

# Proxmox Software Defined Networking (SDN)

The Proxmox Software Defined Networking (SDN) configuration provides a comprehensive overview of network management within the Proxmox cluster. This configuration is accessible through the web-based user interface (UI) at the datacenter level, offering several sections for different aspects of SDN management:

## SDN Overview

- **SDN:** This section provides an overview of the current active SDN state across the entire cluster. It allows users to view the status of SDN configurations and apply any pending changes to the network setup cluster-wide.

## Network Zones Management

- **Zones:** In this section, users can create and manage virtually separated network zones. Zones enable the segmentation of the network into distinct areas, each with its own set of rules and configurations. This segmentation helps in organizing and securing network traffic based on specific requirements or criteria.

## Virtual Network Bridges and Subnets Management

- **VNets:** Within this section, users can create virtual network bridges and manage subnets. Virtual Network Bridges facilitate the connection of virtual machines (VMs) to the network, while subnets allow for the organization and management of IP address ranges within those bridges.

## Additional Services Configuration

- **Options:** This category allows users to add and manage additional services to enhance their SDN setup.

- **Controllers:** For controlling layer 3 routing in complex setups, which involves directing traffic between different networks based on IP addresses.
- **DHCP:** Users can define a DHCP server for a zone, which automatically allocates IP addresses for guests (VMs) from a predefined pool and leases them to the guests via DHCP. This simplifies the management of IP addresses within the network.
- **IPAM:** Enables external IP address management for guests, providing a centralized system for tracking and assigning IP addresses to VMs.
- **DNS:** Users can define a DNS server integration for registering virtual guests' hostname and IP addresses, ensuring that DNS resolution works seamlessly within the SDN environment.

## Summary

The Proxmox SDN configuration offers a comprehensive suite of tools and features for managing network resources within the cluster. From creating and managing network zones to configuring DHCP, IPAM, and DNS services, users can efficiently set up and maintain their network infrastructure to meet their specific requirements. The web-based UI provides an intuitive interface for accessing and configuring these settings, making network management tasks more accessible and streamlined.

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