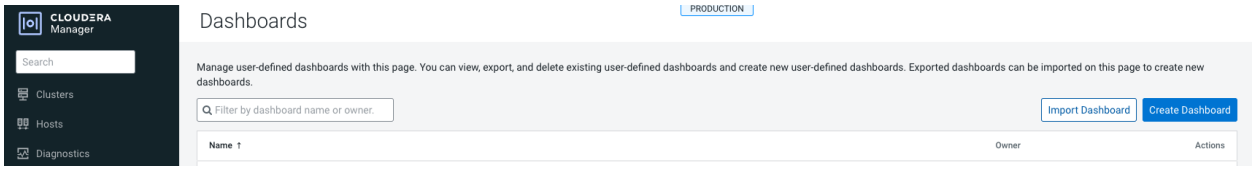
Deploy your Cloudera Manager Dashboards

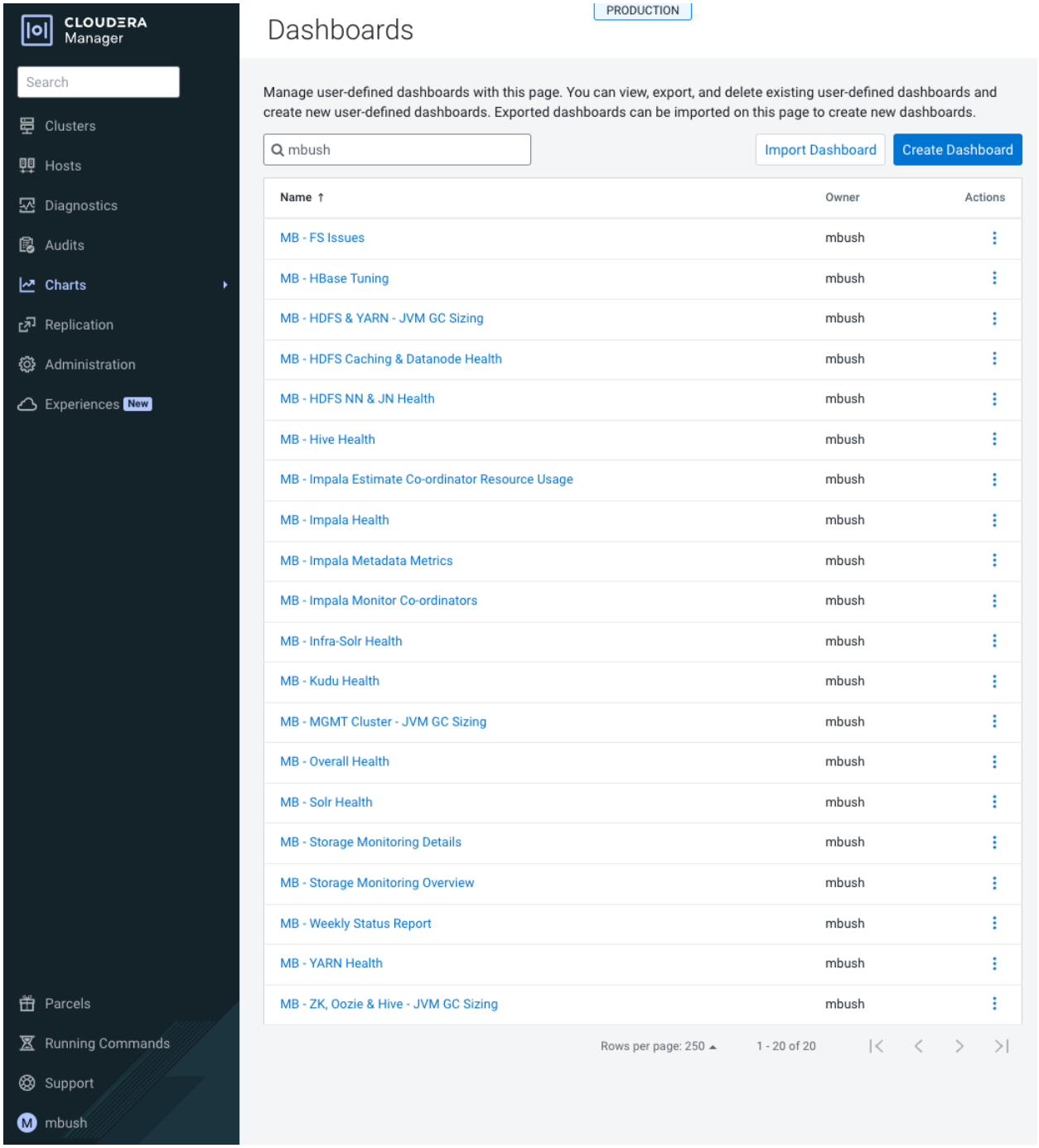
Summary

Out of the box, Cloudera Manager provides plenty of valuable health checks to highlight platform and services issues that may need to be addressed along with an intuitive interface for troubleshooting issues. Nevertheless, the greater the quantity of pipelines and processes the platform supports (especially at peak loads/times), the higher the probability that you would benefit from additional visibility into overall cluster performance. To that end, we're offering you JSON files of custom Cloudera Manager dashboards to import into your CM managed cluster:



NOTE - you must change the user ID that is within each json file from 'mbush' to a suitable admin user account within your own environment, prior to uploading them in Cloudera Manager.

Here are the links to the dashboards we will preview below: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PRODUCTION
Dashboards
Manage user-defined dashboards with this page. You can view, export, and delete existing user-defined dashboards and create new user-defined dashboards. Exported dashboards can be imported on this page to create new dashboards.
mbush
Import Dashboard
Create Dashboard
Name
Owner
Actions
MB - FS Issues mbush
MB - HBase Tuning mbush
MB - HDFS & YARN - JVM GC Sizing mbush
MB - HDFS Caching & Datanode Health mbush
MB - HDFS NN & JN Health mbush
MB - Hive Health mbush
MB - Impala Estimate Co-ordinator Resource Usage mbush
MB - Impala Health mbush
MB - Impala Metadata Metrics mbush
MB - Impala Monitor Co-ordinators mbush
MB - Infra-Solr Health mbush
MB - Kudu Health mbush
MB - MGMT Cluster - JVM GC Sizing mbush
MB - Overall Health mbush
MB - Solr Health mbush
MB - Storage Monitoring Details mbush
MB - Storage Monitoring Overview mbush
MB - Weekly Status Report mbush
MB - YARN Health mbush
MB - ZK, Oozie & Hive - JVM GC Sizing mbush
Rows per page: 250
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Three Daily Dashboards

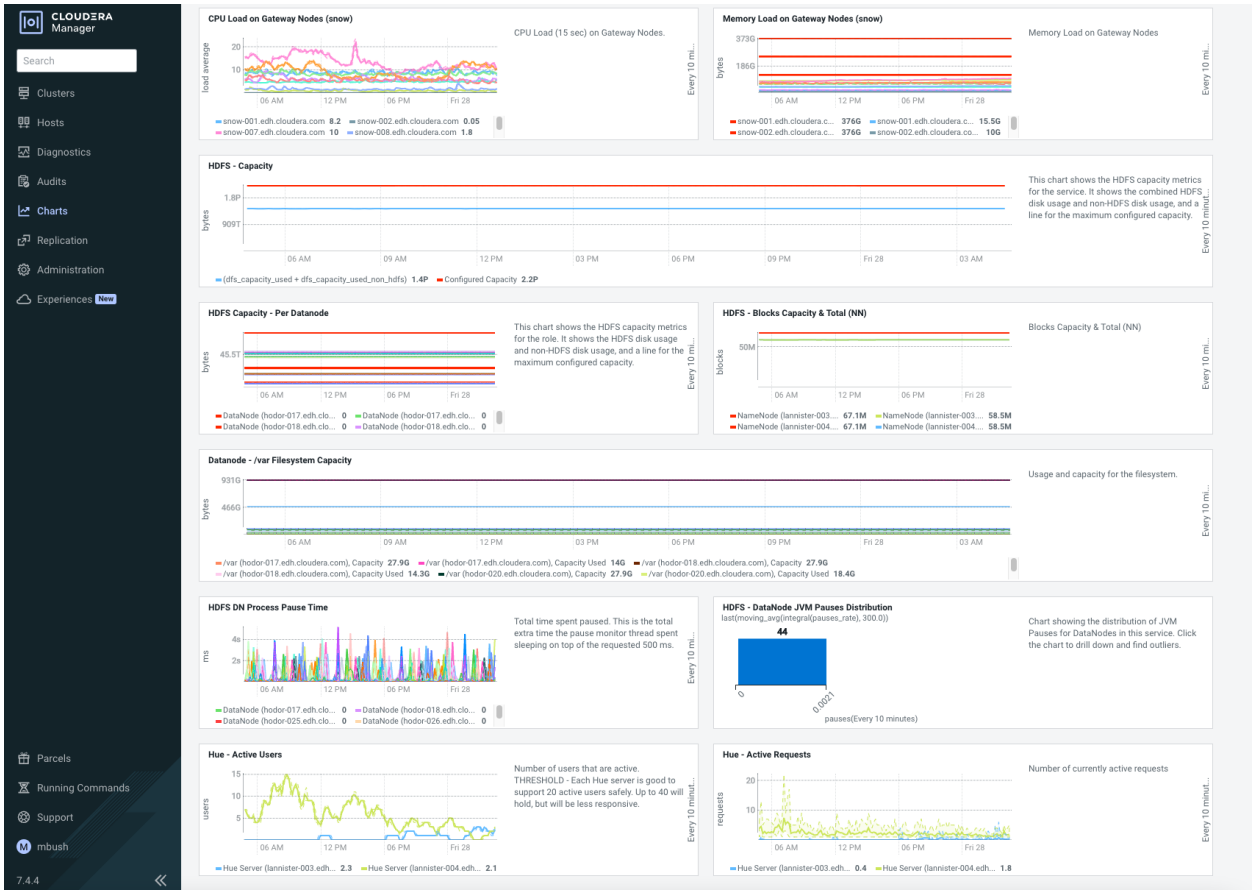
We recommend to use the following dashboards every day:

- Overall Health
- Impala Health
- YARN Health

The Overall Health dashboard depicts a mix of insights across the entire cluster to identify abnormalities affecting any node when it comes to CPU, memory, etc.

> NOTE: the ‘Time Series’ in the top right corner of every screenshot which shows the monitoring time period. The longer the time period set, the more skewed the statistics can become within the CM dashboard due to metric aggregation.

MB - Overall Health (screenshots)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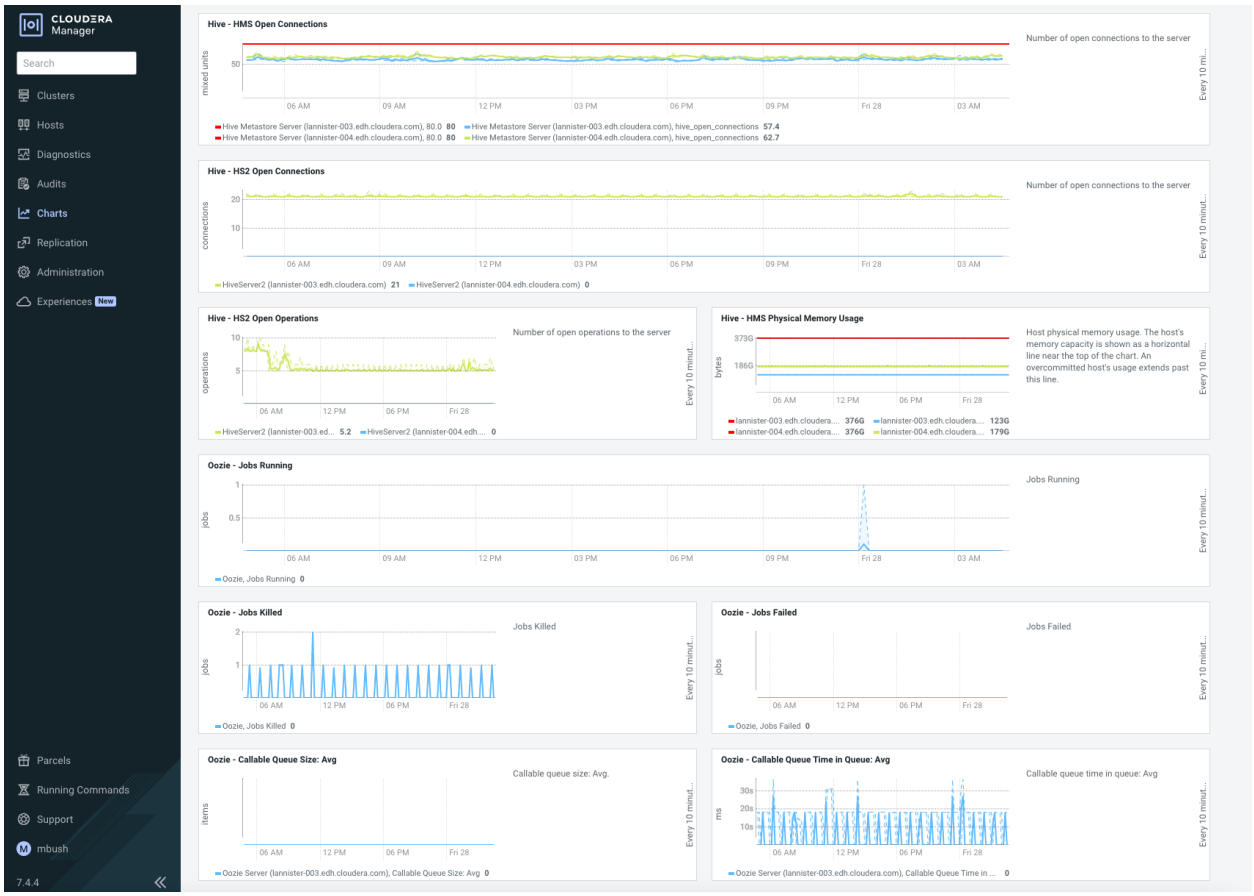
CPU Load on Gateway Nodes (snow)
CPU Load (15 sec) on Gateway Nodes.
load average
Memory Load on Gateway Nodes (snow)
Memory Load on Gateway Nodes
bytes
HDFS - Capacity
This chart shows the HDFS capacity metrics for the service. It shows the combined HDFS disk usage and non-HDFS disk usage, and a line for the maximum configured capacity.
HDFS Capacity - Per Datanode
This chart shows the HDFS capacity metrics for the role. It shows the HDFS disk usage and non-HDFS disk usage, and a line for the maximum configured capacity.
HDFS - Blocks Capacity & Total (NN)
Blocks Capacity & Total (NN)
blocks
Datanode - /var Filesystem Capacity
Usage and capacity for the filesystem.
HDFS DN Process Pause Time
Total time spent paused. This is the total extra time the pause monitor thread spent sleeping on top of the requested 500 ms.
ms
HDFS - DataNode JVM Pauses Distribution
last(moving_avg(integral(pauses_rate), 300.0))
Chart showing the distribution of JVM Pauses for DataNodes in this service. Click the chart to drill down and find outliers.
pauses(Every 10 minutes)
Hue - Active Users
Number of users that are active. THRESHOLD - Each Hue server is good to support 20 active users safely. Up to 40 will hold, but will be less responsive.
users
Hue - Active Requests
Number of currently active requests
requests
Every 10 mi...
Every 10 minut...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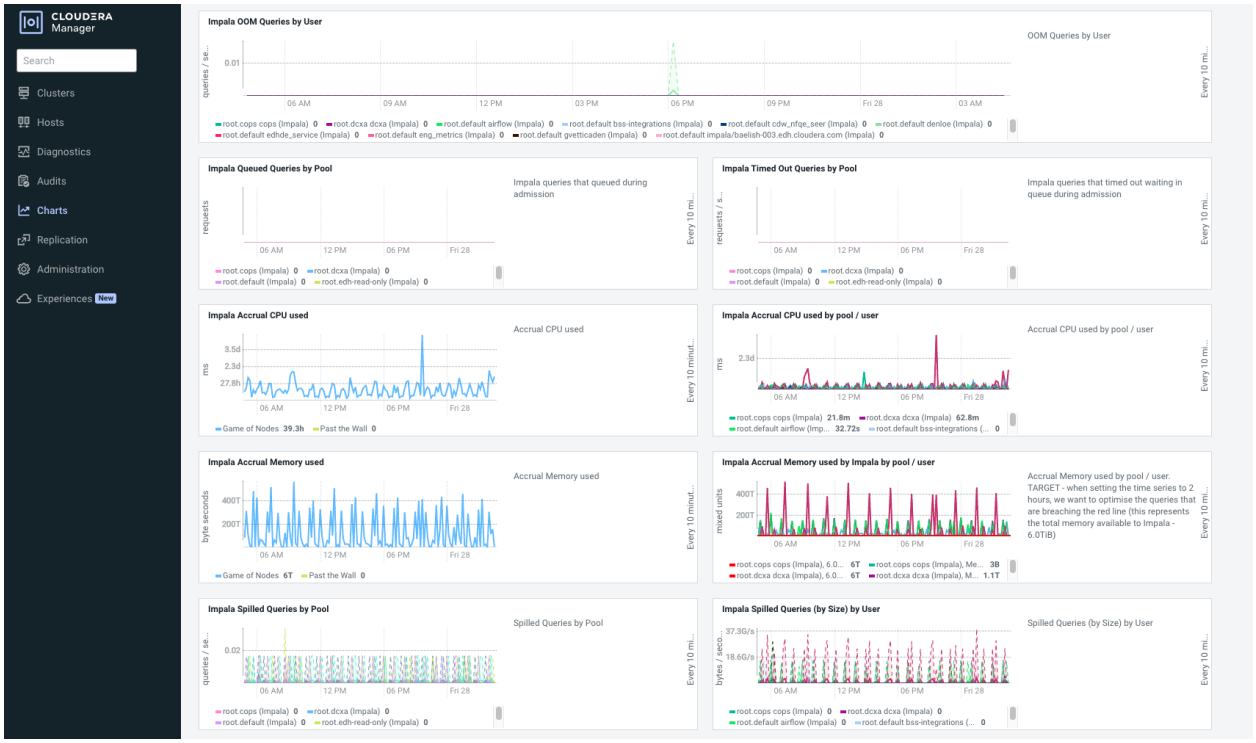
Hive - HMS Open Connections
Number of open connections to the server
Hive - HS2 Open Connections
Number of open connections to the server
Hive - HS2 Open Operations
Number of open operations to the server
Hive - HMS Physical Memory Usage
Host physical memory usage. The host's memory capacity is shown as a horizontal line near the top of the chart. An overcommitted host's usage extends past this line.
Oozie - Jobs Running
Jobs Running
Oozie - Jobs Killed
Jobs Killed
Oozie - Jobs Failed
Jobs Failed
Oozie - Callable Queue Size: Avg
Callable queue size: Avg.
Oozie - Callable Queue Time in Queue: Avg
Callable queue time in queue: Avg

For customers using CDP to perform business analytics, it is important to verify that the impala service is healthy. It is common to see Impala incorrectly being used for ETL-style workloads instead of business analytics and ad-hoc queries. Services such as Hive, Spark, or Map Reduce are better suited for ETL workloads.

The 3 dashboards depicted below can help analyze workload balance and provide valuable insights you can use to begin migrating those workloads from Impala to YARN.

MB - Impala Health (screenshots)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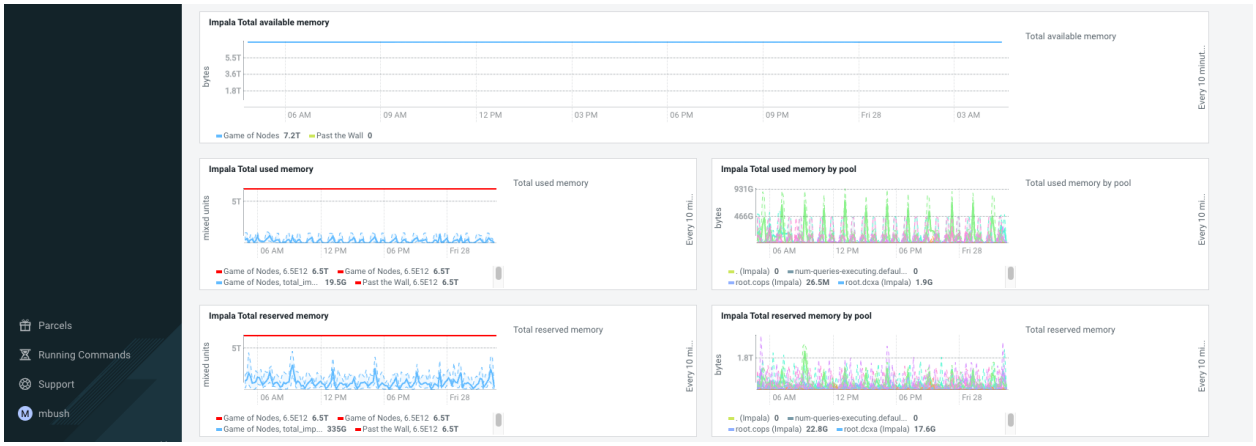
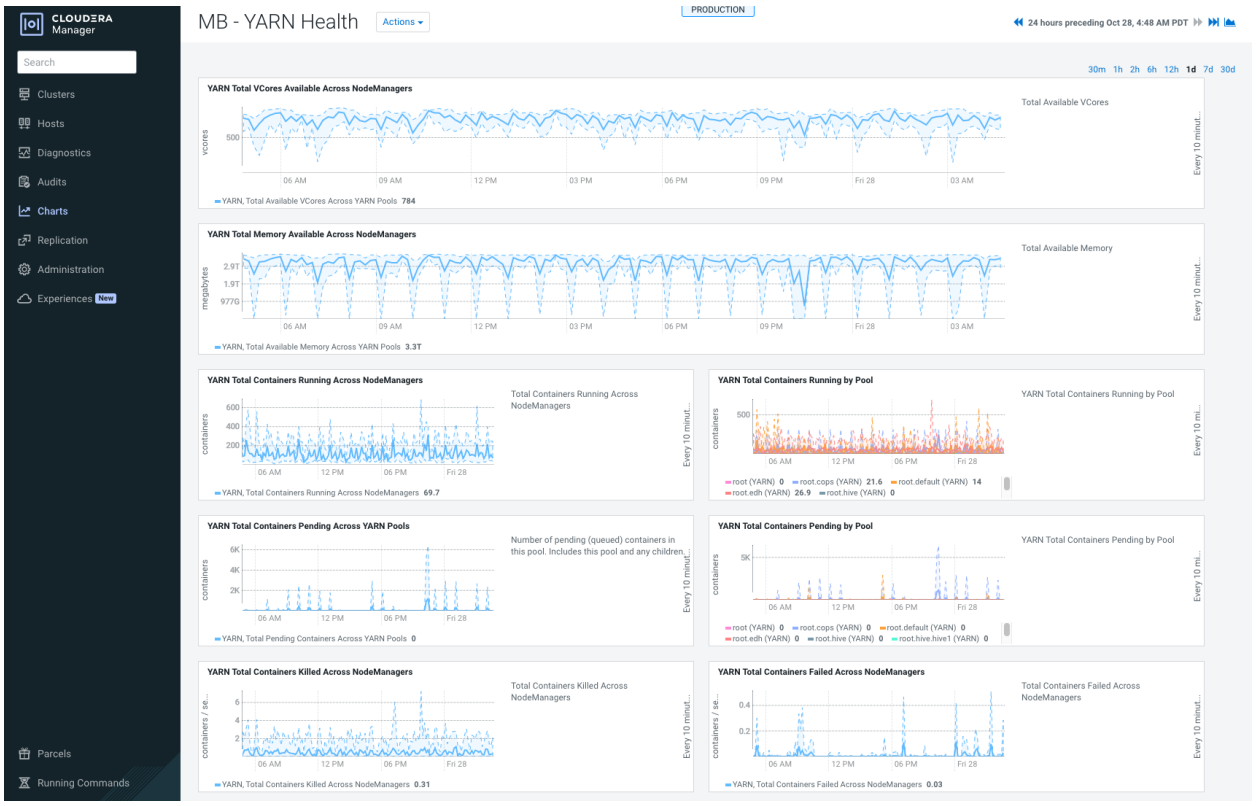
Impala OOM Queries by User
OOM Queries by User
Impala Queued Queries by Pool
Impala queries that queued during admission
Impala Timed Out Queries by Pool
Impala queries that timed out waiting in queue during admission
Impala Accrual CPU used
Accrual CPU used
Impala Accrual CPU used by pool / user
Accrual CPU used by pool / user
Impala Accrual Memory used
Accrual Memory used
Impala Accrual Memory used by Impala by pool / user
Accrual Memory used by pool / user. TARGET - when setting the time series to 2 hours, we want to optimise the queries that are breaching the red line (this represents the total memory available to Impala - 6.0TiB)
Impala Spilled Queries by Pool
Spilled Queries by Pool
Impala Spilled Queries (by Size) by User
Spilled Queries (by Size) by User



MB - YARN Health (screenshots)



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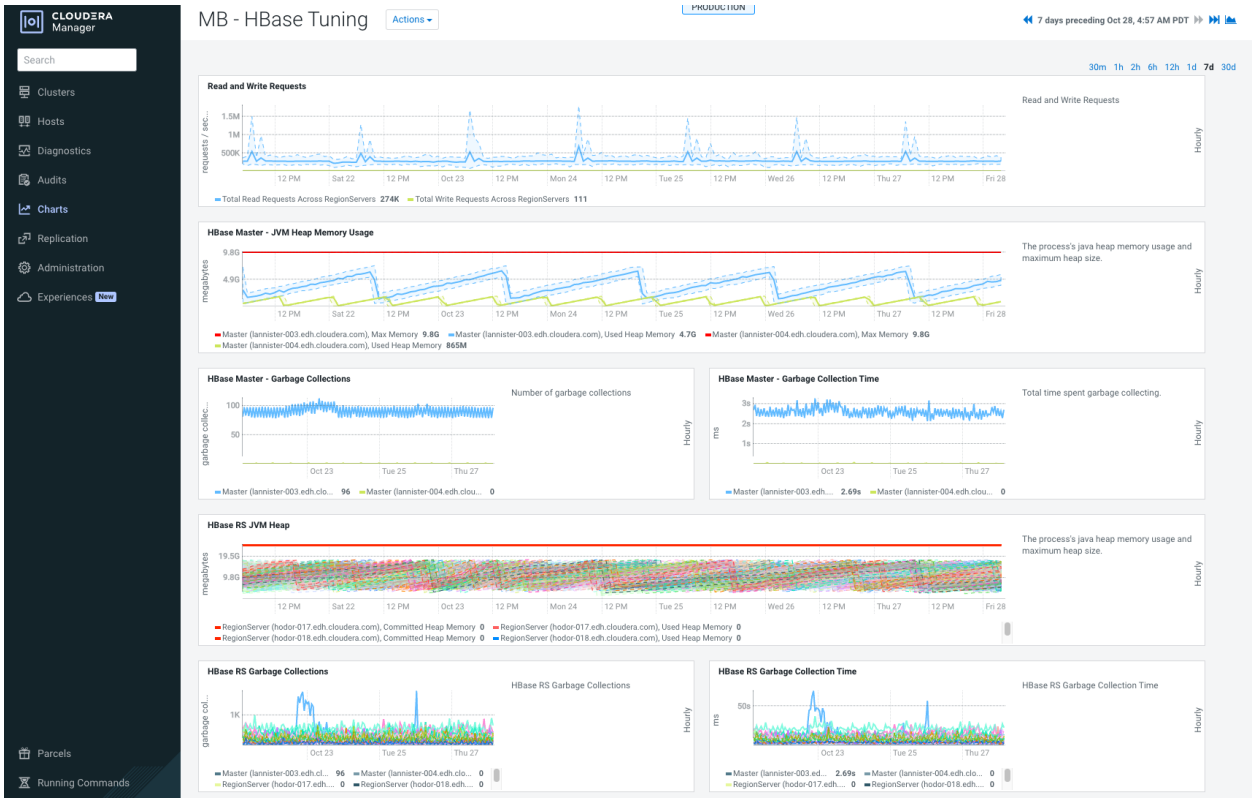
7.4.4
YARN Total Applications Running Across YARN Pools
Number of running YARN applications in this pool. Includes this pool and any children.
YARN, Total Applications Running Across YARN Pools 10.4
YARN Total Applications Running by Pool
YARN Total Applications Running by Pool
root.cops (YARN) 5.9
root.default (YARN) 2.4
root.edh (YARN) 1.1
root.hive.hive1 (YARN) 0
YARN Total Applications Pending Across YARN Pools
YARN Total Applications Pending Across YARN Pools
YARN, Total Applications Pending Across YARN Pools 0
YARN Total Applications Pending by pool
YARN Total Applications Pending by pool
root (YARN) 0
root.cops (YARN) 0
root.default (YARN) 0
root.edh (YARN) 0
root.hive (YARN) 0
root.hive.hive1 (YARN) 0
YARN Total Applications Killed Across YARN Pools
Number of killed YARN applications in this pool. Includes this pool and any children.
YARN, Total Applications Killed Across YARN Pools 0
YARN Total Applications Killed by pool
YARN Total Applications Killed by pool
YARN Total Applications Failed Across YARN Pools
Number of failed YARN applications in this pool. Includes this pool and any children.
YARN, Total Applications Failed Across YARN Pools 0
YARN Total Applications Failed by pool
YARN Total Applications Failed by pool
06 AM
12 PM
06 PM
Fri 28

Seven Weekly Dashboards

We recommend using the following dashboards weekly, or more frequently to identify unexpected behaviour or instability within your cluster:

- MB - HBase Tuning
- HDFS Caching & Datanode Health
- MB - HDFS NN & JN Health
- MB - Hive Health
- MB - Impala Monitor Co-ordinators
- MB - Infra-Solr Health
- MB - Solr Health

MB - HBase Tuning (screenshots)



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HBase RS - Number of Regions
Number of Regions
HBase RS - Read and Write Requests
Read and Write Requests
HBase RS - Percent HFiles Local
HBase RS - Flush Queue Size
Size of the flush queue
HBase RS - Compaction Queue Size
Size of the compaction queue
HBase RS - Percent HFiles Local
The percent of HFiles that are stored on the local HDFS DataNode.
HBase RS - Block Cache Capacity
This chart shows the HBase RegionServer block cache capacity as percentage full.
HBase RS - Block Cache Blocks Cached
Block Cache Blocks Cached
HBase RS - Block Cache Hit Ratio
Block Cache Hit Ratio
HBase RS - Block Cache Hit Count
Block Cache Hit Count
HBase RS - Block Cache Miss Count
Block Cache Miss Count
Hourly

HBase RS - Block Cache Express Hit Ratio
The percent of the time that requests with the block cache turned on hit the block cache.
HBase RS - Block Cache Evicted Count
Block Cache Evicted Count
HBase IPC Process Time
HBase IPC Process Time
HBase IPC Queue Rate
HBase IPC Queue Rate
Hourly

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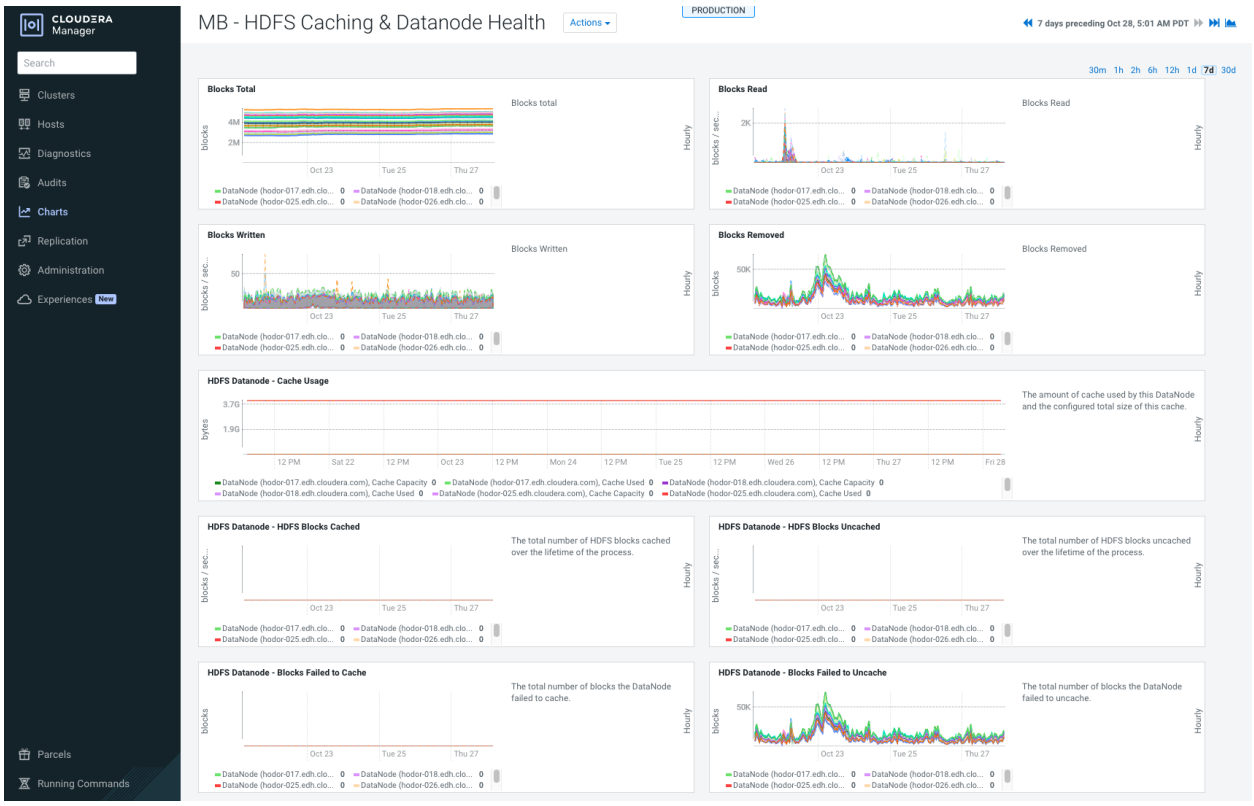
HDFS Caching & Datanode Health (screenshots)



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HDFS Datanode - Cache Reports Operations
The total number of generate cache reports operations on the DataNode.
HDFS Datanode - Cache Reports Average Time
The average time to generate cache reports on the DataNode.
HDFS Datanode - File Descriptors
Open file descriptors.
HDFS Datanode - Disk Flushes
Disk Flushes
HDFS Datanode - Average Disk Flush Time
Average Disk Flush Time
HDFS Datanode - Transceivers
Transceivers
HDFS Datanode - IO
IO bytes_read_rate, bytes_written_rate
HDFS Datanode - IO Blocks
IO blocks_read_rate, blocks_written_rate
HDFS Datanode - Send Data Packet Blocked On Network Average Time
Send Data Packet Blocked On Network Average Time
Hourly

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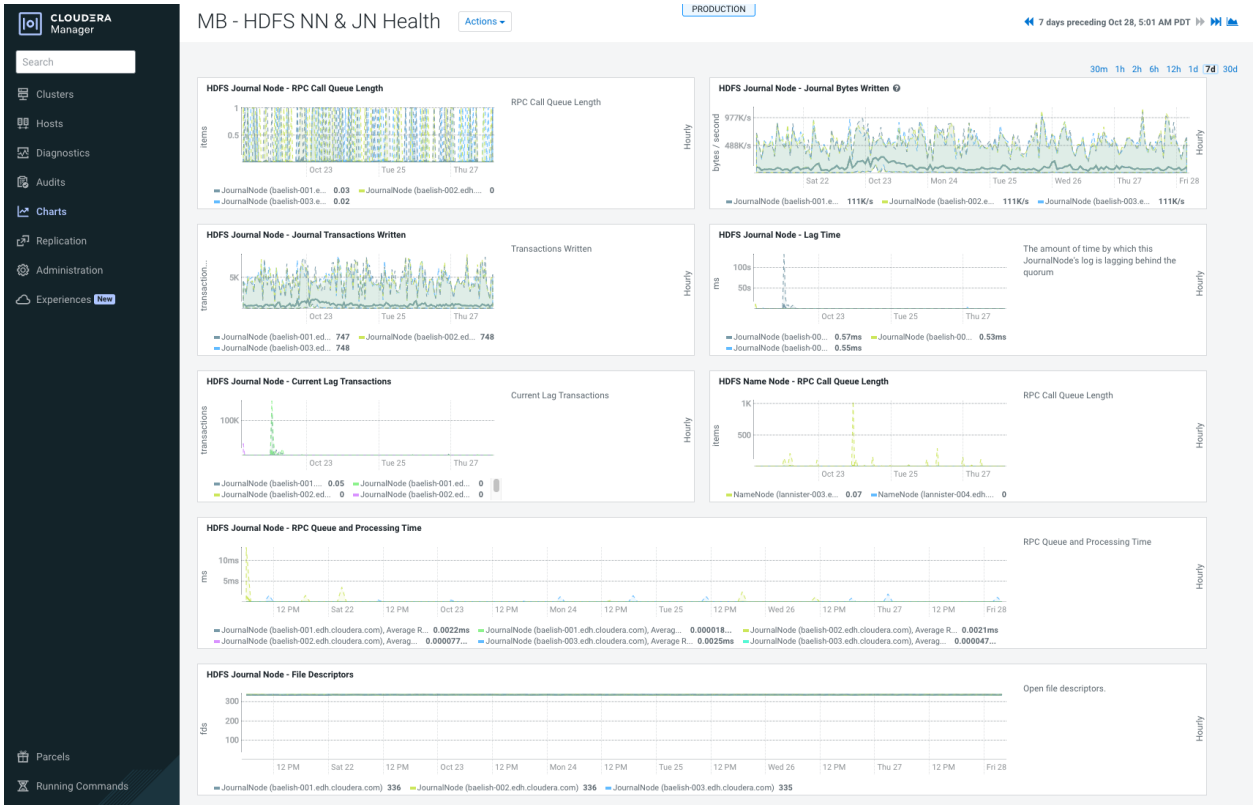
HDFS Datanode - Send Data Packet Transfer Average Time
Send Data Packet Transfer Average Time
HDFS Datanode - Packet Ack Round Trip Average Time
Packet Ack Round Trip Average Time
HDFS Datanode - RPC Call Queue Length
RPC Call Queue Length
HDFS Datanode - RPC Queue and Processing Time
RPC Queue and Processing Time
Hourly

MB - HDFS NN & JN Health (screenshots)



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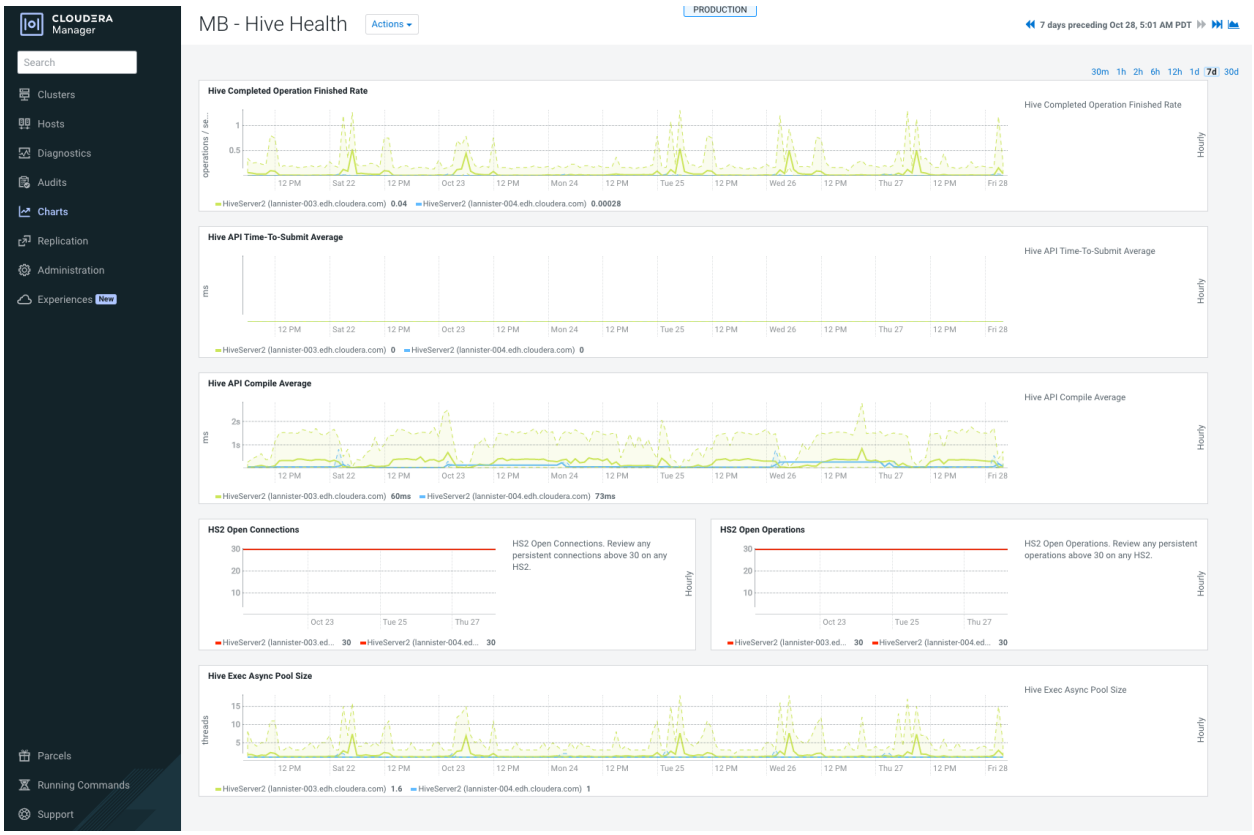
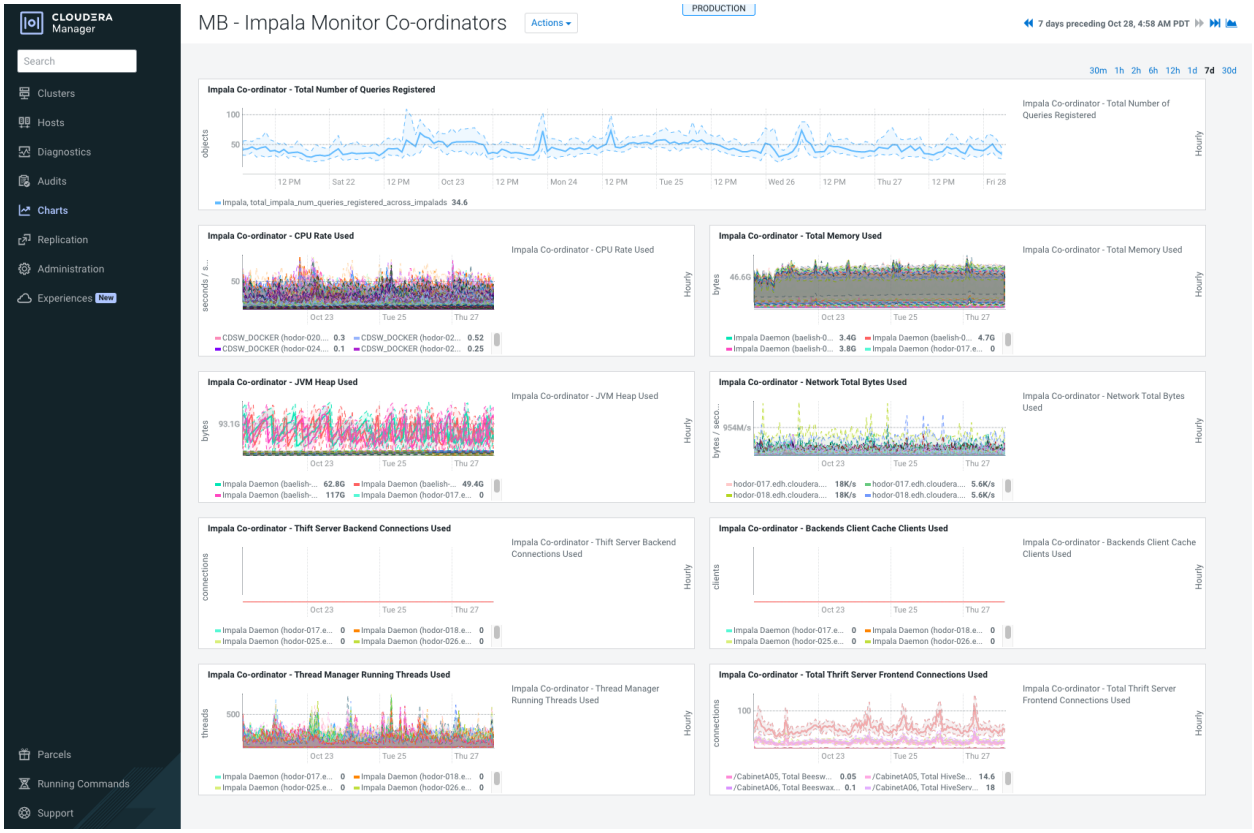
HDFS Name Node - Open RPC Connections
Open RPC Connections
HDFS Name Node - Average Edit Log Sync Time
Average Edit Log Sync Time
HDFS Name Node - RPC Workload Summary
RPC Workload Summary
HDFS Name Node - RPC Queue and Processing Time
RPC Queue and Processing Time
HDFS Name Node - Edit Log Syncs
Edit Log Syncs
HDFS Name Node - Transactions Since Last Log Checkpoint
Transactions Since Last Log Checkpoint
HDFS Name Node - Transactions
Transactions
HDFS Journal Node - Sync Latency: One Minute Granularity
Sync Latency: One Minute Granularity
HDFS Name Node - File Descriptors
Open file descriptors.
Hourly

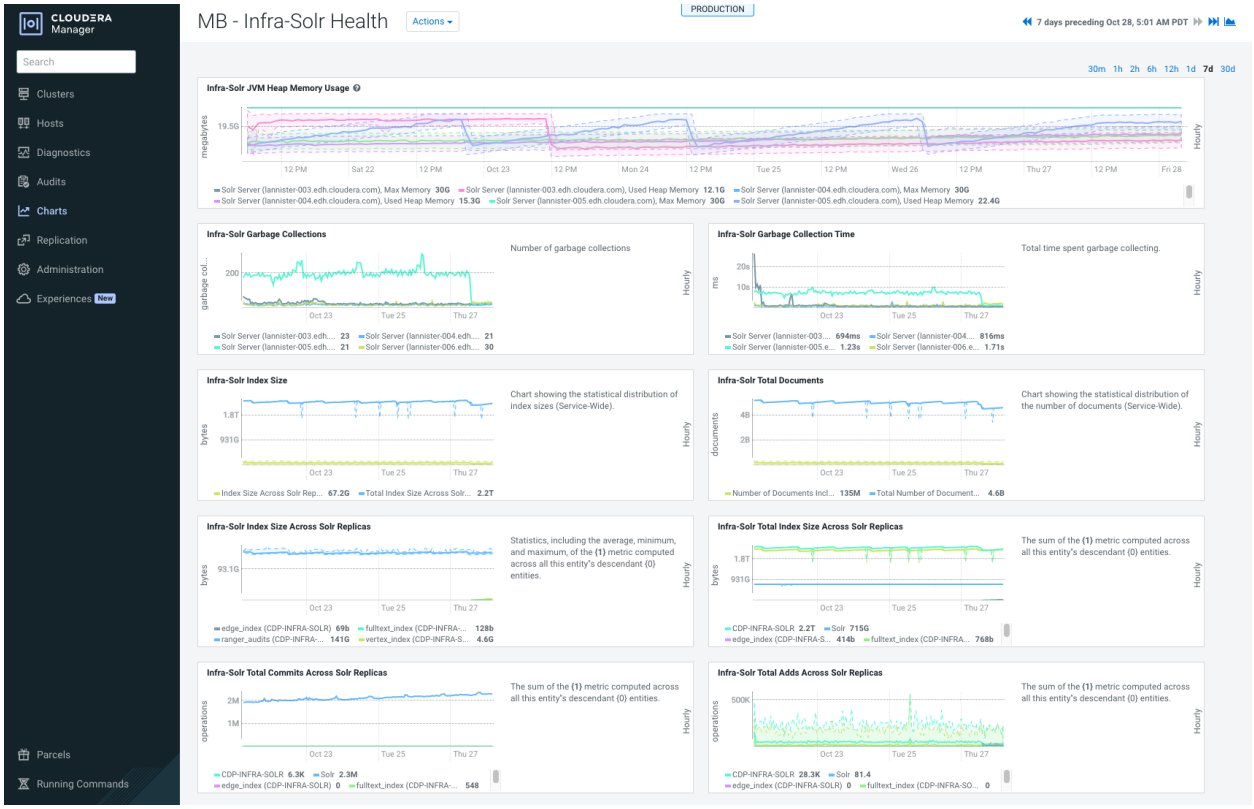
MB - Hive Health (screenshots)

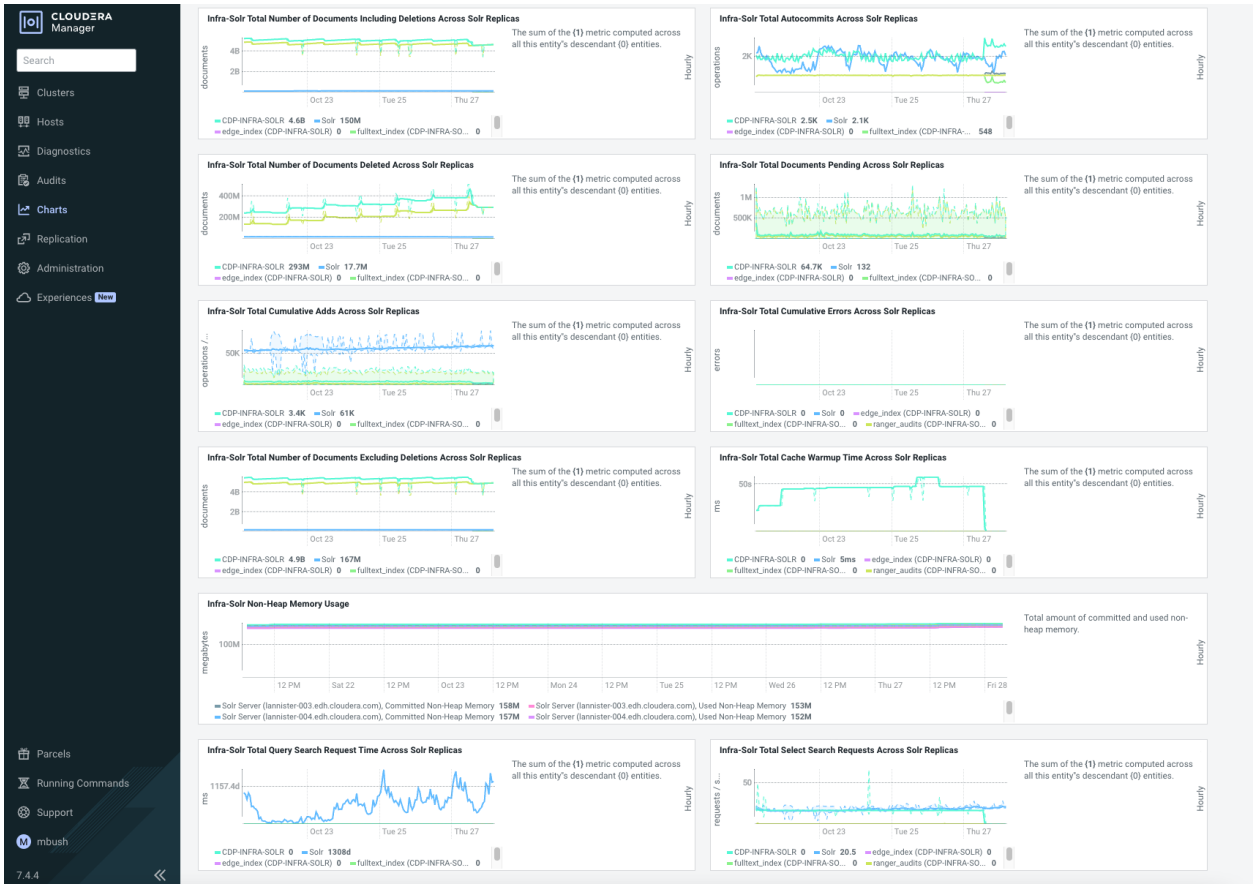


MB - Impala Monitor Co-ordinators (screenshots)



MB - Infra-Solr Health (screenshots)

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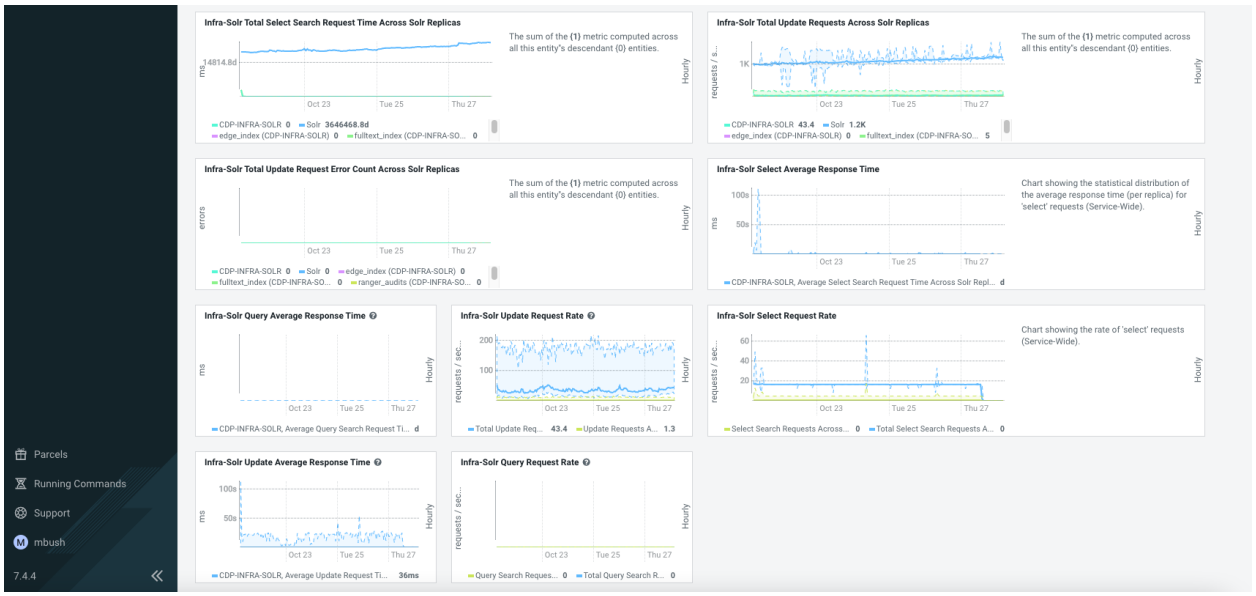
Infra-Solr Total Number of Documents Including Deletions Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Autocommits Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Number of Documents Deleted Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Documents Pending Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Cumulative Adds Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Cumulative Errors Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Number of Documents Excluding Deletions Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Cache Warmup Time Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Non-Heap Memory Usage
Total amount of committed and used non-heap memory.
Infra-Solr Total Query Search Request Time Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Select Search Requests Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.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Infra-Solr Total Select Search Request Time Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Update Requests Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Total Update Request Error Count Across Solr Replicas
The sum of the (1) metric computed across all this entity's descendant (0) entities.
Infra-Solr Select Average Response Time
Chart showing the statistical distribution of the average response time (per replica) for 'select' requests (Service-Wide).
Infra-Solr Query Average Response Time
Infra-Solr Update Request Rate
Infra-Solr Select Request Rate
Chart showing the rate of 'select' requests (Service-Wide).
Infra-Solr Update Average Response Time
Infra-Solr Query Request Rate

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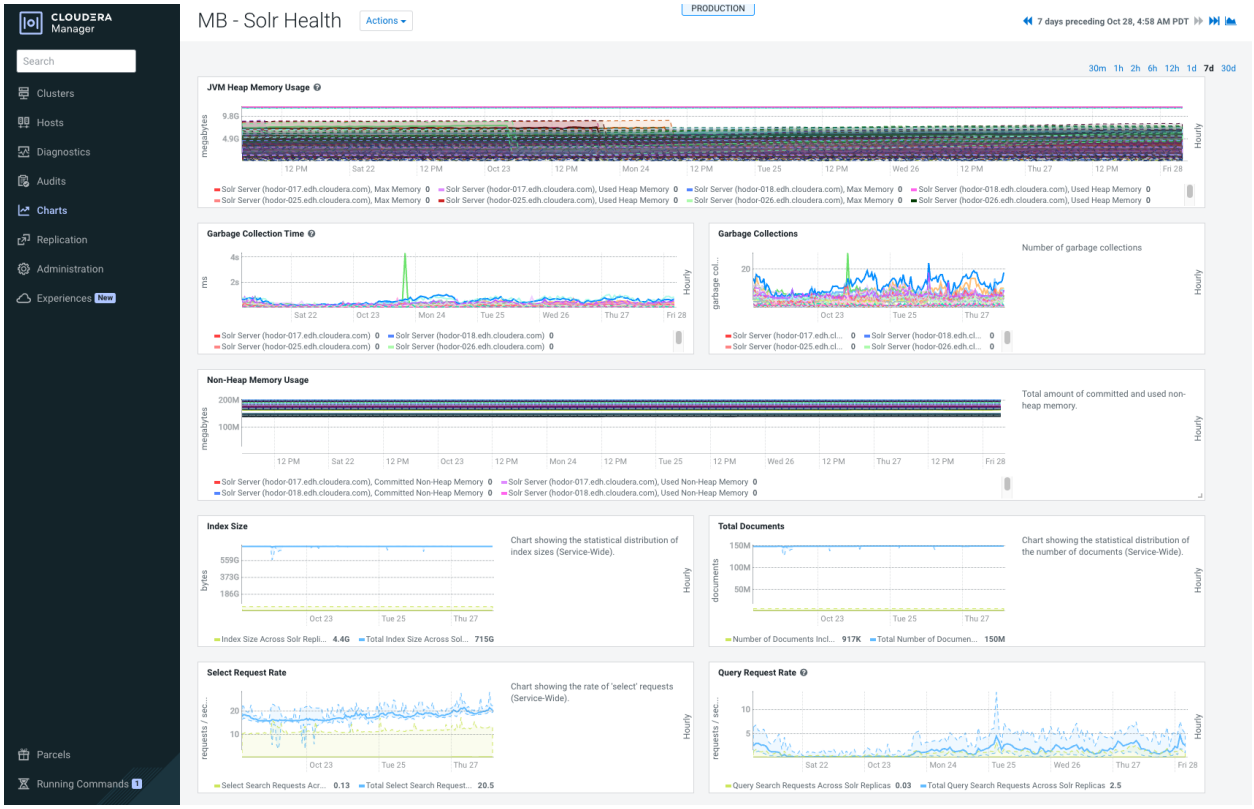
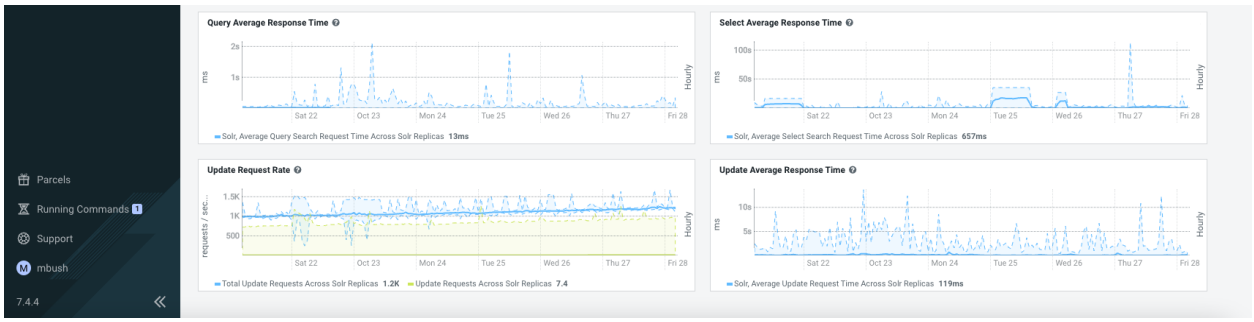
MB - Solr Health (screenshots)



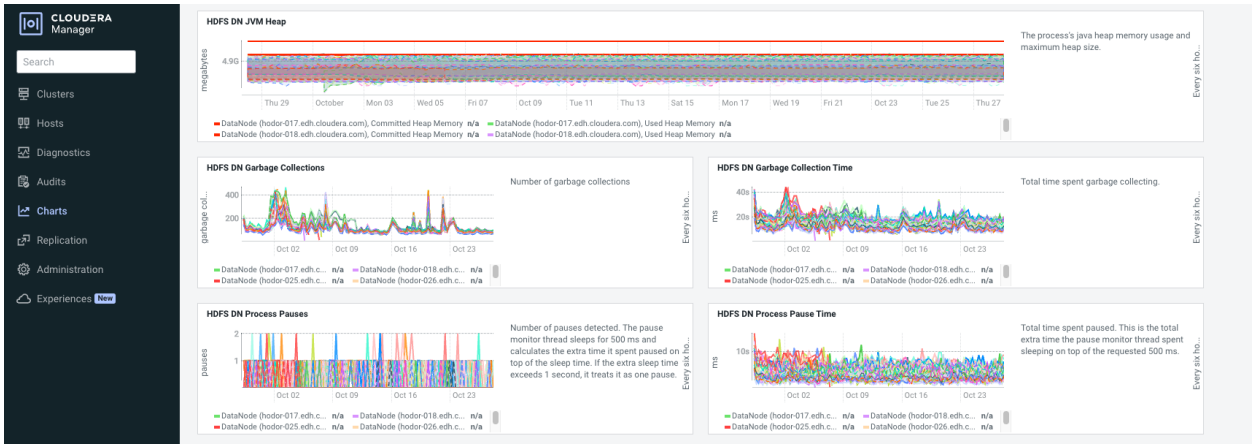


Three Monthly Dashboards

As with the Weekly Used Dashboards, these dashboards can quite often be used daily if identifying unexpected behaviour or instability within the cluster but we recommend using them at least monthly to proactively identify that service/role heap sizing is in a healthy state:

- MB - HDFS & YARN - JVM GC Sizing
- MB - MGMT Cluster - JVM GC Sizing
- MB - ZK, Oozie & Hive - JVM GC Sizing

MB - HDFS & YARN - JVM GC Sizing (screenshots)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HDFS DN JVM Heap
The process's java heap memory usage and maximum heap size.
HDFS DN Garbage Collections
Number of garbage collections
HDFS DN Garbage Collection Time
Total time spent garbage collecting.
HDFS DN Process Pauses
Number of pauses detected. The pause monitor thread sleeps for 500 ms and calculates the extra time it spent paused on top of the sleep time. If the extra sleep time exceeds 1 second, it treats it as one pause.
HDFS DN Process Pause Time
Total time spent paused. This is the total extra time the pause monitor thread spent sleeping on top of the requested 500 ms.

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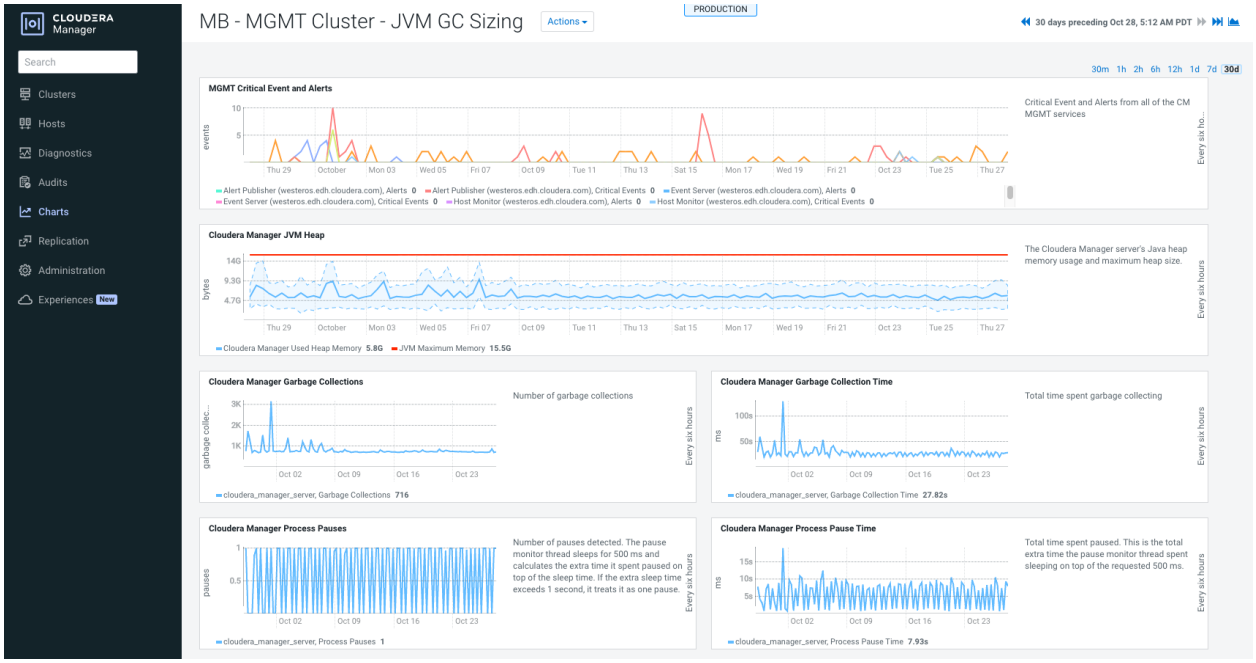
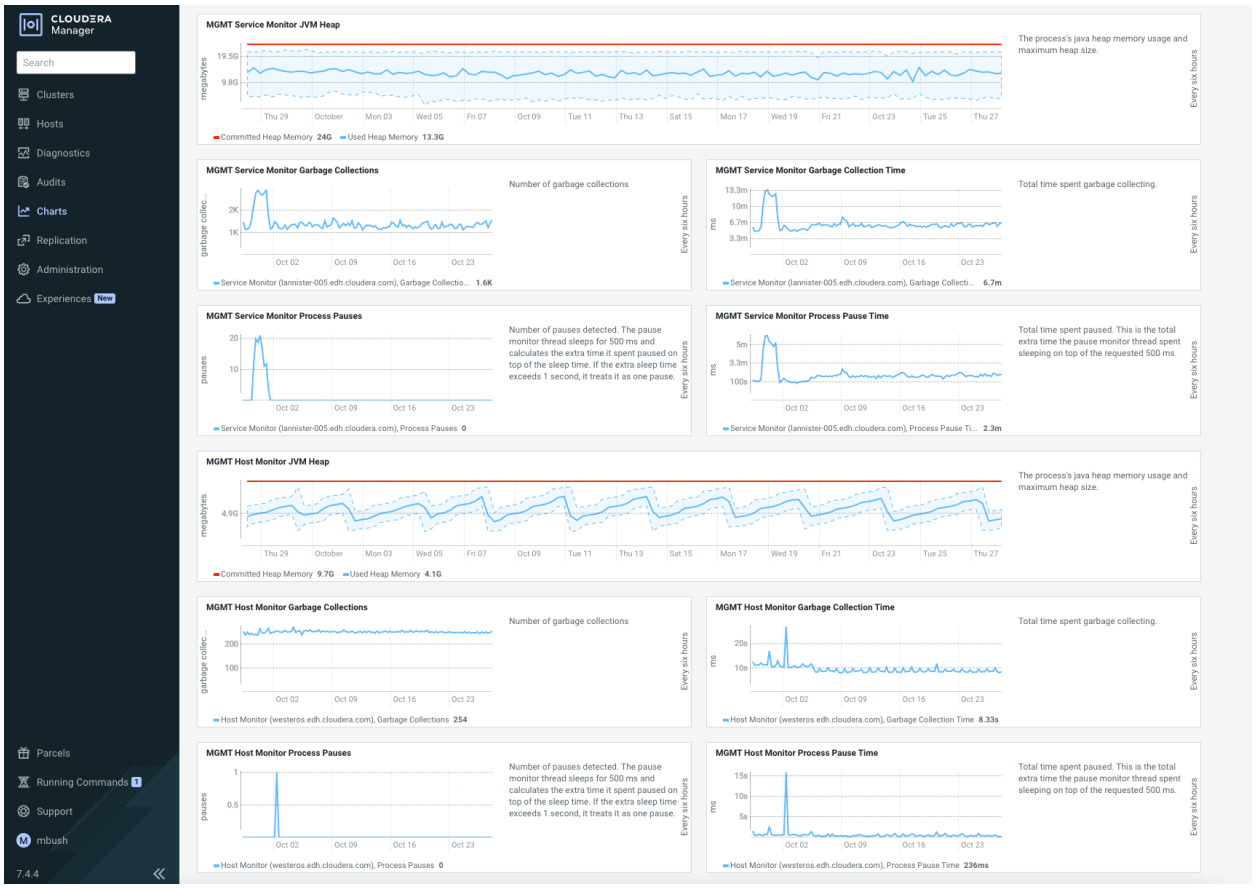
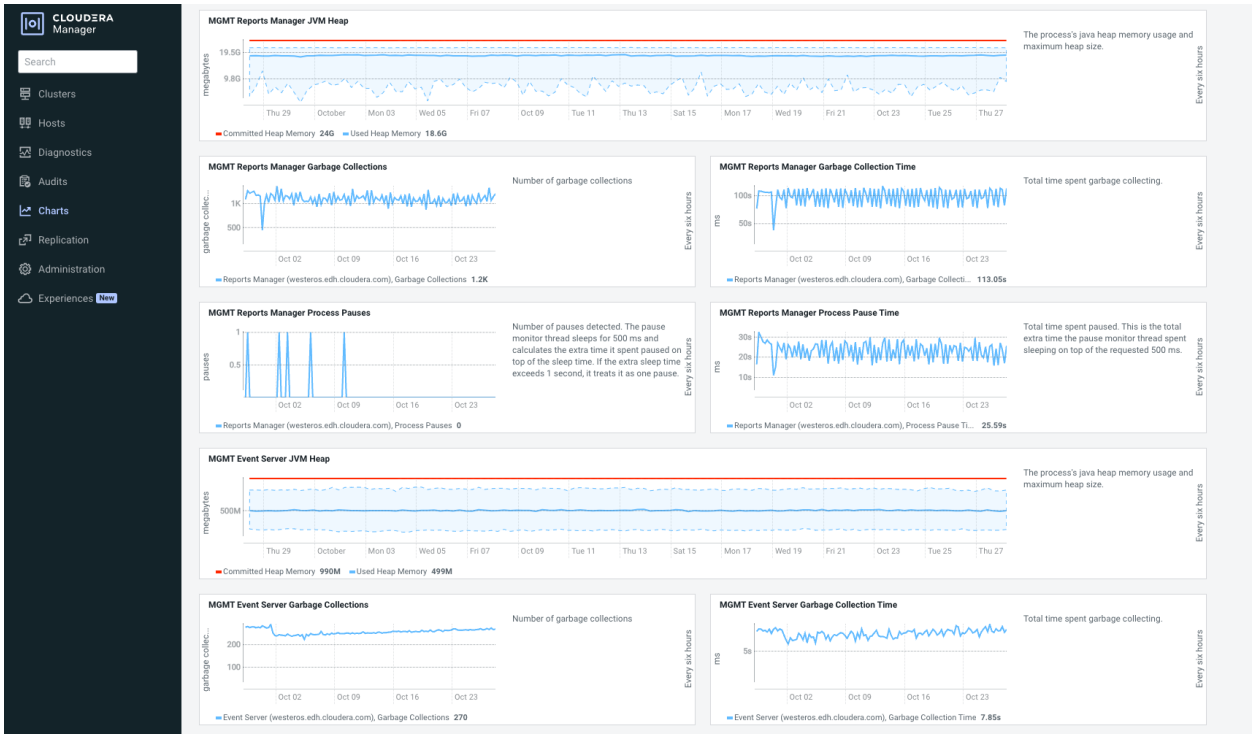
YARN RM JVM Heap
The process's java heap memory usage and maximum heap size.
YARN RM Garbage Collections
Number of garbage collections
YARN RM Garbage Collection Time
Total time spent garbage collecting.
YARN NM JVM Heap
The process's java heap memory usage and maximum heap size.
YARN NM Garbage Collections
Number of garbage collections
YARN NM Garbage Collection Time
Total time spent garbage collecting.
YARN JHS JVM Heap
The process's java heap memory usage and maximum heap size.
YARN JHS Garbage Collections
Number of garbage collections
YARN JHS Garbage Collection Time
Total time spent garbage collecting.

MB - MGMT Cluster - JVM GC Sizing (screenshots)



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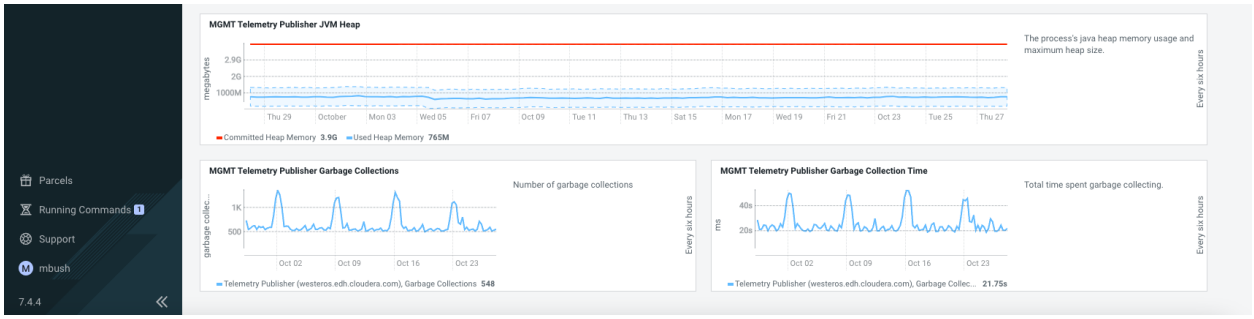
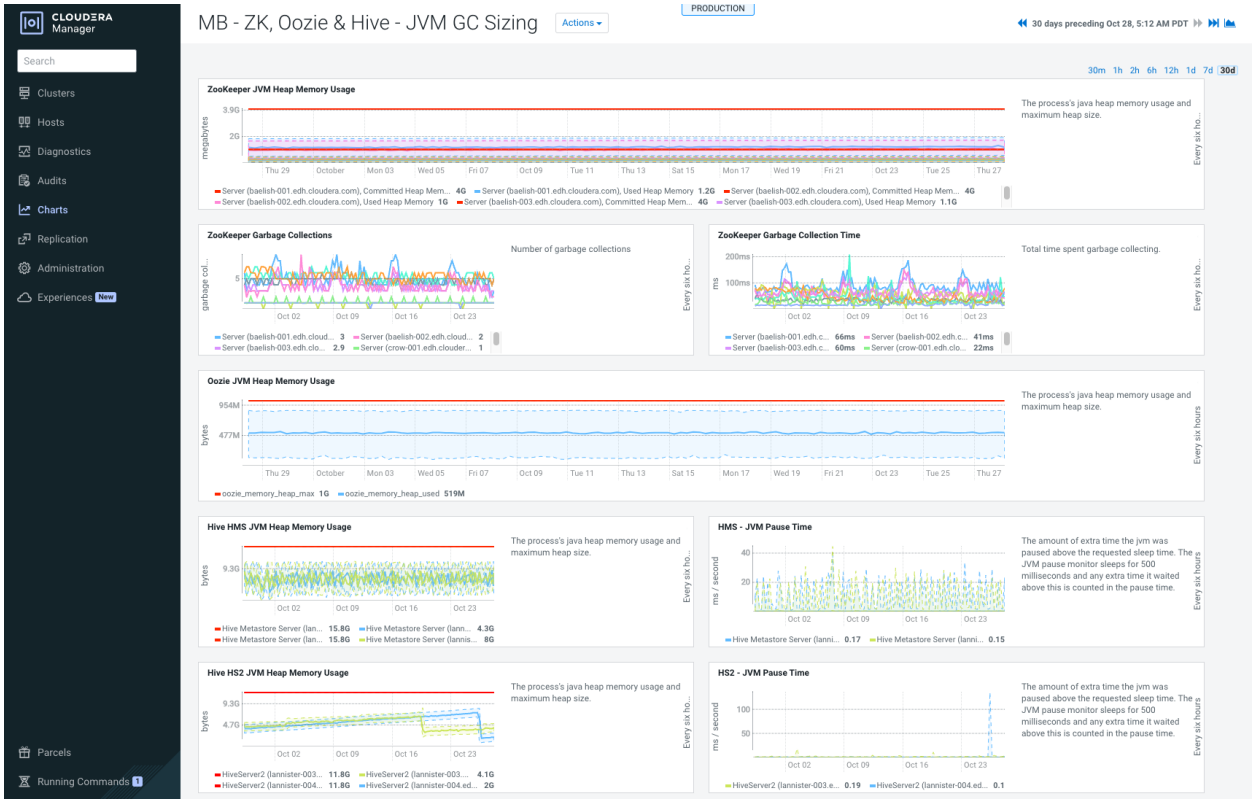
MGMT Reports Manager JVM Heap
The process's java heap memory usage and maximum heap size.
megabytes
19.5G
9.8G
Thu 29 October Mon 03 Wed 05 Fri 07 Oct 09 Tue 11 Thu 13 Sat 15 Mon 17 Wed 19 Fri 21 Oct 23 Tue 25 Thu 27
Committed Heap Memory 24G
Used Heap Memory 18.6G
Every six hours
MGMT Reports Manager Garbage Collections
Number of garbage collections
garbage collec...
1K
500
Oct 02 Oct 09 Oct 16 Oct 23
Reports Manager (westeros.edh.cloudera.com), Garbage Collections 1.2K
MGMT Reports Manager Garbage Collection Time
Total time spent garbage collecting.
ms
100s
50s
Reports Manager (westeros.edh.cloudera.com), Garbage Collecti... 113.05s
MGMT Reports Manager Process Pauses
Number of pauses detected. The pause monitor thread sleeps for 500 ms and calculates the extra time it spent paused on top of the sleep time. If the extra sleep time exceeds 1 second, it treats it as one pause.
pauses
1
0.5
Reports Manager (westeros.edh.cloudera.com), Process Pauses 0
MGMT Reports Manager Process Pause Time
Total time spent paused. This is the total extra time the pause monitor thread spent sleeping on top of the requested 500 ms.
30s
20s
10s
Reports Manager (westeros.edh.cloudera.com), Process Pause Ti... 25.59s
MGMT Event Server JVM Heap
The process's java heap memory usage and maximum heap size.
500M
Committed Heap Memory 990M
Used Heap Memory 499M
MGMT Event Server Garbage Collections
Number of garbage collections
200
100
Event Server (westeros.edh.cloudera.com), Garbage Collections 270
MGMT Event Server Garbage Collection Time
Total time spent garbage collecting.
5s
Event Server (westeros.edh.cloudera.com), Garbage Collection Time 7.85s


Parcels
Running Commands 1
Support
mbush
7.4.4
MGMT Telemetry Publisher JVM Heap
The process's java heap memory usage and maximum heap size.
megabytes
2.9G
2G
1000M
Thu 29 October Mon 03 Wed 05 Fri 07 Oct 09 Tue 11 Thu 13 Sat 15 Mon 17 Wed 19 Fri 21 Oct 23 Tue 25 Thu 27
Committed Heap Memory 3.9G
Used Heap Memory 765M
Every six hours
MGMT Telemetry Publisher Garbage Collections
Number of garbage collections
garbage collec...
1K
500
Oct 02 Oct 09 Oct 16 Oct 23
Telemetry Publisher (westeros.edh.cloudera.com), Garbage Collections 548
MGMT Telemetry Publisher Garbage Collection Time
Total time spent garbage collecting.
ms
40s
20s
Telemetry Publisher (westeros.edh.cloudera.com), Garbage Collec... 21.75s

MB - ZK, Oozie & Hive - JVM GC Sizing (screenshots)