Internal

Cloud HCM
High Level Architecture Overview

April 26 2018

SAP SuccessFactors

Business Outlook

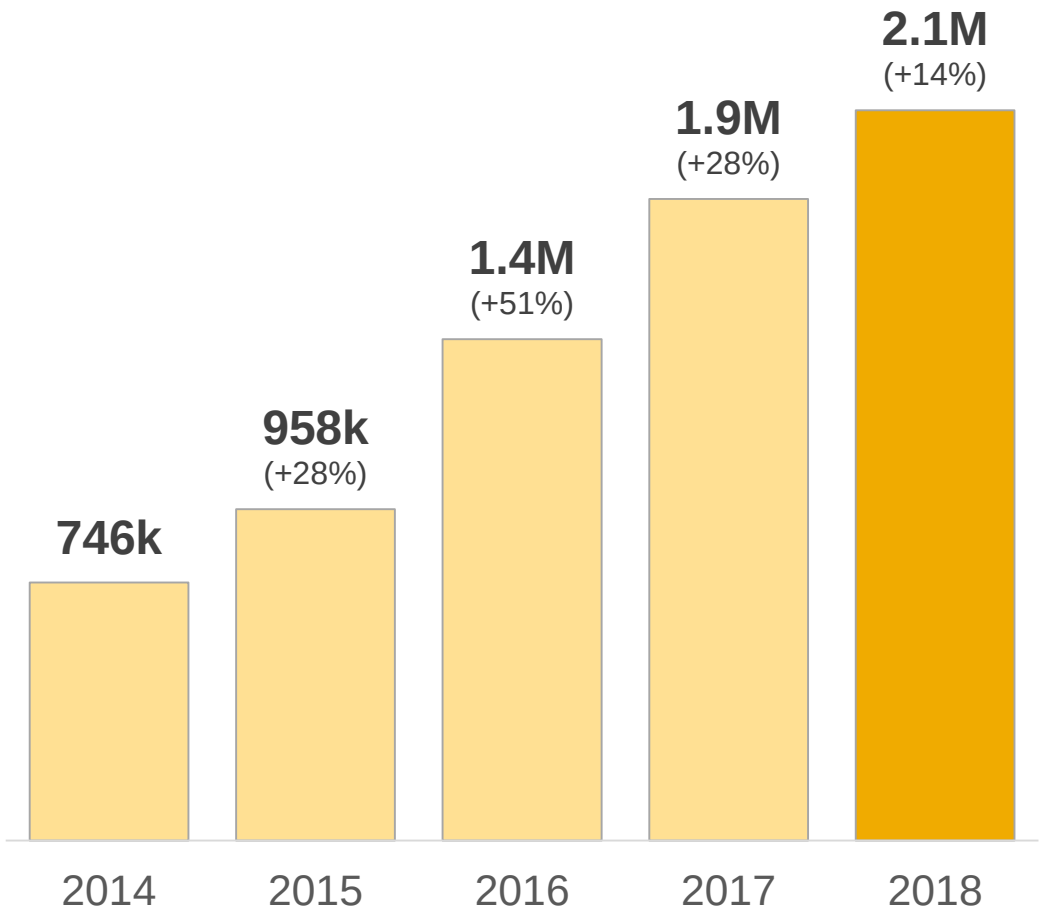
Q1 Peak Sesson Daily Users and Transactions

SAP SuccessFactors

Peak Season – new records for usage achieved for Q1 (so far)!

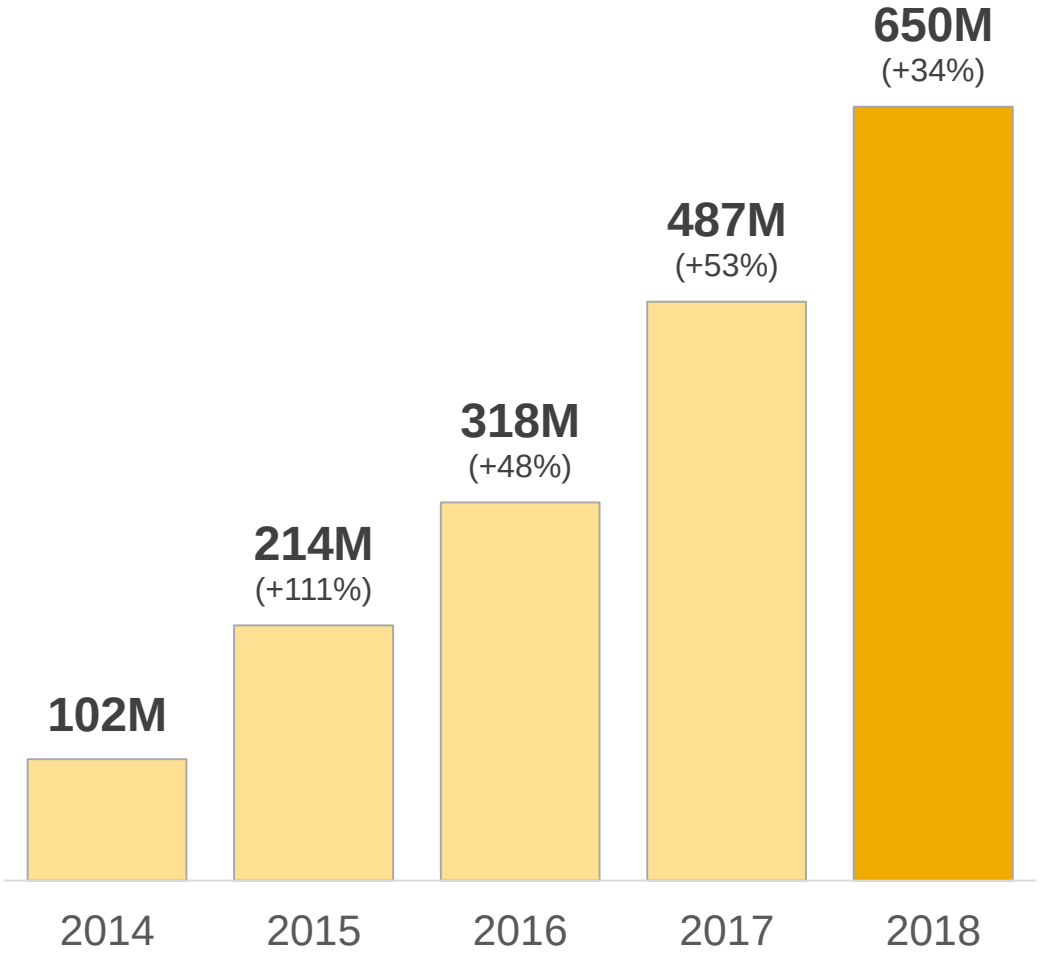
Q1 Peak Daily Users (so far)

(Highest user count for a single day in quarter)



Q1 Peak Daily Transactions (so far)

(Highest transaction count for a single day in quarter)



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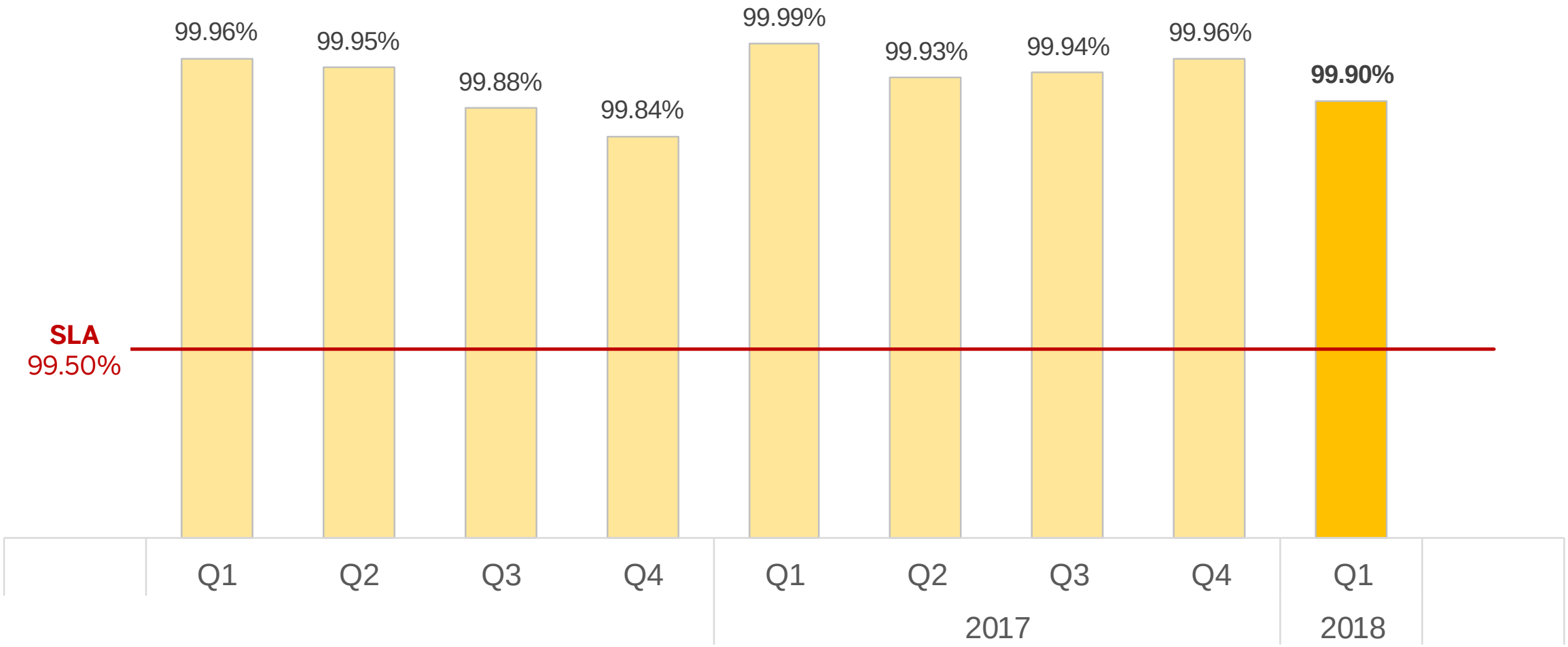
Peak Season – High Availability during Peak Usage

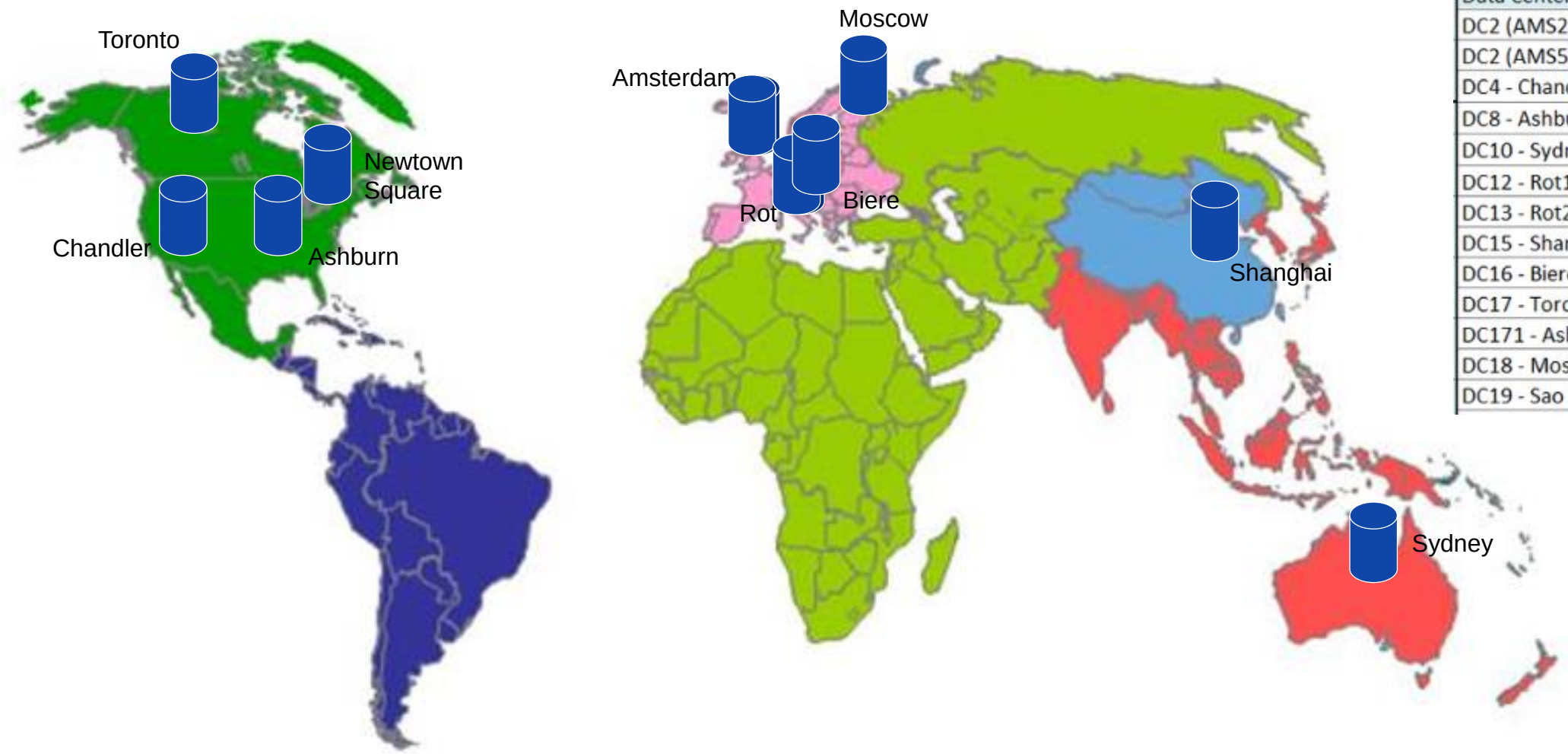
Service Level Availability (so far)
(Average monthly availability across all HCM datacenters)



Data Center Layout

SAP SuccessFactors

SuccessFactors Data Centers



Data Centers:
DC2 (AMS2) - Amsterdam1/HCM
DC2 (AMS5) - Amsterdam2/HCM
DC4 - Chandler1/HCM
DC8 - Ashburn1/HCM
DC10 - Sydney1/HCM
DC12 - Rot1/HCM
DC13 - Rot2/HCM
DC15 - Shanghai1/HCM
DC16 - Biere1/HCM
DC17 - Toronto1/HCM
DC171 - Ashburn1/HCM-FED
DC18 - Moscow1/HCM
DC19 - Sao Paulo1/HCM

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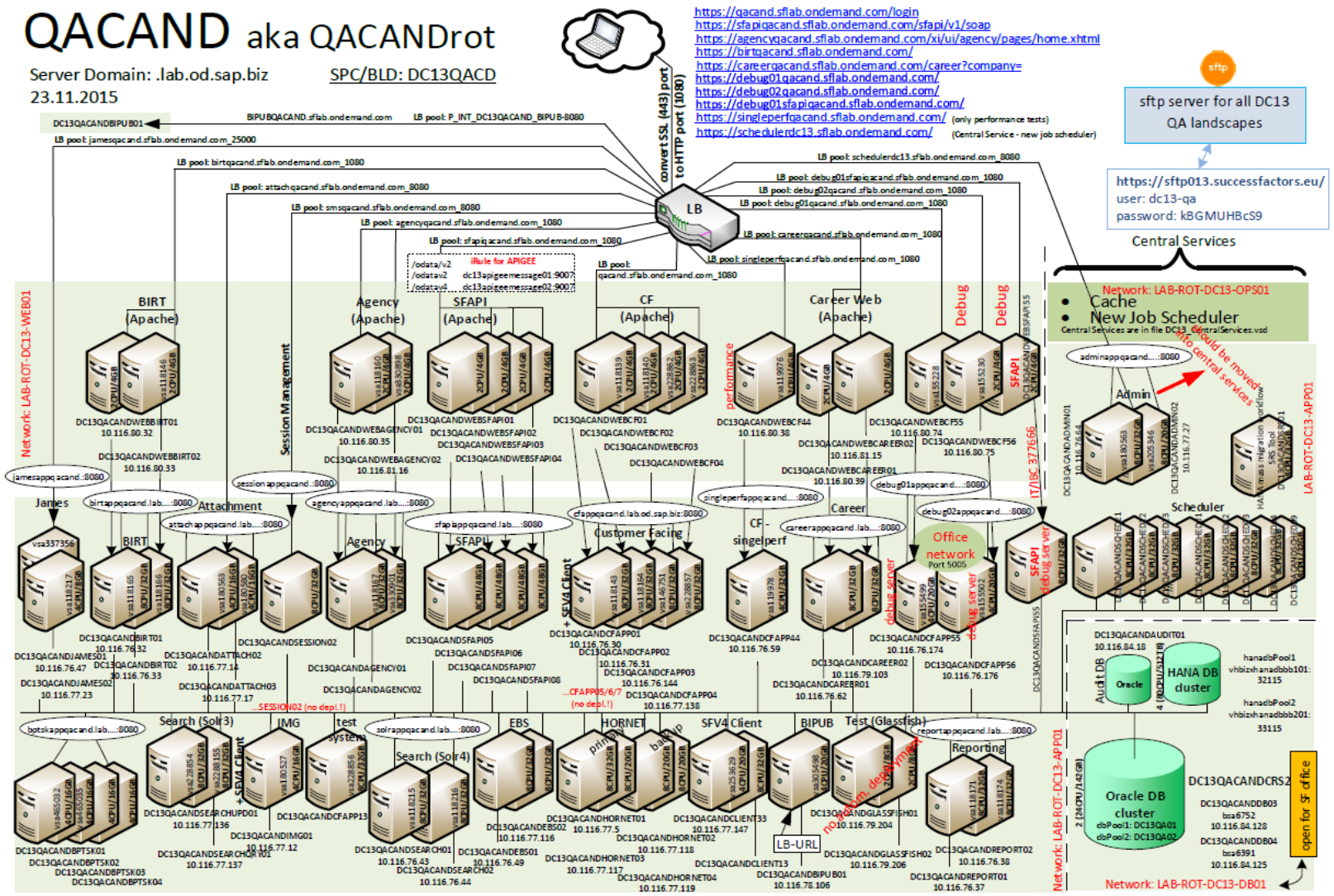
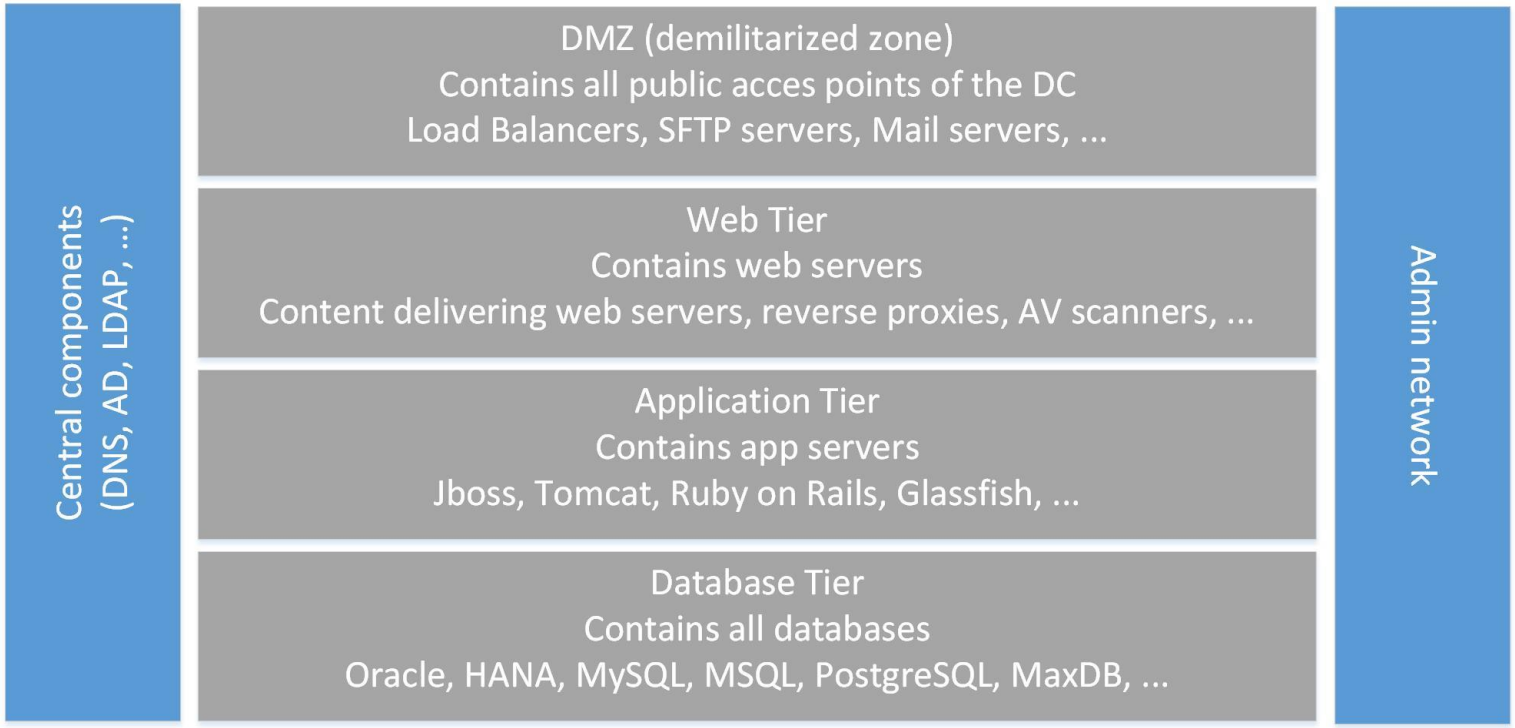
You know this one, do you?



General (SFSF) Datacenter Layout

- Four tiers (DMZ – Web – App – DB)
- Isolation of tiers by firewalls or security groups



- DC13 is having exactly the same layout

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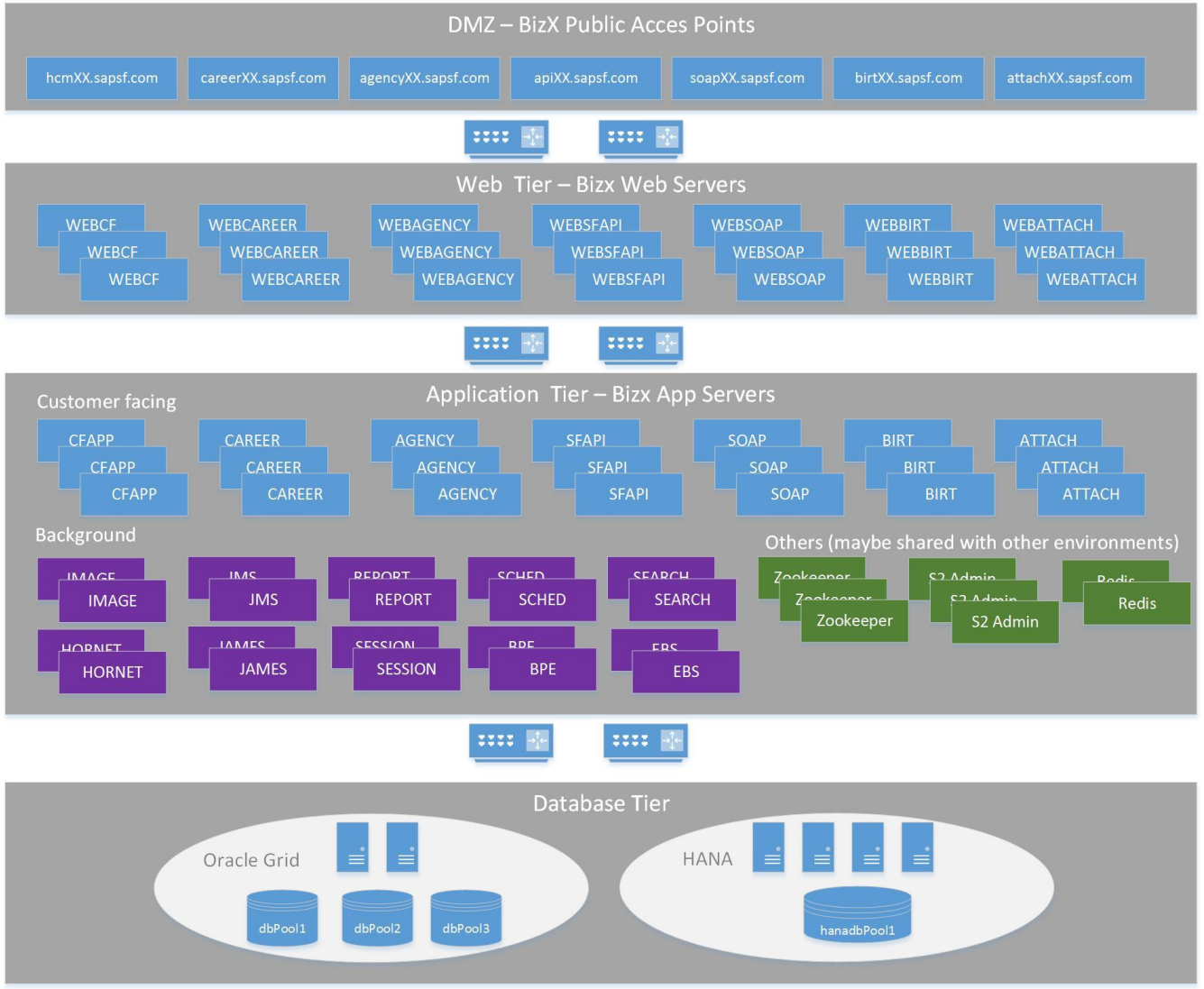
BizX System Components - Overview



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High Level Overview

Major Components

SAP SuccessFactors

Terminology / Abbreviations

BizX Core	Original SuccessFactors application, includes: • Employee Central • Performance Management • Compensation • Recruiting Management
RMK	Recruiting Marketing (J2W acquisition)
ONB	Onboarding (KMS acquisition)
LMS	Learning Management System (Plateau acquisition)
WFA	Workforce Analytics (Inform, YouCalc acquisitions)
Jam	Social (CubeTree and JamBok acquisitions)
SMS	Session Management Service
BPE	Business Process Engine

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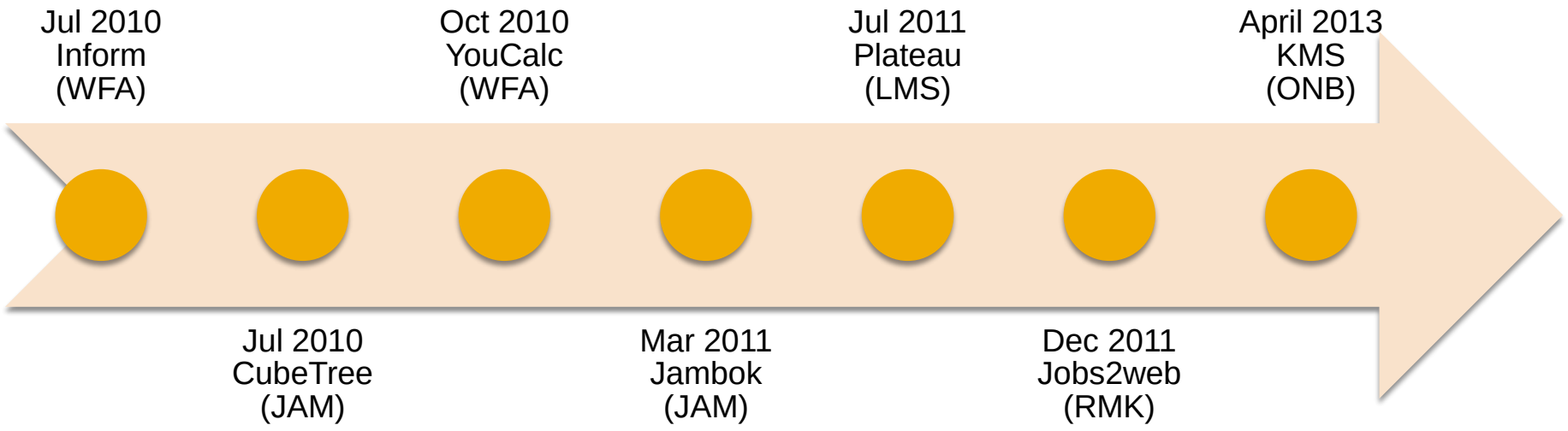
SAP SuccessFactors: A Legacy of Acquisitions



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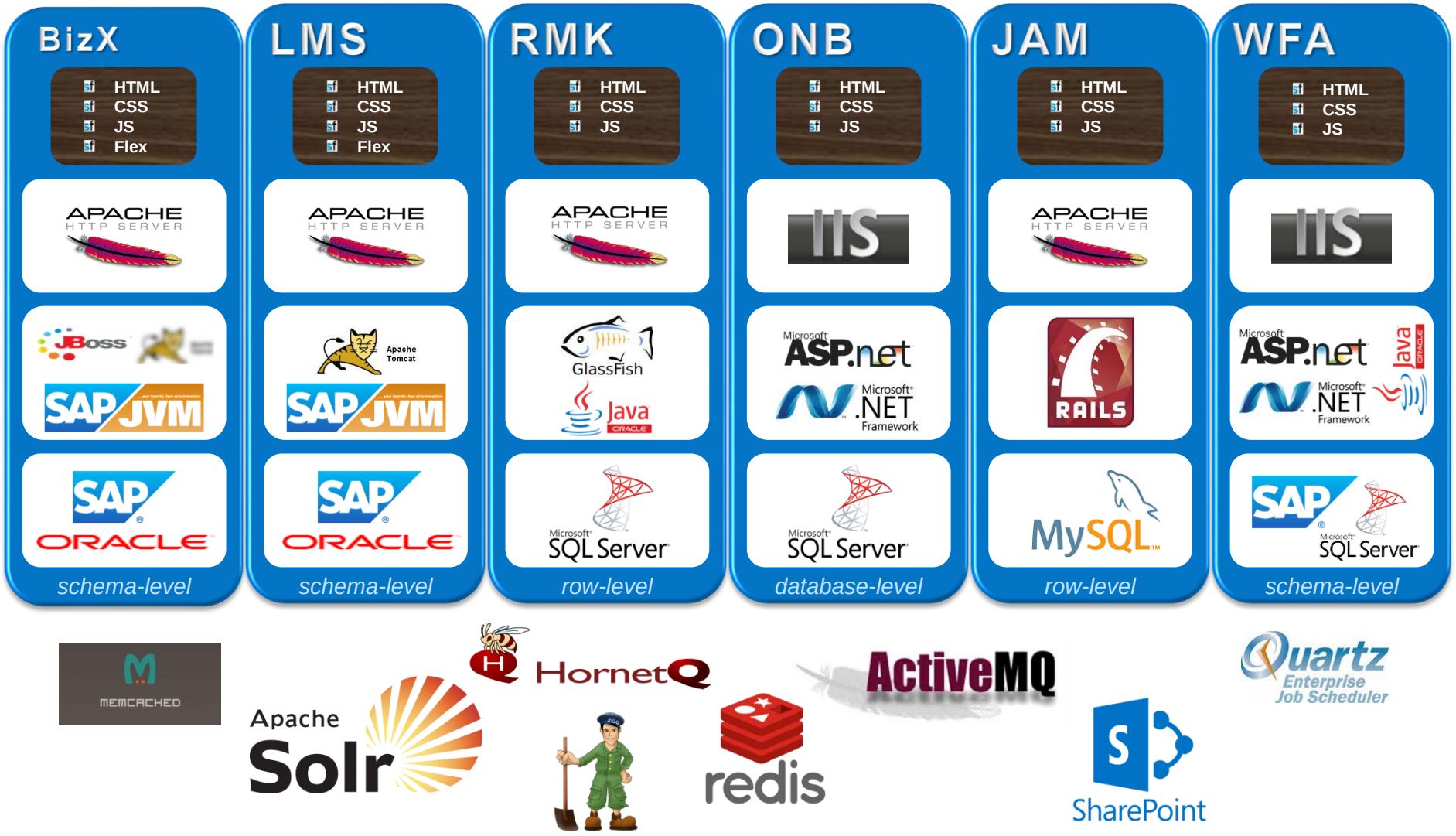
SAP SuccessFactors: Powered By… lots of stuff



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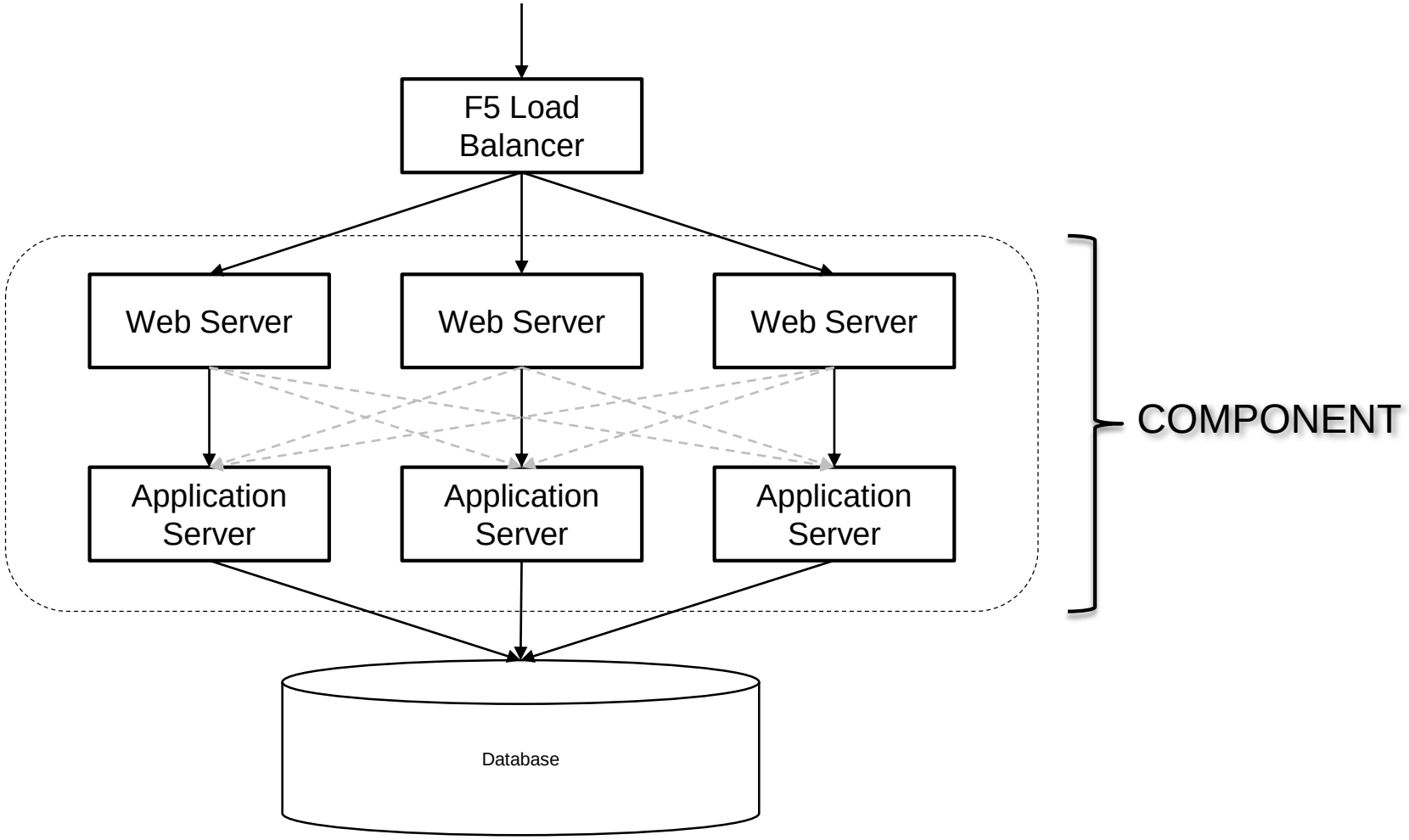
Component Architecture Pattern



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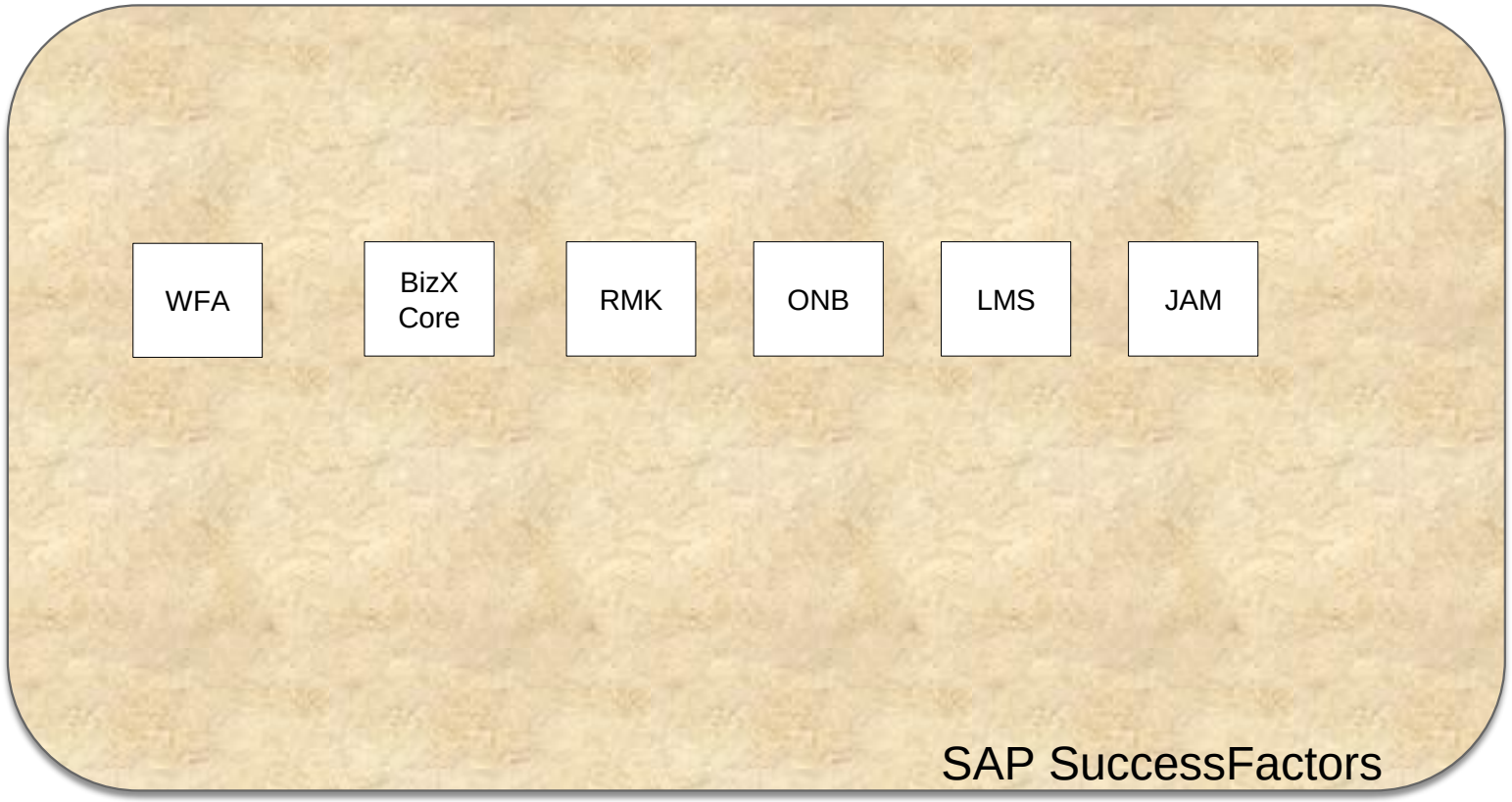
SAP SuccessFactors – Major Components



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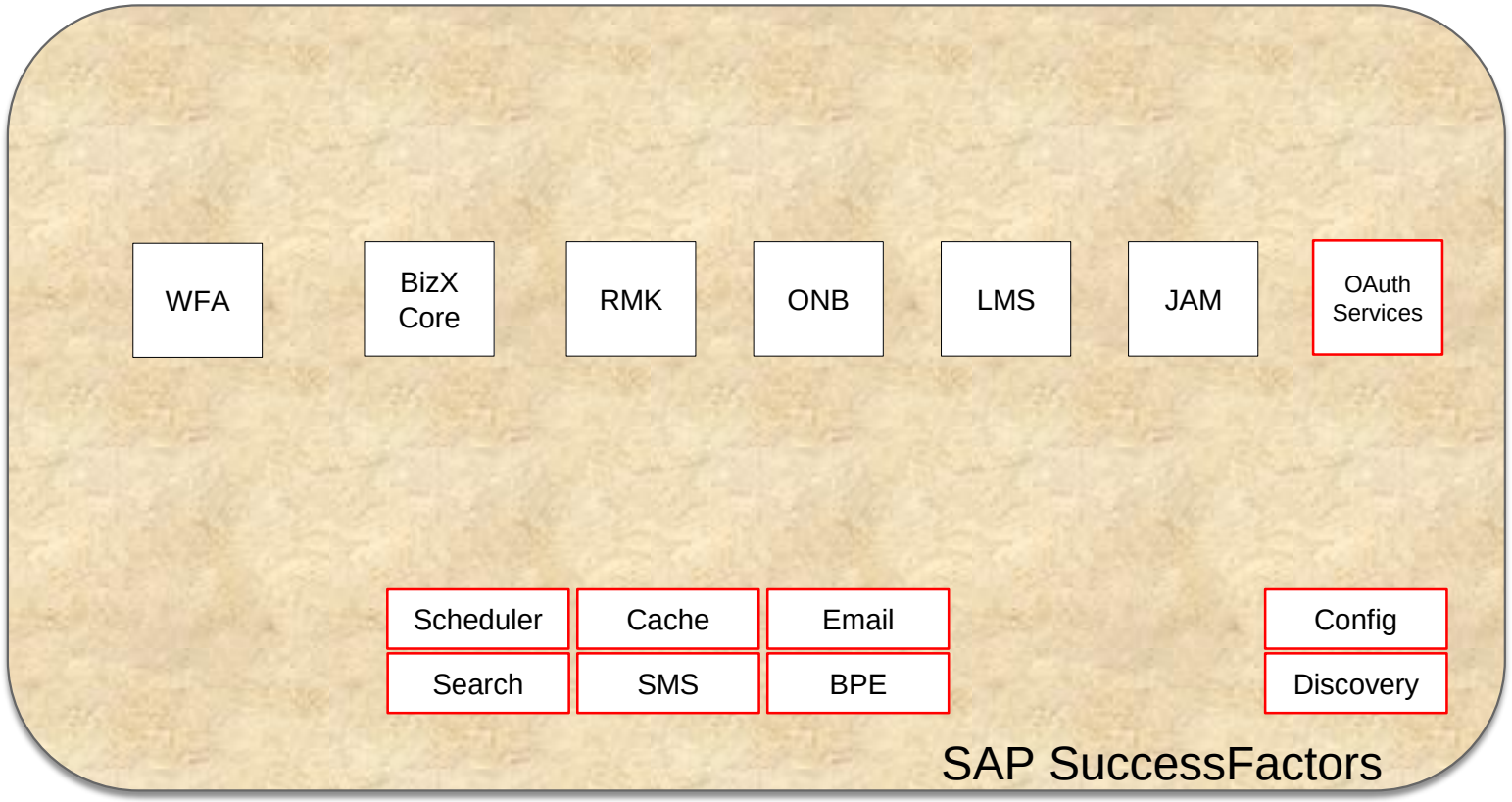
SAP SuccessFactors – Platform Services



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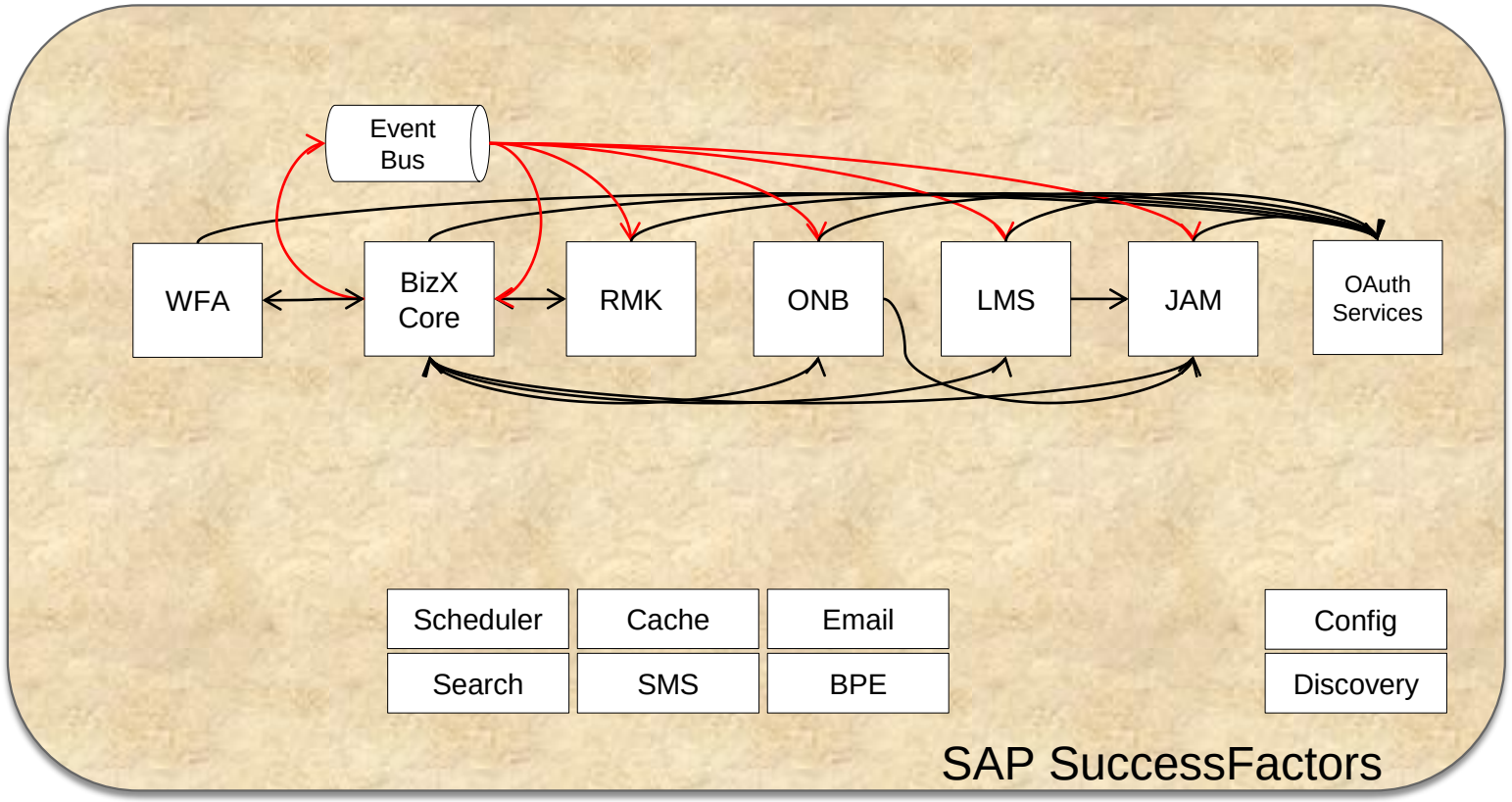
SAP SuccessFactors – Internal Integration



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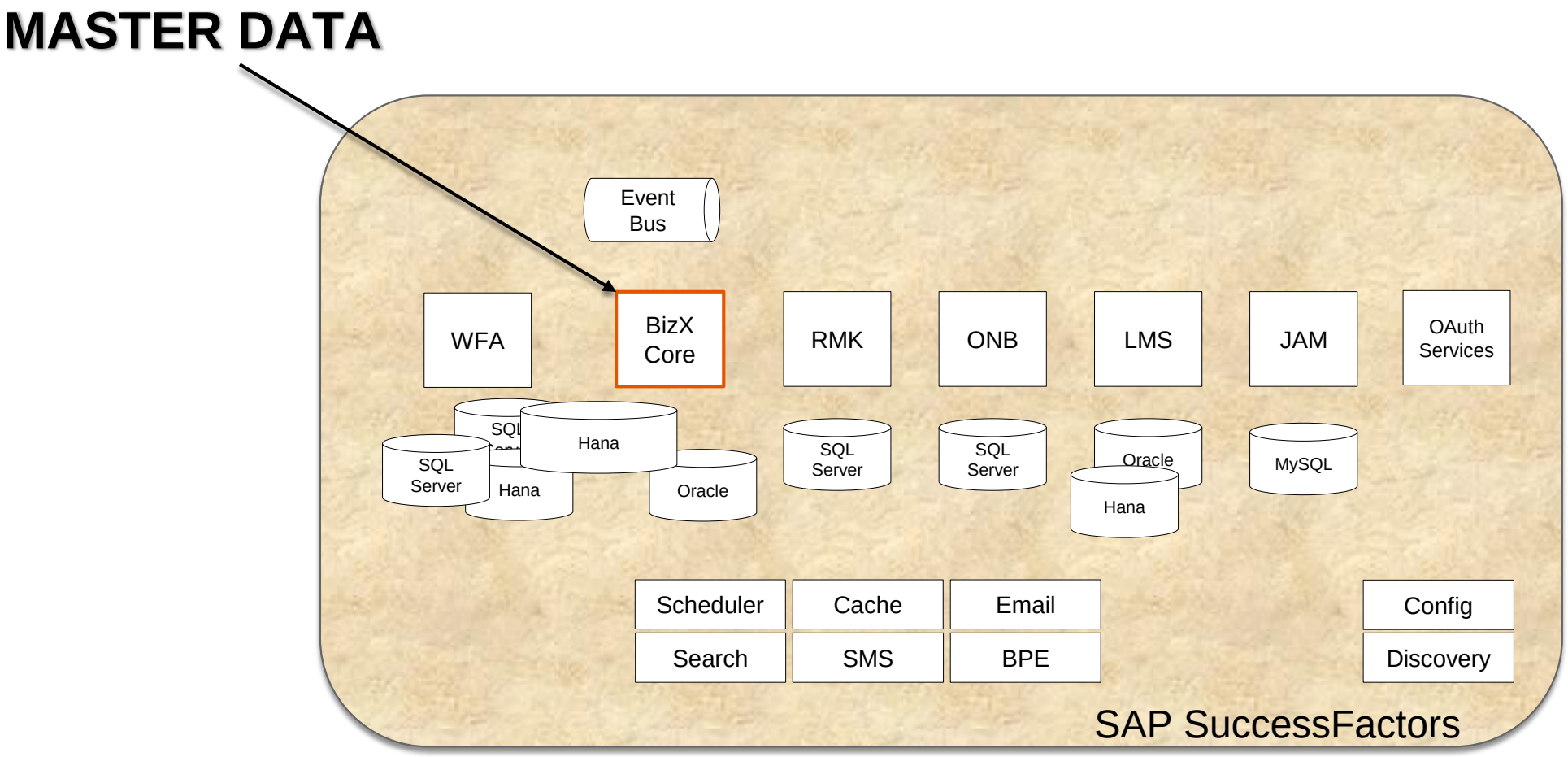
SAP SuccessFactors – Data



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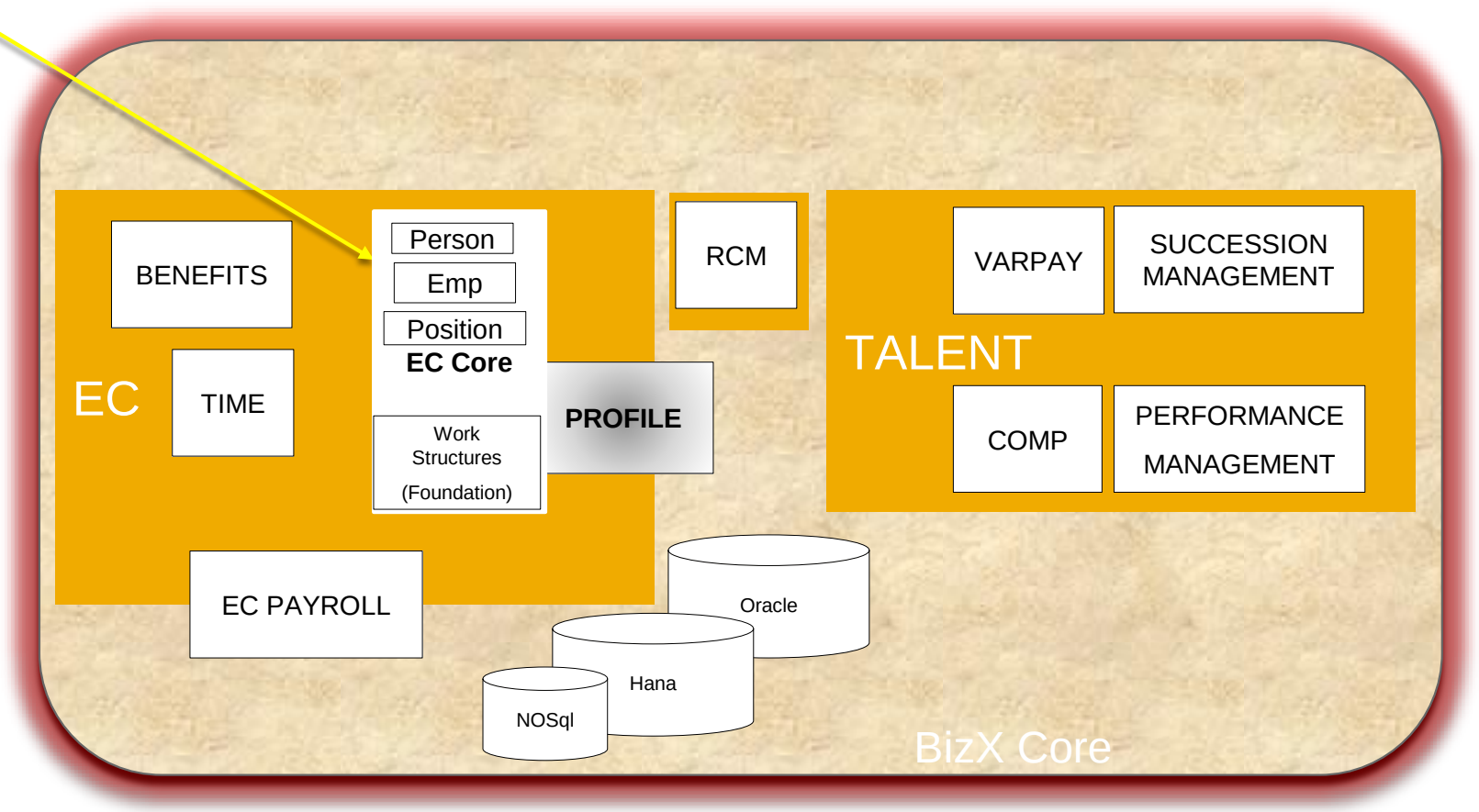
SAP SuccessFactors – Data

MASTER DATA



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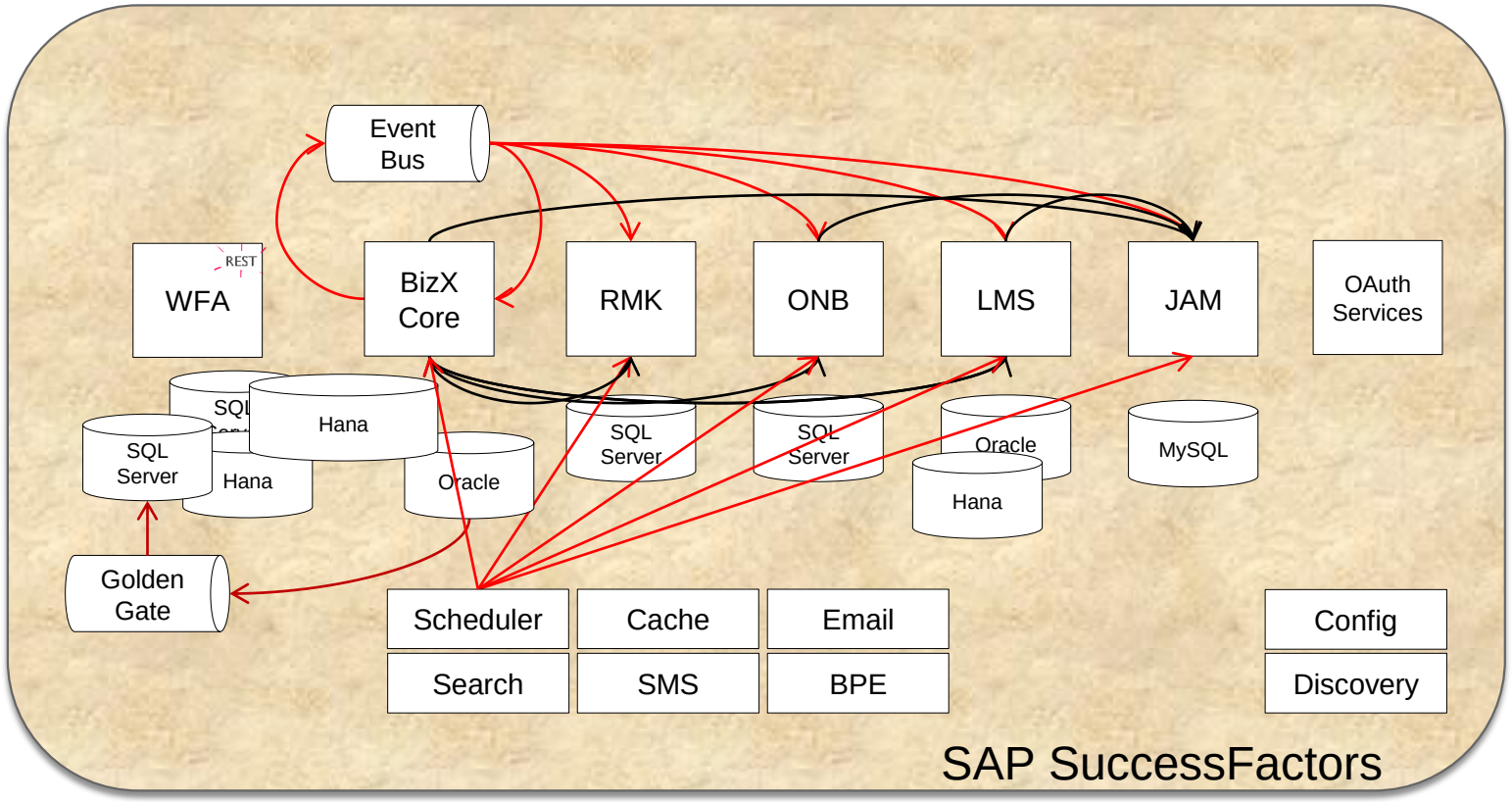
SAP SuccessFactors – Data Replication / Synchronization



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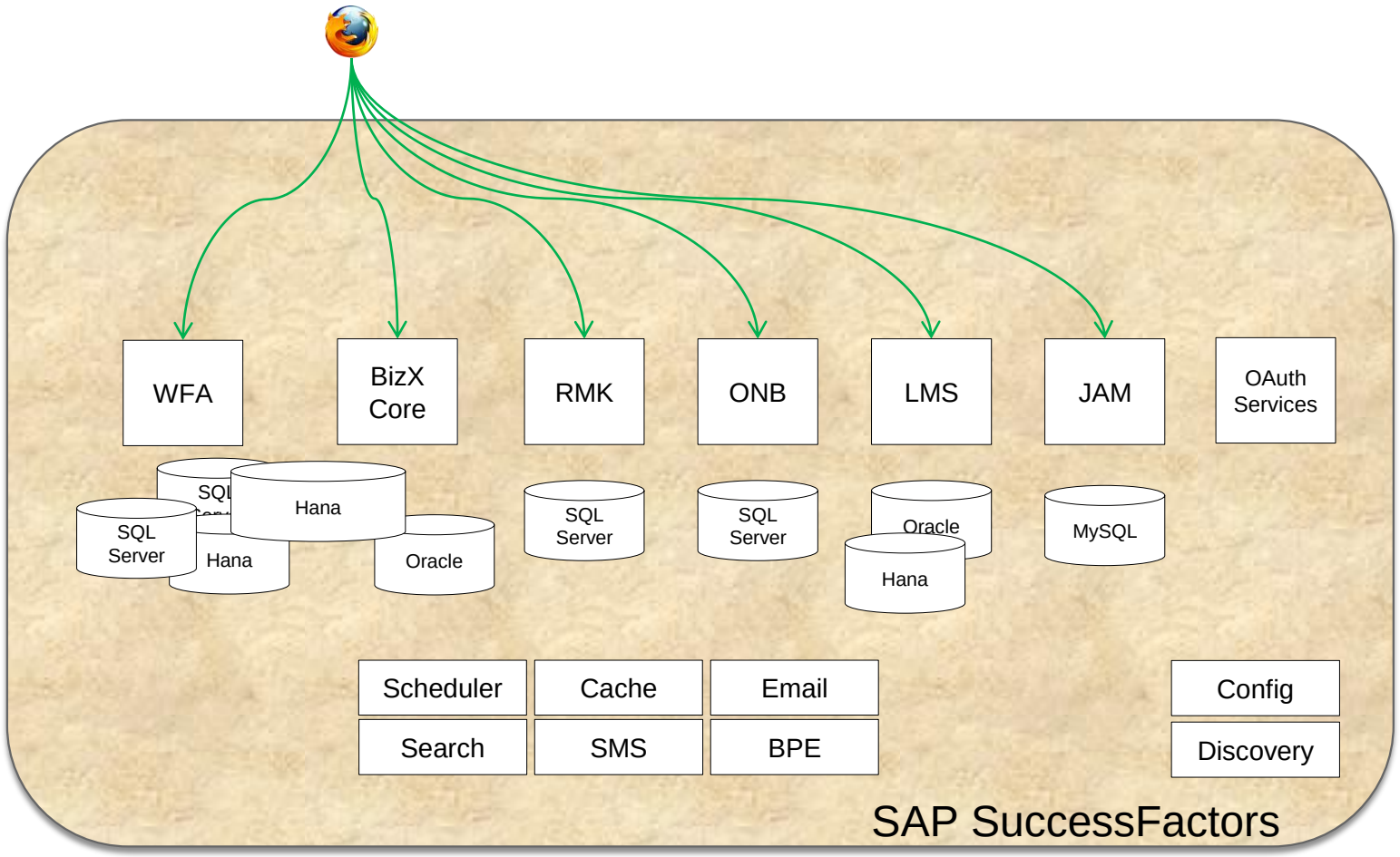
External Access Points

SAP SuccessFactors

SAP SuccessFactors – Web Access



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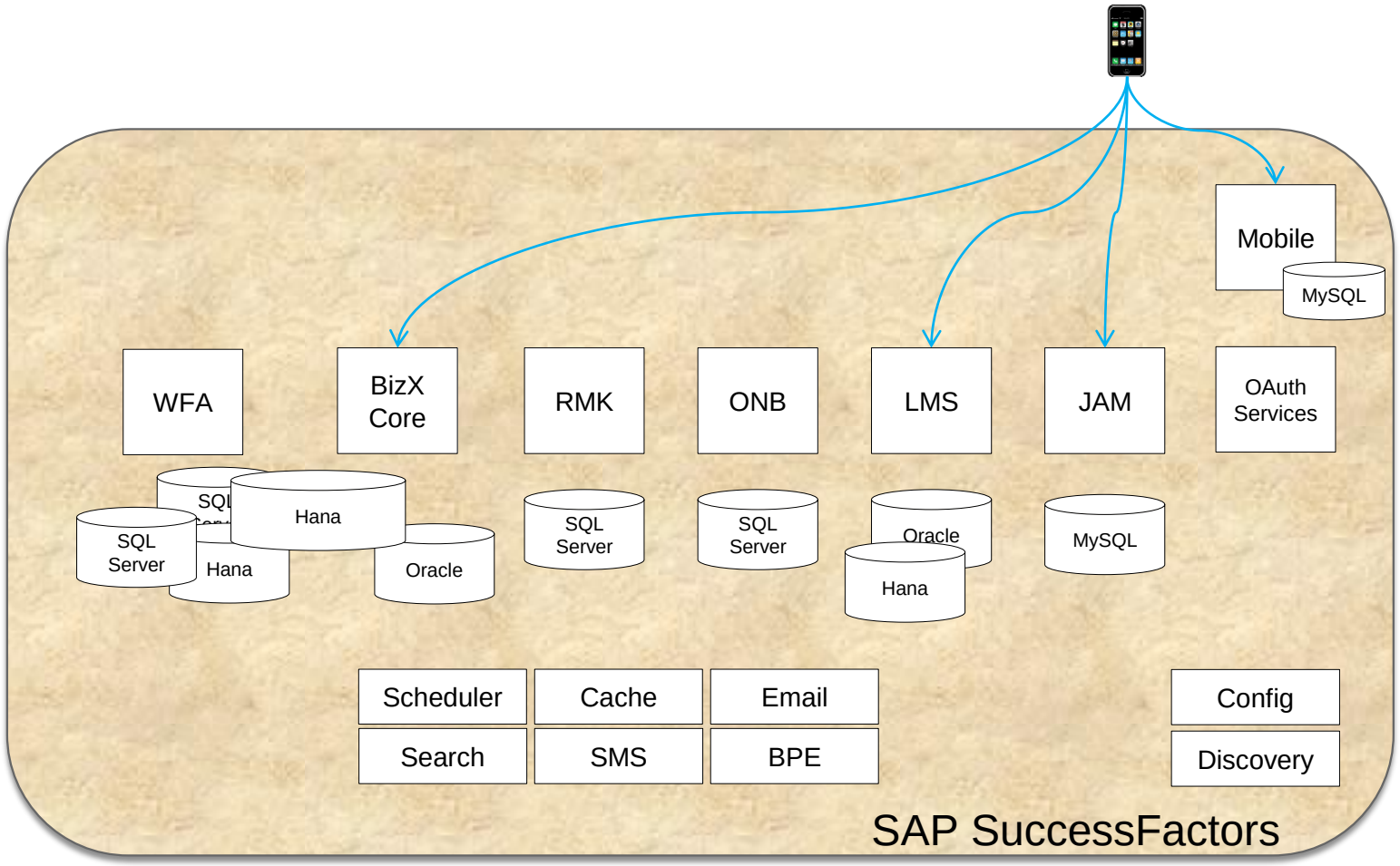
SAP SuccessFactors – Mobile Access



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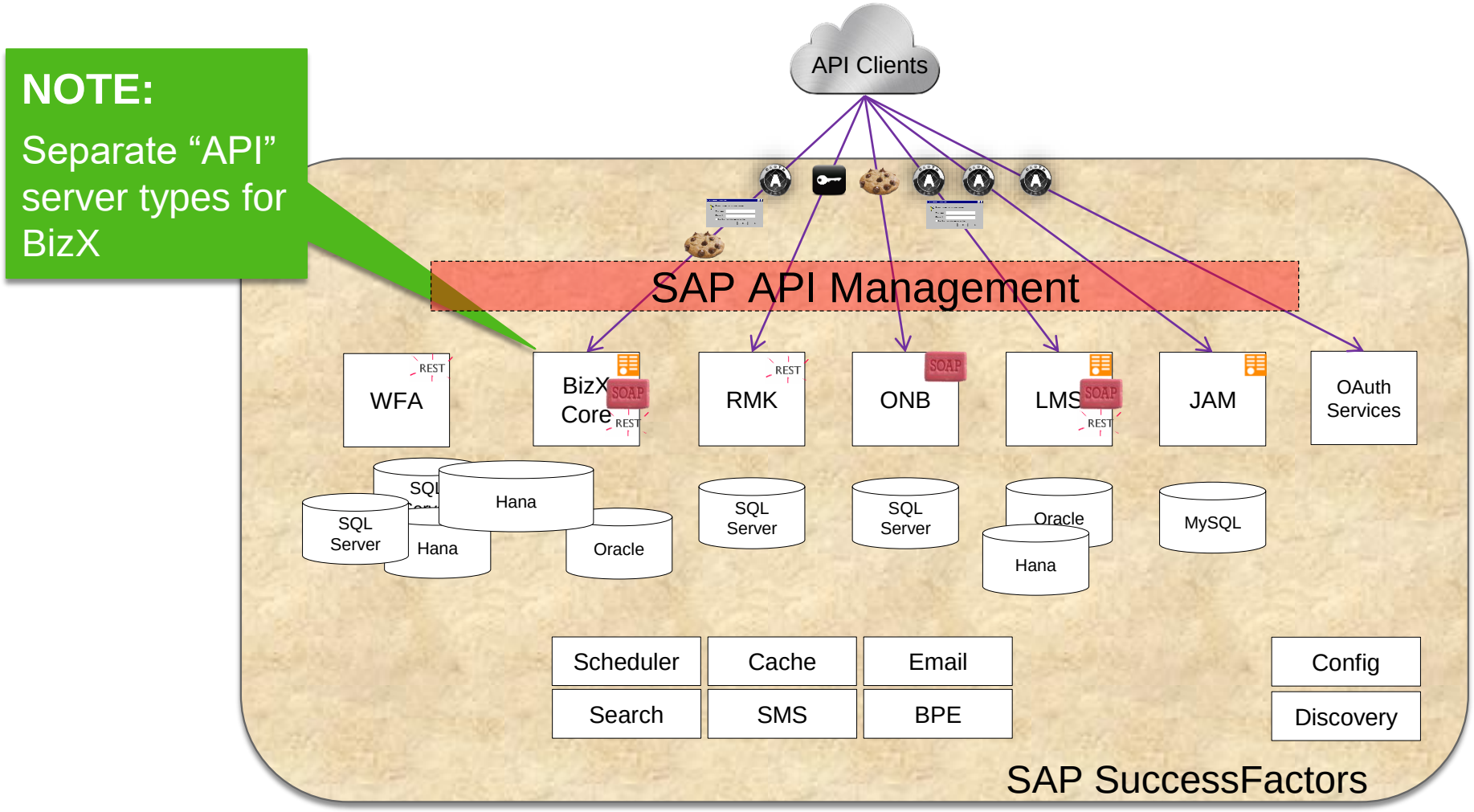
SAP SuccessFactors – API Access



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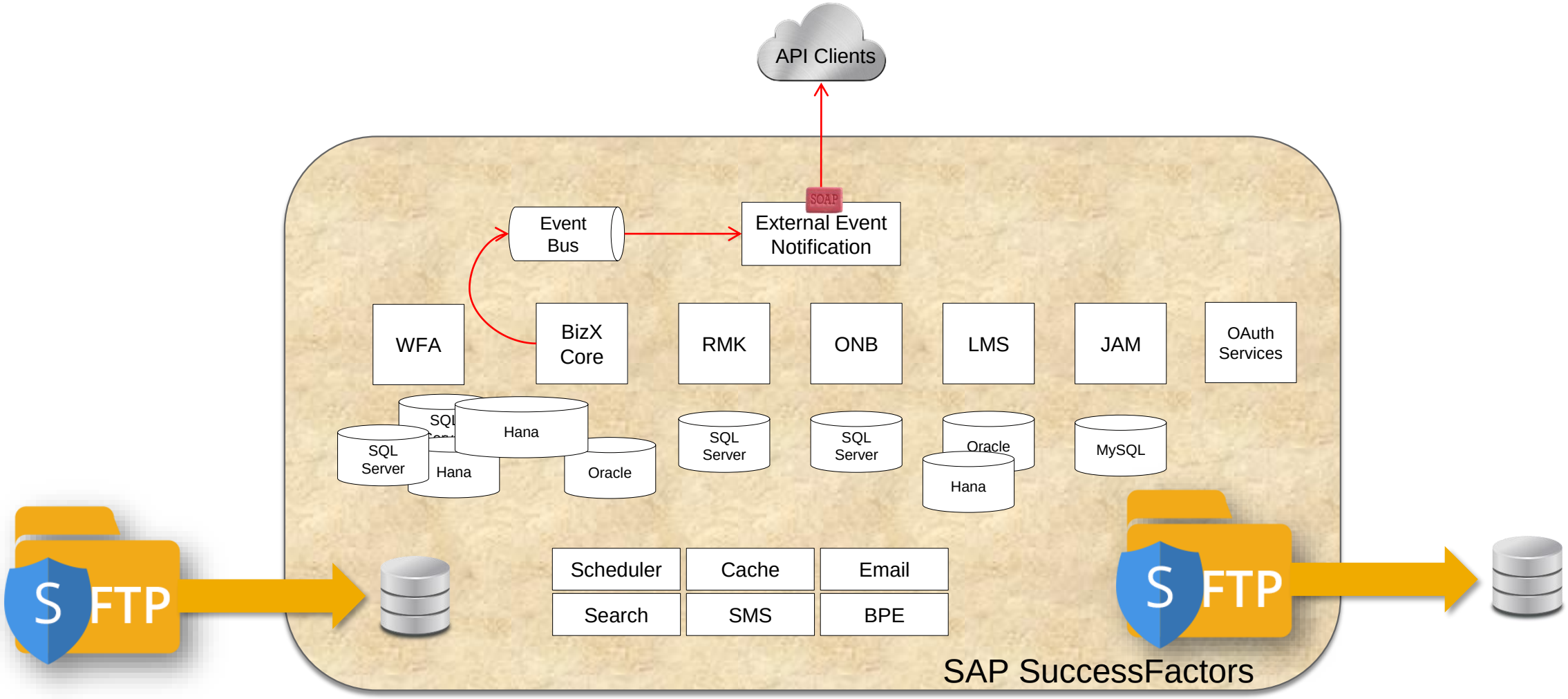
SAP SuccessFactors – Other External Integration Points



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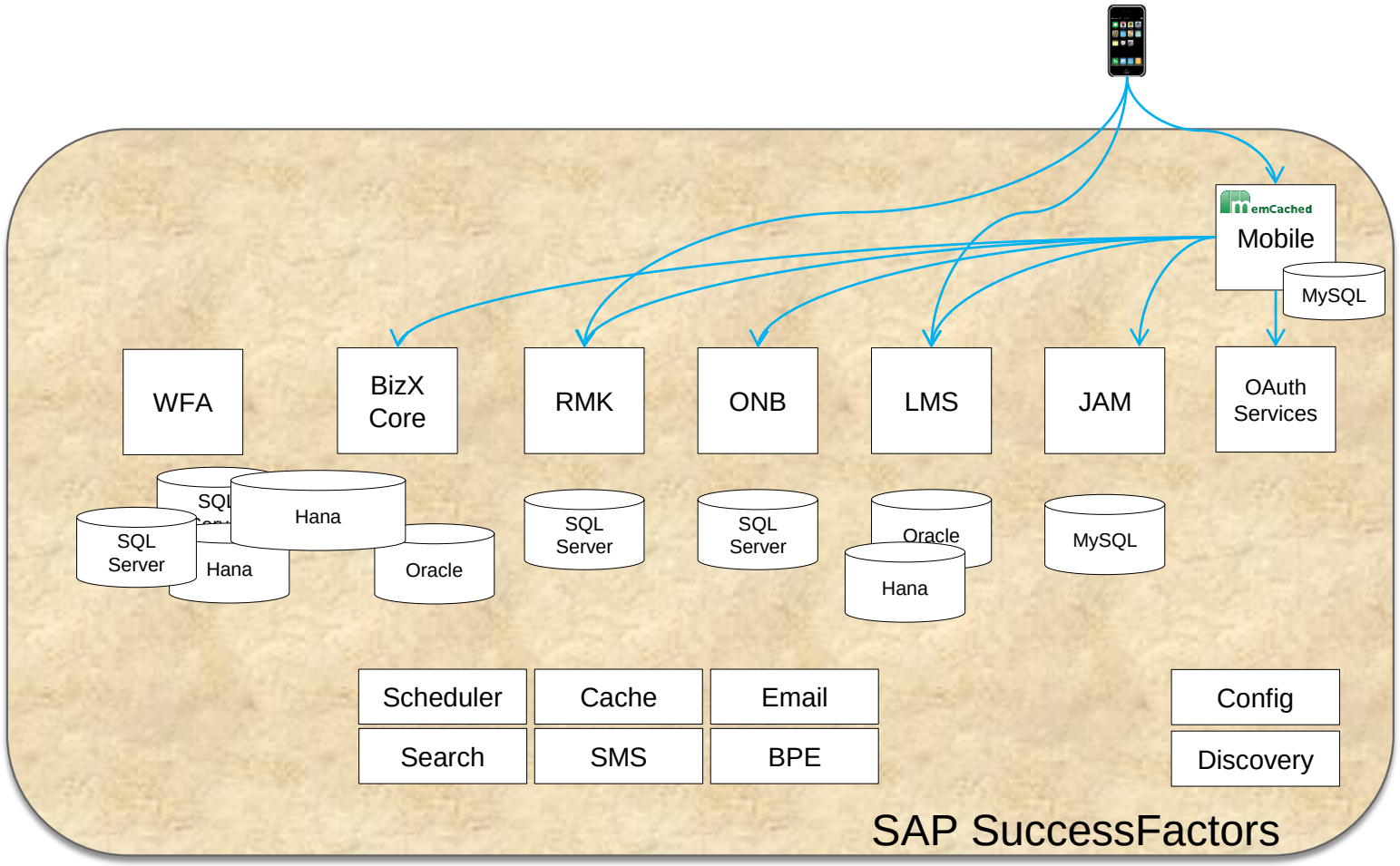
Mobile

SAP SuccessFactors

SAP SuccessFactors – External Access Points



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Multi-tenant Data Architecture

SAP SuccessFactors

SuccessFactors Multi-tenant Data Architecture (Data Isolation)

- Separate Databases
- Separate DC

Premium customers

- Shared database
- Separated schema for each tenant
- One global schema

Standard customers

- ~~Shared Schema~~
- ~~Using Virtual Private Database~~

~~Few customers~~

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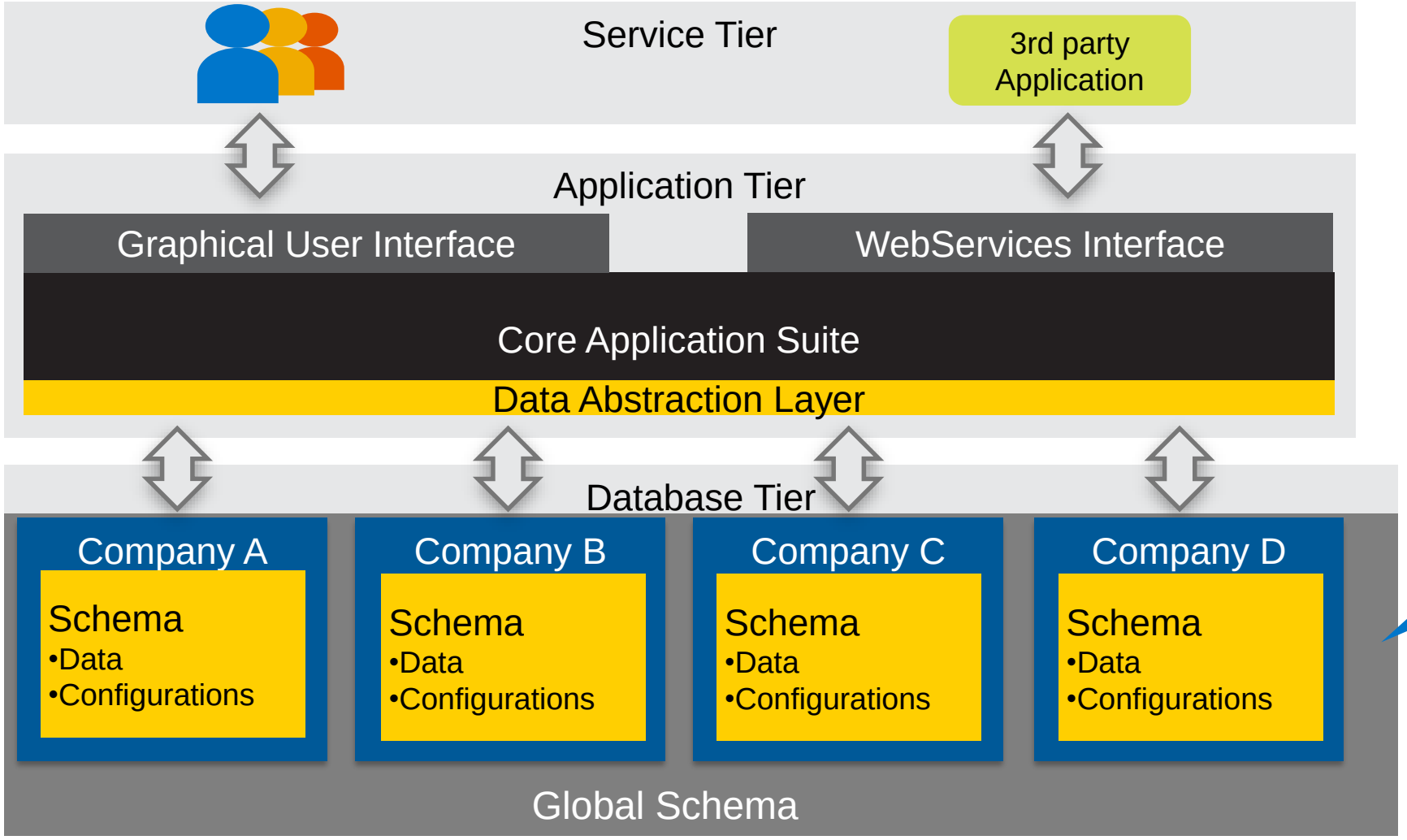
SuccessFactors Multi-tenant Data Architecture



Distinct database schema per customer enforces data isolation

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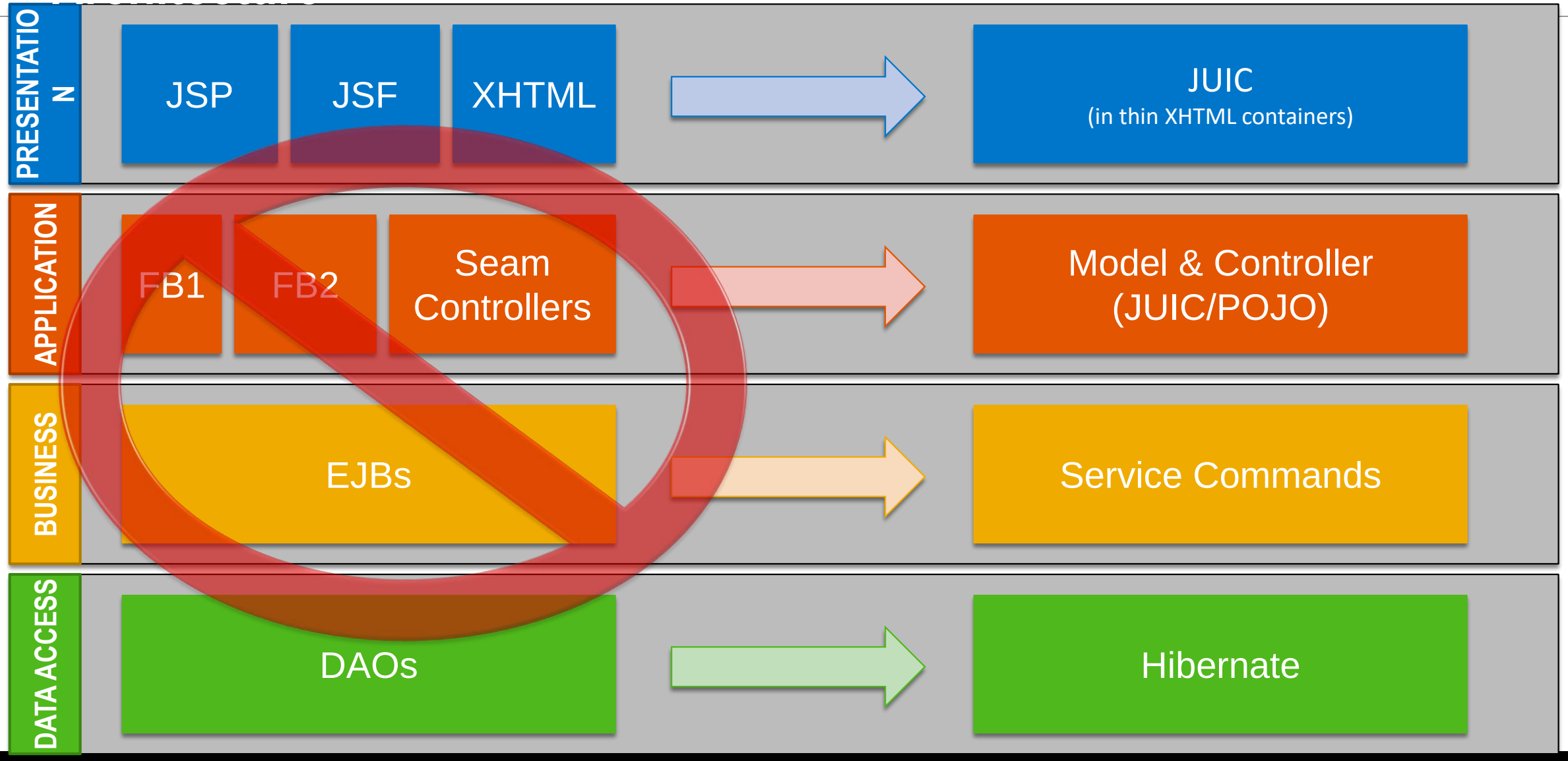
Application Architecture

SAP SuccessFactors

BizX – Tier by Tier Advancement



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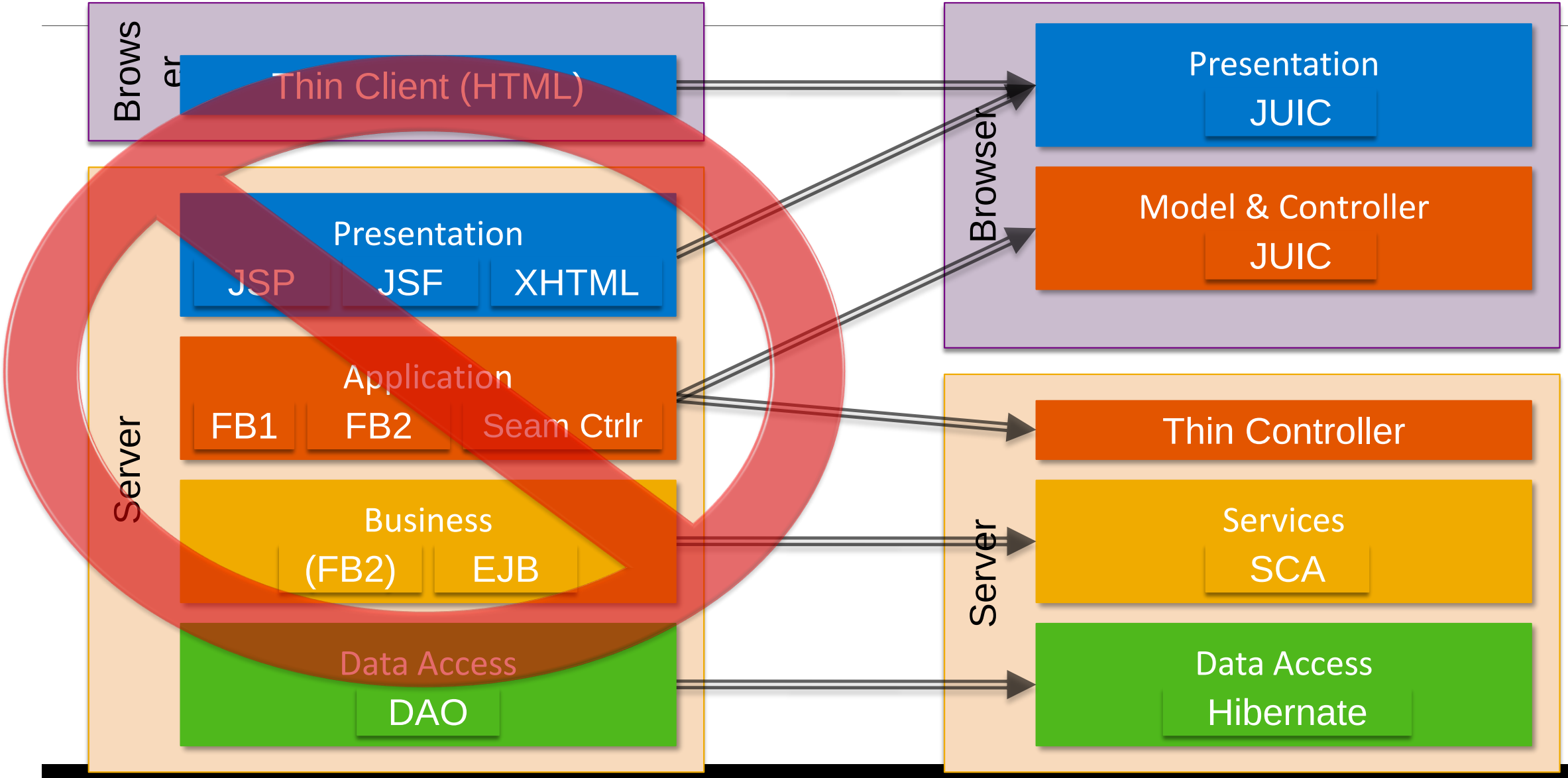
Moving into Browser



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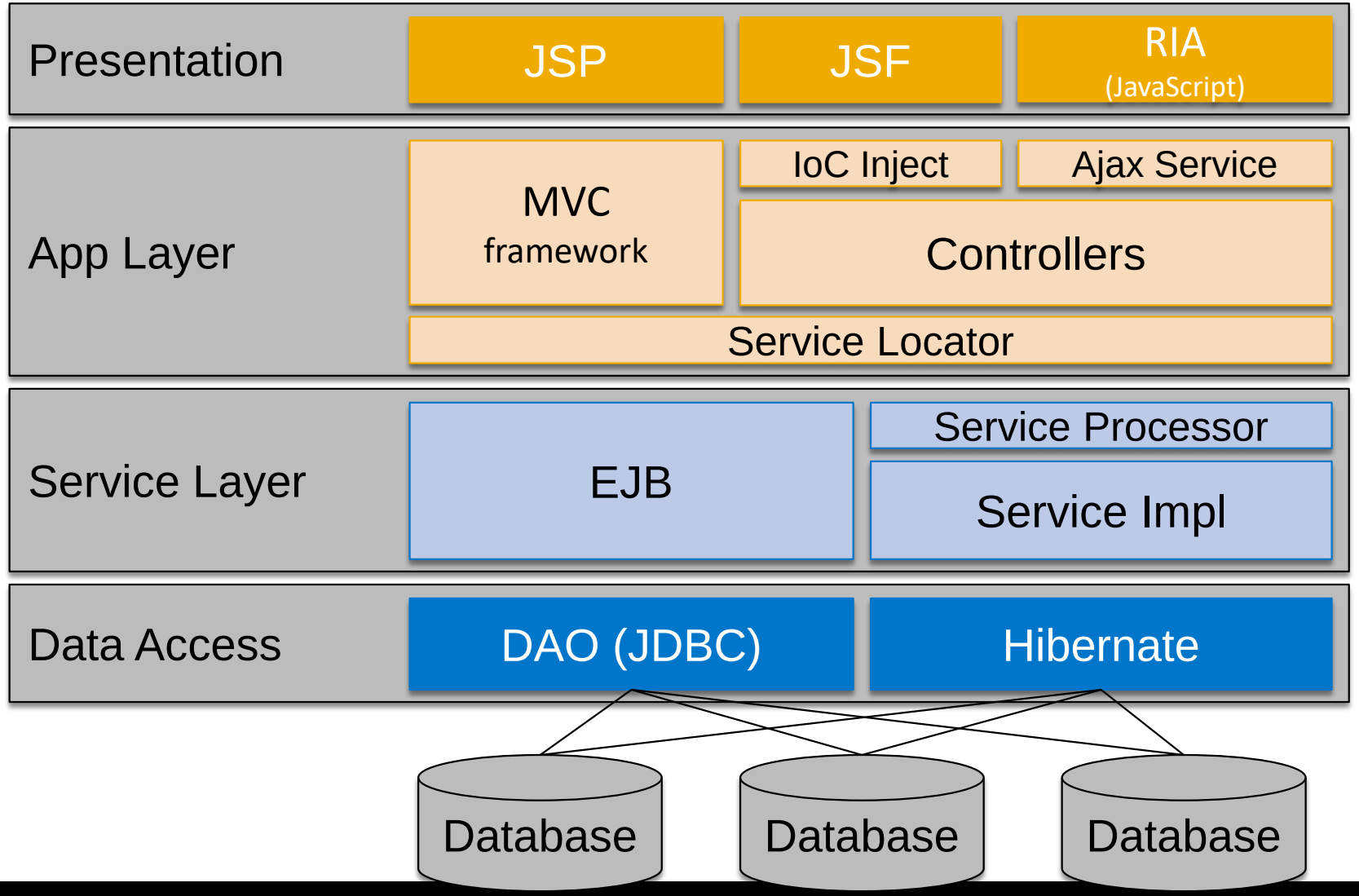
BizX – Customer Facing Application Architecture



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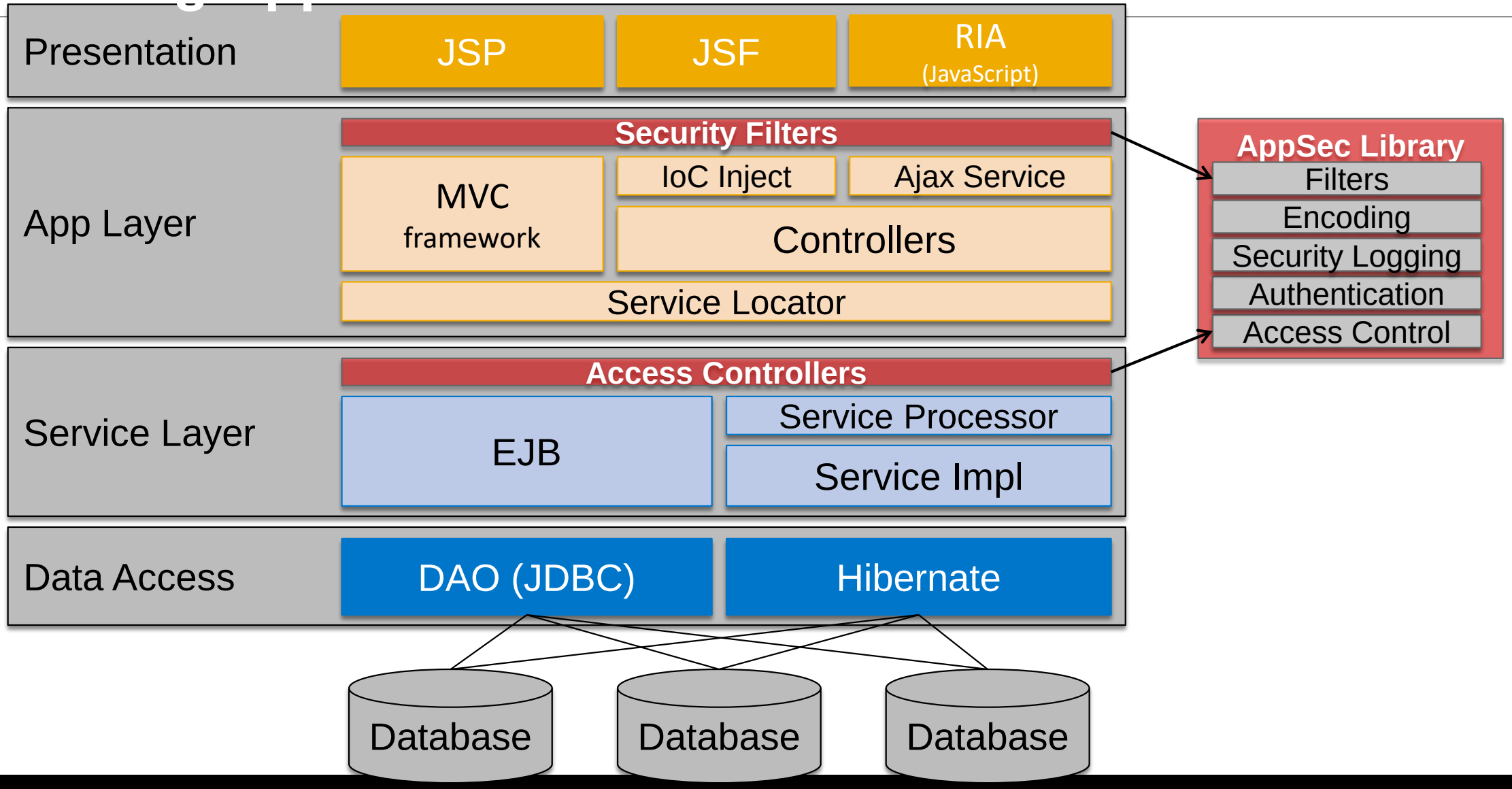
BizX – Secure Application Architecture



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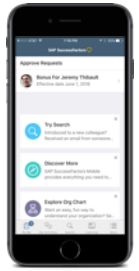
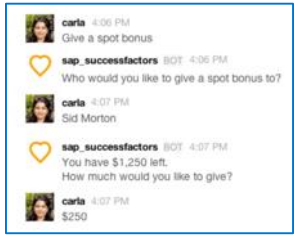
A Target Application Architecture

Fiori UI5



Mobile



Chatbots

Odata API's

Service Layer

HANA

Integrations

Extensions

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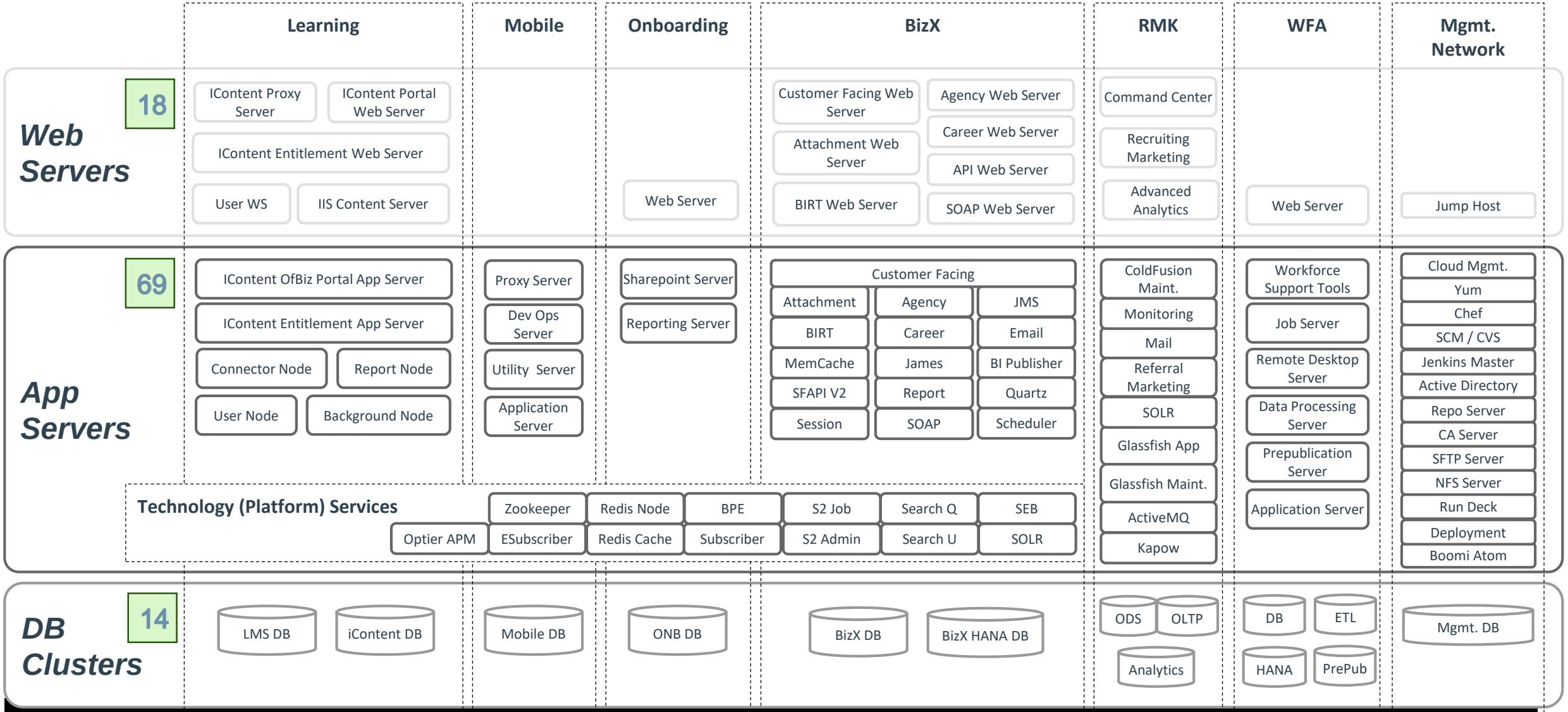
Challenges and Transformation

SAP SuccessFactors

SuccessFactors Architecture (Data Center View)

Jan 2017 – 100+ Services to Operate at 99.9%+



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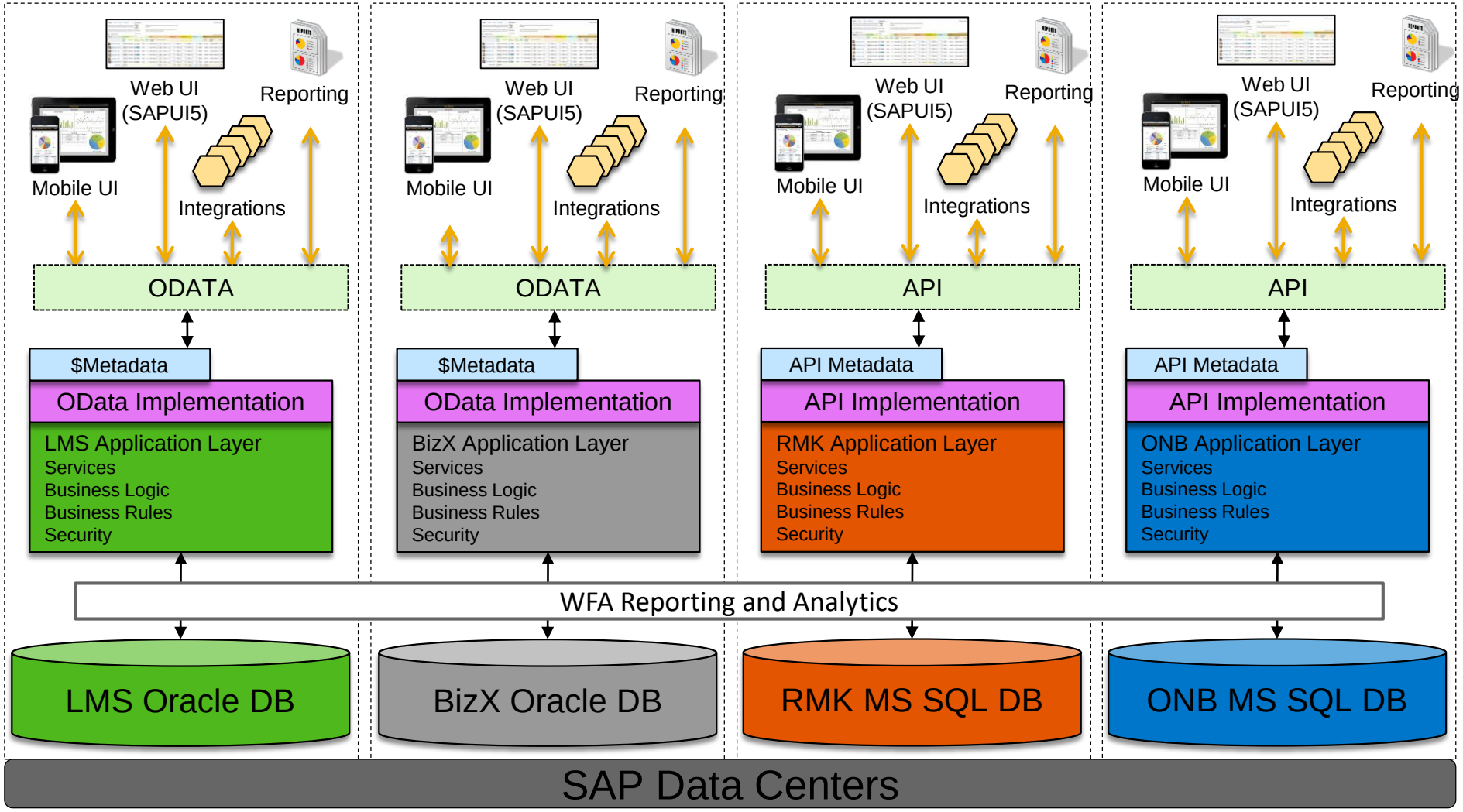
SuccessFactors Architecture (Applications View)

Jan 2017 – Multiple Applications as One Suite



- Separate DBs
- Different data centers for a single customer
- Difficult to perform cross suite operations (Reporting, APIs, UIs)
- Complex In-memory joins due to selects from different DBs
- No use of HANA DB Capabilities due to separate DBs

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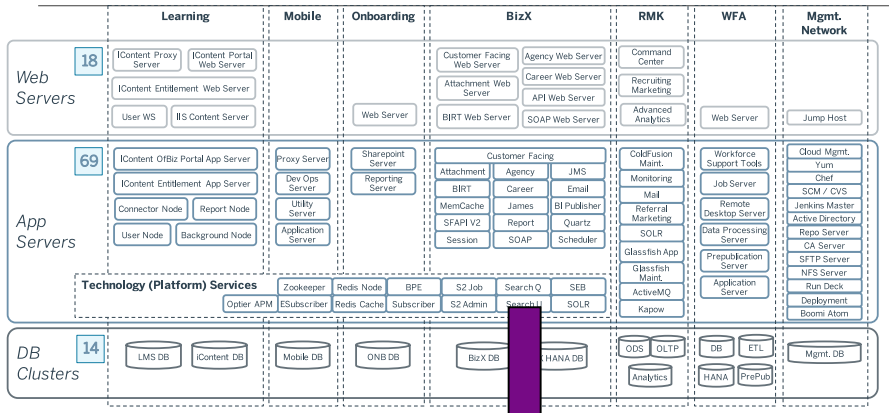
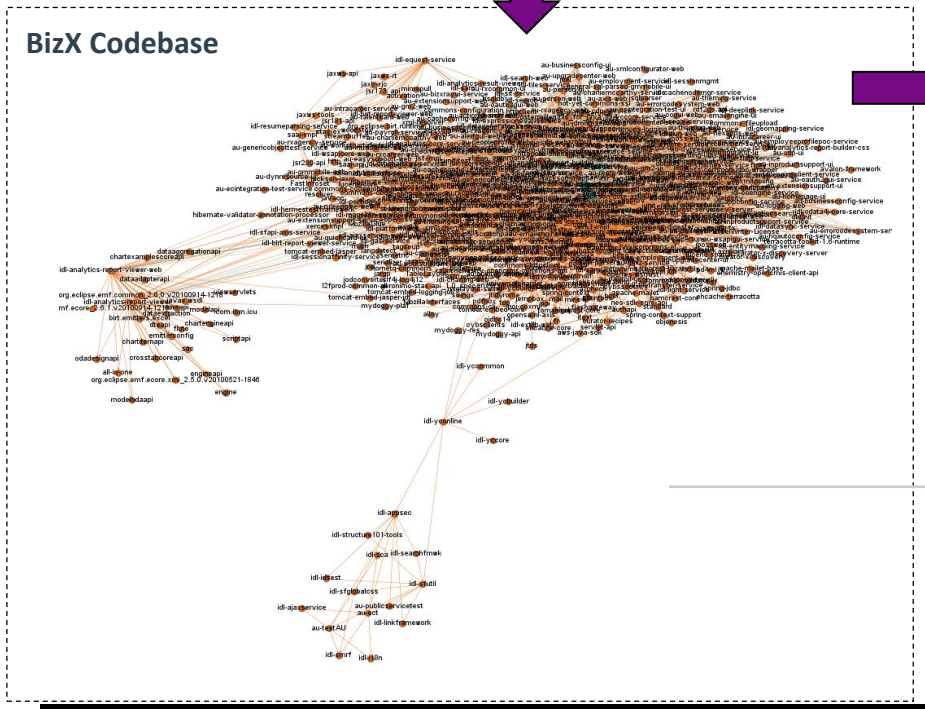
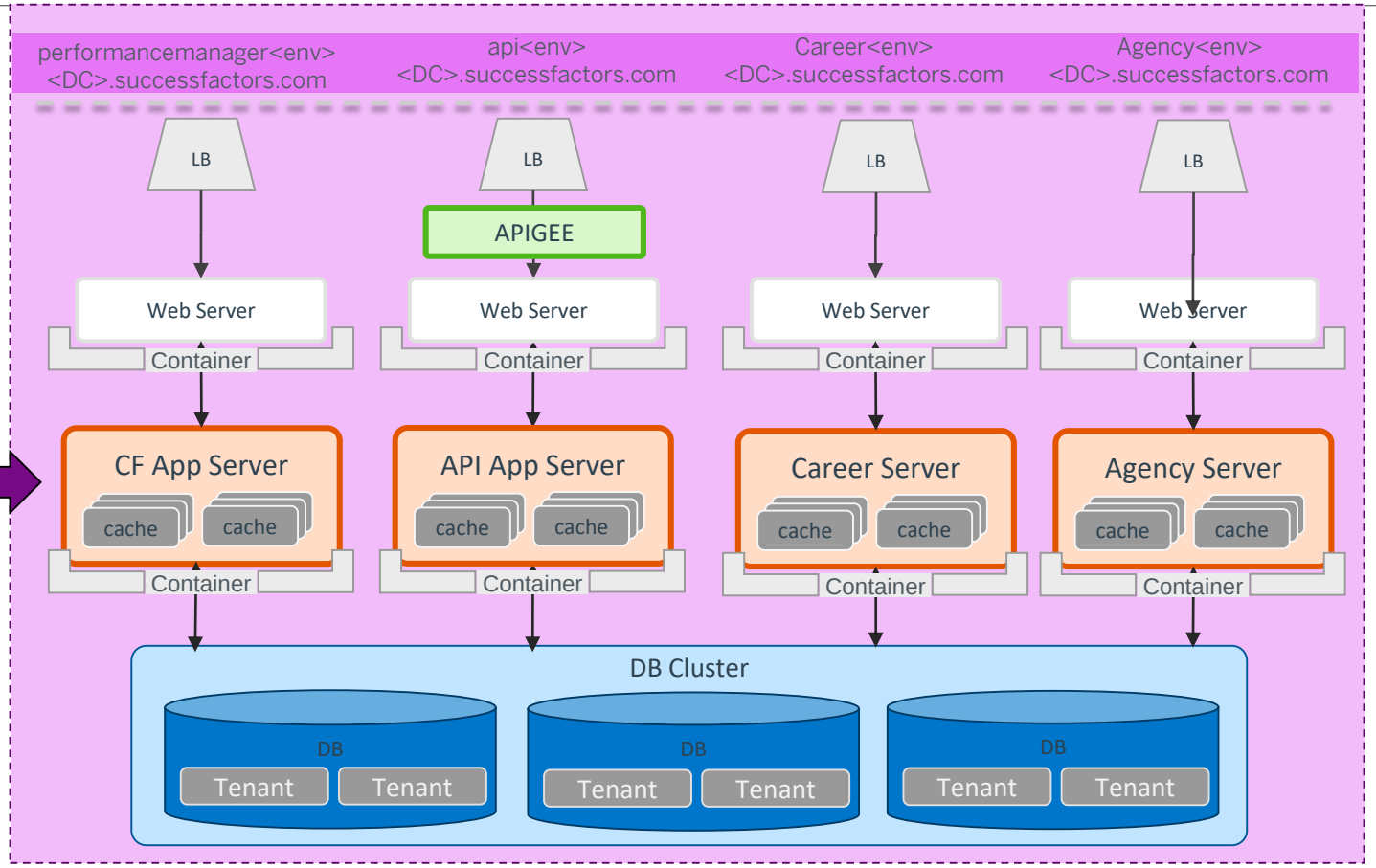
Lack of Application Services

Challenges – Monolithic Codebase







Monolith Codebase – All or Nothing Deployment

Talent, Recruiting and EC application services have no separation and isolation for dev / test / deployment leads to low productivity and challenges in Continuous Delivery

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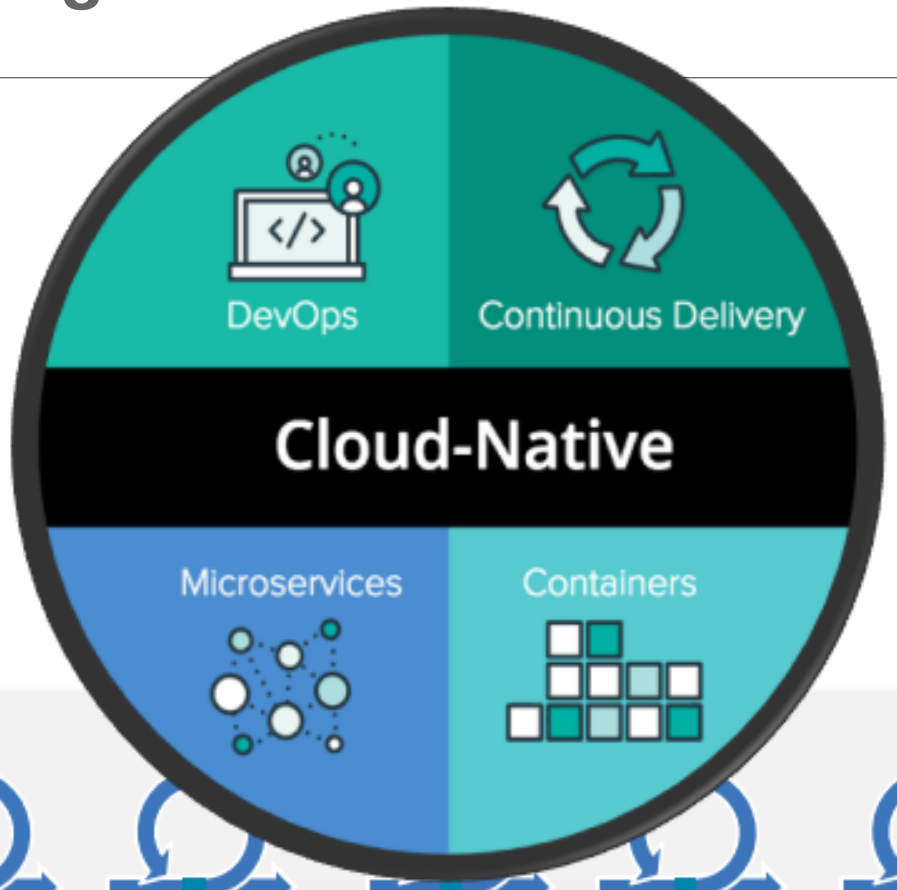
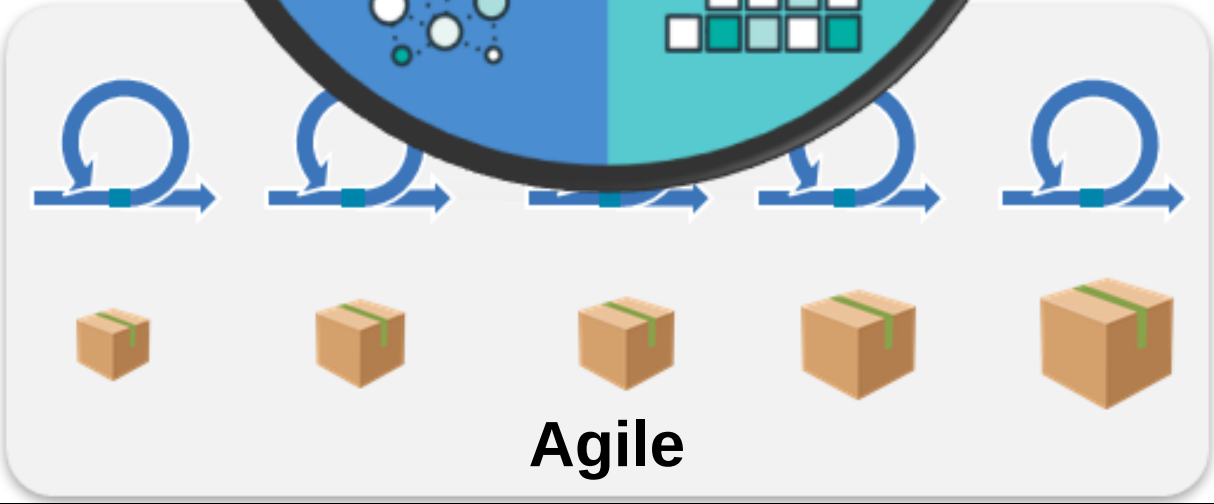
Cloud-Native built on Agile

- ✓ Autonomy
- ✓ Responsibility and ownership
- ✓ Innovation and experimentation
- ✓ Lean (waste reduction)
- ✓ Built-in quality
- ✓ Highly-scalable



- ✓ Speed
- ✓ Agility
- ✓ Confidence
- ✓ Fast feedback loops
- ✓ Resilience
- ✓ Operational excellence



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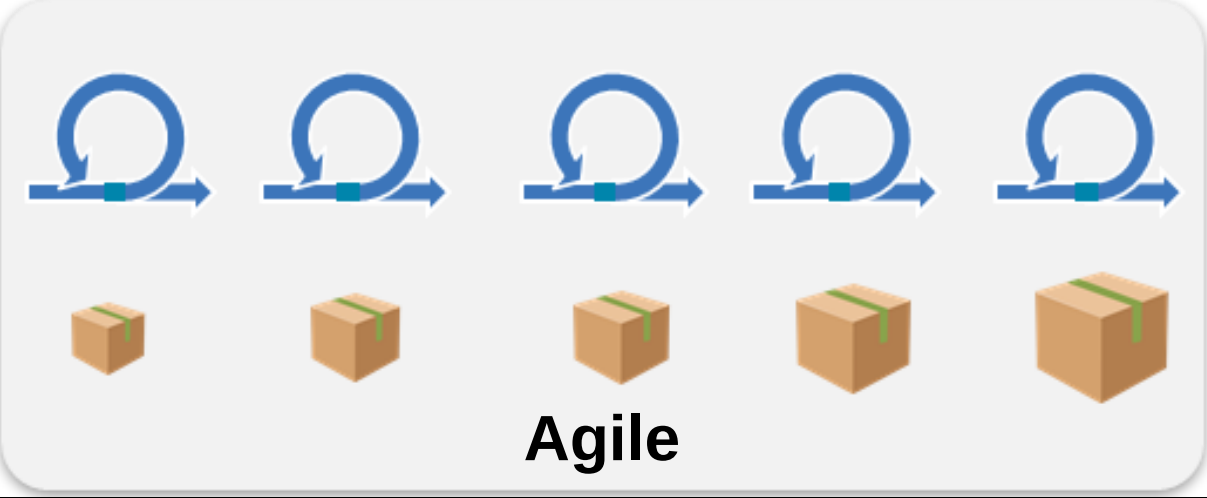
We have to do agile in order to be agile

- User stories
- Late documentation
- Collective ownership
- Pair programming
- Code reviews
- Behavior-driven design
- Test-driven design
- Refactoring
- Code hygiene
- Continuous integration
- Definition of done
- Automation
- Working software
- Consumer-driven contracts
- Metrics



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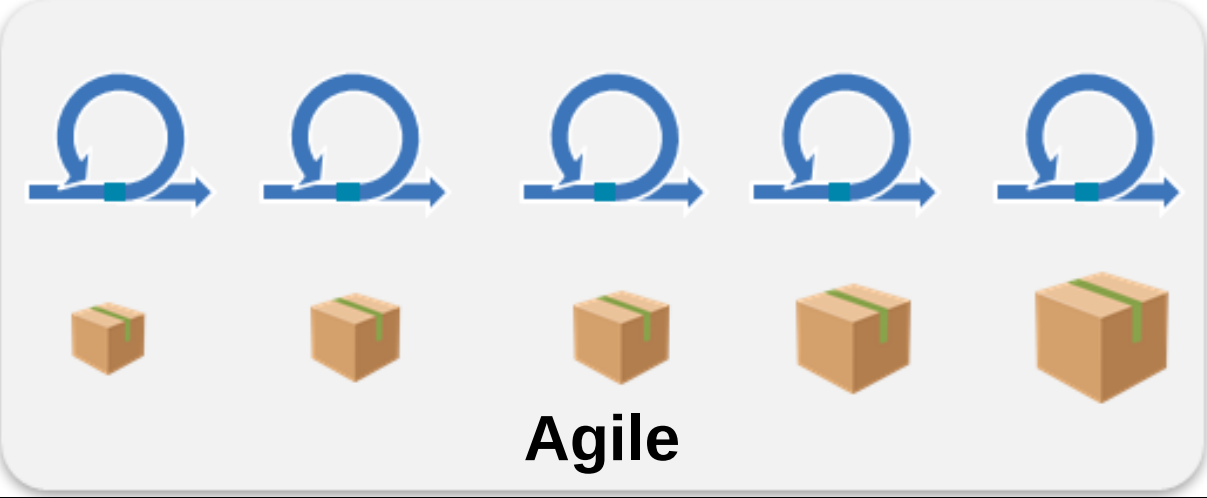

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Target Cloud Capabilities/Qualities

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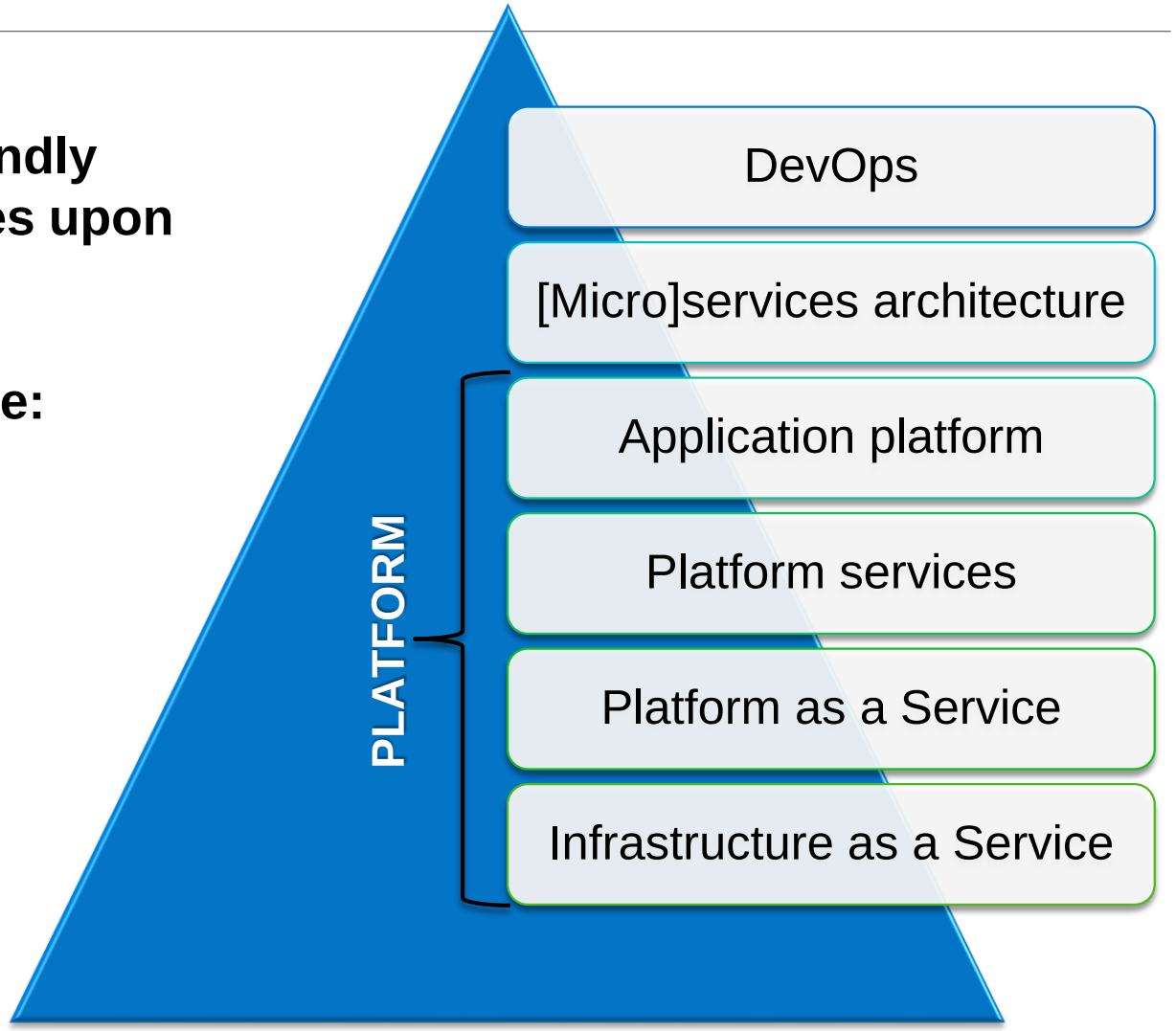
Cloud, Redefined for HCM

“Cloud” (in this context) is a stack of cloud-friendly processes, architectures, tools and technologies upon which we do “SaaS.”

This takes SaaS to the next level, making it more:

- agile
- reliable
- extensible
- integrated
- cost effective



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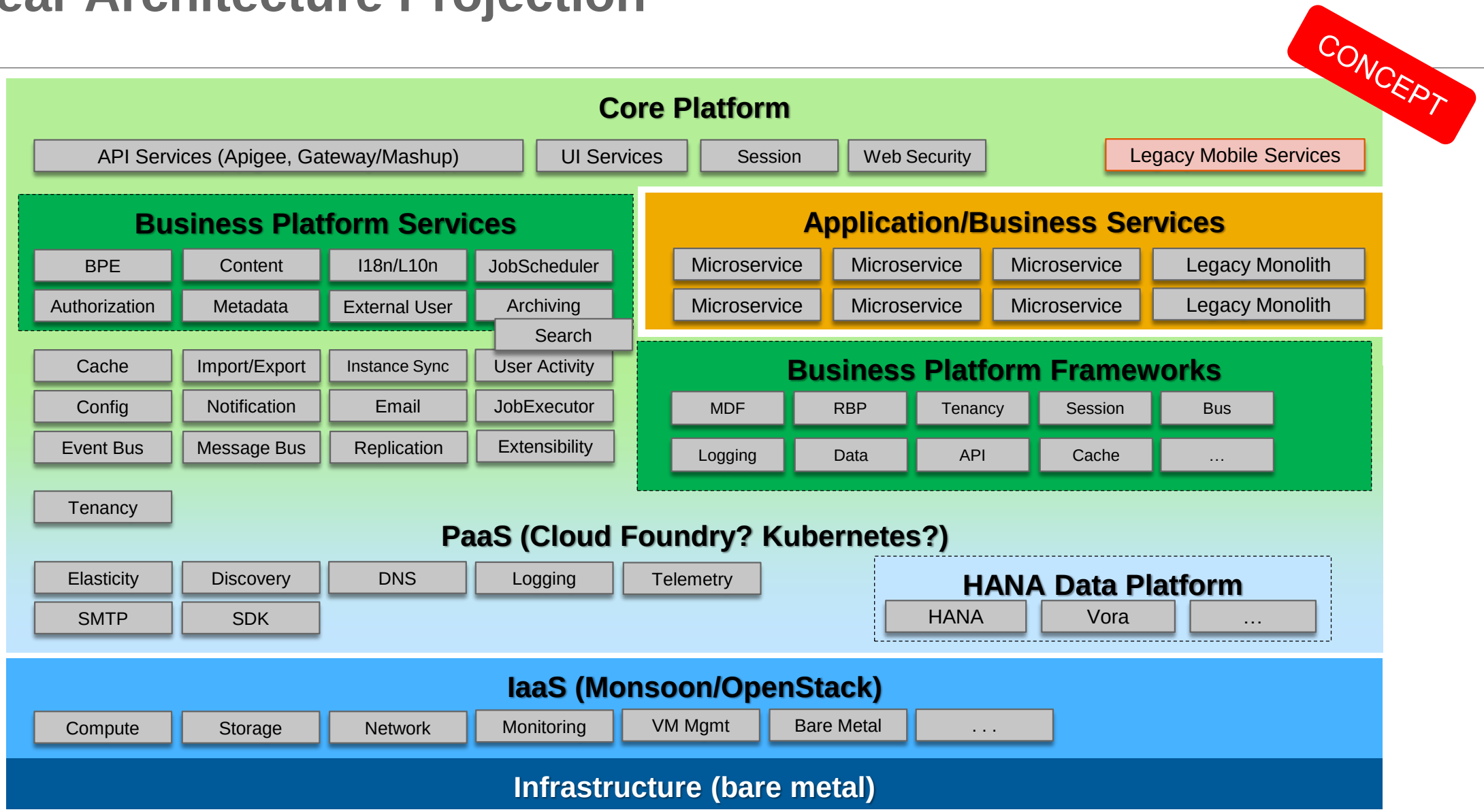
3-5 Year Architecture Projection



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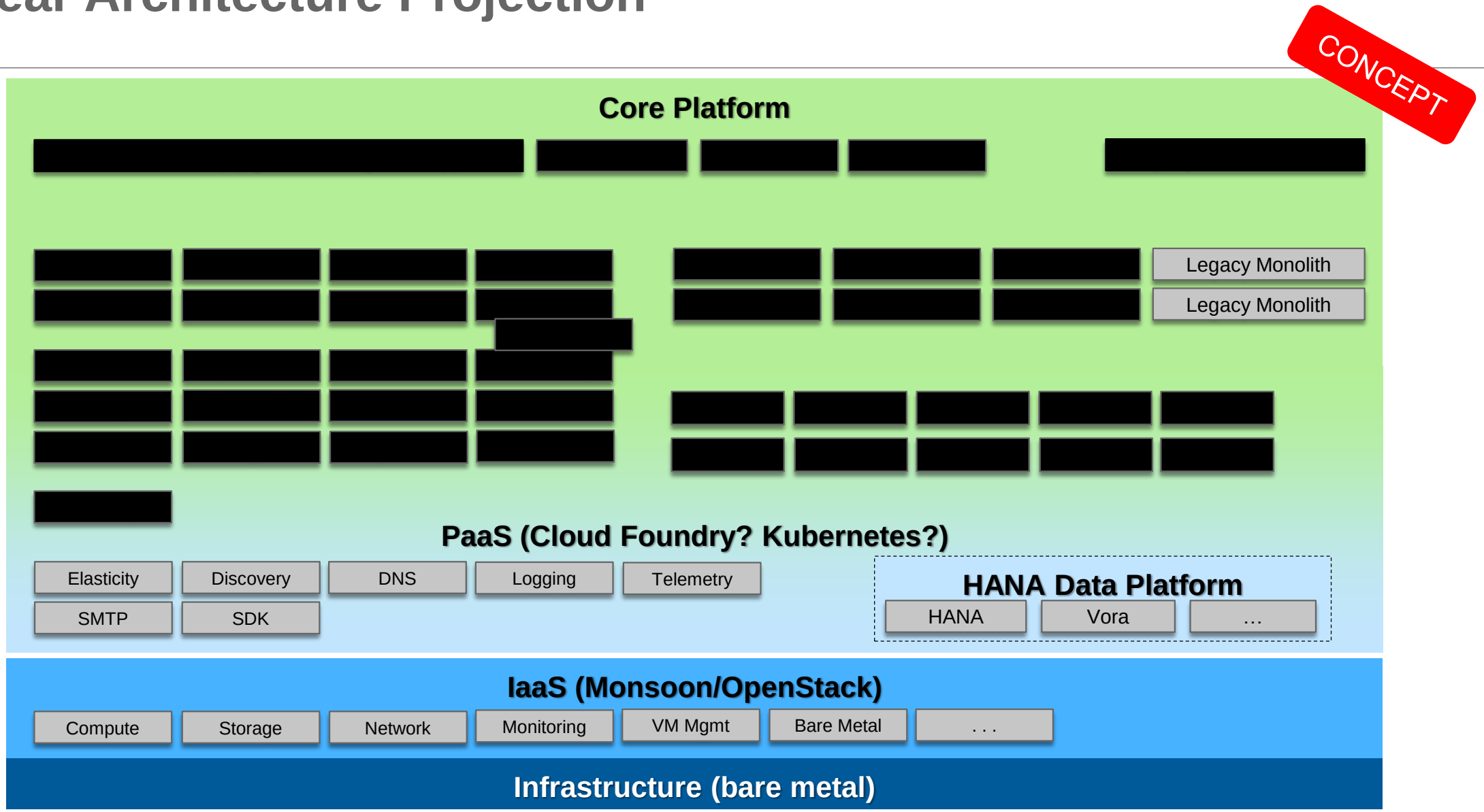
3-5 Year Architecture Projection



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Thank you

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