Navicat
On-Prem Server

Version 3 User Guide

PremiumSoft™
PremiumSoft CyberTech Ltd.

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Chapter 1 - Introduction

About Navicat On-Prem Server

Navicat On-Prem Server is an on-premise solution that allows you to host a cloud environment for storing Navicat objects internally at your location, such as connection settings, queries, snippets, aggregation pipelines, model workspaces, BI workspaces, and virtual group information. It also offers comprehensive tools for effective database management.

Here are some highlights of Navicat On-Prem Server:

- Create and manage user accounts.
- Customize user profiles.
- Enable two-step verification.
- Organize and manage your projects.
- Download or preview Navicat objects.
- Monitor recent activities.
- Perform database management.

For details, visit our website: https://www.navicat.com

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Chapter 2 - Getting Started

Requirements

Supported Platforms for Installing Navicat On-Prem Server

Windows

- Microsoft Windows 7, Windows 8, Windows 8.1, Windows 10, Windows 11, Server 2012, Server 2016, Server 2019, Server 2022
- 64-bit

macOS

- macOS 11 Big Sur, macOS 12 Monterey, macOS 13 Ventura, macOS 14 Sonoma, macOS 15 Sequoia, macOS 26 Tahoe
- 64-bit

Linux

- Debian 10, Debian 11, Debian 12, Ubuntu 20.04, Ubuntu 22.04, Ubuntu 24.04, Fedora 38, Fedora 39, Fedora 40, Linux Mint 20, Linux Mint 21, Deepin 20, KylinOS Desktop 10
- 64-bit

Docker

- Docker 17 or later
- 64-bit

Hardware Requirements for Installing Navicat On-Prem Server

Minimum hardware requirements

- 2-core CPU
- 2GB RAM

Recommended hardware requirements

- 4-core CPU or more
- 8GB RAM or more
- RAID-1 disk mirroring

Disk space minimum requirements

- 4GB/opt

Supported Web Browsers

- Firefox (Latest Version)
- Chrome (Latest Version)
- Microsoft Edge (Latest Version)
- Safari (Latest Version)

Supported Repository Databases

- MySQL 5.6 or later
- MariaDB 10.0 or later
- PostgreSQL 10 or later
- SQL Server 2012 or later
- Amazon RDS for MySQL
- Amazon RDS for MariaDB
- Amazon RDS for PostgreSQL
- Amazon RDS for SQL Server

Offline Installation

Offline Installation is available for all platforms supported by Navicat On-Prem Server, except Amazon Linux 2 and Docker container.

Windows

Follow the steps below to install Navicat On-Prem Server on Windows:

1. Download Navicat On-Prem Server Windows version.
2. Open the **.exe** file.
3. Click **Next** at the Welcome Screen.
4. Read the License Agreement. Accept it and click **Next**.

5. Accept the location of the program by clicking **Next**. If you wish to change the destination of the folder, click **Browse**.

6. Follow the remaining steps.

7. After the installation, Navicat On-Prem Server starts automatically. Configure the Initial Settings in the pop-up browser.

macOS

Follow the steps below to install Navicat On-Prem Server on macOS:

1. Download Navicat On-Prem Server macOS version.

2. Open the **.dmg** file.

3. Drag Navicat On-Prem Server to your Applications folder to install.

4. After the installation, Navicat On-Prem Server starts automatically. Configure the Initial Settings in the pop-up browser.

Linux

Follow the steps below to install Navicat On-Prem Server on Linux:

1. Download Navicat On-Prem Server Linux version installation package for your OS version.

2. Open Terminal. Execute the following commands as "root".

3. Install Navicat On-Prem Server:

OS Version	Command
Fedora	yum localinstall navicatonpremserver-x.y.z.rpm
Debian, Ubuntu, Linux Mint, Deepin, KylinOS	dpkg -i navicatonpremserver

4. Start Navicat On-Prem Server:
   sudo /etc/init.d/navicatonpremserver start

5. After Navicat On-Prem Server is started, you can configure the Initial Settings through a browser at http://your-ip-address:3030.

Online Installation

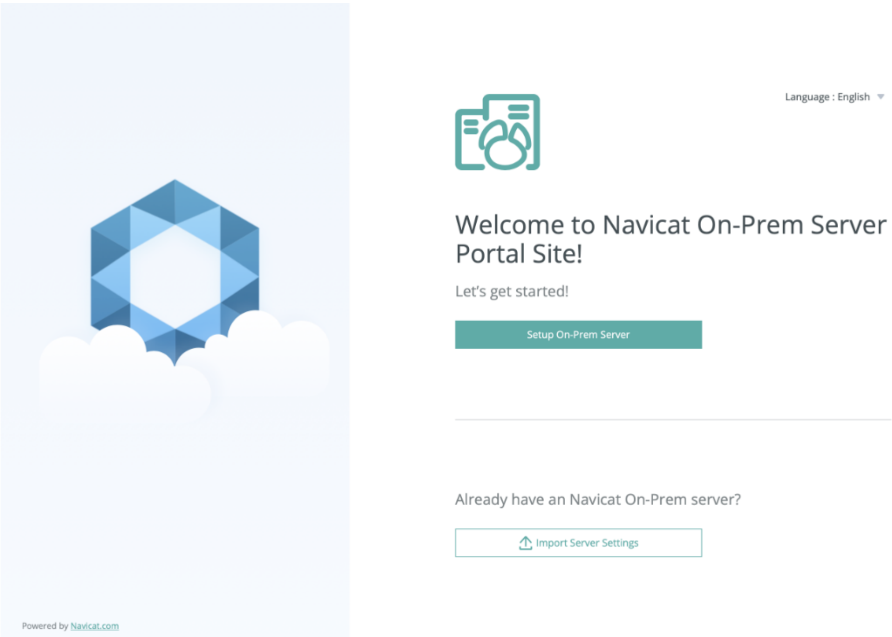
Online Installation is only available for macOS and Linux platforms and Docker container. You can visit our website for the installation instruction.

Initial Setup

After you have installed Navicat On-Prem Server and start it for the first time, a browser will pop up and open the URL **http://<your_ip_address>:<port_number>** of your Navicat On-Prem Server. You need to complete the basic configuration of Navicat On-Prem Server in the Welcome page.

Note: <your_host_address> is the host name of the system that installed Navicat On-Prem Server, and <port_number> is 3030 by default. For Linux version, you need to open the browser and go to http://<your_ip_address>:<port_number> manually.

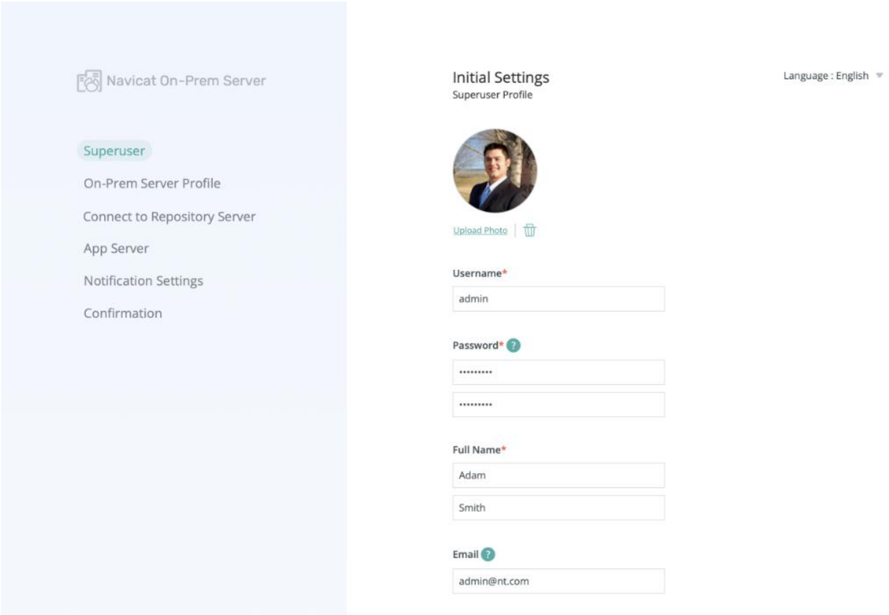
If you want to import Navicat On-Prem Server configuration settings, see Backup / Migration for details.



Create Superuser Account

Superuser is a local user (Admin) account which has unlimited access to Navicat On-Prem Server functionalities.

1. In the Welcome page, click **Setup On-Prem Server**.
2. Upload your photo.
3. Enter the profile information of the superuser: Username, Password, Full Name, Email, Mobile Number, Preferred Language and Appearance.



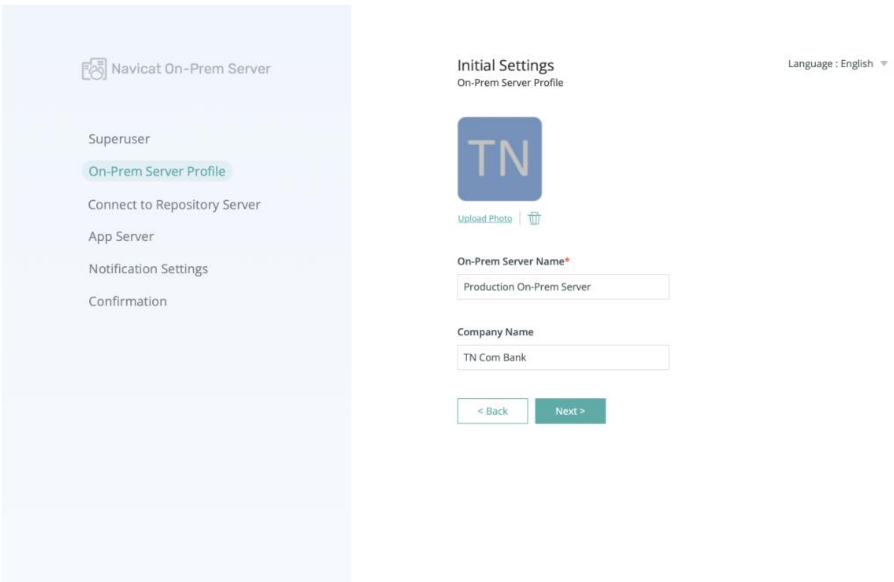
4. Click **Next**.

Hint: You can choose a default appearance (light or dark appearance) for the superuser account and other users. Each user can edit his setting at any time from his own profile page.

Set On-Prem Server Profile

1. Upload the server logo.

2. Enter the profile information of your On-Prem Server: On-Prem Server Name and Company Name.



3. Click **Next**.

Set Repository Database

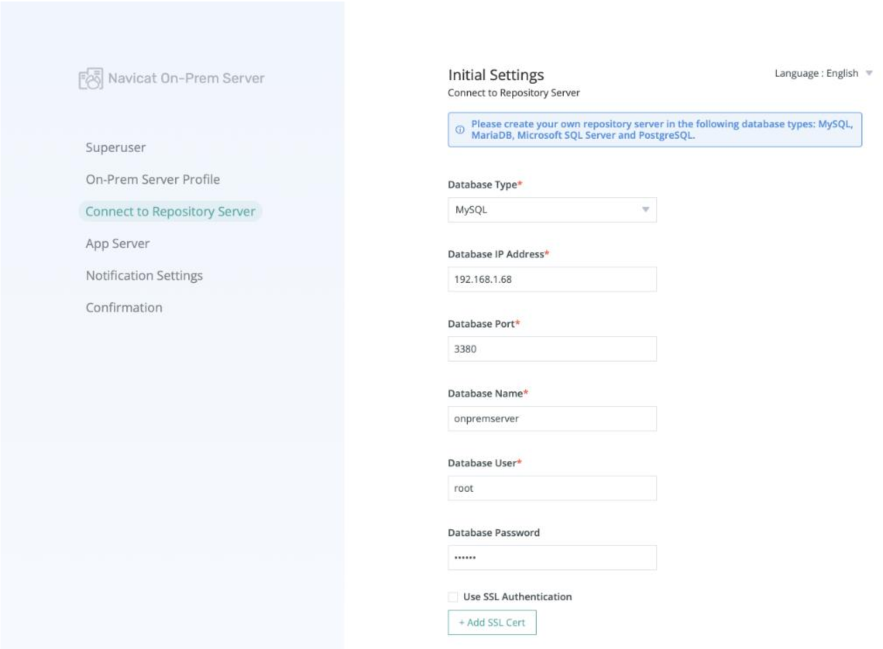
Repository database stores all user information and Navicat objects. It can be either a MySQL database, MariaDB database, PostgreSQL database, SQL Server database or Amazon RDS instance. We do not recommend setting the repository database on a production server.

Note: Admin can change the repository database anytime after the initial setup, see Repository Database for details.

1. Choose the **Database Type** of the repository database.

2. Enter the connection information to connect the repository database.

Database IP Address	The host name or IP address of the database server.
Database Port	The TCP/IP port for connecting to the database server.
Sign in Method	[SQL Server] The authentication method: SQL Server Authentication or Windows Authentication.
Database Name	The name of the repository database. It can be either an empty existing database or a new database created by Navicat On-Prem Server.
Schema Name	[SQL Server / PostgreSQL] The name of the schema.
Domain	[SQL Server] The domain name of the database server.
Database User	User name for connecting to the database server. The user account must have the following privileges: **MySQL / MariaDB** - SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, INDEX, ALTER, CREATE TEMPORARY TABLES, CREATE VIEW on all database objects **PostgreSQL** - Can login, Can create database and Superuser **SQL Server** - CREATE, UPDATE, SELECT and DELETE
Database Password	Password for connecting to the database server.
Use SSL Authentication	
Cert Name	The name of the SSL certificate.
CA Certificate	Paste the trusted SSL certificate authorities.
Client Key	Paste the contents of the SSL key file.
Client Certificate	Paste the contents of the SSL certificate file.
Verify server certificate against CA	Enable to check the server's Common Name value in the certificate that the server sends to the client.
Specified Cipher	Choose a permissible cipher to use for SSL encryption.

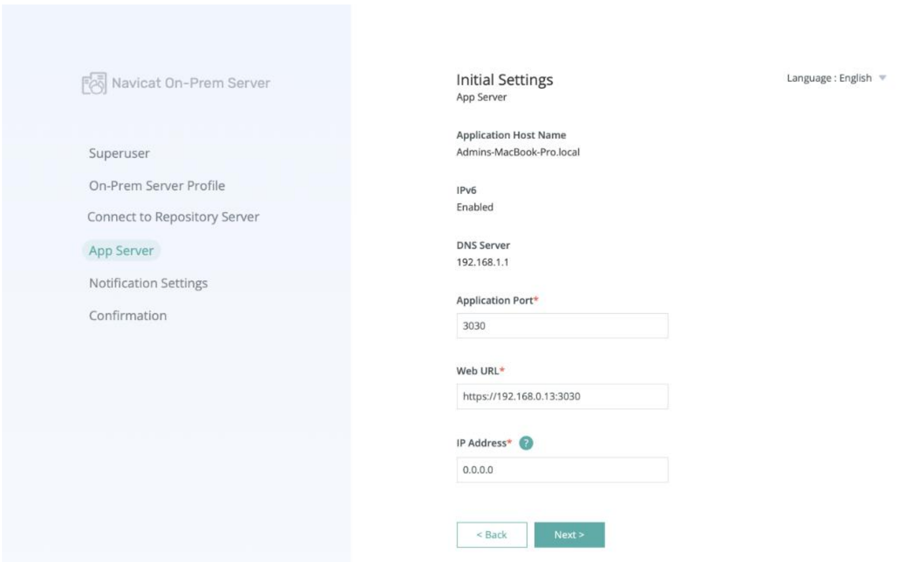


3. Click **Next**.

Set App Server Information

1. Edit the application server information if necessary.

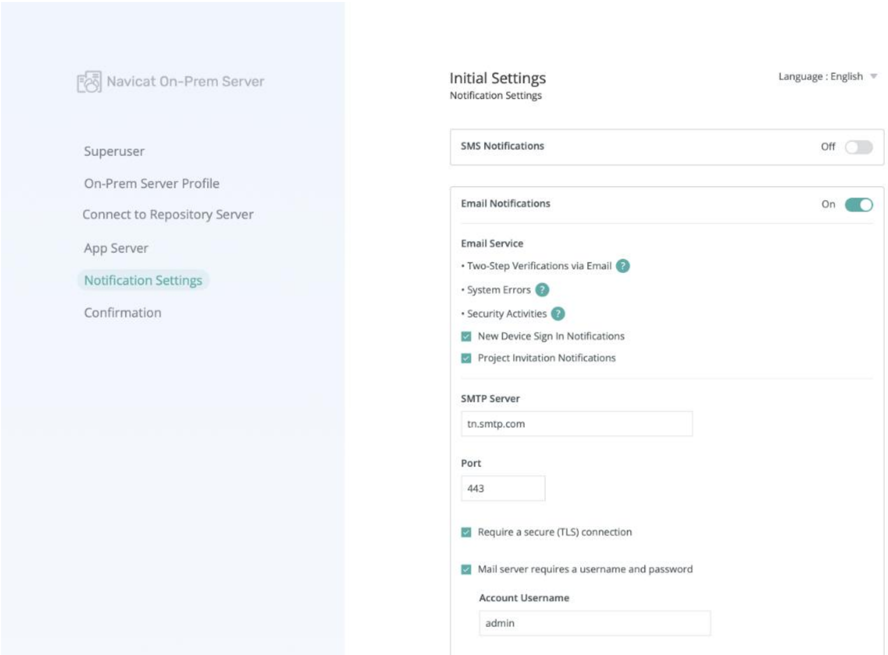
Application Port	The port number that Navicat On-Prem Server will listen.
Web URL	The website URL of Navicat On-Prem Server.
IP Address	If the machine has been assigned multiple IP addresses, you can specify an IP address for users to access Navicat On-Prem Server. **0.0.0.0** means all IPv4 addresses on the machine. **::** means all IPv4 and IPv6 addresses on the machine.



2. Click **Next**.

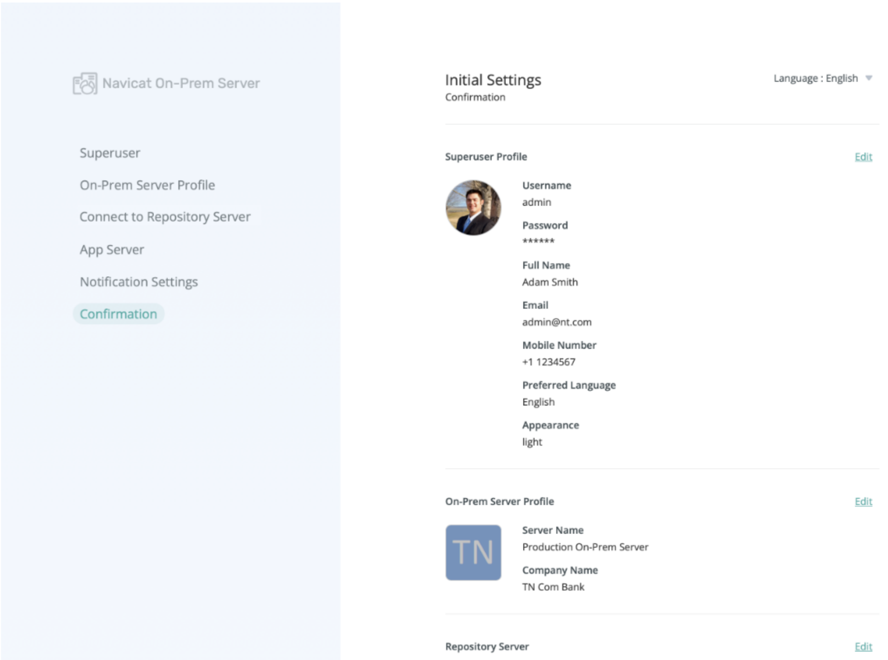
Set Notification

Navicat On-Prem Server provides 2 channels (SMS messages and emails) to send notifications whenever an event (two-step verifications, security activities, new device sign-in, project invitation) is raised or a system problem while you are using it. For details, see Set Up Notifications.



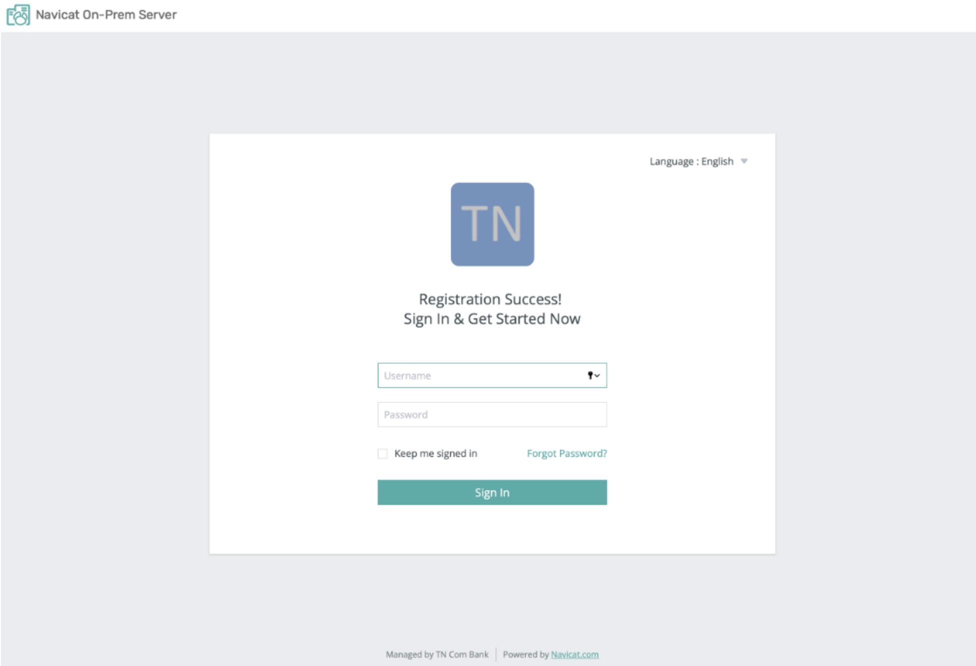
Confirm Settings

Confirm the configuration information, and click **Finish**. Initial configuration process may take a few minutes for setting up the repository database.



Log in Navicat On-Prem Server

After the configuration completed successfully, a login page will be displayed and you can log in Navicat On-Prem Server with the manager user account.



Sign In & Sign Out Navicat On-Prem Server

Sign In Navicat On-Prem Server

1. In the Login page, enter your **User name** and **Password**.
2. Click **Sign In**.
3. If you enabled two-step verification, a code will be sent to you. Enter the received code to sign in.

Note: If you forget your password, you can follow the Reset Your Password steps to reset your password.

Sign Out Navicat On-Prem Server

To sign out on your computer

1. At the top right, click your avatar.
2. Select **Sign Out**.

To sign out from another computer

If you forgot to sign out Navicat On-Prem Server on another computer or Navicat software, you can remotely sign out or unlink it.

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Security** tab.
4. Under the **Sessions** or **Applications** section, click **X**.

Sign In On-Prem Server In Other Navicat Software

You can use URI to quickly sign in your On-Prem Server in any Navicat software.

1. At the top right, click your avatar.
2. Click **Open Navicat with URI**.
3. Copy your URI.
4. Open the Manage Cloud window in another Navicat product.
5. Add a new On-Prem Server with URI and paste your URI.

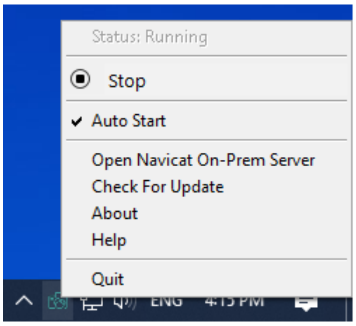
Chapter 3 - Upgrade

Minor Version Upgrade

Windows

Follow the steps below to upgrade Navicat On-Prem Server on Windows:

1. In the notification area, right-click  and choose **Check For Update**.



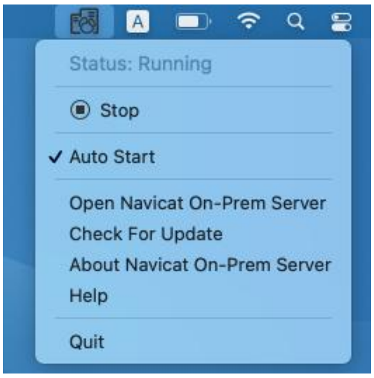
2. If a new version is available, click **Install**.

3. After the upgrade is finished, Navicat On-Prem Server starts automatically.

macOS

Follow the steps below to upgrade Navicat On-Prem Server on macOS:

1. In the menu bar, click  and choose **Check For Update**.



2. If a new version is available, click **Install Update**.

3. After the download is finished, click **Install**.

4. After the upgrade is finished, Navicat On-Prem Server starts automatically.

Linux

Follow the steps below to upgrade Navicat On-Prem Server on Linux:

1. Open Terminal. Execute the following commands as "root".

2. Stop Navicat On-Prem Server:
   sudo /etc/init.d/navicatonpremserver stop

3. Update Navicat On-Prem Server:

OS Version	Command
Fedora	yum clean all; yum update navicatonpremserver
Debian, Ubuntu, Linux Mint, Deepin, KylinOS	apt-get upgrade

4. Start Navicat On-Prem Server:
   sudo /etc/init.d/navicatonpremserver start

Major Version Upgrade

Before you upgrade Navicat On-Prem Server to the latest major version (e.g. from 1.x to 2.x), we recommend that you back up your Repository Database, as the major upgrade is irreversible.

Follow the steps below to upgrade Navicat On-Prem Server:

1. At the top right, click your avatar.

2. Select **Advanced Configurations**.

3. Click **Backup / Migrate / Upgrade App Server**.

4. Click **Download** to back up the current Navicat On-Prem Server settings.

5. [Skip this step if you are using Subscription plan] Click **Deactivate Here** to deactivate all token keys.

6. [Skip this step if you are using Subscription plan] Go to Customer Center to upgrade your token keys that are valid for the latest major version.

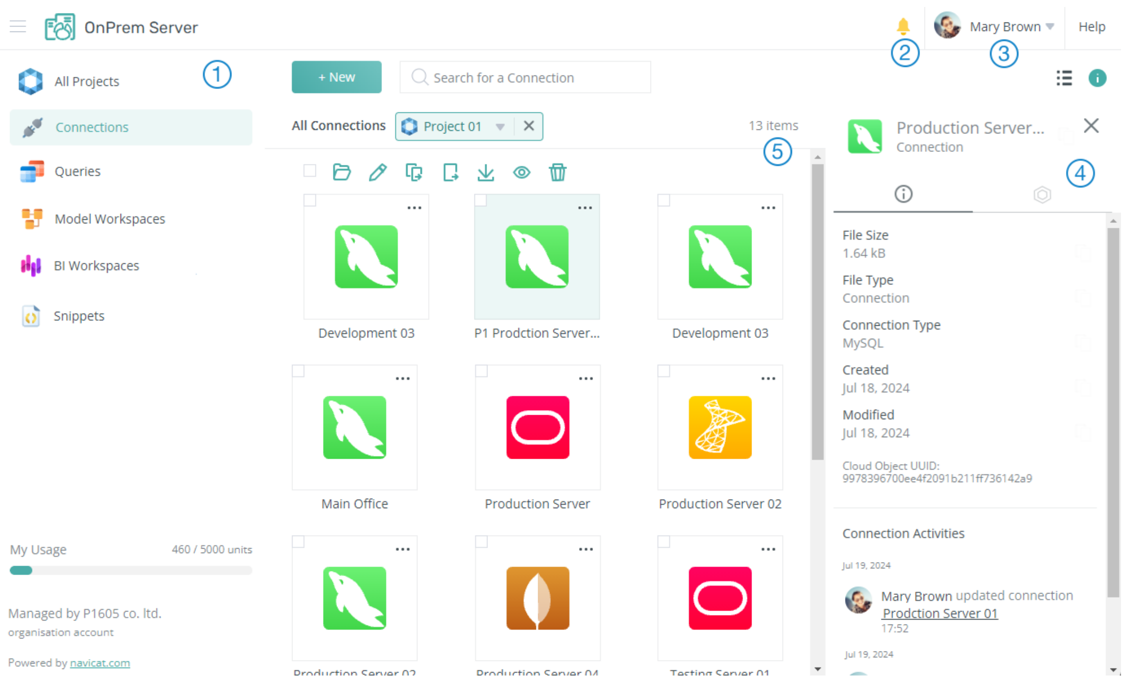
7. Uninstall the current version.

8. Download and install the latest version.

9. Start Navicat On-Prem Server and login your account.

Chapter 4 - User Interface

Main Page



① **Navigation Pane**

The Navigation pane allows you to access projects, connections, queries, model workspaces, snippets and BI workspaces. Click the icon to show or hide the pane.

② **Bell Icon**

The bell icon tells you when there are project invitations, usage warnings, updates, etc. Click the bell icon to view the notification.

③ **User Menu**

The User Menu allows you to open your account settings page, choose to adopt a light or dark appearance, change the UI language, and log out the current session.

④ **Details Pane**

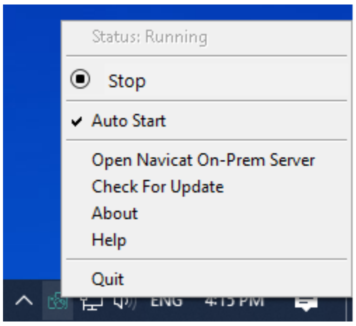
The Details pane shows the detailed information of the selected item. Click the icon to show or hide the pane.

⑤ **Content Pane**

The Content pane contains the items that are in the selected section of Navigation pane. Click the or icons to switch between Details View and Grid View.

Navicat On-Prem Server Application

Navicat On-Prem Server Application is a small utility that provides quick access to Navicat On-Prem Server, shows the status information of the Navicat On-Prem Server service, notifies you any changes and updates. It is only available in Windows and macOS versions.



Status	The current status of the Navicat On-Prem Server service.
Start / Stop	Start or stop the Navicat On-Prem Server service.
Auto Start	Automatically start the Navicat On-Prem Server service when you turn on your computer and start Navicat On-Prem Server Application when you login your computer.
Open Navicat On-Prem Server	Launch Navicat On-Prem Server in a browser.
Check For Update	Check for an update, and prompt to install the latest version if any.
About Navicat On-Prem Server / About	Show the version number of your Navicat On-Prem Server.
Help	Open the user manual.
Quit	Exit Navicat On-Prem Server Application. It does not stop the Navicat On-Prem Server service.

Chapter 5 - Account Settings

Overview

Account Settings is accessible from the User Menu by clicking your avatar at the top right. From here, you can configure your profile settings, security preferences, and account usage.

Manage Account Information

Change Your Profile

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Profile** tab.
4. Edit your profile information.
5. Click **Save Changes**.

Change Your Picture

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Profile** tab.
4. Click **Upload Photo**.
5. Choose an image file.

Change Your Username

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Security** tab.
4. Under the **Security Summary** section, click **Change Username**.
5. For security reasons, you must re-enter your password.
6. Enter the new username, then click **Next**.
7. Sign in the server with the new username.

Change / Reset Password

Change Your Password

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Security** tab.
4. Under the **Security Summary** section, click **Change Password**.
5. For security reasons, you must re-enter your password.
6. Enter your new password, then click **Change Password**.

Reset Your Password

1. In the Login page, click **Forgot Password?**.
2. Enter your email and click **Send Reset Password Email**. An email will be sent to your email address. If you don't get an email, please check your Spam or Bulk Mail folders.
3. Follow the steps in the email to reset your password.

Note: If you change or reset your password, you will be signed out everywhere.

Enable / Disable Two-Step Verification

With two-step verification, your account is protected by both your password and your authentication method (Authenticator app / SMS / Email). It adds an extra layer of security to your account in case your password is stolen.

Turn On Two-Step Verification

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Security** tab.
4. Under the **Two-step Verification** section, click **Enable Two-step Verification**.
5. Click **Next**.
6. For security reasons, you must re-enter your password.
7. Choose an authentication method and click **Next**.
8. Follow the remaining steps.

Note: Save the 16-digit backup code and keep it in a safe place.

Turn Off Two-Step Verification

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Security** tab.
4. Under the **Two-step Verification** section, click **Disable Two-step Verification**.
5. For security reasons, you must re-enter your password.
6. Follow the remaining steps.

Note: Destroy all the backup codes that you have saved for signing in to your account.

View Usage

Each user comes with 5000 units storage, and each entity (i.e. a connection, a query, a snippet, a model, a Charts workspace or a virtual group) occupies one unit.

If the storage limit is reached, you are only allowed to update and sync existing entities but not to add new entities to your On-Prem Server. You will not lose any files or any information, and your new entities will be synced again automatically when your storage space becomes available.

To view the cloud usage details

1. At the top right, click your avatar.
2. Select **Account Settings**.
3. Select the **Your Plan** tab.

Add Certificates / Keys

If you want to use SSL or SSH tunnel to connect your database server, you need to create SSL certificates or SSH keys. Click **+ New** and configure the following information:

New SSL Certificate – MySQL / MariaDB

Option	Description
Name	Enter the name of the certificate.
Certificate	Paste the contents of the certificate file.
Private Key	Paste the contents of the private key file.
Certificate Chain	Paste the contents of the certificate chain file.

Verify server certificate against CA	Check the server's Common Name value in the certificate that the server sends to the client.
Specified Cipher	Choose a permissible cipher to use for SSL encryption.

New SSL Certificate – PostgreSQL

Option	Description
Name	Enter the name of the certificate.
Client Key	Paste the contents of the client private key file.
Client Certificate	Paste the contents of the client certificate file.
Root Certificate	Paste the contents of the trusted certificate authorities file.

New SSH Key

Option	Description
SSH Key Name	Enter the name of the key.
Private Key	Paste the contents of the private key file.
Passphrase	Enter the passphrase. A passphrase is exactly like a password, except that it applies to the keys you are generating and not an account.

Chapter 6 - Advanced Configurations

Overview

Advanced Configurations is accessible from the User Menu by clicking your avatar at the top right. From here, you can configure advanced settings for the whole Navicat On-Prem Server, such as changing the organization profile, adding users, licensing tokens, editing server settings.

Note: You must be a *superuser* or an *admin* in order to perform these configurations.

Organization Account

Edit On-Prem Server Profile

You can change the server name, company name and logo of your On-Prem Server. To open the profile, click **On-Prem Server Profile** in Advanced Configurations.

Change Server / Company Name

1. Edit the server name or company name.
2. Click **Save Changes**.

Change Server Picture

1. Click **Upload Photo**.
2. Choose an image file.
3. Click **Save Changes**.

Manage Users

Navicat On-Prem Server allows creating local users, or creating external users using LDAP or AD authentication. To configure users, click **All Users** in Advanced Configurations.

Note: The admin account created during Initial Setup cannot be changed to LDAP or AD user.

Hint: You can view or edit your own profile by clicking your user icon on the top right corner and selecting **Account Settings**.

There are three built-in roles that you can assign to different users for restricting their access. Each role has different privileges:

Role	Privileges
Admin	- Manage On-Prem Server - Manage licenses

	- Manage users - Manage projects and project owners
Project Manager	- Create projects - Delete projects
User	- Access assigned projects

Create New Users

You can create new users by clicking **+ New Users**.

To create local users

1. Select the **Local User** tab.
2. Enter the **Username** and **Full Name**.
3. Assign a **Role** to the new user.
4. Enter the **Password**, **Confirm Password**.
5. Click the icon and enter user's email and phone number.
6. Repeat Step 2 - 5 to add another new user.
7. Click **Next**.
8. Click **Create User**.

To create LDAP users

1. Select the **LDAP User** tab.
2. Enter the **Username** and **Full Name**.
3. Assign a **Role** to the new user.
4. Click the icon and enter user's email and phone number.
5. Repeat Step 2 - 4 to add another new user.
6. Click **Next**.
7. Click **Create User**.

Hint: To set the LDAP settings, you can go to LDAP / AD Settings.

To create AD users

1. Select the **AD User** tab.

2. Enter the **Username** and **Full Name**.

3. Assign a **Role** to the new user.

4. Click the icon and enter user's email and phone number.

5. Repeat Step 2 - 4 to add another new user.

6. Click **Next**.

7. Click **Create User**.

Hint: To set the Microsoft AD settings, you can go to LDAP / AD Settings.

Suspend Users

You can temporarily block a user's access to your On-Prem Server by suspending his/her account. When you suspend an account, the user's:

- Projects and files aren't deleted.

- Shared projects and files are still accessible to members.

To suspend a user temporarily

1. Click the icon and select **Suspend User**.

Manage Existing Users

To edit a user

1. Click the icon and select **View / Edit User Profile**.

2. Modify the user profile, change the UI language or change the sign in method.

3. Click **Update User Profile**.

To delete a user

1. Click the icon and select **Delete User**.

Configure LDAP / AD Settings

You can configure Navicat On-Prem Server to authenticate users via an externally hosted LDAP server or authenticate users with Microsoft Active Directory (AD) credentials. To configure the LDAP / AD settings, click **LDAP / AD Settings** in Advanced Configurations.

LDAP Settings

To use LDAP authentication, configure the following information:

LDAP Server Host Name	Enter the host name, IP address or URL of your LDAP server.
Encryption	Select the encryption method for communicating with your LDAP server.
Port	Enter the port for connecting your LDAP server.
LDAP server allows anonymous bind	Turn on this option if your LDAP server allows anonymous binds.
User Search Base	Enter the search base filter to search for the user. (For example: If your users are located in "domain.com", then the search base filter would be dc=domain,dc=com)
User DN	Enter the user distinguished name to bind to your LDAP server if it does not allow anonymous binds. (For example: If your user name is admin, then the User DN would be cn=admin,dc=domain,dc=com)
Password	Enter the password for the **User DN** specified.
Test Settings	Click this button to test the connection between Navicat On-Prem Server and your LDAP server.
Authentication Mode	Select the authentication mode to use for authenticating the user with your LDAP server.
[Comparison Authentication] Password Attribute Name	Enter the attribute name that contains the password-based authentication mechanism name.
[Comparison Authentication] Password Digest Mechanism	Select the password-based authentication mechanism.
User Search Attribute	Enter the attribute name that contains the user login name.

Microsoft AD Settings

To use Active Directory authentication, configure the following information:

AD Server Host Name	Enter the host name or IP address of your AD server.
User Search Base	Enter the search base filter to search for the user. (For example: If your users are located in "domain.com", then the search base filter would be dc=domain,dc=com)
User DN	Enter the user distinguished name to bind to your AD server. (For example: If your user name is admin, then the User DN would be cn=admin,dc=domain,dc=com)
Password	Enter the password for the **User DN** specified.
Test Settings	Click this button to test the connection between Navicat On-Prem Server and your AD server.

Configure Security Settings

To configure the security settings, click **Security** in Advanced Configurations.

You can change the complexity requirements of the user passwords to increase the password strength and enforce all other user sessions to log out.

If you want to use encrypted connections (HTTPS sessions) between Navicat On-Prem Server and clients, you can configure Navicat On-Prem Server to use the SSL/TLS protocol. Click **+ Add Certificate** and configure the following information:

Name	Enter the name of the certificate.
Certificate	Paste the contents of the certificate file.
Private Key	Paste the contents of the private key file.
Certificate Chain	Paste the contents of the certificate chain file.

License

When the trial period is finished, Navicat On-Prem Server requires tokens for users to continue synchronizing Navicat objects or files and managing connections. Tokens can be bought as a perpetual license or on a subscription basis. To manage your tokens and license the users, click **Tokens & Licensed Users** in Advanced Configurations.

Note: Perpetual License and Subscription Plan cannot be used at the same Navicat On-Prem Server. Before changing the activation method, you need to deactivate the token key or sign out your Navicat ID.

Perpetual License

If you have purchased a perpetual license, you will receive a token key for activating the purchased tokens in Navicat On-Prem Server.

In the **Perpetual Plan** section, paste your token key into the **Enter Token Key Number** text box and click the **Activate** button. Navicat On-Prem Server contacts our licensing server to activate the token key. If the activation process is successful, the token key details are displayed.

Offline Activation

Offline activation is available when your computer does not have an internet connection. You will need another computer with an internet connection to complete this activation process.

1. In the No Internet Connection dialog, click **Offline Activation**.
2. Copy the Request Code in the **Copy the Request Code Here:** box.
3. Open web browser on a computer with an internet connection and then go to https://customer.navicat.com/manual_activate.php.
4. Paste/Enter the Request Code into the left box.
5. Click **Get Activation Code**.
6. Copy the generated Activation Code in the right box.

7. Go back to the computer where you are activating Navicat On-Prem Server.

8. Paste the Activation Code into the **Paste the Activation Code Here:** box.

9. Click **Activate**.

Deactivate Token Key

In the **# Local Activated Tokens** section, click the **Deactivate** button next to the token key you want to deactivate. Navicat On-Prem Server contacts our licensing server to deactivate the token key. If the deactivation process is successful, the token key details are removed from the list.

If there are not enough available tokens for deactivating your token key, you may need to unlicense your users to release some tokens. Otherwise, the **Deactivate** button will not be enabled.

Subscription Plan

If you have subscribed a plan, you can sign in your Navicat ID to use tokens during the subscription term.

Note: Navicat ID is the Email address that you used to subscribe the plan.

In the **Subscription Plan** section, provide your **Navicat ID** and **Password**. After signed in, the subscription plan details are displayed.

Navicat On-Prem Server contacts our licensing server once per hour to auto reload the plan by default. If you have updated your plan in the portal site, you can use the **Reload Plan** button to force reloading the new plan.

Note: Each Navicat ID can connect to only one Navicat On-Prem Server. If you sign in your Navicat ID in another Navicat On-Prem Server, you will be signed out from the current Navicat On-Prem Server and all users will be unlicensed automatically.

Allocate Tokens

All users are displayed in the bottom list. You can click the **Allocate Tokens** button to assign available tokens to unlicensed users or release the tokens to authorize other users.

Token Usage

- 1 User Account for Collaboration
- 1 User Account for Managing Unlimited MySQL, MariaDB, OceanBase, and TiDB Connections
- 1 User Account for Managing Unlimited PostgreSQL, Fujitsu Enterprise Postgres, GaussDB, KingbaseES, and IvorySQL Connections

Important Note: Before a user can manage these connections, they must first obtain a user collaboration license.

Note: When the trial period expires, Navicat On-Prem Server stops synchronizing Navicat objects or files from all unlicensed users and disable their connection management actions, and will not send any notifications to them.

Server

Manage Repository Database

Migrating an existing repository database to a different database can include moving to a different database in the same server, or migrating to a database on a different operating system (for example from Windows to macOS).

If you want to migrate your Repository Database, follow these steps:

1. Stop the Navicat On-Prem Server service by executing command or using the icon in the notification area / menu bar.
2. In your database management tool, copy your current repository database (all tables with both structure and data) to your new repository database.
3. Start the Navicat On-Prem Server service and open Navicat On-Prem Server Web Portal in your browser.
4. At the top right, click your avatar.
5. Select **Advanced Configurations**.
6. Click **Repository Database**.
7. Click **Edit Settings**.
8. Edit the repository database settings.

Host Name	The host name or IP address of the database server.
Port	The TCP/IP port for connecting to the database server.
Sign In Method	[SQL Server] The authentication method: SQL Server Authentication or Windows Authentication.
Database Name	The name of the repository database.
Schema Name	[SQL Server / PostgreSQL] The name of the schema.
Domain	[SQL Server] The domain name of the database server.
Username	User name for connecting to the database server. The user account must have the following privileges: **MySQL / MariaDB** - SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, INDEX, ALTER, CREATE TEMPORARY TABLES, CREATE VIEW on all database objects **PostgreSQL** - Can login, Can create database and Superuser **SQL Server** - CREATE, UPDATE, SELECT and DELETE
Password	Password for connecting to the database server.
Use SSL Authentication	
Cert Name	The name of the SSL certificate.
CA Certificate	Paste the trusted SSL certificate authorities.
Client Key	Paste the contents of the SSL key file.

Client Certificate	Paste the contents of the SSL certificate file.
Verify server certificate against CA	Enable to check the server's Common Name value in the certificate that the server sends to the client.
Specified Cipher	Choose a permissible cipher to use for SSL encryption.

9. Restart the Navicat On-Prem Server service to use the new repository database.

Configure On-Prem Application Settings

You can view or change the application settings of Navicat On-Prem Server, such as Port, Web URL and IP Address. To configure the application settings, click **On-Prem Application** in Advanced Configurations.

The application settings of Navicat On-Prem Server are listed. You can edit the following settings:

Port	The port number that Navicat On-Prem Server will listen.
Web URL	The website URL of Navicat On-Prem Server.
IP Address	If the machine has been assigned multiple IP addresses, you can specify an IP address for users to access Navicat On-Prem Server. **0.0.0.0** means all IPv4 addresses on the machine. **::** means all IPv4 and IPv6 addresses on the machine.

Note: Once you have changed the above settings, you should restart the Navicat On-Prem Server service for it to take effect.

Usage Limitations

You can set unit usage limits and file size limits for users.

Configure Log House Keeping

Navicat On-Prem Server logs the detailed server errors and messages for tracking down any problems occurred in the servers. To configure the settings, click **Log House Keeping** in Advanced Configurations.

You can control the build retention policy for logs by specifying both the **Maximum Size of Each Build** and the **Maximum No. of Builds to Keep**.

Backup / Migration / Upgrade

Exporting Navicat On-Prem Server settings can be useful for application server migration or backup purposes. The exported zip file includes Token Keys, Repository Database Settings and all the files necessary for the restoration. To backup or migrate Navicat On-Prem Server settings, click **Backup / Migrate / Upgrade App Server** in Advanced Configurations.

Note: You can only migrate settings within the same major and minor release. For example, Navicat On-Prem Server v1.1.x only accept v1.1.y zip file.

Backup Navicat On-Prem Server settings

1. Click **Download** to back up the current Navicat On-Prem Server settings.

Migrate Navicat On-Prem Server to another server

1. Click **Download** to back up the current Navicat On-Prem Server settings.
2. [Skip this step if you are using Subscription Plan] Click **Deactivate Here** to deactivate all token keys.
3. Go to the new server and install Navicat On-Prem Server.
4. Start and open Navicat On-Prem Server on the new server.
5. In **Initial Settings**, click **Import Server Settings**.
6. Drop or browse the zip file to upload it.
7. After the settings are imported, click **Continue**.
8. Modify the repository database settings if necessary.
9. Click **Restore Server Settings**.
10. If the restoration is successful, click **Continue**.
11. [Skip this step if you are using Subscription Plan] All existing tokens are listed. Click **Activate** if you want to activate them now. And then, click **Continue**.
12. Allocate the activated tokens to license the users.
13. Click **Finish**.

Upgrade Navicat On-Prem Server

See Major Version Upgrade for details.

Others

Manage Projects

You can manage all projects in the On-Prem Server by viewing the project usage and size, changing project owner. To open the project summary page, click **Manage Projects** in Advanced Configurations.

Change the owner of a project

1. Navigate to the project that you want to change the owner.
2. Click the existing owner name and select a user.

Set Up Notifications

Navicat On-Prem Server provides 2 channels (SMS messages and emails) to send notifications whenever an event (two-step verifications, security activities, new device sign-in, project invitation) is raised or a system problem while you are using it. To configure the notifications, click **Notification Settings** in Advanced Configurations.

SMS Notifications

1. Turn on **SMS Notifications**.
2. In the **SMS Service** section, enable the events that you want to receive notifications.
3. Configure the following information:

Service Provider	Select the SMS service provider based on your requirement: Clickatell, Twilio or Others.
API Key	[Clickatell] Enter the unique API Key of your Clickatell account.
Account SID	[Twilio] Enter the unique Account SID of your Twilio account.
Auth Token	[Twilio] Enter the unique Auth Token of your Twilio account.
Send SMS from	[Twilio] Enter the sender's Twilio phone number or messaging service SID.
HTTP API URL	[Others] Enter the URL of the HTTP-API for sending SMS messages.
POST / GET	[Others] Choose to send SMS messages using a HTTP POST or HTTP GET request.
Message Key	[Others] Enter the parameter name of the text of the SMS message.
Recipient Mobile No. Key	[Others] Enter the parameter name of recipients' mobile number.
Other Key(s)	[Others] Enter the other parameter names required for sending messages through your SMS provider, e.g. username, password.
Value	[Others] Enter the value of the parameter you specified.
Preferred SMS Title	Enter the title of the SMS message.
Send a Test SMS to this phone / Send Test SMS	Select a country/region and enter a phone number to send a test SMS message for checking your configuration.

4. Click **Save Changes**.

Email Notifications

1. Turn on **Email Notifications**.
2. In the **Email Service** section, enable the events that you want to receive notifications.
3. Configure the following information:

SMTP Server	Enter your Simple Mail Transfer Protocol (SMTP) server for outgoing messages.

Port	Enter the port number you connect to your outgoing email (SMTP) server.
Require a secure (TLS) connection	Enable this option if your SMTP server requires a secure encrypted connection.
Mail server requires a username and password	Enable this option if your SMTP server requires authorization to send email. Enter **Account Username** and **Password**.
Send from Email Address	Enter an email address that used in the "From" field for all notification emails sent by Navicat On-Prem Server.
Send a Test Email to this Email Address / Send Test Email	Enter an email address to send a test email for checking your configuration.

4. Click **Save Changes**.

Note: You will receive log files generated by Navicat On-Prem Server when a system problem occurred. You can submit the logs to Navicat Support Center.

Chapter 7 - Projects

Work with Projects

A project is a way to structure and organize Navicat objects. You can put related objects in one project, and then share the project with other user accounts for collaboration if necessary.

Create New Projects

1. Click **+ New** - > **New Project**.
2. Enter the name of the new project.
3. Click **Create**.

Manage Existing Projects

You can view all your projects and the projects that you are collaborated with by selecting **All Projects**.

To rename a project

1. Under the **Projects** section, select a project.
2. Click the icon.
3. Enter a new project name.
4. Click **OK**.

Note: Only the project owner and the members with the *Can Manage & Edit* right can rename the project.

To delete a project

1. Under the **Projects** section, select a project.
2. Click the icon.
3. Click **Delete**.

Note: Only the project owner can delete the project.

To quit a project

1. Under the **Projects** section, select a project.
2. Click the icon.
3. Click the **X** icon next to your name.
4. Click **Apply**.

Search Projects

If your account has many projects, you can find the projects you want easily by the search feature. Enter a search string in the **Search** text box. Projects will be filtered by the search string immediately.

Change Project Order

Click **Sort by** and select a sorting option. You can sort the projects in ascending or descending order.

Change Layout

By default, your projects and objects are displayed in Grid View. You can click the or to switch between List View and Grid View.

Manage Members

You can manage the project members and their rights.

Hint: You can also manage the members in the Project Details page.

Add Members

1. In the left pane, select **All Projects**.
2. Under the **Projects** section, select a project.
3. Click the icon.
4. Click **+ Add Member**.
5. Select the users.
6. Select the member right.
7. Click **Add**.

Member Rights	Privileges
Can Manage & Edit	Read Objects, Write Objects, Manage Members and Rename Projects
Can Edit	Read Objects and Write Objects
Can View	Read Objects

Manage Existing Members

To edit the right of a member

1. In the left pane, select **All Projects**.
2. Under the **Projects** section, select a project.

3. Click the icon.

4. Use the drop-down list next to the member to change the right.

5. Click **Apply**.

To remove a member from a project

1. In the left pane, select **All Projects**.

2. Under the **Projects** section, select a project.

3. Click the icon.

4. Click the **X** icon next to the member.

5. Click **Apply**.

View Project Details

Click on a project name in the All Projects page to view its **Project Details** page. It shows all objects contained in the project. You can manage the project and its members and objects.

The right pane will show the project members and the activity log.

Manage Objects

You can perform actions like renaming, downloading, previewing or deleting an object, viewing the object details and moving or copying objects to another project.

To view the details of an object

1. Select an object.

2. The detailed object information displays in the right pane.

To rename an object

1. Select an object.

2. Click the icon.

3. Enter a new object name.

4. Click **OK**.

To move / copy an object to another project

1. Select an object.

2. Click the or icon.

3. Select a project.

4. Click **OK**.

Hint: Moving / Copying multiple objects is supported.

Note: If you move or copy a connection to another project, all its query files and virtual groups will also be moved or copied.

To preview an object

1. Select an object.

2. Click the icon.

To download an object

1. Select an object.

2. Click the icon.

Hint: Downloading multiple objects is supported.

To delete an object

1. Select an object you want to delete.

2. Click the icon.

3. Click **Delete**.

Hint: Deleting multiple objects is supported.

Search & Filter Objects

If you have many objects, you can find the objects you want easily by the search feature. Enter a search string in the **Search** text box. Objects will be filtered by the search string immediately.

You can also filter objects by type and group. Just click on the corresponding icon.

Change Object Order

Click **Sort by** and select a sorting option. You can sort the objects in ascending or descending order.

Change Layout

By default, your objects are displayed in Grid View. You can click the or to switch between List View and Grid View.

Chapter 8 - Navicat Objects

Connections

The **Connections** page displays all connections in your account.

You can perform the following actions in this page.

- Open the connection to manage the server.
  Note: Available only for accounts authorized to manage unlimited connections.
- View the connection details.
- Rename connections.
- Copy connections (including their queries and groups) to other projects.
- Move connections (including their queries and groups) to other projects.
- Download connection files (.json).
- Preview and copy the connection settings.
- Delete connections.

See the Manage Objects section for more information.

Queries

The **Queries** page displays all query files in your account.

You can perform the following actions in this page.

- Open the query.
  Note: Available only for accounts authorized to manage unlimited connections.
- View the query details.
- Rename queries.
- Copy queries to other connections.
- Move queries to other connections.
- Download query files.
- Preview and copy the SQL statements.
- Delete queries.

See the Manage Objects section for more information.

Model Workspaces

The **Model Workspaces** page displays all model workspace files in your account.

You can perform the following actions in this page.

- View the workspace details.
- Rename workspaces.
- Copy workspaces to other projects.
- Move workspaces to other projects.
- Download workspace files.
- Preview the last modified diagram in the workspace file.
- Delete workspaces.

See the Manage Objects section for more information.

Snippets

The **Snippets** page displays all snippet files in your account.

You can perform the following actions in this page.

- View the snippet details.
- Rename snippets.
- Copy snippets to other projects.
- Move snippets to other projects.
- Download snippet files.
- Preview and copy the code in the snippet.
- Delete snippets.

See the Manage Objects section for more information.

BI Workspaces

The **BI Workspaces** page displays all BI workspace files in your account.

You can perform the following actions in this page.

- View the workspace details.
- Rename workspaces.
- Copy workspaces to other projects.
- Move workspaces to other projects.
- Download workspace files.
- Preview the first page of the last modified dashboard in the workspace file.
- Delete workspaces.

See the [Manage Objects] section for more information.

Aggregation Pipelines

Each project's aggregation pipelines can be found in its **Project Details** page.

You can perform the following actions in this page.

- View the pipeline details.
- Rename pipelines.
- Copy pipelines to other connections.
- Move pipelines to other connections.
- Download pipeline files.
- Delete pipelines.

See the [Manage Objects] section for more information.

Virtual Groups

Each project's virtual groups can be found in its **Project Details** page.

You can perform the following actions in this page.

- View the group details.
- Rename groups.
- Delete groups.

See the Manage Objects section for more information.

Chapter 9 - Database Management

Overview

Navicat On-Prem Server comes with a powerful tool that enables you to manage connection effectively. It provides a centralized platform for creating, organizing, and maintaining all your database objects in one place.

With Navicat On-Prem Server, you can:

- Create, modify and delete database objects
- View and edit data
- Write and run queries
- Manage database users and roles

Note: To unlock database management, you must use tokens to authorize your user account to manage connections.

Supported On-Premises Databases

- MySQL 3.23 or later
- PostgreSQL 7.3 or later
- MariaDB 5.1 or later
- GaussDB 3.2 or later, openGauss
- OceanBase Community and Enterprise 3.1.0 or later
- TiDB 7 or later
- KingbaseES V8R6 or later
- Fujitsu Enterprise Postgres 9.5 or later
- IvorySQL 1 or later
- Drizzle, OurDelta, Percona Server

Supported Cloud Databases

Amazon AWS

- Amazon Redshift
- Amazon Aurora for MySQL
- Amazon Aurora for PostgreSQL

- Amazon RDS for MySQL
- Amazon RDS for PostgreSQL
- Amazon RDS for MariaDB

Google Cloud

- Google Cloud SQL for MySQL
- Google Cloud SQL for PostgreSQL

Oracle Cloud

- Oracle MySQL Cloud Service

Microsoft

- Microsoft Azure Database for MySQL
- Microsoft Azure Database for PostgreSQL
- Microsoft Azure Database for MariaDB

Alibaba Cloud

- Alibaba Cloud ApsaraDB RDS for MySQL
- Alibaba Cloud ApsaraDB RDS for PostgreSQL
- Alibaba Cloud ApsaraDB for OceanBase (MySQL Mode)
- Alibaba Cloud PolarDB for MySQL
- Alibaba Cloud PolarDB for PostgreSQL
- Alibaba Cloud PolarDB for Xscale

Tencent Cloud

- Tencent Cloud TencentDB for MySQL
- Tencent Cloud TencentDB for PostgreSQL
- Tencent Cloud TencentDB for MariaDB

Huawei Cloud

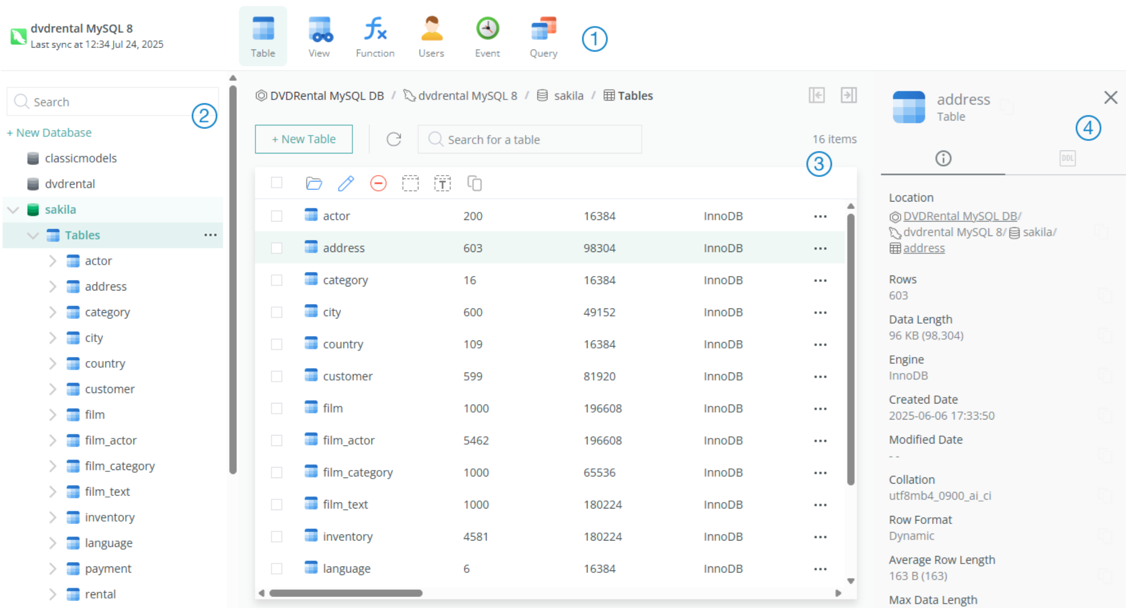
- Huawei Cloud RDS for MySQL
- Huawei Cloud RDS for PostgreSQL

- Huawei Cloud GaussDB Centralized
- Huawei Cloud GaussDB Distributed
- Huawei Cloud GaussDB(DWS)

User Interface

Connection Page

The Connection Page consists of several panes for you to work on connections, database objects and advanced tools.



① **Main Toolbar**

The Main Toolbar allows you to access basic objects and features, such as users, tables, views, functions and more.

② **Connection Tree**

The Connection Tree is the basic way to navigate with connections, databases and database objects. If the Connection Tree is hidden, click .

③ **Object Pane**

The Object Pane displays a list of objects (such as tables, views, queries).

④ **Information Pane**

The Information Pane shows the detailed object information, project activities, the DDL of database objects and membership of users/roles. If the Information Pane is hidden, click .

Connection Tree

The Connection Tree employs tree structure which allows you to take action upon the database and their objects through their pop-up menus quickly and easily. To connect to a database, simply double-click it in the pane.

Table elements, such as fields, indexes and foreign keys, are display under each table. Click the arrow to the left of the table name to expand the list.

If the Connection Tree is hidden, click .

Filter Connection Tree

Entering a search string in the **Search** text box will only show items containing the string. All groups and opened objects that containing search result will also automatically expand to show the filtered results.

Object Pane

When you select an object in the connection tree, available objects are displayed in the Object Pane. It shows the name and several properties of objects in columns.

After selecting an object, you can perform the following:

Button	Description
	Open the object.
	Open the designer to edit the structure.
	Delete the object.
	Clear all data in the table.
	Clear all data in the table and reset the auto increment value.
	Create a duplicate copy of the object.

Search Objects

If you have many objects, you can find the objects you want easily by the search feature. Enter a search string in the **Search** text box. Objects will be filtered by the search string immediately.

Information Pane

The Information Pane shows the detailed object information, project activities, the DDL of database objects and membership of users/roles. If the Information Pane is hidden, click .

You can select any objects and then select the corresponding buttons on the Information Pane.

Button	Description
	General - Show the general information of the object.
	Preview - Show the SQL statements in the query.
DDL	**DDL** - Show the DDL statements of the object.
	Member Of - Show the roles that the user or the role assigned to.
	Members - Show the members of the role.
	Field - Show the information of the selected field in Table Viewer.
	Identifiers - Show all available tables, views or fields in the selected database.

	Privileges - Show the privileges granted to the user.
	Project - Show the project members and the project activities done by the members. Click **+** to add members to the project.

Connection

About Connection

To start working with your server, you should first establish a connection or several connections using the Connection window. If you are new to the server or 'Net in general' and are not quite sure how things work, you may want to look at:

- MySQL User Manual
- PostgreSQL User Manual
- MariaDB Documentation

Create Connection

1. In the main page, click **+ New** -> **New Connection**.
2. In the new connection window, select your server type and click **Next**.
3. Enter the necessary information.
4. Click **New**.

Note: You can make connection to remote servers running on different platforms (i.e. Windows, macOS, Linux and UNIX).

Open Connection

1. In the main page, double-click a connection.
2. Enter the password and click **Open Connection** if necessary.
3. A tab will open for you to manage your server.

Edit Connection Settings

1. In the main page, open the connection.
2. Hover over the connection name in the connection tree.
3. Click the ••• icon and select **Edit Connection**.
4. In the Edit Connection window, modify your connection information.
5. Click **Save**.

Copy Connection To Another Project

1. In the main page, open the connection.
2. Hover over the connection name in the connection tree.
3. Click the ··· icon and select **Copy Connection To**.
4. Select an existing project.
5. Click **OK**.
6. The connection will be copied to the project.

Flush MySQL / MariaDB Connection

You can clear or reload various internal caches, flush tables, or acquire locks.

1. In the main page, open the connection.
2. Hover over the connection name in the connection tree.
3. Click the ··· icon and select **Flush**.

Note: You must have the RELOAD privilege to use this feature.

Testing Account

Navicat provides evaluated accounts for testing purpose.

MySQL

- Host: server1.navicat.com
- Port: 4406
- User Name: navicat
- Password: testnavicat

PostgreSQL

- Host: server1.navicat.com
- Port: 5432
- Initial Database: HR
- User Name: navicat
- Password: testnavicat

General Settings

MySQL / MariaDB / OceanBase / TiDB

To successfully establish a new connection to local/remote server - no matter via SSL, SSH or HTTP, set the database login information in the General tab. If your Internet Service Provider (ISP) does not provide direct access to its server, Secure Tunneling Protocol (SSH) / HTTP is another solution.

Option	Description
Connection Name	Enter a friendly name to best describe your connection.
Project	Select the project to save the connection.
Host	A host name where the database is situated or the IP address of the server.
Port	A TCP/IP port for connecting to the database server.
User Name	User name for connecting to the database server.
Password	Password for connecting to the database server.

PostgreSQL / Fujitsu Enterprise Postgres / KingbaseES / IvorySQL

To successfully establish a new connection to local/remote server - no matter via SSL, SSH or HTTP, set the database login information in the General tab. If your Internet Service Provider (ISP) does not provide direct access to its server, Secure Tunneling Protocol (SSH) / HTTP is another solution.

Option	Description
Connection Name	Enter a friendly name to best describe your connection.
Project	Select the project to save the connection.
Host	A host name where the database is situated or the IP address of the server.
Port	A TCP/IP port for connecting to the database server.
Initial Database	Set the initial database which user connects when making connection.
User Name	User name for connecting to the database server.
Password	Password for connecting to the database server.

GaussDB

To successfully establish a new connection to local/remote server - no matter via SSL or SSH, set the database login information in the General tab. If your Internet Service Provider (ISP) does not provide direct access to its server, Secure Tunneling Protocol (SSH) is another solution.

Option	Description
Connection Name	Enter a friendly name to best describe your connection.
Project	Select the project to save the connection.
Type	The type of your GaussDB server: Single Host or Multiple Hosts.
Host / Hosts	A host name where the database is situated or the IP address of the server.
Port	A TCP/IP port for connecting to the database server.
Host Type Preference	The type of the host to be connected.
Initial Database	Set the initial database which user connects when making connection.

User Name	User name for connecting to the database server.
Password	Password for connecting to the database server.

Advanced Settings

Note: The following options depend on the connection server type and sort in ascending order.

Auto connect

Open the connection at Navicat application startup automatically.

Client Character Set

Choose the session client character set used in Navicat.

Compatibility

Enable the Compatibility tab for setting the compatibility mode for MySQL connection.

Connection Timeout

Specify the amount of time to wait for a connection to be established before timing out.

Encoding

Choose a codepage for converting data to display in Navicat UI.

Keepalive interval

Keep the connection with the server alive by pinging it. You can set the period between pings in the edit box.

Limit connection sessions

Specify the maximum number of concurrent connections that the server allows.

Read Timeout

Specify the amount of time to wait for more data from a connection before aborting the read.

Use compression

Use compression protocol. It is used if both client and server support zlib compression, and the client requests compression.

Use named pipe, socket

Use socket file for localhost connection.

Write Timeout

Specify the amount of time to wait for a block to be written to a connection before aborting the write.

Database Settings

In the **Database** tab, you can set which databases will be shown in the connection tree when connecting to your server. It is not obligatory. To start working with custom database settings, check **Use custom database list**. Then, check the preferable databases in the **Name** column. If you want Navicat automatically open the databases at connection, check the **Auto Open** box.

Add a hidden database to the list

1. Click the **+** button.
2. Enter the database name.
3. Check the newly added database in the database list.

Remove a database from the list

1. Select the database in the database list.
2. Click the **-** button.

Note: The database will be just removed from the database list box, it will still exist in the server.

SSL Settings

Secure Sockets Layer(SSL) is a protocol for transmitting private documents via the Internet. To get a secure connection, the first thing you need to do is to install OpenSSL Library and download Database Source.

To provide authentication details, enable **Use authentication** and choose the **SSL Cert**. See Certificates / Keys for details.

SSH Settings

Secure SHell (SSH) is a program to log in into another computer over a network, execute commands on a remote server, and move files from one machine to another. It provides strong authentication and secure encrypted communications between two hosts, known as **SSH Port Forwarding (Tunneling)**, over an insecure network. Typically, it is employed as an encrypted version of Telnet.

In a Telnet session, all communications, including username and password, are transmitted in plain-text, allowing anyone to listen-in on your session and steal passwords and other information. Such sessions are also susceptible to session hijacking, where a malicious user takes over your session once you have authenticated. SSH serves to prevent such vulnerabilities and allows you to access a remote server's shell without compromising security.

Please make sure that the parameter - "AllowTcpForwarding" in the Linux server must be set to value "yes", otherwise, the SSH port forwarding will be disabled. To look for the path: /etc/ssh/sshd_config. By default, the SSH port forwarding should be enabled. Please double check the value settings.

Even the server support SSH tunnel, however, if the port forwarding being disabled, Navicat cannot connect via SSH Port 22.

Host

A host where SSH server is activated.

Note: The host name in the General tab should be set relatively to the SSH server which provided by your database hosting company.

Port

A port where SSH server is activated, by default it is 22.

User Name

A user on SSH server machine. (It is not a user of database server.)

Authentication Method

Password	Provide the SSH server user **Password**.
SSH Key	Choose the private key. It is used together with your public key. See Certificates / Keys for details.

Note: HTTP Tunnel and SSH Tunnel cannot be function simultaneously. The SSH Tunnel is disabled when you select the HTTP Tunnel and vice versa.

HTTP Settings

HTTP Tunneling is a method for connecting to a server that uses the same protocol (http://) and the same port (port 80) as a web server does. It is used while your ISPs do not allow direct connections, but allows establishing HTTP connections.

Uploading the Tunneling Script

To use this connection method, first thing you need to do is to upload the tunneling script to the web server where your server is located.

Note: Click the **Export Tunnel Script** button to extract the script file, **ntunnel_mysql.php** (for both MySQL and MariaDB) or **ntunnel_pgsql.php**.

Setting up HTTP Tunnel

The following instruction guides you through the process of configuring a HTTP connection.

1. Select the HTTP tab and enable **Use HTTP tunnel**.

2. Enter URL of the tunneling script.
   e.g. http://www.navicat.com/ntunnel_mysql.php

3. If your server installed a Web Application Firewall, you can check the **Encode outgoing query with base64** option.

4. If the tunneling script is hosted in a password protected server or you have to access internet over a proxy server, you can provide the required authentication details in the **Authentication** or **Proxy** tab.

Note: HTTP Tunnel and SSH Tunnel cannot be function simultaneously. The SSH Tunnel is disabled when you select the HTTP Tunnel and vice versa.

Compatibility Settings

If your server is a variant of MySQL or has proxy middleware installed, you can enable compatibility mode and set the corresponding settings for the connection.

Note: Available only for MySQL.

Force lower_case_table_names as

Set the value of the lower_case_table_name system variable.

Force sql_mode as

Set the value of the sql_mode system variable.

Force NDB cluster support as

Include or exclude the support for the NDBCLUSTER storage engine.

Force database listing method as

Use the SHOW DATABASES statement to retrieve the information for listing databases, or select the information from the INFORMATION_SCHEMA database.

Force view listing method as

Use the SHOW FULL TABLES statement to retrieve the information for listing tables, or select the information from the INFORMATION_SCHEMA database.

Connect with Different Profiles

You can have multiple profiles for each connection, with slightly different connection settings. For example, different database users.

Create Connection Profile

1. In the connection window, click .

2. Click **+ New Connection Profile**.

3. Enter the name of the profile.

4. Enter the connection settings.

5. Click **Save**.

Switch Profile

1. In the connection tree, hover over the connection name.

2. Click the ••• icon and select **Switch Connection Profile**.

3. Select the profile name.

Hint: You can also set the default active profile in the connection window.

Server Objects

About Server Objects

Navicat On-Prem Server provides powerful tools to manage server objects, such as databases, tables, views, functions, etc.

In object designers, you can preview the necessary SQL statements for creating or editing the object on the **SQL Preview** tab. For some database objects, you can use the drop-down list to show the SQL which will be run when choosing **Save** or **Save As**.

MySQL / MariaDB / OceanBase / TiDB

Databases

To start working with the server objects, you should create and open a connection. If the server is empty, you need to create a new database.

Create a new database

1. In the connection tree, click **+ New Database**.

2. Enter the database properties.

3. Click **New**.

Edit an existing database

1. In the connection tree, hover over a database.

2. Click ••• and choose **Edit Database**.

3. Edit the database properties.

4. Click **OK**.

Note: MySQL does not support renaming database through its interface at this moment. Access the directory in which databases being stored. By default, all databases store within a directory called data under MySQL Installation folder. For example: C:\mysql5\data. You must stop MySQL before you can rename the database.

Tables

Tables are database objects that contain all data in a database. A table is a set of rows and columns, and their intersections are fields. In the connection tree, click **Tables** to open the table object list.

After selecting a table, you can perform the following:

Button	Description
	Open the table to view or edit data. The data is displayed as a grid. See Data Editor for details. (Transaction is only available for INNODB tables.)
	Open the table designer to edit the structure.
	Delete the table.
	Clear all data in the table.
	Clear all data in the table and reset the auto increment value.
	Structure and Data - Create a duplicate copy of the table including structure and data. **Structure Only** - Create a duplicate copy of the table, without the data.

Create a new table

1. In the table list, click **+ New Table**.

2. Design the table structure.

3. Click .

4. Enter the table name.

Empty / Truncate a table

1. In the table list, select a table.

2. Click / .

Views

A view allows users to access a set of tables as if it is a single table. You can use views to restrict access to rows. In the connection tree, click **Views** to open the view object list.

After selecting a view, you can perform the following:

Button	Description
	Open the view to view or edit data. The data is displayed as a grid. See Data Editor for details. (Transaction is only available for updatable views.)
	Open the view designer to edit the structure.
	Delete the view.
	Create a duplicate copy of the view.

Create a new view

1. In the view list, click **+ New View**.
2. Design the view structure.
3. Click .
4. Enter the view name.

View Designer

You can enter the SQL statement in the **SQL Editor**. See Query Editor for details.

Button	Description
Preview	Preview the data of the view.
Explain	Show the Query Plan of the view.
Stop	Stop the execution.

Procedures / Functions

A procedure or function is a set of SQL statements that can be executed as a single unit. In the connection tree, click **Functions** to open the function object list.

After selecting a procedure or function, you can perform the following:

Button	Description
	Open the function designer to edit the structure.
	Delete the procedure/function.
	Create a duplicate copy of the procedure/function.

Create a new procedure/function

1. In the function list, click **+ New Function**.
2. Design the procedure/function structure.
3. Click .

Function Wizard

After clicking **+ New Function**, **Function Wizard** will pop up and it allows you to create a procedure/function easily.

1. Select the type of the routine: **Procedure** or **Function**.
2. Enter the name of the routine and click **Next**.
3. Define the parameters. Set the **Name**, **Type**, **Length**, **Mode** under the corresponding columns.
4. If you create a function, select the **Return Type** from the list.
5. Click **Next**.
6. Choose the additional options.
7. Click **Finish**.

Function Designer

You can enter a valid SQL statement in the **SQL Editor** tab. This can be a simple statement such as SELECT or INSERT, or it can be a compound statement written using BEGIN and END. Compound statements can contain declarations, loops, and other control structure statements. See Query Editor for details.

Button	Description
Run	Execute the procedure/function.
Stop	Stop the execution.

Results

If the SQL statement is correct, the statement will be executed and, if the statement is supposed to return data, the **Result** tab opens with the data returned. If an error occurs while executing the procedure/function, execution stops, the appropriate error message is displayed. If the procedure/function requires input parameters, the **Input Parameter** dialog will pop up. Check the **Raw Mode** option to pass the inputted values to the procedure/function without quotation marks.

Events

An event is a task that run according to a schedule. In the connection tree, click **Events** to open the event object list.

After selecting an event, you can perform the following:

Button	Description
	Open the event designer to edit the structure.
	Delete the event.
	Create a duplicate copy of the event.

Create a new event

1. In the event list, click **+ New Event**.

2. Design the event structure.

3. Click .

4. Enter the event name.

Event Designer

You can enter a valid SQL procedure statement in the **Definition** tab. This can be a simple statement such as SELECT or INSERT, or it can be a compound statement written using BEGIN and END. Compound statements can contain declarations, loops, and other control structure statements. See Query Editor for details.

Maintain Objects

Navicat On-Prem Server provides a complete solution for maintaining server objects.

1. In the connection page, hover over an object in the connection tree or the object pane.

2. Click the icon.

3. Choose **Maintain**, and then choose a maintain option from the pop-up menu.

4. Results show in a new tab.

Table

Option	Description
Analyze Table	Analyze and store the key distribution for the table.
Check Table	Check the table for errors.
Optimize Table	Optimize the table to reduce storage space and improve I/O efficiency.
Repair Table	Repair the possibly corrupted table.
Get Rows Count	Count the number of rows in the table.

PostgreSQL / Fujitsu Enterprise Postgres / GaussDB / KingbaseES / IvorySQL

Databases & Schemas

To start working with the server objects, you should create and open a connection. If the server is empty, you need to create a new database and/or a new schema.

Create a new database

1. In the connection tree, click **+ New Database**.

2. Enter the database properties.

3. Click **New**.

Edit an existing database

1. In the connection tree, hover over a database.
2. Click ••• and choose **Edit Database**.
3. Edit the database properties.
4. Click **OK**.

Create a new schema

1. In the connection tree, hover over a database or schema.
2. Click ••• and choose **New Schema**.
3. Enter the schema properties.
4. Click **New**.

Edit an existing schema

1. In the connection tree, hover over a schema.
2. Click ••• and choose **Edit Schema**.
3. Edit the schema properties.
4. Click **OK**.

Tables

Tables are database objects that contain all data in a database. A table is a set of rows and columns, and their intersections are fields. In the connection tree, click **Tables** to open the table object list.

After selecting a table, you can perform the following:

Button	Description
	Open the table to view or edit data. The data is displayed as a grid. See Data Editor for details.
	Open the table designer to edit the structure.
	Delete the table.
	Clear all data in the table.
T	Clear all data in the table and reset the auto increment value.
	Structure and Data - Create a duplicate copy of the table including structure and data. **Structure Only** - Create a duplicate copy of the table, without the data.

Create a new table

1. In the table list, click **+ New Table** and select the table type.

2. Design the table structure.

3. Click .

4. Enter the table name.

Empty / Truncate a table

1. In the table list, select a table.

2. Click / .

Views

A view allows users to access a set of tables as if it is a single table. You can use views to restrict access to rows. In the connection tree, click **Views** to open the view object list.

After selecting a view, you can perform the following:

Button	Description
	Open the view to view data. The data is displayed as a grid. See Data Editor for details.
	Open the view designer to edit the structure.
	Delete the view.
	Create a duplicate copy of the view.

Create a new view

1. In the view list, click **+ New View**.

2. Design the view structure.

3. Click .

4. Enter the view name.

View Designer

You can enter the SQL statement in the **SQL Editor**. See Query Editor for details.

Button	Description
Preview	Preview the data of the view.
Explain	Show the Query Plan of the view.
Stop	Stop the execution.

Materialized Views

Materialized Views are schema objects that used to summarize, compute, replicate, and distribute data. In the connection tree, click **Materialized Views** to open the materialized view object list.

After selecting a materialized view, you can perform the following:

Button	Description
	Open the materialized view to view data. The data is displayed as a grid. See Data Editor for details.
	Open the materialized view designer to edit the structure.
	Delete the materialized view.
	Create a duplicate copy of the materialized view.

Create a new materialized view

1. In the materialized view list, click **+ New Materialized View**.
2. Design the materialized view structure.
3. Click .
4. Enter the materialized view name.

Materialized View Designer

You can enter the SQL statement in the **SQL Editor**. See Query Editor for details.

Button	Description
Preview	Preview the data of the materialized view.
Explain	Show the Query Plan of the materialized view.
Stop	Stop the execution.

Procedures / Functions

A procedure or function is a set of SQL statements that can be executed as a single unit. In the connection tree, click **Functions** to open the function object list.

After selecting a procedure or function, you can perform the following:

Button	Description
	Open the function designer to edit the structure.
	Delete the procedure/function.
	Create a duplicate copy of the procedure/function.

Create a new procedure/function

1. In the function list, click **+ New Function**.

2. Design the procedure/function structure.

3. Click .

Function Wizard

After clicking **+ New Function**, **Function Wizard** will pop up and it allows you to create a procedure/function easily.

1. Select the type of the routine: **Procedure** or **Function**.

2. Enter the name of the routine and click **Next**.

3. Define the parameters. Set the **Name**, **Type Schema**, **Type**, **Mode**, **Default Value** under the corresponding columns.

4. If you create a function, select the **Return Type** from the list.

5. Click **Next**.

6. Choose the additional options.

7. Click **Finish**.

Function Designer

You can enter a valid SQL statement in the **SQL Editor** tab. This can be a simple statement such as SELECT or INSERT, or it can be a compound statement written using BEGIN and END. Compound statements can contain declarations, loops, and other control structure statements. See Query Editor for details.

Button	Description
Run	Execute the procedure/function.
Stop	Stop the execution.

Results

If the SQL statement is correct, the statement will be executed and, if the statement is supposed to return data, the **Result** tab opens with the data returned. If an error occurs while executing the procedure/function, execution stops, the appropriate error message is displayed. If the procedure/function requires input parameters, the **Input Parameter** dialog will pop up. Check the **Raw Mode** option to pass the inputted values to the procedure/function without quotation marks.

Indexes

An index is a data structure that improves the speed of data retrieval operations on a database table. In the main toolbar, click A-Z **Index** to open the index object list.

After selecting an index, you can perform the following:

Button	Description
	Open the index designer to edit the structure.
	Delete the index.
	Create a duplicate copy of the index.

Create a new index

1. In the index list, click **+ New Index**.
2. Design the index structure.
3. Click .
4. Enter the index name.

Sequences

A sequence generates a series of unique numeric values. It is commonly utilized for auto-incrementing primary key columns in tables. In the main toolbar, click 123 **Sequence** to open the sequence object list.

After selecting a sequence, you can perform the following:

Button	Description
	Open the sequence designer to edit the structure.
	Delete the sequence.
	Create a duplicate copy of the sequence.

Create a new sequence

1. In the sequence list, click **+ New Sequence**.
2. Design the sequence structure.
3. Click .
4. Enter the sequence name.

Triggers

A trigger is a special type of stored procedure that automatically executes in response to certain events on a specified table or view, such as INSERT, UPDATE, or DELETE operations. In the main toolbar, click **Trigger** to open the trigger object list.

After selecting a trigger, you can perform the following:

Button	Description
	Open the trigger designer to edit the structure.
	Delete the trigger.
	Create a duplicate copy of the trigger.

Create a new trigger

1. In the trigger list, click **+ New Trigger**.

2. Design the trigger structure.

3. Click .

4. Enter the trigger name.

Types

A type is a user-defined type that allows you to create a specific structure for storing data that is not covered by the built-in data types. In the main toolbar, click **Type** to open the type object list.

After selecting a type, you can perform the following:

Button	Description
	Open the type designer to edit the structure.
	Delete the type.
	Create a duplicate copy of the type.

Create a new type

1. In the type list, click **+ New Type** and choose the form of the type.

2. Design the type structure.

3. Click .

4. Enter the type name.

Maintain Objects

Navicat On-Prem Server provides a complete solution for maintaining objects.

1. In the connection page, hover over an object in the connection tree or the object pane.

2. Click the icon.

3. Choose **Maintain**, and then choose a maintain option from the pop-up menu.

4. Results show in a new tab.

Database

Option	Description
Allow	Users can connect to the database.
Disallow	No users can connect to the database.
Analyze Database	Collect statistics about the database.

Vacuum Database	Garbage-collect and optionally analyze the database.
Reindex Database	Recreate all indexes within the database.

Table / Materialized View

Option	Description
Analyze Table / Analyze Materialized View	Collect statistics about the contents of the table.
Vacuum Table / Vacuum Materialized View	Garbage-collect and optionally analyze the table.
Reindex Table / Reindex Materialized View	Recreate all indexes of the table.

Manage Extensions

PostgreSQL has various extensions, supplying extra functions, operators, or types to extend the functionality of a database. You can install the extensions that are supported by your PostgreSQL server.

Install an extension

1. In the connection tree, hover over a database.
2. Click ••• and choose **Manage Extensions**.
3. All available extensions are listed on the left. Move an available extension to the Installed list.
4. Click **OK**.

Remove an extension

1. In the connection tree, hover over a database.
2. Click ••• and choose **Manage Extensions**.
3. Move an installed extension to the Available list.
4. Click **OK**.

Data Editor

About Data Editor

Navicat On-Prem Server includes a data editor that allows you to view, update, or delete data. The editor also includes advanced features and editors that can help you understand the data as you manipulate it. You can use common keyboard navigation to browse your data.

Data Editor displays the data as a grid or a form. To switch the view, click or at the bottom.

The toolbar of the data editor provides the following functions for managing data:

Button	Description
Begin Transaction	Start a transaction.
Commit	Make permanent all changes performed in the current transaction.
Rollback	Undo work done in the current transaction.
Columns	Show / Hide columns.
Filter & Sort	Filter and sort records by applying filter and sorting criteria for the data grid.

Use Navigation Bar

Data Editor provides a convenient way to navigate among the records/pages using the **Navigation Bar** buttons.

Button	Description
	Add Record - enter a new record. At any point when you are working in the data editor, click on this button to get a blank display for a record.
	Delete Records - delete an existing record.
	Apply Changes - apply the changes.
	Discard Changes - remove all edits made to the current record.
	Refresh - refresh the data.
	Stop - stop when loading enormous data from server.
	First Page - move to the first page.
	Previous Page - move to the previous page.
	Next Page - move to the next page.
	Last Page - move to the last page.
	First Record - move to the first record.
	Previous Record - move one record back (if there is one) from the current record.
	Next Record - move one record ahead.
	Last Record - move to the last record.
	Limit Record Setting - set number of records showing on each page.
	Grid View - switch to Grid View.
	Form View - switch to Form View.

Use the **Limit Record Setting** button to enter to the edit mode.

Limit records ☐ **records per page**

Check this option if you want to limit the number of records showed on each page. Otherwise, all records will be displayed in one single page. And, set the value in the edit box. The number representing the number of records showed per page.

Note: This setting mode will take effect on current object only.

Record a **of** b **in page** c

Display the numbers representing the selected record and page.

a - the selected record.

b - number of records in the current page.

c - the current page.

Edit Records

Grid View

Grid View is a spreadsheet-like view showing records and fields as rows and columns. The navigation bar allows you to switch the records quickly, insert or delete records.

To add a record

1. Click to get a blank display for a record.
2. Enter the desired data.
3. Click .

To edit a record

1. Select the record that you wish to edit by clicking in the specific field you want to change.
2. Type in the new data for that field.
3. Click .

To edit multiple cells with same data

1. Select a block of cells in the data grid.
2. Type in the new data.

Note: Changes will apply to multiple fields with compatible data type.

To delete a record

1. Select the record that you wish to delete.

2. Click −.

Form View

Form View displays a single record at a time from a table. The navigation bar allows you to switch the records quickly, insert or delete records.

To add a record

1. Click + to get a blank display for a record.
2. Enter the desired data.
3. Click ✓.

To edit a record

1. Go to the record that you wish to edit.
2. Type in the new data for the specific field you want to change.
3. Click ✓.

To delete a record

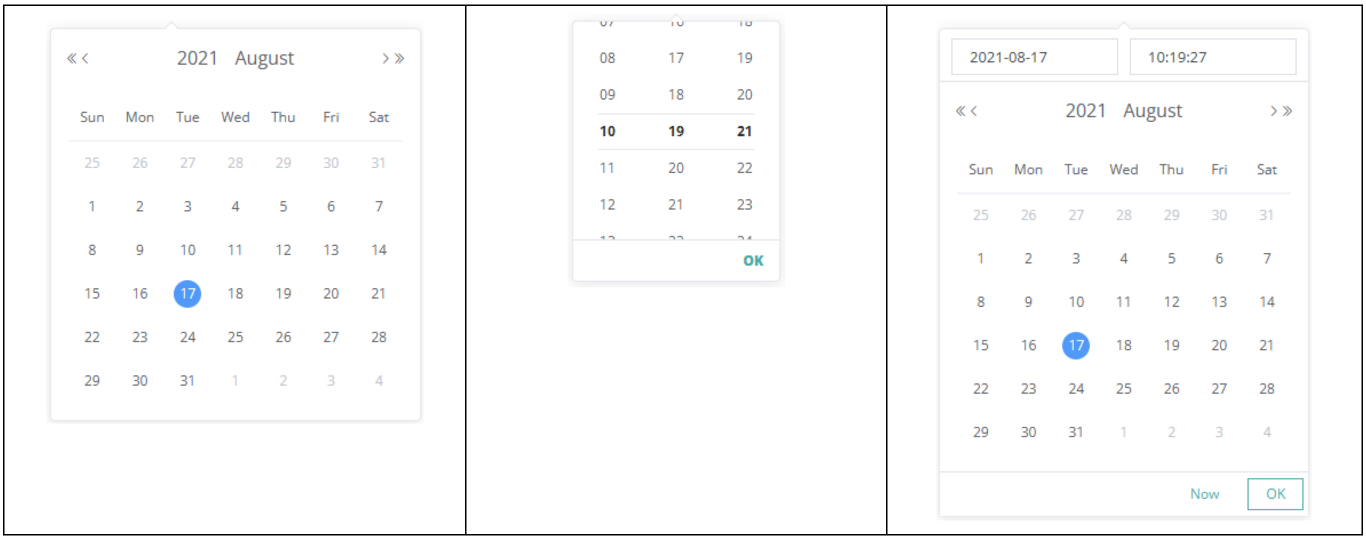
1. Go to the record that you wish to delete.
2. Click −.

Edit Records with Special Handling

To set the cell value to an empty string or NULL, right-click the selected cell and select **Set to Empty String** or **Set to NULL**.

To edit a Date/Time record, just simply click the cell to open the editor for editing. The editor used in cell is determined by the field type assigned to the column.

Date	Time	DateTime/Timestamp



Copy Data from Grid View

Data that being copied from the data grid goes into the clipboard with the fields delimited by tabs and the records delimited by carriage returns. It allows you to easily paste the clipboard contents into any application you want. Spreadsheet applications in general will notice the tab character between the fields and will neatly separate the clipboard data into rows and columns.

To select data using mouse actions

- Select the desired records by holding down the CTRL key while clicking on each row.
- Select range of records by clicking the first row you want to select and holding down the SHIFT key together with moving your cursor to the last row you wish to select.
- Select a block of cells.

Sort / Find / Replace Records

Sort Records

Server stores records in the order they were added to the table. Sorting in the data grid is used to temporarily rearrange records, so that you can view or update them in a different sequence.

Hover over the column caption whose contents you want to sort by, click or and select **Sort Asc**, **Sort Desc** or **Remove Sort**.

To sort by custom order of multiple columns, click **Filter & Sort** from the toolbar.

Find and Replace

Find Records

The Find bar is provided for quick searching for the text in the data editor. Just simply press CTRL+F. Then, choose **Find** and enter a search string. The search starts at the first record to the end of the data grid and is case-insensitive.

To find for the next text, just simply click **>**.

Replace Records

In the Find bar, choose **Find & Replace** and enter the text you want to search and replace. Click **Replace** or **Replace All** to replace the first occurrence or all occurrences automatically.

Format Data View

Use the following methods to format the table:

Hint: Form View only supports Show/Hide Columns.

Move Columns

- Click on the column header and hold down the left mouse button.
- Move the pointer to the desired location.
- Release the mouse and the column will move.

Set Column Width

- Click right border at top of column and drag either left or right.
- Right-click the column header and select **Set Column Width**. Specify width in the **Set All Column Width** dialog.

Hint: This action applies on the current table grid only.

Set Row Height

Right-click the row header and select **Set Row Height**. Specify row height in the **Set All Row Height** dialog.

Hint: This action applies on the current table grid only.

Show/Hide Columns

If there are many columns in the table and you want to hide some of them from the grid/form, just simply click **Columns**. Select the columns that you would like to hide.

The hidden columns will disappear from the grid/form.

To unhide the columns, just simply click **Columns**. Select the columns that you would like to redisplay.

View Field Information

Data Type

You can display the data types of fields in the column header. To do so, right-click the column header and select **Show Field Type**.

payment_id # smallint	customer_id # smallint	staff_id # tinyint	rental_id # int	amount # decimal
1	1	1	76	2.99
2	1	1	573	0.99
3	1	1	1185	5.99
4	1	2	1422	0.99

Field Comment

If you have added comments to the table fields, you can right-click the column header and select **Show Comment**. Field comments are displayed as the column header.

address_id	active The status of the customer	create_date
5	1	2005-02-14 22:04:36
6	1	2005-02-14 22:04:36
7	1	2005-02-14 22:04:36
8	1	2005-02-14 22:04:36

Cell Editors

Navicat On-Prem Server provides powerful cell editors to view and edit fields content. The editor allows you to view, update, insert, or delete data in a table. Click **Cell Editor** at the bottom to activate the appropriate editor.

The **Text** pane allows you to edit data as a simple text. Use the button on the navigation bar to update the changed records.

The **Hex** pane allows you to edit data in hexadecimal mode. Use the button on the navigation bar to update the changed records.

The **Image** pane allows you to show data as image. Use the , and buttons to load/remove the image from a file, and save the image to a file.

The **Web** pane allows you to show data with HTML codes as in a web browser.

Filter & Sort Pane

The Filter & Sort pane allows you to facilitate applying filter and sorting criteria that you specify for the data grid. Click **Filter & Sort** from the toolbar to activate the Filter & Sort pane.

Apply Filter

1. To add a new condition to the criteria, just simply click **+**. If you want to add a condition with parentheses, click **( )+**.

   Hint: To add parentheses to existing conditions, simply right-click on the selected conditions and select **Group With Bracket**.

2. Click on the field name (next to the checkbox) and choose a field from the list.

3. Click on the operator (next to the field name) and choose a filter operator. You can choose **[Custom]** from the list to enter the condition manually.

Filter Operator	Operator Description
=	The field is equal to 'value'.
!=	The field is not equal to 'value'.
<	The field is less than 'value'.
<=	The field is less than or equal to 'value'.
>	The field is greater than 'value'.
>=	The field is greater than or equal to 'value'.
contains	The field contains 'value'.
does not contain	The field does not contain 'value'.
begin with	The field starts with 'value'.
does not begin with	The field does not start with 'value'.
end with	The field ends with 'value'.
does not end with	The field does not end with 'value'.
is null	The field is NULL.
is not null	The field is NOT NULL.
is empty	The field is empty.
is not empty	The field is not empty.
is between	The field is between 'value1' and 'value2'.
is not between	The field is not between 'value1' and 'value2'.
is in list	The field is in the list of ('value1','value2',...).
is not in list	The field is not in the list of ('value1','value2',...).

4. Click on **<?>** to activate the appropriate editor and enter the criteria values. The editor used in the criteria values box is determined by the data type assigned to the corresponding field.

5. Click on the logical operator (next to the criteria values) to choose **and** or **or**.

6. Repeat step 1-5 to add another new condition.

7. Click **Apply Filter & Sort** to see the result of the filtering you made.

Apply Sort

1. Click **+**.

2. Click on the field name and choose a field you want to sort from the list.

3. Click or to change the sorting order.

4. Repeat step 1-3 to add another field.

5. Click **Apply Filter & Sort** to see the result of the sorting you made.

Hint: If you have more than one field in the **Sort By** area, you can rearrange the order by dragging the fields into the precise position you want.

Query

About Query

A query is used to extract data from the database in a readable format according to the user's request. You can edit the query text directly in Query Editor. Queries can be stored under the connection level or the database level, click **Queries** to open the query object list.

Toolbar

Button	Description
	Open the query designer to edit the query.
	Delete the query.
	Create a duplicate copy of the query.

Create a new query

1. In the query list, click **+ New Query**.
2. Enter the statements.
3. Click .
4. Enter the query name.
5. Click **Save**.

Import SQL from an external file

1. In the query list, click **+ New Query**.
2. Click and choose **Import SQL**.
3. Browse the sql file and click **Open**.
4. Click .
5. Enter the query name.
6. Click **Save**.

Query Editor

Query Editor allows you to create and edit SQL text, prepare and execute selected queries. You can define multiple SQL statements in one query editor. Drag-and-drop or double-click an identifier in the right **Identifiers** pane to add it to the editor.

Toolbar

Button	Description
Beautify	Format the query and make it readable and understandable.
Run	**Run** - Execute the entire query. **Run Current Statement** - Execute the current statement based on the cursor position. **Run Selected** - Execute the highlighted code. **Continue on Error** - Ignore errors that are encountered during the execution process. **Show Query Profiling and Status** - Show the query profiling and status when running the query.
Stop	Stop the executing query.
Explain	Show the execution plan of the query: Explain or Explain Selected (when highlighted code).

Code Formatting

The Beautify feature formats your query to make it more readable and understandable. This helps improve clarity and organization in your SQL statements, making it easier to review and modify your code.

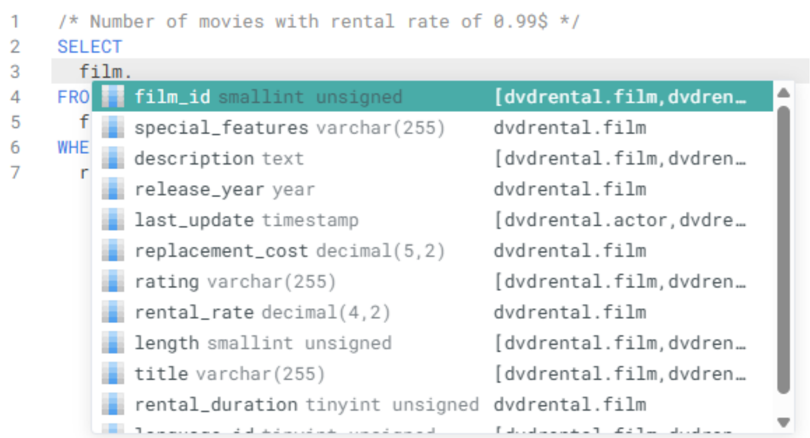
To use the Beautify feature, simply click **Beautify**.

Code Completion

The Code Completion feature pops up a list of suggestions as you type your query statement in the editor. It assists you with statement completion and the available properties of database objects, for example databases, tables, fields, views etc with their appropriate icons and information.

To invoke code completion, just simply press '.' for the available properties of database object currently in the scope.

When the suggestion list appears, you can select the needed item using UPPER ARROW or DOWN ARROW and then press ENTER to insert the selected item.



In addition, code completion can be invoked by typing a character for keywords or database objects.

Code Folding

The Code Folding feature enables you to collapse blocks of code such that only the first line of the block appears in Query Editor.

A block of code that can be folded is indicated by an icon to the left of the first line of the block. A vertical line extends from the icon to the bottom of the foldable code. In contrast, a folded block of code is indicated by an icon to left of the code block. You can fold the block by clicking or expand it by clicking .

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `rewards_report`(
    IN min_monthly_purchases TINYINT UNSIGNED
    , IN min_dollar_amount_purchased DECIMAL(10,2)
    , OUT count_rewardees INT
)
    READS SQL DATA
    COMMENT 'Provides a customizable report on best customers'
proc: BEGIN ...
    IF min_dollar_amount_purchased = 0.00 THEN
        SELECT 'Minimum monthly dollar amount purchased parameter must be > $0.00';
        LEAVE proc;
    END IF;
```

You can enable or disable the code folding feature by clicking ••• and choose **Use Code Folding**.

Syntax Highlight

Navicat On-Prem Server uses syntax highlighting which depending on the database associated with the query. Different databases have different sets of reserved keywords.

Query Results

You can run the query on any server in the project. Select the target connection, database and/or schema from the drop-down list on the toolbar, and then click **Run**. If the query statement is correct, the query executes and, if the query statement is supposed to return data, the **Result** tab opens with the data returned by the query. If an error occurs while executing the query, execution stops, the appropriate error message is displayed.

The **Result** tab displays the result data, returned by the query, as a grid. See Data Editor for details.

You are allowed to run selected portion of query, just simply highlight SQL in Query Editor and click **Run Selected**. To run the current statement your cursor is on (position the cursor within the desired statement), just simply click the down arrow next to **Run** and select **Run Current Statement**.

Adjust Result Position

You have the flexibility to configure how query results are displayed. You can choose to show the query results on the right side of the editor, or at the bottom of the editor. This allows you to adapt the display layout based on your specific needs and preferences during data analysis and exploration. To change the result position, use the or icon located in the tab bar.

Pin Query Result

Existing result tabs are removed when you re-execute the query. You can pin a result tab so that it remains visible after re-executing the query. Simply click **Pin** and its contents will not be cleared the next time you execute it.

When you pin a tab, it will display a pin icon and automatically moves towards the left side of the tab bar. All pinned tabs appear from left to right in the order you pinned. Hover over a pinned tab will show its execution time and the query. You can pin any number of results and quickly see what's pinned and what's not pinned. Simply click **Unpin** to unpin a tab.

Show Query Profiling and Status

To show the query profiling and status when running the query, simply click the down arrow next to **Run** and enable **Show Query Profiling and Status** before running the query, and then click **Run**.

The **Query Profiling** tab under the Result tab displays the query profiling: Table lock, System lock, Statistic, etc.

Note: For MySQL 5.0, supported from 5.0.37. For MySQL 5.1, supported from 5.1.24.

The **Status** tab displays the query status: Bytes received, Bytes sent, etc.

Query Explain

Query Explain provides detailed information about how a database query is executed by the database server. It helps you understand and optimize the performance of queries by analyzing the query execution plan.

When you click **Explain**, Navicat On-Prem Server sends an EXPLAIN statement to the database server. The server then generates an execution plan that outlines the steps it will take to execute the query and retrieve the requested data.

The **Explain** tab displays the execution plan. You can pin the tab by clicking **Pin**.

You are allowed to explain selected portion of query, just simply highlight SQL in Query Editor and click **Explain Selected**.

Server Security

About Server Security

You can manage server user accounts and the privileges of database objects. All information of users and privileges are stored in the server. In the main toolbar, click **User** or **Role** to open the user/role object list.

Create a new user

1. In the user list, click **+ New User**.
2. A tab will open for you to edit the user information.
3. Click .

Create a new role

1. In the role list, click **+ New Role**.
2. A tab will open for you to edit the role information.
3. Click .

MySQL / MariaDB / OceanBase / TiDB

User Designer

General Properties

User Name

Define a name for the user account.

Host

Enter a host name or an IP address where the user connected from. % means any host.

Plugin

Select the account authentication plugin for the user.

Password

Specify a login password for the user.

Confirm Password

Re-type the login password.

Expire Password Policy

Select the password expiration policy for the user account.

Advanced Properties

Maximum Queries Per Hour, **Maximum Updates Per Hour**, **Maximum Connections Per Hour**

Specify the maximum number of queries, updates, and connections that a user can perform during any given one-hour period. 0 means no limit.

Maximum User Connections

Specify the maximum number of simultaneous connections that a user can make.

Use OLD_PASSWORD encryption

Use the OLD_PASSWORD() function to generate a hash value for storing user password.

SSL Type

Specify the SSL/TLS-related options for the user account.

ANY	Require SSL encryption when the user connects.
SPECIFIED	Require a valid certificate when the user connects. Provide Certificate **Issuer**, Certificate **Subject**, or SSL **Cipher**.
X509	Require a valid certificate when the user connects.

Members

Note: Available only for MySQL 8.0 or later.

In the grid, check the **Granted** option against the role/user listed in **Name** to assign the selected role/user to be a member of this user.

Member Of

Note: Available only for MySQL 8.0 or later or MariaDB 10.0.5 or later.

In the grid, check the **Granted** or **Default** option against the role listed in **Name** to assign this user to be a member of the selected role.

Server Privileges

In the grid, check the **Grant** option against the server privilege listed in **Privilege** to assign this user to have that privilege.

Object Privileges

To edit specific object privileges for the user, click **Add Privilege** to open the dialog and follow the steps below:

1. Expand the node in the tree view until reaching to the target object.
2. Check the object to show the grid on the right pane.
3. In the grid, check the **Grant** option against the privilege listed in **Privilege** to assign this user to have that privilege. To grant or revoke all privileges, right-click on the grid and select **Grant All** or **Revoke All**.

Role Designer

Note: Roles are available for MariaDB 10.0.5 or later.

General Properties

Role Name

Define a name for the role.

Member Of

In the grid, check the **Granted** option against the role listed in **Name** to assign this role to be a member of the selected role.

Members

In the grid, check the **Granted** option against the role/user listed in **Name** to assign the selected role/user to be a member of this role.

Server Privileges

In the grid, check the **Grant** option against the server privilege listed in **Privilege** to assign this role to have that privilege.

Object Privileges

To edit specific object privileges for the role, click **Add Privilege** to open the dialog and follow the steps below:

1. Expand the node in the tree view until reaching to the target object.
2. Check the object to show the grid on the right pane.
3. In the grid, check the **Grant** option against the privilege listed in **Privilege** to assign this role to have that privilege. To grant or revoke all privileges, right-click on the grid and select **Grant All** or **Revoke All**.

PostgreSQL / Fujitsu Enterprise Postgres / GaussDB / KingbaseES / IvorySQL

Role Designer

Note: Roles are available for PostgreSQL 8.1 or later.

General Properties

Role Name

Define a name for the role.

Role ID

Specify an ID for the role.

Can login

Check this option to allow the role to log in.

Password

Specify a login password for the role.

Confirm Password

Re-type the login password.

Password Encryption

Choose whether the password is stored ENCRYPTED or UNENCRYPTED in the system catalogs.

Connection Limit

Specify how many concurrent connections the role can make. -1 means no limit.

Expiry Date

Set a datetime that the role's password will expire. If this option is omitted, the password will be valid for all time.

Superuser

Check this option to determine the role is a superuser.

Can create database

Check this option to allow the role to create databases.

Can create role

Check this option to allow the role to create roles.

Inherit privileges

Check this option to determine the role inherits the privileges of roles it is a member of.

Can update system catalog

Check this option to allow the role to update system catalog.

Can replicate

Check this option to allow the role to initiate streaming replication or put the system in and out of backup mode.

Can bypass RLS

Check this option to allow the role to bypasses every row-level security (RLS) policy.

Member Of

In the grid, check the **Granted** or **Admin Option** option against the role listed in **Name** to assign this role to be a member of the selected role.

Members

In the grid, check the **Granted** or **Admin Option** option against the role listed in **Name** to assign the selected role to be a member of this role.

Object Privileges

To edit specific object privileges for the role, click **Add Privilege** to open the dialog and follow the steps below:

1. Expand the node in the tree view until reaching to the target object.
2. Check the object to show the grid on the right pane.
3. In the grid, check the **Grant** or **Grant Option** option against the privilege listed in **Privilege** to assign this role to have that privilege. To grant or revoke all privileges, right-click on the grid and select **Grant All**, **Grant All With Grant Option** or **Revoke All**.

User Designer

Note: Users are available for PostgreSQL 8.0 or below.

General Properties

User Name

Define a name for the user.

User ID

Specify an ID for the user.

Password

Specify a login password for the user.

Confirm Password

Re-type the login password.

Password Encryption

Choose whether the password is stored ENCRYPTED or UNENCRYPTED in the system catalogs.

Expiry Date

Set a datetime that the user's password will expire. If this option is omitted, the password will be valid for all time.

Superuser

Check this option to determine the user is a superuser.

Can create database

Check this option to allow the user to create databases.

Member Of

In the grid, check the **Grant** or **Admin Option** option against the group listed in **Name** to assign this user to be a member of the selected group.

Object Privileges

To edit specific object privileges for the user, click **Add Privilege** to open the window and follow the steps below:

1. Expand the node in the tree view until reaching to the target object.
2. Check the object to show the grid on the right pane.
3. In the grid, check the **Grant** or **Grant Option** option against the privilege listed in **Privilege** to assign this user to have that privilege. To grant or revoke all privileges, right-click on the grid and select **Grant All**, **Grant All With Grant Option** or **Revoke All**.

Group Designer

Note: Groups are available for PostgreSQL 8.0 or below.

General Properties

Group Name

Define a name for the group.

Group ID

Specify an ID for the group.

Members

In the grid, check the **Granted** option against the user listed in **Name** to assign the selected user to be a member of this group.

Object Privileges

To edit specific object privileges for the group, click **Add Privilege** to open the window and follow the steps below:

1. Expand the node in the tree view until reaching to the target object.
2. Check the object to show the grid on the right pane.
3. In the grid, check the **Grant** option against the privilege listed in **Privilege** to assign this group to have that privilege. To grant or revoke all privileges, right-click on the grid and select **Grant All** or **Revoke All**.

Privilege Manager

Besides setting privileges in each user, **Privilege Manager** provides another view on privileges in a connection and its database objects.

To add privileges, click and follow the steps below:

1. Expand the node in the tree view until reaching to the target object.
2. Choose the object and click **Add Privilege** to open the dialog.
3. Check the user on the left pane.
4. In the grid, check the relevant options against the privileges listed in **Privilege** to assign the selected user to have that object privilege.

Virtual Grouping

Virtual Group aims to provide a platform for logical grouping objects by categories, so that all objects are effectively preserved. It can be applied on Tables, Views, Functions, Queries, etc.

Create a new group

1. In the connection tree, hover over an object node.
2. Click the icon and select **New Group** or **Manage Group** -> **New Group**.
3. Enter a name for the new group.
4. Click **New**.

Move an object to a group

1. In the connection tree, hover over an object.
2. Click the icon and select **Manage Group** -> **Add to Group**.
3. Select an existing group.

Move an object to the top-level

1. In the connection tree, hover over an object.
2. Click the icon and select **Manage Group** -> **Exclude from Group**.

Hint: You can also perform the same actions in the object pane.

Chapter 10 - Other Advanced Tools

Share via Link

Sharing links are idea for providing direct access to a specific object within Navicat On-Prem Server. These links can be shared with others, providing them with quick and convenient access to the desired object without the need for manual navigation.

When the link is clicked or opened, Navicat On-Prem Server will launch and directly navigate to the specified object, saving time and effort for the user.

Here are the objects that can be shared:

- Projects
- Connections
- Queries
- Server Objects (e.g. databases, tables, views, functions)

To copy an object link, simply click ••• and choose **Copy Link**.

Chapter 11 - Commands

On-Prem Server Commands

You can use the command line to manage Navicat On-Prem Server service on Windows, macOS or Linux. The installation folder or the program path of Navicat On-Prem Server is:

Windows

C:\Program Files\PremiumSoft\Navicat On-Prem Server

macOS

/Applications/Navicat On-Prem Server.app/Contents/Resources/

Linux

/opt/navicatonpremserver/x86_64-linux-gnu/

Note: On Linux operating systems, commands must be run by the "navicatonpremserver" account.

Syntax

navicatonpremserver [command]

Available Commands

browser	Open a browser with Navicat On-Prem Server Web URL.
diagnostic	Show diagnostic information.
help	Print the help information of any command.
passwd	Reset the Superuser password.
restart	Restart Navicat On-Prem Server.
start	Start Navicat On-Prem Server.
status	Print the status information of Navicat On-Prem Server.
stop	Stop Navicat On-Prem Server.
version	Print the version number of Navicat On-Prem Server.

Examples

navicatonpremserver stop

navicatonpremserver restart

Chapter 12 - Troubleshooting

Log Files

Navicat On-Prem Server log files have detailed records of all sorts of server errors and messages. These files can help in tracking down any problems with Navicat On-Prem Server. Follow these steps to download the log files:

1. At the top right, click your avatar.
2. Select **Advanced Configurations**.
3. Click **About**.
4. Scroll to the **Diagnostics** section.
5. Click **Retrieve All Log Files** to download a .zip file containing log files.

Chapter 13 - Open Source Libraries

Open Source Libraries & Licensing

The following table lists the open source libraries used by Navicat On-Prem Server.

License	Libraries
Apache 2.0	• github.com/aws/aws-sdk-go-v2 • github.com/dgraph-io/badger • github.com/golang/mock • github.com/google/wire • github.com/pkg/errors • github.com/pquerna/otp • github.com/spf13/cobra
MIT	• github.com/Konstantin8105/FreePort • github.com/fatih/structs • github.com/gin-contrib/cors • github.com/gin-contrib/gzip • github.com/gin-contrib/sessions • github.com/gin-gonic/gin • github.com/jinzhu/gorm • github.com/jmoiron/sqlx • github.com/kelindar/binary • github.com/korylprince/go-ad-auth • github.com/mutecomm/go-sqlcipher • github.com/natefinch/lumberjack • github.com/ttacon/libphonenumber • gopkg.in/gomail.v2

	• gopkg.in/gormigrate.v1 • gopkg.in/ldap.v2 • github.com/fingerprintjs/fingerprintjs • www.npmjs.com/package/axios • www.npmjs.com/package/click-outside-vue3 • www.npmjs.com/package/crypto-js • www.npmjs.com/package/element-plus • www.npmjs.com/package/moment-timezone • www.npmjs.com/package/normalize.css • www.npmjs.com/package/normalizr • www.npmjs.com/package/resize-observer-polyfill • www.npmjs.com/package/vue • www.npmjs.com/package/vue-hot-reload-api • www.npmjs.com/package/vue-i18n • www.npmjs.com/package/vue-router • www.npmjs.com/package/vuex • www.npmjs.com/package/workbox-sw
MPL 2.0	• github.com/go-sql-driver/mysql • github.com/tredoe/osutil
BSD 3-Clause	• github.com/denisenkom/go-mssqldb • github.com/google/uuid • github.com/googollee/go-socket.io • github.com/namsral/flag • github.com/shirou/gopsutil • golang.org/x/crypto

	• golang.org/x/image • www.npmjs.com/package/highlight.js
BSD 2-Clause	• github.com/go-redis/redis • github.com/sfreiberg/gotwilio • github.com/vmihailenco/msgpack • gopkg.in/guregu/null.v3
Freetype	• github.com/golang/freetype
ISC	• github.com/howeyc/gopass • github.com/oschwald/geoip2-golang • www.npmjs.com/package/https
CC0 1.0	• www.npmjs.com/package/randomcolor