

Change Package

Proxmox KVM module **WHMCS**

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Overview

A package change (upgrade or downgrade) reconfigures a live VM to match a different product plan — new CPU/RAM values, larger disks, different network settings, changed firewall options. Just like [Deploy](#), this runs asynchronously as a resumable state machine driven by the cron. The client does not wait for all the Proxmox API calls to finish — WHMCS accepts the upgrade order immediately and the module walks the VM through the change over the next one or two cron ticks.

Change Package Pipeline

```
change_package → cp_update_ip → cp_stop → cp_cpu_ram →  
cp_system_disk_size → cp_system_disk_bandwidth →  
cp_additional_disk → cp_additional_disk_size → cp_additional_disk_bandwidth →  
cp_network → cp_firewall → cp_start → ready
```

Step descriptions

| State (done) | Next action | What happens |
|-----------------------------|----------------------------|--|
| <code>change_package</code> | Update IP + DNS + firewall | Reload config, reload remote VM data, update IP allocation if the new package changes IP requirements, refresh anti-spoofing IPSet, and refresh forward + reverse DNS records to reflect any IP changes. |

| State (done) | Next action | What happens |
|---|----------------------|--|
| <code> cp_update_ip </code> | Stop VM | Stop the VM. Required because some downstream steps (disk resize, CPU/RAM limits) cannot be applied to a running VM. Polls until the VM reports <code> stopped </code> . |
| <code> cp_stop </code> | Set CPU & RAM | Apply new CPU cores / sockets / memory from the new package. Skipped if the values are unchanged. |
| <code> cp_cpu_ram </code> | Resize system disk | Grow the system disk to the new size (Proxmox cannot shrink disks — a smaller target is silently skipped). |
| <code> cp_system_disk_size </code> | System disk I/O | Apply new bandwidth limits to the system disk. |
| <code> cp_system_disk_bandwidth </code> | Additional disk | Create an additional disk if the new package includes one and the VM does not have it yet. |
| <code> cp_additional_disk </code> | Additional disk size | Grow the additional disk. |
| <code> cp_additional_disk_size </code> | Additional disk I/O | Apply new bandwidth limits. |
| <code> cp_additional_disk_bandwidth </code> | Network | Update bridge, VLAN and NIC rate limit. |
| <code> cp_network </code> | Firewall | Re-apply per-product firewall options and refresh the anti-spoofing IPSet with the current IP list. |
| <code> cp_firewall </code> | Start VM | Power the VM back on. |
| <code> cp_start </code> | Verify running | Wait up to 5 ticks for the guest to report <code> running </code> . |
| <code> ready </code> | — | Done. VM is live with the new package. |

Skip-if-unchanged optimization

Every `|cp_*|` step first compares the **current** VM configuration with the **target** package configuration. If they match, the step logs `|skip (no change)|` and advances immediately. A downgrade that only reduces RAM, for example, doesn't touch the disks, network, or firewall — it stops the VM, applies RAM, restarts. In practice most package changes complete in 20-40 seconds real time.

In the log this shows up as lines like `|cp_system_disk_size skip → cp_system_disk_bandwidth|`. Useful for auditing what actually changed during a given upgrade.

If the last run had any failures the modal shows a red error banner at the top with the failure reason.

Retry semantics

Change package uses the same "no retry limit, no time bomb" design as deploy:

- A failed step keeps the VM in its current `cp_*` state.
- The next cron tick retries **only that step**, not the whole pipeline.
- Earlier successful steps are never repeated — disk resizes, for example, are not redone on retry.
- A persistent failure is visible in every cron log entry until an admin addresses the root cause.

During the `cp_stop` → `cp_start` window the VM is offline for as long as the hardware changes take. For most upgrades this is under a minute. For large disk resizes it can be longer — Proxmox needs to finish the storage operation before `cp_start` can proceed.

What triggers a change package

A package change starts when `vm_status` is set to `change_package`. That happens when:

- A client completes an upgrade/downgrade order in the client area.
- An admin clicks **Change Package** in the service module commands.
- `ChangePackage` is called through the WHMCS API.

The module verifies the current `vm_status` is either `ready` (normal path) or already `change_package` (idempotent) before setting state. An in-progress deploy or terminate will be respected — the change package request waits until the VM returns to `ready`.

Caveats

- **Disks cannot be shrunk.** Proxmox does not support shrinking virtual disks safely. A downgrade to a smaller disk size logs "skip (new size is smaller)" and keeps the existing larger disk. Billing is unaffected — WHMCS tracks the package, not the disk size on disk.
- **VM must be healthy to stop gracefully.** If the guest OS is unresponsive, `cp_stop` may take longer and eventually force-stop.
- **Cross-node migration during upgrade is not performed.** The VM stays on its current node. If you need to move a VM to a different node during an upgrade, do the

migration separately in Proxmox first.

Related reading

- [Deploy Process](#) — first-time provisioning using the same state-machine pattern.
- [Terminate Process](#) — async service teardown.
- [DNS Zones & Integration](#) — how the DNS refresh during `change_package → cp_update_ip` works.

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