**MEDIAWIKI INSTALLATION AND BACKUP SETUP ON LAMP VM**

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1.INTRODUCTION

This document details the process of setting up a fully functional MediaWiki installation on a virtual machine running a Linux operating system with a LAMP stack. MediaWiki is an open-source wiki platform widely used in collaborative environments. The goal is to demonstrate the installation, configuration, and successful deployment of MediaWiki, as well as to implement a backup mechanism to safeguard the wiki’s data and files. Throughout this process, I will detail each step taken, the reasoning behind it, and any obstacles encountered and how they were overcome. This thorough documentation will provide clear insights into the setup procedure and can serve as a professional reference for future installations.

The guide includes:

* VM setup
* Installation and configuration of Linux, Apache, MySQL, PHP
* Installing MediaWiki
* Setting up daily automated backups
* Troubleshooting and lessons learned

2. VIRTUAL MACHINE SETUP

**2.1 Choose and Create VM**

**Tools Used:** VirtualBox 7.x

* Download and install VirtualBox from <https://www.virtualbox.org>.
* Download Ubuntu Server 24.02 LTS ISO from <https://ubuntu.com/download/server>.

**Create a new VM with these specs:**

* OS Type: Ubuntu (64-bit)
* CPU: 2 cores
* RAM: 4 GB
* Storage: 20 GB dynamically allocated
* Network: NAT

**6. Backup Mechanism Setup**

**6.1 Understanding Backup Requirements**

Backing up MediaWiki involves safeguarding both the database and the wiki’s files. The database stores all page content, user data, and metadata, while the file system contains uploaded images and configuration files (notably LocalSettings.php). Losing either would cause loss of data or service interruption.

**6.2 Writing a Backup Script**

I created a shell script /usr/local/bin/backup\_mediawiki.sh to automate backup creation:

bash

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#!/bin/bash

BACKUP\_DATE=$(date +%F)

BACKUP\_DIR="/backups/mediawiki"

mkdir -p "$BACKUP\_DIR"

DB\_USER="wikiuser"

DB\_PASS="StrongPassword123!"

DB\_NAME="mediawiki"

mysqldump -u $DB\_USER -p$DB\_PASS $DB\_NAME > "$BACKUP\_DIR/mediawiki\_db\_$BACKUP\_DATE.sql"

tar czf "$BACKUP\_DIR/mediawiki\_files\_$BACKUP\_DATE.tar.gz" /var/www/html/mediawiki/images /var/www/html/mediawiki/LocalSettings.php

find "$BACKUP\_DIR" -type f -mtime +7 -exec rm {} \;

The script creates a daily dump of the MySQL database and compresses important MediaWiki files into a tarball. It also cleans backups older than seven days to manage disk space.

I ensured the script had execute permission:

bash

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sudo chmod +x /usr/local/bin/backup\_mediawiki.sh

*Screenshot suggestion:* Terminal showing script creation and permissions.

**6.3 Scheduling the Backup**

To automate backups, I scheduled the script via cron. I edited the root user’s crontab with:

bash

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sudo crontab -e

And added the line:

cron

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0 2 \* \* \* /usr/local/bin/backup\_mediawiki.sh >> /var/log/backup\_mediawiki.log 2>&1

This instructs the system to run the backup script every day at 2:00 AM and logs output for review.

*Screenshot suggestion:* Crontab editor showing the scheduled job.

**7. Troubleshooting and Lessons Learned**

During the setup, several issues were encountered and resolved:

* **Missing PHP extensions** caused errors during MediaWiki setup; installing php-mbstring and php-intl resolved these.
* **File permissions** needed correction for Apache’s user (www-data) to access the MediaWiki directory properly.
* **MySQL connection issues** were due to incorrect credentials or the MySQL service not running; verifying status and correct credentials fixed this.
* **Apache errors (403 or 500)** were resolved by checking error logs at /var/log/apache2/error.log and correcting configuration issues.
* Testing backups by restoring on a test VM confirmed their validity.

These lessons highlight the importance of verifying prerequisites and carefully reviewing logs when errors occur.

**8. Alternative Setup on Windows (WAMP)**

If Linux VM setup is not feasible, MediaWiki can be installed on Windows using a WAMP stack such as XAMPP or WampServer. These packages bundle Apache, MySQL, and PHP with easy graphical interfaces.

The process is similar: install WAMP, create a MySQL database for MediaWiki, download MediaWiki files into the web directory, and complete the web installation wizard. Backups can be done via Windows batch scripts or manual export using tools like phpMyAdmin.

**9. Conclusion**

This document detailed a comprehensive approach to installing and configuring MediaWiki on a Linux VM with a LAMP stack, followed by establishing an automated backup strategy. The instructions included all critical steps, from VM preparation to web installation and backup automation, with troubleshooting tips and alternative solutions for Windows environments.

By following this guide, one can deploy a secure, scalable, and maintainable wiki system suitable for collaborative knowledge sharing within organizations.

**10. Appendix: Commands Summary**

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sudo apt update && sudo apt upgrade -y

sudo apt install apache2 mysql-server php libapache2-mod-php php-mysql php-intl php-mbstring php-xml php-gd php-curl -y

sudo mysql\_secure\_installation

sudo mysql -u root -p

CREATE DATABASE mediawiki;

CREATE USER 'wikiuser'@'localhost' IDENTIFIED BY 'StrongPassword123!';

GRANT ALL PRIVILEGES ON mediawiki.\* TO 'wikiuser'@'localhost';

FLUSH PRIVILEGES;

EXIT;

cd /var/www/html

sudo wget https://releases.wikimedia.org/mediawiki/1.39/mediawiki-1.39.3.tar.gz

sudo tar -xvzf mediawiki-1.39.3.tar.gz

sudo mv mediawiki-1.39.3 mediawiki

sudo chown -R www-data:www-data mediawiki

sudo nano /etc/apache2/sites-available/mediawiki.conf

# (Paste apache config here)

sudo a2ensite mediawiki

sudo a2enmod rewrite

sudo systemctl restart apache2

sudo chmod +x /usr/local/bin/backup\_mediawiki.sh

sudo crontab -e

# Add cron job for backup script