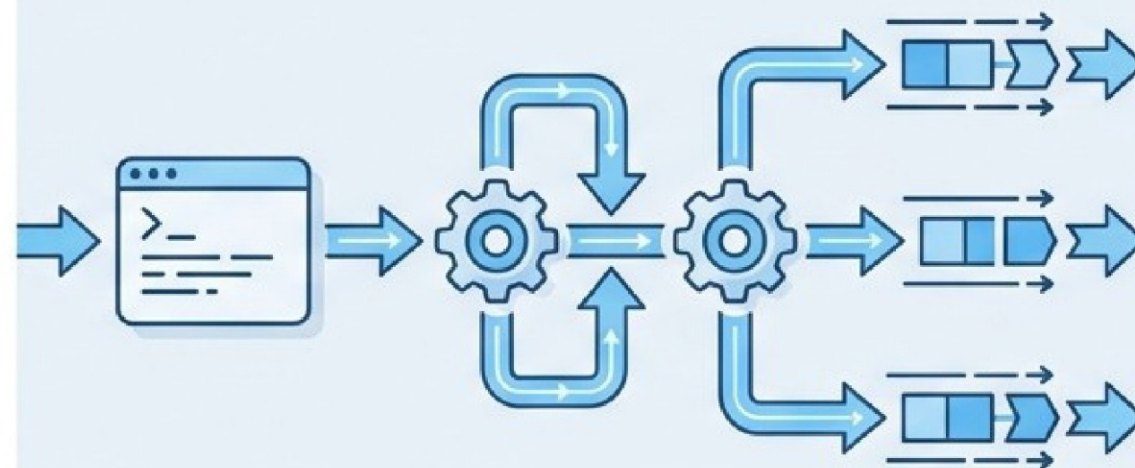
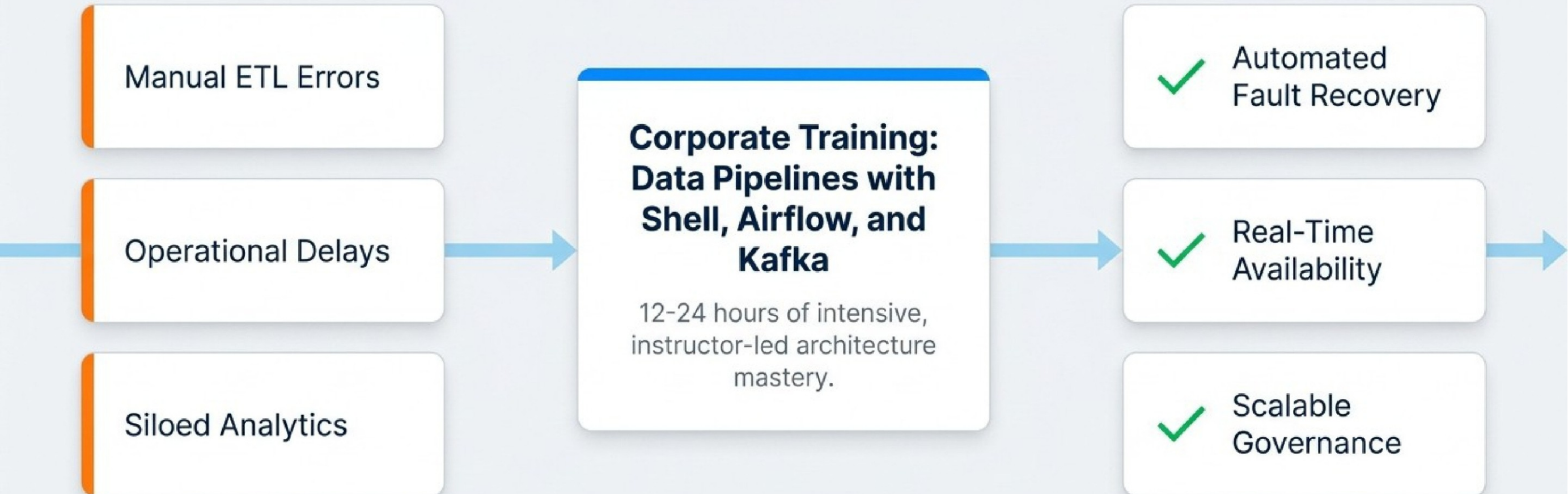


Data Pipelines with Shell, Airflow, and Kafka: The Capability That Changes Everything

Equip teams to build, orchestrate, and manage scalable batch and streaming data pipelines. Reduce operational delays and ensure real-time data consistency across your enterprise.



The Capability Activation Curve



Course At-a-Glance

Enterprise-grade technical training deployed on your terms.



12 - 24 hrs

Intensive Course Duration



Expert-Led

Live Instructor-Led Training



10 Languages

Virtual, On-site, or Off-site



10,000+

Global Vetted Trainers



Certified

Professional Certificate of Completion

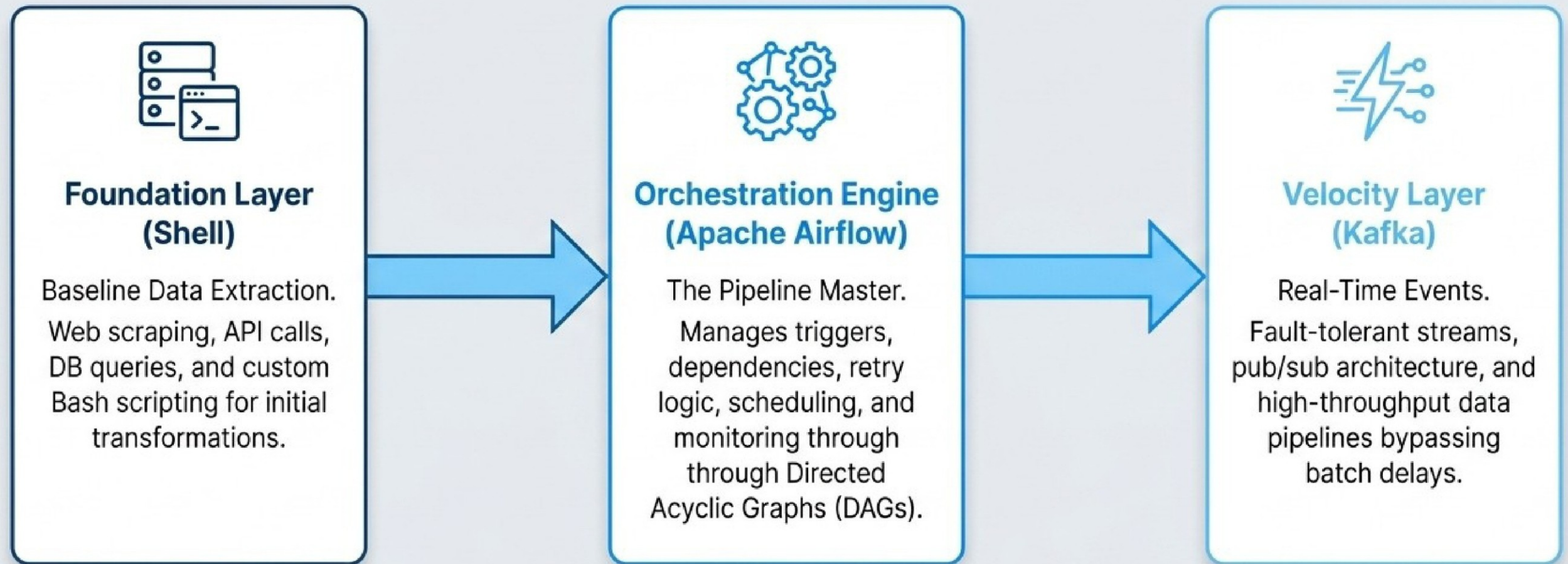
The Capability Ascent

A structured progression from baseline knowledge to end-to-end deployment.



The Modern Data Architecture

Synthesizing three distinct technologies into a single, fault-tolerant ecosystem.



Module 1 deep dive: Strategic Architecture

Teaching teams when to use ETL vs. ELT based on enterprise latency and throughput needs.

Dimension	ETL	ELT
Architecture Focus	Transformation before load	Load first, transform in-destination
Latency	Higher latency, batch focus	Lower latency, raw data availability
Best For	Structured Data Warehouses	Unstructured Data Lakes

Executing with Shell Scripting

- ✓ Automate data extraction via APIs and DB queries.
- ✓ Write robust Bash scripts for initial data cleaning.
- ✓ Implement basic automation and logging with cron.

Module 2 deep dive: The Orchestrator

Taming complex data dependencies with Apache Airflow.

Orchestration Flow (DAG)



Dependency Management

Build DAGs, define task dependencies, and master BashOperator/PythonOperator.



Failure & Recovery

Design self-healing pipelines with custom retry logic, alerts, and detailed logging.



Production Deployment

Scale Airflow workflows for enterprise production environments and manage UI monitoring.

Module 3 deep dive: Real-Time Velocity

Shifting from batch processing to continuous streaming with Apache Kafka.



Core Components

Master Brokers, Topics, Partitions, and Replication for fault tolerance.

Delivery Semantics

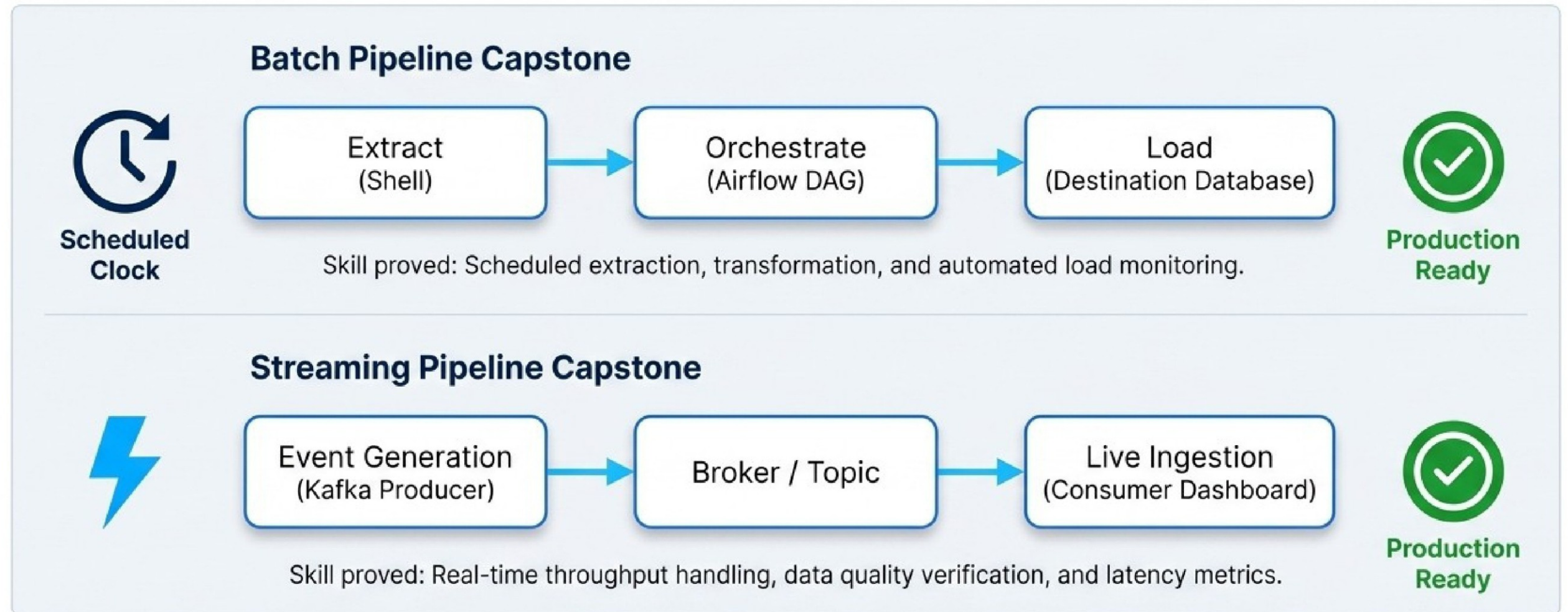
Manage offset delivery and integrate Producers and Consumers seamlessly.

Streaming APIs

Build advanced, real-time escalation pipelines using the Kafka Streams API.

The Capstone Synthesis

Theory becomes capability. Learners build end-to-end, fault-tolerant pipelines from scratch.



Organization-Wide Impact

How the curriculum upgrades specific technical roles across your enterprise.

Data Engineers

Move from manual scripting to building highly accessible, reliable, and optimized automated systems for data collection and reporting.

DevOps Engineers

Bridge development and operations by automating data workflows and integrating pipeline triggers into continuous CI/CD pipelines.

Backend Developers

Optimize server-side application architecture by utilizing Kafka for event-driven logic and real-time database updates.

Data Architects & SysAdmins

Ensure system reliability, optimize performance metrics (throughput/latency), and design secure, scalable data governance frameworks.

Flexible Delivery Modalities

Choose the format that fits your team's operational rhythm and location.



Virtual Live

(Instructor-Led)

- ✓ Join from own workspace (zero travel).
- ✓ Scale to large groups across global sites.
- ✓ Interactive tools keep remote learners engaged.



On-Site

(Face-to-Face)

- ✓ Trainers deployed to your office.
- ✓ Content tailored to your internal tech stack.
- ✓ Deep group collaboration and hands-on live demos.



Off-Site

(Immersive)

- ✓ Hosted at a premium external venue.
- ✓ Zero everyday workplace distractions.
- ✓ Built-in team bonding and immersive focus.

Built for scalable, enterprise-grade workforce transformation.



Proof of Impact

Measurable capability upgrades from engineering leaders.



Gave me hands-on experience with industry best practices... I've been able to drive meaningful innovation and understand practical applications deeply.

Donna Stevens

Lead AI Engineer, Deep Learning Solutions Firm



Advanced methodologies expertise... Our team's capability maturity level increased by three full stages within six months.

Bharati Naskar

Lead Data Warehouse Engineer, AI Platform Provider



Transformed my approach... The deep coverage of hands-on exercises gave me advanced skills. We delivered a high-visibility enterprise project two months ahead of schedule.

Jacek Szymanski

Principal Data Architect, AI-Powered Automation Co.

Scalable Enterprise Packages

Tailor-made licenses to upskill teams of any size.



Activate Your Team

Secure your customized training program today.

- 1 Define Scope**
Download our training requirement template or list your courses.
- 2 Customize**
Tell us your headcount, delivery preference (Virtual/On-site), and schedule.
- 3 Deploy**
Receive a custom quote and begin your team's capability upgrade.

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✓ ISO 9001:2015 Certified

✓ ISO 27001:2022 Certified