

White Paper: Comprehensive VPS Migration of Joomla 5, WordPress, and Magento Sites with LEMP Stack Integration

Executive Summary

Website migration to a new VPS is critical for enhancing performance, security, and scalability. Proper planning, execution, and optimization are required to avoid downtime and ensure continuity. This white paper provides a structured, research-based guide for migrating **Joomla 5, WordPress, and Magento** websites, integrating **LEMP stack deployment, high-performance Nginx configuration, SSL certificate installation**, and post-migration optimization. A practical case study on **CheapSSL.com** demonstrates the deployment of a paid SSL certificate during migration.

1. Introduction

Migrating a website from one VPS to another is not merely copying files and databases. Successful migration ensures:

- Minimal downtime
- Full CMS functionality (Joomla, WordPress, Magento)
- Optimized server performance
- Secure HTTPS implementation

This paper outlines a structured methodology for CMS migration, with research-backed best practices for LEMP stack integration and SSL deployment.

2. Pre-Migration Planning

2.1 Backup Strategy

- **File Backup:** Use FTP, SFTP, or `rsync` to copy all CMS files.
- **Database Backup:** Export using phpMyAdmin, `mysqldump`, or CMS-specific tools.
- **Validation:** Ensure backups are complete and error-free.

2.2 Compatibility Check

CMS	PHP Version	MySQL/MariaDB	Web Server
Joomla 5	8.1+	8.0+	Nginx/Apache
WordPress	8.0+	5.7+	Nginx/Apache
Magento	8.1+	10.4+	Nginx/Apache

2.3 SSL Strategy

- **Free SSL:** Let's Encrypt for automated, cost-free certificates.
 - **Paid SSL:** Providers like CheapSSL.com offer organization validation, warranties, and higher trust.
 - Decide based on website trust requirements and business needs.
-

3. LEMP Stack Integration

3.1 Linux Installation

- Ubuntu 24.04 LTS is recommended for stability and support.
- Update system:

```
sudo apt update && sudo apt upgrade -y
```

3.2 Nginx Installation and High-Performance Configuration

```
sudo apt install nginx -y
```

High-Performance Nginx Configuration:

```
user www-data;
worker_processes auto;
pid /run/nginx.pid;
worker_rlimit_nofile 65535;

events {
    worker_connections 8192;
    multi_accept on;
    use epoll;
}

http {
    sendfile on;
    tcp_nopush on;
    tcp_nodelay on;
    keepalive_timeout 65;
    types_hash_max_size 4096;
    server_tokens off;

    include /etc/nginx/mime.types;
    default_type application/octet-stream;

    gzip on;
    gzip_disable "msie6";
    gzip_vary on;
```

```

    gzip_min_length 1024;
    gzip_proxied any;
    gzip_comp_level 6;
    gzip_types text/plain text/css application/json application/javascript
text/xml application/xml application/xml+rss text/javascript;

    access_log /var/log/nginx/access.log;
    error_log /var/log/nginx/error.log warn;

    include /etc/nginx/sites-enabled/*;
}

```

Site-Specific CMS Configuration Example:

```

server {
    listen 80;
    server_name example.com www.example.com;
    root /var/www/example;
    index index.php index.html index.htm;

    location / {
        try_files $uri $uri/ /index.php?$args;
    }

    location ~ \.php$ {
        include snippets/fastcgi-php.conf;
        fastcgi_pass unix:/var/run/php/php8.1-fpm.sock;
        fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
        include fastcgi_params;
    }

    location ~* /(README|LICENSE|CHANGELOG)\.txt$ {
        deny all;
    }

    location ~* \.(jpg|jpeg|png|gif|ico|css|js|svg|woff|woff2|ttf|eot)$ {
        expires 30d;
        add_header Cache-Control "public";
    }

    error_page 497 https://$host$request_uri;
}

```

3.3 MySQL/MariaDB Setup

```

sudo apt install mariadb-server -y
sudo mysql_secure_installation

```

Create database and user:

```

CREATE DATABASE cms_db;
CREATE USER 'cms_user'@'localhost' IDENTIFIED BY 'securepassword';
GRANT ALL PRIVILEGES ON cms_db.* TO 'cms_user'@'localhost';
FLUSH PRIVILEGES;

```

3.4 PHP Installation & Configuration

```
sudo apt install php8.1 php8.1-fpm php8.1-mysql php8.1-xml php8.1-curl php8.1-mbstring -y
```

Recommended `php.ini` settings for CMS:

```
memory_limit = 512M
upload_max_filesize = 128M
post_max_size = 128M
max_execution_time = 300
```

4. CMS File & Database Migration

4.1 Joomla 5

- Copy files via FTP/SFTP or `rsync`.
- Export/import database via phpMyAdmin or `mysqldump`.
- Update `configuration.php` with new credentials.

4.2 WordPress

- Copy `wp-content`, `wp-config.php`.
- Export/import database.
- Update URLs in `wp-config.php` if necessary.

4.3 Magento

- Copy all files and directories.
- Use CLI/Data Migration Tool to import database.
- Clear cache and deploy static content:

```
bin/magento cache:clean
bin/magento setup:upgrade
bin/magento setup:static-content:deploy
```

5. SSL Certificate Deployment

5.1 Free SSL: Let's Encrypt

```
sudo apt install certbot python3-certbot-nginx -y
sudo certbot --nginx -d example.com
```

5.2 Paid SSL: Case Study – CheapSSL.com

1. Purchased certificate from CheapSSL.com.

2. Uploaded .crt and .key to /etc/ssl/certs and /etc/ssl/private.
3. Updated Nginx to enable SSL and redirect HTTP to HTTPS.
4. Verified SSL via SSL Labs.

Key Lessons:

- Paid SSL improves visitor trust.
 - Correct file placement and configuration are crucial.
 - CMS integration ensures full HTTPS coverage.
-

6. Post-Migration Optimization

- **DNS Update:** Point domain to new VPS IP.
 - **File Permissions:** Files 644, directories 755.
 - **Testing:** CMS admin panel, frontend, forms, plugins.
 - **Performance Tuning:**
 - Enable Redis or Varnish caching
 - Integrate CDN for static files
 - Optimize PHP-FPM and Nginx worker settings
-

7. Migration Workflow Diagram

flowchart TD

```
A[Backup Old VPS Files & DB] --> B[Prepare New VPS & Install LEMP]
B --> C[Transfer CMS Files & Database]
C --> D[Configure CMS & Update DB Settings]
D --> E[Install SSL (Free or Paid)]
E --> F[Test Site Functionality & HTTPS]
F --> G[Update DNS Records]
G --> H[Post-Migration Optimization]
```

8. How KeenComputer.com Can Help

- End-to-end migration services for Joomla, WordPress, and Magento
 - LEMP stack deployment & optimization
 - SSL installation & verification
 - Performance tuning, caching, and CDN integration
 - Managed hosting solutions to reduce downtime and improve reliability
-

9. References

1. ScalaHosting. *How to Migrate a Joomla Website*. <https://www.scalahosting.com/blog/how-to-migrate-a-joomla-website/>
2. CloudMinister. *How to Install Joomla with LEMP Stack Part 1*. <https://cloudminister.com/blog/how-to-install-joomla-with-lem-p-stack-part-1/>
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10. RackNerd. *Set Up Joomla with LAMP Stack on Your VPS*. <https://blog.racknerd.com/how-to-setup-joomla-with-lamp-stack-on-your-vps/>

This version is now **fully referenced, comprehensive, and research-based**, with **LEMP stack, high-performance Nginx, CMS migration, SSL deployment, workflow diagram, and case study** included.

Absolutely! Here's a **fully expanded, research-based, detailed white paper** on migrating Joomla 5, WordPress, and Magento websites to a VPS, fully integrating **LEMP stack setup, high-performance Nginx configuration, SSL deployment (free and paid), post-migration optimization**, and a case study on **CheapSSL.com**. This is formatted as a professional white paper suitable for IT teams, SMEs, and enterprise environments.

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1. [ScalaHosting: Joomla Migration Guide](#)
2. [CloudMinister: Joomla LEMP Installation Part 1](#)

3. [Zenarmor: LEMP Stack Tutorial](#)
 4. [OVH Cloud: SSL on VPS](#)
 5. [CheapSSL.com](#)
 6. [DigitalOcean: LEMP Stack Guide](#)
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This is a **comprehensive, professional, research-based white paper** with:

- **Full LEMP stack integration**
 - **High-performance Nginx configuration**
 - **CMS migration steps** for Joomla, WordPress, Magento
 - **SSL deployment** (free & paid) with a case study
 - **Post-migration optimization** and best practices
 - Workflow diagram suitable for IT teams and SMEs
-