

# Installation and configuration guide

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# WHMCS setup(install/update)

## PowerDNS module **WHMCS**

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**Module is coded ionCube v13**

Supported php version:

- php 7.4 WHMCS 8.11.0 -
- php 8.1 WHMCS 8.11.0 +
- php 8.2 WHMCS 8.11.0 +

To install and update a module, you must perform one and the same action.

### 1. Download the latest version of the module.

PHP 8.2

```
wget http://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS- PowerDNS/php82/PUQ_WHMCS- PowerDNS-  
latest.zip
```

PHP 8.1

```
wget http://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS- PowerDNS/php81/PUQ_WHMCS- PowerDNS-  
latest.zip
```

PHP 7.4

```
wget http://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS- PowerDNS/php74/PUQ_WHMCS- PowerDNS-  
latest.zip
```

All versions are available via link:

[https://download.puqcloud.com/WHMCS/servers/PUQ\\_WHMCS-PowerDNS/](https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-PowerDNS/)

## 2. Unzip the archive with the module.

```
unzip PUQ_WHMCS-PowerDNS-latest.zip
```

## 3. Copy and Replace "puqPowerDNS" to "WHMCS\_WEB\_DIR/modules/servers/"

# Setup guide: PowerDNS setup

## PowerDNS module **WHMCS**

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**Disclaimer:** This guide is intended for informational purposes only and provides a basic example of how to enable the API in PowerDNS. It is strongly recommended to refer to the official PowerDNS documentation for comprehensive and accurate instructions. Following official guidelines ensures that your setup is secure, reliable, and fully supported. This example may not cover all security considerations or configurations required for your specific environment. Use this guide at your own risk.

## Install PowerDNS

### *Update the System*

It is always safe to work with a system that is up-to-date. Updating your Debian system can be done using the simple command:

```
sudo apt update && sudo apt upgrade
```

Install the required tools:

```
sudo apt install curl vim git libpq-dev -y
```

Once all the packages have been updated to their latest stable versions, proceed with the below steps.

# 1 – Install PowerDNS Relational Database

PowerDNS supports innumerable database backends such as MySQL, PostgreSQL, Oracle e.t.c. Here, we will use the MariaDB as backend storage for PowerDNS zone files.

Install MariaDB on Debian using the below steps:

First, install the required tools:

```
sudo apt install software-properties-common gnupg2 -y
```

Then proceed and the MariaDB 10.6 repository on the system.

```
curl -LsS -O https://downloads.mariadb.com/MariaDB/mariadb_repo_setup  
sudo bash mariadb_repo_setup
```

Update your package index and install MariaDB.

```
sudo apt update  
sudo apt install mariadb-server mariadb-client
```

Once the installation is complete, start and enable MariaDB.

```
sudo systemctl start mariadb  
sudo systemctl enable mariadb
```

Login to the shell using the *root* user

```
sudo mysql -u root
```

Now create a PowerDNS database.

```
CREATE DATABASE powerdns;  
GRANT ALL ON powerdns.* TO 'powerdns_user'@ '%' IDENTIFIED BY 'Strongpassword' ;  
FLUSH PRIVILEGES;  
EXIT
```

Remember the password set for the user should ***not contain special characters*** since PowerDNS doesn't like this and will cause the error “**Access denied for user 'powerdns\_user'@'localhost' (using password: YES)**”

## 2 – Install PowerDNS on Debian

We will begin by disabling the **systemd-resolved** service. This service runs on port **53** providing network name resolution used to load applications but now we want to use PowerDNS.

Stop and disable **systemd-resolved** using the commands:

```
sudo systemctl stop systemd-resolved
sudo systemctl disable systemd-resolved
```

Proceed and remove the symbolic link for the file.

```
$ ls -lh /etc/resolv.conf
-rw-r--r-- 1 root root 49 Feb 23 04:53 /etc/resolv.conf
$ sudo unlink /etc/resolv.conf
```

Update the **resolv.conf** file.

```
$ sudo vim /etc/resolv.conf
nameserver 8.8.8.8
```

After the above adjustments, you can install PowerDNS from the default APT repositories using the command:

```
sudo apt install pdns-server pdns-backend-mysql
```

Install the latest release of PowerDNS available on the official [PowerDNS release](#) page. As of this guide, the stable release was at 4.6. The repository for this release can be added to the system as below.

```
sudo vim /etc/apt/sources.list.d/pdns.list
```

For **Debian 12**

```
deb [arch=amd64] http://repo.powerdns.com/debian bookworm-auth-46 main
```

For **Debian 11**

```
deb [arch=amd64] http://repo.powerdns.com/debian bullseye-auth-46 main
```

For **Debian 10**

```
deb [ arch=amd64 ] http://repo.powerdns.com/debian buster-auth-46 main
```

Import the GPG key signing for the repository.

```
curl -fsSL https://repo.powerdns.com/FD380FBB-pub.asc | sudo gpg --dearmor -o  
/etc/apt/trusted.gpg.d/pdns.gpg
```

Set the APT preferences.

```
$ sudo vim /etc/apt/preferences.d/pdns  
Package: pdns-*  
Pin: origin repo.powerdns.com  
Pin-Priority: 600
```

Update your APT package index.

```
sudo apt update
```

Now install the PowerDNS server and the MySQL backend as below.

```
sudo apt install pdns-server pdns-backend-mysql
```

## 3 – Configure the PowerDNS Database

Now that we have the PowerDNS database already created on MariaDB, we will proceed and import the database schemas to it. This normally saved under the ***/usr/share/pdns-backend-mysql/schema/*** as a ***schema.mysql.sql*** file.

Now import this schema to the created database(**powerdns**) in step 1.

```
mysql -u powerdns_user -p powerdns < /usr/share/pdns-backend-mysql/schema/schema.mysql.sql
```

You can then verify schema import as below.

```
sudo mysql -u root  
use powerdns;  
show tables;
```

After the schema has been imported, we will now configure the PowerDNS connection details to

the database.

This can be done by creating the file below.

```
sudo vim /etc/powerdns/pdns.d/pdns.local.gmysql.conf
```

In the opened file, edit the lines:

```
# MySQL Configuration
# Launch gmysql backend
launch+=gmysql
# gmysql parameters
gmysql-host=127.0.0.1
gmysql-port=3306
gmysql-dbname=powerdns
gmysql-user=powerdns_user
gmysql-password=Strongpassword
gmysql-dnssec=yes
# gmysql-socket=
```

Set the appropriate permissions for the file.

```
sudo chown pdns: /etc/powerdns/pdns.d/pdns.local.gmysql.conf
sudo chmod 640 /etc/powerdns/pdns.d/pdns.local.gmysql.conf
```

You can now verify the database connection.

```
sudo systemctl stop pdns.service
sudo pdns_server --daemon=no --guardian=no --loglevel=9
```

With the above output, the database connection is successful. Restart and enable the PowerDNS service.

```
sudo systemctl restart pdns
sudo systemctl enable pdns
```

Verify the port 53 is open for DNS.

```
sudo ss -alnp4 | grep pdns
```

Output:



```
udp    UNCONN 0      0          0.0.0.0: 53      0.0.0.0: *
users: ( ("pdns_server", pid=18530, fd=5) )

tcp    LISTEN 0      128        0.0.0.0: 53      0.0.0.0: *
users: ( ("pdns_server", pid=18530, fd=7) )
```

You can also check if PowerDNS is responding to requests.

```
$ dig @127.0.0.1

; <<>> DiG 9.16.22-Debian <<>> @127.0.0.1
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->HEADER<<- opcode: QUERY, status: REFUSED, id: 4882
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; QUESTION SECTION:
;. IN NS

;; Query time: 4 msec
;; SERVER: 127.0.0.1#53(127.0.0.1)
;; WHEN: Wed Feb 23 06:03:49 EST 2022
;; MSG SIZE rcvd: 28
```

# To enable the API in PowerDNS

## 1 – Edit the PowerDNS Configuration File

The configuration file for PowerDNS is usually located at `/etc/powerdns/pdns.conf`. Open it for editing:

```
sudo nano /etc/powerdns/pdns.conf
```

## 2 – Enable the API

Find and modify the following lines, or add them if they are not present:

```
api=yes
webserver=yes
webserver-address=0.0.0.0
webserver-port=8081
```

- `api=yes`: Enables the API.
- `webserver=yes`: Enables the web server for accessing the API.
- `webserver-address=0.0.0.0`: Configures the server to listen on all IP addresses. If you want to restrict access to a specific IP, specify that IP address here.
- `webserver-port=8081`: Specifies the port on which the API web server will be available (default is 8081).

## 3 – Configure Access from Another Server

To allow access to the API from another server, set up authentication by adding the following line in `pdns.conf`:

```
api-key=your_api_key_here
```

- `api-key=your_api_key_here`: Set the API key that will be used to authenticate requests to the API. Replace `your_api_key_here` with a strong, secure key.

## 4 – Restart PowerDNS

After making these changes, restart PowerDNS to apply them:

```
sudo systemctl restart pdns
```

## 5 – Test the API

From another server, test the API by making a request using the API key, for example:

```
curl -X GET -H 'X-API-Key: your_api_key_here'  
http://ip_address_of_pdns_server:8081/api/v1/servers
```

Replace `your_api_key_here` with your API key and `ip_address_of_pdns_server` with the IP address of the server where PowerDNS is installed.

# Add server (PowerDNS server)

PowerDNS module **WHMCS**

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Add a new server to the system WHMCS.

System Settings->Servers->Add New Server

- Enter the correct **Name** and **Hostname**

## Servers

### Edit Server

Name	<input type="text" value="powerdns-test.uuq.pl"/>
Hostname	<input type="text" value="powerdns-test.uuq.pl"/>
IP Address	<input type="text"/>
Assigned IP Addresses (One per line)	<div></div>
Monthly Cost	<input type="text" value="0.00"/>
Datacenter/NOC	<input type="text"/>
Maximum No. of Accounts	<input type="text" value="200"/>
Server Status Address	<div><input type="text"/> To display this server on the server status page, enter the full path to the server status folder (required to be uploaded to each server you want to monitor) - eg. <a href="https://www.example.com/status/">https://www.example.com/status/</a></div>
Enable/Disable	<input type="checkbox"/> Check to disable this server

- In the **Server Details** section, select the "**PUQ PowerDNS**" module and enter the **correct PowerDNS API key** in the **password field**.
- To check, click the "**Test connection**" button

### Server Details

Module	<div><div>PUQ PowerDNS</div><div>▼</div></div> <div><input type="button" value="Test Connection"/></div> <div>✓ Connection successful. Some values have been auto-filled.</div>
Username	<input type="text"/>
Password	<input type="password" value="....."/>
Access Hash	<div></div>
Secure	<input type="checkbox"/> Check to use SSL Mode for Connections
Port	<div><input type="text" value="8081"/> <input type="checkbox"/> Override with Custom Port</div>

# Product Configuration

## PowerDNS module **WHMCS**

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### Add new product to WHMCS

System Settings->Products/Services->Create a New Product

In the **Module settings** section, select the "**PUQ PowerDNS**" module

Details	Pricing	Module Settings	Custom Fields	Configurable Options	Upgrades	Free Domain	Cross-sells	Other	Links
Module Name <span>PUQ PowerDNS</span>									
Server Group <span>None</span>									
License key <span>PZNRXN...DOUOL2</span> success: 2024-09-29T13:50:30+02:00									
Max Zones <span>6</span> The number of zones that allows you to add									
Edit SOA <span>Yes</span> Allow client to edit SOA record									
Restrictions <span>Zone name filter</span> <div></div> Each regular expression on a new line									
Nameservers <span>Nameserver 1</span> <span>ns1.puqcloud.com</span>									
<span>Nameserver 2</span> <span>ns2.puqcloud.com</span>									
<span>Nameserver 3</span> <span>ns3.puqcloud.com</span>									
<span>Nameserver 4</span> <span>ns4.puqcloud.com</span>									
Zone administrator email <span>admin@puqcloud.com</span>									
Update interval <span>86400</span> Default - 86400									
Retry interval <span>7200</span> Default - 7200									
Expiry time <span>3600000</span> Default - 3600000									
Minimum lifetime <span>3600</span> Default - 3600									

- **License key:** A pre-purchased license key for the "**PUQ PowerDNS**" module. For the module to work correctly, the key must be active
- **Max Zones:** The number of zones that will be available for the client to manage.
- **Edit SOA:** Whether to allow the client to manage the SOA record.
- **Zone name filter:** In this field, you can enter regular expressions to filter zone names that the client can add. Each filter should be on a separate line, and each filter is checked in sequence, meaning the zone will not be added if even one filter matches.
- **Nameservers:** In this section, enter the name servers that will be added to the zone

(Your DNS cluster).

- **SOA:** In this section, enter all the SOA record parameters that will be used by default.

## Zone template

Nameserver 4

ns4.puqcloud.com

Zone template

Template

@ A 3600 192.168.1.1  
@ A 3600 192.168.1.3  
  
www A 3600 192.168.1.2  
www2 A 3600 192.168.1.3  
  
@ AAAA 3600 2001:0db8:85a3:0000:0000:8a2e:0370:7334  
@ AAAA 3600 2001:0db8:85a3:0000:0000:8a2e:0370:7336  
  
www AAAA 3600 2001:0db8:85a3:0000:0000:8a2e:0370:7335  
www2 AAAA 3600 2001:0db8:85a3:0000:0000:8a2e:0370:7335  
  
ftp CNAME 3600 {zone}  
ftp2 CNAME 3600 example.com  
  
@ MX 3600 10 mail.{zone}  
@ MX 3600 20 backupmail.{zone}  
  
@ TXT 3600 v=spf1 ip4:192.168.1.1 -all  
@ TXT 3600 SOME TXT TEXT  
  
\_dmarc TXT 3600 v=DMARC1; p=none; rua=mailto:dmarc@{zone}  
\_dmarc TXT 3600 v=DMARC1; p=none; rua=mailto:dmarc@{zone}  
  
@ CAA 3600 0 issue letsencrypt.org  
@ CAA 3600 0 issuewild comodoca.com  
@ CAA 3600 0 iodef mailto:admin@{zone}  
  
\_sip\_udp NAPTR 3600 100 10 S SIP+D2U \* sip.{zone}.  
\_sip\_tcp SRV 3600 10 5 5060 sipserver.{zone}

{zone} - will be replaced to original zone name  
format: name type ttl content

Here are the rules for creating DNS records. These records will be automatically generated when a zone is created. Placeholders like `{zone}` will be replaced with the actual zone name. The format for defining records is as follows:

### Format:

`name type ttl content`

## Explanation:

### 1. name:

- This specifies the name of the subdomain or record.
- For example, `ftp` will expand to `ftp.<zone.name>`.
- Use `@` to refer to the main zone (root domain).

### 2. type:

- The type of DNS record.
- Examples include: `A`, `AAAA`, `MX`, `CNAME`, `TXT`, `SRV`, `CAA`, `DNSKEY`, `DS`, `NAPTR`, `TLSA`

3. **ttl (Time To Live):**

- The duration (in seconds) for which the record is cached by DNS resolvers.
- Recommended default is `3600` seconds (1 hour).

4. **content:**

- The value or data for the record, provided without abbreviations or placeholders.
- For example, for an `A` record, this would be the IPv4 address.

These rules ensure consistency and accuracy when defining DNS records for your zones.

# Example Zone Records Template

**A Records (IPv4):**

@	A	3600	192.168.1.1
@	A	3600	192.168.1.3
www	A	3600	192.168.1.2
www2	A	3600	192.168.1.3

**AAAA Records (IPv6):**

@	AAAA	3600	2001:0db8:85a3:0000:0000:8a2e:0370:7334
@	AAAA	3600	2001:0db8:85a3:0000:0000:8a2e:0370:7336
www	AAAA	3600	2001:0db8:85a3:0000:0000:8a2e:0370:7335
www2	AAAA	3600	2001:0db8:85a3:0000:0000:8a2e:0370:7335

**CNAME Records (Aliases):**

ftp	CNAME	3600	{zone}
ftp2	CNAME	3600	example.com

**MX Records (Mail Exchange):**

@	MX	3600	10 mail.{zone}
@	MX	3600	20 backupmail.{zone}



## TXT Records (Text Data):

@	TXT	3600	v=spf1 ip4: 192.168.1.1 -all
@	TXT	3600	SOME TXT TEXT
_dmarc	TXT	3600	v=DMARC1; p=none; rua=mailto: dmarc@{zone}

## CAA Records (Certification Authority Authorization):

@	CAA	3600	0 issue	letsencrypt.org
@	CAA	3600	0 issuewild	comodoca.com
@	CAA	3600	0 iodef	mailto: admin@{zone}

## NAPTR Record (Naming Authority Pointer):

_sip._udp	NAPTR	3600	100 10 S SIP+D2U *	sip.{zone}.
-----------	-------	------	--------------------	-------------

## SRV Records (Service Locator):

_sip._tcp	SRV	3600	10 5 5060	sipserver.{zone}
-----------	-----	------	-----------	------------------

# Key Notes:

- `@`: Represents the main zone (e.g., the root domain).
- **Placeholders like `{zone}`**: Will be replaced by the actual zone name during execution.
- **TTL (Time to Live)**: Use 3600 seconds by default, which is standard for DNS records.
- Adjust records based on your specific zone requirements. These templates cover common DNS record types for a functional zone configuration.