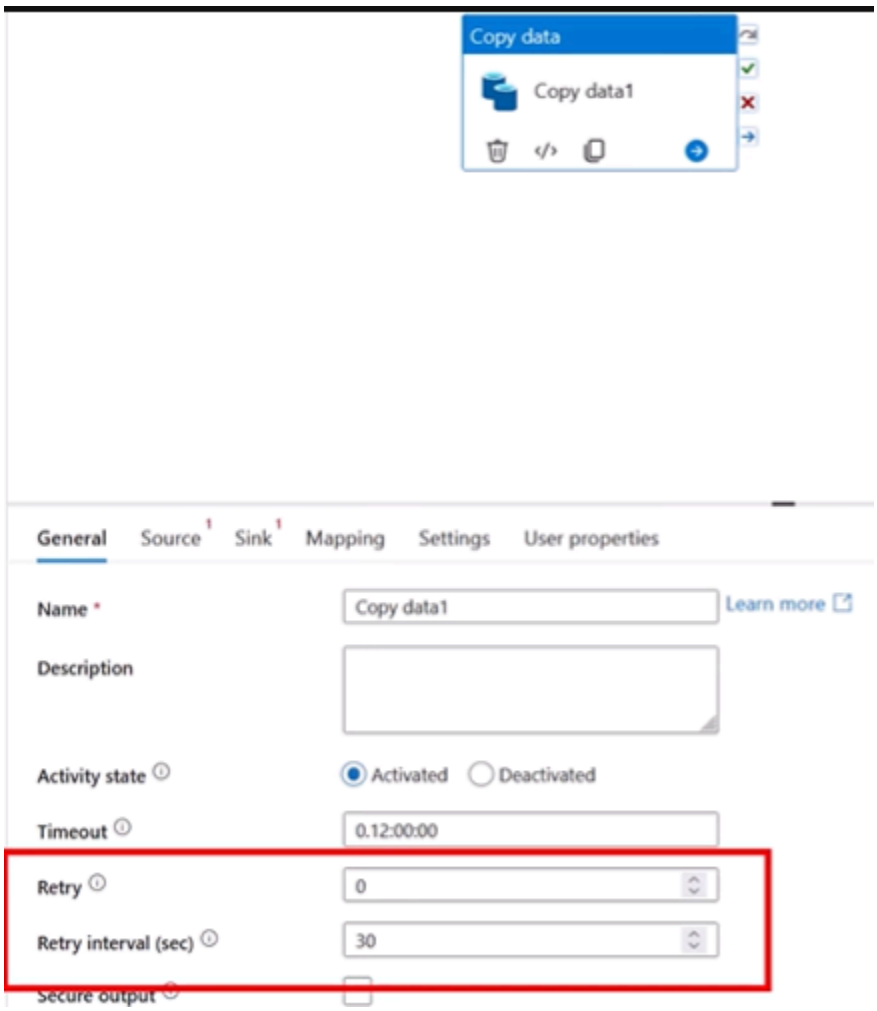
DP-203: 14 - Error Handling in ADF

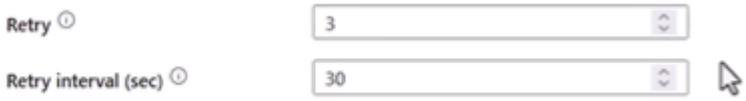
Retry

1. First thing to handle the erros in ADF we can retrying our operation
2. Lets see it practically
3. Lets create a pipeline and add copy data activity



In the each activity we have this retry option

4. Here if our pipeline encounter's an error…then it will wait for 30 sec and retry again for 3 times



Conditional path

1. To understand this let us consider two Set variable activities inside the pipeline

2. Initially here in set variable 1…we have added a variable “myvar” which takes an integer and stores it
3. Similarly for the set variable 2 ..we did the same thing
4. Here SV2 only runs if the SV1 has successfully completed..if it fails then SV2 never

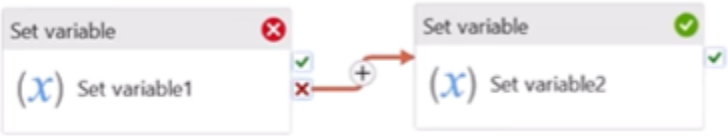
executes

because we have connected its path via on success

5. Now let us change the “myvar” of SV1 to a string …which gives an error and SV2 runs only when SV1 successfully executes

6. Here we can see SV2 has not run

7. here we have modifies the conditional path..to when SV1 fails then SV2 runs

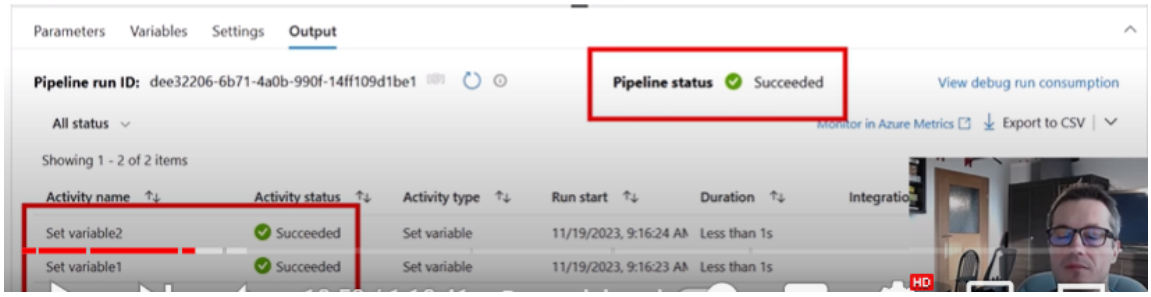


8. We have 3 rd connector on Completion it says that after completing executing(even pass or fail) SV1 then move to SV2…

9. We have 4th connector on skip…basically it moves to 2nd activity if the first activity is skipped

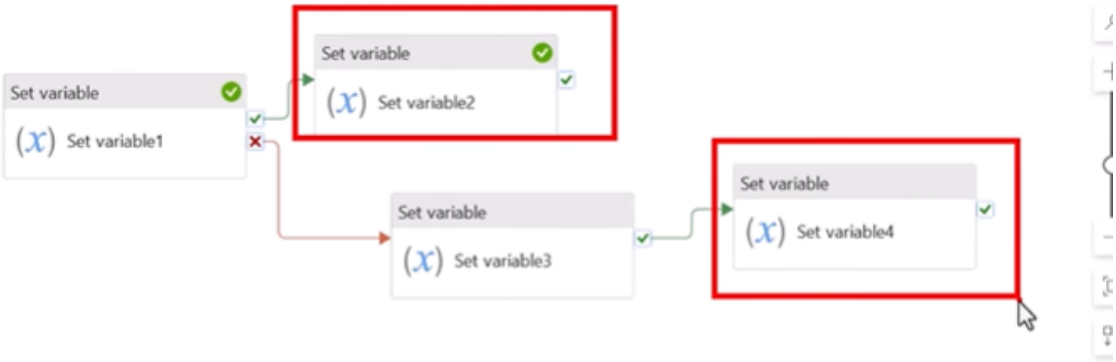
Pipeline Status

1. Here we have pipeline status as succeeded



2. It only shows succeeded when all the leaf activity passes

3. Examples of leaf activities highlighted in squares

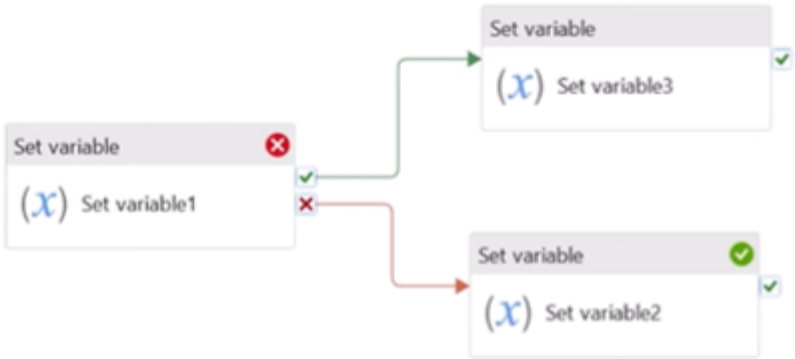


4. Suppose if the leaf activity is skipped…then it checks with the parent

Common Error Patterns

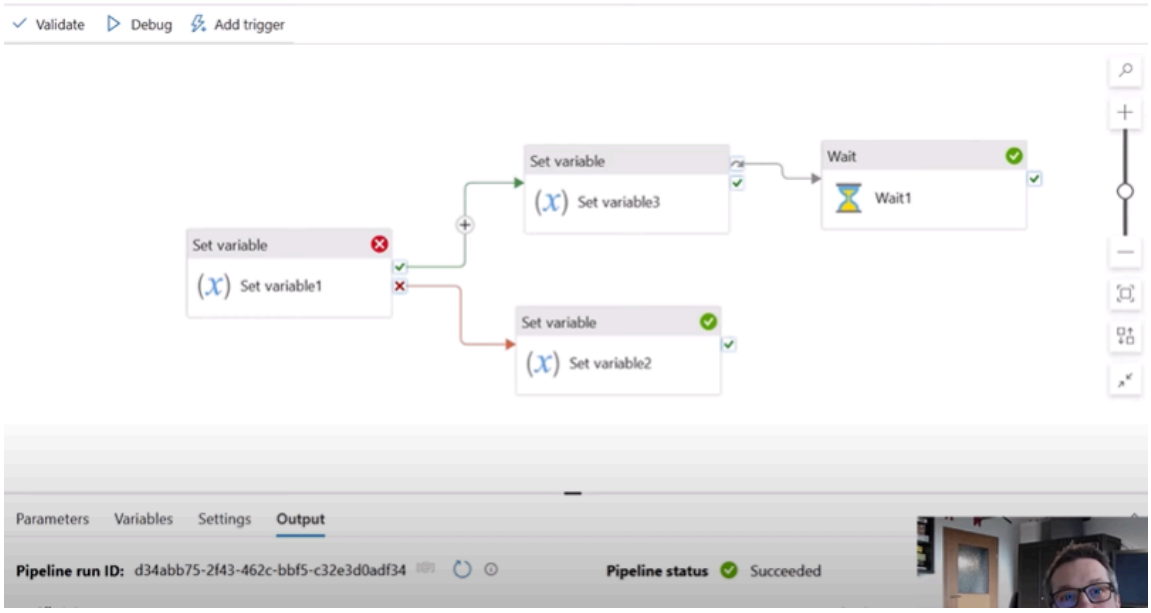
1. Try Catch method
   Here we can make use of this connectors to perform try and catch

here if activity1 fails we can send the error to activity2 (SV2)



2. DO IF ELSE
   Here if activity1 (SV1) fails then it executes Activity2 (SV2) else it executes Activity3(SV3)

3. DO IF SKIP ELSE



Here SV3 is getting skipped and it resulted in Pipline status Failed …as it is leaf activity and parent activity failed

So to avoid pipeline failed status we added a dummy activity which executes when leaf activity is skipped

4. TRY CATCH PROCEED

Here our first activity failed and 2nd activity handles this error and proceeds with 3rd activity
2nd scenario

Here the first activity passes and 2nd activity gets skipped as it only runs when first activity fails…and we have connected SV2 and SV3 using skipped connector ..as SV2 is skipped SV3 executes

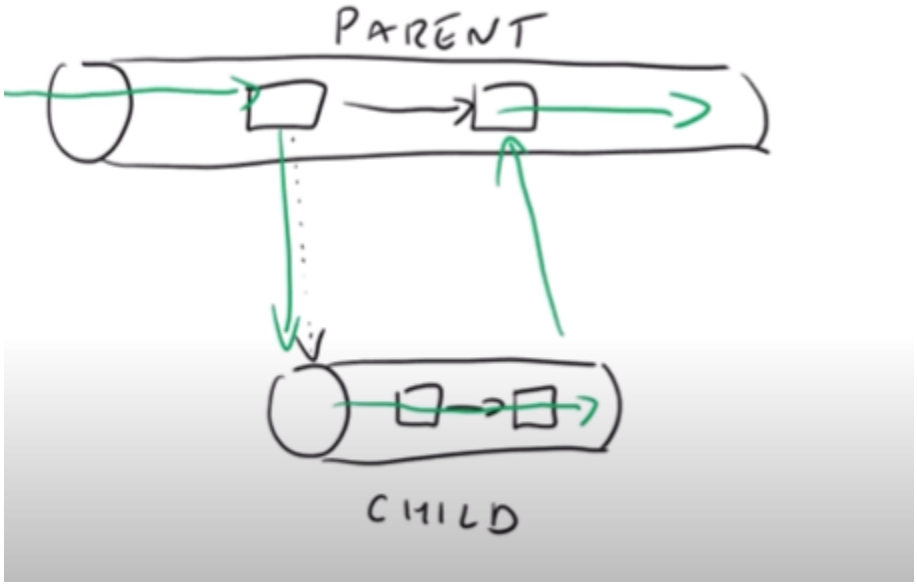
5. Generic Error Handling

   This Pattern is most confusing…refer video

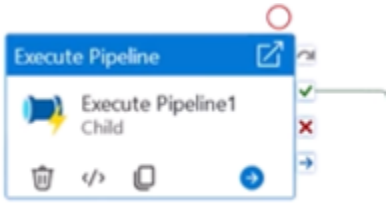
Parent Child Scenario

1. Assume we created two pipelines ..

2. CHild has two activities and parent has 2 activites

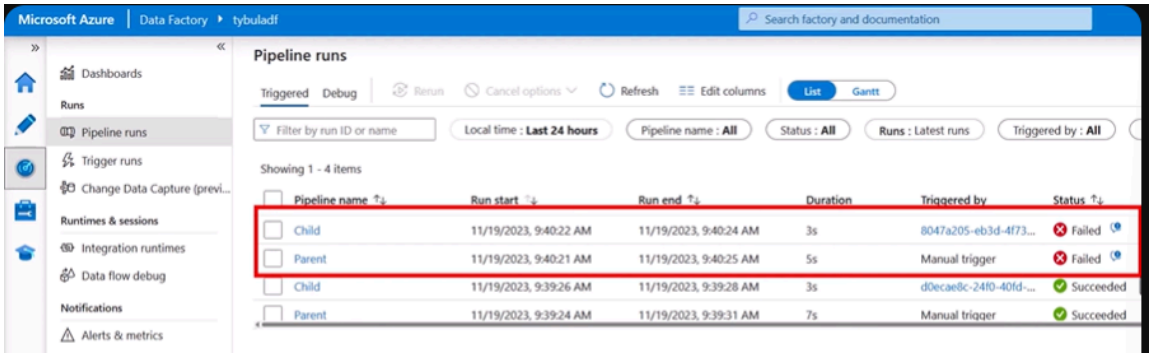


3. When we execute the parent …it goes to the child…execute all child activities and then execute remaining parent activities
4. Here we created child pipeline and added two activities of Set Variable (SV)
5. And created parent pipeline and inside that we have executed child using



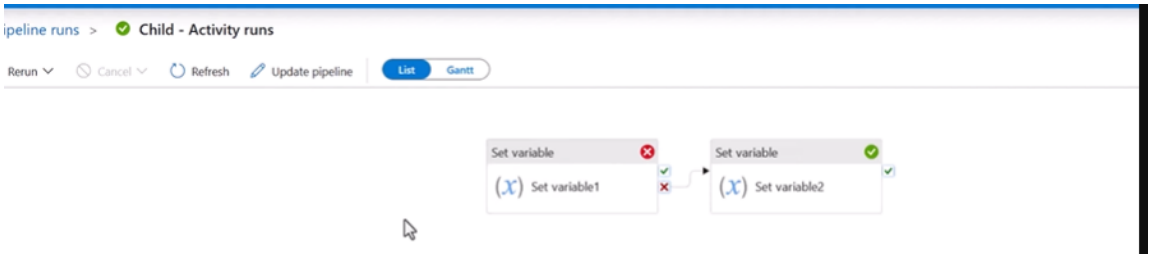
and created wait activity inside parent pipeline

6. To check the pipeline status ….we can see pipeline runs inside manage
7. Later we introduce a bug in child pipeline …now when we execute parent pipeline



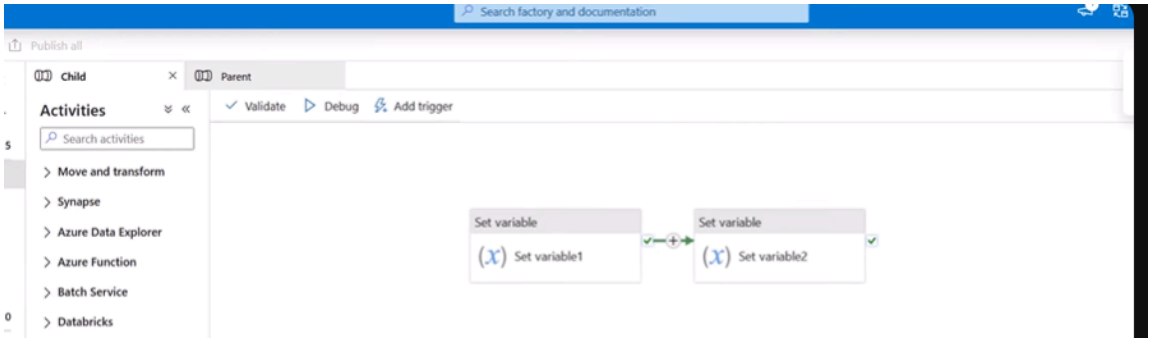
we see the both pipelines failed

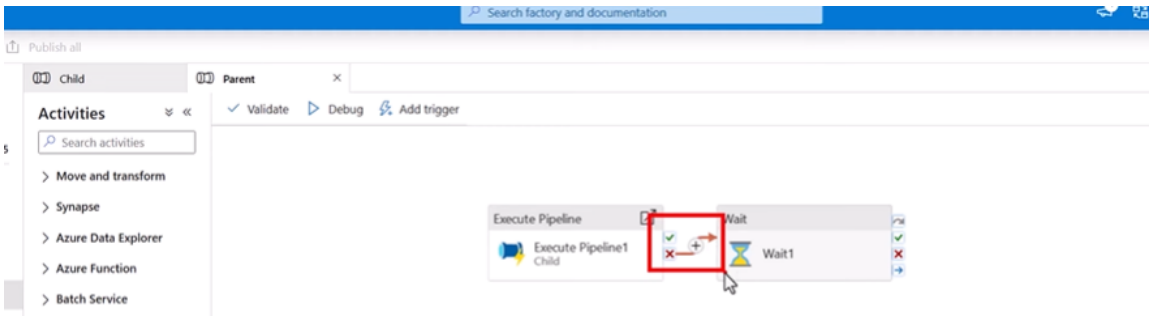
8. And if we handle the bug in the



and run the parent pipeline then we get success

9. Another scenario….
10. Here we do not handle the bug in child pipeline and handle the bug in parent pipeline…then we get..child as failed and parent as succeeded





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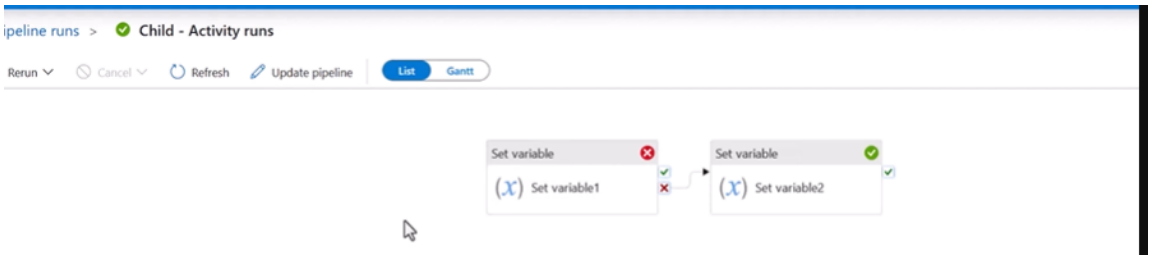
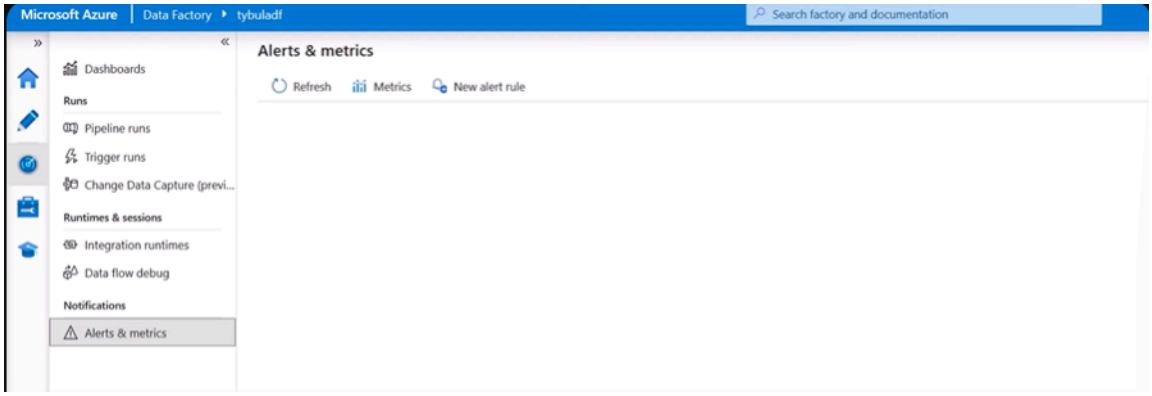


11. So by this we can track the error's and handle them in our ADF

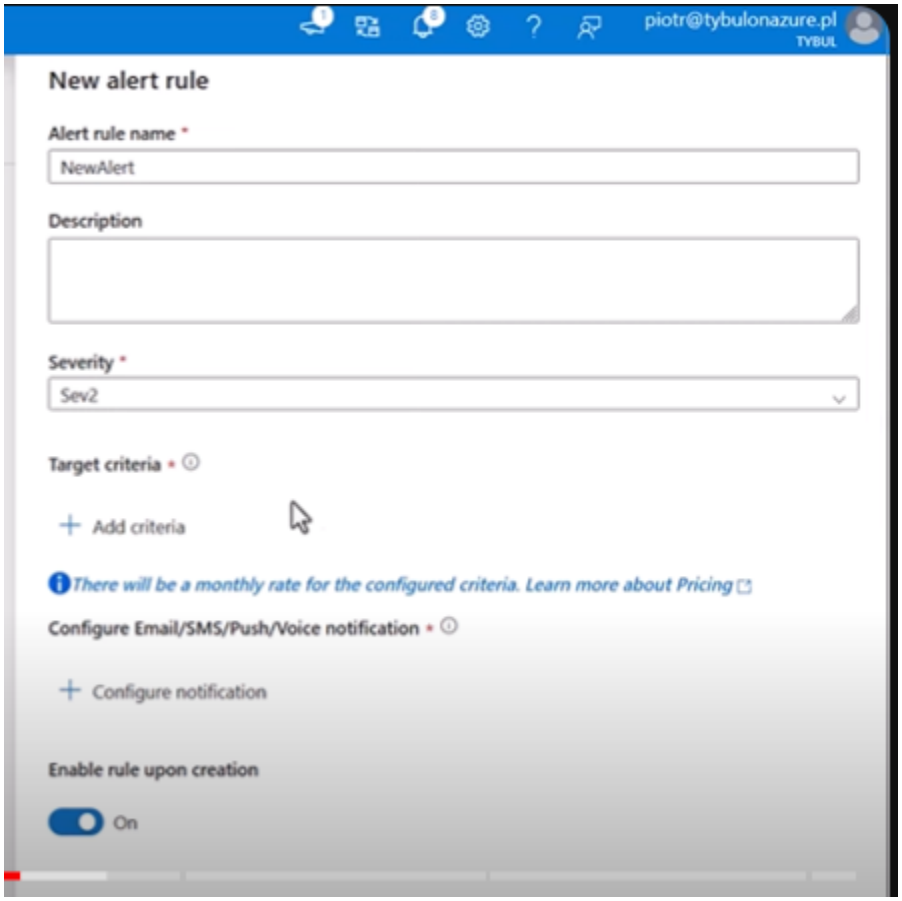
Alerts

1. Here alerts will notify us when there are any issues in our ADF

2. To setup alerts we go to



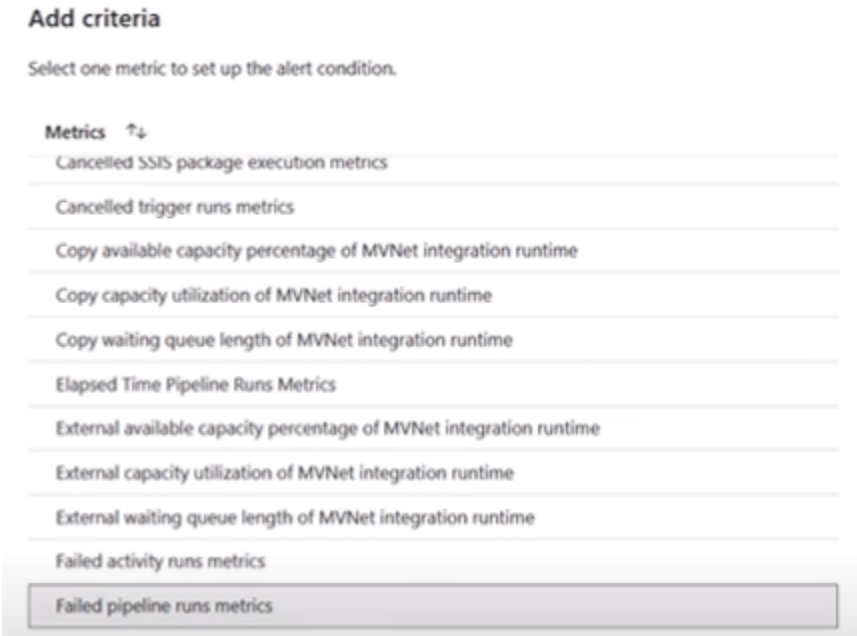
3. Next we will create a new alert rule



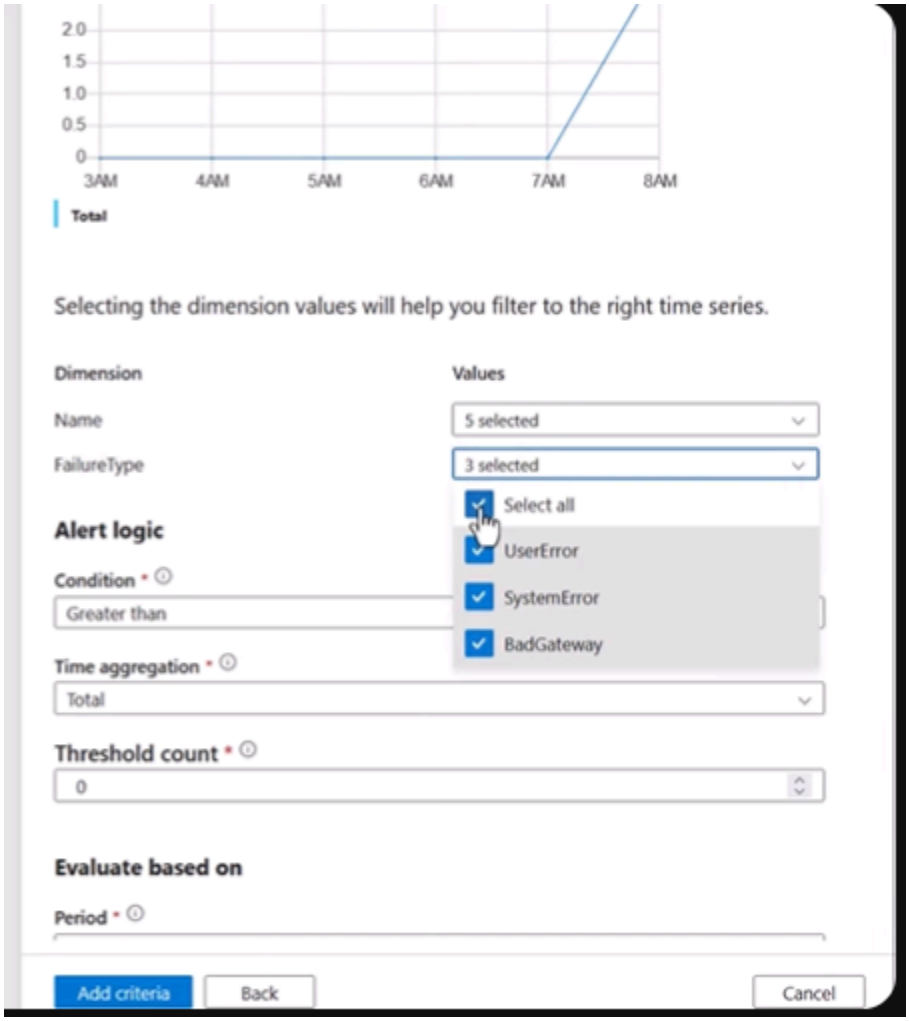
here severity is level of issue

4. Next we have to add criteria on when can this alert trigger

5. So here we can choose any issue



6. Next we have to select the pipelines and failure type



7. If threshold is greater than 0…then this alert gets trigger
8. After creating this criteria…we have to configure the notification on how to notify

9. So if any of our pipelines fails..then we get an email alert

Metric name	PipelineFailedRuns
Metric namespace	factories/tybuladf
Dimensions	ResourceId = /SUBSCRIPTIONS/1C461DD7-4FB5-4D22-B200-E052F75B9C6F/RESOURCEGROUPS/DP-203/PROVIDERS/MICROSOFT.DATAFACTORY/FACTORIES/TYBULADF Name = Child FailureType = UserError
Time Aggregation	Total
Period	Over the last 1 mins
Value	2
Operator	GreaterThan
Threshold	0
Criterion Type	StaticThresholdCriterion

See in the Azure portal >

You're receiving this notification as a member of the alert action group.
Unsubscribe from emails directed to this group.

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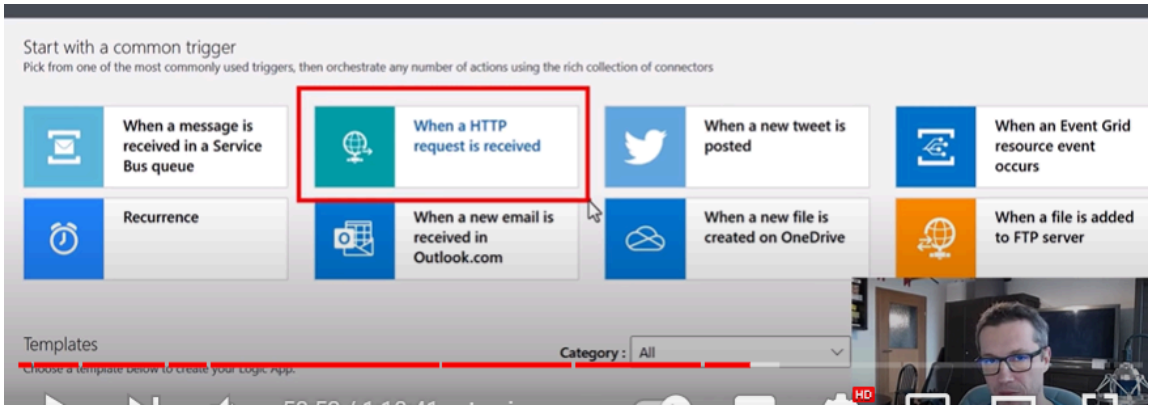
10. It will be very useful if we have 1000's of pipeline

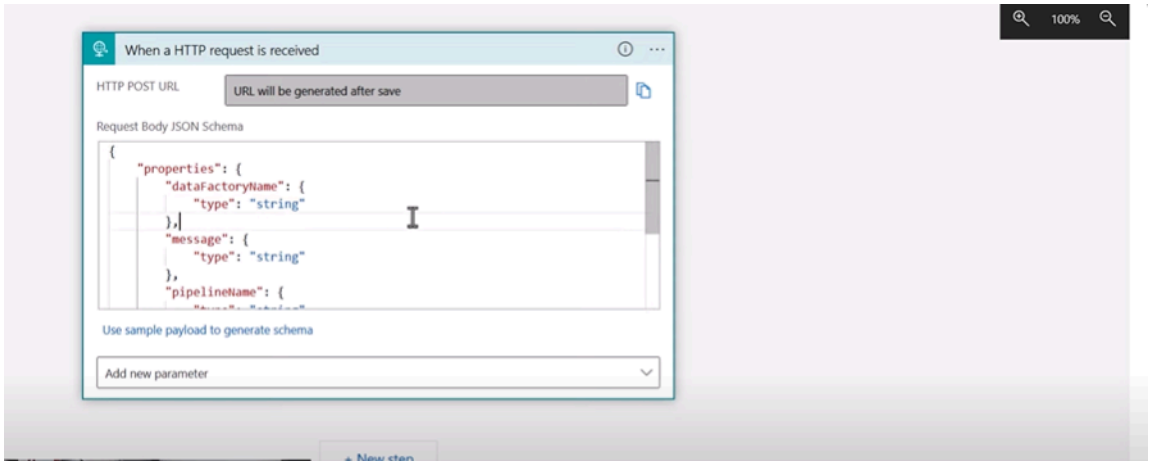
Logic App

1. Here ADF does not have activity to send email alert
2. So we have to use other Azure Service to send email alert
3. Next we create a logic app with defaults

4. Then we have to choose when should our logic app triggers



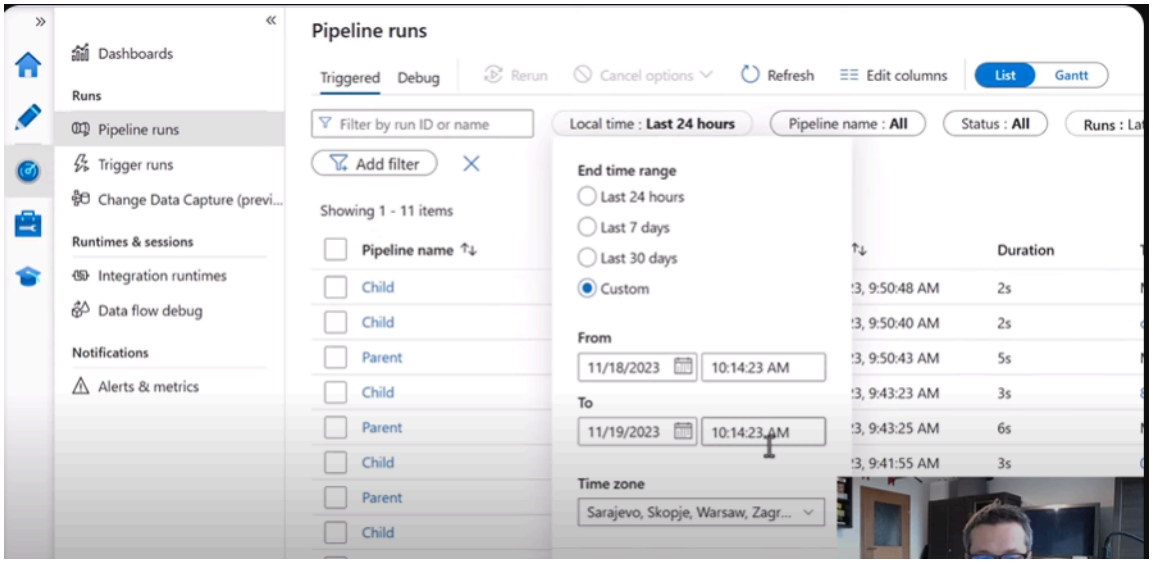
5. Next we define the adf name,pipeline name



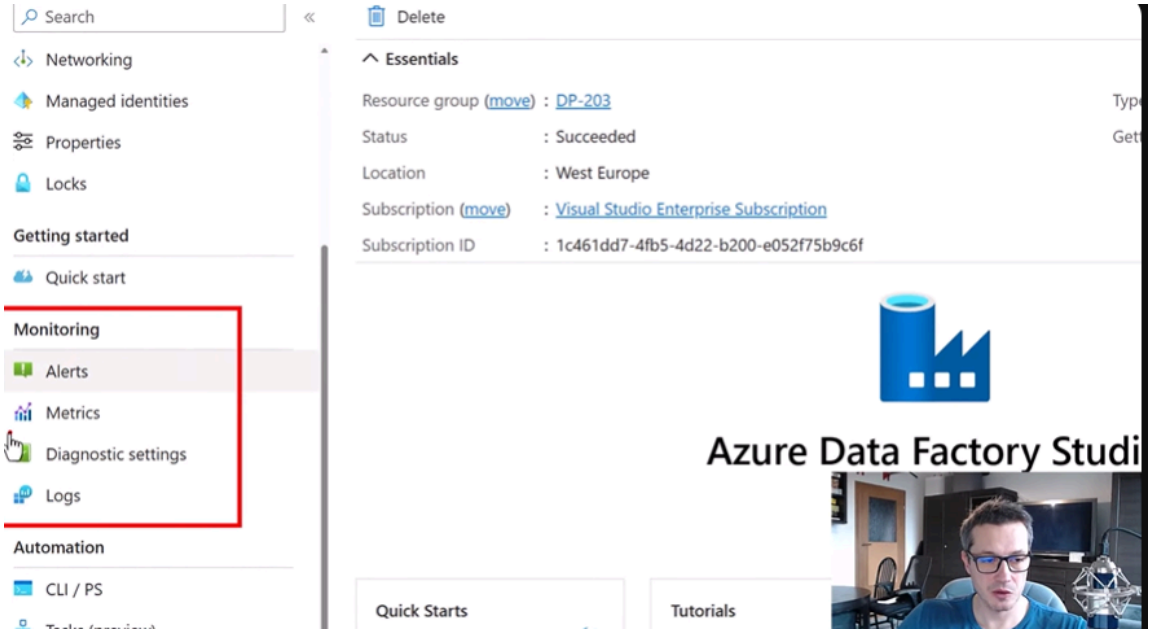
6. Next we need to use logic app connector and connect with outlook mail…now this email will send the alert to use
7. So when we use logic app…we can create custom email template and send it via alerts to the user's..if there's any issue(errors) with ADF pipelines

Log Analytics Approach

1. In ADF our pipelines logs are only stored for a max period of 45days

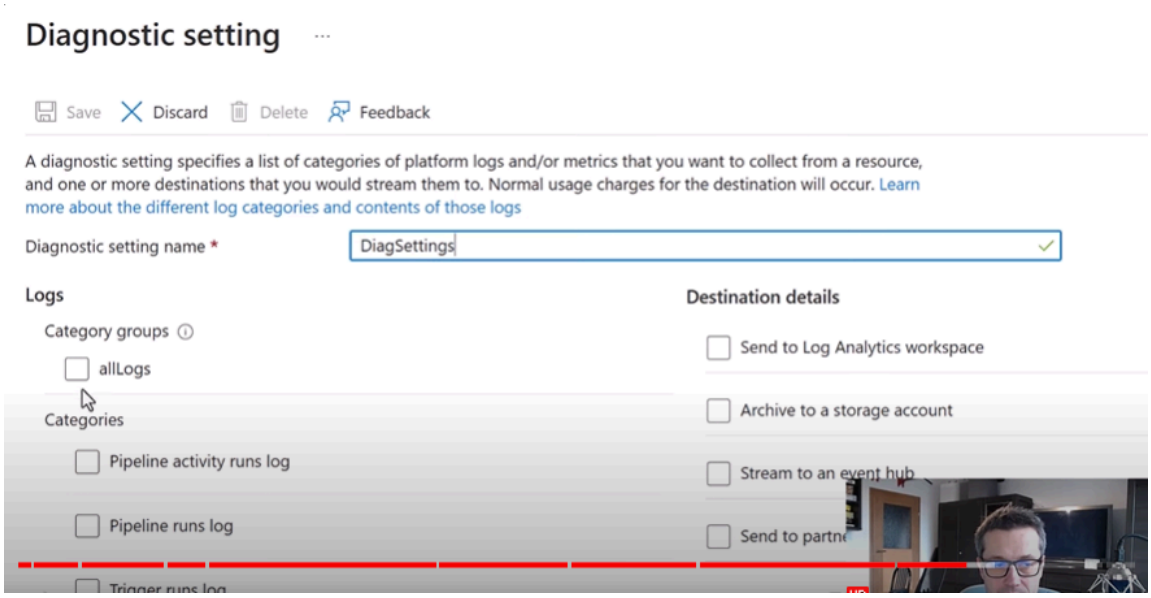


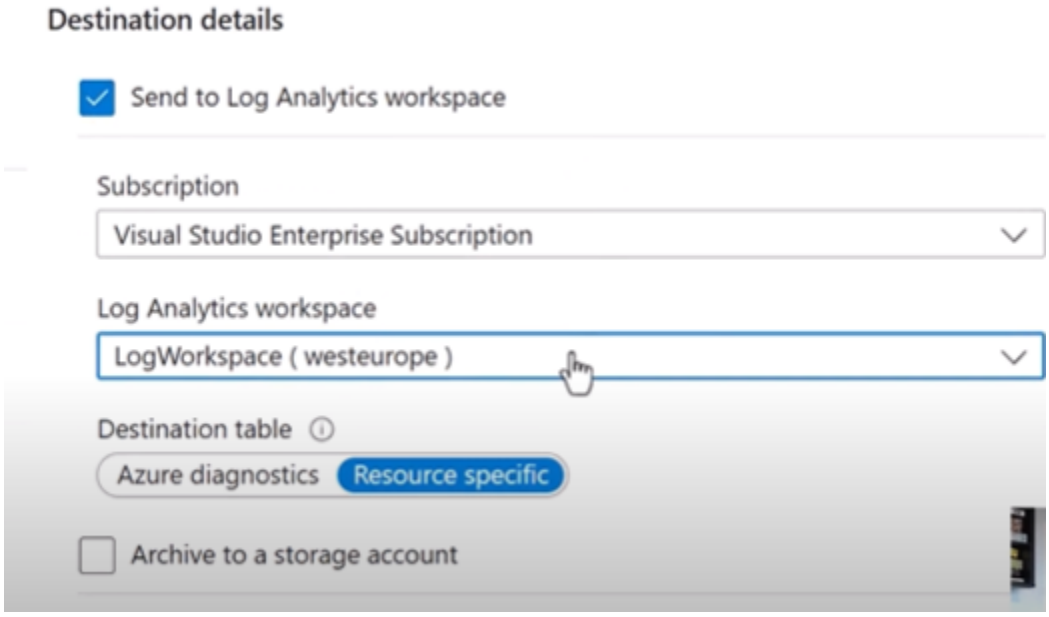
2. So to analyze the logs we might need to store them for a longer period of time…to perform any analysis
3. To store the logs for longer periods..we can use diagnostic settings
4. So here we can make use of log analytic workspace to store logs for longer period of time
5. Practical
6. Search log analytics workspace and create one
7. In the monitor tab we can see



diagnostic setting

8. Next we have to choose the type of logs that log analytics stores and the destination(log analytics workspace)





9. Also we can choose the retention period for this logs inside log analytic workspace …default is 30days…can be extended upto 730days.
10. And logs inside log analytics workspace can be queried using KQL language
11.