# LDMS USER GROUP MEETING

Nov 3, 2025

# Agenda

- V4.5.1 has been released
- Significant Features in V4.5.1
- LDMSCON2026 Updates
- V4.5.2 Release Target
- Q&A

# Significant Features in V4.5.1

- General Networking Improvements
- Message Bus Subsystem (replaces Streams)
- Multi-instance Plugins
- Decomposition Improvements
- Sampler thread improvements
- Message Logging API that allows log-level configuration by *subsystem*
- Peer Daemon Advertisement
- Support for YAML configuration in LDMSD
- New/Improved Samplers

# V4.5.1 Networking Improvements

- Single logical transport runs over multiple connections (RAIL)
  - Each RAIL has its own I/O thread
  - Traffic between peers is spread across RAILS
    - LDMS Messages
    - Set lookup/update

# Message Bus API

- Trusted credentials (UID, GID, Permission) are end-to-end
- Detailed statistics: counts, drops, timestamps by client
- QUOTA
  - Message buffering can be capped for a connection
  - Current quota is exchanged between peers to avoid overrunning consumer
- Rate
  - Network bandwidth  can be capped between peers
- Qgroups
  - Qgroup is defined as set of IP-addresses/Ports
  - Quotas are shared/computed between members of each group
  - Capping network bandwidth of messages going through the group

# Message Bus API (cont.)

- Selected samplers/stores have  been converted from streams API
  - slurm_sampler
  - papi_sampler
  - syspapi_sampler
  - netlink
  - linux_proc_sampler
  - blob store

# Multi-instance Plugins

- A single plugin can support multiple configurations
- Selected subset of plugins have been made multi-instance capable
  - Samplers
    - Meminfo
    - procnetdev2
    - app_sampler
    - json_stream_sampler
    - filesingle
    - cxi_sample
    - test_samplerr
  - Stores
    - store_csv
    - store_sos
    - store_arvo_kafka

# Sampler Threading Improvements

- Add “exclusive_thread=1” option to “start” command
  - The sampler will have a thread exclusively to itself.
  - Useful for sampler with long sampling time.

# Decomposition Improvements

- Simplified syntax:
  - Decomposition matching by schema name (in addition to just SHA).
    - This can be regular expression.
  - “name[record_field]” in “src” field can be used to access record field.

# ovis_log Logging API

- Set the log level of sub-system, e.g., configuration-related, specific plugin instance, and updater routine
- Combination of the log levels: DEBUG, INFO, WARNING, ERROR, CRITICAL
- Dedicated thread to write to the log file

# Peer Daemon Advertisement

- Enable LDMS daemons to automatically add producers for peer daemons
- Reduce manual configuration overhead in large deployments
- Support filtering by hostnames or IP addresses
- Support both passive and active producers
  - Passive: aggregator creates producers that leverages the connection initiated by advertising peers
  - Active: aggregator creates producers that initiate connections to advertising peers

# YAML Configuration in LDMSD

- Allow users to pass a YAML configuration file on the ldmsd command line
- Entire cluster configuration or a single LDMSD can be defined in a single YAML file
- YAML file shares configuration structure with Maestro
- LDMSD's are identified with unique "names"

*ldmsd -y cluster_config.yaml -n sampler-1*

# Migration Requirements for V4.5.1

- `ldmsd` runs in foreground
  - Need to modify your systemd configuration (simply remove type=forking line)
- Add `stream_enable` to your existing config files if you are using Stream
- Add `msg_enable` to your existing config files if you are using new Message API
- If you use `-P` for specifying worker threads at the ldmsd startup, add `worker_threads num=<value>` to your config files and remove `-P` from the command line
- Log message format change
  - Log message format has changed by default (now excludes date/time)
  - Use `LDMSD_LOG_DATE_TIME` environment variable to maintain v4.4 format

# LDMSCON2026

- Location is at David Rubenstein Forum, University of Chicago (same location as last year)
- Dates are either June 2-4 or June 9-11

# V4.5.2 Release Target

- Hard target of February 2026
- Key Features
  - Message Channel API
  - Event-Based Storage
  - Curated Metric Set Sampler
  - Job Manager API
  - Multi-tenant Infrastructure
  - file_importer sampler
  - Bug Fixes for v4.5.1

# Q&A

- Lustre server metrics collection issue in v4.5.1
  - store_influx assumes job_id metric exists, but lustre server set doesn't contain it, causing assertion failure
  - Patch for v4.4.7 created: https://github.com/ovis-hpc/ldms/pull/2091
    - Pending testing
    - V4.5.2 patch will follow
  - An update to add decomposition support to store_influx has been mentioned: https://github.com/ovis-hpc/ldms/issues/2092
- Pull request prioritization for v4.5.2
  - Approach: Merge orthogonal pull requests first to minimize code conflicts and reduce rebasing effort



# Thank you!