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Best Practices from Toyo Engineering for Using Alteryx Server

Toyo Engineering Corporation

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Agenda

- 1. Introduction**
- 2. Server Governance**
- 3. Server Scale Out**
- 4. Server API**
- 5. Tips**

Introduction

Introduction

Toyo Engineering is a Global EPC Contractor



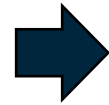
EPC = Engineering, Prourement, Construction

Involvement: **15** countries

Duration: **52** months

Occupied area: **1,000** acres

Employment: **10,000** people



Document
5,000,000
pages



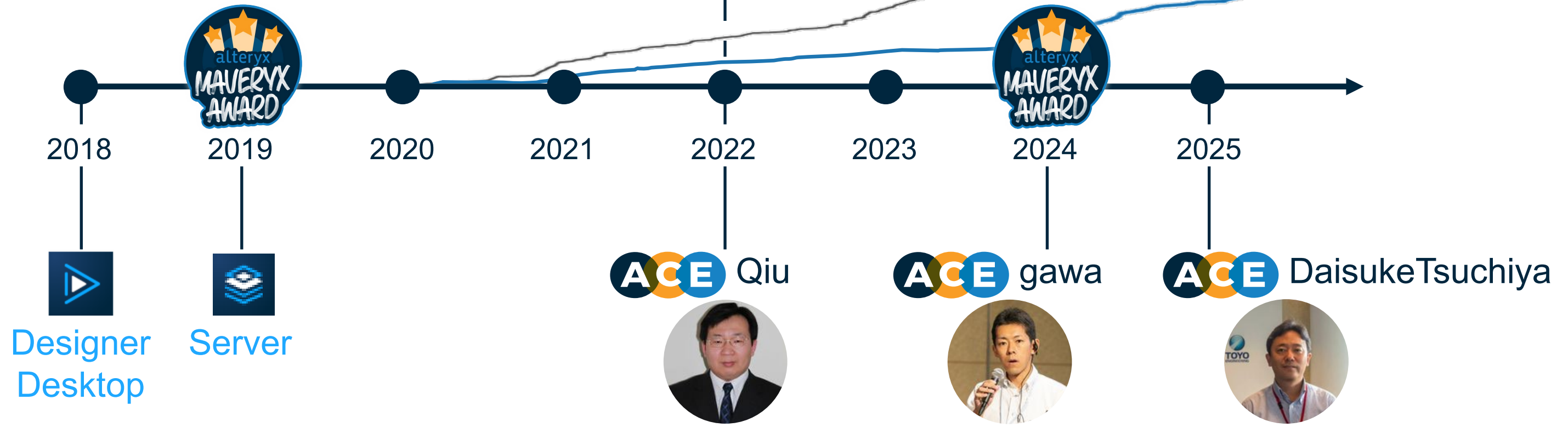
Introduction

TOYO's Alteryx History

Assets on Server
Workflows **1,200+**

Schedules **500+**

Globalization



Server Governance

Server Governance

What should we do for governance?

Monitor:

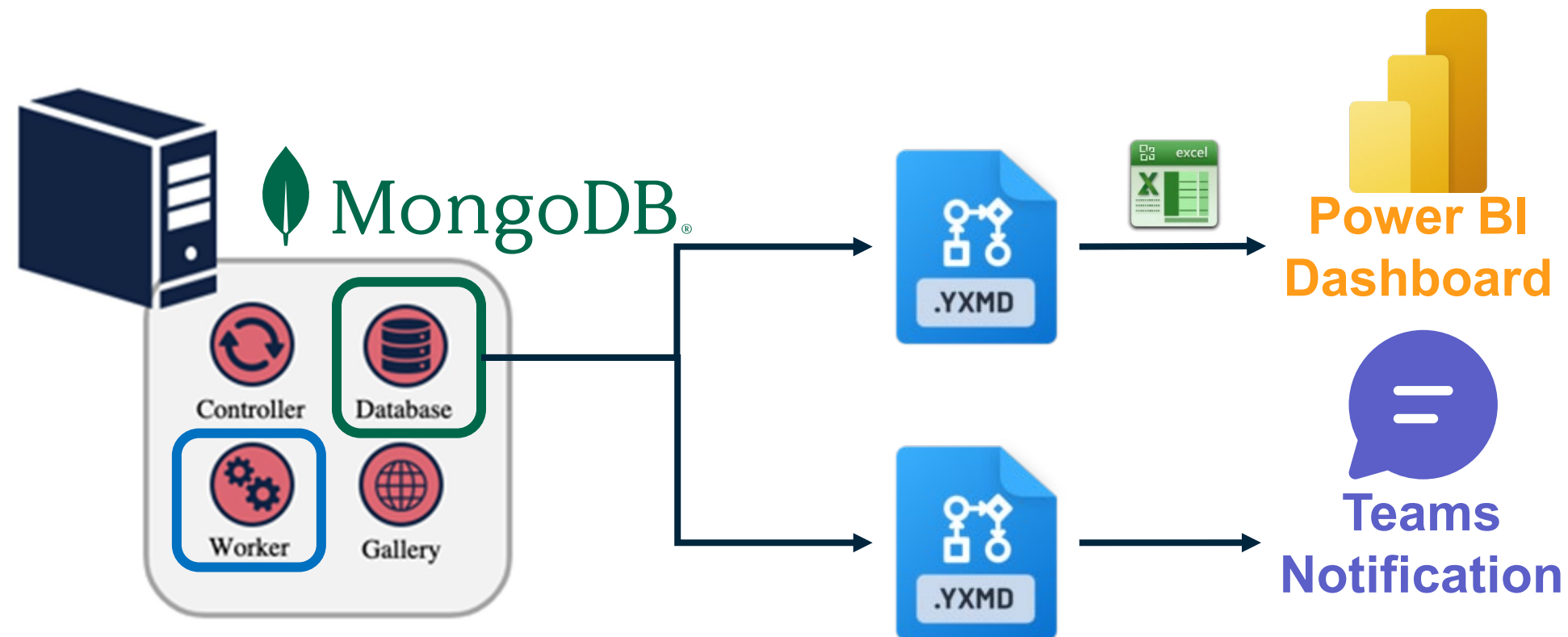
- Long Running JOBS
- Long Queued JOBS
- Failed JOBS & Error Details

Find Bottlenecks ASAP!

Server Governance

Our Asset Monitoring Tools

- In-house Dashboard of Server Usage Logs
- Automated Schedule Error Notification to Owners

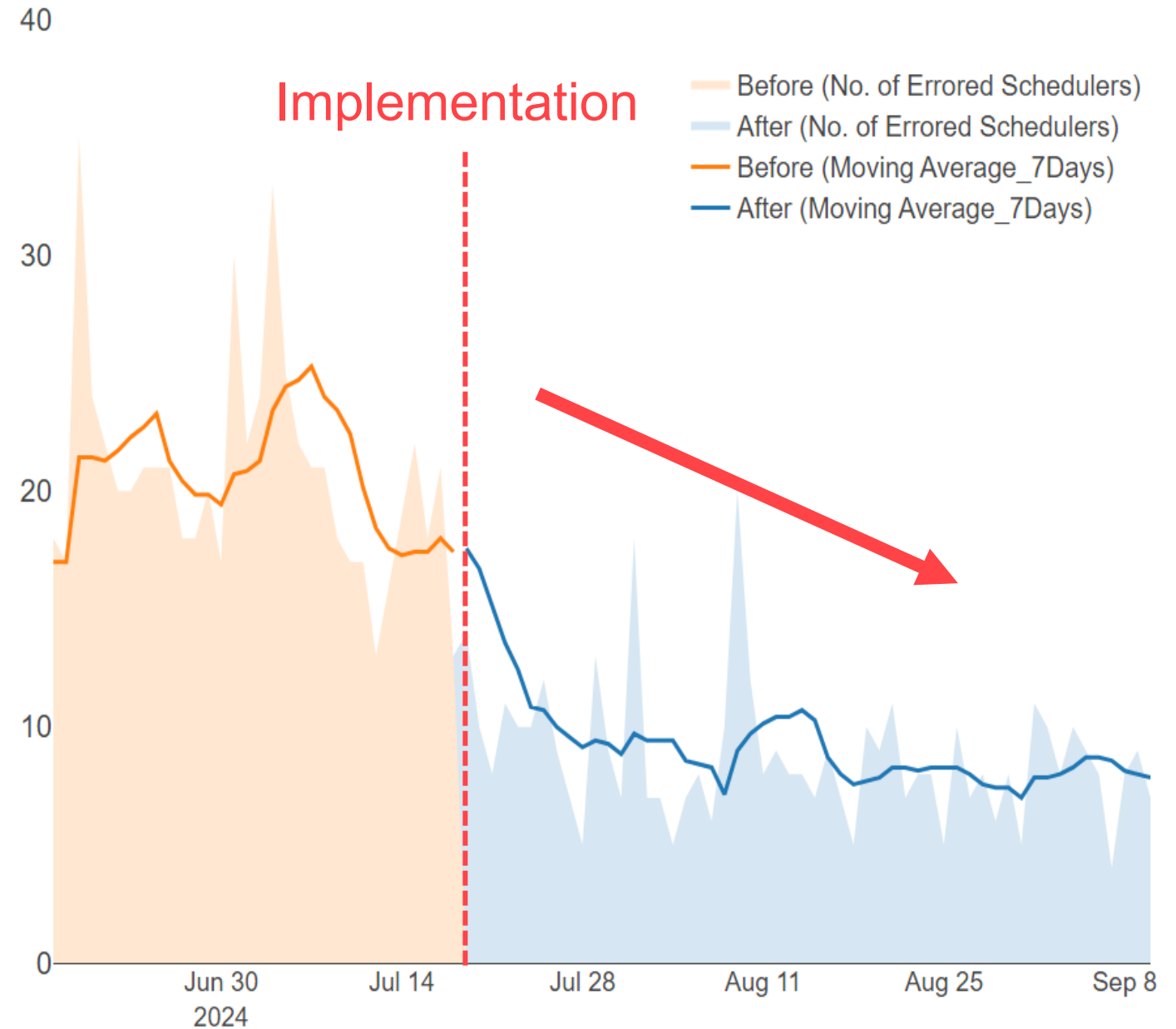
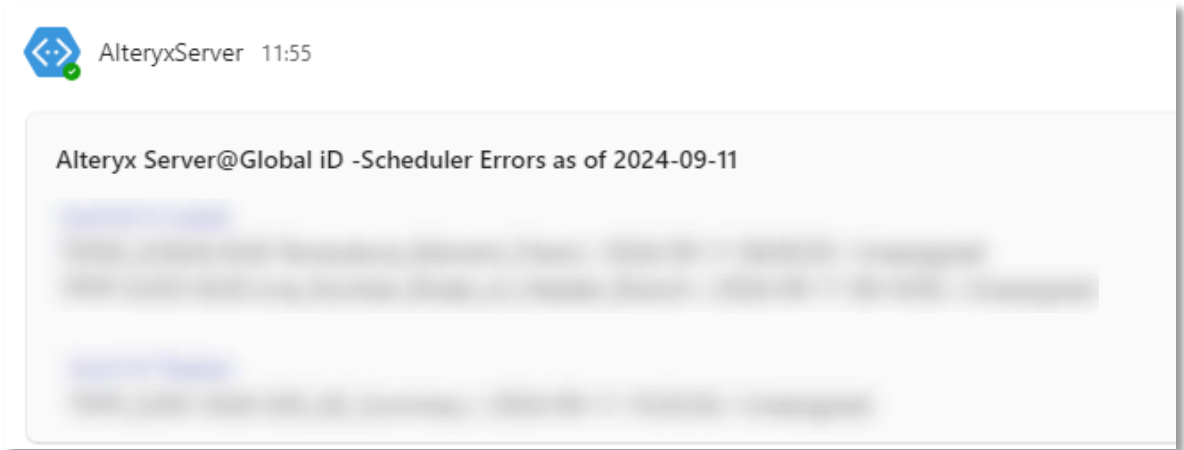


|

Server Governance

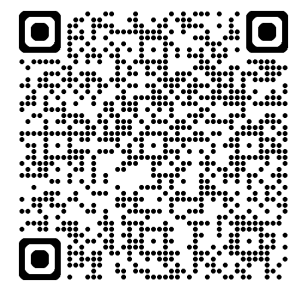
Automated Schedule Error Notification to Owners

Error notification via Teams

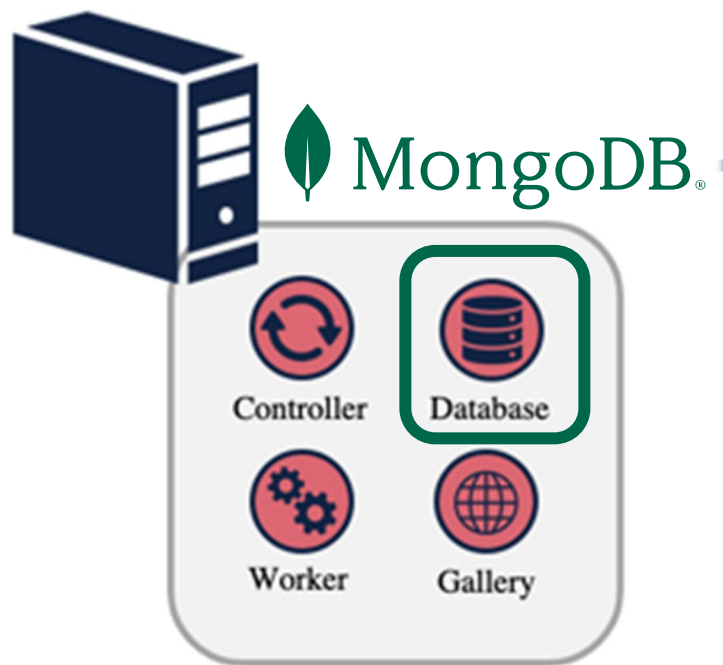


Server Governance

MongoDB Schema



MongoDB Schema Reference



DB Name

AlteryxGallery

AlteryxService

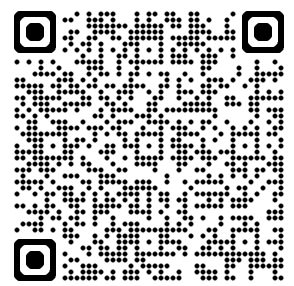
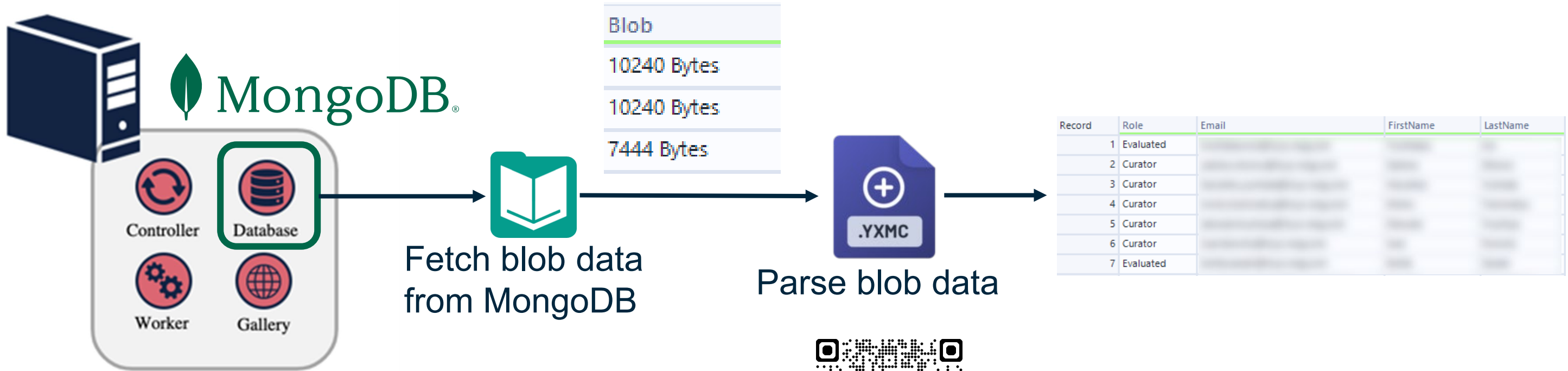
Collection Name

- Collections
- Subscriptions
- Users
- ...

- Queues
- Workflow Results
- Schedules
- ...

Server Governance

How to Retrieve Data from MongoDB

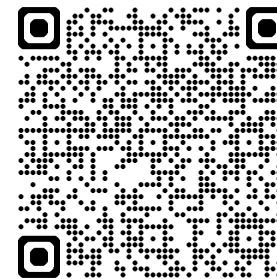


Macro Shared in Community Discussion

Server Governance

Summary

- Utilize MongoDB data for better governance.
- When extracting data from MongoDB,
 1. refer to the official schema reference
 2. use the Parse Macro for binary data



**MongoDB
Schema Reference**



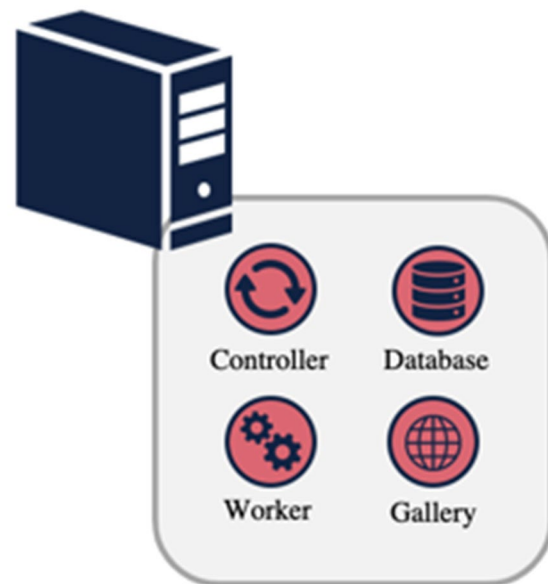
**Macro Shared in
Community Discussion**

Server Scale Out

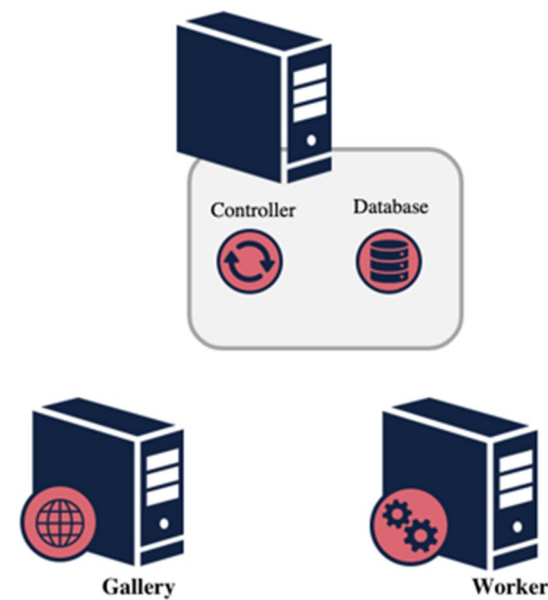
Server Scale Out

What is multi node deployment?

Single Node



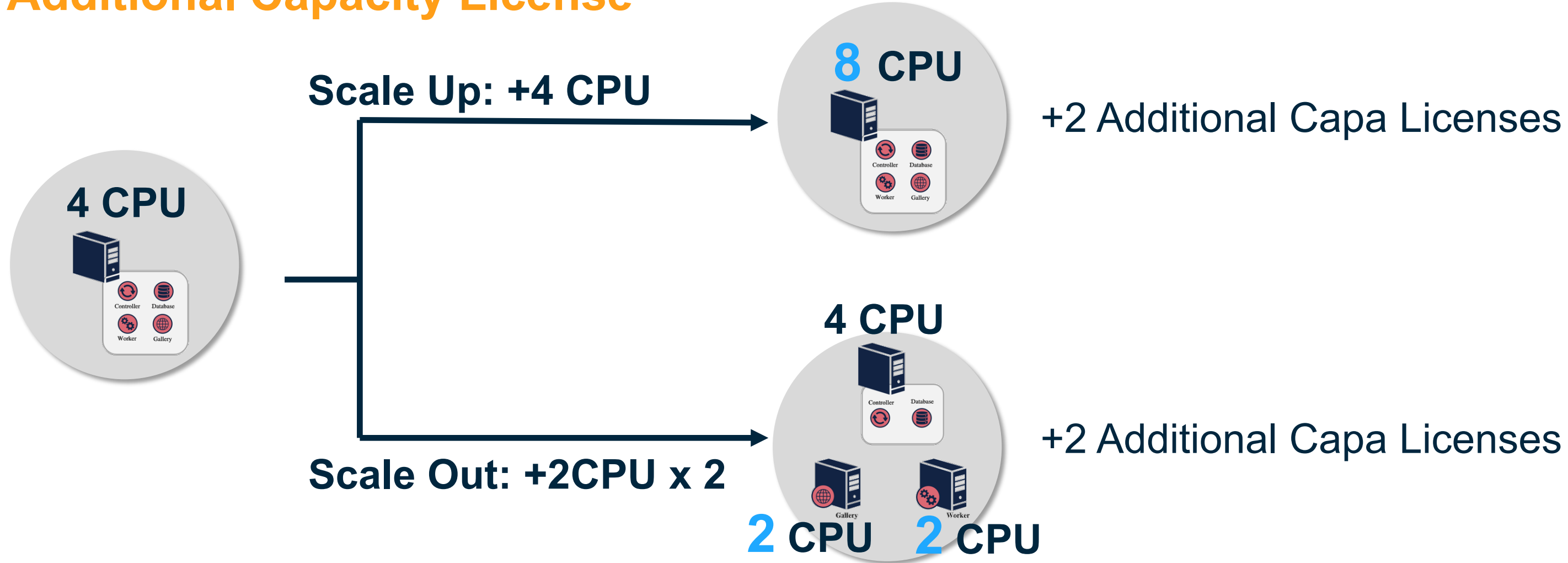
Multi Node



<https://help.alteryx.com/current/en/server/best-practices/security-best-practices/deployment-types.html>

Server Scale Out

Additional Capacity License



'2 CPUs' means 2 Physical Cores. NOT 2 Virtual (Logical) Cores.

Server Scale Out

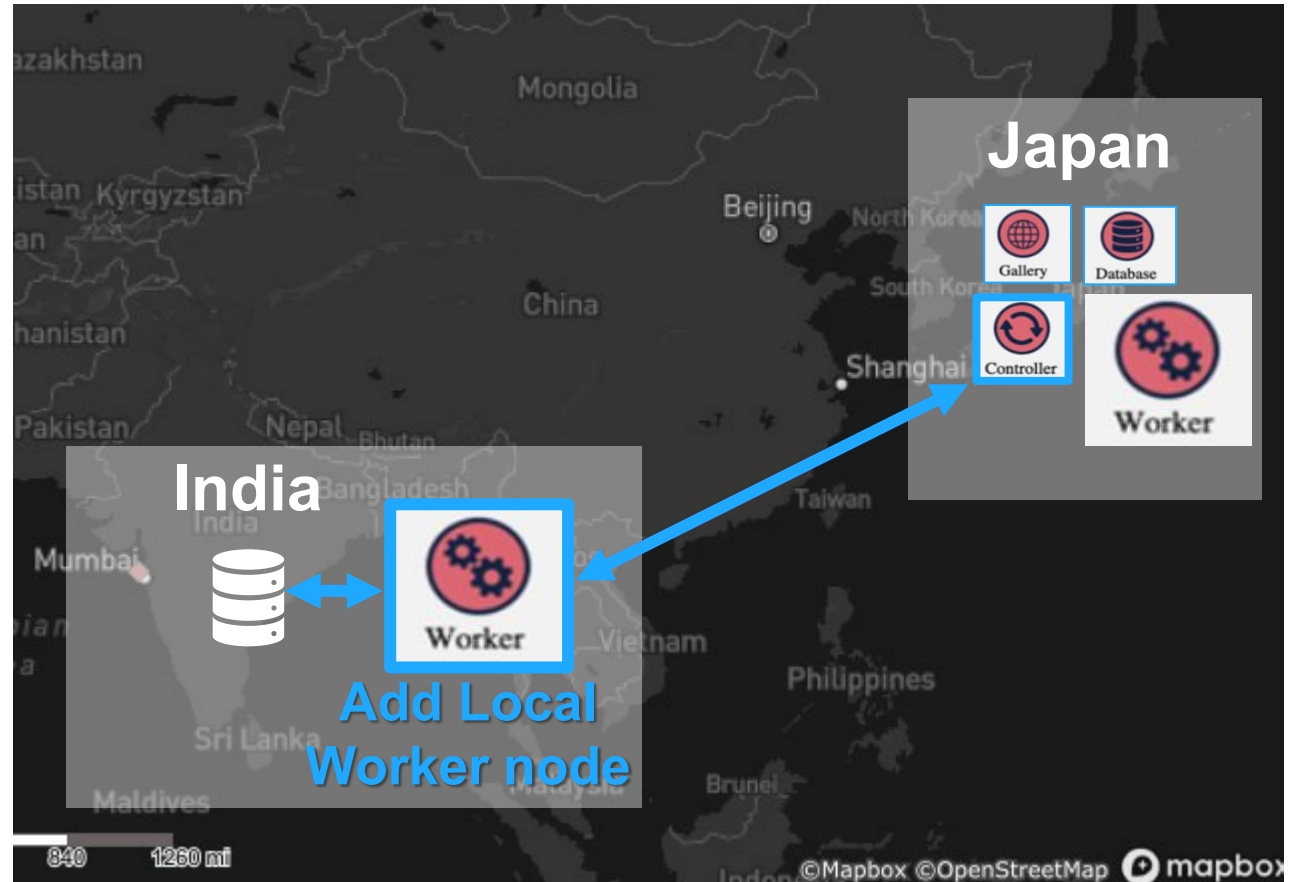
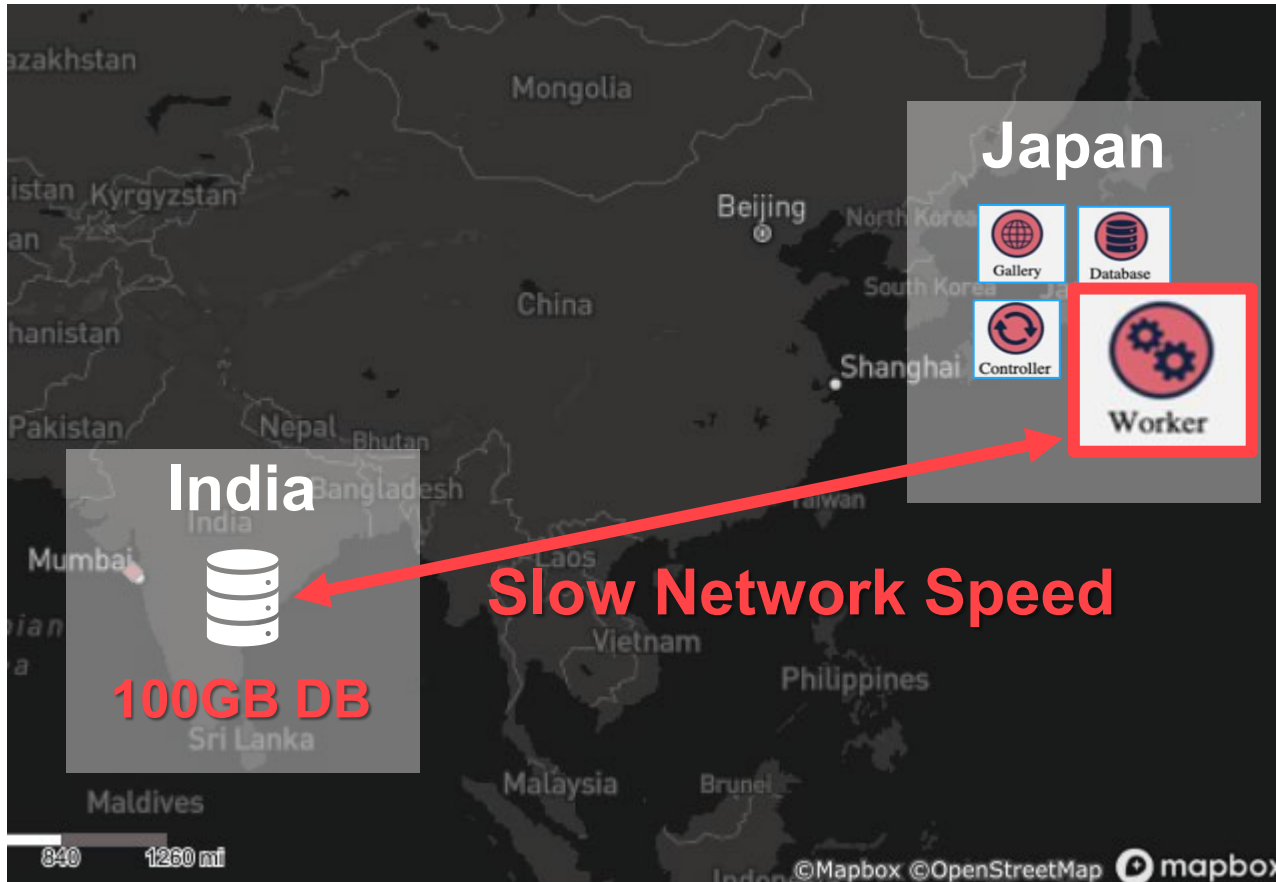
Case-1: Performance Improvement

Original (Single Node)

120 min

Scale Out (Multi Nodes)

15 min

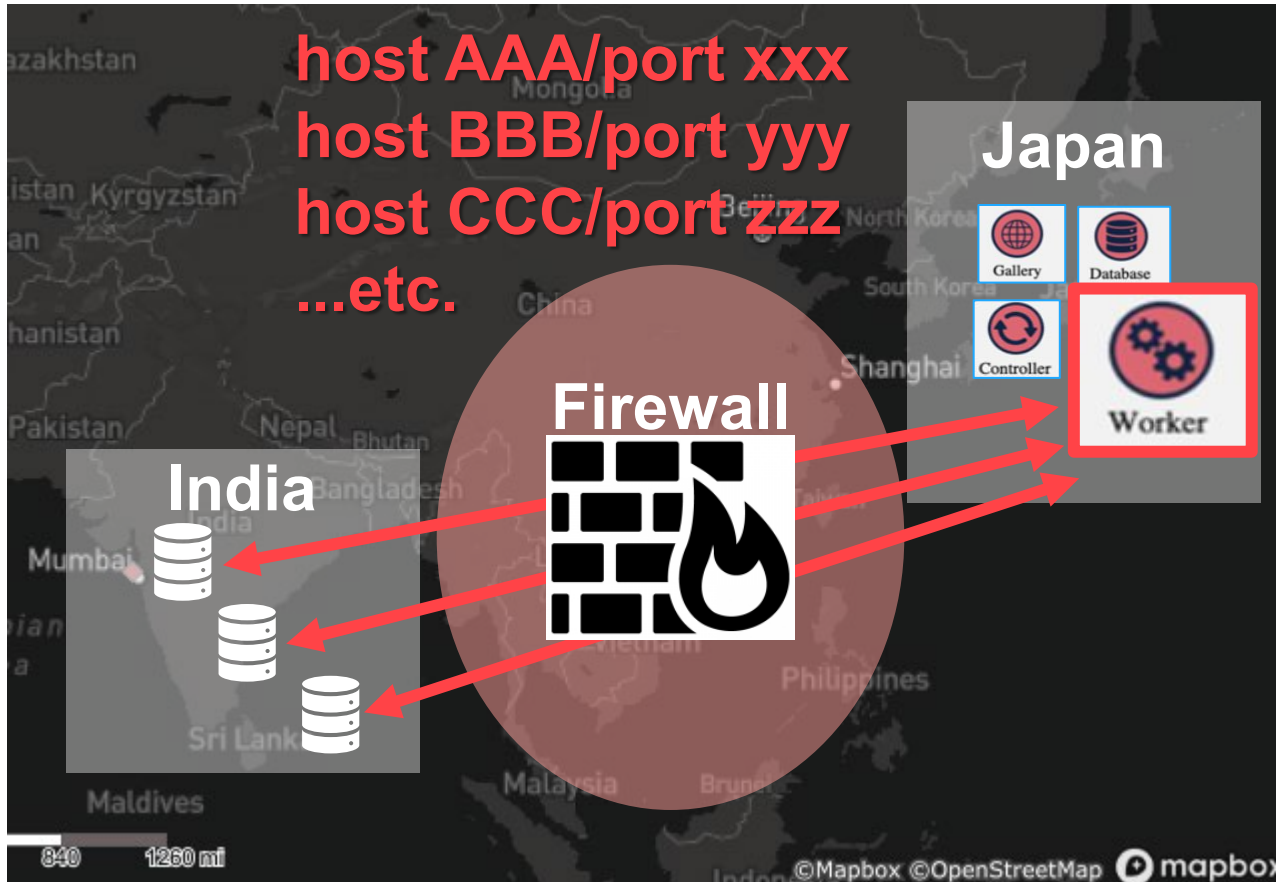


Server Scale Out

Case-2: Security Improvement

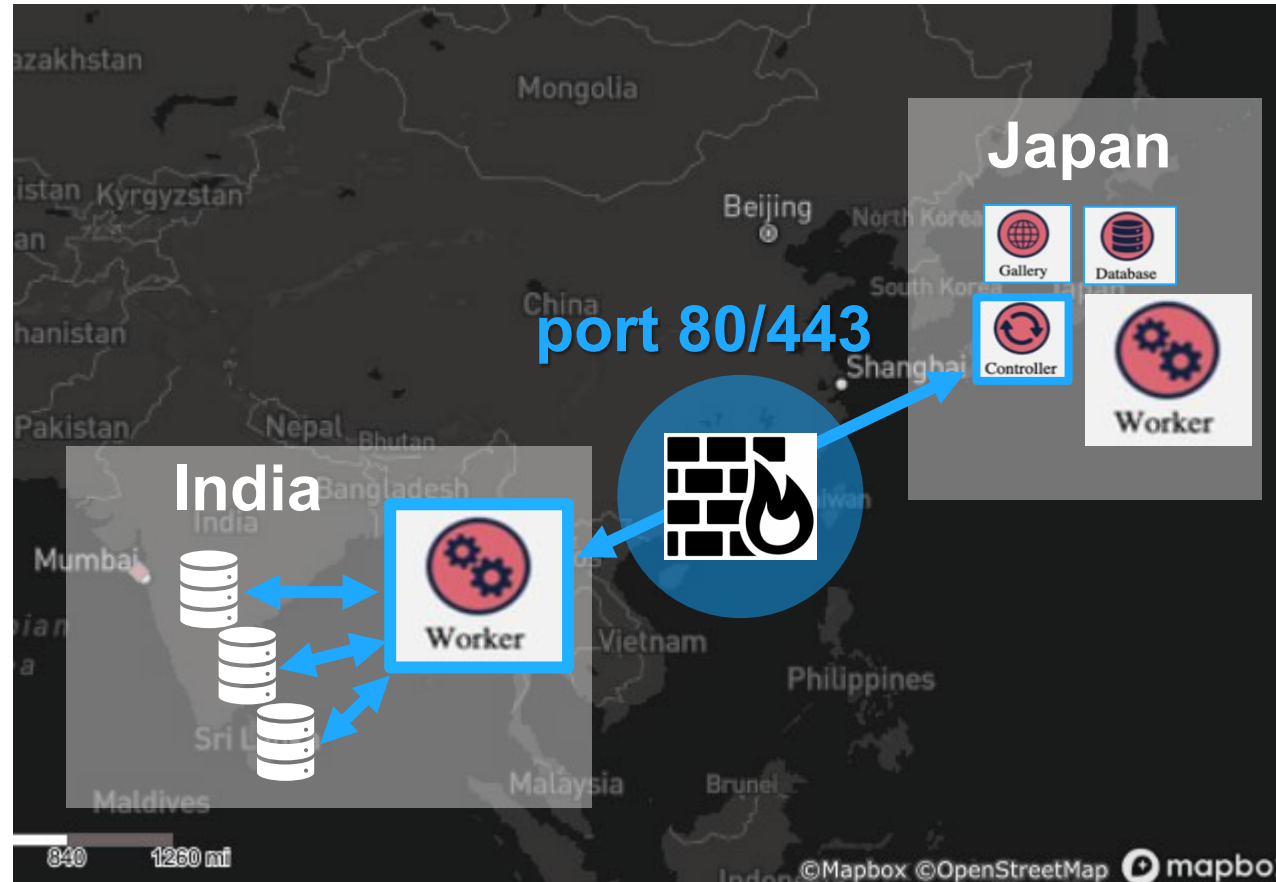
Original (Single Node)

Allowlist per Source



Scale Out (Multi Nodes)

Minimum Allowlist



Server Scale Out

Summary

- Use Additional Capacity License for Scale up/out
- Consider Multi Node Deployment:
 - to Resolve Performance Bottleneck
 - for Secure Connections

Server API

Server API

3 Methods of Executing Workflows on Server



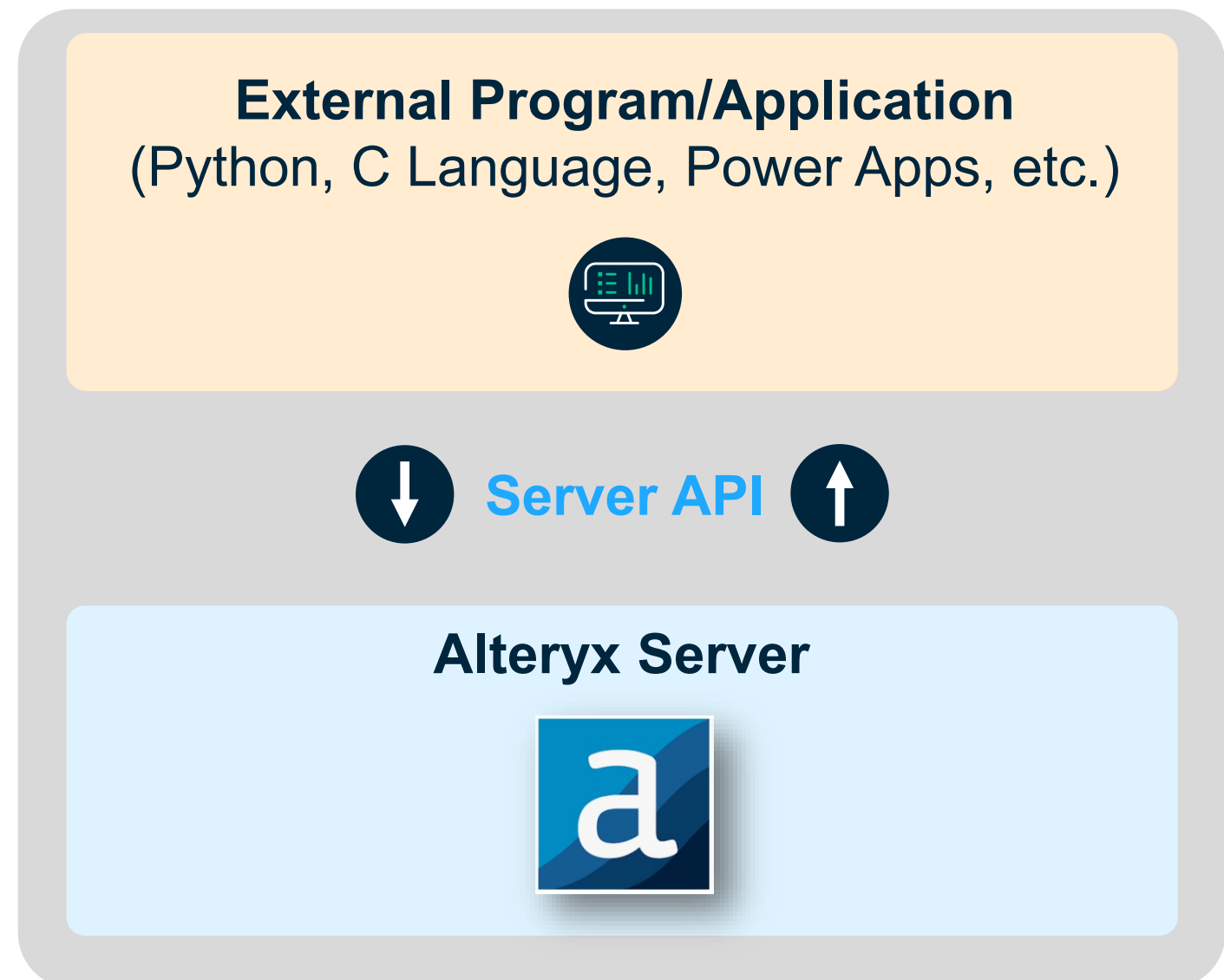
Manual Run
Collaboration



Scheduled Run
Automation

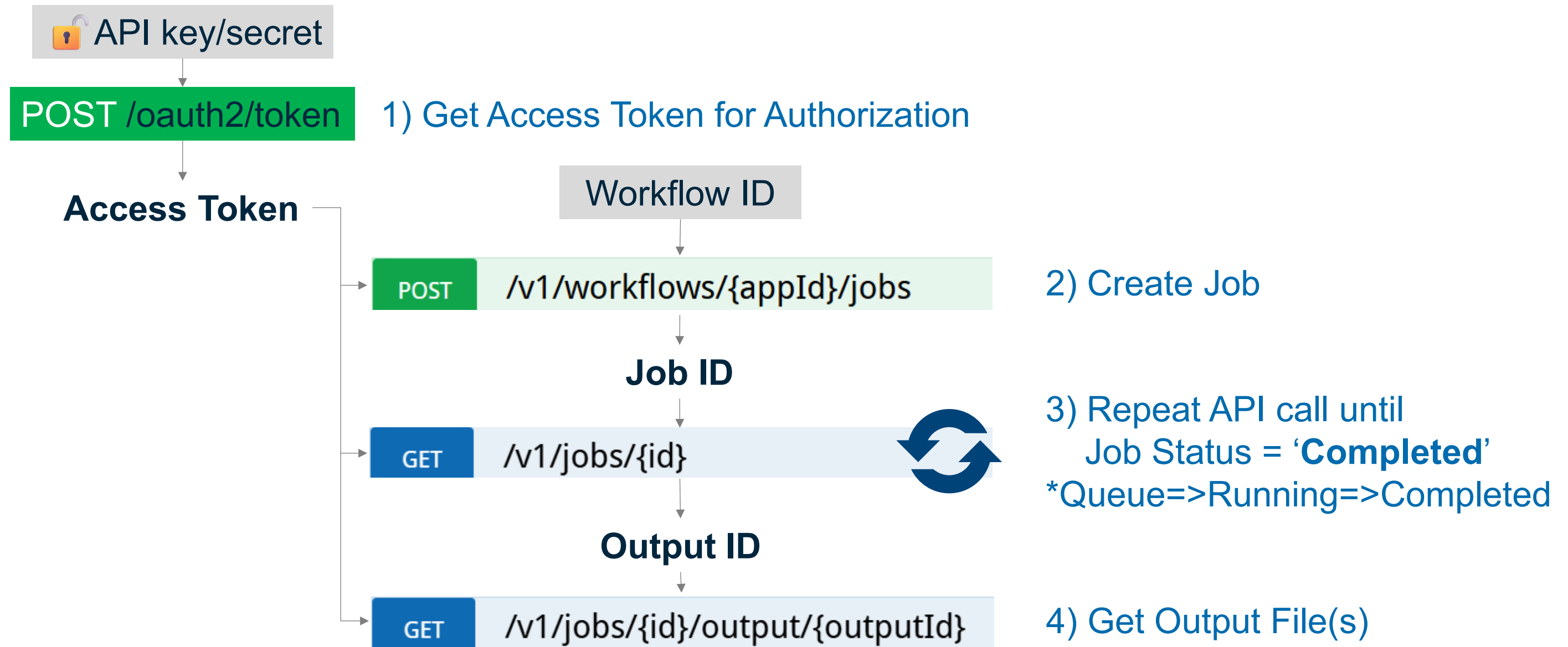


Server API Run
Integration



Server API

Sequence of Server APIs to Get Results of Workflows



- My Workspace
- Schedules
- Workflow Results
- Collections
- Districts
- DCM Data Sources
- DCM Credentials
- DCM Vaults
- Insights

My Workspace

Alteryx Server Version: 2023.2

~Since 8-Sep, 2024~

My Files Shared With Me Public

Search Files

Name	Type	AMP	Uploaded	Manual Runs
01_TEST	Workflow	—	Apr 04, 2025, 01:20 PM	0
1.000 075 0000 4 000_Report_Example	Workflow	—	Mar 21, 2025, 02:10 PM	1
1.000 075 0000 4 000_Report_Example	Workflow	—	Mar 24, 2025, 03:40 PM	1
1.000 075 0000 4 000_Report_Example	Workflow	—	Mar 13, 2024, 03:26 PM	0
1.000 075 0000 4 000_Report_Example	Workflow	—	Oct 16, 2024, 03:06 PM	4
1.000 075 0000 4 000_Report_Example	Workflow	—	Oct 16, 2024, 03:07 PM	2
1.000 075 0000 4 000_Report_Example	Workflow	—	Oct 16, 2024, 03:08 PM	1

Server API

Summary

- Integrate with external programs by Server API.
- Create Job → Get Job ID → Repeat Job status check until completion
→ Get Output ID → Get output files
- Utilize Swagger for development and debug.

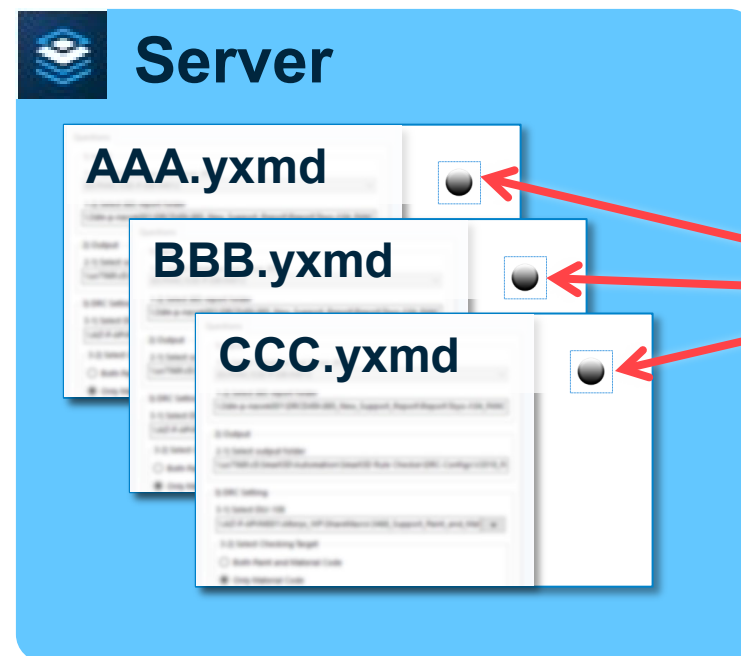
Tips

Tips

Macro Control

Challenge:

- A Standard Macro is used in 50+ scheduled workflows.
 - We are expected frequent macro upgrade & prompt reflect in all workflows.
- ➔ How can we minimize effort and downtime for this process?



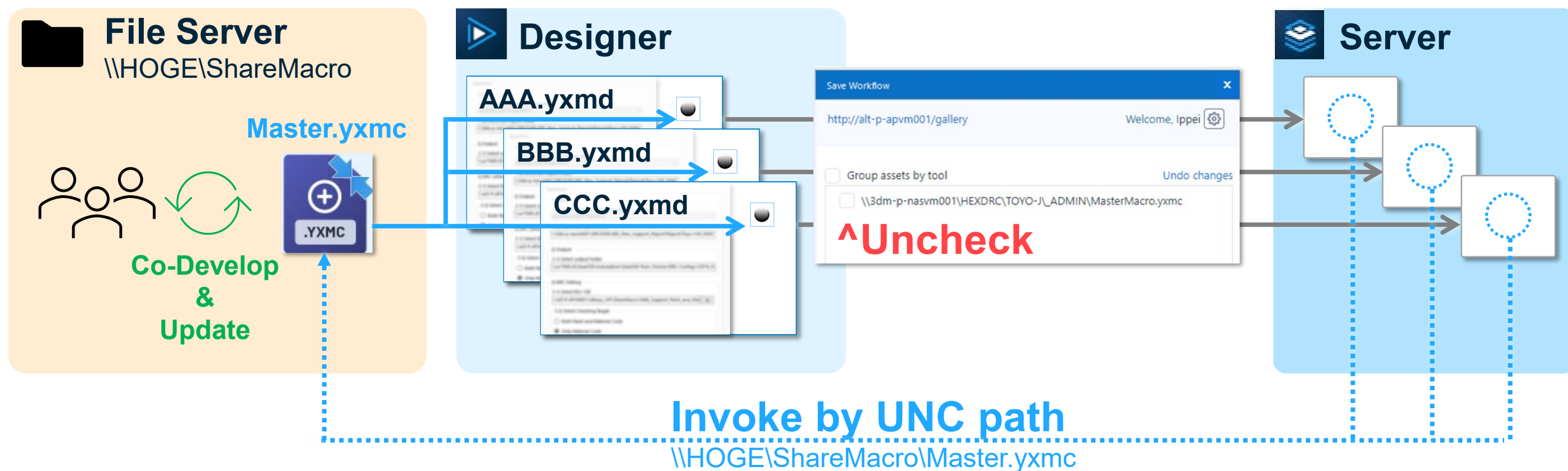
- **Re-publish WFs 50+ times?**
- **Re-enable Schedules 50+ times?**

Tips

Macro Control

Solution:

Single master macro (Trade-off: Revision control in Gallery)



Tips

Maintainability

Challenge:

- The number of the master macro has exceeded 100+.
 - Maintenance through Teamwork.
- ➔ How can we keep every Macro easily maintainable by multiple developers?



Tips

Maintainability

Solution:

Development guideline was established to ensure uniform development style.

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TOYO ENGINEERING

DX Engineering Dept Instruction

DIICT-UTY-4501

Best Practice for Alteryx Designer – Creating and Sharing Workflow for Intermediate Users

Revision	Date	Issue Purpose	Prepared by
0	2021/07/30	First Issue	D.Tsuchiya

Toyo Engineering Corporation

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Rule

Rule Name	Created Date]

and that
and Revised
ed in Workflow
sure latest
by users.

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Folder

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Output Files

Output Files

ed at same
Workflow

Workflow

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2

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4

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6

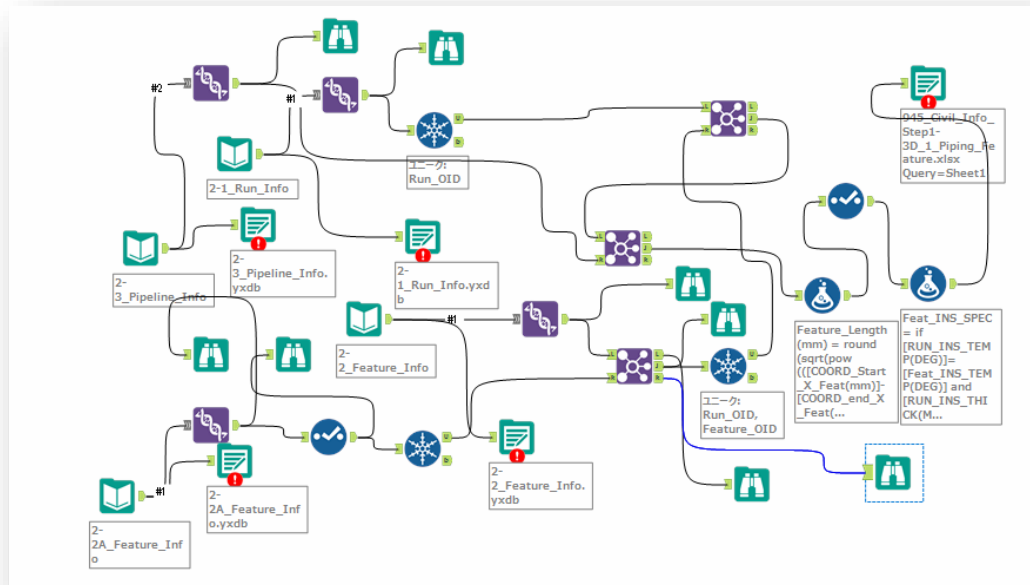
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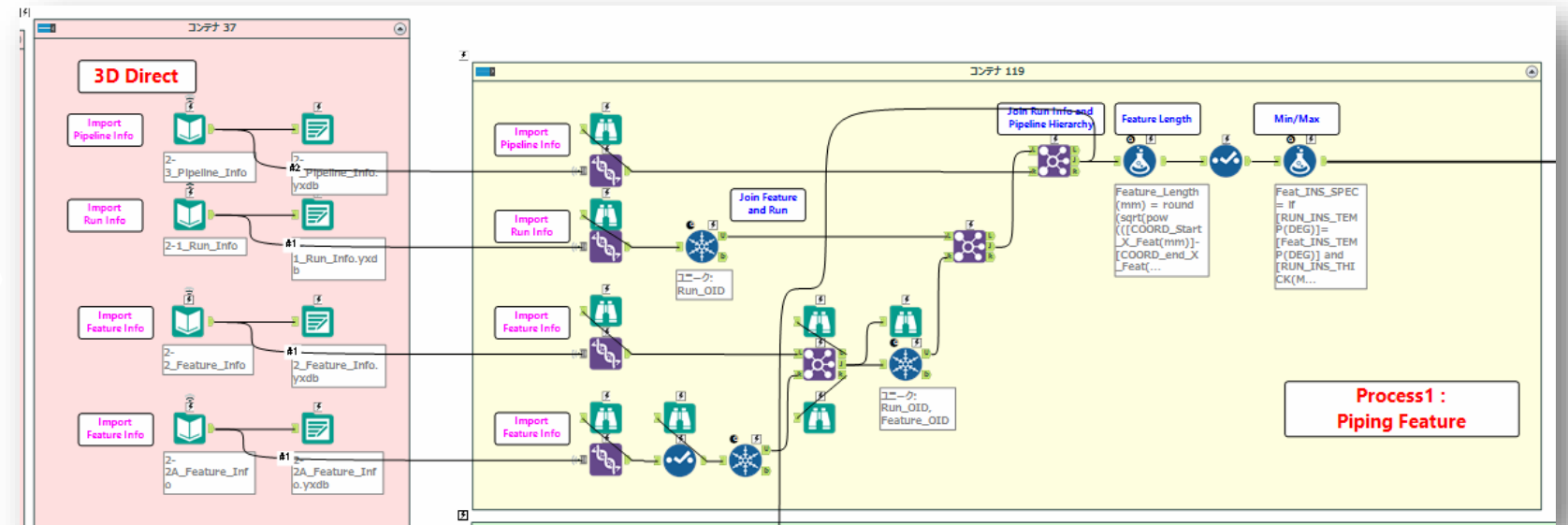
Tips

Maintainability (Sample)

Bad- Not Aligned

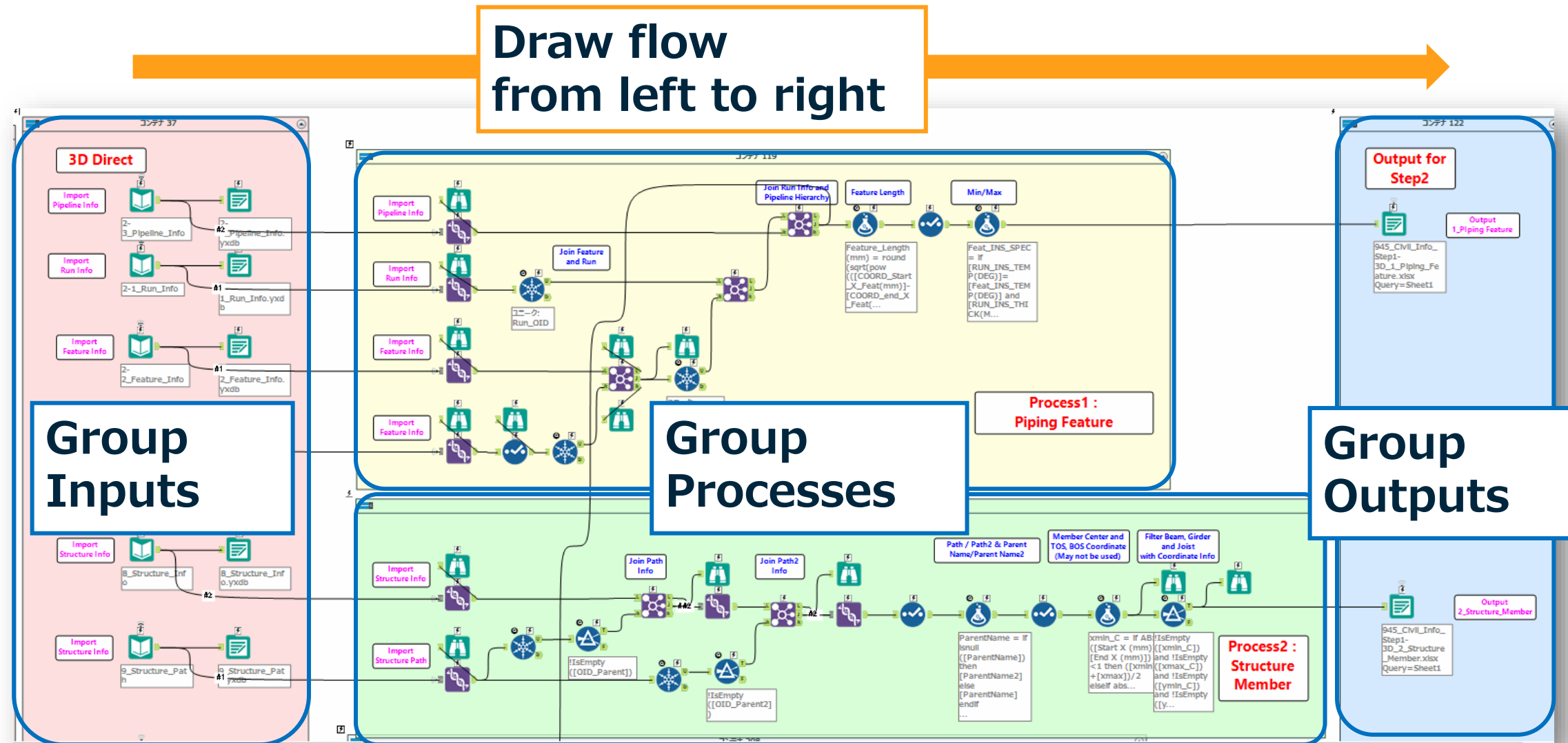


Good – Aligned well



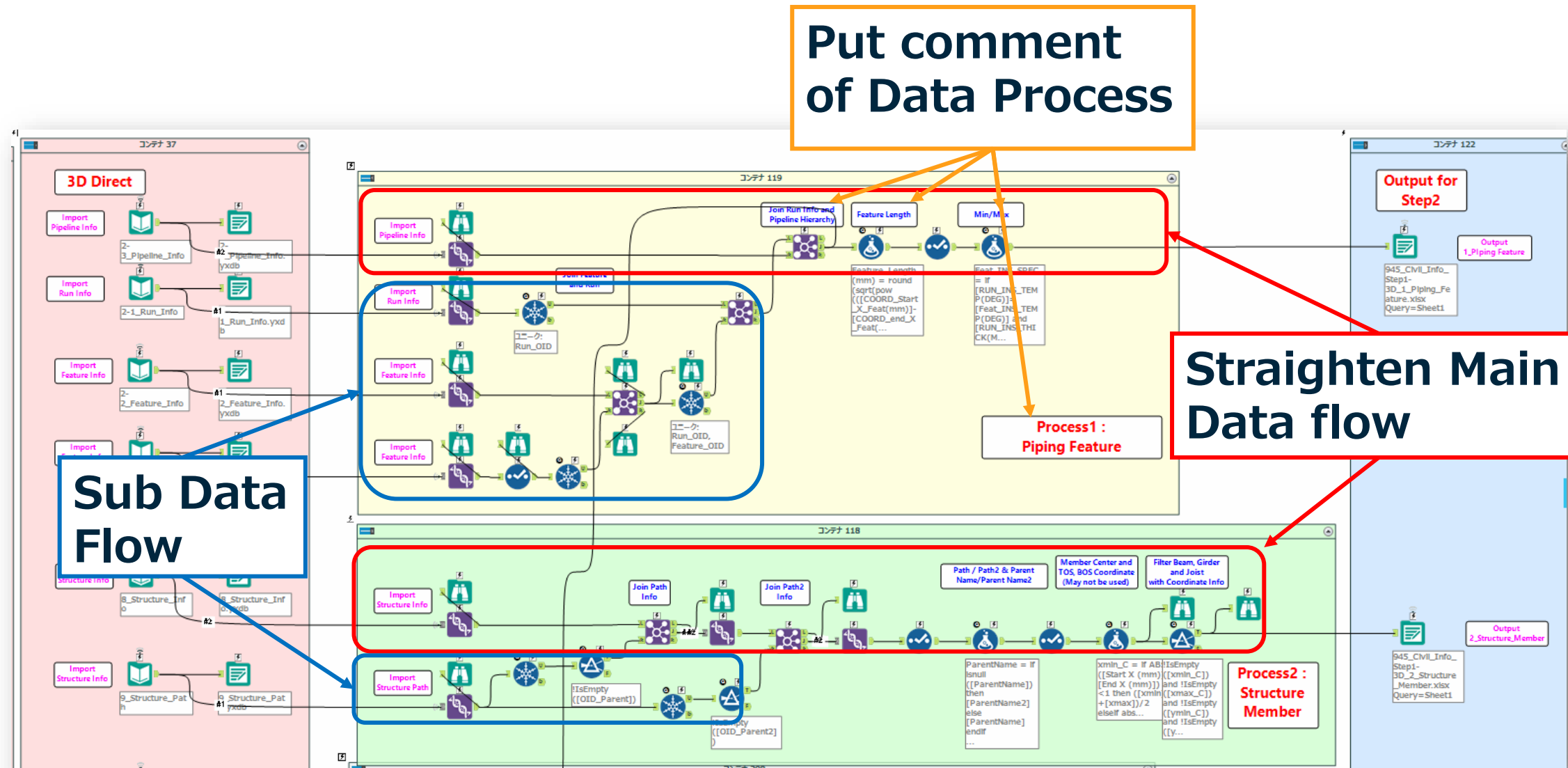
Tips

Maintainability (Sample)



Tips

Maintainability (Sample)



Tips

Maintainability (Sample)

Main Support Prep1

Support_Main
Main_Support
Main_Support_OI
\$ =
ASSY_Support_OI
Main_Support...

**Main Support Prep2
Dimension Regex**

DIM_L = If
[DIM_L] = 50 or
[DIM_L] = 75 or
[DIM_L] = 100
then null else
[DIM_L] wr...

**Provide
Revision
History**

Revision History

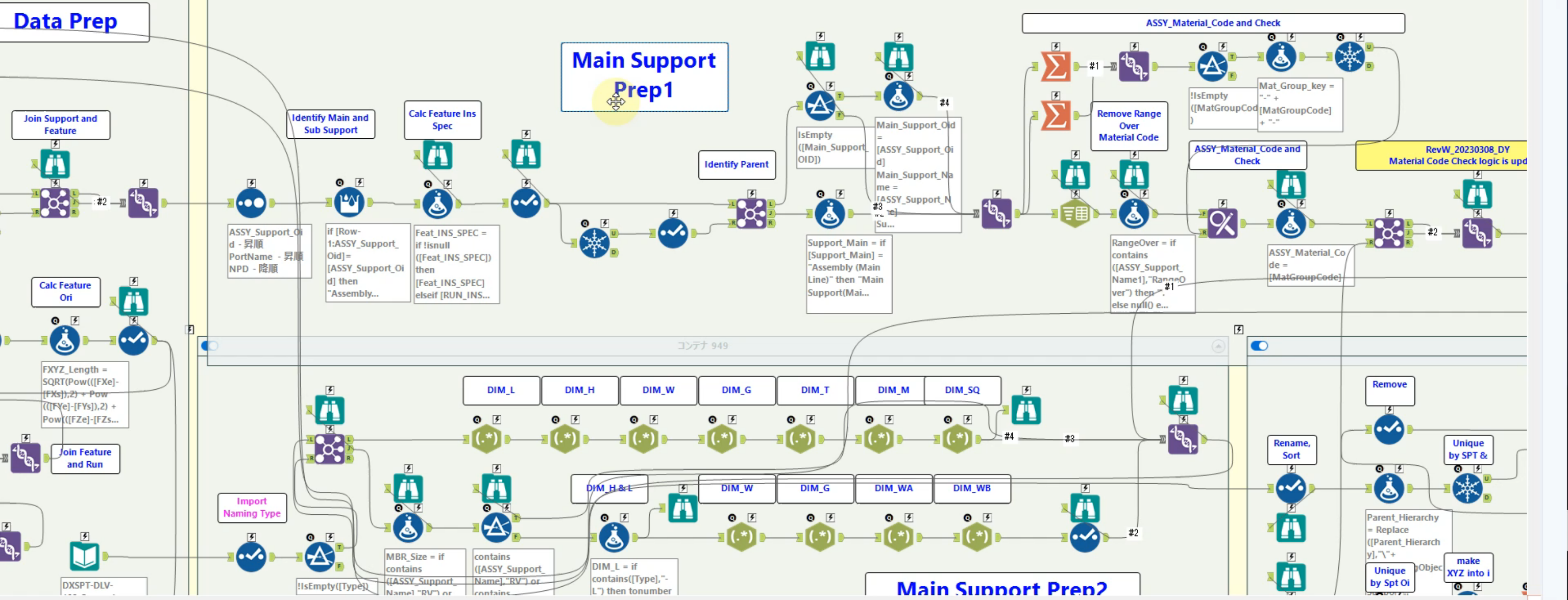
- 20210518 : Add Clip Info
- 20210603 : Add Vessel Support / Change SQL to shorten process and remove round in 9_Clip Info and 10 Vessel SPT Info SQL
- 20210604: Off Dimension Check Report 11 to 15
- 20210615 : Adjust Temporary Run and Feature Spec/ Update Vessel Report SQL10 / Add Support Marking
- 20210617 : Update Temporary PipeRun SQL and update Feature INS Spec logic
- 20210718 :
Correct PCS for VIP and CV10
Separate Clip Part and Spring Part sheet
Implement Spring Report

Assembly (Main Line) Output

コンテナ 104

コンテナ 952

コンテナ 949



Tips

Summary

- Consider managing WF assets to enable flexible operation and maintenance.
- Enhance quality and maintenance efficiency of WFs through guidelines.

Key Takeaways



Utilize MongoDB for better governance.



Consider Multi Node Deployment for performance and security.



Integrate with external programs using Server API.



Enable efficient operation and maintenance by managing WF assets and development guidelines.

alteryx