Workflow to a clustered SOA domain.	Boolean
Cluster Name	The name of the pre-existing SOA server cluster.	

Worklist Settings

Parameter	Description	Typical value
General		
Service Port	The port to use to host the 1Workflow interface web service	7122
Listen Address		
Server Name	In a clustered environment, this needs to be unique on each node in the cluster.	MSWorkflow
Worklist repository		
JDBC Connection string	The connection details of the 1Workflow schema in the form: jdbc:oracle:thin:@[hostname]:[port]:[service_name]	

Parameter	Description	Typical value
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of Worklist servers e.g: "1Worklist_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

4 Installation of 1SMS Components

 **Note:** If you wish to install all components of 1SMS, rather than an individual component, please see ["Installation of 1Spatial Management Suite" on page 20](#).

The 1Spatial Management Suite Installation Wizard will guide you through the installation of your selected 1Spatial Management Suite component.

Use the following steps, and the corresponding section for the component you are installing.

 **Note:** Ensure that the WebLogic Node Manager and Admin Server are running before proceeding with the installation.

 **Note:** If you have your own custom data stores or built-ins, you will need to add these to the installation directory before running the installation wizard.

 **Note:** If you are running the installation on an existing domain, roles and users may already exist in that domain. Only new users and new role mappings will be created in this situation. Existing mappings will be preserved.

INSTALL COMPONENTS USING THE INSTALLATION WIZARD

1. Launch the Installation Wizard (see ["Launching the wizard" on page 10](#)).
2. Select **WebLogic Installation**, then click **Next**.
3. In the Product Selection page, tick **Install** for your selected component, then click **Next**.
4. Complete each page of the installation wizard, entering parameters as required.
5. On the Summary page, click **Next**, then click **Begin** to run the installation.

 **Note:** If you encounter the following when clicking **Begin** to run the installation, restart the Admin Server then re-run the installation wizard.

All previously entered data will be preserved.

```
#####
```

```
# Server "AdminServer" must be restarted to activate all configuration changes.
```

```
#####
```

Common Parameters

The following parameters will be presented at the beginning of the installation process, regardless of which component(s) you are installing.

Parameter	Description	Typical Value
WebLogic 14c		
WebLogic Home		C:/oracle/Middleware
WebLogic Domain Home	This can be an absolute directory or one relative to WebLogic home (relative directories will be converted into absolute directories automatically).	user_project/domains
WebLogic 12c		
WebLogic Home		C:/oracle/Middleware
WebLogic Domain Home	This can be an absolute directory or one relative to WebLogic home (relative directories will be converted into absolute directories automatically).	user_project/domains
WebLogic: Domain Without SOA Components		
Host	Host name	[machine name]
Port	Port number	7001
Protocol	Protocol type to use (t3 or t3s).	
	 Note: If using t3s, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used <i>when WebLogic was installed</i> .	
Admin Username	Admin username for the WebLogic domain.	

Parameter	Description	Typical Value
Admin Password	Admin password for the WebLogic domain.	
Admin Server Name	Name of the WebLogic domain's Administration Server  Note: This should be the same for each domain.	AdminServer
Domain Name	Name of the domain	sms_domain
Node Manager Machine Name	Name of the node manager machine	[machine name]
Node Manager Host	Host of the node manager	localhost
Node Manager Port	Port of the node manager	5556
Node Manager Type	Type of node manager	ssl
WebLogic: Domain With SOA Components		
Host	Host name	[machine name]
Port	Port number	7001
Protocol	Protocol type to use (t3 or t3s).  Note: If using t3s, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used <i>when WebLogic was installed</i> .	
Admin Username	The username associated with the Administration Server	
Admin Password	The password associated with the Administration Server	
Admin Server Name	Name of the WebLogic domain's Administration Server  Note: This should be the same for each domain.	AdminServer
Domain Name	Name of the domain	sms_domain
Feature Schema		
JDBC Connection	The connection details of the schema in the form jdbc:oracle:thin:@[hostname]:	

Parameter	Description	Typical Value
String	[port]:[service_name]	
User	The username associated with the Feature Schema	
Password	The password associated with the Feature Schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Security Schema		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]:[service_name]	
User	The username associated with the Security Schema	
Password	The password associated with the Security Schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
JMS Schema		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]:[service_name]	
User	The username associated with the JMS	

Parameter	Description	Typical Value
	Schema	
Password	The password associated with the JMS Schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15

Installing 1Exchange

Installing 1Exchange on an Oracle WebLogic Server consists of the following tasks:

- Running the Installation Wizard using the "[1Exchange Installation Wizard Parameters](#)" below
- "[1Exchange Product Configuration](#) " on page 71 (if using GML via in-built Go Loader and Go Publisher)
- "[Testing the 1Exchange Installation](#)" on page 91

1Exchange Installation Wizard Parameters

The following parameters are given in the order displayed in the Installation Wizard, and split by the page within which they appear.

Parameter	Description	Typical value
General		
Service Port	The port to use to host the 1Exchange web service	7115
Listen Address	The listen address of the server, for more information about listen addresses please refer to Oracle Documentation	
Server Name	The name of the server on which the	MSExchange

Parameter	Description	Typical value
	application is hosted. There is a 22 character limit.	
Exchange Repository		
JDBC Connection string	The connection details of the Exchange repository. This will be in the form: jdbc:oracle:thin:@[hostname]:[port];[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Use Snowflake Components for GML handling		
Configure Snowflake Components	Select whether 1Exchange is installed with Snowflake components	Boolean
Load Balancing		
Using Load Balancer	See "Load Balancing" on page 48	
Address	This is the address of your Load Balancer or the URL location from which to download your packages	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Exchange servers e.g: "1Exchange_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a

Parameter	Description	Typical value
		single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified then the default is used.

1Exchange Snowflake Configuration

Parameter	Description	Typical value
Licences		
Go Publisher Licence File	Location of the license file	
Go Loader Licence File	Location of the license file	
GO Loader Repository		
JDBC Connection string	The database schema set up for the GoLoader database. This will be in the form: jdbc:oracle:thin:@[hostname]: [port];[service_name]	
Username	User name for the GoLoader schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
GO Publisher Repository		

Parameter	Description	Typical value
JDBC Connection string	The database schema set up for the GoPublisher database. This will be in the form: jdbc:oracle:thin:@[hostname]:[port]:[service_name]	
Username	Username for the GoPublisher schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Configuration		
Configure GoLoader and GoPublisher Products	See "GO Publisher and GO Loader" below	

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.

FME Server can be used for additional conversion of the resulting GML through FME Adaptors (see 1Exchange admin section). Alternatively, FME Server can be used to convert directory from the Oracle data into the format your editing client requires.

 **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**.

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 71.

Load Balancing

As 1Exchange is performance intensive, it is possible to have multiple 1Exchange services running on multiple application services to improve performance of your system.

In this case, a load balancer is placed in front of these multiple services. Select the **Using Load Balancer** option during installation and enter the address (including an optional port number) of the load balancer.

 **Note:** As 1Exchange is where your job packages are stored, the address parameter can be used to control the URL from which these packages can be downloaded.

For advice on configuring your servers in this scenario, please contact 1Spatial support.

Installing 1Generalise

Installing 1Generalise on an Oracle WebLogic Server consists of the following tasks:

- Running the Installation Wizard using the "[1Generalise Installation Wizard Parameters](#)" below
- "[Testing the 1Generalise Installation](#)" on page 91

1Generalise Installation Wizard Parameters

The following parameters are given in the order displayed in the Installation Wizard, and split by the page within which they appear.

1Generalise Interface

Parameter	Description	Typical Value
General		
Service Port	The port to use to host the interface web	8100

Parameter	Description	Typical Value
	service	
Listen Address		[machine name]
Server Name	The name of the server on which the application is hosted. There is a 22 character limit.	[server name]
1Generalise Repository		
JDBC Connection string	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]: [service_name]	
Username	User name for the schema	
Password	Password for the schema	
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/ data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	MSExchangeCluster
Cluster Address	The address of the cluster	A unique identifier for

Parameter	Description	Typical Value
		the cluster of 1Generalise servers e.g: "1Gen_Cluster"
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Generalise Processing Nodes

Parameter	Description	Typical Value
General		
Number Of Nodes	The number of processing nodes to install on this machine. The number of processing nodes depends on the expected load and a license is required for each one. For a small to medium-sized system, two processing nodes should be sufficient. For larger systems, contact 1Spatial to discuss the correct sizing.	
Service Port(s)	A list of ports that should be used to host the processing services. This can either be a comma separated list or a range, such as 8022, 8023, or 8024-8027. Ensure the ports are not already in use.	
Listen Address		
1Generalise Repository		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]: [service_name]	
Username	User name for the schema	
Password	Password for the schema	

Parameter	Description	Typical Value
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/ data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Generalise servers e.g: "1Gen_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

Installing 1Integrate

Installing 1Integrate on an Oracle WebLogic Server consists of the following tasks:

- Running the Installation Wizard using the ["1Integrate Installation Wizard Parameters"](#) below
- ["Configuring 1Integrate Users and Roles"](#) on page 67
- ["Testing the 1Integrate Installation"](#) on page 91

1Integrate Installation Wizard Parameters

The following parameters are given in the order displayed in the Installation Wizard, and split by the page within which they appear.

1Integrate Interface

Item	Description	Typical Value
1SMS Integration	Select to install 1Integrate as part of 1SMS.	Boolean
Server		
Service Port	The port to use to host the 1Integrate interface web service	7004
Listen Address		[machine name]
Server Name	The name of the server to host the 1Integrate interface web service	[server name]
1Integrate Repository		
JDBC Connection string	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection	The minimum number of connections the pool	Defaults to 1

Item	Description	Typical Value
Pool Minimum Capacity	can contain once it has been started.	
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/ data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic
Interface JVM Settings		
Initial Heap Size		256MB
Maximum Heap Size		1024MB
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	

1Integrate Engine

Parameter	Description	Typical Value
General		
Number of Nodes	Number of Engines to be created (limited by your licence agreement).	2

Parameter	Description	Typical Value
Service Port(s)	A list of ports that should be used to host the processing services. This can either be a comma separated list or a range, such as 8022, 8023, or 8024-8027. Ensure the ports are not already in use.	
Listen Address		
1Integrate Repository		
 Note: These settings must be entered the same as for the 1Integrate Interface.		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Cache Data		
Directory	The location of the cache directory. When a session is run, a folder is created called "1Integratecache", within which the cache is stored.  Note: This stores the data cache from data read by 1Integrate. This may require large amounts of disk space depending on the size of data being read into sessions and the number of concurrent sessions. If left blank, this will default to "C:\Users\[user]\AppData\Local\Temp".	C:/1spatial/ data
License	The location of the provided product licence file	C:/1spatial/ [licence name].lic

Parameter	Description	Typical Value
Engine JVM Settings		
Initial Heap Size	This Initial Heap Size value specifies how much memory a 1Integrate Engine node uses on startup. If it requires more memory, it will grow up to the Maximum Heap size.	256MB
Maximum Heap Size	This is the maximum amount of Java memory that can be allocated to the 1Integrate Engine node. If this number is too small then very complex or large processes may fail by running out of memory. The amount of memory is required not directly related to the amount of feature loaded (because they are cached to disk) but is related to the size of individual entities being handled, such as restoring large XML backups or processing very large geometries.	1024MB
Custom Extensions		
Include Custom Extensions	Tick this box to include custom extensions.	
Selected Custom Extensions	Browse for custom extensions to be included.	
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Integrate servers e.g: "1Int_Cluster"
Cluster Address (optional)	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging	Select the messaging mode to be used by the cluster.	Unicast/ Multicast

Parameter	Description	Typical Value
Mode		
Cluster Broadcast Channel (optional)	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

Installing 1Plan

Installing 1Plan on an Oracle WebLogic Server consists of the following tasks:

- Running the Installation Wizard using the "[1Plan Installation Wizard Parameters](#)" below
- "[Testing the 1Plan Installation](#)" on page 92

1Plan Installation Wizard Parameters

The following parameters are given in the order displayed in the Installation Wizard, and split by the page within which they appear.

Parameter	Description	Typical value
General		
Service Port	The port to use for 1Plan	7112
Listen Address	The IP address or DNS name the 1Plan server uses to listen for incoming connections. In a clustered environment, this needs to be unique for each node in that environment. Typically set to the machine name.	
Server Name	Name of the 1Plan server within WebLogic. There is a 22 character limit. In a clustered environment, this needs to be unique for each node in that environment.	
Job Schema		
JDBC Connection string	The connection details of the 1Plan repository schema in the form jdbc:oracle:thin: @[hostname]:[port]:[service_name]	
Username	User name for the schema	

Parameter	Description	Typical value
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Plan servers e.g: "1Plan_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

Installing 1Transact

Installing 1Transact on an Oracle WebLogic Server consists of the following tasks:

- Running the Installation Wizard using the ["1Transact Installation Wizard Parameters" on the facing page](#)
- ["Testing the 1Transact Installation" on page 92](#)

Clustered Environment

In the case of a clustered environment (perhaps with multiple instances of 1Transact installed for redundancy), the following settings are advised:

 **Note:** These steps are not necessary if you are using a BPEL 1Spatial Workflow engine.

- Fill in the **Server Name** parameter with the machine name on which you are installing 1Transact.
- Ensure that the **Service Port** parameter value is the same for all installed instances of 1Transact.
- Ensure that all the other "Clustering" parameter values are different between each instance, for example by adding a number at the end of each value.

1Transact Installation Wizard Parameters

The following parameters are given in the order displayed in the Installation Wizard, and split by the page within which they appear.

1Transact Settings

Parameter	Description	Typical Value
General		
Service port	The port to use to host the 1Transact web service.	7007
Listen Address		
Server Name	The name of the server on which the application is hosted. There is a 22 character limit.	MSTransact
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of 1Transact servers e.g: "1Transact_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load	Select the algorithm to be	round-robin, weight-based,

Parameter	Description	Typical Value
Algorithm	used for load-balancing between the services.	random
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

1Transact as a PostgreSQL Extension

Prerequisites

Installation of the following is required before proceeding:

- PostgreSQL database

Database Creation

3 databases are needed for the full installation of 1Transact on PostgreSQL:

1. Feature Schema
2. Messaging Schema
3. Security Schema

In order to generate these, connect to PostgreSQL and run the following command to create the databases:

```
create database "testDb";
```

Messaging Database Set-up

Connect to the JMS database and create a table within it, using the following SQL:

```
\c sms_jms_store  
  
CREATE TABLE mstransact_wlstore(  
    id INTEGER NOT NULL PRIMARY KEY,  
    type INTEGER NOT NULL,
```

```
handle INTEGER NOT NULL,  
record BYTEA NOT NULL);
```

Steps for Install

1. Extract the `ms-transact-release-[version_number]-release.zip` from `1Transact_[VersionNumber].zip`.
2. Copy **`sms_1transact.control`** and **`sms_1transact.sql`** to `<postgres-installation>\share\extension`. These files contain the database installation definitions.
3. Connect to the database in which you want to install 1Transact using tools such as the **PSQL** command line: (`psql -U <user>`) or from the PGAdmin **Execute Arbitrary SQL Queries** window.

 **Note:** PGAdmin users will not be able to use the `/I` helper functions.

4. Execute the SQL

```
create extension sms_1transact;  
  
SELECT sms_1transact.initialise();
```

This will create the `sms_1transact` schema and metadata tables and functions in that schema.

5. To check that the installation has succeeded:
 - From the **PSQL** command window you can list the database objects and the functions using:
 - `\d sms_1transact.*`
 - `\df sms_1transact.*`
 - From the pgAdmin query window, select the Graphical Query Builder tab, expand the schemas node and check that there is a `sms_1transact` item.
6. You can unistall the 1Transact Postgres extension by first un-version-enabling all your tables and then executing `drop extension sms_1transact;`

 **Note:** It is possible that whilst trying to drop the 1Transact Postgres extension it will fail, giving the following hint:
Hint: Use `DROP ... CASCADE` to drop the dependent objects too.
DO NOT use this cascade command as it will delete your features, instead you should version-disable your feature tables before dropping the extension.

Adding PostgreSQL JDBC driver to WebLogic

The standard WebLogic distribution does not include support for connecting to a PostgreSQL database. The PostgreSQL JDBC driver must be added manually to the 1SMS domain, and the domain start-up scripts must be edited to ensure it is available in the classpath.

1. Stop WebLogic Admin server for your domain.
2. Ensure the domain directory includes a sub-directory named drivers. Copy `postgresql-x.x.x.jar` into this directory.
3. Modify `PRE_CLASSPATH` in `setUserOverrides.cmd` (Windows) or `setUserOverrides.sh` (Linux).

For example on Windows:

- `set PRE_CLASSPATH=C:\oracle\weblogic\user_projects\domains\smsdomain\drivers\postgresql-x.x.x.jar`

or on Linux:

- `export PRE_CLASSPATH=C:/oracle/weblogic/user_projects/domains/smsdomain/drivers/postgresql-x.x.x.jar`

4. Re-start Admin server for your domain.

 **Note:** The PostgreSQL JDBC driver must be available to the 1SMS installer when it is installing 1Transact for PostgreSQL. The installer will execute `setUserOverrides` to ensure the driver is on the class path. The directory containing the driver does not have to be named drivers. However, it is recommended that the driver is not installed into the domain lib directory- `setUserOverrides` would not normally put the lib directory on the class path.

Installing 1Workflow

There are two parts to 1Workflow:

- Worklist (front end)
- 1Workflow (back end)

Worklist is comprised of a web service and a website providing the Worklist API and a user interface. It supports the Worklist interface within 1Edit. The Worklist also provides an administration page within which the BPEL workflow can be configured.

The 1Workflow is the main service providing the underlying support for the BPEL workflow.

1Workflow Installation Wizard Parameters

The following parameters are given in the order displayed in the Installation Wizard, and split by the page within which they appear.

Workflow

Parameter	Description	Typical value
SOA Server		
SOA Server Protocol	The protocol type to be used (http or https).  Note: If using https, you must ensure that the server's certificate(s) are added to the cacerts trust store for the Java version used <i>when WebLogic was installed</i>.	
SOA Server Name	The name of the SOA server	
SOA Server Host	The machine to host 1Workflow	localhost

Parameter	Description	Typical value
SOA Server Port	The port for the SOA service.	7003
SOA Server Username	The user name of the SOA server administrator.	
SOA Server Password	The password for the SOS server administrator.	
Secure with Oracle Web Services Manager Policies	Requires Oracle Web Services Manager license.	
Component WSDLs		
1Exchange		http://[server]:7115/soapview/ExchangeService?WSDL
1Plan		http://[server]:7112/pcs/JobSoapService?wsdl
1Workflow		http://[server]:7003/soa-infra/services/default/SMSMainWorkflow/SMSMainWorkflowClient_ep?WSDL
Worklist		http://[server]:7122/wf/WorkflowConfigSoapService?wsdl
1Transact		http://[server]:7007/ms-transact-soapview/TransactService?WSDL
1Integrate		http://[server]:8080/soap/validate/ValidationService?WSDL
1Generalise		http://[server]:8100/soap/GeneralisationService?WSDL
Clustering		
Clustered	Select if you are deploying 1Workflow to a clustered SOA domain.	Boolean
Cluster Name	The name of the pre-existing SOA server cluster.	

Worklist

Parameter	Description	Typical value
General		
Service Port	The port to use to host the 1Workflow interface web service	7122
Listen Address		
Server Name	In a clustered environment, this needs to be unique on each node in the cluster.	MSWorkflow
Worklist repository		
JDBC Connection string	The connection details of the 1Workflow schema in the form: jdbc:oracle:thin:@[hostname]:[port]:[service_name]	
Username	User name for the schema	
Password	Password for the schema	
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
Clustering		
Clustered	Select to enable clustering	Boolean
Cluster Name	Define the name for the cluster of servers	A unique identifier for the cluster of Worklist servers e.g: "1Worklist_Cluster"
Cluster Address	The address of the cluster	A comma separated list of IP/Host addresses for each cluster member, or a single DNS name that maps to all members.
Cluster Load Algorithm	Select the algorithm to be used for load-balancing between the services.	round-robin, weight-based, random

Parameter	Description	Typical value
Cluster Messaging Mode	Select the messaging mode to be used by the cluster.	Unicast/ Multicast
Cluster Broadcast Channel	Define the channel that will handle communications within the cluster.	String, if nothing is specified the default is used.

5 Configuration

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

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.

 **Note:** 1SMS roles will not grant Users access to 1Integrate. For information on configuring 1Integrate Users and Roles, please refer to 1Integrate documentation.

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

Interface	Roles						
	1SM S_ adm in	exchan ge_ user	plan ner	trans act_ user	valida te_ user	wor ker	global_ superv isor
1Exchange							
/1exchange	✓	✓	✗	✗	✗	✗	✗
/admin	✓	✗	✗	✗	✗	✗	✗
SOAP	✓	✓	✗	✗	✗	✗	✗
1Plan							
/1plan	✓	✗	✓	✗	✗	✗	✗
/1plan/jobsummary/	✓	✗	✓	✗	✗	✗	✓
/admin	✓	✗	✗	✗	✗	✗	✗
SOAP	✓	✗	✓	✗	✗	✗	✗

Interface	Roles						
	1SMS_admin	exchange_user	planner	transact_user	validate_user	worker	global_supervisor
1Transact							
/1transact	✓	✗	✗	✓	✗	✗	✗
SOAP	✓	✗	✗	✓	✗	✗	✗
1Integrate							
Validation SOAP Service	✓	✗	✗	✗	✓	✗	✗
1Workflow							
/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.

Configuring 1Integrate Users and Roles

Users and roles can be configured for the 1Integrate interface to enable users to log in to 1Integrate.

Roles determine the privileges and the menus to which users have access.

1Integrate users and roles should be configured using the WebLogic Server Administrator Console.

The following 1Integrate users are created by default:

User	Password	Assigned roles
INTFull	integrate1	rs_users

User	Password	Assigned roles
		rswsuser rs_rule_definers rs_data_loaders rs_data_engineers rs_data_quality_stewards
INTAdmin	integrate101	rs_admins rs_users rswsuser
INTUser	integrate102	rs_users
INTWService	integrate103	rswsuser
INTRule	integrate104	rs_rule_definers
INTLoader	integrate105	rs_data_loaders
INTEng	integrate106	rs_data_engineers
INTQuality	integrate107	rs_data_quality_stewards
INTMonitor	integrate108	rs_monitors

In WebLogic, "groups" are used to define roles. Group membership determines a user's access to application features.

1Integrate groups are created by default. However, unlike the default users that are created, the group names set up by installer must not be altered.

 **Note:** The default setup assigns the default users to some of the default groups, allowing you to log in and start using 1Integrate without having to change any of the security configuration. If you wish to customise the users, then group assignment can be altered.

Role	Description
rs_admins	The administrator can set up system parameters and has all the privileges of the other roles. These include creating and modifying: • rules • data stores • sessions • actions • action maps The administrator can also define sessions and upload files.
rs_data_engineers	A data engineer can:

Role	Description
	• create and modify actions • create and modify action maps • define and run sessions
rs_data_loaders	A data loader can upload files into 1Integrate.
rs_data_quality_stewards	A data quality steward can define and run sessions only.
rs_rule_definers	A rule definer can create and modify: • rules • data stores • sessions The rule definer can also run sessions.
rs_users	A user can only view data presented on the interface.
rswsuser	A web service user can use the web services.

1SMS Display Names

By default, if 1Plan and the Worklist have been configured to point to the Workflow server, e.g. 1Plan configured to Workflow mode, 1SMS will always attempt to find the LDAP "displayName" attribute. If this has not been defined then it will revert to using the configured username attribute of your authentication provider.

It is possible to change this default behaviour by setting a JVM argument to select an alternative LDAP attribute on all SOA Servers in your domain:

`-Dweblogic.ldap.display.name=[Chosen Attribute]`

 **Note:** Standalone 1Plan will default to the LDAP attribute you have configured as the "userName" attribute and you will not be able to change this behaviour.

The chosen attribute will be used in 1Plan drop down user selector and in the Worklist notification admin page.

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)

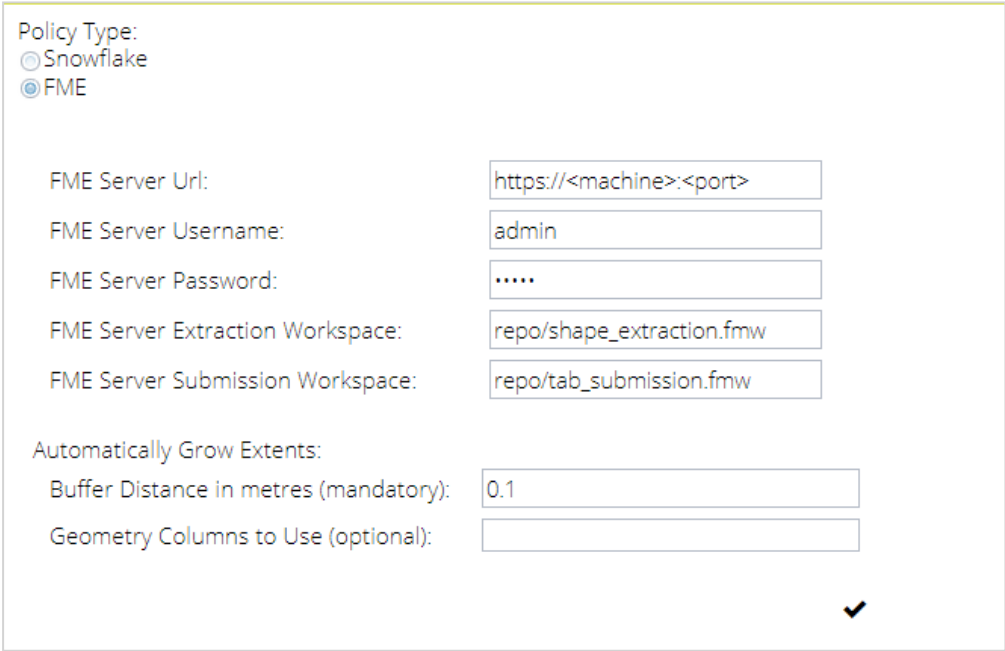
The REST web service is located at: [http://\[server\]:\[port\]/restview/rest/](http://[server]:[port]/restview/rest/)

 **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):

✓

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](#)" below).

 **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**.

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.

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**.

In turn, these **Products** are used when configuring **Exchange Policies** in the 1Exchange administration page (see "[Exchange Policies](#)" on page 69).

 **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 74).

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 Product Configuration

1. Launch the Installation Wizard.
2. On the Wizard Options screen, select **1Exchange Product Configuration** and click **Next** to proceed.
3. Enter all required parameters (see "[1Exchange Product Configuration](#)" on the [previous page](#)).
4. Click **Configure** to begin the configuration.
5. Click **Finish** once complete.

 **Note:** If more than one Exchange product is required, run the installer again and provide a different product name and different configuration files.

1Exchange Configuration Parameters

Item	Description	Typical Value
General		
Translation Config	(optional) An XML file that specifies translation between GML and Oracle schema and is required to allow conflict resolution. 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.	translationConfig.xml
Product Name	The name to be given to the GO Loader/ GO Publisher product.  Note: This should be a name that is meaningful for the data being loaded, as it will appear in a drop-down list during Policy configuration (see "Managing Exchange Policies" on page 74).	
Feature Schema		

Item	Description	Typical Value
 Note: These parameters can be used to override the schema from which to read and write the data. If the schema for this product has not previously been set via the installer (or manually via the config.properties file), these parameters will be pre-populated by the Feature Schema settings previously entered into the "Common Settings" section of the installer.		
JDBC Connection String	The connection details of the schema in the form jdbc:oracle:thin: @[hostname]: [port]:[service_name]	
User		
Password		
Connection Pool Initial Capacity	The starting number of connections to make when creating the Connection Pool. If this threshold cannot be reached then the connection pool will not be available to the application.	Defaults to 1
Connection Pool Minimum Capacity	The minimum number of connections the pool can contain once it has been started.	Defaults to 1
Connection Pool Maximum Capacity	The maximum number of connections the pool can contain once it has been started.	Defaults to 15
GO Loader		
Project File	The location of the GO Loader project file (.glp) that has been configured to load the uploaded GML into the feature database tables. Please contact 1Spatial support for information on creating and configuring this file.	
Schema Folder	The folder containing the GML Schemas (.xsd) that describe the feature data to be uploaded by GO Loader.	
GO Publisher		
Project File	The location of the GO Publisher project file (.gpp) that has been configured to extract GML from the feature database tables. Please contact 1Spatial support for information on creating and configuring this file.	
Schema Folder	The folder containing the GML Schemas	

Item	Description	Typical Value
	(.xsd) that describe the feature data to be extracted by GO Publisher.  Note: This should be the same Schema Folder specified for the GO Loader configuration	
Root Schema	Root schema, relative to the Schema folder above.	
Feature Relations	When loading by reference, an XML file containing the relation between feature classes. Please contact 1Spatial support for information on creating and configuring this file.	

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
SRS	The SRS to be applied to the geometry when using a MBR or string of coordinates. 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. 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, urn:ogc:def:crs:EPSG::4326.	
Extraction Project	A GO Publisher product registered during or after installation. A list of available products is available for selection.	
Submission Project	A GO Loader product registered during or after installation. A list of available products is available for selection. When only one product is available, this is automatically selected.	
Extraction Adaptor	Adaptor to be applied to extracted features to convert from GML to a different required format. 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.	
Submission Adaptor	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. If the returned updated data includes all the data for	

Parameter	Description	Typical Value
	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.	
Grow Extents Buffer	Applied when growing extents (see "Grow Extents" on page 80).	
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 80).	

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]
Automatically Grow Extents		
Buffer Distance in metres (mandatory)	Applied when growing extents (see "Grow Extents" on page 80).	
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 80).	

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 the previous page](#)).

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
Workspace name	The name of the extraction/submission workspace.	Including containing repository (e.g. [repository]/[extraction_workspace]).

Parameter	Description	Typical Value
Overwrite features	If selected, the <code>features.zip</code> in the job package will be replaced by the file returned from FME Server. 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>.  Note: This option will only appear on Extraction Adaptors.	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_	Filename	Required	An XML file containing the job

Parameter	Type	Required	Description
File	(Multiple)		metadata
Validation_Report_File	Filename (Multiple)	Optional	A validation report generated by 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**.

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).

Validation Configuration

Data Stores and Rules set up within 1Integrate will require a specific configuration if they are to be used for validation in 1SMS.

For more detailed information on Validation Data Store and Rule set up, please refer to 1Integrate documentation.

 **Note:** When configuring Validation Data Stores and Rules the folder names are case sensitive.

Validation Data Store

1Integrate reads the feature data to be validated directly from the source feature schema through an interface known as a Data Store. For a list of all supported formats, please refer to 1Integrate documentation.

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

Be aware that you will need to provide the name of any Data Stores you plan to utilise during Workflow Configuration.

Validation Rules

1Integrate rules are written in the 1Integrate 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 run within the 1Spatial Management Suite, rules must be placed in a subfolder of a root folder called Production.

Additionally:

- Only rules placed in a CRITICAL sub-folder will trigger a validation failure job in the 1SMS Workflow e.g. \\Production\\MyRules\\CRITICAL.
- Failing rules in other subdirectories, i.e. WARNING will not trigger the validation failure process but will still appear in validation reports visible in the editing application.
- In the \\Production\\MyRules\\CRITICAL example you would need to provide the name of the MyRules folder that contains the CRITICAL subfolder during Workflow configuration .

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 WebLogic Administration Console.

1Plan will create a spatial index in the correct projection for the job extents using the parameters you entered.

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	Configure when a late email is sent: before, after or on the planned

Setting	Description
alert as configured in the table above	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.
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	You also configure emails to include a Notification Footer with fully customisable HTML.  Note: There is a maximum 4000 character limit for the HTML appended to notification emails.
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	☒	☒	☐	☐	☐
Activated	☒	☐	☐	☐	☐
Prepared	☐	☐	☐	☐	☐
Downloaded	☐	☐	☐	☐	☐
Uploaded	☐	☐	☐	☐	☐
Committed	☐	☐	☐	☐	☐
Completed	☐	☐	☐	☐	☐
Validation Failure	☐	☐	☐	☐	☐
Conflict Resolution	☐	☐	☐	☐	☐
Revoked	☐	☐	☐	☐	☐
Relinquished	☐	☐	☐	☐	☐
Abandoned	☐	☐	☐	☐	☐
Failed	☐	☐	☐	☐	☐
Quarantined	☒	☐	☐	☐	☐
Quarantine Correction	☐	☐	☐	☐	☐
Approved	☐	☐	☐	☐	☐
Corrections Required	☒	☐	☐	☐	☐
Discarded	☐	☐	☐	☐	☐
Embargoed	☐	☐	☐	☐	☐
Late Completion Alert	☐	☐	☐	☐	☐

Notifications Configuration

1Workflow in a Clustered Environment

If you are using a clustered environment, you must configure 1Workflow to provide the load balanced URL when it communicates with any of the components.

CONFIGURE 1WORKFLOW FOR A CLUSTERED ENVIRONMENT

1. Log in to the Oracle Enterprise manager on each of the 1Workflow nodes in your clustered environment.

 **Note:** It is recommended that this is performed before cloning the machine.

2. Click on **SMSMainWorkflow** under the SOA deployment.
3. Under the SOA Infrastructure menu, select **SOA Administration > Common Properties**.

4. Set both Server URL and Callback Server URL to the Load balanced address for the workflow.
5. Click **Apply**.

Suite Configuration

Some additional configuration steps are required once the software components have been installed. These can be performed using the 1Spatial Management Suite Installation Wizard.

PERFORM SUITE CONFIGURATION

1. Launch the Installation Wizard.
2. On the Wizard Options screen, select **Suite Configuration** and click **Next** to proceed.
3. In the Services area, enter the host and port number for the 1Plan and 1Workflow protocols.

For example: `http://[hostname]:[portnumber]`

Click **Next**.

4. Click **Configure** to begin the configuration.
5. Click **Finish** once complete.

Securing 1SMS with HTTPS

1SMS can be configured to communicate over HTTPS with self-signed certificates.

 **Note:** For full details on how to set up HTTPS in your WebLogic environment, please see the Oracle product documentation.

Extra Configuration

Once HTTPS has been set up in your WebLogic environment, a few extra configuration steps are required.

1Exchange

Due to limitations with third party libraries, 1Exchange must be able to communicate internally using the non-SSL endpoint.

Ensure the **restBaseUrl** parameter is configured to refer to the non-SSL endpoint, even when not in a load balanced environment.

1. Set the **restBaseUrl** parameter for the MExchange server to refer to the *unsecured* listen port.
2. Restart the Exchange server.

SOA Domain

An extra step is required to get 1Workflow calling services over HTTPS when using custom certificates or all calls will fail.

Update the **-Djavax.net.ssl.trustStore** parameter to point to your custom trust store.

 **Note:** Ensure that If using secured authentication providers (see ["Authentication Provider Setup" on page 11](#)), the certificate(s) for them are added to your custom trust store

As per the Oracle product documentation, update the -
Djavax.net.ssl.trustStore parameter specified in the **setDomainEnv** file to point to your custom trust store.

1. `-Djavax.net.ssl.trustStore=C:\Security\trust.jks`
2. Restart the SOA server.

NIC/Network Adaptor Configuration

The Grid discovery used to find Engines by default uses the first found non-loopback address, for example a machine with Ethernet adaptors "eth0" and "eth1" and Local Loopback "lo" will likely use "eth0".

 **Note:** If you do not need to override the adaptor default behaviour, then the following properties do not need to be included.

Within the WebLogic Server Administration Console, include the following in the Server Start Arguments:

```
-Dgrid.local.address=[NIC Address]
-Dgrid.discovery.tcp.port=[default: 51300]
-Dgrid.communication.tcp.port=[default: 51401]
```

Where:

- **Dgrid.local.address** - specifies the IP address of the network adaptor used for grid communication.
- **Dgrid.communication.tcp.port** and **Dgrid.discovery.tcp.port** - allows environments to specify known ports (for example, when using a firewall).

 **Note:** The communication port must be a minimum of 100 greater than the discovery port, in order to avoid conflict.

1Integrate Offline Help

By default, clicking the Help button within 1Integrate opens the online WebHelp. However, this button can be configured to open local offline documentation instead.

 **Note:** The configuration of offline help is only advised for environments without access to the internet, as local help files will not receive updates as often as the online help.

Before performing the configuration, ensure your local help files are placed somewhere accessible on your local network. If the help files have not been provided with your release, please contact your vendor or 1Spatial Support.

CONFIGURE OFFLINE HELP

1. Log into your WebLogic console as administrator.
2. Navigate to your 1Integrate Interface server.
3. Open the **Server Start** tab.
4. Click **Lock & Edit** to enable modifications to be made to your configuration.
5. Add the following parameter to the **Arguments** text field (include a space at the beginning, but do not add any new lines).

```
-Dhelp_base_url=[location of help files]
```


Where [location of help files] is replaced with the path to your local help files.

6. Click **Save**.
7. Click **Release Configuration**.
8. Restart your 1Integrate Interface server.

 **Note:** Offline help can also be configured before installation by adding the following parameter to the **config.properties** file (generated by the installer once it is opened):
1Integrate_par_user_defined=-Dhelp_base_url=[location of help files] (where [location of help files] is replaced with the path to your local help files).

6 Testing the Installation

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

Testing the 1Exchange 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 1Generalise Installation

1Generalise can be accessed through the following sites:

- User Interface: [http://\[machine\]:\[service_port\]/](http://[machine]:[service_port]/)
- Administration: [http://\[machine\]:\[service_port\]/admin](http://[machine]:[service_port]/admin)

 **Note:** Use the port number specified during installation, by default this is 8100.

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

[http://\[machine\]:\[service_port\]/soap/GeneralisationService?WSDL](http://[machine]:[service_port]/soap/GeneralisationService?WSDL)

Testing the 1Integrate 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 7004.

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

Testing the 1Plan 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

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 1Workflow 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)

7 Appendices

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A Troubleshooting

This chapter explains how to investigate and fix some common errors found in the 1Spatial Management Suite.

Browser errors

If you are presented with a blank page after logging in to the user interface using Internet Explorer, check with your IT department to see if Enhanced Security Configuration is enabled.

This setting is usually enabled on Windows Server machines, but usually not enabled on ordinary Windows desktop machines.

If the setting is enabled, add the URL of the user interface to Internet Explorer's trusted sites list.

 **Note:** Please consult the official Microsoft documentation for details on how to set up trusted sites.

General Error Messages

The following table describes some common error messages, and provides solutions for fixing them.

Error Message	Solution
com.onespatial.radius.studio.model. SessionUserException: The Gothic native library could not be initialised	ICU libraries have become unlinked. To fix, this carry out the following steps: 1. Run command <code>sudo /sbin/ldconfig -v /usr/local/lib64</code> to relink the ICU libraries and then restart Node Manager. 2. Create a file called 1integrate.conf under /etc/ld.so.conf.d/ with the following contents: <code>/usr/local/lib64</code> Now, every time <code>ldconfig</code> is run at boot, it will include the path.
Exchange Extract Features: Unable to create a publisher job for	This message appears if the product file is not

Error Message	Solution
package 10520 because of {"apiErrorMessage":{"cause": "ProductNotFoundException: Failed to locate a persistent product with name [XXX].", "developerDetail": "uk.co.snowflakesoft. workflow.model.ProductNotFoundException: Failed to locate a persistent product with name [XXX].\r\n\tat	registered.
Error codes: 1001 1021 Error code:1001 oracle.j2ee.ws.client.jaxws. JRFSOAPFaultException: Client received SOAP Fault from server	This error occurs if security is added and there is an invalid connection. Check LDAP configuration and role mappings.
There has been a problem reading the Workflow configuration, please check the Workflow admin page.	Worklist is not yet installed. This also occurs if 1Plan has been updated with new job types and a user tries to use them before updating 1Workflow with the new job types.
Error in getting XML input stream: http://[server:port] /wf/WorkflowConfigSoapService?wsdl: Response: '404: Not Found' for url: 'http://[server:port] /wf/WorkflowConfigSoapService?wsdl':	The server is not available. This also occurs if an incorrect URL is used during installation. In this case, 1Workflow must be uninstalled and reinstalled with the correct details.
CreateWorkspaceRequest [parentName=583,workspaceName=584,priority=1] with response: CreateWorkspaceResponse [success=false,reason=Unexpected SQL Exception, code 20173: ORA-20173: cannot create workspaces that are more than 30 levels deep	It is a known issue that you cannot create workspaces that are more than 30 levels deep.

1Workflow Troubleshooting

Errors in the system usually become apparent when jobs do not move forward (for example, a user uploads a job and it then returns to a downloaded state).

When under workflow control, it is recommended that you troubleshoot issues starting with looking at the audit trail of the workflow. You will need the job ID before starting.

Once the location of the fault has been identified, check the individual service log files.

INVESTIGATING A SYSTEM ERROR

1. Open the SOA Enterprise Manager Console.
2. Navigate to the workflow (labelled **SMSMainWorkflow**) to display the instances.

 **Note:** Click **Show All** if not all of the instances are displayed. You may also need to adjust the time filter.

3. Use the Name search filter to find the required workflow.

The workflow names are in the form [job_id]-[timestamp].

 **Note:** The filter [job_id]% is usually sufficient.

4. Click **Instance** to display the trace.
5. Click on ***SMSMainWorkflow** and select the **Flow** tab.
6. A task that has errored is highlighted in red. Click the task to show the error message from a component.

Instead, you may find your workflow is in a state where it is waiting for a response from a service. In this case, select the last task in the flow labelled **Waiting On**. If the process has been waiting for a very long time, this may be an indication of a crashed or hung component service.

 **Note:** You can also see the errors in the workflows by opening the **Faults and Rejected Messages** tab.

1Exchange Troubleshooting

1Exchange log files are located in DOMAIN_HOME/servers/MSEExchange/logs/.

The files **MSEExchange.log** and **MSEExchange.out** usually contain the stack traces when errors occur.

Common Errors

Error	Solution
<pre><bpelFault><faultType>1</faultType><FaultResponse xmlns="http://workflow.ms.onespatial.com/v1/activateJob"> <part name="localFaultPart"><faultMsg xmlns= "http://workflow.ms.onespatial.com/v1/activateJob"> <summary xmlns="">Exchange Extract Features: </summary> <detail xmlns="">java.lang.NullPointerException at com.onespatial.ms.exchange.ctrl.api.nodewrapper. admin.ExchangePolicyNodeWrapper.getSrsName (ExchangePolicyNodeWrapper.java:73)</pre>	The 1Exchange policy name was not created. To do this, open the 1Exchange administrator web interface: http:// [server:port]/1exchange/admin/
Licence file cannot be found: <pre>java.io.IOException: Unable to locate the licence file at resource class path resource [gopublisher/licence/XXX.lic]</pre>	This error may occur during installation or when the server is restarted. Ensure the correct path and file name for the licence are specified.
Licence is invalid: <pre>uk.co.snowflakesoft.licence2.LicenceException: No valid licence found. Exiting application.</pre>	This may occur during installation or when the server is restarted. The licence file is invalid. The most likely cause of this error is that it has expired.
Schema not configured on gopublisher.xml: - weblogic.application.ModuleException: [HTTP:101216]Servlet: "spring" failed to preload on startup in Web application: "/gopublisherwfl" - org.springframework.beans.factory.BeanCreationException: Error creating bean with name 'dbExternalPublishing' defined in class path resource [spring/external-publish.xml]: Invocation of init method failed; nested exception is org.hibernate.exception.SQLGrammarException: could not execute query - java.sql.SQLSyntaxErrorException: ORA-00942: table or view does not exist	This may occur during installation or when the server is restarted. Check that the gopublisher.xml file specifies the correct Oracle schema for GoPublisher workflow in the following line: <pre><sfa:databaseSchema>GP_ WORKFLOW_ SCHEMA</sfa:databaseSche ma></pre>

Error	Solution
GoPublisher product has not been registered (when extracting data): <pre>SEVERE: Unable to create a publisher job for package laura_test because of {"apiErrorMessage": {"cause":"ProductNotFoundException: Failed to locate a persistent product with name [XXX].","developerDetail": "uk.co.snowflakesoft.workflow.model.ProductNotFou ndException: Failed to locate a persistent product with name [XXX]}</pre>	The GO Publisher product specified in the Exchange policy has not been published.
<pre>Could not obtain results from _CONF table: ORA- 00904: "null": invalid identifier</pre>	In order for a conflict job to successfully go to a prepared state each table name in the GO Publisher project requires a unique key. To set this within GO Publisher Desktop: 1. Open the SQL Filters tab. 2. For each table select Edit on the right-hand side. 3. Populate the Unique Key column, click OK and then click Save.

1Plan Troubleshooting

1Plan log files are located in [DOMAIN_HOME]/servers/MSPLAN/logs/.

The files **MSPlan.log** and **MSPlan.out** usually contain the stack traces when errors occur.

Common Errors

Error	Solution
No background mapping in 1Plan (indicated by pink squares).	Ensure that the URLs for the layers are correct in the 1Plan administrator web interface, and ensure that the map servers are running (this is outside the control of 1Plan).  Note: A white background is not an error. Instead, you may be in a region where there is no map data, or you have zoomed out too far.
In 1Plan, no users or	Ensure that the LDAP connection details are correct in the 1Plan

Error	Solution
groups are populated. This usually appears as a 500 Internal error message when you log into 1Plan.	administration web interface. Go to <code>http://plan_url:7112/pcs/rest/ldap/userToGroups</code> then check the log files for details of the error.
Job search does not find any jobs in 1Plan.	To fix this issue, perform one of the following actions: • Ensure that no other 1Plan installation is using the same multicast addresses as this installation. The MSPlan.out file states which other installation (if any) is using the same addresses. If this is the case, uninstall 1Plan and change the multicast addresses in the msplan-server.properties file then install 1Plan again. • Go to <code>http://plan_url:7112/pcs/rest/jobs/reindex</code> to re-index the job index. The message "Successful" is displayed when the process finishes.
Cannot allocate or revoke jobs in 1Plan.	To fix this issue, perform the following actions: • Ensure that the 1Workflow URL is correct in the 1Plan administration web interface. • Ensure that 1Workflow is up and running by going to <code>http://workflow_url/soa-infra/services/default/SMSMainWorkflow/SMSMainWorkflowClient_ep?WSDL</code> The XML document should be displayed.

Uninstallation Troubleshooting

If you encounter errors when uninstalling 1SMS products (especially as part of an upgrade procedure), you may need to manually remove some components after running the **Uninstall** option through the 1SMS Installation Wizard.

1PLAN UNINSTALLATION TROUBLESHOOTING

1. Log into the weblogic console and navigate to **Domain > Environment > Servers**.

Shut down the **MSPlan** server.

2. Navigate to **Domain > Services > Data Sources**.

Delete the **MSPlanDS** data source.

3. Navigate to **Domain > Deployments**.

Delete the **MSPlan** deployment.

4. Navigate to **Domain > Environment > Servers**.

Delete the **MSPlan** Server.

5. Using windows explorer, navigate to: C:\oracle\weblogic1213\user_projects\domains\[domain]\servers

Delete the **MSPlan** folder.

1 EXCHANGE UNINSTALLATION TROUBLESHOOTING

1. Log into the weblogic console and navigate to **Domain > Environment > Servers**.

Shut down the **MSExchange** server.

2. Remove all exchange related data sources in the following locations:

- **Domain > Services > Messaging > JMS Modules**
- **Domain > Services > Messaging > JMS Servers**
- **Domain > Services > Data Sources**
- **Domain > Services > Persistent Stores**

3. Navigate to **Domain > Deployments**.

Remove the **MSExchange** deployment.

4. Navigate to **Domain > Environment > Servers**.

Delete the **MSExchange** Server.

5. Using windows explorer, navigate to: C:\oracle\weblogic1213\user_projects\domains\[domain]\servers

Delete the **MSExchange** folder.

6. Navigate to: C:\oracle\weblogic1213\user_projects\domains\[domain]

Delete the GOLoader and GOPublisher directories and the **goloader.xml**, **gopublisher.xml** and all **translationconfig.xml** files.

7. Navigate to: C:\oracle\weblogic1213

Delete the jackrabbit directory.

B 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 WebLogic consists of un-installing your current product version, copying across your **config.properties** file, and then re-installing your new product version.

 **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:\Program Files\1Spatial** as a directory within which to store our installation package files, organised into **C:\Program Files\1Spatial\Product-1.A** and **C:\Program Files\1Spatial\Product-1.B**.

1. Launch the 1SMS Installation Wizard for your *current* installation (e.g. **C:\Program Files\1Spatial\Product-1.A\1sms_installer.jar**).
 - i. Select **WebLogic Installation**, then click **Next**.
 - ii. In the Product Selection page, tick **Uninstall** for the components to be upgraded, then click **Next**.
 - iii. On the Summary page, click **Next**, then click **Begin** to run the un-installation.
2. Copy the **config.properties** file from your old installation directory (e.g. **C:\Program Files\1Spatial\Product-1.A**) to your new installation directory (e.g. **C:\Program Files\1Spatial\Product-1.B**).
3. Launch the 1SMS Installation Wizard for the *new* product version (e.g. **C:\Program Files\1Spatial\Product-1.B\1sms_installer.jar**).
 - i. Select **WebLogic Installation**, then click **Next**.
 - ii. In the Product Selection page, tick **Install** for the components to be upgraded, then click **Next**.

- iii. Check the parameters on each page of the installation wizard. These will be pre-populated from the **config.properties** file that was copied from the previous installation.
- iv. On the Summary page, click **Next**, then click **Begin** to run the installation.