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Effective Onboarding and Adoption of SAP BTP



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Agenda

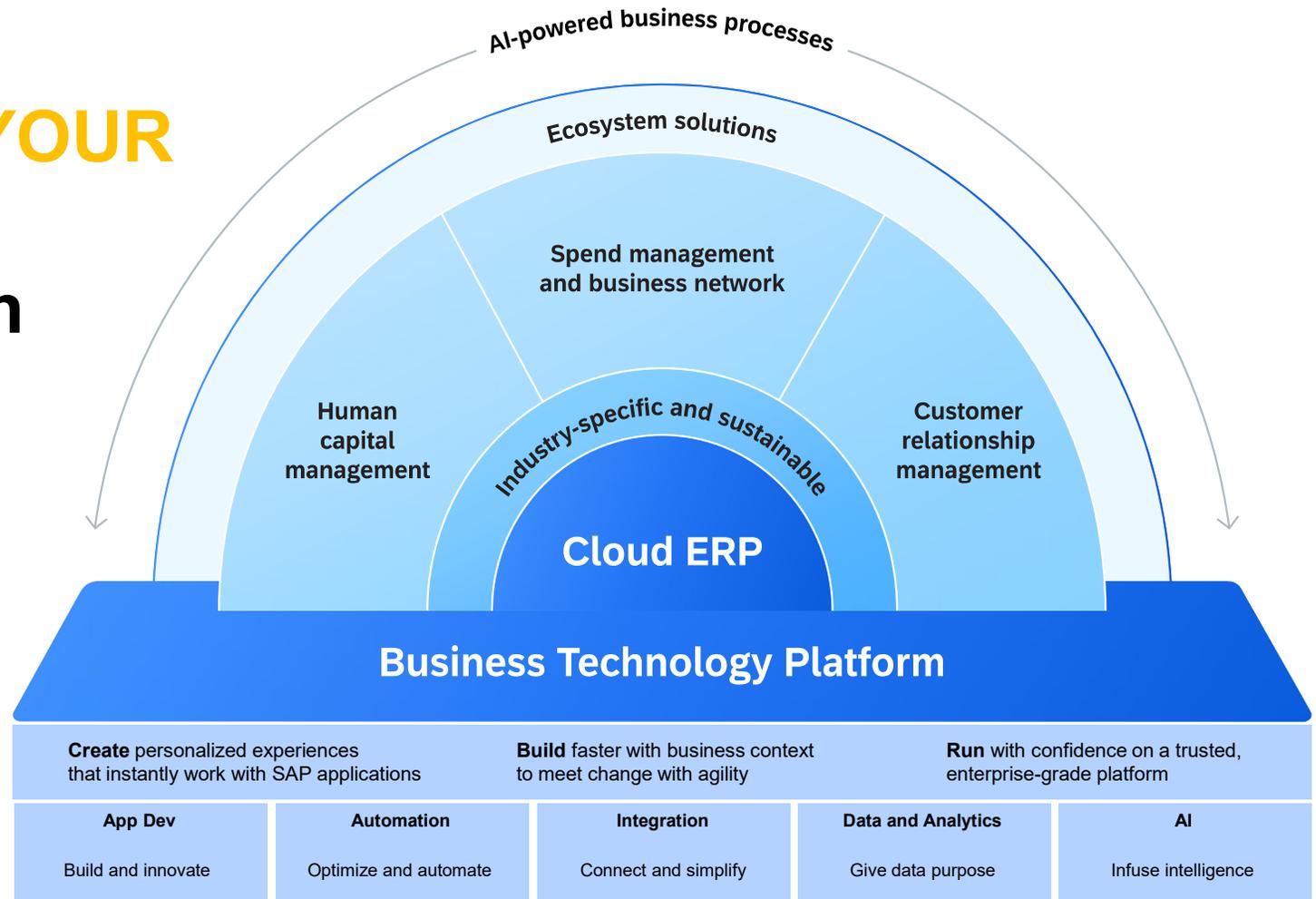
- SAP BTP Global Overview
 - SAP BTP Platform at a glance
 - Shared Responsibility Model
 - Actors in Hybrid landscape
- Governance
 - Foundation Services
 - SAP BTP Account organization
 - Codification standards
- Security
 - Security concepts
 - Identity management
- Monitoring and Alerting
 - SAP CALM
 - Monitoring solution
- Cost management
 - Usage Transparency



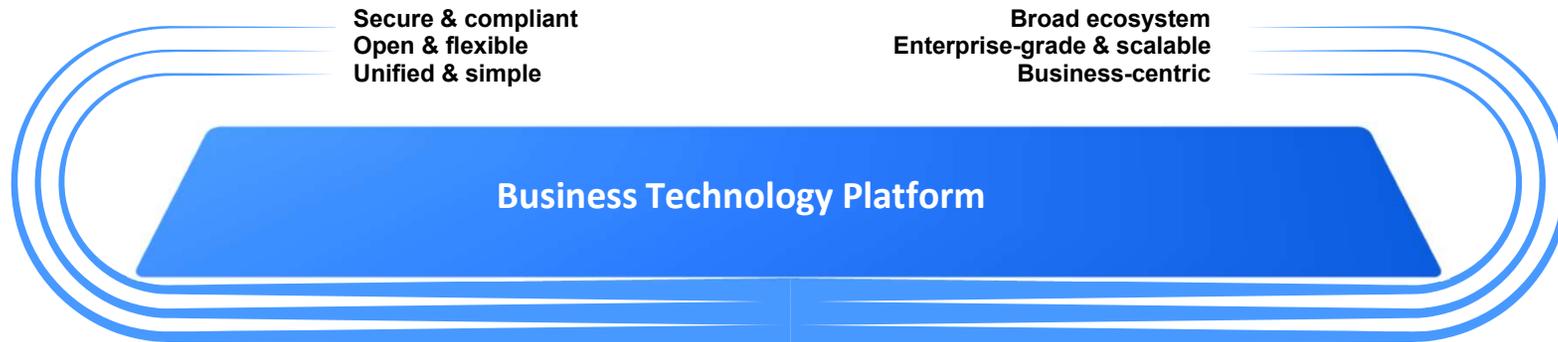


- SAP BTP Global overview

SAP BTP is YOUR foundation to become an Intelligent Sustainable Enterprise



SAP BTP Cloud Capabilities



App Dev	Automation	Integration	Data and Analytics	AI
→ Visual Low-Code / No-Code experience	→ Workflow Management	→ Process integration	→ Analytics & planning	→ Pre-trained AI models
→ Pro-code tooling	→ Robotic Process Automation	→ API-led integration	→ Data management	→ Responsible AI
→ Digital experience	→ Process monitoring & analytics	→ Event-driven integration	→ Operational database	→ AI model lifecycle management
→ DevOps	→ Automated document processing	→ B2B integration	→ Data warehouse & data lake	→ AI-infused SAP Applications (incl. Generative AI)
		→ Data integration		



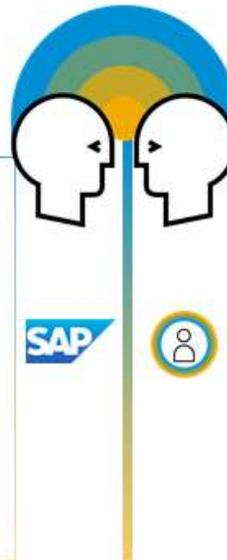
SAP Business Technology Platform

SAP Business Technology Platform

Shared Security Responsibility



Customer



- ✓ Multi-AZ platform architecture
- ✓ Secure development of SAP BTP services
- ✓ Security patching and maintenance
- ✓ Secure backup and restore capability
- ✓ Customer data segregation
- ✓ Secure cloud operations and administration
- ✓ Security incident and event management (SIEM)
- ✓ 24x7 Security monitoring
- ✓ Personal data breach notification
- ✓ SLA and support services
- ✓ Threat management
- ✓ Security audits and compliance of the platforms

- ✓ User identity, authentication and authorisation management
- ✓ User roles, user groups, access control & governance
- ✓ Integration and extensions configuration
- ✓ Secure cloud application development
- ✓ Digital storyboard and data analytics
- ✓ Customer data ownership
- ✓ Compliance to government regulation
- ✓ Security audit logging
- ✓ Deployment of cloud connectors and configuration of backend systems (on-premise)
- ✓ Building secure trust between cloud connector and SAP BTP sub-account
- ✓ Security and privacy configuration of the tenant

Platform as a Service

SAP Business Technology Platform

IaaS Providers
(Managed under SAP SE)



- ✓ Physical Data Center Security
- ✓ Resilient Network Connectivity, Regions, Availability Zones
- ✓ Underlying Physical, Virtual Infrastructure & Hypervisor
- ✓ Network Availability with built-in basic DDOS protection
- ✓ Audit, Security and Compliance on IaaS

Definitions - Actors in Hybrid Landscape



Lead Technology Architect BTP Platform

Manage Cost planning and Structure on BTP

Lead Security Auth Architect

Produce Auth Concept

Lead Integration Architect

Produce Integration Naming standard.
With ISA-M supports each "Product/Dev Team"
to make sure they follow the Rules

Lead Development Architect

Define Development Guidelines to be followed

Technical BTP Administrator

Work with Basis team : All activities on Sub
Account COCKPIT level + Cloud Connector
(EXCEPT User Management)

Basis Administrator

Support Technical BTP Administrator AND any
activity to reach Backend SAP/Non-SAP

Planning and Setup for SAP BTP operations



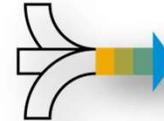
Governance Model

- Team setups (including IT support roles and responsibilities)
- Onboarding process for development projects
- Knowledge transfer process for the involved teams
- Support processes, operations documentation, and involved tools
- Define activities to ramp up resources and implement changes
- Help desk processes, incident and change management



Account Model

- Hierarchical structure between global accounts, directories, and subaccounts
- Staged development environment
- Cost management
- Automation



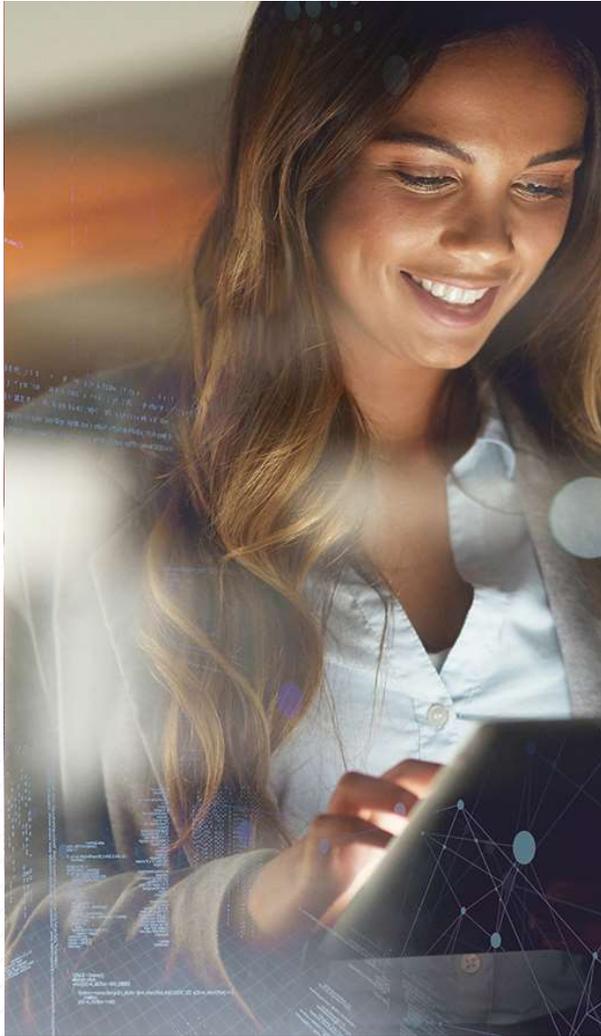
Security and Compliance

- Authentication (User Store, IAS/IDP, Platform vs. Business Users)
- Authorization (Role Templates, Roles, Role Collections, Attributes)
- Identity propagation / SSO
- On-prem connectivity (SAP Cloud Connector)
- Data Protection and Privacy Requirements



Business Continuity

- High Availability and Failover

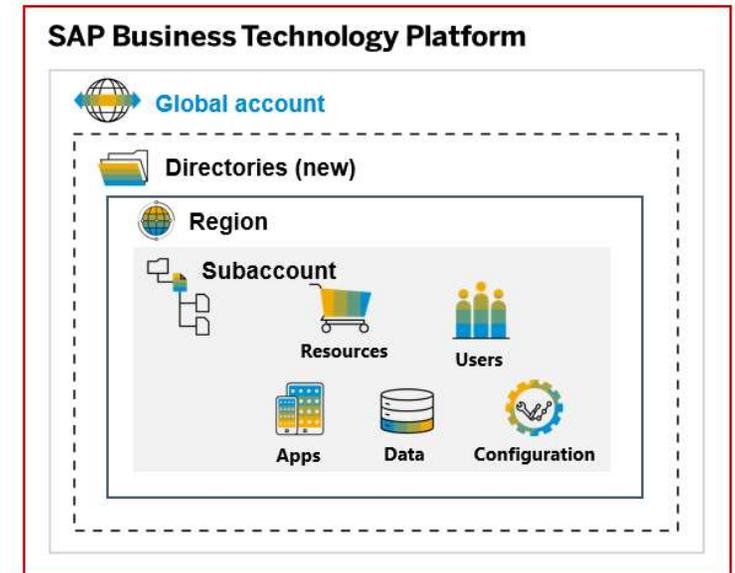


2 Governance



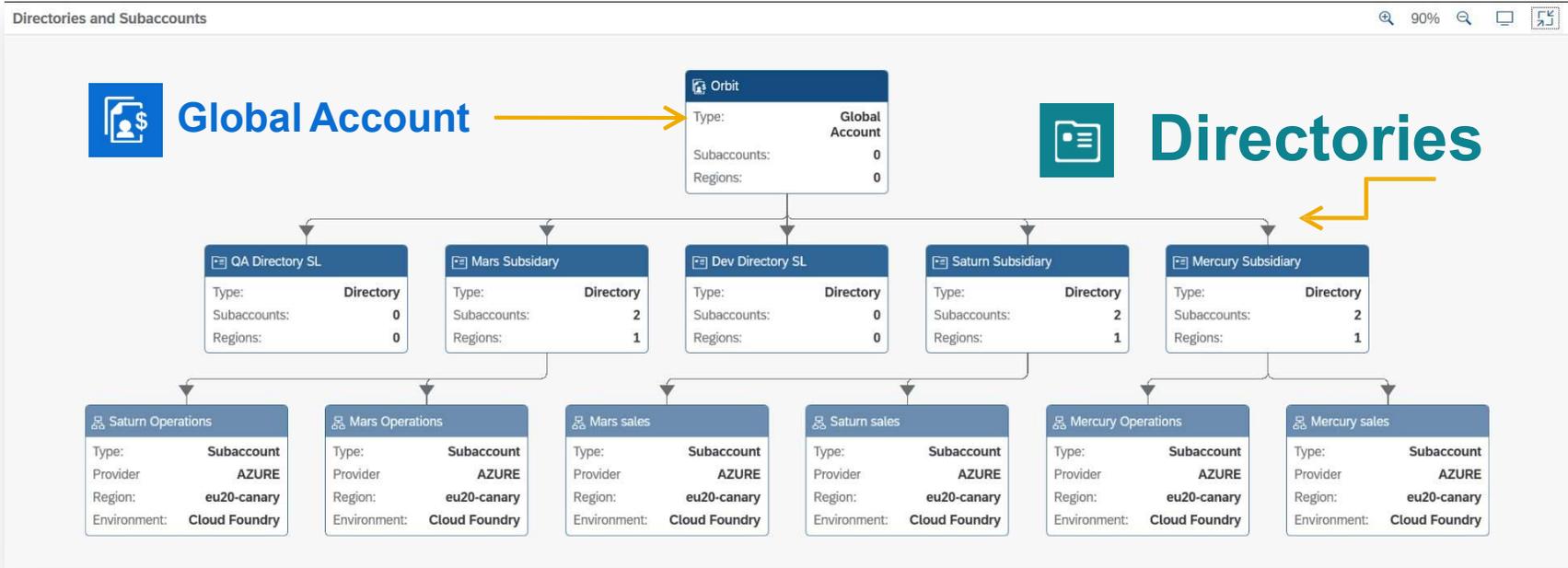
Basic Terminology

- **Global Account:**
 - representation of your contractual agreement with SAP.
 - No action at this level
- **Region:**
 - Represents a geographical location where applications, data, or services are hosted.
 - Third-party region providers operate the infrastructure layer of the regions
 - SAP operates the platform layer and Cloud Foundry.
- **Subaccounts:**
 - Hold together your applications, services and subscriptions and allow you to organize and structure your global account.
 - You can have as many subaccounts as required to achieve your account model.
 - The actual work is done on this level.
- **Entitlements:**
 - The services you are permitted to use based upon the contract you signed.
 - Some services are included automatically with no additional charge when you purchase an SAP BTP account.
 - Others are specific services you license, either through a subscription or consumption-based agreement.
- **Directories:**
 - Allow you to organize and manage your subaccounts based on business and/or technical need.
 - These are **optional** and provide an additional layer of separation.





BTP Account Model



 **Subaccounts**



High level Criteria

Cloud Connector configuration

Requirement related with different restriction on SAP Cloud Connector level

Data Centre Location

For eg. : Different Products hosted in different region (C4C in US, S/4 HANA in EU, ...)

Service Entitlement

For eg. : SAP HANA Cloud / Integration Suite/ ABAP require different setup because of its Cost

BTP Service availability

Services Available only in specific region

Identity Provider Configuration

Different user authentication requirement

End User Authorization

Different landscape require different user authorization

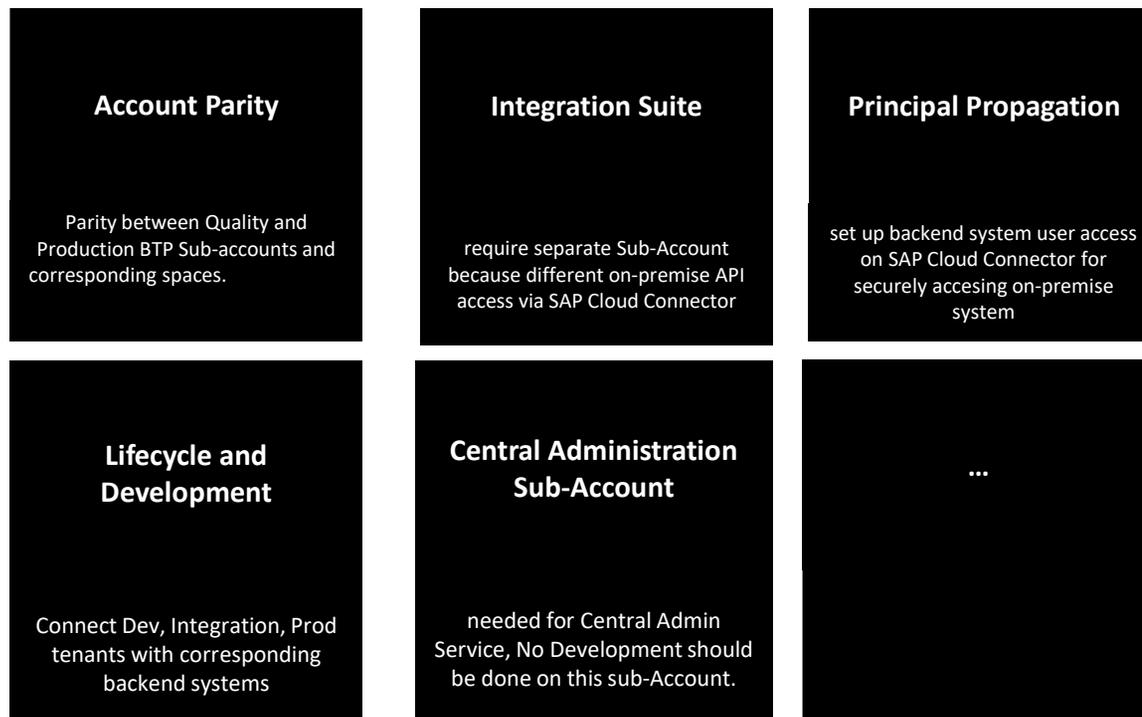
Cloud Foundry Space

Team/Members access on applications/Services management



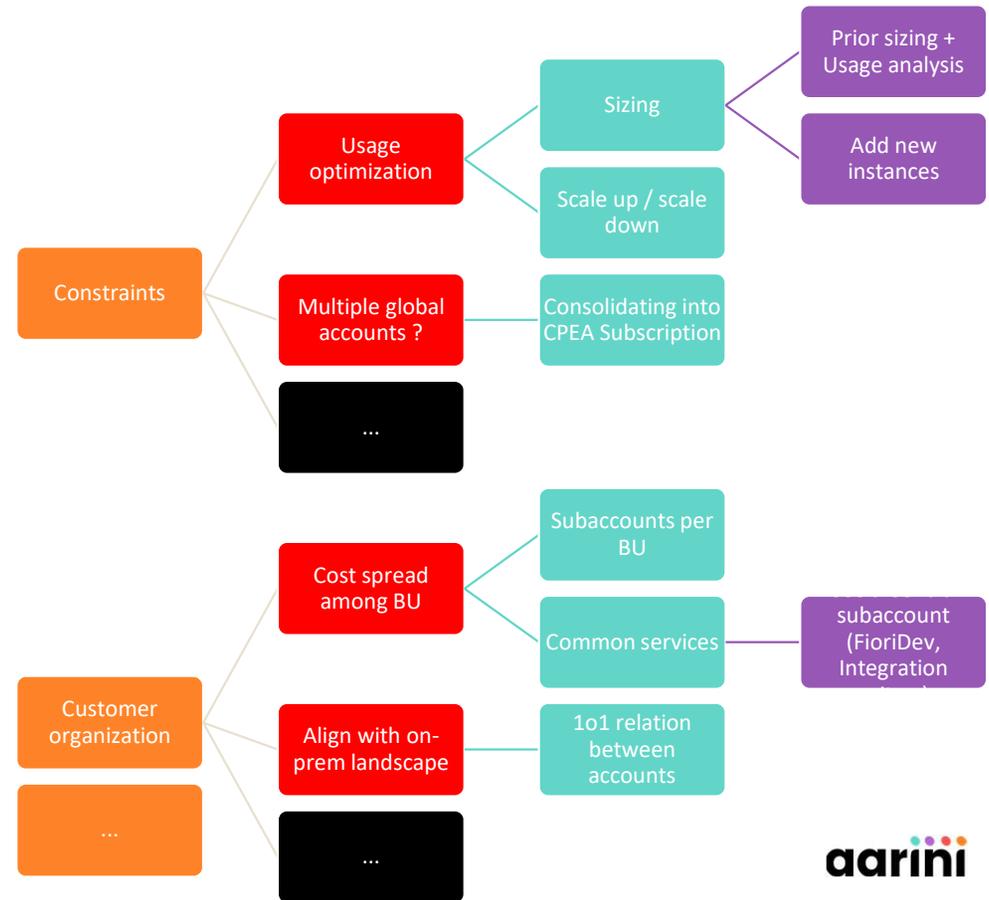
Technical criteria

- SAP BTP account structure also depends on the active usages for the customer



Optimization criteria

Based on our customer experience, a decision tree helps refine the design of the SAP BTP Subscription





Foundation Services

Monitoring/Alerting



Cloud ALM
Automation Pilot
ANS

Connectivity/Security



Destination
Audit logging
Credential Store

DevOps



TMS
CI/CD
Content Agent

Logging



Application Logging
Elastic - Kibana
Audit Log



Workshop on Governance

- **Objective :**
 - Define the target structure of the SAP BTP account organization / Account Model
- **Remarks :**
 - There is no “single Best Practice” but various possible recommendations
 - Each customer will have a different structure based on its own organization and needs
- **Working list :**
 - Audit : Relationship with existing on premise backends
 - Current BTP setup vs new usages
 - Expectations in the new landscape (scalability, security, cost optimization,...)



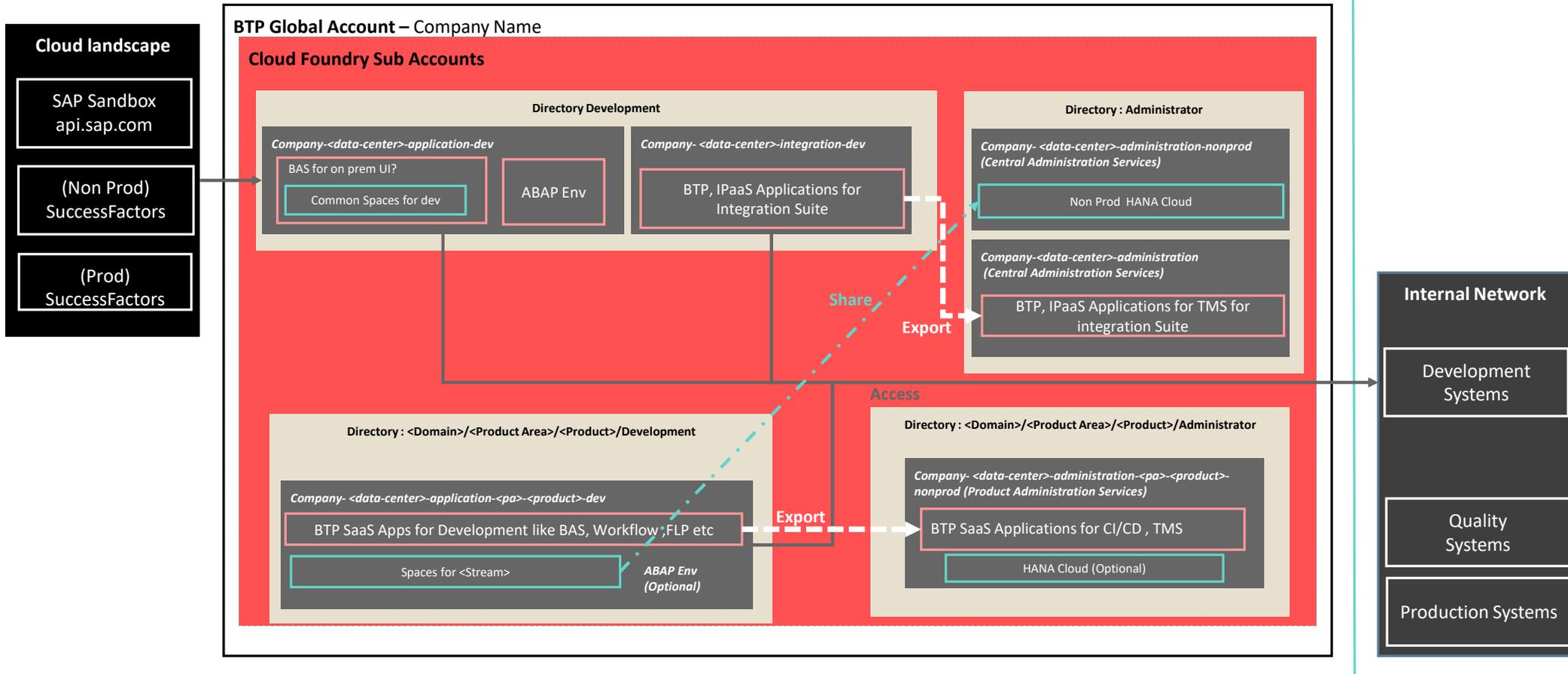
Customer case : Sample Architecture matrix

- As a result of the workshops, customer is provided with a matrix presenting :
 - Naming convention of each space
 - Active services in each subaccount

BTP Service(Subaccount)	Development	Quality	PreProd	Production	Administrator
HANA Cloud	org-eu10-nonprod-hanacloud	X	X	org-eu10-prod-hanacloud	X
Integration Suite	org-eu10-dev-ins	org-eu10-qa-ins	org-eu10-preprod-ins	org-eu10-prod-ins	X
BAS	org-eu10-dev-bas	X	X	X	X
ABAP Runtime	org-eu10-dev-abap	org-eu10-qa-abap	org-eu10-preprod-abap	org-eu10-prod-abap	X
CI/CD	X	X	X	X	org-eu10-admin-devops
TMS	X	X	X	X	org-eu10-admin-devops
CF Runtime	Shared	Shared	Shared	Shared	X
Data Intelligence	Yes	X	X	Yes	X
Mobile Services	org-eu10-dev-mobile	X	X	org-eu10-prod-mobile	X
Cloud ALM	N	N	N	N	Yes
DataSphere	Yes	N	N	Yes	
Event Mesh	Shared	Shared	Shared	Shared	X
Advance Event Mesh	Shared	Shared	Shared	Shared	
Application Logging Service	Shared	Shared	Shared	Shared	X
Flori Cloud	D	D	D	D	
Web IDE Full Stack	D	D	D	D	X
SAP Workzone(Launchpad)	org-eu10-dev-build	org-eu10-qa-build	org-eu10-preprod-build	org-eu10-prod-build	X
Cloud Portal	U	U	U	U	X
Credential Store	Shared	Shared	Shared	Shared	X
SAP Appgyver	D	D	D	D	X
SAP Intelligent RPA	D	D	D	D	X
SAP IOT	D	D	D	D	
SAP Translation Hub	Shared	Shared	Shared	Shared	X
AutoScaler	N	N	N	N	X
AlertNotification	N	N	N	N	X
Document Management Service					
Adobe Forms					
Print Service					
SAP Build Process Automatio	Shared	Shared	Shared	Shared	X

Customer Case : Design of BTP Account Model

- BTP Directory
- BTP Sub-Account
- BTP SaaS Service
- BTP Cloud Foundry Space





3 Security



Platform Users and Business Users



PLATFORM USERS

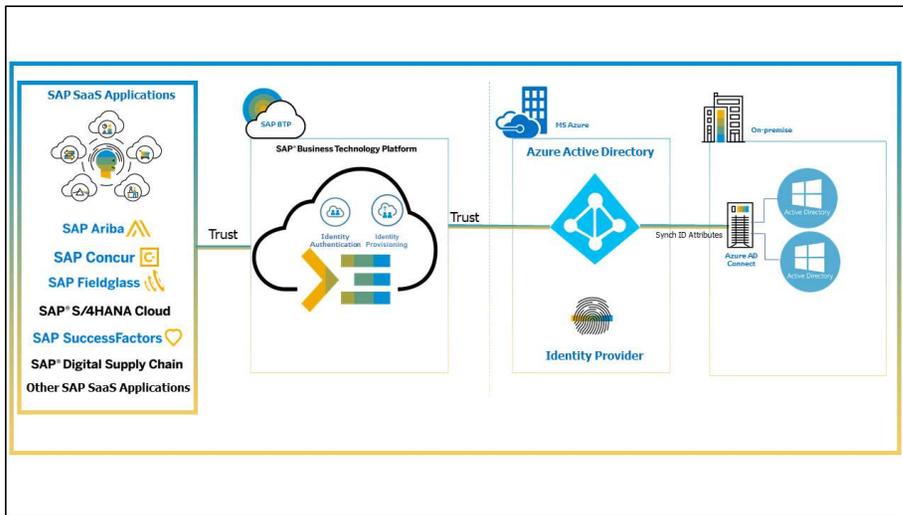
- › Users for Admins and developers
- › Configured in Dedicated IAS.
- › Will act as technical users to connect cloud connector, certificate expire , monitoring tools etc..



BUSINESS USERS

- › Users for end users
- › Configured in the AD/IAS of different then Platform users.
- › AD groups assign in the IdP.
- › Role collection mapped in the cockpit.
- › Ease user management, directly through AD groups.

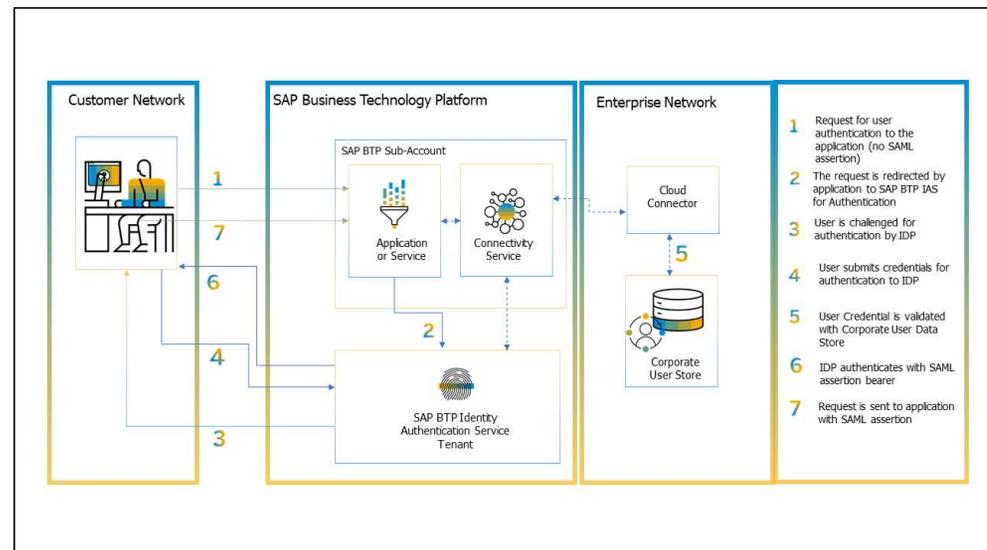
Authentication Scenario of BTP :



- Authentication model with Azure AD
 - BTP directly connecting to Azure
 - Basic architecture to implement

Authentication model with SAP BTP as IdP

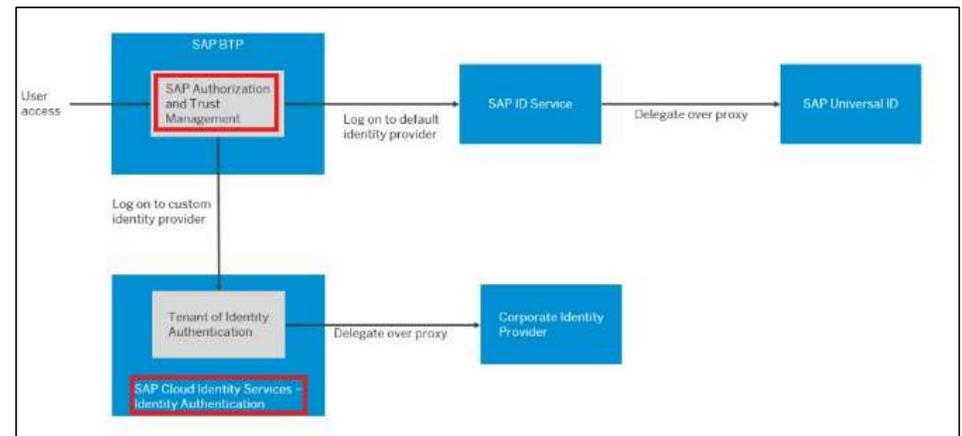
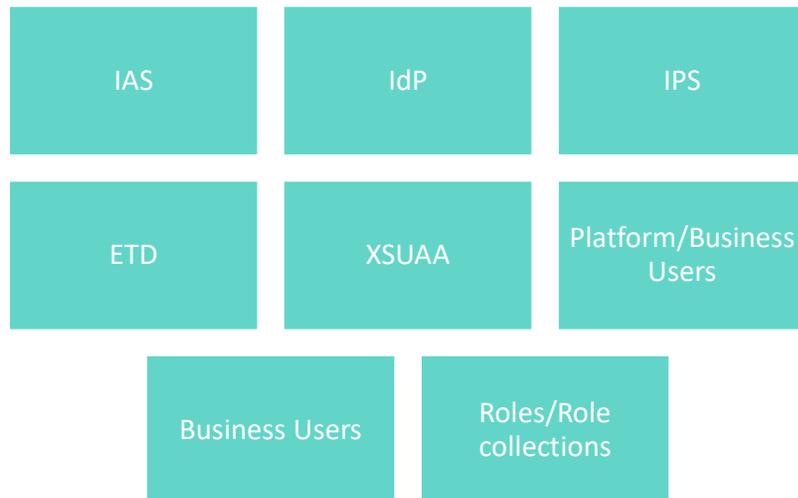
- › Using SAP IAAS engine (Identity As A Service)
- › OpenID Based
 - Standard used in many applications
 - Easier management (inviting external partners)
- › Architecture build on new standards





Security

- SAP BTP XSUAA Authentication model
 - Following components can be involved in the Security management



Workshop on Security / User authentication

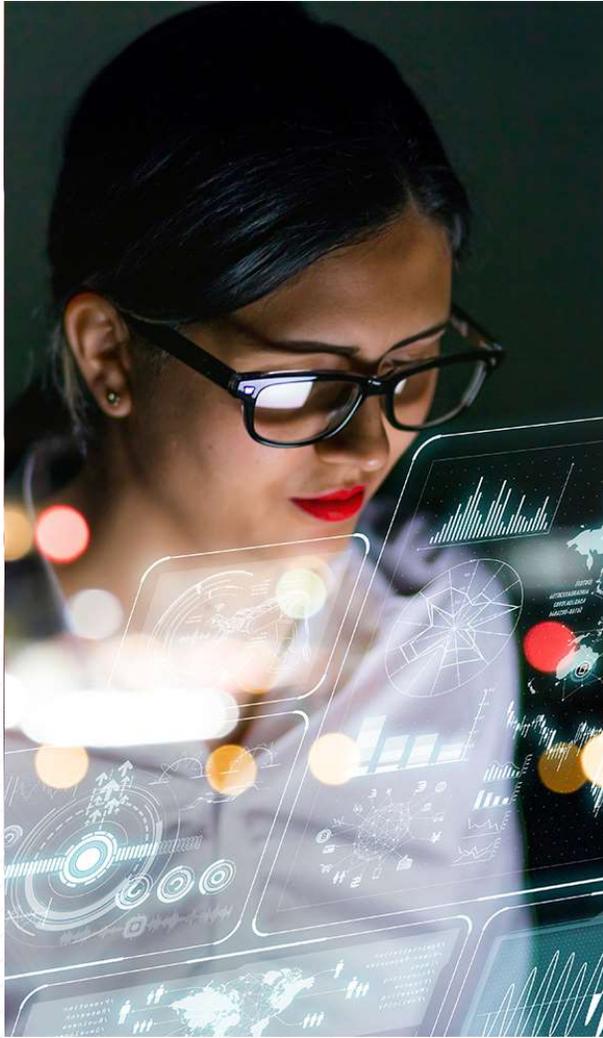


- **Objective :**

- Present the security concepts for SAP BTP
 - User / Identity provisioning
 - Access control
 - Application access / Authorization

- **Working list :**

- Explanation of the usages
- Review the best practices vs existing integration
- How to secure the user provisioning / principal propagation
- Certificate management

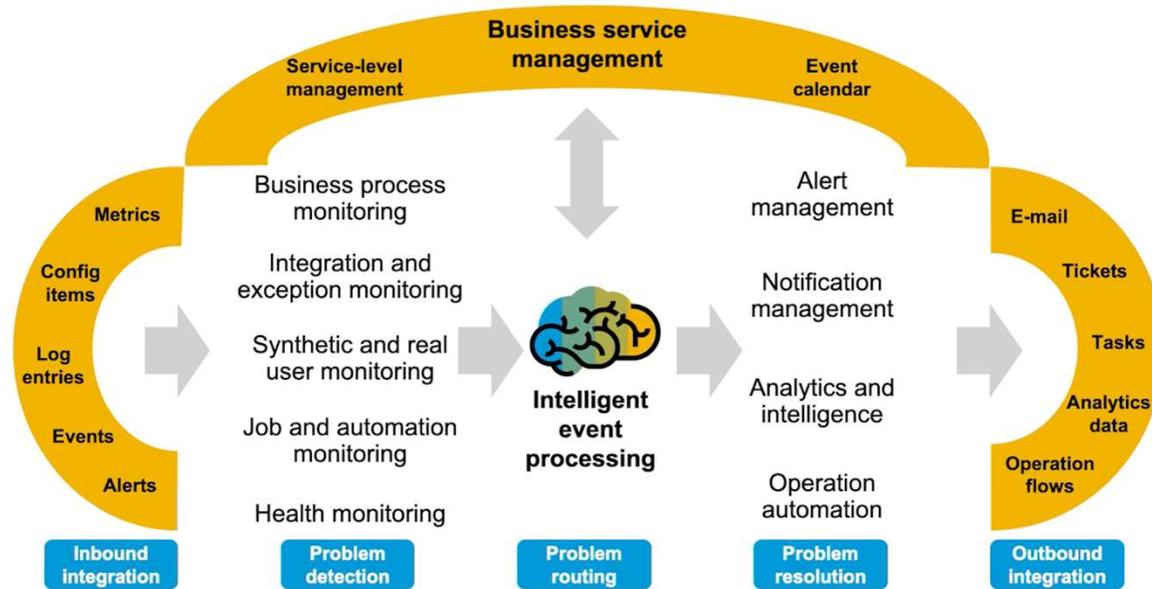


4 Monitoring and Alerting

Monitoring and Alerting in SAP BTP

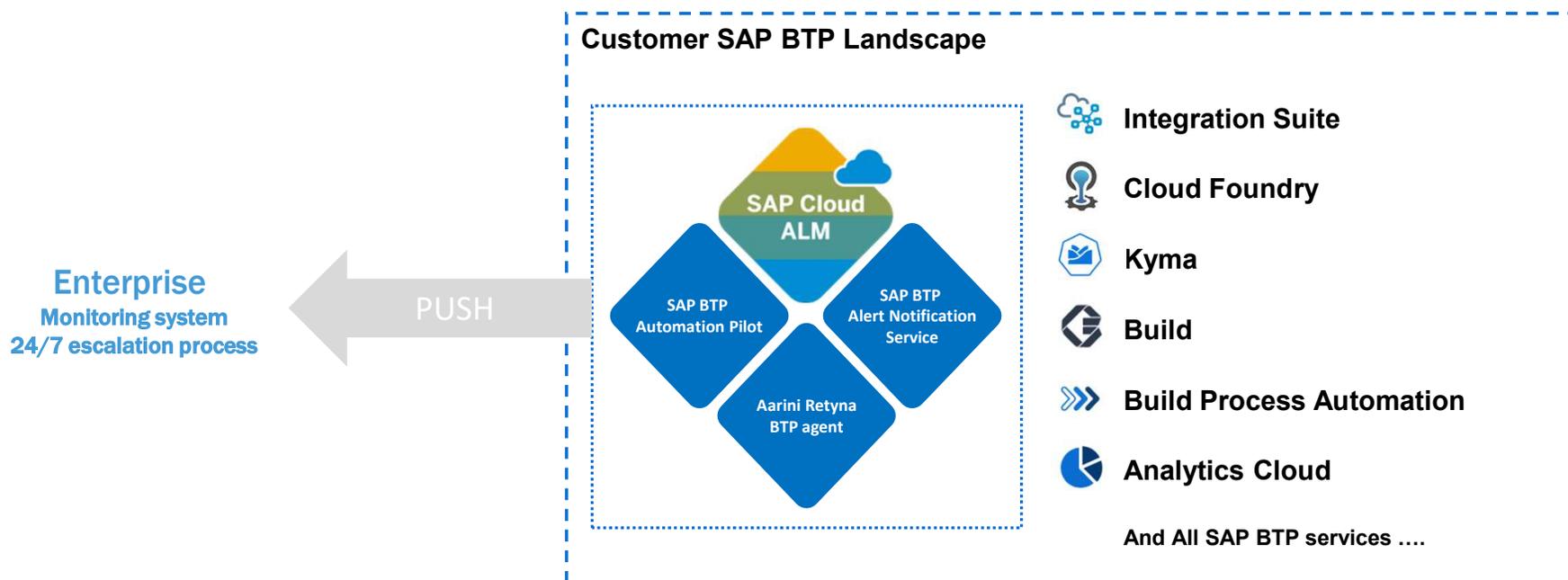
- Schema for CALM Architecture

SAP Cloud ALM for operations





SAP BTP monitoring solution





Additional Monitoring

CPEA Credit Alerts

```
{
  "<Service_ID>": [
    {
      "Metric": "measureId",
      "PlanId": "xplan",
      "ThresholdValue": "threshold",
      "SubaccountId": "subaccountid"
    }
  ]
}

example values:

{
  "CloudIntegration": [
    {
      "Metric": "connections", "ThresholdValue": 100, "PlanId": "standard", "SubaccountId": "s1",
      "Metric": "tenants", "ThresholdValue": 5, "PlanId": "standard", "SubaccountId": "s2"
    }
  ],
  "sap-workzone": [
    {
      "Metric": "swz_users", "ThresholdValue": 10, "PlanId": "standard", "SubaccountId": "s2",
      "Metric": "swz_connections", "ThresholdValue": 10, "PlanId": "standard", "SubaccountId": "s1"
    }
  ]
}
```

BTP Certification Alerting



BTP Automator

```

"btp" {
  subaccount = var.globalaccount
  subdomain = var.subdomain
  password = var.password
}

resource "btp_subaccount" "dev" {
  name = "dev"
  subdomain = "qcc48514"
  region = "us10"
  description = "hey, this subaccount is managed by terraform!"
}

resource "btp_subaccount_role_collection_assignment" "subaccount-viewer" {
  subaccount_id = btp_subaccount.dev.id
  role_collection_name = "subaccount-viewer"
  user_name = "herish.yarragearini.com"
}

resource "btp_subaccount_entitlement" "bas" {
  subaccount_id = btp_subaccount.dev.id
  service_name = "sapreportstudio"
  plan_name = "trial"
}

resource "btp_subaccount_entitlement" "cloudfoundry" {
  subaccount_id = btp_subaccount.dev.id
  service_name = "APPLICATION_SHARING"
  plan_name = "MEMORY"
  amount = 1
}

resource "btp_subaccount_environment_instance" "cloudfoundry" {
  subaccount_id = btp_subaccount.dev.id
  name = "my-cf-environment"
  environment_type = "cloudfoundry"
  service_name = "cloudfoundry"
  plan_name = "standard"
}
```



Workshop on Monitoring Alerting

- **Objective** : Define specifications of the monitoring solution on SAP BTP
- **Prerequisite** : Subaccounts structure and Security defined
- **Working list** :
 - Define the monitoring items for the SAP BTP solution
 - HANA Cloud DB status
 - SAP CPI Events
 - Application availability in Cloud Foundry
 - ...
 - Define the alerting process
 - Escalation process
 - Contacts / Teams to be notified
 - ...
 - Customer Monitoring dashboard

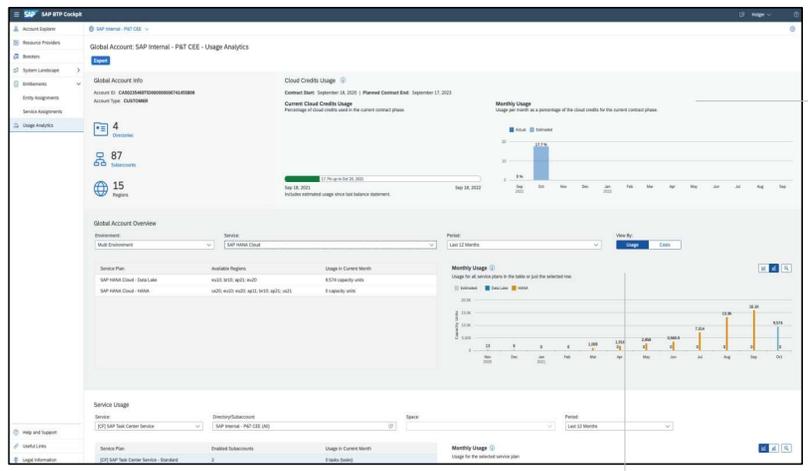


5 Cost Management



Usage Transparency

- SAP BTP Portal provides Usage Information to allow full control on cost management
 - KPIs can also be integrated in the Monitoring solution to receive alerts based on usage

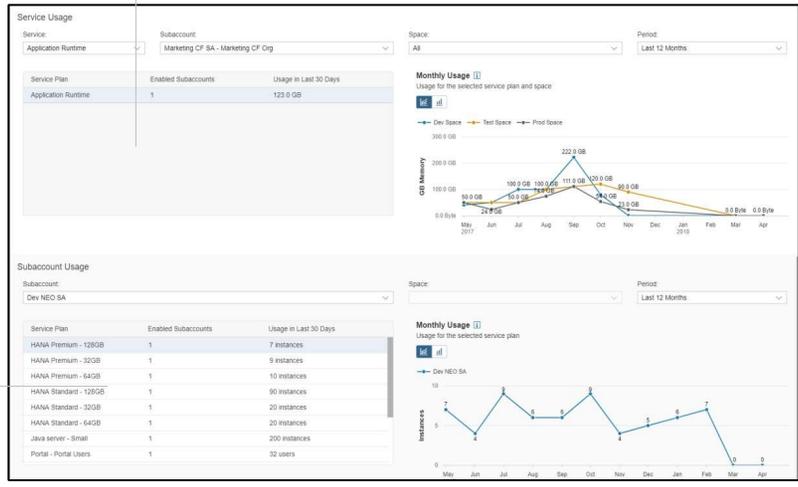


MONTHLY USAGE INFORMATION AS PERCENTAGE OF CPEA

USAGE VIEW PER SERVICE

MONTHLY BLOCKS USAGE & COST INFORMATION

USAGE VIEW PER SUBACCOUNT





Optimization examples

INTEGRATION SUITE

▼

Problem with Number of Messages Exchange between the systems.

SAP Graph

Use Object Store instead of CPI Data Store

If Object Store doesn't work HANA Cloud ?

Filter Queues data in Event Mesh Levels.

Use AMQP not Webhooks



CF RUNTIME

▼

Stop/Delete all local unused instances from sandbox system

Define RAM & Disk as Mandatory checks for each application before deployment

Ignore Unnecessary Files When Pushing

Store documents in Document Management service

Use Auto scalar to scale application based upon usage



SAP HANA CLOUD

▼

2 tiers Landscape (non prod & Prod).

Unused HDI Containers

Shutdown Sandbox weekends & night times

Scale Whenever its required

Focus on Multi Tenant applications

Separate Data between HANA Cloud and Data Lake

Every HANA cloud instance has default CPU unit





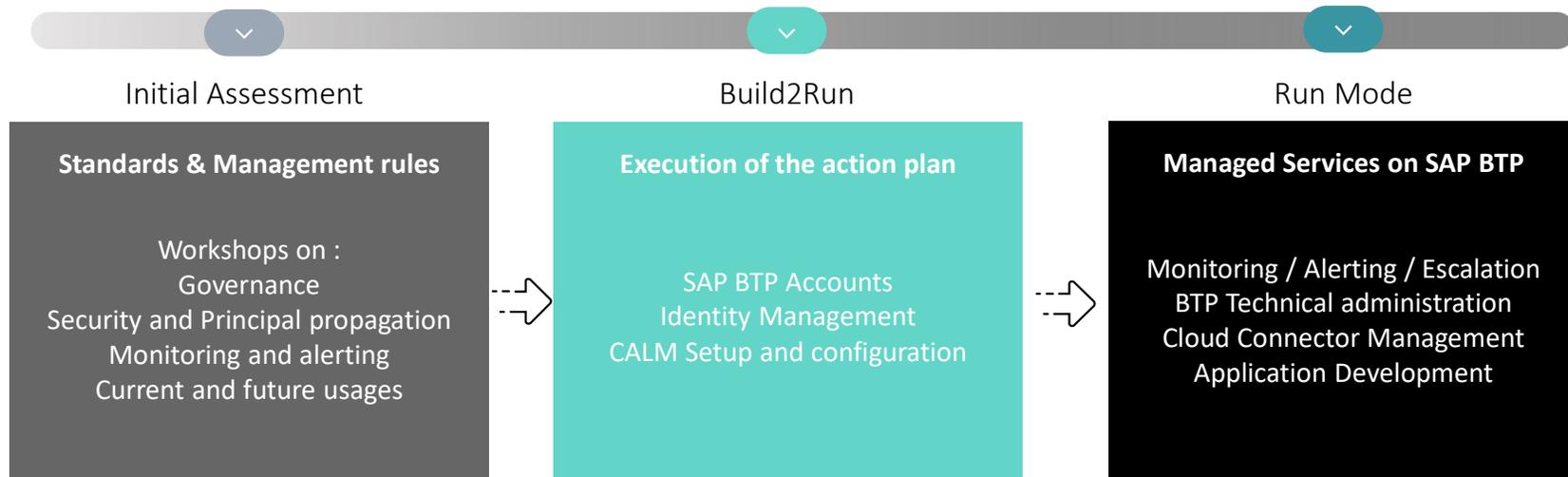
Workshop on Cost Management

- Objective : Integration of SAP BTP Cost Control KPIs in the monitoring
- Prerequisite : Subaccounts structure defined
- Working list :
 - Centralize Finance KPIs
 - Initial Cost optimization assessment
 - Cost Sharing Model - FinOPS

Aarini BTP Excellence



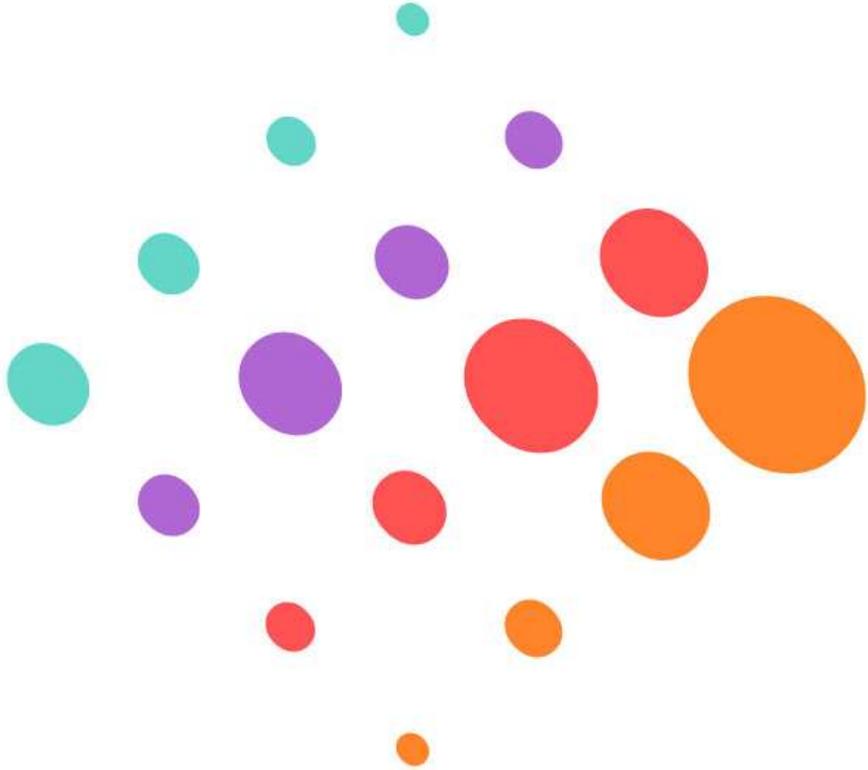
Main Milestones



- Aarini proposes to realize the Initial assessment workshops to validate with Areas the action plan of activities to be realized in the SAP BTP platform :

- Governance workshop : 5-10 days
- Security / User authentication : 5 days
- Monitoring : to be defined
- Cost optimization : 5-10 days

Thank you



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Q&A