**❓ 1. What is a DaemonSet?**

**🧠 Simple Definition:**

A **DaemonSet** is like a special helper in Kubernetes that makes sure **a specific type of pod runs on every node** in your cluster.

**🛠️ Use Case (Why do we need it?):**

Imagine you have a group of computers (called **nodes**) and you want to install a tool on **each** one of them — like:

* A **monitoring agent** to collect CPU/RAM info from each node.
* A **log collector** to send logs to a central system.
* A **network tool** to manage traffic on every node.

Instead of manually placing it on each computer, you just say:

“Hey Kubernetes, please make sure this tool runs on **all** nodes, always!”

And Kubernetes replies:

“Got it! I’ll use a **DaemonSet** to do that.”

**👟 How It Behaves:**

Let’s say you have 3 nodes in your Kubernetes cluster:

* Node1
* Node2
* Node3

You create a **DaemonSet** for a logging agent.  
➡️ Kubernetes will automatically start **1 pod per node** with that logging agent.  
If you add a new node (Node4), Kubernetes will **automatically add the pod to that node too.**

If a node crashes or goes away? Kubernetes removes the pod from that node.  
If a new node appears? Kubernetes adds the pod to it.

💡 You don’t manage the pods yourself — Kubernetes does it for you.

**🔁 Recap Summary (like a kid's explanation):**

* A **DaemonSet** is like a robot helper that puts a tool (pod) on **every machine** (node) in your system.
* It makes sure **every node always has that tool** running.
* You use it when something needs to run **everywhere**, like:
  + Collecting logs
  + Watching system health
  + Managing networks