



Home Depot

ThousandEyes Clusters Script - Functional Specification



Change Control

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Version History

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November 11, 2022	1.0	Daniela Magallan	Initial Draft
November 14, 2022	1.0	Daniela Magallan	Home Depot - team review
December 1st	1.0	Amy Arana	Internal documentation review

Resources

The following parties are involved in the engagement.

Name	Contact	Company	Title
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Description

This document serves as the functional specification for the script delivered by ThousandEyes to Home Depot.

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Introduction

Purpose

The purpose of this document is to provide a functional specification on the script created by ThousandEyes Professional Services for Home Depot.

The goals of the script are as follows:

- It helps to create or update clusters by adding specific agents to them.

ThousandEyes Solution

Overview

The following sections describe all deliverables involved for the solution.

Solution Components

The three main components involved in this solution are described in the sections below.

ThousandEyes API

The ThousandEyes API is the mechanism that is used to retrieve all data pertaining to an organization's alert rules, and to make modifications to such. All data is stored on ThousandEyes side, and access to the API is required in order to operate the script.

Python Scripts

The scripts involved in this solution are all written in Python, using 3.10 as the target version. The scripts were developed using the VsCode Python IDE on the Mac OS X platform. Testing of the scripts was performed on Mac OS X but should work on the same way on Windows platforms.

Excel File

The .XLS file is used for the script as a database source that contains the agents name and the cluster to which they will be added. In the other hand, this excel file will hold basic log information about of the script execution while is configuring each agent. Please refer to the Mode of Operation section to know how to interpret the color code.

Script Overview

The main script that is executed by the user is the **Clusters.py** file.



This script performs the following functions:

- Reads the excel file that contains a list with the agents and the cluster to which each agent should belong. The script will iterate over that list and will take one pair (agent-cluster) at a time.
- With each pair the script will do different steps/validations:
 1. Will find and save the unique identifier (agentId) for both, cluster and agent since this will be used later on the script. If the ID for either cluster or agent is not found, the value will be 0.
 2. If the ID was found for both of them, it means both are available so we add the agent to the cluster.
 3. If a cluster has the same name of an existent agent, the cluster will be created with the name of the pair agent and a warning will be generated on the excel file.
 4. If the agent ID was found but the cluster ID was not, we have to create the cluster and add the agent to it.
 - Here it comes another validation. If the name for the cluster is not specified, the cluster will have the same name of the agent that will be added.
 5. Finally, if the agent was not found, the script will just add an error log on the excel file since nothing can be done if the agent does not exist.

After all the agent-cluster pairs have been analyzed the script ends and you can open excel document to see the logs and the clusters must be created in your account.

Requirements

- Python 3.10 recommended with following libraries installed: pip, json, requests and openpyxl
- Clusters-info.xlsx

Mode of Operation

The script must be executed via command line and it is required to have the script and run it in the same directory where the excel lives.

Additional libraries

Some python libraries must be installed. Execute the following commands on the CMD or terminal:

```
>pip3 install requests
>pip3 install openpyxl
```

Parameters

It is required to change the “aid” variable in case you want to run the script for a different account group, right now the script will run against **THDUS** account group as requested on the sync-up meeting. Also, API authentication token must be changed on the Clusters.py script. Refer to the configuration section [below](#) for more details.



End of execution

A successful script execution will be indicated by output similar to the below:

```
$python3 Clusters.py

===== S U M M A R Y =====
This script has finished, time elapsed:0.65920
Clusters created: 0
Clusters edited: 0
Agents added: 0
Errors detected: 1 on this agents: ['Testing']
Warnings detected 0 on this agents: []
```

See that you will be able to see how much time does it takes to execute the script as well as the information related to the errors or warnings encountered.

Excel file

Once the script completes. Logs will be added to the excel file under “Notes” column for each agent-cluster pair. If the logs are in **black** it means the cluster and the agent were added successfully. If the logs are in **orange** this means there was an issue with the cluster name because this is somewhere duplicated on the account. If the color is **red** this means there was an error with the agent itself and cannot be added to the cluster.

Configuration

Configuration

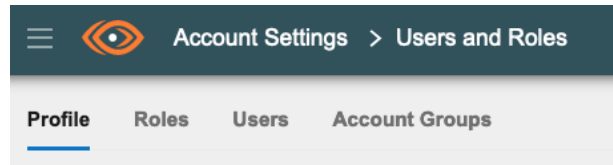
This section details the entries within Clusters.py that must/could be changed. The configuration for the operation of the script is held within this file and is required.

Credentials

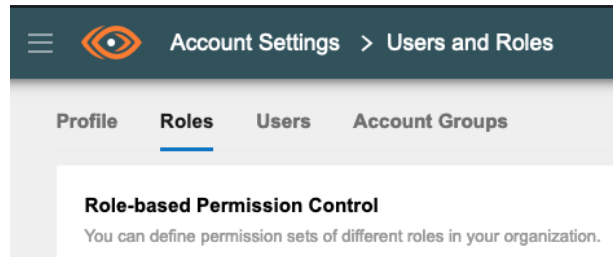
First, in order to call the ThousandEyes API the “OAuth Bearer Token” has to be changed at the top of the Clusters script.

Note: This token is unique for each user within the account group and ideally the person who execute the script should put its Token. This person must have the appropriate role in order to view and modify agent configurations since the user must have API access permissions.

You can check user “Roles” per organization in the ThousandEyes web UI under *Account Settings > Users and Roles > Profile*.



Then, to verify the permissions each role has, navigate to the “Roles” section. API access must be selected for your specific role.



After doing the validation, go back to the “Profile” section and on the “User API Tokens” sub section generate and copy the OAuth Bearer Token in case you don’t have it. Then, this must be assigned at the beginning of the Clusters script to the “**Token**” variable in **string** format. This variable is initially empty and looks like:

```
#####
#           ONLY PARAMETERS THAT CAN BE MODIFIED           #
#           DO NOT MODIFY ANYTHING ELSE                     #
#####

Token = ''
```

Account group ID

Next step is to modify the account group against which you would like to run the script. In this case the script will run against the **THDUS** as discussed in the sync meeting but also, there is the option to change the account group if you need it later.

Kindly find the Account Groups ID list:

Account Group	Account Group ID (aid)
Cisco Managed Services (CMS)	1077841
Enterprise Operations (Daniel Grider)	1077861
HDIS (Denise Countryman)	1101131



Home Depot (TDHUS)	155958
Network Engineering (Daniel Grider)	1098436
THD Canada	1077851
THD Pro (HD Supply)	256976
THD Mexico (THDMX)	1077846

Once you have identified against which account group you want to run the script, you have to change the value to the **“aid”** variable defined on the script just down below the **“Token”** variable. The variable will be setup to run against TDHUS so it should look like:

```
#####
#           ONLY PARAMETERS THAT CAN BE MODIFIED           #
#           DO NOT MODIFY ANYTHING ELSE                     #
#####

Token = '3e4679ce-02ad-4f19-a47c-66e8aa5f4856'
aid = 155958

#####
#####
```

Note: Remember this is an example and the token must be different.

Excel file

Lastly, this is the format that the excel file should have and how the information must be added. Also, the excel name should be **“Clusters-info.xlsx”** and as a reminder, it has to be on the same folder where the python script lives.

	A	B	C
1	Agent	Cluster	Notes
2	Testing	hd-cluster	
3	Primary		
4	ip-172-31-31-173.ec2.internal	HD-Test	
5	ftd1_agent		
6	M1	Primary	
7			

Note: Remember that if the “Cluster” cell is empty, a new cluster will be created with the name of the agent it will be added.



Errata

This script automatically generates logs on the same excel file, on the third column which is assigned for "Notes". Errors will be highlighted in red colors while warnings will be on orange color.

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Name	Version	License
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