

Why software architecture is important.

My name is Khassangali Gapparov, I am from Kazakhstan. I am happy to start the most exciting subject during my Compro program. Before starting the conversation I would like to share my experience of my background, after I will try conclude my thoughts why architecture is important.

I am the person who likes competition with good meaning, I've started my field of experience in a telecommunication networking. I've started managing networks of building within little campus or university, ended up managing and controlling the networkings of Service providers within the countrywide. Certified engineer from Cisco Systems Inc, reached three CCIE type of certifications like:

- CCIE (Cisco Certified Internetwork Expert) Routing and Switching
- CCIE Service Provider
- CCIE Security

In 2018 I've understood that I can handle configuration and managing of any type of complexity of networking technologies, but I've limited in amount of devices which I could control or configure myself. Even following some tools and utilities from other companies I felt myself limited by lack of knowledge in writing my own scenarios. To make some automations I've started learn the automation with Ansible application, but even that required me write some extra codes, that time I've started learning coding using the Python language. After that my journey in developing started, and fell in love in developing because of the way of flexibility and limits only your imagination.

Long story short, in my 12 years of experience I've had faced in challenges where I had to learn almost all level's of OSI model, starting from physical layer ending up Application layer.

From my life experience I've challenged myself participate in one of the most important project - Building the Central Call Center.

I've gathered the team from eight people, 5 developers, myself and one more architect and SIP VoIP engineer. We called ourselves as architect within that project, because all decisions and tasks was made by us. Knowing our weaknesses and strengths of whole team the decisions was chosen one open source solution over another. Due to lack of a time (during the pandemic situation) we had to sacrifice long term designs and automations over short fast deployment actions, because of that we have deployed our solution within three weeks. The solution increased amount of operators from 200 up to 2000 operators.

As we all know, the most constant process is CHANGE. At first, we had hard coded the reports for the customers and deployed them with all fancy design and visualization tables in one of our report pages. When we had asked add more new report types, it was too difficult adding extra changes to application, editing the database and queries, changing the schemas which results as consequence a huge amount of changes in all level of layers. It was painful for our developers and administrators drowning in coding and configurations.

Then we decide add ELK to our application, logging all events and call records in elastic database. Using their visualization tools and dashboards we could build any type of reports in real time.

This is the only one example of why architect is important, by implementing separation of concern principle team could spend more time on their code optimizations. This like challenges happens in all layer of domain.

Eventually I could continue this like examples in security, logging, load balancing and etc challenges, but I would like to say that architect is important because the only one who is the bridge between company's strategies and principals and the list of chosen technology stacks and solution implementation guidance.