Workforce Management Administrator's Guide

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Using WFM Prometheus metrics for monitoring & troubleshooting

To support additional resiliency and observability capabilities for (but not limited to) cloud based environment and deployment, the backend components of Genesys Workforce Management solution are modified to support Prometheus based metrics, available via http endpoints for engage on premise platform.

Use the below URL for WFM Prometheus based metrics:
`http://<server-host>:<port>/metrics`

Where:
`<server-host>` - Host on which WFM backend component running (WFM Server, Builder, Data Aggregator or Daemon)
`<port>` - Port on which WFM backend component (WFM Server, Builder, Data Aggregator or Daemon) accepting client requests. This `<port>` can either be the default server listening port or a dedicated management port that need to be enabled with the management-port option:
`management-port = <port>`

For more information, see the the following URLS:

Prometheus models: https://prometheus.io/docs/concepts/data_model/
Prometheus supported metrics types: https://prometheus.io/docs/concepts/metric_types/
Grafana dashboards: https://prometheus.io/docs/visualization/grafana/ (WFM backend components now supports wide list of metrics which will be defined later in this chapter. These metrics can be called and used to build Grafana like dashboards for solution monitoring.)

Following tables describes all supported and available metrics that can be used to build dashboards, reports, alerts and gives you opportunity to monitor solution heath.

System

Name	Type	Description	Labels
wfm_system_start_time_seconds	Gauge	Start time as epoch time, in seconds	[app_name, component, host, version]
wfm_system_uptime_seconds	Gauge	System uptime, in seconds	[component, host]
wfm_system_leader	Gauge	Leader indicator 0/1	[component, host]
wfm_system_cpu_count	Gauge	System CPU count	[component, host]
wfm_system_process_private_bytes	Gauge	Process private bytes	[component, host]
wfm_system_process_virtual_bytes	Gauge	Process virtual bytes	[component, host]
wfm_system_process_cpu_time_ratio	Gauge	Process CPU time %	[component, host]
wfm_system_total_cpu_time_ratio	Gauge	Total system CPU time %	[component, host]
wfm_system_total_committed_bytes	Gauge	Total system committed	[component, host]

Name	Type	Description	Labels
		bytes	
wfm_system_total_commit_limit	Gauge	Total system memory limit, in bytes	[component, host]
wfm_system_total_physical_memory_bytes	Gauge	Total system physical memory, in bytes	[component, host]
wfm_system_total_virtual_memory_bytes	Gauge	Total system virtual memory, in bytes	[component, host]
wfm_system_available_physical_memory_bytes	Gauge	Available physical memory, in bytes	[component, host]
wfm_system_physical_memory_load_ratio	Gauge	Physical memory load %	[component, host]

Session

Name	Type	Description	Labels
wfm_session_count	Gauge	Current session count labeled by the session scope, which can be ‘agent’, ‘user’, ‘user agent’ or ‘system’	[component, host, scope]

Socket Connections

Name	Type	Description	Labels
wfm_connection_total	Counter	Total connections	[component, host]
wfm_connection_refused_total	Counter	Refused connections	[component, host]
wfm_connection_open	Gauge	Open connections	[component, host]
wfm_connection_idle	Gauge	Idle connections	[component, host]
wfm_connection_queued	Gauge	Queued connections	[component, host, direction]
wfm_connection_threads	Gauge	Connection thread count	[component, host, direction]
wfm_connection_threads_limit	Gauge	Connection thread count limit	[component, host, direction]

HTTP

Name	Type	Description	Labels
wfm_http_request_total	Counter	Total requests	[component, host]
wfm_http_request_failed_total	Counter	Total failed requests	[component, host]
wfm_http_request_duration_seconds	Histogram	Successful requests duration, in seconds	[component, host]
wfm_http_request_failed_duration_seconds	Histogram	Failed requests duration, in seconds	[component, host]

Name	Type	Description	Labels
wfm_http_request_latency_seconds	Summary	Successful requests latency over the rolling time window, in seconds	[component, host]
wfm_http_request_failed_latency_seconds	Summary	Failed requests latency over the rolling time window, in seconds	[component, host]
wfm_http_request_failed_ratio	Summary	Failed requests ratio over the rolling time window	[component, host]
wfm_http_request_rps	Summary	Requests per second (RPS) over the rolling time window	[component, host]
wfm_http_request_active	Gauge	Active requests	[component, host, operation, uri]
wfm_http_request_read_time_seconds	Histogram	Request read time, in seconds	[component, host, operation, uri]
wfm_http_request_read_bytes	Counter	Request read bytes	[component, host, operation, uri]
wfm_http_request_write_time_seconds	Histogram	Request write time, in seconds	[component, host, operation, uri]
wfm_http_request_written_bytes	Counter	Request written bytes	[component, host, operation, uri]
wfm_http_response_total	Counter	Total responses	[component, host, code, operation, error, uri]
wfm_http_response_time_seconds	Histogram	Response time, in seconds	[component, host, code, operation, error, uri]
wfm_http_response_latency_seconds	Summary	Successful response latency over the rolling time window, in seconds	[component, host, code, operation, error, uri]
wfm_http_response_failed_latency_seconds	Summary	Failed response latency over the rolling time window, in seconds	[component, host, code, operation, error, uri]

Task

Name	Type	Description	Labels
wfm_task_total	Counter	Total tasks	[component, host, task]
wfm_task_refused_total	Counter	Total refused tasks	[component, host, task]
wfm_task_cancelled_total	Counter	Total cancelled tasks	[component, host, task]
wfm_task_failed_total	Counter	Total failed tasks	[component, host, task]
wfm_task_active	Gauge	Active tasks	[component, host, task]
wfm_task_active_max	Gauge	Maximum active tasks over the rolling time window	[component, host, task]
wfm_task_active_limit	Gauge	Active tasks limit	[component, host, task]

Name	Type	Description	Labels
wfm_task_queued	Gauge	Queued tasks	[component, host, task]
wfm_task_queued_max	Gauge	Maximum queued tasks over the rolling time window	[component, host, task]
wfm_task_queued_limit	Gauge	Queued tasks limit	[component, host, task]
wfm_task_queued_time_seconds	Histogram	Task time in the queue, in seconds	[component, host, task]
wfm_task_handle_time_seconds	Histogram	Task handle time, in seconds	[component, host, task]
wfm_task_duration_seconds	Histogram	Task duration, in seconds	[component, host, task]
wfm_task_latency_seconds	Summary	Task latency over the rolling time window, in seconds	[component, host, task]
wfm_task_all_threads	Gauge	Task thread pool size	[component, host]
wfm_task_all_active	Gauge	Active tasks	[component, host]
wfm_task_all_active_max	Gauge	Maximum number of active tasks since last restart	[component, host]
wfm_task_all_active_limit	Gauge	Active task limit	[component, host]
wfm_task_all_queued	Gauge	Queued tasks	[component, host]
wfm_task_all_queued_max	Gauge	Maximum number of queued tasks since last restart	[component, host]
wfm_task_all_queued_limit	Gauge	Queued task limit	[component, host]
wfm_task_all_throttled	Gauge	Throttled tasks	[component, host]
wfm_task_all_throttled_max	Gauge	Maximum number of throttled tasks since last restart	[component, host]

Database

Name	Type	Description	Labels
wfm_db_connection_total	Counter	Total database connections	[component, host]
wfm_db_connection_failed_total	Counter	Total failed database connections	[component, host]
wfm_db_connections	Gauge	Current database connections	[component, host]
wfm_db_connection_time_seconds	Histogram	Time to establish database connection, in seconds	[component, host]
wfm_db_command_total	Counter	Total number of database commands	[component, host, task]

Name	Type	Description	Labels
		executed	
wfm_db_command_failed_total	Counter	Total number of failed database commands	[component, host, task]
wfm_db_command_duration_seconds	Histogram	Database command duration, in seconds	[component, host, task]
wfm_db_fetch_total	Counter	Total number of database fetches	[component, host, task]
wfm_db_fetch_duration_seconds	Histogram	Database fetch duration, in seconds	[component, host, task]
wfm_db_deadlock_total	Counter	Total number of database deadlocks detected	[component, host, task]

Cache

Name	Type	Description	Labels
wfm_cache_size_bytes	Gauge	Cache size, in bytes, labeled by cache type	[component, host, cache]
wfm_cache_hit_count	Counter	Cache hit count, labeled by cache type	[component, host, cache]
wfm_cache_miss_count	Counter	Cache miss count, labeled by cache type	[component, host, cache]
wfm_cache_hit_ratio	Summary	Cache hit ratio over the rolling time window	[component, host, cache]

Memory Allocations

Name	Type	Description	Labels
wfm_alloc_objects	Gauge	Allocated object count, labeled by object type	[component, host, object]
wfm_alloc_object_size_bytes	Gauge	Object allocation size, in bytes, labeled by object type	[component, host, object]

ETL

Name	Type	Description	Labels
wfm_etl_run_total	Counter	Total ETL runs	[component, host]
wfm_etl_run_failed_total	Counter	Total failed ETL runs	[component, host]
wfm_etl_run_cancelled_total	Counter	Total cancelled ETL runs	[component, host]
wfm_etl_run_progress_pct	Gauge	Last ETL run progress %	[component, host]
wfm_etl_run_start_time_seconds	Gauge	Last ETL run start time as epoch time, in	[component, host]

Name	Type	Description	Labels
		seconds	
wfm_etl_run_end_time_seconds	Gauge	Last ETL run end time as epoch time, in seconds	[component, host]
wfm_etl_run_outcome	Gauge	Last ETL run outcome: 0 - complete, 1 - cancelled, 2 - failed	[component, host]
wfm_etl_record_total	Counter	Total ETL records transferred by subsystem: ‘configuration’, ‘adherence’, ‘schedule’, ‘performance’	[component, host, subsystem]

Data Aggregator (DA)

Name	Type	Description	Labels
wfm_da_writes_db_total	Counter	Total number of DA database record writes	[component, host, record_type]
wfm_da_writes_db_failed_total	Counter	Total number of failed DA database record writes	[component, host, record_type]
wfm_da_writes_db_retried_total	Counter	Total number of retried DA database record writes	[component, host, record_type]
wfm_da_writes_db_queued_time_seconds	Histogram	DA database record time in queue, in seconds	[component, host, record_type]
wfm_da_writes_db_write_time_seconds	Histogram	DA database record write time, in seconds	[component, host, record_type]
wfm_da_writes_db_duration_seconds	Histogram	DA database record write duration, in seconds	[component, host, record_type]
wfm_da_writes_file_total	Counter	Total number of DA dump file data writes	[component, host]
wfm_da_writes_file_failed_total	Counter	Total number of DA dump failed file data writes	[component, host]
wfm_da_writes_queue_size	Gauge	DA database writer queue size	[component, host]
wfm_da_statserver_event_total	Counter	Total number of events received from StatServer, labeled by event type	[component, host, event]
wfm_da_statserver_error_total	Counter	Total number of errors received from StatServer, labeled by	[component, host, event]

Name	Type	Description	Labels
		event type	

Builder

Name	Type	Description	Labels
wfm_builder_job_total	Counter	Total schedule build jobs	[component, host]
wfm_builder_job_failed_total	Counter	Total failed schedule build jobs labeled by error type. Possible 'error' label values: 'internal', 'data', 'network', 'wfmserver', 'cfgserver', 'system'.	[component, host, error]
wfm_builder_job_cancelled_total	Counter	Total cancelled schedule build jobs	[component, host]
wfm_builder_job_active	Gauge	Active schedule build jobs	[component, host]
wfm_builder_job_active_limit	Gauge	Maximum allowed number of active concurrent schedule build jobs	[component, host]
wfm_builder_job_queued	Gauge	Queued schedule build jobs	[component, host]
wfm_builder_job_reading	Gauge	Schedule build jobs reading input data	[component, host]
wfm_builder_job_writing	Gauge	Schedule build jobs saving the results	[component, host]
wfm_builder_job_queue_time_seconds	Histogram	Schedule build jobs time in queue, in seconds	[component, host]
wfm_builder_job_queued_latency	Summary	Job time in queue over the rolling time window, in seconds	[component, host]
wfm_builder_job_read_time_seconds	Histogram	Schedule build jobs reading input data time, in seconds	[component, host]
wfm_builder_job_build_time_seconds	Histogram	Schedule build jobs scheduling time, in seconds	[component, host]
wfm_builder_job_write_time_seconds	Histogram	Schedule build results saving time, in seconds	[component, host]
wfm_builder_job_duration_seconds	Histogram	Schedule build jobs duration, in seconds	[component, host]
wfm_builder_job_sites	Histogram	Schedule build site count	[component, host]
wfm_builder_job_agents	Histogram	Schedule build agent count	[component, host]

Name	Type	Description	Labels
wfm_builder_job_days	Histogram	Schedule build day count	[component, host]
wfm_builder_task_active	Gauge	Active scheduling tasks	[component, host]
wfm_builder_task_active_limit	Gauge	Maximum allowed number of active concurrent scheduling tasks	[component, host]
wfm_builder_task_active_ratio	Summary	Active task ratio (task_active / task_active_limit) over the rolling time window	[component, host]
wfm_builder_task_queued	Gauge	Queued scheduling tasks	[component, host]

Golden Metrics

Name	Type	Description	Labels
golden_signals:traffic	Gauge	Traffic normalized in the range from 0 to 1	[component, host]
golden_signals:latency	Gauge	Latency normalized in the range from 0 to 1	[component, host]
golden_signals:errors	Gauge	Errors ratio	[component, host]
golden_signals:saturation	Gauge	Saturation normalized in the range from 0 to 1	[component, host]

Health

Name	Type	Description	Labels
wfm_health_status	Gauge	Component health status: 0 - green, 1 - yellow, 2 – red includes component’s dependencies and their health statuses	[component, host, dependency]