Kepware KEPServerEX Integration with Microsoft Teams

Easy Guide

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About the Authors:

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Chapter 1: Introduction

1.1.   Motivational Background:

Coming across a post from OPC Router (https://www.opc-router.com/microsoft-teams-rest-connection_en/) where integration was shown between OPC Router and MS Teams. We sought to replicate using Kepware. In order to find out if the same was possible with Kepserver.

1.2.   Introduction

The Configuration API in KEPServerEX® Version 6 enables users to leverage a RESTful interface and HTTP commands to make local, remote, and programmatic project changes to the KEPServerEX configuration via third-party applications (such as web clients, SCADA software that supports HTTP, and IoT platforms). *[1]

Supported project changes include creating, reading, updating, and deleting objects (such as channels, devices, and tags) in the server—and more.

Following the steps mentioned in the Kepware Document, a third party application can read, create and modify object properties while enabling the Configuration API.

KEPServerEX documentation uses a third-party application "Postman" to work with MS Teams. We alternatively took the approach of not using third party software and we wrote our own Python script.

1.3.   Approach using Python Programming:

Initially, following the steps mentioned in Kepware's official document*[2] mentioned above we used a third-party software called "Postman". Through Postman a channel is created to fetch Kepware attributes and to post them on MS Teams Channel.

Using the python programming approach, we now fetch the information from Kepware channels using REST APIs and then post the results on MS Teams. This can be done with a single execution of the python script to post data on MS Teams thereby notifying users within the channel.
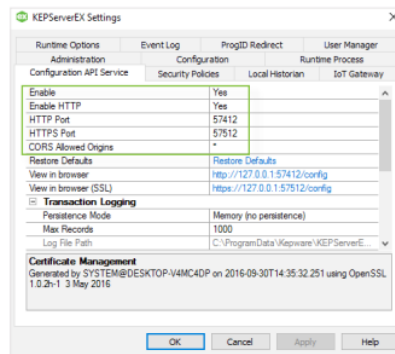
Chapter 2: Methodology & Implementation

The steps ahead within this document will help single execution.

Step 01: Enable Configuration API

Figure 1: Step 1 cited from the original KepwareDocument

Step 02: POST API

Write a small POST API call to create the channel in KEPServerEX. Once you are accessing Kepware through this method make sure to pass the correct parameters for credentials. Remember your Username and Password. It you have not set username or password then by default credentials are: Username = 'Administrator' and Password = ''

Step 03: GET API

Write a GET API call to fetch the data of the channel, or to fetch the values of tags. You can add additional part of code to send any alert message depending upon the value of tags.

Step 04: Create MS Teams Channel

Now for pushing the results into the Microsoft Teams, first create a team and make a channel within it.
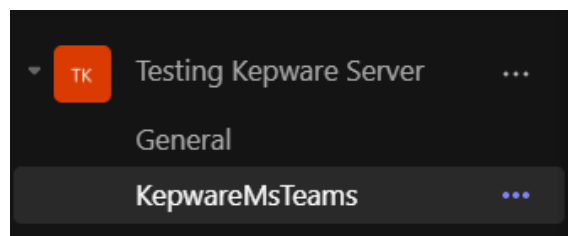

Figure 2: Teams created as KepwareMSTeams

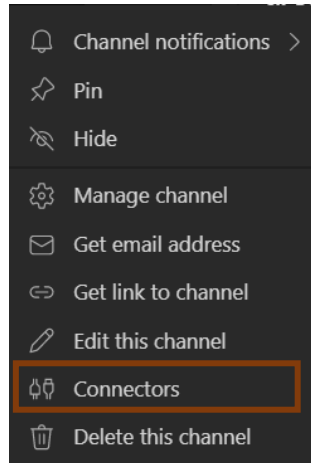Go to more options of the channel and select "Connectors".

Figure 3: Option connectors selected.

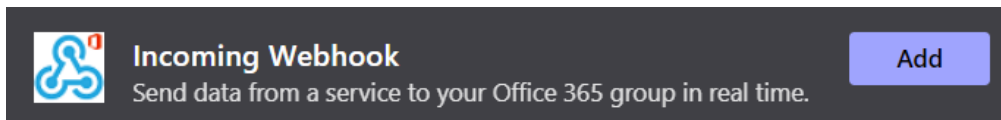From connectors add "Incoming Webhook"

Figure 4: Incoming Webhook added

Configure the webhook, create it and then copy the webhook link for future use.

Step 05: Push tags on MS Teams

Now use that webhook link to call POST API to push the tags and messages on Microsoft Teams.

Chapter 3: Results

The following figure shows the post on MS Teams channel after the steps in the above document are followed.
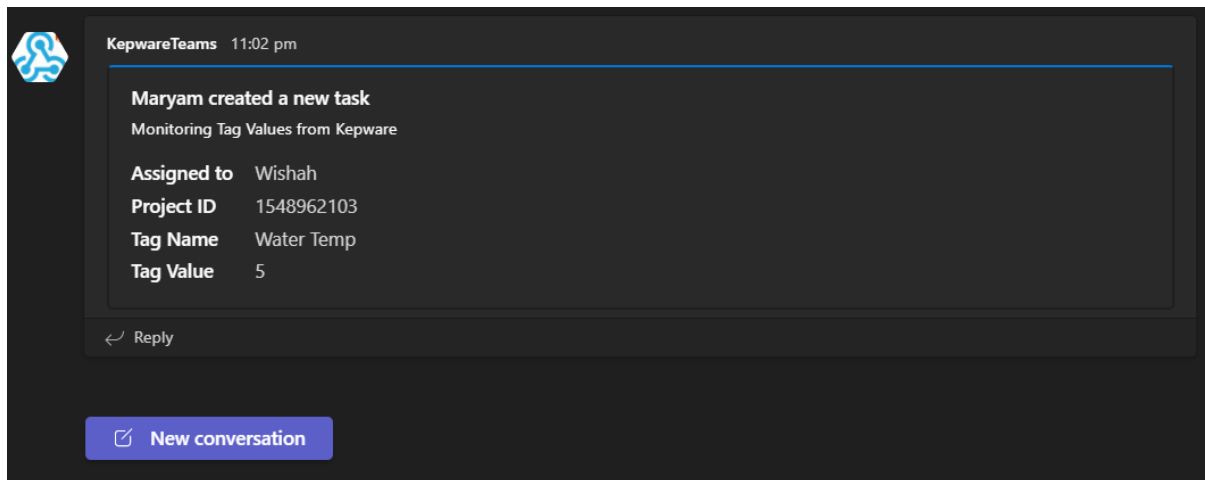

Figure 5: Post results on MS Teams channel

References

1. "Configuration API for KEPServerEX® Version 6",
   https://www.kepware.com/getattachment/e1943820-ef3c-4932-b055-4ef2a80ab863/kepserverex-manual.pdf