

# Server Segmentation (Web / Mail / DNS tiers)

PUQ Web Hosting module **WHMCS**

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## One server or many?

You can run the whole module on a **single** HestiaCP node that does everything. That is perfect for getting started, for small offers, and for testing.

But the module is designed so you can **segment** your fleet as you grow: put **websites** on one set of servers, **mailboxes** on dedicated **mail (MX)** servers, and **DNS** on separate **nameservers**. Each role then scales on its own hardware, and a busy mail queue or a heavy website can't starve the others.

The mechanism that makes this possible is **server capabilities** + **server groups**.

## Capabilities — what a node is allowed to host

Each server you add (Infrastructure → *Web / Mail / DNS Servers*) has three capability flags: **Web**, **Mail**, **DNS**. You tick them when you add or edit the node. A node can carry one role, two, or all three.

The OPcache PHP extension is enabled. This extension can cause problems with cached data use and PHP script execution in WHMCS. We recommend disabling OPcache. [Learn More](#)

PUQ Web Hosting

Web Servers

ID	Server
2	isp-web01-test.uuq.pl
3	isp-web02-test.uuq.pl

### Edit Web Server

**Capabilities \***  
 Web  Mail  DNS  
 Tick every role this physical server is provisioned for. Unified-deployment products need a server with both Web and Mail ticked. PowerDNS supports DNS only.

**Driver \*** hestiacp **Status** active

**Name \*** isp-web01-test.uuq.pl **Group** pl

**Hostname \*** isp-web01-test.uuq.pl **IP \*** 77.87.125.156 **SSH port** 22

**SSH username \*** admin **SSH auth method \***  Password  Private key  
 Either **root** (recommended), or any user with full passwordless sudo (**NOPASSWD: ALL**).

**SSH password**  
 leave blank to keep existing

**Requirements on the HestiaCP server:**

- SSH access enabled on port **22** (or custom port above).
- SSH user can log in via password or private key.
- FULL passwordless sudo is required.** The module runs both Hestia **v-\*** commands and system probes (**df**, **/proc/\***, custom scripts) — partial NOPASSWD scoped only to **/usr/local/hestia/bin/\*** is not enough.

Two ways to satisfy this:

- (a) SSH as **root** — easiest, no sudoers config needed. The module auto-detects **uid=0** and skips **sudo** entirely.
- (b) Use a **sudoer user** — create **/etc/sudoers.d/puq-webhosting** on the Hestia server:

```
sudo tee /etc/sudoers.d/puq-webhosting <<'EOF'
# Full passwordless sudo for PUQ Web Hosting integration.
# Replace "admin" with the SSH username configured above.
admin ALL=(ALL) NOPASSWD: ALL
EOF
sudo chmod 440 /etc/sudoers.d/puq-webhosting
sudo visudo -c # syntax check - must say "parsed OK"
```

Verify it works: **sudo -n -l** on the server must list a **NOPASSWD: ALL** rule.

4. For **private-key** auth — public key in **~/.ssh/authorized\_keys** of the SSH user, perms **600**.

This is how you decide your topology. Typical patterns:

Pattern	Web nodes	Mail nodes	DNS nodes
<b>All-in-one</b>	one node ticks Web + Mail + DNS	(same node)	(same node)
<b>Web / mail split</b>	nodes tick <b>Web</b> only	dedicated <b>Mail</b> nodes (your MX)	nodes tick <b>DNS</b> only
<b>Full three-tier</b>	Web pool	Mail pool	Nameserver pool (e.g. <code>ns1</code> , <code>ns2</code> )

In the Infrastructure pages the same physical servers appear under **Web Servers**, **Mail Servers** and **DNS Servers** filtered by their capability — so a mail-only node only shows up under Mail:

PUQ Web Hosting

Home Services Statistics **Infrastructure** Logs

Settings Help v1.0

Web Servers

ID	Server	Group	Status	Capacity	Actions
2	<p>isp-web01-test.uuq.pl isp-web01-test.uuq.pl:22 HESTIACP OK</p> <p>2026-06-03 21:11</p> <p>CPU 1.2% RAM 51.7% Disk 47% Load 6%</p> <p>v1.9.4 Ubuntu 3 4 26/26 1</p>	PL	ACTIVE	3 / 0	
3	<p>isp-web02-test.uuq.pl isp-web02-test.uuq.pl:22 HESTIACP OK</p> <p>2026-06-03 21:12</p> <p>CPU 3.4% RAM 41.7% Disk 11% Load 4%</p> <p>v1.9.6 Debian 6 7 25/25 1</p>	PL	ACTIVE	6 / 0	

PUQ Web Hosting

Home Services Statistics **Infrastructure** Logs

Settings Help v1.0

Mail Servers

ID	Server	Group	Status	Capacity	Actions
8	<p>isp-mx01-test.uuq.pl isp-mx01-test.uuq.pl:22 HESTIACP OK</p> <p>2026-06-03 21:12</p> <p>CPU 3.4% RAM 29.2% Disk 22% Load 2%</p> <p>v1.9.6 Debian 4 5 16/16 1</p>	PL	ACTIVE	4 / 0	
9	<p>isp-mx02-test.uuq.pl isp-mx02-test.uuq.pl:22 HESTIACP OK</p> <p>2026-06-03 21:12</p> <p>CPU 2.3% RAM 49.8% Disk 10% Load 5%</p> <p>v1.9.6 Debian 2 2 16/16 1</p>	PL	ACTIVE	2 / 0	

PUQ Web Hosting

Home Services Statistics **Infrastructure** Logs

Settings Help v1.0

DNS Servers

DNS servers are independent — attach them to groups from Group → DNS servers tab. One DNS server can serve many groups.

ID	Server	Status	Actions
10	<p>isp-ns1-test.uuq.pl isp-ns1-test.uuq.pl:22 OK</p> <p>2026-06-03 21:12</p> <p>CPU 6.7% RAM 37.3% Disk 10% Load 8%</p> <p>v1.9.6</p>	ACTIVE	
11	<p>isp-ns2-test.uuq.pl isp-ns2-test.uuq.pl:22 OK</p> <p>2026-06-03 21:12</p> <p>CPU 6.8% RAM 36.7% Disk 10% Load 12%</p> <p>v1.9.6</p>	ACTIVE	

When a **Split** service is provisioned, the module places each role on a **least-loaded active node that has the matching capability**: the web user lands on a Web node, the mailbox on a Mail node, the DNS zone on the group's DNS nodes. That is the load balancing — it is **by role and by capacity**, automatically.

# Server groups — the unit you sell

# from

A **server group** ties a set of nodes together and is what a product points at (the product's *Server Group* dropdown). Open a group to manage it.

PUQ Web Hosting

Server	Type	Status	Last collected	
isp-mx01-test.uuq.pl isp-mx01-test.uuq.pl	MAIL	OK	2026-06-03 21:12:13	Open
isp-mx02-test.uuq.pl isp-mx02-test.uuq.pl	MAIL	OK	2026-06-03 21:12:23	Open
isp-web01-test.uuq.pl isp-web01-test.uuq.pl	WEB	OK	2026-06-03 21:11:46	Open
isp-web02-test.uuq.pl isp-web02-test.uuq.pl	WEB	OK	2026-06-03 21:12:00	Open

The group's **Actions** tab shows the members with their **Type** (WEB / MAIL) and lets you push configuration to **all servers**, **web servers only**, **mail servers only** or **DNS servers only**. That last point is the key to safe segmentation: a web-specific setting is **never** applied to a mail node and vice-versa.

## Role-targeted configuration

The group editor has separate config tabs whose values are pushed **only** to nodes of that role during *Apply Hestia config*:

- **All-servers config** — keys applied to every node (language, theme, security/API, user policies...).
- **Web config** — web-only keys (Apache/Nginx ports, web backend, phpMyAdmin alias...).

Settings applied only to web (Hestia) servers in this group. Pushed via `v-change-sys-config-value KEY VALUE` during the same "Apply Hestia config" action — the worker filters keys by category target.

**Web Server**

Apache port `WEB_PORT`  
(not managed)

Default 8080. Behind nginx proxy.

Apache SSL port `WEB_SSL_PORT`  
(not managed)

Default 8443.

Nginx (proxy) port `PROXY_PORT`  
(not managed)

Default 80 — public HTTP.

Web backend `WEB_BACKEND`  
php-fpm

Sync error pages on rebuild `POLICY_SYNC_ERROR_DOCUMENTS`  
yes

Sync skeleton on rebuild `POLICY_SYNC_SKELETON`  
yes

**Databases**

phpMyAdmin alias `DB_PMA_ALIAS`  
(not managed)

Default "phpmyadmin" — /phpmyadmin URL.

phpPgAdmin alias `DB_PGADMIN_ALIAS`  
(not managed)

- **Mail config** — mail-only keys (SMTP/IMAP system, antispam/antivirus, webmail, notification from-address...).

Settings applied only to mail (Hestia) servers in this group. Pushed via `v-change-sys-config-value KEY VALUE` during the same "Apply Hestia config" action — the worker filters keys by category target, so mail-only keys never land on web servers and vice-versa.

**Mail**

Mail (SMTP) system `MAIL_SYSTEM`  
(not managed by group)

Outbound SMTP / inbound MTA, Hestia ships exim4.

IMAP/POP3 system `IMAP_SYSTEM`  
(not managed by group)

Mailbox access daemon, Hestia ships Dovecot.

Sieve filters (ManageSieve) `SIEVE_SYSTEM`  
(not managed by group)

Server-side mail filtering rules (RFC 5228).

Antispam `ANTISPAM_SYSTEM`  
(not managed by group)

Spam filter applied to inbound mail.

Antivirus `ANTIVIRUS_SYSTEM`  
(not managed by group)

Virus scanner applied to inbound mail attachments.

Webmail alias `WEBMAIL_ALIAS`  
(not managed)

Subdomain prefix, e.g. "webmail" — webmail.domain.com

Webmail system `WEBMAIL_SYSTEM`  
(not managed by group)

Use server SMTP for system mail `USE_SERVER SMTP`  
(not managed by group)

Route Hestia's own notifications through local exim.

Notifications from-email `FROM_EXIM`  
(not managed)

Notifications from-name `FROM_NAME`  
(not managed)

- **DNS config** — DNS-only keys (DNSSEC, DNS cluster). PowerDNS nodes have no `hestia.conf` and are skipped automatically.

The worker filters every managed key by its category target, so "mail-only keys never land on web servers and vice-versa". This means you can, for instance, enable ClamAV/SpamAssassin only on your mail tier without touching the web tier.

# DNS is active-active across the tier

DNS servers are **independent** — you attach them to a group on the group's **DNS servers** tab, and **one DNS server can serve many groups**. When a zone is created it is **replicated to every attached DNS node**, so you get an active-active nameserver cluster out of the box. The **DNS Zones** page shows the per-server deploy state for each logical zone:

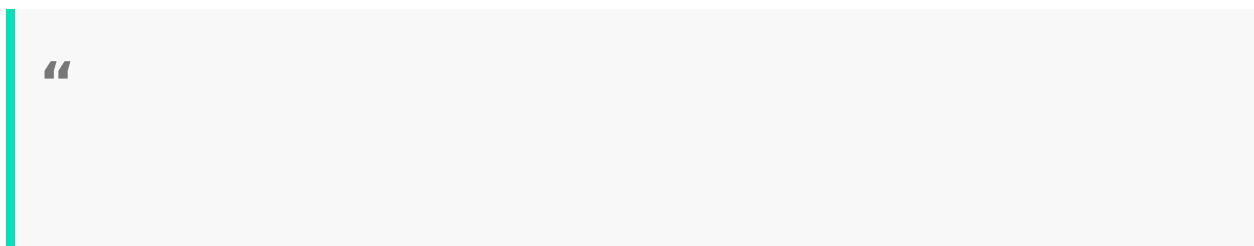
ID	Zone	Service	Cluster	Records	Actions
36	test.appuw.com	test.appuw.com	ISP-NS1-TEST.UUQ.PL: ACTIVE ISP-NS2-TEST.UUQ.PL: ACTIVE	25	Redeploy
34	test.puq.info	test.puq.info	ISP-NS1-TEST.UUQ.PL: ACTIVE ISP-NS2-TEST.UUQ.PL: ACTIVE	25	Redeploy
35	test2.puq.info	test2.puq.info	ISP-NS1-TEST.UUQ.PL: ACTIVE ISP-NS2-TEST.UUQ.PL: ACTIVE	25	Redeploy

## Watching the balance

The addon **Statistics** page reports usage **per domain, split into Web and Mail columns**, so you can see at a glance how load is distributed and when a tier needs another node:

Domain	Status	Web							Mail			Updated
		Disk	Bandwidth	DNS rec	DBs	FTP	Cron	Backups	Disk	Accounts	Backups	
ddd.benchwords.com	ACTIVE	1 MB / 1.0 GB 0%	0 / ∞	0 / 50 0%	0 / 1 0%	0 / 1 0%	0 / 5 0%	0 / ∞	1 MB / 10.0 GB 0%	1 / 10 10%	0 / ∞	2026-06-03 21:12
ddfsg.benchwords.com	ACTIVE	1 MB / 1.0 GB 0%	0 / ∞	0 / 50 0%	0 / 1 0%	0 / 1 0%	0 / 5 0%	0 / ∞	1 MB / 512 MB 0%	1 / 10 10%	0 / ∞	2026-06-03 21:12
ruslan.benchwords.com	ACTIVE	1 MB / 10.0 GB 0%	0 / ∞	0 / 50 0%	1 / 1 100%	0 / 1 0%	0 / 5 0%	0 / ∞	1 MB / 1.0 GB 0%	1 / 10 10%	1 / ∞	2026-06-03 21:12
test.appuw.com	ACTIVE	1 MB / 1.0 GB 0%	0 / ∞	25 / 500 5%	2 / 5 40%	0 / 10 0%	0 / 10 0%	9 / 5 180%	1 MB / 10.0 GB 0%	0 / 10 0%	5 / 2 250%	2026-06-03 21:12
test2.puq.info	ACTIVE	1 MB / 1.0 GB 0%	0 / ∞	25 / 500 5%	0 / 5 0%	0 / 10 0%	0 / 10 0%	12 / 5 240%	1 MB / 10.0 GB 0%	0 / 10 0%	8 / 2 400%	2026-06-03 21:12
test.puq.info	ACTIVE	1 MB / 1.0 GB 0%	0 / ∞	25 / 500 5%	0 / 5 0%	1 / 10 10%	0 / 10 0%	12 / 5 240%	1 MB / 10.0 GB 0%	0 / 10 0%	8 / 2 400%	2026-06-03 21:12

The Home dashboard's **Server capacity** table lists each node by type with its capacity and last sync time — a quick health view of every tier.



**Why segment?** Mail and web have very different load profiles. Keeping them on separate, capability-tagged tiers lets you scale each independently, isolate failures, and apply role-specific tuning — while the module's per-capability placement spreads new accounts across the least-loaded node automatically.

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Revision #4

Created 4 June 2026 15:11:35 by Ruslan

Updated 4 June 2026 16:43:19 by Ruslan