

DERIVATIVES SERVICE BUREAU

PUBLIC UAT-DR TEST: PREPARATION
INTER-REGION

September 2019

FINAL VI.0.01

DSB Existing Availability & Continuity

Background

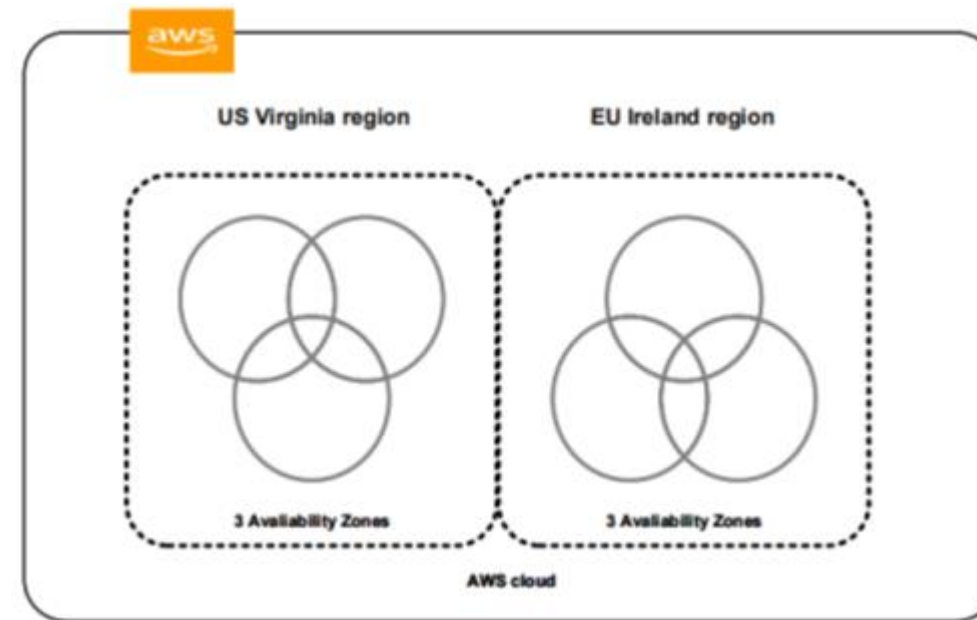
The DSB's ISIN engine has been configured to run within a single cloud through our current cloud provider Amazon Web Service (AWS).

The service is currently deployed in two AWS Regions, with each Region implemented across three AWS Availability Zones. Each availability zone can be considered as a data center in it's own right and each conforms to the following:

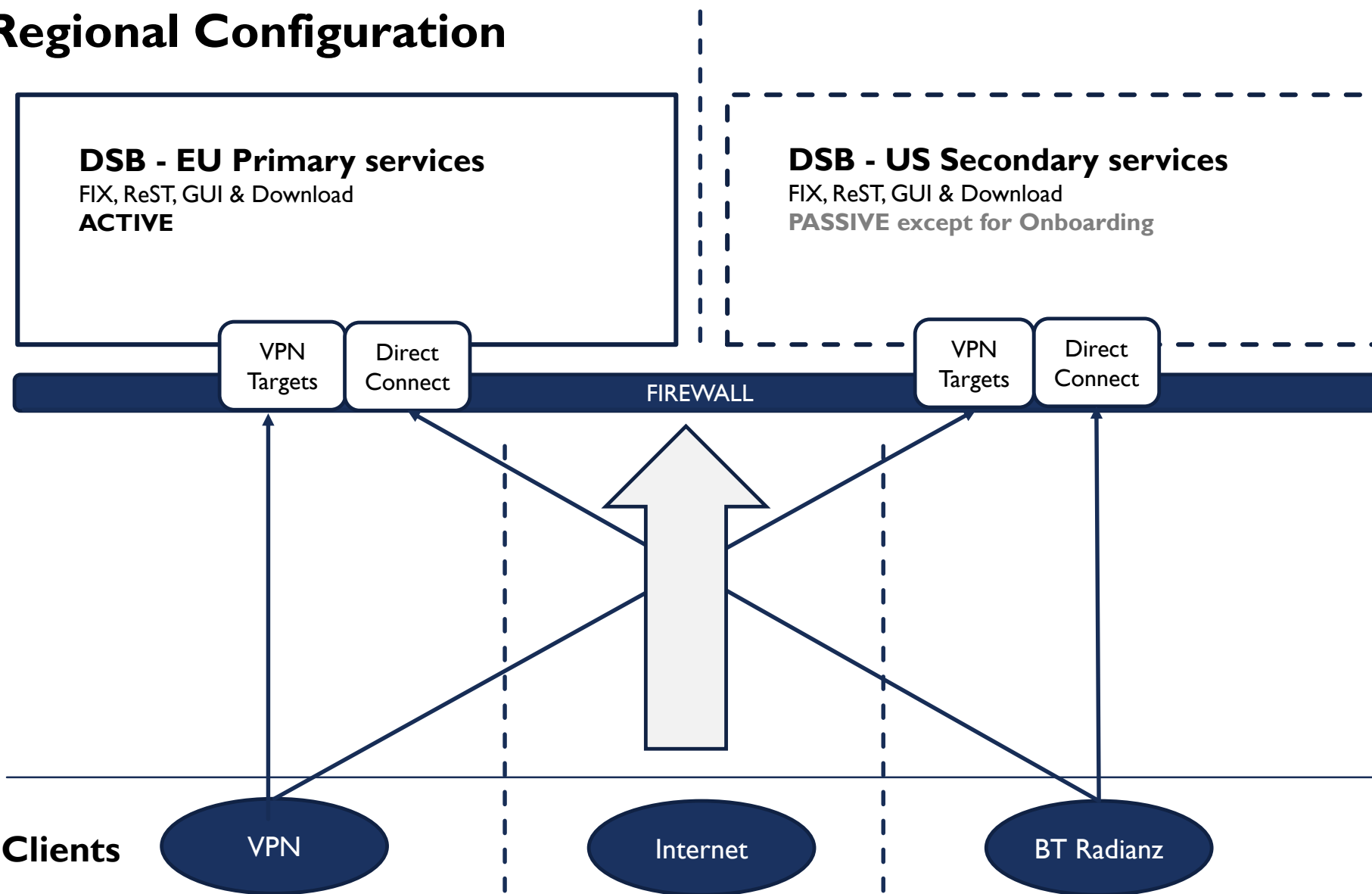
- *Runs on its own physically distinct, independent infrastructure*
- *Engineered to be highly reliable*
- *Common points of failures like generators and cooling equipment are not shared across Availability Zones*
- *Physically separate, such that even extremely uncommon disasters such as fires, tornados or flooding would only affect a single Availability Zone.*

The resiliency of the primary Region is constantly being tested, the DSB manages routine issues such as server failures within a single Availability Zone without any impact to the service.

Following on from the industry consultation in 2018, our attention is now focusing on business continuity planning in the event of losing the entire AWS primary Region and the testing of the failover process to the secondary region and then back to the primary Region when it becomes available.



DSB Regional Configuration



DSB Availability & Continuity

Inter-Region Failover Testing Approach

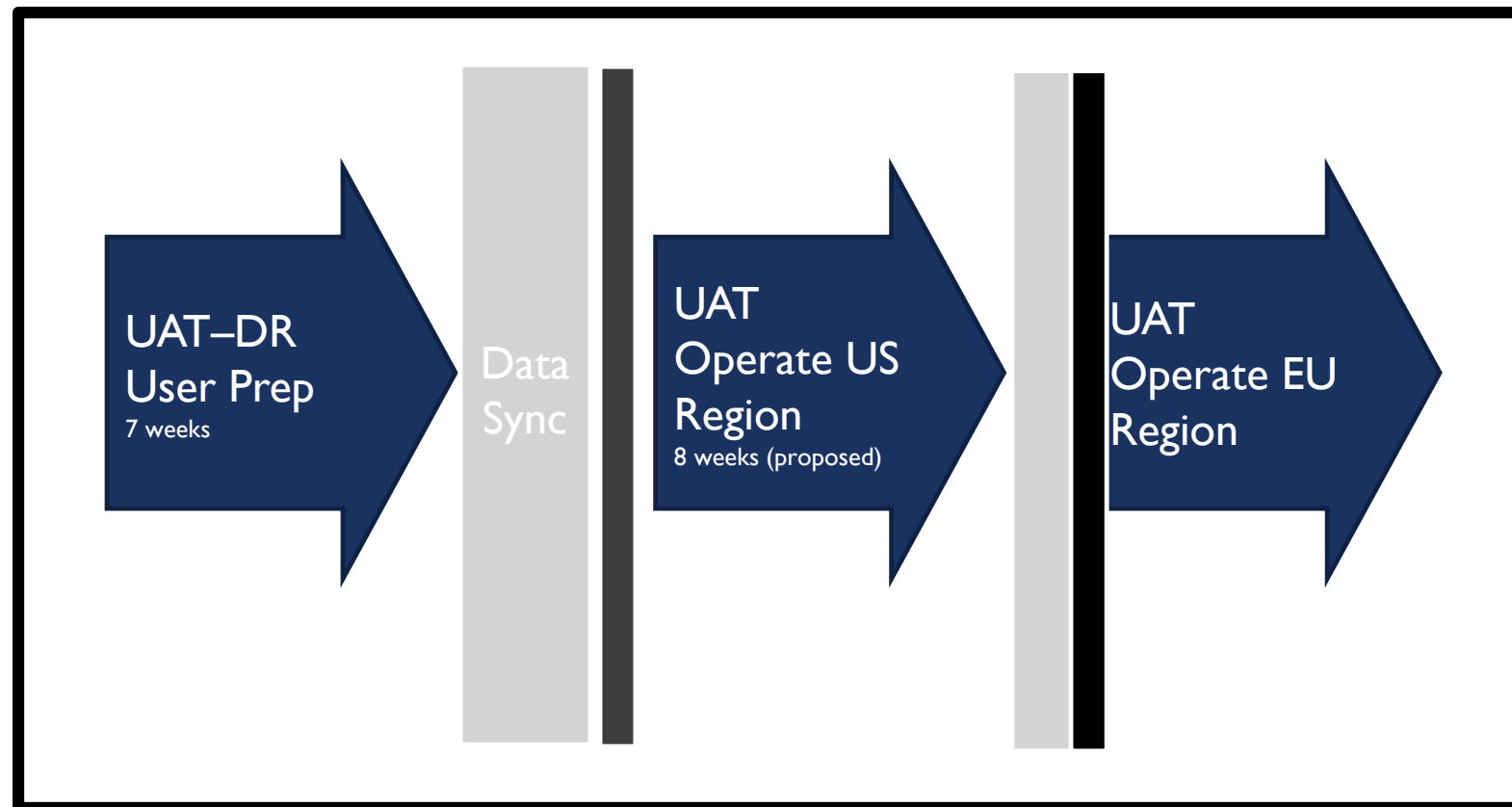
The DSB has ratified with the TAC the following sequence, which undertakes tests in the DSB’s UAT environment before repeating the tests in production.

Phase	Environment	Direction	Notes
1	UAT	To Secondary	Connectivity: client preparation in secondary region.
2	UAT	To Secondary	Application: client preparation in secondary region.
3	UAT	To Secondary	Failover UAT for a set period (proposed to be 8 weeks).
4	UAT	To Primary	Failback UAT to primary region.
5 onwards	Production	To Secondary	Approach & Timeframes to be confirmed with TAC.

Note: The DSB has committed that the Production activities should only occur after TAC review of the UAT activities.

DSB Failover Sequencing

- DSB utilises Public DNS failover to expose new endpoints to clients transparently. DSB DNS entries are the authoritative “golden-source” of active endpoints for clients.
- User Preparation activities in UAT-DR will proceed to such time as readiness is signed off by the TAC.
- DSB reconfigures UAT-DR prior to any scheduled test and any Phase 1 & 2 data is deleted. UAT-DR is fully synchronised with EU UAT (UAT-DR unavailable whilst the reconfiguration work is completed).
- Failover invoked with UAT into US Region for (proposed) 8 week window.
- Preparation for failback includes a second window of validation activities for DSB.
- Failback to original EU Region.



DSB validation activities
 Failover

UAT-DR User Workflow: Preparation phases I & 2

Preparation for UAT failover involves validation in two areas:

- Network connectivity testing
 - DNS & URL Endpoints
 - Firewalling
 - VPN/BT Radianz configuration

- Application
 - Credentials activated
 - Relevant access methods
 - FIX
 - ReST
 - File Download
 - GUI

- User specific technical information supplied in UAT-DR Registration forms.

