



Zoho
People

Biometric Integration



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INTRODUCTION

Biometric attendance data can be integrated with Zoho People using either of the below two methods:

- » API
- » Plugin

Integration using API method

The below mentioned API can be used to push attendance data to Zoho People application directly from the biometric application. Configuration of the same has to be taken care of from the client's end (either by the biometric vendor or by the client's IT team). Kindly check the feasibility of this method with the biometric vendor.

API link: <https://www.zoho.com/people/api/attendance-bulkimport.html>

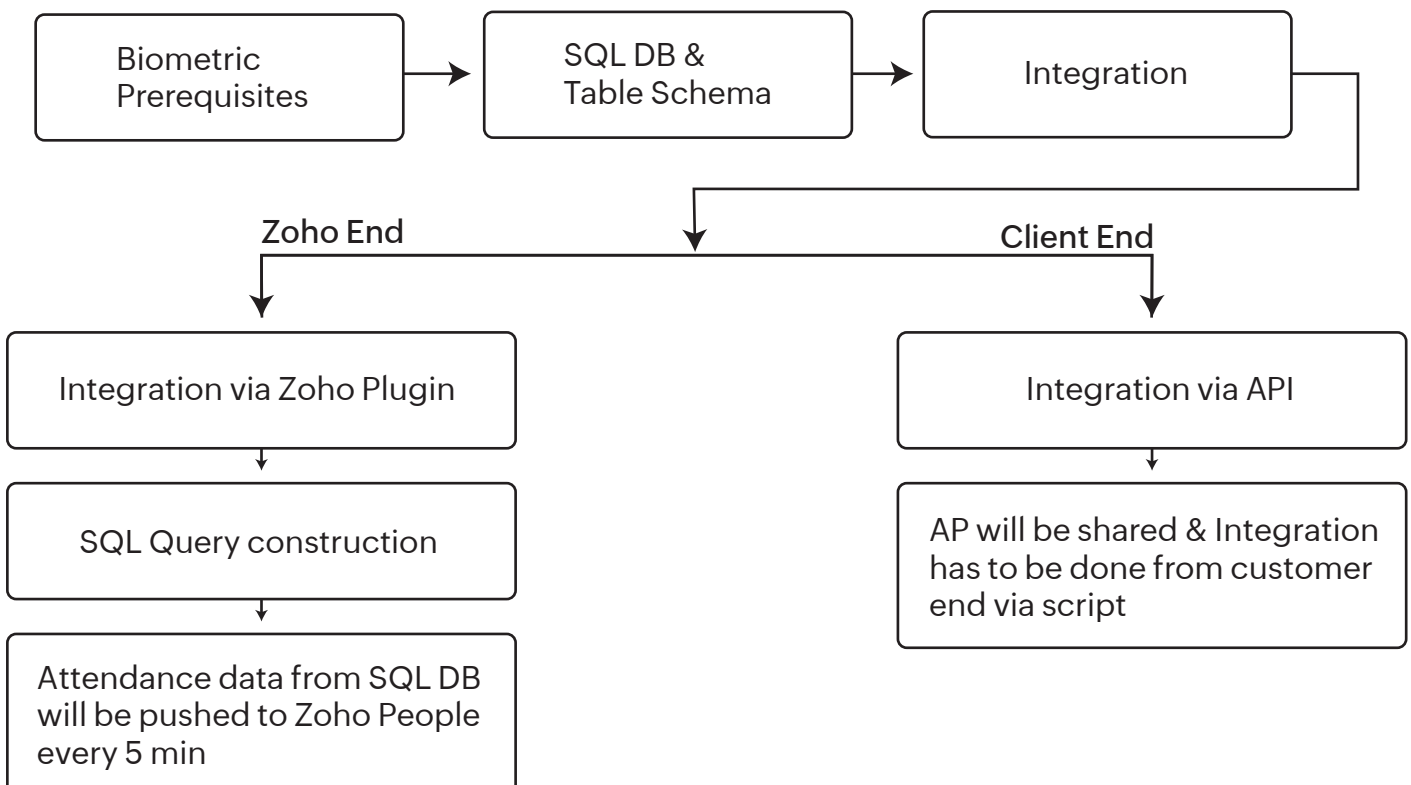
Note: This API has a threshold limit of 10 requests/minute and a lock period of 5 minutes.

Authorization for API: Kindly follow the steps mentioned in the below document to generate the authentication tokens.

<https://www.zoho.com/people/api/oauth-steps.html>

Integration Using Plugin Method

Another way to integrate the biometric device with Zoho People is by configuring a plugin through the **Tomcat server**.



TERMINOLOGIES



BIOMETRIC DEVICE

It is an electronic machine that is made for identification and authentication through physiological and behavioural characteristics like face recognition, fingerprint reading, palm recognition, and others.

TOMCAT SERVER

It is an open-source Java servlet container that implements many Java Enterprise Specs, such as the Websites API, JavaServer Pages and the Java Servlet.



Apache Tomcat



MySQL (DATABASE)

MySQL is an open-source relational database management system. The open-source GPL licence allows programmers to modify the MySQL software to fit their own specific environments.

Microsoft Access

Microsoft Access is a database management system from Microsoft that combines the relational Access Database Engine with a graphical user interface and software development tools.



Microsoft SQL Server

Microsoft SQL Server is a relational database management system. It is a software product with the primary function of storing and retrieving data as requested by other software applications.

PREREQUISITES

We support MS SQL SERVER, MS Access and MySQL database and the query format as mentioned below.

Note: It is important to have an IT person or your biometric vendor at your side to proceed with the integration.

Query Requirements:

Database: We support MS SQL SERVER, MS Access and MYSQL databases with the same query format as below.

“Select employeeID, eventTime, isCheckin, downloadDate from Attendance”

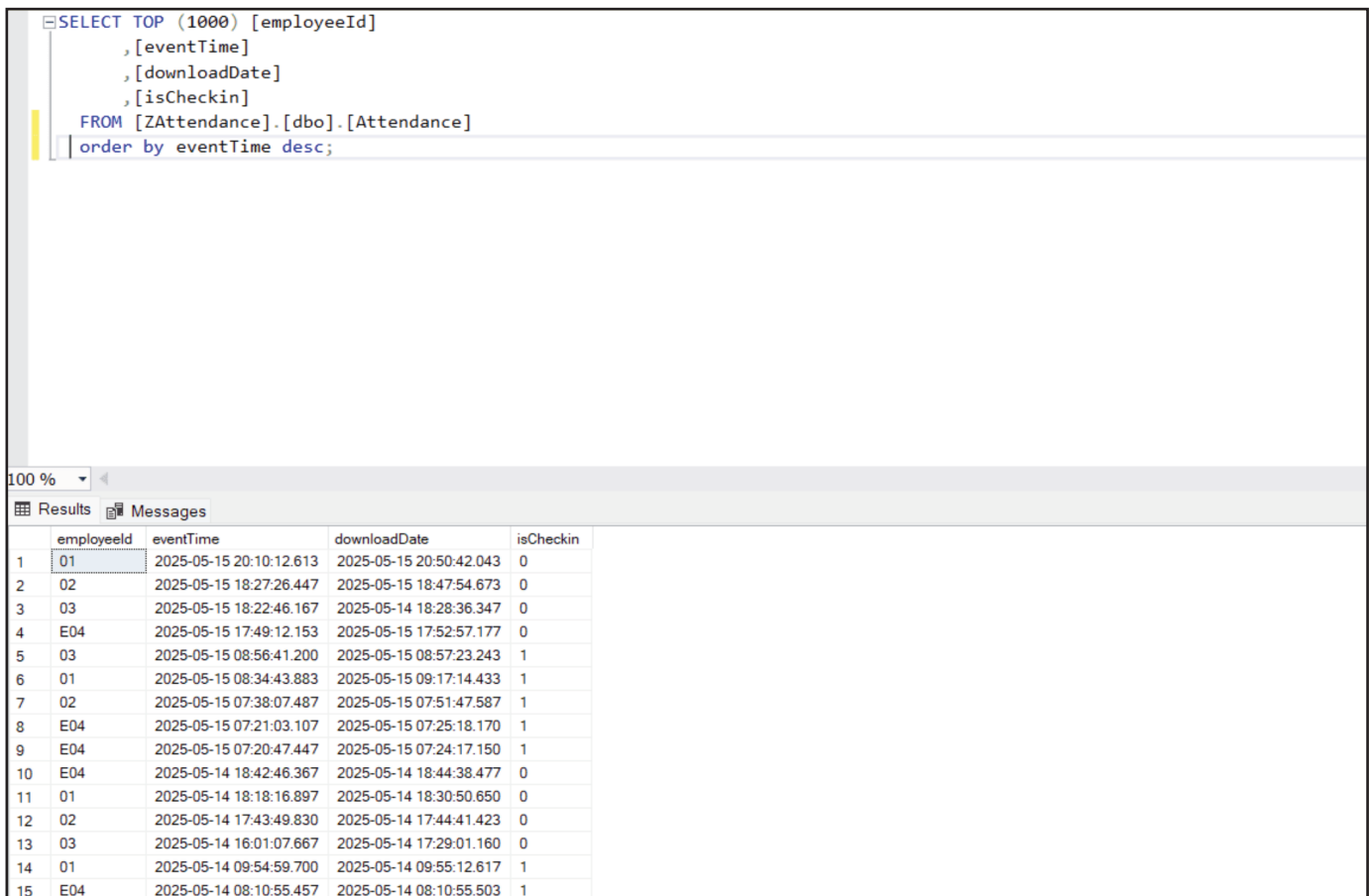
employeeID - Should be the same as the employee ID in Zoho People

eventTime - Attendance in-punch and out-punch (in date-time format)

ischeckin - 1/0 (1 denotes check-in and 0 denotes check-out)

downloadDate - Date and time at which the attendance data is pushed to the database (in date-time format)

Please find the sample database table screenshot attached below for reference.



```
SELECT TOP (1000) [employeeId]
, [eventTime]
, [downloadDate]
, [isCheckin]
FROM [ZAttendance].[dbo].[Attendance]
order by eventTime desc;
```

	employeeId	eventTime	downloadDate	isCheckin
1	01	2025-05-15 20:10:12.613	2025-05-15 20:50:42.043	0
2	02	2025-05-15 18:27:26.447	2025-05-15 18:47:54.673	0
3	03	2025-05-15 18:22:46.167	2025-05-14 18:28:36.347	0
4	E04	2025-05-15 17:49:12.153	2025-05-15 17:52:57.177	0
5	03	2025-05-15 08:56:41.200	2025-05-15 08:57:23.243	1
6	01	2025-05-15 08:34:43.883	2025-05-15 09:17:14.433	1
7	02	2025-05-15 07:38:07.487	2025-05-15 07:51:47.587	1
8	E04	2025-05-15 07:21:03.107	2025-05-15 07:25:18.170	1
9	E04	2025-05-15 07:20:47.447	2025-05-15 07:24:17.150	1
10	E04	2025-05-14 18:42:46.367	2025-05-14 18:44:38.477	0
11	01	2025-05-14 18:18:16.897	2025-05-14 18:30:50.650	0
12	02	2025-05-14 17:43:49.830	2025-05-14 17:44:41.423	0
13	03	2025-05-14 16:01:07.667	2025-05-14 17:29:01.160	0
14	01	2025-05-14 09:54:59.700	2025-05-14 09:55:12.617	1
15	E04	2025-05-14 08:10:55.457	2025-05-14 08:10:55.503	1

Note:

- If the Downloaddate column is not available in the table, then we can't assure that all the data from the SQL DB will get pushed to Zoho People, and there might be a possible chance of data loss.
- If there are multiple shifts for your employees, all of them should be mapped in Zoho People.
- If the biometric ID is different from the Zoho People employee ID, then the biometric ID has to be mapped in Zoho People under **Operations > Attendance > Biometric ID Mapping**.
- The integration is fully dependent on the server system where the biometric data is stored. If it crashes or reboots due to improper shutdown of the system, it may corrupt the configuration page. In such a scenario, we will have to reconfigure the integration.

Software Required



Apache Tomcat 9: (Windows service installer)
<https://tomcat.apache.org/download-90.cgi>



Java: (latest version and as per OS)
<https://www.openlogic.com/openjdk-downloads>

Note: It is mandatory to have your biometric vendor/IT team at the time of integration.

PROCEDURE

Ensure **Java** and **Tomcat** applications are downloaded and installed. Check under Local disc C > Program files or Program files (86) > whether JAVA/Tomcat is installed. If not, install both the software.

Tomcat Setup

- 1) **Service Name:** Tomcat8ZohoPeople
- 2) **Shutdown Port:** 8989
- 3) **Connector Port/Tomcat Server Port:** 8584 (check if this port no is not used in any other service)
- 4) Kindly select the Open Logic Java file path: Under C drive > Program Files/ Program Files X86/ Open Logic/ jdk <version>
- 5) **Start-up Type:** Start > Search Service > Tomcat8Zoho (right click) > Properties > Startup Type > Automatic

War File Installation

- 1) Click on the below link to download the war file.
<https://www.zoho.com/people/downloads/ZAttendance.war>
- 2) Navigate to Local disc C > Program file > Apache software foundation > Tomcat8 > Web apps > Paste the war file > refresh > File will be extracted
- 3) Routing to plugin page Check whether you're able to load the plugin page via the URL - <http://localhost:8584/ZAttendance>

Plugin Configuration Steps

- 1) Click on the Configure button in the top right corner of the plugin page to open the configuration page and select the database type.
- 2) Copy and paste the example connection URL given below the field and update the database name.

Change the port number of the database instance accordingly.

If MS SQL: Navigate to Program file C > Windows > Syswow64 > sql_server_manager > SQL server network.

configuration > Protocol SQLExpress > TCP/IP > IP Address > TCP port: 1433 port > Apply > Ok.

(OR)

Navigate to Start > Search > Computer management > SQL Server network management or Configuration (second option on left) > TCP/IP > IP Address > TCP port: 1433 port > Apply > Ok.

If MySQL - Default port number is 3306.

If MS ACCESS - Add the database path and change the forward slashes to backward slashes.

- 3) Add the database username and password. If MySQL, the default username is "root" and for MS ACCESS is "admin".
- 4) Add the Delay Time and Sleep Time as 5 minutes (minimum suggested time).
- 5) SQL query configurations.

If all columns are as per the requirement:

Static Table:

```
select [employeeID] as employeeld, ischeckin as isCheckin, [eventTime] as eventTime, [download-Date] FROM [ZAttendance].[dbo].[Att-checkin] where DownloadDate>=$1 and DownloadDate<$2
```

Dynamic Table:

```
select [employeeID] as employeeld, ischeckin as isCheckin, [eventTime] as eventTime, [Down-loadDate] FROM #Tablename_%M_%Y# where DownloadDate>=$1 and DownloadDate<$2
```

When the download date column is not available: (Delay time should be 1-2 hours):

```
select [Id] as employeeld, case [Checkin] when 'IN' then 1 when 'OUT' then 0 end as isCheckin, [EventTime] as eventTime FROM [ZAttendance].[dbo].[Att-checkin] where eventTime>=$1 and eventTime<$2
```

When IN/OUT direction differentiation is not specified in the table:

Push each punch as both IN & OUT to ZOHO:

```
select [empid] as employeeld, '1' as isCheckin, [EventTime] as eventTime,
[downloaddate] FROM [ZAttendance].[dbo].[Att_noCheck] where DownloadDate>=$1
and DownloadDate<$2
UNION
select [empid] as employeeld, '0' as isCheckin, [EventTime] as eventTime,
[downloaddate] FROM [ZAttendance].[dbo].[Att_noCheck] where DownloadDate>=$1
and DownloadDate<$2
```

Dynamic Table:

```
select [employeeID] as employeeld, ischeckin as isCheckin, [eventTime] as eventTime,
[Down-loadDate] FROM #Tablename_%M_%Y# where DownloadDate>=$1 and
DownloadDate<$2
```

When the download date column is not available: (Delay time should be 1-2 hours):

```
select [Id] as employeeld, case [Checkin] when 'IN' then 1 when 'OUT' then 0 end as
isCheckin, [EventTime] as eventTime FROM [ZAttendance].[dbo].[Att-checkin] where
eventTime>=$1 and eventTime<$2
```

(OR)

Alternate In & Out Punches:

```
select [Id] as employeeld ,[EventTime] as eventTime ,[DownloadDate] FROM
[ZAttendance].[dbo].[Att-checkin] where DownloadDate>=$1 and DownloadDate<$2
```

Tomcat > config.properties > url should be changed to bulkImportRawEntry instead of bulkImport.

6) Generate Auth tokens:

Go to **api-console.zoho.in** (or com/eu - based on the DC). Create a **Self Client** client type, copy **Client ID** and **Client Secret** and paste it in the Plugin page.

Generate a code under **Generate Code** tab,

Scope: ZohoPeople.attendance.all

Duration: 10 minutes

Description: BI

Generate **Refresh Token:** Paste the Client ID / Client Secret / CODE / > Select the DC > Generate > copy and paste it in the Refresh Token field.

Make sure that the tokens were generated using an admin account where Zoho Role/Role is marked as "admin" under the profile.

- 7) **Update Time Zone:** Select your location's time zone. Ensure the time zone of the attendance data in the database and the admin account's time zone are the same.
- 8) **Manual testing and pushing:** For testing, sync any one employee's data. Change the downloadDate column's name to the EventTime column's name in the SQL query after the where condition and add the employee ID filter as mentioned below.

```
select [Id] as employeeld, [Checkin] as isCheckin, [EventTime] as eventTime ,  
[DownloadDate] FROM [ZAttendance].[dbo].[Att-checkin] where Even-tTime>=$1 and  
EventTime<$2 and Id='1001'
```

In Manual sync tab, click on 'Get record count' and fetch and upload to pull and push the data to Zoho People.

- 9) Once testing is done, automate the sync by clicking Resume sync in the plugin page.
- 10) Bookmark the URL for future reference and take a backup of the config.xml file outside the Tomcat folder.

FAQs

For FAQs and solutions to common issues, refer to our online help documentation on [biometric device integration](#).

