Adobe Experience Manager Architecture

Objectives:

- Describe the architecture of AEM
- Understand Cloud Manager for AEM
- Explain how AEM fits into the Adobe Experience Cloud

Adobe Experience Manager drives Experiences

Source | Create

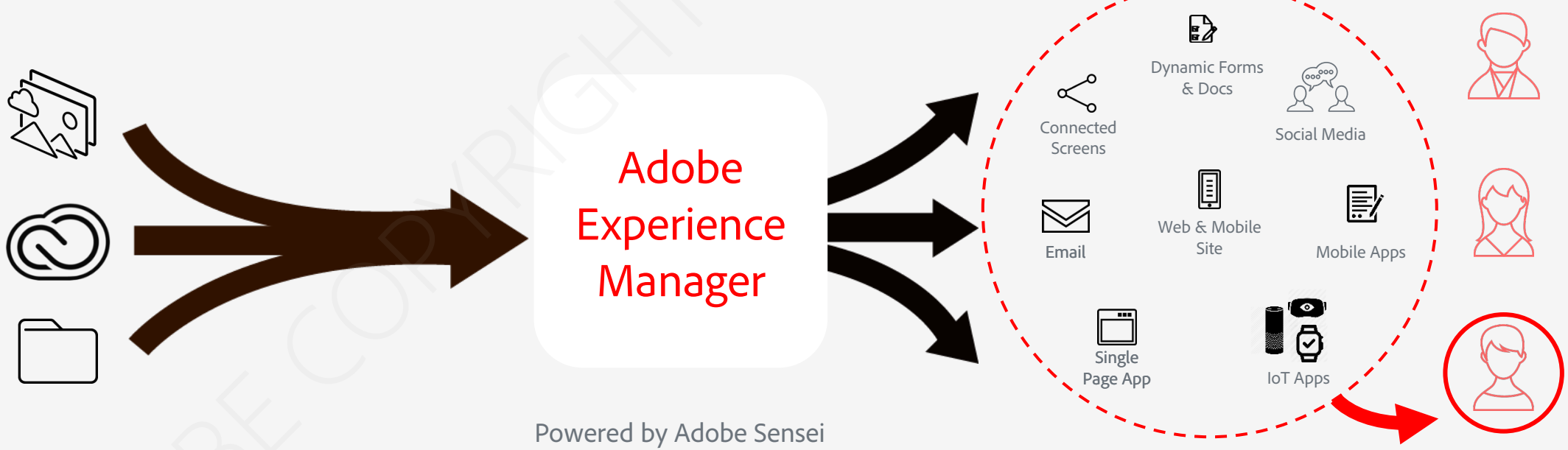
Ingest any number of content types: Creative Cloud, Stock, Brand Assets and more

Manage | Assemble

Easily store, find and compose varied experiences

Personalize | Deliver

Intelligent personalization and channel-agnostic content delivery



Powered by Adobe Sensei

Artificial Intelligence & Machine Learning

Smart Content Services

Adobe Experience Manager built on Open Source

All aspects of AEM are built on open source:

- Architecture, supporting frameworks, templates, CLI tools, components, dev tools and admin tools are all open source

Components are open source

- Core Components
- eCommerce Components

Many projects open source

- AEM archetypes
- Consulting Services tools
- Migration tools
- Integrations through Adobe IO plugins

ACS AEM Commons

Adobe Experience Manager | Applications

Adobe Experience Manager

manages and delivers connected digital experiences across all channels

Sites
Easily compose and deliver digital experiences across online & physical touch points

Assets
Digital asset creation, management and delivery

Forms
Multi-channel forms, onboarding, and customer communications management

Screens
Delivery dynamic interactive experiences into physical places

Cloud Manager
Unified Digital Experience Delivery Platform to manage cloud operations

Experience Intelligence
Powered by Adobe Sensei

Access within AEM to Adobe Target, Adobe Analytics, Adobe Campaign and Adobe Sign capabilities

Adobe Experience Manager | Architecture

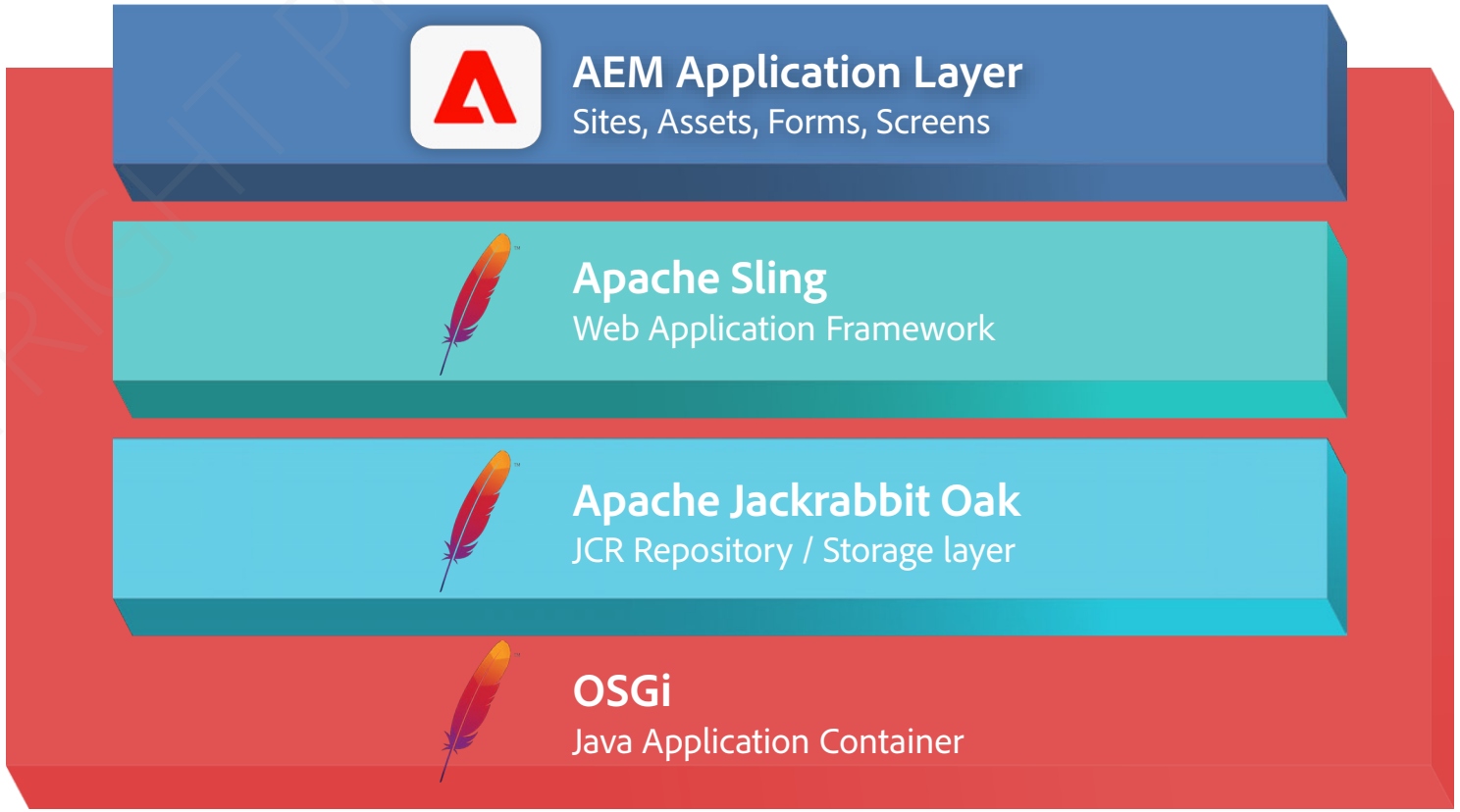
Technical foundation on which AEM is built

Includes many open-source elements

- OSGi Application Runtime
- Java Content Repository (JCR)
- Web Application Framework

Apart of Experience Cloud

- Cloud Manager
- Adobe I/O
- Adobe Sensei
- Assets Microservice



Architecture | OSGi Platform

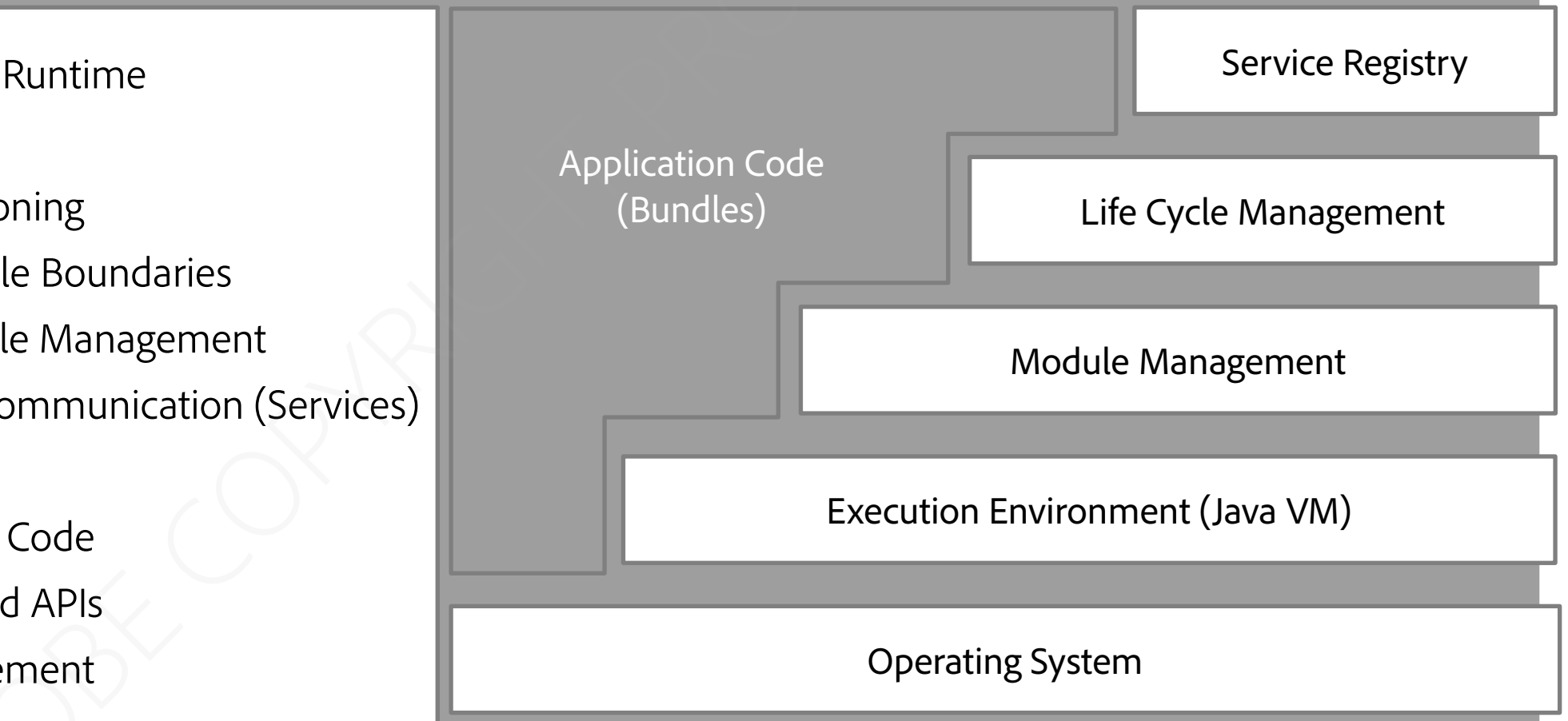
Modular Application Runtime

Features:

- Semantic Versioning
- Enforced Module Boundaries
- Module Lifecycle Management
- Inter-Module Communication (Services)

Benefits:

- Hot Swappable Code
- Clean, Versioned APIs
- Service Replacement



Architecture | Apache Sling

Key principles:

- Web application framework
- Provides RESTful Web API to JCR-based applications

Sling is resource-oriented

- Resources are maintained in a virtual tree
- Most resources map to JCR nodes

Sling Processing

- Decompose the URL (extract path and other parts)
- Resource resolution
- Servlet resolution

Architecture | Java Content Repository (JCR)

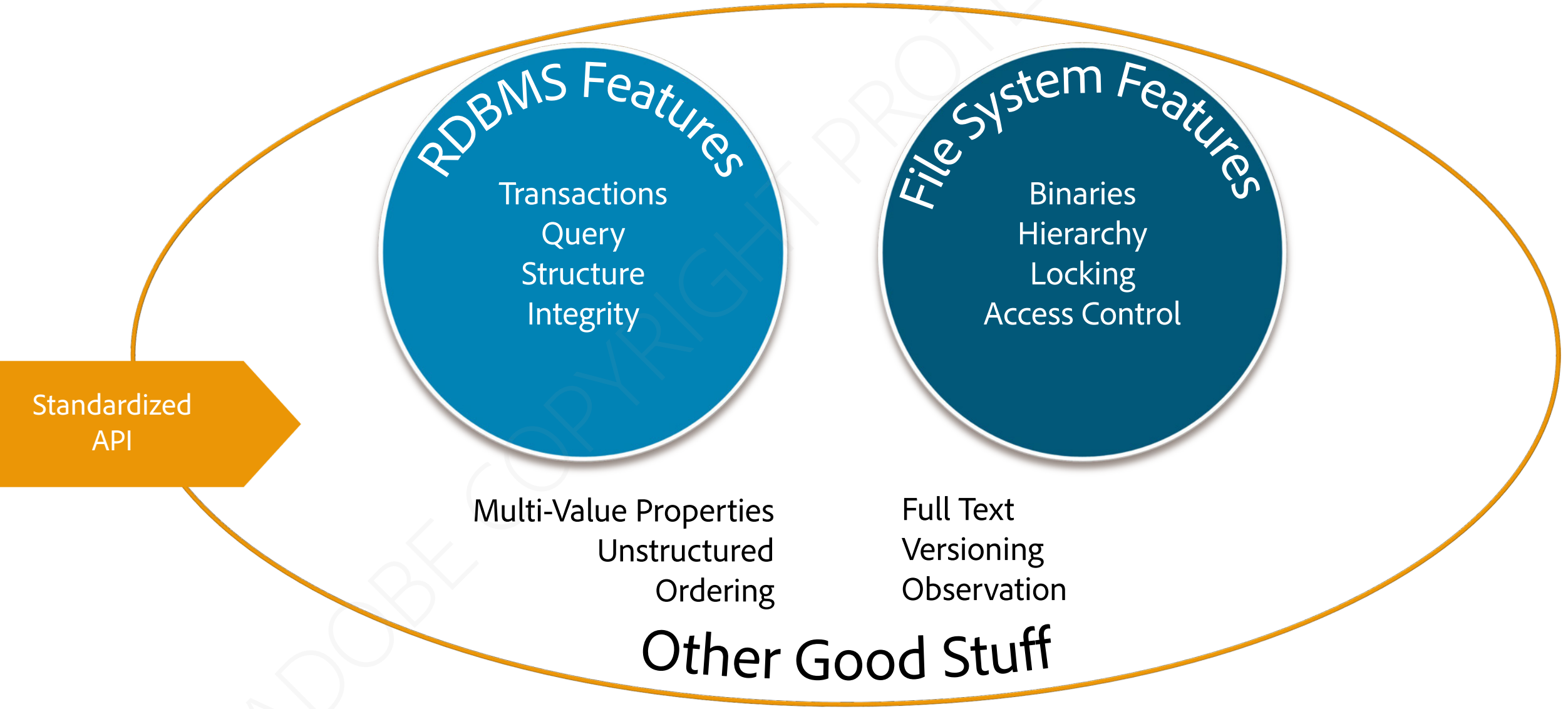
A database that looks like a file system:

- Supports storage of unstructured content
- Enables versioning and observation
- Provides services such as full-text search, indexing, access control, and event monitoring

Important principles of the JCR:

- Common programmatic interface to content repositories
- Content organization in a repository model – Hierarchical modeling
- Implemented by Apache Jackrabbit Oak

Architecture | Content Repository



Adobe Experience Manager | Infrastructure

Deployment of Adobe Experience Manager can have several challenges

- Scalability
- Reliability
- Security
- Optimization of the infrastructure for AEM
- Management of upgradability

Cloud Manager by Adobe provides many advantages

- CICD
- Security, high availability, and self service
- Author, publish, dispatcher environments

Adobe's hosted solutions include Cloud Manager

Infrastructure | By Adobe

AEM as a Cloud Service

Fully cloud-native PaaS application

AEM with Managed Services

Automation with cloud-native functionality

Cloud Manager

On Premise deployments continue to be supported for AEM 6.5 and earlier

Infrastructure | Cloud Service

Cloud-native service that is always current, scalable and available

Always Current

- New builds are seamlessly incorporated daily
- CI/CD framework for rapid development

Scalable, modular and global

- Extensible set of microservices
- Traffic autodetection to dynamically scale horizontally and vertically

Performance resiliency

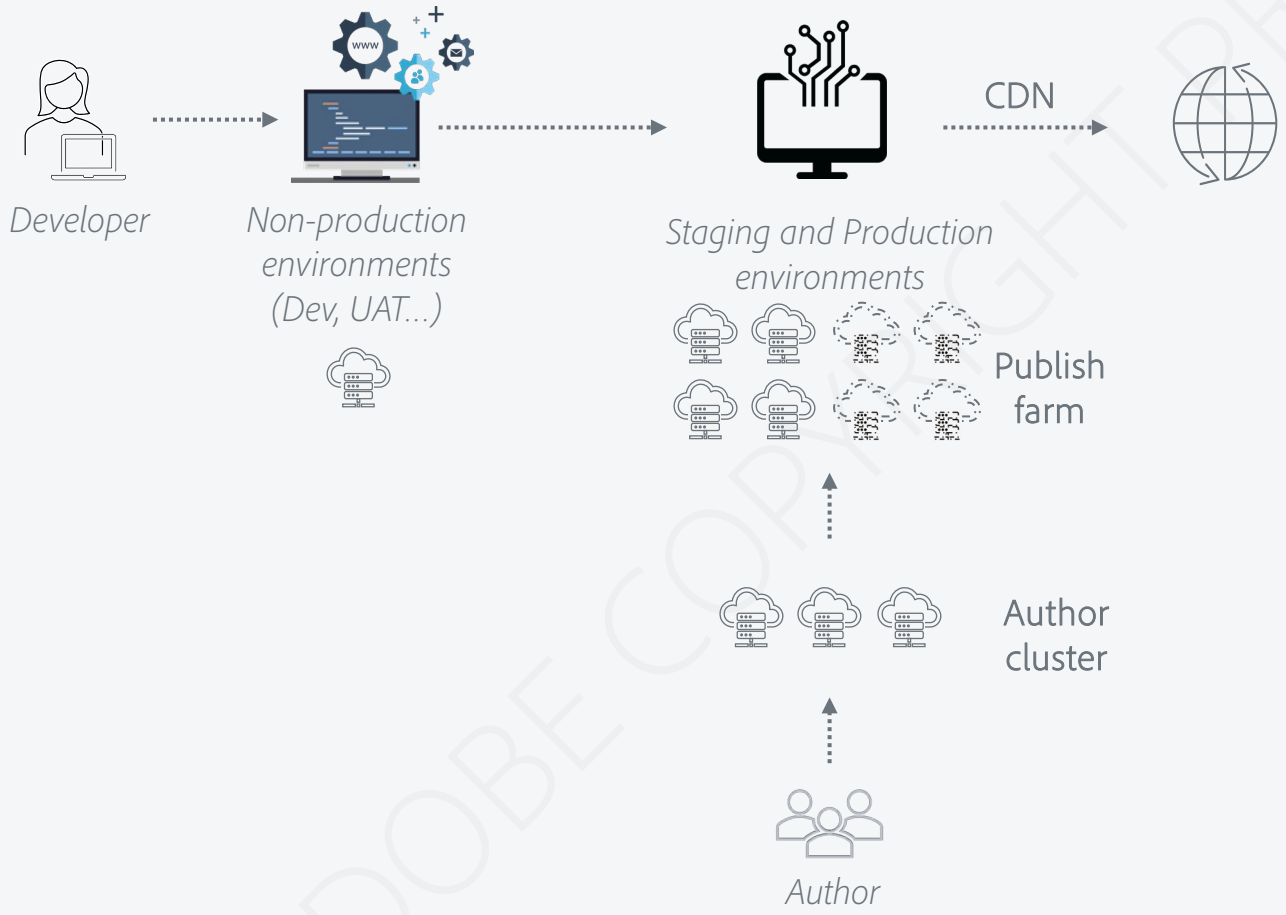
- Guaranteed high service level availability
- Failure protection against any un-predictable cloud outages or disasters

Secure by default

- All environments pre-configured to Adobe-backed security rules
- Compliance with security frameworks such as SOC-2 and ISO-27001

Infrastructure | Cloud Service auto-scaling

Automatically detects the need for increased capacity and scales dynamically



Vertical Scaling

Adds additional memory or processing to current system s

Horizontal Scaling

Adds as many new nodes as needed for high performance

Infrastructure | Managed Services

Scale and expertise paired with cloud-native capabilities

Accelerate Agility

Automate and shorten development cycles with Cloud Manager CI/CD to deliver digital experiences faster.

Maximize ROI

Improve developer productivity with a simplified upgrade experience for increased adoption of new features.

Minimize Disruptions

Simplify process automation and ensure business continuity with auto-scaling, self-service capabilities, and high SLAs.

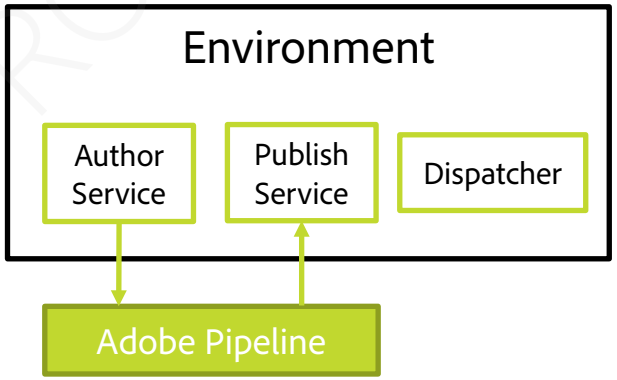
Security in Depth

Minimize risk of security threats or downtime with best-in-class security coverage and testing.

Cloud Manager | AEM Environments

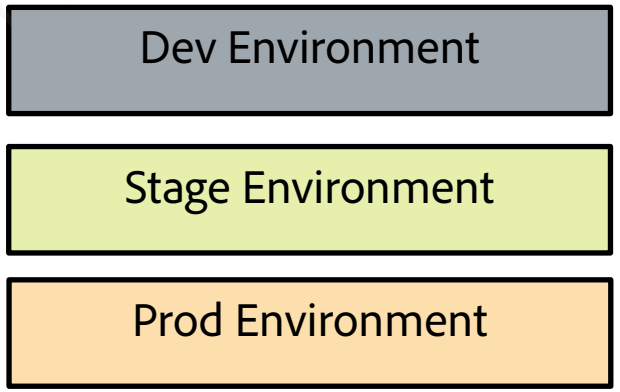
Services within an environment

- AEM Author
- AEM Publish
- Dispatcher



Types of Environments

- Dev
- Stage
- Prod



Cloud Manager | Developer Notes

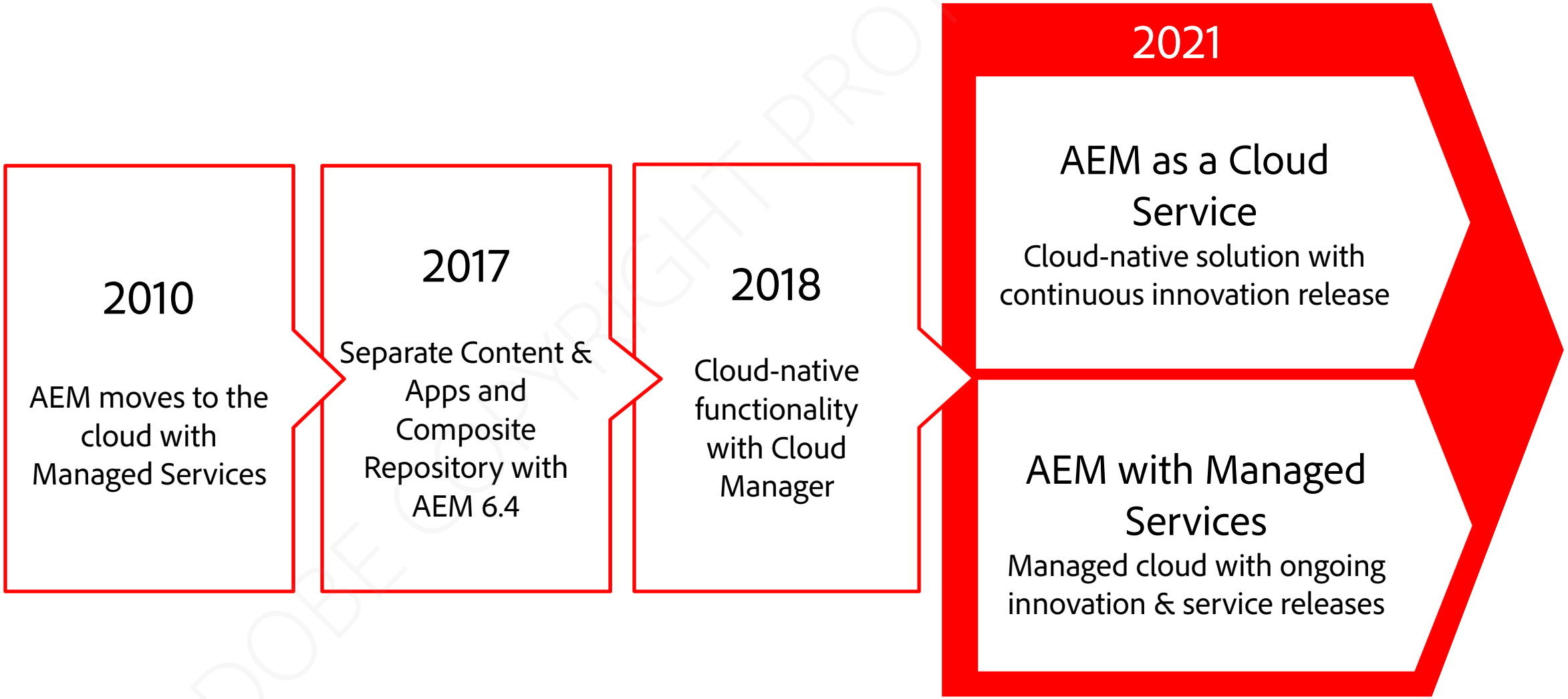
Develop Local

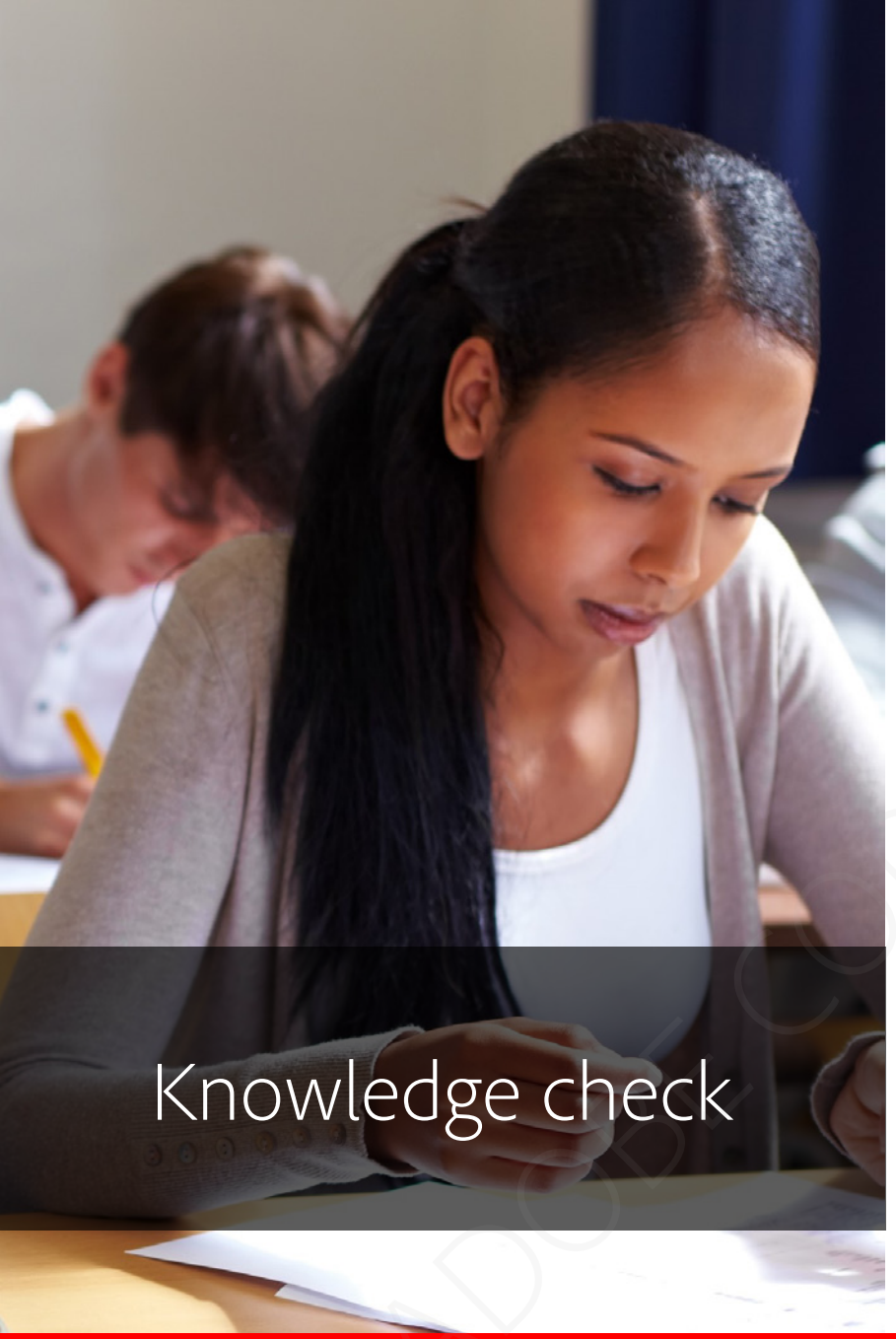
- AEM builds can be run locally
- Dispatcher validation can be tested locally
- Maven projects are used for development
- Projects must be pushed into Git

Adhere to best practices enforced by CICD

More on Cloud Manager later…

Evolution of Adobe Experience Manager in the Cloud





What are the 4 architecture layers in an AEM? Select the correct answer.

A. Cloud Manager, JCR, Sling, and Applications
B. OSGi, JCR, Sling, and AEM Applications ✓
C. OSGi, JCR, HTML, and Applications
D. OSGi, JCR, Sightly, and Cloud Manager

Key takeaways

- AEM provides Sites, Assets, Forms, and Screens Applications
- AEM has an open source architecture that includes OSGi, Sling, and the JCR
- Adobe provides two deployment options that include Cloud Service and Manage Services
- Cloud manager is used as Adobe's deployment tool

Q&A session