



Service Catalog Integration with ServiceNow

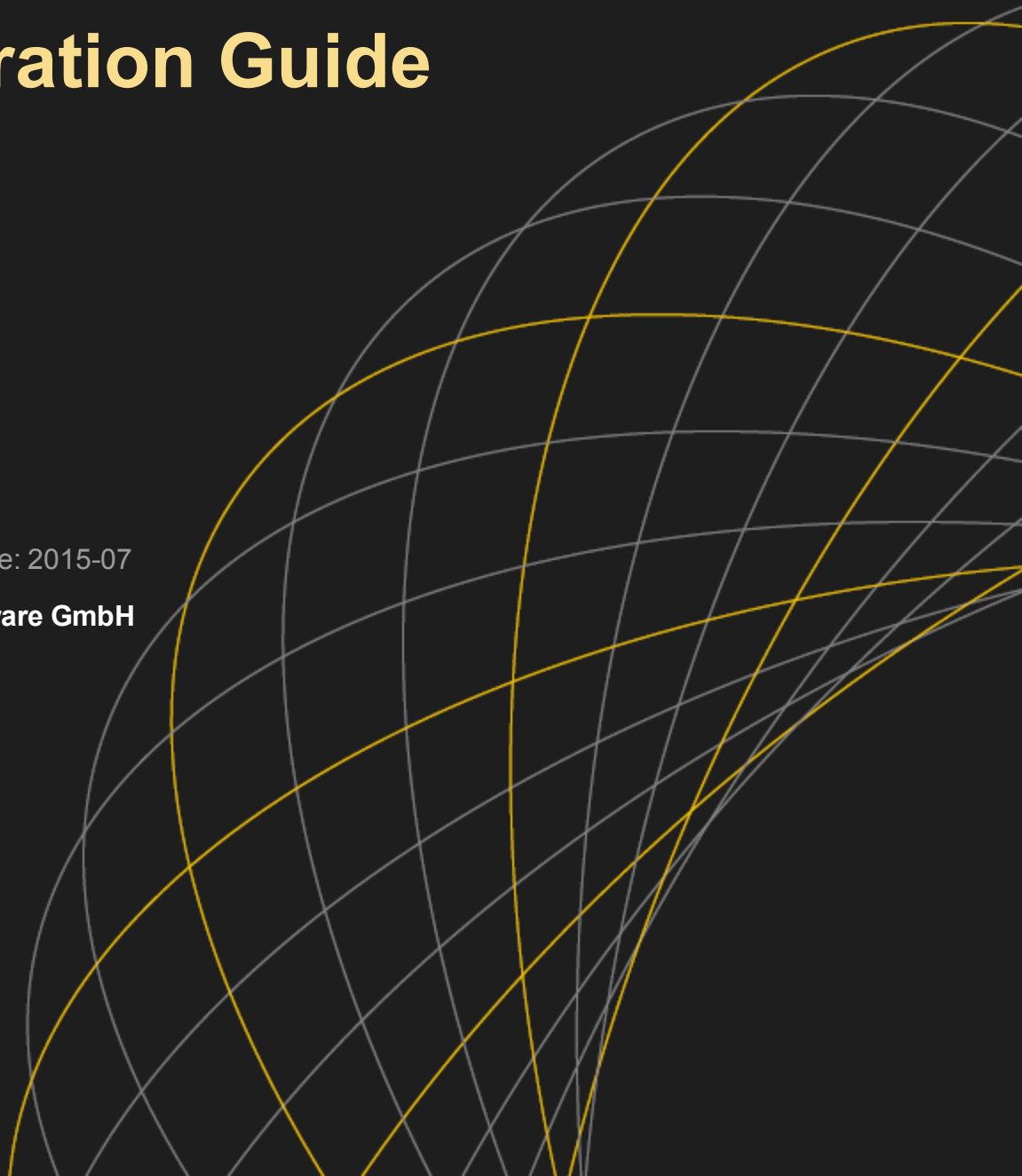
ONE Automation Platform

Integration Guide

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Automatic Software GmbH



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2015-07-13	Changes reflecting SNSC version 1.0.1
2015-04	Updates and improvements due to reviews
2015-02	Descriptions of parameters added, examples clarified regarding login user/password
2014-12	Minor changes reflecting the focus on ServiceNow integration
2014-10	Service Orchestration Offering Guide - All sections new

 Note, that this document is not updated automatically neither by Automic revision service nor any other way. When in doubt that this is not the latest version, contact Automic sales team near your location. Visit <http://automic.com/company/contact-us> for further reference.

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1 Introduction

Service Catalog Integration is part of our Application Service Orchestration (ASO) Offering. This guide describes the service catalog integration with ServiceNow using the Automic ServiceNow Service Connector (SNSC), Service API (SAPI) and Authentication Server (OAuth).

Automic Services are Automation Engine workflows published with the Service API. Part of the offering is an out of the box integration into ServiceNow that allows an automatic creation of service catalogs.

Target Audience

This guide is intended for administrators and managers who wish to publish and use Automic Services with ServiceNow. Readers should know about the administration of Automation Engine and ServiceNow.

1.1 Welcome to the World of Automic!

Automic congratulates you on using Service Catalog Integration with ServiceNow. This Integration Guide relates to Service Catalog Integration with ServiceNow within our ONE Automation 2015. Let's automate your business!

Automating your business processes – that's what Automic solutions and offerings are about. Financial transactions, software deployment or database operations, to name just a few, with any of these you may adapt the Automic ONE Automation platform and targeted offerings individually to your needs – and relieve every day work from recurrent tasks.

We are constantly improving the ONE Automation platform. We hope you enjoy using it as much as we enjoy developing it.

For any suggestions, wishes or questions, please contact Automic Technical Support. Your input will help us to make ONE Automation even better. We look forward to hearing from you!

See also: [About Automic Software, Community and Support](#)

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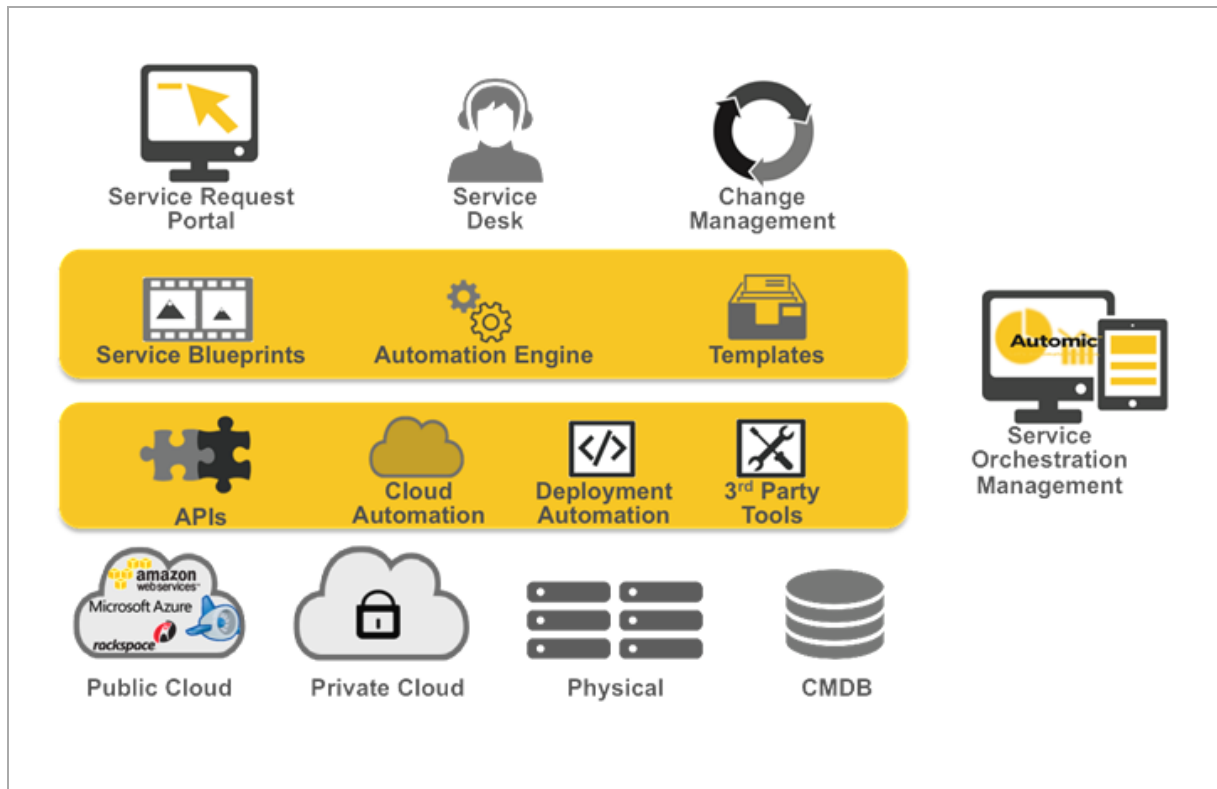
1.2 About Application Service Orchestration (ASO)

Our Service Orchestration Offering focus on deploying a service rather than software and infrastructure - e.g., for Automated Help Desk Fulfillment or Automated SAP System Copy.

Automic's Service Orchestration Offering operates from the Service Management perspective, providing service catalog-driven orchestration of infrastructure provisioning and software deployment to deliver a complete, ready-to-run service to the requestor. Automation covers configuration tasks, e.g. data loading and pre-release backups as well as being able to roll-back to a previous configuration.

You can deploy services in a single workflow and consistently in development, test and production environments.

Offering Concept



Application Service Orchestration leverages existing ITSM platform, infrastructure and software management systems.

Examples

Example use cases for Application Service Orchestration Offering:

- Automated testing: Automated acceptance testing of new release and configuration package
- Analytics / Monthly reports: Create monthly order reports and build compute-intense scoring
- Self service: Create new instances of e.g., an multi-tier WebLogic application for a new branch office
- Deployment: Provisioning of a server with database and a certain pre-configuration on a separate server
- Access management: Grant/revoke access for users to a specific custom application

1.3 About Service Catalog Integration

Our Service Catalog Integration shows how you can consume Automic Services using third party applications. This integration provides service catalog-driven orchestration of infrastructure provisioning and software deployment to deliver a complete, ready-to-run service to the requestor.

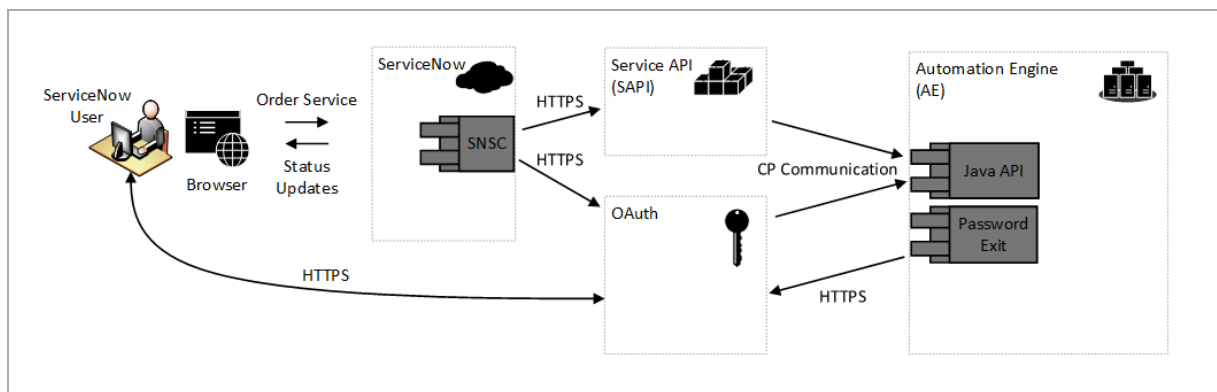
To achieve this, you can integrate your Automic Automation Platform with ServiceNow using the AutomicServiceNow Service Connector (SNSC), Service API (SAPI) and Authentication Server (OAuth).

This solution enables ServiceNow users to select services published in the ServiceNow Service Catalog that are automatically fulfilled by Atomic workflows in concert with ServiceNow processes, such as approvals. For example, when a ServiceNow user requests the service 'Provisioning of a virtual machine XYZ', the ordering and approval process follows the definitions in ServiceNow and is finally executed by Atomic Automation Engine. The user can monitor the progress of the fulfillment via the ServiceNow user interface.

Examples for services delivered by ONE Automation 2015 via the ServiceNow Service Catalog:

- Month-end close financial process, including incremental provisioning and data updating
- Copy and restore or duplicate an SAP System, including coordination of process and system shut-down/pause and start-up
- Provision and deploy to or change a Siebel environment
- Provision and deploy a WebLogic domain or cluster with application and data
- Promote, provision, deploy and initiate testing of software from one stage (dev/test) to the next environment
- Provision, deploy, change, update, patch, triage, remediate or execute other IT Process Automation (ITPA, Run Book Automation)
- Document processing with automated ticket creation, updating and closing which complies with ServiceNow processes
- Consistently publish and execute services with multiple instances of service catalogs

Architectural Overview



Architecture of ServiceNow service catalog integration.

Automation Engine (AE)

The Automation Engine contains the workflows which are published as Atomic Services via Service API and it is responsible for the user and permission management. Automation Engine objects are used to store the workflows and login data according to the Automation Engine object structure.

From the Automation Engine's point of view, the OAuth Authorization Server is an external system responsible for user authentication. Automation Engine supports validation of passwords via the Password Exit function.

OAuth Authentication Server

The OAuth Authentication Server is the main component for managing tokens for authentication. It offers standardized HTTP interfaces to remote client applications (e.g., ServiceNow) and end users as well as restricted HTTP interfaces for internal components (Automation Engine: permission management and data store).

Service API (SAPI)

The Service API component provides REST API access to Automation Engine workflows and publishes them as Atomic Services.

From the Authorization Server's perspective, SAPI is an internal component that allows remote client applications to use OAuth for authentication and therefore needs to be able to validate OAuth tokens.

ServiceNow Service Connector (SNSC)

The ServiceNow Service Connector connects ServiceNow with the AtomicService API. Via the Service API it reads the Automation Engine services (workflows and prompt sets) and generates ServiceNow service catalogs out of it.

Web Browser

The web browser is the user interface for the end user to consume Atomic Services via ServiceNow and to communicate with the OAuth Authorization Server for authentication.

1.4 About ONE Automation Platform

ONE Automation makes it easy to build automated workflows across the different IT silos and departments for complete business process automation. The platform allows to orchestrate processes, big data and cloud technologies, as well as deploying infrastructure and new or existing applications built on top.

Orchestrate on-premise, cloud and hybrid processes within one single business workflow using REST and SOAP based web services.

Use templates and actions to build workflows of any scale and share them with your team or across departments. Customize and adapt workflows, add new tasks to workflows and link the tasks to predecessors or successors using our graphical interface. You also can schedule workflows based on time, calendar or interval. Create custom calendars and patterns to suit the most complex of execution windows. Optionally you can trigger workflows based on the occurrence of any event, such as self service request, file arrival, console or database event, or system workload breaching a threshold.

ONE Automation Platform consists of the following components (depending on your license model):

- Automation Engine: enterprise job scheduling and advanced workload automation solution - see [About Automation Engine \(AE\)](#)
- Enterprise Control Center: build and monitor workflows using our unified graphical user interface
- Agents: integrate various operating system platforms including Windows Server, UNIX, Linux, iSeries, z/OS and other mainframe operating systems
- Adapters: orchestrate applications including Oracle, SAP, PeopleSoft, JD Edwards, JMS, Webservice and Hadoop - integrate with development tools including JIRA, Jenkins, TeamForge and GitHub
- Product Add-ons: enhance ONE Automation Platform capabilities - e.g., integrate Active Directory with LDAP Sync
- Templates and Actions: examples and ready-to-use workflows for various re-occurring tasks

The ONE Automation Platform is the stable basis for our specialized offerings on top.

1.5 About Automation Engine (AE)

Automation Engine is a core component of Automic's ONE Automation Platform.

The Automation Engine is an enterprise job scheduling and advanced workload automation solution with a fully integrated managed file transfer capability that is designed to meet the demanding enterprise requirements of today's business world.

It provides a centralized, scalable and multi-tenant architecture that takes advantage of a centralized database management system, an object-oriented design with an enormous time-saving potential, native application support and the ability to embed conditional business rules. It responds dynamically to the changing state of the business as represented by changes in the corporate data and is flexible and easy to use for end-users. Moreover, it enables security and compliance across the enterprise. Transparency with full end-to-end control is guaranteed including full version control so that everything that happens is fully documented.

1.6 About Service API (SAPI)

The SAPI component provides REST API access to Automic Automation Engine workflows published as services (Automic Services).

SAPI publishes all workflows as a service where a link in the Automation Engine folder `\SERVICES` pointing to the related workflow exists. Services are presented in service catalogs, according to the sub-folder name in folder `\SERVICES`.

SAPI runs on a tomcat application server and communication can be SSL encrypted. Authentication is necessary for each request and is done via OAuth.

SAPI calls are stateless and result in a JSON formatted response (media type: application/json).

1.7 About OAuth Authorization Server

OAuth is an open protocol that allows secure authorization in a simple and standard method from web, mobile and desktop applications. It enables third-party applications to authenticate on behalf of a user.

OAuth Authorization Server is a Java-based web application that runs on any Tomcat server. It is responsible for issuing and managing all OAuth tokens according to OAuth 2.0 specification. The OAuth server registers a password exit in the AE that allows to authenticate users via OAuth token.

Although it is designed to run in a distributed system. It also runs together with the Enterprise Control Center (ECC) and the Service API (SAPI) on the same Tomcat server. You may also deploy OAuth Authorization Server independently from ECC and SAPI.

See also: oauth.net

1.8 About ServiceNow

ServiceNow provides software and services to support IT service management (ITSM).

See also: <http://www.servicenow.com/>

1.9 About ServiceNow Service Connector (SNSC)

The SNSC connects ServiceNow with the Automic Service API. This solution enables an out-of-the-box Service Catalog Integration by connecting ServiceNow with the Service API of our ONE Automation 2015.

Via the Service API SNSC reads the Automation Engine services (workflows and prompt sets), generates ServiceNow service catalogs out of it and publishes the services to the ServiceNow Service Catalog. Access of SNSC to the Automation Engine workflows is secured using OAuth.

SNSC is part of the Application Service Orchestration (ASO) offering.

The main functionality is the following:

- Import Automation Engine services into ServiceNow, scheduled and ad-hoc
- Trigger service execution (i.e., the workflow execution in the Automation Engine) from a third-party application (e.g., ServiceNow)

For the user, SNSC is transparent when it comes to filling in required variables: SNSC provides drop-down fields filled with values form Automation Engine variables the same way as they are presented to you in the AE User Interface.

2 Getting Started

2.1 System Requirements

Requirements for ServiceNow - Service API Automation Engine integration.

Compatible versions:

Component	Required Version
ServiceNow	Eureka
ServiceNow Service Connector	1.0.1
Service API	1.0.1 (released 2015-02-13)
OAuth Authentication Server	1.0
Automation Engine	11.1
Java	1.8
Tomcat	7

2.2 Installation Packages

Currently provided by Atomic upon request only.

Contact your account manager for the download information.

3 Installation and Configuration


For a successful integration, you must install and configure the following components carefully.

Install and configure as follows:


- [Installation of OAuth Authorization Server](#), [Configuration of OAuth](#) including configuration of [OAuth Password Exit with AE](#)
- [Installation of SAPI](#) and [Configuration of SAPI](#)
- [Installation of SNSC](#) and [Configuration of SNSC](#)

3.1 Installation of Password Exit with AE

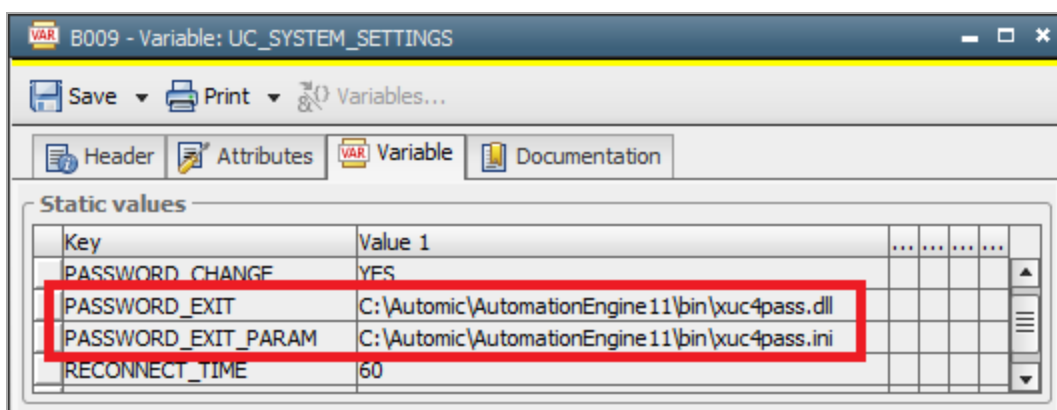
You need to install Password Exit to use OAuth as login method for your Automation Engine or Integrated Windows Authentication for ARA version 5.

 For installation and configuration basics see also: AE documentation - Application Integration Guide - Program Exits - Password Exit.

Steps:

1. Install scriptable command line tool to send HTTP post requests (e.g., curl) on the AE host.
 -  Remember to install a version with SSL support for HTTPS communication.
2. Copy the library (.so or .dll) and the ini file to the bin directory of the AE
3. Login to AE client 0
4. Set the paths to the library and ini file in UC_SYSTEM_SETTINGS: parameters PASSWORD_EXIT and PASSWORD_EXIT_PARAM

Parameter	Description	Example
PASSWORD_EXIT	Path to Password Exit library	c:\automic\AE\bin\xuc4pass.dll
PASSWORD_EXIT_PARAM	Path to configuration file	c:\automic\AE\bin\xuc4pass.ini



Variable object UC_SYSTEM_SETTINGS with configured password exit libraries (example).

- Adapt the ini file where PASSWORD_EXIT_PARAM is pointing to: Set Url to your OAuth validation end-point URL you want to use

Parameter	Type	Default Value	Description
Url	String	-	URL to the validation endpoint of the OAuth server
OutputFile	String	-	Output file to store run-time information
Logging	Number	-	Logging level: <ul style="list-style-type: none"> 0 ... disable logging 1 ... writing to target AE WP log-file
cmd	String	-	cURL command used to call the service method to verify login user
Search	String	"access_token"	String to be found in messages, if validation is successful (only then "access_token" appears)

Example content of the ini file using cURL:

```
[Settings]
Url=https://oauthserver/oauth2/validate
outputFile=C:\Automic\AE\Temp\xuc4pass_log.txt
Logging=1
cmd=C:/curl/curl --user User1:PWord %0 -data "access_token=%1"
Search="access_token":
```

- Restart AE

✓ Now, Password Exit is active

3.2 Installation of OAuth Authorization Server

Deploy OAuth Authorization Server to a Tomcat server. You must also install and configure Password Exit.

The OAuth server consists of a web server component and a password exit component.

Deploy OAuth Authorization Server:

- Copy `oauth_server.war` to your Tomcat container.
- Install and configure Password Exit




 See also: [Installation of Password Exit with AE](#).

3.3 Configuration of OAuth

Configuration of OAuth is done via multiple configuration files (configuration.properties, uc4config.xml, logback.xml) and password exit component configuration.

3.3.1 configuration.properties

Parameters

Parameter	Type	Description
Encryption.Key	String	Key to be used for AES encryption  You may use a tool to generate encryption keys.
Encryption.IV	String	Initialization vector for the AES encryption
AutomationEngine.System	String	Name of the AE system which is validating the logins
AutomationEngine.AEUser	String	Name of the technical AE user for the internal processing Format: user name/department Example: OAUTH_SERVER_USER/MYDOMAIN
AutomationEngine.AEPassword	String	Password for the technical AE user
AccessToken.CacheTimeout	Number	Number of seconds that the OAuth server keeps a token validation result in its memory Default value: 30
ValidationEndpoint.Username	String	User name for the basic authentication for the validation endpoint  This must be the same user name as specified in Password Exit's ini file (see Installation of Password Exit with AE).
ValidationEndpoint.Password	String	Password for the basic authentication for the validation endpoint  This must be the same password as specified in Password Exit's ini file (see Installation of Password Exit with AE).

Example

```
Encryption.Key = B174A26A71490437AA024E4FADD5B497
Encryption.IV = 9E892875A52C59A3
```

```
AutomationEngine.System = AE11
AutomationEngine.AEUser = OAUTH_SERVER_USER/MYDOMAIN
AutomationEngine.AEPassword = 123
```

```
AccessToken.CacheTimeout = 30
ValidationEndpoint.Username = InternalUser
ValidationEndpoint.Password = MySecretPassword
```

3.3.2 uc4config.xml

Configure connections in uc4config.xml.

See also: Automation Engine Administration Guide.

3.3.3 Logback Configuration

Use the following configuration files:


- **logback.xml** at <Tomcat installation path>/webapps/oauth-server/WEB-INF/classes for main log configuration
- **logback-access.xml** at <Tomcat installation path>/webapps/oauth-server/WEB-INF/classes for access log configuration (request/response log)

 For bug reporting, edit logback.xml and set logger level to trace.

logback.xml Parameters


Name	Description	Xml Element	Default value
Current log location	Name of current on-going log file	/configuration/.../file	<Tomcat installation path>/logs/oauth-server.log
Archived log location	Archived log location and file name pattern	/configuration/.../fileNamePattern	<Tomcat installation path>/logs/oauth-server*.log
Max History	number of archived logs will be kept	/configuration/.../maxHistory	30
Loggers	Log level for special package	/configuration/logger	level="info"
Root level	Default log level of all loggers	/configuration/root	level="warn"
Appenders	Log appenders	/configuration/root/appender-ref	ref="CONSOLE" ref="FILE"

3.3.4 OAuth Password Exit with AE

 For installation and configuration basics see Automation Engine documentation - Application Integration Guide - Program Exits - Password Exit.

Requirement

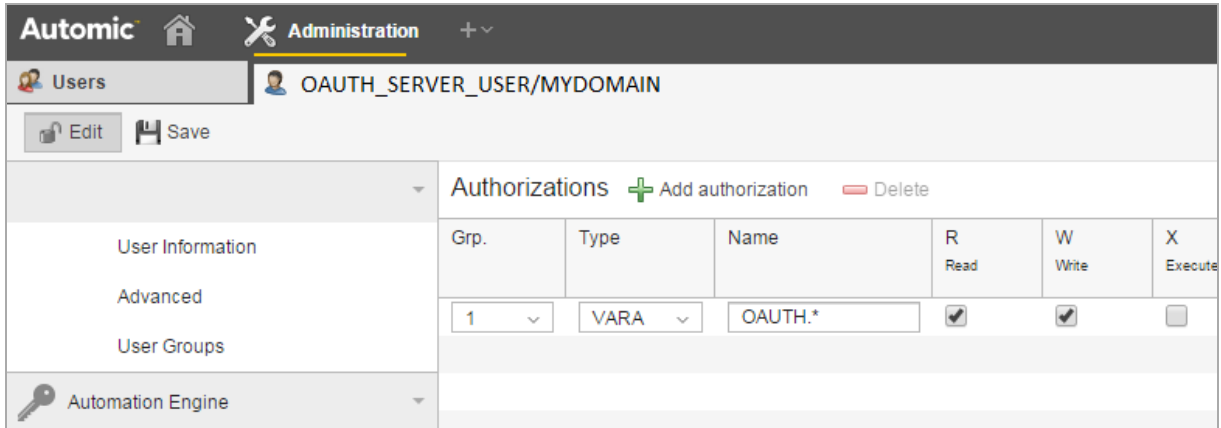
Password Exits installed.

 Make sure, that the parameters PASSWORD_EXIT and PASSWORD_EXIT_PARAM in UC_SYSTEM_SETTINGS are configured.

See also: [Installation of Password Exit with AE](#)

Create Technical AE User

You need an internal technical user together with OAuth server installation. You must configure its name and password in the configuration file. This user is used to manage the tokens as well as to retrieve the client information. It therefore requires read and write access rights to all objects starting with the OAuth prefix OAUTH.*.



Access rights for technical user (example).

⚠ Note that you must create the technical user on each OAuth enabled AE client using the same name and password as configured in OAuth server configuration.

Load AE Variables and Clean-up Workflow from XML to AE


Load the variables and the clean-up workflow definition from oauth.xml to each AE client where OAuth will be used. You can find the steps in the file readme.txt in the OAuth package. See [Schedule Clean-up Process](#).

AE Variable for OAuth Clients

Create a static AE variable object for each registered OAuth client during the client registration. It stores both, the client's basic information and its endpoints.

The XML with an empty/dummy data (OAUTH.SAMPLE_CLIENT.CLIENT_INFORMATION) is provided as part of the OAuth Server package. You must install this in the proper AE client.

AE Object	Static Variable (VARA)
Composite Name	Object: OAUTH.[CLIENT_ID].CLIENT_INFORMATION Title: [CLIENT_NAME]

Records	Key	Value 1	Example
	client_id	Unique ID of an OAuth client (capital letters)  This field must contain the same value as specified in [CLIENT_ID] in the object name.	SERVICE_NOW
	client_secret	AES encrypted password of the client *) see note below	AES_12345 will be encrypted as x6chJ1RoEtHNg6Yt4KZAuQ==
	grant_types	List of possible [grant_type], separated by semi-colons (or comma) **) see note below	password;refresh_token;authorization_code
	name	Human readable name of the client	Service Now
	description	Additional information about the client	ServiceNow - service generator extension
	application_url	Main URL of the clients application	https://myhost.servicenow.com/
	authorization_code_timeout	Timeout of authorization codes of this client in seconds	180
	access_token_timeout	Timeout of access tokens of this client in seconds	30

*) Note: To encrypt passwords, you may use third-party tools like the openssl command line call `openssl enc`.

**) Note: The values for `grant_types` must be set to one of the following:

- `authorization_code`: The client received an authorization code during the process Obtain Authorization with Authorization Code and wants to exchange it to an `access_token`.
- `password`: The client has the resource owners credentials and wants to Obtain Authorization with Resource Owner Credentials.
- `client_credentials`: The client wants Obtain Authorization with Client Credentials.
- `refresh_token`: The client wants to Renew access tokens

AE Variable for OAuth Access Tokens

Create a static variable object during the OAuth server installation for storing all generated access tokens.


AE Object	Static Variable (VARA)
Composite Name	Object: OAUTH.ACCESS_TOKENS Title: OAuth Access Tokens
Records	(empty)

AE Variable for OAuth Refresh Tokens

Create a static variable object during the OAuth server installation for storing all generated refresh tokens.

AE Object	Static Variable (VARA)
Composite Name	Object: OAUTH.REFRESH_TOKENS Title: OAuth Refresh Tokens
Records	(empty)

Each generated refresh token is stored in one record. The settings below are applied for each record:

Key	The key is an SHA-256 hash that's calculated over the issued refresh token. Example: AF340C9954BA6A1CD93B648643F3CCB5986AE3657DA9F924145E517A6DAE11F7T  The issued refresh token is not stored in the system. Verification is based on hash code.
Value 1	Fully qualified ID of the OAuth client the token was issued for. E.g. AE10LLV/99/service_now
Value 2	Fully qualified AE user name the token belongs to in the format [SYSTEMNAME]/[CLIENT]/[USERNAME]/[DEPARTMENT], e.g. AE10LLV/99/AE_USER_NAME/SBB01
Value 3	The creation time stamp of the access token in ISO-8601 format, e.g. 2014-01-20T14:00:00Z
Value 4	-
Value 5	-

AE Variable for OAuth AuthorizationTokens

Create a static variable object during the OAuth server installation for storing all generated authorization tokens.

AE Object	Static Variable (VARA)
Composite Name	Object: OAUTH.AUTHORIZATION_CODES Title: OAuth Authorization Codes
Records	(empty)


Each generated authorization token is stored in one record. The settings below are applied for each record:

Key	The code is an random string which contains 16 characters, uppercase Latin letters or number Example: WLCEO4AZHLHKO0WC
Value 1	Fully qualified ID of the OAuth client the token was issued for Example: AE10LLV/99/service_now
Value 2	Fully qualified AE user name the token belongs to in the format [SYSTEMNAME]/[CLIENT]/[USERNAME]/[DEPARTMENT] Example: AE10LLV/99/AE_USER_NAME/SBB01
Value 3	-
Value 4	-
Value 5	The expired time of the authorization code in ISO-8601 format Example: 2014-01-20T14:00:00Z

Schedule Clean-up Process

You may schedule the OAUTH.CLEANUP_TOKENS workflow for a recurring execution, recommended once per day.

You can use the workflow OAUTH.CLEANUP_TOKENS (title 'Process to cleanup expired tokens and authorization codes') to cleanup expired access tokens and authorization codes in a background process.

 This workflow XML is shipped with the OAuth package. You must install it in the proper AE client.

3.4 Installation of SAPI




Deploy Service API to a Tomcat server.

Copy `sapi.war` to your Tomcat container.

3.5 Configuration of SAPI

Configuration of Service API is done via `sapiConfig.xml`.

Parameters

Section	Parameter	Type	Description
Environment	mode	String	Has to be one of <ul style="list-style-type: none"> testing development staging production
	absoluteUrl	Boolean	Flag whether links are returned as relative or as absolute links: <ul style="list-style-type: none"> True: absolute links False: relative links
	baseUrl	String	REST API root URL  Only used if parameter absoluteUrl is set to true.
AutomationEngine	saraFolderPath	String	Name of REST API root folder Default value: /SERVICES
OAuthServer	validationUrl	String	URL of the OAuth validation endpoint
	username	String	User name for the basic authentication of the OAuth validation endpoint  This must be the same user name as specified in OAuth configuration file configuration.properties for parameter ValdidationEndpoint.Username.
	password	String	Password for the basic authentication of the OAuth validation endpoint  This must be the same password as specified in OAuth configuration file configuration.properties for parameter ValdidationEndpoint.Password.

Example

```
<?xml version="1.0" encoding="UTF-8"?>
<Configuration>

  <AutomationEngine saraFolderPath="/SERVICES" />

  <OAuthServer
    validationUrl="http://url_to_oauth_server/oauth-server/internal/oauth2/validate"
    username="InternalUser"
    password="MySecretPassword" />

  <Environment
    mode="development"
    absoluteUrl="false"
```

```
baseUrl="http://url_to_sapi_root" />  
</Configuration>
```

3.6 Installation of SNSC

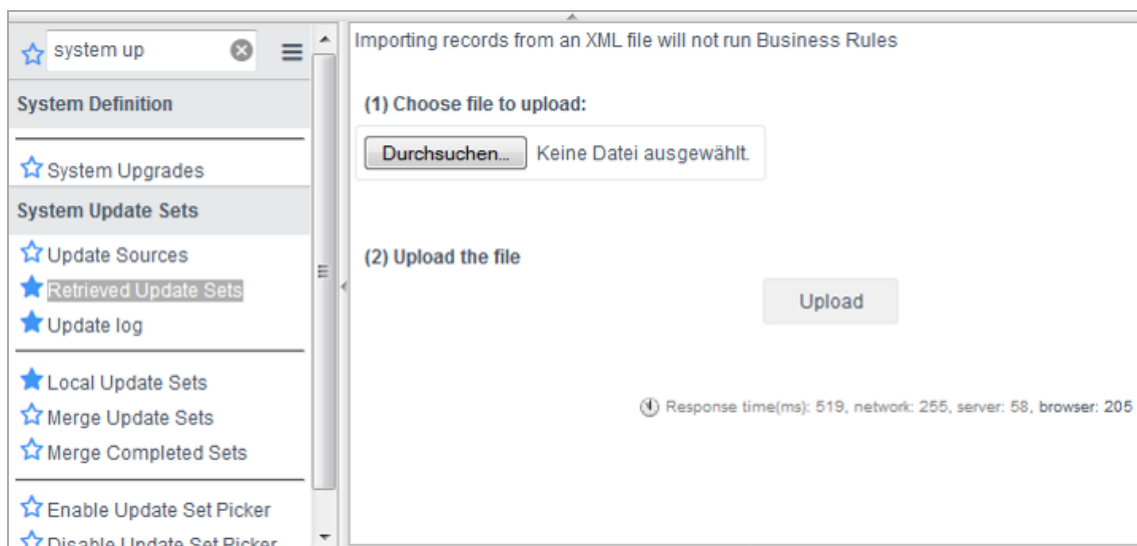
You must install ServiceNow Service Connector at your ServiceNow instance.

Requirements for installing SNSC with ServiceNow

- You need ServiceNow administrator rights (admin and security_admin)
- REST Message must be supported by the ServiceNow instance

Steps

1. Login to the target ServiceNow instance with a user who owns the roles *admin* and *security_admin*
2. Click **Retrieved Update Sets**
3. Click **Import Update Set from XML**, select file **Automic_SNSC.xml** from the file system and click **Upload**




4. Click **Commit Update Set**
5. Check via **System Update Sets - Local Update Sets**

3.7 Configuration of SNSC

You can enhance ServiceNow with the AutomicServiceNow Service Connector to enable the execution and monitoring of Automation Engine services directly from the ServiceNow service catalog.

3.7.1 Configuration of ServiceNow System Properties

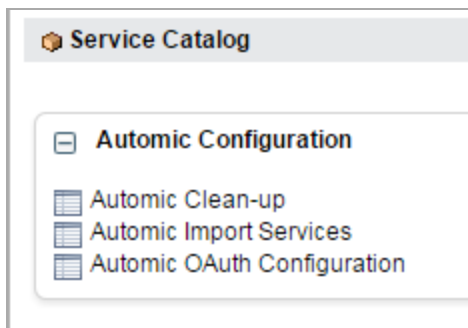
SNSC uses ServiceNow System Properties to store SAPI and OAuth configuration properties.

 You may use an intermediate mid server when you cannot connect from your ServiceNow instance to SAP or OAuth servers. See also: wiki.servicenow.com/index.php?title=MID_Server.

To configure ServiceNow for using OAuth and SAPI start the *Automatic OAuth Configuration* wizard.

Steps:

1. Login to the target ServiceNow instance with a user who owns the roles *admin* and *security_admin*
2. In ServiceNow, open the **Automatic Configuration** service catalog



3. Open **Automatic OAuth Configuration**

OAuth Client

←
Automatic OAuth Configuration
Edit Panel

OAuth Client
Prepare Service Now OAuth Client for SARA

Client ID

Client Secret

SAPI Endpoint

Token Endpoint

Authorization Endpoint

Redirection Endpoint

Store OAuth Client Settings


⌚ Response time(ms): 2289, network: 218, server: 328, browser: 1742

Automatic OAuth Configuration wizard: Input fields for AE client, SAPI and OAuth configuration properties.

Configuration Parameter	Description
Client ID	Identity of OAuth client (AE system name / client number / user name) ℹ Typically the ID of the ServiceNow instance registered with OAuth server, eg.: SERVICE_NOW
Client Secret	Secret phrase of OAuth client user Example: AES_12345, the value will be encrypted in ServiceNow
SAPI Endpoint	Root endpoint URL of SAPI, the URL from which SNSC will start discovering services ⚠ Protocol indication (http/https) is needed.
Token Endpoint	Endpoint for token requesting/refreshing URL ⚠ Protocol indication (http/https) is needed.

Configuration Parameter	Description
Authorization Endpoint	Authorization endpoint URL ⚠ Protocol indication (http/https) is needed.
Redirection Endpoint	Redirection endpoint URL ⚠ Protocol indication (http/https) is required.

4. Click **Store OAuth Client Settings**

 New values are effective immediately.

 OAuth Client Settings are activated

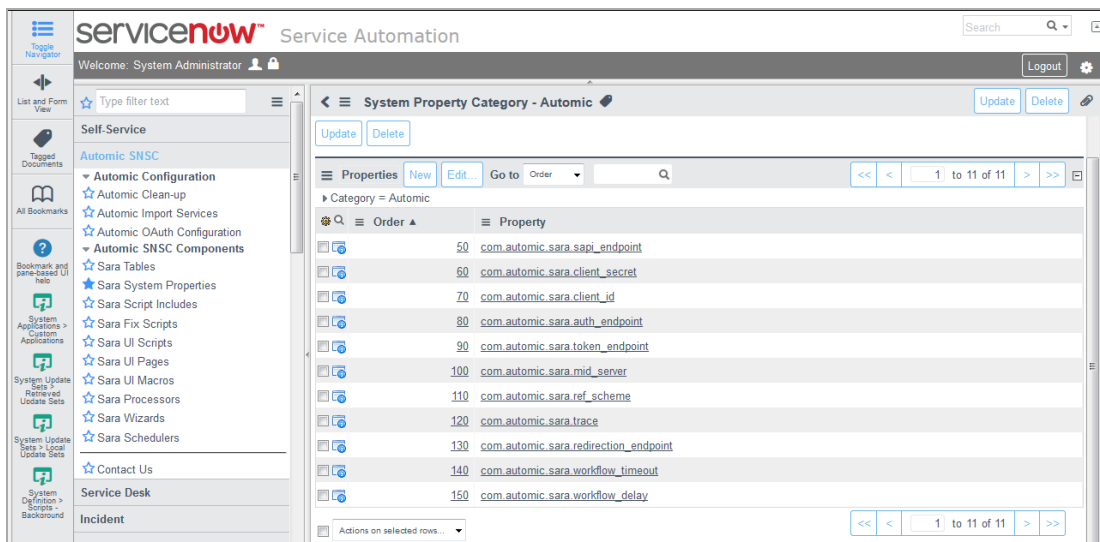
3.8 Optimize Your SNSC Installation

You can optimize your ServiceNow Service Connector installation by tweaking SNSC System Properties in ServiceNow.

How to change SNSC System Properties in ServiceNow

Steps:

1. Log-in as Administrator
2. In the **Automatic SNSC** section, click on **Sara System Properties**



ID	Name	Property
50	com.automic.sara.sapi_endpoint	
60	com.automic.sara.client_secret	
70	com.automic.sara.client_id	
80	com.automic.sara.auth_endpoint	
90	com.automic.sara.token_endpoint	
100	com.automic.sara.mid_server	
110	com.automic.sara.ref_schema	
120	com.automic.sara.trace	
130	com.automic.sara.redirection_endpoint	
140	com.automic.sara.workflow_timeout	
150	com.automic.sara.workflow_delay	


The list of Sara system properties appears (example).


3. Click the system property link, edit the values and confirm

System Properties

- **com.automic.sara.sapi_endpoint**

Root endpoint URL of SAPI, the URL from which SNSC will start discovering services


 Protocol indication (http/https) is needed.

 Do not edit this value directly. To change values, use Automic OAuth configuration in ServiceNow (see [Configuration of SNSC](#)).

- **com.automic.sara.client_secret**


Secret phrase of OAuth client user


Example: AES_12345, the value will be encrypted in ServiceNow

 Do not edit this value directly. To change values, use Automic OAuth configuration in ServiceNow (see [Configuration of SNSC](#)).

- **com.automic.sara.client_id**


Identity of OAuth client (AE system name / client number / user name)


 Typically the ID of the ServiceNow instance registered with OAuth server, eg.: SERVICE_NOW

 Do not edit this value directly. To change values, use Automic OAuth configuration in ServiceNow (see [Configuration of SNSC](#)).

- **com.automic.sara.auth_endpoint**


Authorization endpoint URL


 Protocol indication (http/https) is needed.

 Do not edit this value directly. To change values, use Automic OAuth configuration in ServiceNow (see [Configuration of SNSC](#)).

- **com.automic.sara.token_endpoint**

Endpoint for token requesting/refreshing URL

 Protocol indication (http/https) is needed.

 Do not edit this value directly. To change values, use Automic OAuth configuration in ServiceNow (see [Configuration of SNSC](#)).

- **com.automic.sara.mid_server**

Name of established MID server that will be used by SNSC to connect to SAPI and OAuth server in certain ServiceNow set-ups.


 Leave this property empty to connect directly with SAPI and OAuth server.


- **com.automic.sara.ref_scheme**

Deprecated parameter

- **com.automic.sara.redirection_endpoint**

Redirection endpoint URL

 Protocol indication (http/https) is required.

 Do not edit this value directly. To change values, use Automatic OAuth configuration in ServiceNow (see [Configuration of SNSC](#)).

- **com.automic.sara.workflow_timeout** in seconds

Specifies the maximum waiting time for the workflow execution to finish. If the value equals 0, the duration time will be forever. If the execution of the workflow exceeds this maximum waiting time, the execution will end NOT_OK.

During this waiting time, the status of workflow execution is checked in intervals specified in parameter `com.automic.sara.workflow_delay`.

Default value: 0

- **com.automic.sara.workflow_delay** in seconds

Specifies the time interval when checking a workflow's execution status (service's status). If the value equals 0, the time interval will be 60 seconds.

Default value: 0

4 Uninstall

The purpose is to remove ServiceNow-Service API integration.

To remove the integration, you must remove the ServiceNow Service Connector using the `uninstall.js` script.

To uninstall, perform the following steps:

1. Login to the target ServiceNow instance with an user who owns the roles *admin* and *security_admin*


2. In the Application Navigator, navigate to **System Application > Custom Applications**

3. Click **Automic SNSC**

The detail page of the Automic SNSC Application appears.


4. Click the **Delete** button, confirm with **OK** and wait until deleting application is done

Progress page of Deleting Application appears.

 **Note for a clean removal of SNSC:** To delete all files contained in the application, check the option to delete all files. To delete the application and all of its files, type the word *delete* in the text box, then click OK.

5. Check in System Application > Custom Applications

 The Automic SNSC Application is not on the list anymore.

-  Done! The ServiceNow-SAPI integration is removed from your ServiceNow instance
-


5 Service Management

Service Management covers administrative activities to import, update and clean-up the ServiceNow service catalogs containing Automatic Services.

Use Cases

The administrative use cases are the following:

- [Importing Services to ServiceNow](#) manually
- [Scheduled Importing of Services to ServiceNow](#)
- [Bulk Remove Automatic Services in ServiceNow \(Clean-up\)](#)
- User management is handled via Automation Engine

 See also: [Automation Engine Administration Guide](#)

5.1 Importing Services to ServiceNow

You need to import Automatic Services to ServiceNow ServiceNow Service Catalog in order to use them from ServiceNow.

ServiceNow Service Connector provides a wizard for importing services.

When Automatic Services (AE workflows) change, you must update the ServiceNow Service Catalog. To remove Automatic Services based on now deleted workflows [Bulk Remove Automatic Services in ServiceNow \(Clean-up\)](#). To update changed services, import the services again.

You can keep your service catalog up-to-date either manually or on a scheduled basis (see also: [Scheduled Importing of Services to ServiceNow](#)).

5.1.1 Preperation in Automation Engine

To publish a workflow as an Automatic Service, you add a link in the \SERVICES folder pointing to the related Automation Engine workflow. You can create service catalogs by creating sub-folders to the \SERVICES folder.

Example:

- Root folder: \SERVICES
- Service catalog for deployment services: \SERVICES\DEPLOY

Workflow: All services are workflows stored in the \SERVICES folder structure either as workflow objects or links to workflow objects. All other objects are ignored by the SAPI and you can use them only internally within Automation Engine.

PromptSet: The PromptSets assigned to a workflow are interpreted by SAPI as input forms. Their physical location as well as their name does not matter.

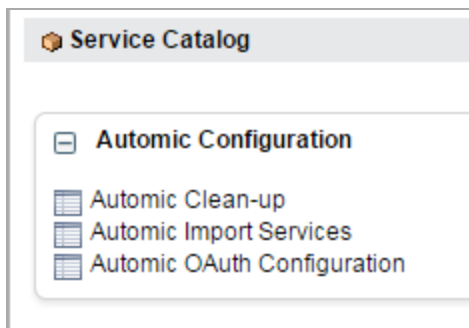
Variable: Variable objects are used to define the look-up resources for SAPI. The physical location of the variable as well as its name does not matter.

5.1.2 Steps for Importing Services

To configure ServiceNow Service Catalogs serving as target service catalogs for importing services, start the *Automatic Import Services* wizard. When you click **Import Services**, new values are effective immediately.

Steps:

1. In ServiceNow, open the **Automatic Configuration** service catalog



2. Click **Automatic Import Services** service
3. Select the **Target Category** to import catalogs and services to

Automatic target categories are:

- Automatic Services
- Automatic Configuration

 All imported catalogs will become sub-categories of this category.

4. If session is timed out, you need to log-in via an OAuth login pop-up

✓ The successful service execution is confirmed with a message

5.2 Scheduled Importing of Services to ServiceNow

When Services are changed in Automation Engine, you need to re-import Automatic Services to ServiceNow again manually (see also: [Importing Services to ServiceNow](#)) or you set up automatic synchronization. This topic shows how to set up Auto-sync feature for importing services to ServiceNow.

You can use a fix script or you can perform the configuration steps manually.

5.2.1 Fix Script

You can create or remove the scheduled synchronization of services to ServiceNow using pre-defined fix scripts.

The screenshot shows the ServiceNow Service Automation interface. The top navigation bar includes the ServiceNow logo, "Service Automation", a search bar, and a "Logout" button. Below the navigation bar, there is a "Welcome: System Administrator" message and a "Logout" button. The main content area is titled "Fix Scripts" and shows a list of scripts for "Sara". The list has columns for Name, Active, Before, Description, and Updated. Two scripts are visible: "Sara - Create Scheduler for auto-sync" and "Sara - Remove Scheduler for auto-sync".

Name	Active	Before	Description	Updated
Sara - Create Scheduler for auto-sync	true	false	Create Scheduler for auto-sync service a...	2015-04-16 02:42:39
Sara - Remove Scheduler for auto-sync	true	false	Remove Scheduler for auto-sync service a...	2015-04-16 02:42:39

5.2.2 Manual Configuration

For running synchronization every defined hour, ServiceNow provides the Scheduler.

Steps:

1. Access **Scheduled Jobs** in ServiceNow System Scheduler (Admin)

The screenshot shows the ServiceNow navigation menu. The "Admin" option is highlighted with a yellow box. Below the "Admin" menu, the "System Scheduler" section is expanded, and the "Scheduled Jobs" option is highlighted with a yellow box.

2. Click **New** and choose **Automatically run a script of your choosing**
3. Fill in the required information

Scheduled Script Execution

Name: SnsAutoSyncServices

Active:

Run: Periodically

* Repeat Interval Days: 0 Hours: 02 : 00 : 00

Starting: 16.10.2014 12:41:46

Conditional:

Run this script

```
new SaraSync().syncServices();
```

Created by: snsuser

Name: Name of scheduler

Active: Active or deactivate this scheduler

Run: Type of scheduler (Must be Periodically)

Repeat Interval: The time interval at which the scheduler will run

Run this script: The script will be called when Scheduler run

SCRIPT: `new SaraSync().syncServices();`

4. Click **Save & Exit**

See also: ServiceNow documentation.

5.3 Bulk Remove Automatic Services in ServiceNow (Clean-up)

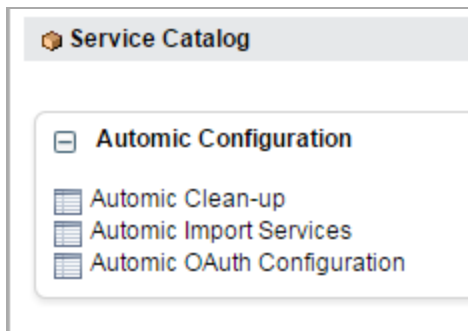
This administrative service removes all services that were created via SNSC.

The **Automatic Clean-up** service will delete all sub-categories and service catalog items generated by SNSC.

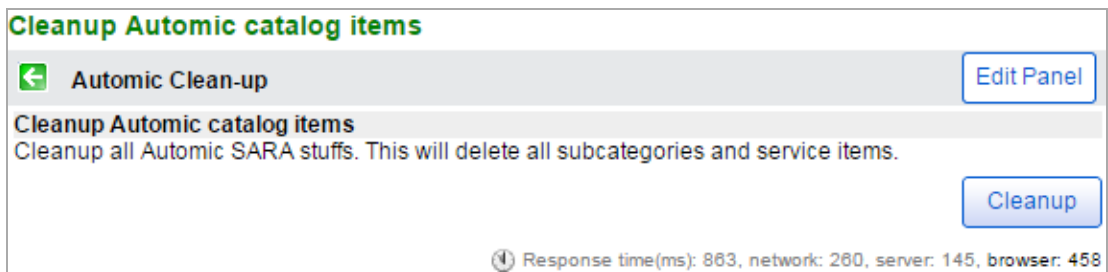
Warning: During next synchronization, the services will be created again, if the corresponding AE workflows are still linked to the folder or a sub-folder of \SERVICES.

Steps:

1. In ServiceNow, open the **Automic Configuration** service catalog



2. Open the **Automic Clean-up** service



3. Click **Cleanup**


- ✓ The successful service execution is confirmed with a message

6 Usage: Trigger Service Execution via ServiceNow

6.1 Ordering Automatic Services via ServiceNow Service Catalog


Ordering Automatic services works the same way as ordering any other service from a ServiceNow Service Catalog.

Steps:

1. Open the ServiceNow **Service Catalog**
Among other catalogs, you will find an **Automatic** service catalog.
 2. Select the service category item within the service category for Automatic services
 3. Select the service and fill in the form (if required)
 4. Click **Order Now**
 Alternatively you can add the service to the cart (click **Add to Cart**) and order after collecting additional services.
 5. When you consume an Automatic service for the first time in a session, authorization based on AE user name (system name / client number / user name / department) and password is required. Click **OK** to confirm or **Cancel** to abort.

The **Order Status** page is displayed

ServiceNow automatically updates the stage flow.

ServiceNow polls the SAPI server regularly and the stage of the service request is updated accordingly to the execution status of the Automation Engine workflow execution.
-  After performing the above steps, the order of an Automatic Service via ServiceNow was successful

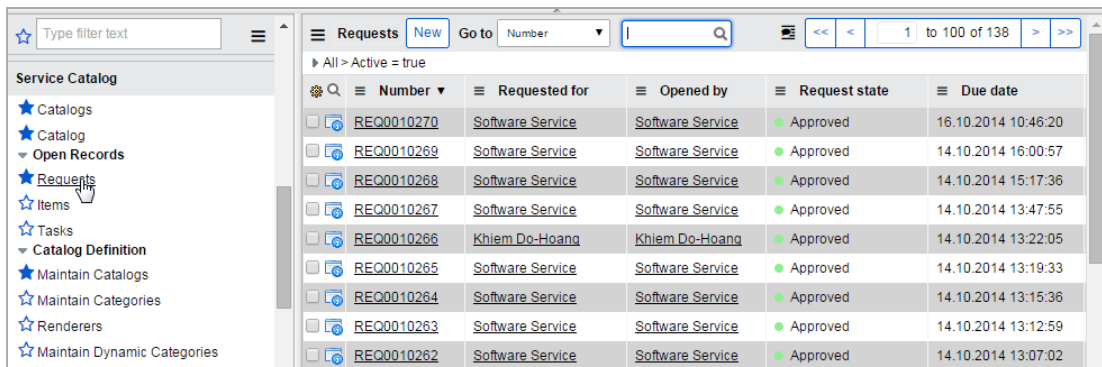
See also: ServiceNow documentation.

6.2 Check the State of Your Order in ServiceNow

You can check the states of your pending service requests from ServiceNow.

Steps:

1. Go to **Service Catalog > Open Records > Requests**



Number	Requested for	Opened by	Request state	Due date
REQ0010270	Software Service	Software Service	Approved	16.10.2014 10:46:20
REQ0010269	Software Service	Software Service	Approved	14.10.2014 16:00:57
REQ0010268	Software Service	Software Service	Approved	14.10.2014 15:17:36
REQ0010267	Software Service	Software Service	Approved	14.10.2014 13:47:55
REQ0010266	Khiem Do-Hoang	Khiem Do-Hoang	Approved	14.10.2014 13:22:05
REQ0010265	Software Service	Software Service	Approved	14.10.2014 13:19:33
REQ0010264	Software Service	Software Service	Approved	14.10.2014 13:15:36
REQ0010263	Software Service	Software Service	Approved	14.10.2014 13:12:59
REQ0010262	Software Service	Software Service	Approved	14.10.2014 13:07:02

2. Click on your request number

- ✓ In section **Requested Item** the current state (**Stage**) of your order is displayed.

7 Release Notes

Release Notes

The following is the change history. Information on bug-fixes and known errors is available by contacting Automatic [Technical Support](#).

Release Notes 1.0.1

Enhancements

You can configure SNSC to wait for a specified time so that ServiceNow can report the status of the workflow execution correctly. When the execution takes longer than the waiting time allows, the execution will end with the status "Ended Failed (Completed)". See also: [Optimize Your SNSC Installation](#).

Bug Fixes

Fixed:

- When the configuration of the Token Endpoint is wrong, the ServiceNow User Interface freezes after login, and the log is not meaningful
- When the configuration of the Authorization Endpoint is wrong, the ServiceNow User Interface displays an empty pup-up after login, and the log does not contain this event
- ServiceNow incorrectly reports that workflows ended with the status "Ended Failed (Completed)"
- Cannot consume service with prompt-set values containing commas (,)

Release Notes 1.0

Key Features

Automatic Service Orchestration Offering includes components to enable publishing of Automation Engine workflows as Automatic Services to third-party applications like ServiceNow.

With our Service Catalog Integration, ServiceNow users can order Automatic Services and track their request status via ServiceNow.

Automatic Components:

- Automation Engine Password Exit
 - OAuth Authentication Server
 - Service API
 - ServiceNow Service Connector
-

About Automic Software, Community and Support

This topic introduces the Automic Software company and how to leverage the full potential of our solutions to you.

You can also obtain Automic documentation online from docs.automic.com.

Automic Company

Automic Software is dedicated to business automation.

Automic is the world's most comprehensive platform in automating businesses. Founded 1985, Automic pioneered the largest, independent, globally deployed automation platform which powers the enterprise, application and infrastructure. Now, as the consumerization of IT accelerates, Automic is re-imagining how organizations integrate next generation service models such as Cloud, DevOps and Big Data. Today, our software automates tens of millions of operations a day for over 2,000 customers worldwide. We challenge conventional thinking, enabling our customers to be faster, smarter, in control. Automic – the standard in business automation.

Find out more at our website www.automic.com.

Global Headquarter: Automic Software GmbH, Am Europlatz 5, 1120 Vienna, Austria

Automic Community

Want to connect with other Automic users to compare notes or learn how others are tackling problems that you're running into?

Talk with other users from around the world to learn how they optimize their business automation with Automic. Interact with the Automic Team to get ONE Automation Platform tips and tricks straight from the source.

Join the Automic Community (community.automic.com) and become an Automic Insider and be among the first to get news about new products and events, even before they are generally announced!

Download Center

Make sure that you are using our products to their fullest potential.

The Automic Download Center (downloads.automic.com) is the place where you find product downloads, documentation and information on new releases and hot-fixes about your Automic solution. It's all in one place: from service hotfixes, release notes, and all guides. You will also find patch descriptions, known bugs or workarounds.

Technical Support

We have a support team you can trust.

Our team of professionals is ready to support you, anytime and anywhere. Three support centers located in Europe, the United States, and Asia Pacific build the core of the Automic support organization.

Our Technical Support Team (support@automic.com) makes sure that your closest Automic experts are never more than a few hours flight away, no matter on which continent your subsidiaries and data centers are located. Automic software is designed to provide global connectivity for international companies. You are employing Automic software on a global scale and therefore you can expect global service.

Training Services

Do you want to learn even more about Automic solutions?

We offer a range of training options on how to get the most out of your Automic solution. Depending on your location, either open training sessions at an Automic Software Service Center, or personalized training sessions at your company's site suits best. Visit the training site and get detailed information about currently offered courses.

See also: <http://automic.com/about/training/>

Glossary

This topic provides brief definitions of terms used in Automic documentation.

A

action

Product(s): AE, ASO. Actions are predefined building blocks for recurring activities. They are commonly used for managing third party systems or in deployment scenarios.

AES

Abbreviation for Advanced Encryption Standard, a specification for the encryption of electronic data.

Automation Engine

Product(s): AE, SNSC, ASO, RA_JMS, AutomicAll. The Automation Engine is an application for managing when and how objects run. Processes and various other object types can be selected and then specified to run at or within certain times. This allows you to manage processing in Automation Engine systems in an automated way and from a remote and central location. Furthermore, the activities of these objects are tracked and recorded for logging and analysis purposes. [Formerly called "(UC4) Automation Platform" and "(UC4) Operations Manager."]

Automic services

Product(s): ECC_ProcessAutomationPlugin, SNSC, ASO. Automic services consist of Automation Engine workflows provided as a service including the required prompt set.

C

client

Product(s): AE, ARA, ECC_ProcessAutomationPlugin, ECC, SNSC. A closed environment within an Automation Engine system where you can create and run objects. A client name consists of a 4-digit number that must be indicated when a user logs on to the Automation Engine system. Users and their rights are also defined in clients. A particular Automation Engine object type.

communication process

Product(s): AE, ECC_ProcessAutomationPlugin, ECC, SAPI, OAuth, PROXY. A communication process is part of the component Automation Engine. It is responsible for connecting the components.

D

DB Service Agent

null

department

Product(s): AE, SNSC. Department name to which the Automation Engine user belongs.

Download Center

Product(s): AE, SNSC. The Download Center (<http://downloads.automic.com/>) is the place where you find everything you need to know about your Automic solution to make sure you are using our products to their fullest potential.

E

ECC

Product(s): AE, ECC_ProcessAutomationPlugin, ASO. Abbreviation for the Enterprise Control Center

endpoint

Product(s): SAPI, OAuth. An endpoint is used for providing web services. You can access the exposed services via URI.

Enterprise Control Center

Product(s): AE, ECC, ASO, RA_JMS. Automic's web application that provides a single, browser-based interface for the ONE Automation platform.

I

IT Service Management

ITSM is a process-based approach to establish and optimize the support of business processes by well aligned IT services.

ITSM

Abbreviation for IT Service Management.

J

JMS

Product(s): RA_VMWare, ASO. Abbreviation for Java Message Service for managing messages (create, send, receive, and read) between two or more clients.

JMS Message

Product(s): RA_VMWare, ASO. An object that contains the data being transferred between JMS clients - there are different message types: e.g. MapMessage, StreamMessage, TextMessage (Text, XML, JSON, YAML), BytesMessage.

JMS Provider

Product(s): RA_VMWare, ASO. Manages Queues, Topics and Sessions; there are several commercial and open-source JMS Provider implementations (e.g. Apache ActiveMQ, TIBCO EMS, IBM WebSphere MQ, Oracle WebLogic Server).

O

OAuth

OAuth is an authorization service for web-, desktop- or mobile applications. Main feature is that OAuth allows clients to access server resources on behalf of a resource owner without sharing their credentials.

OAuth Authentication Server

Authentication Server is the main component for managing tokens for authentication.

ONE Automation

The name of an Automic platform (product family). [Formerly called "ONE Automation Platform."]

P***Package Manager***

Product(s): ASO, APM, SIEBEL. The Automic Package Manager is a command line tool to share, retrieve and update solution packages on top of the Automation Engine.

password

Product(s): AE, SNSC. A secret combination of characters for a Automation Engine user.

password exit

The AE Password Exit function supports validation of passwords for e.g., OAuth Authorization Server.

PromptSet

Product(s): ECC_ProcessAutomationPlugin, SAPI. A user-defined input mask for executable objects. An Automation Engine object type.

R***release notes***

Release Notes contain information about highlights, new functions, improvements, and corrections for various versions and releases of the Automic product family.

REST

Product(s): ECC_ProcessAutomationPlugin, SNSC. Representational State Transfer, a software architecture for distributed systems e.g., web services.

RichClient

Product(s): AE, ASO. Deprecated Term. Replaced by: UserInterface

S***Service API***

Automic Service API is a Rest API to access AE workflows and publishes them as Automic Services.

Service Catalog

Product(s): ECC_ProcessAutomationPlugin, SNSC, ASO. A service catalog is a list of services from which a user or an application can consume (obtain and utilize) one or more services. In the ECC, the term also refers to a perspective presenting the workflows that the user is allowed to execute.

service consumer

Product(s): ECC_ProcessAutomationPlugin, SNSC. Uses a service provided via SAPI.

Service Management

Short for IT Service Management.

ServiceNow Service Connector

Product(s): ARA, SNSC. ServiceNow Service Connector connects ServiceNow with the Automatic Service API.

SOAP

Abbreviation for Simple Object Access Protocol.

status

Product(s): ARA, SNSC. It provides information about how a task has ended or if it is still active.

superordinate task

There are various ways of activating objects. The originator of the activation is referred to as the superordinate task (parent).

system name

Product(s): AE, SNSC. Name of the Automation Engine instance to which a user is connected.

T

templates

Product(s): AE, ARA, ECC_ProcessAutomationPlugin, ASO. Pre-defined 'workflows' for specific components/tasks, e.g. Tomcat, SubVersion.

token

Product(s): AE, SNSC. A token is used for authentication within a session between a client and a server. A (soft) token is a unique identifier which is generated and sent from a central server to a client software. The client uses the token to authenticate each request.

Tomcat

Apache Tomcat is an open source implementation of the Java Servlet and JavaServer Pages technologies.

U

UC4 Automation Platform

Deprecated Term. Replaced by: ONE Automation

user name

Product(s): AE, SNSC. Name of the Automation Engine user.

UserInterface

Product(s): AE, ASO, PROXY. This is the Automation Engine's graphical user interface. [Formerly called the "Rich Client", "RichGUI" and "Dialog Client."]

V

variable

Product(s): AE, ECC_ProcessAutomationPlugin, SAPI. It stores or retrieves values dynamically at runtime. An individual Automation Engine object type.

W*WebLogic*

Product(s): ASO, WebLogic. WebLogic is a e-commerce platform provided by Oracle.

work process

Product(s): AE, OAuth, PROXY. A part of the component Automation Engine. It is responsible for an Automation Engine system's processes (see also 'Primary work process').

workflow

Product(s): AE, ARA, ECC_ProcessAutomationPlugin, ECC, ASO, PROXY. An object of the Automation Engine that can include several executable objects and which runs them in a specified order. [Formerly called "ProcessFlow" and "JobPlan."]

workflow execution

Product(s): AE, SNSC, RA_JMS. An execution is an instance of a workflow. It can be monitored and controlled using the workflow monitor.
