

# Active Directory

## Overview

This document describes how you can import hosts and users from Active Directory.

**There are some steps you'll need to follow in order to be able to import hosts and users :**

- Enable the Active Directory source,
- Configure the Active Directory module,
- Configure the connection to Active Directory,
- Configure the import rules,
- Configure the mapping rules (optional).

## What is already available in the Shinken Installation

To make your life a bit easier, a few configuration tasks have already been done for you:

1. Installation of the Active Directory import module,
2. Availability of an example of pre configured active directory source ready to be customized.

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## Setup the pre-installed source

Installation and update script of Shinken will set up a default Active Directory source already configured:

- You can see it in the source table of the UI Configuration home page.
- This source uses 2 kinds of configuration files
  - **Source definition files**
  - **Configuration files** to customize the data mining.
    - available in folder ( /etc/shinken-user/source-data/source-data-active-directory-sample/\_configuration ).



### Advice

The first time, we advise you to only update Configuration files.

Then, you will have to decide if you want to have 1 or more Active Directory sources ( if you have a big Active Directory, it might be interesting to have many sources pointing of specific entries for performance gain).

## Automatic Detection Modules

SOURCES >

Order	Name	Enabled	State
1	cfg-file-shinken	<input type="checkbox"/>	Disabled
2	cfg-file-nagios	<input type="checkbox"/>	Disabled
3	active-dir-example	<input type="checkbox"/>	Disabled
4	openldap-example	<input type="checkbox"/>	Disabled
5	sync-vmware	<input type="checkbox"/>	Disabled
6	discovery	<input type="checkbox"/>	Disabled
7	syncui		Ok

## Source definitions:

**Enable the activ-dir-import Source:**

In the **Automatic Detection Modules** panel, clic on the button to enable the module.

## Automatic Detection Modules

SOURCES >

Order	Name	Enabled	State
1	cfg-file-shinken	<input type="checkbox"/> Disabled	
2	cfg-file-nagios	<input type="checkbox"/> Disabled	
3	active-dir-example	<input type="checkbox"/> Disabled	
4	openldap-example	<input type="checkbox"/> Disabled	
5	sync-vmware	<input type="checkbox"/> Disabled	
6	discovery	<input type="checkbox"/> Disabled	
7	syncui		Ok

You can find the following parameters in the source file `/etc/shinken/sources/active-dir-hosts.cfg` :

Property	Example	Description
source_name	active-dir-example	Name of the source displayed in the <b>UI configuration</b> home page. <b>Must be unique.</b>
order	2	Order in the merge algorithm of this source data. Look in the <a href="#">Synchronizer</a> page for more information about merging order.
import_interval	5	<p>The source will be run automatically every <i>import_interval</i> minutes.</p> <ul style="list-style-type: none"> <li>if set to 0, the source will never be run automatically.</li> </ul> <div style="border: 1px solid #4CAF50; padding: 10px; margin-top: 10px; background-color: #e8f5e9;"> <p> <b>Advice</b></p> <p>For your initial test, we advise you to set it to 0. Clicking on the <b>Force import</b> button in the home page will allow you to start the source whenever you want.</p> <div style="background-color: #d3d3d3; padding: 5px; margin: 5px 0; text-align: center;"> <span style="margin: 0 10px;"><b>Enabled</b></span> <span style="margin: 0 10px;"><b>State</b></span> <span style="margin: 0 10px;"><b>Next import</b></span> <span style="margin: 0 10px;"><b>Force import</b></span> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input checked="" type="checkbox"/> Enabled         </div> <div style="text-align: center;">Ok</div> <div style="text-align: center;">4m</div> <div style="text-align: center;"> </div> </div> </div>
modules	active-dir-example	Module definition used by Shinken to parse OpenLDAP data.
enabled	0	Activate or Disable the source. This property is also edited automatically when you use the <b>Enabled</b> button.

description	This source is about loading hosts from active directories
-------------	--

## Configure the Active Directory Module

Modify if necessary, the file `/etc/shinken/modules/activ-dir-import.cfg`

Property	Value	Description
module_name	active-dir-example	Module's name. <b>Must be unique.</b>
module_type	ldap-import	Type of module. Don't change it as it refers to the shinken component.
connection_configuration_file	<code>/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-connection.json</code>	Connection information.
mapping_configuration_file	<code>/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-mapping.json</code>	<b>Mapping rules</b> Mapping of attributes can be different between 2 Active Directory. You can specify in this file for example what will be the attribute's name of the user phone number
rules_configuration_file	<code>/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-rules.json</code>	<b>Rules configuration</b> You can choose what kind of host and user will be retrieved and define criteria to set automatically template attachment.

## Connection configuration

This file is used to make the connection to your Active Directory server.



Edit the file `/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-connection.json`

Property	Default	Description
url	<code>ldap://YOUR-DC-FQDN/</code>	URL of your Active Directory server.
ldap_protocol	3	Version of LDAP protocol (by default set to 3 if not set)
base	<code>dc=YOUR,dc=DOMAIN,dc=com</code>	Base OU for your objects discovery.
hosts_base	<code>OU=DataCenter Servers,dc=YOUR,dc=DOMAIN,dc=com</code>	Base OU for the hosts discovery.
hostgroups_base	<code>OU=computers,dc=shinkendom,dc=local</code>	Base OU for host groups discovery.
contacts_base	<code>dc=YOUR,dc=DOMAIN,dc=com</code>	Base OU for the contacts discovery.
username	<code>SHINKEN@YOURDOMAIN.com</code>	Username used to connect to the server.
password	PASSWORD	Password used to connect to the server.

Example

**/etc/shinken-user/source-data/source-data-active-directory-sample/\_configuration/active-directory-connection.json**


```
{
  "url": "ldap://vm-w2k8r2.shinken.local/",
  "base": "dc=shinken,dc=local",
  "hosts_base": "OU=serveurs,dc=shinken,dc=local",
  "hostgroups_base": "OU=serveurs,dc=shinken,dc=local",
  "contacts_base": "OU=utilisateurs,DC=shinken,DC=local",
  "username": "administrateur@shinken.local",
  "password": "P@ssword1"
}
```

 **Tip**

The account used to request LDAP only need read-only access. You should create a user account with read-only access dedicated to the Active Directory import module.

## Mapping rules configuration

This file allow you to do the mapping between Active Directory and Shinken properties.

 Unless you know what you're doing here, you should keep this file unmodified.

You can find some customization in the **HOW TO** section.

File **/etc/shinken-user/source-data/source-data-active-directory/\_configuration/active-directory-mapping.json**

## /etc/shinken-user/source-data/source-data-active-directory-sample/\_configuration/active-directory-mapping.json

```
# IMPORTANT: Do not edit this file.
# To have your own mapping, copy it under the /etc/shinken-users/source-data/YOU_SOURCE_FOLDER
/_configuration/ directory and edit your copy instead.
# Note: comments should be with a # starting the line, NOT after a value
{
# first hosts properties (computer object in Active Directory)
  "host.name": "name",
  "host.dNSHostName": "dNSHostName",
  "host.operatingSystem": "operatingSystem",
  "host.operatingSystemServicePack": "operatingSystemServicePack",
  "host.distinguishedName": "distinguishedName",
  "host.filter": "(objectClass=computer)",

# Now contact properties
  "contact.name": "name",
  "contact.categoryFilter": "Person",
  "contact.mail": "mail",
  "contact.member": "member",
  "contact.telephoneNumber": "telephoneNumber",
  "contact.mobile": "mobile",
# Co: for country
  "contact.co": "co",
# l: for city
  "contact.l": "l",
  "contact;company": "company",
  "contact.filter": "(&(objectCategory=person)(objectClass=user))",
# By default hostgroup are not requested. Setup a filter to enabled it
  "hostgroup.filter": ""
}
```

## Import rules configuration

This file is used to apply **host template**, **contact template** and tags to the hosts and contacts while the import.



Edit the file `/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-rules.json`

### Tip

A host template called **windows** is already available in Shinken that checks : Cpu, Disks, EventLogApplication, EventLogSystem, Memory, Network Interface, Reboot, Services, Swap.

As a good start, you can configure the property **hosts\_tag** in this way :


hosts_tag	windows
-----------	---------

The mandatories properties to modify are in green.

Property	Default	Description
hosts_tag	your-host-template	The host template "your-host-template" will be applied to any host discovered in Active Directory during the import.

contacts_tag	generic-contact	The contact template "generic-contact" will be applied to any contact discovered in Active Directory during the import
contacts_group_filter	CN=Domain Admins,CN=Users,DC=YOUR,dc=DOMAIN,dc=com   CN=OTHERGROUPS,OU=Groups,OU=Users Groups,DC=YOUR,dc=DOMAIN,dc=com	Organizational Unit or User group to import You can define many group by separating filter by
hosts_tag_citrix	OU=Terminal Servers,OU=DataCenter Servers,DC=YOUR,dc=DOMAIN,dc=com	host template citrix applied
hosts_tag_database	OU=Database Servers,OU=DataCenter Servers,DC=YOUR,dc=DOMAIN,dc=com	host template database applied
hosts_tag_exchange	OU=Email Collaboration Servers,OU=DataCenter Servers,DC=YOUR,dc=DOMAIN,dc=com	host template exchange applied
hosts_tag_fileprint	OU=Files Print Servers,OU=DataCenter Servers,DC=YOUR,dc=DOMAIN,dc=com	host template fileprint applied
hosts_match_operatingSystem_windows	windows	Host template windows will be applied for hosts matching "windows" in the property operatingSystem.
hosts_match_operatingSystem_windows2008	windows*. *2008(?!.*(?:r2))	Host template windows2008 applied for hosts matching "windows*. *2008(?!.*(?:r2))" in the property operatingSystem
hosts_match_operatingSystem_windows2008r2	windows*. *2008*. *r2	host template windows 2008r2
hosts_match_operatingSystem_windows2003	windows*. *2003	host template windows2003
hosts_match_operatingSystem_windows2012	windows*. *2012(?!.*(?:r2))	host template windows2012
hosts_match_operatingSystem_windows2012r2	windows*. *2012*. *r2	host template windows2012r2
hosts_match_operatingSystem_windows2000	windows*. *2000	host template windows 2000
hosts_match_operatingSystem_windowsxp	windows*. *xp	host template windows xp
hosts_match_operatingSystem_enterprise	Enterprise	host template Enterprise
hosts_match_operatingSystemServicePack_sp1	Service Pack 1	host template Service Pack 1
hosts_match_operatingSystemServicePack_sp2	Service Pack 2	host template Service Pack 2
hosts_match_operatingSystemServicePack_sp3	Service Pack 3	host template Service Pack 3
AddFirst_template_(domain-admins)_to_contact_matching_[memberOf]	CN=Domain Admins,CN=Users,DC=YOUR,dc=DOMAIN,dc=com	Add the " <b>domain-admins</b> " contact template to every contacts matching the value "CN=Domain Admins,CN=Users,DC=YOUR,dc=DOMAIN,dc=com" in its attribute " <b>memberOf</b> " first in list (before the contacts_tag template).
AddLast_template_(users)_to_contact_matching_[memberOf]	CN=Users,DC=YOUR,dc=DOMAIN,dc=com	Add the " <b>users</b> " contact template to every contacts matching the value "CN=Users,DC=YOUR,dc=DOMAIN,dc=com" in its attribute " <b>memberOf</b> " last in list (after the contacts_tag template).

Force_template_(specific)_to_contact_matching_[memberOf]	CN=SpecificUsers,DC=YOUR,dc=DOMAIN,dc=com	Add the "specific" contact template to every contacts matching the value "CN=SpecificUsers,DC=YOUR,dc=DOMAIN,dc=com" in its attribute "memberOf" all alone (the contacts_tag template will not be applied).
--	---	---

 **Tip**  
See below about the tag functionality.


Example :

```

/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-rules.json

{
  "hosts_tag": "windows",
  "contacts_tag": "generic-contact",
  "contacts_group_filter": "CN=paris_shinken_users,OU=utilisateurs,DC=shinkendom,DC=local |
CN=bordeaux_shinken_users,OU=utilisateurs,DC=shinkendom,DC=local",
  "hosts_tag_citrix": "OU=citrix,OU=serveurs,dc=shinken,dc=local",
  "hosts_tag_database": "OU=database,OU=serveurs,dc=shinken,dc=local",
  "hosts_tag_exchange": "OU=exchange,OU=serveurs,dc=shinken,dc=local",
  "hosts_tag_fileprint": "OU=fileprint,OU=serveurs,dc=shinken,dc=local",
  "hosts_tag_windows": "OU=infra,OU=serveurs,dc=shinken,dc=local",
  "hosts_match_operatingSystem_windows": "windows",
  "hosts_match_operatingSystem_windows2008": "windows*.2008(?!.*(?:r2))",
  "hosts_match_operatingSystem_windows2008r2": "windows*.2008*.r2",
  "hosts_match_operatingSystem_windows2003": "windows*.2003",
  "hosts_match_operatingSystem_windows2012": "windows*.2012(?!.*(?:r2))",
  "hosts_match_operatingSystem_windows2012r2": "windows*.2012*.r2",
  "hosts_match_operatingSystem_windows2000": "windows*.2000",
  "hosts_match_operatingSystem_windowsxp": "windows*.xp",
  "hosts_match_operatingSystem_enterprise": "Enterprise",
  "hosts_match_operatingSystemServicePack_sp1": "Service Pack 1",
  "hosts_match_operatingSystemServicePack_sp2": "Service Pack 2",
  "hosts_match_operatingSystemServicePack_sp3": "Service Pack 3",
  "AddFirst_template_(domain-admins)_to_contact_matching_[memberOf]": "CN=Domain Admins,CN=Users,DC=YOUR,dc=DOMAIN,dc=com",
  "AddLast_template_(users)_to_contact_matching_[memberOf]": "CN=Users,DC=YOUR,dc=DOMAIN,dc=com",
  "Force_template_(specific)_to_contact_matching_[memberOf]": "CN=SpecificUsers,DC=YOUR,dc=DOMAIN,dc=com"
}

```

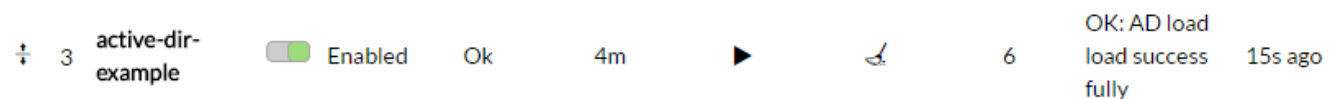


 If you want to import all objects of an OU instead of groups, set no **contacts\_group\_filter**.  
All objects inside **contacts\_base** (file *active-directory-connection.json*) filtered via **contact.filter** (file *active-directory-mapping.json*) will be imported.

## Import the objects

Go to the **UI Configuration home page**, if your configuration is ok you should have an output "**OK: Import clean.**"

Now do a "**Force import**" in clicking on 

In the "**Elements >**" panel you will see new elements appearing (Hosts and Contacts).

 active-dir-example Enabled Ok 4m   6 OK: AD load success 15s ago fully

The next step will be to import those new objects.

## HOW TO

### Import computers with a specific name



Edit the file `/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-mapping.json`

#### `/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-mapping.json`

```
# IMPORTANT: Do not edit this file.
# To have your own mapping, copy it under the /etc/shinken-users/source-data/YOU_SOURCE_FOLDER
#_configuration/ directory and edit your copy instead.
# Note: comments should be with a # starting the line, NOT after a value
{
# first hosts properties (computer object in Active Directory)
  "host.name": "name",
  "host.dnsHostName": "dnsHostName",
  "host.operatingSystem": "operatingSystem",
  "host.operatingSystemServicePack": "operatingSystemServicePack",
  "host.distinguishedName": "distinguishedName",
  "host.filter": "(objectClass=computer)",

# Now contact properties
  "contact.name": "name",
  "contact.categoryFilter": "Person",
  "contact.member": "member",
  "contact.telephoneNumber": "telephoneNumber",
  "contact.mobile": "mobile",
# Co: for country
  "contact.co": "co",
# l: for city
  "contact.l": "l",
  "contact;company": "company",
  "contact.filter": "(&(objectCategory=person)(objectClass=user))",
# By default hostgroup are not requested. Setup a filter to enabled it
  "hostgroup.filter": ""
}
```

Modify the `host.filter`

```
"host.filter": "(&(objectClass=computer)(sAMAccountName=*SERVER_NAME*))",
```

Change `SERVER_NAME` by the server name pattern you want to import.

### Import users of multiple groups

With the Active Directory source, it's possible to import users that are in different groups.



Edit the file `/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-rules.json`

In `contact_group_filters`, add the Distinguished Name (DN) to the different user groups separated by a pipe.

```
/etc/shinken-user/source-data/source-data-active-directory-sample/_configuration/active-directory-rules.json
```

```
"contacts_group_filter": "CN=shinken_admins,OU=utilisateurs,DC=shinkendom,DC=local | CN=shinken_users,OU=utilisateurs,DC=shinkendom,DC=local",
```

## Tag hosts to add more properties before import

This source also includes other parameters that will allow you to automatically “tag” your servers based on your active directory information:

- **hosts\_tag**: each loaded hosts will have at least this tag

Tagging hosts based on their OU (Organization Unit) is possible. This is done with the **hosts\_tag\_\*** parameters.

For example, if you want to add the **exchange** tag to all the servers which are below

the **OU=Email Collaboration Servers,OU=DataCenter Servers,DC=YOUR,dc=DOMAIN,dc=com** OU,

you can set this parameter:

```
hosts_tag_exchange OU=Email Collaboration Servers,OU=DataCenter Servers,DC=YOUR,dc=DOMAIN,dc=com
```

Setting up ldap object matching with the **hosts\_match\_\*** parameters is also possible.

For example, if you want to add the **enterprise** tag to all the ldap object that match the string **Enterprise** in their **operatingSystem** property,

you only need to setup :

```
hosts_match_operatingSystem_enterprise Enterprise
```

## Creation of your own sources

Having multiple sources can help you if you have a huge directory and want to have the control on what to import at any time. As an example, you have an OU containing *Paris users* and another OU containing *Bordeaux users*. At a given time, you want to import only *Bordeaux users*. If you create two sources, you can activate just the Bordeaux source and import its objects.



Every time you have to customize Shinken Sources, you have to do it in the **/etc/shinken-user** folder.

You will have to do the following to create your own source :

- Create a module
- Create a source
- Configure the source-data
- Configure the Synchronizer daemon to take the new module in consideration

### Create a module

```
cd /etc/shinken/modules/  
cp activ-dir-import.cfg activ-dir-import-Bordeaux.cfg
```



Edit the file `activ-dir-import-Bordeaux.cfg`

Delete the 4 lines beginning from

**# Shinken Enterprise**

to

**# End of Shinken Enterprise part**

Modify

```
module_name      active-dir-example
```

With

```
module_name      active-dir-Bordeaux
```

Modify the following lines to point to the new source data (see below for the source data configuration)

```
connection_configuration_file  
rules_configuration_file  
mapping_configuration_file
```

Example :

```
# Configuration file for your Active Directory connection (server, user, password, ...)  
connection_configuration_file /etc/shinken-user/source-data/source-data-active-directory-Bordeaux  
/_configuration/active-directory-connection.json  
  
# Configuration file for your import rules (like OU=>template rules)  
rules_configuration_file      /etc/shinken-user/source-data/source-data-active-directory-Bordeaux  
/_configuration/active-directory-rules.json  
  
# Configuration file for your ldap fields mapping (like for openldap users)  
mapping_configuration_file    /etc/shinken-user/source-data/source-data-active-directory-Bordeaux  
/_configuration/active-directory-mapping.json
```

**Create a source**

```
cd /etc/shinken/sources/  
cp active-dir-hosts.cfg active-dir-hosts-Bordeaux.cfg
```



Edit the file `activ-dir-import-Bordeaux.cfg`

Delete the 4 lines beginning from

**# Shinken Enterprise**

to

**# End of Shinken Enterprise part**

Modify

```
source_name      active-dir-example
modules          active-dir-example
```

With

```
source_name      active-dir-Bordeaux
modules          active-dir-Bordeaux
```

## Configure the source data

To create your own import source, do the following :

```
cd /etc/shinken-user/source-data
cp -r source-data-active-directory-sample source-data-active-directory-Bordeaux
```



### Tip

Let's consider that the folder in which you will have your new Active Directory source is : `/etc/shinken-user/source-data/source-data-active-directory-Bordeaux/`  
inside it, the folder `_configuration` contain all configuration file to customize the source behavior.

[See above on how to configure the source data](#)

## Configure the Synchronizer Daemon



Edit the file `/etc/shinken/synchronizers/synchronizer-master.cfg`

At the end of the "sources" lien, add you new source.

Example :

```
sources      syncui, cfg-file-shinken, active-dir-example, sync-vmware, cfg-file-nagios, discovery,
openldap-example, active-dir-Bordeaux
```

you can see your now source :

3	active-dir-Bordeaux	<input checked="" type="checkbox"/> Enabled	Ok	1m	▶	✍	13	OK: AD load success fully	3m ago
4	active-dir-example	<input checked="" type="checkbox"/> Enabled	Ok	2m	▶	✍	6	OK: AD load success fully	2m ago

## Apply contact templates to specific contact groups

During the import process a contact template is applied on every contacts thanks to the "**contacts\_tag**" property found in the *active-directory-rules.json*.

However, you have the possibility to apply contact templates to specific contact groups with the following properties (file *active-directory-rules.json*):

Property	Value	Description
AddFirst_template_(domain-admins)_to_contact_matching_[memberOf]	CN=Domain Admins, CN=Users, DC=YOUR, dc=DOMAIN, dc=com	Add the " <b>domain-admins</b> " contact template to every contacts matching the value "CN=Domain Admins, CN=Users, DC=YOUR, dc=DOMAIN, dc=com" in its attribute " <b>memberOf</b> " first in list (before the contacts_tag template).
AddLast_template_(users)_to_contact_matching_[memberOf]	CN=Users, DC=YOUR, dc=DOMAIN, dc=com	Add the " <b>users</b> " contact template to every contacts matching the value "CN=Users, DC=YOUR, dc=DOMAIN, dc=com" in its attribute " <b>memberOf</b> " last in list (after the contacts_tag template).
Force_template_(specific)_to_contact_matching_[memberOf]	CN=SpecificUsers, DC=YOUR, dc=DOMAIN, dc=com	Add the " <b>specific</b> " contact template to every contacts matching the value "CN=SpecificUsers, DC=YOUR, dc=DOMAIN, dc=com" in its attribute " <b>memberOf</b> " all alone (the contacts_tag template will not be applied).

If you want to customize your Active Directory by adding a new property, for example called countryCode and to apply a template to it, you can do it like :

```
"AddFirst_template_(domain-admins)_to_contact_matching_[countryCode]" : "33"
```

### Tip

Keep in mind that the group in which you want to apply specific contact templates must be part of the "**contacts\_group\_filter**" filter.

For example, let's consider you want to apply the contact templates to the groups listed in the table above.

You have to set "**contacts\_group\_filter**" like this :

```
"contacts_tag" : "CN=Domain Admins, CN=Users, DC=YOUR, dc=DOMAIN, dc=com|CN=User, DC=YOUR, dc=DOMAIN, dc=com|CN=SpecificUsers, DC=YOUR, dc=DOMAIN, dc=com"
```