

# aix-exporter

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Native Prometheus exporter for IBM AIX systems, written in C with `libperfstat`.

Collects 22 categories of system metrics from AIX LPARs and exposes them in Prometheus format via an HTTP endpoint.

**Website:** <https://aixwatch.com>

## Supported Systems

AIX Version	Status
AIX 7.1 TL5	✓ Tested
AIX 7.2 TL5	✓ Tested
AIX 7.3	✓ Tested

Runs on IBM Power Systems (POWER7 and later), both dedicated and shared processor LPARs.

## Prerequisites

The following runtime libraries are required (most are included with AIX or the AIX Toolbox for Linux Applications):

Library	Package	Source
<code>libperfstat.a</code>	<code>bos.perf.libperfstat</code>	AIX base
<code>libpthread.a</code>	<code>bos.rte</code>	AIX base

Library	Package	Source
<code>libc.a</code> , <code>libcrypt.a</code>	<code>bos.rte</code>	AIX base
<code>libcfg.a</code> , <code>libodm.a</code> , <code>liblvm.a</code>	<code>bos.rte</code>	AIX base
<code>libsrc.a</code>	<code>bos.rte</code>	AIX base
<code>libatomic.a</code> , <code>libgcc_s.a</code>	<code>gcc-libs</code>	AIX Toolbox
<code>libmicrohttpd.a</code>	—	Shipped in BFF
<code>libprom.a</code> , <code>libpromhttp.a</code>	—	Shipped in BFF

All AIX base libraries are present on any standard AIX installation. The only external dependency is `gcc-libs` from the [AIX Toolbox for Linux Applications](#):

```
rpm -ivh gcc-libs-12.2.0-2.aix7.2.ppc.rpm
```

## Features

- **22 collectors** covering CPU, memory, storage, network, protocols, NFS, and more
- **Zero dependencies at runtime** — single static binary, no Python/Java/Node.js
- **Prometheus 3.x compatible** — proper `Content-Type` headers
- **SRC integration** — managed via AIX System Resource Controller
- **Auto-start at boot** — `inittab` entry created at install
- **Configuration file** — enable/disable collectors without restarting
- **SIGHUP reload** — reload configuration without downtime
- **Collector timeout protection** — individual collectors timeout after 10s without affecting others

- **Compatibility mode** — `node_*` metric prefix for existing `node_exporter` dashboards
- **Grafana dashboard included** — ready-to-import JSON with 60+ panels
- **BFF packaging** — standard AIX `installp` package

## Available Collectors

### System

Collector	Description
<code>partition</code>	LPAR statistics (CPU entitlement, pool, weight, capped/uncapped)
<code>cpu</code>	Per-CPU utilization (user, sys, idle, wait) via SPURR
<code>mem</code>	Memory usage (real, virtual, pinned, available)
<code>mem_pages</code>	Memory paging statistics (page in/out, faults, scans)
<code>loadavg</code>	System load averages (1, 5, 15 min) with float precision
<code>processes</code>	Process counts (total, running, zombies, threads)
<code>uptime</code>	System uptime in seconds
<code>lpar_config</code>	LPAR configuration (vCPUs, SMT, memory caps, pool, weight)

### Storage

Collector	Description
<code>disk</code>	Per-disk I/O (reads, writes, queue depth, service time)
<code>diskadapter</code>	Disk adapter throughput and utilization

Collector	Description
diskpath	Disk multipath (MPIO) statistics
filesystems	Filesystem usage (size, used, free, inodes)
pagingspace	Paging space usage per volume (LV and NFS)

## Network

Collector	Description
net	Network interface statistics (bytes, packets, errors)
netadapter	Network adapter statistics
netbuffer	Network buffer pool usage
fc	Fibre Channel HBA statistics (frames, bytes, errors, link failures)
protocol	TCP/UDP/IP/ICMP protocol counters
nfs	NFS client/server and RPC statistics (generic, v3, v4)

## Monitoring

Collector	Description
errpt	AIX error report entries grouped by class × type (24 buckets)
vmstat	vmstat-style metrics (runqueue, swap rate, context switches)

## Compatibility

Collector	Description
compat	

Collector	Description
	Expose metrics with <code>node_*</code> prefix for node_exporter dashboards

## Installation

### From BFF Package (recommended)

```
# Download from https://aixwatch.com
installp -aXd aix-exporter.1.0.0.0.bff aix-exporter

# Verify
lsllp -l aix-exporter.rte
lssrc -s aix-exporter
```

The installer automatically: - Installs the binary to `/usr/local/bin/aix-exporter` - Installs required libraries to `/usr/local/lib/` - Creates the configuration directory `/etc/aix-exporter/` - Registers the SRC subsystem - Adds an inittab entry for automatic startup at boot - Cleans up legacy `prom_exporter` installations

### Start / Stop

```
startsrc -s aix-exporter          # Start
stopsrc -s aix-exporter           # Stop
lssrc -s aix-exporter             # Status
refresh -s aix-exporter           # Reload config (SIGHUP)
```

### Uninstall

```
stopsrc -s aix-exporter
installp -u aix-exporter
```

# Configuration

Default configuration file: `/etc/aix-exporter/aix-exporter.conf`

```
# TCP port (default: 9100)
port = 9100

# Sampling period in seconds (default: 30)
sampling = 30

# Listen address (default: 0.0.0.0)
# listen = 127.0.0.1

# Collectors to enable (comma-separated, no spaces)
# Available: cpu, mem, mem_pages, disk, diskadapter, diskpath,
#            net, netadapter, netbuffer, partition, filesystems,
#            vmstat, fc, compat, pagingspace, uptime, processes,
#            errpt, loadavg, lpar_config, protocol, nfs, all
collectors = all
```

See the installed configuration file for detailed documentation of all options.

## CLI Options

```
aix-exporter [options]

-p <port>   TCP port (default: 9100)
-s <sec>    Sampling period (default: 30)
-k <file>   Configuration file (default: /etc/aix-exporter/aix-expo
-l <addr>   Listen address (default: 0.0.0.0)
-v          Print version and exit
-h          Show help
```

CLI options take precedence over the configuration file.

## HTTP Endpoints

Endpoint	Description
<code>/metrics</code>	Prometheus metrics
<code>/health</code>	Health check (JSON)
<code>/ready</code>	Readiness check (JSON)
<code>/</code>	Simple OK response

## Grafana Dashboard

A ready-to-use dashboard is included in `resources/AIX_Server_Overview.json` with 60+ panels covering all collectors.

Import via Grafana UI: **Dashboards** → **Import** → **Upload JSON file**

## Building from Source

Requirements: - GCC (IBM AIX Toolbox or GCC for AIX) - libperfstat (included with AIX) - libmicrohttpd - [prometheus-client-c](#) (libprom + libpromhttp)

```
# Build prometheus-client-c first
cd /opt/freeware/src/prometheus-client-c
make clean && make PLATFORM=aix CC=gcc
make install

# Build aix-exporter
cd /opt/freeware/src/aix-exporter
make clean && make CC=gcc

# Create BFF packages
make bff CC=gcc
```

## Trial Edition

The trial edition is limited to CPU, memory, and partition collectors only. All other collectors require a licensed version.

Purchase at <https://aixwatch.com>

## License

Proprietary — see `EULA.md` for terms.

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