
AWS
re:Invent
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NFX204

Microservice orchestration platform and studio orchestrator

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Agenda

The Netflix Studio – Challenges

Studio Orchestrator

Tools and developer experience

Examples

Q&A

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Glossary

VFX - Visual effects

EXR - File format commonly used in visual effects and animation

OCF - Original camera format

DCC - Digital Content Creation applications

Pipeline - Business process modeled by Studio Orchestrator

cDrive, Baggins - Netflix’s abstractions on top of S3

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How many hours of content did Netflix release in 2019?

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On average, how many hours of camera footage is recorded per hour of content on screen? (shooting ratio)

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Wide range of genres









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Geographical distribution



Los Angeles



Mumbai



São Paulo



London



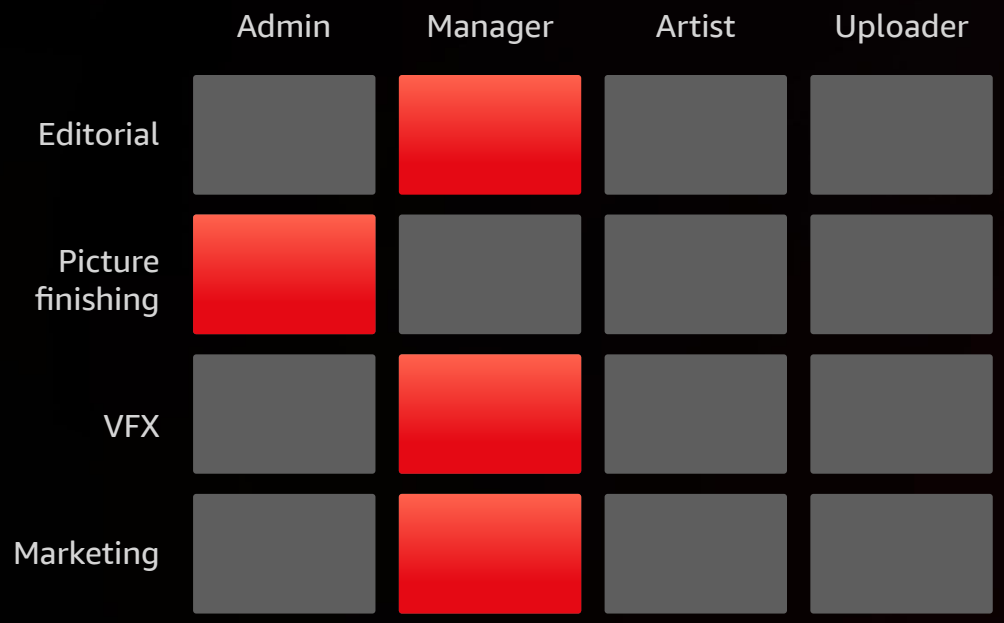
Tokyo



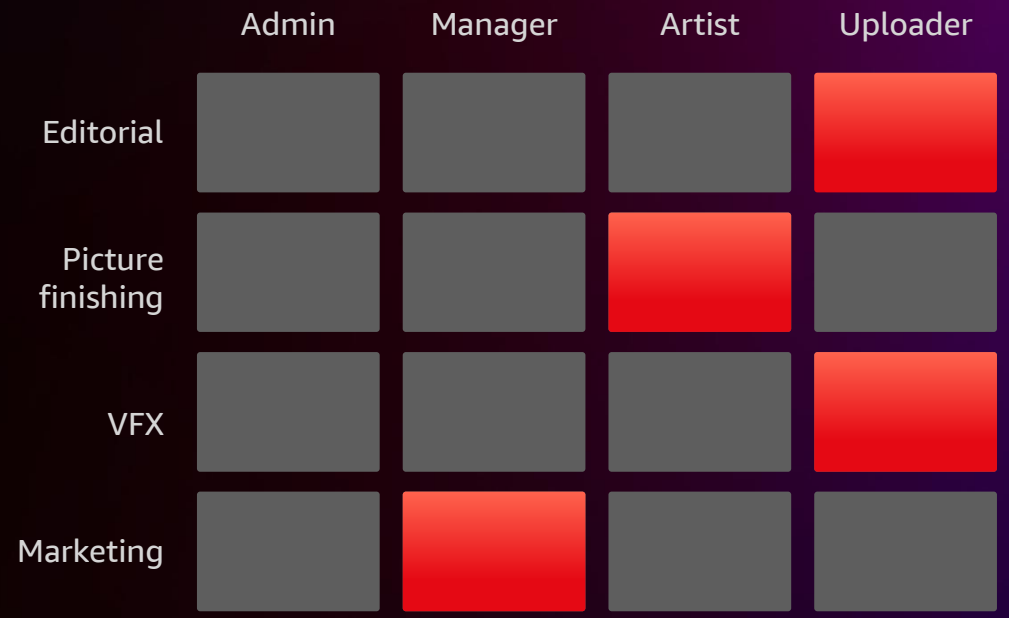
Netflix Studio Operations | Supporting production teams globally

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Access control



Production A



Production B

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Studio Orchestrator

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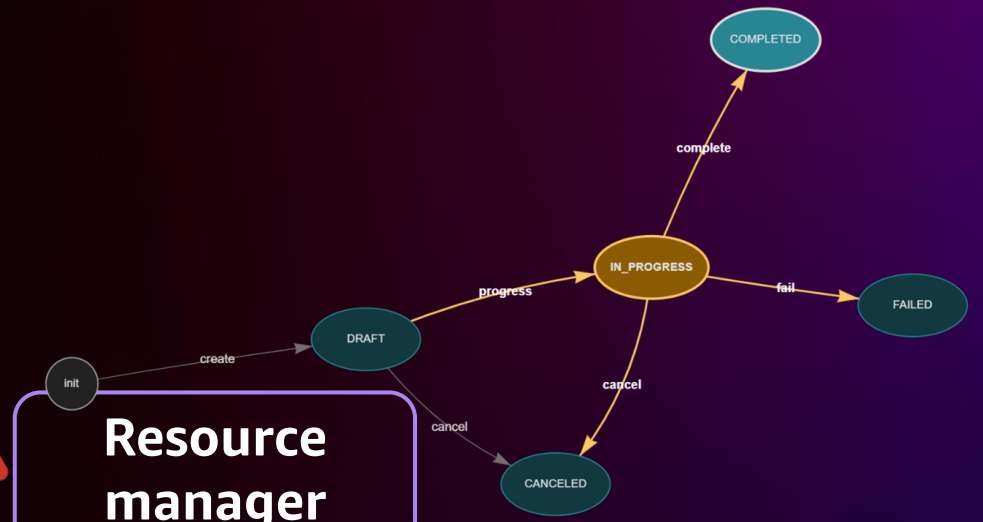
Orchestrator pipeline model

Studio Orchestrator platform

Models the business process
(open, in delivery, QC approved, final, etc.)

State machine

Enforces user auth and state transitions



Pipeline

Process orchestrator

Describes and executes the workflow
(via Netflix Conductor)

Register async/await actions on resources

Resource manager

Single interface to connect to multiple data entities (assets, files, compute resources)

Conductor

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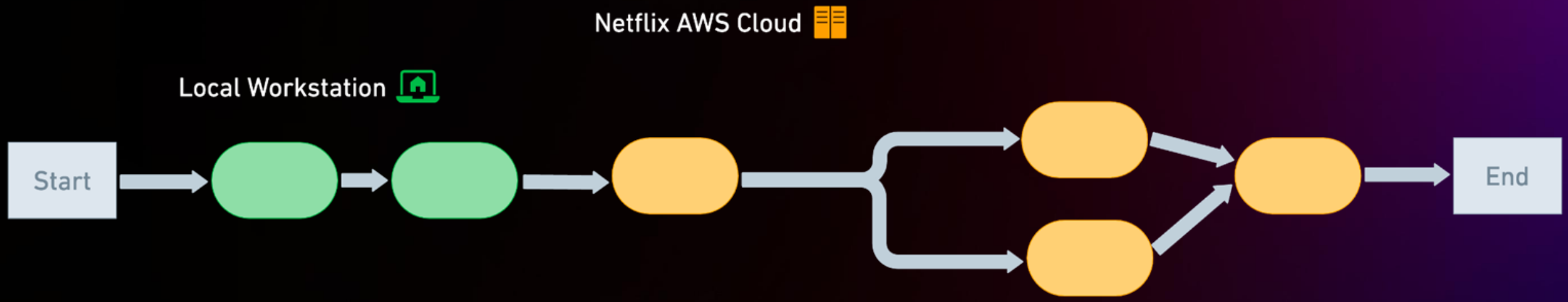
The Standard Task Library

Review tools	Media management	Storage	Media transformations
Industry review tools	AMP (Netflix Asset Management) Asset Discovery Service Protego (RBAC)	CDrive/ Baggins (Netflix Storage) Physical storage for artist workstation Amazon S3	Encoding Media inspections Ad hoc media transforms

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Authoring pipelines



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Tools and developer experience

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We believe production teams should spend their time on creative work, not media logistics

The developer view

250+

reusable tasks



50+

pipeline types



120,000

pipelines per month



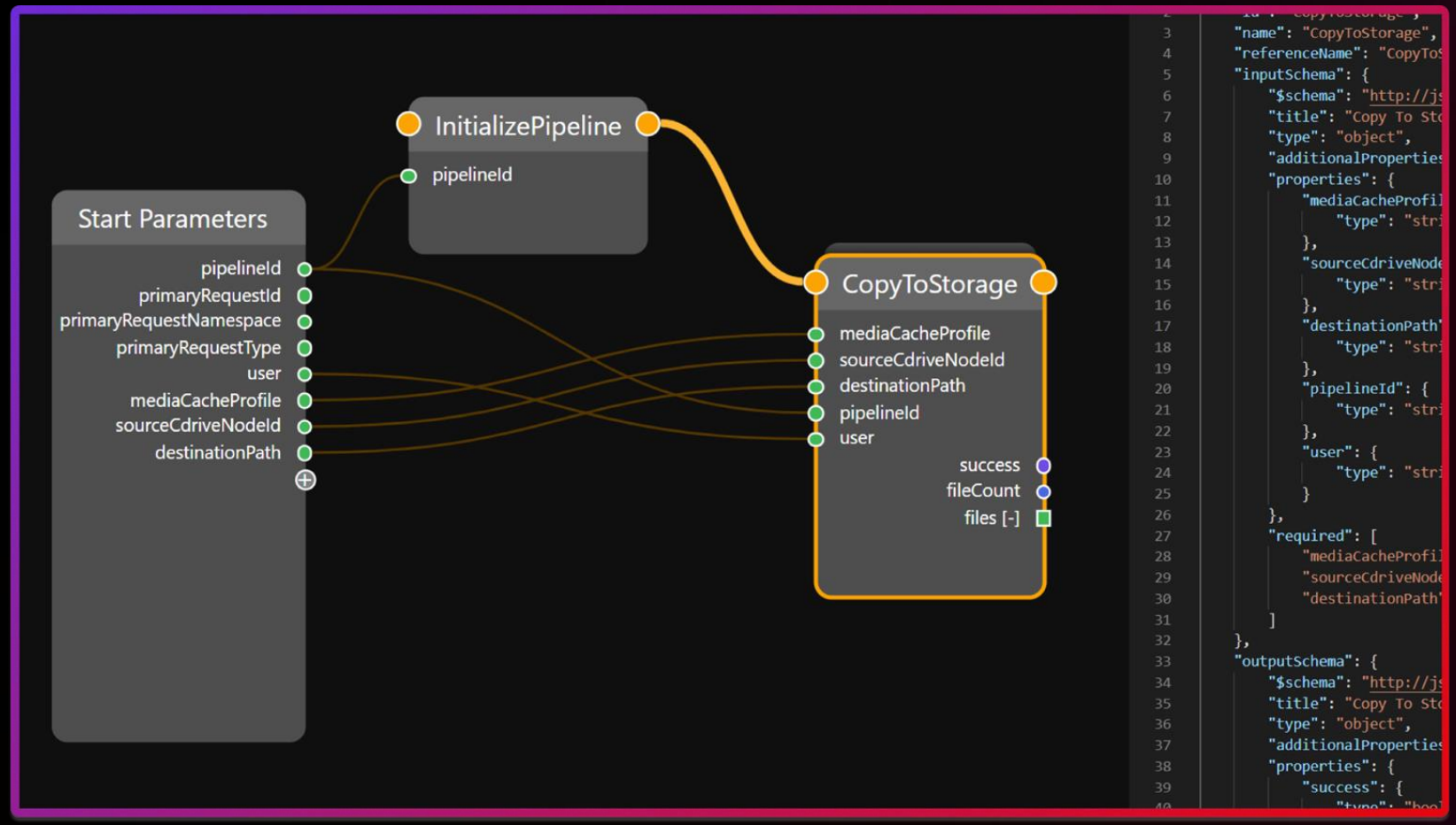
2PB

of data ingested per month



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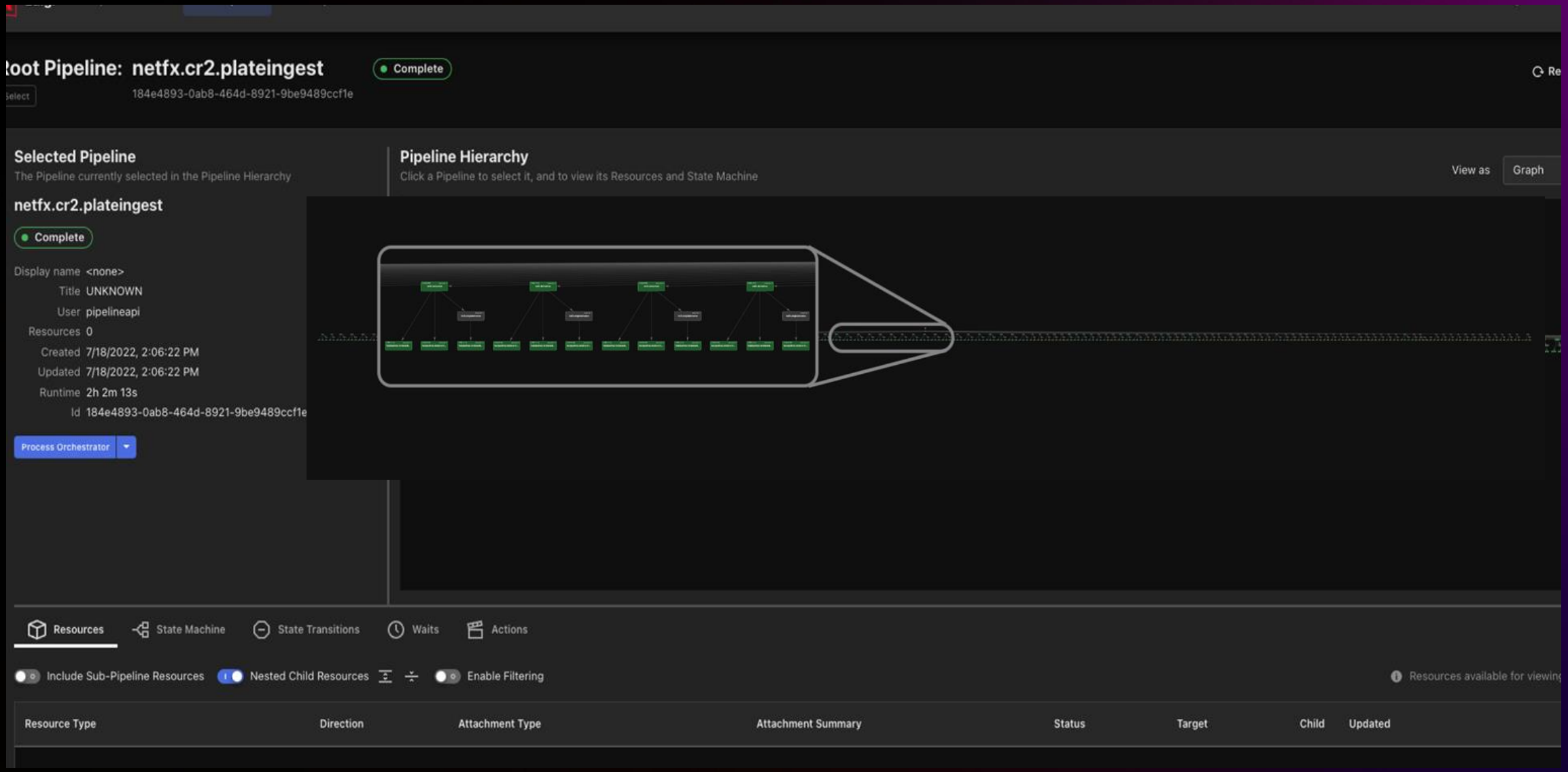
Visual authoring



. . . with an experience that is approachable, simple, and **visual**

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Monitoring pipelines



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Examples

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VFX plate ingest



VFX plate ingest



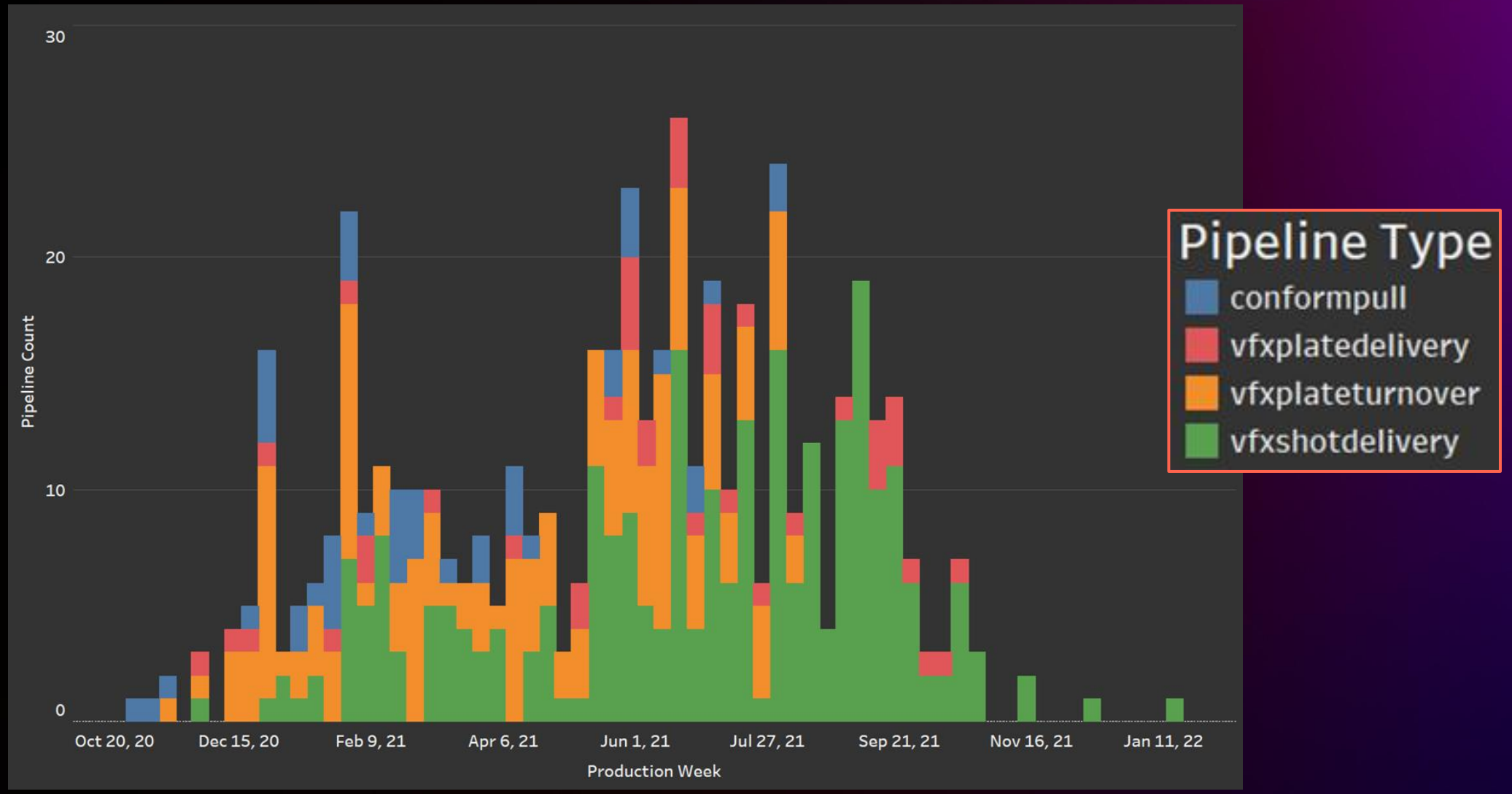
Made with Studio Orchestrator with ♡

La Casa de Papel: Season 5



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Chicken Run:
Dawn of the Nugget
(coming 2023)



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- *Last Days of American Crime*
- *Selena*
- *Haunted*: Season 3
- *Confessions of an Invisible Girl*
- *El Reino*: Season 1
- *Mismatched*: Season 1
- *The Cabin with Bert Kreischer*: Season 1
- And many, many more

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Thank you!

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