



DMM.com leveraged Oracle Premier Support for MySQL to upgrade over 100 MySQL Servers in a year and stabilize operations to ensure growth of business

“We decided to adopt MySQL Enterprise Edition because we realized that Oracle Premier Support for MySQL would be critical in quickly solving various database operational issues, including upgrades, bug handlings and performance design. While it’s possible to get a lot of information from the community, we would have ended up wasting much time investigating and verifying it. What we always looking for is accurate information with strong backing.”

DMM.com LLC
IT Infrastructure Headquarters, Infrastructure Division, Server Infrastructure Group
Group Leader
Masato Tsunashima

CASE STUDY

DMM.com LLC has continued to use MySQL Enterprise Edition for over ten years, and their Infrastructure Division has been working closely with MySQL Support Team at Oracle Corporation. They were able to upgrade over 100 MySQL Enterprise Edition servers, used across a wide variety of services and backend systems, in a short period of time.

INTRODUCTION

DMM.com offers various services, including entertainment services like online games, streaming videos, and e-books. These services extend as far as online shopping, online English classes, foreign exchange and various products' rentals. All of these services are running on large database farm.

They have various database architectures depending on each service's purpose and scale, and MySQL Enterprise Edition accounts for the majority of them. The Infrastructure Division alone directly manages nearly 300 licenses. From frontend such as content delivery from each service systems to backend, they have a wide range of tasks supported by MySQL Enterprise Edition.

DMM.com has a long history of first using MySQL, but DMM.com started using MySQL Enterprise Edition when Oracle provided MySQL from 2010.

DMM.com had the limited knowledge and information of MySQL in 2010. Actually, failure investigations had been eating an incredible amount of time and they urgently needed to reduce time to solve these issues by using external support services.

DMM.com also lacked properly backed information with regard to performance design, making it difficult to know if DMM.com was actually moving in the right direction. To fill these gaps, infrastructure managers need to keep up with the information individually, so DMM.com decided to get the support as an advisor who could be considered an "external dedicated DBA."



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Infrastructure Division, Server
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CHALLENGES

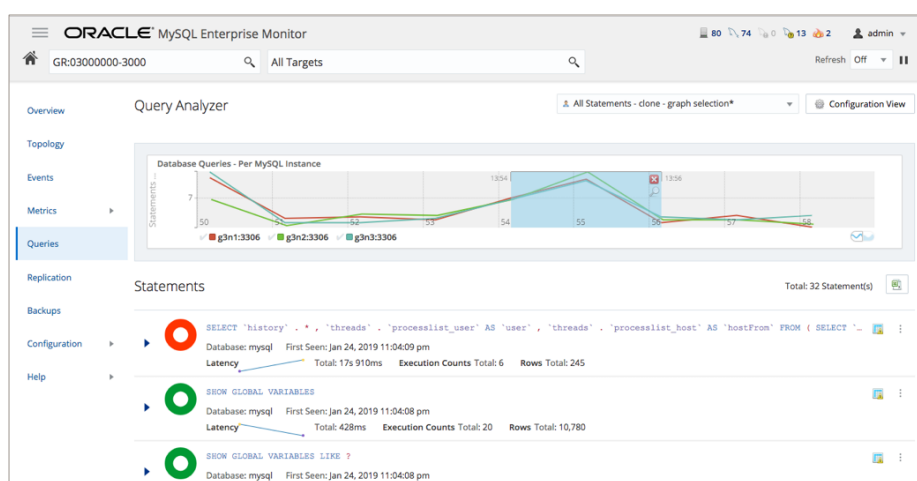
- When the DMM.com Infrastructure Division started using MySQL Enterprise Edition, they had databases used by multiple service systems that were tightly-coupled. They were running into issues like increasing response times due to complex queries.
- A lot of time was needed to determine the cause when problems occurred in these complex queries.
- It was difficult to get proper information related to upgrades and bug handlings. While it was possible to get information from MySQL community, it was difficult to quickly judge the veracity of that information. Additionally, there were concerns that there could be misinterpretations when using answers and documents that had been translated from English to Japanese.
- There was no guarantee that they could trust information from the community about performance design. The business divisions were expecting rapid performance gains for the service systems they ran, so it was necessary that the design techniques the Infrastructure Division was planning and testing were properly backed.
- There are limited information in the community about upgrade procedures of MySQL across different major versions. While it's possible to formally achieve migration by starting a new version of the database and importing data from an old version, there is the possibility of compatibility issues caused by changes specific to the new version. In these cases, it is essential to quickly know how to modify data to prevent such issues.

RESULTS

- The DMM.com Infrastructure Division relied on Oracle Premier Support for MySQL to solve the above-mentioned issues. MySQL Support Team was able to reply to the DMM.com Infrastructure Division's questions with quick and accurate answers. Additionally, particularly difficult questions were escalated to the developers, providing accurate solutions that had a proper backing.
- MySQL Support Team also provided strong support when DMM.com shifted database servers to virtualized environment with durable configuration in 2013 to 2014. This was all done while receiving advice from MySQL Support Team, and it greatly increased the availability of the databases. There had been many times in the past when physical server failures had an effect on the services DMM.com offered, but they were able to reduce the effect these physical failures had on services by over 80%.
- During the 2014 upgrade from MySQL Enterprise Edition 5.1 to 5.6, MySQL Support Team made great contributions through the solutions they offered. DMM.com was able to upgrade over 100 servers to MySQL Enterprise Edition 5.6 through their close relationship with MySQL Support Team. This process was completed in a single year, all according to plan.
- Without support from Oracle, the upgrade process would have fallen into dire straits with no end in sight. There are actually a number of companies that have to upgrade from 5.1 to 5.6 only gradually, leading to a fair number of headaches. DMM.com was able to smoothly transition from 5.1 to 5.6, and was able to complete their migrations in a timely manner complying with their original plan.
- Completing the upgrade to MySQL Enterprise Edition 5.6 in such a short time allowed them to bring the benefits of the new version to each service even quicker. Performance in particular saw massive improvements. MySQL Enterprise Edition 5.1 used a small number of threads in its parallel processing, which made it unsuitable for services with sudden spikes in the number of transactions. This performance problem was solved completely with the upgrade to 5.6, which had its internals largely reworked.
- Additionally, along with this upgrade, DMM.com began to use the MySQL Enterprise Monitor and MySQL Query Analyzer monitoring tools that can be used with MySQL Enterprise Edition. These tools contributed greatly to their business, providing things like performance improvements for each service and detection of underlying problems.
- MySQL Enterprise Monitor and MySQL Query Analyzer constantly monitor the database, making the health of queries visible at a glance. Warnings are issued before

a problem effecting the system occurs, making it possible for engineers in the Infrastructure Division to anticipate and resolve issues beforehand. Additionally, detection of inefficient and unhealthy queries within applications is possible, with feedback provided to the development team.

- This high level of monitoring can't be found in standard monitoring tools unless the results of a separate system or event log are captured. MySQL Enterprise Monitor and MySQL Query Analyzer do not increase database load in any way and can be easily implemented. Moreover, they can be used in cooperation with MySQL Support Team.
- At present, these monitoring tools are supporting the DMM.com Infrastructure Division's ongoing performance improvement initiatives. They are using these tools to drive PDCA cycle parameter tuning for each service.
- Systems migrated to MySQL Enterprise Edition 5.7 are able to implement all of the HA (high availability) features, which have traditionally been reliant on storage, into the database. This is done through the introduction of the new MySQL Group Replication and MySQL InnoDB Cluster features. This reduced the risk of having the storage and the network connected to the storage become a SPOF (single point of failure).



MySQL Query Analyzer Screen

WHY ORACLE

While DMM.com has been using MySQL Enterprise Edition as their main database for as long as over 10 years, they have actually looked into other database products during that time. However, they were never able to find anything that could outperform MySQL Enterprise Edition.

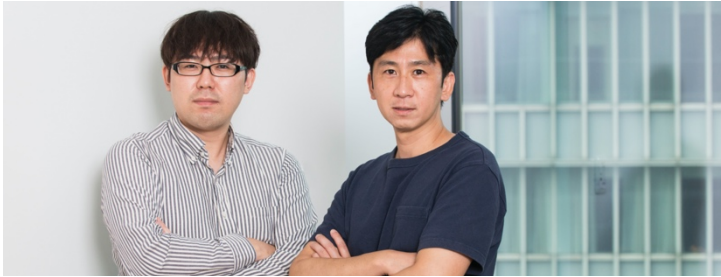
“MySQL Enterprise Edition is different from other open-source databases in that replication is incredibly easy, simple, and reliable. We sometimes see the customers rush to use our services and the access spikes, for example through the campaigns we run multiple times a year. When this happens, we need to quickly start new instances and MySQL Enterprise Edition's replication capabilities help this a lot. This simplicity and reliability are worth everything and consequently, we have continued using MySQL Enterprise Edition.

We also really like the direct support from the manufacturer. We feel the difference in speed of answering questions. Additionally, growing services is incredibly important to businesses. Using the support services and the monitoring tools offered by MySQL Enterprise Edition allows us to put our resources into the areas that we essentially need to focus on to grow our own services.”

—DMM.com LLC, Infrastructure Division, Server Infrastructure Group, Service Front Team,
Yoshihiko Goto

“We are seeing our company’s overall system moving more and more to use cloud so that the developers can develop applications and services even faster. This comes from our idea of using the right tool for the right job. We anticipate an increase in our use of MySQL on public cloud. However, we’re not going to get rid of our on-premise environment. As we continue to use MySQL Enterprise Edition, we’re currently investigating the upgrade to version 8.0 and how to design a database that makes the most of the new features. MySQL Support Team is essential for us to engage in this new endeavor.”

— DMM.com Infrastructure Division, Server Infrastructure Group, Group Leader, Masato Tsunashima



ABOUT DMM.COM LLC

At the electronic commerce site run by DMM.com, “DMM.com,” they move forward with the business strategy that focuses on investing in any businesses that they think have potential, regardless of scale or field. This has its basis in their business concept of “Expanding whatever the sector.”

As a result, DMM.com has expanded to become the largest platform in Japan, embraced by 28,000,000 users. Creating a new world where the internet and the real world come together, their services are continuing to grow rapidly and include finance, games, museums/theme parks, global business, education/community, entertainment content, hardware products, communication/infrastructure, agricultural support, lifestyle, e-commerce, amusement and more.

On May 25th, 2020, they opened the “DMM Kariyushi Aquarium” in the shopping center next to Toyosaki Chura Sun Beach in Tomigusuku City, Okinawa. It was conceptualized as being “a new form of entertainment aquarium that makes full use of the latest visual expression and spatial production”. The aquarium features exhibitions of aquatic life and flora and fauna from around Okinawa, as well as spatial presentations that make you wonder if they’re really taking place inside a shopping center.

ORACLE SOLUTIONS USED

- MySQL Enterprise Edition

CONNECT WITH US

[MySQL Inquiries]

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DMM.com

ORACLE CUSTOMER

DMMcom Group

- <https://dmm-corp.com/>
- Industry: Service
- Annual Sales: 221.1 billion yen (Consolidated, year ending Feb 2019)
- Employee: 1,527



NS Solutions

ORACLE PARTNER

NS Solutions Corporation

- <https://www.nssol.nipponsteel.com>
- Industry: Information processing, software
- Annual Sales: 274,800,000,000 yen (Consolidated, year ending Mar 2020)
- Employees: 6,639 (Consolidated, as of Mar 2020)

