

WSO2con2025

From Data Center to Hyperscaler Leveraging Hybrid Deployment Models



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Why Would an Organization Move to Cloud?

- Maintenance and management convenience.
- Time to market.
- Scalability.
- Availability.
- Cost optimization.
- Use the latest technology as a service.



Challenges in Moving to Cloud

What prevents organizations from fully adopting the cloud?

- Organization's own policies.
- Regulatory restrictions.
- Architecture limitations.
- Co-locating services.
- Time required to move to cloud.

How can you move to cloud and manage the above challenges?



Running Things Hybrid!



Running Things Hybrid!

- Hybrid deployments are becoming popular.
- Part of the deployment in cloud while the other part on-premise.
- Best of both worlds.
- Flexibility.
- Reliability and better service availability.
- Serve traffic closer to the customer, faster response times for services,
- Ability to comply with organizational processes and regulations.



Running Things Hybrid: Common Patterns

- External traffic → cloud while Internal traffic → on-prem.
- Traffic that needs rapid scaling served from cloud.
- Low priority traffic served from cloud while high priority traffic served from on-prem.
- New projects served from the cloud while existing projects from served from on-prem.
- Use of cloud services such as managed kubernetes services and cloud functions.
- Cloud used as the DR site for on-prem workloads and vice-versa.



Running Hybrid Deployments with WSO2 Products

- Built ground up to work in a hybrid setup.
- Infrastructure agnostic.
- De-coupled architecture between components.
- Independent scaling of components.
- Adopts event driven messaging.
- Tolerance to network delays.
- Ability work across different network boundaries.

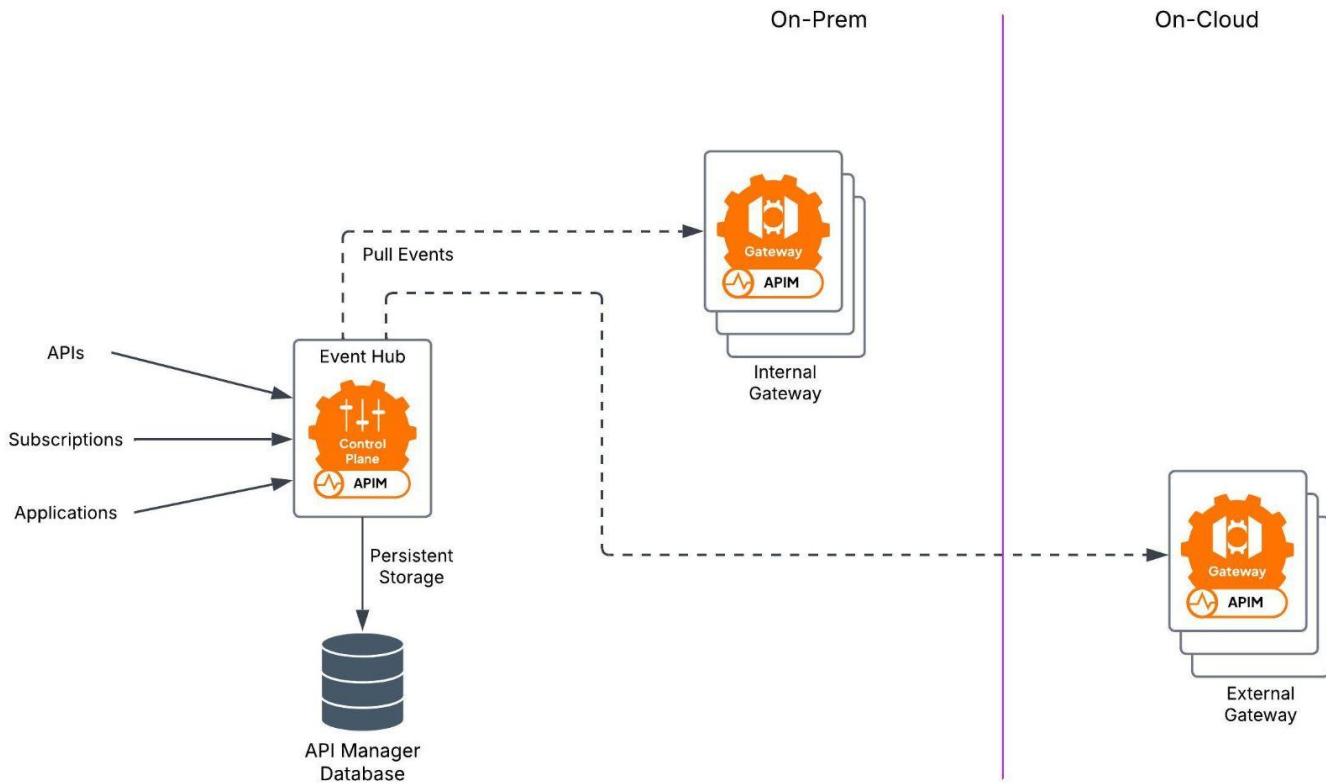


Hybrid Deployment for Managing APIs

- Gateway and Control Plane separation.
 - Each component to be deployed either on-prem or on-cloud.
- Separate Gateways in separate networks to serve different types of APIs.
 - Regulated/internal APIs on-prem while external facing APIs on-cloud.
- Co-locate gateways with the backend services.
- Utilize managed services like Kubernetes Services to deploy scalable Gateways on-cloud.



API Manager Product Architecture

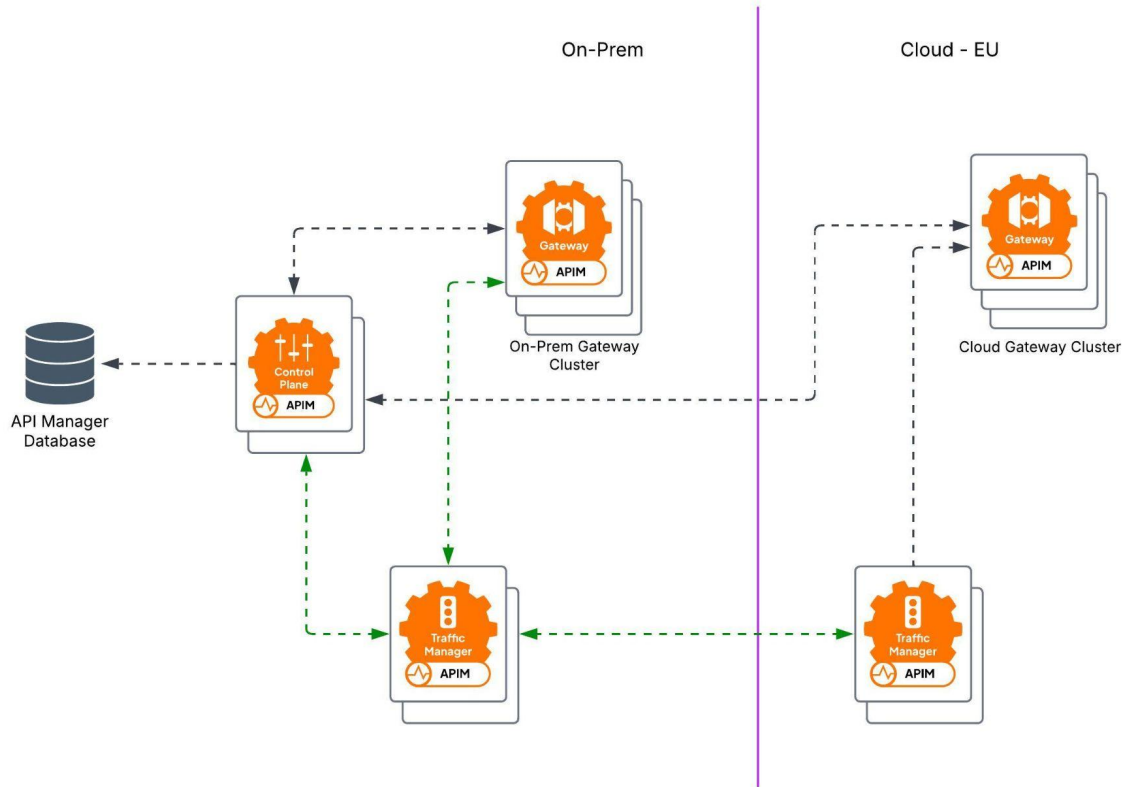


Hybrid Deployment of API Manager : Customer Example

- Horse racing to sports betting.
- Primary business served from on-prem.
- New business served from cloud.
- Cloud deployment in EU serving the sports betting market in EU.
- APIs controlled and managed by a single control plane.
- Variable demand in the sport betting business doesn't impact the primary business.



Hybrid Deployment of API Manager : Customer Example

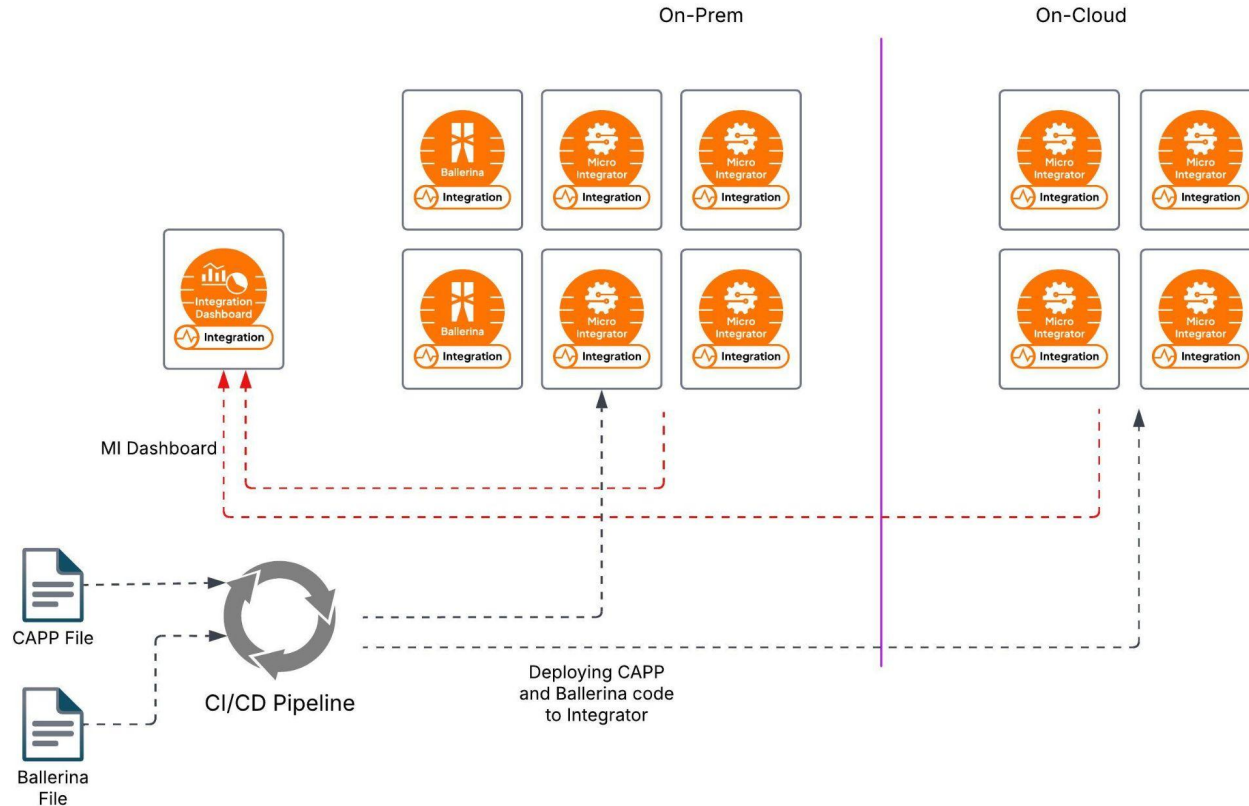


Hybrid Deployment for Managing Integrations

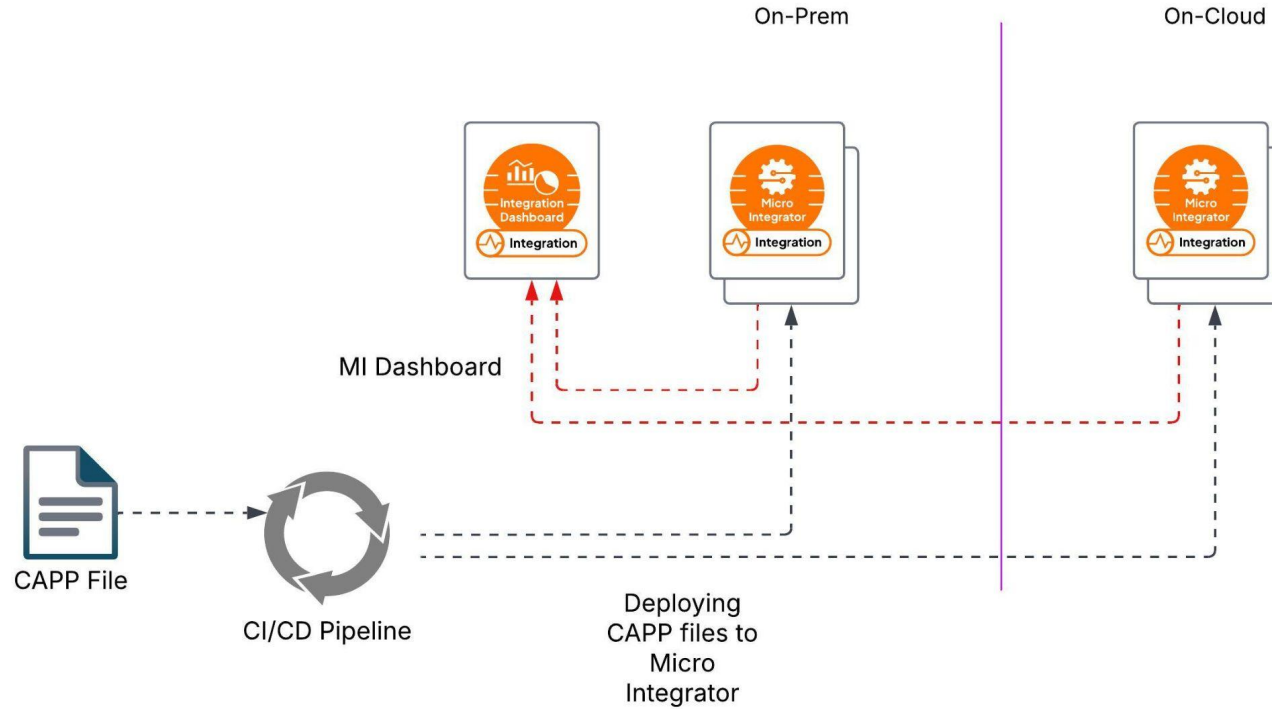
- Ability to run WSO2 Integrator as a centralized or a decentralized deployment.
- Can be deployed in different network segments, but work as part of a single deployment.
- Single integration dashboard to monitor all APIs.
- Deploy services directly to the integrator through a CI/CD pipeline.



Product Architecture : WSO2 Integrator (Decentralized)



Product Architecture : WSO2 Integrator (Centralized)

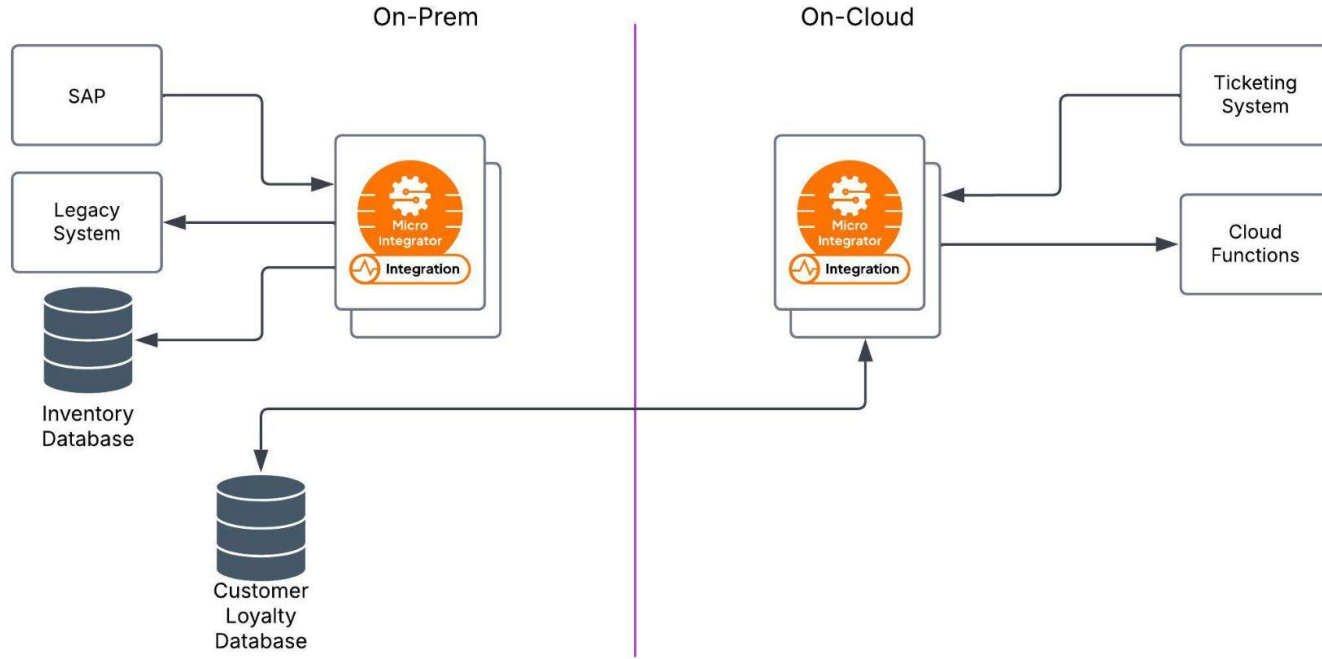


Hybrid Deployment of Micro Integrator: Customer Example

- Customer in the amusement park industry require hybrid integration capability across different on-prem and cloud.
- On-Prem integration with legacy backend systems and SAP.
- On-Prem integrations are batch jobs, SKU and inventory syncing.
- Cloud integrations are with ticketing systems and serverless functions running on cloud.
- Horizontal scalability in cloud using Kubernetes service.



Hybrid Deployment of Micro Integrator: Customer Example

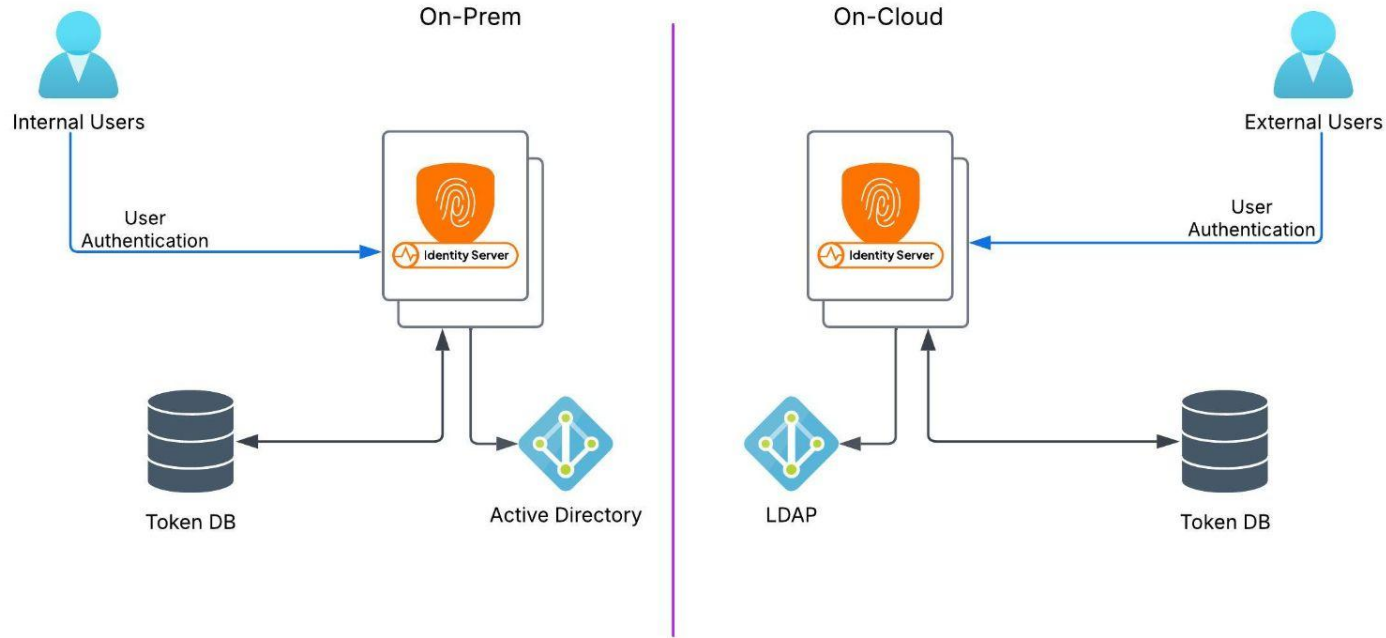


Hybrid Deployment for Managing Identities

- Managing Identities across multiple networks.
- Authenticate users closer to their region of operation.
- Ability to serve clients from multiple locations and networks.
- Independently scale to authentication requests originating from a specific source.
- Cloud serves as the failover site for on-prem user authentication.

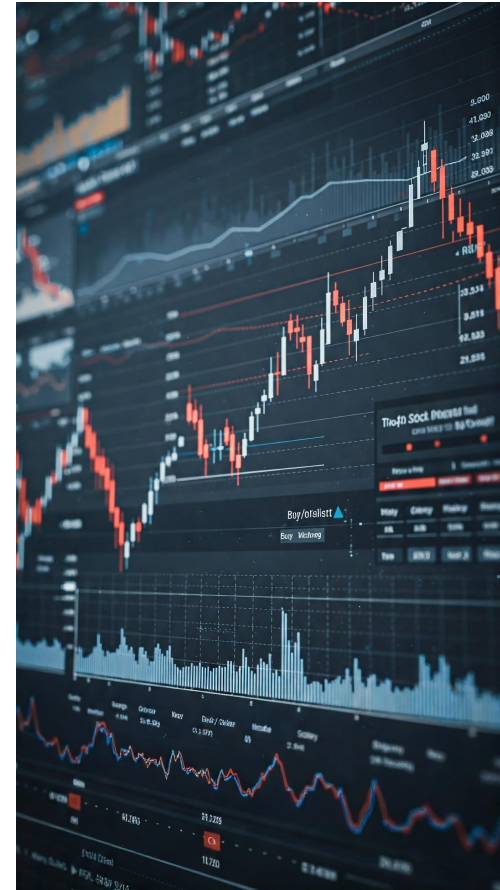


Product Architecture : Identity Server

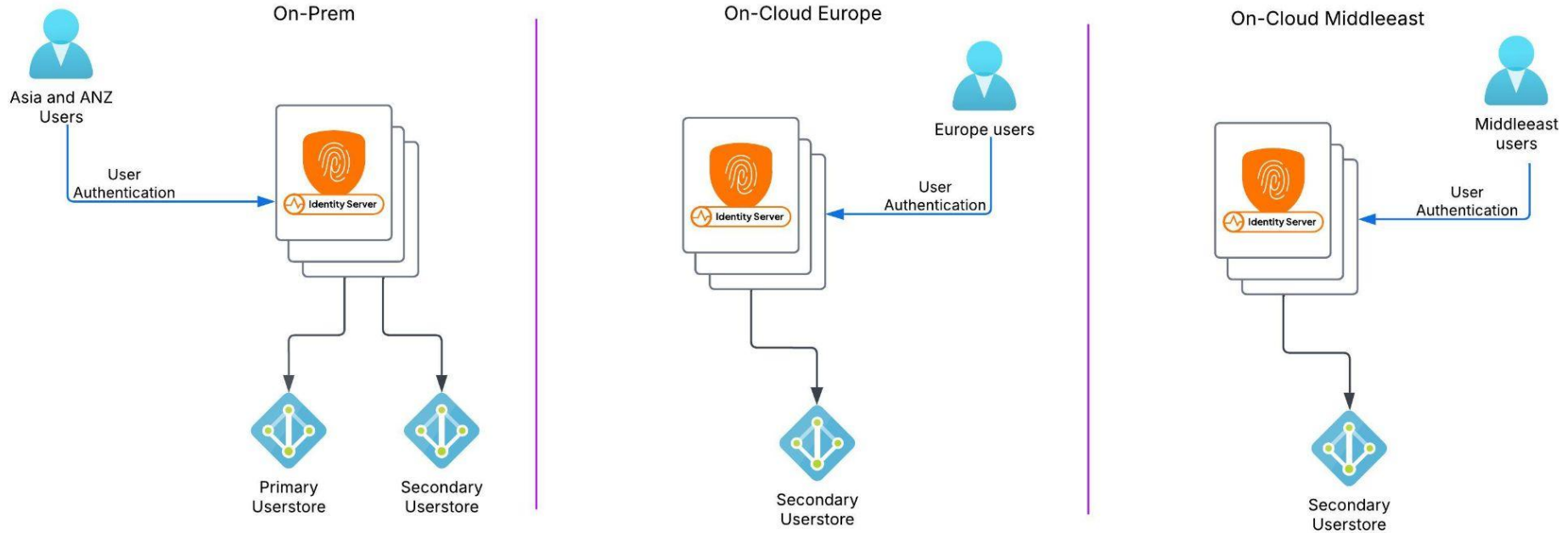


Hybrid Deployment of Identity Server: Customer Example

- Trading platform that uses WSO2 Identity Server for Customer Identity and Access Management.
- Serving multiple markets across different geo- zones.
- Asian customers are authenticated and served from their on-prem data center.
- Middle eastern and European customers are served from cloud.

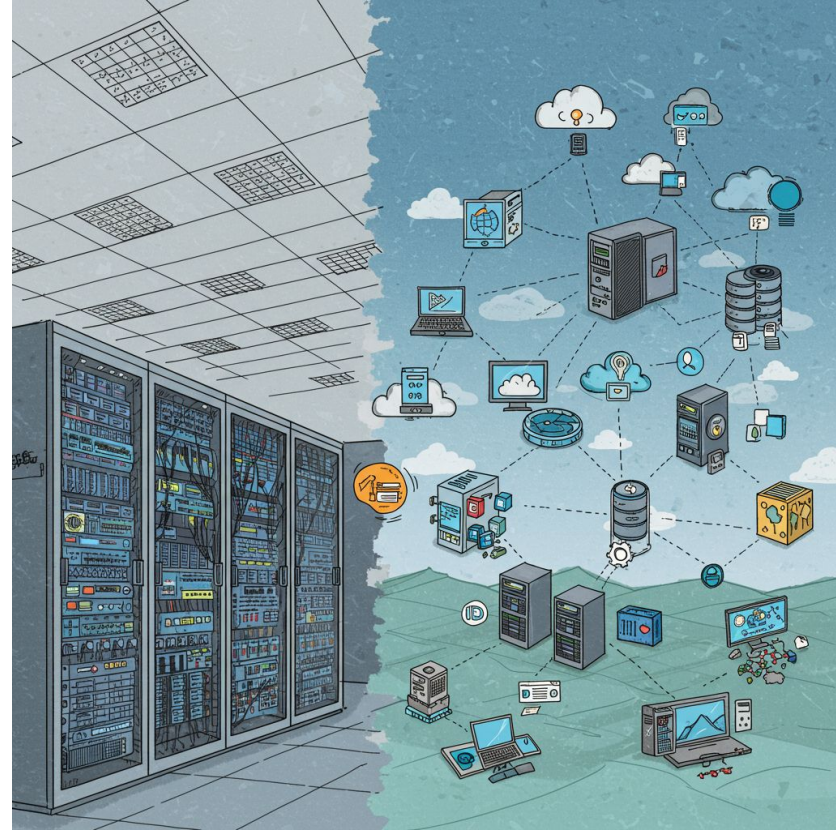


Hybrid Deployment of Identity Server: Customer Example



Challenges Faced with Hybrid Deployments

- Network latency → Product performance and functionality.
- Network restrictions.
- Shipping updates and patches.
- Inconsistent deployment methods.
- Log management and correlation.

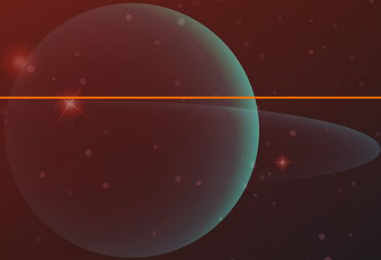


Overcoming Challenges with Hybrid Deployments

- Operate in isolation.
- Session affinity.
- When possible, stick to the same deployment model.
- Use log aggregation tools to aggregate logs.



Question Time!



Thank you

