**Hosting 36 Websites on a VPS: Apache HTTPD or Nginx**

**Pros of Hosting Multiple Websites on a Single VPS:**

* **Cost Efficiency:** Hosting multiple websites on one VPS is generally cheaper than using separate hosting services for each domain.
* **Resource Optimization:** Virtual hosts allow efficient use of the server's resources (CPU, memory, disk space) to serve multiple websites.
* **Centralized Management:** Simplifies maintenance tasks like updates, backups, and monitoring from a single location.
* **Custom Configuration:** Fine-tune server settings to optimize performance for each website.
* **Scalability:** Easily add more websites or upgrade server resources as needed.
* **Full Control:** Complete control over the server environment, including software installation and configuration changes.

**Cons of Hosting Multiple Websites on a Single VPS:**

* **Resource Constraints:** A single VPS might struggle with high traffic or resource-intensive sites, potentially leading to slow load times or downtime.
* **Single Point of Failure:** If the VPS encounters issues, all 36 websites will be affected. Regular backups and a solid disaster recovery plan are essential.
* **Complexity:** Managing a large number of virtual hosts can become complex, particularly with varying configurations and security requirements.
* **Security Risks:** Increased risk if one site is compromised; proper isolation and security practices are essential.
* **Performance Bottlenecks:** Resource demands from one website could negatively impact others.
* **Maintenance Overhead:** Significant time and technical expertise required for updates, security, and backups.

**Recommendations for a Single VPS Setup:**

* **Resource Monitoring:** Continuously monitor server performance and resource usage.
* **Load Balancing:** Consider load balancing or upgrading to a more powerful VPS if needed.
* **Security Hardening:** Implement strong security measures, including updates, firewalls, SSL certificates, and isolated environments.
* **Backup Strategy:** Regularly back up the server and individual websites.

**Pros of Hosting Each Website on Separate VPS Servers:**

**Isolation and Security:**

* **Enhanced Security:** Each website is isolated, reducing the risk of cross-site contamination.
* **Independent Configuration:** Tailor each server’s configuration to the needs of the website it hosts.

**Performance:**

* **Dedicated Resources:** Each site has its own resources, leading to better performance.
* **No Shared Bottlenecks:** Resource usage by one site won’t impact others.

**Reliability:**

* **Reduced Single Point of Failure:** Only the affected VPS will experience downtime if issues arise.
* **Easier Troubleshooting:** Isolated issues make it easier to identify and fix problems.

**Scalability:**

* **Targeted Scaling:** Scale each VPS based on the specific needs of the website it hosts.

**Flexibility:**

* **Diverse Environments:** Each VPS can run different software stacks or configurations.

**Cons of Hosting Each Website on Separate VPS Servers:**

**Cost:**

* **Higher Expenses:** Running 36 separate VPS servers is more expensive compared to a single server.

**Management Complexity:**

* **Increased Maintenance:** Managing updates, security, and monitoring for 36 servers is time-consuming.
* **Complicated Backups:** Backing up each server individually is complex.

**Resource Underutilization:**

* **Wasted Resources:** Some VPS servers may be underutilized, leading to inefficient resource use.

**Difficulty in Load Balancing:**

* **Complex Load Management:** Distributing traffic across multiple servers can be challenging.

**Networking Complexity:**

* **DNS Management:** Managing DNS records for multiple IP addresses can be cumbersome.
* **Firewall Rules:** Ensuring consistent firewall settings across multiple servers is complex.

**Recommendations for Separate VPS Servers:**

* **Cost Analysis:** Balance the benefits of isolation and dedicated resources against the higher cost.
* **Automation Tools:** Use tools like Ansible, Puppet, or Chef to automate server management.
* **Centralized Monitoring:** Implement a centralized monitoring solution.
* **Hybrid Approach:** Consider a mix where critical or high-traffic sites have separate VPS servers, while smaller sites share resources.

**Storage and CPU Core Recommendations**

**Storage Needs:**

**Current Requirements:**

* **MySQL Databases:** 540 MB
* **Source Code Storage:** 30 GB
* **Media File Storage:** 70 GB
* **Total Storage Needed:** 100.54 GB

**Additional Considerations:**

* **Backups:** Allocate extra space.
* **Growth:** Plan for future needs.
* **Operating System & Software:** Account for 5-20 GB.
* **Temporary Files:** Consider space for logs and cache.

**Conclusion:** 200-250 GB of storage should be sufficient, with 99.46-149.46 GB remaining for backups, system needs, and future growth.

**CPU Core Recommendations:**

* **Baseline:** For low-traffic, less resource-intensive sites, 2-4 CPU cores may suffice.
* **Moderate Usage:** For moderate traffic or some dynamic sites, 4-8 CPU cores is recommended.
* **High Traffic or Resource-Intensive Sites:** For high traffic or demanding applications, 8-12 CPU cores or more.

**In Summary:** Start with 4-8 CPU cores and adjust based on performance metrics and specific requirements.

RAM Recommendations::

Moderate usage : 16 **GB** RAM

Standard Usage : 32 **GB** RAM