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, we will first discuss 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.

We also deal with corrupt software files. Remember the BSOD blue screen of death in Windows? OS crashing, memory-hogging unresponsive processes. Likewise, software running on cloud nodes crashes unpredictably and takes down the entire node.

Hardware failures#

Another reason for system failure is hardware crashes, including

overloaded CPU and RAM, hard disk failures, nodes going down, and network outages.

Human errors#

This is the biggest reason for system failures. It includes flawed configurations and what not.

Google made a tiny network configuration error, and it took down almost half of the internet in Japan. This is an interesting read (https://thenextweb.com/google/2017/08/28/google-japan-internet-blackout/).

Planned downtime#

Besides the unplanned crashes, there are planned down times that involve routine maintenance operations, patching 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 system downtime scenarios.

← Back

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Next →

Achieving High Availability - Fault Tol...

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