



Informatica® Data Integration - Free & PayGo

# ServiceNow Connector

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# Table of Contents

<b>Preface .....</b>	<b>5</b>
Informatica Resources. ....	5
Informatica Documentation. ....	5
Informatica Intelligent Cloud Services web site. ....	5
Informatica Intelligent Cloud Services Communities. ....	5
Informatica Intelligent Cloud Services Marketplace. ....	5
Data Integration connector documentation. ....	6
Informatica Knowledge Base. ....	6
Informatica Intelligent Cloud Services Trust Center. ....	6
Informatica Global Customer Support. ....	6
 <b>Chapter 1: Introduction to ServiceNow Connector.....</b>	<b>7</b>
ServiceNow Connector assets. ....	7
ServiceNow Connector Task and Object Types. ....	7
Introduction to ServiceNow. ....	8
Administration of ServiceNow Connector. ....	8
Set up the ServiceNow integration user and the GMT time zone. ....	9
Enable the aggregate web service. ....	9
Setting up the ServiceNow user, group, and role. ....	10
Set up a ServiceNow user without the ITIL role. ....	17
Testing the connection. ....	20
Verify the connection status. ....	20
Verify the credentials. ....	21
Test the APIs. ....	22
Configure the firewall. ....	23
 <b>Chapter 2: ServiceNow connections.....</b>	<b>24</b>
ServiceNow connection properties. ....	24
Configuring proxy server settings. ....	25
Enable proxy server through the proxy.ini file. ....	25
Enable proxy server through the Secure Agent Manager. ....	25
 <b>Chapter 3: Mappings and mapping tasks with ServiceNow Connector.....</b>	<b>26</b>
ServiceNow sources in mappings. ....	26
 <b>Chapter 4: Troubleshooting.....</b>	<b>28</b>
Increasing query rows in ServiceNow. ....	28
Best practices for increasing memory of the Secure Agent. ....	28

**Chapter 5: Data type reference..... 30**  
ServiceNow and transformation data types. . . . . 30

**Index..... 33**

# Preface

Use *ServiceNow Connector* to learn how to read from ServiceNow by using Cloud Data Integration. Learn to create a ServiceNow connection, develop mappings, and run mapping tasks in Cloud Data Integration.

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## CHAPTER 1

# Introduction to ServiceNow Connector

You can use ServiceNow Connector to securely read data from ServiceNow. You can also use ServiceNow Connector to connect to any on-premise or cloud application.

You can use ServiceNow objects as sources in mappings and mapping task.

ServiceNow connector supports all versions of ServiceNow except the Express Edition.

## ServiceNow Connector assets

Create assets in Data Integration to integrate data using ServiceNow Connector.

When you use ServiceNow Connector, you can include the following Data Integration assets:

- Mapping
- Mapping task

For more information about configuring assets and transformations, see *Mappings*, *Transformations*, and *Tasks* in the Data Integration documentation.

## ServiceNow Connector Task and Object Types

The following table lists the task operations that you can configure for the supported ServiceNow objects:

Object Name	Read	Data Preview	Lookup
Incident	Y	Y	Y
Cases	Y	Y	Y
Contract	Y	Y	Y
Account	Y	Y	Y

Object Name	Read	Data Preview	Lookup
Assets	Y	Y	Y
Contact	Y	Y	Y
Log_Entry	Y	Y	Y
Catalog_Task	Y	Y	Y
Ticket	Y	Y	Y
Knowledge	Y	Y	Y
Event	Y	Y	Y
Variables	Y	Y	Y
Work Order	Y	Y	Y

## Introduction to ServiceNow

ServiceNow is a software-as-a-service (SaaS) provider of enterprise service management software.

ServiceNow automates enterprise operations and creates a single system of record for all service management processes within an organization. ServiceNow brings together the strategy, design, transition, and operation on the cloud platform. ServiceNow applications are built on a single platform-as-a-service which offers consistent and intuitive user experience through the entire service management lifecycle for services, such as Incident Management, Problem Management, Change Management, User Administration, CMDB, and Service Management.

## Administration of ServiceNow Connector

As a user, you can map data between ServiceNow and Salesforce modules such as Incident Management, Problem Management, Change Management, User Administration, CMDB, and Service Management modules.

Before you can perform data integration between Salesforce and ServiceNow, you must perform the following tasks:

- Ensure that you have the Salesforce, ServiceNow, and Informatica Cloud Account credentials.
- Enable the XML WebService - SCHEMA export processor to read the schema definition.
- Set up the ServiceNow Integration User and the GMT time zone.
- Enable the Aggregate Web Service plugin to fetch the total row count while reading data.
- Set up the ServiceNow user, group, and role. Include the following roles for the ServiceNow user:
  - soap: To read data from the tables.

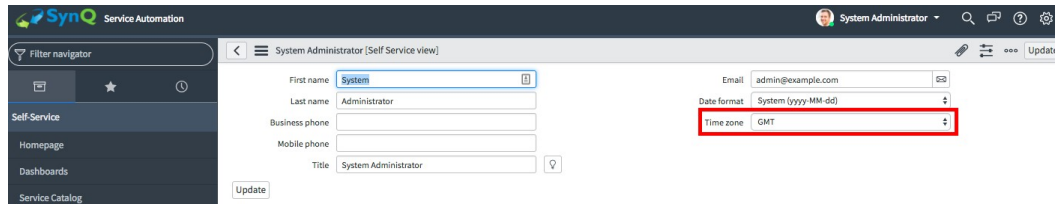


- rest-service and itil: To access views or tables from the ServiceNow modules.

## Set up the ServiceNow integration user and the GMT time zone

Set up an Integration User for ServiceNow and set the user time zone to GMT.

The following image shows the Integration User details and the configured GMT time zone:

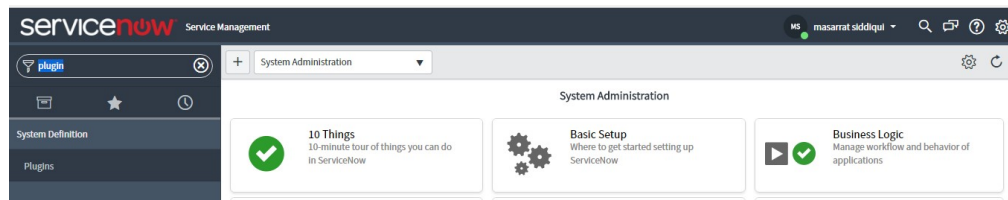


## Enable the aggregate web service

You must enable the required ServiceNow plugins and the system properties for ServiceNow Connector.

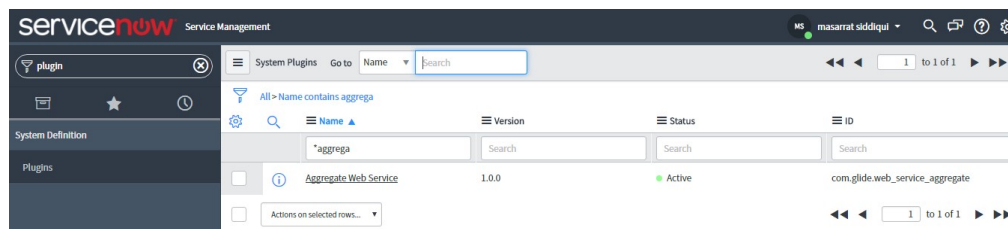
1. To enable the Aggregate Web Service plugin, click **Plugin** from the **System Definition** application menu, and then search for Aggregate Web Service.

The following image shows the System Definition application menu:



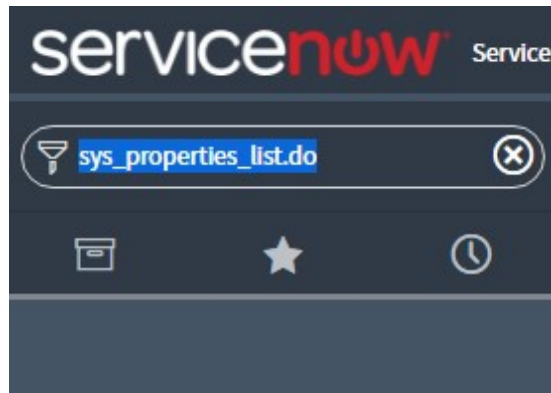
2. Make sure that the status of Aggregate Web Service is Active. If it does not display Active status, right-click the service and select **Activate**.

The following image shows the status of the aggregate web service:



3. To view all the system properties, type `sys_porproperties_list.do` in the filter navigator, and press **Enter**.

The following image shows the filter menu:



All the system properties appear.

4. Search for JSONV2 from the **Go To** filter.

The following image shows the displayed system properties:

	Name	Value	Type	Application	Description	Updated	Updated by
<input type="checkbox"/>	change.conflict.backout	true	true   false	Global	When checking change request conflicts, ...	2011-01-18 06:49:41	felix.bait
<input type="checkbox"/>	change.conflict.currentci	true	true   false	Global	When checking change request conflicts, ...	2011-01-18 06:49:34	felix.bait
<input type="checkbox"/>	change.conflict.currentwindow	true	true   false	Global	When checking change request conflicts, ...	2011-01-18 06:49:28	felix.bait
<input type="checkbox"/>	change.conflict.mode	advanced	choice list	Global	CI conflict check mode. Basic mode only ...	2016-05-23 17:33:16	system
<input type="checkbox"/>	change.conflict.refresh.conflicts	true	true   false	Global	Run conflict detection automatically aft...	2016-05-23 17:33:16	system
<input type="checkbox"/>	change.conflict.refresh.scheduled	false	true   false	Global	Enable the scheduled change conflict che...	2015-07-07 06:38:44	admin
<input type="checkbox"/>	change.conflict.relatedchildwindow	false	true   false	Global	When checking change request conflicts, ...	2011-01-18 06:52:14	felix.bait
<input type="checkbox"/>	change.conflict.relatedparentwindow	false	true   false	Global	When checking change request conflicts, ...	2011-01-18 06:53:28	felix.bait
<input type="checkbox"/>	change.conflict.role	itil	string	Global	A comma separated list of roles which ha...	2015-09-08 05:41:09	admin

5. Ensure value is true for glide.basicauth.required.jsonv2.

The following image shows the value for the selected glide.basicauth.required.jsonv2:

	Name	Value	Type	Application	Description	Updated	Updated by
<input type="checkbox"/>	glide.basicauth.required.jsonv2	true	true   false	Global	Require basic authentication for incomin...	2013-09-04 16:07:55	admin

## Setting up the ServiceNow user, group, and role

Before you use ServiceNow Connector to integrate data from ServiceNow, you must create the ServiceNow user, group, and role. ServiceNow Connector uses JSONv2 web services to communicate with ServiceNow. ServiceNow Connector also requires access to the system tables, such as sys\_db\_object and sys\_db\_view.

To perform operations in ServiceNow, you must create a group, assign the custom role to the group, and then add the integration user to the group.

The custom role must include the following roles required for integrating data:

- ITIL
- Rest\_Service
- Soap\_query

For incident management related tables, it is recommended to include the ITIL role while creating the user and role.

For more information about the SOAP roles, see the ServiceNow documentation.

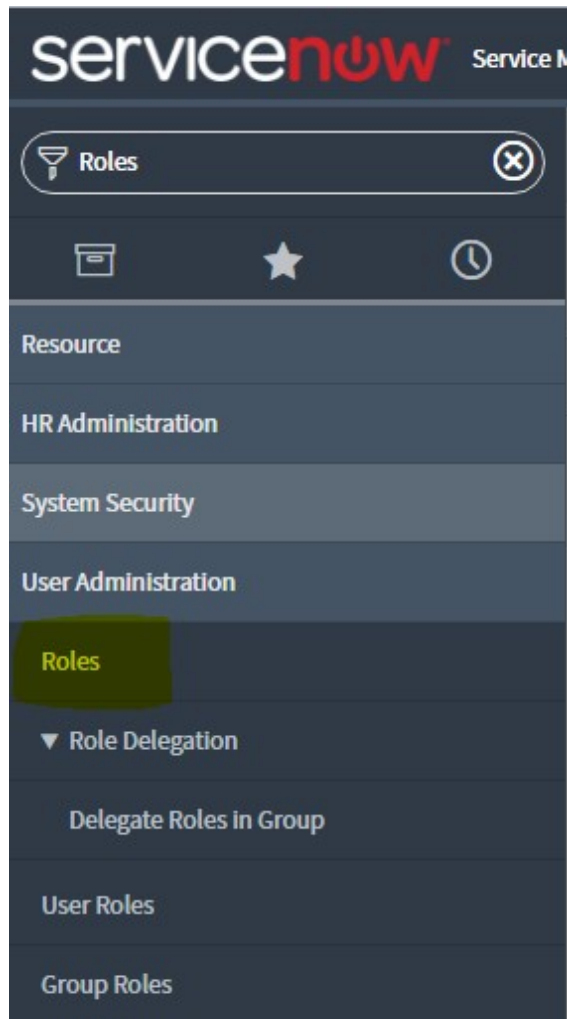
## Create a ServiceNow role

You must first create the ServiceNow role. ServiceNow recommends that you assign roles to a group and assign users to a group.

The following example shows you how to create a ServiceNow role.

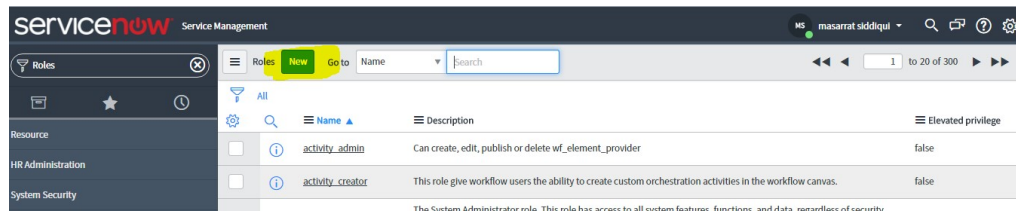
1. Click the **Role** module that resides in the **User Administration** application menu.

The following image shows the **Role** screen that appears, displaying the existing roles and their attributes:



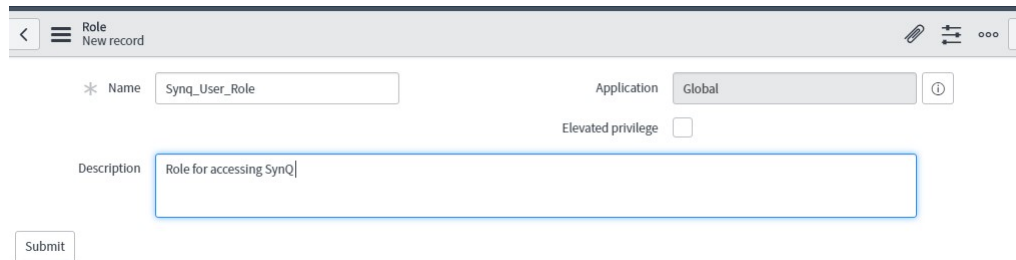
2. Click **New** to create a new role.

The following image shows the **New** tab:



3. Enter a valid name in the **Name** field and optionally enter a description.

The following image shows the specified Synq\_User\_Role:

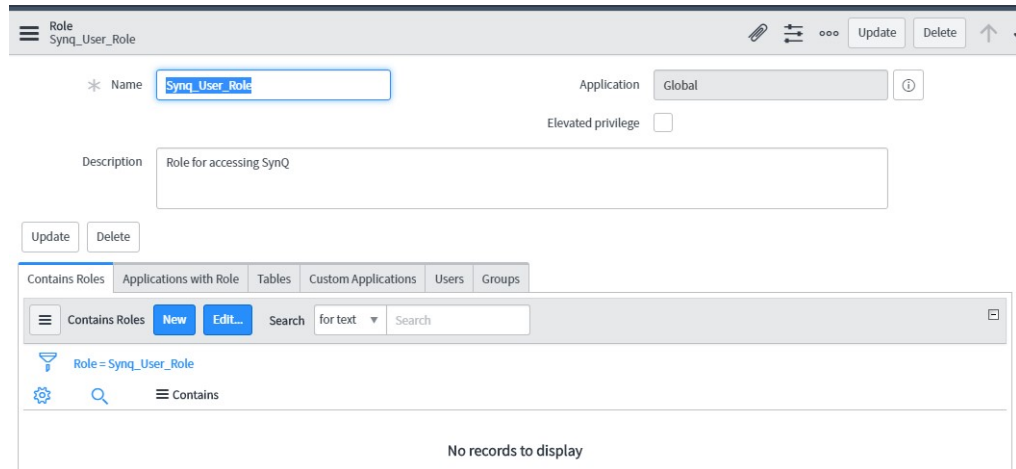


4. Select Global in the **Application** field.

The role is created.

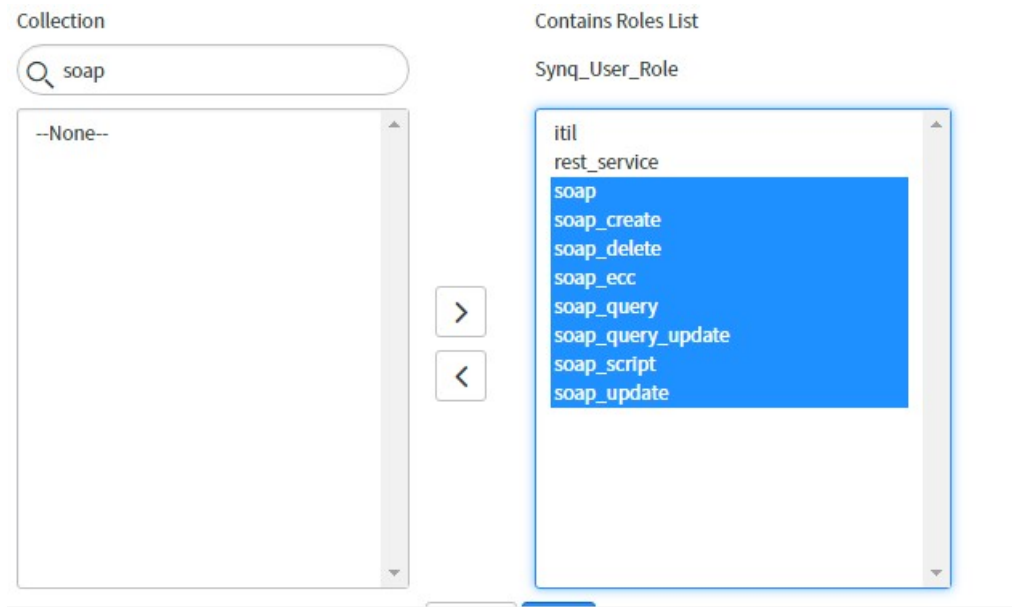
5. To assign existing roles to the newly created role, click the **Contains Role** tab, and then click **Edit**.

The following image shows the **Contains Role** tab on the lower side, with the **Edit** tab:



6. Include the roles required for gaining access to all the ServiceNow features.

The following image shows the selected roles:



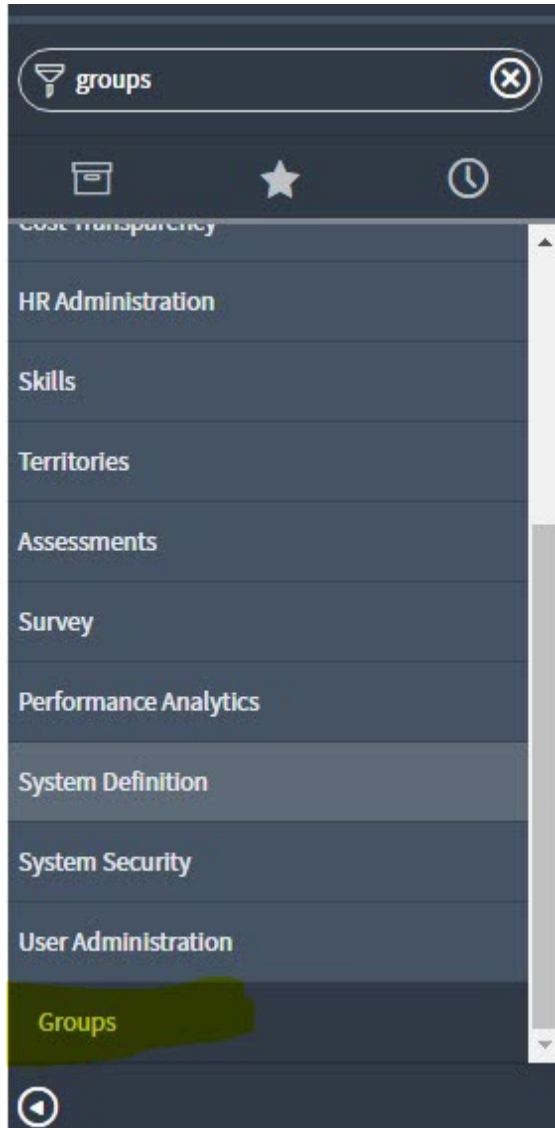
7. Click **Save** to complete the operation.

## Create a group

Create a group and assign the configured role to the user group.

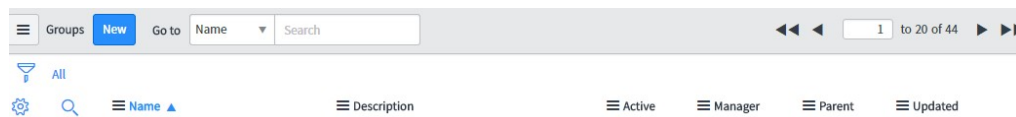
1. Click the **Groups** tab from the **User Administration** menu.

The following image shows the **Groups** tab:



2. Click **New** to create a new group.

The following image shows the **New** tab:



3. Enter a name and provide a description for the user group.

The following image shows the specified name for the user group:

Group New record

Name: SynQ\_User\_Group

Group email:

Manager:

Parent:

Type:

Vendors:

Description: Synq Users Group

Submit

- Click **Submit** to save the information.

The group is created.

Group SynQ\_User\_Group

Name: SynQ\_User\_Group

Group email:

Manager:

Parent:

Type: itil

Vendors:

Description: SynQ user group

Update Delete

Roles (1) Group Members Groups Skills Locations Covered

Roles Edit... Go to Created Search

Group = SynQ\_User\_Group

- Click **Edit** on the **Roles** tab to assign the roles to the group.
- Select Synq\_user\_Role from the available roles.

The following image shows the selected Synq\_user\_Role in the Roles list:

Add Filter Run filter ?

-- choose field -- -- oper -- -- value --

Collection

Roles List

SynQ\_User\_Group

SynQ\_User\_Roles

activity\_admin  
activity\_creator  
admin  
agent\_admin  
agent\_schedule\_admin  
agent\_schedule\_user  
api\_analytics\_read  
approval\_admin  
approver\_user  
assessment\_admin  
asset  
assignment\_rule\_admin  
atf\_test\_admin  
atf\_test\_designer  
bsm\_legacy  
bsm\_legacy\_admin

- Click **Save**.

## Use an existing user or create a new user

Assign an existing user to SynQ\_User\_Group or create a new user and then assign the created new user to SynQ\_User\_Group.

1. Click the **Group Members** tab.

The following image shows the **Group Members** tab in the SynQ\_User\_Group:

The screenshot shows the 'Group Members' tab for the 'SynQ\_User\_Group'. The top section contains form fields for 'Name' (SynQ\_User\_Group), 'Group email', 'Manager', 'Parent', 'Type' (itil), and 'Vendors'. Below these are 'Update' and 'Delete' buttons. The main section has tabs for 'Roles (1)', 'Group Members' (selected), 'Groups', 'Skills', and 'Locations Covered'. The 'Group Members' tab shows a table with columns: 'Created', 'Role', 'Granted by', and 'Inherits'. A single record is displayed with 'Created' as '2017-01-14 10:30:27', 'Role' as 'SynQ\_User\_Roles', and 'Inherits' as 'true'.

2. Choose to create new users, or click **Edit** to add existing users to the group.

The following image shows the **Edit** tab for the SynQ\_User\_Group:

The screenshot shows the 'Edit' tab for the 'SynQ\_User\_Group'. The top section contains form fields for 'Name' (SynQ\_User\_Group), 'Group email', 'Manager', 'Parent', 'Type' (itil), and 'Vendors'. Below these are 'Update' and 'Delete' buttons. The main section has tabs for 'Roles (1)', 'Group Members' (selected), 'Groups', 'Skills', and 'Locations Covered'. The 'Group Members' tab shows a table with columns: 'User'. The table is empty, and the message 'No records to display' is shown at the bottom.



3. Click **Save**.

The following image shows the added group members to the SynQ\_User\_Group:

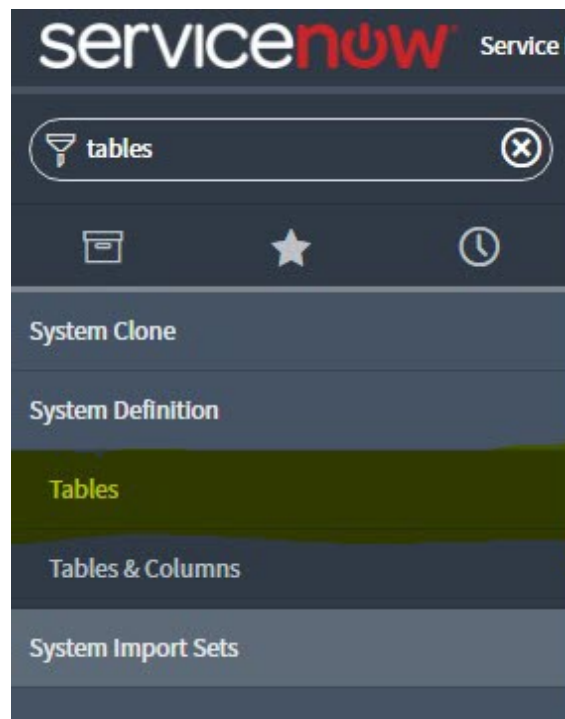
The screenshot shows the 'Edit Members' dialog box. At the top, there's a title bar with a back arrow, 'Edit Members', and a 'Cancel' button. Below the title bar, there are three dropdown menus: '-- choose field --', '-- oper --', and '-- value --'. The main area is divided into two sections. On the left, under 'Collection', there's a search bar with 'masa' and a list containing 'masarrat siddiqui'. On the right, under 'Group Members List', there's a search bar with 'SynQ\_User\_Group' and a list containing 'Masarrat Siddiqui'. Between the two lists are '>' and '<' buttons. At the bottom right, there are 'Cancel' and 'Save' buttons.

## Set up a ServiceNow user without the ITIL role

You can access ServiceNow without assigning the ITIL role to the user. It is recommended that you must have the ITIL role if you want to perform operations on the Incident Management tables.

1. Update the ACL of the sys\_db\_object table.
2. Click **Tables** to get the list of tables.

The following image shows the **Tables** tab:



3. Search for sys\_db\_object.

The following image shows the list of tables from which you use the search to list the sys\_db\_object:

Label	Name	Extends table	Extensible	Updated
Agent Personal Schedule	agent_events		false	2017-03-09 15:46:36
Agent Schedule Definition Theme	agent_schedule_definition_theme		false	2017-03-09 15:46:38
Event Configuration	agent_schedule_task_config		false	2017-03-09 15:46:39
Agent Schedule Relationship	agent_schedule_task_config_rel_user_pref		false	2017-03-09 15:46:38
Agent Schedule User Config	agent_schedule_user_pref		false	2017-03-09 15:46:37
Agent Work Schedule	agent_work_schedule		false	2017-03-09 15:46:35
Allocation Units	allocation_unit		false	2017-02-15 03:23:06
Asset	alm_asset		true	2016-05-23 17:08:05
Asset CI Field Mapping	alm_asset_ci_field_mapping		false	2017-01-10 09:38:55

4. Click the **Table** label value to view and update the attributes of the sys\_db\_object table.

The following image shows the **Table** label:

Label	Name	Extends table	Extensible	Updated
Table	sys_db_object	Application File	false	2016-05-23 16:51:35

5. On the **Access Controls** tab, scroll down to view the ACLs.

The following image shows the listed ACLs:

Name	Operation	Type	Active	Updated by	Updated
sys_db_object	create	record	true	don goodliffe	2010-09-02 11:53:26
sys_db_object	delete	record	true	myla.jordan	2011-03-18 09:14:45
sys_db_object	read	record	true	admin	2017-01-11 11:33:07
sys_db_object	read	record	true	myla.jordan	2011-04-28 05:43:54
sys_db_object	read	record	true	admin	2016-03-04 13:17:39
sys_db_object	write	record	true	myla.jordan	2011-03-18 09:14:37
sys_db_object*	read	record	true	system	2016-10-18 10:43:45

The sys\_db\_object contains metadata of the ServiceNow tables. For accessing data from the sys\_db\_object table, assign the role to the read operation. You must have the security\_admin elevated role for updating the ACL for any of the tables. Enable the role before updating the ACLs.

6. To add a new ACL for the read operation for the Synq\_User\_Role, click **New**.

The following image shows the **New** tab where you can create a new ACL:

Access Controls (9)Labels (2)Database Indexes (10)

Access ControlsNewGo toUpdatedSearch

1to 9 of 9

Access Controls

	Name	Operation	Type	Active	Updated by	Updated
<input type="checkbox"/>	<a href="#">sys_db_object</a>	<a href="#">read</a>	<a href="#">record</a>	true	admin	2017-01-11 11:33:07
<input type="checkbox"/>	<a href="#">sys_db_object.*</a>	<a href="#">read</a>	<a href="#">record</a>	true	system	2016-10-18 10:43:45
<input type="checkbox"/>	<a href="#">sys_db_object</a>	<a href="#">read</a>	<a href="#">record</a>	true	admin	2016-03-04 13:17:39
<input type="checkbox"/>	<a href="#">sys_db_object.provider_class</a>	<a href="#">read</a>	<a href="#">record</a>	true	admin	2014-01-17 15:58:08

Access Control  
sys\_db\_object

Admin overrides☒Advanced☐

Name

Table [sys\_db\_object]

-- None --

Description

Definition

Access Control Rules allow access to the specified resource if *all three* of these checks evaluate to true:  
1. The user has one of the roles specified in the **Role** list, or the list is empty.  
2. Conditions in the **Condition** field evaluate to true, or conditions are empty.  
3. The script in the **Script** field (advanced) evaluates to true, or sets the variable "answer" to true, or is empty.  
The three checks are evaluated independently in the order displayed above.  
[More Info](#)

Requires role

1to 1 of 1

Role

☒

[Informatica\\_role](#)

☐

Synq\_User\_Role

☒

☐

7. Repeat steps similarly to update the ACLs for the sys\_db\_view table:

The screenshot shows the ServiceNow ACL configuration interface for the sys\_db\_view table. The top section displays a list of ACLs with columns for Application, Label, Name, Extends table, Extensible, Created, and Created by. The selected ACL is for the Global application, Database View label, and sys\_db\_view name. Below the list, the configuration details for the selected ACL are shown, including Type (record), Operation (read), Application (Global), Active (checked), Admin overrides (checked), Name (Database View [sys\_db\_view]), and Description. The Definition section contains a blue box with the following text: "Access Control Rules allow access to the specified resource if all three of these checks evaluate to true: 1. The user has one of the roles specified in the Role list, or the list is empty. 2. Conditions in the Condition field evaluate to true, or conditions are empty. 3. The script in the Script field (advanced) evaluates to true, or sets the variable 'answer' to true, or is empty. The three checks are evaluated independently in the order displayed above. More Info". The bottom section shows the Requires role field with a list of roles.

For more information about updating ACLs, see the ServiceNow documentation.

## Testing the connection

To verify if you can connect to ServiceNow, open any REST or SOAP client and test the connection.

It is recommended that you use the following SOAP URL and test the REST, JSON, JSONv2, or SOAP endpoints: <https://www.soapui.org>

You must use the user credentials that has the SynQ\_User\_Role, or the name that you provided for the role.

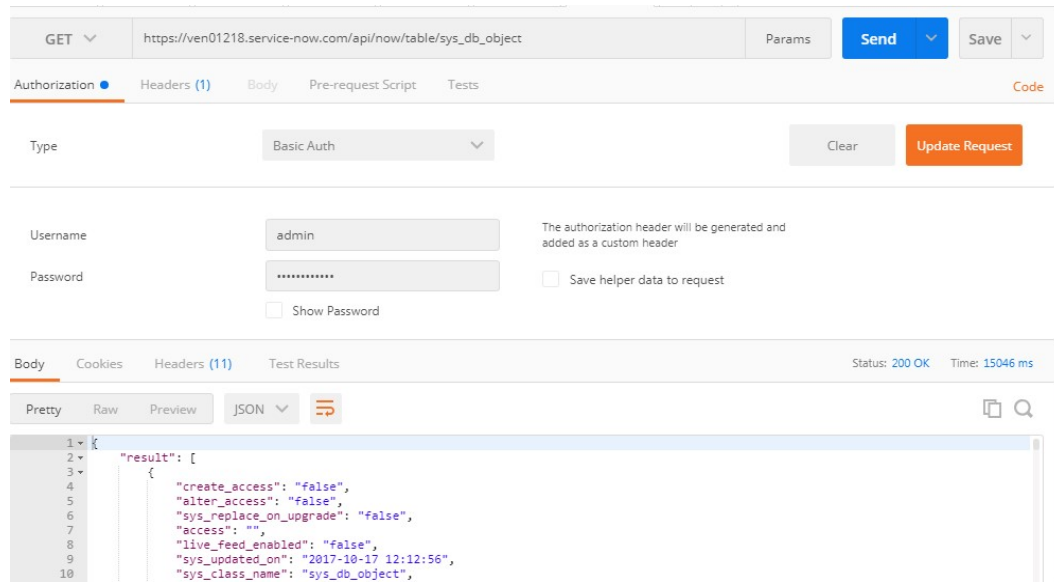
## Verify the connection status

To verify the connection status, you can call the REST API from any REST client.

Before making a call to the API, make sure that you have set up the user, group, and role:

```
Purpose : Testing Connection with ServiceNow
URL :https://<instance>.service-now.com/api/now/table/sys_user
Authentication: Basic
```

If you set the appropriate roles, you will get a response similar to the following image:

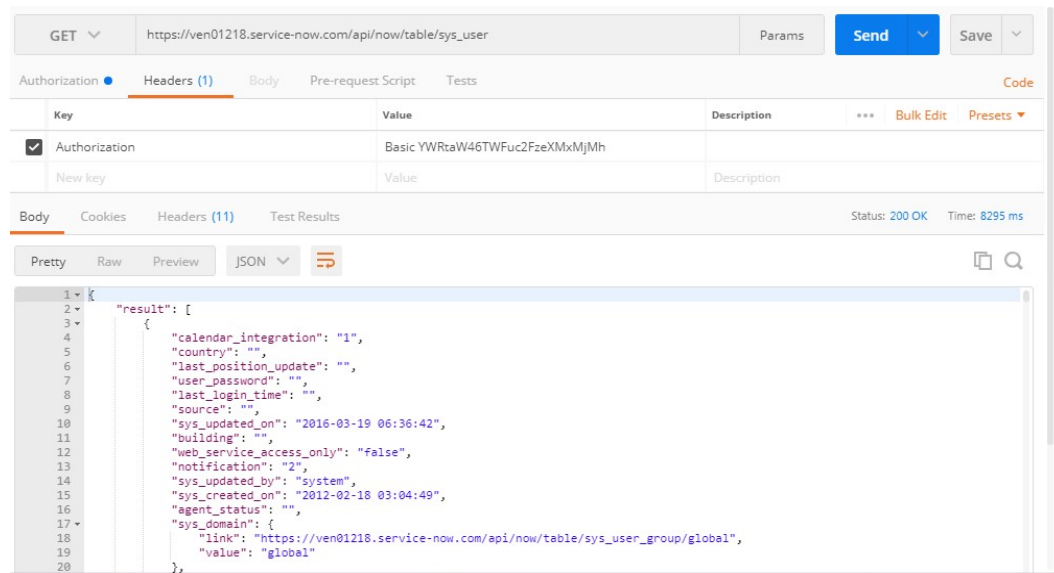


If you do not get the expected results, verify the user credentials and ServiceNow ACLs.

## Verify the credentials

To verify if the ACL and user settings are correct, call the REST API from a REST client.

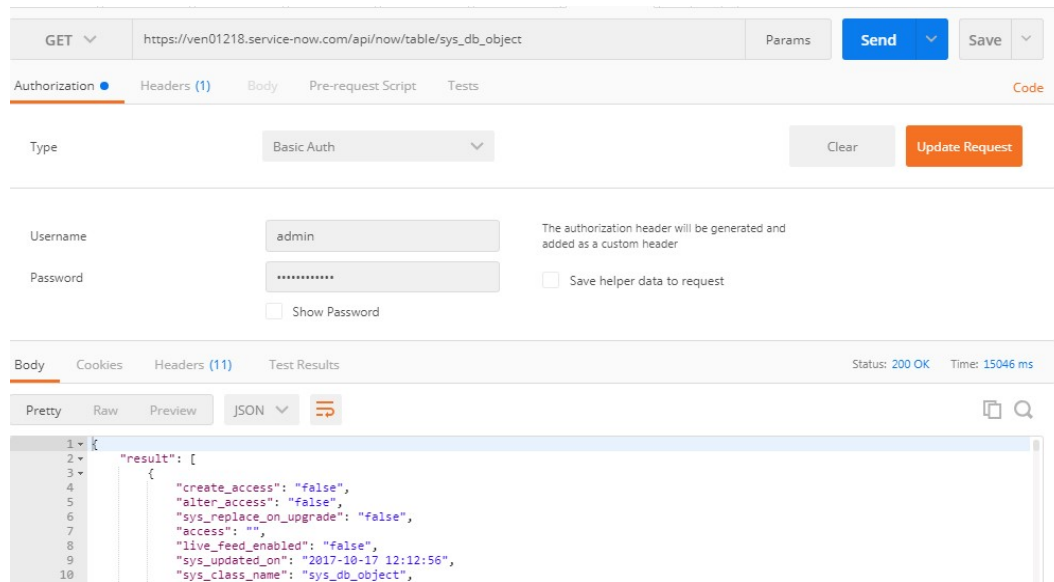
The following image shows an example of a GET request validation from a REST Client:



To create a successful connection with Data Integration, verify the credentials and ACLs with the following API:

API URL :`https://<instance>.service-now.com/api/now/table/sys_db_object`  
Authentication:Basic

The following image shows an example of a GET request validation from a REST Client:



## Test the APIs

Test the APIs for metadata information and if you can read from ServiceNow.

### Metadata information

Test the following APIs if you can access the metadata:

- `https://<instance>.service-now.com/api/now/table/sys_db_view.do`
- `https://<instance>.service-now.com/api/now/table/sys_db_object.do`
- `https://<instance>.service-now.com/api/now/table/<table_name>.do?SCHEMA`

### Read API

Test the SOAP and REST APIs to read from the ServiceNow tables or views.

### Use the REST Client

You can test the ACL and user-role setup using the REST clients. To test using a REST client, you require a valid REST API URL, the suitable methods, valid parameters, and authentication. For example, call a REST API to get data from a ServiceNow table. Use the following details to make a REST call:

```
Authentication : Basic (Requires username /password of user who is having
SynQ_User_Role)
Method : Get
URL : valid api url
```

For more information about the REST API URLs and parameters, see the following website:

[https://docs.servicenow.com/bundle/jakarta-application-development/page/integrate/inbound-rest/concept/c\\_RESTAPIExplorer.html?title=REST\\_API\\_Explorer#gsc.tab=0](https://docs.servicenow.com/bundle/jakarta-application-development/page/integrate/inbound-rest/concept/c_RESTAPIExplorer.html?title=REST_API_Explorer#gsc.tab=0)

# Configure the firewall

If your organization uses a protective firewall, include the Secure Agent IP address ranges on the list of approved IP addresses to ensure that the Secure Agent can perform all the necessary tasks through the firewall.

The Secure Agent uses the following IP address ranges:

- 209.34.91.0-255
- 206.80.52.0-255
- 206.80.61.0-255
- 209.34.80.0-255

## CHAPTER 2

# ServiceNow connections

Create a ServiceNow connection to securely read data from ServiceNow. You can use ServiceNow connections to specify sources in mapping tasks.

You can create a ServiceNow connection on the **Connections** page and use it in the Mapping task wizard when you create a task. The connection becomes available to the entire organization.

## ServiceNow connection properties

When you set up a ServiceNow connection, configure the connection properties.

The following table describes the ServiceNow connection properties:

Property	Description
Connection Name	Name of the connection. Each connection name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: _ . + -, Maximum length is 255 characters.
Description	Description of the connection. Maximum length is 4000 characters.
Type	The ServiceNow connection type.
Runtime Environment	The name of the runtime environment where you want to run the tasks. Specify a Secure Agent or a Hosted Agent.
Username	User name of the ServiceNow instance.
Password	Password for the ServiceNow instance.
EndPoint URL	The ServiceNow endpoint URL.
Instance Type	Type of ServiceNow instance. Select JSONv2.



# Configuring proxy server settings

If your organization uses a proxy server to access the Internet, you can configure the proxy server settings for the Secure Agent to connect to ServiceNow.

You must provide the proxy server details either in the `proxy.ini` file or in the Secure Agent Manager.

When you configure a proxy server, you can only use an unauthenticated proxy server to connect to Informatica Intelligent Cloud Services.

## Enable proxy server through the proxy.ini file

You can set the proxy server details for the Secure Agent in the `proxy.ini` file.

1. Navigate to the following directory on the Secure Agent machine: <Secure Agent installation directory>\Informatica Cloud Secure Agent\apps\agentcore\conf\proxy.ini

2. Add the host and port number of the proxy server in the `proxy.ini` file:

```
InfAgent.ProxyHost=<Proxy server hostname>
InfAgent.ProxyPort=<Proxy server port number>
```

3. Restart the Secure Agent.

The proxy details appear on the Secure Agent Manager proxy server settings page.

## Enable proxy server through the Secure Agent Manager

You can set the proxy server details for the Secure Agent in the Secure Agent Manager.

1. Click **Start > All Program > Informatica Cloud Secure Agent > Informatica Cloud Secure Agent**.

You can also click the **Data Integration** icon in the Windows taskbar notification area to open the Secure Agent Manager.

The Secure Agent Manager displays the Secure Agent status.

2. Click **Proxy** in the Secure Agent Manager page.
3. Click **Use a Proxy Server** to enter the proxy server settings.
4. Configure the following proxy server details:

Field	Description
Proxy Host	Required. Host name of the outgoing proxy server that the Secure Agent uses.
Proxy Port	Required. Port number of the outgoing proxy server.

5. Click **OK**.
6. Restart the Secure Agent to apply the settings.

## CHAPTER 3

# Mappings and mapping tasks with ServiceNow Connector

Use the Data Integration Mapping Designer to create a mapping. When you create a mapping, you configure a source to represent a ServiceNow object.

## ServiceNow sources in mappings

When you create a mapping, you can configure the source properties to use ServiceNow objects to read data from your ServiceNow account. The source properties appear on the **Source** tab when you specify a ServiceNow connection.

The following table describes the ServiceNow source properties:

Source Property	Description
Connection Type	Name of the source connection.
Source Type	Select Single as the source type.
Source Object	Select the source object for the task.

You can use the following ServiceNow objects as a source object in a mapping:

- Incident
- Cases
- Contract
- Account
- Assets
- Contact
- Log\_Entry
- Catalog\_Task
- Ticket
- Knowledge
- Event

- Variables
- Work Order
- Task
- Alm\_asset
- Sn\_customerservice\_case\_report

The following table describes the advanced ServiceNow source properties:

Source Property	Description
Read Batch Size	The maximum number of records that the Secure Agent reads in a batch from ServiceNow. <b>Note:</b> You can specify a maximum batch size of up to 10,000 records. If you specify a batch size beyond 10,000 records, data loss is encountered.

**Note:** When you read data from the Account object, the Secure Agent displays incorrect number of success rows in the session log.

## CHAPTER 4

# Troubleshooting

Use the following sections to troubleshoot errors in ServiceNow Connector.

## Increasing query rows in ServiceNow

The default query row limit is 250 in ServiceNow. The ServiceNow instances in Dublin have a default query row limit of 10000 for the JSON service.

The system property [of *sys\_properties* table]: *glide.processor.json.row\_limit* determines the query row limit.

To enable this property in the ServiceNow table, perform the following tasks:

1. Type *sys\_properties.list* in the Navigation filter.  
The entire list of properties in the *sys\_properties* table appears. When the property is not available, it uses the default value.
2. If you want a different value, you must create the property. If the property already exists, update the value.
3. To create a new property, click **New** in the **System Properties** list.
4. Specify the **Name** as *glide.processor.json.row\_limit*, **Type** as *Integer*, and **Value** with the required number.
5. Click **Save** or **Update**.

## Best practices for increasing memory of the Secure Agent

You can increase the memory for different operations of the Secure Agent in the System Configuration Details section for types DTM and Tomcat JRE.

### Tomcat JRE

**Problem:** You might encounter memory related or Java heap related error messages when you perform the following tasks:

- Test connection or metadata fetch. You might encounter an error when you select a connection or an object.
- Agent logs. Java out-of-memory or Java heap space error encountered during the INFA Agent login.

**Solution:** Increase the memory options for the INFA\_MEMORY attribute for type Tomcat JRE. Use the following format: `"-Xms***m -Xmx****m -XX:MaxPermSize=***m"`

## DTM

**Problem:** You might encounter Java out-of-memory, Java heap space, out-of-memory, or perGen space error messages either in the session log or the activity log, or both.

**Solution:** You can specify the default options of JVMOption1, JVMOption2, JVMOption3, and so on. If you have specified all the available JVMOptions, you can add additional options as custom properties for the Secure Agent.

Ensure that you maintain the sequence. If the default ones that you specified stop at JVMOption5, you must add custom properties that start with JVMOption6. Specify the type as DTM and subtype as INFO. Each JVMOption must hold only one JVM property.

The main JAVA memory properties are `-Xms**m`, `-Xmx****m`, and `-XX:MaxPermSize=***m`.

## INFA\_MEMORY and JVMOptions

You must specify the following memory attributes in the INFA\_MEMORY and JVMOptions:

### **-Xms\*\*\*m**

The initial value that specifies the amount of memory with which the Java Virtual Machine starts. The memory value you specify for this attribute is allocated when the Java process starts.

### **-Xmx\*\*\*\*m**

The value that specifies the maximum amount of memory that the Java Virtual Machine can allocate as heap. After the Java process starts, it will continue allocating more space to store its objects. The allocation continues until it reaches the maximum setting, after which the Java process crashes with a Java heap space or out-of-memory issue.

### **-XX:MaxPermSize=\*\*\*m**

The maximum permissible size that the Java Virtual Machine can use at a given time. If the Java Virtual Machine requires more than the specified amount, the Java process crashes with a permGen space issue.

## Set the Required Values

You must set the following values for the attributes:

### **-Xms\*\*\*m**

This value represents the base or initial value. You can specify a minimum value, such as 64M or 128M. This value specifies the amount of memory used for the process initialization. The Java process eventually continues to allocate space as and when it requires.

### **-Xmx\*\*\*m**

This value represents the maximum value to which the Java heap can grow. The value must be large such that it can hold all the Java objects and classes.

On a 32-bit Secure Agent, you can specify a value that must not exceed 1024M for Windows and 2048M for Linux due to operating system limitations for a 32-bit application. However, it is recommended that you do not specify a value beyond 900M for 32-bit Secure Agents to avoid memory issues for tasks in general and for the Secure Agent.

If the process fails with 900M or higher on a 32-bit Secure Agent, you must use a 64-bit Secure Agent. For a 64-bit Secure Agent, you can specify any -Xmx value, which is limited only by the system memory that the operating system allocates to the system. Generally, on a 64-bit Secure Agent, you can specify a value of about 1024M or 2048M. However, if your tasks fail with a Java heap space or out-of-memory error, you must increase the value further, based on trial and error, as the value is dependent on the amount of data, the classes loaded, and how the Java and operating system stores the data.

## CHAPTER 5

# Data type reference

Data Integration uses the following data types in mappings and mapping configuration tasks with ServiceNow:

### ServiceNow native data types

ServiceNow data types appear in the **Fields** tab for Source transformation when you choose to edit metadata for the fields.

### Transformation data types

Set of data types that appear in the transformations. They are internal data types based on ANSI SQL-92 generic data types, which the Secure Agent uses to move data across platforms. Transformation data types appear in all transformations in a mapping.

When Cloud Data Integration reads source data, it converts the native data types to the comparable transformation data types before transforming the data.

## ServiceNow and transformation data types

The following table describes the data types that Data Integration supports for ServiceNow sources:

ServiceNow Data Type	Transformation Data Type
Choice	String
Collection	String
Color	String
Condition String	String
Conditions	String
Currency	Double
Date	Date
Date/Time	TimeStamp/Date
Document ID	String
Domain ID	String

ServiceNow Data Type	Transformation Data Type
Due Date	Date
Duration	Long
Encrypted Text	String
Field Name	String
File Attachment	String
Floating Point Number	Double
HTML	String
Integer	Integer
IP Address	String
Journal	String
Journal Input	String
Long	Long
Password (1 Way E)	String
Password ((2 way E)	String
Percent Complete	Integer
Phone Number (E164)	String
Price	Double
Reference	String
Script	String
Script (Plain)	String
String	String
String (Full UTF-8)	String
Suggestion	String
Table Name	String
Time	String
Translated HTML	String
Translated Text	String

ServiceNow Data Type	Transformation Data Type
True/False	Boolean
URL	String



# INDEX

## C

Cloud Application Integration community  
URL [5](#)  
Cloud Developer community  
URL [5](#)  
connections  
ServiceNow [24](#)

## D

Data Integration community  
URL [5](#)

## I

Informatica Global Customer Support  
contact information [6](#)  
Informatica Intelligent Cloud Services  
web site [5](#)

## M

maintenance outages [6](#)

## S

ServiceNow  
connection properties [24](#)  
ServiceNow connections  
administration [8](#)

ServiceNow Connections  
overview [24](#)  
ServiceNow Connector  
overview [7](#)  
ServiceNow data types  
mapping to transformation data types [30](#)  
overview [30](#)  
ServiceNow source  
mappings [26](#)  
status  
Informatica Intelligent Cloud Services [6](#)  
system status [6](#)

## T

trust site  
description [6](#)

## U

upgrade notifications [6](#)

## W

web site [5](#)

## Z

Zendesk V2 Connector  
supported object types [7](#)