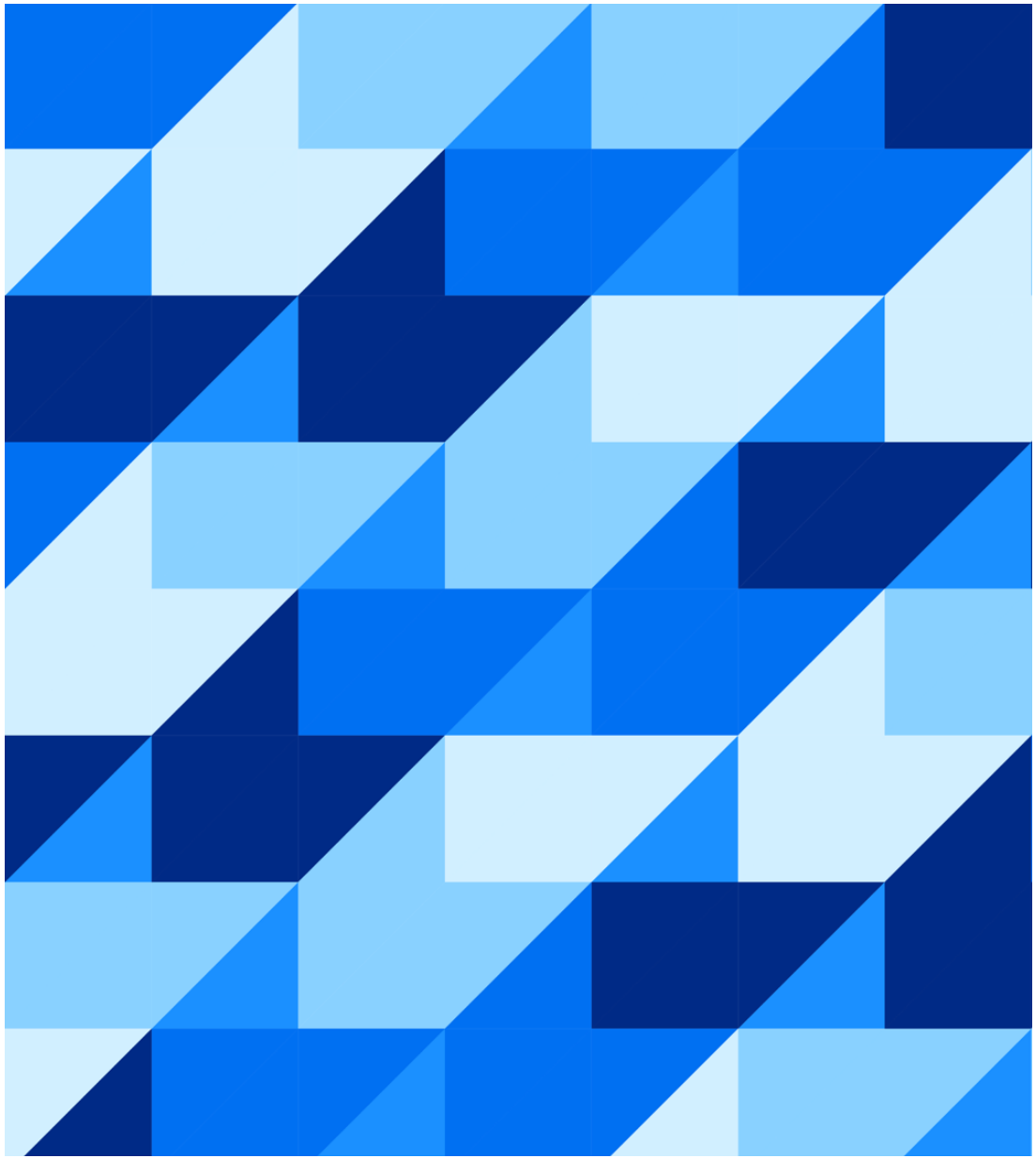
Dev 2 Ops:
SAP BTP High Availability and Disaster Recovery Overview and Roadmap

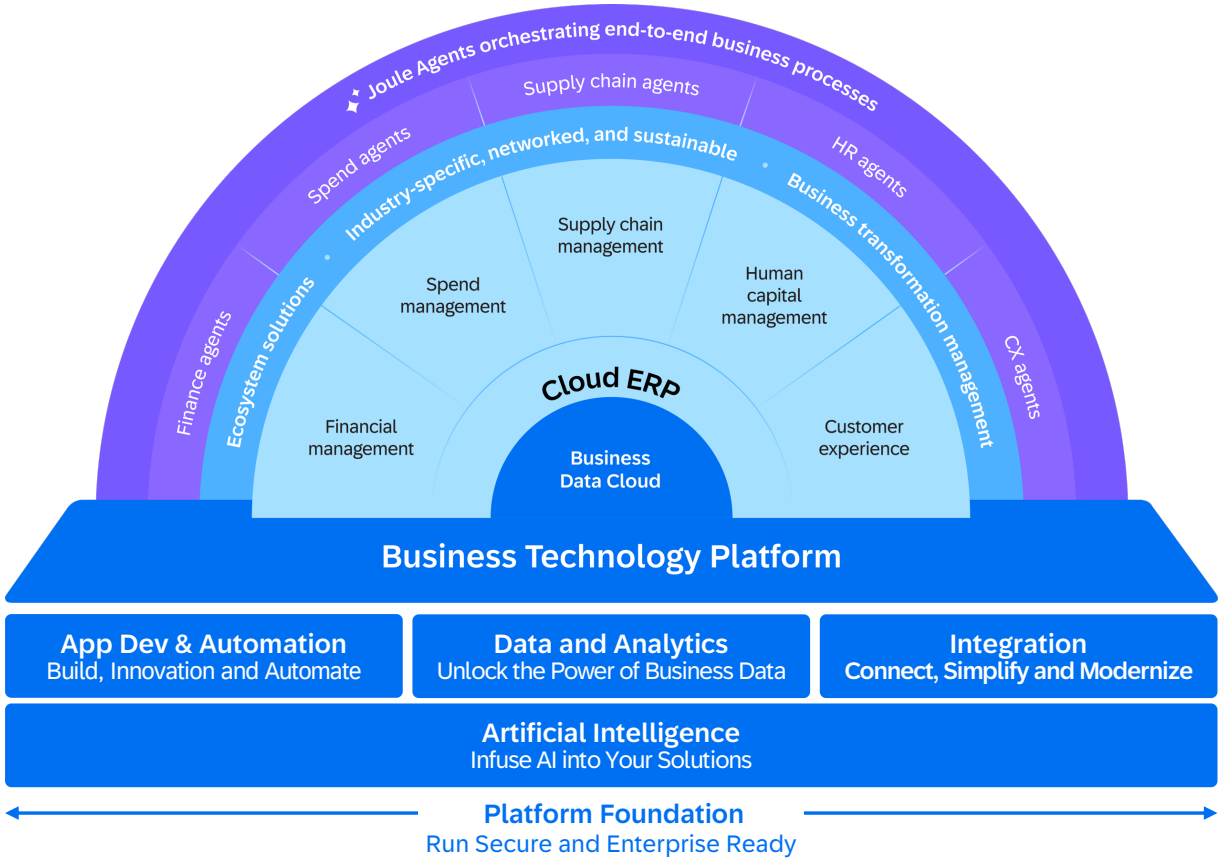
Niklas Siemer (he / him)
Senior Product Manager, SAP BTP
June 12th, 2025

Public

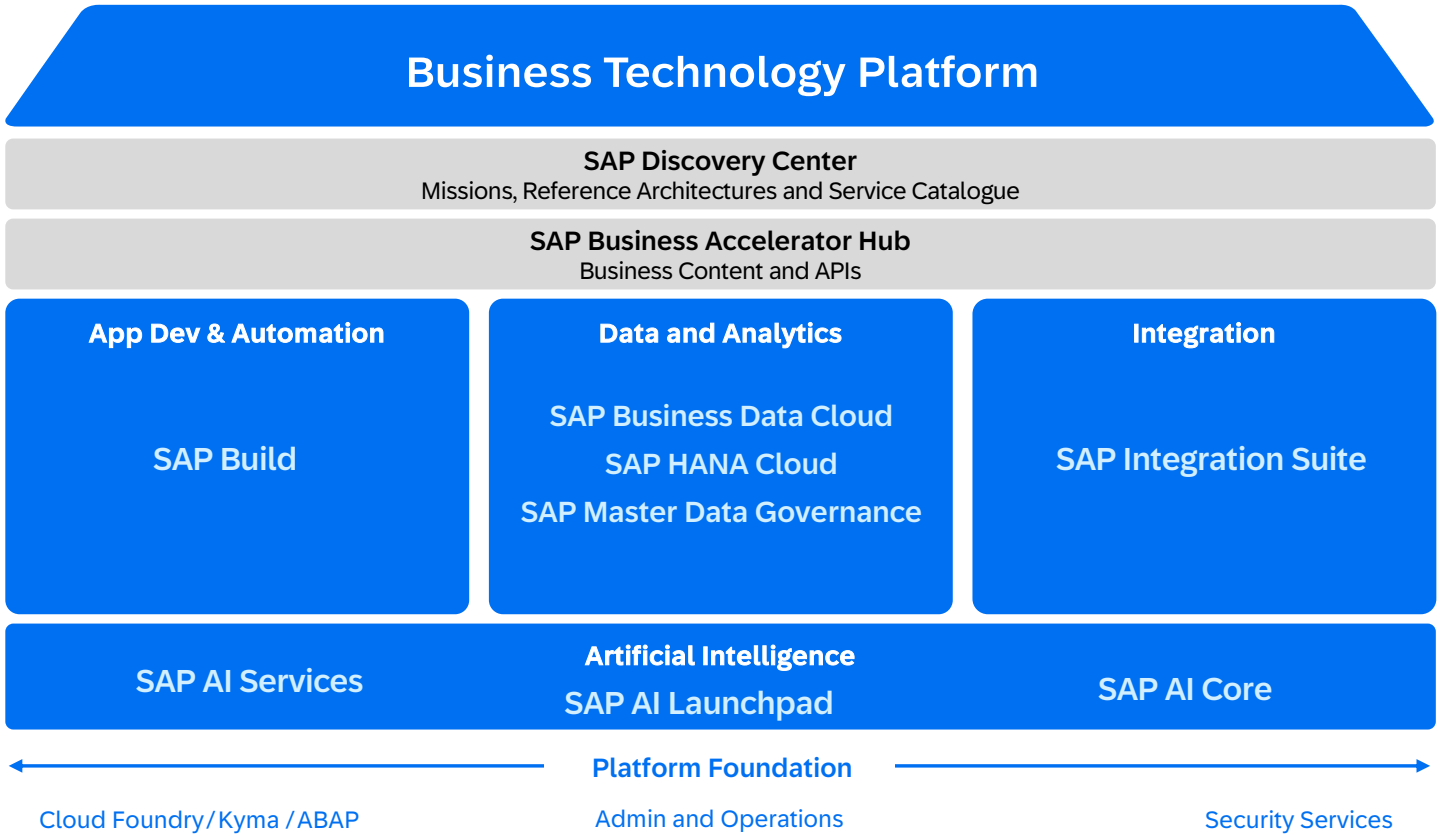


SAP Business Technology Platform (SAP BTP)

SAP Business Technology Platform



SAP Business Technology Platform



What is business continuity all about?

Minimizing impact on the business through:

- **Minimize Downtime**: Ensures continued operations during disasters, maintaining productivity and revenue.
- **Protect Reputation**: Demonstrates reliability and resilience, maintaining trust with customers and stakeholders.
- **Compliance**: Meets industry regulations, avoiding legal issues and systematically addressing risks.
- **Safeguard Data**: Protects sensitive information and physical assets, ensuring recovery and minimal losses.

SAP BTP: Enterprise Readiness

SAP BTP: Enterprise Readiness

Resilient:

- Systematic approach to ensure “cloud” qualities of BTP services.
- Enable all BTP services with Multi-AZ High Availability

Clear Communication:

- Centralized outage communication via SAP Trust Center
- Improve customer communication concerning outages – starting from initial outage alert until customer facing root cause analysis.

Quality & Operations:

- Practice means to simulate failures: Chaos days & Game days
- Simulating them and handling it - process & people
- Maturity assessment

Zero Downtime Maintenance (ZDM):

- Zero downtime maintenance (ZDM)
- Reduce & harmonize MUWs

SAP BTP: High-Availability & Disaster Recovery

High-Availability

High availability refers to a service's ability to remain operational and accessible for users with minimal downtime and interruption. -> Prevent the loss of service in first place.

Disaster Recovery

Disaster recovery refers to the processes put in place to restore and recover to an operational state following a disaster. -> Protect applications/services from unwanted data loss

High Availability is intended to handle problems while a system is running whereas Disaster Recovery is intended to handle problems after a system fails.

SAP BTP: Service Availability Transparency and Service Level Agreements

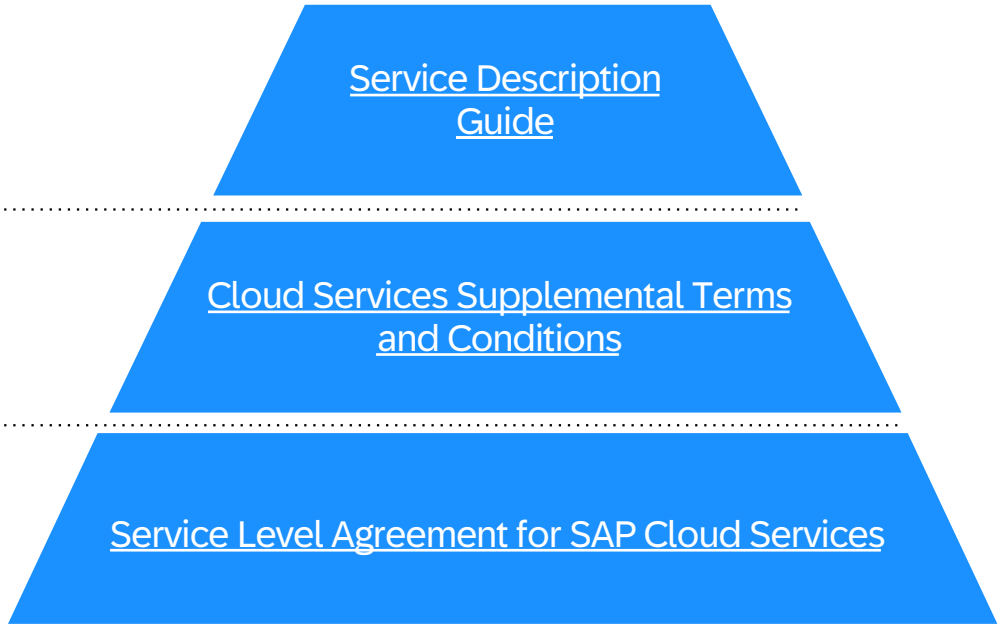
SAP Cloud Service Level Agreement Hierarchy

Any deviations from SLA per service are noted here (**99.95%**)

Amended by the Supplemental Terms for SAP Cloud Services (**99.9%**) and other BTP services;
SLAs for In-Metro Disaster Recovery and related statements available in SAP BTP Disaster Recovery Overview, BTP Supplement and HANA Cloud Supplement

Availability SLA of **99.7%** promised by SAP

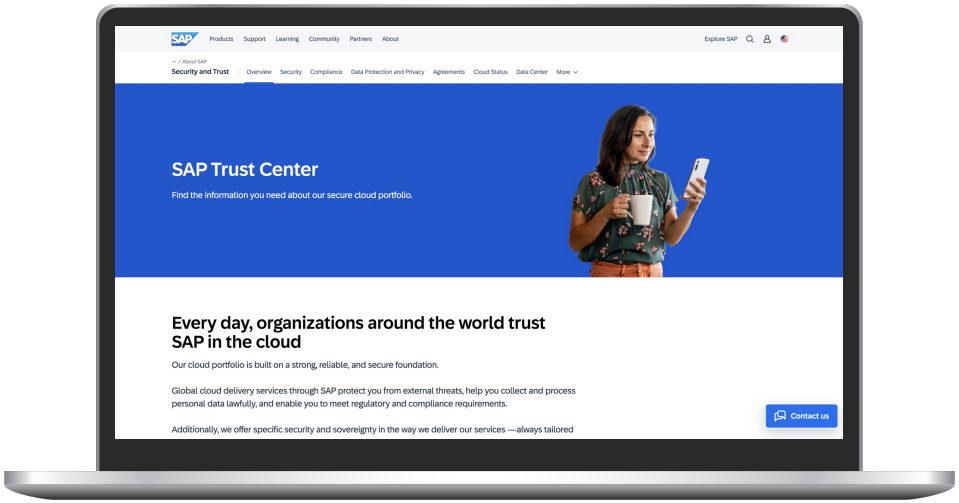
Baseline document for all SAP Cloud services (E.g. S4, Ariba, Concur, SuccessFactors)



SAP Trust Center

The SAP Trust Center is a public-facing website, designed to provide unified and easy access to trust related content, such as security, privacy, and compliance.

- Delivers transparency
- Easy access to SAP trust-related documents, certificates, and contracts.
- Users can initiate requests and engage with SAP
- BTP Supplement Agreement



https://www.sap.com/trust-center

Security
Measures to ensure SAP Cloud Security

Compliance
Shows the vast variety of ISO/BS as well as certificates

Privacy
SAP respects and protects the rights of individuals

Agreements
Overview of the building blocks of SAP contracts

Cloud Service Status
Availability data of our cloud services showing the current live status

Data Centers
Virtually and physically protected data with state-of-the-art technologies

SAP for Me

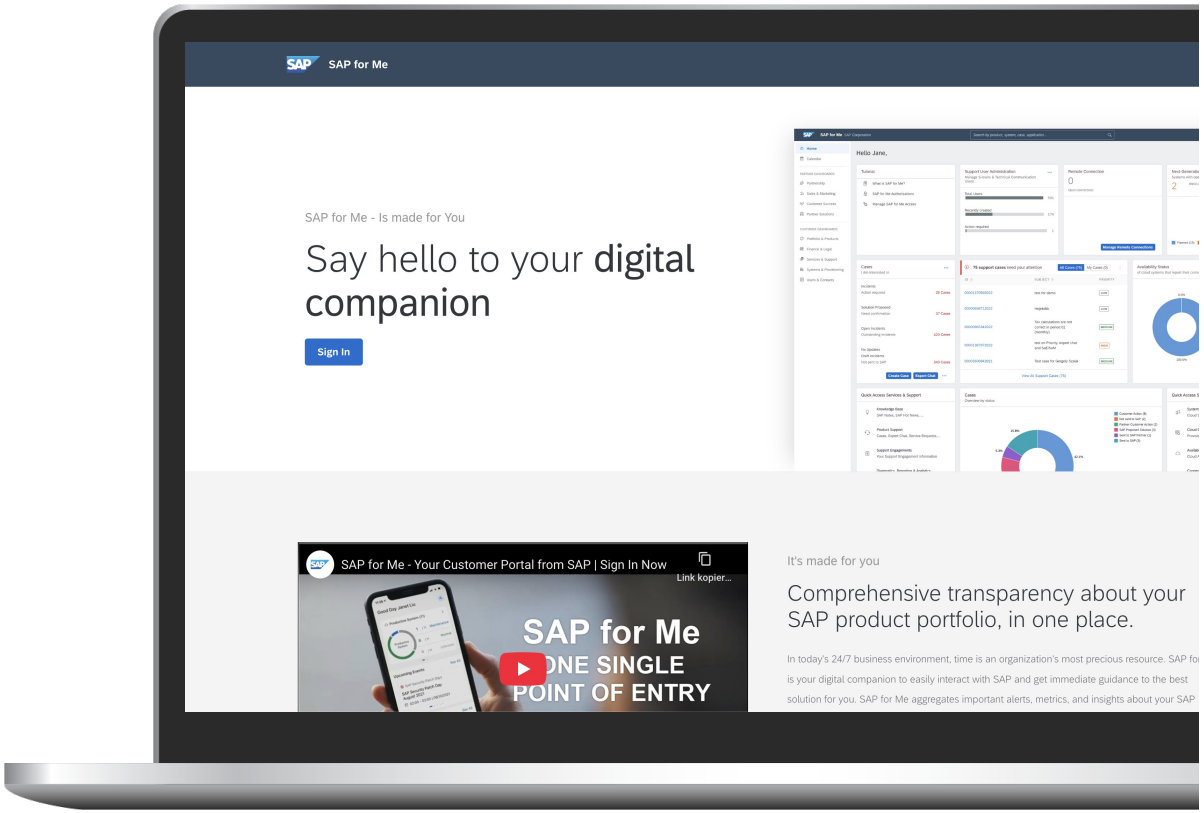
SAP for Me is your digital companion to easily interact with SAP and get immediate guidance to the best solution for you. SAP for Me aggregates important alerts, metrics, and insights about your SAP product portfolio with a single access point.

Availability Tab
Shows events that can affect your cloud system availability

Notifications
Receive timely updates regarding their SAP Cloud Services, e.g. downtimes or customer communication

System Details Page
Check communicated availability for the previous and current months and manage compensation claims

Event Details Page
track the progress of events, including type, start/end time, duration, notifications, and affected systems



https://me.sap.com/

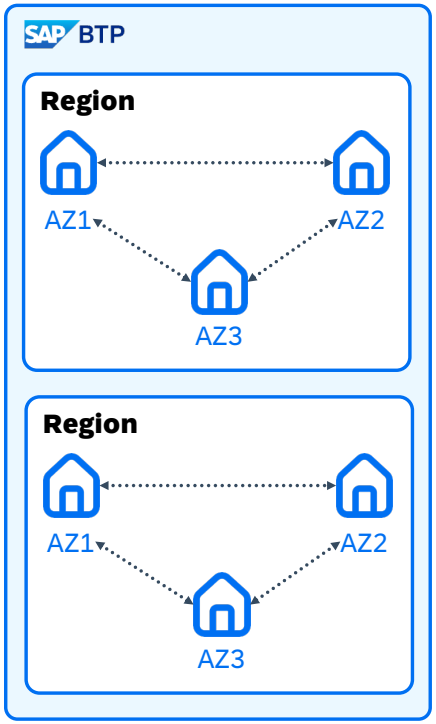
SAP BTP: High Availability Concepts

High Availability in a nutshell

- High availability (HA) is a method of designing a system to eliminate or minimize downtime, by ensuring redundancy and a failover solution.
- The focus of HA is to keep the system operational or always '*available*'.
- High Availability setup is for all layers from infrastructure, to services, to applications.
- The majority of platform services are setup in a resilient fashion across availability zones within one region
- Depending on the service requirement, the setup is active-active (application level) and active-passive (database level) with automatic failover across Multiple Availability Zones
- Explicit configuration is required for database and applications (managed by the runtimes) for High Availability (HA) configuration.

Availability Zones (AZs)

- Hyperscaler infrastructure is hosted in multiple locations world-wide called ***Regions***
- Regions consist of several isolated locations known as ***Availability Zones (AZs)***
- Availability zones are physical locations consisting of one or more data centres, with independent power, cooling and network connectivity.
- Every AZ in a region is connected to each other by a low-latency, high-bandwidth communication link and offer the ability to replicate resources between them.

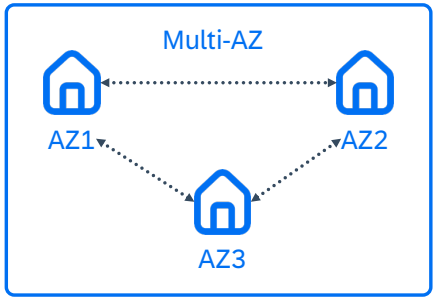


SAP BTP High Availability: Multi-AZ

Multi-AZ deployments provide resiliency against infrastructure failure of a single availability zone by distributing stateless services across AZs and replicating data of stateful services between AZs.

The multi-cloud environments of SAP BTP run transparently in a HA setup over multiple availability zones with an end state of 3 Availability Zones (AZs) in a hyperscaler's region.
Exceptions to the 3 AZ set up can be found in SOC report[1].

[1] Customers can request the BTP Audit Reports via SAP Trust Center https://www.sap.com/about/trust-center.html --> Compliance --> Service Organization Control Reports (SOC) --> SOC 2 Type 2 Reports resp. direct link

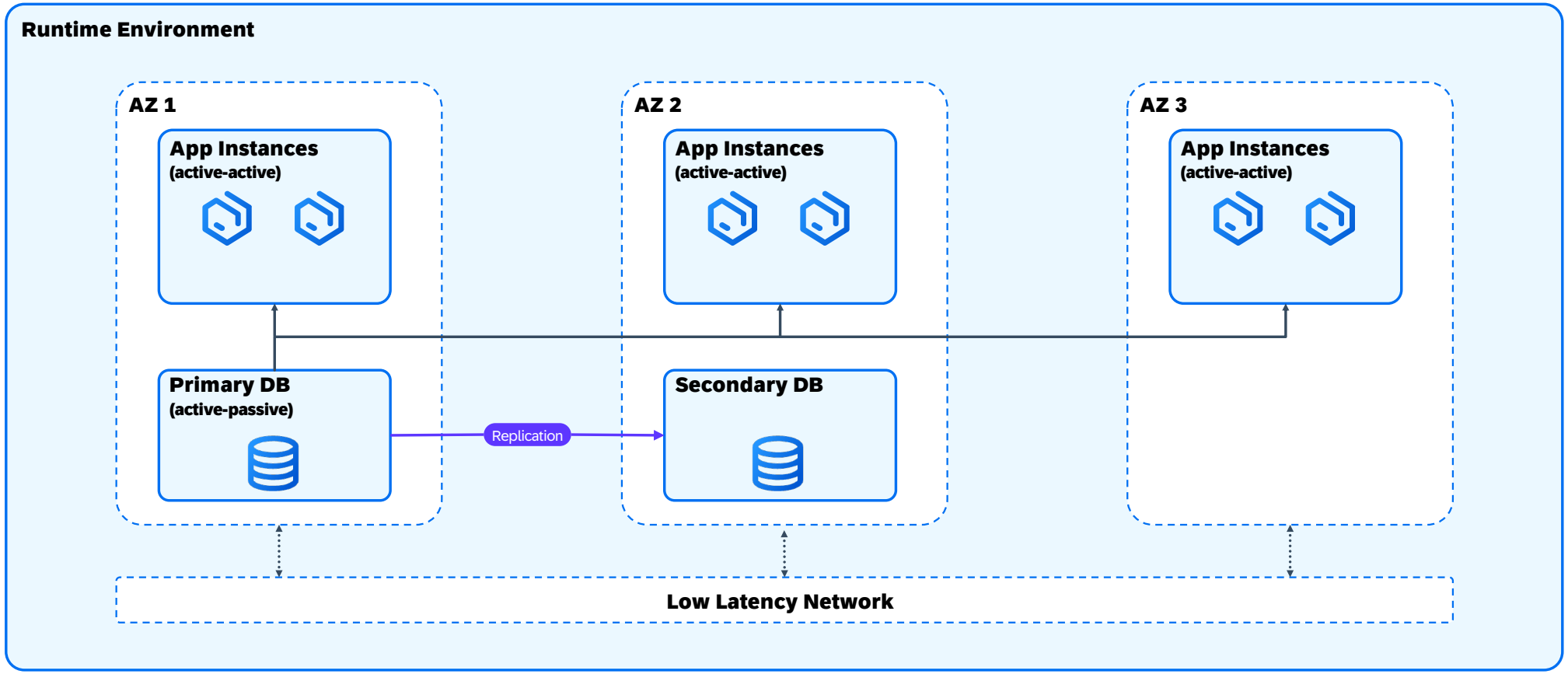


In a **Multi-AZ** configuration, your application instances are located in **different AZs**.

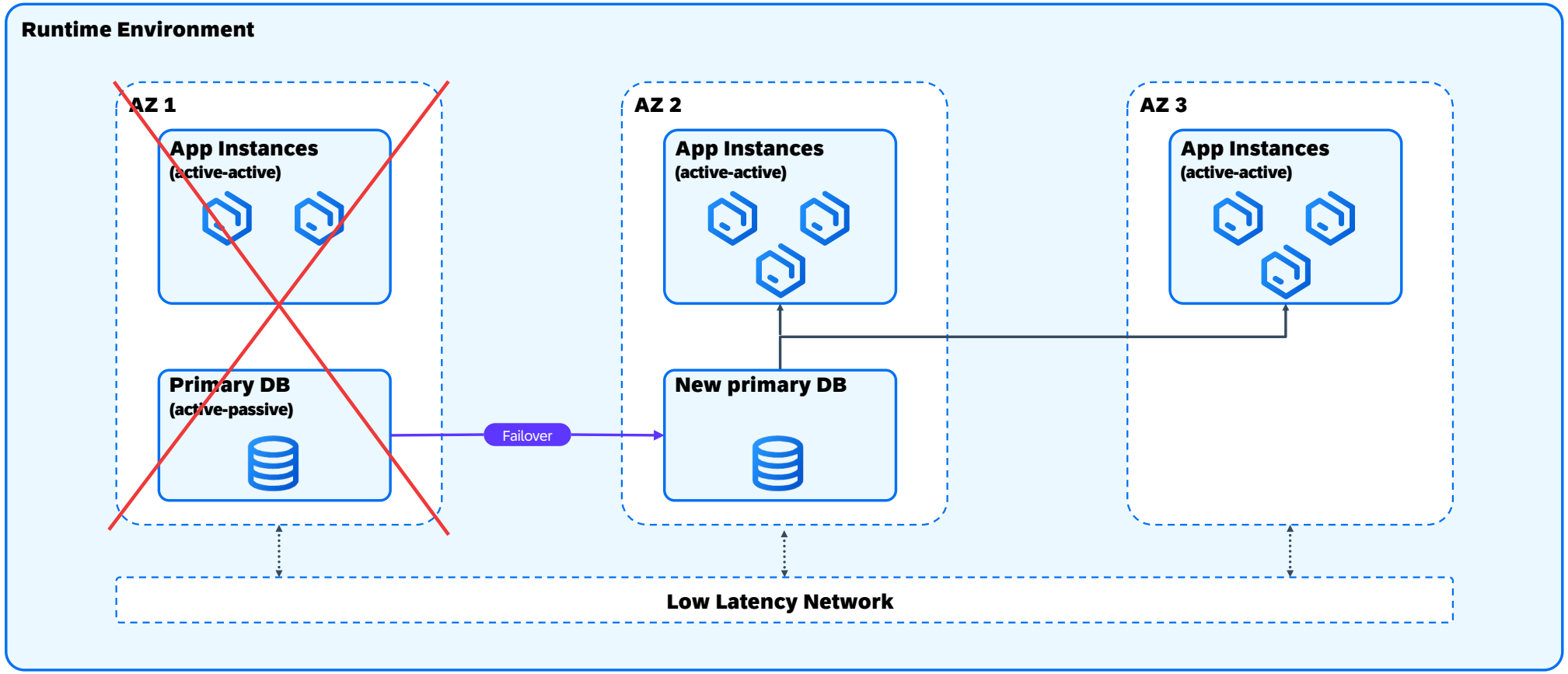
Failure of one AZ will not impact the application availability and protects customers from incidents in a single AZ.

- **Transparent HA setup** over multiple near-by AZs within one region
  - Applications run active-active across 3 AZs
  - Databases run active-passive across 2 AZs
- **Synchronous data replication**
- Automatic failover
- Traffic management, load balancing and failure detection
- "Chaos Days" testing methodology to regularly test internally for Multi-AZ failovers

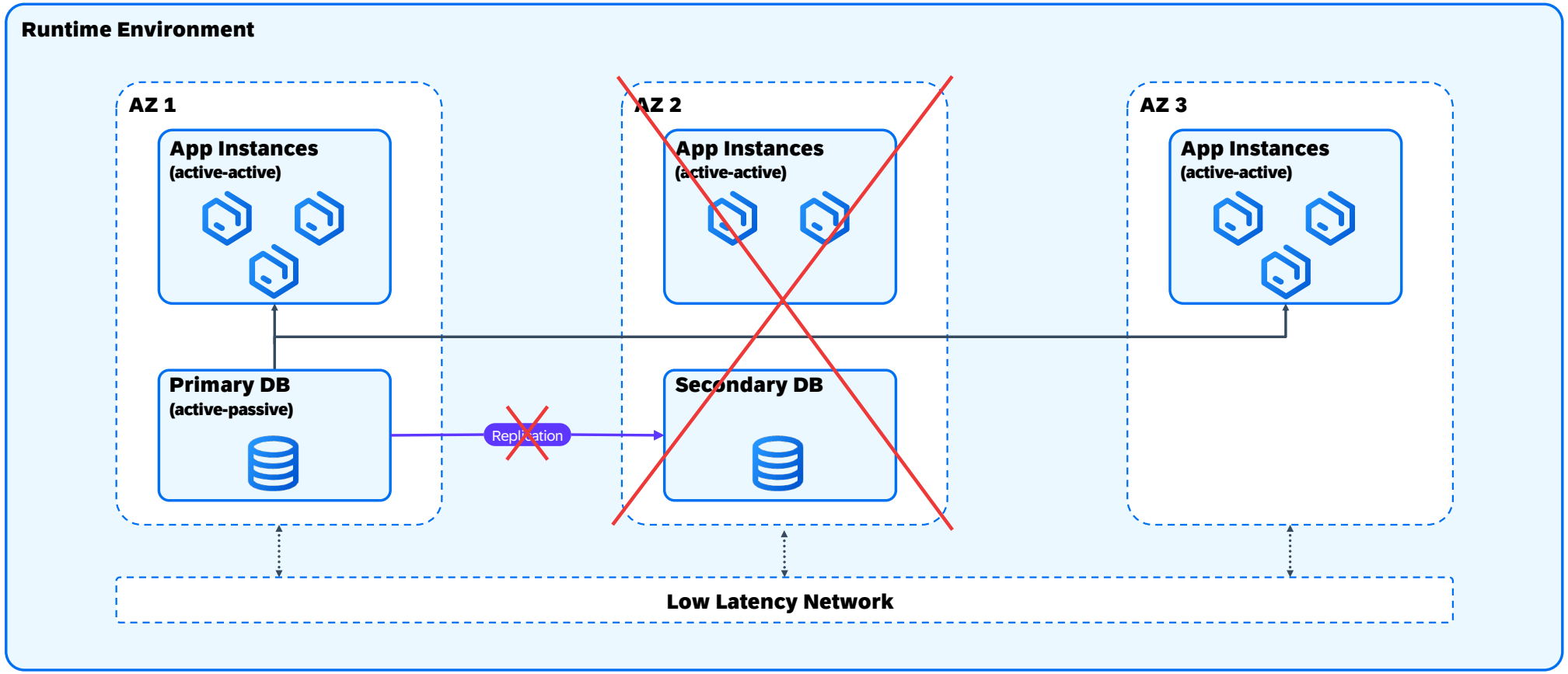
SAP BTP: Multi-AZ setup (3 AZs)



SAP BTP: Multi-AZ setup (3 AZs)



SAP BTP: Multi-AZ setup (3 AZs)



SAP BTP: Setup of Multi-AZ

- **Check critical services for Multi-AZ HA provided by SAP out of the box**
  - SAP will ensure that most of the service instances are distributed across the different AZs within the region.
  - Example : IAS, Integration Suite, BAS, Launchpad, Workzone
- **There may be services that require at least two service instances running to be setup for Multi-AZ HA. Running multiple instances might have cost implications.**
  - This is applicable to any service which provides a specific HA configuration like database/persistence services.
  - For databases, SAP will distribute the primary and secondary databases/replicas across 2 AZs. Example : HANA Cloud Services, Postgres Database.
  - For Runtime services. Example: CF Runtime, Kyma Runtime.
- **Consume out-of-box “Multi-AZ enabled” services provided by SAP BTP.**

SAP BTP: Disaster Recovery and Backup Concepts

SAP BTP: Definition of RTO & RPO

RTO

Recovery Time Objective: This is the acceptable amount of time to restore the function.

RPO

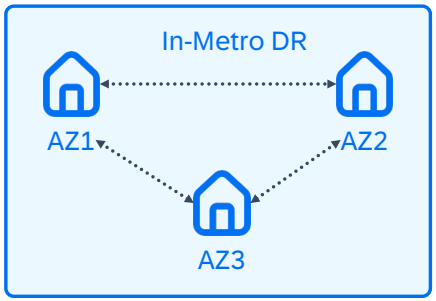
Recovery Point Objective: This is the acceptable amount of data that will not be recovered.

Standard Disaster Recovery in a nutshell:
Restoration from Backups

- BTP includes a Standard Disaster Recovery service out-of-box and without additional costs.
- The objective of the service is to protect production data from unwanted losses caused by a disaster. It comes into effect in case of a ‘declared disaster’ by SAP.
- The service is based on data restore from backups, which are stored in another availability zone within the region.
- The backups contain data (+ logs) stored in the Database or persistence services on SAP BTP.
- The offering does not guarantee any formal SLAs:
  - The Recovery Point Objective (RPO) has no strict SLA. The internal objective is 24 hours.
  - The Recovery Time Objective (RTO) is "best commercially reasonable effort" to restore the affected service as soon as possible at time of disaster.

In-Metro DR in a nutshell

In-Metro DR is a disaster recovery solution that utilizes synchronous data replication. It has been designed to protect our customers from the impact of local disasters that may affect a single availability zone (AZ). By deploying services across multiple AZs within a single region, In-Metro DR ensures that if a disaster occurs in one AZ, the issue is contained within that zone. Meanwhile, the other unaffected availability zones continue to function normally, efficiently handling incoming requests.



- In-Metro DR will be offered to customers for the services that have passed the audit. The offering provides the following contractually committed DR SLAs: RPO of 5 minutes and RTO of 2 hours.
- In-Metro DR solution leverages an active/active HA set up across 2 or more availability zones with a failover for all customers from primary to secondary site i.e. availability zones within a single region
- Fully functioning availability zones are paired with every primary availability zone, application stack is pre-built with same capacity and compute as the primary availability zone.
- A written, customer facing DR plan exist and is update at least once every 12 months
- A DR test is performed at least once every 12 months, and the DR documents are revised as needed based on the results
- The In-Metro DR solution passes annual audits and receives certifications (e.g., SOC2).
- Scope:
  - BTP services in scope are listed in SAP BTP Disaster Recovery Overview (SAP Trust Center)
  - Includes BTP regions on AWS and Azure

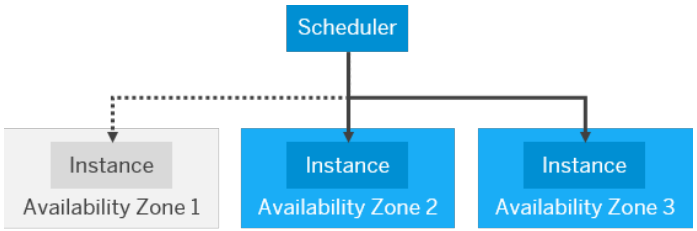
Customer Managed Services

In-Metro DR is available out-of-the-box for SAP-managed services, meaning that customers using SAP BTP under SAP's management can take advantage of the In-Metro DR setup without additional configuration or costs.

However, for customer-managed scenarios, such as side-by-side extensions or persistency services, the customer is responsible for configuring it accordingly for In-Metro DR obligations to apply.

Run at least 3 instances of your application to be setup for High Availability (HA).

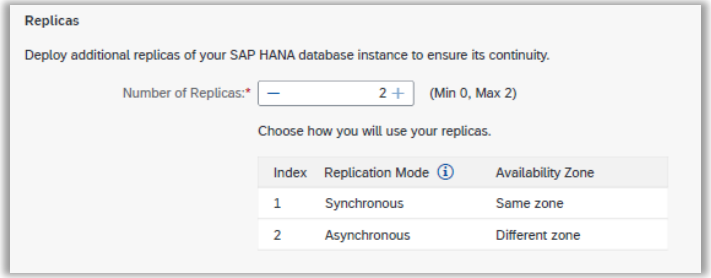
- *SAP will ensure that the app instances are automatically distributed across the different AZs in your region (if supported).*
- *To achieve horizontal scaling use:* ***cf scale APP -i INSTANCES (3 atleast)*** *(https://docs.cloudfoundry.org/devguide/deploy-apps/cf-scale.html).*



Distribution During an Availability Zone Failure

Use the explicit High Availability configuration.

- *This is applicable to any service which provides a specific HA configuration like database/persistence services.*
- *For databases, SAP will distribute the primary and secondary databases/replicas across 2 Azs (https://help.sap.com/docs/hana-cloud/sap-hana-cloud-administration-guide/sap-hana-database-availability-zone-and-replicas)*



SAP BTP HA/DR: Vision

SAP BTP HA/DR: Upcoming Innovations

To ensure a resilient platform, SAP is continuously investing in extending the concepts of HA/DR and business resiliency for SAP BTP along the next years.

To further increase DR, SAP is investing in:

- SAP HANA Cloud multi-region DR (Q3 2025) as a fundament for future multi-region DR scenarios

More to come.

Thank you.

Niklas Siemer (he / him)
Senior Product Manager, SAP BTP
n.siemer@sap.com