YOORshop SAS

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[company details to be completed]

Report Ref.: YH-DEMO-2026-03
Intervention Date: October 16, 2026

● **RESOLVED & VALIDATED — LOAD 44.8 → 1.2**

SYSTEMS & NETWORK ENGINEERING REPORT • DELIVERABLE #3

Server Speed & Load Diagnostics

Stabilization of critical overload (Load Average 44.83 → 1.01), ASN filtering, granular Nginx cache policy, and PHP-FPM tuning.

RECIPIENT CLIENT

Company: Distribution Auto & Stock SAS (Fictional)
Domain: https://pieces-stock.example
Dedicated Server: srv-demo.yoorhosting.com
Architecture: Intel Xeon E-2388G (16T) • 64 GB RAM

SERVER LOAD AVERAGE
44.83 → 1.01
Stabilized across 16 Xeon threads

OVERALL CPU USAGE
~2%
After ASN filtering & Unison fix

PRODUCT PAGE STOCK
Real-Time BYPASS
Categories cached for 30 min

PHP-FPM / NGINX TIMEOUT
120 s → 300 s
Long imports & exports secured

CLIENT REQUEST

"Immediately halt the critical load spikes (Load Average > 44) slowing down our 16T Xeon server while meeting four strict business requirements: 1) restore traffic from our AWS-hosted marketing partner, 2) completely exempt our office static IP (`203.0.113.20`) and the back-office from rate limiting, 3) guarantee real-time stock display on single-item product pages synced with marketplaces, and 4) extend import/export execution timeouts to 300 seconds."

SYSTEM & WEB SCOPE

- Server `srv-demo.yoorhosting.com` (Xeon E-2388G 8C/16T, 64 GB RAM), Nginx front-end, and dedicated PHP-FPM pool.
- Nginx ASN filtering rules, `geo` directives, and rate-limiting zones (`limit_req`).
- Unison file synchronization service on `/home` and `pieces-stock.example.php-fpm.yaml` configuration.

DIAGNOSTIC METHODOLOGY

- Correlation of real-time Netdata metrics with the system process table and Nginx access/error logs.
- Incoming traffic classification by Autonomous System Number (ASN), User-Agent fingerprint, and response payload size.
- HTTP validation testing (`200` status codes, `X-Cache-Status` headers) across every user profile.

1 Identified Root Causes of the 44.83 Load Spikes

OVERLOAD FACTOR	TECHNICAL MECHANISM OBSERVED IN LOGS AND NETDATA	MEASURED IMPACT
1. Intensive Cloud Scraping ASN 396982 & ASN 16509	Fleets of IP addresses hosted on Google Cloud (`ASN 396982`) and AWS (`ASN 16509`) crawled thousands of product URLs using forged desktop User-Agents (Chrome Mac), forcing continuous PHP-FPM and MariaDB execution.	**PHP worker saturation**
2. Bots Hitting Heavy Categories	Repeated automated requests against large, uncached category pages, dynamically generating **4.5 MB** HTML responses on every hit.	**CPU & bandwidth spike**
3. Looping Unison Process	A `repeat = 5` setting forced the Unison synchronization utility to rescan the entire `/home` directory tree every 5 seconds continuously.	**50% of 1 core non-stop**

Before intervention: Load Average 33.45 to 44.83 (16T Saturation) **280%**

After intervention: Load Average 1.01 to 1.42 (Global CPU ~2%) **~7.5% capacity**

Server Speed & Load Diagnostics — https://pieces-stock.example

Ref. YH-DEMO-2026-03 • Server srv-demo.yoorhosting.com (Xeon E-2388G 16T, 64 GB RAM)

PRODUCTION CONFIGURATION LIVE

2 Engineering Fixes Deployed on Nginx and PHP-FPM

INTERVENTION AREA	TECHNICAL IMPLEMENTATION AND OPERATIONAL PROOF
A. Marketing Partner Whitelist (AWS)	The marketing connector (hosted on AWS Frankfurt: `198.51.100.222` and `198.51.100.26`) had been caught by the initial ASN 16509 block at 13:06. Both IPs were added to priority directives `geo $is_trusted_ip` and `geo $is_rate_limit_exempt`: 100% exemption from ASN filtering and rate limiting (streams restored to `HTTP 200`).
B. Office, Back-Office & Media Exemption	• **Operator Static IP (`203.0.113.20`):** exempted from all rate limits site-wide via dynamic Nginx key `$site_rate_limit_key`. • **Back-Office (`/admin-panel` and `admin*`):** completely exempted from ASN filtering and rate limiting. • **Static Assets (`.jpg`, `.png`, `.css`, `.js`):** rate limiting removed from global context and scoped strictly to `location /`, permanently eliminating `HTTP 429` errors when loading thumbnail-heavy pages.
C. Hybrid Nginx Cache & Real-Time Stock	To prevent double-selling of unique second-hand parts synchronized with marketplaces: • **Product Pages (`*.html`):** systematic Nginx cache bypass (`X-Cache-Status: BYPASS`), serving live stock directly from PrestaShop (same for logged-in visitors, carts, and checkout flows). • **Category Pages (e.g., `/416-berlines`, `/77-pieces-occasions`):** active Nginx cache (30 min TTL) retained to absorb heavy 4.5 MB pages.
D. Timeout Extended to 300 s	`request_terminate_timeout` was raised from `120s` to `300s` (5 minutes) in `pieces-stock.example.php-fpm.yaml`, aligned with Nginx's `proxy_read_timeout 300s` to secure long data imports and exports.

3 Control Audit of Blocked (HTTP 403) and Rate-Limited (HTTP 429) Requests

Cross-verification of Nginx logs since 13:00 confirms that **no shipping carrier, payment gateway (card, PayPal), marketplace feed, or legitimate Google indexing bot was affected**:

TRAFFIC BLOCKED WITH HTTP 403 (FORBIDDEN)

- **Datacenter Scrapers:** Google Cloud / AWS bots spoofing browser User-Agents to scrape product listings.
- **Vulnerability Scanners:** automated probes targeting `/.git/config`, `/.git-credentials`, and `/npm-debug.log`.
- **Marketing Partner (`198.51.100.222` / `.26`):** unblocked and placed on permanent whitelist.

TRAFFIC LIMITED WITH HTTP 429 (TOO MANY REQUESTS)

- **Identified Cause:** simultaneous download of dozens of product thumbnails (`.jpg`) when opening a category page.
- **Resolution:** `0 residual 429 errors` since excluding static media from the `limit_req` zone and exempting office IP `203.0.113.20`.

4 Before / After Comparison Summary and Maintenance Recommendations

PARAMETER / SERVICE	INITIAL CONFIGURATION (BEFORE)	FINAL CONFIGURATION (AFTER)	VERIFIED STATUS
Server Load (Load Average)	**33.45 to 44.83** (Critical overload)	**1.01 to 1.42** (Nominal for 16T, CPU ~2%)	**Smooth & stable**
Marketing Connector (AWS)	Blocked by ASN 16509 rule (HTTP 403)	Priority whitelist (`198.51.100.222` / `.26`)	**Operational (200)**
Office IP (`203.0.113.20`)	Limited to 6 req/s (429 errors on images)	100% exempted + media outside rate-limit	**Unlimited access**
Administration (`/admin-panel`)	Subject to ASN filtering & Rate Limit	Full ASN & Rate Limit exemption	**Unlocked**
Product Page Stock (`.html`)	30-min Nginx cache (double-sale risk)	`X-Cache-Status: BYPASS` (live direct stock)	**Real-time stock**
Category Pages (4.5 MB)	Dynamic PHP generation on every hit	Active Nginx cache (30-minute TTL)	**Load absorbed**
PHP Timeout (Imports/Exports)	120 seconds (aborts on large feeds)	**300 seconds** (aligned Nginx + PHP-FPM)	**5-min exports OK**