

## ***Mastering major CSDE upgrade***

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### Objective(s):

The objective of the project was to upgrade major applications on CSDE.

### Achievements and status:

We modified the architecture of the CSDE and introduced an innovative DevOps approach giving us the opportunity for further improvement and addition of new functionality without downtime and without affecting the user activities:

- all applications are launched in Docker containers
- an Ansible-based - continuous management (CM) system was deployed and is used to deal with infrastructure, hosts and applications
- the monitoring system was completely rebuilt and new subsystems were integrated into it: Zabbix and Graylog - for centralized storing and analyzing of logs
- as the reverse proxy we've used nginx for SSL termination and migrated to the most modern security technologies
- dozens of Ansible playbooks and Bash/Python scripts with a total volume exceeding 5000 lines of code have been written and debugged