

# □ Centralized Server Management

To streamline the administration of the entire infrastructure, a centralized management node was deployed. This allows for simultaneous updates, command execution, and service monitoring across all virtual machines from a single interface.

## 1. Master-Slave Architecture

The management system follows a Master-Slave topology where a dedicated VM acts as the orchestrator for other infrastructure components.

Role	Hostname	IP Address	Operating System
<b>Master Node</b>	webmin-master	10.252.252.27	Debian 13 (Trixie)
<b>Slave Node 1</b>	wiki-server	10.252.252.31	Debian 13
<b>Slave Node 2</b>	dns-server	10.252.252.25	FreeBSD 14
<b>Slave Node 3</b>	vpn-portal	10.252.252.109	Debian 12

## 2. Master Node Installation

The Master Node was installed on a clean Debian VM. The official Webmin repository was used to ensure the latest security updates.

```
# Download and run the setup script
curl -o setup-repos.sh
https://raw.githubusercontent.com/webmin/webmin/master/setup-repos.sh
sh setup-repos.sh

# Install Webmin with recommended dependencies
apt install webmin --install-recommends -y
```

## 3. Network & DNS Integration

To enhance usability, a local domain was assigned to the management interface.

- **DNS Record:** A new A-Record was added to the FreeBSD BIND9 server.
  - Record: `webmin.berkay.local` → `10.252.252.27`
- **Reverse Proxy (Optional):** Initial tests were performed with Nginx Proxy Manager (NPM) for SSL termination, though direct DNS resolution was preferred for internal stability.

## 4. Security Hardening

Strict security measures were applied to the management port (10000).

## Firewall Configuration (UFW):

```
sudo ufw allow 10000/tcp  
sudo ufw reload
```

**Access Control:** Configuration was modified in `/etc/webmin/miniserv.conf` to trust the local domain and prevent unauthorized referers.

```
referers=webmin.berkay.local  
trust_real_ip=1
```

## 5. Centralized Operations

With this setup, the following tasks are now automated across the cluster:

- **Cluster Shell Commands:** Run `apt update` or `pkg update` on all servers at once.
- **Unified Monitoring:** View CPU, RAM, and Disk usage for all nodes in one dashboard.
- **User Management:** Create or modify administrative accounts globally.

— **Summary:** The deployment of the Webmin Master Node successfully unified the management of Debian and FreeBSD systems, reducing administrative overhead and increasing infrastructure visibility.

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