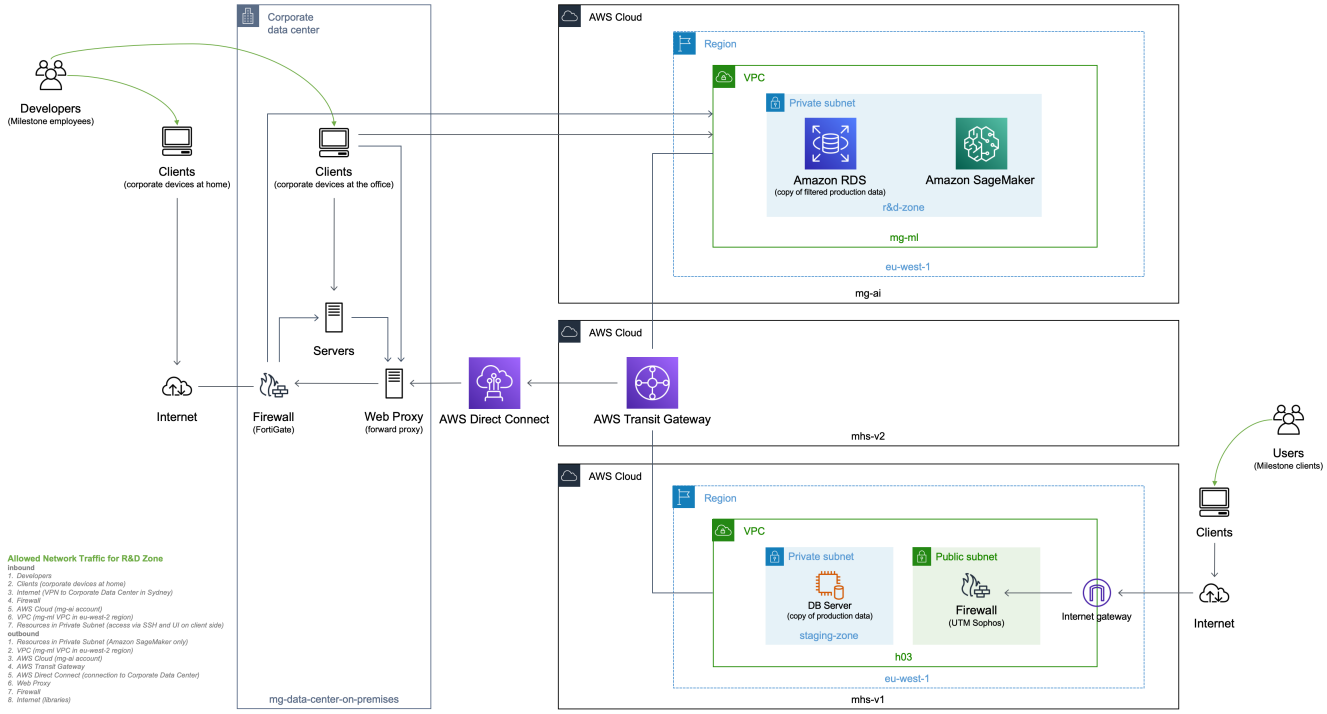
Computational Environment

> *... developing machine learning in software development environments*
>
> - building infrastructure and pipelines for Data-Driven Science
> - this requires architecture that allows to create experimental models (prototypes) and operationalise such innovation into products

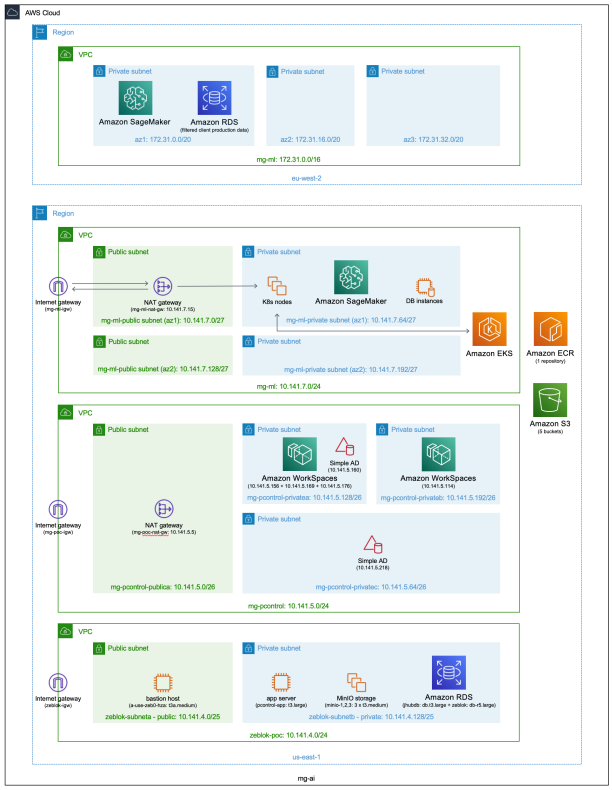
R&D Zone

- AWS account ID: mg-ai

access



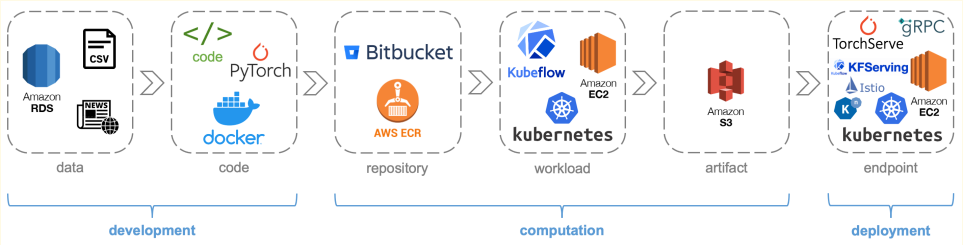
resources

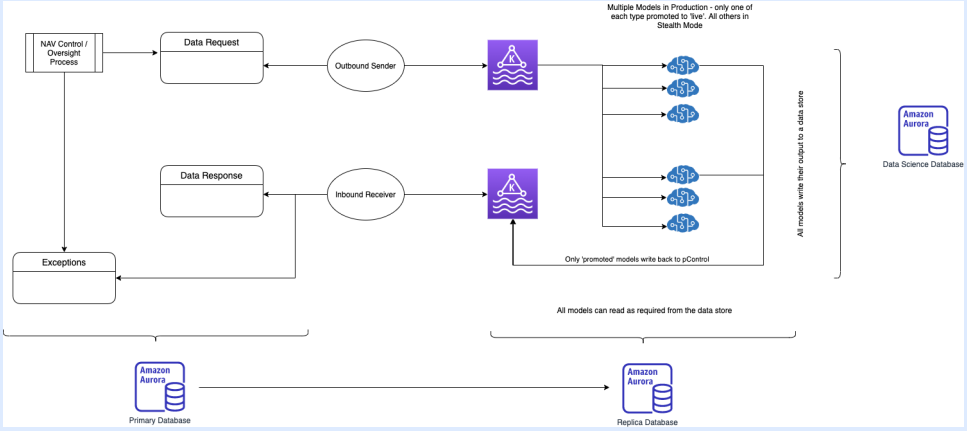


MLOps

- data pipelines via network traffic between private subnets (staging and R&D zones) and corporate devices for data analysis, model design, and model deployment

pipeline	motivation	approach
data analysis	*analysing the quality of production data for design of experimental ML models*	1. exporting the copy of production data from clients to their Staging Zone 2. filtering the data in the Staging Zone to select the data for analysis • data for the client approved list of funds without any any modifications 3. copying the filtered data from the Staging Zone to R&D Zone 4. analysing the data quality for ML experiments in the R&D Zone

model design	*designing experimental ML models with production data*	• designing ML models in the R&D zone
		• machine learning workflow
		  • development via SDKs (Software Development Kits) on corporate devices
		  • computation & deployment via programatic, cloud-native approaches
		  • CaC (Configuration as Code) to manage and configure pipelines
		  • IaC (Infrastructure as Code) to manage and provision infrastructure
		 

model deployment	*deploying all ML models in a single production environment per region and continuously testing the perfromance of multiple ML models*	• promoting ML models into production via our ML Data Store • two modes of deployment into production environments 1. live mode - ML models are consuming production data from clients and sending the results back to their pControl applications and our ML Data Store 2. stealth mode - ML models are consuming production data from clients and sending the results to our ML Data Store only (no client exposure)  • this should significantly improve our deployment capabilities, e.g. we will not need to go through multiple sign offs and other lengthy procedures between environments (UAT, prod, etc.) to just test a single model