

AMX Tutorial Using Cloud Based HRMS Systems as Identity Sources

This tutorial uses PeopleHR and ZohoPeople to show AMX facilities for extracting identities from cloud based HRMS systems using REST web APIs. These systems both offer free trials if you want to explore AMX before attempting to configure it for the cloud based system in use in your organization.

AMX runs on Windows and must be setup as shown in the AMX Tutorial Setup document. In this tutorial identityReport and identitySync are run from the Command Line using AMXRun which sets the environment variables.

Extracting the identities from ZohoPeople

IdentityReport will be used to extract all the identities from ZohoPeople and create a report. IdentityReport and identitySync both use the JSON adapter JSONIdentity. The tutorial will show how to extract the identities, using identitySync to synchronise them with a resource such as the Active Directory is not covered, other tutorials show how this is achieved. This tutorial will show AMX facilities:

- Extracting the identities from ZohoPeople and creating an identity file.
- Transforming the leaving date
- Transforming other dates

1. Generate the API Key

The API key does not expire, so no authentication stage is required. The key is obtained from the Setup menu, generate a key using the API mode, copy it, create a ZohoPasswd.txt file and paste the key into the first line. It will be encrypted when identityReport first runs.

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Setup

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Zoho People API

Authentication Token Generation API Reference

Zoho People provides REST API to integrate your People account with third-party software or services. A valid user's Authentication Token is necessary for user should have "Zoho People API Access" permission to access API.

Generating Authentication Token:

To generate the Authentication Token, you can use either of the following modes:

API Mode

```
https://accounts.zoho.com/apiauthtoken/nb/create
```

You will get the required token as a response.

Browser Mode

```
https://accounts.zoho.com/apiauthtoken/create?SCOPE=zohopeople/peopleapi
```

The API can be tested using curl. If curl is successful AMX will be too. Curl does provide better diagnostics

```
curl https://people.zoho.com/people/api/forms/P_EmployeeView/records -d authToken= ** -verbose
[{"recordId":"325711000000084844",
 "Date of joining":"",
 "Employee Role":"Admin",
```

```
"Work phone":"","  
"AbouMe":"","  
"EmployeeID":"302",  
"Extension":"","  
"Nick Name":"","  
"Photo_downloadUrl":"https://contacts.zoho.com/file?ID=546779322&fs=thumb",  
"Department":"Sales",  
"Work location":"","
```

The result of a successful curl execution can be copied and pasted into a file and identityReport will reformat it. For example create a file called ZohoUsers.txt and run identityReport ZohoPeople1.properties. The file containing the JSON result is specified in the JSONIdentityResource1 property in ZohoPeople1.properties.

2. Run IdentityReport

Open a Command prompt and change directory to the AMX Tutorial1 directory. Run IdentityReport.

```
C:\AMX\Tutorial1>identityReport.exe ZohoPeople2.properties  
Begins Tue, 28 Jun 2016 09:06:55 GMT identityReport  
JSONIdentity1 Zoho1  
Extracted 37 Identities  
JSONIdentity2 Zoho2  
Extracted 2 Identities  
JSONIdentity Finished Tue, 28 Jun 2016 09:06:58 GMT  
Total of 39 Identities  
  
C:\AMX\Tutorial1>
```

The extract is run twice, the second time extracts the inactive identities.

If no identities are returned, an error message such as "Error: JSON Extract webclient The remote server returned an error: (500) Internal Server Error". This can be the result of a bad key. Curl provides better diagnostics, a bad key will get the response

```
{"response":{"message":"Error occurred","errors":{"message":"Provided authentication token is  
invalid.", "code":7202},"status":1,"uri":"/api/forms/P_EmployeeView/records"}}
```

3. Review the Results

Identity Report will create a file IdentityReportZohoPeople2.csv, open it with Excel and check it.

4. Transform the Leaving Date

The exit date or end date is date is the employee's last day at work. Normally access to email and applications continues until the end of the last day.

AMX processes the leave date to determine the active attribute. Using the leave date as extracted from the People HR system will cause the active attribute to have the value Inactive on the last day.

4.1 Raw Leaving Date

Open the ZohoPeopleSchema1.txt with a text editor. The raw leaving date will be reported by the Date of Exit attribute. Comment out the Employee Status and uncomment:

```
Date of exit,active
```

Run the IdentityReport ZohoPeople2.properties, and review the report IdentityReportZohoPeople2.csv. The active attribute value is the leaving date. Find a leaver and notice it is in the format 28-06-2016.

Use the attribute modifier date to reformat it. Update ZohoPeopleSchema1.txt, run identityReport and notice the date is now in the localised format, for example 28/06/2016.

4.2 Leaving date and Time

identitySync will disable an account if the end date is in the future. This will disable a person's accounts on their leaving date which is unsuitable, so the end date can be transformed to include a time.

Edit the ZohoPeopleSchema1.txt file and add a suitable time to disable the account. The replace is a regular expression which will match a 10 character string and replace it with the string and an append of 17:30:00. Blank values remain blank.

```
Date of exit,active;date;replace/(\S{10})/$1 17:30:00/
```

Run the IdentityReport ZohoPeople2.properties, and review the report IdentityReportZohoPeople2.csv. The active attribute value is the leaving date. Notice it is now the format 28/06/2016 17:30:00 and no other blank dates have the time added.

4.3 The endDate attribute flag

Edit the ZohoPeopleSchema1.txt file add a suitable time to disable the account and flag it as an endDate. The endDate flag will evaluate the current time, if it is later than the leaving date and time the value will be active=N.

```
Date of exit,active;date;replace/(\S{10})/$1 17:30:00/;enddate
```

Run the IdentityReport ZohoPeople2.properties, and review the report IdentityReportZohoPeople2.csv. The active attribute value is Y or N for any identity with a leaving date, otherwise blank.

Edit the ZohoPeopleSchema1.txt file and add a lookup. The final replace will change a blank value to Y.

```
LeavingDate,active;date;replace/(\S{10})/$1 17:30:00/;enddate;replace/^\$/Y/
```

Run the IdentityReport ZohoPeople2.properties, and review the report IdentityReportZohoPeople2.csv. The active attribute value is Y or N for every identity and will remain active until 17:30 on the last day.

5. Other Dates

The timestamps, createdAt and ModifiedDate are in Unix Epoch format, milliseconds since the beginning of the epoch 1/1/1970. Adding the attribute flag dateEpoch will convert them to the localized date format such as 28/06/2016.

Extracting the identities from PeopleHR

IdentityReport will be used to extract all the identities from PeopleHR and create a report. IdentityReport and identitySync both use the JSON adapter JSONIdentity. The tutorial will show how to extract the identities, using identitySync to synchronise them with a resource such as the Active Directory is not covered, other tutorials show how this is achieved. This tutorial will show AMX facilities:

- Extracting the identities from PeopleHR and creating an identity file.
- Transforming the leaving date

1. Generate the API Key

The API key does not expire, so no authentication stage is required. The key is obtained from the PeopleHR settings page. Add a new key, specify that the key will allow access to Employees, History and Query Builder

Browser address bar: <https://axnt.peoplehr.net/Pages/LeftSegment/System.aspx>

Navigation: Apps, Bookmarks, Philn, Ellen, Virgin Media | Sign in, BBC Home - BBC News, Google, iCloud, Windows 10 help and

People - axnt

- Dashboard
- News
 - Holidays & Absence
- Employees
 - Administrators
- Me
 - Licences
- Documents
 - Company
- Thanks
 - Timesheets
- Planner
 - Performance

API Key Management

Create an API key to allow you to integrate People with other systems

Webhook URL:

Name	Key
amx	e86dcfea-22f5-..._...

The API can be tested using curl. If curl is successful AMX will be too. Curl does provide better diagnostics

```
curl --url https://api.peoplehr.net/Employee --request POST -d '{"APIKey": "79e24e28-e3fa-4967-b766-f**", "Action": "GetAllEmployeeDetail", "IncludeLeavers": "true"}'
```

```
{"isError":false,"Status":0,"Message":"The request processed successfully.",
"Result":[{"
"EmployeeId":{"DisplayValue":"PW1","FieldHistory":[]},
"Title":{"DisplayValue":"","FieldHistory":[]},
"FirstName":{"DisplayValue":"Philip","FieldHistory":[]},
"LastName":{"DisplayValue":"Nesfield","FieldHistory":[]},
"OtherName":{"DisplayValue":"","FieldHistory":[]},
"KnownAs":{"DisplayValue":"Phil","FieldHistory":[]},
"EmailId":{"DisplayValue":"philip.nesfield@axnt.co.uk","FieldHistory":[]},
Etc etc
```

This is also useful to identify staging attribute names which do not necessarily correspond with the GUI labels.

The result of a successful curl execution can be copied and pasted into a file and identityReport will reformat it. For example create a file called PeopleHRUsers.txt and run identityReport PeopleHR1.properties. The file containing the JSON result is specified in the JSONIdentityResource1 property in PeopleHR1.properties.

Create a PeopleHRpasswd.txt file and copy the key into the first line. The key will be encrypted the first time that IdentityReport runs.

2. Run IdentityReport

Open a Command prompt and change directory to the AMX Tutorial1 directory. Run identityReport.

```
C:\AMX\Tutorial1>identityReport.exe PeopleHR.properties
Begins Mon, 27 Jun 2016 14:06:32 GMT identityReport
JSONIdentity1 PeopleHR
Extracted 30 Identities
JSONIdentity Finished Mon, 27 Jun 2016 14:06:33 GMT
Total of 30 Identities
```

```
Finished Mon, 27 Jun 2016 14:06:33 GMT
```

```
C:\AMX\Tutorial1>
```

If no identities are returned, check the debug file, search for JSON Extract. Check the result which in this example is a bad APIKey. The password is not printed for security considerations. Check the password file had the whole key pasted into it. Repeat the exercise making sure that the whole key is selected.

```
JSON Extract
https://api.peoplehr.net/Employee
POST
{"APIKey": "%password%", "Action": "GetAllEmployeeDetail", "IncludeLeavers": "true"}
JSON ExtractPreamble text length 68
JSON ExtractPreamble level 0 of 2
{
JSON ExtractPreamble level 1 of 2
{"isError": true, "Status": 2, "Message": "Invalid API Key.", "Result": {
```

3. Review the Results

Identity Report will create a file IdentityReportPeopleHR.csv, open it with Excel and check it.

4. Transform the Leaving Date

The leaving date or ending date is the employee's last day at work. Normally access to email and applications continues until the end of the last day.

AMX processes the leave date to determine the active attribute. Using the leave date as extracted from the People HR system will cause the active attribute to have the value Inactive on the last day.

4.1 Raw Leaving Date

Open with PeopleHRSchema.txt with a text editor. Comment out the Employee Status and uncomment:

```
LeavingDate, active
```

Run the IdentityReport PeopleHR.properties, and review the report IdentityReportPeopleHR3.csv. The active attribute value is the leaving date. Find a leaver and notice it is in the format 2016-06-24.

4.2 Leaving date and Time

identitySync will disable an account if the end date is in the future. This will disable a person's accounts on their leaving date which is unsuitable, so the end date can be transformed to include a time. Edit the PeopleHRSchema.txt file and truncate the leave date


```
LeavingDate, active; date
```

Run the IdentityReport PeopleHR.properties, and review the report IdentityReportPeopleHR1.csv. The active attribute value is the leaving date. Notice it is now the format 24/06/2016

Edit the PeopleHRSchema.txt file and truncate the leave date and then add a suitable time to disable the account. The replace is a regular expression which will match a 10 character string and replace it with the string and an append of 17:30:00. Blank values remain blank.

```
LeavingDate, active; date; replace/(\S{10})/$1 17:30:00/
```

Run the IdentityReport PeopleHR.properties, and review the report IdentityReportPeopleHR1.csv. The active attribute value is the leaving date. Notice it is now the format 24/06/2016 17:30:00 and no other blank dates have the time added.

4.3 The endDate attribute flag

Edit the PeopleHRSchema.txt file and truncate the leave date and then add a suitable time to disable the account and flag it as an endDate. The endDate flag will evaluate the current time, if it is later than the leaving date and time the value will be active=N.

```
LeavingDate, active; date; replace/(\S{10})/$1 17:30:00/; enddate
```

Run the IdentityReport PeopleHR.properties, and review the report IdentityReportPeopleHR1.csv. The active attribute value is Y or N for any identity with a leaving date.

Edit the PeopleHRSchema.txt file and add a lookup. The final replace will change a blank value to Y.

```
LeavingDate, active; date; replace/(\S{10})/$1 17:30:00/; enddate; replace/^\$/Y/
```

Run the IdentityReport PeopleHR1.properties, and review the report IdentityReportPeopleHR1.csv. The active attribute value is Y or N for every identity and will remain active until 17:30 on the last day.