Building a framework for orchestration in Azure Data Factory

by Martin Schoombee

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Community Support

Name	Type	Frequency	Join
LA Data Platform User Group	Virtual	Every 3rd Wednesday monthly @ 7PM PDT	
San Diego SQL Server User Group	Hybrid	Every 3rd Thursday monthly @ 6.30PM PDT	
San Francisco Microsoft Fabric Meetup	Virtual	Every 2nd Wednesday monthly @ 7PM PDT	
Sacramento SQL Server User Group	In-Person	Every 1st Wednesday monthly @ 6PM	

#SQLSatOC

Find more Azure Data Tech Groups on Meetup

Martin Schoombee

"I help people make sense
of their data"

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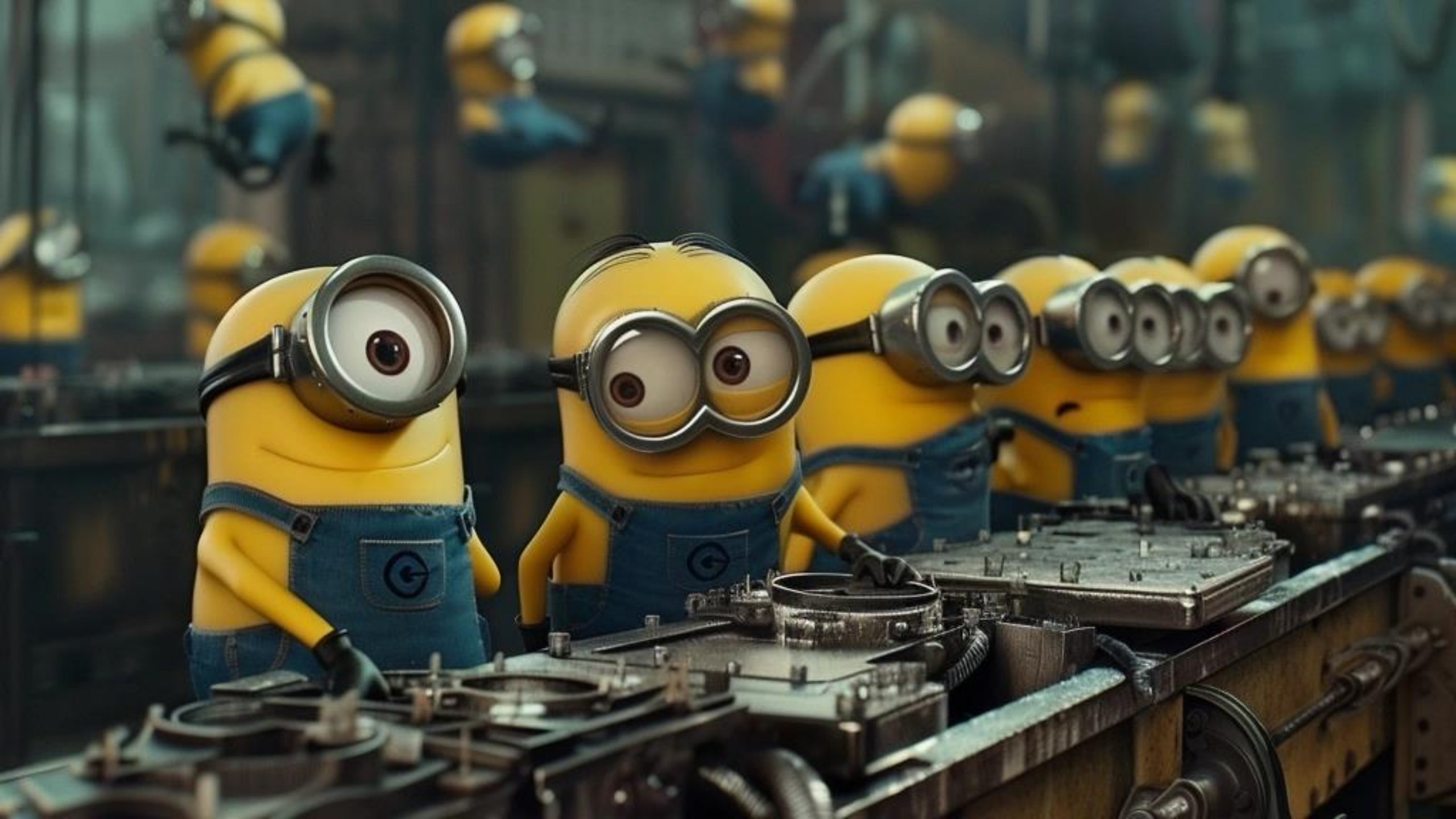
My company: 28twelve.consulting

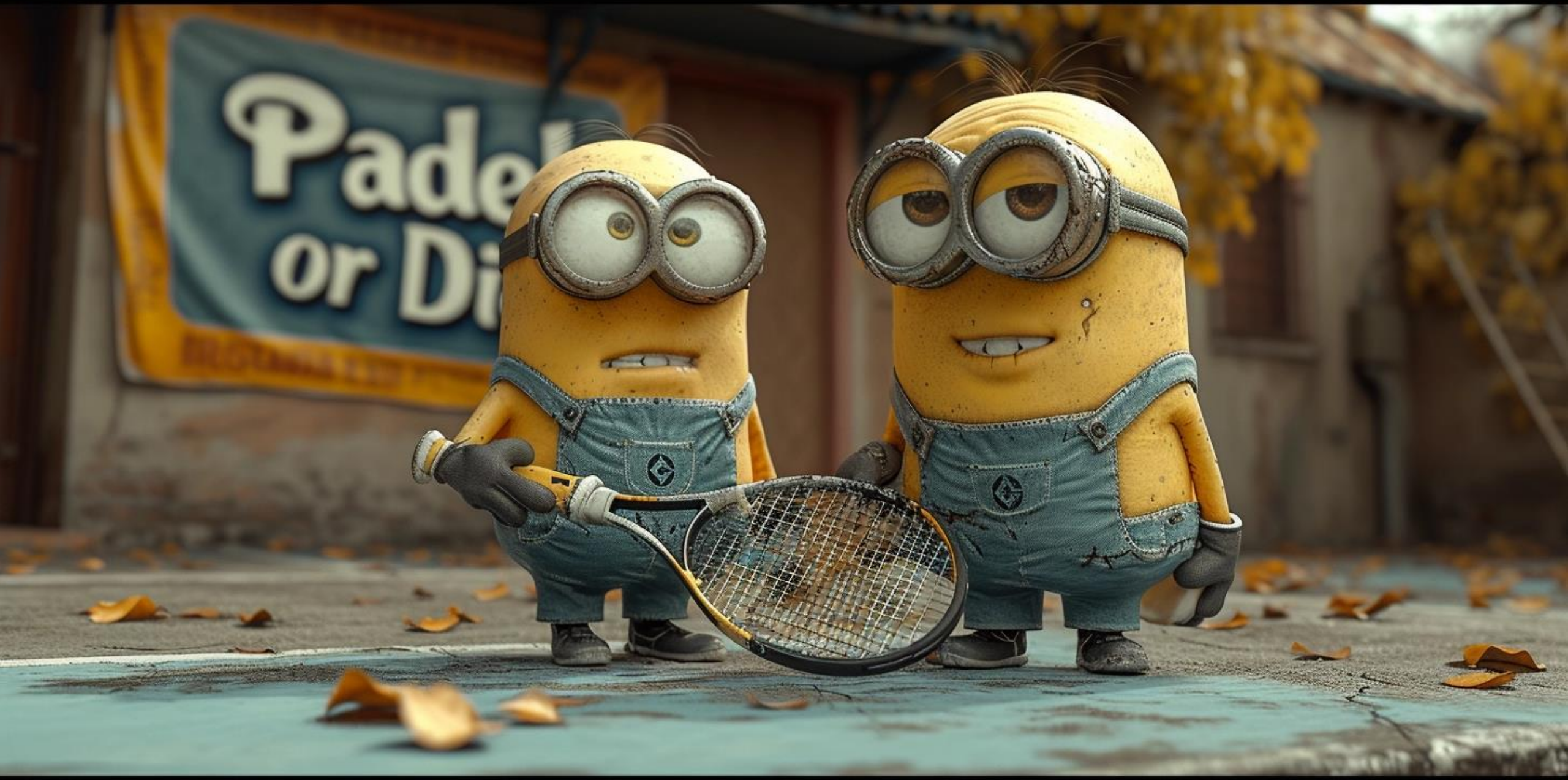
Tweet me: @MartinSchoombee

GitHub Repo:
https://github.com/mschoombee/Presentations/wiki/Presentations

Agenda

- The what & the why
- Characteristics of a good framework
- Orchestration
- Framework components

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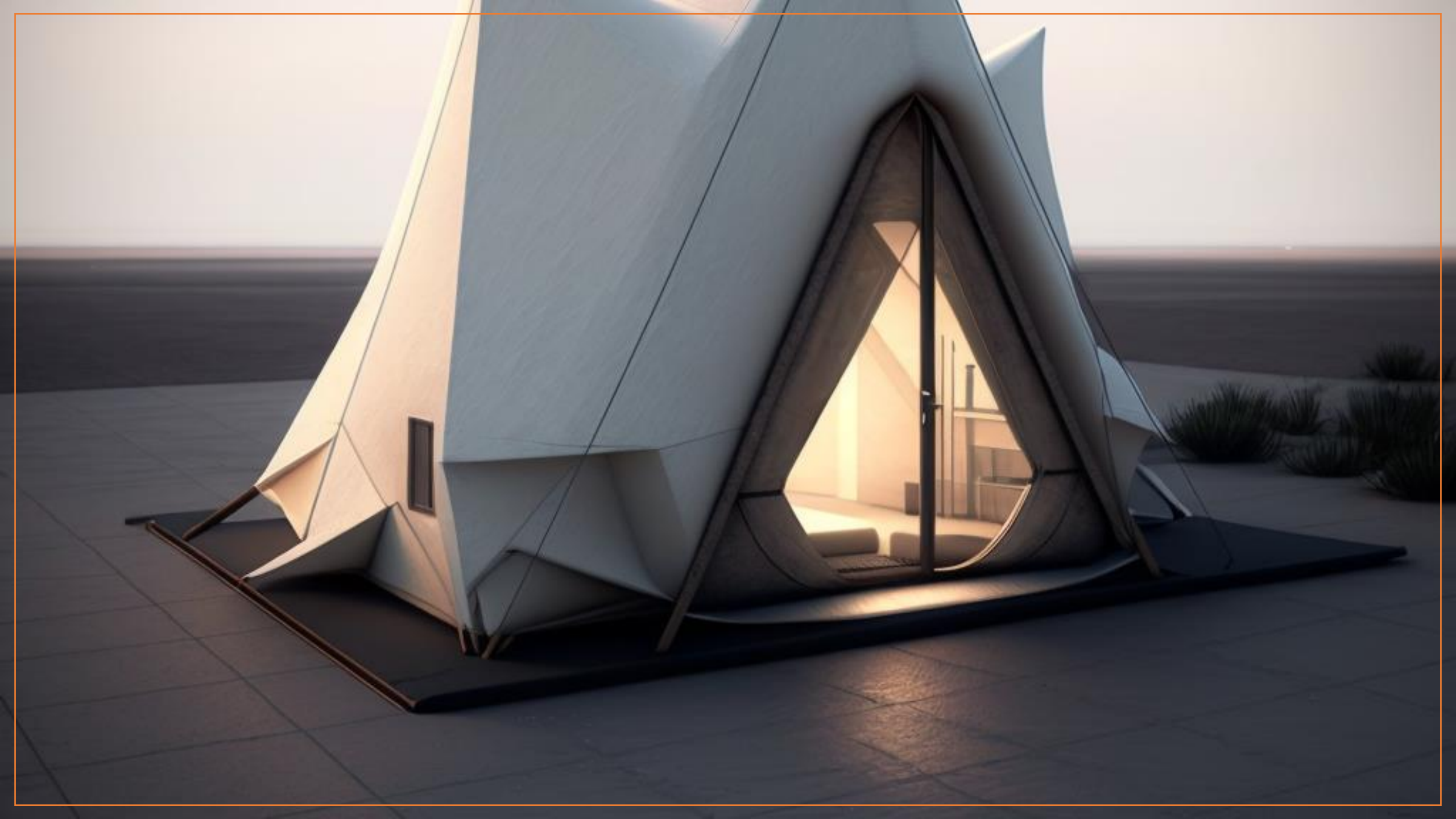


Repeatable Functionality

Efficiency & Performance

Scalability

Component or Code Reuse

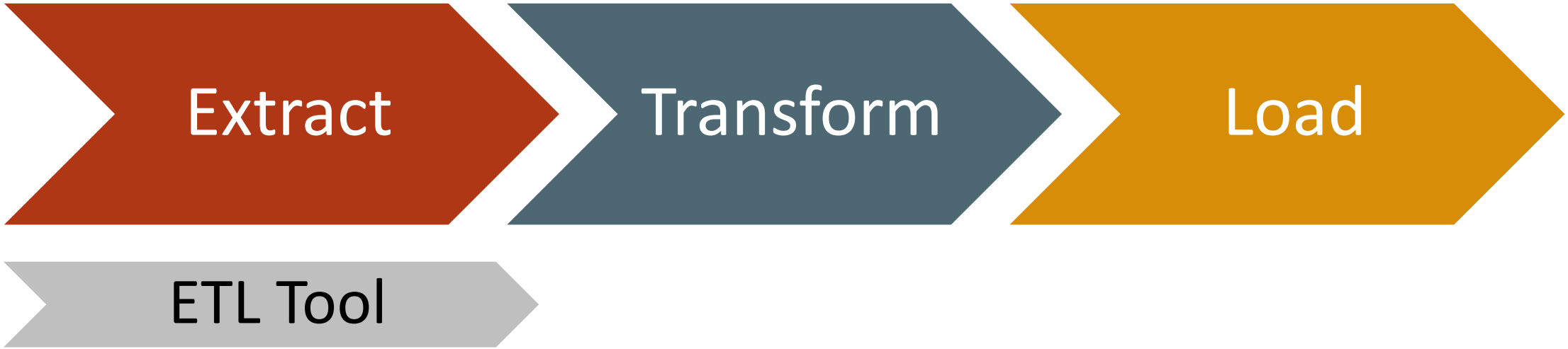
Simplicity

Cost

Orchestration

"Traditional" ETL Approach

Orchestration



ELTL

ELTL

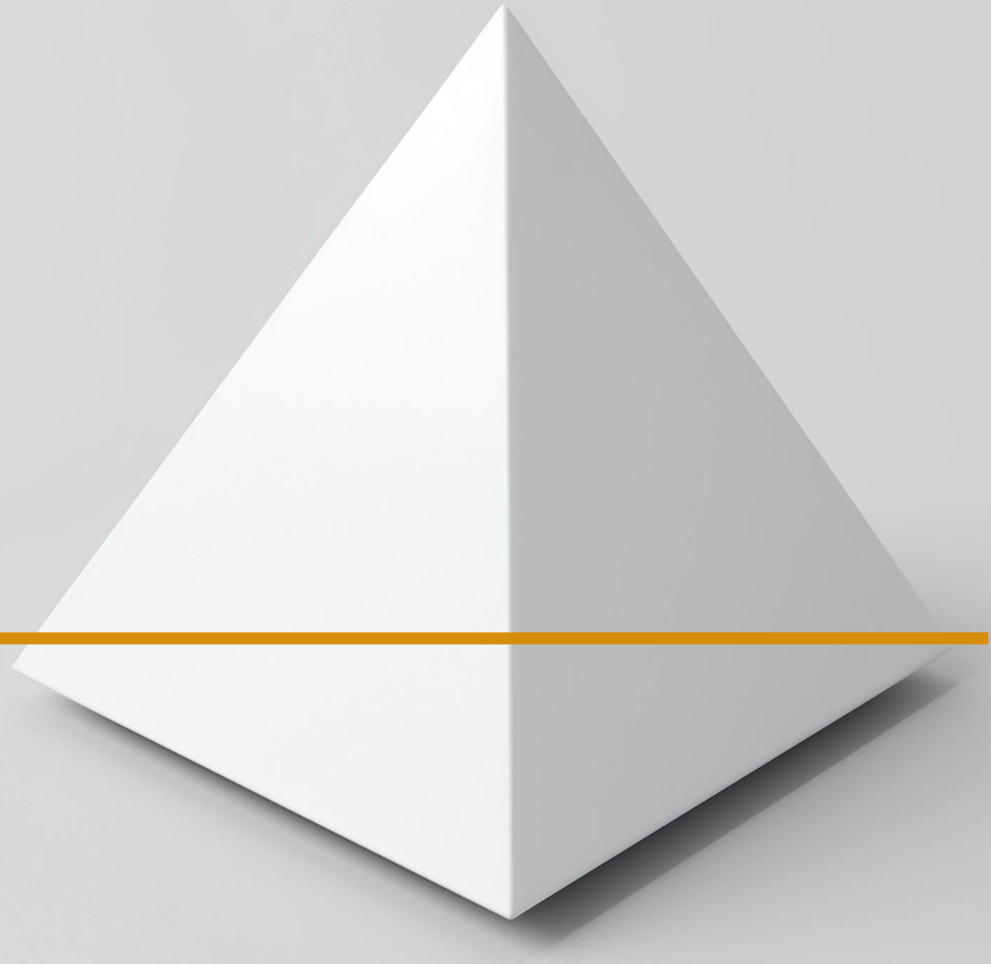
Extract
Load (Staging)
Transform
Load (DWH)
ETL Tool
Stored Procedures

ADF

SSIS

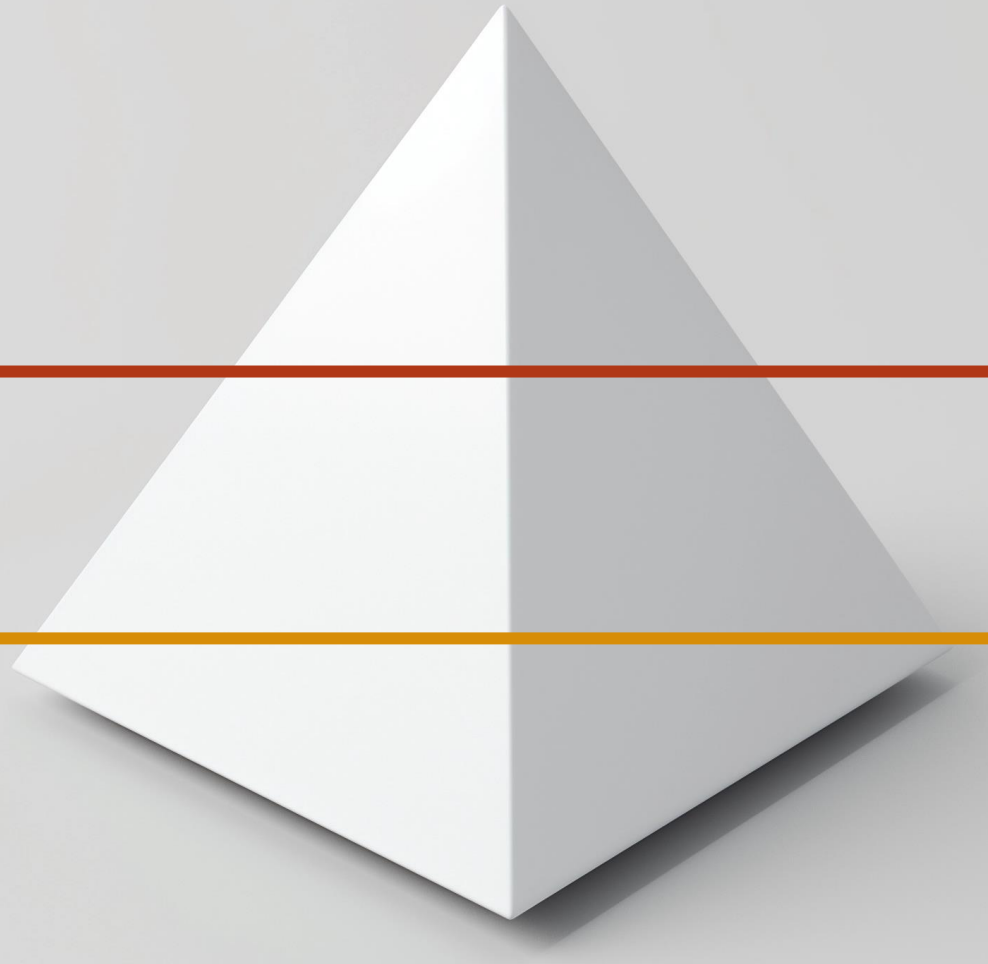
Framework Components

Workers



Orchestrators

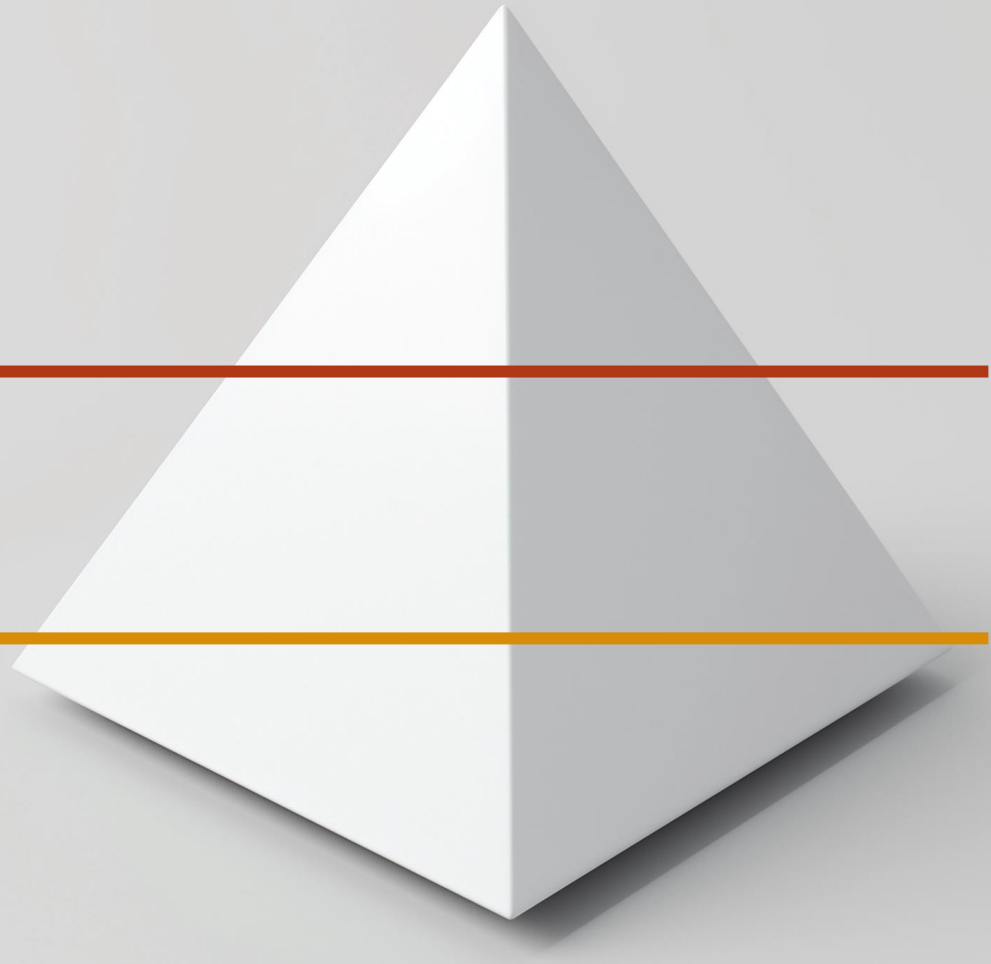
Workers



Controllers

Orchestrators

Workers

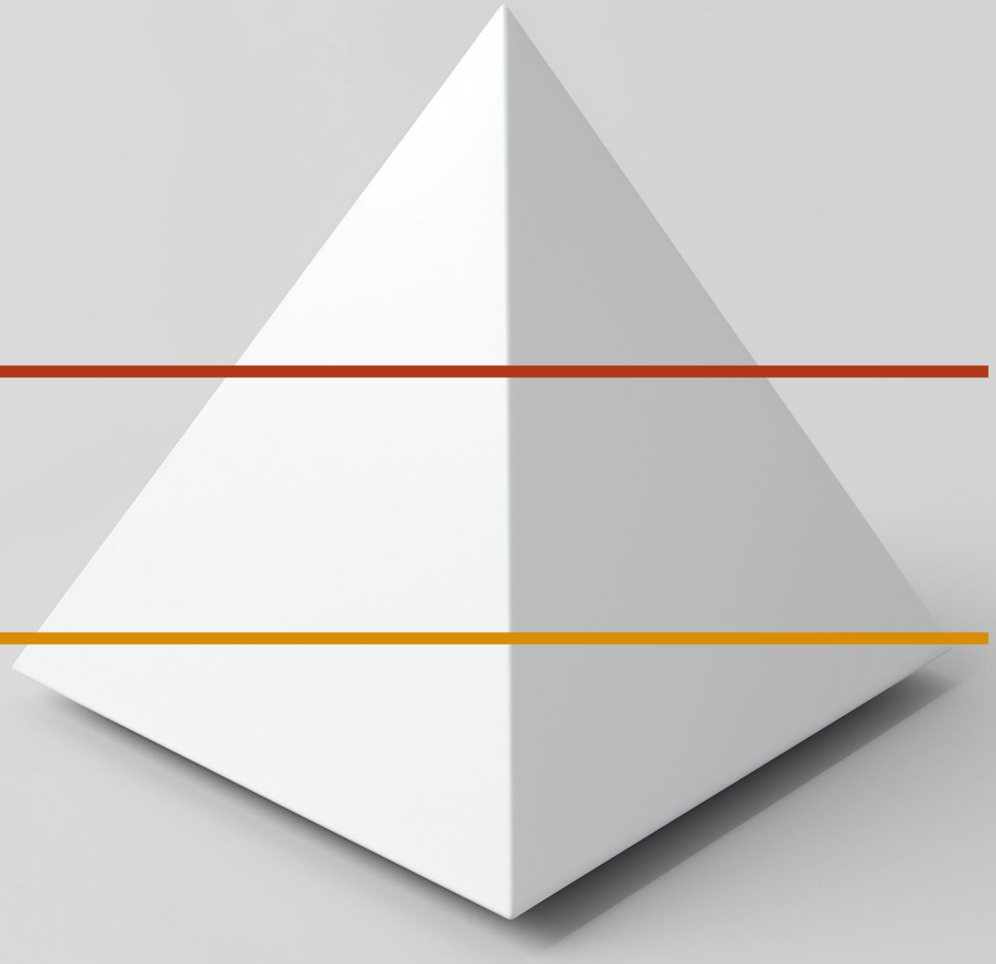


Metadata

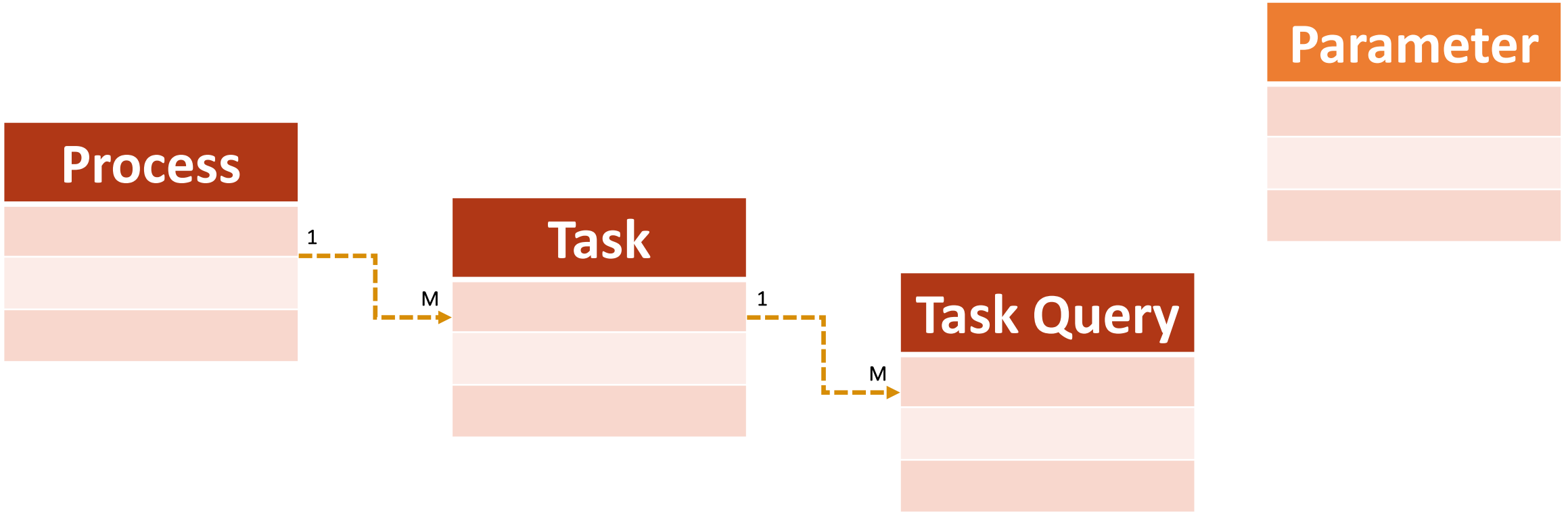
Controllers

Orchestrators

Workers



Metadata Tables



Process Table

Environment	Process Name	Execution Sequence	Execute Process
QA	Staging_Xero	1	Yes
QA	Dimensions	2	Yes
QA	Facts	3	Yes

Task Table

Process	Task Name	Target Schema	Target Table	…
Staging_Xero	Staging_Xero_Invoices	Staging_Xero	Invoices	…
Dimensions	Dimensions_Customer	Dimension	Customer	…
Facts	Facts_TimeEntry	Fact	Time	…

Task Table (continued)

…	Task Name	Column Mapping	Data Factory Pipeline	…

…	Staging_Xero_Invoices	{
		"type": "TabularTranslator",
		"mappings": […]
		}
			Copy Data - Xero	…

…	Dimensions_Customer		Execute Stored Proc - DWH	…
…	Facts_TimeEntry		Execute Stored Proc - DWH	…

Task Table (continued)

…	Task Name	Execution Sequence	Execute Task
…	Staging_Xero_Invoices	1	Yes
…	Dimensions_Customer	1	Yes
…	Facts_TimeEntry	1	No

Task Query Table

Task Name	Connection Secret	Source Query
Staging_Xero_Invoices	connectionstring-database-xero	https://api.xero.com/api.xro/2.0/Invoices
Dimensions_Customer		Dimension.LoadCustomer
Facts_TimeEntry		Fact.LoadTimeEntry

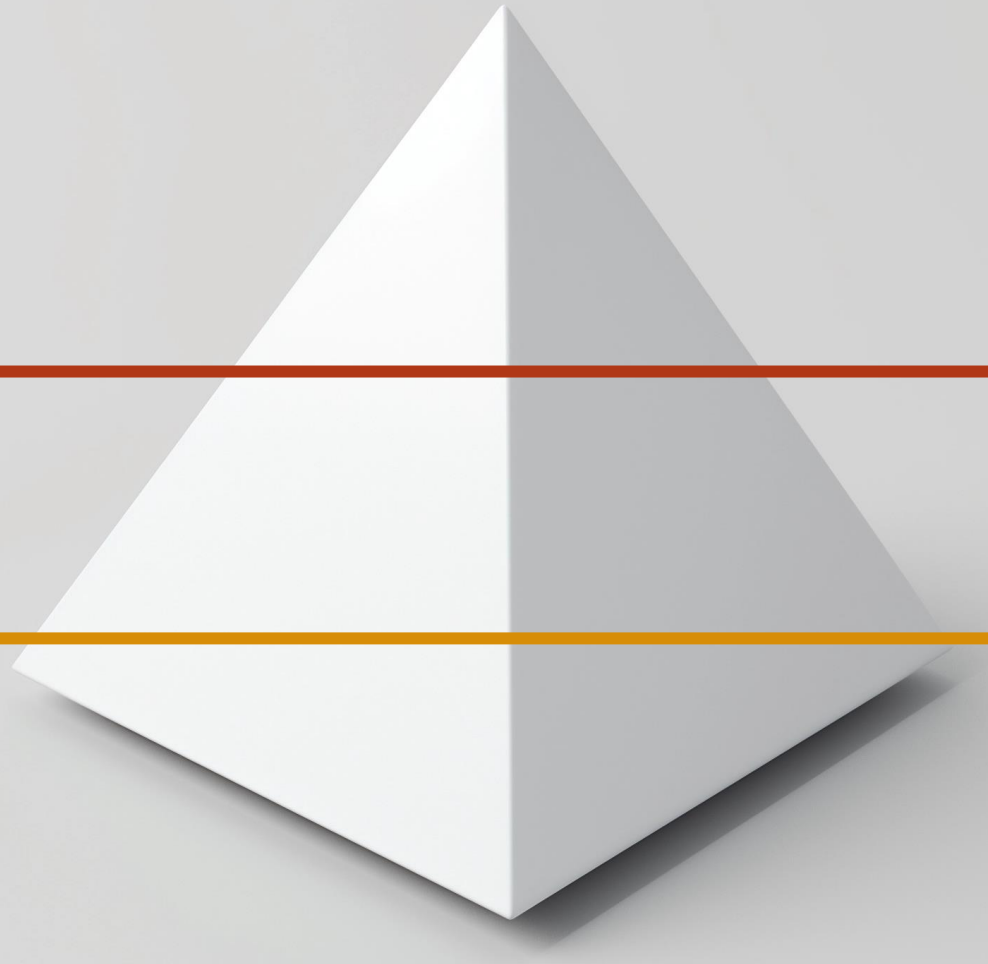
Parameter Table

Parameter Name	Parameter Value
Xero_Daily_DaysToLoad	20
Xero_Hourly_DaysToLoad	1

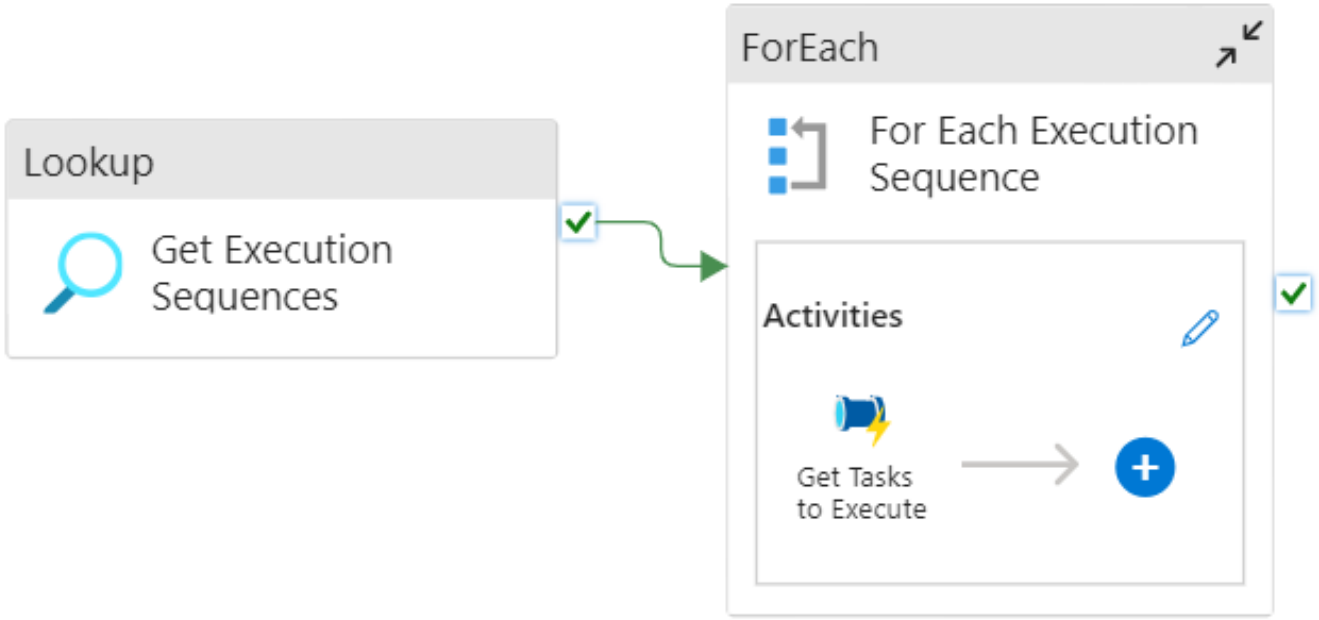
Controllers

Orchestrators

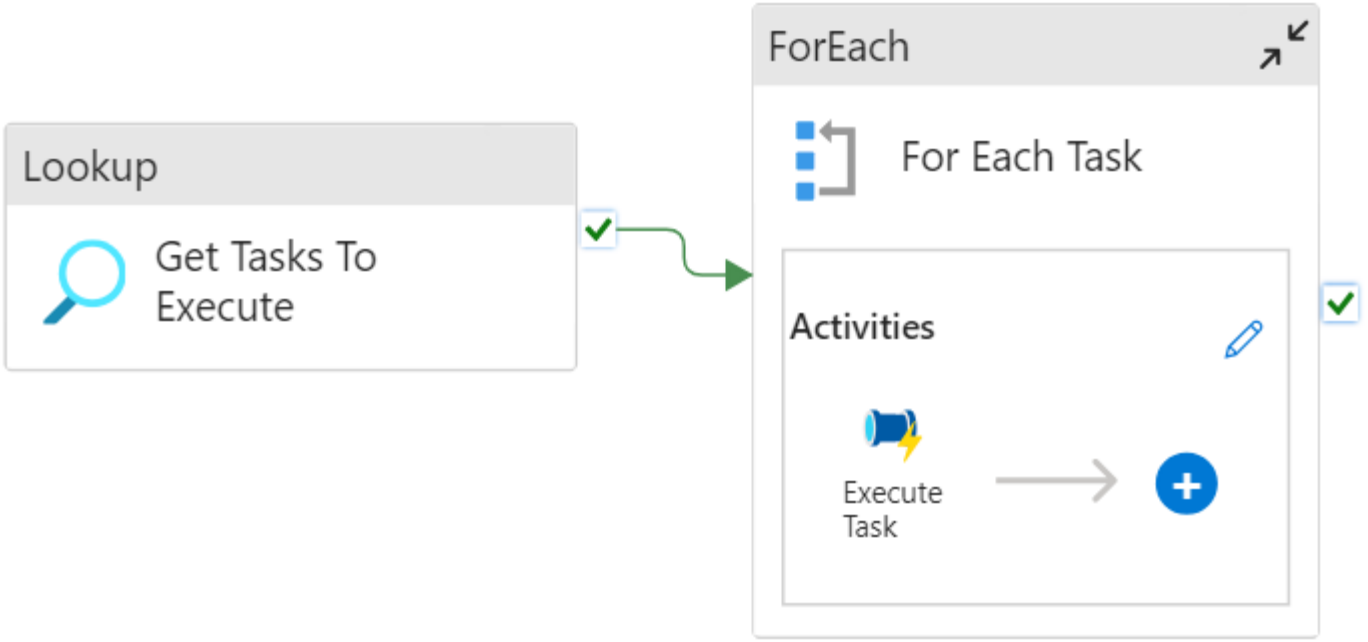
Workers



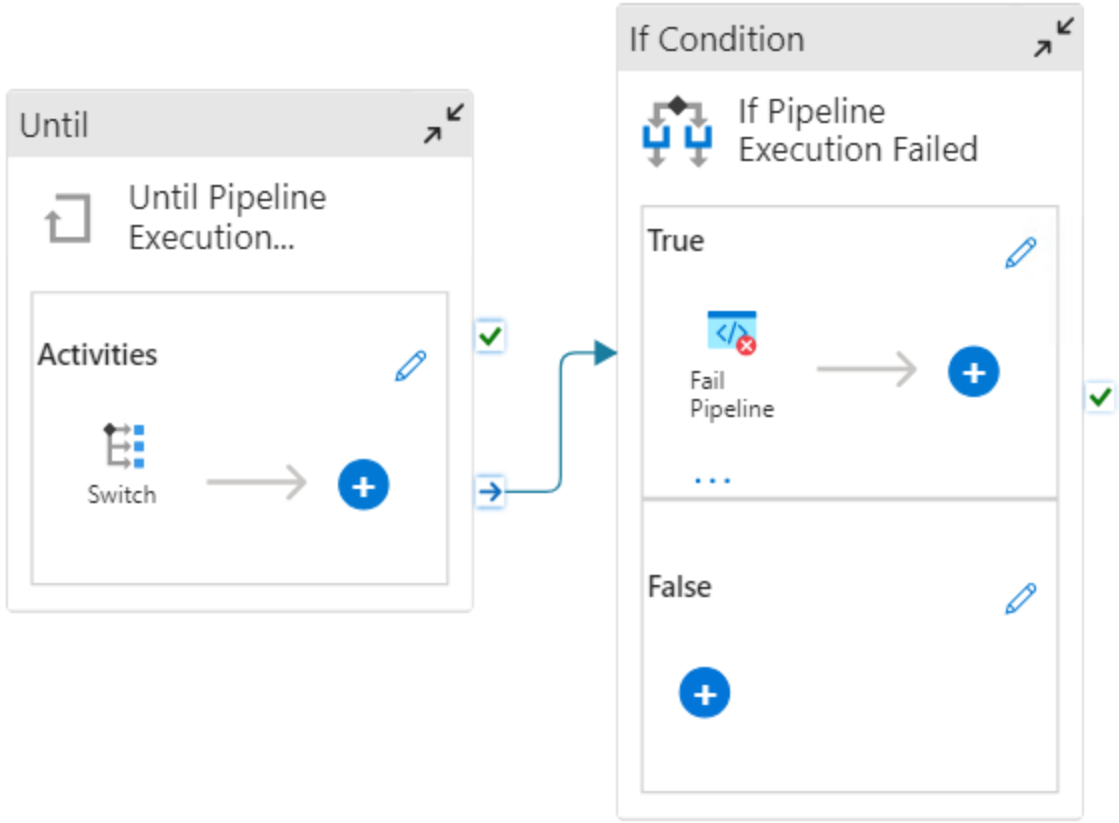
Main Entry Point



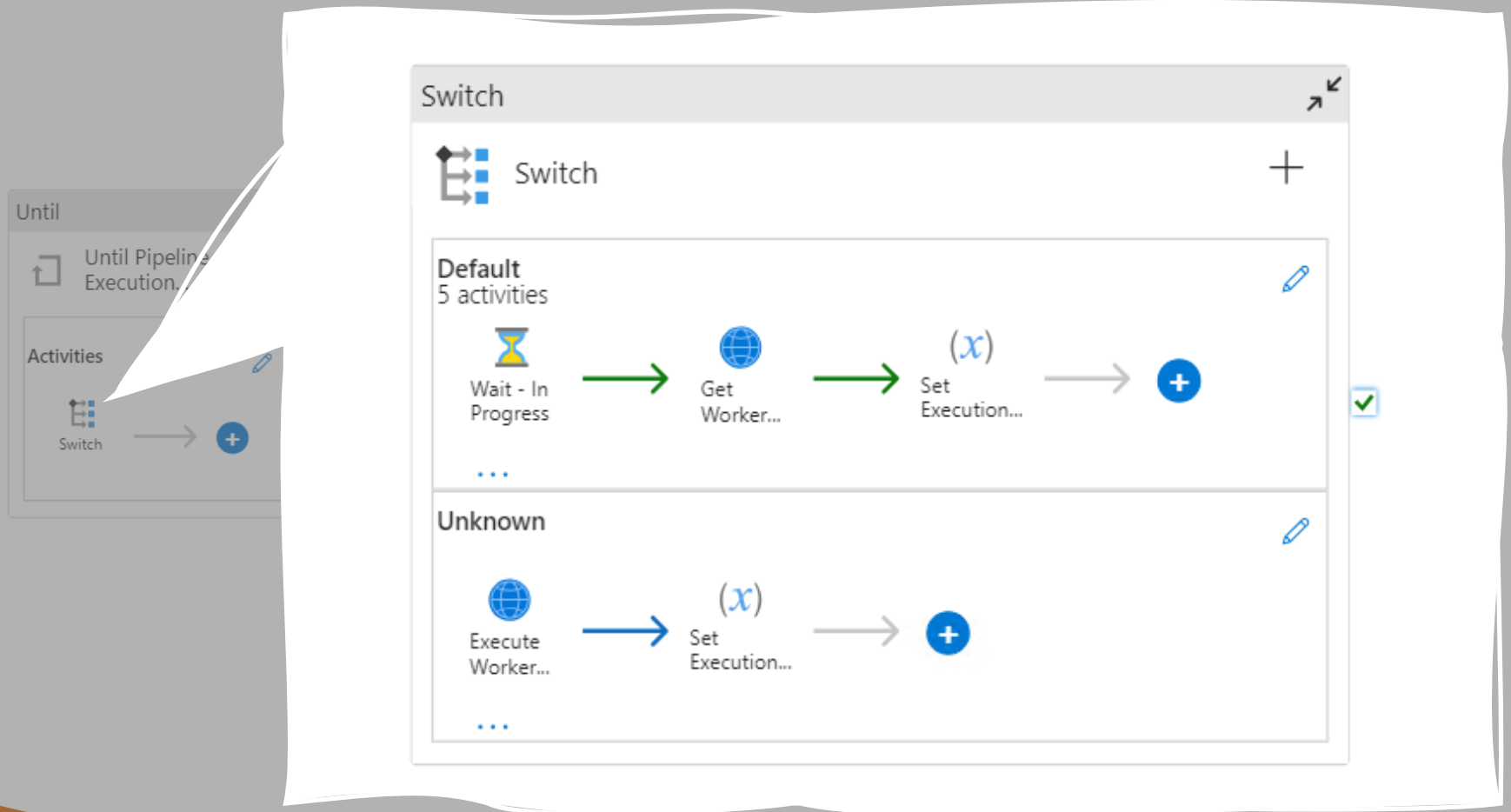
Get Tasks To Execute



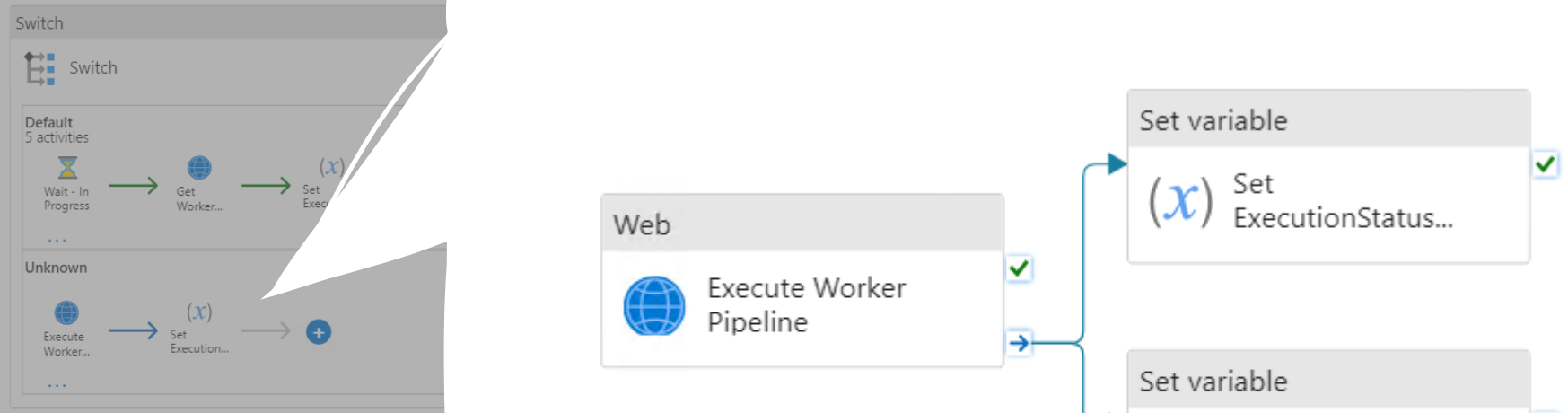
Execute Task

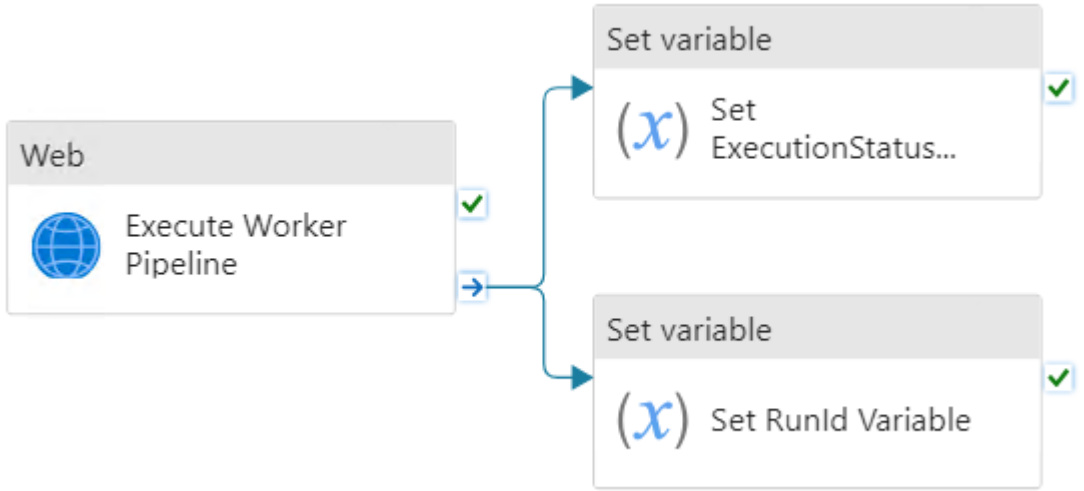


Execute Task (continued)

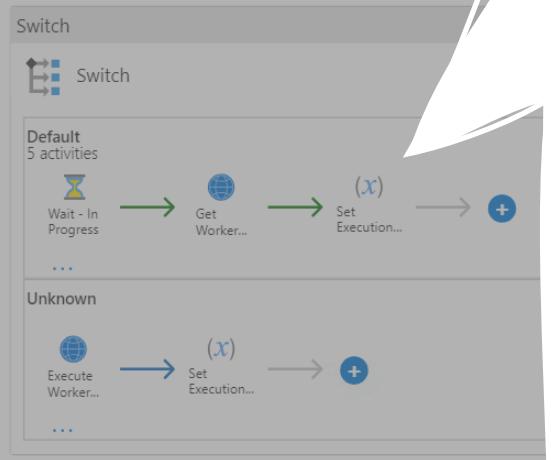


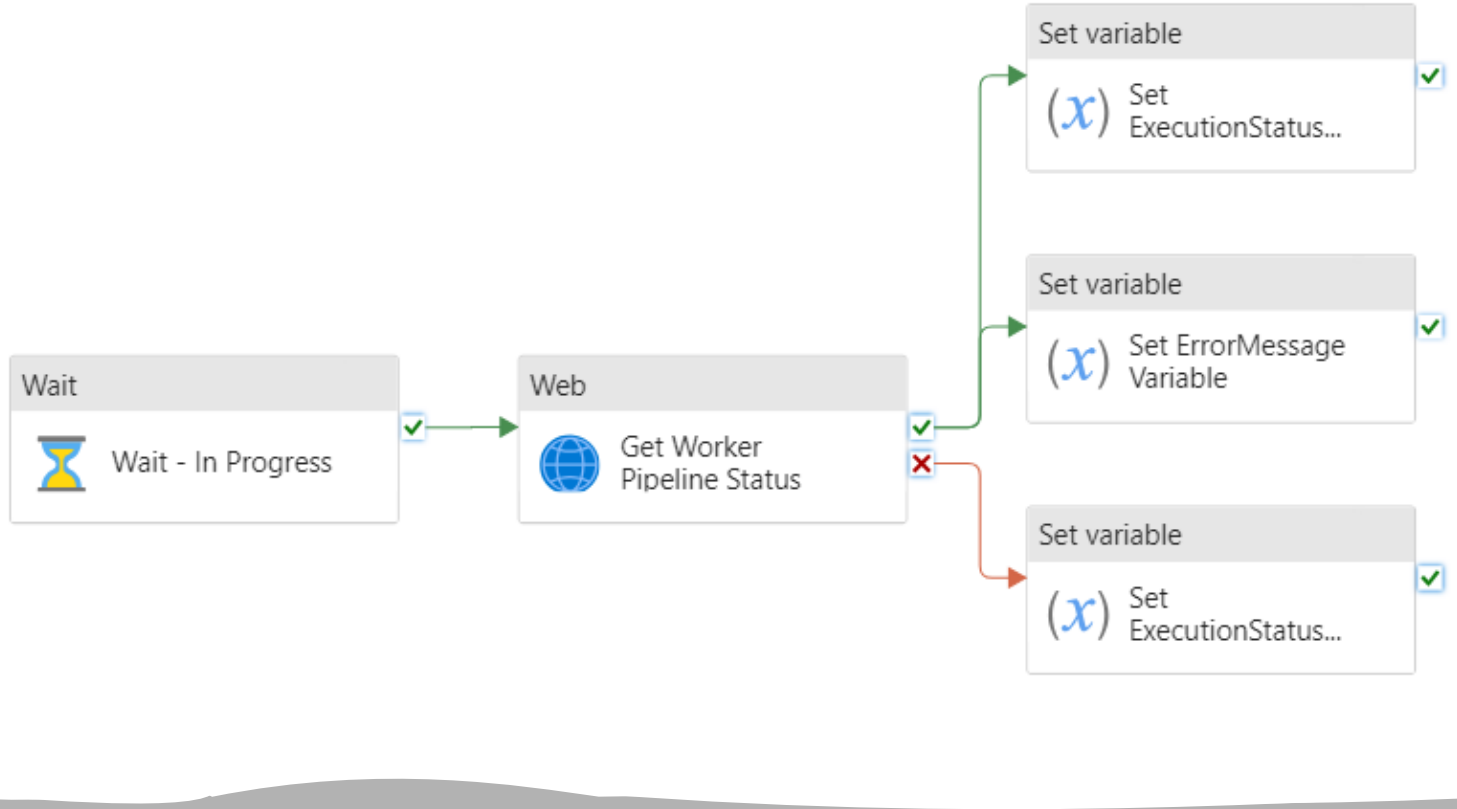
Execute Task (continued)



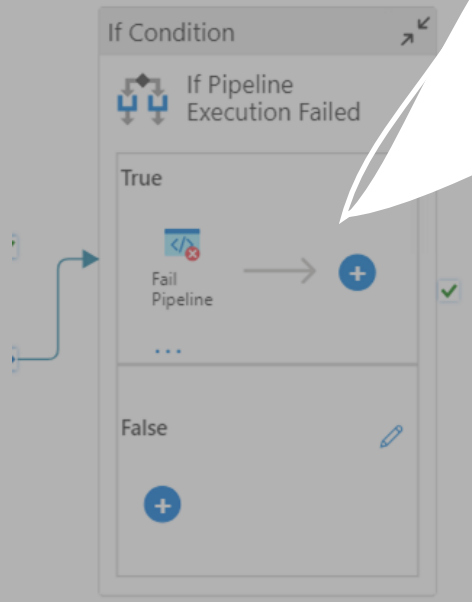


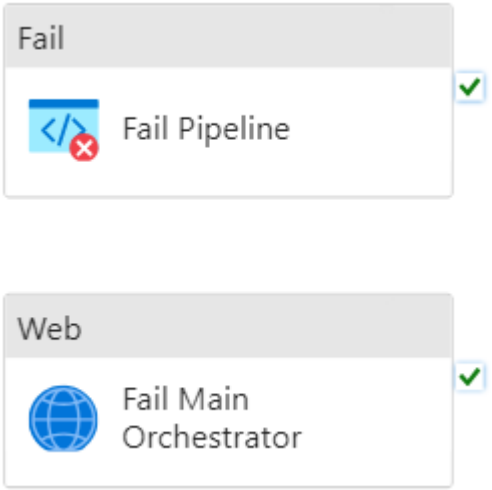
Execute Task (continued)





Execute Task (continued)

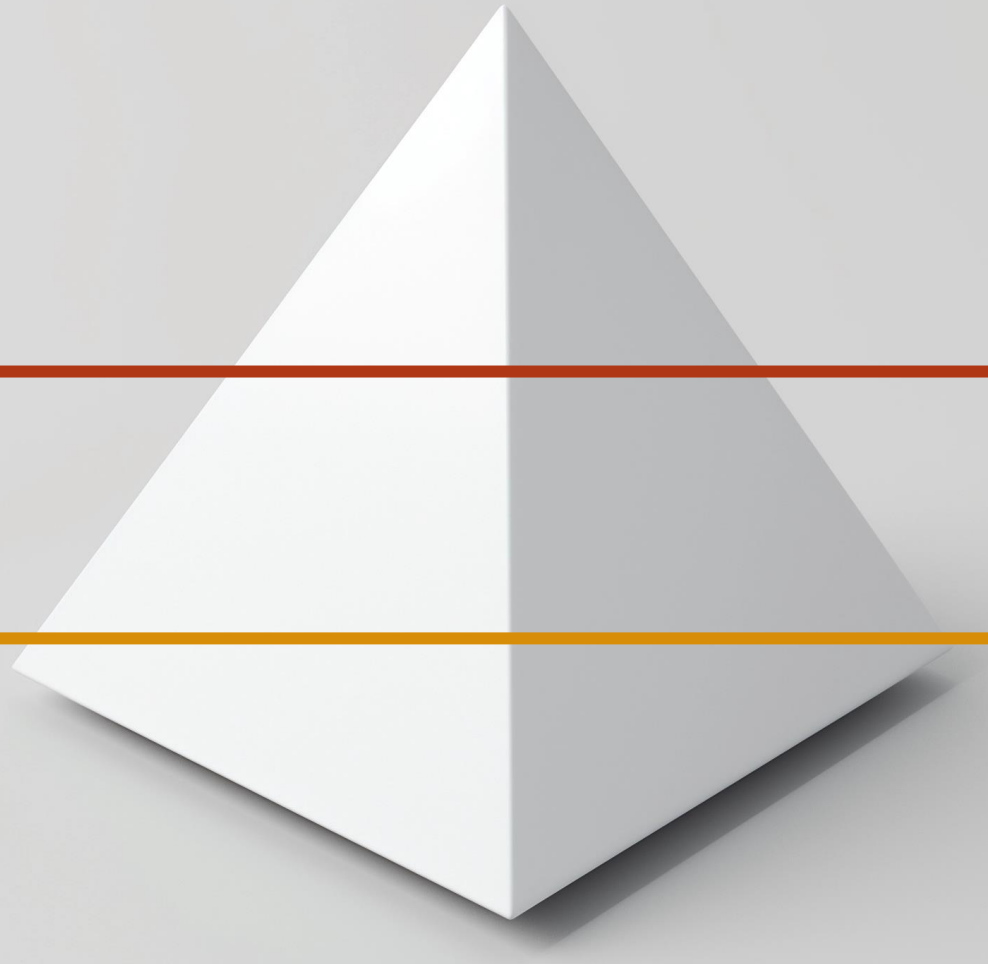




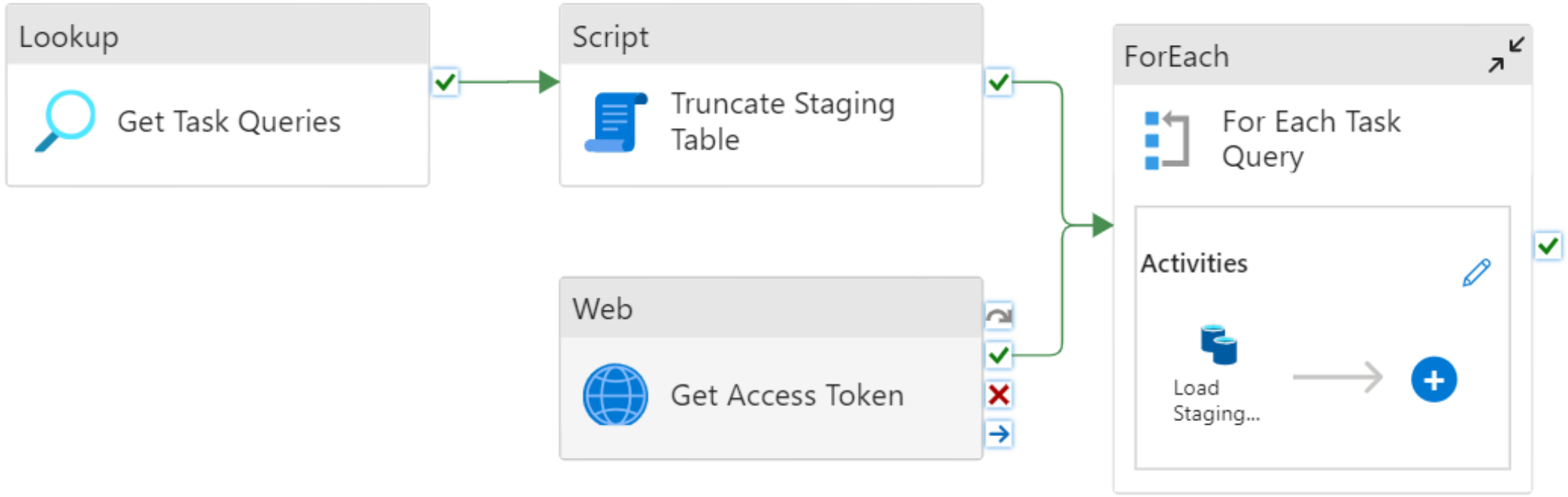
Controllers

Orchestrators

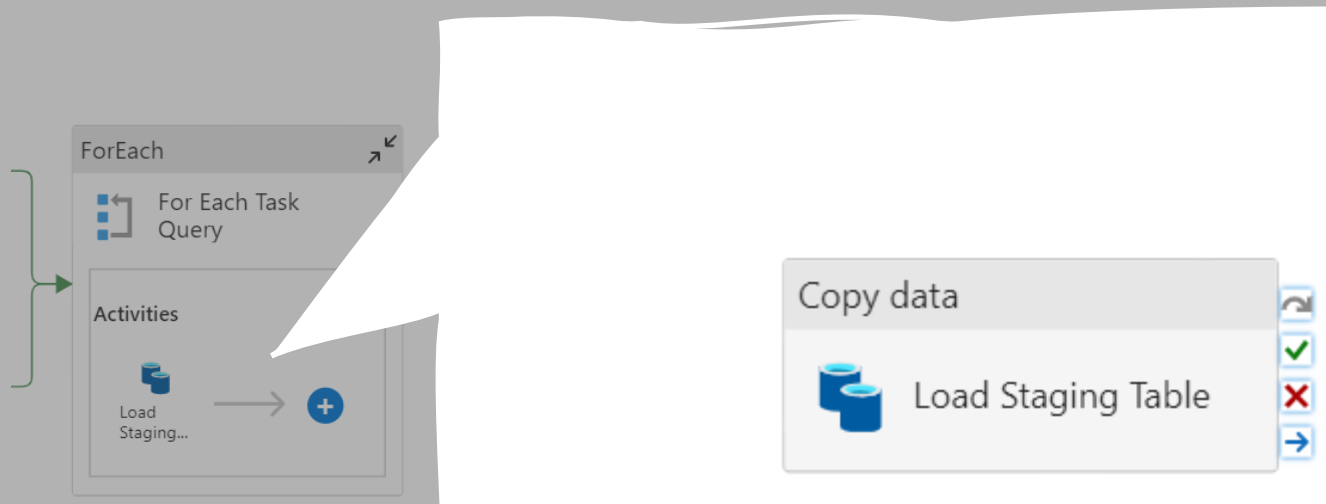
Workers



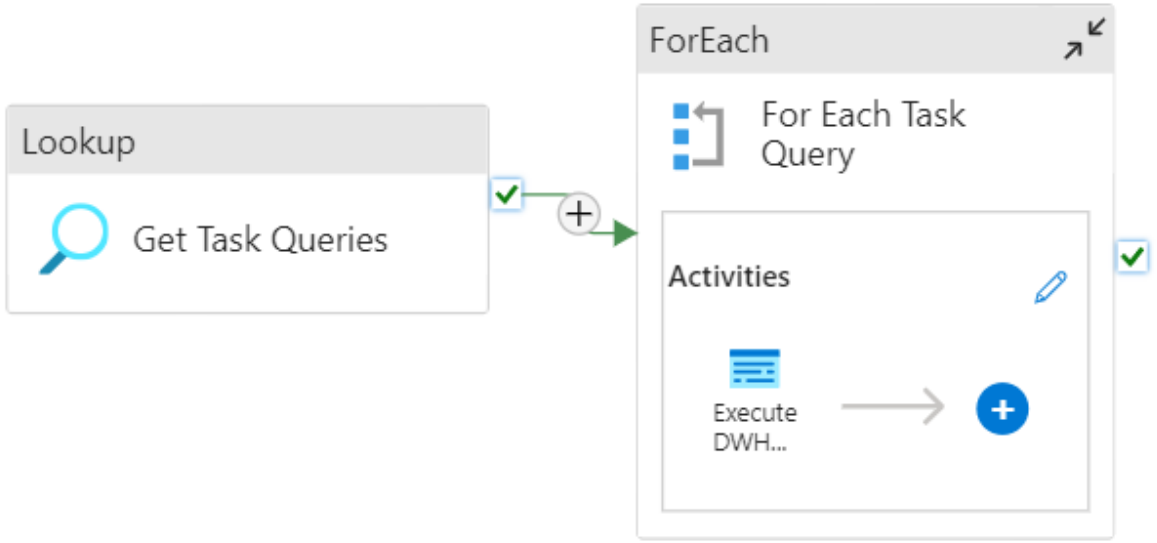
Worker Pipeline – Staging



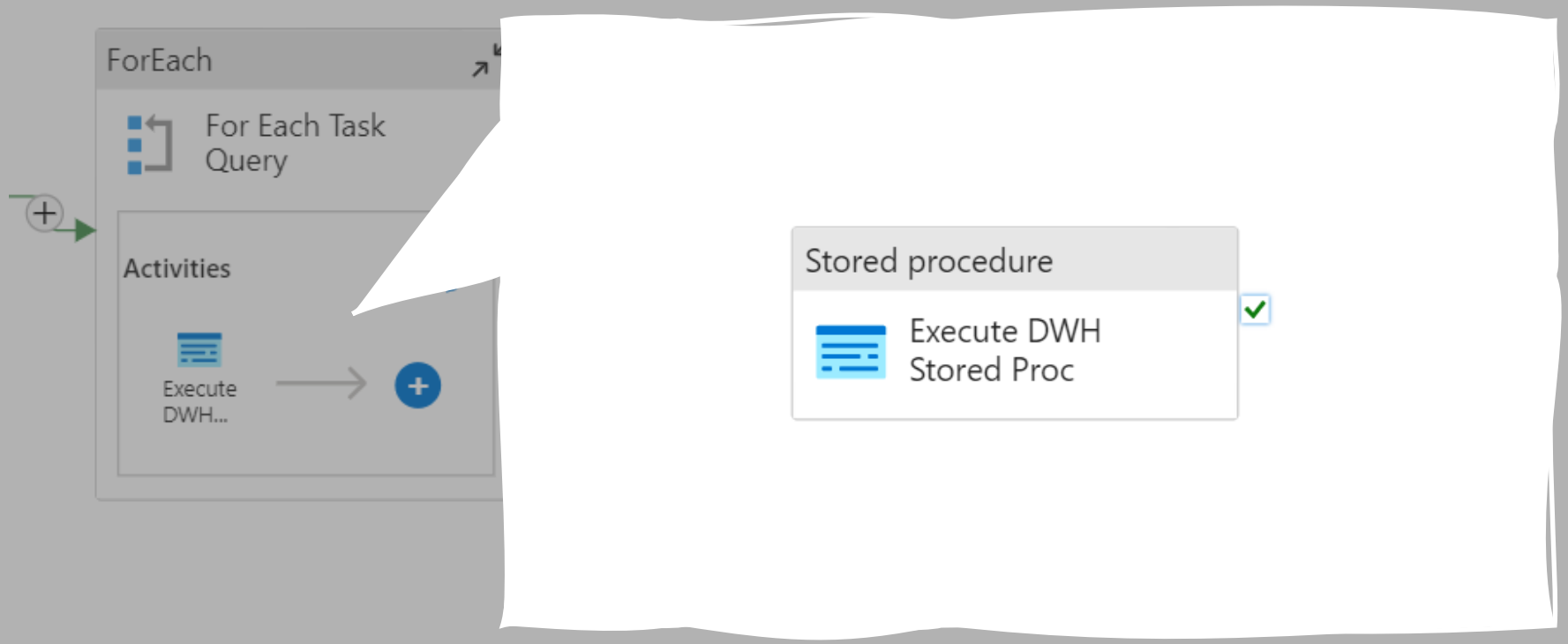
Worker Pipeline (continued)



Worker Pipeline – Dimensions/Facts



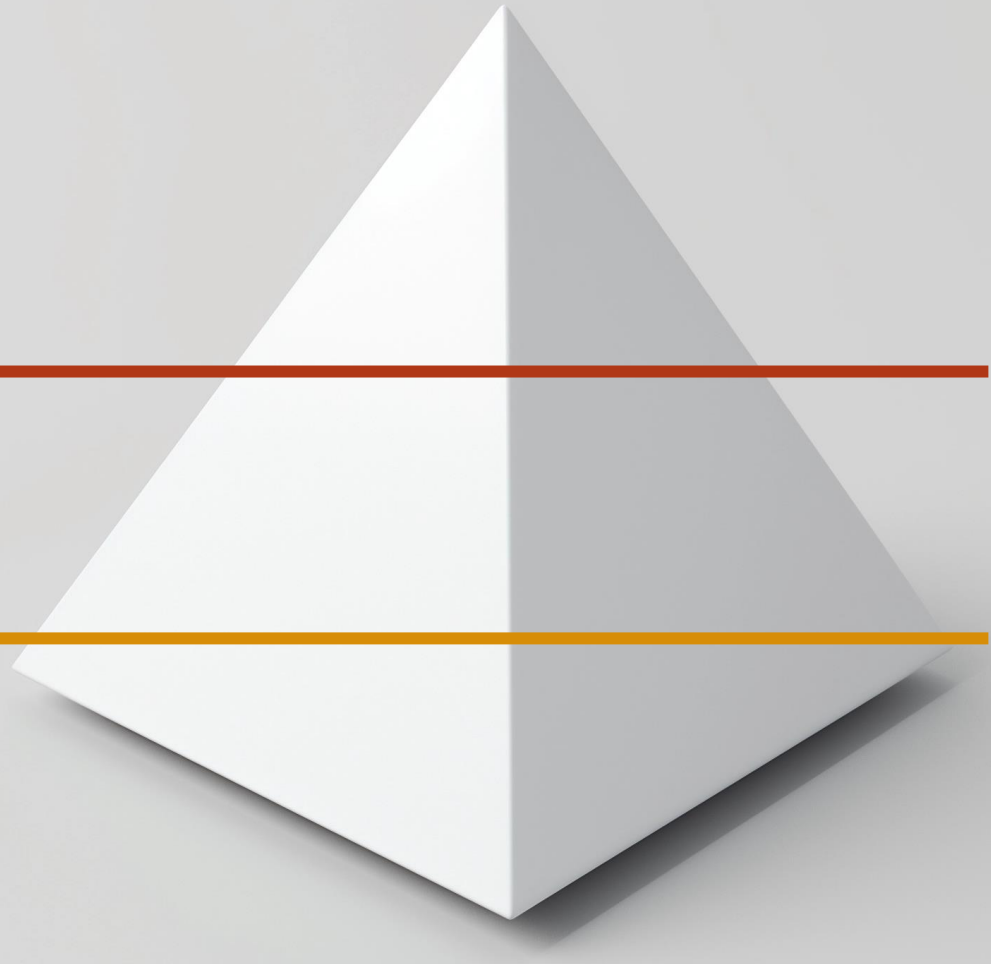
Worker Pipeline (continued)



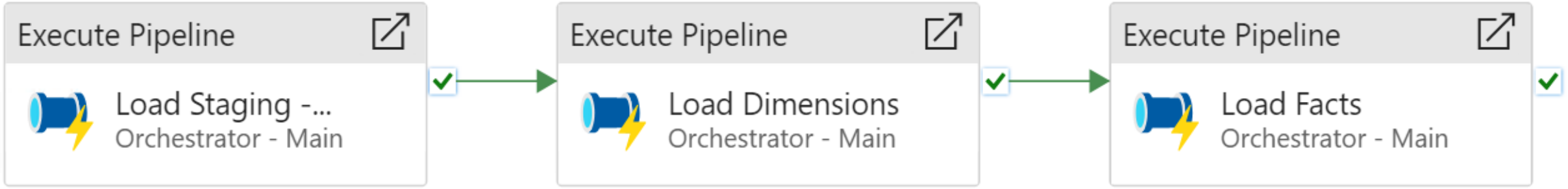
Controllers

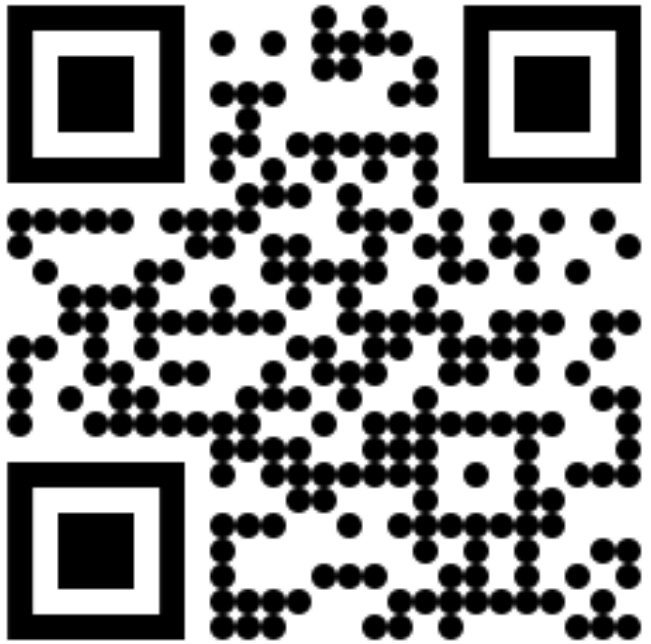
Orchestrators

Workers



Controller Pipeline



Recap

What’s Next?