

How to troubleshoot Zombie Triggers

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This Troubleshooting Guide is part of a case study to find out the root cause of the pipelines getting triggered by a zombie trigger (trigger which was deleted by the customer but was still active)

NOTE:

Kindly validate if customer has deleted the trigger recently or long ago. If customer has deleted the trigger after pipelines are already in progress, then stopping or deleting a trigger will only prevent any new runs from being started. It will not stop runs that are already 'InProgress' or in 'Running' state. In this case, customer would have had to cancel the pipeline runs to stop the trigger runs.

Once you have validated the above NOTE, please proceed with this TSG for further investigation.

Scenario

Customer was noticing his pipeline was getting triggered by a Scheduled Trigger which they've deleted couple of weeks ago. The trigger was not visible on the portal or using PowerShell/SDK. However, they still noticed the pipeline was getting triggered by the same trigger which they deleted.

Information shared by customer

- **Data Factory Name:** CustomerDataFactoryName
- **Trigger runId:** 08586134596851449946220218822CU61
- **Trigger Name:** CustomerTriggerName

Investigating the issue

1. Query **ApiOperationEvent** table to find out if the pipeline was getting triggered by this trigger CustomerTriggerName

Use the filter ApiName contains "PUT Trigger" and RequestUri contains "CustomerTriggerName"

```

ApiOperationEvent
| where env_time >= ago(15d)
| where DataFactoryName =~ "CustomerDataFactoryName"
//| where ApiName contains "DELETE Trigger"
| where ApiName contains "PUT Trigger"
| where RequestUri contains "CustomerTriggerName" //Trigger Name
| project env_time, operationName, DataFactoryName, RequestUri, TraceCorrelationId
| project env_time, ApiName, RequestUri

```

Output:

env_time	ApiName	RequestUri
2020-04-21 08:00:03.0535172	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-21 08:00:08.1615203	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586141508850583712695214145CU66
2020-04-22 08:00:04.0391779	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-22 08:00:10.1019318	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586140644857599480815653873CU115
2020-04-23 08:00:06.6532865	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-23 08:00:12.9615619	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586139780854394315269969512CU119
2020-04-24 08:00:04.7641470	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-24 08:00:09.0755664	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586138916851831226971633121CU93
2020-04-25 08:00:06.9051038	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-25 08:00:09.6693715	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586138052849868980143861106CU94
2020-04-26 08:00:05.7379455	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-26 08:00:08.8005082	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586137188856523676661580772CU177
2020-04-27 08:00:01.8058149	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-27 08:00:05.9675086	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586136324855049163237015534CU178
2020-04-28 08:00:06.6193012	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-28 08:00:10.8225354	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586135460852605285445230097CU181
2020-04-29 08:00:04.9682255	PUT TriggerEvent/ProcessTriggerEventAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily
2020-04-29 08:00:08.4245378	PUT TriggerEvent/ReportTriggerEventStatusAsync	PUT https://pmwesteurope.svc.datafactory.azure.com/triggerevent/ScheduleTrigger/DA_NetworkSFT_DMA_Daily/08586134596851449948220218822CU61

We noticed there were multiple PUT trigger request with the same trigger, which means the Trigger still exists and is executing pipeline. However, as customer mentioned that he couldn't find it in the portal and powershell, we continued with our research.

2. You may query **ApiOperationEvent** table again to query, with filter ApiName contains "DELETE Trigger", if the Trigger was deleted or not:

```

ApiOperationEvent
| where env_time >= ago(15d)
| where DataFactoryName =~ "CustomerDataFactoryName"
| where ApiName contains "DELETE Trigger"
| project env_time, ApiName, RequestUri

```

Output:

env_time	ApiName	RequestUri
2020-04-18 21:34:28.6178819	DELETE Trigger/DeleteTriggerAsync	DELETE https://pmwesteurope.svc.datafactory.azure.com/subscriptions/7328bdc4-4d89-43b6-9f37abedbd18/resourceGroups/RD-EUW-PROD-DataPlatformProd/providers/Microsoft.DataFactory/factories/KCF-EUW-PROD-AcquisitionTriggers/DA_ReportingCOW_Reports_Daily/api-version=2018-08-01
2020-04-18 21:34:28.6882788	DELETE Trigger/DeleteTriggerAsync	DELETE https://pmwesteurope.svc.datafactory.azure.com/subscriptions/7328bdc4-4d89-43b6-9f37abedbd18/resourceGroups/RD-EUW-PROD-DataPlatformProd/providers/Microsoft.DataFactory/factories/KCF-EUW-PROD-AcquisitionTriggers/OT_CSPR_Pow_Daily/api-version=2018-08-01
2020-04-18 21:34:30.9187718	DELETE Trigger/DeleteTriggerAsync	DELETE https://pmwesteurope.svc.datafactory.azure.com/subscriptions/7328bdc4-4d89-43b6-9f37abedbd18/resourceGroups/RD-EUW-PROD-DataPlatformProd/providers/Microsoft.DataFactory/factories/KCF-EUW-PROD-AcquisitionTriggers/OT_CSPR_Pressure_Daily/api-version=2018-08-01
2020-04-23 15:47:45.4079629	DELETE Trigger/DeleteTriggerAsync	DELETE https://pmwesteurope.svc.datafactory.azure.com/subscriptions/7328bdc4-4d89-43b6-9f37abedbd18/resourceGroups/RD-EUW-PROD-DataPlatformProd/providers/Microsoft.DataFactory/factories/KCF-EUW-PROD-AcquisitionTriggers/DA_RPTSpring_Priority_Services_Daily/api-version=2018-08-01

We noticed that customer has deleted multiple triggers in the last 15 days, but not the one that they would like to investigate. Since Kusto Logs has a retention period of 2-3 weeks, we searched the Jarvis logs for last 3 months to find out if there was any delete call for this trigger and the output of that.

3. You may run the following Jarvis Query and enter the Data Factory and Trigger details: [Jarvis Query](#) 

env_time	ApiName	RequestUri
03-20-2020 13:43:13	POST Trigger/StopTriggerPostAsync	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-20-2020 13:43:17	PUT Trigger/CreateOrUpdateTriggerAs...	PUT https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a8...
03-20-2020 13:43:22	POST Trigger/StartTriggerPostAsync	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-20-2020 13:44:41	POST Trigger/UnsubscribeFromEventsP...	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-20-2020 13:44:43	POST Trigger/StopTriggerPostAsync	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-20-2020 13:44:43	DELETE Trigger/DeleteTriggerAsync	DELETE https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f3...
03-20-2020 13:58:15	GET Trigger/GetTriggerAsync	GET https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a8...
03-23-2020 09:19:55	POST Trigger/StopTriggerPostAsync	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-23-2020 09:19:58	PUT Trigger/CreateOrUpdateTriggerAs...	pNew Trigger CreateRequest datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a8...
03-23-2020 09:20:00	POST Trigger/StopTriggerPostAsync	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-23-2020 09:31:39	GET Trigger/GetTriggerAsync	GET https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a8...
03-24-2020 09:17:53	POST Trigger/UnsubscribeFromEventsP...	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-24-2020 09:17:53	POST Trigger/StopTriggerPostAsync	POST https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f37a...
03-24-2020 09:17:54	DELETE Trigger/DeleteTriggerAsync	DELETE https://rpwesteurope.svc.datafactory.azure.com/subscriptions/7228bc4b-c4c0-4d99-b5fb-4f3...

We noticed that there were DELETE Trigger request for this trigger on 03/20/2020 and 03/24/2020. But there was no CreateOrUpdateTrigger request after 03/24/2020, so it became clear that the trigger was deleted successfully, and customer didn't recreate the trigger.

We engaged Product Group to find the root cause of the issue.

Product Group Root Cause

We have manually stopped the trigger. We had a bug months ago where we would create the trigger twice and after deletion we would only delete one of them and the other one would become a "zombie" trigger. This bug has been fixed and customers shouldn't face this issue anymore. However, it's possible that customers still see it for triggers created and started a long time ago. New triggers won't have this problem.

Additional Information:

- **Icm References:** ICM# 186125907
- **Author:** vimals
- **Reviewer:** vimals
- **Keywords:**

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