Reasons For System Failures

In this lesson, we will discuss the common reasons for system failure.

We'll cover the following

Before delving into the HA system design, fault-tolerance and redundancy. I'll first talk about the common reasons why systems fail.

Software Crashes

I am sure you are pretty familiar with software crashes. Applications crash all the time, be it on a mobile phone or a desktop.

Corrupt software files. Remember the BSOD blue screen of death in windows? OS crashing, memory-hogging unresponsive processes. Likewise, software running on cloud nodes crash unpredictably, along with it they take down the entire node.

Hardware Failures

Another reason for system failure is hardware crashes. Overloaded CPU, RAM, hard disk failures, nodes going down. Network outages.

Human Errors

This is the biggest reason for system failures. Flawed configurations & stuff.

Google made a tiny network configuration error & it took down almost half of the internet in Japan. This is an interesting read.

Planned Downtime

Besides the unplanned crashes, there are planned down times which involve routine maintenance operations, patching of software, hardware upgrades etc.

These are the primary reasons for system failures, now let’s talk about how HA systems are designed to overcome these scenarios of system downtime.