

# Day 54: Understanding Infrastructure as Code and Configuration Management

What's the difference bhaiyya?

When it comes to the cloud, Infrastructure as Code (IaC) and Configuration Management (CM) are inseparable. With IaC, a descriptive model is used for infrastructure management. To name a few examples of infrastructure: networks, virtual computers, and load balancers. Using an IaC model always results in the same setting.

Throughout the lifecycle of a product, Configuration Management (CM) ensures that the performance, functional and physical inputs, requirements, design, and operations of that product remain consistent.

## Task-01

- Read more about IaC and Config. Management Tools

### IAC:

Infrastructure as Code (IaC) is the managing and provisioning of infrastructure through code instead of through manual processes.

With IaC, configuration files are created that contain your infrastructure specifications, which makes it easier to edit and distribute configurations. It also ensures that you provision the same environment every time.

Deploying your infrastructure as code also means that you can divide your [infrastructure](#) into modular components that can then be combined in different ways through automation.

There are 2 ways to approach IaC: declarative or imperative.

A declarative approach defines the desired state of the system, including what resources you need and any properties they should have, and an IaC tool will configure it for you.

A declarative approach also keeps a list of the current state of your system objects, which makes taking down the infrastructure simpler to manage.

An imperative approach instead defines the specific commands needed to achieve the desired configuration, and those commands then need to be executed in the correct order.

Benefits:

- Cost reduction
- Increase in speed of deployments

## Configuration management:

Configuration management is a process for maintaining computer systems, servers, and software in a desired, consistent state. It's a way to make sure that a system performs as it's expected to as changes are made over time.

The role of configuration management is to maintain systems in a desired state. Traditionally, this was handled manually or with custom scripting by system administrators. [Automation](#) is the use of software to perform tasks, such as configuration management, in order to reduce cost, complexity, and errors.

Through automation, a configuration management tool can [provision a new server](#) within minutes with less room for error.

- Give differences on both with suitable examples
  - Ansible, Chef and puppet are configuration management tools which means they are primarily designed to install and manage software on existing servers.
  - Terraform and cloudFormation are IAC tools which are designed to provision servers and infrastructure themselves.
- What are the most common IaC and Config management Tools?

### IAC Tools:

1. Terraform
2. AWS CloudFormation
3. ARM Template
4. GCP- Deployment Manager

### Configuration Management:

1. Ansible
2. Chef
3. Puppet

Write a blog on this topic in the most creative way and post it on LinkedIn :)

happy learning...