

# CHA Collector Performance Management Function Guide

Used in containerized deployment

User Guide

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# 1 CHA Performance Management Introduction

CHA generates performance metrics used to measure the behavior and performance of the system. Metrics are also used to generate alarms when values go over or under a specified threshold. Recording rules are an aggregation of multiple metrics to allow for even more useful data points.



## 2 Charging Collector Metrics

Collector metrics used in containerized deployment.

Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_balance_enquiry_akka_requests_total	Number of requests received for the balance enquiry service.	Counter	operation	Possible Values: ExecuteBalanceSnapshot, ReadBucketBalance
cha_collector_balance_enquiry_akka_requests_errors_total	Number of failure responses sent for requests to the balance enquiry service.	Counter	code	Error Code
			operation	Possible Values: ExecuteBalanceSnapshot, ReadBucketBalance
cha_collector_balance_enquiry_akka_request_duration_seconds	Average time taken to process a request received for the balance enquiry service. The unit of measurement is milliseconds.	Summary	operation	Possible Values: ExecuteBalanceSnapshot, ReadBucketBalance
cha_collector_balance_adjustment_akka_requests_total	Number of requests received for the balance adjustment service.	Counter	operation	Possible Values: UpdateBucketBalance
cha_collector_balance_adjustment_akka_requests_errors_total	Number of failure responses sent for requests to the balance adjustment service.	Counter	code	Error Code
			operation	Possible Values: UpdateBucketBalance



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Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_balance_adjustment_akka_request_duration_seconds	Average time taken to process a request received for the balance adjustment service. The unit of measurement is milliseconds.	Summary	operation	Possible Values: UpdateBucketBalance
cha_collector_balance_expiry_offset_akka_requests_total	Number of Balance Expiry Offset Trigger requests received.	Counter	operation	Possible Values: BalanceExpiryOffsetTrigger
cha_collector_balance_expiry_offset_akka_requests_errors_total	Number of Balance Expiry Offset Trigger requests resulted in an error.	Counter	code	Error Code
			operation	Possible Values: BalanceExpiryOffsetTrigger
cha_collector_balance_expiry_offset_akka_request_duration_seconds	Average response time of a Balance Expiry Offset Trigger request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: BalanceExpiryOffsetTrigger
cha_collector_cil_data_mgmt_java_requests_total	Number of CIL Data Management operations performed	Counter	customer_partition	Represents the Partition ID where the customer belongs.
			method	The Service operation that has been performed. Possible Values: get, put, delete.



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_cil_data_mgmt_java_requests_errors_total	Number of CIL Data Management operations resulted in an error	Counter	code	Charging Internal Response Code to represent the reason of failure.
			customer_partition	Represents the Partition ID where the customer belongs.
			method	The Service operation that has been performed. Possible Values: get, put, delete.
cha_collector_cil_data_mgmt_java_request_duration_seconds	Time taken to perform the requested operation via CIL Data Management Service. The unit of measurement is milliseconds	Summary	customer_partition	Represents the Partition ID where the customer belongs.
			method	The Service operation that has been performed. Possible Values: get, put, delete.
cha_collector_rmca_data_enquiry_java_requests_total	Number of RMCA Data Management requests executed.	Counter	operation	Possible Values: get
cha_collector_rmca_data_enquiry_java_requests_errors_total	Number of RMCA Data Management requests resulted in an error.	Counter	code	Error Code
			operation	Possible Values: get





Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_rmca_data_enquiry_java_request_duration_seconds	Average response time of a RMCA Data Management request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: get
cha_collector_cpm_data_enquiry_java_requests_total	Number of CPM Data Enquiry requests executed.	Counter	operation	Possible Values: getCustomer, getPartyRole, getEntitySpecifications, getCustomerAndContract, getPartyRoleAndContract, getPartitionId, getPartyRoleInvolvementGroup, getResolvedContract
cha_collector_cpm_data_enquiry_java_requests_errors_total	Number of CPM Data Enquiry requests resulted in an error.	Counter	code	Error Code
			operation	Possible Values: getCustomer, getPartyRole, getEntitySpecifications, getCustomerAndContract, getPartyRoleAndContract, getPartitionId, getPartyRoleInvolvementGroup, getResolvedContract



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_cpm_data_enquiry_java_request_duration_seconds	Average response time of a CPM Data Enquiry request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: getCustomer, getPartyRole, getEntitySpecifications, getCustomerAndContract, getPartyRoleAndContract, getPartitionId, getPartyRoleInvolvementGroup, getResolvedContract
cha_collector_purchase_charge_ackka_requests_total	Number of requests received for the purchase charge service.	Counter	operation	Possible Values: CreateReservation, CommitReservation, CancelReservation, BasketRateAndCharge, BasketRateAndDeduct, BasketRateAndExecute, BasketRateAndAdvice, CancelBasketRateAndChargeReservation
cha_collector_purchase_charge_ackka_requests_errors_total	Number of failure responses sent for requests to the purchase charge service.	Counter	code	Error Code
			operation	Possible Values: CreateReservation, CommitReservation, CancelReservation, BasketRateAndCharge, BasketRateAndDeduct, BasketRateAndExecute, BasketRateAndAdvice, CancelBasketRateAndChargeReservation



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_purchase_charge_akka_request_duration_seconds	Average time taken to process a request received for the purchase charge service. The unit of measurement is milliseconds.	Summary	operation	Possible Values: CreateReservation, CommitReservation, CancelReservation, BasketRateAndCharge, BasketRateAndDeduct, BasketRateAndExecute, BasketRateAndAdvice, CancelBasketRateAndChargeReservation
cha_collector_event_consumption_akka_requests_total	Number of Customer Status Update requests received.	Counter	type	Possible Values: CustomerStatusUpdate, ProductStatusNotificationAcknowledge
cha_collector_event_consumption_akka_requests_errors_total	Number of Customer Status Update requests resulted in an error.	Counter	code	Error Code
			type	Possible Values: CustomerStatusUpdate, ProductStatusNotificationAcknowledge
cha_collector_event_consumption_akka_request_duration_seconds	Average response time of a Customer Status Update request. The unit of measurement is milliseconds.	Summary	type	Possible Values: CustomerStatusUpdate, ProductStatusNotificationAcknowledge



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_periodic_operation_j ava_requests_to tal	Number of customers evaluated in recurrence or Number of customers with recurrence configured or Number of customers with at least one due recurrence or Number of contracts evaluated in recurrence or Number of contracts with recurrence configured or Number of contracts with at least one due recurrence or Number of calendar entries evaluated in recurrence or Number of calendar entries with due recurrence or Number of calendar entries with recurrence speculation.	Counter	operation	Possible Values: Customers-Evaluated, Customers-With-Periodic-Job, Customers-With-Due-Periodic-Job, Contracts-Evaluated, Contracts-With-Periodic-Job, Contracts-With-Due-Periodic-Job, Calendar-Entries-Evaluated, Calendar-Entries-Due, Calendar-Entries-Speculation



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_periodic_operation_java_requests_errors_total	Number of customers experienced problem while executing recurrence or Number of contracts experienced problem while executing recurrence or Number of calendar entries experienced problem while executing speculation or real recurrence.	Counter	code	Error Code
			resource	Possible Values: Customer, Contract, Calendar-Entries
cha_collector_business_scheduler_http_requests_total	Number of Business Scheduler requests sent.	Counter	operation	Possible Values: CreateGenericCalendarEntry, UpdateGenericCalendarEntry, DeleteGenericCalendarEntry, ReadGenericCalendarEntry
cha_collector_business_scheduler_http_requests_errors_total	Number of Business Scheduler requests resulted in a failure.	Counter	code	HTTP Response Code



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
			operation	Possible Values: CreateGenericCalendarEntry, UpdateGenericCalendarEntry, DeleteGenericCalendarEntry, ReadGenericCalendarEntry
cha_collector_business_scheduler_http_request_duration_seconds	Average response time of a Business Scheduler request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: CreateGenericCalendarEntry, UpdateGenericCalendarEntry, DeleteGenericCalendarEntry, ReadGenericCalendarEntry
cha_collector_provider_resources_akka_requests_total	Number of Provider Resources Get/Update requests received.	Counter	operation	Possible Values: get, update
cha_collector_provider_resources_akka_requests_errors_total	Number of Provider Resources Get/Update requests resulted in an error.	Counter	code	Error Code
			operation	Possible Values: get, update
cha_collector_provider_resources_akka_request_duration_seconds	Average response time of a Provider Resource Get/Update request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: get, update



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_balance_management_akka_requests_total	Number of requests received for the balance management service.	Counter	operation	Possible Values: MoveContract, CancelMoveContract, MoveCustomer, CommitMoveCustomer, CancelMoveCustomer and BillingAccountBalanceExpiryOffsetTrigger.
cha_collector_balance_management_akka_requests_errors_total	Number of failure responses sent for requests to the balance management service.	Counter	code	Error Code
			operation	Possible Values: MoveContract, CancelMoveContract, MoveCustomer, CommitMoveCustomer, CancelMoveCustomer and BillingAccountBalanceExpiryOffsetTrigger.
cha_collector_balance_management_akka_request_duration_seconds	Average time taken to process a request received for the balance management service. The unit of measurement is milliseconds.	Summary	operation	Possible Values: MoveContract, CancelMoveContract, MoveCustomer, CommitMoveCustomer, CancelMoveCustomer and BillingAccountBalanceExpiryOffsetTrigger.
cha_collector_transfer_product_data_akka_requests_total	Number of Transfer Product Data requests received.	Counter	operation	Possible Values: TransferProductData



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_transfer_product_data_akka_requests_errors_total	Number of failure Transfer Product Data responses.	Counter	code	Error Code
			operation	Possible Values: TransferProduct Data
cha_collector_transfer_product_data_akka_request_duration_seconds	Average response time of a Transfer Product Data request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: TransferProduct Data
cha_collector_cpm_id_translation_java_requests_total	Number of CPM ID Translation operations performed.	Counter	method	The Service operation that has been performed. Possible Values: get.
cha_collector_cpm_id_translation_java_requests_errors_total	Number of CPM ID Translation operations resulted in an error.	Counter	code	Charging Internal Response Code to represent the reason of failure.
			method	The Service operation that has been performed. Possible Values: get.
cha_collector_cpm_id_translation_java_request_duration_seconds	Average time taken to perform the requested operation via CPM ID Translation Service. The unit of measurement is milliseconds.	Summary	method	The Service operation that has been performed. Possible Values: get.





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Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_coba_data_mgmt_j ava_requests_total	Number of COBA Data Enquiry operations performed.	Counter	table	Represents the COBA table data that has been retrieved.
cha_collector_coba_data_mgmt_j ava_requests_errors_total	Number of COBA Data Enquiry operations resulted in an error.	Counter	code	Charging Internal Response Code to represent the reason of failure.
			table	Represents the COBA table data that has been retrieved.
cha_collector_coba_data_mgmt_j ava_request_duration_seconds	Time taken to perform the requested operation via COBA Data Enquiry Service. The unit of measurement is milliseconds.	Summary	table	Represents the COBA table data that has been retrieved.
cha_collector_recurrence_akka_requests_total	Number of requests received for the recurrence management service.	Counter	operation	Possible Values: ExecuteRecurrenceJob, ReadRecurrenceJob, ScheduledRecurrenceJob, TrafficTriggeredRecurrenceJob, RecurrenceNotificationOffsetTrigger, PromotionTriggeredRecurrenceJob
			triggering_service	Possible Values: Any traffic service which contain pre traffic recurrence flow or Internal if operation is not TrafficTriggeredRecurrenceJob



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_recurrence_akka_requests_errors_total	Number of failure responses sent for requests to the recurrence management service.	Counter	code	Error Code
			operation	Possible Values: ExecuteRecurrenceJob, ReadRecurrenceJob, ScheduledRecurrenceJob, TrafficTriggeredRecurrenceJob, RecurrenceNotificationOffsetTrigger, PromotionTriggeredRecurrenceJob
			triggering_service	Possible Values: Any traffic service which contain pre traffic recurrence flow or Internal if operation is not TrafficTriggeredRecurrenceJob
cha_collector_recurrence_akka_request_duration_seconds	Average time taken to process a request received for the recurrence management service. The unit of measurement is milliseconds.	Summary	operation	Possible Values: ExecuteRecurrenceJob, ReadRecurrenceJob, ScheduledRecurrenceJob, TrafficTriggeredRecurrenceJob, RecurrenceNotificationOffsetTrigger, PromotionTriggeredRecurrenceJob



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
			triggering_service	Possible Values: Any traffic service which contain pre traffic recurrence flow or Internal if operation is not TrafficTriggered RecurrenceJob
cha_collector_test_management_akka_requests_total	Number of requests received for the test management service.	Counter	operation	Possible Values: ExecuteEntityAdjustment
cha_collector_test_management_akka_requests_errors_total	Number of failure responses sent for requests to the test management service.	Counter	code	Error Code
			operation	Possible Values: ExecuteEntityAdjustment
cha_collector_test_management_akka_request_duration_seconds	Average time taken to process a request received for the test management service. The unit of measurement is milliseconds.	Summary	operation	Possible Values: ExecuteEntityAdjustment
cha_collector_dns_lookup_http_requests_total	Number of DNS Lookup requests performed including retries.	Counter	endpoint	Endpoint for connection to application.
cha_collector_dns_lookup_http_requests_errors_total	Number of DNS Lookup failure responses received or Number of requests timedout.	Counter	code	Error Code
			endpoint	Endpoint for connection to application.



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_dns_lookup_http_request_duration_seconds	Average response time of a DNS Lookup. The unit of measurement is milliseconds.	Summary	endpoint	Endpoint for connection to application.
cha_collector_duplicate_detection_java_total	Number of duplicate requests received per service context.	Counter	service_context	Represents Service Context configured in the System via CHA-GUI.
cha_collector_processed_deferred_rac_started_customer_total	Number of mass resource customers that has started processing for the deferred rate and charge service.	Counter	customer_partition	Represents the Partition ID where the customer belongs.
cha_collector_processed_deferred_rac_completed_customer_total	Number of mass resource customers that has completed processing (both success and failure) for the deferred rate and charge service. A failed customer will normally be processed again.	Counter	code	Result Code
			customer_partition	Represents the Partition ID where the customer belongs.
cha_collector_processed_deferred_rac_customer_duration_seconds	Average time for processing a mass resource customer for the deferred rate and charge service.	Summary	customer_partition	Represents the Partition ID where the customer belongs.



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_processed_deferred_rac_batch_total	Number of batches processed for the deferred rate and charge service.	Counter	-	-
cha_collector_processed_deferred_rac_batch_errors_total	Number of batches failed to process for the deferred rate and charge service.	Counter	code	Error code
cha_collector_processed_deferred_rac_batch_duration_seconds	Average time taken to process a batch for the deferred rate and charge service. The unit of measurement is milliseconds.	Summary	-	-
cha_collector_processed_deferred_rac_events_per_batch_total	Number of events per batch.	Summary	-	-
cha_collector_processed_deferred_rac_event_total	Number of events processed for the deferred rate and charge service.	Counter	-	-
cha_collector_processed_deferred_rac_event_errors_total	Number of events failed to process for the deferred rate and charge service.	Counter	code	Error code
cha_collector_processed_deferred_rac_event_duration_seconds	Average time taken to process an event for the deferred rate and charge service.	Summary	-	-
cha_collector_settlement_trigger_consumed_kafka_requests_total	Number of successfully rated and charged settlement triggers.	Counter	party_role_involvement_group_ref	Party Role Involvement Group Ref Id



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_settlement_trigger_consumed_kafka_requests_error_total	Number of unsuccessfully rated and charged settlement triggers.	Counter	code	Error code
			party_role_involvement_group_ref	Party Role Involvement Group Ref Id
cha_collector_partner_resources_akka_requests_total	Number of Partner Resources update requests received.	Counter	operation	Possible Values: update
cha_collector_partner_resources_akka_requests_errors_total	Number of Partner Resources failed update requests resulted in an error.	Counter	code	Error code
			operation	Possible Values: update
cha_collector_partner_resources_akka_request_duration_seconds	Average response time of a Partner Provider Resource update request. The unit of measurement is milliseconds.	Summary	operation	Possible Values: update
cha_collector_internal_resource_statistics	Counter for Charging Internal Statistics.	Gauge	type	Possible Value: regulation
			entity	Possible Value: entity, e.g. Rf-Core-Average-Latency
cha_collector_event_creation_java_total	Number of Event Records put in queue.	Counter	type	Represents the event record type that is being created. Example: BalanceAdjustmentEvent, BucketMaintenanceEvent.



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_event_creation_java_errors_total	Number of Event Records failed to put in queue.	Counter	code	Charging Event Result Code to represent the reason of failure. Example: 3002.
			type	Represents the event record type that is being created. Example: BalanceAdjustmentEvent, BucketMaintenanceEvent.
cha_collector_event_posting_kafka_total	Number of Event Records sent in the kafka interface.	Counter	customer_partition	Represents the Partition ID where the customer belongs.
			topic	The kafka topic the event was sent to.
			type	Represents the event record type that is being posted. Example: BalanceAdjustmentEvent, UsageChargeEvent.
			transport_layer	Messaging mode. Possible values: CIL, MSG
cha_collector_event_posting_kafka_errors_total	Number of Event Records failed to send in the kafka interface.	Counter	code	Charging Event Result Code to represent the reason of failure. Example: 3002.
			customer_partition	Represents the Partition ID where the customer belongs.



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
			topic	The kafka topic the event was sent to.
			type	Represents the event record type that is being posted. Example: BalanceAdjustmentEvent, UsageChargeEvent.
			transport_layer	Messaging mode. Possible values: CIL, MSG
cha_collector_event_creation_java_requests_total	Number of Notification Events successfully put in queue.	Counter	type	Notification Event.
cha_collector_event_creation_java_requests_errors_total	Number of Notification Events failed to put in queue.	Counter	type	Notification Event.
			code	Error Code
cha_collector_event_posting_kafka_requests_total	Number of Notification Events sent successfully.	Counter	type	Notification Event.
cha_collector_event_posting_kafka_requests_errors_total	Number of Notification Events not sent due to a failure.	Counter	type	Notification Event.
			code	Error Code
cha_collector_mnp_lookup_http_requests_total	Number of number portability lookup requests sent including retries.	Counter	endpoint	Endpoint of an external server
			endpoint_type	Endpoint type of an external server. Possible Value: MAP





Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
			service_context	Represents Service Context configured in the System via CHA-GUI.
			retransmitted	Indicates whether the request is retransmitted. Possible values: Yes, No.
cha_collector_mnp_lookup_http_requests_errors_total	Number of number port ability lookup failures or timed out responses received.	Counter	code	HTTP Status Code received in the HTTP failure response. If failure response is not received the default value NA is used.
			endpoint	Endpoint of an external server
			endpoint_type	Endpoint type of an external server. Possible Value: MAP
			service_context	Represents Service Context configured in the System via CHA-GUI.



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
			fault_code	Fault code received in the HTTP failure response. Possible Values: 1000, 1001, 1002, 1003, 1005, 1008, 1009, 1010, 1011, 1013, 1014, 1, 34, 35, 36, 49. If failure response is not received the default value NA is used.
cha_collector_mnp_lookup_http_request_duration_seconds	Average response time for a number portability lookup request. The unit of measurement is milliseconds.	Summary	endpoint	Endpoint of an external server
			endpoint_type	Endpoint type of an external server. Possible Value: MAP
cha_collector_log_streaming_tcp_requests_errors_total	Number of requests that resulted in error when streaming the log events towards the log transformer.	Counter	appender_name	The name of the appender which is used for streaming the log events
cha_collector_log_streaming_tcp_queue_events_count	Number of log events present in the streaming appender's queue which are yet to be sent to the log transformer.	Gauge	appender_name	The name of the appender which is used for streaming the log events



Table 1 Charging Collector Metrics

Metric name	Metric description	Type	Metric Labels	Metric Label Description
cha_collector_cha_data_cache_total	Number of times the individual cache of CHA customers is accessed.	Counter	outcome	Possible values: hit, miss or stale. Stale is used when cache exists but is marked as stale and cannot be used
cha_collector_cha_data_cache_eviction_total	Number of times a CHA data cache is removed.	Counter	reason	Possible values: memory, notification or noSessions. Notification is used in the replicate charging scenario when a cache is removed on passive application group due to a notification from active application group