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# Introduction to Networking in Kubernetes

Mastering Networking Fundamentals in Kubernetes

## DEFINITION

> Kubernetes networking connects containers, enabling communication and resource sharing across clusters. Understanding its components is essential for effective deployment and management.

## KEY CONCEPTS

### Pod Networking

Each pod in Kubernetes gets its own IP address, allowing seamless communication between pods.

### Services

Services provide stable IP addresses and DNS names to access pods, facilitating load balancing.

### Network Policies

Network policies control traffic flow between pods, enhancing security by defining allowed connections.

### Ingress Controllers

Ingress controllers manage external access to services, handling HTTP/S routing and load balancing.

### Cluster Networking

Cluster networking ensures all nodes can communicate, enabling efficient resource sharing and management.

## EXAMPLES

→ Creating a service to expose a web application running in a pod.

→ Implementing network policies to restrict traffic between development and production pods.

→ Using an ingress controller to route traffic based on URL paths.

## MEMORY TIPS

★ Remember 'P' for Pod and 'S' for Service to link pods with their access points.

★ Think of 'Ingress' as 'In' to help recall it manages incoming traffic.

★ Use the acronym 'CSPN' for Cluster, Service, Pod, Network to remember key networking components.

## COMMON MISTAKES

✗ Forgetting to define network policies, leading to unintended traffic access.

✗ Misconfiguring services, resulting in inaccessible applications.

✗ Neglecting to consider ingress rules, causing routing issues.

## QUICK RECAP

Kubernetes networking is crucial for pod communication and service accessibility. Key components include pods, services, and network policies. Mastering these concepts ensures efficient cluster management.