

SALFETCH

Discover · Document · Operate · Upgrade — your entire network estate from one web app.

Developed by **Saleh Alharbi**

info@salfetch.app

Website: salfetch.app

LinkedIn: [linkedin.com/in/saleh-alharbi-b492aa213](https://www.linkedin.com/in/saleh-alharbi-b492aa213)

What is SALFETCH?

A self-hosted web application that automates day-to-day network operations across a whole fleet — replacing repetitive, device-by-device CLI work with parallelized tasks and clean reports.

Parallel by design

Runs a task across hundreds of devices at once using worker pools — not one SSH session at a time.

Multi-platform

Auto-detects IOS, IOS-XE, NX-OS, and IOS XR and uses the right commands and workflow per platform.

Report-first

Every task produces an Excel workbook, a technical PDF, and a sanitized executive summary PDF.

Operator-friendly

Browser UI with task groups, live job logs, scheduling, and email alerts — no scripting needed to run.

End-to-End Architecture

How a request flows from the browser to your network gear and back as reports.



16 Tasks, Four Workflows

Tasks are organized by where they sit in the network lifecycle.

Discovery

4

- Network Infrastructure Discovery
- Inventory
- Reachability Check
- Topology Discovery

Information

5

- Fetch Version
- Interface Description
- Routing Health Check
- Device Health Check
- VLAN Availability Check

Operations

5

- Configuration Backup
- Push Commands (Fast)
- Push Commands (Sequential)
- Routing Notifications
- Circuits Monitoring Dashboard

Lifecycle

2

- Transfer Image
- Upgrade

Discovery Tasks

Network Infrastructure Discovery

Scan CIDRs / ranges / IPs. Two-phase: fast TCP probe, then SSH/telnet classification with multiple credentials. Sorts devices into one Excel sheet per platform family.

Inventory

Hardware inventory per stack member: hostname, version, model, serial, license tier — one row per member, PSUs/fans filtered out.

Reachability Check

Parallel ICMP ping sweep across a device list, exported as a color-coded Excel report.

Topology Discovery

Walks CDP + LLDP neighbor tables and builds a normalized Excel topology plus an SVG diagram that scales in any browser.

Information Tasks

Fetch Version

Reads show version across a list and reports only devices matching the golden/cleared versions you specify.

Interface Description

Auto-sets interface descriptions from CDP/LLDP neighbor data. Dry-run by default; IP phones skipped.

Routing Health Check

Gathers neighbor state for every dynamic protocol (BGP, OSPF/OSPFv3, EIGRP, IS-IS, RIP, PIM). Catches flush-on-down neighbors via syslog. Color-coded Excel + PDF + executive summary.

Device Health Check

Snapshots CPU, memory, temperature, power, fans, storage, interface errors, stack state, and recent critical syslog. Lite / Standard / Full depth.

VLAN Availability Check

Sweeps switches for a chosen VLAN ID before fleet-wide deployment — reports where it already exists and whether it's in use, so you proceed or pick another.

Operations Tasks

Configuration Backup

Auto-detects platform and saves running-config from every device into a downloadable zip.

Push Commands (Fast)

Pushes mixed show + config commands to many devices in parallel. Smart-routes show vs config; blocks dangerous EXEC by default.

Push Commands (Sequential)

One-by-one variant for devices sensitive to many concurrent SSH sessions.

Routing Notifications

Continuous monitor: polls on an interval and emails when any selected protocol's neighbor state transitions UP/DOWN.

Circuits Monitoring Dashboard

Live NOC dashboard (no email): one status tile per device; click any tile for a tree of each protocol's neighbors and state.

Lifecycle Tasks

Transfer Image

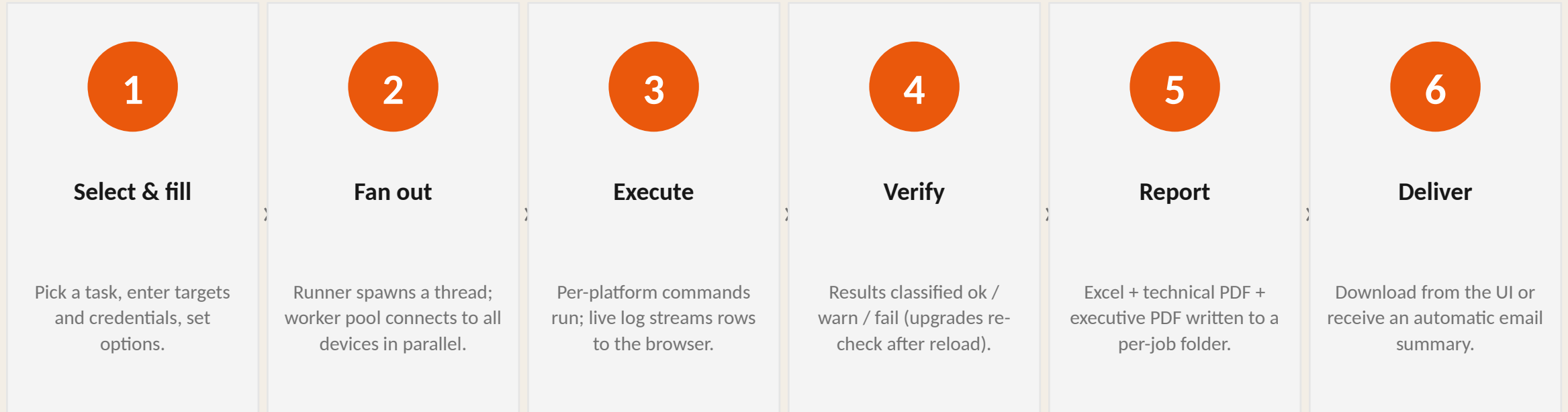
SCP over SSH (IOS / IOS-XE) with storage auto-detect. High-speed AES-GCM with fallback. Stack-aware fan-out to all members.

Upgrade

Full IOS / IOS-XE upgrade. Free-space cleanup, image verification, post-reload version confirmation, and a pending/retry flow for slow-booting devices.

A Job, End to End

What happens between clicking Run and downloading the report.



Outputs Built for Everyone

Each job lands in its own task-named folder, with three layers of detail.

Excel Workbook

FOR ENGINEERS

Full structured data — one sheet per family/protocol, color-coded ok/warn/fail, auto-filtered.

Technical PDF

FOR THE RECORD

A printable, branded snapshot of the same data — easy to archive or attach to a change ticket.

Executive Summary PDF

FOR MANAGEMENT

Sanitized, plain-language counts and outcomes — no IPs or device internals. Forward as-is.

Folder layout: `outputs / <Task Name> / <Task>_job_<id> / → .xlsx · .pdf · _Executive_Summary.pdf`

Built to Be Trusted

Technology

- FastAPI + Uvicorn — async web framework
- SQLAlchemy + SQLite — jobs, users, schedules
- Netmiko — multi-vendor SSH / telnet
- APScheduler — recurring & scheduled jobs
- openpyxl + ReportLab — Excel & PDF output
- bcrypt + itsdangerous — auth & sessions

Safety & Control

- Dry-run defaults — changes require explicit Apply
- Dangerous EXEC commands blocked by default
- Per-user task permissions; admin controls
- Upgrades verify image + confirm post-reload
- Pending/retry flow instead of false failures
- Full audit log of who ran what, and when

16

Automation tasks

4

Platform families

3

Report formats

1

Web app

Tailored to Your Network

SALFETCH adapts to what you need — you're not locked into the whole platform.



Pick your tasks

Deploy the tasks that fit your operation — discovery only, health monitoring only, or the full lifecycle. You pick the modules; you don't have to take all 16.

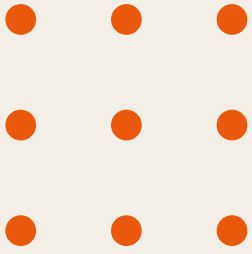
Run only the workflows that matter to your team.



Design your own task

Have a workflow that's unique to your environment? SALFETCH is built to be extended — new custom tasks can be designed and added to automate exactly what your network requires.

If you can describe the workflow, SALFETCH can be built to run it.



From hours of CLI work

to minutes — fleet-wide.

Built around your needs — choose the tasks that fit, or have new ones designed for your network.

SALFETCH

Developed by **Saleh Alharbi**

info@salfetch.app

Website: salfetch.app

LinkedIn: [linkedin.com/in/saleh-alharbi-b492aa213](https://www.linkedin.com/in/saleh-alharbi-b492aa213)