



MySQL-MariaDB History talk

**July, 2023
Michael Widenius
CTO @ MariaDB**

A long time ago...

Monty and My



Benefits of creating MySQL



At start: Lots of traveling and meeting interesting people

The origin of a virtual company



Working from home since 1981

The namesake of MaxDB and MaxScale



Max at our summer house (no electricity)

Celebrating 10 years of MySQL and PHP



The origin of MySQL



Taking in investors is a learn experience

The origin of MySQL



Then we came into strange company

The origin of MySQL



Which scared some of us a bit...

The origin of My(SQL) and Maria(DB)



Fortunately there is someone else that can continue

The origin of Maria(DB)



It's a hard job taking over a success

The origin of Maria(DB)



But we are confident we can pull it off

The animals that support us



We have had up to 70+ animals at the same time (now 30+) that Maria takes care of

Maria then and now



My today



Monty's early years

- Bought one of the first programmable calculators (Texas Instrument 58) in 1975
 - 512 bytes programmable memory
- Saw the first 'personal computer', an ABC 80, in 1978
 - 4 MHz, 8 k ROM, 8 k ram memory



Monty's early years

- Put asphalt on streets in Helsinki to get money to pay for half of the ABC 80 (father paid for other half).
- They also sold Pet and Apple II, but I choose ABC 80 because it's BASIC was MUCH faster.
- Met **Allan Larsson** in Sweden (3rd founder of MySQL)
- Wrote/adopted a lot of games (clones of Space Invaders, Pacman, Missile Command etc) in assembler

Monty's early years

- Upgraded to ABC 800 + disk station in 1980
 - 4 MHz, 32 k memory



Monty's early years

- Wrote on the ABC800
 - Word processor
 - Hard disk controller
 - Tape backup software
 - One-card-computer multi-task operating system
 - 3 MHz, 16 k memory

Monty's early years

- Took summer job 1981 at Tapio Laakso Oy
 - Converted computer programs (book keeping, payroll etc) from Cobol to 'modern personal computers' like TRS-80 running Microsoft basic.
 - Noticed that most of the programs was very similar.
- Started to study in Technology university in Otaniemi.
 - There was no computer science department back then so I choose to study Technical Physics
 - I worked in parallel while studying. After 2 years I stopped studying as I already had a full time job doing software development.

Monty's early years

- Allan Larsson wanted me to write some programs based on a database program but I found it was too cumbersome to use and impossible to maintain.
- Wrote Unireg (base of MySQL code) in 1981
 - First in BASIC on the ABC 800
 - Rewrote it in C on a DS90 (Swedish Unix computer with 2M of ram) in 1983



Monty's early years

- Met **David Axmark** in Sweden. Started to work actively with **Allan Larsson** developing software for customers.
- Did a lot of development of Unireg on Sun Sparcstation (40 MHz, 24M of memory) before moving in 1996 to Linux and standard hardware.



(Very brief) MySQL history

- Added SQL interface to Unireg and renamed it MySQL in 1994.
- MySQL released December 1995 under dual licensing.
- MySQL Finland Ab took in investment and hired Mårten Mickos (2001).
- Made an agreement with SAP and released MaxDB 2003
- **Oracle bought the InnoDB engine 2005.**
- MySQL Ab was sold to Sun in March 2008 for 1 billion \$
- Monty & others left Sun in Feb 2009 to work on Maria engine in Monty Program Ab.
- Oracle started to acquire Sun (including MySQL) in April 2009.

(Very brief) MySQL history

- Original MySQL developers starts focusing on MariaDB.
- MariaDB foundation was created in 2012
- MariaDB is replacing MySQL in most distributions in 2013.
- Monty Program Ab merged with SkySQL in April 2013
- SkySQL Ab renamed to MariaDB Corporation in October 2014
- Monty joined MariaDB Corporation as CTO in January 2016
- 2018 MariaDB has replaced MySQL in almost all OS distributions

Why MySQL was released as Free Software

- David Axmark and Monty had been using Free software for 10 + years and wanted to give something back
- MySQL was our first program suitable for wider usage
- We earned money mainly by doing software development and consulting:
 - **Releasing MySQL under open source would not harm our income**
- We choose to do **dual licensing** to be able to work full time on MySQL
 - Second project with dual licensing (ghostscript was the first)
 - After 2 months we where profitable and could spend all time on developing and spreading MySQL.
- Nowadays I am advocating **Business Source** to companies who wants do create open source products but can't do dual licensing. See <http://monty-says.blogspot.com/>

Why MariaDB was created

“Save the People, Save the Product”

MariaDB was created shortly after Oracle announced it wanted to buy Sun & MySQL on April 20, 2009.

MariaDB was created:

- To keep the MySQL talent together
- To ensure that a free version of MySQL always exists
- To get one community developed and maintained branch

MariaDB Foundation was created to ensure the two last points above.

MariaDB is guaranteed to always be open source

The MariaDB Foundation was created to ensure that anyone can be a **contributor** to the MariaDB project **on equal terms!**

The MariaDB Foundation is the **owner** of the main MariaDB server repositories on github

The Foundation can never to be controlled by a single entity or person

The Foundation is **not** about the MariaDB trademark or to decide upon the MariaDB roadmap!

MariaDB Foundation status

- Ensure the MariaDB Server code base remains open for usage and contributions on technical merits.
- Strive to increase adoption by users and across use cases, platforms and means of deployment.
- Provide continuity to the MariaDB Server ecosystem, independent of any commercial entities.

Builds MariaDB binaries and provides them for download

Works with OS distributions to help them with MariaDB issues

- 1400 closed community contributed pull request
 - 80 outstanding, but feedback given to all of them
 - In comparison MySQL has about 70 community pull requests closed.
- Does a lot of virtual conferences! Search for MariaDB FEST for videos

MariaDB Foundation board members and sponsors

Platinum Sponsors



Gold Sponsors



MariaDB plc

- Owner of the MariaDB trademark, except for 3 parts which the MariaDB Foundation owns.
- Employs 300+ people, of which 60+ are engineers working on MariaDB and related software (MaxScale, ColumnStore, Xpand etc).
- Have the best MariaDB engineers & most of the MariaDB captains (people with write access to MariaDB source).
- Is the biggest driver of the MariaDB project.
- Sells support, subscriptions and tools around MariaDB.
 - (The MariaDB server is guaranteed to always be free software)
- Rename from MariaDB Corporation to MariaDB plc as part of entering the New York Stock Exchange!

MariaDB Ecosystem

MariaDB Foundation **Works with the community**

Builds and tests binaries

- Develops MariaDB buildbot

Drives adoption

- Works with OS to ensure MariaDB is included everywhere

Works with community developers

- Reviews architecture and patches
- Approves and pushes changes

Insures that MariaDB is always free.
Founded through sponsorship's.

MariaDB Corporation **Works with customers**

Provides paid support and subscriptions for MariaDB (Enterprise and Community)

Employs most of the MariaDB developers

- Main driver of MariaDB development

MariaDB Enterprise

- Longer End-of-life
- Stable features are backported to earlier versions to minimize needs for upgrades.

Provides NRE (paid development of new MariaDB features).



Open development

- Anyone can participate in the MariaDB server development on equal terms
- All development plans are in the MariaDB Jira and the MariaDB Knowledgebase (KB)
- Anyone can get write access to the Knowledgebase or the code repository (if you are good enough)
- One source repository for all server features and all tests
 - MySQL is open core and main repository doesn't have all features and lacks a lot of tests
- More secure as security bugs are fixed at once (not delayed to quarterly security releases)
- We use Zulip, a modern communication platform anyone can join and discuss with all the active MariaDB developers and other MariaDB users.
- There are a lot of developers of MariaDB in a lot of different companies

Easy upgrades

- MariaDB does not remove features
- Upgrades should take only a few seconds
- Upgrading from MySQL to MariaDB is easier than upgrading between two MySQL versions (disregarding MySQL 8.0)
- No dump and restore is ever needed between releases
- Data on disk is forward compatible
- All old MySQL and MariaDB clients works with older and newer versions of MariaDB

MariaDB & MySQL Compatibility

- User level (data, API, replication, configuration files..) compatible with MySQL
- Drop in replacement up to MySQL 5.7
 - If your are using InnoDB partitions in MySQL 5.7, wait until MariaDB 10.6.15 to upgrade!
- More plugins, more storage engines, more features, faster, better code quality.
- **GPL**-only server license.
- **LGPL** C, ODBC and Java connectors.
 - All MySQL connectors should work with MariaDB

More frequent releases

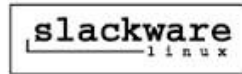
(Release early, release often)

- | | |
|----------------------------|---------------------------------------|
| • MariaDB 5.1 (Feb 2010) | Making builds free |
| • MariaDB 5.2 (Nov 2010) | Community features |
| • MariaDB 5.3 (Apr 2012) | New optimizer |
| • MariaDB 5.5 (Apr 2013) | Merge MySQL 5.5 |
| • MariaDB 10.0 (Mar 2014) | Parallel replication |
| • MariaDB 10.1 (Oct 2015) | Galera, Encryption |
| • MariaDB 10.2 (Apr 2017) | Advanced features |
| • MariaDB 10.3 (May 2018) | Compatibility, Spider |
| • MariaDB 10.4 (May 2019) | Security, compatibility |
| • MariaDB 10.5 (June 2020) | Xpand(clustrix), compatibility |
| • MariaDB 10.6 (July 2021) | Atomic DDL, JSON_TABLE, compatibility |
| • MariaDB 10.11 (Sep 2022) | Faster InnoDB, Lag free ALTER TABLE |

MariaDB is everywhere

(Most distributions don't support MySQL anymore)

Linux Distributions



Cloud Services & Stacks



OPENSIFT



Pivotal Cloud Foundry®



Challenges with forking MySQL (1)

- Creating a team that could continue and take over MySQL
- Creating free documentation & forums
- Creating a free build & test environment (buildbot)
- Competing against a well know trademark (MySQL)
 - Visiting most open source trade shows
- Working with OS distributions to get MariaDB
- Keeping up with MySQL development
 - Lots of bugs found while doing monthly merges
 - Merging MariaDB 5.3 and MySQL 5.5 took 6 months
 - Adding new “must have” features (in MariaDB 5.3/5.5)
- Creating a developer community
 - Relatively easy as Oracle is not working with the community to get in their patches or handle their bugs

Challenges with forking MySQL (2)

- Finding a business model not based on licensing
 - Developer support (for advanced MySQL users)
 - Third level support via partners like SkySQL
 - Getting paid for adding features to MariaDB/MySQL
- No paying customers for the first 3 years
 - All major paying customers bought 3-5 year contracts to protect against price increases from Oracle
- Things changed after the MariaDB foundation was created and Monty Program merged with SkySQL
 - First years most customers was moving from MySQL to MariaDB
 - 2015 we started to see a lot of customers moving from Oracle and MSSQL to MariaDB

MariaDB popularity is increasing

- In December 2012
 - Wikipedia announced they are moving to MariaDB.
- In January-March 2013
 - DB at Mozilla blogged they have moved to MariaDB
 - Fedora voted 7-0 to make MariaDB the default MySQL database
 - OpenSuse 12.3 included MariaDB as default.
 - Slackware, Chakra Linux and Arch Linux has MariaDB as default.
- In April 2013
 - Google is basing their new SQL offerings on MariaDB
 - FusionIO is showing benchmarks with MariaDB.
- June 2013
 - RedHat announced it will include MariaDB in RedHat Enterprise.

MariaDB popularity is increasing

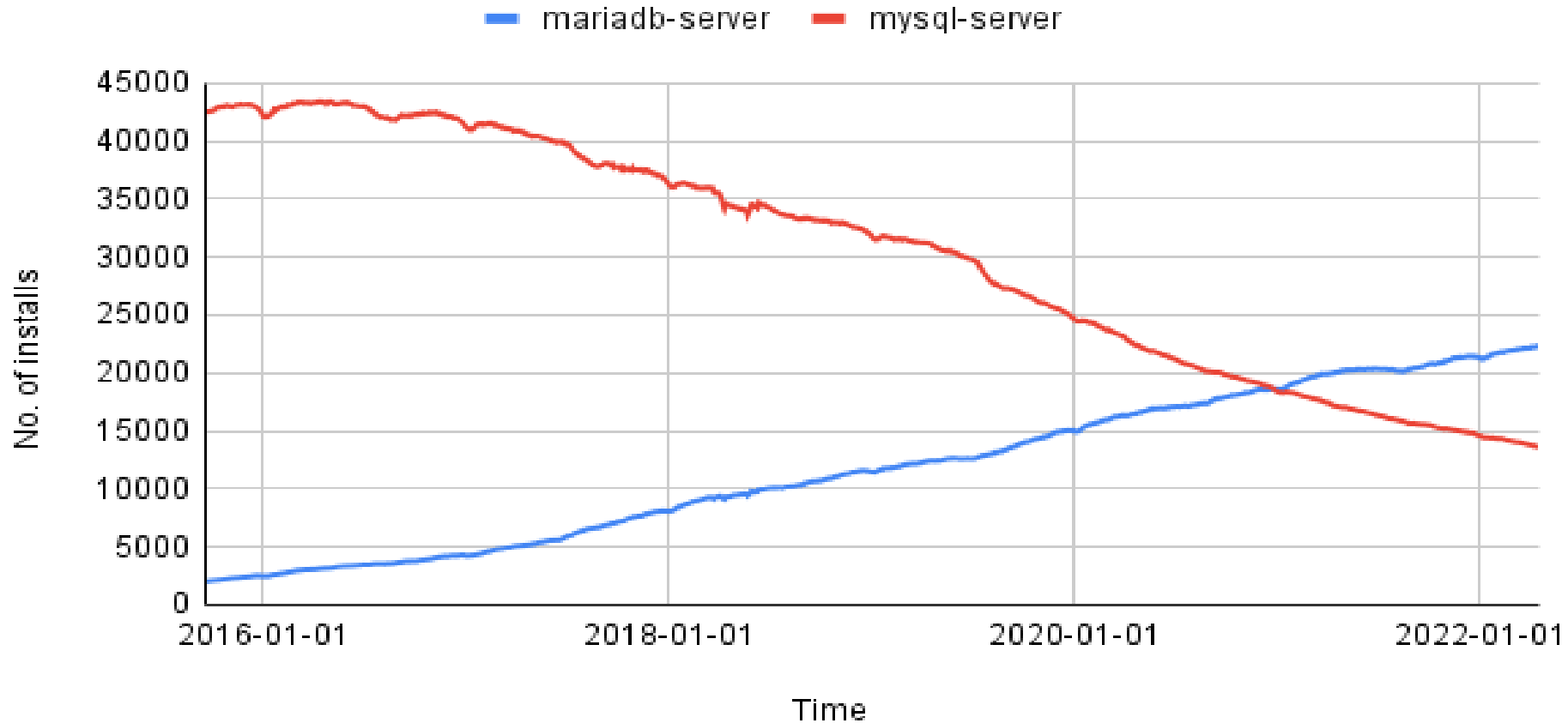
- December 2013
 - MariaDB was added to Debian and later included in Ubuntu
- 2014
 - RedHat Enterprise Linux 7, Suse Enterprise and Oracle unbreakable Linux has MariaDB as default
- In April 2015
 - Gartner puts MariaDB in the 1st (leader) quadrant
 - Open source databases are now used by 25% of the market
- In August 2015
 - MariaDB was ranked #9 as Finland's hottest startup and #2 in the Business software category
 - MariaDB announced on IBM System Z and Power 8
 - Amazon starts using MariaDB's C/ODBC and Java connectors

MariaDB popularity is increasing

- In February 2017
 - MariaDB was selected as **Database of the Year**, 3rd year in a row, in the Members' Choice awards at LinuxQuestions.org
- At June 14, 2017
 - Debian 9 is replacing MySQL with MariaDB
- December 2017
 - Microsoft joins MariaDB Foundation and offers MariaDB on Azure
- August 2018
 - Alibaba is offering MariaDB 10.3 on their cloud
- December 2018
 - Microsoft becomes platinum sponsor of the MariaDB Foundation
- October 2021
 - MariaDB become more popular than MySQL by Debian users

Debian popcon graph 2017- 2021 MariaDB overtook MySQL installations

MariaDB vs MySQL Debian PopCon Popularity



There is a lot of others involved

- MariaDB corporation has to 300+ employees
- Many external contributors; Most features in MariaDB **5.2** and **10.1** were contributed.
 - 1140 community pull requests closed(2020-05-18). 159 open (2023-07-22)
 - MySQL has about 60 closed community pull requests in 2020, however a few big companies has contributed directly to MySQL without pull requests.
- Many of the advanced features in MariaDB 10.2 and 10.3 are sponsored features!
- MariaDB has had more public contributions the last 12 months than MySQL under it's whole lifetime.
- In the mariadb.com/kb knowledge base (free MariaDB and MySQL documentation) we have 8226 (mostly English) articles.
 - In July 2023 189 added/changed articles
- Github statistics (July 2023)
 - 324 followers
 - 1500 forks, 4900 stars, 368 contributors
 - 198k commits, 2481 branches, 1015 tags (releases)

Some notable contributors

- Multisource replication Taobao
- Encryption Google & Eperi
- Galera Cluster Codership
- Atomic writes FusionIO & Shannon
- Oracle MySQL enhancements
- Connect Olivier Bertrand
- MaxScale binlog Booking.com
- Spider storage engine Kentoku
- AliSQL patches Alibaba
- TSQL patches Tencent
- Webscale patches Facebook, Google, Twitter
- MyRocks Facebook
- Lots of others, listed in the Knowledgebase at mariadb.com

Reasons to switch to MariaDB today

- MariaDB is guaranteed to be always free!
- MariaDB is maintained by the people that originally created MySQL and has the best knowledge of the MySQL code.
- MariaDB is binary compatible (data and API) with MySQL up to 5.7, so its trivial to replace MySQL with MariaDB (minutes).
- Reasons to switch to MariaDB
 - **Faster queries** thanks to optimized InnoDB, ColumnStore, MyRocks, a much better optimizer and better replication
 - Open source development: **Anyone can be part of the development** at all stages. Developer meetings are public!
 - **More features** like true parallel replication, better statistics, dynamic columns, encryption and many storage engines.
 - **Less risk**, as MariaDB will not remove features (like MySQL is doing)

Summary: What made MySQL successful?

- We were using it (for data warehousing and web)
- Internet was new and everyone needed a web-optimized DB
- “Virtual company” made it easy to find good people
- New “free” license scheme (this was before Open Source)
- Free for most, a few have to pay
- Second program (ghostscript was first) to use dual licensing, MySQL first to do it with GPL.
- Very easy to install and use (15 minute rule)
- Released source and tested binaries for most platforms
- Friendly and helpful towards community
 - I personally wrote 30,000+ emails during the first 5 years to help people with using MySQL
- Waited with investments until product was “good enough”
- MySQL was a needed, stable and easy to use product with the right price

What have I developed recently

Highlights of MariaDB development by Monty

- **Oracle compatibility** (With Alexander Barkov) (10.3)
 - Allows one to easily migrate from Oracle to MariaDB with non or minimal changes in applications.
- **BACKUP STAGES**
 - Allows one to backup MariaDB with minimum locking or performance impact.
- **S3 Storage engine** (10.5)
 - Allows on to archive and share tables stored in S3
- **Atomic DDL** (10.6)
 - CREATE TABLE, DROP TABLE, ALTER TABLE, RENAME TABLE are now crash safe.
- Added support of **MySQL 5.7 InnoDB partitions** in mariadb-upgrade (10.6.15)
- **Improving the MariaDB optimizer**, including introducing a new cost model and adding EQ_REF optimization which helps when using many tables. (10.11 & 11.0)
 - MariaDB 11.0 optimizer can now solve complex queries better than earlier versions.
- I am now working on **multi-tenancy catalogs** for MariaDB 11.3

Monty's Philosophy's

Statements that defines Monty

- George Bernard Shaw said “The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man.”
 - Do not give up even if others tells you it will not work.
- Treat others like you would like to be treated if you where in their shoes.
 - This philosophy helped me create a community around MySQL.
- Each day do everything that is possible to do that is required or expected of you. If you can go to sleep every night without having to regret ‘why did I not do that thing’, then you have a good life.
- Working remotely works (I have done this since 1981)
 - But there has to be checks to ensure productivity
 - One also have to learn to take a pause from work.
- I put my team first, then the product, then the customers and after that the Company.
 - Without the team there is no product and without a product there is no customers and without customers there is no company.

Monty's Achievements & Experience

- Created MySQL & MariaDB (The products)
 - Having 3 children, My, Max and Maria that have shared their name with my products
- Creating a community around MySQL and MariaDB. (Harder than creating products)
- Getting MySQL sold to Sun and MariaDB on the New York Stock Exchange.
- Keeping a good relationship with old customers.
 - Just because you have a new job/mission does not mean you should neglect old customers or users of your product!
- Keeping a good relationship with my ex wife!
 - Life is short: Remember the good times and ignore the bad ones.
- I have worked most of my life on one product (MySQL/MariaDB). I have no plans to work on anything else as long as there are a lot of users who depends on my work!
 - I prefer to work on one product a long time instead of on a lot of different products.
This works as long as there are constant new things one can do to enhance it!
- It is possible to do money on Open Source/Free software!
 - Dual licensing and the BSL license works.
- I believe “Open source is a better way to develop software!”



Thank you