Qplat V3

Operation Manual

July 30, 2026

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1. Architecture

1.1. Admin Server

A single process that centralizes all key configurations and information, including user management, authentication, permission management, configurations management, trace management, approval management, job management, and scheduler management. For redundancy of the Admin Server, you need to use a separate HA solution to configure Active-Standby.

You can choose one of the managed servers to install and operate the Admin Server together, but it is recommended to install it on a separate host for more independent and stable operation.

1.2. DB server, web server, messaging server

They are installed with the Admin Server and their roles are as follows:

DB Server

Save a list of all actions and actions that have happened through Qplat. Used for storing approval items and tracking status, etc.

The built-in DB server is Apache Derby DB. It can be replaced with other RDB servers that support standard SQL and Java JDBC, such as Oracle, MS SQL, MySQL, and PostgreSQL.

Web Server

This is used for downloading client program and smart update. It provides also some features that require HTTP communication and the use of a web browser, such as email approval. Strictly speaking, it is a web application server (WAS), but for convenience, this manual refers to it as a web server.

The built-in web server is Apache Tomcat. It can be replaced with another Java-based web application server that supports servlets/JSPs.

Messaging Server

Handle asynchronous messaging for users, such as approval alarms and job status alarms.

The built-in messaging server is Apache Active MQ. It can be replaced by another messaging server that supports the Java JMS specification.

1.3. Admin agent

It is a real agent that is installed on the same host as the Admin Server and serves as a secondary agent to the Admin Server.

1.4. Agent

It is an agent that is installed on the managed server and is divided into a real agent and a virtual agent. Each has its own advantages and disadvantages, so you can choose one of the two types to install or set up.

<Note>

Each agent must have a unique name. While any name may be specified, the target server's hostname is generally used. Additionally, agent names are case-sensitive. That is, Qplat recognizes **abc** and **ABC** as different agents.

1.4.1. Real Agent

It is actually installed on the managed server and is run using the startagent command. Here are the pros and cons of Real Agent:

- **Pros**
  - If the OS account password or SSH key on the target server changes, you don't need to reapply the new value.
- **Cons**
  - You must install the agent on the target server.
  - If you need to patch, you must patch all the real agents together.
  - If the agent on the target server is not running, it cannot perform any operation.

- It occupies some of the memory and disk of the target server.
- Job execution is possible only with the agent's process owner account permissions.

Looking at it this way, it seems that there are a lot of disadvantages, but in reality, it cannot be said to be a major disadvantage due to the following reasons.

- It provides an installer, making it easy and fast to install. It usually takes less than a minute to install one real agent, and you can even install multiple agents at the same time.
- Patching can also be done in batches through the Qplat client program, which is simple and not time-consuming.
- You can make it start automatically when the server boots up, so you rarely need to start it manually unless you deliberately stop the agent.
- What the Qplat agent does is not much different from what an SSH or SFTP server does. Therefore, even though it is a Java program, it does not use a lot of resources.
- If you run the agent as root, you can use all OS account permissions on that server.

1.4.2. Virtual Agent

It is intended for an agentless approach and is not actually installed on the target server.

It connects to the target server using the SSH protocol. So, instead of installing files, it requires configurations such as OS account password registration or SSH key registration for SSH integration.

The pros and cons of virtual agents include:

- **Pros**
  - You don't need to install the agent on the target server. This means you don't even need to manage the running state of the agent.
- **Cons**
  - If your password or SSH key changes, you need to refect the new value.

< caution>
MS Windows does not support virtual agents, and you must install real agents.

1.4. Proxy agent

An agent that acts as a communication gateway between the client and the agent.

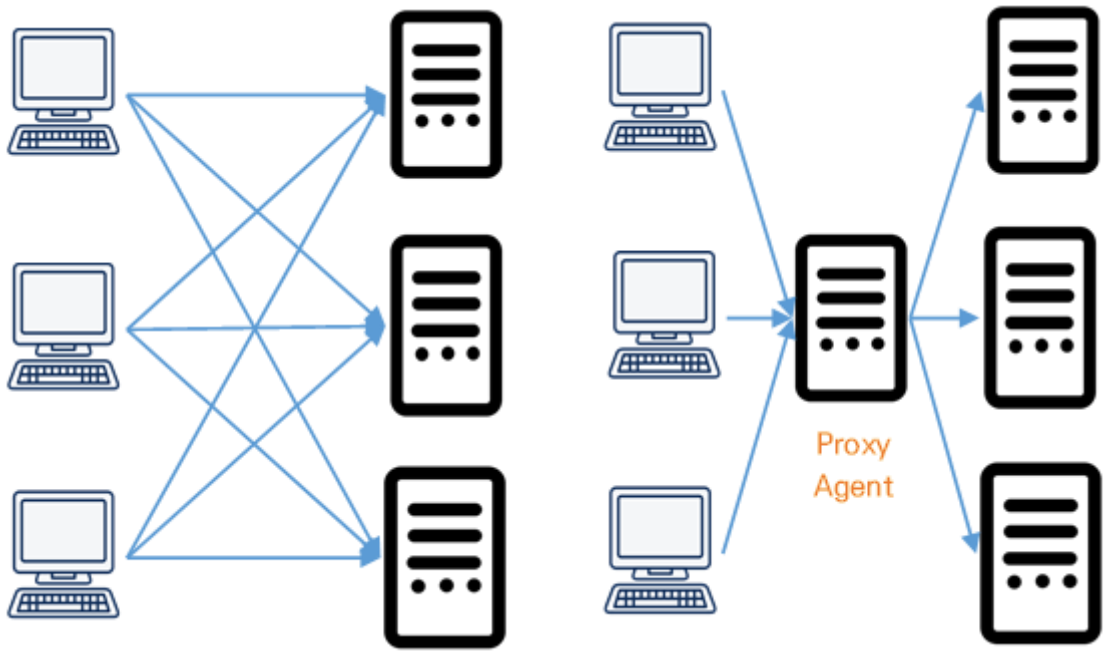
If you have at least one virtual agent, you must specify a proxy agent as mandatory. This is because communication between the client and the virtual agent is only possible through the proxy agent.

On the other hand, if all agents are real agents, there is no need for a proxy agent.

However, without a proxy agent, the client program communicates directly with the real agent, which does not matter if there is no firewall between the client and the real agent, but if there is a firewall, the firewall must be opened between all clients and all real agents, which can complicate the firewall setup. In addition, if communication such as file transfer is required between different real agents, the firewall between each agent must also be opened.

On the other hand, if you have a proxy agent, you only need to open a port of communication with the proxy agent, making it simpler to set up a firewall.

Below is a diagram showing the difference between the communication structure without and when the proxy agent is present.



[Without Proxy Agent] **[With Proxy Agent]**

Of course, the method of going through a proxy agent will inevitably cause a delay in response time. However, this response time delay is so small that you won't notice it unless you're making a large file transfer, so you don't have to worry too much.

All real agents can act as proxy agents simply by specifying them in the management console, and the same is true for Admin agents. Therefore, it is common to specify a Admin agent as the default proxy agent.

Proxy agents can be configured in an active-active manner to perform load balancing and failover. This is possible with only Qplat itself configuration, without any solutions.

1.6. Client Program

It is a GUI program that you install on your PC. Not only ordinary users, but also administrators use this program to perform all their jobs.

< caution>
Currently, the Qplat client program is only available for MS Windows.

The client program is downloaded and installed from the web page provided by the web server, and if a patch or update is applied to the web server, the new version is automatically downloaded and the installer is launched at the next startup. Once the installer starts, simply press the [Next] button to patch and update.

2. Installation and Status Management

2.1. Preparing for Installation

2.1.1. Checking the Support Environment

Configuration Module	Supported OS	Prerequisites	Installation Files

● Admin Server ● DB ● Messaging Server ● Web Server ● Admin agent	● Linux ● IBM AIX 5.3 over ● HP-UX 11i over ● Solaris 8 over ● MS Windows 10 over	For Unix, a Java 8 or higher JDK or JRE must be installed on the target server. Linux and Windows don't need a separate JRE because they have a built-in JRE in the installation file.	For Linux or Unix, use a file with a tar.gz extension, and for Windows, use a file with a zip extension. ● candle_[version]_db. [tar.gz or zip] ● candle_[version]_mq. [tar.gz or zip] ● candle_[version]_web. [tar.gz or zip] ● candle_[version]_admin. [tar.gz or zip] ● candle_[version]_agent. [tar.gz or zip]
● Real Agent		For Unix, a Java 5 or higher JDK or JRE must be installed on the target server. Linux and Windows don't need a separate JRE because they have a built-in JRE in the installation file.	For Linux or Unix, use a file with a tar.gz extension, and for Windows, use a file with a zip extension ● candle_[version]_agent. [tar.gz or zip]
● Virtual Agent	Any server that supports SSH	N/A	It is configurable with just the setup and no installation required.
● Clients	● MS Windows 10 over	N/A	

2.1.2. Select the IP and port to listen to, and open the firewall

Each server must be assigned a unique IP and port number to receive (listen) TCP requests from remote locations. IPs must be accessible from a remote location, so you should not use addresses that are not accessible remotely, such as localhost or 127.0.0.1. If you use a hostname instead of an IP, we recommend that you only use it if the hostname is registered in the company-wide DNS.

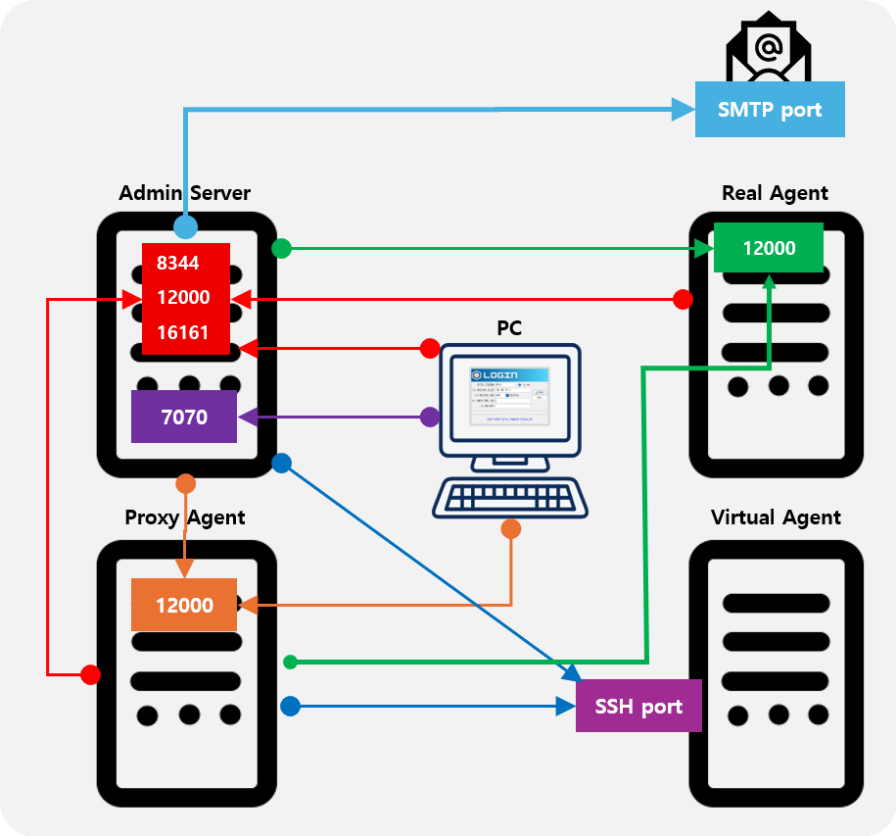
For Unix and Linux, port numbers below 1024 can only be assigned to super users (root), so if the process execution account is a regular OS user, please specify the port number after 1024. The

listening ports specified by default are as follows:

Note that the DB server also listens for ports, and the default value is 11527. However, the DB is only accessed by the Admin Server and does not need to be exposed externally, so I did not write it in the table.

Destinations	Listening Port (Default)	Origins	비고
Admin Server	8344	● All Agents ● All Clients	Admin Server
	16161	● All Agents ● All Clients	Messaging Server
	7070	● All Clients	Web server
	12000	● All Agents ● All Clients	Admin Agent + Default Proxy Agent
Real Agents	12000	● Admin Server ● Proxy Agents	
Virtual Agents	SSH Port	● Admin Server ● Proxy Agents	
Proxy Agents	12000	● Admin Server ● All Clients	Only required when setting up a separate proxy agent outside the management server
Mail Server	SMTP Port	● Admin Server	Required only for approval process via email and user reenablement via email

This table is shown in the figure below.



In the picture, the side where the arrow starts is the sending side, and the side that ends is the receiving side. The communication protocol uses its own defined TCP-based protocol, and all packets are encrypted with TLS. However, SSH is used to communicate with the virtual agent.

If a firewall exists on your network, please refer to the table and figure above to properly open the ports of the firewall before installation.

<Caution>

Since Qplat is a program for the centralized management of multiple servers, it can cause extensive damage if hacked. Therefore, for security purposes, all Qplat listening ports must be exposed only to essential personnel or computers. In particular, please take care not to expose them to the general public, such as via the internet.

2.1.3. Selecting the OS Account Required for Installation and Operation

The Admin Server, Admin agent, DB server, Messaging server and Web server do not require super user (root) privileges to perform missions, Therefore, it does not matter which account you install and run it with.

The agents in managed servers must actually perform the action requested by the user, so the actions performed by the agents are limited by the process owner of the real agent or the SSH access account permissions of the virtual agent.

For example, even if you specify a file as [readable] in the Qplat permission configurations, if the process owner of the real agent does not have permission to read the file, the file reading will eventually fail. Therefore, you should pay more attention to choosing an OS account for agents for managed servers.

Of course, if possible, the most convenient account is a superuser (root) account. This is because if you have superuser account permissions, there are no restrictions on what agents can do. In addition, real agents running as root accounts can also play the role of other accounts internally using su, sudo, chown, chgrp, etc.

2.1.4. Determining and Creating an installation directory

Create a directory on each server to install Qplat, and assign ownership of the directory to the OS account where you want to install and run Qplat.

This manual assumes **/qplat** as simply as possible. If it's MS Windows, it' s going to be about **C:₩qplat**.

2.1.5. Installing the JRE or JDK

Qplat is a Java-based application, so it requires a Java Runtime Environment (JRE) to run it. The minimum version required is:

Admin Server	Real Agent	Virtual Agent	Clients
Java 8	Java 6	No need	No need

For Linux and Windows, the Admin Server, real agent, and client all have the Amazon Coretto JRE built into the installation file, so there is no need to install a separate JRE.

However, if the built-in JRE does not work well, or if it is a Unix OS such as AIX, HPUX, or Solaris, you will need to install the corresponding JRE separately.

Of course, if you already have a minimum version of the JRE installed somewhere in the OS, you only need to specify the path at the time of installation, so you don't need to install anything more.

If you don't have access to the JRE installation file, you can install the Java Development Kit (JDK). This is because the JDK contains a JRE inside.

2.2. Admin Server installation and status management (including DB, web server, messaging server)

2.2.1. Installing the Admin Server

1. Open the CLI window

Unix/Linux	MS Windows	Description
Terminal (Telnet/SSH) access	Open the DOS command window (Using administrator mode)	Log in with the OS account you want to install/start the product on

2. Upload and unzip the installation file

Unix/Linux	MS Windows	Description
mkdir /qplat	mkdir C:₩qplat	
Upload the installation file to /qplat	Upload the installation file to C:₩qplat	For Linux or Unix, upload a file with a tar.gz extension, and for Windows, upload a file with a zip extension. ● candle_[version]_db. [tar.gz or zip] ● candle_[version]_mq. [tar.gz or zip] ● candle_[version]_web. [tar.gz or zip] ● candle_[version]_admin. [tar.gz or zip] ● candle_[version]_agent. [tar.gz or zip]
cd /qplat	cd C:₩qplat	
gunzip *.gz tar -xvf *admin*.tar tar -xvf *db*.tar tar -xvf *mq*.tar tar -xvf *web*.tar tar -xvf *agent*.tar	Unzip it to C:₩qplat using an unzipper	After unzipping, admin and agent directorys should be created under the installation directory.

3. Set JAVA_HOME

JAVA_HOME is an environment variable that points to the root directory path of the JRE or JDK installed on the computer. For example, if the JRE is installed under **/usr/java8**, set **/usr/java8** as the JAVA_HOME value.

- **Linux and MS windows**

  (Amazon Correto Java 8) is built into the Linux and Windows installation files, so you can skip this process. However, if you want to use other JREs, you should go through this process.

- **Unix**

  This process is required.

Unix/Linux	MS Windows	Description
cd /qplat/admin/cust_bin	cd C:₩qplat₩admin₩cust_bin	
vi java.home.sh (Example) JAVA_HOME=/usr/java8	notepad java.home.cmd (Example) set JAVA_HOME=C:₩Program Files₩Java8₩jre	Open Java.home.sh (Windows java.home.cmd) file with a text editor. Erase the existing content. Then enter a new JAVA_HOME by referring to the (Example) on the left..

4. Execute the setup program

The setup program is located in **admin/bin**, and it name is **setup**.

Unix/Linix	MS Windows
cd /qplat/admin/bin	cd C:₩qplat₩admin₩bin
./setup <Options…>	setup <Options…>

You can specify options for the setup program. Even though there may seem to be many options, the usage is simple, and most come with default values, so there's no need to worry.

For example, if you want to use default values for all options, the command line is as follows.

Unix/Linix	Unix/Linix
./setup -default	setup -default

If you want to enter all options using a prompt method, the command line is as follows.

Unix/Linix	Unix/Linix
./setup -console	setup -console

If you only set values for some options and use default for the rest, just specify those options. For example, if you specify only the -**host** and **-port** options and set the rest as default, do it as follows.

Unix/Linux	MS Windows
./setup -host 192.168.171.3 -port 5678	setup -host 192.168.171.3 -port 5678

The full list of options is as follows. For the part labeled <arg> specify the value of the option.

Option	Desctiption
-h	Shows a brief explanation of how to use the setup program.
	<Note> Even if you run setup without any options or if an error occurs while running the setup program, a usage description will also be displayed.
-default	When used alone, all options use their default values. When used with the -console option, only options without default values will be prompted for values.
	<Note> If the -console option is not present, default values are used for omitted options, regardless of whether the -default option is present.
-console	It prompts you to enter a value for each option. A default value is provided for most options; if you wish to use that value, simply press the Enter key. When specified with the -default option, options with default values will not prompt for a value. When other options are specified with the -console option, those options will not prompt for a value.
-javahome <arg>	The absolute path to the JDK or JRE home directory. The default value is the value specified in the JAVA_HOME described earlier.
-prodfamily <arg>	Product type. The default value is **Qplat** .
-name <arg>	Name of this Admin Server. The default value is the hostname or IP of the current computer.
-host <arg>	The network IP that this Admin Server will listen to. This IP must be remotely accessible by the Qplat clients and agents. Therefore,

	localhost or 127.0.0.1 should not be specified. The default value is the IP mapped to the hostname of the current computer.
-port <arg>	TCP ports that this Admin Server will listen to. The default value is 8344.
-ssl <arg>	Whether to use SSL (actually TLS) for network communication (y/n). The default value is y .
-adminagent <arg>	Name of the Admin Agent for this Admin Server. The default value is the hostname or IP of the current computer.
-mqport <arg>	TCP listening port number of the messaging server. The default value is 16161.
-dbport <arg>	The TCP listening port number of the database server. The default value is 11527.
-webport <arg>	The TCP listening port number of the web server. The default value is 7070.

When the input is completed, the option values are reflected in various configuration files. If everything goes well, the message you see is as follows: If you see a message that contains an Error or Exception, check the error message, fix the problem, and execute the setup program again.

```
********* Processing command line ... ********
Admin Server java home file [Path=/qplat/admin/cust_bin/java.home.sh]..... OK
Admin Server config file [Path=/qplat/admin/conf/admin.prop]..... OK
Internal Messaging Server java home config file [Path=/qplat/admin/ext/mq/bin/java.home.sh]..... OK
Internal Messaging Server config file [Path=/qplat/admin/ext/mq/conf/activemq.xml]..... OK
Internal Database Server java home config file [Path=/qplat/admin/ext/db/bin/java.home.sh]..... OK
Internal DB Server config file [Path=/qplat/admin/ext/db/bin/derby.properties]..... OK
DB connection config file [Path=/qplat/admin/conf/db/db.prop]..... OK
Internal Web Server java home config file [Path=/qplat/admin/ext/web/bin/java.home.sh]..... OK
Internal Web Server config file [Path=/qplat/admin/ext/web/conf/server.xml]..... OK
qplat Client launching file [Path=/qplat/admin/ext/web/webapps/ROOT/candle.jnlp]..... OK
********* Setup Completed !!! *********
```

5. Start all processes

If the installation was successful, enter the startall command to start all the DB server, messaging server, and web server processes, including the Admin Server.

Unix/Linux	MS Windows
./startall	startall

2.2.2. Starting, shutting down, and checking the status of the Admin Server

The following describes how to start, shut down, and check the status of Admin Server and messaging server, web server, and DB server processes installed under it at once.

1. Open the CLI window and navigate to the admin/bin directory

Unix/Linux	MS Windows	Description
Terminal (Telnet/SSH) access	Open the DOS command window (Using administrator mode)	Log in with the OS account to start/stop the Admin Server
cd /qplat/admin/bin	cd C:₩qplat₩admin₩bin	

2. Run the state management command

Things to do	Unix/Linux	MS Windows	Description
Start	./startall	startall	Processes that have already started are marked as ALREADY RUNNING.
Shut down	./stopall	stopall	Processes that have already been terminated are marked as NOT RUNNING.
Status Check	./checkall	checkall	You can see the startup status of each process and the listening status of network ports.

There are a total of 5 processes created by the startall command, as shown below.

Process Name	Description
bin.candle.db	DB
bin.candle.mq	Messaging Server
bin.candle.web	Web Server
bin.lm_admin	Lifecycle Manager (LM): A shell script process that performs remote patching and restart of the Admin Server process
bin.candle_admin	Admin Server process

< caution>

In the case of Linux and Unix, all processes run as background processes. Therefore, closing the terminal window does not terminate the process.

On the other hand, in MS Windows, each one opens as a separate DOS window, and the process name is displayed as the title of the DOS window. If you close the DOS window, the process will

end, so be careful not to close or log out of the DOS window . In particular, if you have started the Admin Server as a remote desktop, do not log out, but only close the remote desktop session.

This is also the case with the Admin agent, which will be discussed below.

2.3. Admin agent installation and status management

2.3.1. Installing the Admin Agent

Once the Admin Server is started, install the Admin agent on the same computer. The installation command will look similar to the one for the Admin Server, but note that the job directory is named agent, not admin .

If you unzipped the agent*.tar.gz (.zip Windows) file during the Admin Server installation process, the agent directory should have already been created, so you can start with the JAVA_HOME setup process.

1. Set JAVA_HOME

   JAVA_HOME is an environment variable that points to the root directory path of the JRE or JDK installed on the computer. For example, if the JRE is installed under **/usr/java8**, set **/usr/java8** as the JAVA_HOME value.

   - **Linux and Windows**
     installation files include the JRE (Amazon Coretto Java 8), so you can skip this process. However, if you want to use any other JRE, you will need to set this up.
   - **Unix**
     This configuration is essential.

Unix/Linux	MS Windows	Remarks
cd /qplat/agent/cust_bin	cd C:₩qplat₩agent₩cust_bin	
vi java.home.sh (Example) JAVA_HOME=/usr/java8	notepad java.home.cmd (Example) set JAVA_HOME=C:₩Program Files₩Java8₩jre	Open Java.home.sh (Windows java.home.cmd) file with a text editor. Erase the existing content. Then enter a new JAVA_HOME by referring to the

		(example) on the left..

2. Execute the setup program

The setup program is located in **agent/bin**, and it name is **setup**.

Unix/Linux	MS Windows
cd /qplat/agent/bin	cd C:₩qplat₩agent₩bin
./setup -console	setup -console

You can specify options for the setup program. Even though there may seem to be many options, the usage is simple, and most come with default values, so there's no need to worry.

For example, if you want to use default values for all options except the required Admin Server IP, the command line is as follows.

Unix/Linux	MS Windows
./setup -adminhost 192.168.171.3	setup -adminhost 192.168.171.3

If you want to enter all options by prompting way, the command line is as follows.

Unix/Linux	MS Windows
./setup -console	setup -console

The full list of options is as follows. <arg> specify the value of the option.

Option	Description
-h	Shows a brief overview of how to use the setup program.
	<Note> Even if you run only setup without any options or if an error occurs while running the setup program, a usage description will still be displayed.
-default	When used with the -console option, only options without default values will be prompted for values.
	<Note> If the -console option is not present, default values are used for omitted options, regardless of whether the -default option is present.
-console	It prompts you to enter a value for each option. A default value is provided for most options; if you wish to use that value, simply

	press the Enter key. When specified with the -default option, options with default values will not prompt for a value. When other options are specified with the -console option, those options will not prompt for a value.
-javahome <arg>	The absolute path to the JDK or JRE home directory. The default value is the value specified in the JAVA_HOME described earlier.
-adminhost <arg>	IP of the Admin Server. Although the Admin Server is running on the same computer, do not specify loopback addresses like localhost or 127.0.0.1.
	<Note> This option does not have a default value, so you must specify it yourself.
-adminport <arg>	The TCP port number of the Admin Server. The default value is 8344 .
-adminssl <arg>	Whether the Admin Server uses SSL (y/n). The default value is y .
-host <arg>	Network IP that the Admin Agent will listen to, and it specifies the same value as the Admin server. The default value is the IP mapped to the hostname of the current computer.
-port <arg>	TCP port to listen to. The default value is 12000 .
-ssl <arg>	Whether to use SSL (actually TLS) for network communication (y/n). The default value is y.
-name <arg>	Name of this Admin Agent. The default value is the hostname or IP of the current computer.
	<Note> If you specify the Admin Agent's name by yourself when setting up the Admin Server, you must specify the value to here.

3. If the installation was successful, the message displayed is as follows: If you see a message containing an Error or Exception, check the error message and restart the setup program.

```
********* Processing command line ... ********
Agent Server java home file [Path=/qplat/agent/cust_bin/java.home.cmd]..... OK
Connecting to Admin Server..... OK
Adding Agent to Admin Server [Agent Name=test1.velosk.com]..... OK
Agent configuration file [Path=/qplat/agent/conf/agent.prop]..... OK
DB connection config file [Path=/qplat/agent/conf/db/db.prop]..... OK
SSL keystore with self signed certificate [Path=/qplat/agent/secu/ssl.jks]..... OK
SSL properties file [Path=/qplat/agent/secu/ssl.prop]..... OK
********* Setup Completed !!! *********
```

If the installation is successful, enter the start command as shown below to start the agent.

Unix/Linux	MS Windows
./startagent	startagent

2.3.2. Admin agent start, shutdown, and status check

Here's how to start, shut down, and check the Admin agent:

1. Open the CLI window and navigate to the agent/bin directory

Unix/Linux	MS Windows	Remarks
Terminal (Telnet/SSH) access	Open the DOS command window (Using administrator mode)	Log in with the OS account to start/stop the Admin agent
cd /qplat/agent/bin	cd C:₩qplat₩agent₩bin	

2. Executing Commands

Things to do	Unix/Linux	MS Windows	Remarks
Start	./startagent	startagent	If it has already started, it will show as ALREADY RUNNING.
Shut down	./stopagent	stopagent	If it has already been terminated, it will show as NOT RUNNING.
Status Check	./checkagent	checkagent	You can see the startup status of the process and the listening status of the network port.

There are a total of 2 processes created by the start command, as shown below.

Process Name	Description
bin.lm_agent	Lifecycle Manager (LM): A shell script process that performs remote patching and restart of the Admin agent process
bin.candle_agent	Admin agent Process

2.4. Auto-start of Admin Server and Admin Agent at boot

To have the Admin Server and Admin agent start automatically at boot, do the following:

- **Linux/Unix**

There are several methods, but using CronTab is the simplest.

Open the CronTab editor with the following command:

```
crontab -e
```

Add the following line at the end and save. (Do not forget that it must end with a new line)

```
@reboot sleep 10 && /qplat/admin/bin/startall && sleep 10 && /qplat/agent/bin/startagent
```

- **MS Windows**

There is no method to recommend yet. There is a way to start it using the Windows scheduler, but in this case, the status check or shutdown command will not work properly.

2.5. Installing and Running Client Programs (MS Windows)

2.5.1. Accessing the download page

Open your internet browser and type the following in the address bar:

```
http://Admin_server_IP:web_port
```

For example, if the Admin Server_IP is 192.168.172.3 and you have installed the web port by default, you can type http://192.168.171.3:7070.

2.5.2. Installing the Program

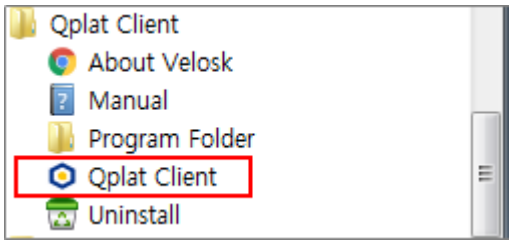
On the program installation page, click the [Download] button. The client installer will be downloaded. Once the download is complete, run the installer and follow the instructions of the installer to proceed with the installation.

2.5.3. Running the Program

Qplat can be done in two ways:

(Method 1) Find the Qplat Client icon on your desktop and double-click on it.

(Method 2) Select All Programs> Qplat Client > Qplat Client from the Programs menu in Windows



Wait for a while, and you will be prompted to enter the address of the update server as shown below. Enter the following here, check [Don't show any more] and press the [OK] button.

admin_server_IP:web_port

For example, if your admin server_IP is 192.168.172.3 and you installed the web port by default, you can type 192.168.171.3:7070.

2.5.4. Registering a Login Profile

Wait for a while, and the login window will pop up.

If the login profile registration window appears above this window, enter it as follows. Otherwise, press the [+] button next to the login profile combo box.

Title	Value	Remarks
Login Profile	Qplat	You can enter any value as the name of the profile.
Admin Server host	Admin Server IP	The IP of the Admin Server
Admin Server port	8344	TCP communication port on the Admin Server. The default is 8344.

SSL	Check	Whether the Admin Server port is SSL enabled. The default is check.
User Account (ID)	candleadm	candleadm is the default admin account. If another user wants to log in to Qplat, they should enter their Qplat user account ID here.

<Note>

- **Change and remove login profiles**
  Select the desired profile in the Login Profile combo box and press the [Change] or [Remove] button on the right.

2.5.5. Login, Log Out, and Relogin

The login window will appear automatically every time you start the client program. If you want to open the login window manually, please press the [Login] button in the main toolbar at the top of the program.

■ Log in

In the login window, enter your ID and password, and then press the [OK] button.

<Note>

After the initial installation, a default administrator ID named candleadm will be created, and the password will be the same as candleadm.

By default, all configurations in Qplat can only be made by users with Qplat Administrator privileges, and other users will not see the menus or screens required for the configurations.

■ Log out

Press the [Logout] button on the main toolbar.

■ Relogin

If you get an error due to a session timeout or you can't see part of the menu, you can log in again without logging out to continue what you were doing.

2.6. Selecting License Type

Qplat is currently available in 2 license types:

- **CE (Community Edition)**

  You have most of Qplat's features, and there is no limit to the number of agents. However, license purchase is required to use the following features:

  - Use of multi-factor authentication
  - Storage and viewing of Task Traces longer than one week
  - Register and activate more than 5 user accounts including administrators

  These conditions may vary depending on the versions and builds

- **R Series**

  There is no limit to the number of user accounts that can be used. However, the Admin Server and the agent must be purchased as many servers as they want to manage. Agents are priced differently depending on the application.

  Newly installed agents come with a three-month free usage period by default. However, this period may vary depending on the versions and builds.

The default license type is CE (Community Edition). Therefore, if you want to use the R Series license, please change the license type immediately after installation:

1. Run the Qplat client program and log in with your administrator ID. The default admin ID is candleadm.
2. In the Main Menu at the top of the program, select [Configurations > Administration Environment> Licensing Policy.] Change license type and click the [Save] button.

<Note>
For License & tech service purchase send email to : sales@velosk.com.

2.7. Specifying Proxy Agents

1. Run the Qplat client program and log in with your administrator ID. The default admin ID is candleadm.
2. In the Main Menu at the top of the program, select Configuration > Administration Environment > Agent > Proxy agent.
3. In the Proxy agent configurations window, press the [+] button on the right and select the agent you want to use as the proxy agent.

> <Note>
> Normally, the Admin agent is designated as the default proxy agent, so select it first. And if load balancing and failover are required between proxy agents, add more real agents later.

4. Make sure that the [Activated] checkbox is checked, and if not, check it.
5. Click the [Save] button to save the configurations.
6. Due to the caching mechanism of the Qplat client, it can take up to 5 minutes for the new configurations to take effect. Therefore, if you want to reflect it immediately, restart the Qplat client program.

2.8. Real Agent Installation and Management

To fully use Qplat, you need to install a real agents on the target servers or set up virtual agents.

2.8.1. Installation

A real agent is an agent that is actually installed on the managed server

1. Open the CLI window

Unix/Linux	MS Windows	Remarks
Terminal (Telnet/SSH) access	Open the DOS command	Log in with the OS account you

	window (Using administrator mode)	want to install/start the product on

2. Upload the installation file and unzip it

Unix/Linux	MS Windows	Remarks
mkdir /qplat	mkdir C:₩qplat	
/qplat to upload the installation file to	Upload the installation file to C:₩qplat	For Linux or Unix, upload a file with a tar.gz extension, and for Windows, upload a file with a zip extension. ● candle_[version]_agent. [tar.gz or zip]
cd /qplat	cd C:₩qplat	
gunzip *.gz tar -xvf *agent*.tar	Using the zip program, unzip it to C:₩qplat	After unzipping, an agent directory should be created under the installation directory.

2. Set JAVA_HOME

JAVA_HOME is an environment variable that points to the root directory path of the JRE or JDK installed on the computer. For example, if the JRE is installed under **/usr/java8**, set **/usr/java8** as the JAVA_HOME value.

- **Linux and Windows**
  installation files include the JRE (Amazon Coretto Java 8), so you can skip this process. However, if you want to use any other JRE, you need to set this up.
- **Unix**
  This configuration is essential.

Unix/Linux	MS Windows	Remarks
cd /qplat/agent/cust_bin	cd C:₩qplat₩agent₩cust_bin	
vi java.home.sh (Example) JAVA_HOME=/usr/java8	notepad java.home.cmd (Example) set JAVA_HOME=C:₩Program Files₩Java8₩jre	Open Java.home.sh (Windows java.home.cmd) file with a text editor. Erase the existing content. Then enter a new

		JAVA_HOME by referring to the (example) on the left..

3. Execute the setup program

The setup program is located in **agent/bin**, and it name is **setup**.

Unix/Linux	MS Windows
cd /qplat/agent/bin	cd C:₩qplat₩agent₩bin
./setup -console	setup -console

You can specify options for the setup program. Even though there may seem to be many options, the usage is simple, and most come with default values, so there's no need to worry.

For example, if you want to use default values for all options except the required Admin Server IP, the command line is as follows.

Unix/Linux	MS Windows
./setup -adminhost 192.168.171.3	setup -adminhost 192.168.171.3

If you want to enter all options by prompting way, the command line is as follows.

Unix/Linux	MS Windows
./setup -console	setup -console

The full list of options is as follows. <arg> specify the value of the option.

Option	Description
-h	Shows a brief overview of how to use the setup program.
	<Note> Even if you run only setup without any options or if an error occurs while running the setup program, a usage description will still be displayed.
-default	When used with the -console option, only options without default values will be prompted for values.
	<Note> If the -console option is not present, default values are used for omitted options, regardless of whether the -default option is present.

-console	It prompts you to enter a value for each option. A default value is provided for most options; if you wish to use that value, simply press the Enter key. When specified with the -default option, options with default values will not prompt for a value. When other options are specified with the -console option, those options will not prompt for a value.
-javahome <arg>	The absolute path to the JDK or JRE home directory. The default value is the value specified in the JAVA_HOME described earlier.
-adminhost <arg>	IP of the Admin Server. <Note> This option does not have a default value, so you must specify it yourself.
-adminport <arg>	The TCP port number of the Admin Server. The default value is 8344 .
-adminssl <arg>	Whether the Admin Server uses SSL (y/n). The default value is y .
-host <arg>	Network IP that this agent will listen to. Since it must be accessible from the Admin Sever and Proxy Servers, you should not specify loopback addresses like localhost or 127.0.0.1. The default value is the IP mapped to the hostname of the current computer.
-port <arg>	TCP port to listen to. The default value is 12000 .
-ssl <arg>	Whether to use SSL (actually TLS) for network communication (y/n). The default value is y.
-name <arg>	Name of this agent. The default value is the hostname or IP of the current computer.

4. Run the setup program

Unix/Linux	MS Windows
cd /qplat/agent/bin	cd C:₩qplat₩agent₩bin
./setup -console	setup -console

Once the setup program runs successfully, you can follow each step as the program instructs. Most steps will provide a default value, and if you want to use the default value as it is, you can press ENTER Key without entering any values.

Prompt	Things to do
-javahome = JAVA_HOME. JDK or JRE's home directory.	If you have specified a JAVA_HOME in your java.home.sh or java.home.cmd file, this path will show the value. Check if the route you want is correct, and if it does, hit enter. If it is not the route you want, enter a new JRE route.
-name = Agent Name. Name of this agent.	Enter a name for the agent.
-host = Agent Host. IP of agent listener. Don't use localhost or 127.0.0.1.	This is the network IP that the agent will listen to. Please specify an IP that can communicate remotely from the Admin Server.
-port = Agent Port. Port number of agent listener.	Enter the TCP port that the agent will listen to. The default value is 12000.
-ssl = Agent SSL. Use SSL for agent TCP listener	Specifies whether to use SSL (actually TLS) for communication with the agent. The default is Y.
[MANDATORY] -adminhost = Admin Server host. IP of admin server.	The IP of the Admin Server. Unlike the other steps, this one does not provide a default value. Therefore, if you just enter without entering a value, you will not move on to the next step.
-adminport = Admin Server Port. Port number of admin server.	Enter the port number of the Admin Server. The default is 8344.
-adminssl = Admin SSL. Does admin server TCP listener use SSL?	Enter whether the TCP port of the Admin Server uses SSL. The default is Y.

If the installation was successful, the message displayed is as follows: If you see a message containing an Error or Exception, check the error message and restart the setup program.

```
********* Processing command line ... ********
Agent Server java home file [Path=/qplat/agent/cust_bin/java.home.cmd]..... OK
Connecting to Admin Server..... OKAdding Agent to Admin Server [Agent Name=test1.velosk.com]..... OK
Agent configuration file [Path=/qplat/agent/conf/agent.prop]..... OK
DB connection config file [Path=/qplat/agent/conf/db/db.prop]..... OK
SSL keystore with self signed certificate [Path=/qplat/agent/secu/ssl.jks]..... OK
SSL properties file [Path=/qplat/agent/secu/ssl.prop]..... OK
********* Setup Completed !!! *********
```

<Note> **When a duplicate message appears and cannot be reinstalled.**

If you see the error message "Agent name is duplicated", it means that the agent with the same name is already registered on the Admin Server. Therefore, restart the setup program and give it a different name.
However, if there was a problem during the previous setup process, so only the name is registered on the Admin Server without the agent being properly installed, please remove the agent with the duplicate name from the management server and run the setup program again.

- Open the Qplat client program and log in as an administrator.
- Select the agent in the Agent Explorer on the left side of the screen and right-click on it.
- Select Agent Management > Remove Agent.

If the installation is successful, enter the start command as shown below to start the agent.

Unix/Linux	MS Windows
./startagent	startagent

2.8.2. Start, Shut Down, and Status Checks

1. Open the CLI window and go to the agent/bin directory.

Unix/Linux	MS Windows	Remarks
Terminal (Telnet/SSH) access	Open the DOS command window (Using administrator mode)	Log in with the OS account to start/stop the agent
cd /qplat/agent/bin	cd C:₩qplat₩agent₩bin	

2. Run the command

Things to do	Unix/Linux	MS Windows	Remarks
Start	./startagent	startagent	If it has already started, it will show as ALREADY RUNNING.
Shutdown	./stopagent	stopagent	If it has already been terminated, it will show as NOT RUNNING.
Status Check	./checkagent	checkagent	You can see the startup status of the process

			and the listening status of the network port.

There are a total of 2 processes created by the start command, as shown below.

Process Name	Description
bin.lm_agent	Lifecycle Manager (LM): A shell script process that performs remote patching and restart of the real agent process
bin.candle_agent	Real Agent Process

< caution>

For Linux and Unix, the real agent runs as a background process. Therefore, logging out or closing a terminal window after the process has run does not terminate the process.

On the other hand, in the case of MS Windows, if you close the CLI window or log out of Windows after starting the real agent process, the agent process will end. Therefore , please be careful not to log out. If you started it from a remote desktop, don't log out and just close the remote desktop session.

If you find this process troublesome, please refer to the chapter [Automatically start the real agent at boot] below to register the agent as a Windows service. This will not shut down the agent when you log out, and you can also get the effect of the agent automatically starting at boot.

2.8.3. Real Agent Auto-Start at Boot

To have the Real Agent start automatically at boot time:

- **Linux/Unix**

There are several methods, but using CronTab is the simplest.

Open the CronTab editor with the following command:

```
crontab -e
```

Add the following line at the end and save. (Do not forget that it must end with a new line)

```
@reboot sleep 10 && /qplat/agent/bin/startagent
```

- **MS Windows**

Register the Real Agent as a Windows service by the following method. The real agents registered as Windows services run as background processes, and logging out from remote desktop does not terminate the process.

Things to do	Instructions	Remarks
Move to the agent/bin directory	cd C:₩qplat₩agent₩bin	
Shut down the agent if it's running	stopagent	● If the agent is already running, you need to shut it down first
Register for the service	wsinstall	

After successful registration, you can manage the status of the service with the startagent, stopagent, checkagent commands.

There are a total of 2 Windows services that are registered through this process, and their names are as follows:

- **CandleAgent.[Agent Name].[Port Number]**
- **CandleAgent.[Agent Name].[Port Number]. LM**

In addition, the process for deregistering a real agent registered with Windows services is as follows: If you need to delete the installed real agent, please unregister the service first and then delete the agent.

Things to do	Instructions	Remarks
Move to the agent/bin directory	cd C:₩qplat₩agent₩bin	
Shut down the agent if it's running	stopagent	● If the agent is already running, you need to shut it down first
remove from the service	wsremove	

2.9. Virtual Agent Configuration and Management

Unlike real agents, virtual agents are not actually installed on the target server. Instead, the proxy agent needs to be able to access the target server using standard protocols such as SSH, SFTP, TELNET, FTP, etc., so you need to set up the necessary information for this.

<Note>

For real agents, this process is not necessary.

However, if [Execute by Terminal] option is checked for the command line execution job, even if the target agent is a real agent, you must configure the terminal connection settings by referring to [2.9.2. Specifying Communication Protocols] through [2.9.5. Registering OS Account Credentials] in this chapter.

To set up virtual agents, run your Qplat client program and log in with administrator ID. Then, from the Main Menu at the top of the program, select Configuration > Administration Environment to open the Administration Environment window.

2.9.1 Adding Virtual Agents

1. In the Administration Environment window, select Agent > Virtual Agent.
2. Press the [+] button on the top toolbar, enter the following information, and click the [OK] button.

Title	Description
(*) Agent Name	The unique name of this agent. It is convenient to use the hostname of the target server.
(*) IP	The IP of the target server. This IP must be remotely accessible from the Admin Server and relay server.
(*) OS	OS type of target server

3. Repeat the above steps to add all the virtual agents you want
4. Note that you can change and delete the desired agent from the table and then press the [Change] and [Delete] buttons on the toolbar.

2.9.2. Specifying Communication Protocols

1. In the Administration Environment window, choose [Agent > Communication Protocol]
2. Select one or more agents, and then click the [Update] or [Batch Update] button in the top toolbar
3. Enter the following information, and then click the [OK] button.

Title	Description
Shell Access/Port	The protocol and port number to use to execute command lines. The protocol chooses between SSH and TELNET. The default is SSH/22.
File Transfer/Port	If the shell access protocol is SSH, the file transfer protocol is automatically set to SFTP, and the port number is also determined to be the same port as the shell access port. On the other hand, if the shell access protocol is TELNET, you can choose between FTP and SFTP as the file transfer protocol.
Anonymous access	The Qplat client has a built-in remote terminal emulator. This configuration is required when using this function, and if this configuration is set to [Disallow], you can log in only with the OS account information preset in Qplat. On the other hand, if you set this configuration to [Allow], users can log in by entering their own OS account credentials for the target server. The default is Disallow.
Access Route	This is also a necessary setup when using the built-in remote terminal emulator. You can choose one of the two values below. ● DIRECT : Connect directly from the Qplat client program to the target server without going through the proxy agent. ● THROUGH_PROXY_AGENT : Remote access is made through the proxy agent. The default is THROUGH_PROXY_AGENT.

4. Click the [Save] button at the bottom.

2.9.3. Adding OS Accounts

1. In the Administration Environment window, select Securities > Account > OS Account.

2. Choose an agent
3. Click the Account > [Add] button in the bottom toolbar.
4. Enter the name of the OS account you want to use through the agent. If you want to add multiple accounts at once, separate each name with a new line (ENTER Key). Then press the [OK] button.

2.9.4. Assigning a Default OS Account

The default OS account acts like the process owner of a real agent, and when a user wants to do something, it is used unless they specifically specify an OS account. Qplat also uses this account to read the system information required to operate the virtual agent.

If a virtual agent has only one OS account registered, you do not need to specify a default account. However, if you have multiple registered OS accounts, you must explicitly specify one of them as the default account. Here's how to specify it:

1. At the top of the OS Accounts table, find and select the account you want in the [Default] combo box. If the combo box does not contain the desired account, add it to the OS account table and click the combo box.
2. Click the [Save] button on the right side of the combo box.

2.9.5. Registering OS Account Credentials

To connect to the actual target server with the OS account you added, you need to register your password or SSH key information.

If you have registered both, the SSH key will be used first.

2.9.5.1. Password Registration

If you know passwords to log in to the OS accounts, do like followings.

1. Select the OS account to register the password for.
2. Click Password > [Update] button in the toolbar at the bottom.
3. Enter the current password for that OS account.

4. Click the [Check] button to verify the entered password.
5. Click the [OK] button.

Of course, if the password of the OS account changes, you will need to go through the above process to re-register the password.

2.9.5.2. SSH Key Registration

Depending on the situation, please choose one of the methods below.

- **(Method 1)** If an OS account has an SSH key set and you have the private key of that key pair, register it in the Qplat keystore as follows.
  1. Select the OS account to register the SSH private key.
  2. Click the SSH Key > [Upload Private Key] button in the toolbar at the bottom.
  3. Select the private key file and click the [OK] button.

- **(Method 2)** On the other hand, if an OS account does not yet have an SSH key set up or does not have a private key, use the following method: This will create a new SSH key pair internally in Qplat, the private key will be stored to Qplat's keystore, and the public key will be sent to the target server.

  If the OS account or root account was pre-registered with Qplat with the correct password or SSH key, the process of sending the public key to the target server will be done automatically using this information. If not, you will be asked for the password for the OS account before sending the public key.

  1. Select the OS account to create key.
  2. Click the SSH key > [Update] button in the toolbar at the bottom.

2.9.6. Batch Registration and Change of OS Account configurations

This feature allows you to add and change multiple OS account configurations in multiple servers

at once.

1. Click the [Batch] tab at the top of the OS account configurations screen.
2. Click the [Batch Add/Update] button at the bottom of the screen.

In the center of the batch add/update window is a table for entering OS account information. After editing this table, press the [Start] button to reflect what you entered in Qplat.

Here are some tips for entering each column in the table:

Title	Description
Agent	Agent Name
Accounts	Account Name
SuperUser (Y/N)	If you are a superuser, enter Y or N
Default (Y/N)	If it's a default account, enter Y, or N
Password	Password of the account
Installing SSH Keys (Y/N)	Whether to create and install a new SSH key pair for this account. To install it, type Y, or N. If Y is specified, one of the following conditions must be met for the generated public key to be correctly transmitted and installed on the target server: ■ Existing super users for this agent are already registered. ■ This account already has the correct password or SSH key assigned to it ■ You have entered the superuser and password for this agent in the current table ■ Password for this account is specified in the current table

If necessary, check the [Overwrite settings for existing ones] option before pressing the [Start] button. If this option is checked, if there are accounts with the same name as the one you currently entered, change the configurations of that account to the one entered in the table. If you don't check it, existing accounts will be skipped.

There are two ways to add what you want to the table. You can use one of the two methods, or you can use a mix of the two methods as needed.

■ **Edit the table yourself**

1. Click the [+] button on the right side of the table to add a blank row.
2. You can double-click on a cell in an added row to edit the value of that cell.
3. You can also copy existing rows to create a new ones. To do this, select one or more rows you want to copy, and then press Ctrl+C / Ctrl+V on your keyboard. Then double-click on the cell you want to change and enter a new value.

■ **Use the CSV editor to edit and paste it into the OS account information table**

1. Click the [Copy table header to clipboard] button at the top of the table.
2. Launches an editor that allows CSV editing. It would be nice if it was a convenient editor like Microsoft Excel, but a simple text editor is also fine.
3. In the CSV editor, press the Ctrl+V key to paste the title on the first line.
4. Add one row per OS account. If you use simple text editor, each column should be separated by a tab.
5. When you're done editing the CSV, select the rest of the rows in the editor, except for the title row, and press Ctrl+C key to copy them to the clipboard.
6. Return to the [Batch Add/Change] window of the Qplat client, click the table and press the Ctrl+V button to paste the contents of the clipboard into the table.

2.9.7. Managing OS Account Credentials

2.9.7.1. Viewing Currently Registered Passwords

After selecting the OS account for which you want to view passwords, you can view the currently registered password values by clicking the Password > [View] button in the toolbar at the bottom.

2.9.7.2. Changing the actual password

After selecting the OS account for which you want to change the password, click the Password > [Update] button. If you check the [Apply to OS too] box in this window, the actual password for the OS account will be changed to the newly entered value, and this value will also be registered in Qplat.

However, in order to use this feature, the account or superuser account must be registered in advance with the correct credentials.

2.9.7.3. SSH Key Downloads

1. Select one or more OS accounts.
2. Click SSH Key > [Download Public Key] or [Download Privat Key] button.

2.9.7.4. Changing SSH Key Pairs

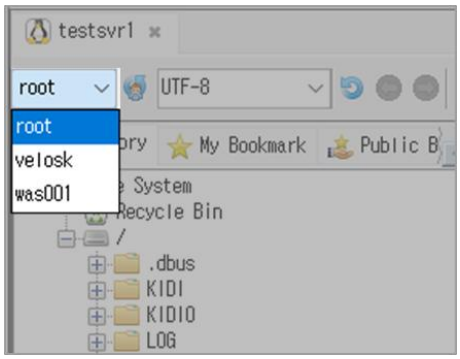
Changing an existing key pair is the same as registering a new key pair.

1. Select the OS account you want to change the SSH key pair for
2. Click the SSH Key > [Update] button in the toolbar at the bottom

3. Select OS Account Permissions for File Access

Qplat users can conveniently browse, search, lookup, change, or delete files on each server without having to log in to individual servers.

However, in order to do this, you need to select the OS account to perform the action. For example, Explorer has the following OS account selection combobox: Here, the real work is done with the permissions of the selected OS account.



However, this configuration is not required in the following cases, as the agent can only exercise one OS account privilege.

- When the agent type is a real agent and the process owner of the agent is not a superuser

account (non-root account)

- If the agent type is Virtual Agent and you have only one account registered in the Security > Accounts > OS Accounts menu in the Administration Environment>

The list of OS accounts that users can select must be specified by the administrator in advance through the Administration Environment> Security > Roles > Mapping Permissions to Roles menu. As a special user, Qplat administrators can use most functions without specifying permissions, but they must specify OS account permissions in advance, just like regular users. Here's how:

1. Run the Qplat client and select the Main Menu > Administration Environment> Security > Role > Mapping Permissions to Roles menu.
2. In the Upper-left corner, select Administrator from the Roles table.
3. In the Permissions tree in the lower left, select [Server and OS account].
4. Select one or more servers from the [OS account] table on the right, and click the [Add OS Accounts] button.
5. Enter the name of the OS account you want to access. If you want to enter multiple accounts at once, separate each with a new line (ENTER Key). When you're finished, click [OK]
6. If you have added multiple accounts to an agent, select the one you use most frequently and designate it as the default account. This way, in the future, when you open File Explorer, Viewer, Editor, etc., the account will be selected by default in the OS Account Combo box.

   To set it up, select one or more agents to assign the default account to and then press the [Set Default] button.

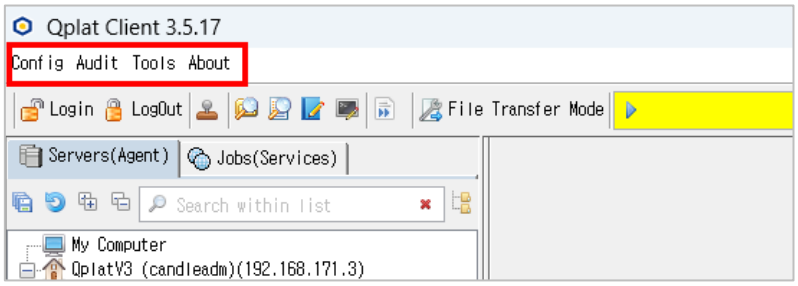
   The default account specified here may be different from the default account specified on the virtual agent's OS account registration screen. If these two default accounts are different, the default account specified here will be applied first.
7. When the configurations are complete, press the [Apply] button and then the [Save] button.

4. Qplat Client Program Basic Usage

The basic usage of the Qplat client is as follows:

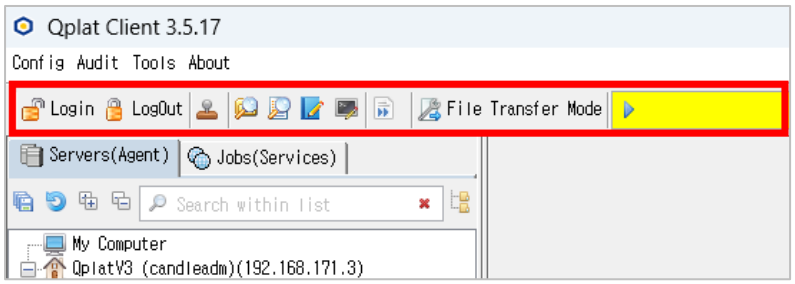
4.1. Main Menu

It's located at the top of the client program.



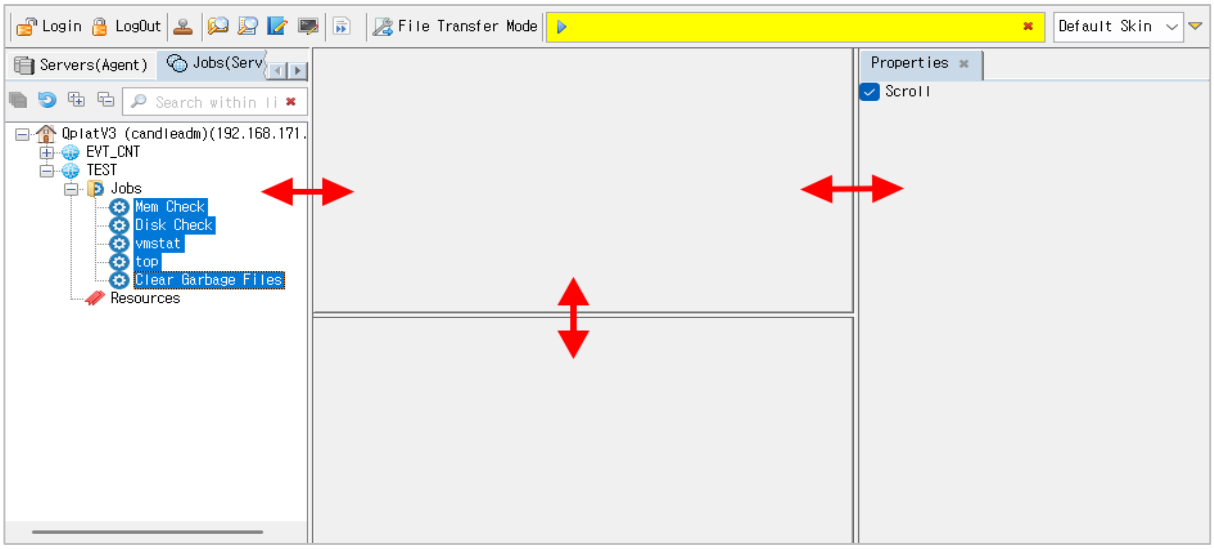
4.2. Main Toolbar

This is the toolbar located just below the Main Menu.



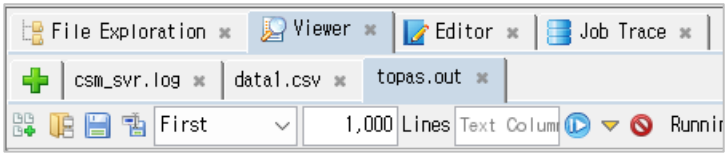
4.3. Changing the size (ratio) of the split window

If you look at the screen of the Qplat client program, you can see that several windows are divided into top, bottom, left, and right. You can drag the borders of each window to change the size (ratio) of each window.



4.4. Tabs

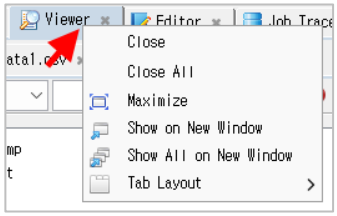
Qplat's screen is basically a multi-tabbed structure, and you can click the tab to navigate to the desired window.



Double-click a tab to maximize the view of the window, and double-click again to return to its original size.

If a tab has an X button, press it to close it.

Right-clicking on a tab will reveal additional menus, such as separating tabs into new windows.



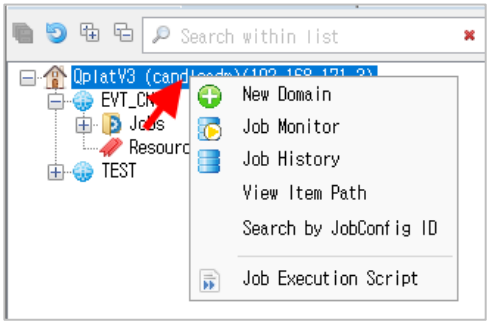
4.5. Usage Tips

Qplat automatically displays usage tip windows in various places so that you can learn the basics without a manual. Pressing the X button in the upper right corner of the tip will close the window, but it will reopen the next time you open the screen. Therefore, if you no longer wish to see a specific usage tip window, please check the [Do not show again] box at the bottom of the tip.

In addition, you can view a brief description (tooltip) at any time by hovering your mouse over buttons, table headers, input boxes, etc. on the screen for about 1 second.

4.6. Pop-up menu

If there is no separate toolbar, or if the desired function is not available on the toolbar even if there is one, right-clicking the mouse will display the available menu.



4.7. Skins

You can select the program's skin, such as White, Black, or System Default, from the skin selection box on the far right of the main toolbar. If you select a new skin, you must restart the program for it to be fully applied.

4.8. Logging in again after a session timeout

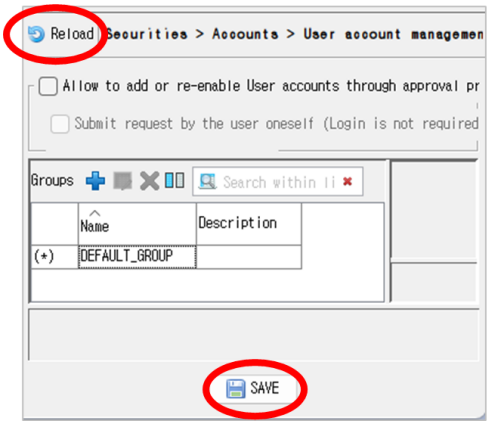
If you do not perform any action for a period specified by the administrator after logging in, the session times out. Subsequently, when you attempt to perform a new action, a message window will appear indicating that you are not logged in or that the session has expired. If you click the [Re-login] button in this message window to log in again, you can resume your previous work.

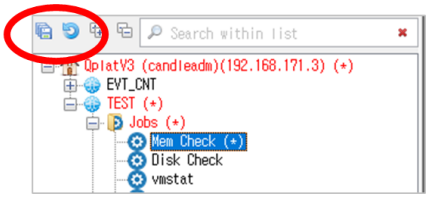
If you log out without doing so, all active screens will be closed.

[Caution]
If you need to log in with the same ID as the timed out user, and if you don't, you may get an error during the operation.

4.9. Saving Configurations

If you set something, if there is a [Save] button on the screen, you usually have to press the button to save the changed configurations to the server. If you want to ignore the changed configurations, press the [Reload] button in the upper left corner instead of [Save].





On the other hand, if there is no [Save] button, the configurations will be saved immediately after the change.

In either case, it can take up to 1 minutes for the saved configurations to fully apply to all agents and users. If you apply

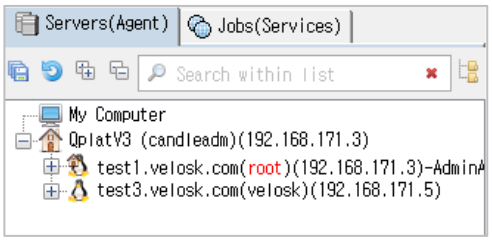
4.10. Next steps

If you are interested in configuring and executing predefined jobs. jump to here .

Otherwise, if you want to know how to manage files, such as browsing, viewing, editing, and transferring, please proceed to the next chapter.

5. Agent Explorer

When you log in to the Qplat client, a list of accessible agents appears in the Agents tab on the left side of the screen.



- My Computer at the top indicates your current PC.
- Just below that, an icon will appear, indicating the currently logged in Admin Server, name, IP, and the ID of the currently logged in user.
- Under the Admin Server icon, a list of agents registered with that Admin Server is listed.

Select one or more icons and right-click to bring up the available menu.

5.1. Viewing Admin Server and agent information

A quick hover over the Admin Server or agent icon will bring up a tooltip where you can see basic information such as version and process owner. For real agents, if the status is unreachable, the status information will appear as UNKNOWN, and the icon will show an X.

If there is a gray square band around the icon, it is a virtual agent.

Real Agent Virtual Agent

5.2. Grouping agent lists

The array structure of the agents shown in the Agent Explorer is basically a tree. In the tree view type, agents can be grouped together using folders. Here's how:

1. Select Admin Server, right-click > choose [New Folder]. (If you want to create a child folder under an existing folder, you can select the existing folder instead of the Admin Server.)
2. After entering the folder name, press the [OK] button to create a new folder.
3. Select one or more agents and drag them with your mouse to drop them into the folder. Or you can cut (Ctrl-X) and then paste (Ctrl-V). The selected agents are then taken to that folder.

Note that if you want to change the order of agents or folders, you can do the same by dragging-dropping.

Once all the changes are made, press the [Save] button at the top. If you want to cancel the changes, press the [Reload] button next to the save button.

5.3. Changing the View Type

By clicking the rightmost button in the top toolbar of Agent Explorer, you can change the type in which the agent list is displayed to Tree or List. The default type is [Tree].

If you select the [List] type, you can select one of the [Name, OS, Status] as the child menu.

- Name: Arranged in ascending order based on name
- OS: Arranged based on Operating System type
- Status: Sort the agent's state based on its availability. The order is [Connectable Real Agents > Unconnectable Real Agents > Virtual Agents]. Virtual agents are simply arranged in alphabetical order because Agent Explorer doesn't show availability.

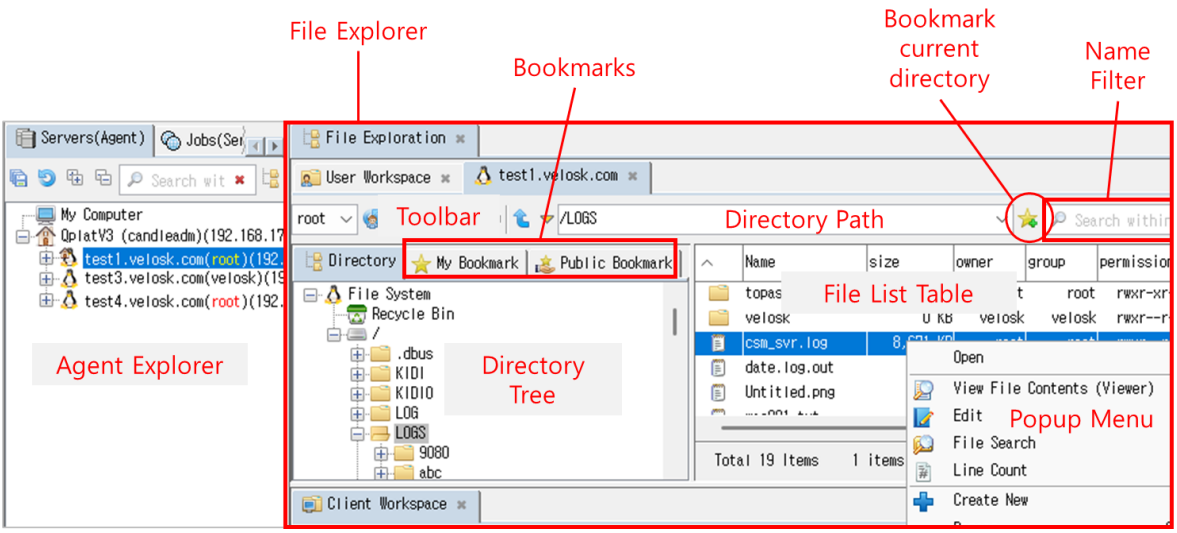
5.4. Finding Agent

If you enter an agent's name or part of their IP in the search field at the top of Agent Explorer, the agent will be displayed brightly. You can find the tree folder in the same way.

6. File Explorer

Select one or more agents in Agent Explorer, right-click on them, and select [File Explorer] from the

menu to open the File Explorer window. (Or, if you only selected one agent, you can just double-click it.)



If you want to browse My PC, double-click [My Computer] in Agent Explorer.

6.1. Go to the directory you want

Expand the [Directory] tree on the left side of File Explorer and select the directory you want. This will show you a list of files and directories within that directory on the right. You can double-click on a directory in this list to navigate into it.

At the top of the explorer window, there is a text field that shows the full path to the current directory. If you know the full path to the target directory, enter it here and press the ENTER key. You can then immediately navigate to that directory.

When you double-click a file, if the target system is a server, a text file viewer window will open, and if the target system is your PC, the connected program will be executed.

Select one or more files or directories from the table and right-click on it to bring up a pop-up menu where you can perform the desired action.

6.2. Filtering the file list

You can filter the list of files within File Explorer by typing part of the file name in the search field on the far right of the Explorer window (case-insensitive).

If the number of files displayed in the Explorer table is too large, this feature makes it easier to find the file you are looking for. The input value is initialized each time you move the directory.

6.3. Bookmarks (favorites)

You can bookmark the current directory by clicking the [Bookmark] button on the right side of the current directory path field at the top of File Explorer.

The created bookmarks are saved in the [My Bookmark] tab, and you can double-click on the desired bookmark to go directly to its directory.

To set the bookmarks in the Bookmarks tab, select one or more bookmarks you want and right-click. This will bring up a menu where you can manage your bookmarks.

Bookmarks can also be managed in a folder structure, just like favorites in an internet browser. You can also copy and move between folders using the copy/cut/paste (Ctrl+C / Ctrl+X / Ctrl+V) function or drag-drop.

Right next to the [My Bookmark] tab is the [Public Bookmark] tab. Bookmarks in the My Bookmark tab can only be used and edited by the person who registered them, whereas bookmarks in the Public Bookmark tab can be used and edited by anyone with access to the corresponding agent.

You can also use Copy/Cut/Paste (Ctrl+C / Ctrl+X / Ctrl+V) to copy and move bookmarks between My Bookmarks tabs and Public Bookmarks tabs, or between bookmarks tabs of different agents.

6.4. Navigating inside the archive file

Select a archive file, such as tar, zip, gz, tar.gz, etc., right-click and select the [Archive File Explorer] menu to open Archive File Explorer.

Archive File Explorer is a function that allows you to explore the internal structure of a archive file without unzipping it, and you can immediately search or download the contents of the desired file using the text file viewer.

This feature does not work with virtual agents.

6.5. Copying, moving, downloading, uploading, and transferring files and

directories between servers

Copying and moving files and directories, as well as uploading, downloading, and transferring them between servers can be done simply by using the [Copy/Cut/Paste] menu between each window in File Explorer, using the [Ctrl+C/Ctrl+X/Ctrl+V] keys, or [Mouse Drag/Drop].

Here's how:

1. In Agent Explorer, double-click the origin-side agent to open the source-side File Explorer. If you want to upload a file from your PC to a server, double-click the [My Computer] icon at the top of Agent Explorer.

   Navigate to the location of the file or directory you want to copy, select one or more files or directories to copy, right-click the mouse, and tap [Copy] from the menu. Of course, you can press Ctrl+C on your keyboard instead of the menu.

   If you want to move instead of copying, select [Cut] from the menu or press Ctrl+X from the menu.

2. In Agent Explorer, double-click the target-side agent to open the target-side File Explorer. If you want to download a file from the server to your PC, double-click the [My Computer] icon at the top of Agent Explorer.

   Of course, if the target side is on the same host as the origin side, you can use the already open file explorer without opening a new file explorer.

   After going to the target directory in File Explorer, right-click the mouse and click [Paste] from the menu. Of course, you can also press Ctrl+V on your keyboard instead of the menu.

3. Once the file transfer starts, a transfer status table will appear at the bottom of the screen, and you can press the [Stop] button to stop the transfer if necessary.

4. If you don't want to use the keyboard, you can copy and move by simply dragging and dropping the mouse, and in this case, a dialog will appear asking if you want to copy/move.

5. While one transfer is being performed, you can also start another transfer job.

6.6. Transfering Files and Directories to Multiple Servers At Once

This feature allows you to transfer one or more files or directories to multiple servers at once.

1. Select one or more source files or directories to transfer in File Explorer, right-click. Choose [Distribute] menu.

2. Enter the conditions required for the transfer, and then press the [OK] button.

- **Transfer mode**

  You can choose between ASCII and Binary. The default is Binary.

  ASCII mode converts and transmits newline characters in text files according to the receiving OS. Binary mode, on the other hand, transfers files without any conversion.

- **Source files and directories**

  Specify the source files and directories. File Explorer automatically populates the source file and directory information you select, so you don't have to enter it separately.

  But, If you want to change the value, please do the following:.

  - **Paths**

    Each path must be an absolute path. If you specify multiple paths, each path should be separated by a new line (ENTER key).

    You can use a wildcard expression for the last token in the path, that is, the name part. For example, if you type /app/db/*.txt, it means that all files with a .txt extension just below the /app/db folder.

  - **OS Account**

    The OS account that will read the file. For real agents, omitting this value uses the owner privilege of the agent process. For virtual agents, if this value is omitted, the default OS account is used.

  - **Path Characterset**

    Specify when the name or path of a file contains multiple languages.

    This condition is valid only for virtual agents.

- **Target Directories**

Specify the destination to which you want to transfer the file. It is in the form of a table and can specify one or more.

To add target directories, press the [+] button on the right side of the table and input the following items:

- **(*) Agent**

  Select one or more agents on the target server.

- **(*) Path**

  Specifies the absolute path to the target directory.

  If you specify multiple paths, each path is separated by a new line (ENTER).

- **OS Account**

  The OS account to write the file. For real agents, omitting this value uses the owner privilege of the agent process. For virtual agents, if this value is omitted, the default OS account is used.

- **Path Characterset**

  Specify when the name or path of a file contains multiple languages.

  This condition is valid only for virtual agents..

<Note> Reuse target directory path inputs

You can save a collection of frequently used target directories as [Path Group] and reuse them with just a double click. Here's how to save a path group:

1. Click the [Add Rows from Path Group] button on the right side of the target directory table.
2. In the Path Group tree, select [Path Groups], and then right-click > select [New Path Groups].
3. Enter a name of the path group, and then press the [+] button.
4. Enter the required information, such as the agents and directory absolute paths, and then click the [OK] button.

To enter the configurations from a path group to the [Target Directories] table, do the following:

1. Click [Add Rows from Path Group] button on the right side of the target directories table.
2. Double-click the desired path group.
3. Close the path group window by clicking X button.

- **Overwrite**

Determine whether a file with the same name in the target directory will be overwritten or not.

- **Overwrite All**

  If there is a file with the same name, it will be overwritten unconditionally.

- **Overwrite if**

  Overwrites files only if the specified conditions are met.

  - **Size is different**
    Overwrites when the original and target files are of different sizes.
  - **Source is Newer**
    Overwrites when the source file's last update time is newer.
  - **Target is Newer**
    Overwrites when the target file's last update time is newer.

If you don't want to overwrite, select [Overwrite if] and uncheck all the subsequent options.

- **Parallel Transfer Thread Count**

If there are multiple target agents or directories, they can be transferred in parallel, which is the maximum number of concurrent transfer threads used. The default value is 5, and the maximum number is limited to 64 to avoid overload. If you specify this value of 1 , it means serial or sequential.

Since a large number of parallel transfer is not necessarily a good thing, it is recommended to specify the appropriate number by considering the resource workload

like network bandwidth, disk speed, CPU etc.

■ **Saving and Reusing Configurations as a File**

If you need to use the same configuration multiple times, you can save the configurations as a configuration file and reuse it. Here's how to save it:

1. Click the [Save configurations to file] button at the top of the File Distribution window. Then the User Workspace Explorer window opens.
2. After entering a suitable file name, click the [Save] button. The file extension is .xsfd, and if you just enter the name, the extension will be automatically added.

To load the saved file:

1. In the Qplat client, select [Tool > File Distributor] from the Main Menu.
2. Clicking the [Open configuration file] button in the toolbar at the top of the input window opens the User Workspace Explorer.
3. Find the desired configuration file and double-click.
4. If you want to change the existing configurations, enter the new value and press the [Save configurations to file] button in the top toolbar. Or, if you want to save it as a new file, press the [Save configurations as new name] button.

6.7. Creating Copies of Files and Directories in Your Current Location

Select one or more files and directories to create a copy of in File Explorer, then press Ctrl+C. After that, press Ctrl+V to create a copy in your current location.

The copy is named after the original file name followed by the current date and time, and has a .bak extension.

6.8. Creating New Files and Directories

1. Open File Explorer and navigate to the directory where you want to create a new file. Then right-click the mouse and select [Create New > File].

2. Enter the name of the new file in the input box and press [OK]. This will create a new file in current location. For example, if current location is /test and you entered myfile.txt as the new name, a /test/myfile.txt file will be created.

   If you enter a relative path instead of a name, the necessary subfolders will be created at once based on your current location. For example, if your current location is /test and you enter abc/def/myfile.txt as the new name, then the abc and def directories will be created in turn, and finally the /test/abc/def/myfile.txt file will be created.

   You can also create multiple files at once by entering a name or relative path followed by a semicolon (;).

The only difference in how to create a directory is to select [Directory] instead of [File] from the menu, but the process is the same.

6.9. Deleting Files and Directories

There are two ways to delete files and directories: [Delete immediately] and [Throw in trash].

- **Delete**

  Select one or more files and directories that you want to delete in File Explorer, right-click > choose [Delete]. Or press Shift+DELETE on your keyboard. The target files will be deleted immediately.

- **Throw to recycle bin**

  Instead of deleting the files immediately, replace only the .candle.tsh extension with .candle.tsh and make invisible on the Qplat File Explorer. These are called trash files and are automatically deleted by the agent after a specified amount of time. Here's how:

  Select one or more files and directories to delete in File Explorer. Right-click the mouse > select

[Throw to Recycle Bin]. Or press DELETE key on your keyboard. Then, an input window will appear asking for the keeping duration After entering the keeping duration, press the [OK] button.

◆ **Restore trash files**

If the window that you threw the files has not closed, you can press Ctrl+Z to recover the thrown files immediately.

If the window is already closed, double-click the agent to open the File Explorer window and select [Recycle Bin] from the [Directory] tree. Then the trash files in the recycle bin will appear on the right side. From here, select the target you want to recover. Right-click your mouse > select [Restore].

◆ **Delete trash files**

To delete the trash files immediately, select the targets in the recycle bin and right-click your mouse > select [Remove]. Right-clicking on the trash icon at the root of the trash file tree will bring up the [Empty Recycle Bin] menu, which will delete all files stored in the agent's recycle bin.

6.10. Renaming Files and Directories

Select the desired file or directory in File Explorer, right-click > choose [Rename].

6.11. Changing File and Directory Properties

Select one or more files or directories that you want, and then right-click > select [Change Properties]. When the Properties window appears, check the properties you want to change and enter a new value. When you are done entering, press the [OK] button.

This menu does not appear if the target is MS Windows.

6.12. Checking Disk Usage

You can use one of the following methods to check disk usage:

- Click the [Disk Usage] button in the toolbar of File Explorer.
- Select one or more of the desired agents in the Agent Explorer and right-click on the mouse. Then select [Disk Usage] from the menu.

This will bring up a window showing all the file systems and disk usage within the selected agents.

This feature is not supported by virtual agents.

6.13. Checking Directory Usage

Select one or more directories from the file list table and right-click the mouse. Then select [Directory Structure and Usage] from the menu.

You can then scan all the files and subdirectories contained in the selected directories, see the total size of the files, the number of files, symlinks and subdirectories, the list of the top 100 largest files, and more.

Go to the [Top 100 Largest Files] tab. Select the desired file from the list, and right-click to display a menu with actions such as viewing, editing, deleting, and downloading. You can select these menus to perform the desired action immediately.

This feature is not supported by virtual agents.

6.14. Textfile Line Count

Select one or more directories from the file list table and right-click the mouse. Then select [Line Count] from the menu.

The number of lines in the selected files is then shown. Hover over the header of the table to learn more about what each column means.

6.15. User Workspace Explorer

The user workspace is where the user's saved configuration files are located, and each user has their own user workspace. The repository of the user workspace is the management server.

- If you have a configuration file saved in a user workspace, user workspace explorer will automatically open immediately after logging in.
- To manually open the User Workspace Explorer, select [Tools > User Workspaces] from the main menu.

Select one or more files you want in User Workspace Explorer, then right-click > select the [Open] menu, or double-click the desired file. This will automatically open the relevant window and load the settings stored in that file.

7. Text File Viewer

7.1. Open the Text File Viewer

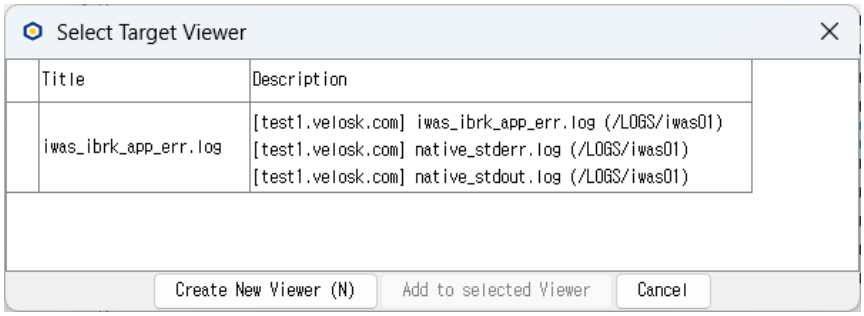
Find the file you want in the File Explorer window and double-click on it, or right-click and select [View File Contents (Viewer)] from the menu. This will open the text file viewer, where you can look up the contents of that file.

This viewer is for text files, and other files are not visible properly when opened. For example, if you open an image file in the viewer, the screen will only show broken text that you can't read.

<Note>

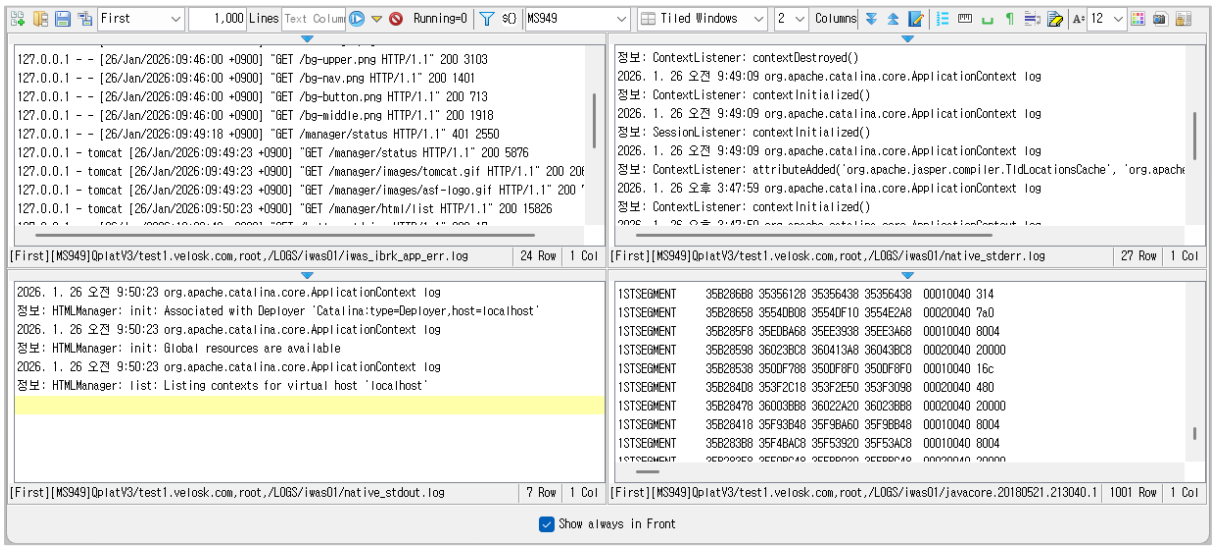
If you double-click on a local file in [My Computer], not on the server, the viewer will not open, but the program on your computer will be launched. So, for local files, use [View File Contents (Viewer)] than double-click.

If you are currently viewing one or more files and trying to view another file, you will see the following window.



This window shows the title of the currently open viewer windows and a list of files within them. If you select a viewer and press the [Add to Selected Viewer] button, or double-click a viewer, the new files will be added to the viewe.

This type of viewer is called a [multi-file viewer], and it is convenient for viewing multiple files at once within a single window.



On the other hand, pressing the [Create New Viewer] button will create a new viewer window for the new file.

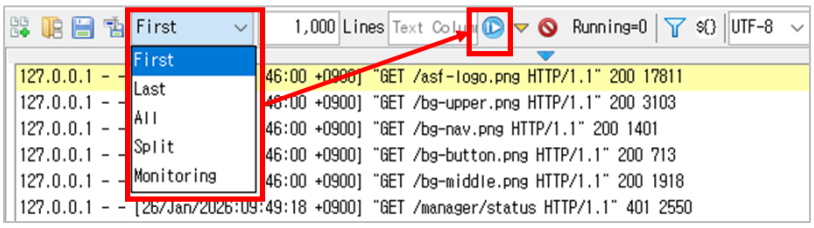
<Note> **Controlling individual file windows within the Multifile Viewer**

If you want to set different viewing options for each individual file within the Multifile Viewer, you need to open the toolbar for each file. To open the individual toolbar, press the [▼] button at the top of each file window.

7.2. Start Viewing

Just after the viewer opens, 1000 lines from the beginning of the file are automatically. If you want to change the type of viewing, select the desired type from the [View Type] combo box in the

toolbar at the top of the viewer and press the [Start] button.



Please remember that if you change options such as Vew Type, Filtering option, character set, you must press the [Start] button to view the file with the new options.

7.3. Viewing the first n line

Select [First] as the view type and press the [Start] button to view n lines of the file from the beginning . The default is 1000 lines. After changing the number of lines, press the [Start] button again.

7.4. Viewing the last n lines

Select [Last] as the view type and press the [Start] button to view n lines from the end of the file . The default is 1000 lines. After changing the number of lines, press the [Start] button again.

7.5. Viewing All

Select [All] as the view type and press the [Star] button to view the entire contents of the file.

However, if you try to open a file larger than 10MB, a warning window will be displayed, and if you try to open a file larger than 30MB, the viewing will be rejected. Therefore , for files larger than 30MB, please use the [Split] type or filtering function

7.6. Monitoring (Tailing like ‘tail -f’)

If you select [Monitor] as the view type and press the [Star] button, 1000 lines will be displayed at the end. And then, when new lines are added to the file, they are continuously shown.

<Note> Snapshot
When you press the [Snapshot] button while the monitoring is running, the current text of the window is copied and displayed as a separate window. If you are monitoring multiple files in one window, click the Snapshot button on the individual file toolbar.

7.7. Split viewing of large files

Viewing the contents of large files exceeding tens of MB all at once places a burden on both the server and the client program.

The split viewing feature is designed for such cases, and its usage differs between real agents and virtual agents.

7.7.1. For Real Agents

Splits the file into specific sizes (in MB) and view them page by page. The default size is 1 MB. We recommend that this size be within a maximum of 10 MB, and 1 MB is usually sufficient.
The procedure is as follows:

1. In the viewer, select [Split] as the view type. The page size input field will appear.
2. Here, enter the desired page size and press the [Split] button on the right. The page number will then be listed in the combo box to the right of the button. From here, select the page number you want and press the [Start] button to view that page.

3. If you want to find a page that contain the keywords you want in a large file at once, press the [Search Page] button instead of the Start button.

4. When the keyword input window appears, specify the keywords you want to search for and the search range, i.e., the start page number and the last page number, and press the [OK] button.
5. If a keyword is successfully searched, the entire page is loaded, and the cursor moves to the

keyword location. And the page list combobox shows the current page.

6. If you want to search for additional keywords within the current page, press Ctrl+F to perform an in-page search. On the other hand, if you want to search for another page, press the [Search Page] button again.

7.7.2. For virtual agents

A split lookup of a virtual agent does the following:

1. Select the file in File Explorer and right-click on it
2. Select [View Large Files] from the menu

This opens a terminal emulator screen that runs the CLI program 'less' on the server side. With a toolbar at the top, and the buttons here allow you to scroll up and down the document or search for keywords. For the exact role of each button, check the tooltip that appears when you hover over the button.

To copy text within this screen to the clipboard, simply select the desired text. Please be careful, as pressing Ctrl+C without doing so will close the less program and disconnect the connection.
If the connection is lost, press the ENTER key or press the [Reconnect] button at the bottom to restart viewing.

7.8. Filtering (Only viewing lines that contain specific keywords like 'grep')

Press the [Configure Filters] button in the toolbar.

When the keyword input window appears, check [String] and [Includes], and enter the desired keywords in the input window. To search by combining two or more keywords using AND or OR

If you want to exclude lines containing specific keywords, check [Excludes] and enter keywords using the same way as [Include].

The bottom [Filter] button means to output only the lines that meet the conditions, and the [Highlight] button means to output all lines but highlight the corresponding keywords brightly.

Please press the [OK] button when you have finished entering the input.

In order to apply new filtering conditions, you must press the [Star] button.

7.9. Column Cut (only a certain range of columns are viewed)

As a function that shows only a certain range of columns, enter the numbers of the start and end columns in the Column Cut text field in the toolbar. The following is an example input.

Example 1) 10-100 : from 10 to 100 columns
Example 2) -100 : from the beginning to 100
columns Example 3) 10-: from 10 columns to the end

To specify multiple ranges, separate each range with a comma (,).

In order to apply new conditions, you must press the [Star] button.

7.10. Character Set (Content Encoding)

The toolbar of the Text File Viewer has a combo box that specifies the characterset (encoding) of the file content. The default value for this combo box is the default characterset for the PC. For example, in the Korean Windows environment, MS949 is specified as the default characterset. (MS949 is a Korean extended and complete character set created by MS, including both KSC5601 and EUC-KR character sets.)

After specifying a new character set, you need to press the [Start] button to apply the new character set.

If you find it cumbersome to change the character set settings every time, you can configure it as follows to specify character set selected by default based on the agent name or file extension. However, this method applies only to the PC where the setting was performed, so you must reconfigure if you change PC.

- In the Main Menu of the Qplat client program, select [Configuration > My Client Program > Text File Character Set].
- The configurations are as follows:
  - **Default**

    For files that are not specified in the [Pattern] input box described below, this value is used.
  - **Pattern**

    Depending on the pattern of the agent, file path, etc. in which the file exists, the characterset can be specified differently. The pattern is expressed in the following format:

AgentName;FilePath;CharacterSet

- The separator for each field is a semicolon (;), and wildcard (*,?) expressions can be used for the agent name and file path. When specifying a file path with a wildcard, * represents a single-level directory and ** represents multiple-level directories. Therefore, to express a path including subdirectories as a wildcard, please use ** instead of *.
- Write a pattern on one line. If you want to specify multiple patterns, write each one line.
- If a file is matched to more than one pattern at the same time, the pattern specified in the bottom line is applied.

아래는 패턴의 지정 예입니다.

Example	Description
*;**.sh;UTF-8	For all agents, select UTF-8 for files with the .sh extension.
agent1;/logs/applog/*;UTF-8	Select UTF-8 for all files under agent1's /logs/applog. However, if there are subdirectories under /logs/applog, files within them are not subject to this rule.
web*;*/logs/**;MS949	For all agents whose names start with "web", select MS949 as the default for all files under the /logs directory. If there are subdirectories under the /logs directory, apply the same rule to the files within them.
*;**.log;UTF-8 *;/logs/applog/**.log;KSC5601	For all agents, select UTF-8 for all files with the .log extension. However, select KSC5601 for files with the .log extension within the /log/applog directory. If there are subdirectories under /logs/applog, apply the same rule to the .log files within them.

- After changing the configurations, you must press the [Save] button at the bottom of the window to save it before the changes will take effect.

7.11. Changing the Viewer Window Arrangement

If you want to view multiple files at once in one viewer window, you can use the [Window

Arrangement] combo box to adjust the way they are arranged on the screen.

- **Tiled windows**
  Divide each file into multiple windows of the same size to display the tiled display. You can change the arrangement of the windows by changing the number of columns on the right side of the combo box.

- **Tabbed Windows**
  Arrangement arranges each file into one tab. You need to click on the tab to view the desired file.

- **Single Window**
  all the output in one window, but add a description at the beginning or end of each line that indicates the origin of the line. You can change the format and position of the description by clicking the [Line Description Format] button on the right side of the combo box.

7.12. Transfering Files and Text between users when copying and printing are not permitted

Files that are not authorized to download by Qplat's permission management configurations are not allowed to be downloaded, but also stored, copied, cut, and printed.

In this case, if you want to pass the specific content of the text to someone, you need to pass the URL instead of the contents of the file, and the recipient must also have viewing permissions on the file.

However, this function is not supported in the [Monitoring] type, nor is it supported in the virtual agent's [less] function.

Sending side	1. Drag and select the text you want to forward, right-click, and select [Copy URL to clipboard] from the pop-up menu. (Shortcut: shift+ctrl+C) 2. Forward the URL copied to the clipboard to the other party by email or messenger.
Receiving side	1. Copy the URL forwarded by email or messenger to system clipboard. 2. Launch the Qplat client and log in. 3. Copy the URL from the clipboard into the URL input box at the top of the Qplat client and type enter.

7.13. Saving and Reusing Viewing Conditions

If you think that the files you are currently viewing will be viewed frequently in the future, you can save the conditions as a file and reuse them at any time. Here's how:

1. Click the [Save] button on the top toolbar of the Viewer. Then the Workspace Explorer will be opened.
2. After entering a suitable file name, click the [Save] button. The file extension is .xmv, and if you just enter the name, the extension will be automatically added.

Here's how to load the saved configuration file:

1. In the Main Menu of the Qplat client, select [Tools > Viewer].
2. Press the [+] button on the Viewer tab to open a new Viewer window, and then click the [Open] button in the toolbar at the top.
3. Find the desired configuration file and press the [Open] button.

Alternatively, you can load the configuration file through the user workspace.

1. In the Qplat client's Main Menu, select [Tools > User Workspaces].
2. Locate the desired configurations file and double-click on it.

8. Text File Editor

Unlike viewers, editors can edit and save the contents of files. Here's how to use it:

- **Edit a new file**

  To edit a new file, select [Tool > Editor] from the main menu of the Qplat client. This will open the Editor tab, creating a blank file window. If you want to create a new file, press the [New File] button in the toolbar on the left side of the Editor tab, or press Ctrl+N on

your keyboard.

- **Edit an existing file**

  To edit an existing file, use one of the methods below.

  - **Select the target file in the editor**

    Press the [Open File] button in the toolbar on the left side of the editor, or press Ctrl+O on your keyboard to find and select the desired file.

  - **Select the target file in File Explorer**

    Find the file you want to edit in File Explorer, right-click on it> and select [Edit] from the pop-up menu. (If the File Explorer window is not open, double-click the target agent in Agent Explorer to open the File Explorer window.)

  - **Instantly edit files being viewed in the viewer**

    If you want to immediately edit the file you're viewing in the Text File Viewer, you can find and click the Edit icon in the Viewer's toolbar.

- **Save files**

  To save the file you are editing, press the [Save] button in the toolbar at the top of the editor or press Ctrl+S.

- **Specifying Character Set (Content Encoding)**

  When you load or save a file, you can specify the characterset (content encoding) of the file's contents. To reload the document after changing the characterset, press the [Reload] button in the top toolbar or press F5 on your keyboard.

- **Specifying Line Breaks**

  When saving the file, specify whether to use ₩n or ₩r₩n for newlines. If you specify it [Auto], it will automatically adjust the newline characters according to the OS of the computer where the file is stored.

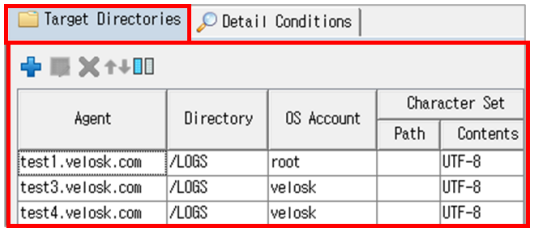
9. File Search

It is a function that finds files with specific conditions. You can specify multiple agents, multiple directories at once. If you specify multiple agents, each agent is searched in parallel, and each directory within the agent is searched sequentially.

9.1. Specifying Agents and Directories to Search

Select the directory you want to search in File Explorer, right-click, and select [File Search] from the menu that appears. This will bring up the search criteria input window.

The Destination Directories tab has a table that specifies the agents and directories to search.



Here's what each column in the table means:

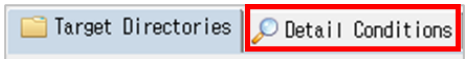
Column	Description
Agent	The name of the agent you want to search for
Directory	The absolute path to the directory to search
OS Account	The actual file search is performed with the privileges of this OS account. If omitted, the real agent is performed with the owner privileges of the real agent process, and the virtual agent is performed with the default OS account privileges.
Contents Characterset	Specify when the content is encoded with a special character set. This condition is only valid when searching for the contents of a file.
Path Characterset	Specify when the name or path of a file contains international languages. This condition is valid only for virtual agents.

The table should already contain the folders you just selected. If you want to add more agents or directories to search for, press the [+] button in the toolbar at the top of the table.

If you want to change or delete the values of each row in the table, select one or more rows you want and click the [Modify] or [Delete] button in the top toolbar.

9.2. Specifying Search Criteria

Click the [Search Criteria] tab next to the Destination Folder tab. This will bring up a screen where you can enter your search criteria.



Enter the desired condition in each condition field. At this time, remember that you must check the box of each condition so that the condition is actually applied.

- **Name**

  Enter the name of the file or directory you want to search, and use the wildcard expression (*,?)For example, if you want to search for all files with a .log extension, you can type *.log. If you want to enter multiple file names, separate each one by a line. If you don't enter any, it will search all files.

- **Contents**

  Enter the keywords you want to search for in the contents of the file. If you want to enter multiple keywords, separate each one with a single line.

- **Search to the inside of the archive file**

  If you check it, if you encounter a archive file during the search, it will search for the files inside the archive file.

  However, this condition does not apply to virtual agents.

- **Maximum result count per agent**

  Specify when you expect too many results. The default value is 100. If an agent's search results exceed this number, that agent's search stops there.

9.3. Starting and Stopping a Search

Once you have specified both the directory you want to search and the search criteria, click the [Start] button at the bottom of the [Search Conditions] tab. This will start the search, and the results will appear in the table on the right.

Agents that have completed the search will have a checkmark in front of their name.

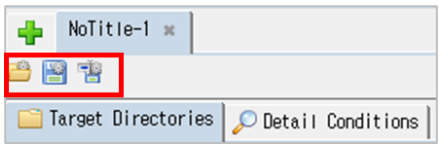
If you want to stop the search midway, press the [Stop] button at the bottom of the [Search Conditions] tab.

9.4. Utilizing Search Results

Select one or more of the retrieved files and right-click to display a menu with actions such as viewing, editing, deleting, and downloading. You can tap these menus to perform the desired action immediately.

9.5. Saving and Reopening Search Criteria

If you think you're going to search frequently with the current conditions, you can save the paths and conditions as a file and have them reload at any time.



Here's how:

1. Press the [Save] button in the toolbar at the top of the search window to open Workspace Explorer.
2. Specify the file name and click the [Save] button. The file has a .xfs extension, and if you just name the file without the extension, it will automatically be saved with the extension.

Here's how to load the saved configuration file:

1. In the Qplat client's Main Menu, select [Tool > File Search].
2. Click the [+] button at the empty File Search tab.
3. Click [Open] button in the toolbar at the top.
4. Find the desired configuration file and press the [Open] button.

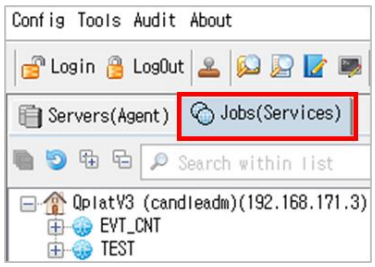
Alternatively, you can load the configuration file through the user workspace.

1. In the Qplat client's Main Menu, select [Tools > User Workspaces].
2. Find the file you want and double-click on it.

10. Predefine jobs and Execute

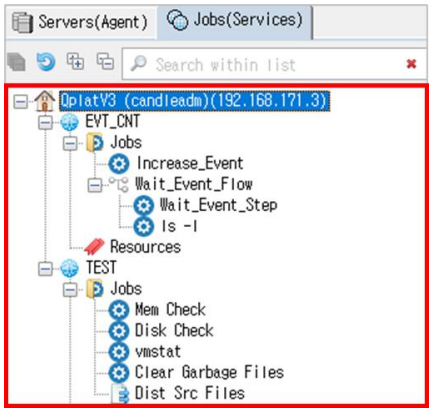
This is a function that defines the details of jobs to be executed on the server in advance and allows multiple users to execute them.

Configuration and executing jobs is performed in the job configuration tree that is displayed when you click the [Jobs (Service)] tab next to the Agent Explorer on the left side of the Qplat client screen.



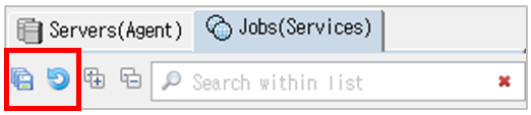
10.1. Job Configuration Tree

Job configurations are managed in a hierarchy in the form of a tree, which is called a Job Configuration Tree. Every item in the tree must have a unique name within its parent item.



10.2. Managing Job Configuration Tree items

10.2.1. Saving and Reloading



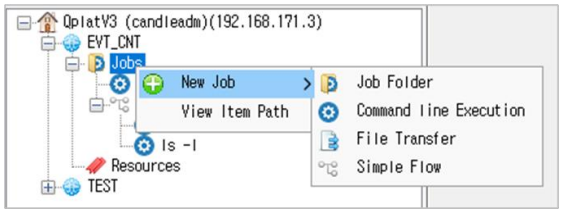
Whatever kind of changes you make, such as adding, changing, deleting, copying, moving, or creating links, be sure to click the [Save] button in the toolbar at the top of the configuration tree when you are done. This will save your changes to the Qplat Admin Server.

If you want to ignore the changes, press the [Reload] button instead of saving. This will reload the configuration tree from the server, and any unsaved changes will be ignored.

[Reference]
When there is content to be saved, the border of the save button blinks red, and the blinking stops after saving or reloading is complete.

10.2.2. Adding

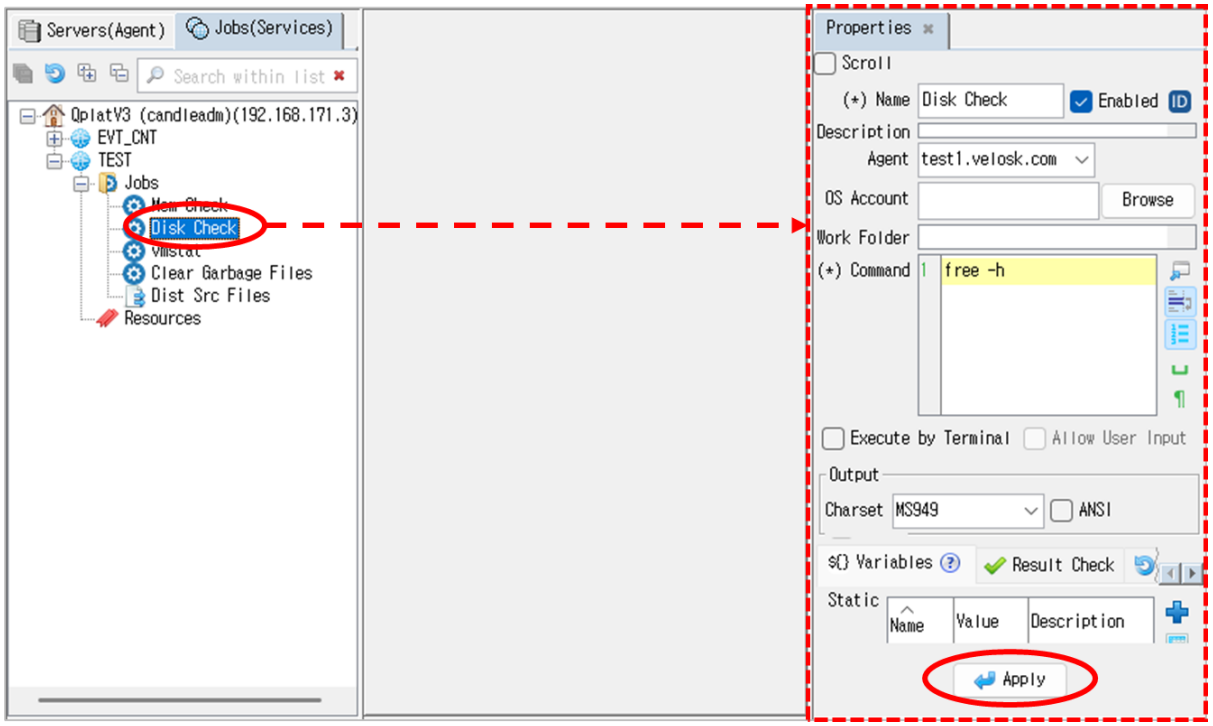
To add an item within the configuration tree, right-click on the parent item and select the relevant menu from the menu that appears.



In the input window that appears, enter the required items and press the [OK] button to add the new item.

10.2.3. Changing

When you select the desired item from the configuration tree, the detailed properties of the item will appear in the [Properties] window on the right side of the screen. After changing the value of the desired item in the Properties window, press the [Apply] button at the bottom of the window to apply the changed properties to the item.



<Note> If there are too many input fields in the property window,

If there are too many input fields in the Properties window, the size of each field becomes too small. If this makes it difficult to view the content, please check [Scroll] at the top. Then you can scroll through the properties window.

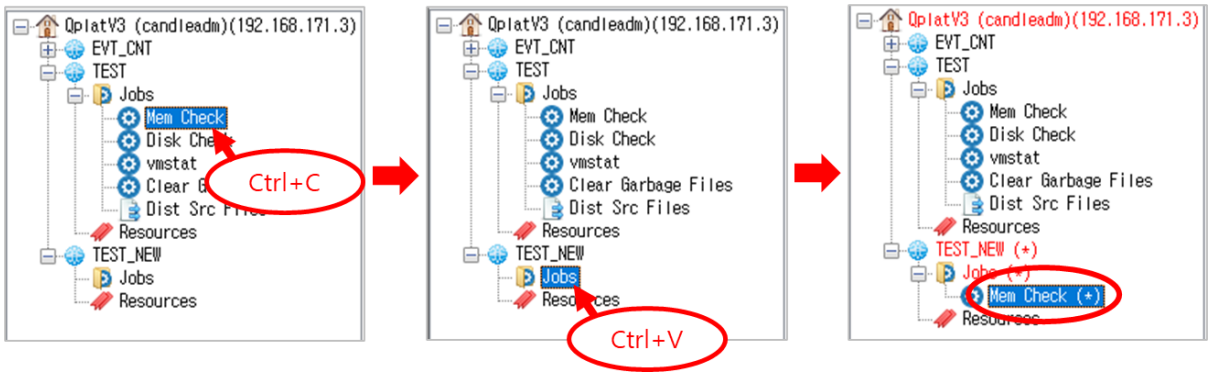
10.2.4. Deleting

Select one or more items to delete from the configuration tree, and then right-click > Select [Delete] menu. Or, press the [Delete] key on your keyboard.

10.2.5. Copying and Moving

- **Copying**

  Select one or more original items to copy, then press [Ctrl+C] on your keyboard to copy them to the clipboard. Then, select the parent item of the destination to be copied and press [Ctrl+V] on your keyboard. This will add the copied item.



If there are other items with the same name in the place to be copied, an input box will appear saying [Enter a new name]. Enter a new name here and press the [OK] button.

- **Moving**

  To move an item to another parent, copy it and delete the original item.

10.2.6. Links

Instead of copying a job, create a link to it. Links can only be created as children of a Job Flow item.

To create a link, simply drag the original jobs and drop them to the destination.

10.2.7. Changing the Order

Select the desired item with the mouse and drag-drop it to the desired location. However, this method is only supported when changing the order of child items within the same parent item.

10.3. Item Variables

Each item within the job tree can have one or more variables.

Variables are similar to environment variables in shell scripts, where each variable is defined as a pair of names and values, and the defined variables can reference values in the form **${variable name}** in that item or its sub-items.

There are three types of variables: fixed variables, runtime variables, and built-in variables.

10.3.1. Fixed Variables

As a variable with a fixed value, the value is specified when the variable is defined. It can be defined in most items.

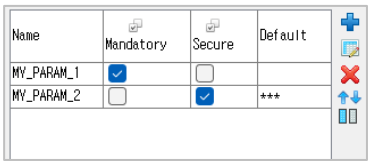
Fixed variables are used to minimize the effort of repeatedly entering the same value and if the value change is required, the new value is applied to all fields that reference it at once just by changing the variable value.

Adding, changing, and deleting fixed variables are done with the buttons on the right side of the variable definition table, and the configurations are as follows.

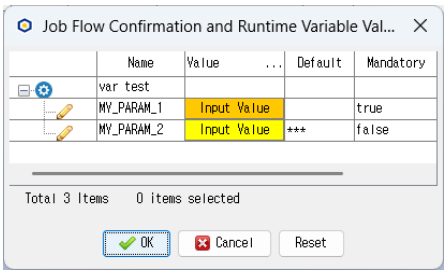
(*)Name	Enter the unique name in the item
Secure	If checked, the value will appear as ***, just like when entering the password, and will remain as *** in the logs.
(*) value	Enter the value of the variable.
Description	Enter short desription

10.3.2. Runtime Variables

As a variable that the user enters a value when executing a job, it can only be set to the [Job] items, unlike fixed variables.



If you set a runtime variable on the job,



At runtime, an input window will appear asking for the actual value

Adding, deleting, changing, and changing the order of variables is done with the buttons on the right side of the variable definition table, and the items to be set are as follows.

(*)Name	Decide on a name for the variable
Mandatory	If checked, you must enter a value before run
Secure	If checked, the value will appear as ***, just like when entering the password, and

	will remain as *** in the logs.
Default	If you don't enter a value at runtime, it will be used instead.
Description	Enter short desription

< caution>
The actual values of runtime variables can only be entered when the user executes them directly or through approval. If they are executed by scheduler, the values cannot be entered.

10.3.3. Built-in Variables

They are variables built into each item by default, and is automatically defined The name of the built-in variable is usually starts with KW. , and the list of built-in variables currently available is as follows:

Built-in variable name	Description
KW.DOMAIN.NAME	The domain name to which the job belongs
KW.JOB.NAME	Name of the job
KW. BATCH.ODATE	If ODATE value is specified, it represents the ODATE value. If ODATE value is not specified, it represents the current date. The value format is yyyyMMdd.
KW. SELECTED.AGENT	If you omit the name of the agent to run the job when you configure a job, you have to select the target agent just before run it. This variable points to the name of the agent.

You can view the list of built-in variables by pressing the Ctrl+SPACE keys on the keyboard while the field you want to reference a variable value from is selected with the mouse.

10.3.4. Using Variable Value (Variable Value Expression)

The value of a variable can be used as an expression like the one below in most input fields, except for the name or description field, which is replaced by a value on execution.

${VariableName}

For example, let's say you entered the command lines field as follows:

./test.sh ${MY_VAR1}

If the value of MY_VAR1 variable is ABC, this command line is executed by substituting as follows:

./test.sh ABC

If the variable is not defined MY_VAR1, the expression will not be replaced and will be executed as shown below.

./test.sh ${MY_VAR1}

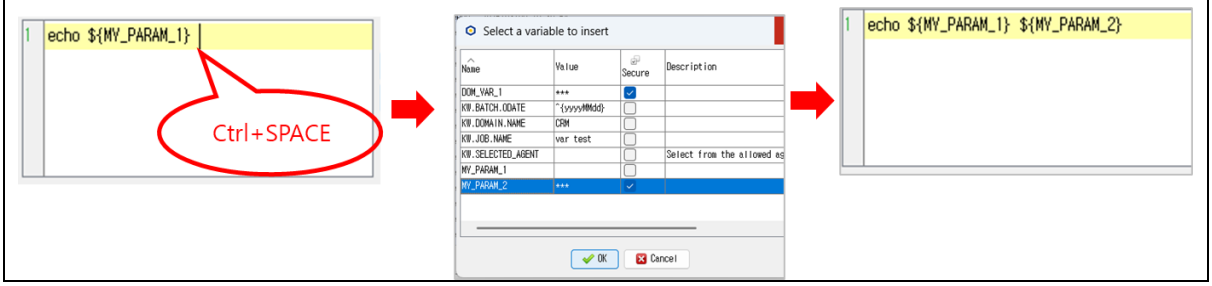
- When you define a variable, you can also specify an expression for another variable with its value. For example, when defining a MY_VAR2, you can specify ${MY_VAR1} as its value. Then, when you specify ${MY_VAR2} in the input field, the final value of MY_VAR1 will be entered. In this way, up to 10 repeated substitutions can be achieved.

- Variables can be referenced not only within that item, but also in sub-items on the tree. If an item variable with the same name exists in both the ancestor and child items, the variable of the child item will be applied.

<Note>

If you want to know which variables are available in an input field, select the input field and press [Ctrl+SPACE] on your keyboard. This will bring up a list window showing the names and values of all the variables available in that input field.

Double-click on the desired variable, or press the [OK] button after selection, and the expression of that variable will be inserted at the current cursor position.



10.4. Domains

Create domains before configuring your jobs.

A domain is a top-level group of jobs and can contain multiple jobs and job folders under it.

You can freely specify domains in various units, such as jobs, services, servers, users, and roles, and there is no limit to the number of domains that can be created.

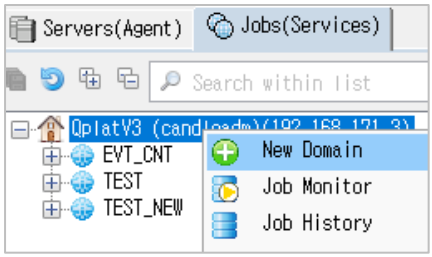
Domains can be divided into three types: [Generic, Role Dedicated, and User Dedicated] depending on who can configure the items under them.

Unlike configuration, anyone can execute items under a domain, depending on the permission configured by administrator.

10.4.1. Generic Domains

A Generic Domain is a domain that only administrator can set up.

To create a generic domain, right-click the Admin Server in the Job Configuration Tree and select the [New Domain] menu.



The inputs are as follows.

Title	Description
(*) Name	Unique name of the domain
Description	Short description of the domain
Variables	Fixed variables to use in child(descendant) items

10.4.2. Role Dedicated Domains

A Role Dedicated Domain is a domain where the role's owners can configure the descendant items

in the domain.

Therefore, if you want to make all the items be configured by the Qplat admnistrator, you can skip this chapter.

The jobs defined under a Role Dedicated Domain can be performed by any user in that role.

A Role Dedicated Domain has a name of type [**RoleDedicated**.RoleName]. For example, the dedicated domain for a role with the role name TEST is RoleDedicated.TEST.

The owner of a role can add, change, or delete sub-items to that domain. However, you must go through the approval process for the new configurations to actually be reflected. Once the approval process is complete, the Role Dedicated Domain is automatically created and can be viewed in the Job Configuration Tree.

The owner of the role must be specified in advance by the Qplat administrator, and the method is as follows:

1. In the Main Menu, select [Configuration > Administration Environment > Role > Role Definition], select the desired role from the table that appears, and then press the [Update] button at the bottom.
2. In the next window that appears, click the [+] button on the right side toolbar of the role owner list to add a new user. Or click the [X] button to remove an existing owner. After completing settings, click the [OK] button.

To set up a Role Dedicated Domain as a role owner:

1. Log in to the Qplat client with the role owner's user ID.
2. In the Main Menu, choose [Configuration > Permission Change Request]. (If you log in as an administrator, you will not see this menu)
3. Select a role name from the [Roles] table.
4. Select [Service Management] from the [Permission] tree under the role list.

   Then, a dedicated domain for that role will appear in the configuration tree on the right. Below the domain. Set up new items like administrator does, and press the [Request Approval] button at the bottom.

According to approval line definition, the approvers might be automatically assigned, or they need to be manually assigned. Please refer to Approval Management chapter for details about approval line.

5. After the final Approver has approved it, you can see that the Role Dedicated Domain has been added or changed in the Job Configuration Tree.

10.4.3. User Dedicated Domains

A User Dedicated Domain is a domain where the user can configure the descendant items in the domain.

Therefore, if you want to make all the items be configured by the Qplat admnistrator, you can skip this chapter.

User Dedicated Domains have names of the type [**RoleDedicated.UserDedicated**.UserID]. For example, a user's User Dedicated Domain with the username tester01 is named RoleDedicated.UserDedicated.tester01.

These users can set up items under this domain. However, in order for the configurations to be reflected on the server, they must go through the approval process, just like Role Dedicated Domains.

For a user to set up their own User Dedicated Domain:

1. Log in to the Qplat client with their own usernames.
2. Select [Permission Change Request] from the Main Menu (you will not see this menu if you log in as an administrator)
3. Select the UserDedicated.UserID role in the [Roles] table
4. Select [Service Management] from the [Permission] tree under the role list.

   Then, a dedicated domain for that role will appear in the configuration tree on the right. Below the domain. Set up new items like administrator does, and press the [Request Approval] button at the bottom.

   According to approval line definition, the approvers might be automatically assigned, or they need to be manually assigned. Please refer to Approval Management chapter for details about approval line.

5. After the final Approver has approved it, you can see that the User Dedicated Domain has been added or changed in the Job Configuration Tree.

10.5. Job Folders

A Job Folder is used for grouping multilpe jobs. While a domain can contain any type of items, a Job Folder can only contain jobs and another job folders.

The default job folder is the [Jobs] folder under the domain, which is automatically created when the domain is created, and the name of this folder cannot be changed. Under the [Jobs] folder, another Job folders can be added in several levels and can be named arbitrarily.

To add a new job folder, right-click on the parent folder, such as Jobs, and select [New Job > Job Folder].

The input items are as follows, and when you press the [OK] button, a new Job Folder will be added below.

Title	Description
(*)Name	Name of the folder
Description	Description of folders
Variables	Fixed variables to use in child items

10.6. Jobs

Define the jobs that will run on the server. The following types of jobs are currently supported:

Types	Description
Command Line Execution	Execute command lines.
File Transfer	Transfer files and directories between servers.
Sleep	Wait for the specified amount of time.
Job Status Check	Check whether other job is started, succeeded, or failed.
Job Flow	Group multiple jobs and execute them step by step.

10.6.1. Common Configurations

Title	Description

(*) Name	The name of the job. It must be unique within the job folder to which it belongs.
Description	Short description
Retry	The number of retries and the retry interval on job failure, which is located on the bottom tab of the job properties screen. If the number is 0, it will not retry, and the default value is 0. The retry interval is in milliseconds (ms), and default value is 5000.

10.6.2. Command Line Execution Jobs

A Command Line Execution Job is for the execution of a command lines on the servers.

To add a new command line execution job:

1. Select a Job Folder or Job Flow item to which you want to add a new job, then right-click
2. Select [New > Command line Execution] from the menu

The input items are as follows.

- **Agent** (Can use item variable value expression)

  A combobox that specifies the name of the target agent to perform the job. The designation way is as follows.

  - **Leave it blank**

    If you leave it blank without typing anything, the user can select the target agent at runtime.

    <Note>
    The Jobs that doesn't have agent name can be executed not only in the Job Configuration Tree, but also in the Agent Explorer. Here's how to do it.
    1. Select one or more agents to execute the job in Agent Explorer, and then right-click
    2. Find and select the job name from the menu.

  - **Assign a specific agent name**

    If you assign a specific agent name, the job will be performed only on that agent.

■ **Assign an Agent Group**

Use when the target is multiple agents.

However, to use this method, you must first define an agent group. Here's how:

<How to define an agent group>

1. From the Main Menu at the top of the program, select [Configuration > Administration Environment > Agent > Agent Group]
2. Press the [+] button in the top toolbar.
3. In the [Group Name] field, enter a name for the agent group.
4. In the [Agent List] field, enter the names of the agents that will be included in the group.
   Separate each name with a new line (ENTER Key).
   You can also use wildcards for agent names. For example, my* refers to all agents whose agent names start with my. Just type * and it will point to all agents.
5. When you are done, press the [OK] button.
6. To change or delete an existing defined agent group, select the agent group and click the [Edit] or [Remove] button in the top toolbar.
7. Once the configurations are complete, press the [Save] button.

Defined agent groups can be specified and used with various expressions, such as:

< caution>

The scheduler can only execute jobs in the first of the following expressions, i.e. {{GroupName/1}}.

◆ **{{GroupName/1}}**

Picks one of the agents in the group in a round-robin fashion. If the selected agent is not connectable, ignore it and picks another.

If all agents in the group are not connectable, jobs triggered by [Execute] or [Execute By Approval] will fail. But, execution by scheduler will wait in the queue until at least one agent becomes connectable.

◆ **{{GroupName/S}}**

Serial execution: Executes sequentially for all agents in the group.

- **{{GroupName/P}}**

  Parallel execution: All agents in the group execute the job in parallel. If the number of agents exceeds 32, an input box will appear asking for the number of concurrent threads.

- **{{GroupName/A}}**

  Run on all agents in the group, but user can choose whether to be exeuted serial/parallel.

- **OS account** (can use variable value expressions)

  The OS account that will execute the command.

  For real agents, if the value is omitted, it executes as the owner account of the agent process. For virtual agents, if the value is omitted, it executes as the default account.

- **Working directory** (can use variable value expressions)

  The working directory where the command line will be executed. This means that when you run this action, the directory changes here before the command is executed internally.

  If omitted, the command line may be executed in an unexpected directory, such as the target agent's home directory, target OS account's home directory, or the root directory.

  For example, let's say you normally execute a command line like this:

  cd /myprogram/bin

  ./startMyBatch.sh

  In this example, you can specify /myprogram/bin as the working directory.

- **(*) Command Line** (can use variable value expressions)

  The command lines to be executed.

  For example, let's say you normally execute a command lines like this:

cd /myprogram/bin

./startMyBatch.sh

In this example, . /startMyBatch.sh is this command line, so you can enter this value.

You can enter multiple command lines, and each line will be executed sequentially.

<When one of the multi-line commands fails>

If you type several lines of a command, an option button titled [If a single command fails] appears. Choose one of these. The default is [Keep Going].

■ **Keep Going**

All commands will execute regardless of whether other commands fail.

■ **Abort**

If a commane line above fails, the lines below it will not be executed.

- **Execute by Terminal**

If this option is checked, an SSH terminal window connecting from the user's PC to the target server will open and the command lines will be automatically entered. After the execution is complete, the terminal window remains open, but the terminal connection is terminated.

If you use this method, even if the target agent is a real agent, you need to set the terminal access information for that agent. The configuration method is similar to when configuring a virtual agent. So, please refer to [Specifying Communication Protocols] ~ [Registering OS Account Credentials] in the [Virtual Agent Configuration and Management] chapter.

< caution>

This option is only valid when the user runs the job by [Execute Now] menu.

- **Allow user input**

Check if the user's keyboard input is required during the execution of the command line. This option is valid only if [Execute by Terminal] is checked.

- **Characterset**

  Specify the character set (encoding) of the input and output text. Specify if the input and output text is broken.

- **ANSI/Onlcr**

  This topic is used when the output value of the command line is ANSI text rather than plain text. onlcr is intended for handling newline characters (NL) in ANSI text, converting NL to CR-NL, which moves the text output cursor to the first column of the next line.

< caution>
Even if you check this item, complex formatted ANSI text may look broken, in which case we recommend using the [Execute by Terminal] option described earlier.

- **Result Check**

  A condition for determining the eventual success of the job after the command lines are executed.

  By default, no conditions are specified, and in this case, success or failure is determined solely by the return value of the last executed statement; if the return value is 0, it is considered a success, and if it is any other value, it is considered a failure.

  In addition, the types of conditions that can be specified are as follows.

Type	Description
Output String	Check if the output string contains a specific string
ps -ef Result String	Internally, it runs the ps -ef command and checks if its output contains a specific string. It is mainly used to determine the presence or absence of a particular process.
netstat -an Result String	Internally, it runs the netstat -an command and checks if its output contains a specific string. It is mainly used to determine whether a particular port is listening or not.

  The additional inputs for the type are all as follows:

Title	Description	Remarks
Includes	Specify the strings that should be included in the output line you want to find. If you need to specify multiple strings, use the ENTER key to specify one line for each.	To search for a string word by word, enclose the string with quotation marks ("). If you want to search for the string itself that is enclosed in double quotes, wrap the string with ₩". For example, if you specify "abc", you will find a string called abc surrounded by spaces. If you specify ₩"abc₩", it will search for "abc".
Excludes	Specifies the strings that should not be included in the output line. Also, if you specify multiple strings, specify one line for each string.	
Case Sensitive	If checked, the English string search will be case-sensitive.	
Combination	If you enter multiple strings as include or exclude strings, specify how the conditions for each string should be combined. You can choose between AND and OR conditions.	
Sleep Before Check	Specifies the time in milliseconds to wait after the job execution is finished and before performing the check.	For the Output String condition, this option is not available because it keeps checking the output string during command line execution.
Check Success=	When the check result is successful, specify whether it should be judged as a success or a failure of the job execution.	A successful check result means that there is at least one line that is printed after both 'Includes' and 'Excludes' are applied.
Recheck	If the check results in a failure, specify whether to check again, and if so, how many times in millisecond intervals.	If the number is 0, it will not be checked again.
Abort job on Job Failure	As a condition that exists only in the [Output String] condition.	Valid only for [Output String] condition.

	If this option is checked, and if the job is determined to have failed during the string check, the job will be killed immediately during execution.	

10.6.3. File transfer Jobs

It is a feature to transfer files or directories from one server to another. You can also transfer to multiple servers at once.

To add a new file transfer job:

1. Select a Job Folder or Job Flow you want to add a new Job to, and then right-click.
2. Select [New Job > File Transfer] from the menu.

The inputs are as follows.

- **Transfer mode**

  You can choose between ASCII and Binary. The default is Binary.

  ASCII mode converts and transmits newline characters in text files according to the receiving OS. Binary mode, on the other hand, transfers files without any conversion.

- **Source files and directories**

  Specify the source files and directories. File Explorer automatically populates the source file and directory information you select, so you don't have to enter it separately.

  But, If you want to change the value, please do the following:.

  - **(*) Agent** (Can use Item Variable Expressions)

    Specify the name of the agent that reads the source files and directories.

  - **Paths** (Can use Item Variable Expressions)

    Each path must be an absolute path. If you specify multiple paths, each path should be separated by a new line (ENTER key).

You can use a wildcard expression for the last token in the path, that is, the name part. For example, if you type /app/db/*.txt, it means that all files with a .txt extension just below the /app/db folder.

- **OS Account** (Can use Item Variable Expressions)

  The OS account that will read the file. For real agents, omitting this value uses the owner privilege of the agent process. For virtual agents, if this value is omitted, the default OS account is used.

- **Path Characterset**

  Specify when the name or path of a file contains multiple languages.

  This condition is valid only for virtual agents.

- **Target Directories**

Specify the destination to which you want to transfer the file. It is in the form of a table and can specify one or more.

To add target directories, press the [+] button on the right side of the table and input the following items:

- **(*) Agent** (Can use Item Variable Expressions)

  Select one or more target agents.

- **(*) Path** (Can use Item Variable Expressions)

  Specifies the absolute path to the target directory.

  If you specify multiple paths, each path is separated by a new line (ENTER).

- **OS Account** (Can use Item Variable Expressions)

  The OS account to write the file. For real agents, omitting this value uses the owner privilege of the agent process. For virtual agents, if this value is omitted, the default OS account is used.

- **Path Characterset**

  Specify when the name or path of a file contains multiple languages.

This condition is valid only for virtual agents.

- **Overwrite**

  Determine whether a file with the same name in the target directory will be overwritten or not.

  - **Overwrite All**

    If there is a file with the same name, it will be overwritten unconditionally.

  - **Overwrite if**

    Overwrites files only if the specified conditions are met.

    - **Size is different**
      Overwrites when the original and target files are of different sizes.
    - **Source is Newer**
      Overwrites when the source file's last update time is newer.
    - **Target is Newer**
      Overwrites when the target file's last update time is newer.

  If you don't want to overwrite, select [Overwrite if] and uncheck all the subsequent options.

- **Parallel Transfer Thread Count**

  If there are multiple target agents or directories, they can be transferred in parallel, which is the maximum number of concurrent transfer threads used. The default value is 5, and the maximum number is limited to 64 to avoid overload. If you specify this value of 1 , it means serial or sequential.

  Since a large number of parallel transfer is not necessarily a good thing, it is recommended to specify the appropriate number by considering the resource workload like network bandwidth, disk speed, CPU etc.

10.6.4. Job Flows

Job Flow is used to process multiple subjobs in combination sequentially or in parallel. A Job Flow

can contain all other types of jobs as subjobs, and it can even contain another Job Flows.

The subjobs run sequentially from top to bottom by default, and you can use the flow control options to control the flow as needed.

10.6.4.1. Adding a New Job Flow

To add a Job Flow:

1. Select the job folder to add the Job Flow and right-click on it
2. Select New Job > Job Flow

The input options are:

- **Controlling the flow of subjobs**

  ■ **Sequence**

  Specify whether you want to perform the subjobs sequentially from top to bottom, or at the same time.

  For sequential execution, select [Serial], and for concurrent execution, select [Parallel]. If you select parallel, all jobs in the sub-steps must be finished before moving on to the next step.

  ■ **Partial success =**

  If only some of the jobs in the lower steps succeed, it determines whether the current step is considered a success or a failure.

- **What to do after this step**

  This option is not only in Job Flow itself, but also in its subjobs.

  ■ **On Success/Failure**

  Specify the next step to run if the current step succeeds or fails. By default, you can choose one of two values:

Value	Description	Remarks
kw:next	Go to next step	Default value for [On Success]
kw:stepExit	Immediately exit the level you belong to.	Default value for [On Failure]

In addition to kw:next or kw:stepExit, you can also choose the name of one of the other jobs in the same level.

10.6.4.2. Adding Subjobs Under Job Flow

To add a subjob to Job Flow:

1. Select the Job Flow and right-click
2. Select [New Job] from the menu, and then select the desired type of subjob.

If the new job you want to add is the same as the other job already defined, you can add it by [copying and pasting] way. Here's how to do it.

1. Select the original job with your mouse and press Ctrl+C on your keyboard to copy it to the clipboard.
2. Select the destination step and press Ctrl+V on your keyboard to paste it.

10.6.4.3. Adding Links to Other Jobs under Job Flow

When adding a task identical to an existing one, you can avoid duplicate settings by adding it as a link instead of redefining the task itself or [copying and pasting] it.

Links can be added by [selecting the source job with the mouse and dragging it > dropping it at the destination]. Successfully added links will have a small arrow added to the bottom of the source job's icon.

If you want to add a link as the last child of a Job Flow, drop it directly onto it. Alternatively, if you want to add a link at a specific position, drop it at that location.

Since links are items that reference the source job, if the source job's settings change, the link will execute by referencing the changed settings.

10.6.4.4. Adding Another Job Flow under a Job Flow

One Job Flow can add another Job Flow to its subordinates. The method is as shown below, and the input is the same as when creating a new Job Flow.

1. Select the Job Flow to add a substep, and then right-click
2. Select [New Job > Job Flow]

10.6.4.5. Changing the Order of Subjobs

Newly added job are placed at the bottom of the corresponding step. To change the order of subjobs within the same step, select the desired task, drag it, and drop it where needed.

10.6.5. Sleep

As a job that waits for a specified amount of time, it can only be added to a subordinate of the Job Flow.

The additional method is shown below.

1. Select the parent Job Flow and right-click
2. Select [New Job > Sleep] from the menu

The configurations are as follows.

- **(*) Duration** (Can use item variable value expression)

Specify the time you want to wait. The unit can be selected from milliseconds to hours.

10.7. Execute Jobs

The ways to execute predefined jobs can be divided into immediate execution, approval execution, and scheduling.

10.7.1. Execute Now

Let the user execute the action immediately. Here's how to run it:

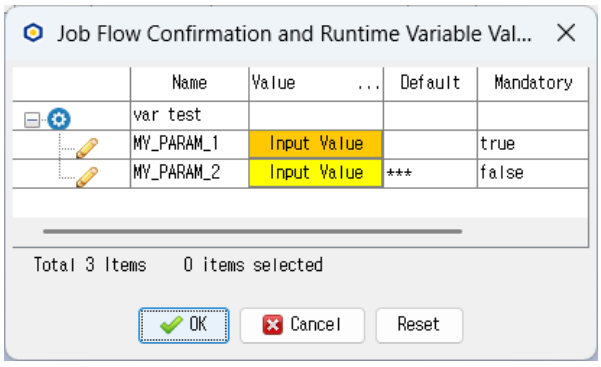
1. Select one or more desired actions from the Job Configuration Tree
2. Press ENTER Key on your keyboard or right-click the mouse and select [Execute Now] from the menu.
   Or, if you only have one job to execute right away, you can simply double-click on it.

If more than one job is selected, or if the target agent selects a job specified as {{AgentGroup/A}}, a window will appear asking if the jobs should be executed in serial or parallel.

Jobs specified as [Serial] are executed sequentially by a single thread. On the other hand, jobs specified as [Parallel] are executed by multiple threads at the same time.

If the number of parallel jobs exceeds 32, a window asking for the number of threads to use is displayed, where you can increase the number of threads up to a maximum of 64. The appropriate number of threads depends on the capacity of the PC; while a typical PC can handle up to about 64 jobs without difficulty, it is recommended to specify a smaller number for very low-spec PCs. Tasks exceeding the specified number of threads wait in an internal job queue and are executed when one or more existing jobs are completed and allocable threads become available.

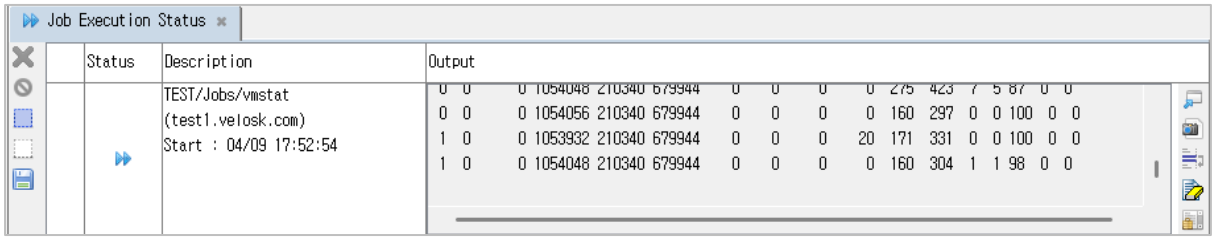
If runtime variables is set for a job, a window opens where you can enter the value of the variable.



To enter a value, double-click on the cell, enter the desired value, and press ENTER Key. When you

have finished entering all the variable values, press the [OK] button.

When the job starts running, the [Job Execution Status] window appears, and the output text is displayed in real time.



There are buttons on the left and right sides of the output window, and their roles are as follows, and you can see a brief explanation by hovering over the button.

The buttons on the right side of the output window are for managing the output window of individual jobs.

Button	Roles
Separate into a separate window	The output window is separated into separate windows. Use it when you want to see the current output in a large window.
Snapshot	Copy the entire current text in the output window and display it in a separate window. The output of the original output window will continue to proceed.
Automatic line breaks	When the text becomes horizontal, it automatically wraps lines to eliminate the need for left and right scrolling.
Delete all current text	Delete all text that is currently displayed in the output window.
Disable auto-scroll	Automatically prevent the window from scrolling when new text is output.

The buttons on the left side of the output window are for managing the job list.

Button	Roles
Delete rows	Deletes the selected jobs from the current list. Running jobs aren't deleted even if selected.
Kill	Kill the selected jobs. Completed jobs are ignored even if selected.
Select All	Select all rows.
Deselect	Deselect all rows.
Snap Shot	Collect the output text and display it in a separate editor window.
Save	Collect the output text and save it as a file.

10.7.2. Job Execution Script

This is a window that allows you to specify multiple jobs as text scripts and execute them all at once. Scripts can also be saved as files and then reloaded and reused. To open the Job Execution Script window, do the following:

- Select the Admin Server node (house icon) in the Job Configuration Tree, right-click > select [Job Execution Script]
- Alternatively, select [Tools > Job Execution Script] from the Main Menu, or click the corresponding button in the Main Toolbar.

At first, one blank window opens. If you want to open more blank windows, press the [New File] button on the left of the window.

Each task must be recorded on a single line, and the format is as follows. Lines starting with # are treated as comments.

[Path Name of Job] [Name of Dynamic Variable 1] [Value of That Variable 1] [Name of Dynamic Variable 2] [Value of That Variable 2] ...

[and] are used to distinguish tokens, so don't enter them. Each token is separated by a space or a tab. If there is a blank space in the job path name, variable name, variable value, etc., wrap it with double quotes, so that it will be recognized as a token. If you want to enter the double quote itself, type ₩".

For example, suppose you have a command line execution job under the Jobs folder in the TEST domain that is defined as follows:

Name	FileCopy
Command line	cp -r ${FROM} ${TO}
Dynamic variables	FROM
	TO

If you want to run this job and copy /test/src/* to /test/target, you can specify the following:

```
TEST/Jobs/FileCopy  FROM  /test/src/*  TO  /test/target
```

Here's an easy way to enter a pathname for a job:

- Select the job in the Job Configuration Tree, then press Ctrl+C. The path name of the task will then be copied to the clipboard. Then, select the desired location in the Job Execution Script window and press Ctrl+V to paste it.
- Alternatively, you can drag the job from the Job Configuration Tree with your mouse and drop it to your desired location in the Job Execution Script window.

Here's how to make dynamic variable input easier:

- Place the cursor (carat) after the job path and type Ctrl+SPACE on your keyboard to bring up the dynamic parameter list window. After entering the desired value here, press the OK button to append the name and value pair of parameters.

If you don't specify dynamic variables in your script, you'll be asked for a value when you execute them.

Once all the inputs are complete, press the [Execute] button on the top toolbar. Once the execution starts, you cannot edit the script or close the window until all operations are complete or stopped.

To stop the jobs you have executed all at once, press the [Stop] button in the top toolbar. If you want to selectively stop only the jobs, select the desired job from the Job Status Table at the bottom and press [Kill] button at left tool bar.

If you want to reuse your input later, do the following:

- Press the [Save] button in the top toolbar or press Ctrl+S on your keyboard. This will bring up a window to specify the file name.
  The file has .jxsi extension. If you just enter the file name without the extension, the extension will be added automatically.

To retrieve the saved file, follow these steps:

- Press the [Open Files] button on the left toolbar or press Ctrl+O on your keyboard. This will bring up a window where you can select the files. You can select one or more files, and if you select multiple files, each file opens in a separate window.
- Alternatively, select one or more files you want to load from the User Workspace

window and right-click > [Open]. If you only want to open one at a time, just double-click it.

The User Workspace window opens automatically when you log in and is located within the File Explorer tab. If the window is closed or you want to open a new one, select [Configurations > User Workspace] from the Main Menu.

12. User Account Management

<Caution: License>
● For Community Edition, you must purchase a separate license key to operate more than 5 user accounts. Purchase inquiries: sales@velosk.com ● For detailed information about licenses, please refer to the [Selecting License Type] section.

In the Main Menu, select [Configurations > Administration Environment> Security > Account > User Account]. This will open a window showing a list of all currently registered user accounts.

Just after installation, you will have only one administrator account, [candleadm] registered. This cannot be deleted as a default administrator account.

< Caution>
After adding a new user, you must map that user to one or more roles. Otherwise, the user cannot do anything other than log in. For more information on this, please refer to the [Permission Management] chapter.

12.1. Password Complexity Policy

This configuration applies to all users, and passwords that violate this policy cannot be used when a new password is assigned. The configuration method is as follows.

Click the [Password Policy] button at the top of the user list. And a window opens.

The input items are:

- **Password Length (Min)**

  Specify the minimum length of the password.

- **Number of uppercase, lowercase, numeric, and special characters (minimum)**

  Specify how many uppercase, lowercase, numeric, and special characters must be included in the password.

  To disable a condition, specify 0.

- **Consecutive Characters (Max)**

  Specifies the maximum number of identical or consecutive characters allowed, such as 111,aaa,123,321,abc,CBA.

  To disable this condition, specify 0 or 1.

- **Number of non-reusable previous passwords (maximum)**

  Prevents the use of previously used passwords. For example, if you specify 3, the three previously used passwords cannot be used as new passwords.

  To disable this condition, specify 0.

  However, regardless of this number, a password identical to the current password cannot be set as a new password.

12.2. User Management Policy Defaults (SYSTEM_DEFAULT)

The settings here apply equally to all users.

However, for [Inactive Account Expiry], [Password Expiry], and [Illegal Login], the values set here are used only if the value is specified as SYSTEM_DEFAULT in the properties of each user account.

You can open the configurations window by clicking the [Common Policy (SYSTEM_DEFAULT)] button at the top of the user account list, and the input items are as follows.

- **Inactive Account Expiry**

  Accounts that are not logged in during this period will be disabled. The unit is [Day]

If you don't want to apply this condition, select [None].

- **Password Expiry**

  You must change your password before this period expires. The unit is [day].

  If you don't want to apply this condition, select [None].

- **Illegal Login**

  If login attempts fail more than the [Max Count] specified here, the account will be disabled.

  - **Count Reset**

    If you specify ON_SUCCESFUL_LOGIN, when a user successfully logs in, the illegal login counter will reset to zero.

    On the other hand, if you choose NEVER, the illegal login counter continues to accumulate regardless of whether the login is successful.

  - **Delay**

    This is designed to defend against mechanical login attempts, such as brute-force attacks. If the password is incorrect, the admin server waits for the specified time before returning an error response. The unit is [seconds].

    If you don't want to apply this condition, input 0.

- **On login**

  Before and after user login, the following notifications will appear depending on the account status.

  - **Account Expiry Warning**

    This is a warning displayed when a user account has an expiration date.

    Based on the user's current login time, this warning window is displayed if the account is scheduled to expire within the time specified here. The unit is [days].

  - **Password Expiry Warning**

If the password is scheduled to expire within the specified time based on the user's current login time, a warning window will be displayed. The unit is [day].

- **Password Change Enforcement**

  If the password is scheduled to expire within a specified time based on the user's current login time, it blocks login and forces password change. The unit is [day].

  This value should be smaller than [Password Expiry Warning] value.

- **Periodic Notifications**

  Even if users are not logged in, the system periodically checks account status and sends notifications.

  - **Notification Method**

    Currently only [Email] is supported. However, to send notifications via email, you must set the relevant settings up in advance. To know how to set them up, please refer to [Email Sending].

  - **Inactive Account Expiry Warning, Password Expiry Warning**

    Warning emails are sent to users whose login will soon be blocked due to the [Inactive Account Expiry] policy and [Password Expiry] policy.

    Please specify the number of days prior to expiration when sending the email. If specifying more than one number, separate them with comma (,). For example, if you specify 5,10 emails will be sent 5 and 10 days prior to expiration.

  - **Schedule**

    Specifies when the internal scheduler that checks expiration dates and sends notifications should run. The schedule expression is similar to Linux crontab expression. If you are not familiar with this expression, you can press the [Assist] button to the right of the input box to get help writing it.

<Schedule Expression>
A single expression consists of five fields, each separated by a blank. The order of the fields is as follows.

Minutes(0-59) **Hours**(0~23) **Days**(1~31) **Months**(1~12) **Weekdays**(0~6)

Each field is assigned a number, and there is a limit to the range of numbers that can be specified per field. For example, in the [minutes] field, only numbers between 0 and 59 can be entered.
To specify multiple numbers in one field, separate each number with a comma (,).
You can enter asterisk (*) instead of numbers, which means all numbers.

For example, if you specify the following, the scheduler will run every morning at 5 a.m.

0 5 * * *

- **Account Re-enable by User Oneself**

  Allows the user to reenable the account by themselves when it was disabled due to reasons such as inactive account expiry, password expiry, illegal login.

  However, if the account's expiration date has passed or has been forcibly disabled by administrator, it cannot be reenabled by user themselves regardless of this configuration.

  - **When inactivity period expired, When password expired, When illegal login count limite exceeded**

    Specify when to allow reactivation.

  - **Identity Verification Method**

    Currently, only [Email] is supported. However, to send notifications via email, you must set the relevant settings up in advance. To know how to set them up, please refer to [Email Sending].

  - **The user must know the current password**

    If check this, the reenabling process includes a step to verify whether the user knows the current password.

Additional settings are required to ensure this applies to users. You cannot set this up on the current screen; you must edit the [candle.jnlp] file directly on the Admin Server. Editing can be done using the text file editor in the Qplat Client or by remotely accessing the Admin Server.

■ **Editing with the Qplat Client**

1. In Agent Explorer, find the AdminAgent and double-click to open File Explorer. The Admin Agent is located just below the Admin Server icon and has the suffix [AdminAgent].
2. Go to the /qplat/admin/ext/web/webapps/ROOT directory.
3. Find and select the candle.jnlp file, right-click > choose [Edit].

■ **Remote access to the Admin Server for editing**

1. Remotely access the Admin Server via SSH or Windows Remote Desktop.
2. Go to the /qplat/admin/ext/web/webapps/ROOT directory.
3. Find the candle.jnlp file and open with an editor like vi or Notepad.

If you open the candle.jnlp file with an editor, do it as follows.

1. Locate the **candle.usermgmt_by_req.activate** property and set its value to **true**.
2. Locate the **candle.usermgmt_by_req.allowReenableAndPasswdResetBySelf** property and set its value to **true**.
3. Save the file.

From now on, when the Qplat Client starts, the message [Don't you have User account or is it disabled?] will be displayed at the bottom of the login screen. If the user clicks this message, they can start the reenabling process.

- **Allow simultaneous login**

  If you uncheck this item, you will not be able to log in with the same ID at the same time, and if you log in again, the user who were already logged in will be forcibly logged out without warning.

- **Show login messages**

  This message is displayed immediately after a user logs in. Generally, it is used to enter warnings, announcements, etc., that all users need to be aware of.

12.3. Individual User Configurations

To add a new user, click the [Add] button at the bottom of the account list. To change an existing user configuration, select the user and click the [Update] button or double-click on the user. To delete an existing user configuration, select the user and press the [Remove] button.

The input items on each user configurations are as follows.

- **(*) ID**

  Specify the ID of the user. The ID must be unique and cannot be used for anything other than the English alphabet, numbers, period(.), underbar(_), dash(-), and at(@).

<Notes>
IDs are case-sensitive. That is, abc and ABC are recognized as different IDs.

- **Change Password**

  This checkbox appears only when changing configurations. You must check here if you want to change password.

- **(*) Password**

  Specify a password.

- **(*) Confirm password**

  Enter password once more to verify its accuracy.

- **Change Password on the First Login**

  Checking this check box forces the user to change their password on first login thereafter. Once the user changes their password, this box is automatically unchecked.

- **Personal Information**

  The user's personal information, such as person name, email, phone, title, department, company, and simple descriptions.

- **Account Expiry**

  If this account must be used only until a specific date, please enter it here. Otherwise, select [None].

- **Inactive Account Expiry, Password Expiry, Illegal Login**

  If you select [SYSTEM_DEFAULT] in the combo box of these items, the values specified in the [Common Policy (SYSTEM_DEFALT)] described earlier are automatically applied.

  If you need to assign a different policy to a specific account, select [Specific] in the combo box and specify the desired value.

- **Account status**

  Indicates the current status of the account. The value is either Enabled/Disabled, and you can also change this value to force the user account to be enabled/disabled.

- **Allowed PC list**

  Enter the network information for the user's PC that you want to allow to log in with the account. If you don't enter anything, all PCs are allowed.

  The input format is to write the IP, Mac address, and hostname of the PC in a single line followed by a comma.

  For example, the representation below only allows login from PC with an IP of **100.1.2.123**, Mac address of **00:50:56:c0:00:08**, and a hostname of **John_Doe_PC**.

  100.1.2.123,00:50:56:c0:00:08,John_Doe_PC

To allow all values for a field, use asterisk (*). For example, the expression below only checks if IP of the PC is 192.168.123.101, but does not check the Mac address and hostname.

192.168.123.101,*,*

If you want to specify multiple PCs, separate each PC information with a new line (ENTER key). There is no limit to the number of PCs that can be specified.

- **Add the first login PC from now**

  If this check box is checked, the network information of the PC that the user logs in for the first time will be added to the [Allowed PC List] described above. This feature is convenient because administrators do not have to enter the user's PC information one by one.

  Once the user has successfully logged in, this box is automatically unchecked.

12.4. Adding Multiple Users at once

When you click the [Batch Add] button at the bottom of the list of user accounts, a table appears that allows you to add multiple user accounts at once.

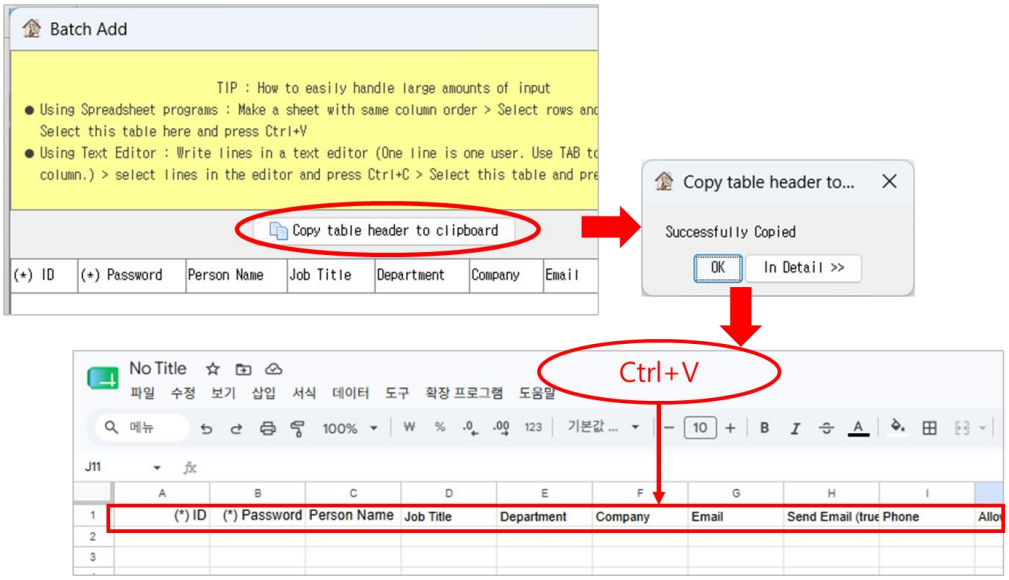
- To add a user information to the table, press the [+] button on the right. Double-click on the desired cell and enter a new value.
- Select one or more rows and copy (Ctrl+C) / paste (Ctrl+V) to add new rows with the same values. You can save the trouble of re-entering the same values by double-clicking only the parts that need changing in the new rows.

<Note>

Spreadsheet programs such as MS Excel, Google Spreadsheet or text editors such as Notepad can make typing easier for many users. (When using a text editor, be sure to separate each field with a tab.)

You must strictly adhere to the order of the input items. To make this easier, you can copy the table title to the clipboard by pressing the [Copy table title to clipboard] button at the top of the table. Then paste this into the first line of a spreadsheet program or text editor

by pressing Ctrl+V. Then write user records below it.



Once you have finished ediding the table, select all rows except the titles, copy them to the clipboard (Ctrl+C), and return to the [Batch Add] window. Then, select the User Information table and press Ctrl+V to paste the contents.

After entering all the users you want to add, press the [OK] button. If you already have a user account with the same ID, a warning window will appear. If you click [Skip All] in this warning window, all users will be added normally except for duplicate IDs.

12.5. Multi Factor Authentication (MFA)

<Caution: License>

- For Community Edition, you must purchase a separate license key to use multi-factor authentication. For purchase inquiries: sales@velosk.com
- For detailed information about licenses, please refer to the [Selecting License Type] section.

With this feature, you can apply additional authentication such as One Time Password (OTP) in addition to the default password authentication. The default additional authentication method is Google OTP (Google Authenticator). Here's how to set it up.

1. From the main menu, select [Settings > Management Environment > Security > Account >

Multi-Factor Authentication].

2. Check the [Activate] box. If this box is not checked, multi-factor authentication will not be applied.
3. Select [Google OTP] as the [Type].
4. Select and check the functions that require additional authentication, and uncheck those that do not. For example, if you check [Open File Explorer], additional authentication will be required each time you open File Explorer.
5. If there are users who do not require additional authentication, their IDs are listed in the [Exceptional Users] box. If you want to enter more than one user ID, separate each with a new line (ENTER key).
6. Once the setup is complete, press the [Apply] button and then the [Save] button in order.

Now, when the user logs in, a window will appear asking them to register a Google OTP key. You can register your user key with Google OTP by doing the following .

1. Open app markets like Google Play or App Store on your smartphone, find and install Google OTP or Google Authenticator.
2. Open the app, press the [+] button, and scan the QR code displayed on the screen. If you cannot scan the QR code, please enter the key value.
3. Once the key registration is complete in the app, press the [Complete Registration] button.

Now, every time the user logs in, a window appears asking for an OTP value, and the user must enter the OTP value to log in.

12.6. Troubleshooting when User Can't Login

If user have forgotten password, password has expired, or the account was disabled due to long term inactivity, do the followding steps for troubleshooting.

● **Troubleshooting by administrator**

Locate the user in the user account list and double-click to open the account properties screen. From here, take the following steps and then click the [Update] button.

■ **If user forgot password or password expired**

Check the [Change Password] box and enter the new password.

■ **If maximum count of Illegal Login is exceeded**

Click the [Reset] button in the [Illegal Login] section

■ **If Inactive Account Expiry has passed**

Click the [Reset] button in the [Inactive Account Expiry] section

■ **If Google OTP key reissue required**

This should be done on the account list screen, not the user account properties screen. Select the desired user from the account list table and click the [OTP Key Reset] button at the bottom.

● **Troubleshooting by user oneself**

For this operation, [Account Re-enable by User Oneself] setting must be onfigured in advance. For instructions, refer to the [Account Re-enable by User Oneself] section in the [User Management Policy Defaults (SYSTEM_DEFAULT)] chapter.

If this setting is already enabled, users can see [Don't you have User account or is it disabled?] message at the bottome of their Login screen. If click this message, the reenabling procedure will begin. This procedure requires identity verification and password changes.

12.7. Troubleshooting when the Administrator Can’t Login

If you have forgotten the administrator account password, the password has expired, or the account has been disabled due to long term inactivity, take the following steps for troubleshooting.

Use an SSH terminal or remote desktop client to connect to the Admin Server and navigate to the bin folder in the Admin Server installation directory. For example:

Linux/Unix	Windows
cd /qplat/admin/bin	cd C:₩qplat₩admin₩bin

● **Forgot password, password expired, or the maximum count of illegal logins exceeded**

Execute the init_passwd command to reset password

Linux/Unix	Windows
./init_passwd	init_passwd

- **If your account has been deactivated because you haven't used it for a long time**

  Execute the init_lastlogintime command to reset the final login time.

Linux/Unix	Windows
./init_lastlogintime	init_lastlogintime

- **If Google OTP key reissue required**

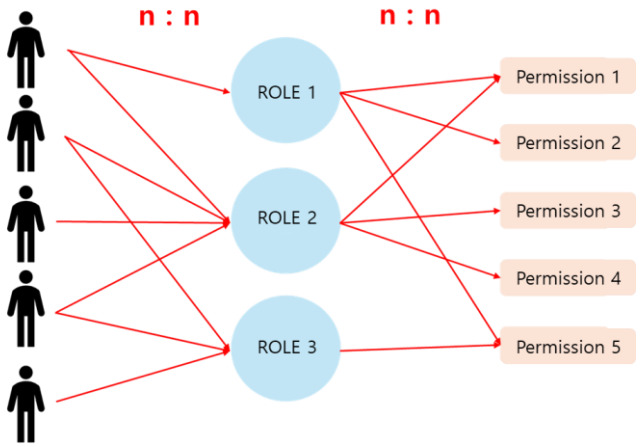
  Execute the init_googleotpkey command.

Linux/Unix	Windows
./init_googleotpkey	init_googleotpkey

13. Permission Management

Qplat manages all users' permissions on a role-based.

Qplat supports n:n role mapping, which means that a role can contain multiple users, and a single user can also be included in multiple roles at the same time.



13.1. Role Definitions

To add a new role, select [Security > Role > Role Definition] in the Administration Environment window. A table will appear showing a list of all the roles currently registered on the Admin Server.

<Note>
The table includes roles named [UserDedicated.UserID] by default, which are assigned exclusively to that user, and are automatically created when users are added, and will not need to be changed other than a session timeout.

When you click the [Add] button at the bottom of the table, a window will appear where you can set a new role, and the input items are as follows.

- **(*) Name**

  The name of the role. It serves as an ID that separates each role, so you need to specify a unique value, and you can't use anything other than the English alphabet, numbers, Period(.), underbar(_), dash(-), and at(@).

  <Notes>
  Role names are case-sensitive. That is, abc and ABC are recognized as different roles.

- **Description**

  A brief description of the role.

- **(*) Session Timeout**

  If the user assigned to this role does not perform any operations during this time, the session will be invalidated. The unit is [minutes], with a minimum of 1 and a default value of 60. Enter -1 to specify no session timeout.

  If a user is mapped to multiple roles, the shortest session timeout among those assigned to each role will be applied.

  If you attempt to perform a new operation after the session is invalidated, some menus may not be visible, or a warning window indicating that there is no session will be displayed. Clicking the [Log In Again] button on this warning window will bring up the Login window. You can resume

your work by logging in again from here.

On the other hand, tasks started before the session was invalidated will continue regardless of the session invalidation. For example, tasks started before the session was invalidated or file monitoring (tail) will continue even after the session is invalidated.

- **Role Owner**

Specify users other than the administrator who can edit the permissions mapped to this role. This is not mandatory, so you do not have to specify anyone, or you can specify one or more.

<Note>
To change the permission settings included in a role, the role owner must do the following:
1. Log in with the role owner's ID.
2. Select [Configurations > Permission Change Request] from the main menu.
3. Select the role from the [Roles] table and set the necessary permissions.
4. Once the permission settings are complete, click the [Request Approval] button.

The configured permissions will be applied after the final approval process is complete.

13.2. Mapping Permissions to Roles

This is the process of assigning permissions to a role.

In the Administration Environment, select [Security > Role > Mapping Permissions to Roles]. This will show a window for permission mapping.

<Caution>
Please make sure to press the [Save] button once the settings are complete. This ensures that the settings are finally reflected in the server's repository. Conversely, if you wish to ignore new settings, press the [Reload] button at the top left of the screen.
It may take up to 1 minute for the saved settings to be applied to all users and agents.

13.2.1. Common Policies

Specify a policy that applies to all roles.

To set it, click the [Common Policy] button at the top of the permission mapping window. The input items are:

- **Disallowed characters in runtime variable value**

  This is used to block command-line injection attacks where users input unauthorized statements into runtime variable values during task execution.

  For example, if a user append 'semicolon (;) + command line' into a runtime variable value of a Linux command line execution task, that command line is executed.

  The default characters are as follows; if a user enters one of these characters into the runtime variable value, Qplat rejects execution and displays an error message.

  `|><; &

- **Text can be copied without download permission**

  If users don't have permission to download a file, they are blocked from copying or cutting the contents of the file to the clipboard. However, with this feature, they can copy a specified amount of text to the clipboard even without download permission.

- **File keeping duration in recycle bin**

  If you have [File Write] permissions to a file, you can delete or throw it in Qplat trash, which is automatically deleted after a certain period of time. You can specify the minimum, maximum, and default values for this period. The units can be selected between days minutes, and hours.

13.2.2. Mapping Permissions to Each Role

When you select a role from the list of roles, the permissions mapped to it are displayed in a tree below it. This is called the [Permission Tree], and each tree item has a configuration method that matches the type of the permission.

If you want to assign specific permissions to a role, do the following:

1. Select the desired role from the [Roles] table. This will show you the permission tree for that role below it.

2. In the tree, check the box in front of the permission name you wish to configure if it is not already checked.

   This checkbox determines whether the permission is applied. You can disable the permission simply by unchecking it, without removing any detailed settings. Additionally, if a parent permission in the tree is not checked, the permission will not be applied even if a child permission is checked.

3. In the tree, select the permission name to display the configurations window for detailed permissions on the right. The content and method of configuration permissions vary for each permission, so please refer to the section on that permission.

   <Caution>
   If there is an [Apply] button at the bottom of a settings window, please be sure to click the [Apply] button after entering new values. This is necessary for the new value to be applied to the permission tree. Otherwise, if you switch screens, the input values will not be applied and will disappear.

Once the permission settings are complete, press the [Save] button to save the settings to the server. Conversely, if you wish to discard the settings, press the [Reload] button at the top left of the configuration window to reload the settings from the server.

13.2.3. Administraion Permissions

These are permissions for Qplat administrators that specifies the ability to view and write all configurations in Qplat and control all behaviors. Without the need to specify details, permissions are applied simply by checking or unchecking.

- **View**

  This is the permission to view configurations.

- **Write and Control**

  This is the permissoin to change configurations and control this product.

13.2.4. Server and OS Account Permissions

Specify the list of accessible agents and which OS accounts each agent can use on the server.

From the permissions tree, select the [Server and OS Account] item. A window will appear on the right side, where you can specify [Accessible Agents] and [Available OS Accounts].

● **Accessible Agents**

First, specify a list of accessible agents. Agents not specified here will not be visible in the Agent Explorer and are not subject to [File and Directory Access Permissions] described later.

However, for users with administrator privileges, all agents are visible regardless of what is specified here.

1. Clicking the [+] button on the right side of the table will bring up the agent name input field.
2. Now, you can enter agents using the following methods.

   ■ When you select one or more agents from the list, their names are automatically entered in the [Agent Name Expression] text box at the bottom.

   ■ Instead of selecting agents from the list, enter the agent name or wildcard (*,?) expressions in the [Agent Name Expressions] text box.

   For example, specifying * means all agents, and specifying abc* means all agents whose name starts with abc. Using wildcard expressions like this is convenient because it automatically recognizes newly installed agents.

   If you want to enter multiple names or expressions, separate each with a new line (ENTER key).

   Once you have finished entering the input, please press the [OK] button. Then, all the expressions in the [Agent Name Expressions] text box will be added to the agent list table. If you wish to change an already added ones, please delete them and then add new ones.

   The [Access] column in this table determines whether to allow or disallow access to the corresponding agent. The default value is [Allow]. Since rows are evaluated from top to bottom, if an agent matches multiple expressions, the [Access] value of the lowest expression is applied.

   Using these characteristics, you can easily apply access permissions to a large number of

agents. For example, if you want to allow access for all agents but disallow access for some of them, do the following:

1. Add agent expression *, and set the [Access] permission to [Allow].

2. Add the agents to be disallowed below that, and set their [Access] permissions to [Disallow].

- **Available OS accounts**

Once you've set up the agent list, it's time to specify the list of available OS accounts for each agent.

Unlike the agent list, this process is only required in the following cases, and the target OS is limited to Linux and Unix.

- If the target agent is a real agent running on an actual process, and the agent's process owner is a superuser (root),
- If the target agent is a virtual agent

Unless these are the case, all operations can only be performed by the agent's process owner privileges, so there is no need to specify the OS account list.

There are two tables specifying the OS account list: one titled [Grouping] and the other titled [Individual]. You can specify only one of these or both.

- **Grouping**

  By using wildcard expressions, multiple target agents can be specified at once, and a list of available OS accounts is mapped here. For example, specifying * as the agent name means all agents, and specifying abc* means all agents whose name starts with abc. Using wildcard expressions like this is convenient because it automatically recognizes newly installed agents.

  To add, delete, or reorder expressions, use the button on the right side of the table. Expressions are evaluated sequentially from top to bottom. Therefore, if there are multiple rows of expressions and an agent matches two or more of them, the bottom one is applied.

- **Individual**

This table lists the names of all agents matched with [Accessible Agents]. Select the desired agent from these and map the OS account list.

If an agent is included in both [Grouping] and [Individual], the one specified in [Individual] takes precedence.

For both [Grouping] and [Individual] tables, OS account mapping is done as follows.

1. Select one or more agent name or expression to set up an OS account, then click the [Add OS Account] button at the bottom.
2. Enter the available OS account names in the Add Account input field. To specify two or more OS accounts, enter one line for each.

   If you don't know your OS account name exactly, try clicking the [Load from server] button. This allows you to view the list of all OS accounts within a specific agent.

   Once you have entered everything, click the [OK] button.

<Reference>

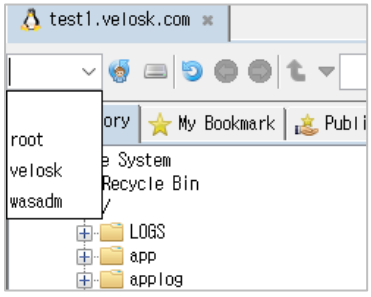
To remove OS accounts assigned to an agent from the list, do the following.

1. Select one or more agents from the [OS Accounts] table to remove the OS account.
2. Click the [Remove OS Account] button at the bottom of the table.
3. When the OS account list appears, select the OS accounts you want to remove and click the [Confirm] button.

3. If there are two or more OS accounts assigned to an agent and one of them is likely to be frequently used by the user, press the [Set Default] button and set it as the [Default OS Account]. Then, when the user needs to select an OS account later, that will be selected as the default one.
4. Don't forget to click the [Apply] button to reflect the settings to the selected role when input is complete.
5. When all settings are complete, click the [Save] button, which will eventually reflect the settings to the server's storage.

The user will now be able to select one of the mapped OS accounts in the file explorer, viewer, editor, and so on. The capture below is an example of a file explorer.

From now on, users will be able to select one of the mapped OS accounts in File Explorer, Viewer, Editor, etc. The screenshot below is an example of File Explorer.



13.2.5. File and Directory Access Permissions

Specifies permissions to access files and directories and read and write.

<Caution>

Access to files and directories is performed by the agent.
Therefore, it goes without saying that even if Qplat has granted access permissions to a file or directory, access to that file or directory is not possible unless the owner of the real agent process or the OS account of the virtual agent connection has OS-level privilege for the file or directory.

To add Read or Write permissions, expand the [File and Directory] item, right-click the [Read] or [Write] item below it, and select the [Add New Paths] menu. The input items are like followings.

● **Common Inputs**

The followings are the common inputs contained in both [Read] and [Write] permissions.

■ **Agent**

Please list the names of the agents to which you want to apply the current permissions, among the agents specified earlier in [Server and OS Account]. To list multiple agents, separate each name with a new line (press the ENTER key).

Press the [+] button on the right to display a list of available agents, from which you can select and add desired agents.

However, rather than listing each agent name individually, a more recommended way is to use wildcard (*, ?) expressions for some or all of the agent names.

For example, if you specify ***** as the agent name, all agents specified earlier in [Server and OS Account] will be recognized as targets. And, if you specify **abc*** as the agent name, agents

among those specified in [Server and OS Account] whose names start with **abc** will be the targets.

■ **Path**

Specify one or more paths for files and directories to access.

When a user attempts to access or manage a file or directory, Qplat compares its absolute path to the path expressions specified here to determine if they match. If the target server's OS is MS Windows, path comparison is performed case-insensitively; if it is Unix or Linux, it is case-sensitive.

To add a new path, press the [+] button on the right side of the table. This will add a blank row. You can enter a path expression by double-clicking the path cell in the row. You can also change existing values by double-clicking the path cell.

Wildcards (*, ?) can be used in each path expression. A single asterisk (*****) represents a single-level subdirectory, that is, the directory or file rigit under it. Using two consecutive asterisks (******) represents multiple levels of subdirectories under it.

For example, **/app/*** refers to files and directories right under the **/app** directory, while **/app/**** refers to all subdirectories starting with **/app**.

Similarly, **/app/*.log** refers to files with the .log extension immediately below **/app**, while **/app/**.log** refers to files with the .log extension within all subdirectories starting with **/app**.

Entering just ****** as a path expression refers to all files and directories within the target system.

If multiple lines are added to a path expression, they are compared sequentially from top to bottom. If a file or directory matches two or more path expressions, the permissions of the bottom one are applied.

● **[Read] Permissions**

The following are the detailed permissions that can be specified in the [Read] permission, and the value can be selected from [Allow, Disallow, Allow by Approval]. [Allow] means to always allow the permission, and [Disallow] means to never allow it. [Allow By Approval] means that permission is granted by final approval after going through the approval process.

These permissions can be specified differently for each path expression, and the value can be changed by clicking on the cell and selecting the desired value in the combo box.

■ **View**

The permission to view contents in the viewer.

■ **Download**

Permission to download files.

If this permission is [Disallow], you even cannot save, copy, cut, or print the content viewed in the viewer.

<Note>
If you set the [Text can be copied without download permission] option in [Common Policies], even users without download permission can select and copy/cut up to a specified number of characters in the viewer.

■ **Transmission**

This is the permission to copy files to another server.

<Caution>
The actual transfer is possible only when the recipient of the file is granted [Write] permission.

■ **Copy**

The ability to copy files to different paths within the same server.

< caution>
The actual transfer is possible only when the recipient of the file is granted [Write] permission.
In addition, if you intend to 'move' a file, since this is actually an act of 'copying and deleting the original,' both the target side and the source side must have [Write] permission.

■ **PreFilters**

This is a filter called before the agent loads the file contents and converts them to text. It is primarily used to decrypt encrypted files.

Customization, such as writing a separate Java class, is required to use this feature; otherwise, the value of this item has no effect.

■ **PostFilters**

This is a filter called immediately before the agent sends the file contents to the client. It is primarily used to remove sensitive information within the file.

Like PreFilter, using this feature requires customization by writing a separate Java class; otherwise, it has no effect.

● **[Write] Permissions**

The following are the detailed permissions that can be assigned to the [Write] permission, and the value can be selected from [Allow, Disallow, Allow by Approval], just like Read. [Allow] means to always allow the permission, and [Disallow] means to never allow it. [Allow by Approval] means that the permission is allowed after approval and final approval.

These permissions can be specified differently for each path expression.

■ **Upload**

Permission to upload files and directories from a user's PC to the server.

■ **Write**

All write permissions except for uploading, such as creating, deleting, and modifying files and directories.

● **[Execution] Detailed Permissions**

This feature is a permission to double-click on a file to run it directly, which is not currently supported.

After all input is complete, click the [OK] button to add the newly entered items under the [Read] or [Write] section.

To change existing settings, select the corresponding item under [Read] or [Write], change the setting, and click the [Apply] button.

If you wish to remove items added under [Read] or [Write], select them, right-click, and choose [Remove].

Once all settings are complete, click the [Save] button. This will ensure the settings are reflected in the server's repository.

<Note>
If you need to specify different file and folder paths and permissions for each agent or group of agents, add multiple [Read] and [Write] items. by doing [Add New Path] multiple times.

13.2.6. Predefined Job Execution Permissions

This permission is required when a user wants to execute predefined jobs in Job Configuration Tree by [Execute Now] or [Execute After Approval] menu.

<Note>
Auto-run by schedule is not affected by this permission.

To set this permission, please do the following:

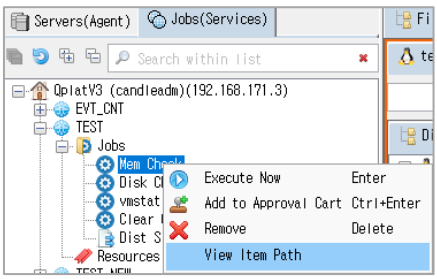
1. Select the [Service Management > Execute Predefined Job] item in the permission tree.
2. Then, press the [+] button on the right side of the permission table to display a blank line. To enter a new value, click or double-click on the desired cell.

■ **Path expressions**

Each item in the Job Configuration Tree can be displayed as a single string of characters from the name of the top-level item to the name of that item with a slash (/), like a file path. This is called the item's path expression.

For example, if you have a **Jobs** job folder under the **TEST** domain , and a job called **Memory Usage** under it , the path to this job item is **TEST/Jobs/Memory Usage**.

<Note>
If you want to get the path expression of an item, you can go to the [Job Configuration Tree], right-click on the item, and select the [View Item Path View] menu.



Wildcards (*, ?) can be used in each path expression. A single asterisk (*) represents a single-level sub-item, i.e., the item right under it. Using two consecutive asterisks (**) represents multiple levels of sub-item.

For example, **TEST/Jobs/*** refers only to jobs right under the **Jobs** folder in the **TEST** domain, and **TEST/Jobs/**** refers to all jobs below the **Jobs** folder in the **TEST** domain.

Entering just **** as the path expression refers to all items including all jobs in all domains.

- **Execution**

Specify the execution permissions of the jobs that match the path expression with one of the values of [Allow, Disallow, Allow by Approval]. [Allow] means to allow immediate execution, and [Disallow] means not to allow execution. [Allow by Approval] means that it will be executed automatically after final approval is received through the approval process.

Users with [Allow] permission can perform both [Execute Now] and [Execute by Approval] for the jobs.

If [Allow by Approval] is specified, the user can request approval for the execution of the job, and at this time, the request is made by specifying whether the final approval should be automatically executed immediately or automatically executed at a specified time later.

If you add multiple path expressions, the permissions of each expression are applied sequentially from top to bottom. This means that if a job is matched to more than one path expression, the permissions specified at the bottom are applied.

<Note: When using the scheduler>

Users with the [Allow] permission can change the status of jobs registered in the planner both immediately and after approval.

Users with the [Allow by Approval] permission can also change the status of jobs registered in the planner only after approval.

- **Can View Properties**

If this item is checked, when the user selects an item in the [Job Configuration Tree], they can see

the properties of the item, that is, its configurations. However, changes to the properties is not allowed.

13.2.7. View Task Trace Permissions

Qplat keeps a trace of all users' operations, including administrators. And administrators can view these traces on the [Task History] screen.

If you want to give other users in addition to administrators permission to view their task traces, set followings :

- **By User**

  Allows to view the task traces of specific users. If you want to make them view only their own traces, check the [My Name Only] box at the top of the screen.

  - **Target Users**

    To specify the target user, press the [+] button on the right. This will create a blank line. To enter a new value, click or double-click on the desired cell.

    - **ID Expression**

      Specify at least one ID for the targeted users. A wildcard (*?) expression can be used. If a user ID matches two or more expressions, the bottom one's permission is applied.

    - **Permission**

      Specifies whether to [Allow] or [Disallow] viewing task traces of target users.

- **By Role**

  Allows to view the task trace of the users with specific roles. If you want to make them to view the task traces of users with the same role as themselves, check [My Roles Only] box at the top of the screen.

  - **Target Roles**

    To add a target role, press the [+] button on the right. This will create a blank line. To enter a new value, click or double-click on the desired cell.

◆ **Name expressions**

Specify name of target role. Wildcard expression (*?)can be used. If a role matches two or more expressions, the bottom one's permission is applied.

◆ **Permissions**

Specifies whether to [Allow] or [Disallow] viewing task traces of target roles.

13.3. Mapping User Accounts to Roles

This is the process of including Qplat users in specific roles. By doing this, users can obtain the permissions mapped to those roles.

In the Administration Environment, select [Security > Role > Mapping User Accounts to Roles]. A window for user mapping will appear. A list of roles is located at the top left of the window. If the name of a newly added role is not visible here, click the [Reload] button at the top.

To map users to a role:

1. Select the desired role, then a list of Qplat users will appear in the tables at the bottom and right side. The bottom table represents the Members already included in the role , and the right table represents the Candidate users who are not yet included in the role.
2. To add a Qplat user to a role, select one or more Qplat user IDs from the [Candidates] table on the right and click the [<=+] button or double-click the user. Then, they move to the [Members] table.
3. To remove Qplat users from a role, select one or more Qplat users from the [Members] table on the left and click the [-=>] button or double-click the user. Then, they move to the [Candidates] table.

● **Role Expiry**

You can specify a Role Expiry Date for member users. When you specify a role expiry date, the user can no longer perform that role after the date. If it has no value specified or is specified as None, it means that it can continue to perform its role without expiry.

To change the expiry date of a role, select one or more target users in the [Members] table, click the [Update Role Expiry] button at the bottom of the screen, and specify the expiry date and time.

14. Approval Process Management

<Caution>
Please make sure to press the [Save] button once the settings are complete. This ensures that the settings are finally reflected in the server's repository. Conversely, if you wish to ignore new settings, press the [Reload] button at the top left of the screen. It may take up to 1 minute for the saved settings to be applied to all users and agents.

14.1. Common Policies

From the Administration Environment, choose [Security > Approval].

The following items can be set:

- **Manual Job Duration Max**

  Manual job refers to a process where a user sets a period for performing a task upon requesting approval, and performs the task freely at any time within that period.

  The value of this setting limits the maximum period that the user can specify. For example, if this value is set to 10 days, the user can only set the period from the start to the end of the manual job to be within 10 days.

- **Directory Download / Directory Upload**

  If the value of this configuration is set to Disabled, users will not be able to download or upload directory.

- **Keep temp files for upload**

  When a user requests to upload a file via Approval, the file is temporarily held within the Admin Server before being sent to the target server, and is sent to the target server after the final

approval is completed.

The value of this configuration is in days, and if you specify a value of 0, files temporarily stored on the Admin Server will be deleted immediately after they are sent to the target server. On the other hand, if you set this configuration value to 1 or higher, the temporarily stored files will remain within the Admin Server for a specified period of time after they are sent to the target server.

The reason why temporary files are stored for a certain period of time even after the transfer is completed is due to post-audit. This means that each approval allows you to know exactly which file was uploaded.

- **Maximum number of downloads**

When a user requests a file download via approval, specify the maximum number of downloads for each file. The default value is 1, which means that a file or directory that has been downloaded once cannot be downloaded again. Therefore, to download them again, the approval process must be repeated.

To allow downloads them two or more times, please specify the desired maximum number. For no limit, enter 0.

14.2. Defining Approval Lines

From the Administration Environment, choose [Security > Approval > Approval Lines].

- **Common Items**

At the top of the approval line screen, there are the following items, which apply to all approval lines.

- **Allow requester to be included in the approval line**

  Generally, the user who requested approval cannot be included in the approval line. However, checking this box allows for such cases. If applicable, the corresponding approval step is automatically processed as [Approved].

- **Allow requester to be the only approver**

This check box is only activated if [Allow requesters to be included in the approval line] is checked.

By checking this box, even if there is only one approver in the approval line, the requester can be the approver.

■ **Disallow requester to be Nth approver**

This item is only activated if [Allow the requester to be included in the approval line].

The approval order is assigned using numbers starting from 1. If specifying two or more, separate them with commas (,). 0 means the last approver. For example, specifying 1,0 means that the requester cannot be the first or last approver in approval line.

■ **Allow Duplicate Approvers**

If you check this box, the same user can be included multiple times in an approval line. If the approver approves at a previous approval step, subsequent approvals will not be asked again and will be automatically processed as [Approved].

● **Definition of Approval Line**

1. To define a new Approval Line, click the [+] button on the Approval Line table's toolbar, enter the Name and Description of the Approval Line, and then click the [OK] button. Immediately after adding it, an alert icon will appear to the left of the Approval Line name because any approver has not yet been added within the Approval Line. If you specify approvers by following the procedure below, the warning icon will disappear.
2. Select the name of the [Approval Line] you want to configure. Then press the [+] button in the toolbar at the top of the [Approvers] table on the right side of Approval Line table. Then, select one or more Qplat users from the [Users] table that appears, and then click the [OK] button. They are then added to the [Approvers] table.

■ **Assign By Force**

If this box is checked, approvers are forcibly assigned when users request their approval. The user can add additional approvers, but cannot remove or replace the specified approvers.

On the other hand, if you uncheck this item, user can select approvers from the list of

approvers before requesting approval.

■ **Change the Approval Order**

◆ **If the [Assign By Force] is checked**

You can select one or more Approvers from the table and then press the Up/Down arrow buttons to reorder the Approvers.

◆ **If the [Assign By Force] is NOT checked**

After selecting one or more approvers from the table, click the [Assign Level] button and choose a level value. The selectable values range from 1 to 10, and approvers with lower level values will be prioritized before those with higher level values.

When users request approval, they select one approver from each level and designate them as the approver for that level.

The number of approval steps depends on the number of level values. For example, if the Approvers table has of 5 level values in total, the number of approval steps will be 5.

3. (Optional) If you need to designate auditors, configure [Autidors] table in the same way you configure [Approvers] table.

   The auditors are not involved in the approval process. They only audits the approval process after approval process finished. For a quick audit, auditors will receive an notification immediately after final approval is completed. If you don't need to specify auditors, you can skip this step.

4. Once you have finished the settings, press the [Save] button at the bottom of the window to save the new settings.

14.3. Mapping Approval Lines to Roles

This is configuration that automatically assigns one of the predefined approval lines based on the user's role.

<Note>
A user may be in more than one role, and each role may have a different approval line. In this case, when the user makes the actual approval request, a box appears to select which of these

approval lines to apply.

Here's how to set it up.

1. In the Administration Environment, select [Security > Role > Mapping Approval Lines to Roles].
2. Select one or more roles from the list of roles and click the [Update Approval Line] button at the bottom.
3. Select the name of the Approval Line you want to assign, and then click the [OK] button.
4. When the assignment is complete, please press the [Save] button at the bottom to save the configurations.

14.4. Approval Delegation Policy

This is configuration that automatically delegates the approval request to another person when the approver is absent. There are two ways to specify the delegation policy.

Approval delegation policies can be configured differently for each user, and the menu that opens the configuration window varies depending on who configures it.

● **Approver specifies their own delegation policy**

Approvers can specify their own approval delegation policy by logging in with their Qplat ID and selecting [Configuration > My Approval Delegation Policy] in the Main Menu.

● **Administrators specify delegation policies for users**

Administrators can specify delegation policies for each user on their behalf. In the Administration Environment window, select [Security > Approval > Approval Delegation Policy].

The input items are as follows.

■ **Enabled**

You must check this box for the delegation policy to be applied.

■ **Valid Duration**

Specify when this policy will be applied. The policy will not be applied once the specified period expires. If it should always be applied, select [Always].

■ **Delegatee**

Specify who you want to delegate to. Press the [Find] button on the right side of the input box to find and select the user you want.

■ **Waiting Time**

Specifies how long the approval must wait before being delegated to the delegatee. If set to 0, approval is delegated to the delegatee immediately upon receipt.

This setting is useful when users want approval delegation to occur not only during pre-planned periods such as vacations, but also when they are temporarily away for reasons such as meetings or breaks.

14.5. Managing Approval Carts and History

<Approval Cart>
Each approval request can contain multiple approval items in it. Therefore, internally in Qaplat, this is referred to as an Approval Cart.

Click [Tools > Approval Management] in the main menu of the Qplat client program. The [Approval Management] window will then appear at the bottom. This window is organized into tabs, and each tab displays a list of approval carts that meet specific criteria.

The period in the search criteria is based on the submission time of the approval cart. You can select from options such as [Today, Yesterday, This Month...] or specify the start and end times directly. Once you have finished specifying the search criteria, press the [Search] button. The search results will then be displayed in search result table in the tab.

Each tab may or may not be visible depending on who you are.

● **When I'm an Approval Requester or Approver**

All Qplat users, including administrators, can be requesters or approvers, so the tabs below are

visible to all users.

■ **Pended by Me**

Search for carts waiting for your approval.

■ **I am involved in Approval Line**

Search for carts where you are one of the Approvers.

■ **I requested**

Search for the carts that you requested approval.

● **When I am an Administrator**

The tabs below are only visible to Qplat administrators.

■ **Search by Requester**

Search for the Approval carts by the user ID of the Approval requester.

■ **Search as Approver**

Search for the Approval carts by the Approver's user ID.

■ **Search by Cart ID**

Internally, the approval item is referred to as Approval Cart. Each approval cart has its own unique ID, which is called the Cart ID

■ **Search All**

Based on the time of the Approval request, retrieves all Approvals requested within the specified time period.

When the search results are available, you can view the details and take the necessary actions as shown below.

● **View Details**

When you select the desired approval cart from the search result table, the center window displays the details of the approval cart.

● **Approve or Reject**

If you are an Approver, the [Approve] and [Reject] buttons appear at the bottom of details window. After checking the details, press one of the two buttons.

● **Approve or Reject At Once**

You can approve or reject multiple carts at once with this feature.

This is done not in the details window, but in the search result table. Selecting them from the search result table > right-click > Select [Approve] or [Reject] from the menu.

● **Cancel**

If you are the requester or administrator, you will see a [Cancel] button in the details window. Pressing this button cancels the Approval cart.

This feature only applies to carts that are still in progress (Pending state).

● **View Auto Execution Trace**

For tasks that run automatically after final approval, if you want to see a detailed progress log or a detailed error message, you can do the following:

1. Select the Approval cart from the search result table, right-click > select [View Auto Execution Trace] menu.
2. This will bring up a Text File Viewer window showing the trace log file for the approval cart. Use this viewer window to view the trace log.

● **Export Approval Cart Information to a CSV File**

1. Select one or more Approval carts to export from the search results table in the Approval History (Ctrl+A for all selections), and select the [Export to CSV file] button in the top toolbar.
2. Then, select the columns to be saved as a CSV file and click the [OK] button, and a table showing the details of the approval carts will appear
3. You can press the button at the bottom of this table to copy the contents of the table to the clipboard or save it as a CSV file.

14.6. Approval via email

Approval requests can only be made using the Qplat client program. However, approvals such as [Approve] or [Reject] can be done not only through the Qplat client but also via email.

< Caution>
The approval request email will only include the summarized content, such as name, description, path, and time etc. Therefore, if you want to check more details such as file contents before approval, the approver must also install the Qplat client program and make approvals with it.

For email approval, the administrators need to set up two configurations:

- **Mail Sending Server configuration**

  Configure SMTP properties for mail sending server. To know how to set them up, please refer to [Email Sending]. The menu is [Administration Environment > Mail Sending Server].

- **Register email address for user account and enable sending**

  The user account must have an email address registered to receive emails, and the [Send E-mail] box must be checked so that the email will actually be sent to that user.

  Here's how to set it up:

  1. From the Administration Environment, choose [Security > Account > User Account].
  2. Double-click the user account you want to configure.
  3. Enter email address and check [Send Email].
  4. When you are finished, press the [Change] button.

15. Request Approval (By Requester)

If administrator has set the permission configuration of a task to [Allow by Approval], the corresponding user can perform the task only after receiving final approval through the approval

process.

15.1. Downloading Files and Directories

To request approval for downloading server-side files and directories, do the following:

1. Find the agent with the files you want to download in Agent Explorer, double-click > select one or more files to download from File Explorer, right-click > select [Request Approval > File Download]. This will open the Approval Cart window.

   An Approval Cart can contain multiple files and directories in multiple agents. So if you have more ones that you want to download at once, repeat this process.

2. Enter a title and description for the Approval Cart.

3. Enter the start and end times of the job.

   - **Job Start : On Final Approval**

     You can download them from immediately after the completion of the final approval to before the end time. By default, the end time is specified as 23:59 on the day. You can change it to the desired date and time.

   - **Job Start : By Schedule**

     You can download them between the start time and the end time. By default, the start and end times are specified from 00:00 to 23:59 on the same day, and you can change them to the desired date and time.

4. Please check the Approval Line.

   If the Approvers are automatically assigned, there is nothing to do. However, if there is a [Assign] button in the Approval Line list, press the button to select approvers. If you want to add more approvers than the specified ones, press the [+] button to add them. If two or more Approvers exsit in the approval line, the order of Approvals is from top to bottom.

5. When all the inputs are complete, click the [Submit] button to request approval.

Once the final approval is complete, do the following:

1. If the requester's Qplat client is running and already logged in, a notification window will appear

in the lower right corner to let you know that the approval is complete. Press the [Action] button here. This will bring up the Related Approval Cart list window. Otherwise, do the following:

After launching the Qplat client, log in and select [Tool > Approval Management] from the Main Menu. When the Approval Management window opens, select the [I requested] tab, specify the period you want to search, and click the [Search] button. If it was requested today, press [Search] button immediately.

2. Select the desired Cart from the Approval Cart list table and the details window will appear in the center of Qplat client program.

3. Click the [Download All] button at the bottom of the details window to download all files and directories at once. If you want to download only a part of it, select them in the details window, and click the [Download] button.

< Notes : Maximum number of downloads >
When downloading through this process, the maximum number of downloads for each file is 1. This means that a file or directory that has been downloaded once cannot be downloaded again. Therefore, if the requester wishes to download the same file again, they must go through the same approval process again. To change this number, change [Maximum Download Count] in the [Administration Environment > Security > Approval] window.

15.2. Uploading Files and Directories

To upload files or directories from your PC to the server, make an Approval request as follows:

1. Double-click [My Computer] in Agent Explorer > select one or more files and directories to upload in File Explore >, right-click > [Request Approval > File Upload]. Then a window will open to specify the target directory. Select Admin Server > select Agent, find the destination directory where the file will be located > click the [OK] button. This will open the Approval Cart for file uploads.

   A single Approval Cart can contain multiple files and directories, and you can specify as many target agents and directories as you want. So, if you have more ones to want to upload at once, repeat this process.

2. Enter a title and description for the Approval Cart.

3. Specify the time when the upload will take place.

   ■ **Job Start : On Final Approval,**

   They are uploaded as soon as the final approval is completed.

   ■ **Job Start : By Schedule**

   They are uploaded at the specified time after final approval.

4. Please check the Approval Line.

   If the Approvers are automatically assigned, there is nothing to do. However, if there is a [Assign] button in the Approval Line list, press the button to select approvers. If you want to add more approvers than the specified ones, press the [+] button to add them. If two or more Approvers exsit in the approval line, the order of Approvals is from top to bottom.

5. When all the inputs are complete, click the [Submit] button to request approval. The target files are then uploaded to the temporary storage on the Admin Server, and they are automatically sent to the destination location after final approval.

15.3. Temporarily Grant Access to Files and Directories

This feature is necessary when a user requests to grant temporary access to a specific files or directories. Once the final approval is complete, we can handle not only downloading or uploading files, but also creating, deleting, changing properties, and more.

<Note>
Of course, the file or directory path must have access mapped to [Allow by Approval]. If the access permission mapped is [Disallowed], you will still not be able to access it even if you receive approval.
For more information on mapping file and directory access permissions, see [File and Directory Access Permissions].

Here's how:

1. In Agent Explorer, find the agent with the files and directories you want to access. Open a File Explorer by double-click the agent and Select the files and directories. If you select a directory instead of a file, you are requesting access not only to that directory, but also to all files and directories in its subpath.

Right-click > select [Request Approval > File Access]. This opens the Approval Cart window for file access permissions.

An Approval Cart can contain multiple files in multiple agents. So, if you have more files or directories to access, repeat this process.

2. Enter a title and description for the Approval Cart.
3. Enter the start and end times you need access.

   ■ **Job Start : On Final Approval**

   You can access them from immediately after the completion of the final approval to before the end time. By default, the end time is specified as 23:59 on the day. You can change it to the desired date and time.

   ■ **Job Start : By Schedule**

   You can access them between the start time and the end time. By default, the start and end times are specified from 00:00 to 23:59 on the same day, and you can change them to the desired date and time.

4. Please check the Approval Line.

   If the Approvers are automatically assigned, there is nothing to do. However, if there is a [Assign] button in the Approval Line list, press the button to select approvers. If you want to add more approvers than the specified ones, press the [+] button to add them. If two or more Approvers exsit in the approval line, the order of Approvals is from top to bottom.

5. Check the required access permissions for each file and directory.
6. When all the inputs are complete, click the [Submit] button to request approval. Once the final approval is complete, open File Explorer and perform the desired action.

15.4. Executing Predefined Jobs

The user submits an approval request for the job run. Once the approval is completed, the job will be executed immediately or automatically at the specified time

Here's how:

1. Select one or more desired actions in the [Job Configuration Tree] and right-click on them
2. Select [Add to Approval Cart] from the menu
3. Enter a title and description for the Approval Cart.
4. Enter the starting time of the jobs.

    ■ **Job Start : On Final Approval,**

    They are executed as soon as the final approval is completed.

    ■ **Job Start : By Schedule**

    They are executed at the specified time after final approval.

5. Select Job Sequence.
6. Please check the Approval Line.

    If the Approvers are automatically assigned, there is nothing to do. However, if there is a [Assign] button in the Approval Line list, press the button to select approvers. If you want to add more approvers than the specified ones, press the [+] button to add them. If two or more Approvers exsit in the approval line, the order of Approvals is from top to bottom.

7. When all the inputs are complete, click the [Submit] button to request approval.
8. When the Approval request window appears, enter additional details such as a description and runtime variables.
9. If you need to manually add an Approver, click the Add button to add an Approver.
10. When you are done with all the inputs, press the [Submit] button.

16. Performing Approval (By Approver)

16.1. Using Qplat Client Program

When an approval request arrives while your Qplat client program is running, a notification window appears at the bottom right of the program. Then, please do the following.

1. When you click the [Action] button in the notification, an approval cart list window titled [Pended by Me] opens.

2. From here, select a cart to approve and you can see details of it.

3. For uploading and downloading files, you can preview the contents of the file in the Viewer window on the right by selecting the file from the file list. For uploading, a message appears that the file cannot be found if the target file is not in that location, and if there is already an existing file in that location, the contents of the file are displayed. If there is an existing file, it will be overwritten when final approval is completed.

   By default, the file content is automatically viewed for 1000 lines from the beginning, and if you want to view more content, you can select the view type such as [First/Last/All/Monitoring/Split] at the top of the viewer and press the [Start] button.

   <Notes>
   - For detailed instructions on how to use the viewer, refer to [Start Viewing] section in the [Text File Viewer] chapter.
   - Even if you are an approver, you must have access permissions to view the contents of an existing file that the requester wants to download or is in the upload location. For instructions on granting viewing permissions to files, refer to the [File and Directory Access] section in the [Permission Management] chapter .

4. When you press the [Approve] button, the request is then sent to the Approver. On the other hand, if you press the [Reject] button, the approval case is immediately stopped.

If you have multiple Approvals to approve and want to approve or reject more than one of them at once, select all the items you want from the Approval Cart list, right-click, and select [Approve] or [Reject] from the menu that appears.

16.1. Using Email

If your administrator has set up a mail server and the approver's email address is registered to your Qplat account, an approval request email will be sent to the approver's email address.

Open the Approval request email, confirm the request, and press the [Approve] or [Reject] button below it, which will open your web browser and process the approval and rejection immediately.

Unlike using the Qplat client, email does not allow you to see the contents of the file you want to

upload or download.

17. Task Traces

Qplat stores all operations of all users, including adminisrators, on the Admin Server for audit purposes.

17.1. Task History

Here's how to view the history of past tasks.

1. In the Main Menu of the Qplat client, select [Audit > Task History]. Alternatively, right-click the Admin Server icon in Agent Explorer and select the [Task History] menu.
2. Select the user you want to view at the top of the Task History window. You can choose from [Mine only, Some users, All users]. If you select [Some Users], you must select at least one user to view by pressing the [Select User] button on the right.
3. Please specify the period of traces. In the combo box, [Today, Yesterday, This week...] You can choose one of the following options, or you can specify a specific time period directly in the date input field on the right side of the combo box.
4. If necessary, press the [Detailed Conditions] button and enter detailed search conditions.

   For conditions that require keyword input, you can use wildcards (*) for keywords. If you want to enter multiple keywords in one input box, separate each keyword into a line (ENTER key). Each line is searched in combination with an OR condition.

   It is convenient to enter [Task Names] by pressing the [+] button on the right side of the input field and selecting it from the list window that appears. However, the jobs defined in the [Job Configuration Tree] do not appear in the selection box, so you must enter the job name by yourself.

   If the [Include Admin Server] is not checked, actions that occurred within the Admin Server will not be viewed. This includes login, logout of users and configuration management of administrators.

   Once you have finished entering the detailed conditions, please press the [OK] button.

5. Once all the conditions are specified, press the [Search] button to start searching.

17.2. Real-time Monitoring

In the top Main Menu of the Qplat client, select [Audit > Task Monitor]. Alternatively, right-click the Admin Server icon in Agent Explorer > click the [Job Monitor] menu.

This gives you a real-time view of a list of operations that users are currently doing.

17.3. Saving Trace Records to File

After selecting the desired records from the search results table, press the Ctrl+C button to copy the selected task history to the clipboard. Then open an Excel window and paste (Ctrl+V) to copy them to spreadsheet programs like MS Excel or Google Sheets.

Or, if you want to save the entire records as a Microsoft Excel file, click the [Save to Excel] button in the toolbar at the top.

17.4. kill Running Tasks

In the search results window, select one or more tasks that are in the RUNNING state, right-click > choose the [Kill] menu.

17.5. Disable User Accounts

In the search results window, select the action requested by the user, right-click, and select the [Disable User] menu. If the user is currently logged in, immediately logged out, the account is disabled, and running tasks are killed.

17.6. View I/O Traces

Select one or more tasks from the search results window, select them, right-click > choose the [View Input/Output Traces] menu. A text viewer window will appear showing detailed trace log files for the task. Use this viewer window to view the input/output and detailed details of the task.

<Notes>
For detailed instructions on how to use the viewer, refer to [Start Viewing] section in the [Text File Viewer] chapter

18. Etc

18.1. Email Sending

For identity verification and approval process via email, you must cofigure the followings in advance.

● **Setting up Mail Sending Server**

The email is sent by the management server, and the protocol used is SMTP. Therefore, make sure the SMTP port from the Admin Server to the Mail Sending Server is not blocked by a firewall, and if it is, open it first.

1. From the main menu of the Qplat client program, select [Configuration > Administration Environment > Mail Sending Server].
2. Enter the host, port, SSL status of the mail sending server and sender's email address. If a login to the mail sending server is required, please also enter the login account and password.
3. Press the [Save] button.
4. Press the [Send Test Email] button to check if the email is being sent properly.

● **Register and enable email sending to user accounts**

Each user account must have an email receiving address registered and checked on [Send Email] box for the email to actually be sent to that user. Here's how to set it up.

1. From the main menu of the Qplat client program, select [Configuration > Administration Environment > Security > Account > User Account].
2. Double-click a user to open the user account configuration window.
3. Enter the user's mail address
4. check [Send email] check box. Otherwise, the email will not be sent even if an email address is provided.

However, emails required for identity verification will be sent even if this box is not checked. For example, the identity verification email sent during the user account reenabling process will be sent even if [Send Email] is not checked.

5. After input complete, press the [Update] button.

18.2. Agent Activity Restriction for Real Agents

You can use this configuration to limit the functionality and performance of all or individual Real Agents. (Doesn't apply to virtual agents)

Here's how to use it:

1. In the top Main Menu of the Qplat client, select [Configurations > Administration Environment> Agent > Agent Activity Restriction]. The settings are:

   ■ **Enabled**

   Check this option to apply the policies you set in the table.

2. Pressing the [+] button on the tool bar will open a window where you can add a new policy. To modify an existing policy, select the policy and click the [Modify] button, or double-click the desired policy. To remove an existing policy, select the policy and press the [Remove] button on the tool bar. To change the order of the policies, select them from the table and press the [Up] or [Down] arrow button on the tool bar.

   ■ A policy can be applied to one or more agents.

   ■ By specifying multiple policies with different conditions, you can ensure that different policies are applied for each agent and time period.

   ■ If an agent is included in multiple policies, the policy at the bottom is applied.

Here's what each input means and how to set it up:

● **Title**

Set a title that allows you to distinguish between policies.

● **Periods**

Specify periods to apply the policy in a similar way to a crontab expression. The rules of the expressions are as follows:

- An expression consists of four fields, each separated by a space. The order is [Times Days Months DaysOfWeek].
- An asterisk (*) indicates all the values that the field can have. Therefore, * * * * means 'Always'.
- If you want to specify multiple values in a field, separate each value with a comma (,).
- A specific range of values can be represented by dashes (-). For example, if you specify 09:00-11:30 in the Time field, it will be applied from 09:00 to 11:30.

Field	Format	Example
Times	Hours:Minutes, from 00:00 to 23:59.	**09:00-12:00,13:00-18:00** =from 09:00 to 12:00 and from 13:00- to 18:00
Days	You can specify from 1 to 31. L refers to the end of the month.	Example) **10,20,30** =10th, 20th, 30th **1-10,20-30** =From the 1st to the 10th, and from the 20th to the 30th. **1,L** =1st day and end of the month
Months	You can specify from 1 to 12.	**1,6,12** =January, June, December **4-6,10-12** = From April to June, and October to December
Days of the week	It can be specified from 0 to 6. 0 is Sunday and 6 is Saturday.	**1,3,5** = Monday, Wednesday, Friday **1-5** = Monday to Friday

If you're not familiar with expressions, you can click the [Assist] button next to the input field to make it easier to write expressions.

- **umask**

umask is the value that determines the initial permission (rwxrwxrwx) of a newly created file or directory in Unix and Linux, and the default permission (777 for the directory, 666 for the file) minus each digit of the umask is the initial permission.

For example, if umask is 022, the file is 644 (rwxr--r--) and the directory is created with the 755 (rwxr-xr-x) permission.

< caution>
This value is only applicable when using Qplat's file creation and transfer functions, and not when using Commandline Execution Jobs.

- **Communication Speed**

Specifies the maximum network communication speed for each agent.

Choose one between [No Limit] and [Limit Maximum Speed]. If [Limit Maximum Speed] is selected, specify the speed in KiloBytes/Sec or MegaBytes/Sec. The default value is [No limit].

■ **Inbound (-> Agent)**

The maximum speed of inbound communication coming into agent.

■ **Outbound (<- Agent)**

The maximum speed of outbound communication going from agent.

- **File Read / Write**

Whether to allow reading or writing to files..

You can specify different values for Read and Write each. Select one of [Allow] or [Disallow] for the value. The default value is [Allow].

● **File (read+write) Speed**

The maximum value of sum of file read and write speed between each agent and disk.

Choose one between [No Limit] and [Limit Maximum Speed]. If [Limit Maximum Speed] is selected, specify the speed in KiloBytes/Sec or MegaBytes/Sec. The default value is [No limit].

● **Directory Download / Upload**

Whether to allow downloads and uploads of the directories.

You can specify different settings for download and upload, and you can select [Allow] or [Disallow] as the value. The default value is [Allow].

● **Maximum Download / Upload Size Per File**

Specifies the maximum size per file when downloading or uploading files.

You can specify different values for Downloads and Uploads each. Choose one between [No Limit] and [Limit Maximum Speed]. If [Limit Maximum Speed] is selected, specify the speed in KiloBytes/Sec or MegaBytes/Sec. The default value is [No limit].

● **Job execution**

Whether to execute Predefined Jobs.

You can specify different values for Read and Write each. Select one of [Allow] or [Disallow] for the value. The default value is [Allow].

■ **Job Execution by User Req**

Whether to execute the Predefined Jobs requested by user. This includes Jobs requested through Approval.

■ **Job Execution by Scheduler**

Whether to execute the Predefined Jobs requested by Qplat Scheduler.

● **Target Agents**

Specify the agent name expressions who will be subject to this policy. If you want to enter more than one, separate each name with a new line (ENTER).

A wildcard (*?) can be used for name expressions. For example, * means all agents, and abc* refers to all agents whose names start with abc.

If you want to exclude some agents, put an exclamation mark (!) in front of their name expressions.

If an agent is contained in multiple name expressions, the bottom one is applied. For example, the expression below means to include all agents, but testagent1.

```
*
!testagent1
```

As previously mentioned, the restriction policies do not apply to virtual agents even if they are included in the target agents.

19. Patching

Qplat's patch files are the same as the installation files. In other words, patching Qplat means applying a new version of the installation file to the installed product through the patching process. Therefore, you must check the versions of Qplat client, Admin Server and all agents before and after patching.

In most cases, this is done with an automatic patching process using the Qplat client, and configuration and data migration are also done automatically internally.

The patch applying process requires restarting the Admin Server and all agent processes. All functions are unavailable while the Admin Server is restarting, and functions via each agent are unavailable while the agent is restarting.

The restart time for each process is around 1 minute, and it usually takes within 30 seconds. In the case of automatic patching using the Qplat client, since it is performed using dozens of parallel threads, the total time required is not so long even if there are many agents.

19.1. Checking the Current Version and Build Number

Admin Servers, Qplat client and all agents must have the same version and build number. Otherwise, unexpected problems may arise during operation. Therefore, before and after patching, you must check the versions of the Admin Server, Qplat client, and all real agents.

For virtual agents, they are not actually installed and run as processes, there is no need to check the version or build number.

- **Checking Qplat client's program version and build number**

  The current version and build number of the client program are displayed in the title bar of the Qplat client program.

- **Checking Admin Server and Agents' version and build number with tooltips in the agent explorer**

  Log in as an administrator in the Qplat client.

  Then, hover your mouse over the Admin Server icon in Agent Explorer for a moment to see a tooltip where you can check the current version and build number of the Admin Server.

  Similarly, hovering your mouse over each agent icon brings up a tooltip, where you can check the current version and build number of that agent.

- **Viewing all Agents' information in a table**

  If there are too many agents, it can be inconvenient to check information using tooltips. In that case, you can view agent information in a table or save it as a CSV file. Here's how.

  1. Log in as an administrator in the Qplat client and select all agents in the agent explorer. If agents are grouped by folder, click the [Agent list viewing type] button at the far right of the top toolbar of the Agent Explorer and select [List > Status] from the menu. This way, you can view and select all agents at once.
  2. Right-click > select the [Agent Information > Export agent information to CSV file] menu.
  3. When the column selection table appears, check the information you want to see. If you

only want to know the agent version and build number, just check [Name] and [Product Version]. Then, click the [OK] button. And the selected information will be displayed in a table.

4. If necessary, you can press the button below the table to copy the contents of the table to the clipboard or save it as a CSV file.

- **Checking version info file under the installation directory**

  If you are unable to run the Qplat client, you can open the **lib/classes/candle.ver** file in the product installation directory and check the version and build number.

  For example, the version of the Admin Server installed under /qplat/admin can be found in the /qplat/admin/lib/classes/candle.ver file, and the version of the Agent installed under /qplat/agent can be found in the /qplat/agent/lib/classes/candle.ver file.

19.2. Preparation

19.2.1. Backing Up Existing Installation Directories

Make sure to back up your existing installation directories just in case. In particular, the Admin Server recommends that you stop all Qplat processes and then back up all files to a separate directory or disk. For example, if the Admin Server is installed under the /candle directory, back up all files and directories under it.

In the case of agents, if there are too many of them and it is difficult to back them up, just proceed with the patch, and if there is a problem, refer to [Restoring to Previous Version] chpater to restore.

19.2.2. Preparing the Patch Files

Download all patch files to the PC where you will perform the patching operation. This PC must have the Qplat client program installed and be able to log in as Qplat administrator. It doesn't matter at which directory the patch files are located, but different versions of the patch files should not be in the same directory.

Among the patch files, files with the .zip extension are for Windows, and .tar.gz files are for Unix

and Linux. Specifically:

- If Admin Server's OS is MS Windows, download candle_[version]_**admin.zip** and candle_[version]_**web.zip**. If Admin Server's OS is MS Windows, download candle_[version]_**admin.tar.gz** and candle_[version]_**web.tar.gz.**
- If the OS of all real agents, including proxy agents, are MS Windows, download candle_[version]_**agent.zip**. If the OS of all real agents, including relay agents, is Unix or Linux, download candle_[version]_**agent.tar.gz**.

  If all of the OS are mixed, please download both files.

If you are not sure which files to download, it's ok to download all patch files.

The downloaded patch files may be placed on the administrator's PC or on the Admin Server. If the network speed between the PC and the Admin Server is slow and there are many real agents, placing the patch files within the Admin Server is a way to speed up file transfer during automatic patching.

The directory path where the patch files are located does not matter. However, different versions of patch files must not be stored together in the same directory.

If the patch files are placed on the Admin Server, the process owner of the Admin Agent must have read and write permissions for that directory and the patch files within it. If you are unsure, use commands such as `chown` to make the owner of the directory and patch files as same as the process owner of the Admin Agent.

19.2.3. Log in to the Qplat Client as an Administrator

If the Qplat client is not running, run it and log in as an administrator user. The default user with this permission is **candleadm**.

19.2.4. Check Admin Server and All Agents are Running

Automatic patching requires that both the Admin Server and the real agent process perform the actual patching, as they are all running. (Virtual agents are not agents that are actually installed and running, nor are they eligible for patching, so they don't need to be checked)

You can easily check whether each process is running or not by doing the following:

1. Run the Qplat client program and log in. If the Admin Server is not running, there will be an access error when logging in. In this case, connect to the Admin Server by SSH or Windows Remote Desktop client and use the **startall** command to start the Admin Server and all related processes.

2. Once you have successfully logged in, please wait for about one minute. The Qplat client checks the running status of the Admin Agent, Proxy Agent and all real agents once every minute. If an agent is not running, a small 'x' mark will be added to the agent icon in the Agent Explorer. In this case, connect to the server using SSH or Windows Remote Desktop Client, and start the agent using the **startagent** command.

   If the agent process is running but you cannot connect, stop the agent with **stopagent** command and restart it with **startagent** command. If the connection still fails, check for any factors, such as firewall settings, that might be interfering with communication with the agent.

19.3. Uploading Patch Files

Qplat client program supports automatic patch file upload functionality for the Admin Server and all agents.

If the automatic upload fails, you will see an Error icon in the upload status table for that server. Click this icon to check the cause of the problem and try uploading again once the problem is resolved.

If there are servers that cannot be automatically uploaded, please refer to the [Applying Patches Manually] chapter to upload yourself.

19.3.1. Uploading Agent Patch Files

1. Select all agents, including Admin Agents and Proxy Agents, in the Agent Explorer.

   However, uploads will not work on inactive agents, so please start the agents beforehand or do not select them. Virtual agents are not eligible for patching. Therefore, even if they are selected, they will not be uploaded files or patches, so it doesn't matter if they are selected together.

   After selection, right-click and select [Agent Management > Upload Agent Patch Files] from the menu.

2. Please wait while the Qplat client checks the status of the agents. If you have a large number

of real agents, this process can take a couple of minutes. After checking the target agents, press the [Continue] button in the status check completion window.

3. If the patchs files are currently on your PC, select [My Computer] as [Admin Server]. Otherwise, if you have placed it within the Admin Server, select the Admin Server's name as [Admin Server] and select the Admin Agent as the [Agent]. And then, navigate to the directory where the files are located.

   If the target agent's OS are only Linux or Unix, you will only see the candle_<version>**_agent.tar.gz** file. If the target agent's OS are only Windows, you will only see candle_<version>**_agent.zip**. If Linux, Unix, and Windows are mixed, you will see both **.tar.gz** and **.zip** files.

   If you see only one file, select one, and if you see both, select both.

   If you see different versions of patch files together, select only the exact version of the file you want to apply.

4. Once the selection is complete, press the [OK] button. Qplat client will then upload the file to the appropriate location (PRODUCT_HOME/fix) of each agent. For example, if the agent installation directory is /qplat/agent, the file will be uploaded to /qplat/fix.

   The upload status to each agent is shown as a row in the File Transfer Status window at the bottom of the Qplat client. 3~5 file uploads are done at the same time, and if no new rows are added to the File Transfer Status window for more than 1 minute, the agent file upload is considered complete.

19.3.2. Uploading the Admin Server patch file

1. In Agent Explorer, select the Admin Server, right-click, and then select the [Admin Server Management > Upload Admin Server Patch File] menu.
2. When the status check completion window appears, press the [Continue] button.
3. If the patchs files are currently on your PC, select [My Computer] as [Admin Server]. Otherwise, if you have placed it within the Admin Server, select the Admin Server's name as [Admin Server] and select the Admin Agent as the [Agent]. And then, navigate to the directory where the files are located.

If the Admin Server's OS is Linux or Unix, you will see the candle_<version>**_admin.tar.gz** file. If the Admin Server's OS is Windows, you will only see candle_<version>**_admin.zip**.

If you see different versions of patch files together, select only the exact version of the file you want to apply.

4. Once the selection is complete, press the [OK] button. Qplat client will then upload the file to the appropriate location (PRODUCT_HOME/fix) of Admin Server. For example, if the Admin Server installation directory is /qplat/admin, the file will be uploaded to /qplat/fix.

   The upload status is shown as a single row in the 'File Transfer Status' window at the bottom of the Qplat client.

19.3.3. Uploading Web Patch Files

1. In Agent Explorer, select the Admin Server, right-click, and then select the [Admin Server Management > Upload Web Patch File] menu.
2. When the status check completion window appears, press the [Continue] button.
3. If the patchs files are currently on your PC, select [My Computer] as [Admin Server]. Otherwise, if you have placed it within the Admin Server, select the Admin Server's name as [Admin Server] and select the Admin Agent as the [Agent]. And then, navigate to the directory where the files are located.

   If the Admin Server's OS is Linux or Unix, you will see the candle_<version>**_web.tar.gz** file. If the Admin Server's OS is Windows, you will only see candle_<version>**_web.zip**.

   If you see different versions of patch files together, select only the exact version of the file you want to apply.

4. Once the selection is complete, press the [OK] button. Qplat client will then upload the file to the appropriate location (PRODUCT_HOME/fix) of Admin Server. For example, if the Admin Server installation directory is /qplat/admin, the file will be uploaded to /qplat/fix.
5. The upload status is shown as a single row in the 'File Transfer Status' window at the bottom of the Qplat client

19.4. Applying Patches

This chapter describes automatic patching for the Admin Server and agents that have completed uploading patch files. During the patch, the Admin Server pcocess and the agent process will automatically restarted.

Uploading patch files does not need to be in order, but it is recommended to apply them in the order of Agent -> Admin Server -> Web. This is because if the Admin Server is patched first, the agent patching may not work due to communication error caused by protocol mismatch between the Admin Server and the agents.

For Admin Server, agents, web applications, etc., to which the patch was not applied using the way below, please refer to the [Applying Patches Manually] chapter to apply the patch manually.

19.4.1. Applying Agent Patch

1. After selecting all the agents that have completed uploading the patch file, right-click the mouse and select the [Agent Management > Apply Agent Patch and Restart] menu.
2. Specify the number of threads in the [Thread Count] Input window. This number indicates the number of agents to which the patch is applied simultaneously, with one thread handling the patching of one agent. The default is 32, and the maximum number that can be specified is 64.

   Functionally, it does not matter if the number of threads is less or more than the number of agents to be patched. However, since overloading the PC may slow down the patching speed or, in severe cases, cause the client program to crash during the patch, it is recommended to apply a lower number to low-spec PC.

   Now, if you click the [Continue] button, the Patch Manager will automatically perform the process of [Stop Agent -> Apply Patch -> Start Agent] for each agent.
3. In the patch status window, wait for the progress bar at the bottom to fill up the number of target agents. For example, if you have 100 target agents, wait for it to be 100/100.

   In the center of this window is a table showing the patch progress status for each agent. This table does not auto-scroll, so please scroll manually to find the agent whose progress status you wish to view.

Status (Phase)	Description
WAIT/ PREPARE / READY	Nothing has happened yet
STOPPING / FIXING / UPDATING	Stopping agent and applying patch
CHECK_STATUS	Waiting for the agent to restart after the patch has finished applying.
FINISHED / COMPLETED	Patch and agent restart completed. Once this status is reached, the agent's current version, process owner, and start time will appear in the [Description] field. Please verify that the current version matches the patch version. If the versions are different, the patch was not applied correctly.
ERROR	Error occurred. Click the icon to view the detailed error message. <Note> Even if the patch and restart have been completed successfully, the status may still be displayed as ERROR. In this case, close the [Apply Agent Patch and Restart] window after all agents have been patched, and then check if the agent is running and if the current version matches the patch version to determine if the patch was successful.

4. After finishing, close the [Apply and restart agent patch] window. If more than 5 minutes have passed since the status table is no longer updated, close the status window.

5. After closing the window and about 1 minute have passed, hover over each agent in Agent Explorer to bring up a tooltip, where you can see the current version and build number of the agent. If the current version is the same as the patch version, the patch was successfully performed.

   If an agent's version or build number differs from the patch, applying patch has failed for that agent. If you cannot identify the cause of the failure, please apply the manual patch only to those agents after all other patches have been completed.

19.4.2. Applying the Admin Server Patch

1. In Agent Explorer, select the Admin Server, right-click, and then choose the [Admin Server Management > Apply Admin Server Patch and Restart] menu.
2. In the patch status window, wait for the steps to change to the FINISHED state. For a detailed explanation of the steps, please refer to the [Applying Agent Patch] section above.
3. When the patch is finished, close the patch status window.
4. Click the [Reload] button at the top of Agent Explorer to refresh the list of Admin Server information and agent list. Hover your mouse over the Admin Server icon to check the tooltip. If the version and build number displayed in the tooltip match the patch file, the patch was successfully performed.

19.4.3. Applying Web Patch

1. In Agent Explorer, select the Admin Server, right-click, and then choose the [Admin Server Management > Apply Web Patch] menu.
2. Unlike the Admin Server and agent, the patch progress status is displayed in the [Job Execution Status] window at the bottom of the screen. If '[COMPLETED] Fixing admin/ext/web completed!!' message appears here, the patch has been successfully applied and the web server has been restarted.

19.4.4. Updating Qplat Client

If all of the above processes have been completed successfully, the server-side patching is complete. If you have a Qplat client currently open, close it and restart it.

The client program then checks the current version information from the web server as it starts, and if there is a version change, it automatically downloads a new client installer and runs it.

Follow the installer program's instruction to complete reinstall.

19.5. Applying Patches Manually

If some or all of the automatic patching fails, you can manually patch individual products as follows.

19.5.1. Applying Agent Patches

If the agent is installed in the /qplat/agent directory, upload the agent patch file to the parent directory's fix directory. i.e. /qplat/fix. The file name ends with **agent.tar.gz** for Linux or Unix, and **agent.zip** for MS Windows. If the fix directory does not exist, create it and then upload the files. If there are other files within the fix directory, delete them all before uploading. Then, proceed as follows.

1. Opens the Command line input window for the target server. For Unix/Linux, open an SSH terminal; for Windows, open a DOS window with administrator privileges.
2. Navigate to the bin directory under the agent installation directory.
3. If the agent is running, stop it.
4. 4. Run the fixagent command.
5. Start the agent.

The above process is described as follows: Assume that the agent home directory is /qplat/agent for Unix/Linux and C:₩qplat₩agent for Windows.

Unix/Linux	MS Windows	Remarks
cd /qplat/agent/bin ./stopagent ./fixagent ./startagent	cd C:₩qplat₩admin₩bin stopagent fixagent startagent	On Windows, if the agent is not running as a service, use the wcstopagent, wcstartagent commands

19.5.2. Applying Admin Server and Web Patching

If the Admin Server is installed in the /qplat/admin directory, upload the Admin Server and web patch files to the fix in the parent directory, i.e. the /qplat/fix directory. The file names ends with **admin.tar.gz** and **web.tar.gz** if the Admin Server is Linux or Unix, and **admin.zip** and **web.zip** files if MS Windows. If you don't have a fix directory, create a new one and upload the files. If there are other files in the fix directory, delete them all and upload them. Then do the following:

1. Opens the Command line window for the target server. For Unix/Linux, you may open the SSH terminal, and for MS Windows, you can open the DOS window.
2. Navigate to the bin directory under the Admin Server installation directory.
3. Stop the Admin Server and all related processes.
4. Run the fixadmin command.
5. Run the fixwebroot command.
6. Start the Admin Server and all related processes with startall command.

The above process is described as follows: Assume that the Admin Server home directory is /qplat/admin for Unix/Linux and C:₩qplat₩admin for Windows.

Unix/Linux	MS Windows
cd /qplat/admin/bin ./stopall ./fixadmin ./fixwebroot ./startall	cd C:₩qplat₩admin₩bin stopall fixadmin fixwebroot startall

19.6. Restoring to the Previous Version

- **If you have made a backup yourself**

  Stop the Admin Server and agent process you want to recover, remove the current files, and restore the backup files to their original location. Then restart the processes.

- **If you haven't made a backup**

  Just in case, the Qplat patching system automatically backs up the executables, scripts, and libraries of the previous version.

  The automatic backup location is the unfix directory under the parent directory of the installation directory. For example, if you have an Admin Server installed in /qplat/admin, the important files will be backed up under the /qplat/unfix/admin directory. Similarly, if the /qplat/agent is installed home, important files will be backed up under /qplat/unfix/agent.

  If you have a problem with the patch version and need to restore the previous version, stop

the Admin Server and agent processes that are being repaired, and copy the backup files to the directory of the same name under the installation directory. Of course, you must delete the files in the directory that you want to recover before copying.

Once the files are recovered, restart the stopped processes.