See What's New in MemSQL 6.7: The No-Limits Database

Available as of 11/6/18

MEM**SQL**

Today's Speaker & Agenda
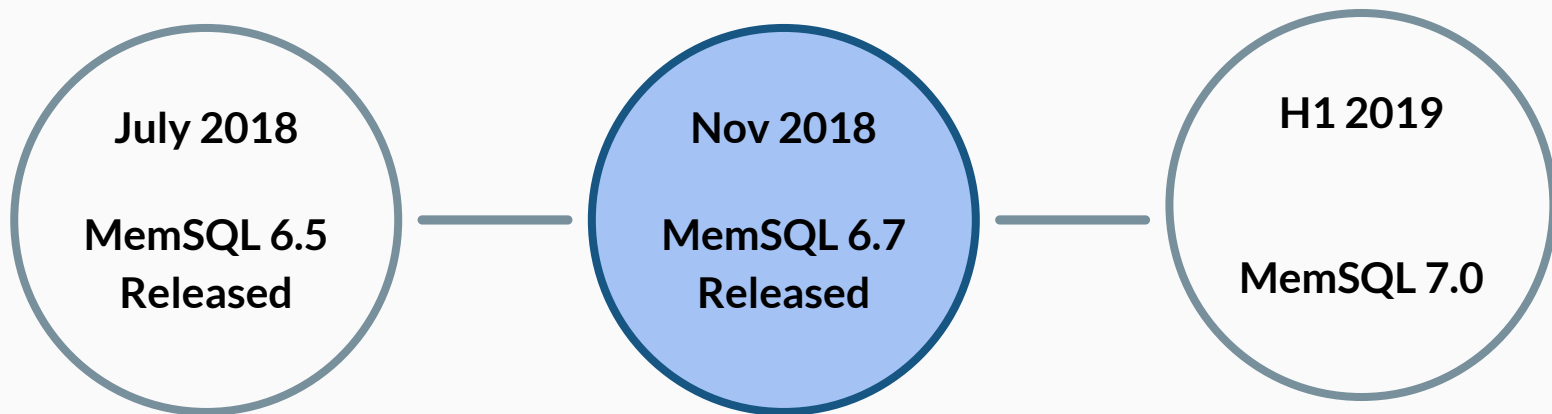

Eric Hanson
Principal Product Manager
MemSQL

Agenda
- What is MemSQL?
- New monitoring and management tooling
- Introduction to MemSQL Studio
- How to take advantage of the new query improvements
- New storage and loading features
- MemSQL free tier overview

Questions?
Submit via the Q&A or chat function in the lower right hand side of the console

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MemSQL Release Timeline

July 2018

MemSQL 6.5 Released

Nov 2018

MemSQL 6.7 Released

H1 2019

MemSQL 7.0

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MemSQL 6.5

(available 7/18)

- Faster Queries
- Automated Workload Management
- Extensible Pipelines
- Full-Text Search
- Scalable Multi-Tenancy

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MemSQL 6.7

Improve usability, compatibility, and performance

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MemSQL 6.7

- Free tier
- Developer forums
- Improved ease of use
- Faster queries
- New manageability

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New Free Tier for Simplified Evaluations

- Full featured product
- Deploy to production
- Install on clusters up to 128GB of RAM
- Unlimited disk usage
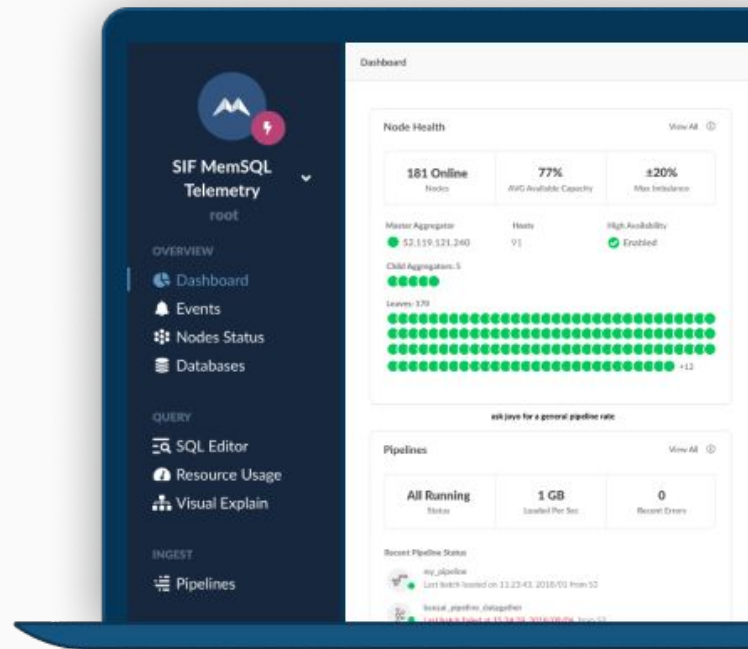- Update to Enterprise Edition with license key change

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Portal and Forums

portal.memsql.com

memsql.com/forum

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MemSQL Studio

- Primary UX tool for managing and monitoring
- Delivers at-a-glance cluster health statistics, query troubleshooting, and query editor
- Requires MemSQL 6.5 or greater
- Independent of the cluster
- Provides multi-cluster access
- Faster update cadence

Management Tools

MemSQL has a new installable package that contains a set of tools for deploying, managing, and troubleshooting MemSQL

memsql-deploy
Installs MemSQL software

memsql-admin
Run commands such as create-node, set-license, add-leaf

memsql-report
Runs a set of checks on hardware, configurations, and clusters

memsql-toolbox-config
Tool to simplify setup of ip-addresses of nodes

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Faster Query Performance

Star Join Improvements

- MemSQL 6.0 delivered faster queries on compressed data - ie. Trillion row per second scan with SIMD (on-chip query vectorization)
- New 6.7 improvements extend SIMD to star join queries, yielding up to 3-100x faster queries over 6.5

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101X speedup -- 780 million rows/sec/core

```
select d_daynuminweek, d_dayofweek, count(*) as c
from media_view_fact f, date_dim d
where f_datekey = d_datekey
group by 1, 2
order by 1 asc;
```
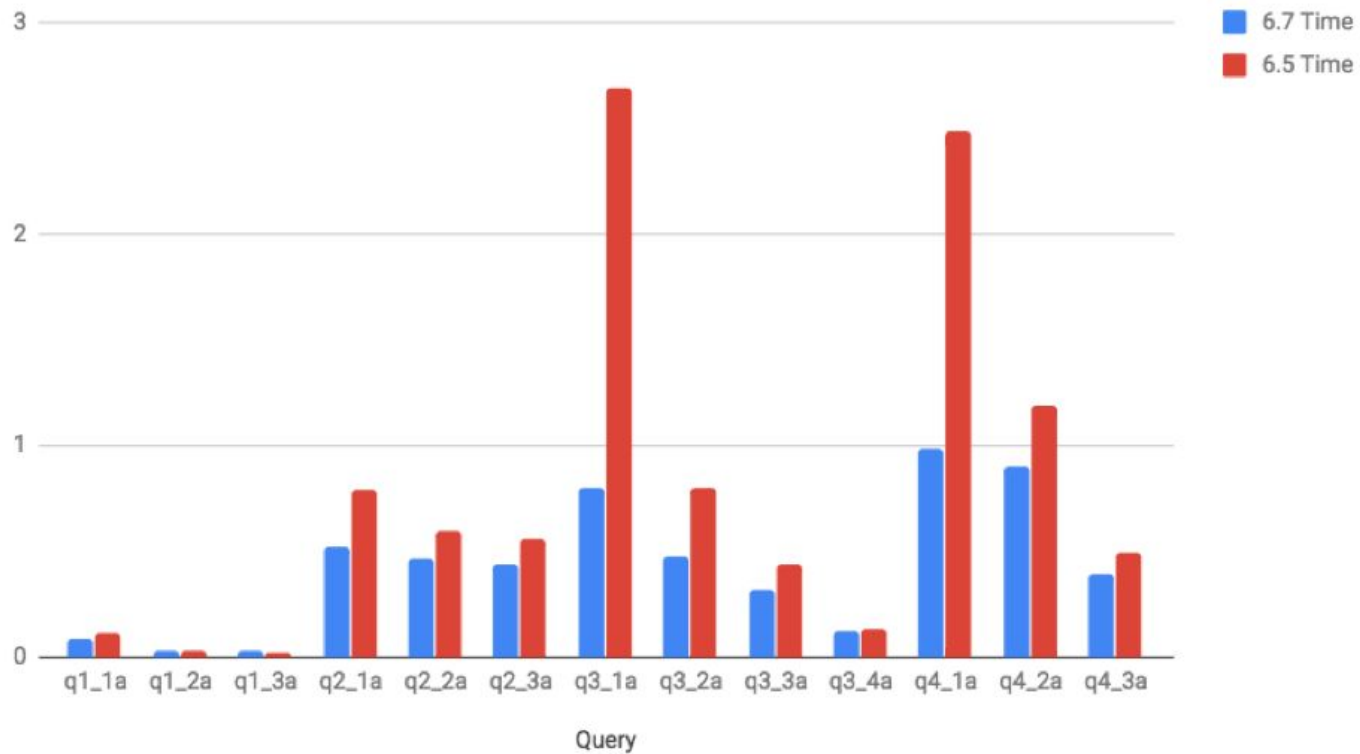
3X speedup

```
select d_dayofweek, count(*)
from media_view_fact, date_dim, user_dim, item_dim
where f_datekey = d_datekey
and f_userkey = u_userkey
and f_itemkey = i_itemkey
and i_itemuri regexp 'http://www.c000[0-5].'
and u_zipcode like '002%' and
d_year = 1997 and d_month = "January"
group by d_dayofweek;
```

Demo

Star Join Performance in Studio

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6.7 and 6.5 Time (seconds) on Star Schema Benchmark

Faster Query Performance

Additional improvements

- Just-in-time compilation of queries (experimental)

- IN-list performance improvement

- Columnstore range filter improvements

- Fast sampled rowstore scans

- INSERT_ALL() function

Query Optimization and Statistics Improvements

- Row store sampling with true random sample

- IN-list filter cardinality estimation with histograms

- Faster compilation for some queries (up to 6X)

- New information_schema views to help with tuning

  - mv_query_column_usage

  - mv_aggregated_column_usage

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New Stats Views

mv_query_prospective_histograms

Shows what queries could have used histograms on a particular column but they weren't available

optimizer_statistics

Shows what statistics are available for each column that has any kind of statistics, and when they were last updated

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Additional Usability Improvements

- Expanded Resource Governor adds CPU and concurrency, in addition to RAM
- Additional query syntax, new extensibility, and loading
  - Dynamic SQL
  - Added ROLLUP and CUBE syntax

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Load, Backup, and Restore Improvements

- Adaptive data compression for LOAD DATA (up to 2X performance gain)
- Tar backup to Amazon S3
- Backup/restore to/from Azure Blob Store
- Enhanced metadata for backups in MV_BACKUP_HISTORY view as well as backup files
- Enhanced validation prior to restore or disaster recovery replicate operations, to ensure there is enough space on the target system
- SELECT INTO OUTFILE on S3
- JSON and Avro support for LOAD DATA and pipelines

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Expanded Compatibility with Other Technology

- Microstrategy support

- SAS Access certification

- Informatica Connector

- Streamsets support

- New Oracle-compatible functions

  - nvl(), to_char(), to_timestamp(), regexp_instr() etc.

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Q&A

memsql.com

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Thank You

Learn more about 6.7 at memsql.com/blog/memsql67

Try us for free at portal.memsql.com

Questions? Email us at **team@memsql.com**

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