

MONITOUCH

Web Machine Interface

Contents

- 1 VPN Remote Access Service
- 2 Cloud Data Service



Record of Revisions

Reference numbers are shown at the bottom left corner on the back cover of each manual.

| Date | Reference No. | Revised Contents |
|-----------------|---------------|--|
| February, 2015 | 1075NE0 | First edition |
| November, 2015 | 1075NE1 | Second edition |
| September, 2016 | 1075NE2 | Third edition Unencrypt communication supported |
| May, 2017 | 1075NE3 | Fourth edition Cloud data service, VPN V-Connect operation environment, Monitoring function added |
| | | |

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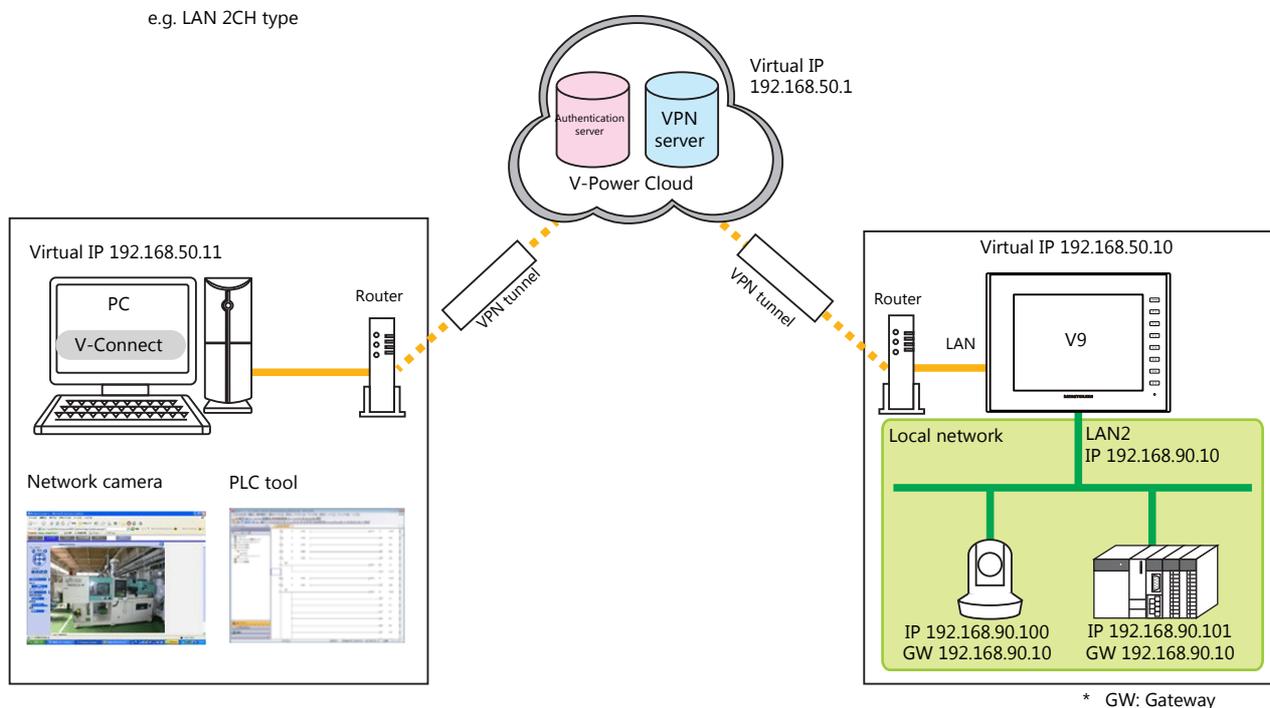
1 VPN Remote Access Service

1.1 Overview

1.1.1 VPN Remote Access Service

- Easily enables remote access using V-Power Cloud (VPN server/authentication server) and V-Connect (management tool) that are prepared by Hakko Electronics.
- Configurable by simply preparing an Internet-connected environment.
Prepare an environment that can perform communications using encryption protocols including HTTPS. There may be severe restrictions on the use of encrypted communications in your country or region. Operation is not guaranteed in such countries or regions.
- Supports SSL-VPN to ensure safe remote access without any risk of eavesdropping or manipulation.
- Routing function
Because the V9 series unit features a built-in routing function, devices on the local network can also be accessed.

e.g. LAN 2CH type



- Remote operations available when connected to a VPN

| Remote Operation | LAN 1CH type | | LAN 2CH type | | LAN 3CH type | |
|---|--------------|------------|--------------|------------|--------------|------------|
| | Local IP | Virtual IP | Local IP | Virtual IP | Local IP | Virtual IP |
| Screen program transfer | ○ | ○ | ○ | × | ○ *1 | × |
| Remote monitoring and operation of V9 series units (VNC server function) | ○ | ○ | ○ | ○ | ○ *1 | ○ |
| FTP communications (FTP server function) | ○ | ○ | ○ | ○ | ○ *1 | ○ |
| Remote monitoring and operation of PLCs connected via serial connection to V9 series units (ladder transfer function) | ○ | ○ | ○ | × | ○ *1 | × |
| Remote monitoring and operation of network cameras on the local network where the V9 series unit is located | ○ *2 | × | ○ *2 | × | ○ *2 | × |
| Remote monitoring and operation of PLCs on the local network where the V9 series unit is located | ○ *2 | × | ○ *2 | × | ○ *2 | × |

*1 When using local IP of VPN connection port, local network and subnet mask settings are required manually in [VPN terminal information] of [Access points] on V-Connect. Refer to page 1-17.

*2 Local IP of network camera or PLC

- Remote operations are performed using the relevant software.

| Remote Operation | Relevant Software |
|---|---|
| Screen program transfer | V-SFT-6 |
| Remote monitoring and operation of V9 series units (VNC server function) | VNC client tool |
| FTP communications (FTP server function) | FTP client tool |
| Remote monitoring and operation of PLCs connected via serial connection to V9 series units (ladder transfer function) | LadderComOp PLC ladder tool |
| Remote management of V9 series units | TELLUS and V-Server (under development) |
| Remote monitoring and operation of network cameras on the local network where the V9 series unit is located | Network camera tool |
| Remote monitoring and operation of PLCs on the local network where the V9 series unit is located | PLC ladder tool |

1.1.2 Applicable Models

The VPN remote access service can be used with the following versions and ports. For older versions, perform an OS and system updates as required.

| V9 | V9 Series Unit Version | | VPN Connection Port * | | | |
|-------------|------------------------|----------------------|-----------------------|------|------|--------|
| | OS | SYSTEM | LAN | LAN2 | WLAN | CUR-03 |
| V9 Advanced | Ver. 1.10 or higher | Ver. 1.060 or higher | ○ | ○ | ○ | × |
| V9 Standard | | | ○ | ○ | ○ | × |
| V9 Lite | | | ○ | - | - | × |

* Only one port is used for VPN connection. The other ports are used to connect to the local network.

1.1.3 License

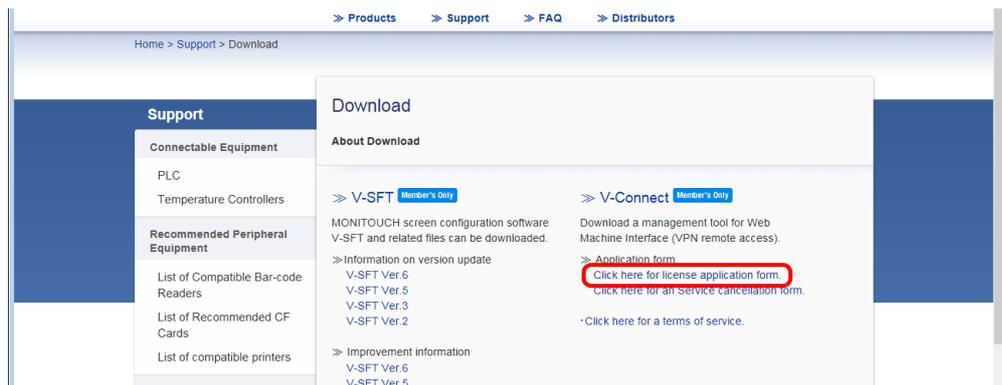
A license must be purchased in order to use the VPN remote access service. The following table lists the license types and available number of access points and VPN terminal registrations.

| Item | License | | | | |
|----------------------------|---------|-------|--------|-----------|-----------|
| | Free *1 | Value | Simple | Wide | Extra |
| Access points *2 | 1 | 1 | 1 | Unlimited | Unlimited |
| VPN terminals (V9) | 5 | 10 | 30 | 100 | Unlimited |
| Number of registered users | 20 | 20 | 20 | 20 | 20 |
| Connection type *3 | 1:1 | ○ | ○ | ○ | ○ |
| | 1:n | | | | |
| | 1:n:m | | | | |
| | n:n | × | | | |

*1 A free license can be registered using the "V-Connect" management tool. The free license provides 30 days of use from the date of registration free of charge. To continue use after 30 days, switch to a paid license.

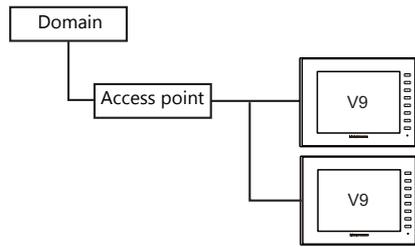
Switch to a paid license by downloading the application form for a paid Web Machine Interface license, entering the required information, and submitting the form to your local retailer.

<http://monitouch.fujielectric.com/site/support-e/download-index-01.html>

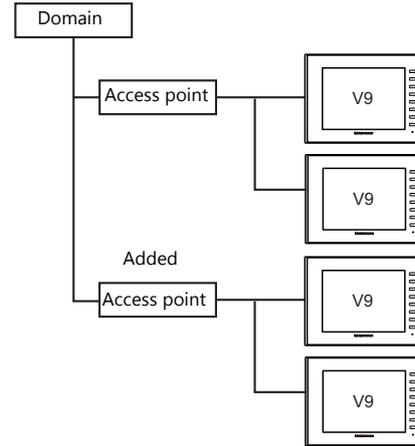


*2 Access points

- Without additional access points

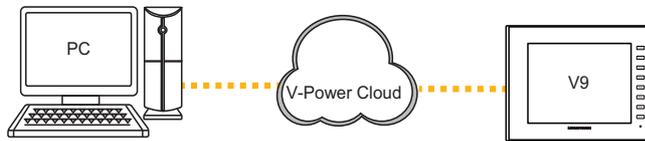


- With an additional access point

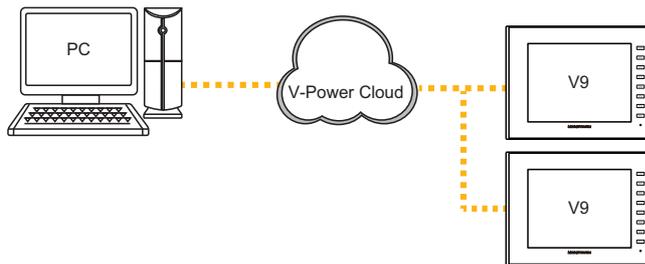


*3 Connection type

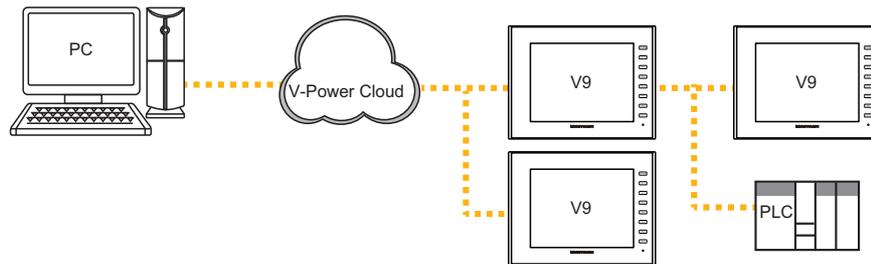
- 1:1



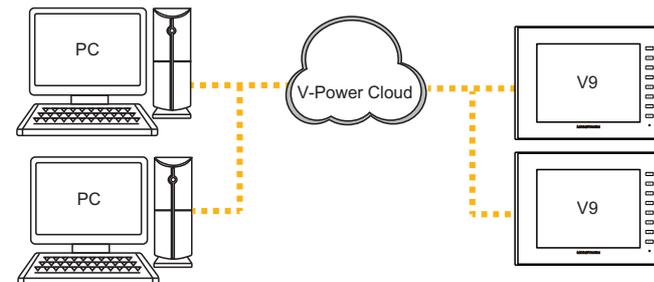
- 1:n



- 1:n:m



- n:n



1.3 V-Connect Management Tool

1.3.1 Operating Environment

Make sure that your system meets the following system requirements before starting V-Connect.

| | |
|------------------------|--|
| Computer | PC/AT compatible computer running Windows |
| OS * | Windows 7 (32-bit, 64-bit) / 8 (32-bit, 64-bit) / 8.1 (32-bit, 64-bit) / 10 (64-bit) |
| CPU | Min. 1.0GHz |
| Memory | Min. 1.0 GB for 32-bit, min. 2.0 GB for 64-bit |
| Hard disk | At installation: Min. 1.0 GB for 32-bit, min. 2.0 GB for 64-bit |
| Display resolution | 1024 × 768 dots (XGA) or higher |
| Display colors | High color (16-bit) or higher |
| Communication protocol | https (TLS1.0) port No. 443 |

* Administrator privileges are required for installation.

Software Copyrights

- The software as well as its copyright and any other copyrights and rights related to the software are property of Hakko Electronics Co., Ltd.
- The software may not be used or copied, whether in whole or in part, without permission of Hakko Electronics Co., Ltd.
- The specifications and components of the software are subject to change without prior notification.
- Hakko Electronics Co., Ltd. bears no responsibility for any results of using the software.
- Windows is a registered trademark of Microsoft Corporation in the United States.
- All other product names are trademarks or registered trademarks of their respective holders.

Notes on Usage

- The software may not be correctly installed if resident programs and applications such as an antivirus program are running. Be sure to close all applications before installing the software.

1.3.2 User Types and Privileges

The following table lists the types of users that can operate V-Connect and the corresponding user privileges.

| Item | | User Type and Privileges | | |
|---------------|--------------------------------------|--------------------------|---------------|-------------|
| | | Domain Administrator | Administrator | Normal User |
| Domain | Register domain | | × | × |
| | Modify Domain | | | |
| Connection | Connect VPN | | | ○ |
| | Disconnect VPN | | | |
| Access points | New access point | | ○ | |
| | Delete access point | | | × |
| | Modify access point | | | |
| | Access point area change | | | |
| User | New user | | ○ | |
| | Delete user | ○ | | × |
| | Modify user | | *1 | |
| | Change user password | | | |
| View | Show domain | | | ○ |
| | Refresh | | | |
| | Log info (for management) | | | × |
| | Log information (for VPN connection) | | ○ | ○ |
| Tool | Proxy settings | | | |
| | Option settings | | | ○ |
| Help | About | | | |

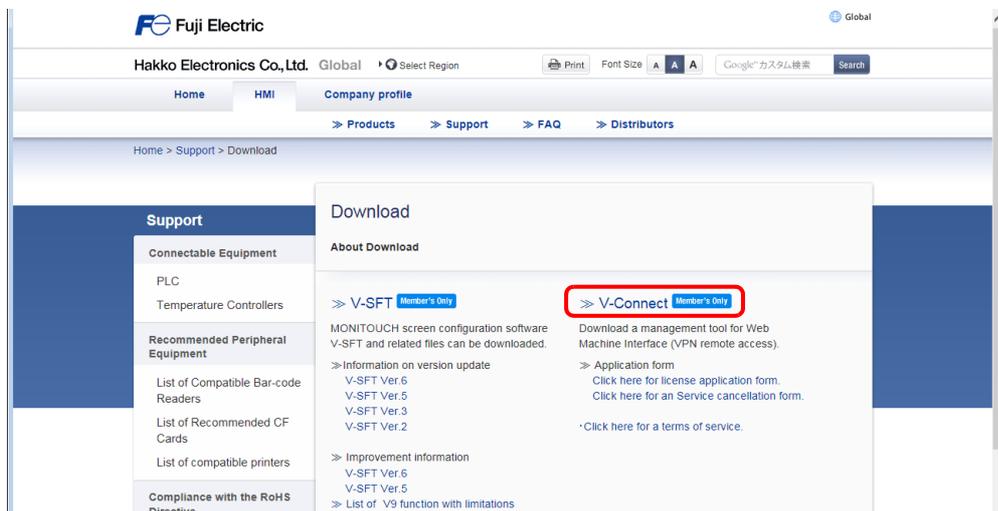
*1 Registration, deletion, and modification of other administrator accounts and modifying the privileges of normal users cannot be performed.

1.3.3 Installation

Procedure

Example: Windows 7

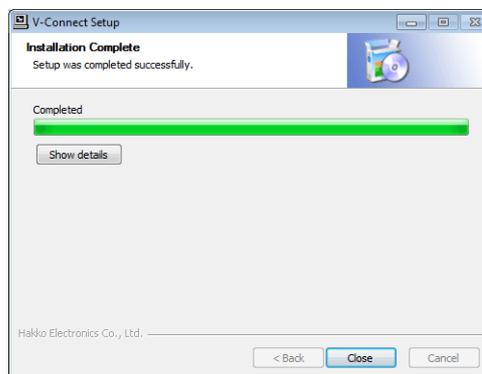
1. Download the "V-Connect" management tool from the Hakko Electronics website.
 URL: <http://monitouch.fujielectric.com/site/support-e/download-index-01.html>
 * User registration is required to download the software.



2. Double-click on the downloaded file to start the installation process.



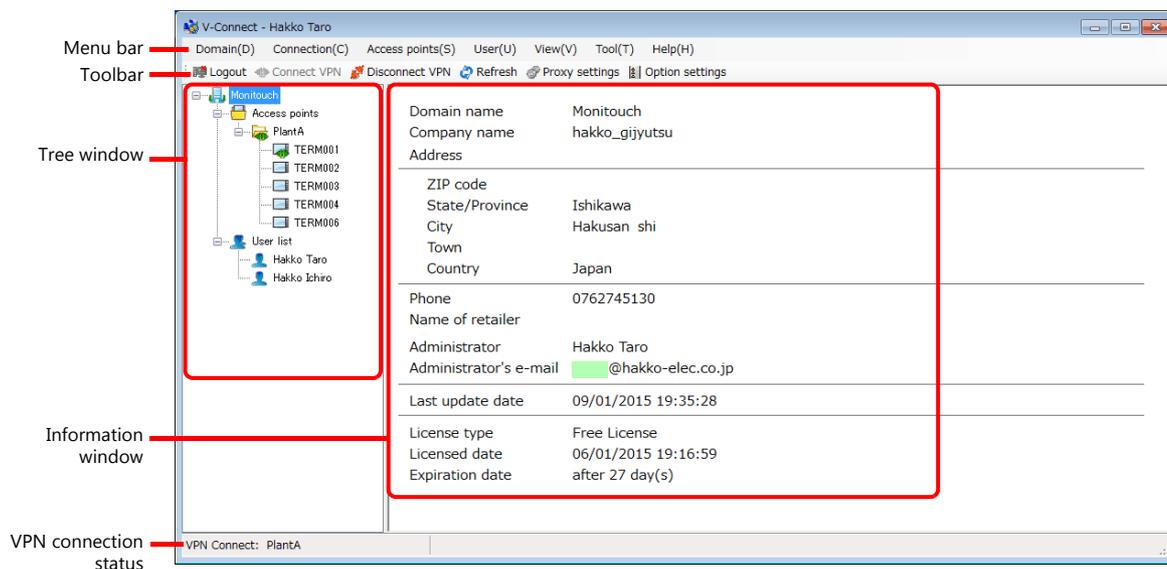
3. Proceed according to the displayed instructions and when the [Installation Complete] window appears, click [Close].



This completes the installation procedure. The software can be started from the Start menu.

1.3.4 V-Connect Configuration

Names of Parts



Menu Bar

Domain(D) Connection(C) Access points(S) User(U) View(V) Tool(T) Help(H)

| Item | Description | Refer to |
|---------------|--------------------------|---|
| Domain | Modify Domain | Modify registered domain information. |
| | Logout | Log out. |
| Connection | Connect VPN | Establish a VPN connection with the selected access point. |
| | Disconnect VPN | Disconnect the current VPN connection. |
| Access points | New access point | Register an access point and VPN terminal (V9). |
| | Delete access point | Delete an access point and VPN terminal (V9). |
| | Modify access point | Change access point and VPN terminal (V9) settings. |
| | Access point area change | Change VPN Server (Europe/Asia). |
| User | New user | Perform user registration. |
| | Delete user | Delete a user. |
| | Modify user | Modify user settings. |
| | Change user password | Change a user password. |
| View | Show domain | Display domain information. |
| | Refresh | Obtain information on the current domain from the authentication server and display it. |
| | Log info | Check V-Connect operation logs and VPN connection history. |
| Tool | Proxy settings | Configure proxy settings. |
| | Option settings | Configure tool operation. |
| Help | About | Check the V-Connect version information and license agreement. |

Toolbar

Logout Connect VPN Disconnect VPN Refresh Proxy settings Option settings

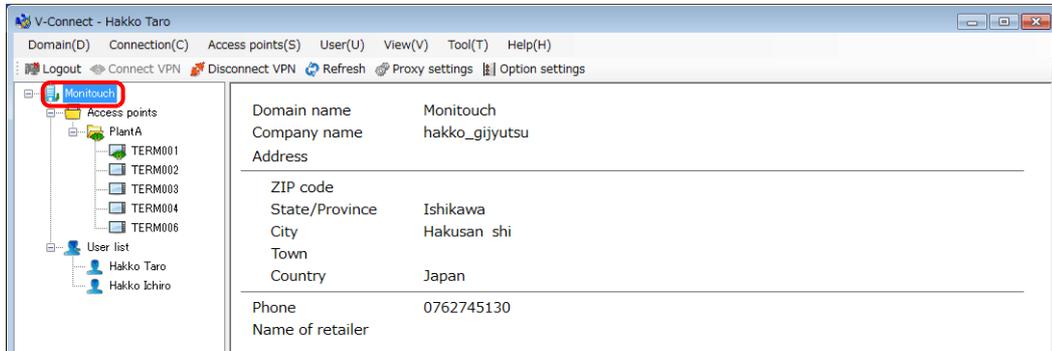
| Item | Description | Refer to |
|----------------|---|-----------|
| Logout | Log out. | page 1-14 |
| Connect VPN | Establish a VPN connection with the selected access point. | page 1-15 |
| Disconnect VPN | Disconnect the current VPN connection. | |
| Refresh | Obtain information on the current domain from the authentication server and display it. | page 1-23 |

| Item | Description | Refer to |
|-----------------|---------------------------|-----------|
| Proxy settings | Configure proxy settings. | page 1-25 |
| Option settings | Configure tool operation. | |

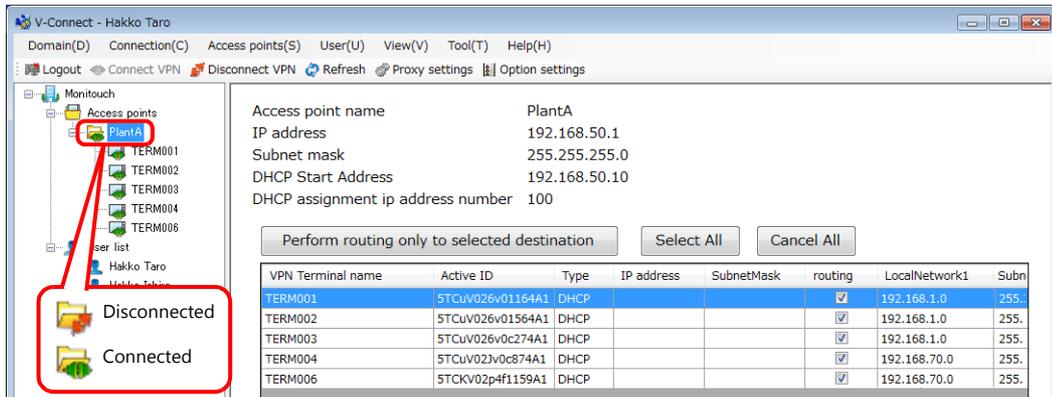
Tree Window/Information Window

The details of the item selected in the tree window can be checked in the information window.

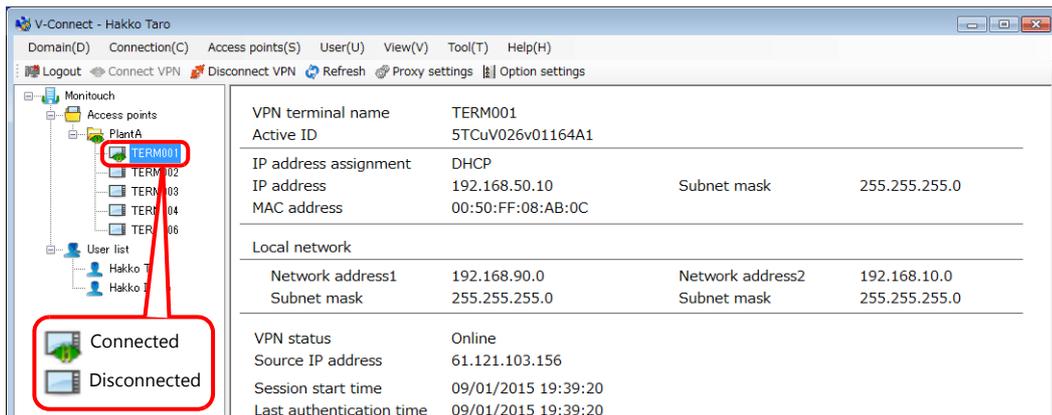
- Domain



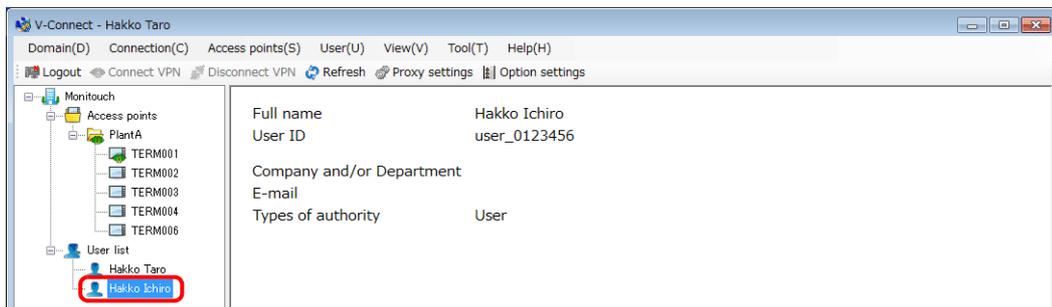
- Access points



- VPN terminals



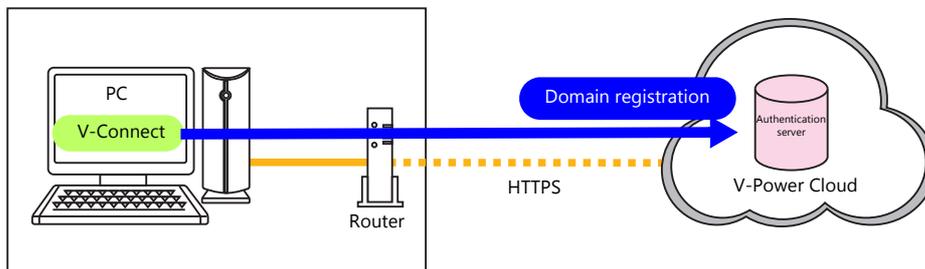
- Users



1.3.5 Domain

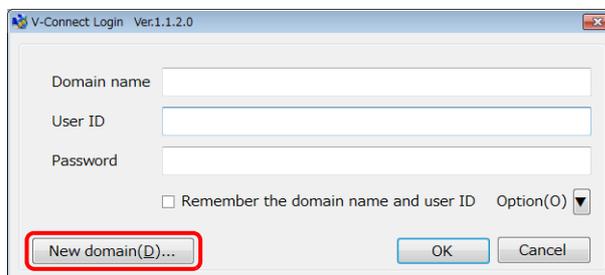
Registering a Domain

Use the "V-Connect" management tool to register domain information to the "V-Power Cloud" authentication server. Domain registration must be performed by a domain administrator.



Procedure

1. Start V-Connect.
2. Click the [New Domain] button.

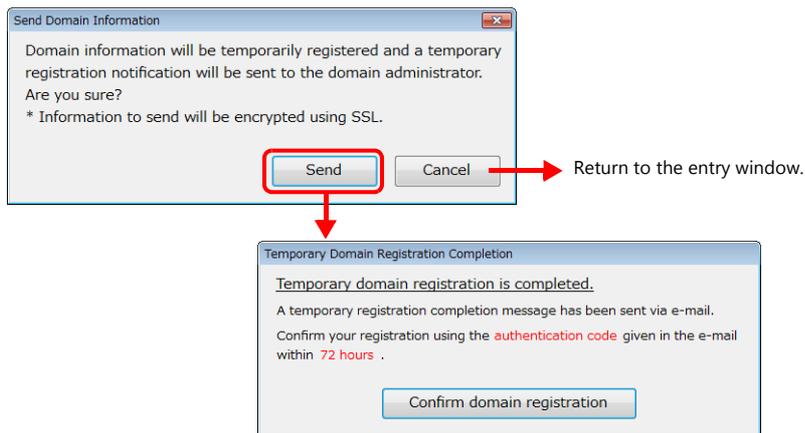


3. Enter the information required to register a domain and click the [OK] button. An asterisk (*) denotes a mandatory field.

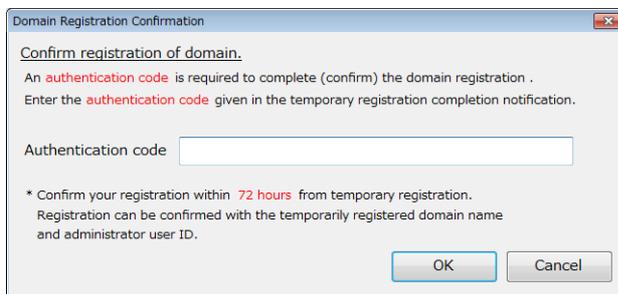
| | Item | Max. Characters | Remarks |
|--------------------|------------------|-----------------|---|
| Domain information | Domain name | 4 to 16 | One-byte alphanumeric characters (case-sensitive) Symbols: !, #, \$, %, &, -, ^, @, ., and _ |
| | Country | - | |
| | Company name | 100 | Maximum of 100 one-byte or two-byte characters |
| | Phone | 30 | One-byte numerals Symbols: (,), -, +, _ , ., and space |
| | ZIP code | 20 | One-byte alphanumeric characters (case-sensitive) Symbols: -, _ , ., and space |
| | State/Province | 60 | Maximum of 60 one-byte or two-byte characters |
| | City | 120 | Maximum of 120 one-byte or two-byte characters |
| | Town | 120 | Maximum of 120 one-byte or two-byte characters |
| | Name of retailer | 100 | Maximum of 100 one-byte or two-byte characters |

| Item | | Max. Characters | Remarks |
|---------------------------|---------------------------|-----------------|--|
| Administrator information | User ID | 8 to 20 | One-byte alphanumeric characters (not case-sensitive) Symbols: #, %, &, -, ., and _ |
| | Password | 6 to 20 | One-byte alphanumeric characters (case-sensitive) Symbols: #, %, &, -, ., and _ |
| | Password (Confirm) | | |
| | Company and/or Department | 100 | Maximum of 100 one-byte or two-byte characters |
| | Full Name | 60 | Maximum of 60 one-byte or two-byte characters |
| | E-mail address | 256 | |
| | E-mail address (Confirm) | | |

- Click [Send] in the [Send Domain Information] dialog box. A message indicating that temporary domain registration is complete is displayed.
To revise the entered information, click [Cancel] to return to the entry window. An error message is displayed if there is a mistake in the information for registration. Correctly enter the information and try again.

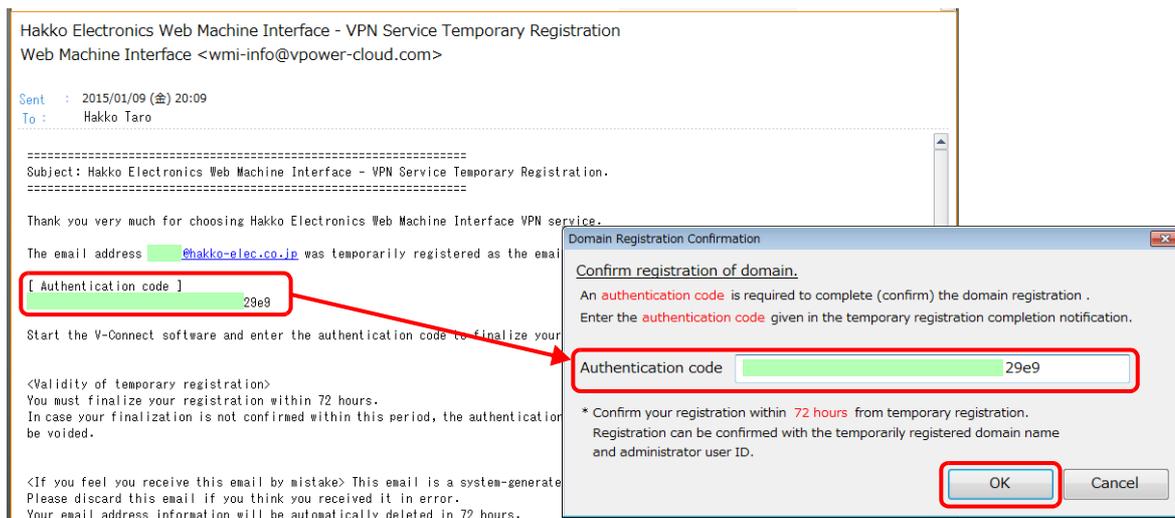


- Click the [Confirm domain registration] button. The [Domain Registration Confirmation] window is displayed.



- Check that the administrator receives an email with the subject "Hakko Electronics Web Machine Interface - VPN Service Temporary Registration".

- Copy the authentication code in the email and paste it into the [Authentication code] field in the [Domain Registration Confirmation] window.
Click [OK].



Period of temporary registration validity

If the email indicating that temporary registration is complete cannot be checked right away, registration can be completed at a later time by closing V-Connect with the [Cancel] button. However, note that the validity period of temporary registration is 72 hours. If registration is not completed within 72 hours, both the authentication code and temporary registration information are invalidated.

- Click [Yes] in the confirmation window. A registration complete message is displayed.

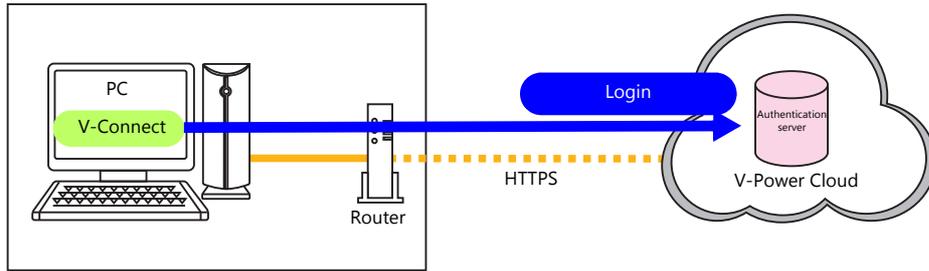


This completes the registration process.

Login

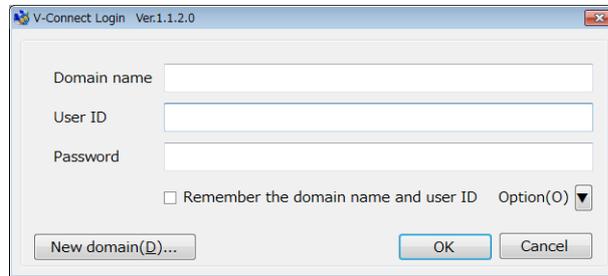
Log into the "V-Power Cloud" authentication server from the "V-Connect" management tool.

- * Always log in using the administrator ID immediately after domain creation.

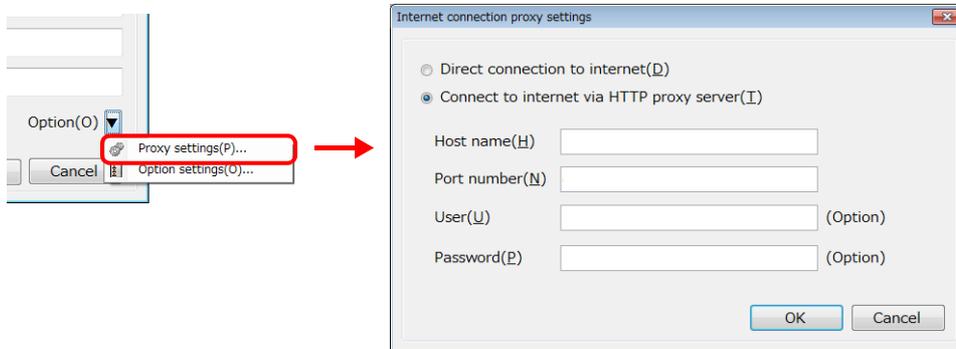


Procedure

1. Start V-Connect.
2. Enter the information (domain name/user ID/password) for the registered domain.
To avoid having to enter the domain name and user ID from the next time V-Connect is started, select the [Remember the domain name and user ID] checkbox.



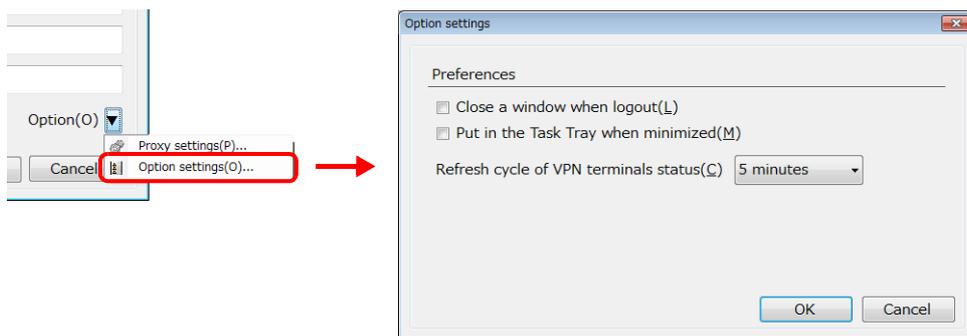
3. Configure the proxy settings and option settings.
 - Proxy settings
Configure these settings when connecting to the Internet via a proxy server.



| Item | Description | |
|--|--|---|
| Direct connection to internet | Connect to the Internet directly without using a proxy server in cases such as when connecting to a mobile router. | |
| Connect to internet via HTTP proxy server *1 | Host name | Set the IP address of the proxy server. |
| | Port number | Set the port number of the proxy server. |
| | User | Set the user ID for logging into the proxy server. |
| | Password | Set the password for logging into the proxy server. |

*1 For information on proxy server settings, consult your network administrator.

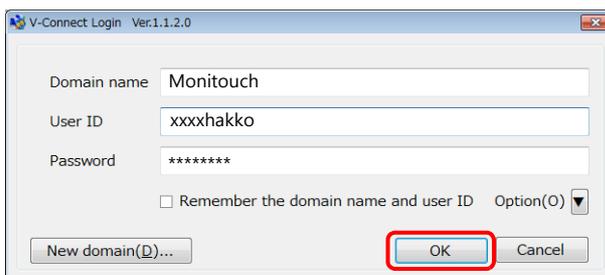
- Option settings
Configure V-Connect operation.



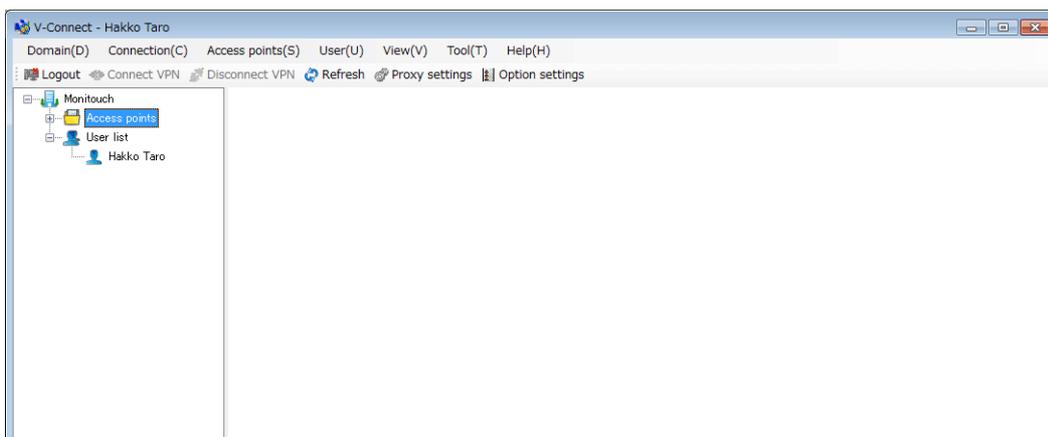
| Item | Description |
|---------------------------------------|---|
| Close a window when logout | Selected: Close V-Connect after logging out. Unselected: Return to the V-Connect login window after logging out. |
| Put in the Task Tray when minimized | Selected: Display a management tool icon in the task tray when the window is minimized. Unselected: Display the management tool on the task bar when the window is minimized. |
| Refresh cycle of VPN terminals status | Set the cycle for refreshing the status of VPN terminal icons in the tree window. The information window is also refreshed when a VPN terminal is selected. None (no automatic refresh) ^{*1} /1 minute/5 minutes/10 minutes/30 minutes/60 minutes |

*1 Refresh the status by clicking [View] → [Refresh].

- Return to the [V-Connect Login] window and click [OK].



- The following window is displayed after successfully logging in. (When an error occurs, refer to page 1-36.)



The following message is displayed if there are no registered access points. Register an access point, VPN terminals, and users.



Modifying the Domain

Modify registered domain information.

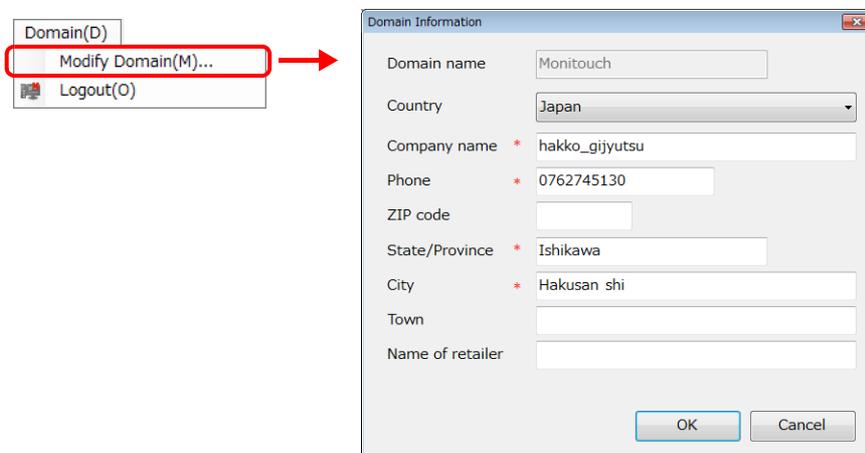
- * Only the domain administrator can perform modifications.

Procedure

1. Select a domain in the tree window.



2. Click [Domain] → [Modify Domain]. The [Domain Information] window is displayed.



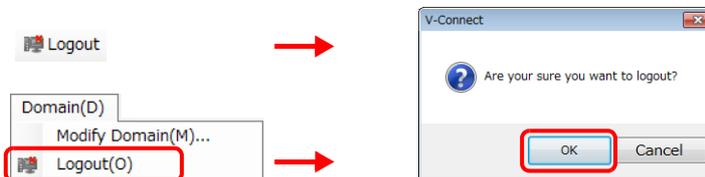
3. Perform any modifications and click [OK] when finished.

Logout

Log out of V-Connect. If a VPN connection is established, the software also disconnects from the VPN.

Procedure

1. Click the [Logout] icon or [Domain] → [Logout]. A confirmation dialog box is displayed.

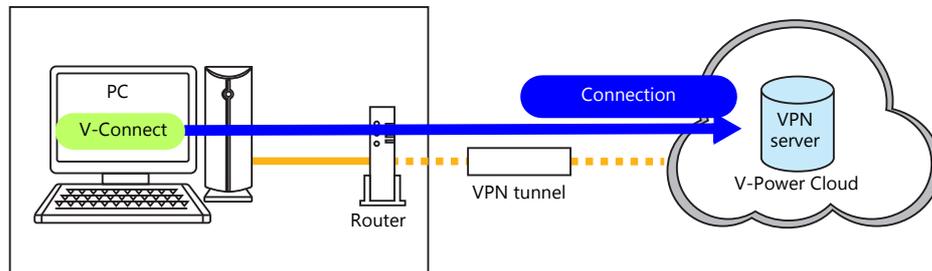


2. Click [OK] to log out.

1.3.6 Connection

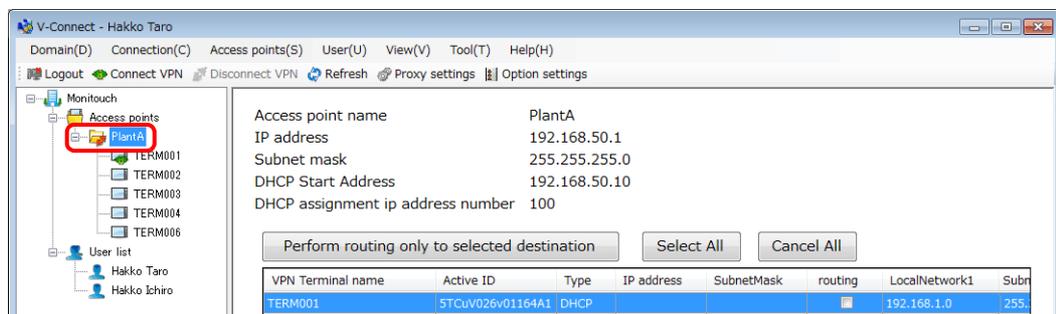
Establishing a VPN Connection

Connect the "V-Connect" management tool to the "V-Power Cloud" access point.

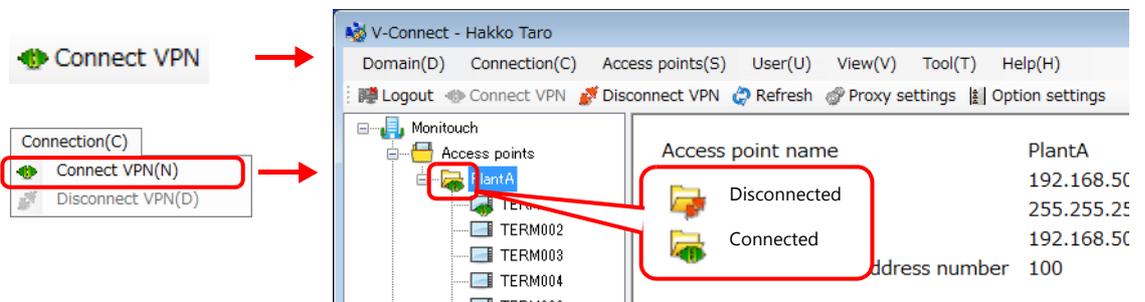


Procedure

1. Select an access point in the tree window.



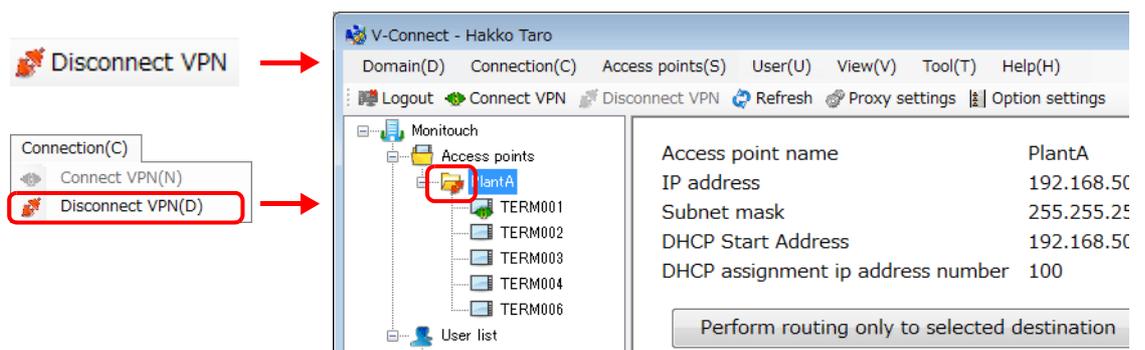
2. Click the [Connect VPN] icon or [Connection] → [Connect VPN]. A VPN connection is established.



Disconnecting a VPN Connection

Procedure

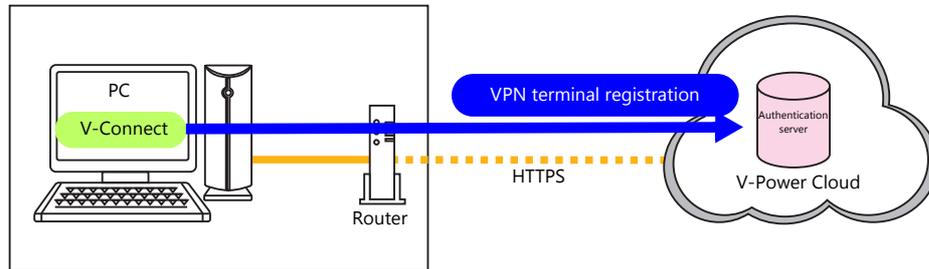
1. Select an access point in the tree window.
2. Click the [Disconnect VPN] icon or [Connection] → [Disconnect VPN]. The VPN connection is disconnected.



1.3.7 Access Points

Registering Access Points

Use the “V-Connect” management tool to register access points and VPN terminals to the “V-Power Cloud” authentication server.



Procedure

1. Click [Access points] → [New access point]. The [Access Point Information] window is displayed.
2. Set the access point information.

| Item | Description | Remarks |
|--|---|--|
| Access point name | Access point name | Maximum of 100 characters |
| IP address | Virtual IP address of the access point ^{*1} | IPv4 address classes A through C can be specified. |
| Subnet mask | Subnet mask of the access point | |
| DHCP start address | Start IP address used when allocating virtual IP addresses ^{*1} of VPN terminals (V9) using DHCP | |
| DHCP assignment IP address number | Maximum number of VPN terminals for allocating virtual IP addresses ^{*1} using DHCP | 0 to 254 |
| Allowable number of additional VPN terminals | Allowable number of additional VPN terminals that can be registered | 0 to 999 ^{*2} |
| Registered VPN terminals in domain | Number of VPN terminals that can be registered to the domain | |
| VPN terminals registered for this access point | Number of VPN terminals registered to the selected access point | |
| Additional number of VPN terminals | Register additional VPN terminals | 0 to 999 ^{*2} |
| CSV output | Output VPN terminal information to CSV file | |

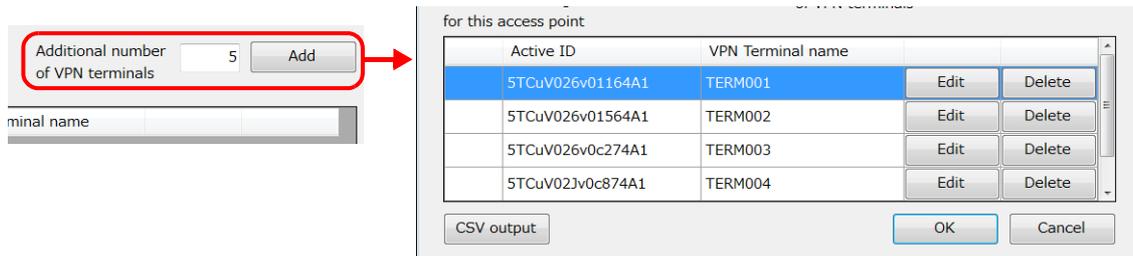
^{*1} Virtual IP addresses

IP addresses that are only allocated for the purpose of VPN connection. These IP addresses cannot be used for any other purpose.

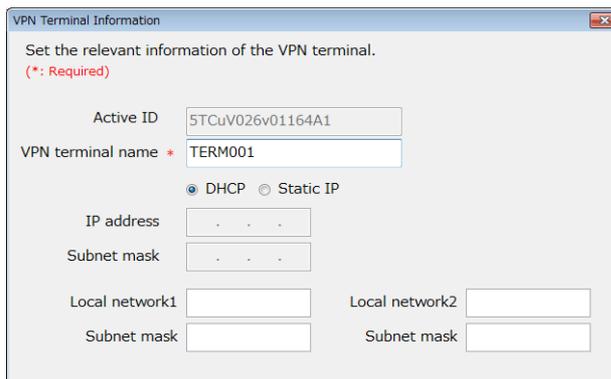
^{*2} The maximum number differs depending on the license type. Refer to “1.1.3 License”

3. Register VPN terminals (V9).

Enter a value for [Additional number of VPN terminals] and click [Add]. The number of specified VPN terminals are temporarily registered.



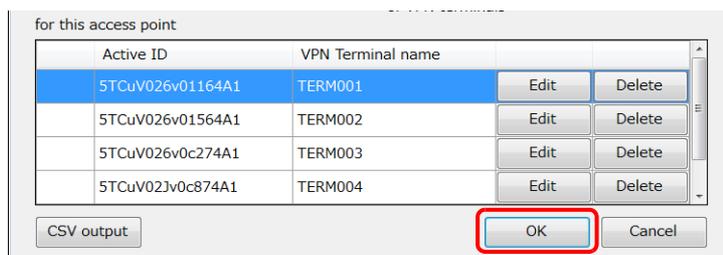
4. If VPN terminal information requires modification, click [Edit] to modify and [OK] to accept the changes.



| Item | Description | Remarks |
|-------------------------------|--|--|
| Active ID | VPN terminal ID This ID is automatically issued by the authentication server. | Registered VPN terminals can be updated by clicking [Delete] → [Add]. |
| VPN terminal name | Name of the VPN terminal | |
| DHCP *1 Static IP *2 | IP address allocation method for the VPN terminal | [DHCP]: Automatically issued from the server |
| IP address | IP address of the VPN terminal | [Static IP]: User-defined |
| Subnet mask | Subnet mask of the VPN terminal | |
| Local network1 Subnet mask | IP address and subnet mask for local network1 of the VPN terminal are acquired automatically. LAN 1CH : local network1 (same port for the VPN connection) LAN 2CH : local network1 LAN 3CH : local network1 | Manual settings is needed when using local IP address of the VPN connection port with LAN 3CH type. *3 |
| Local network2 Subnet mask | IP address and subnet mask for local network2 of the VPN terminal are acquired automatically. LAN 1CH : unused LAN 2CH : local network2(same port for the VPN connection) LAN 3CH : local network2 | Manual settings is needed when using local IP address of the VPN connection port with LAN 3CH type. *3 |

*1 The IP address may change because it is automatically allocated by the server.
 *2 The set IP address and subnet mask are always allocated.
 *3 Manual settings is needed each time V-Connect reconnects to the VPN terminal to get the informations of local network1 and 2.

5. When all VPN terminal settings are configured, click [OK]. The access point and VPN terminal are registered to the authentication server.



6. To delete a VPN terminal, click [Delete] and [OK].



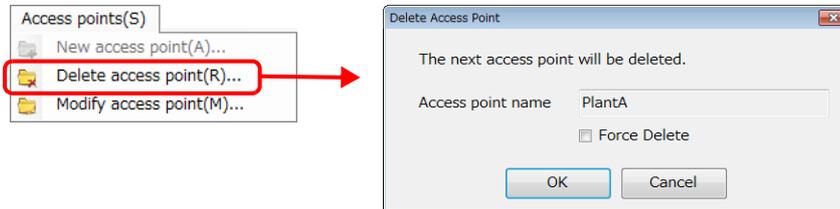
Deleting a VPN terminal causes the active ID to disappear completely. When registering the VPN terminal again, a different active ID is allocated. Take sufficient care when deleting VPN terminals in use.

Deleting Access Points

Delete registered access points.

Procedure

1. Select an access point to delete in the tree window.
2. Click [Access points] → [Delete access point]. A confirmation dialog box is displayed.
If deleting an access point when a VPN connection is established, select the [Force Delete] checkbox.



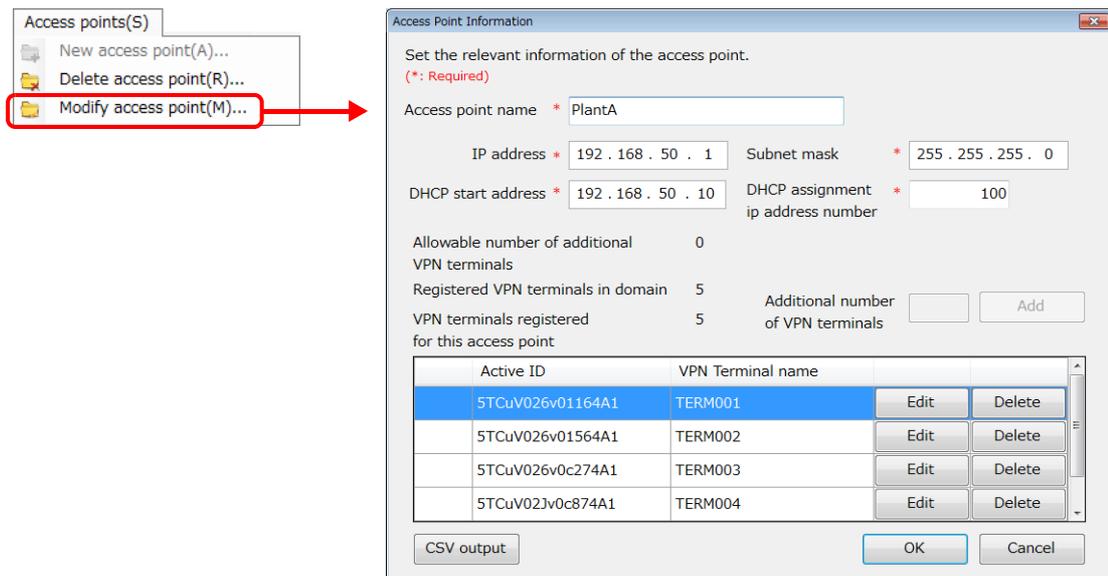
3. Click [OK] to delete the access point.

Modifying Access Points

Modify registered access point information and VPN terminal information and delete VPN terminals.

Procedure

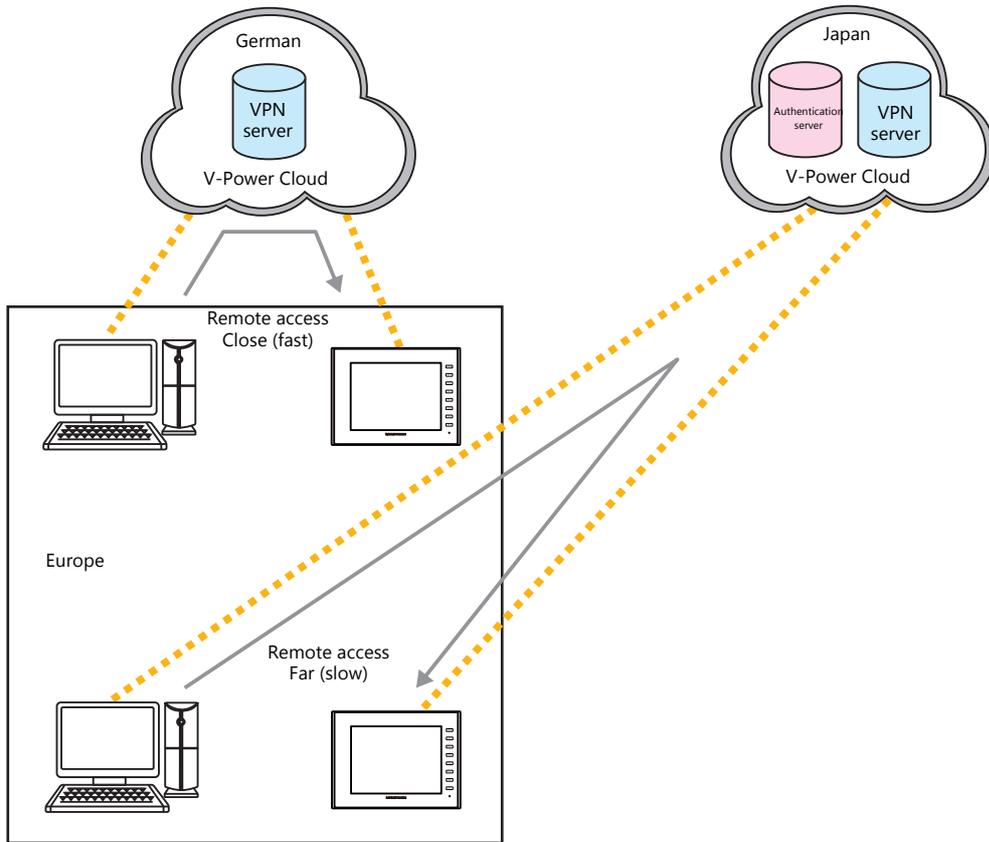
1. Select an access point in the tree window.
2. Click [Access points] → [Modify access point]. The [Access Point Information] window is displayed.



3. Modify the settings. For details on settings, refer to "Registering Access Points".

Access point area change

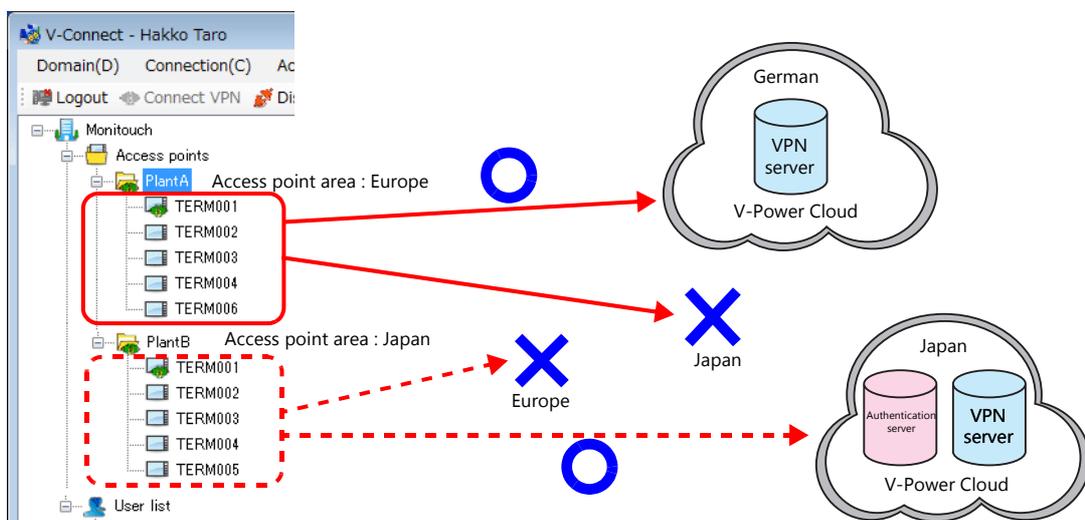
Our VPN servers are located in Japan and Germany. Access point area is automatically set depending on the country that you registered the domain, but you can also change it.



- Access point area at the time of registering the domain (default)

| Domain | Access point area |
|--|-------------------|
| EU accessible countries (28 countries) Turkey European countries other than the above 29 countries | Europe (Germany) |
| Countries other than the above | Asia (Japan) |

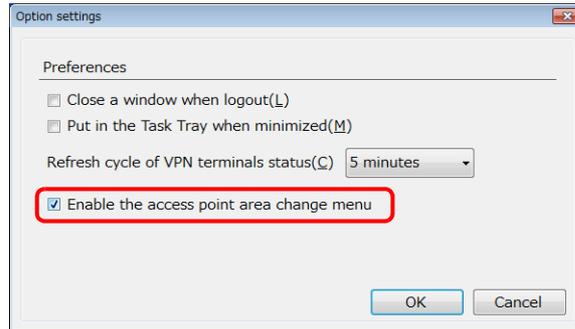
- Access point area is set at access point. It is impossible to be set by unit. If you want to access VPN servers both in Japan and Germany, two or more access points are required.



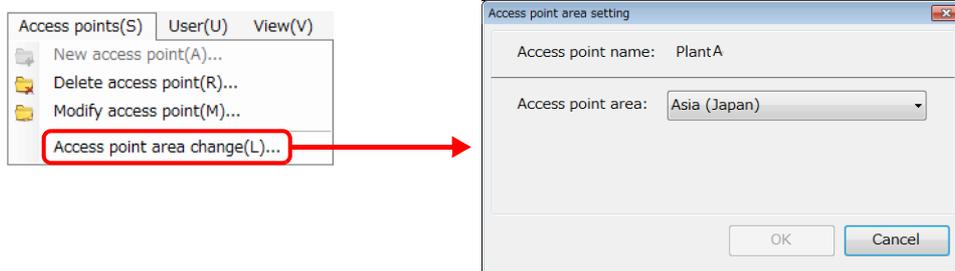
- If access point area is changed, active ID remains the same.

Procedure

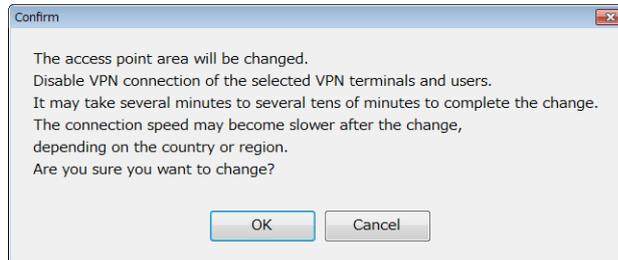
1. Login as [Domain administrator] or [Administrator].
2. Click [Tool]→[Option settings] and then select the [Enable the access point area change menu].



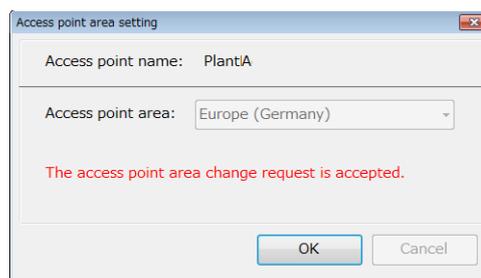
3. Select the [Access points] in the tree view.
4. By clicking the [Access points]→[Access point area change], [Access point area setting] window will appear.



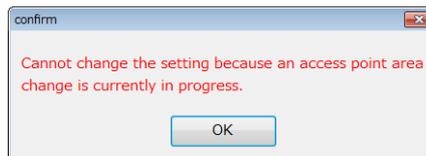
5. Select the access point area and click [OK] button. Confirmation window will be displayed.



6. If you change the access point area, click [OK] button. Notification window representing change of the area will appear.



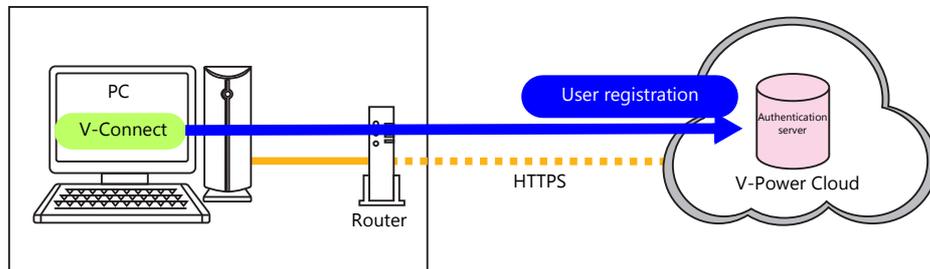
You cannot change [Access], [Access point] and [User] menu while changing access point area.



1.3.8 Users

Registering Users

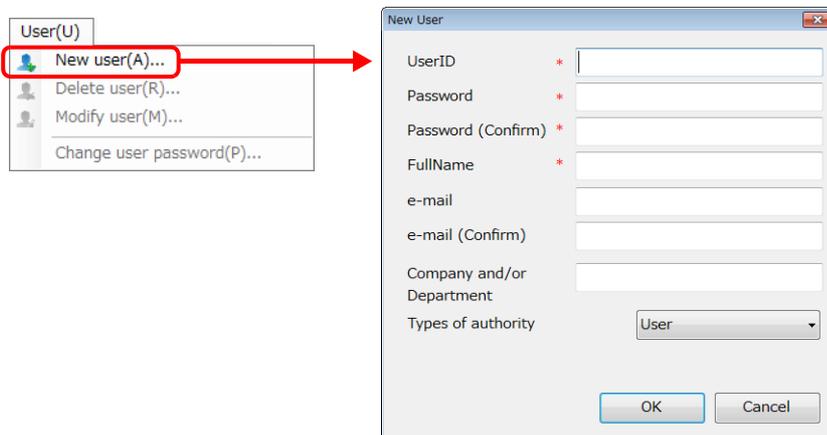
Use the “V-Connect” management tool to register user information to the “V-Power Cloud” authentication server. A maximum of 20 users can be registered to a single domain.



Procedure

1. Click [User] → [New user]. The [New User] window is displayed.
2. Register user information.

An asterisk (*) denotes a mandatory field.



| Item | Max. Characters | Remarks |
|---------------------------|-----------------|--|
| User ID * | 8 to 20 | One-byte alphanumeric characters (not case-sensitive) Symbols: -, _ , #, %, &, and. |
| Password * | 6 to 20 | One-byte alphanumeric characters (case-sensitive) Symbols: -, _ , #, %, &, and. |
| Password (Confirm) * | | |
| Full Name * | 60 | Maximum of 60 one-byte or two-byte characters |
| e-mail | 256 | |
| email (Confirm) | | |
| Company and/or Department | 100 | Maximum of 100 one-byte or two-byte characters |
| Types of authority | - | Normal user/administrator For more information, refer to “1.3.2 User Types and Privileges”. |

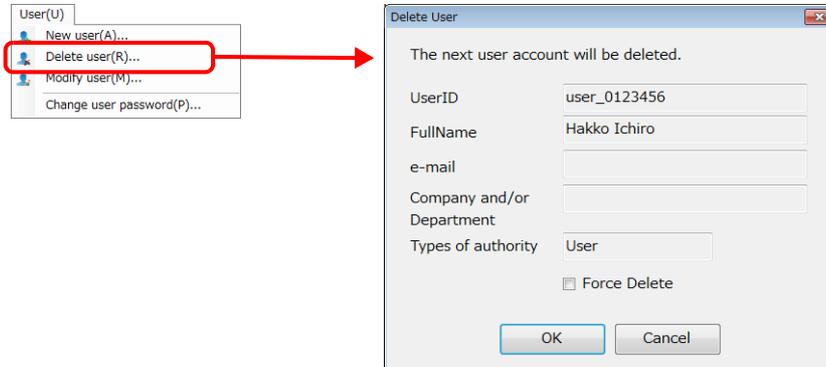
3. Click [OK] to complete user registration.

Deleting Users

Delete registered users.

1. Select a user to delete from the user list in the tree window.
2. Click [User] → [Delete user]. A confirmation window is displayed.

If deleting a user with an established VPN connection, select the [Force Delete] checkbox.

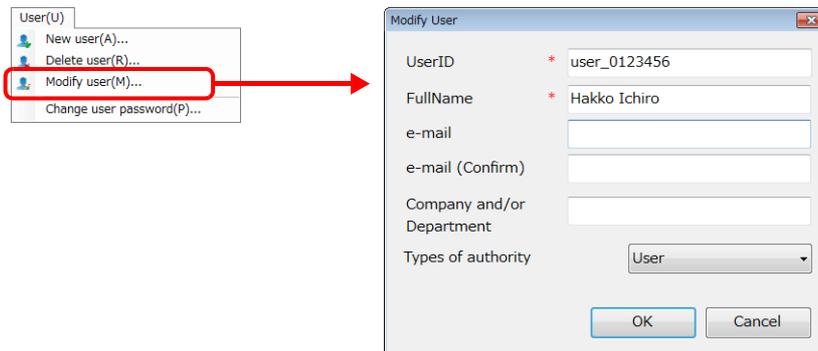


3. Click [OK] to delete the user.

Modifying User Information

Modify registered user information.

1. Select a user to modify from the user list in the tree window.
2. Click [User] → [Modify user]. The [Modify User] window is displayed.



3. Modify the registered information and click [OK] when finished.

Changing User Passwords

Change a registered password.

1. Select the user whose password is to be changed from the user list in the tree window.
2. Click [User] → [Change user password]. The [Change user password] window is displayed.

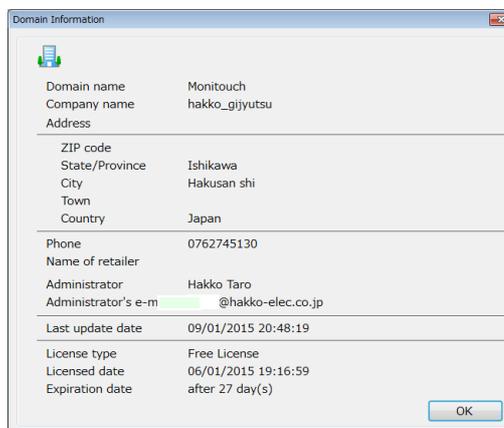


3. Enter a new password and click [OK] when finished.

1.3.9 View

Show Domain

Display the obtained domain information.



Refresh

Obtain information on the current domain from the authentication server and refresh the display.

Log Info

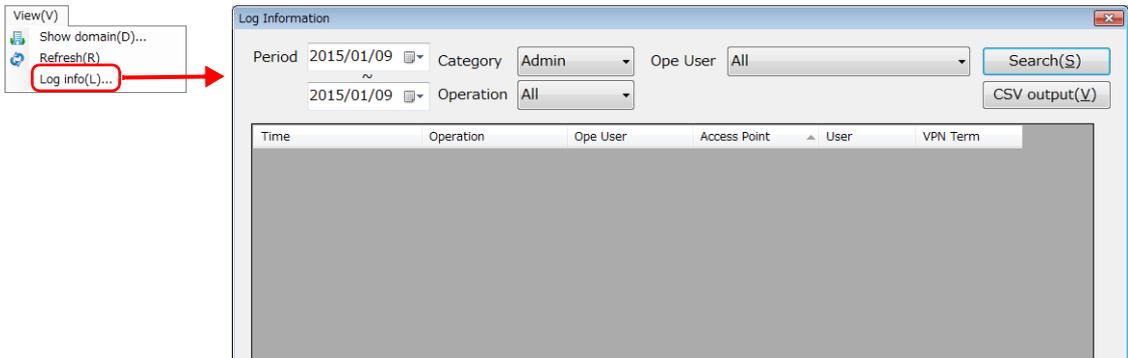
Logs containing management operations performed using V-Connect and VPN connection history for the last three months can be checked.

The following table lists the log information that can be referenced and which users can reference it.

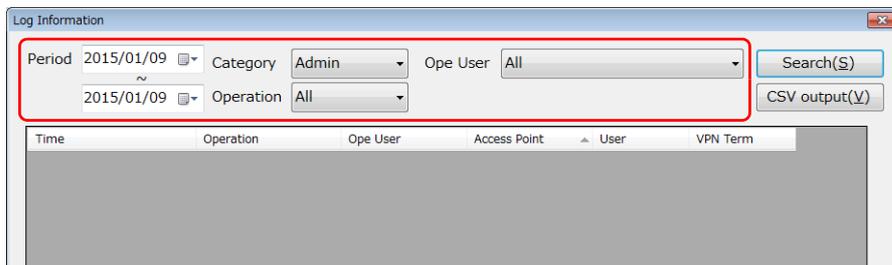
| Operation | | Log Information | Domain Administrator Administrator | Normal User |
|-----------------------|----------------------------|---|---------------------------------------|-------------|
| Management operations | Register user | Date/time Registered user ID, name User ID and name of user that performed registration | | |
| | Delete user | Date/time Deleted user ID, name User ID and name of user that performed deletion | | |
| | New access point | Date/time Registered access point name User ID and name of user that performed registration | | |
| | Delete access point | Date/time Deleted access point name User ID and name of user that performed deletion | ○ | × |
| | VPN terminal registration | Date/time Registered VPN terminal name User ID and name of user that performed registration | | |
| | VPN terminal deletion | Date/time Deleted VPN terminal name User ID and name of user that performed deletion | | |
| VPN connections | User VPN connection | Date/time User ID and name | | |
| | User VPN disconnection | Date/time User ID and name Duration of connection Sizes of sent and received data | | |
| | VPN terminal connection | Date/time VPN terminal name and active ID | ○ | ○ |
| | VPN terminal disconnection | Date/time VPN terminal name and active ID Duration of connection Sizes of sent and received data | | |

Procedure

1. Click [View] → [Log info]. The [Log Information] window is displayed.



2. Set [Period], [Category], and any other required options.



3. Click [Search]. The search results are displayed.
Example: Management logs

| Time | Operation | Ope User | Access Point | User | VPN Term |
|---------------------|---------------------|-----------------------|--------------|--------------------------|----------|
| 06/01/2015 19:21:04 | Regist access point | Hakko Taro /xxxxhakko | Monitouch | | |
| 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM001 |
| 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM002 |
| 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM003 |
| 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM004 |
| 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM005 |
| 06/01/2015 19:35:16 | Delete VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM005 |
| 06/01/2015 19:37:56 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM006 |
| 09/01/2015 19:41:47 | Regist user | Hakko Taro /xxxxhakko | | Hakko Ichiro/HakkoIchiro | |

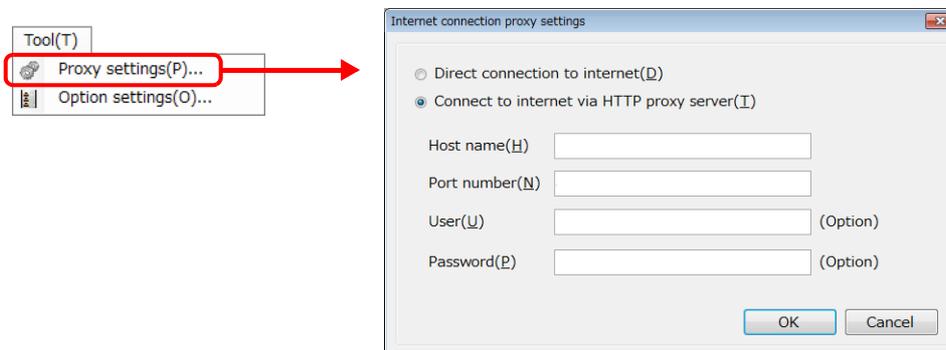
4. Click [CSV output] to save the search results to a CSV file.

| | A | B | C | D | E | F | G |
|----|---------------------|---------------------|-----------------------|--------------|--------------------------|----------|---|
| 1 | Time | Operation | Ope User | Access Point | User | VPN Term | |
| 2 | 06/01/2015 19:21:04 | Regist access point | Hakko Taro /xxxxhakko | Monitouch | | | |
| 3 | 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM001 | |
| 4 | 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM002 | |
| 5 | 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM003 | |
| 6 | 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM004 | |
| 7 | 06/01/2015 19:21:04 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM005 | |
| 8 | 06/01/2015 19:35:16 | Delete VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM005 | |
| 9 | 06/01/2015 19:37:56 | Regist VPN terminal | Hakko Taro /xxxxhakko | PlantA | | TERM006 | |
| 10 | 09/01/2015 19:41:47 | Regist user | Hakko Taro /xxxxhakko | | Hakko Ichiro/HakkoIchiro | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

1.3.10 Tool

Proxy Settings

Configure these settings when connecting to the Internet via a proxy server.

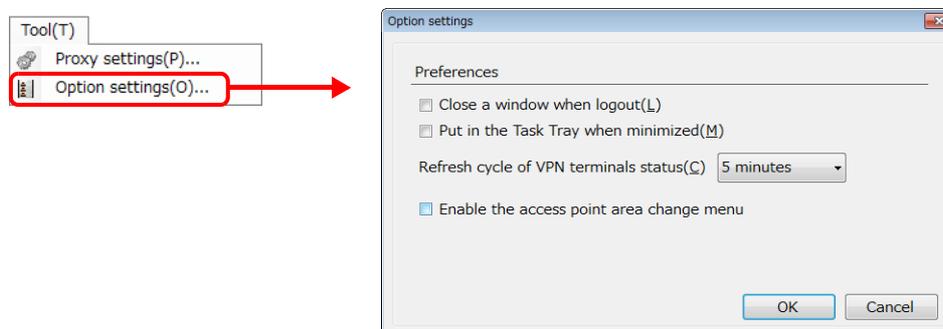


| Item | Description | |
|--|--|---|
| Direct connection to internet | Connect to the Internet directly without using a proxy server in cases such as when connecting to a mobile router. | |
| Connect to internet via HTTP proxy server *1 | Host name | Set the IP address of the proxy server. |
| | Port number | Set the port number of the proxy server. |
| | User | Set the user ID for logging into the proxy server. |
| | Password | Set the password for logging into the proxy server. |

*1 For information on proxy server settings, consult your network administrator.

Option Settings

Configure V-Connect operation.



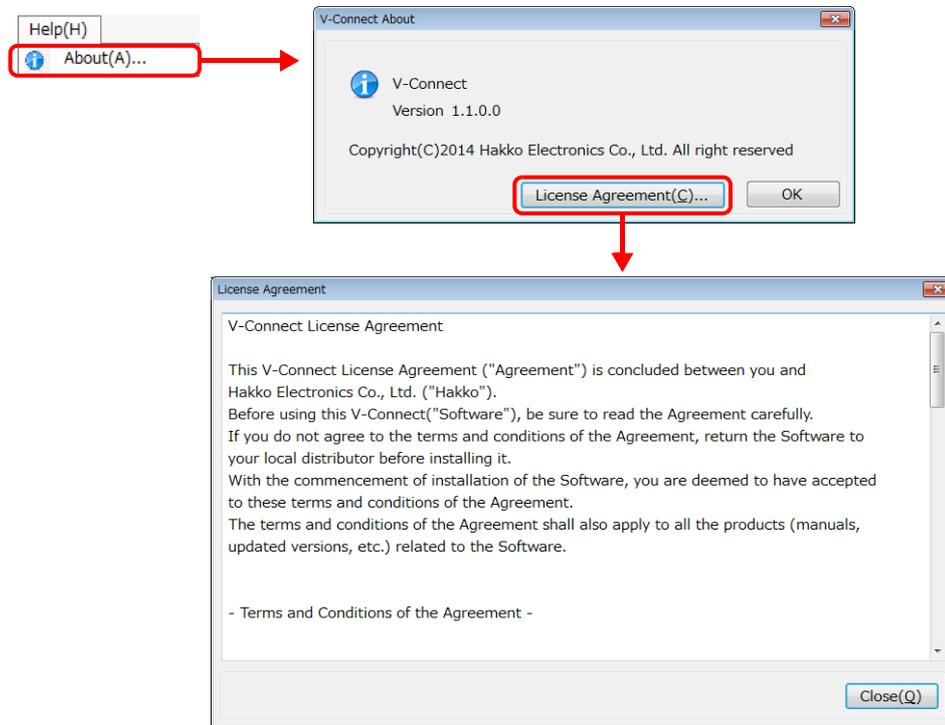
| Item | Description |
|--|--|
| Close a window when logout | Selected: Close V-Connect after logging out. Unselected: Return to the V-Connect login window after logging out. |
| Put in the Task Tray when minimized | Selected: Display a management tool icon in the task tray when the window is minimized. Unselected: Display the management tool on the task bar when the window is minimized. |
| Refresh cycle of VPN terminals status | Set the refresh cycle during VPN connection. None (no automatic refresh)*1/1 minute/5 minutes/10 minutes/30 minutes/60 minutes |
| Enable the access point area change menu | Check the checkbox in changing access point area to Europe or Asia. This checkbox appears only when you login as [Domain administrator/Administrator]. Refer to page 1-19. |

*1 Refresh the status by clicking [View] → [Refresh].

1.3.11 Help

About

Version information of "V-Connect" and the license agreement can be checked.



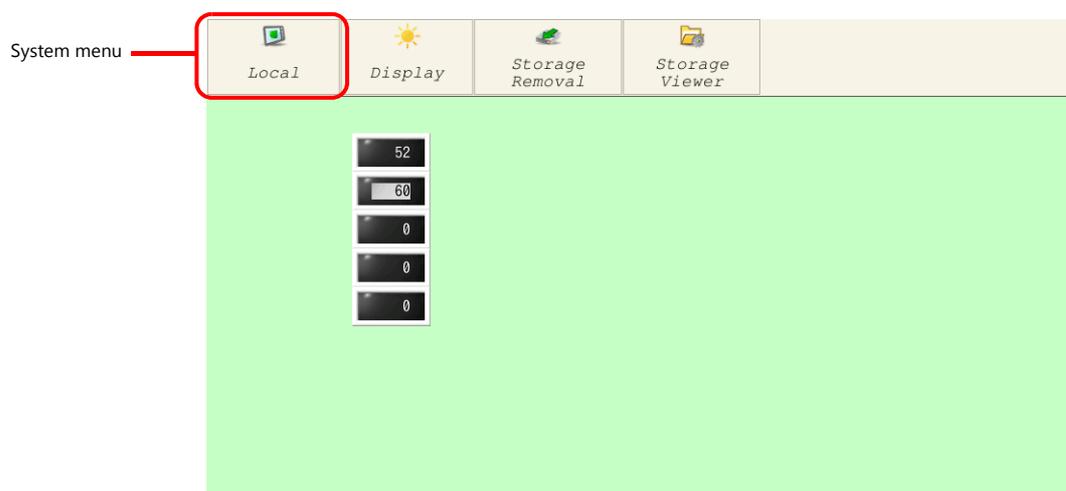
1.4 V9 Series Unit Settings

1.4.1 IP Address Settings

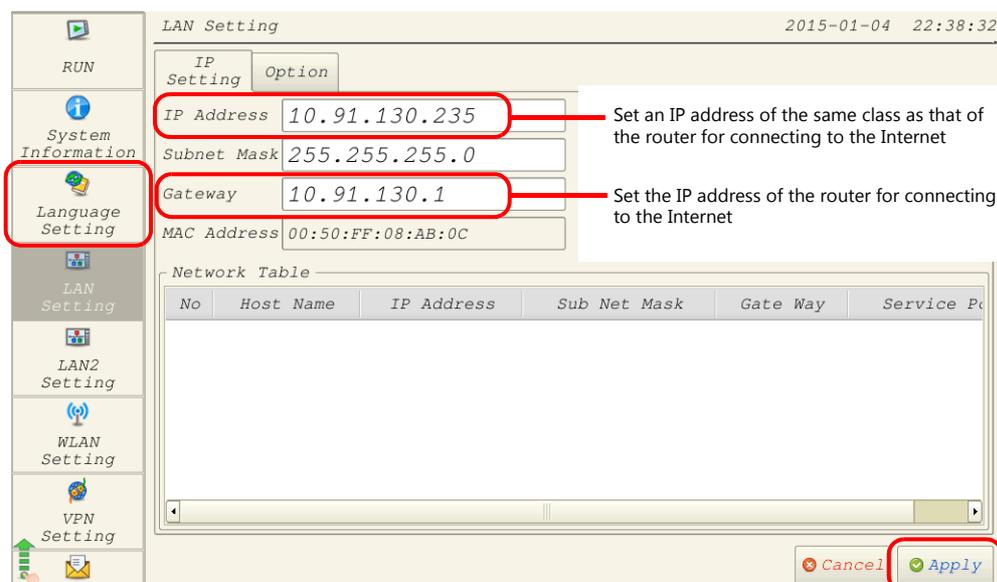
Set the IP address of the V9 series unit.

Procedure

- Enter Local mode on the V9 series unit.
 - * For details on entering Local mode, refer to the V9 Series Troubleshooting/Maintenance Manual.
 - V9 Standard / V9 Lite
Press the [SYSTEM] switch to display the system menu and then press the [Local] switch.
 - V9 Advanced
Press one corner of the screen for at least 2 seconds and release your finger when there is a beep. Then within one second, press a different corner and hold for at least 2 seconds to display the system menu. Press the [Local] switch on the displayed system menu.



- Display the [LAN Setting] screen.
 - * **When using the LAN2CH or wireless LAN type of V9 Advanced / V9 Standard models, LAN2/WLAN settings can also be configured.**
- Set the IP address for connecting to the Internet and accept the setting by pressing [Apply].



When using the LAN2CH or wireless LAN type of V9 Advanced / V9 Standard models, do not set a default gateway for LAN port settings other than the VPN connection port.

1.4.2 Date and Time Settings

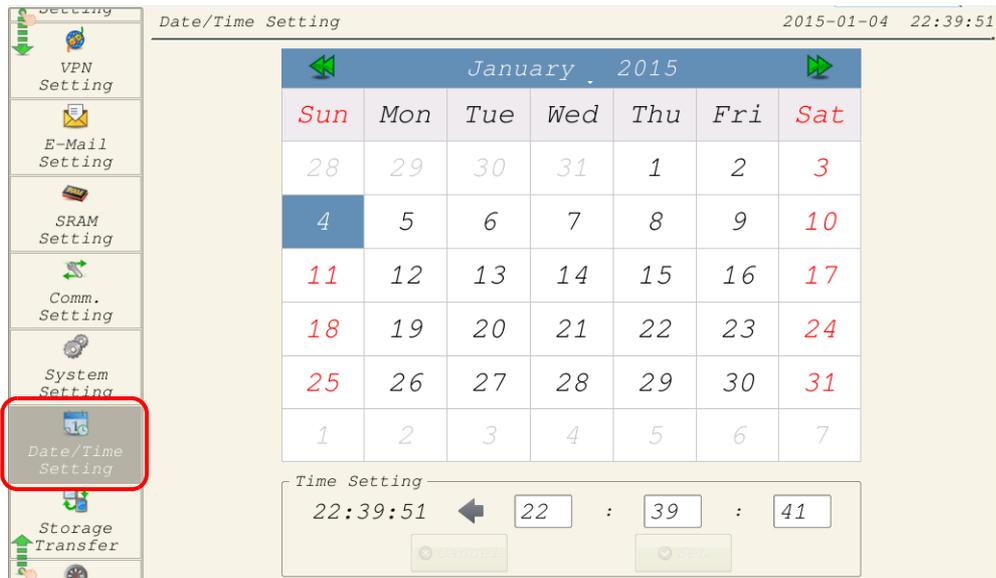
Set the date and time on the V9 series unit.



A VPN connection cannot be established without setting the correct date and time. The deviation within 24 hours of current time is valid.

Procedure

- Using the PLC clock
Set the date and time of the PLC as the current date and time.
- Using the internal clock of the V9 series unit
Configure the date and time settings in Local mode → [Date/Time Setting].

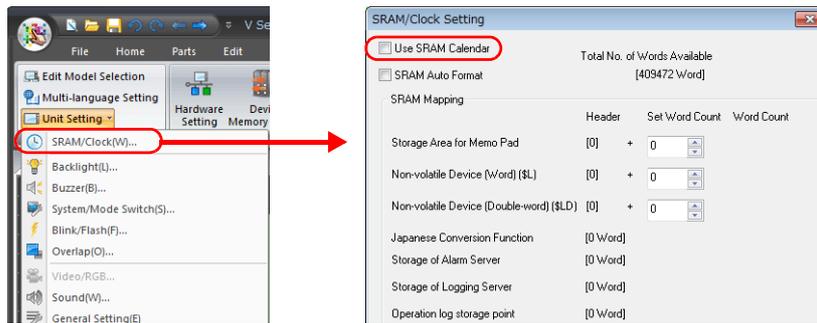


Check the screen program to determine whether the PLC clock or internal clock of the V9 series unit is used.

[System Setting] → [Unit Setting] → [SRAM/Clock] → [Use SRAM Calendar]

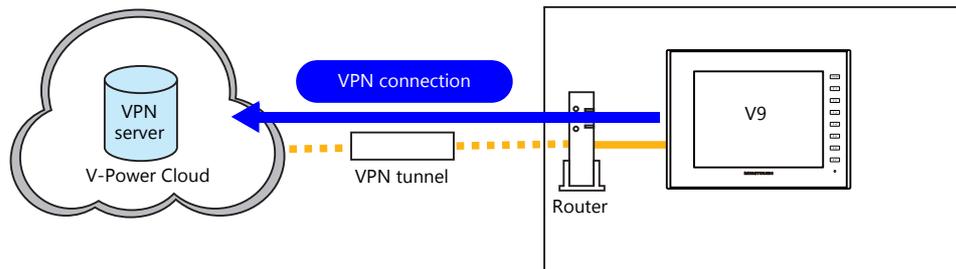
Unselected: PLC clock

Selected: Internal clock of the V9 series unit



1.4.3 VPN Settings

Configure VPN settings and connect the V9 series unit to the VPN.



Procedure

1. Display the [VPN Setting] screen in Local mode.
2. Configure the VPN settings.

The screenshot shows the 'VPN Setting' screen. The status is 'Invalid'. The 'Port for VPN' is set to 'LAN'. The 'Domain name' is 'Monitouch' and the 'Active ID' is '5TCuV026v01164A1'. The 'IP Address for VPN' field is empty. The 'VPN terminal name' field is also empty. The 'Unlink' and 'Connect' buttons are at the bottom right.

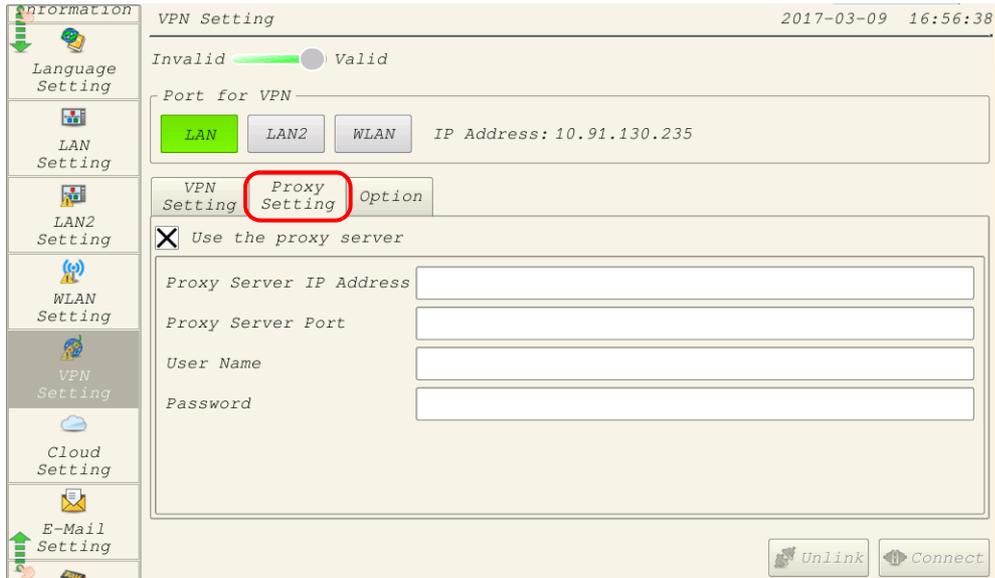
V-Connect

The screenshot shows the 'V-Connect' application window. The 'Monitouch' connection profile is selected. The 'Active ID' is '5TCuV026v01164A1'. The 'VPN terminal name' is 'TERM001'. The 'Local network' section shows the following details:

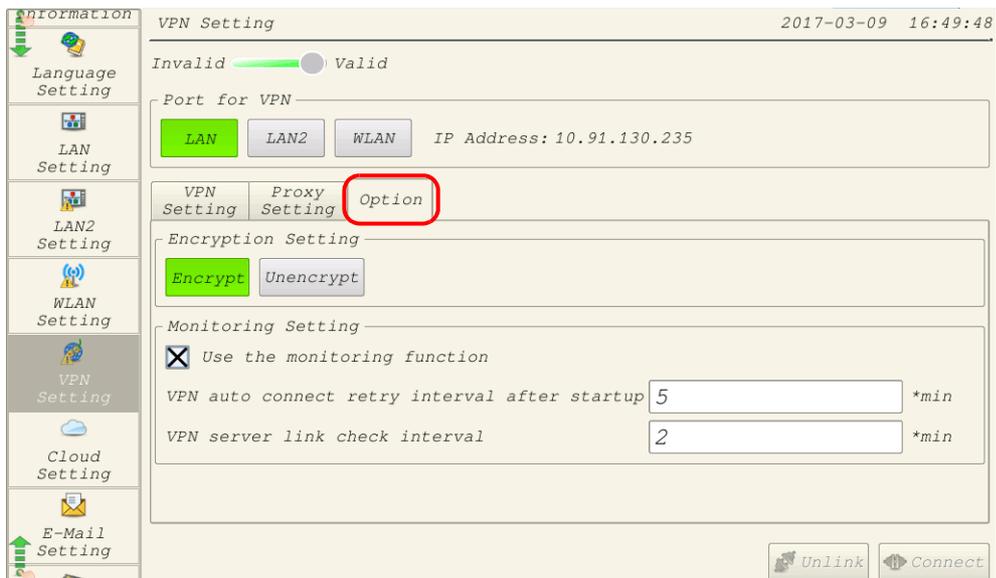
| Local network | | | |
|------------------|---------------|------------------|---------------|
| Network address1 | 192.168.10.0 | Network address2 | 192.168.10.0 |
| Subnet mask | 255.255.255.0 | Subnet mask | 255.255.255.0 |

The 'VPN status' is 'Online'. The 'Source IP address' is '61.121.103.156'. The 'Session start time' is '09/01/2015 19:39:20'. The 'Last authentication time' is '09/01/2015 19:39:20'. The 'Sending data size' is '1,024Bytes' and the 'Receiving data size' is '49,310Bytes'.

3. When accessing the Internet via a proxy server, configure settings on the [Proxy Setting] tab.



4. Configure settings on the [Option] tab.



• Encryption Setting

Communications between the V9 series unit and the VPN server can be partially unencrypted. This setting can only be changed when the communication status is unlinked.

| Communication Contents | [Encrypt] Selected | [Unencrypt] Selected |
|---|--------------------|----------------------|
| Authentication with VPN server, existence check | Encrypted | Encrypted |
| Screen program transfer, VNC server function, FTP server function, ladder transfer function, remote monitoring/operation of network cameras/PLCs on the local network where the V9 series unit is located | Encrypted | Unencrypted |



- Note that establishing a VPN connection with [Unencrypt] selected risks the possibilities of information being eavesdropped on and leakage of information.
- Also note that although the [Option] tab is available only on V9 series versions 1.250 and later, the V9 series unit will still perform unencrypted communications if [Unencrypt] is selected and then the version is downgraded to one that does not support the [Option] tab.

A warning message appears when [Encrypt] is selected.



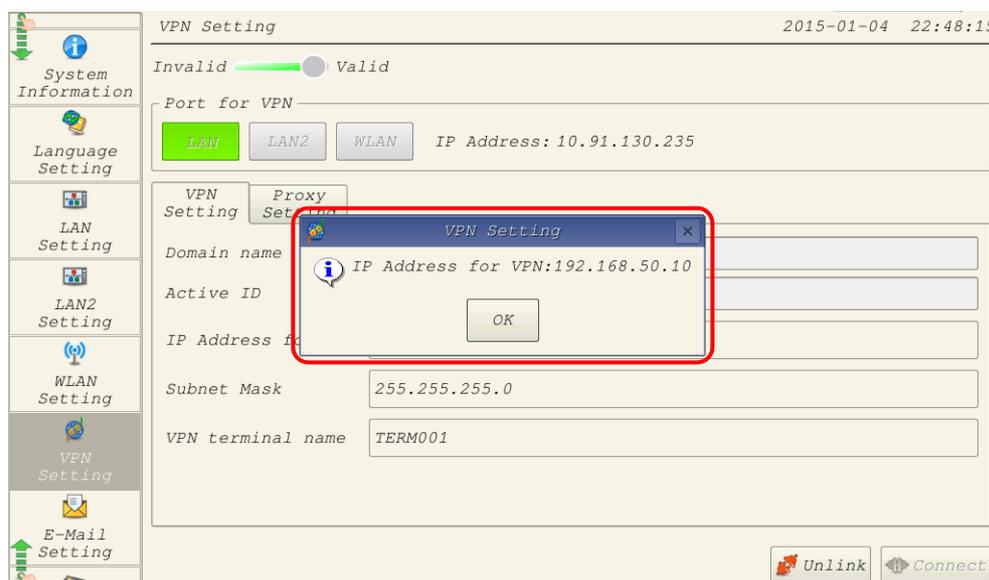
- Monitoring Setting
Configure this setting to use the monitoring function for VPN connection.

| Item | Description |
|---|--|
| VPN auto connect retry interval after startup 1 to 30 min (Default: 5 min) | When the V9 series unit fails to establish a VPN connection automatically*1 upon startup, the V9 series unit automatically retries establishing a connection at the specified interval until it succeeds. The V9 series unit stops retrying in the following cases: <ul style="list-style-type: none"> • Connection with the authentication server is established • Connection is manually attempted from the V9 series status bar • Connection is manually attempted from the [VPN Setting] screen in Local mode |
| VPN server link check interval 1 to 30 min (Default: 2 min) | When internet connection is disabled after establishing a VPN connection, such as by the router power turning off, the link status with the VPN server is stored in \$s1679. Refer to page 1-32. This setting defines the interval at which the V9 series unit checks the VPN connection status. The V9 series unit stops checking in the following cases: <ul style="list-style-type: none"> • Connection is manually disconnected from the V9 series status bar • Connection is manually disconnected from the [VPN Setting] screen in Local mode |

*1 Automatic VPN connection

If the V9 series unit is turned OFF when connected, the unit will automatically reconnect to the VPN when the unit is turned ON.
If the V9 series unit is turned OFF when disconnected, the unit does not automatically reconnect to the VPN.

5. Press [Connect] to access V-Power Cloud. If an "IP Address for VPN" message is displayed as shown below, the V9 series unit has successfully established a connection. (When an error occurs, refer to page 1-36.)



6. Press [Unlink] to disconnect from the VPN.



The state of connection or disconnection is stored even when the V9 series unit is turned OFF.
If the unit is turned OFF when connected, the unit will automatically reconnect to the VPN when the unit is turned ON.

1.4.4 VPN Connection/Disconnection

Connection or disconnection of the V9 series unit to the VPN is performed either from the [VPN Setting] screen in Local mode or from the status bar.

VPN Setting Screen

For information on connecting and disconnecting from the [VPN Setting] screen, refer to 1.4.3VPN Settings.

Status Bar

The VPN connection status can be checked and connecting and disconnecting can be performed using the status bar.

Procedure

1. Enter Local mode on the V9 series unit.

* For details on entering Local mode, refer to the V9 Series Troubleshooting/Maintenance Manual.

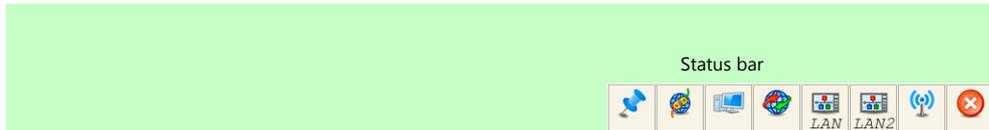
- V9 Standard / V9 Lite

Press the [SYSTEM] switch to display the status bar.

- V9 Advanced

Press one corner of the screen for at least 2 seconds and release your finger when there is a beep.

Then within one second, press a different corner and hold for at least 2 seconds to display the status bar at the bottom right of the screen.



2. Press the VPN icon. A status window is displayed.



3. Press [Connect] and [Unlink] to change the connection state. A mark appears on the VPN icon in the disconnected state.



System Device Memory (\$s)

This device memory stores the state of the VPN connection.

| Device Memory | Description | Remarks |
|---------------|---|--|
| \$s1675 | VPN connection status 0: VPN not configured 1: Connected to VPN -1: VPN disconnected | |
| \$s1679 | VPN server link status 0: VPN not configured 1: Linking with VPN server enabled -1: Linking with VPN server disabled | When \$s1675 = 0: \$s1679 = 0 When \$s1675 = -1: \$s1679 = -1 |

1.5 Routing Function

1.5.1 Overview

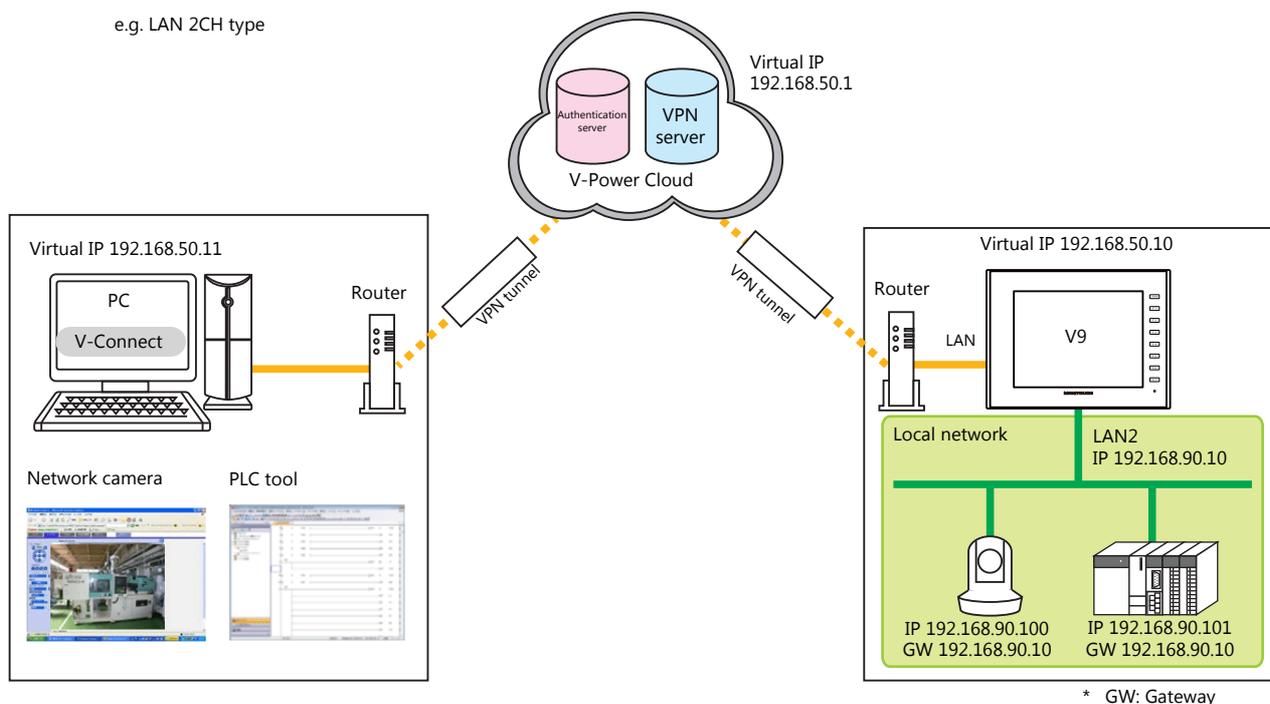
V9 series units with multiple LAN ports such as LAN2CH and 3CH types can have multiple IP addresses.

This means that even if one port is exclusively used for VPN connection, the other ports can be used to connect to PLCs or network cameras to form a local network.

Also, because the V9 series unit features a built-in routing function, devices on the local network can also be accessed over a VPN connection.

The routing function is also supported with LAN 1CH type.

e.g. LAN 2CH type



Remote operations when using the routing function

| Remote Operation | LAN 1CH type | LAN 2CH type | LAN 3CH type |
|---|--------------|--------------|--------------|
| | Local IP | Local IP | Local IP |
| Screen program transfer | ○ | ○ | ○ *1 |
| Remote monitoring and operation of V9 series units (VNC server function) | ○ | ○ | ○ *1 |
| FTP communications (FTP server function) | ○ | ○ | ○ *1 |
| Remote monitoring and operation of PLCs connected via serial connection to V9 series units (ladder transfer function) | ○ | ○ | ○ *1 |
| Remote monitoring and operation of network cameras on the local network where the V9 series unit is located | ○ *2 | ○ *2 | ○ *2 |
| Remote monitoring and operation of PLCs on the local network where the V9 series unit is located | ○ *2 | ○ *2 | ○ *2 |

*1 When using local IP of VPN connection port, local network and subnet mask settings are required manually in [VPN terminal information] of [Access points] on V-Connect. Refer to page 1-17.

*2 Local IP of network camera or PLC

1.5.2 Notes on Connections

V9 Series Unit Settings

IP address settings/default gateways

- Always use a different network group for each IP address of [LAN Setting], [LAN2 Setting], and [WLAN Setting]. If set in the same network group, the system will not operate correctly.
- Only set a default gateway for the port used for VPN connection. Leave the gateways of the local network unconfigured (blank).

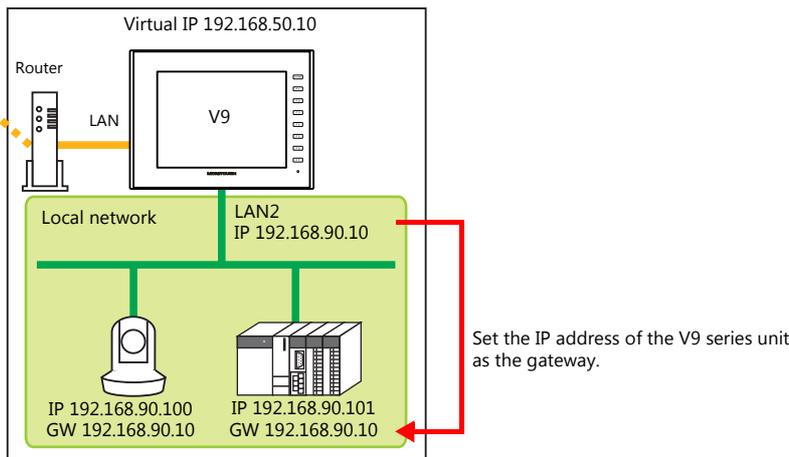
Setting example

| | | LAN Setting (VPN Connection) | LAN2 Setting | WLAN Setting |
|-------------|-----------------|---------------------------------|-----------------|-----------------|
| Correct → | IP Address | 10.90.100.5 | 192.168.1.50 | 192.168.10.200 |
| | Default Gateway | 10.90.100.1 | Not set (blank) | Not set (blank) |
| Incorrect → | IP Address | 192.168.1.100 | 192.168.1.50 | 192.168.10.200 |
| | Default Gateway | 192.168.1.1 | Not set (blank) | 192.168.10.1 |

- The IP addresses of [LAN Setting] and [LAN2 Setting] belong to the same network group (192.168.1.x).
- The gateway of [WLAN Setting] is set.

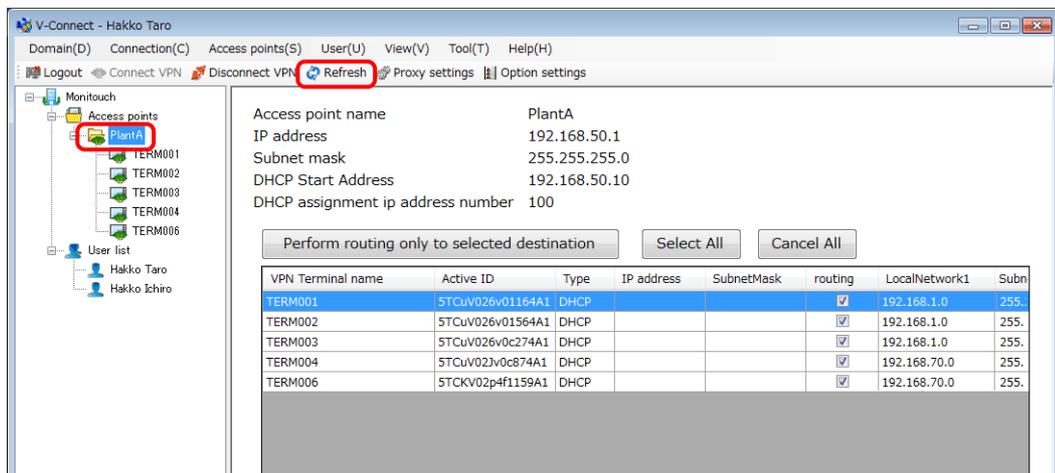
PLC and Network Camera Settings

- Set the local network IP address of the V9 series unit as the gateway of PLCs and network cameras.

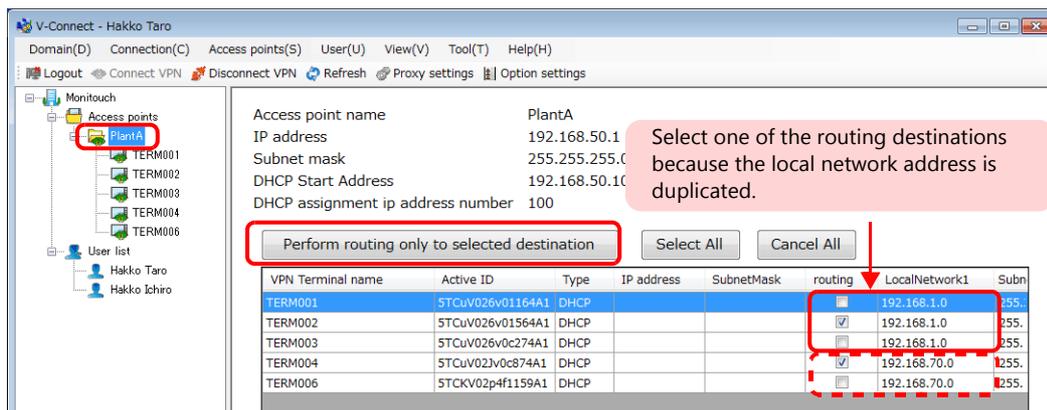


V-Connect Settings

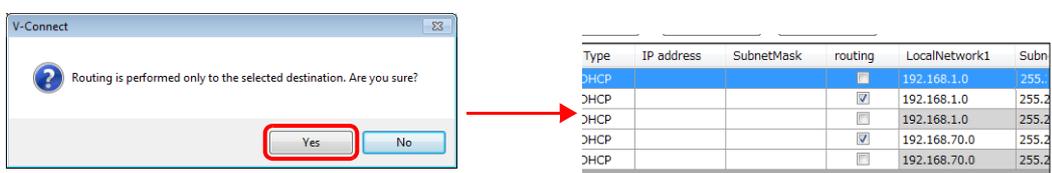
- When V-Connect is connected to the VPN, the routing setting information of V-Connect does not update to the latest state immediately after changing VPN terminal settings. Execute [Refresh] to get updated information.



- If local network address is duplicated among multiple VPN terminals, select one of those to access and click the [Perform routing only to selected destination] button. (Compliant V-Connect version is Ver. 1.1.2.0 and later.)



Click [OK] button in the confirmation window. The field of the selected terminal remains white, and that of the unselected one will be grayed-out.



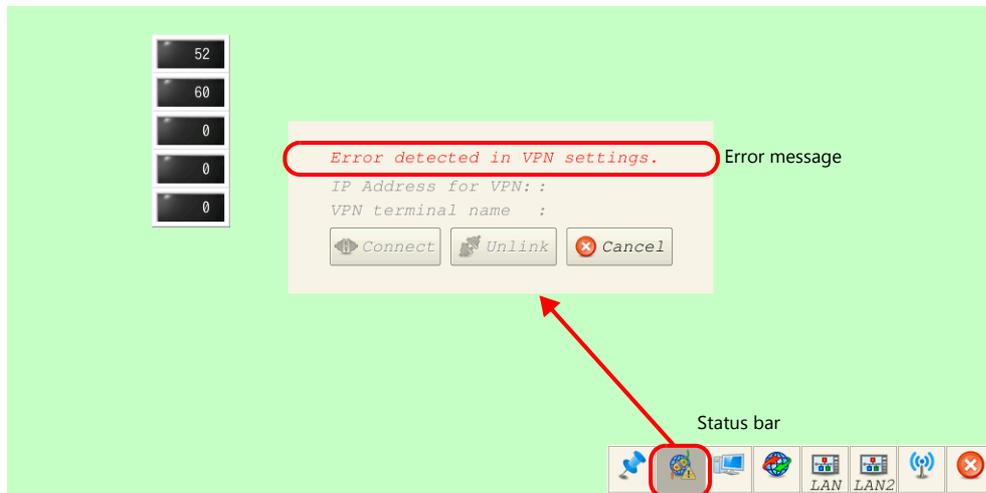
1.6 Errors

V9 Series Unit Errors

- Errors related to V9 series unit settings

| Error No. | Error Message | Cause |
|-----------|---|---|
| 1 | Cannot set the IP address assigned for VPN. | The Local mode → [Date/Time Setting] of the V9 series unit is incorrect. → Check the [Date/Time Setting]. (Refer to page 1-28.) The gateway setting of the LAN port for VPN is incorrect. → Correctly set the IP address of the router. → For LAN 2CH/3CH types, clear the gateway setting of all ports other than the one for VPN. (Refer to page 1-34.) There is an incorrect setting on the [VPN Setting] screen. → Revise the VPN settings. There is a device with the same IP address on the network. → Check the IP address. Cannot connect to the Internet. → Check the router settings, gateway, and cables and connections. → Input the gateway for the V9 series unit in Local mode at [I/O Check] → [Network Test] → [Set IP] and then execute. Check if the result is fine. Firewall settings → Enable use of port No. 443. (Consult your network administrator.) |
| 2 | Connection is not established with the port to be used for VPN. | The port used for VPN connection is not connected. → Check the cables and connections. |
| 3 | Error detected in VPN settings. *1 | The port used for VPN connection is not selected. → Check the LAN/LAN2/WLAN settings. [Domain name]/[Active ID] are not set on the [VPN Setting] screen. → Set [Domain name]/[Active ID]. There is no gateway setting. → Check the gateway. |
| 4 | There is no gateway setting. | Check the gateway. |

*1 Displayed when the VPN settings icon on the status bar is selected.



- Errors received from the authentication server during VPN connection
Reconfigure settings according to the details of the message.

V-Connect Errors

There are errors that occur due to V-Connect settings and errors received from the authentication server during VPN connection.

Reconfigure settings according to the details of the message.

Items to check when an error is displayed on the V-Connect login screen:

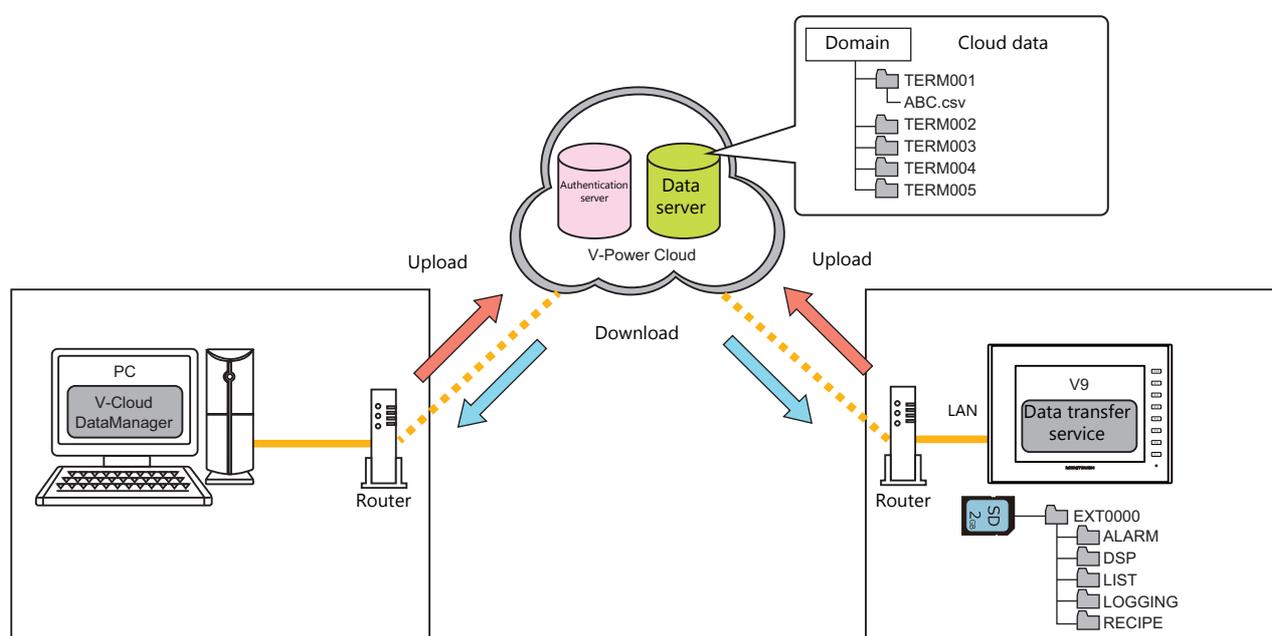
- Date and time settings of the computer (Difference should be within 24 hours from the actual time.)
- Domain name, user ID, password, proxy settings
- Internet connection (Check that the network connection icon on the task bar indicates a connected status.)
- Firewall settings: Enable use of port No. 443 (Consult your network administrator.)

2 Cloud Data Service

2.1 Overview

2.1.1 Cloud Data Service

- The cloud data service enables reading and writing of cloud data utilizing the “V-Power Cloud” server, “V-CloudDataManager” management tool, and the data transfer service of the V9 series provided by Hakko Electronics.
- The cloud data service is one of the Web Machine Interface services and can be used for domains that have obtained contracts for the VPN remote access service and the cloud data service.
- Communications with the data server are done by HTTPS (TLS) communication and therefore there is no danger of eavesdropping or alteration.
- Can be used by simply preparing an Internet-connected environment.
Prepare an environment that can perform communications using encryption protocols including HTTPS.
There may be severe restrictions on the use of encrypted communications in your country or region. Operation is not guaranteed in such countries or regions.



- Supported operations

| Terminal | Tools and Functions | Supported Operations |
|----------|-----------------------|---------------------------------------|
| Computer | V-CloudDataManager | Writing data to the cloud (Uploading) |
| | | Reading cloud data (Downloading) |
| | | Deleting cloud data |
| V9 | Data transfer service | Writing data to the cloud (Uploading) |
| | | Reading cloud data (Downloading) |
| | | Deleting cloud data |

2.1.2 Applicable Models

The cloud data service can be used with the following versions and ports.
For older versions, perform OS and system updates as required.

| V9 | V9 Series Unit Version | | Cloud Connection Port * | | | |
|-------------|------------------------|----------------------|-------------------------|------|------|--------|
| | OS | SYSTEM | LAN | LAN2 | WLAN | CUR-03 |
| V9 Advanced | Ver. 1.10 or higher | Ver. 1.250 or higher | ○ | ○ | ○ | × |
| V9 Standard | | | ○ | ○ | ○ | × |
| V9 Lite | | | ○ | - | - | × |

* The cloud data service and the remote access service (VPN connection) use the same port.

2.1.3 Specifications of Data to be Transferred

The following limitations apply to folder names and filenames.

| Item | No. of Characters | Allowed Characters | Remarks |
|----------------|---|--|--|
| Folder names | 1 to 255 characters | One-byte alphanumeric characters and symbols | The following symbols are prohibited: < > : " / \ ? * |
| Filenames | | | |
| File delimiter | 1 | / | |
| Full path | Maximum of 255 characters (delimiters included) | One-byte alphanumeric characters and symbols | The following symbols are prohibited: < > : " / \ ? * |

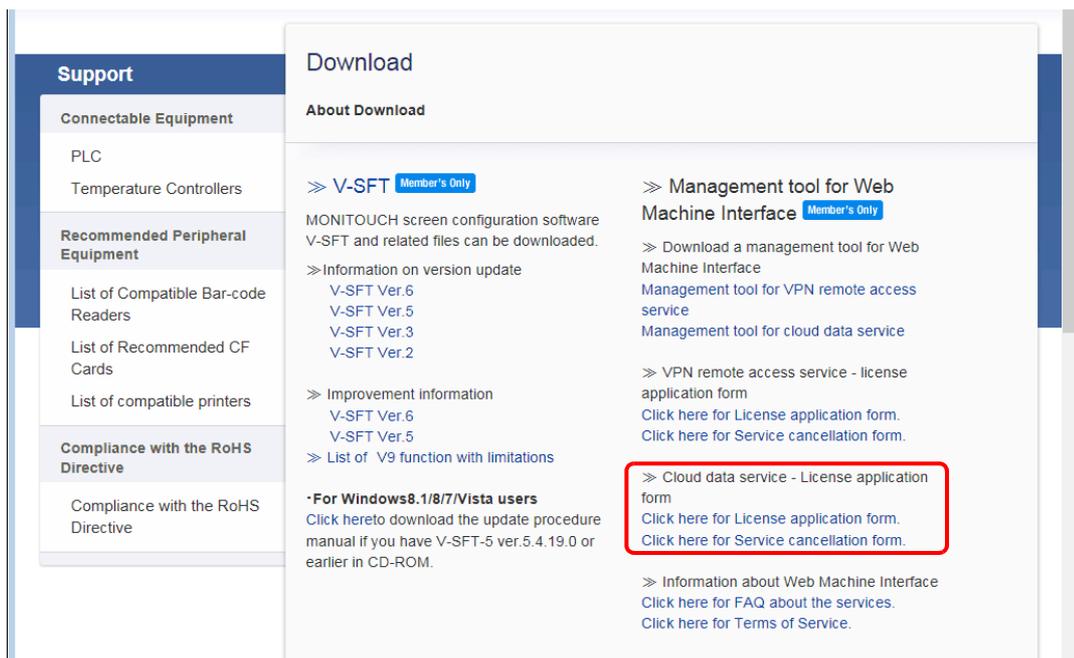
2.1.4 License

A license must be purchased in order to use the cloud data service. There are two license types with different disk space allocations.

| Type | Renewal Type | Disk Space | Remarks |
|--------|--------------|------------|---|
| CDM-5 | CDM-5R | 500 MB | Apply for a license when applying for a VPN remote access service contract. The license must be renewed every year. |
| CDM-10 | CDM-10R | 1 GB | |

Apply for a license by downloading and filling in the "Cloud data service - License application form" from the Hakko Electronics website, and submitting the form to your local retailer.

<http://monitouch.fujielectric.com/site/support-e/download-index-01.html>



2.2 Connecting a Computer to the Cloud Server

The “V-CloudDataManager” management tool is used to connect a computer to the “V-Power Cloud” server.

2.2.1 V-CloudDataManager Management Tool

Operating Environment

Make sure that your system meets the following system requirements before starting V-CloudDataManager.

| | |
|------------------------|---|
| Computer | PC/AT compatible computer running Windows |
| OS * | Windows 7 (32-bit, 64-bit) / 8 (32-bit, 64-bit) / 8.1 (32-bit, 64-bit)/ 10 (64-bit) |
| CPU | Pentium IV 2.0 GHz or above |
| Memory | Min. 1.0 GB for 32-bit, min. 2.0 GB for 64-bit |
| Hard disk | At installation: Min. 1.0 GB for 32-bit, min. 2.0 GB for 64-bit |
| Display resolution | 1024 × 768 dots (XGA) or higher |
| Display colors | High color (16-bit) or higher |
| Language | Japanese, English |
| Communication protocol | HTTPS (TLS1.2) port No. 443 |

* Administrator privileges are required for installation.

Software Copyrights

- The software as well as its copyright and any other copyrights and rights related to the software are property of Hakko Electronics Co., Ltd.
- The software may not be used or copied, whether in whole or in part, without permission of Hakko Electronics Co., Ltd.
- The specifications and components of the software are subject to change without prior notification.
- Hakko Electronics Co., Ltd. bears no responsibility for any results of using the software.
- Windows is a registered trademark of Microsoft Corporation in the United States.
- All other product names are trademarks or registered trademarks of their respective holders.

Notes on Usage

- The software may not be correctly installed if resident programs and applications such as an antivirus program are running. Be sure to close all applications before installing the software.

User Types and Privileges

The following table lists the user privileges for V-CloudDataManager according to license and user types.

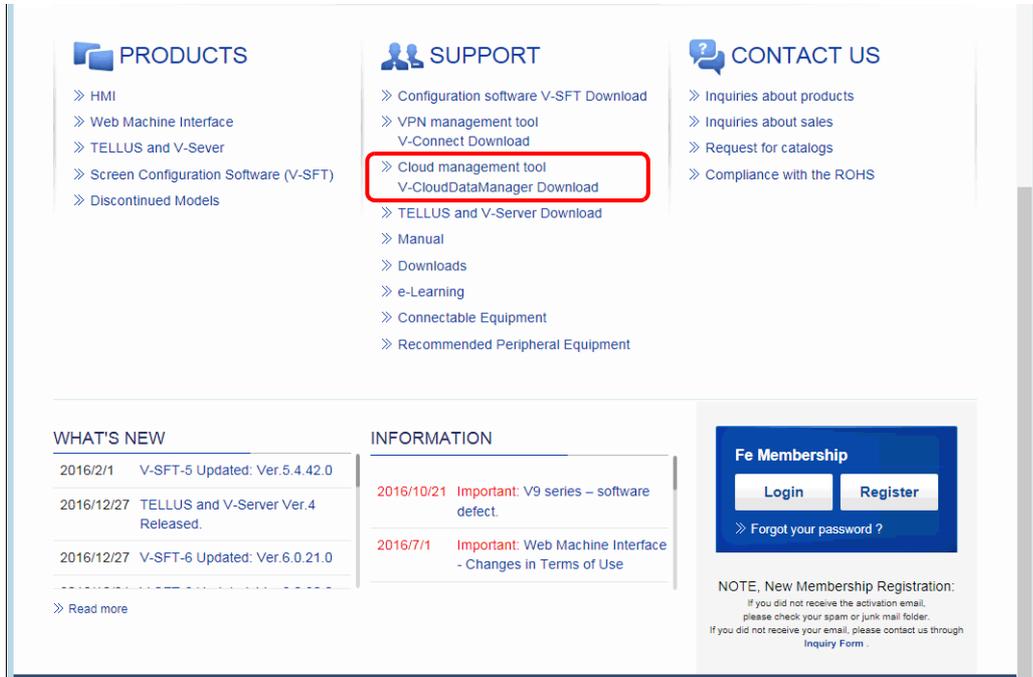
| Cloud Data Service License | User Type and Privileges | | |
|----------------------------|--------------------------|---------------|-------------|
| | Domain Administrator | Administrator | Normal User |
| None | × | × | × |
| Licensed | ○ | ○ | ○ |

Installation

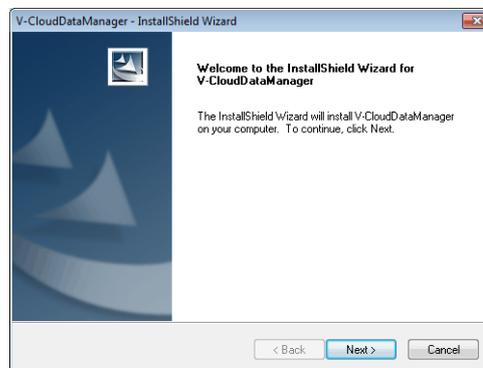
Procedure

Example: Windows 7

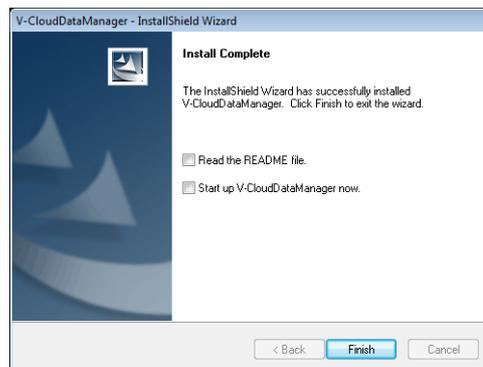
1. Download the "V-CloudDataManager" management tool from the Hakko Electronics website.
URL <http://monitouch.fujielectric.com/>
* User registration is required to download the software.



2. Double-click on the downloaded file to start the installation process.



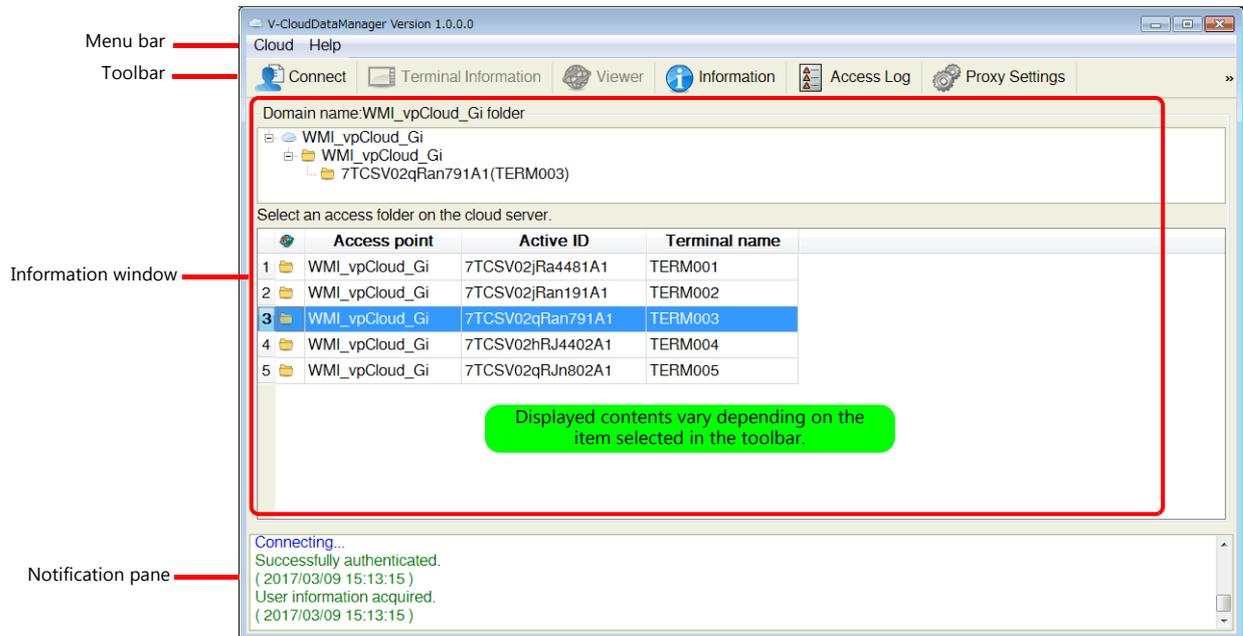
3. Proceed according to the displayed instructions and when the [Install Complete] window appears, click [Finish].



The software can be started from the Start menu.

V-CloudDataManager Configuration

Names of Parts



Menu Bar

| Cloud Help | | Item | Description | Refer to |
|------------|---------------------|---|--|-----------|
| Cloud | Connect | Connect/Unlink | Connect with or disconnect from the data server. | page 2-6 |
| | | Proxy Settings | Configure proxy settings. | |
| | View | Terminal Information | Select the terminal folder on the data server. | page 2-8 |
| | | Viewer | Display and transfer the selected terminal folder. | page 2-9 |
| | | Information | Display the free space left on the data server and configure time zone settings. | page 2-18 |
| | | Access Log | Display the data server access log. | page 2-19 |
| | | Refresh | Acquire and display information in the domain. | - |
| Options | Option Settings | Configure option settings. | page 2-20 | |
| Exit | | Exit the software. | - | |
| Help | Version Information | Check the V-CloudDataManager version information and license agreement. | page 2-20 | |

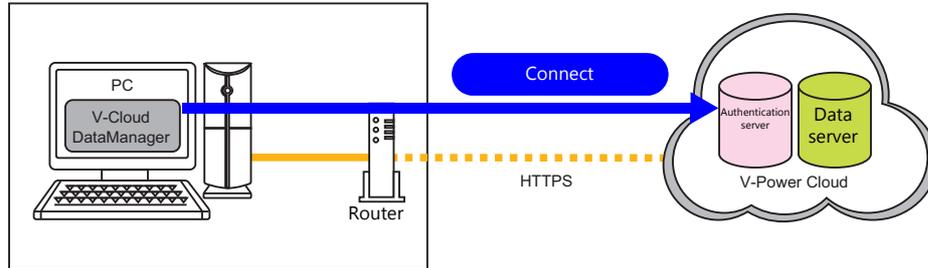
Toolbar

| Item | Description | Refer to |
|----------------------|--|-----------|
| Connect | Connect with the data server. | page 2-6 |
| Terminal Information | Select the terminal folder on the data server. | page 2-8 |
| Viewer | Display and transfer the selected terminal folder. | page 2-9 |
| Information | Display the free space left on the data server and configure time zone settings. | page 2-18 |
| Access Log | Display the data server access log. | page 2-19 |
| Proxy Settings | Configure proxy settings. | page 2-6 |
| Option Settings | Configure option settings. | page 2-20 |

2.2.2 Connection/Disconnection

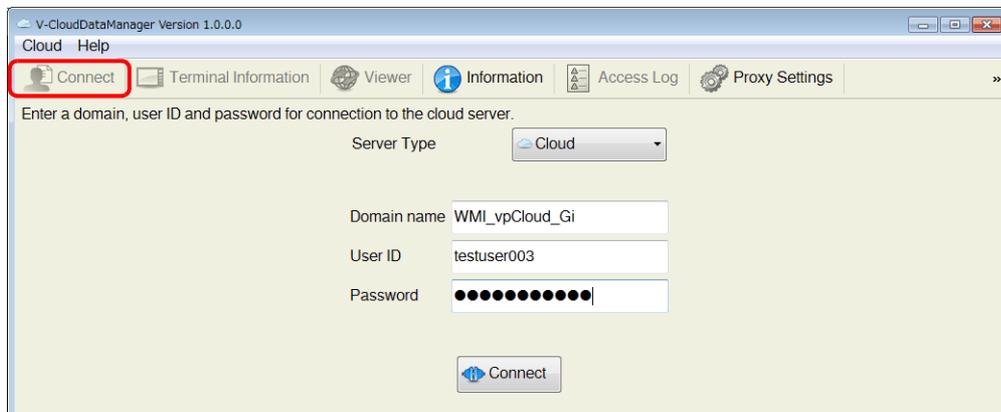
Connection

Connect the “V-CloudDataManager” management tool to the “V-Power Cloud” server. Connection requires authentication. Use the domain information registered for the remote access service.



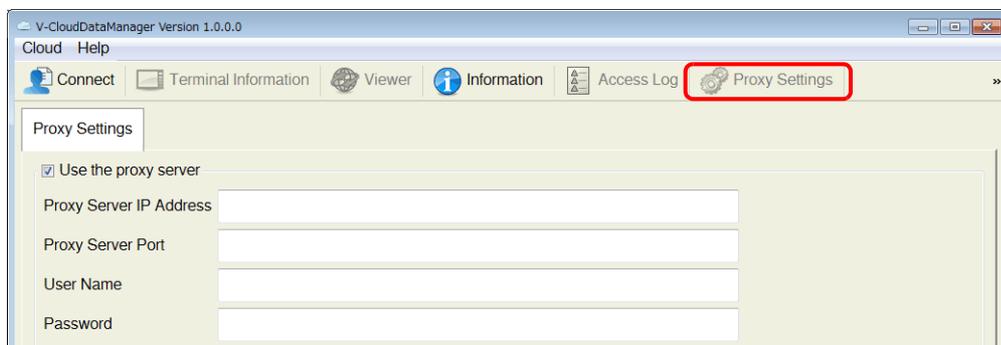
Procedure

1. Start the V-CloudDataManager.
2. Enter the information (domain name, user ID, password) for the registered domain on the [Connect] screen.



| Item | Description |
|-------------|---|
| Server Type | Select [Cloud] as the server type. |
| Domain name | Specify the domain name acquired for the VPN remote access service. |
| User ID | Specify a user within the domain. |
| Password | Specify the password for the specified user ID. |

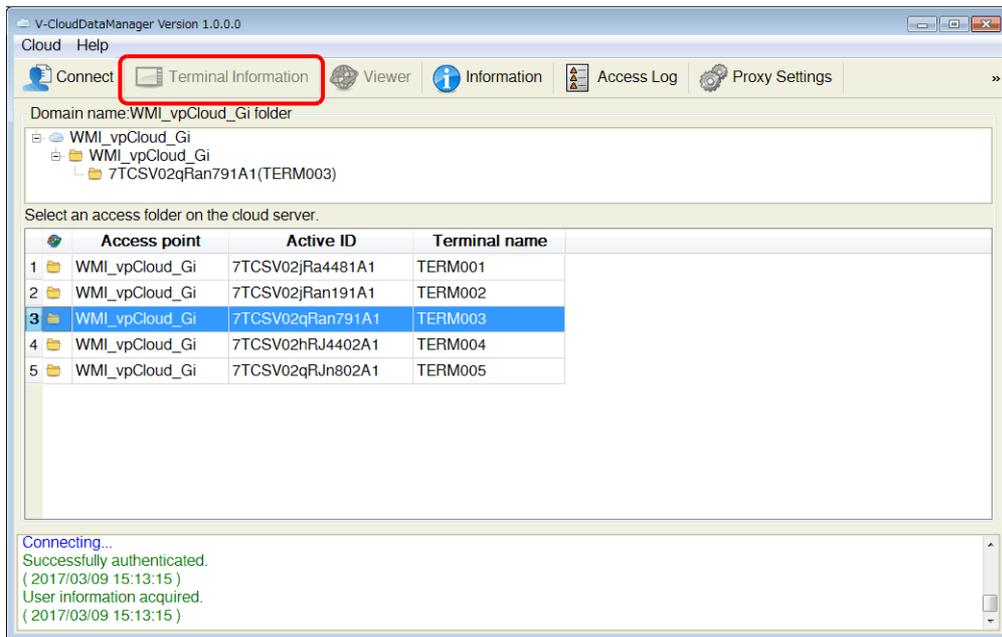
3. Configure settings on the [Proxy Settings] screen.
Configure these settings when connecting to the Internet via a proxy server.



| Item | Description | |
|----------------------|-------------|---|
| Use the proxy server | IP Address | Set the IP address of the proxy server. |
| | Port | Set the port number of the proxy server. |
| | User Name | Set the user ID for logging into the proxy server. |
| | Password | Set the password for logging into the proxy server. |

*1 For information on proxy server settings, consult your network administrator.

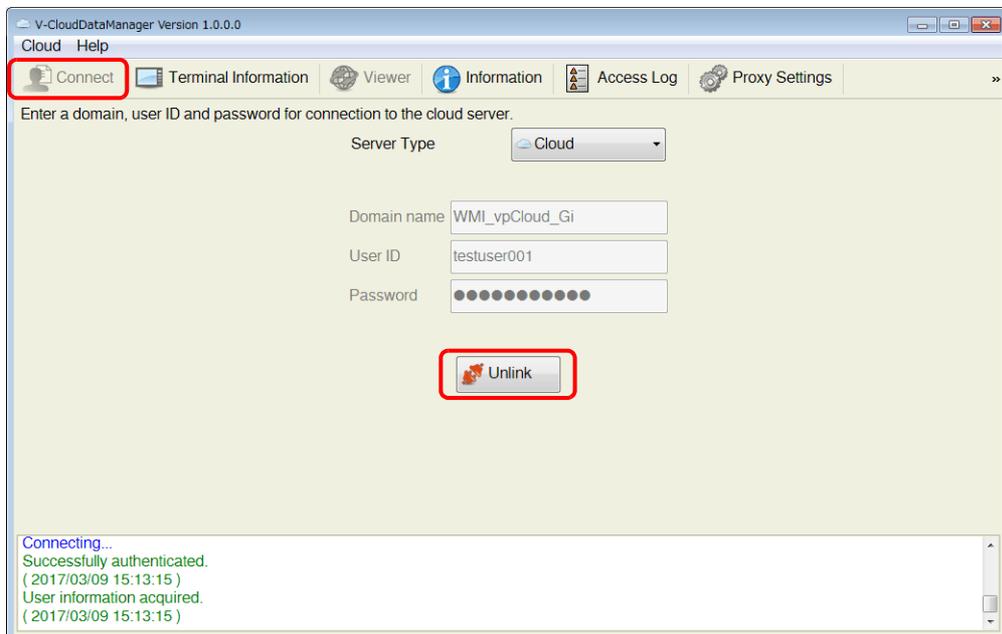
- Click [Connect] or click [Cloud] → [Connect] → [Connect/Unlink].
The [Terminal Information] screen is automatically displayed when connection is established. (When an error occurs, refer to page 2-32.)



Disconnection

Disconnect the "V-CloudDataManager" management tool from the "V-Power Cloud" server.

- Click [Unlink] on the [Connect] screen to disconnect.



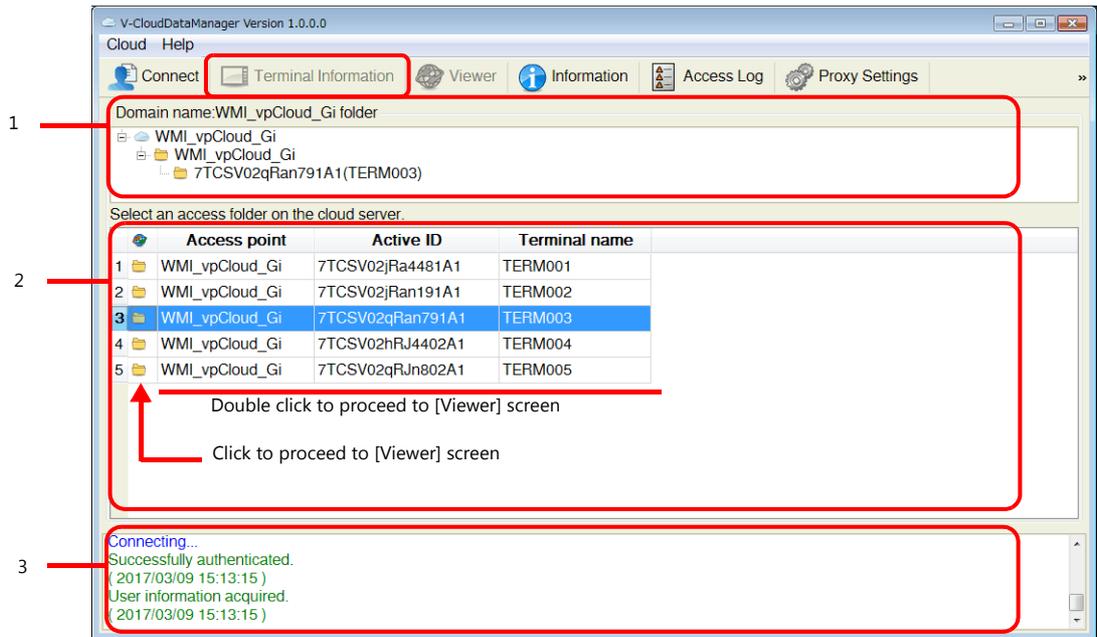
2.2.3 View

Terminal Information

The [Terminal Information] screen is automatically displayed when a connection is established between the "V-CloudDataManager" management tool and the "V-Power Cloud" server. The screen cannot be displayed when disconnected.

Select which terminal's data transfer folder to access on this screen.

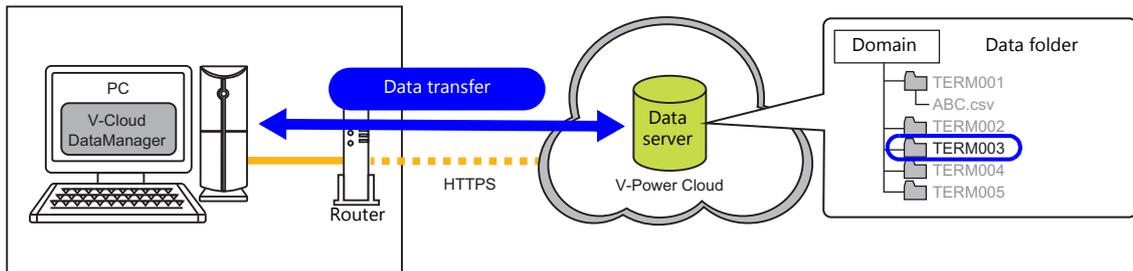
Screen Layout



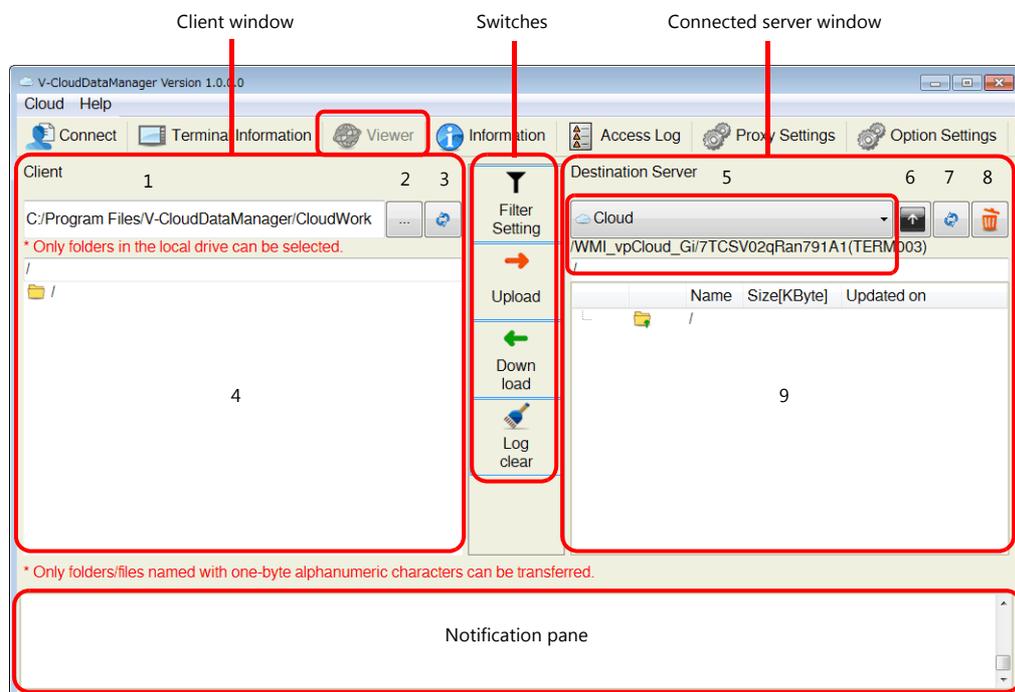
| No. | Item | Description |
|-----|-------------------------|---|
| 1 | Terminal folder | Displays the folder tree to the terminal folder selected from the folder information list. |
| 2 | Folder information list | Displays information of accessible terminal folders within the domain. Click the folder icon to display the [Viewer] screen. Double-click on the [Access point]/[Active ID]/[Terminal name] field to display the [Viewer] screen. |
| 3 | Notification pane | Displays the cloud server access logs. |

Viewer

This screen displays the terminal data folder selected on the [Terminal Information] screen. It is also used to transfer data between this selected data folder and the computer.



Screen Layout

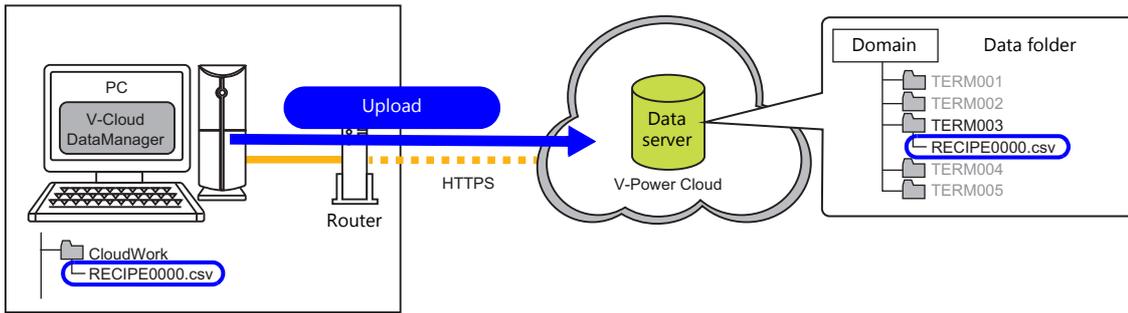


| Item | | Description | Refer to |
|---|----------------|--|-----------|
| Client window (Computer) | 1 | Displays the path of the main working folder (built-in drive) ^{*1} . Paths can also be directly input or copied and pasted. | - |
| | 2 | Select the main working folder. | - |
| | 3 | Updates the main working folder. | - |
| | 4 | Displays information on the working folder. | - |
| Connected server window (Cloud server) | 5 | Displays the path of the terminal data folder. Data is transferred using this folder. | - |
| | 6 | Moves up one directory. | - |
| | 7 | Updates the working folder. | - |
| | 8 | Deletes the selected data. | page 2-16 |
| | 9 | Displays information on the selected terminal data folder. | - |
| Switches | Filter Setting | Filters and then transfers data. | page 2-14 |
| | Upload | Uploads the selected data to the server. | page 2-10 |
| | Download | Downloads the selected data to the client. | page 2-12 |
| | Log clear | Clears the notification pane. | page 2-17 |
| Notification pane | | Displays the cloud server access logs. | - |

*1 Network drives and removable media (USB flash drives, SD cards, etc.) cannot be used.

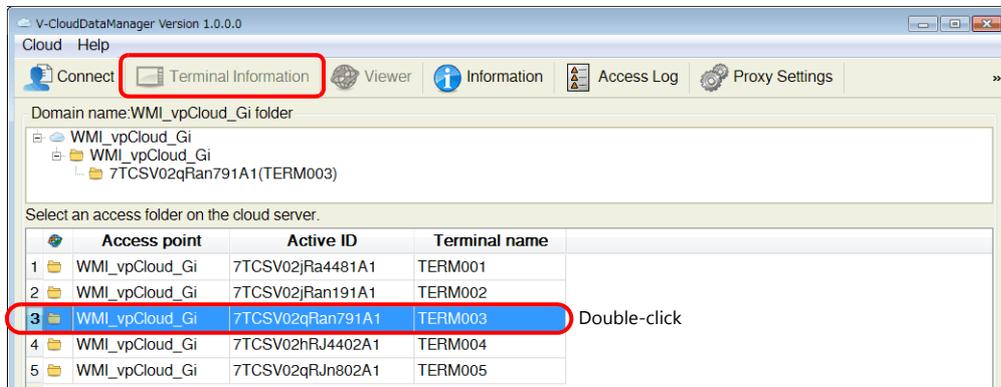
2.2.4 Uploading

This section describes how to upload data selected in the client window from the computer to the cloud server.

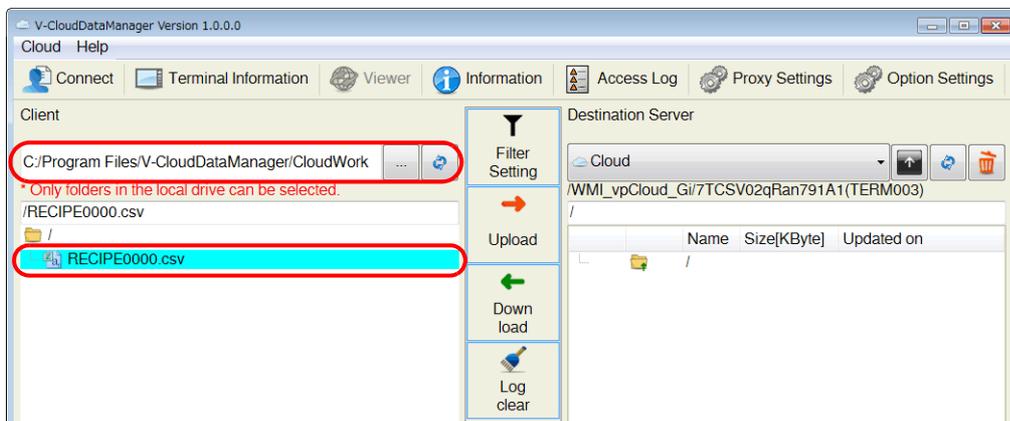


Example: Uploading the "RECIP0000.csv" file in the "CloudWork" folder to the "TERM003" storage point

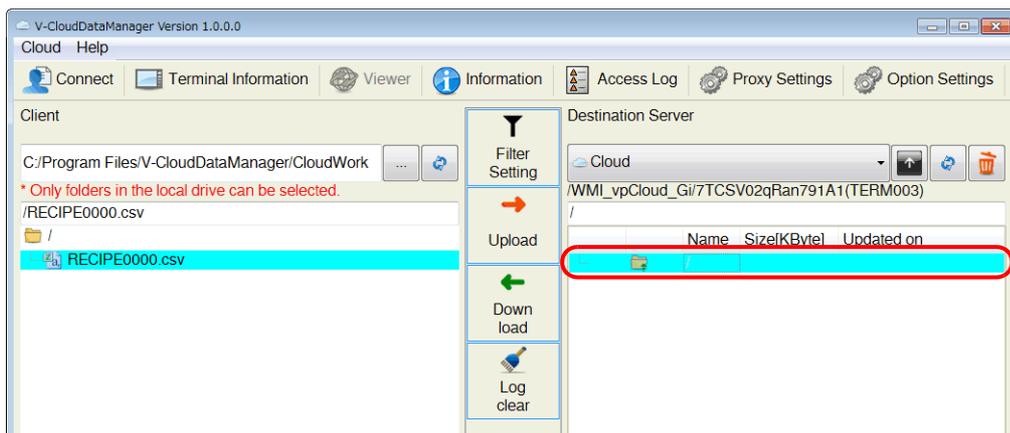
1. Select [TERM003] in the [Terminal Information] screen and display the [Viewer] screen.



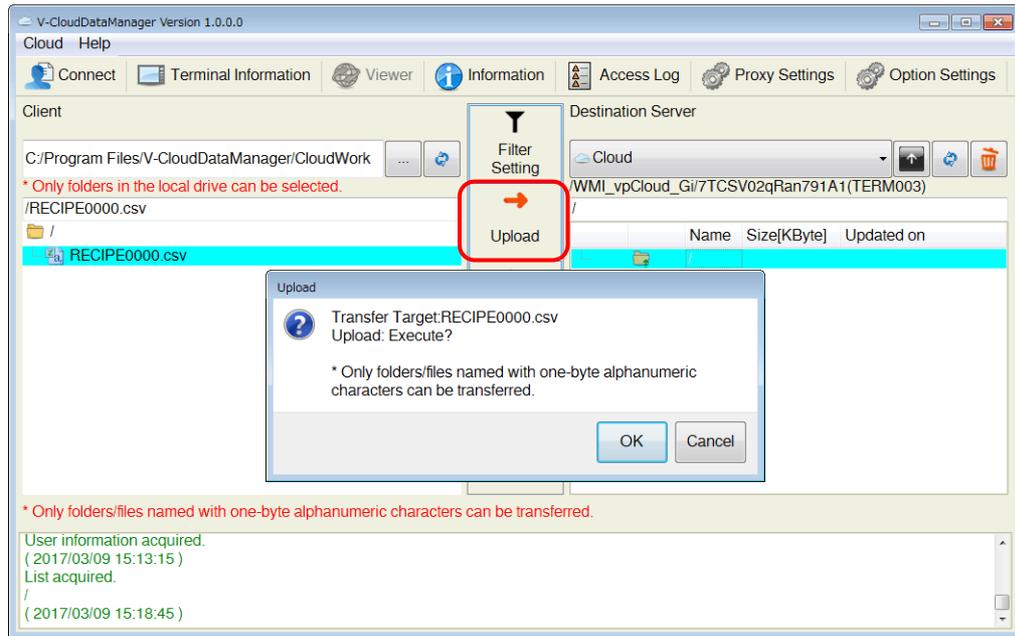
2. Select the "RECIP0000.csv" file in the "CloudWork" folder from the client window.



3. Select the storage destination on the cloud server.

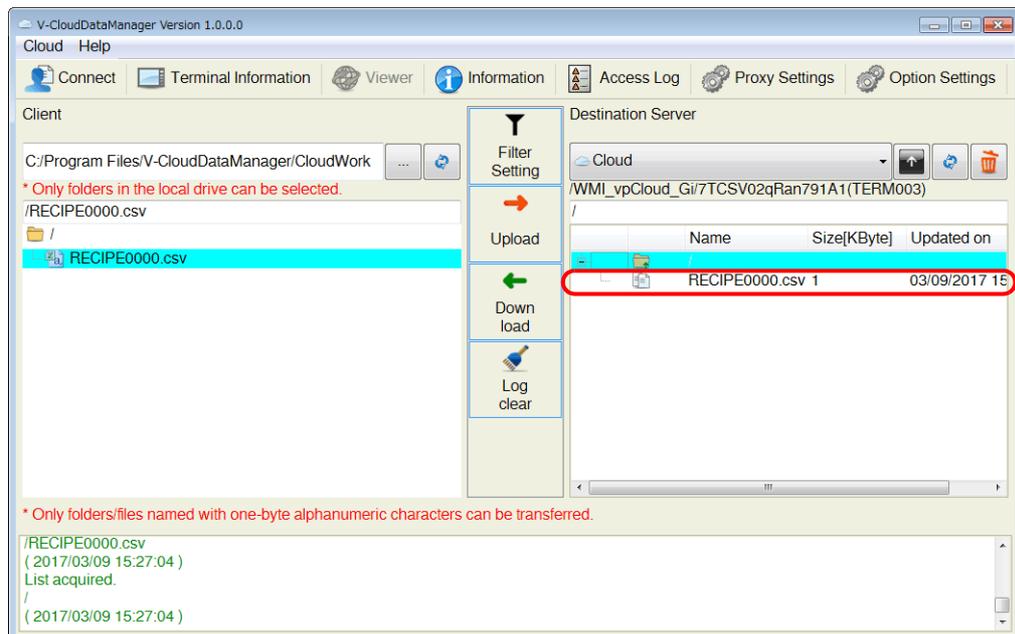


- Click [Upload]. A confirmation window is displayed.



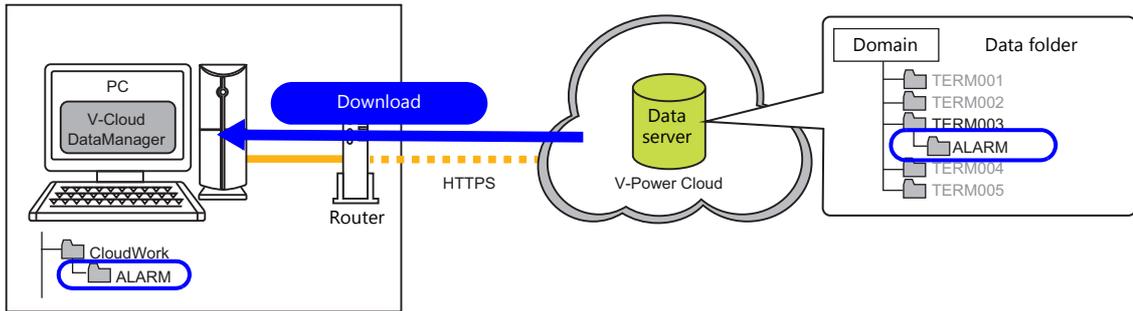
Folder names and filenames
Folders and files containing two-byte characters in its name cannot be transferred. Be sure to use one-byte alphanumeric characters.

- Click [OK] to start uploading. After upload is finished, the "RECIPE0000.csv" is displayed in the cloud server window.



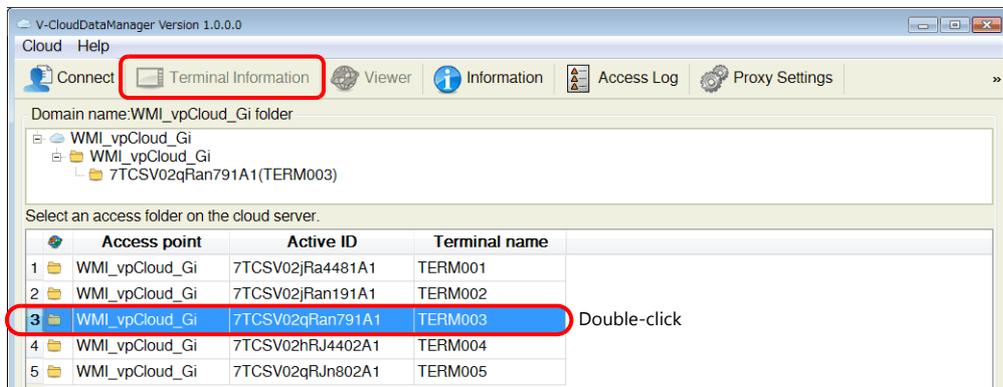
2.2.5 Downloading

This section describes how to download cloud server data to the directory selected in the client window.

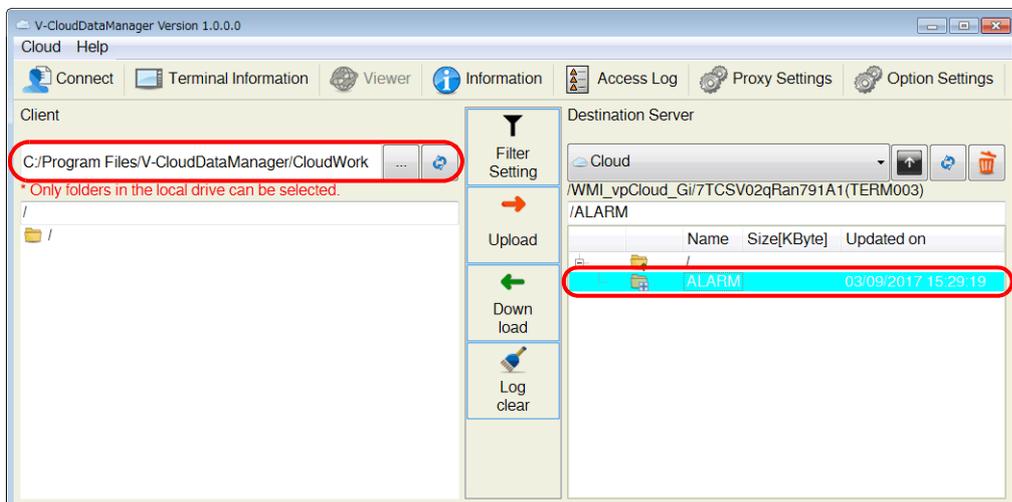


Example: Downloading the "ALARM" folder from the "TERM003" folder on the server and saving it to the "CloudWork" folder

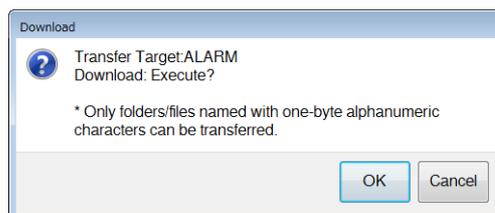
1. Select [TERM003] in the [Terminal Information] screen and display the [Viewer] screen.



2. Select the "ALARM" folder in the server window and the "CloudWork" folder in the client window as the save destination.

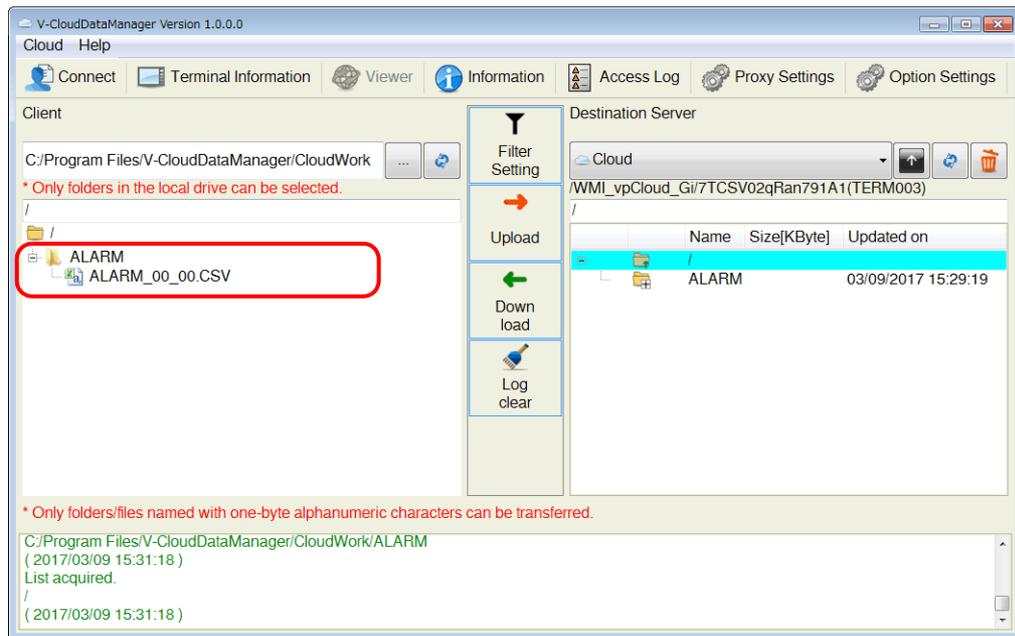


3. Click [Download]. A confirmation window is displayed.



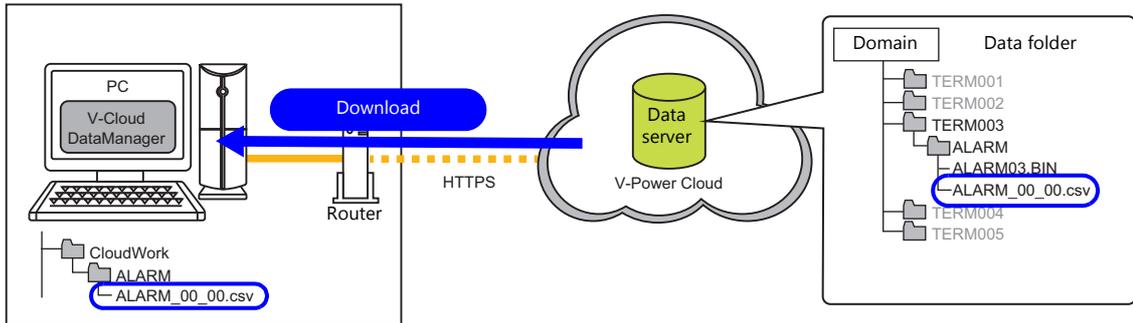
Folder names and filenames
Folders and files containing two-byte characters in its name cannot be transferred. Be sure to use one-byte alphanumeric characters.

- Click [OK] to start downloading. After download is finished, the "ALARM" folder is displayed in the client window. Files in the folder are also transferred.



2.2.6 Filter Settings

Keywords can be specified to filter files when uploading or downloading folders. Wildcards can also be specified as keywords.



• Wildcard

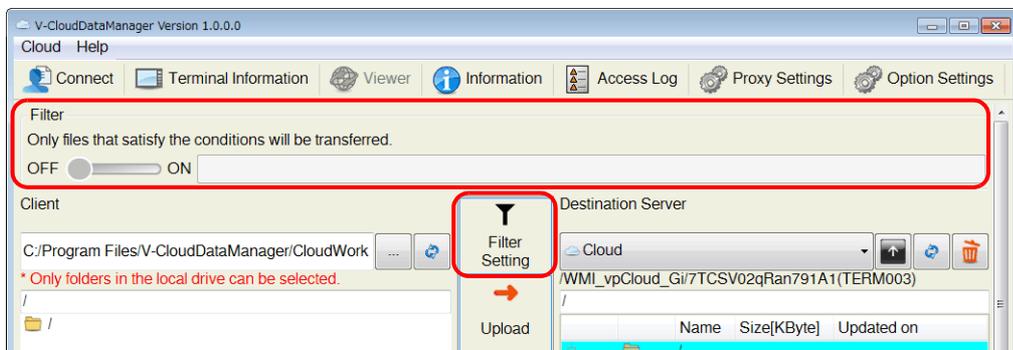
| Wildcard | Description | Usage Example |
|----------|---|---|
| * | Any character string | *.csv |
| ? | Any single character | test?.csv |
| [] | Any one character of those in square brackets | test[A-C].csv (Any one character within A to C) |

• Precautions on using keywords

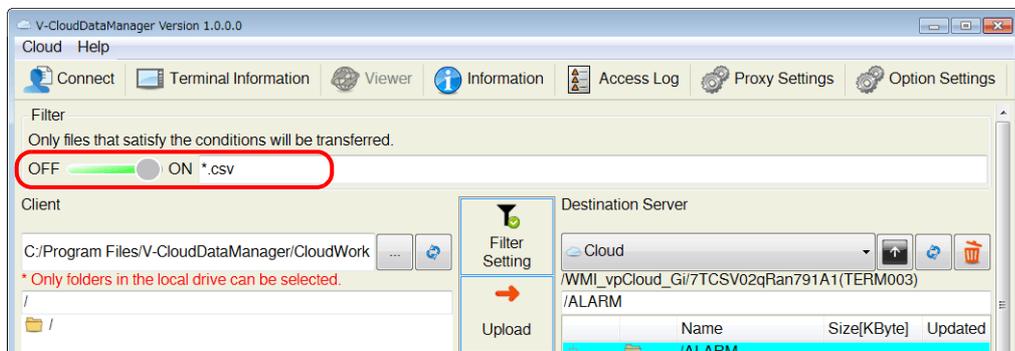
- Two-byte characters and the following seven symbols cannot be used: < > : " / \ |
- When the keyword field is left blank, uploading/downloading is performed in the same way as when there are no keyword settings.

Example: Downloading only CSV files from the "ALARM" folder on the cloud server

1. Click [Filter Setting]. The filter menu is displayed.



2. Set to [ON] and specify the keyword "*.csv".

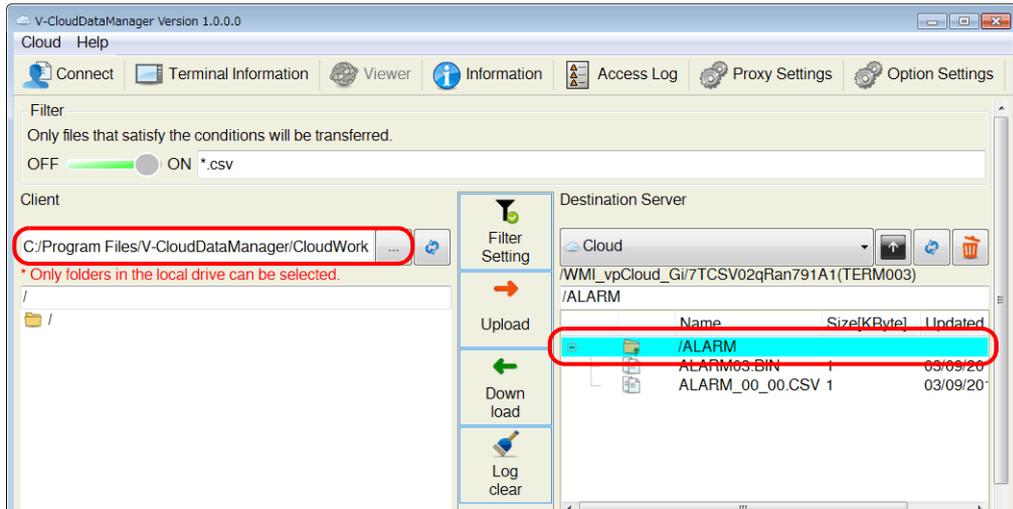


Click [Filter Setting] again to hide the filter menu. The keyword setting is valid when the filter menu is hidden while set to [ON]. Check the icon on the [Filter Setting] switch to see if there are keyword settings.

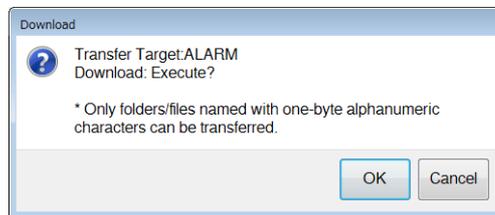
No keyword setting

Keyword setting applied

3. Select the "ALARM" folder in the server window. Select a save destination in the client window.

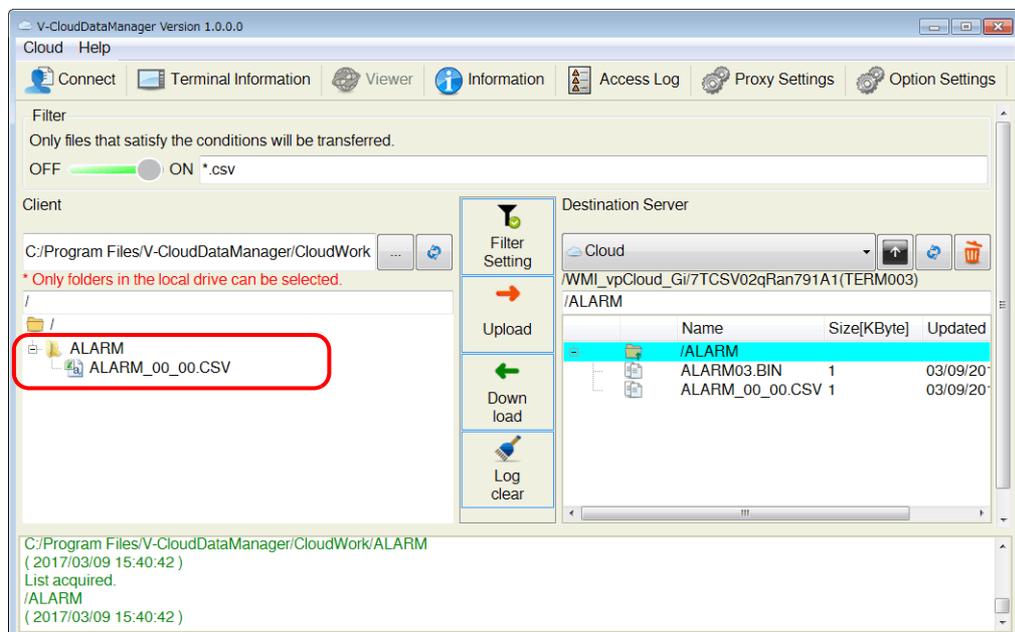


4. Click [Download]. A confirmation window is displayed. Click [OK] to start downloading.



Folder names and filenames
Folders and files containing two-byte characters in its name cannot be transferred. Be sure to use one-byte alphanumeric characters.

5. Only CSV files are saved to the directory specified in the client window.

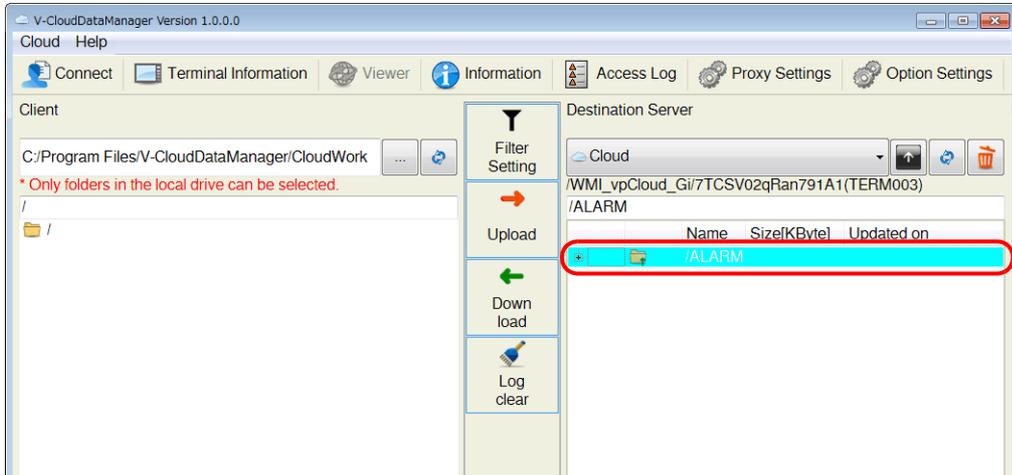


2.2.7 Deleting

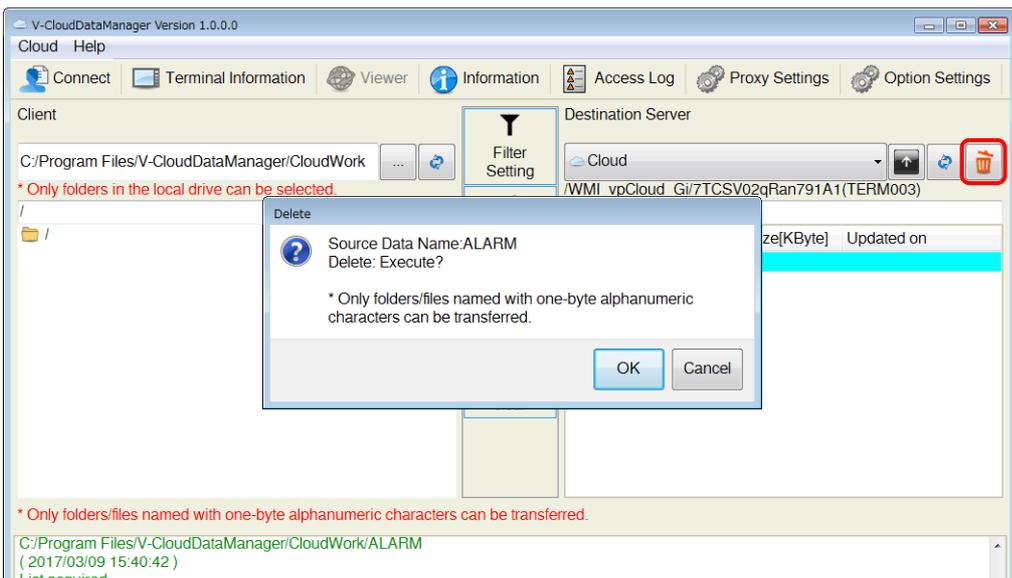
Cloud server data can be deleted. Data can be deleted by both folder and file.

Example: Deleting the "ALARM" folder from the cloud server

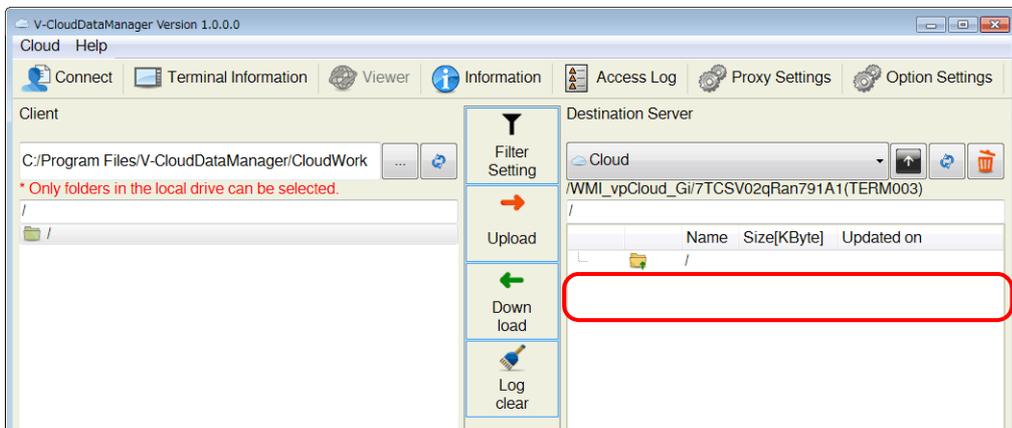
1. Select the "ALARM" folder in the server window.



2. Click the delete icon. A confirmation window is displayed.



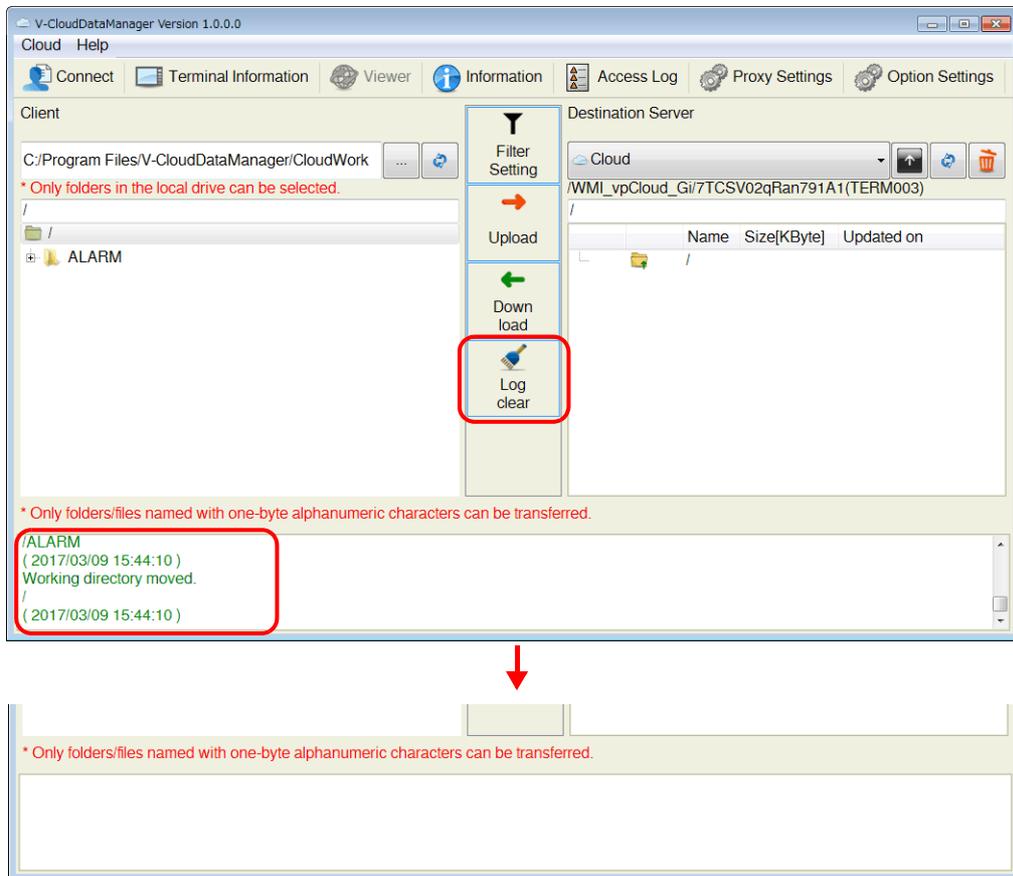
3. Click [OK] to delete.



2.2.8 Other Notes

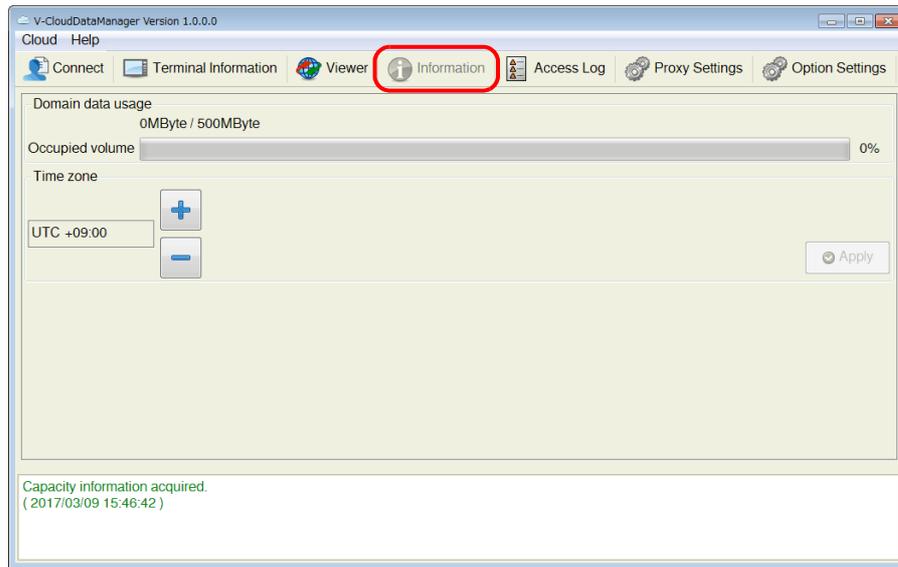
[Log clear] Switch

This switch clears the notification pane.



[Information] Screen

This button is used to display the usage status of the disk space of the cloud server and to set the time zone.



| Item | Description |
|-------------------------|--|
| Domain data usage | Displays the cloud server usage of the connected domain. |
| Time zone ^{*1} | <p>Set the time zone of the current region based on Coordinated Universal Time (UTC). Click [Apply] to apply the setting.</p> <p>Setting range: 30 minute offsets from +13:00 to -12:00</p> <p>This time zone setting is applied to the following indications.</p> <ul style="list-style-type: none"> • Server time stamps on the [Viewer] screen • Time stamps on the [Access Log] screen |

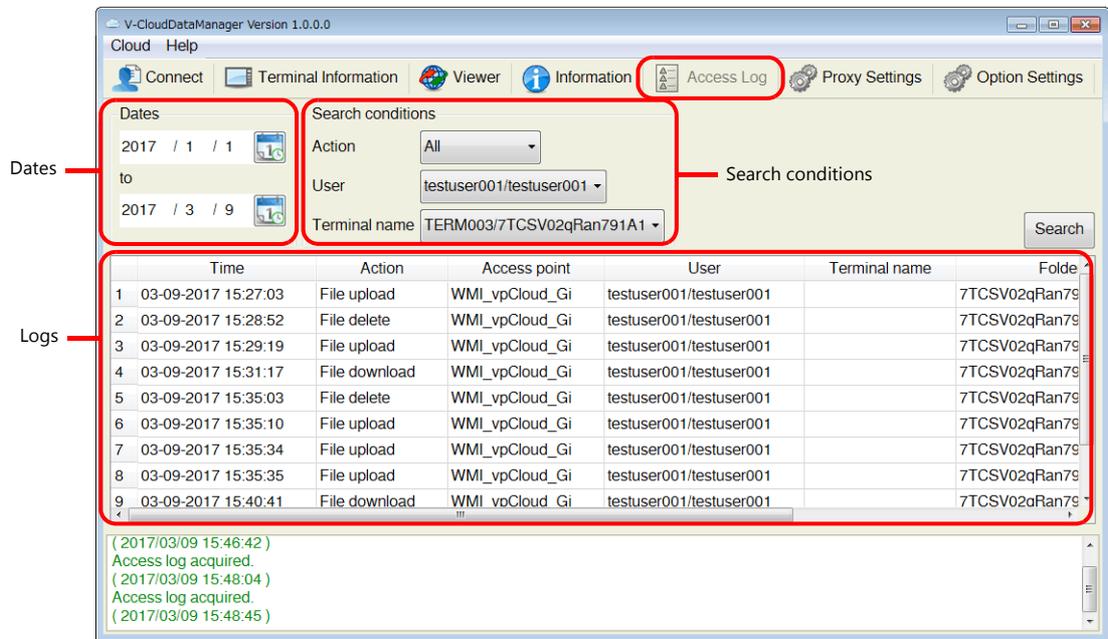
^{*1} This setting is automatically configured upon the initial startup by calculating the difference between the local time and the UTC. When starting up the V9 series unit again in a country or region differing from the location of the initial startup, the setting must be reconfigured.

[Access Log] Screen

Logs over the past three months regarding data operations done via the V9 series unit and V-CloudDataManager are displayed.

Procedure

1. Click [Access Log] or click [Cloud] → [View] → [Access Log]. The [Access Log] screen is displayed.
2. Configure the [Dates] and [Search conditions] settings.

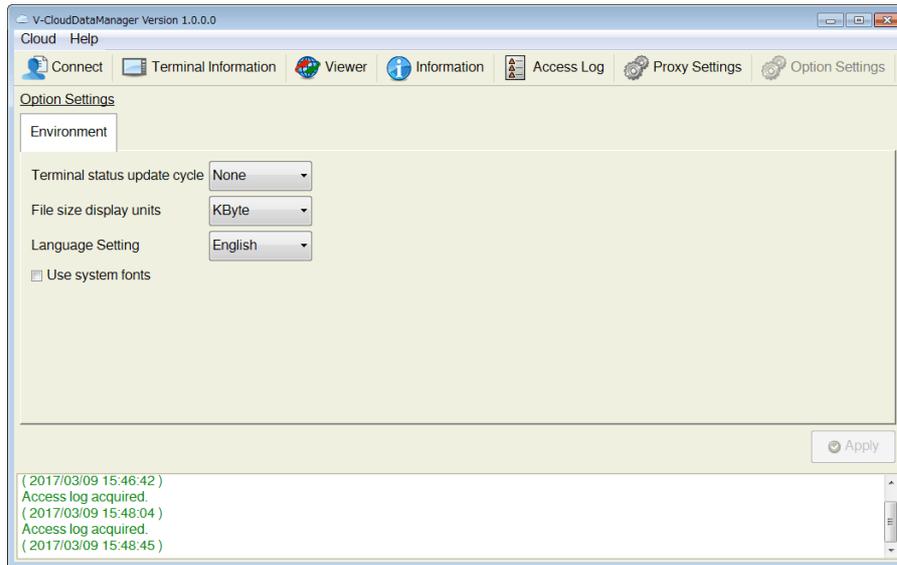


| Item | Description |
|-------------------|---|
| Dates | Set the term for searching. Dates up to 90 days older than the current date can be set. |
| Search conditions | Set the search conditions. |
| Action | All / File download / File upload / File delete |
| User | All / None / user name |
| Terminal name | All / None / terminal name |

3. Click [Search]. Logs that match the search are displayed.

[Option Settings] Screen

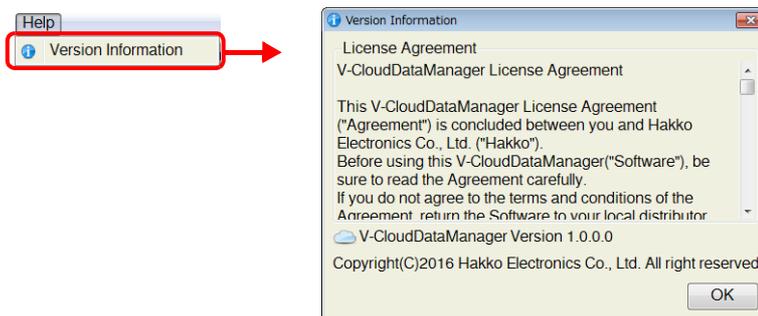
Configure V-CloudDataManager settings on this screen.



| Item | Description |
|------------------------------|---|
| Terminal status update cycle | Set the interval for refreshing information on the data server. None / 1 minute / 5 minutes / 10 minutes / 30 minutes / 60 minutes Updating range <ul style="list-style-type: none"> • [Viewer] screen • [Terminal Information] screen • Privileges of logged in user |
| File size display units | Set the file size display unit for the management tool. MByte / KByte |
| Language Setting | Set the interface language of the management tool. Japanese / English |
| Use system fonts | Select this checkbox to use the OS system font for the management tool interface. |

Version Information

The version information of "V-Connect" and the license agreement can be checked by clicking [Help] → [Version Information].

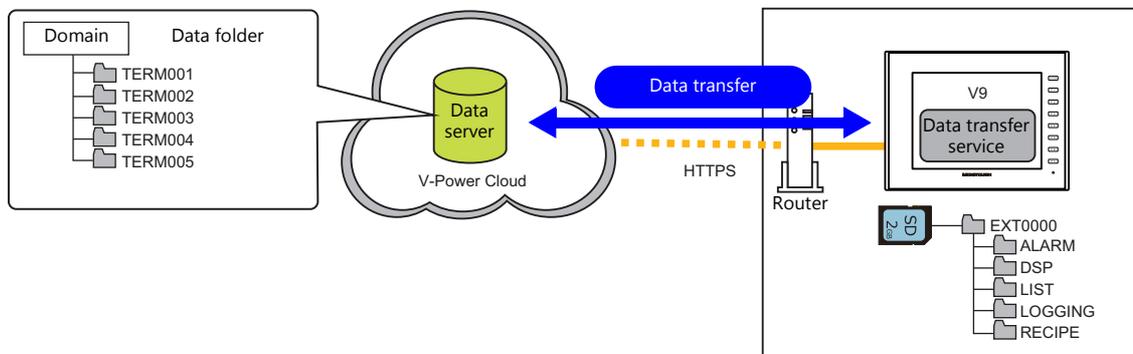


2.3 Connecting a V9 Series Unit to the Cloud Server

The "Data Transfer Service" function of the V9 series is used to connect a V9 series unit to the "V-Power Cloud" server. The V9 series can upload data to the cloud server, download cloud server data and delete cloud server data. Data can be transferred by file and folder. The data transfer service can be used either via the viewer or by a command from a PLC. By either method, the cloud server can be accessed by selecting [Cloud] as the [Server Type].



For details on the data transfer service, refer to "6.11 Data Transfer Service" in V9 Reference Manual 2.



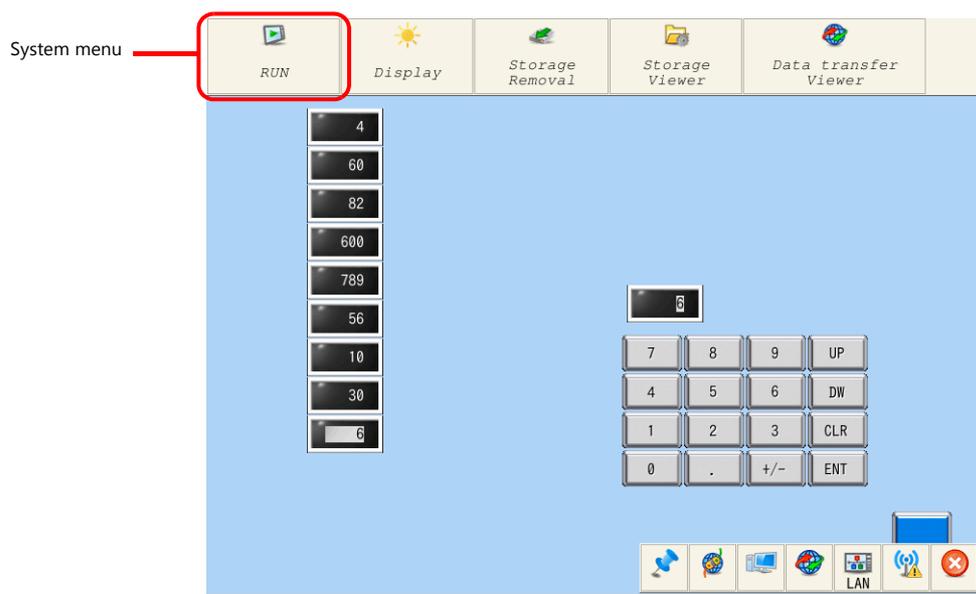
2.3.1 V9 Series Unit Settings

IP Address Settings

Set the IP address of the V9 series unit.

Procedure

- Enter Local mode on the V9 series unit.
 - * For details on entering Local mode, refer to the V9 Series Troubleshooting/Maintenance Manual.
 - V9 Standard / V9 Lite
Press the [SYSTEM] switch to display the system menu and then press the [Local] switch.
 - V9 Advanced
Press one corner of the screen for at least 2 seconds and release your finger when there is a beep. Then within one second, press a different corner and hold for at least 2 seconds to display the system menu. Press the [Local] switch on the displayed system menu.



- Display the [LAN Setting] screen.
 - * **When using the LAN 2CH or wireless LAN type of V9 Advanced / V9 Standard models, LAN2/WLAN settings can also be configured.**

- Set the IP address for connecting to the Internet and accept the setting by pressing [Apply].

The screenshot shows the LAN Setting interface. The IP Address is set to 10.91.130.161 and the Gateway is set to 10.91.130.1. The Apply button is highlighted with a red box. Annotations with red lines point to these fields and the Apply button.

Annotations:

- Set an IP address of the same class as that of the router for connecting to the Internet
- Set the IP address of the router for connecting to the Internet

Buttons: Cancel, Apply



When using the LAN 2CH or wireless LAN type of V9 Advanced / V9 Standard models, do not set a default gateway for LAN port settings other than the VPN connection port.

Date and Time Settings

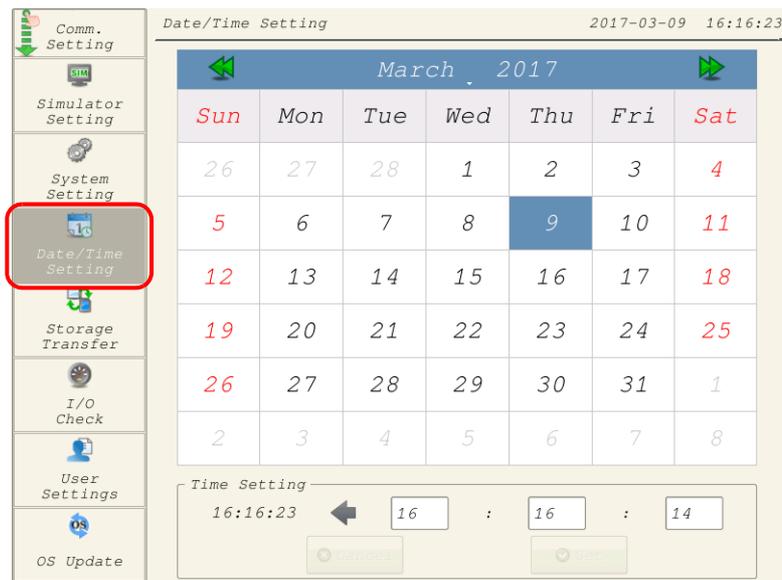
Set the date and time on the V9 series unit.



A connection with the cloud server cannot be established without setting the correct date and time. The difference must be within 24 hours from the actual time.

Procedure

- Using the PLC clock
Set the date and time of the PLC as the current date and time.
- Using the internal clock of the V9 series unit
Configure the date and time settings on the [Date/Time Setting] screen in Local mode.

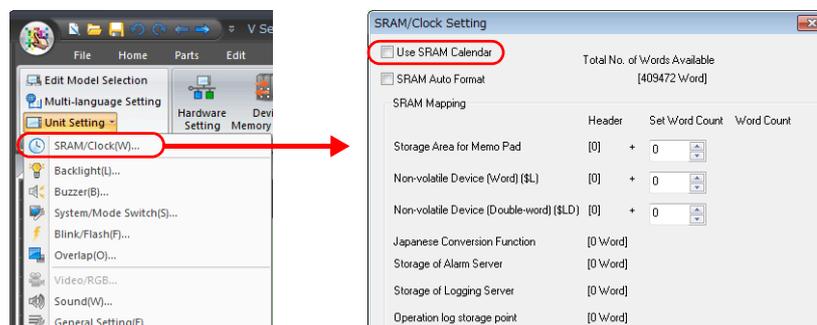


Check the screen program to determine whether the PLC clock or internal clock of the V9 series unit is used.

[System Setting] → [Unit Setting] → [SRAM/Clock] → [Use SRAM Calendar]

Unselected: PLC clock

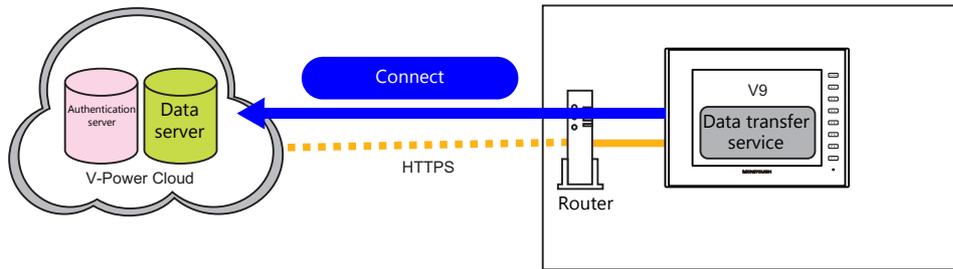
Selected: Internal clock of the V9 series unit



Cloud Settings

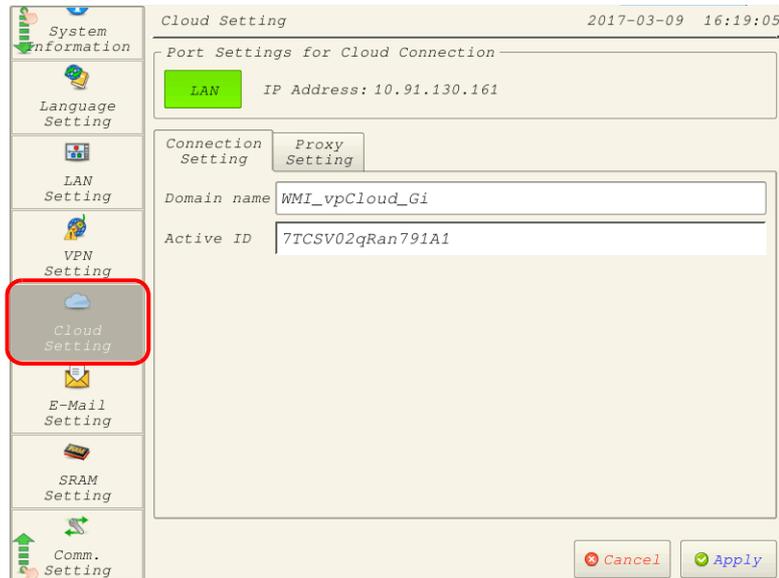
Establish a connection between the V9 series unit and the "V-Power Cloud" server. Connection requires authentication. Use the domain information registered for the remote access service.

 For details on VPN settings, refer to "1 VPN Remote Access Service".



Procedure

1. Display the [Cloud Setting] screen in Local mode.
2. Specify the LAN port to use for connecting to the cloud server, and the domain name and active ID acquired for the remote access service.



- Settings are linked with the [Domain name] and [Active ID] settings on the [VPN Setting] screen. These settings do not need to be specified when settings on the [VPN Setting] screen are made.
- Settings made on the [Cloud Setting] screen are saved to the configuration file of the V9 series unit.

3. When accessing the Internet via a proxy server, configure settings on the [Proxy Setting] tab.

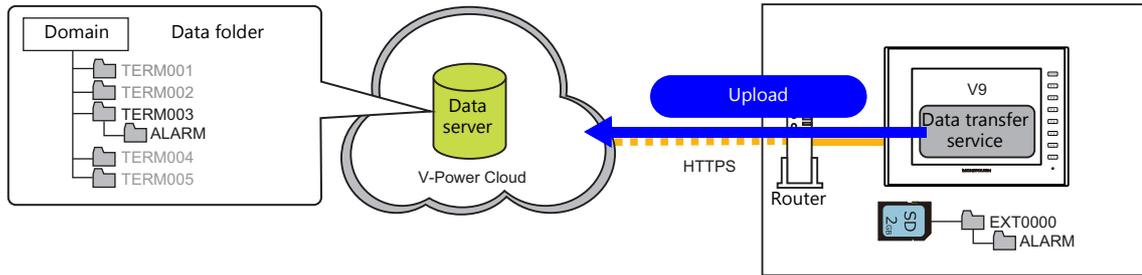


Settings are linked with the [Domain name] and [Active ID] settings on the [VPN Setting] screen. These settings do not need to be specified when settings on the [VPN Setting] screen are made.

4. Press [Apply] on the [Cloud Setting] screen to access the "V-Power Cloud" server. Settings are complete when the following "Successfully authenticated." message is displayed as shown in the figure below. Press [OK]. (When an error occurs, refer to page 2-32.)

2.3.2 Uploading

This section describes how to upload data from a storage device to the cloud server.

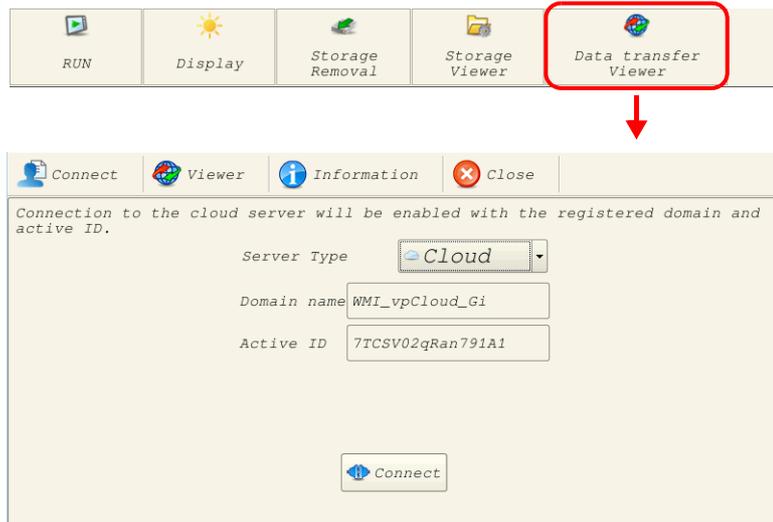


Procedure

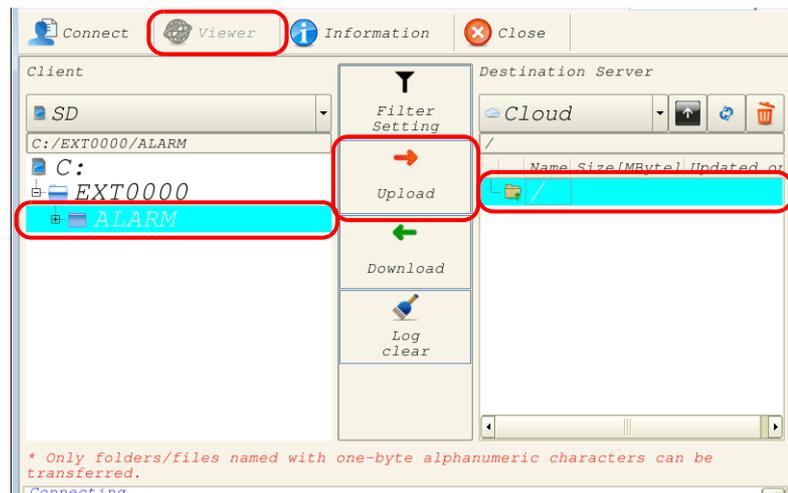
Example: Uploading the "ALARM" folder saved to a storage device to the "TERM003" storage point using the data transfer viewer

1. Press the [SYSTEM] switch to display the system menu and then press the [Data transfer viewer] switch. The data transfer viewer screen is displayed.

 The data transfer viewer screen can also be displayed by a switch or by a command from a PLC.



2. Select [Cloud] as the server type. The [Domain name] and [Active ID] settings set on the [Cloud Setting] screen are displayed.
3. Press the [Connect] switch. When authentication succeeds, the switch becomes an [Unlink] switch.
4. Press the [Viewer] switch. The [Viewer] screen is displayed.
5. Select the "ALARM" folder in the client window and select a save destination in the server window.



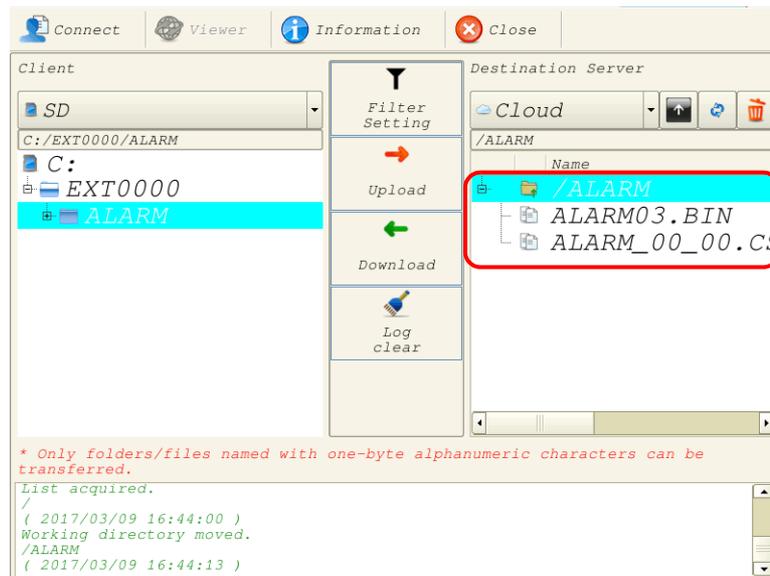
6. Press the [Upload] switch. A confirmation window is displayed.



Folder names and filenames

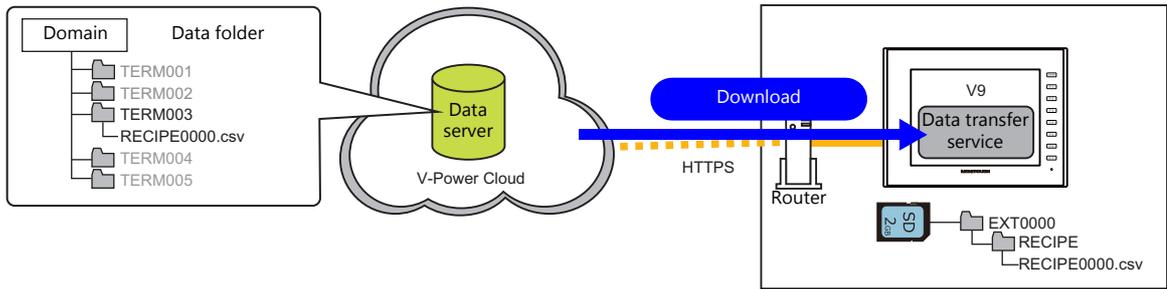
Folders and files containing two-byte characters in its name cannot be transferred. Be sure to use one-byte alphanumeric characters.

7. Press [OK] to start uploading. After upload is finished, the "ALARM" folder is displayed in the server window. Files in the folder are also transferred.



2.3.3 Downloading

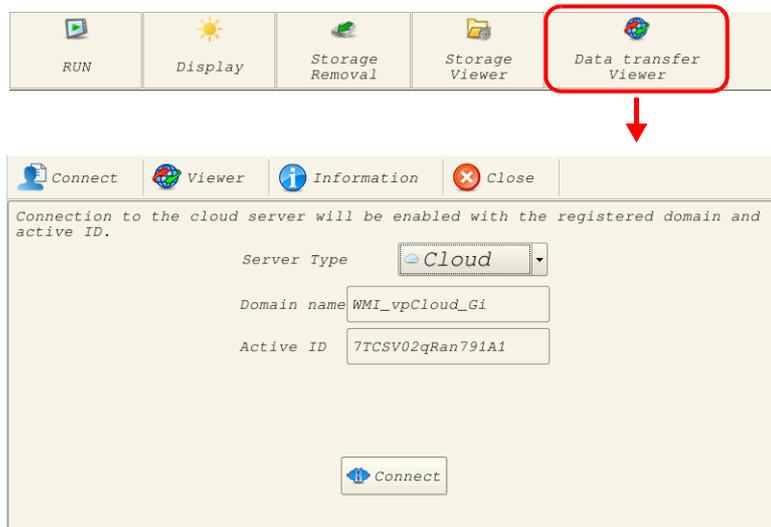
This section describes how to download data from the cloud server to a storage device.



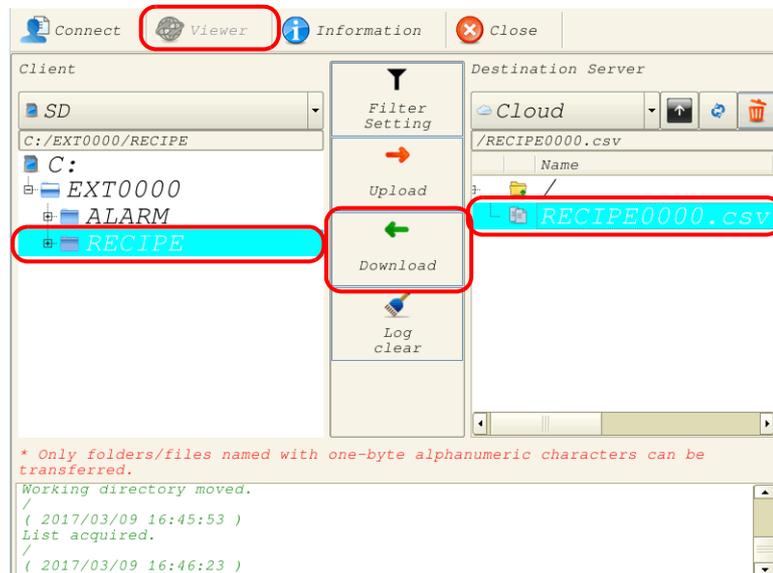
Procedure

Example: Downloading the "RECIPE0000.CSV" file from the cloud server to a storage device using the data transfer viewer

1. Press the [SYSTEM] switch to display the system menu and then press the [Data transfer viewer] switch. The data transfer viewer screen is displayed.



2. Select [Cloud] as the server type. The [Domain name] and [Active ID] settings set on the [Cloud Setting] screen are displayed.
3. Press the [Connect] switch. When authentication succeeds, the switch becomes an [Unlink] switch.
4. Press the [Viewer] switch to display the [Viewer] screen.
5. Select a save destination in the client window and select the "RECIPE0000.CSV" file in the server window.



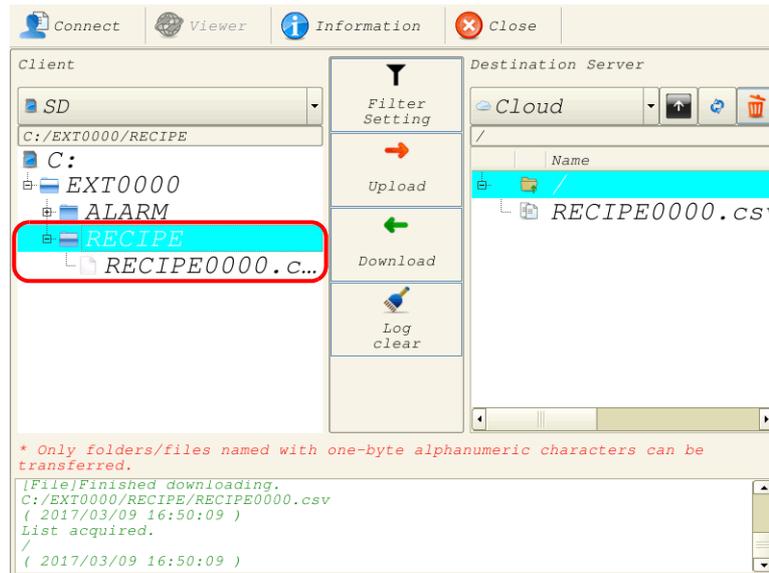
6. Press the [Download] switch. A confirmation window is displayed.



Folder names and filenames

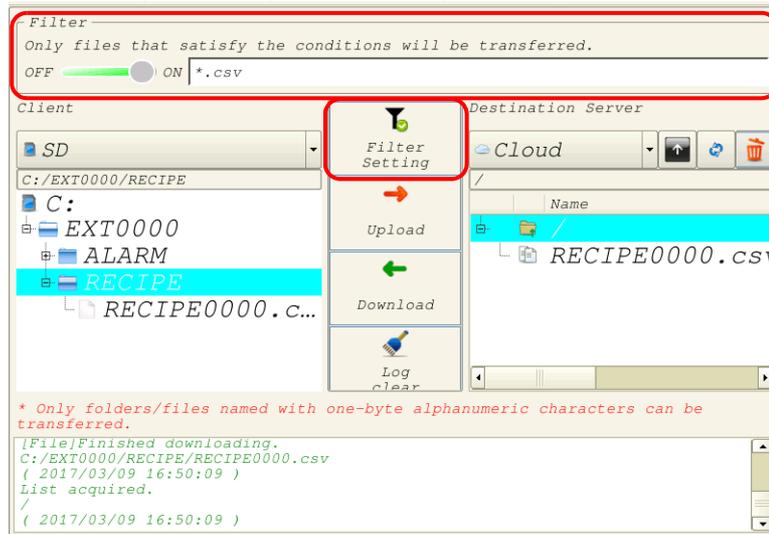
Folders and files containing two-byte characters in its name cannot be transferred. Be sure to use one-byte alphanumeric characters.

7. Press [OK] to start downloading. After download is finished, the "RECIPE0000.csv" file is displayed in the client window.



2.3.4 Filter Settings

Keywords can be specified to filter files when uploading or downloading folders. Wildcards can also be specified as keywords.



☹️ Click [Filter Setting] again to hide the filter menu. The keyword setting is valid when the filter menu is hidden while set to [ON]. Check the icon on the [Filter Setting] button to see if there are keyword settings.

No keyword setting Keyword setting applied



Filter Setting



Filter Setting

• Wildcard

| Wildcard | Description | Usage Example |
|----------|---|---|
| * | Any character string | *.csv |
| ? | Any single character | test?.csv |
| [] | Any one character of those in square brackets | test[A-C].csv (Any one character within A to C) |

• Precautions on using keywords

- Two-byte characters and the following seven symbols cannot be used: < > : " / \ |
- When the keyword field is left blank, uploading/downloading is performed in the same way as when there are no keyword settings.

2.3.5 Checking the Transfer Status

System Device Memory (\$s)

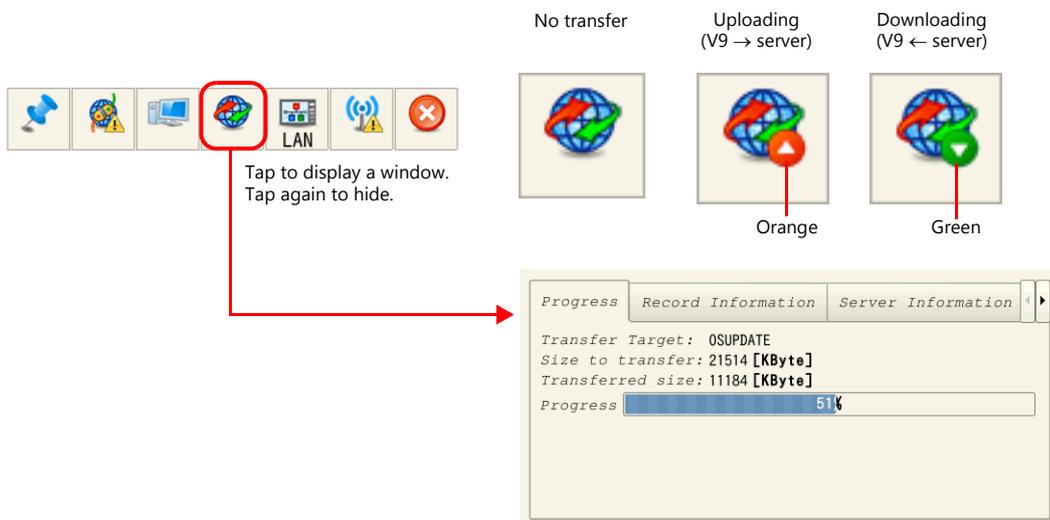
The following table describes the system device memory.

| Address | Description | Remarks |
|---------|--|---------|
| \$s1690 | Checking of FTP communication status 0: Not communicating 1: Uploading (PUT) 2: Downloading (GET) | ← V |
| \$s1691 | When \$s1690 = 1 or 2: Record number in execution With the viewer: -1 | ← V |
| \$s1692 | When \$s1690 = 1 or 2: Server table number in execution With the viewer: -1 | ← V |

Status Bar

The status bar displays the current data transfer status.

Press the icon to check the progress of a transfer or the detailed information of the data for transfer. The status can be checked during transfer as well.



2.4 Limitations

- Operation when the same data exists at the transfer destination:
 - Downloading (GET): Data is overwritten.
 - Uploading (PUT): Data is overwritten.
- Files for which transfer was cancelled or failed to transfer are not saved at the transfer destination.
- When a transfer is cancelled or Ethernet communication is disconnected, all records currently in queue for transfer are cancelled.
- The Local mode screen cannot be displayed during data transfer.
- When a request (connection, upload, download, delete, refresh, or directory change) is sent to the server and it is not acknowledged within 15 seconds, processing is forcefully terminated and the client disconnects.

2.5 Errors

The following items must be checked when the "Failed to connect to the server." message appears upon an attempt to connect to the "V-Power Cloud" server from the V9 series unit or the management tool.

- Date and time settings of the computer (Difference should be within 24 hours from the actual time.)
- Domain name, Active ID (V9 series unit), User ID (management tool), password, proxy settings
- Internet connection (Check that the network connection icon on the task bar indicates a connected status.)
- Firewall settings: Enable use of port No. 443 (Consult your network administrator.)

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