

# OSM — OpenStreetMap Platform

Categories: Application Info · Context: OSM · Exported: 2026-06-22 09:32

## Infrastructure (auto-generated)

Context: OSM

### PROD

Name	Hostname	IP	Status	Role	OS
dfs-imposm-01	dfs-imposm-01.dpko.un.org	10.130.202.37	active	—	RHE 7
Notes: UN Vector Tiles app - Related infrastructure					
dfs-osmpgsql-01	dfs-osmpgsql-01.dpko.un.org	10.129.75.169	active	—	RH7
Notes: UN Vector Tiles app - Related infrastructure					
dfs-osmpgsql-02	dfs-osmpgsql-02.dpko.un.org	10.129.75.170	active	—	RH7
Notes: UN Vector Tiles app - Related infrastructure					
dfs-osmpgsql-03	dfs-osmpgsql-03.dpko.un.org	10.129.75.171	active	—	RH7
Notes: UN Vector Tiles app - Related infrastructure					
unosm-p-app-02	unosm-p-app-02.global.un.org	10.130.3.22	active	User Interface	—
unosm-r-app-01	unosm-r-app-01.global.un.org	10.128.128.49	active	Data Import	RHE 9.7
Notes: sdb and sdc are some kind of cluster as both added create the /data partition: disk └─data-lv_data 253:2 0 1000G 0 lvm /data sr0 11:0 1 1024M 0 rom					
unosm-r-app-02	unosm-r-app-02.global.un.org	10.130.207.88	active	User Interface	—
unosm-r-data-01	unosm-r-data-01.global.un.org	10.128.136.63	active	Data Export	RHE 9.6

Name	Hostname	IP	Status	Role	OS
unosm-r-db-01	unosm-r-db-01.global.un.org	10.130.132.154	active	Database	RHE 9.7
Notes: Write node					
unosm-r-db-02	unosm-r-db-02.global.un.org	10.130.132.155	active	Database	RHE 9.7
Notes: Read-only node					
unosm-r-db-03	unosm-r-db-03.global.un.org	10.130.132.158	active	Database	RHE 9.7
Notes: Read-only node					

# OSM — OpenStreetMap Platform

## iNeed Asset Name

Open Street Map Server (ImpOSM)

## What it is

OpenStreetMap data platform. ImpOSM is the import/processing component.

Managed by Zeeshan's team (GIS PM). Carlos handles DB/infra support.

## Servers (PROD, dpko.un.org, RHEL 7)

- dfs-imposm-01 — ImpOSM import server
- dfs-osmpgsql-01, 02, 03 — PostgreSQL DB servers
- GIS servers: dfs-gisosm-01 (PROD), dfs-gisosm-11 (PRE)
- GIS DB: dfs-gispgsql-02 (PROD), dfs-gispgsql-12 (PRE)

## Active Tasks

- OSM data migration - pending tasks (overdue Mar 19)
- Migration to Proxmox - Prepare OSM data server migration (overdue Mar 20)

- OSM Monthly patches - Consolidate procedure (due Mar 31)
- OSM Maps Batch 5A (due Mar 31)

## Projects

- New OSM updates procedure - Consolidate and execute (no deadline)
- Migration to Proxmox - Phase 2 (overdue Mar 6)

## FW Rules Issue (Current)

FW rules requested for OSM server access got stuck in security approval with Antonio Candelaria.

Zeeshan spoke to Antonio. Carlos to debrief with Zeeshan (call due this week).

## Knowledge Gaps

- What does the monthly patch procedure involve step by step?
- What does OSM Batch 5A mean?
- What is the OSM data migration pending — what data?

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## Infrastructure Detail — unosm-r-app-01

Compiled 2026-03-31

### Server Overview

Property	Value
Hostname	unosm-r-app-01
OS	RHEL (Red Hat Enterprise Linux)
Role	OSM data processing

### Filesystem Layout

Mount	Size	Notes
/	53G	Root filesystem
/var	15G	Logs and system data
/data	1000G	Main data volume
/boot	994M	Boot partition
/tmp	63G	RAM-backed (tmpfs)

**Note:** Application data (imposm diffs, service account home dirs) lives under /home on root, NOT on /data.

## Service Accounts

Account	Purpose
_osmprod	Main OSM production — runs imposm
_osmstat	OSM statistics processing
_osm2pgsql	osm2pgsql bulk imports
adm.pfrizzer	Admin user (UN domain)

## Application Stack

### Imposm

- Location: /home/\_osmprod/imposm/
- Versions: 0.11.1, 0.14.0, 0.14.2
- Function: keeps PostGIS DB in sync with OSM planet via daily replication diffs
- Replication source: <https://planet.openstreetmap.org/replication/day/>
- Diff storage: /home/\_osmprod/imposm/diffs/osm\_planet/ and osm\_planet\_buildings/
- State file: /home/\_osmprod/imposm/diffs/osm\_planet/last.state.txt

### Imposm downloader behaviour:

- Uses parallel workers; temp files named SEQ.osc.gz~ID during download
- On success: renamed to final filename, temp files deleted automatically
- On interruption: orphaned temp files left behind — must be cleaned up manually
- Also contains LevelDB caches: nodes/, ways/, relations/, coords\_rel\_index/, ways\_index/

### osm2pgsql

- Service account: \_osm2pgsql
- Handles bulk imports into PostGIS

**osmosis 0.49.2** — present under imposm bin dir

## Installed Agents

Tool	Purpose
Elastic Agent (/opt/Elastic/Agent)	Monitoring + log/metric forwarding
Nessus Agent (/opt/nessus_agent)	Vulnerability scanning
filebeat	Additional log shipping
GCC Toolsets 12/13/14	Build toolchains (compiled software present)

## Security & Identity

- Domain-joined to global.un.org via SSSD
  - auditd running (audit logging active)
  - filebeat + Elastic Agent for log shipping
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## UNOSM Architecture (detailed reference)

### Mental Model

- **Write brain:** unosm-r-db-01
  - **Read helpers:** unosm-r-db-02, unosm-r-db-03
  - **Importer:** unosm-r-app-01
  - **User entry points:** unosm-r-app-02 (Brindisi), unosm-p-app-02 (Valencia)
  - **Traffic cop:** NetScaler → osmpgsql.dfs.un.org
  - **Exporter:** unosm-r-data-01
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### Database Layer (PostgreSQL)

#### Master

- **unosm-r-db-01** (Brindisi)
- Handles **all writes:** INSERT, UPDATE, DELETE
- Manages transactions locally
- Generates **WAL logs**

#### Slaves

- **unosm-r-db-02** (Brindisi)
- **unosm-r-db-03** (Valencia)
- **Read-only replicas**
- Receive WAL logs **asynchronously**

- Can be slightly behind the master

## Replication Model

- Asynchronous replication
- Master commits **without waiting** for slaves
- Faster writes, possible replication lag

## Failure Behavior

- No automatic failover
  - If **unosm-r-db-01** fails:
    - **Manual promotion** of unosm-r-db-02 or unosm-r-db-03 required
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## Application Layer

### Data Ingestion

- **unosm-r-app-01**
- Imports OpenStreetMap data using **Imposm**
- Feeds data into unosm-r-db-01

### Client Access

- **unosm-r-app-02** (Brindisi)
  - **unosm-p-app-02** (Valencia)
  - Receive user requests
  - Distribute read queries to database slaves
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## Load Balancing & Traffic Flow

### Global Load Balancer

- **NetScaler**
- Public endpoint: `osmpgsq1.dfs.un.org`
- Routes traffic based on:
  - Client location
  - Site load
  - Performance metrics

### Current Behavior

- Active load balancing mainly **within Brindisi**
  - Valencia is available but less actively used
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## Export & Supporting Services

### Data Export

- **unosm-r-data-01**
- Dedicated to export jobs
- Prevents heavy exports from impacting core services

### TL;DR Flow

Users → NetScaler → App Servers → Read Slaves/Imports → unosm-r-app-01 → unosm-r-db-01Writes → unosm-r-db-01 → WAL → Slaves