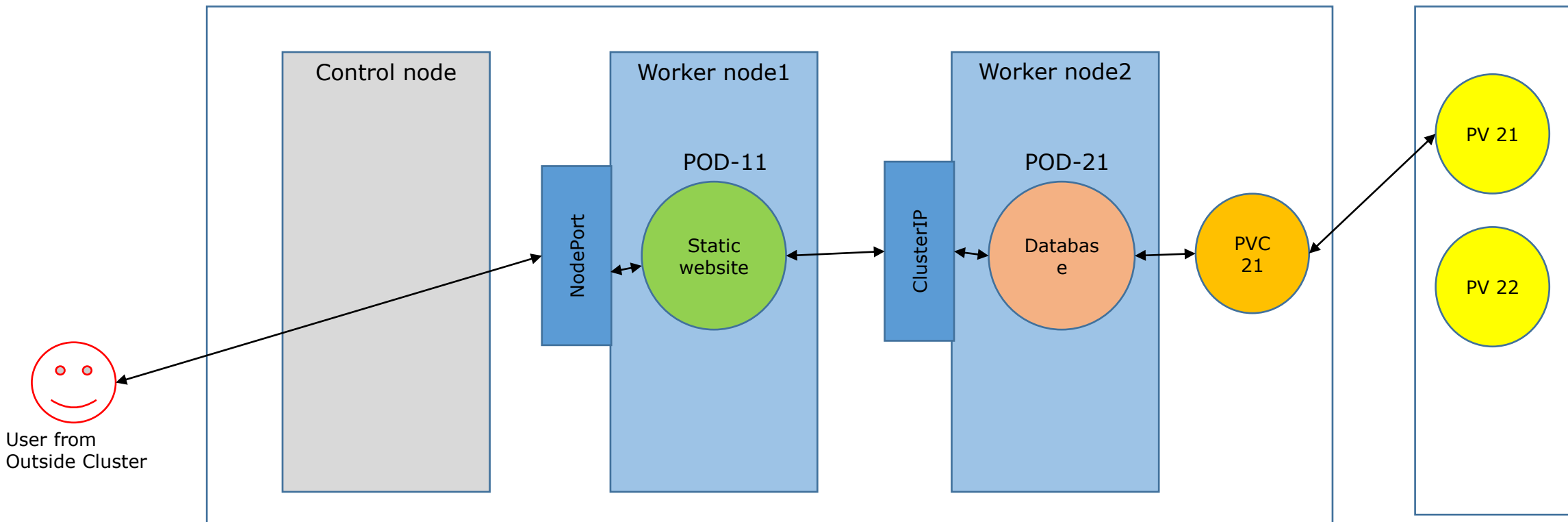What is Stateful and stateless Application?

Stateful Application: The Application which retain information about their previous interactions or state, allowing them to remember past data or user inputs is called as stateful application. Examples – Database (Mongodb, Oracledb, Cassendra, Jenkins, Web Browsers: Web browsers like Chrome, Firefox, Safari, etc., retain information about the browsing history, cookies)

Stateless Application: The Application which does not retain information about previous interactions or state, meaning they treat each request or interaction as independent and do not rely on past data are called as Stateless application. Examples – Static websites, Content Delivery Networks (CDNs), Firewall, Load balancer

K8s Cluster Diagram for Stateless + Stateful Application

ON PREMISES K8 CLUSTER WITH STATIC PV AND PVC

STORAGE ARRAY/NFS SERVER

Control Node

Worker Node 1

Work Node 2

NodePort

Spring boot POD 1

Mongo DB POD 1

NodePort

Spring boot POD 2

Mongo DB POD 2

Cluster IP

PVC for mongo DB POD 1

FLOW SEQUENCE

PV -1

PV -2

PV -3

1. Traffic between User – Nodeport – Spring App

2. Traffic between Spring App – ClusterIP

3. Traffic between ClusterIP - MongoDB

4. Traffic between MongoDB - PVC