MySQL Port Reference

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Contents

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This document describes ports used by MySQL products and related features in MySQL 5.7 and beyond.

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1 Introduction

The number of ports used by MySQL depends on features that are enabled, the components used, how applications connect, and other aspects of your environment.

From a security perspective, ports should only be opened as required to permit system components to communicate. Always practice the principle of least privilege when managing ports, which requires that users, processes, programs, and other system components only have access to information and resources that are required for their legitimate purpose.

How port access is managed depends on different aspects of your environment such as operating system capabilities, firewalls, security tools, use of virtual private networking (VPN), and so on. Some MySQL installation packages assist with port access configuration for core MySQL ports. For example, the MySQL Installer Server package for Windows adds access rules to the Windows firewall, and MySQL for Linux packages add access rules to SELinux or AppArmor. However, MySQL does not assist with less common, optional, or non-MySQL product ports. In these cases, ports must be opened manually with commands such as this one for SELinux:

```
$> semanage port -a -t mysqld_port_t -p tcp <port_open_to_mysqld>
```

For more information about setting the SELinux port context for MySQL, see SELinux TCP Port Context.

Some MySQL features use TCP ports that fall within the allowed local port range on Linux systems (32768 - 61000). For example, the default MySQL X Protocol port is 33060, and the default MySQL Administrative Connection Port is 33062. To avoid port conflicts with other applications, consider configuring the `ip_local_port_range` parameter to limit the range of ports available for automatic port assignment, or configure the `ip_local_reserved_ports` parameter to reserve ports used by MySQL. To check your current `ip_local_port_range` and `ip_local_reserved_ports` configurations:

```
$ cat /proc/sys/net/ipv4/ip_local_port_range
$ cat /proc/sys/net/ipv4/ip_local_reserved_ports
```

For `ip_local_port_range` and `ip_local_reserved_ports` configuration instructions, refer to your distribution documentation.

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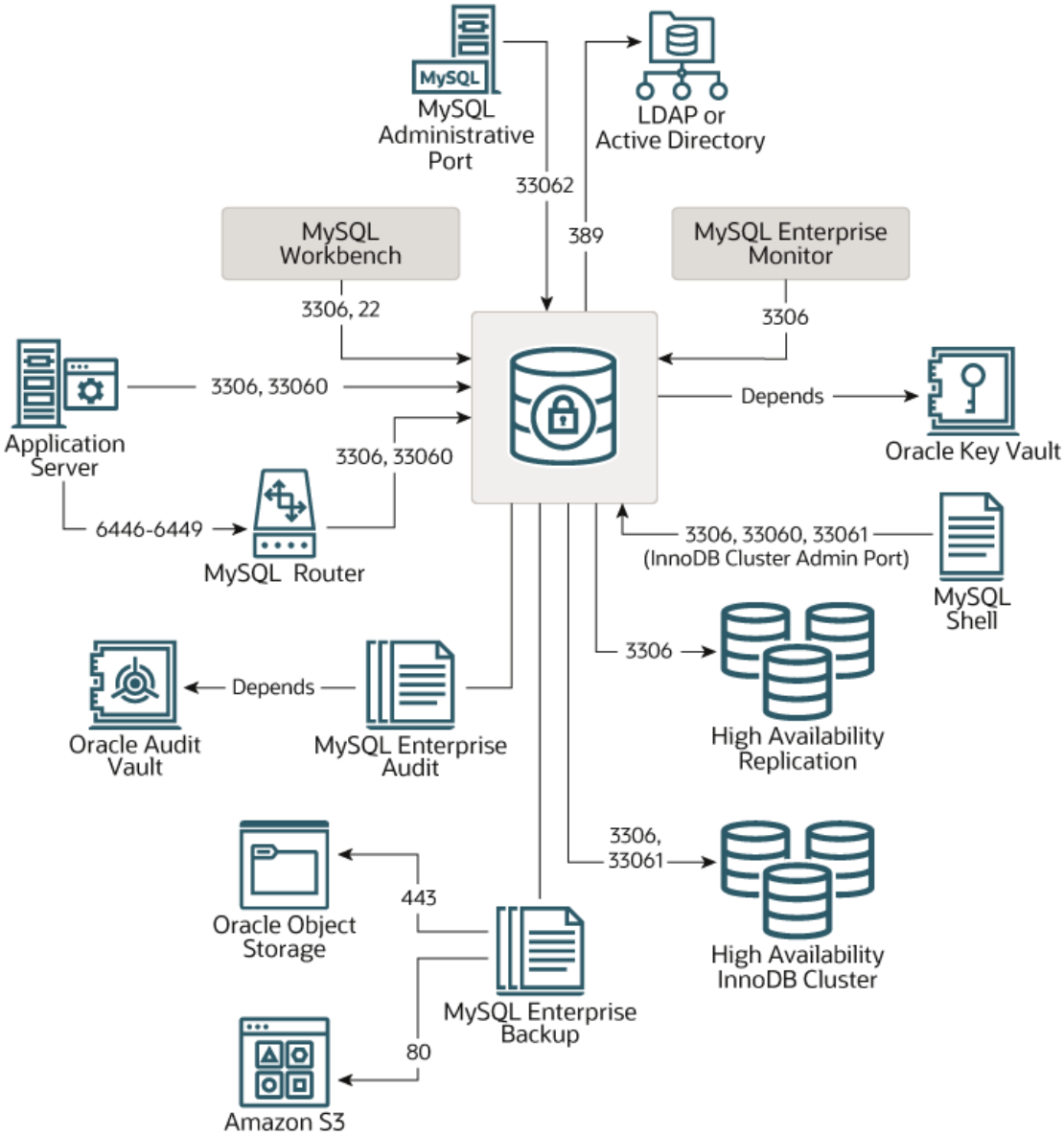
MySQL Port Diagram

The following diagram shows default ports for MySQL products and features. Arrows indicate the direction of network traffic. Not all ports described in this document are shown. For a complete listing, see MySQL Port Reference Tables.

Figure 2-1 MySQL Default Ports



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MySQL Port Reference Tables

The following tables describe ports used by MySQL products and features. Port information is applicable to MySQL 5.7 and beyond.

Client - Server Connection Ports

Port 3306 is the default port for the classic MySQL protocol (`port`), which is used by the `mysql` client, MySQL Connectors, and utilities such as `mysqldump` and `mysqlpump`. The port for X Protocol (`mysqlx_port`), supported by clients such as MySQL Shell, MySQL Connectors and MySQL Router, is calculated by multiplying the port used for classic MySQL protocol by 10. For example if the classic MySQL protocol port is the default value of 3306 then the X Protocol port is 33060.

Table 3-1 Client - Server Connection Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
3306/TCP	MySQL clients to the MySQL server (classic MySQL protocol)	Yes	Yes, unless you are only using X Protocol	From the MySQL client to the MySQL server
33060/TCP	MySQL clients to the MySQL server (X Protocol)	Yes	Yes, unless you are only using port 3306	From the MySQL client to the MySQL server

To verify the value of these ports on MySQL server, issue:

```
mysql> SHOW VARIABLES LIKE 'port';
mysql> SHOW VARIABLES LIKE 'mysqlx_port';
```

MySQL Administrative Connection Port

As of MySQL 8.0.14, the server permits a TCP/IP port to be configured specifically for administrative connections. This provides an alternative to the single administrative connection that is permitted on the network interfaces used for ordinary connections. For more information, see Administrative Connection Management.

Table 3-2 MySQL Administrative Connection Port

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
33062/TCP (default)	A port configured specifically for MySQL administrative connections (classic MySQL protocol)	Yes	No	From the MySQL client to the MySQL server

To verify the value of this port on MySQL server, issue:

```
mysql> SHOW VARIABLES LIKE 'admin_port';
```

MySQL Shell Ports

MySQL Shell supports both X Protocol and classic MySQL protocol. For more information, see MySQL Shell 8.0.

Table 3-3 MySQL Shell Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
3306/TCP	MySQL client to the MySQL server (classic MySQL protocol)	Yes	Yes, unless you are only using X Protocol	From MySQL Shell to the MySQL server
33060/TCP	MySQL client to the MySQL server (X Protocol)	Yes	Yes, unless you are only using port 3306	From MySQL Shell to the MySQL server
33061/TCP	The port used by MySQL Shell to check a server during InnoDB Cluster configuration	Yes	Yes, if running InnoDB Cluster	From MySQL Shell to instances in an InnoDB Cluster

MySQL Workbench Ports

Table 3-4 MySQL Workbench Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
3306/TCP	MySQL client to the MySQL server (classic MySQL protocol)	Yes	Optional (use 3306, 33060, or 22)	From MySQL Workbench to the MySQL server
22/TCP	Connection via SSH tunnel	Yes	Optional (use 3306, 33060, or 22)	From MySQL Workbench to the MySQL server

MySQL Client - MySQL Router Connection Ports

Table 3-5 Client - Router Connection Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
6446/TCP	Read-write SQL from the MySQL client to MySQL Router (classic MySQL protocol)	Yes. Inherited from the MySQL client and server. If the client --ssl-mode is `VERIFY_IDENTITY`, the router must reside at the same IP address as the server.	Required if MySQL Router provides read-write access	MySQL client read-write to MySQL Router
6447/TCP	Read-only SQL from the MySQL client to MySQL Router (classic MySQL protocol)	Same as above	Required if MySQL Router provides read-only access	MySQL client read-only to MySQL Router
6448/TCP	Read-write API calls from the MySQL client to MySQL Router (X Protocol)	Same as above	Required if MySQL Router provides read-write access	MySQL client to MySQL Router
6449/TCP	Read-only calls from the MySQL client to MySQL Router (X Protocol)	Same as above	Required if MySQL Router provides read-only access	MySQL client to MySQL Router
3306/TCP	MySQL Router to the MySQL server (classic MySQL protocol)	Same as above	Required	MySQL Router to the MySQL server
33060/TCP	MySQL Router to the MySQL server (X Protocol)	Same as above	Required	MySQL Router to the MySQL server

High Availability Ports

Table 3-6 High Availability Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
33061/TCP	MySQL Group Replication internal communications port	Yes	Yes	Group Replication communication between group members (InnoDB Cluster instances)
3306/TCP	MySQL Replication	Yes	Yes	Replica connection to the source

External Authentication Ports

Table 3-7 External Authentication Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
389/TCP	MySQL Enterprise Authentication (LDAP)	Yes	Only if using external authentication to LDAP. Also supports use of SASL	MySQL Enterprise Authentication in MySQL server to LDAP
389/TCP	MySQL Enterprise Authentication (Active Directory)	Yes	Only if using external authentication to LDAP	MySQL Enterprise Authentication in MySQL server to Active Directory

Key Management Ports

Key management ports are used for the MySQL Keyring features and Transparent Data Encryption (TDE).

Table 3-8 Key Management Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
Varies. Refer to your key manager/vault documentation.	KMIP. Used with Oracle Key Vault, Gemalto KeySecure, Thales Vormetric key management server, and Fornetix Key Orchestration.	Yes	Only required if TDE uses a KMIP server	N/A

Table 3-8 (Cont.) Key Management Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
443/TCP	Key Services - AWS Key Management Service (AWS KMS)	Yes	Only required if TDE uses AWS KMS	N/A

MySQL Enterprise Backup Ports

Table 3-9 MySQL Enterprise Backup Ports

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
3306/TCP	Communication with the local instance	Yes	Optional. Can connect with TCP, socket, pipe, or memory.	To the local instance
3306/TCP	For InnoDB Cluster/Group Replication	Yes	Required for InnoDB Cluster Backup	To members of the cluster/group
443/TCP	Oracle Object Storage	Yes	Optional	From MySQL Enterprise Backup to Oracle Object Storage
80/TCP	Amazon S3	Yes	Optional	From MySQL Enterprise Backup to Amazon S3
Varies. Refer to your media management system documentation.	Backup to Media Management System (MMS) through System Backup to Tape (SBT)	Vendor dependent	Optional	From the memory management library to the media management server. Refer to your media management system documentation.

Memcached Protocol Port

Table 3-10 Memcached Protocol Port

Default Port/ Protocol	Description	SSL or other Encryption	Required	Direction
11211/TCP	InnoDB memcached Plugin	No	Optional	From memcached client to InnoDB memcached plugin