

Section 1: Requirements

Recommended VM Specifications

Since we're not simulating the scale of a full-blown ISP, we can afford to keep the VMs relatively light:

1. **VyOS VM:**
 - **CPU:** 2 cores
 - **RAM:** 1 GB (2 GB recommended)
 - **Disk:** 8 GB
 - **Network:** 1 NIC connected to the real-world bridge, 1 NIC to the core network bridge, and additional NICs for each virtual ISP bridge.
2. **DNS Root VM:**
 - **CPU:** 1 core
 - **RAM:** 512 MB (1 GB recommended)
 - **Disk:** 4 GB
 - **Network:** 1 NIC connected to the core network bridge.
3. **Stratum 1 Time Server VM:**
 - **CPU:** 1 core
 - **RAM:** 512 MB (1 GB recommended)
 - **Disk:** 4 GB
 - **Network:** 1 NIC connected to the core network bridge.
 - *Hint:* There's something unique planned for this VM that will add a touch of realism to the time synchronization setup. Stay tuned.

Knowledge Prerequisites

To get the most out of this project, you should be comfortable with:

- **Basic Networking:** IP addressing, routing concepts, and network segmentation.
- **Linux Command Line:** Many configurations will require command-line interaction, especially when setting up services on VMs.
- **Virtualization:** Familiarity with creating and managing VMs within Proxmox.

Time and Resource Estimates

1. **Time Commitment:**

- **Initial Setup:** Approximately 1-2 hours for configuring Proxmox, setting up bridges, and creating initial VMs.
- **Configuration and Testing:** Expect to spend 3-4 hours on setting up core services and ensuring everything is communicating correctly.
- **Full Deployment:** Over the course of the weekend, you should be able to bring the entire virtual internet ecosystem to life.

2. **Resource Management Tips:**

- **Use Snapshots:** Take snapshots of your VMs at key configuration points. This allows you to roll back quickly if something goes wrong.
- **Monitor Resource Usage:** Keep an eye on CPU, RAM, and disk usage through Proxmox's interface. Adjust allocations as needed.

Conclusion

With these requirements in hand, you're ready to start building. This section ensures you have a clear understanding of what's needed and how each piece will fit together as we proceed. The next step is to lay out the network architecture, mapping out how our virtual ISPs will interact and how the core services will keep everything running smoothly. Let's get into the design phase!

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