GEM SYSTEM

Securing cloud applications with DevOps

ŠKODA

By objectively evaluating the client's explicit and implicit requirements, we created a tailored solution design. As a result, we were able to build an application that is secure, dynamically configurable, fully automatically deployable (CICD), highly available and automatically scalable.

1 IT SECURITY

- Security is of the highest priority in architectural design.
- Depending on the classification of data, the nature of user access or application requirements, we worked closely with Škoda Auto's security department and followed Cloud Best Practices depending on the proposed cloud provider.
- According to the above, we deal with granting access to the application, e.g. using B2X Integration, cloud network security using Virtual Private Cloud (Private and Public Subnets), VPN, Firewalls and protection against DDOS and other hacker attacks.
- The overall cloud solution is constantly logged and monitored against unauthorized access and activity.

2 BACKUP AND RESTORATION OF SYSTEMS

- Automatic data backup and configuration of individual components is highly important not only in terms of data protection, but also in terms of speed of recovery in case of failure.
- Within database services, we always automatically set up „Point In Time Recovery (POITR)", i.e. the ability to define a recovery point exactly in time and therefore implement minimal or no data loss. Backup is automatic and continuous.

3 DISASTER RECOVERY

- Among cloud solution providers, it is always recommended to have an overall backup plan in case of a region-wide outage. Our designs are prepared for 1 Data Center outage and are spread across at least 2 Availability Zones.
- However, an outage of the entire region can be handled using a Disaster Recovery plan.
- Our cloud solution designs always include automated process builds that are able to minimize the time required to build the entire solution in a new region.
- Using Single-Click DR - we are able to automate the process to such an extent that setting up the configuration for a new region is sufficient and the entire solution is implemented in one click.

INTEGRATION AND DEVELOPMENT | BUSINESS INTELLIGENCE | SECURITY | ADMINISTRATION AND SUPPORT

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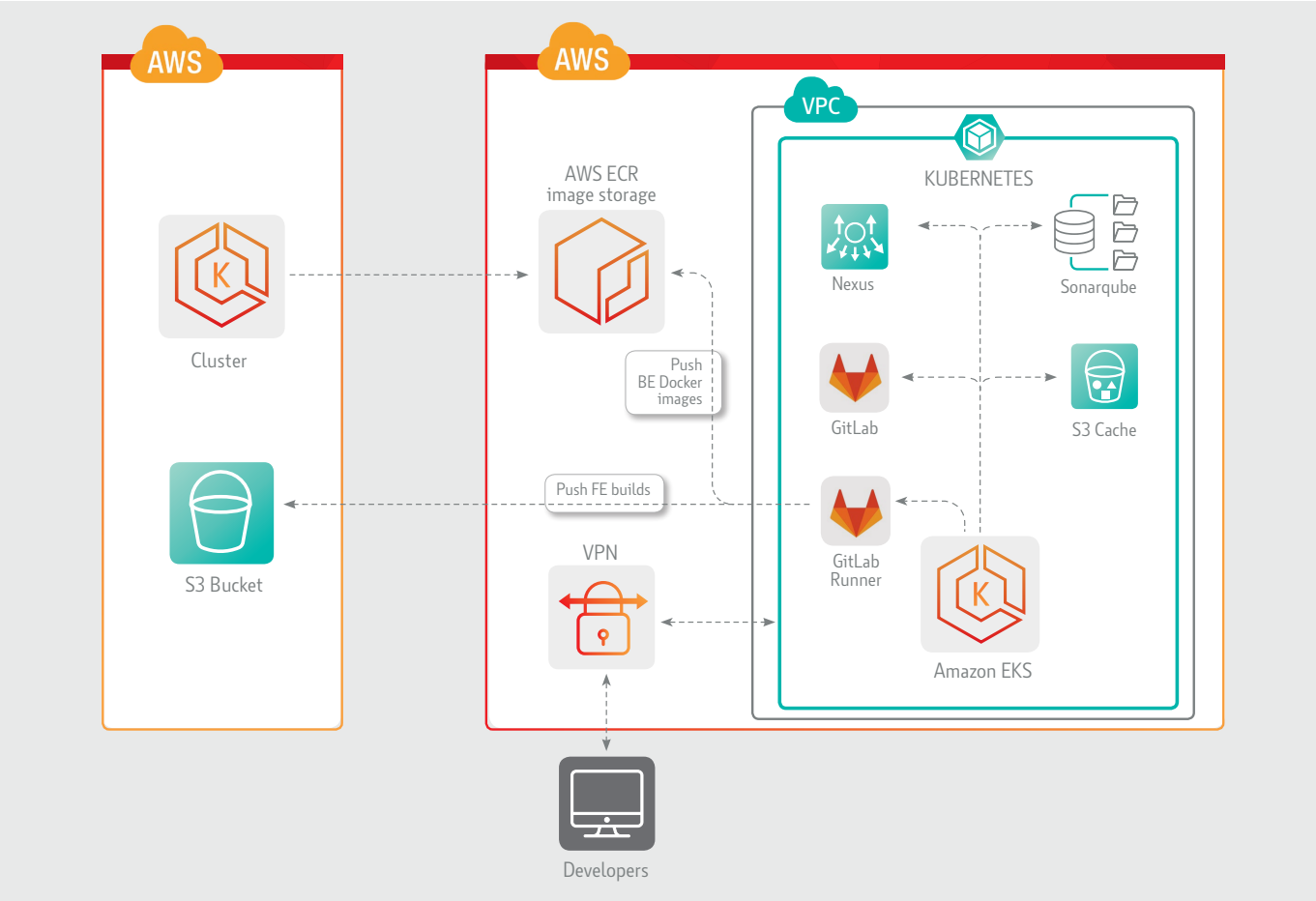
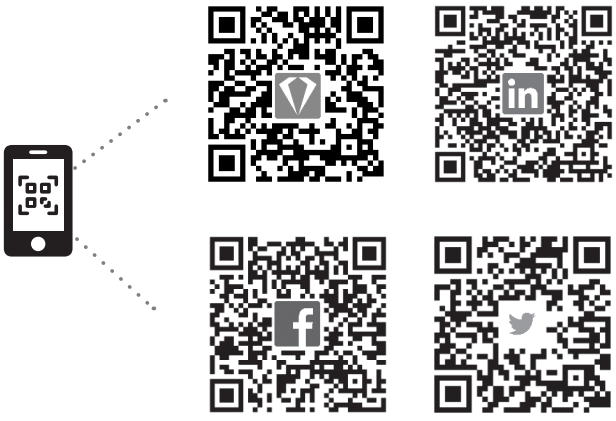


4 MONITORING/LOGGING/ALERTING

- The architecture design assumes monitoring and logging of each application and infrastructure component.
- We integrate Monitoring and Logging according to client requirements, for Škoda Auto with Splunk application. In addition, we build our own monitoring (Prometheus, Grafana) and logging (Elastic Search, Kibana) center as standard. On it we set up Alerting, which can be connected to the client's Operations Centre or GEM System's 24×7 service for incident resolution and system monitoring.



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