

# Garoon 5.15

# Installation Guide

Fourth Edition, Fifth Revision

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- About Machine Translation

This document is machine-translated from the Japanese version.

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# 1 chapter Before the operation

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This section introduces the settings that administrators will perform first after Garoon is introduced.

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## References

- [Garoon Trial Period](#)
  - [Introduction Flow](#)
  - [Login](#)
  - [Access to the Administration screen](#)
  - [Administrator settings](#)
- 

## 1.1. Before Setting Up

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### Points to Be Checked before Setting Up

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This section explains system requirements as well as the ports that are used by Garoon. Make sure that you read through this section before you install or upgrade Garoon.

### System Requirements

The system requirements for Garoon are as follows (as of October 2022).

**Caution**

- Services and products that are no longer supported by their vendors are not included in the list.

**Supported Operating Systems**

OS	Version
Windows (64bit)	Windows Server 2019 Standard Edition Windows Server 2019 Datacenter Windows Server 2022 Standard Edition Windows Server 2022 Datacenter
Linux (64bit)	Red Hat Enterprise Linux 7 Red Hat Enterprise Linux 8

**Supported Web Server Services**

OS	Web Server Services
Windows (64bit)	Internet Information Service (IIS) 10.0
Linux (64bit)	Apache 2.4.x

**Supported Web Browsers**

OS	Web Browsers
Windows	Latest version of Microsoft Edge Latest version of Mozilla Firefox Latest version of Google Chrome
Mac	

OS	Web Browsers
	Latest version of Safari Latest version of Mozilla Firefox Latest version of Google Chrome
iOS	iOS 14 Safari iOS 15 Safari
Android	Latest version of Chrome for Android

### Note

- Garoon can run also in a virtual environment. Note that some virtual environments can degrade performance depending on your operating environment.
- Garoon 5.0 and subsequent versions do not support the server-distributed deployment (deploying Web server and database server separately on different servers).
- Please use Windows Server in full installation mode (GUI enabled). Server OS in Server Core mode is not supported.
- Despite description given above, only the latest two generations of iOS version are supported.
- If you want to use the Full text search server with Garoon version 5.15, the Full Text Search Server must be version 2.0.3 or later.

The following table describes the supported combinations of Garoon versions and Full Text Search Server versions:

Garoon version	Supported Full Text Search Server version
Garoon version 4.6.x, 4.10.x, 5.0.x, 5.5.x, 5.9.x, 5.15.x	2.0.3
Garoon version 4.2.x	2.0.1, 2.0.2, 2.0.3

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Garoon version	Supported Full Text Search Server version
Garoon version 4.0.x	2.0.1, 2.0.2, 2.0.3

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## ■ Mail Servers

To use the e-mail client feature, a separate mail server is also required. Garoon supports the following mail servers:

## ■ Protocol

Garoon currently supports IMAP4 and IMAP4S only for receiving e-mails.

- SMTP
- SMTPS
- POP3
- POP3S
- IMAP4
- IMAP4S

## ■ Authentication Method

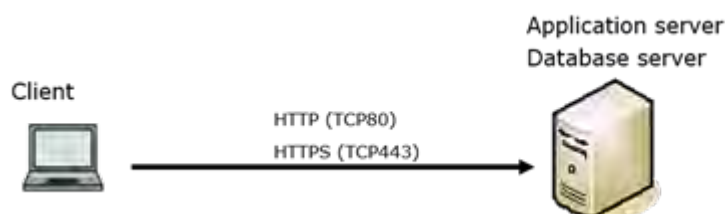
- APOP
- POP before SMTP
- SMTP Authentication
- Advanced authorization (OAuth 2.0) for Gmail and Exchange Online:  
Available in Garoon version 5.5.1 or later. After you configure an e-mail server with specifying the OAuth client in System Administration, users can use the advanced authorization (OAuth 2.0) to send/receive emails by performing the authorization in their "E-mail account details" screen.

## ■ Encryption Protocol

- TLS

## Ports Used by Garoon

This section describes ports used by Garoon. When a firewall is deployed, you must open only necessary ports for protocols you are using.



### Communication Between Clients and the Application Server

Protocol	Port Number Commonly Used
HTTP	TCP80
HTTPS	TCP443

#### Note

- TCP port 3770 must be closed. The port is used for communication with MySQL, but it should not be accessed from outside the server machine. Note that you should not disclose the port numbers to others.

### Features that Require Internet Access

To use Cybozu Online Service (weather forecasts and Rokuyo), Garoon must be able to access the Internet. Please note that Cybozu Online Service is provided only in Japanese.

## Required Settings for the IPv6 Environment



To run Garoon on a server using IPv6 communication, you must edit the MySQL configuration file (my.ini or my.cnf). The following steps assume that MySQL bundled in the installer has been installed:

## For Windows

---

### Steps:

1. Log in to the server machine as a user who has Administrator rights.
2. On Windows, from Administrative Tools, open "Services".
3. Select "Cybozu\_Scheduling\_Service\_cbgrn" and click "Stop Service".
4. Select "Cybozu\_Database\_Engine\_5\_0", and click "Stop Service".
5. Open the my.ini file.

The my.ini file exists in the following directory if you installed MySQL bundled in the installer:

- C:\Program Files\Cybozu\mysql-5.0\etc\my.ini

6. In the [mysqld] section, include the statement "bind-address=::".

Before change:

```
#UNCOMMENT_ONPRE_LIN user = %HTTPD_USER%
skip-name-resolve
port = 3770
#socket = C:/Program Files/Cybozu/mysql-5.0/data/mysql.sock
(Omitted)
```

After change:

```
#UNCOMMENT_ONPRE_LIN user = %HTTPD_USER%
skip-name-resolve
port = 3770
#socket = C:/Program Files/Cybozu/mysql-5.0/data/mysql.sock
bind-address=::
(Omitted)
```

7. On Windows, from Administrative Tools, open "Services".
8. Select "Cybozu\_Database\_Engine\_5\_0" and click "Start Service".
9. Select "Cybozu\_Scheduling\_Service\_cbgrn" and click "Start Service".

## For Linux

---

### Steps:

1. Log into the server machine as a root user.
2. Stop the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn stop
```

3. Stop the MySQL service.

```
[root@garoon admin]# /etc/init.d/cyde_5_0 stop
```

4. Open the my.ini file.

The my.ini file exists in the following directory if you installed MySQL bundled in the installer:

- /usr/local/cybozu/mysql-5.0/etc/my.ini

5. In the [mysqld] section, include the statement "bind-address=::".

Before change:

```
[mysqld]
user = apache
skip-name-resolve
port = 3770
socket = /usr/local/cybozu/mysql-5.0/data/mysql.sock
(Omitted)
```

After change:

```
[mysqld]
user = apache
skip-name-resolve
port = 3770
socket = /usr/local/cybozu/mysql-5.0/data/mysql.sock
bind-address=:
(Omitted)
```

## 6. Start the MySQL service.

```
[root@garoon admin]# /etc/init.d/cyde_5_0 start
```

## 7. Start the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn start
```

## 2 chapter Installing

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Installing a new Garoon.

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### Note

- To enable Garoon to connect to an LDAP server over SSL, additional configurations are required. For details, refer to [Enabling SSL/TLS Connections to LDAP Servers](#).
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## 2.1. Preparing for Installation

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This section describes preliminary tasks to be performed before you can install Garoon. The tasks include preparing information necessary for installation and installing a Web server service.

### Preparing Information Necessary for Installation

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The following information is required for installing Garoon:

Item	Description
Installer	<p>You can download the latest installer from the following Japanese page:</p> <p><a href="https://garoon.cybozu.co.jp/support/package/download/">https://garoon.cybozu.co.jp/support/package/download/</a></p>
Administrator password (for Windows) or root password (for Linux)	<p>The password of the user account that is used to manage Garoon. This password is required for initializing Garoon.</p>
System administrator information	<p>The information of the system administrator of Garoon.</p> <ul style="list-style-type: none"> <li>• User name</li> <li>• Login name</li> <li>• password</li> </ul>
Customer information	<p>The information of the customer who will use Garoon. The following information must be available:</p> <ul style="list-style-type: none"> <li>• Company name</li> <li>• Pronunciation of company name</li> </ul> <p>If you want to change the logo displayed on screens, prepare one of the following:</p> <ul style="list-style-type: none"> <li>◦ Image file</li> <li>◦ URL pointing to the image file's location</li> </ul>
database administrator password	<p>The password of the user account (cbroot) that is used to manage MySQL. You must keep this password strictly confidential.</p>
database user password	<p>The password of the user account that is used to connect to MySQL. You must keep this password strictly confidential.</p>
installation identifier	

Item	Description
	<p>A string that identifies a Garoon installation. The following characters can be used:</p> <ul style="list-style-type: none"><li>• Lowercase alphabetical characters (a-z)</li><li>• Uppercase alphabetical characters (A-Z)</li><li>• Underscores ( _ )</li><li>• Numbers (0-9)</li></ul> <div data-bbox="735 667 1490 768"><p><b>Tip</b></p></div> <ul style="list-style-type: none"><li>◦ The default value is "cbgrn".</li><li>◦ An identifier cannot start with a number.</li><li>◦ The maximum length is 10 characters.</li><li>◦ If you already have a different Cybozu product installed, the new installation identifier must be different from any other identifiers that are currently used for Cybozu products.</li></ul>

Item	Description
CGI directory	<p>A directory to be used for storing CGI programs and configuration files for Garoon.</p> <p>The default directory is as follows:</p> <ul style="list-style-type: none"> <li>• For Windows: C:\inetpub\scripts</li> <li>• For Linux: /var/www/cgi-bin</li> </ul> <div style="border: 1px solid green; background-color: #e6f2e6; padding: 10px; margin-top: 10px;"> <p><b>Tip</b></p> <ul style="list-style-type: none"> <li>◦ For Windows, the CGI directory must be configured as a virtual directory before you can install Garoon. For details, refer to <a href="#">How to Create a Virtual Directory</a>.</li> </ul> </div>
Document root directory	<p>A directory to be used for storing HTML files and image files for Garoon.</p> <p>The default directory is as follows:</p> <ul style="list-style-type: none"> <li>• For Windows: C:\inetpub\wwwroot</li> <li>• For Linux: /var/www/html</li> </ul>

## (For Both Operating Systems) Installing a Web Server Service

Install a Web server service on the serve machine, and configure the Web server to enable CGI programs.

If you plan to use an existing installation of a Web server service, additional configurations may be required for running Garoon, such as granting permissions and setting virtual directories.

You must refer to [Installing and Setting up the Web Server/Web Browser](#) to configure required settings, regardless of whether you plan to install a new Web server service or use an existing

service.

After a Web server service is installed, ensure that the Web server service is running.

---

### Note

- For information on how to create a virtual directory, refer to [How to Create a Virtual Directory](#).
  - On Linux, configure Apache so that it runs in prefork mode.
- 

## (For Both Operating Systems) Configuring Access Logs of a Web Server

---

In access logs of a Web server, you can find the number of accesses to Garoon per minute, the request content when an issue occurred, and the processing time of a request.

Output content and settings may vary depending on the type of your Web server, but make sure that the following information is recorded in access logs.

- On
- Source client IP
- Method (GET, POST, etc)
- Request URL
- Query string
- HTTP status
- Number of bytes sent from the server to the client
- Processing time
- UserAgent
- Referrer

### ■ When using Apache

By default, Apache may not be configured to write the processing time to the access log.

Follow the steps below to configure that the processing time is written to the access log.



**Steps:****1. Edit "httpd.conf" and describe "%D".**

- Example setting (before change):

```
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\""  
combined
```

- Example setting (after change):

```
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\" %D"  
combined
```

**2. To apply the setting, restart Apache or reload the setting file.****Caution**

- If the output format of access log is "common", change it to the "combined" format.

## (For Both Operating Systems: Only When Using an Existing MySQL Installation) Changing MySQL Settings

MySQL is bundled in the Garoon installer. We recommend that you set up Garoon by installing MySQL bundled in the Garoon installer. However, you can use your existing MySQL installation. The only supported version of MySQL is 8.0.28, which is bundled in the Garoon installer. To use an existing MySQL installation, the following steps are required:

### ■ Editing the MySQL Configuration File (my.ini or my.cnf) Before You Install Garoon

Before you install Garoon, edit the my.ini file or my.cnf file to include the values described below.

**Steps:****1. Stop the MySQL service.****2. Move to the directory where the configuration file exists.**

- Example of the directory on Windows: C:\ProgramData\MySQL\MySQL Server 5.7\my.ini
- Example of the directory on Linux: /usr/my.cnf

**3. Open the configuration file in a text editor, enter the following values, and save the file.**

If the values have been already configured, comment them out and enter the following values.

- For Windows (my.ini)

```
[mysqld]
sql_mode=NO_ENGINE_SUBSTITUTION
```

- For Linux (my.cnf)

```
[mysqld]
sql_mode=NO_ENGINE_SUBSTITUTION
character-set-server = utf8mb4
collation-server = utf8mb4_general_ci
skip-character-set-client-handshake
[client]
default-character-set=utf8mb4
```

**4. Start the MySQL service.****■ Entering the Connection Information of MySQL While Installing Garoon**

While installing Garoon, select the "Use MySQL already installed on the server" option and enter the following information about the existing MySQL installation:

- The directory where MySQL is installed

- The port number of MySQL
- The MySQL root password

### ■ Restarting the MySQL Service After Garoon Is Installed

After the installation of Garoon is completed, you must restart the MySQL service.

### ■ Contacting Cybozu About Setting Up the Full Text Search Server

When you use an existing MySQL installation, you must configure special settings for the Full Text Search Server. For more information on the procedure, please contact us.

When you install MySQL bundled in the installer, you can use the regular steps to set up the Full Text Search Server.

## (Only for Windows) Configuring a Virtual Directory

---

A virtual directory maps a URL that users enter on the Web browser to a specific directory on the server. The CGI directory of the Web server must be configured as a virtual directory before you can install Garoon.

For information on how to create a virtual directory, refer to [How to Create a Virtual Directory](#).

## (Only for Linux) Disabling KeepAlive in Apache

---

The default configuration of Apache2.4 (bundled in Red Hat Enterprise Linux 7 and 8) has KeepAlive enabled. To disable KeepAlive, specify the statement "KeepAlive Off" in the configuration file.

### Steps:

#### 1. Edit `httpd.conf` to disable KeepAlive.

Before change:

```
:  
User apache  
Group apache
```

After change:

```
:  
User apache  
Group apache  
KeepAlive Off
```

**2. After you edit the configuration file, restart the Web server service on the server machine.**

```
[root@garoon admin]# systemctl restart httpd.service
```

---

**Note**

- When you choose to enable KeepAlive, you should adjust the KeepAliveTimeout value for your environment.

The greater the value of KeepAliveTimeout, the more likely Garoon is to respond slowly when Garoon handles many requests.

---

## (Only for Linux) Disabling Transparent Huge Pages (THP)

---

THP should be disabled. When THP is enabled, the performance of Garoon version 4.10 or later can be degraded.

**Steps:**

**1. Check that the THP function is disabled.**

```
[root@garoon admin]# cat /sys/kernel/mm/transparent_hugepage/enabled
```

If "never" is surrounded by [ ], the THP function is disabled.

Example:

```
always madvise [never]
```

If "[always] madvise never" or "always [madvise] never" is displayed, the THP function is enabled. Proceed to step 2.

If the THP function is disabled, proceed to step 3.

## 2. THP should be disabled.

```
[root@garoon admin]# echo never > /sys/kernel/mm/transparent_hugepage/
enabled
```

## 3. Edit `/etc/rc.d/rc.local` to include the following statement so that THP can stay disabled after a restart:

File to be changed: `/etc/rc.d/rc.local`

Before change:

```
:
touch /var/lock/subsys/local
```

After change:

```
:
touch /var/lock/subsys/local
echo never > /sys/kernel/mm/transparent_hugepage/enabled
```

## 4. Set the Execute permission on `/etc/rc.d/rc.local`.

```
# chmod u+x /etc/rc.d/rc.local
```

## (Only for Linux) Disabling SELinux

---

For Linux, you must disable SELinux. Garoon does not work properly when SELinux is enabled.

### Steps:

#### 1. Check that SELinux is enabled.

Execute the following command:

```
[root@garoon admin]# getenforce
```

One of the following values is returned:

- Enforcing: Indicates that SELinux is enabled.
- Permissive: Indicates that SELinux is in debugging mode (where access control is not enforced but log entries are generated in the same way as when SELinux is enabled).
- Disabled: Indicates that SELinux is disabled.

#### 2. Disable SELinux.

When SELinux is enabled, open the SELinux configuration file (`/etc/sysconfig/selinux`) to change the value of "SELINUX".

- Before change:

```
:  
SELINUX=enforcing
```

- After change:

```
:  
SELINUX=disabled
```

#### 3. Restart the operating system.

## (Only for Linux) Installing Libraries Required for Garoon

---

For Linux, ensure that the libraries required for running Garoon are installed.

For details on libraries used by Garoon, refer to [Necessary Libraries on Linux \(Garoon 5.x.x or later\)](#).

## 2.2. Installing on Windows

---

This section describes how to install Garoon on Windows.

For example, the steps below are based on the following operation environment:

- OS: Windows Server 2022
- Web server service: IIS 10.0
- CGI directory of the Web server: C:\inetpub\scripts
- Document root directory of the Web server: C:\inetpub\wwwroot
- MySQL: Using MySQL bundled in the Garoon installer

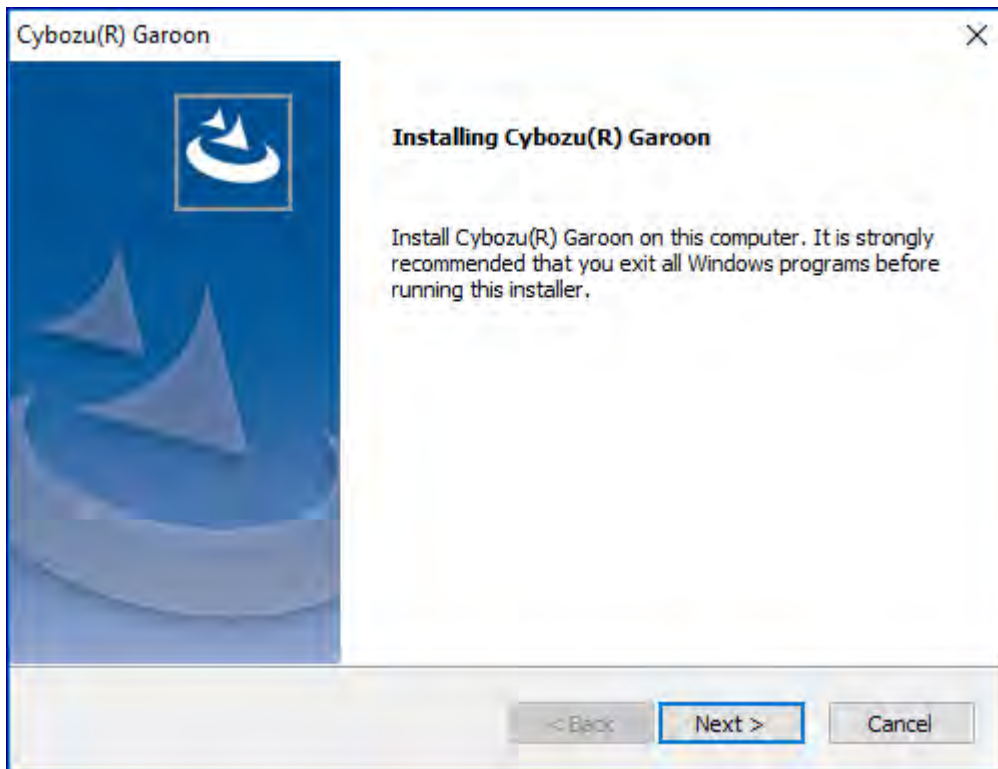
### Caution

- Do not install a new version of Garoon on a server machine where an older version of Garoon is already installed. Installing different versions of Garoon on one server machine causes the older version to fail.
- You must exit all Windows programs before you start the installation.
- You must keep the database administrator password and database user password strictly confidential. If you lose the password, you will not be able to reset the password or migrate Garoon to another server machine.
- Do not operate more than one Garoon installation on one server machine.

- Installing Garoon also installs the Visual C++ redistributable packages for Visual Studio 2013 and 2015. Do not delete the package.
- 

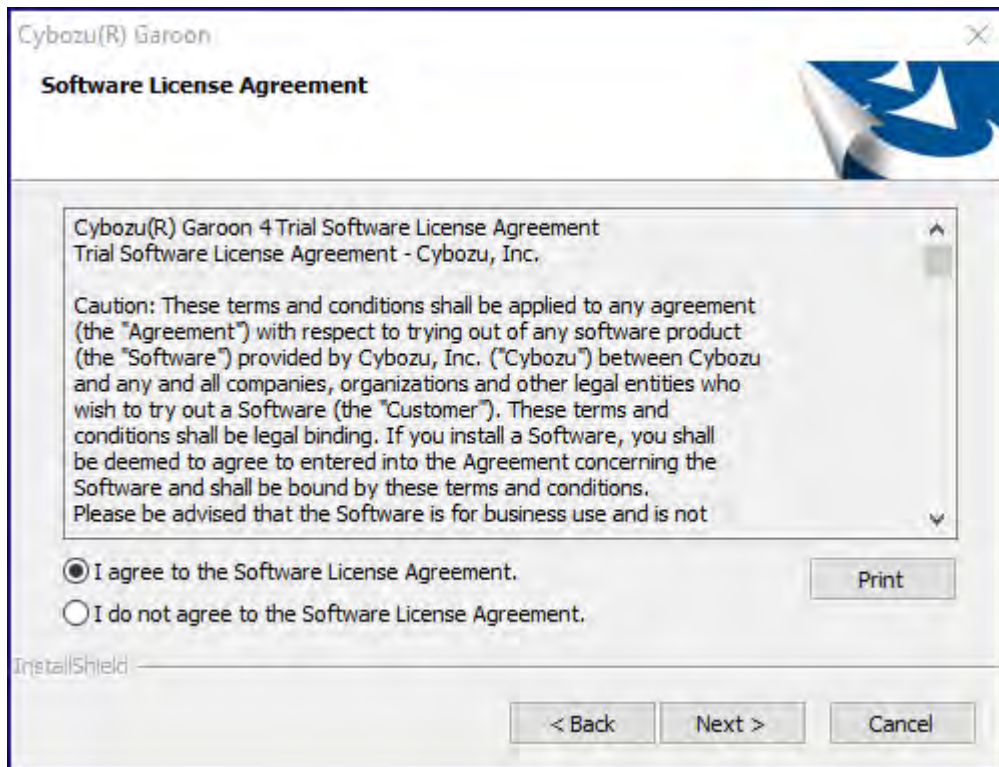
**Steps:**

- 1. Log in to the server machine that you want to install Garoon on as a user who has local Administrator rights.**
- 2. Place the installer in any folder, such as C:\Temp.**
- 3. Start the installer and click Next.**

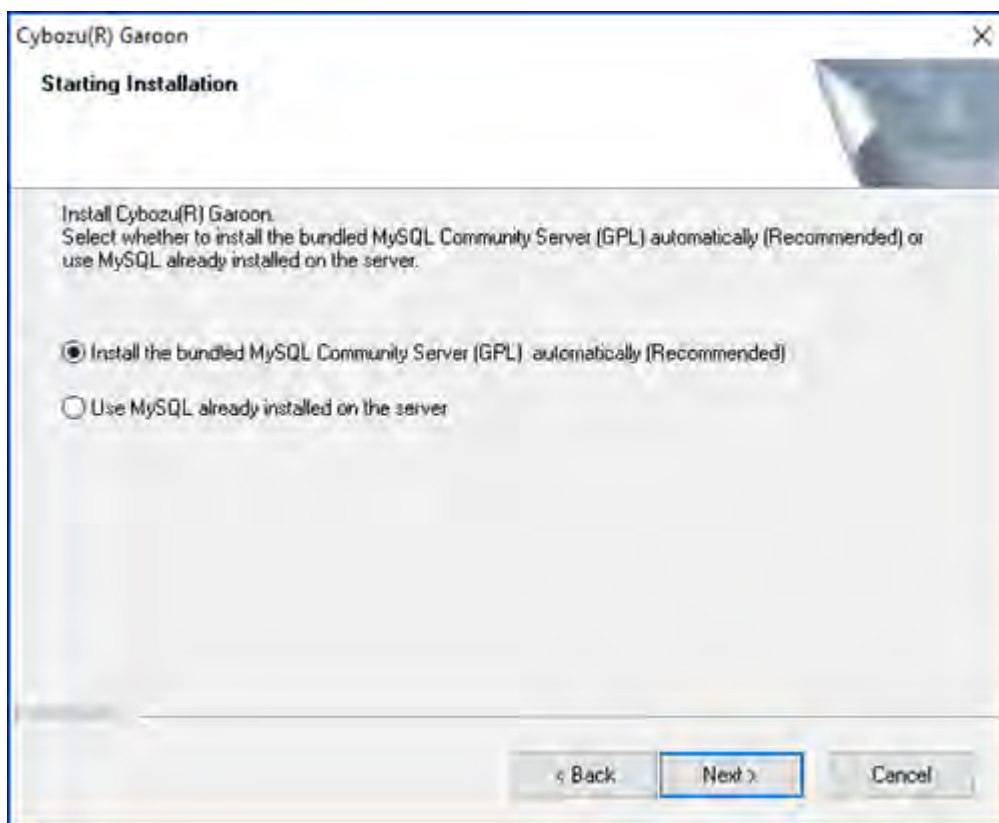


- 4. Read the Software License Agreement carefully. If you agree with it, select "I agree to the Software License Agreement" and click Next.**



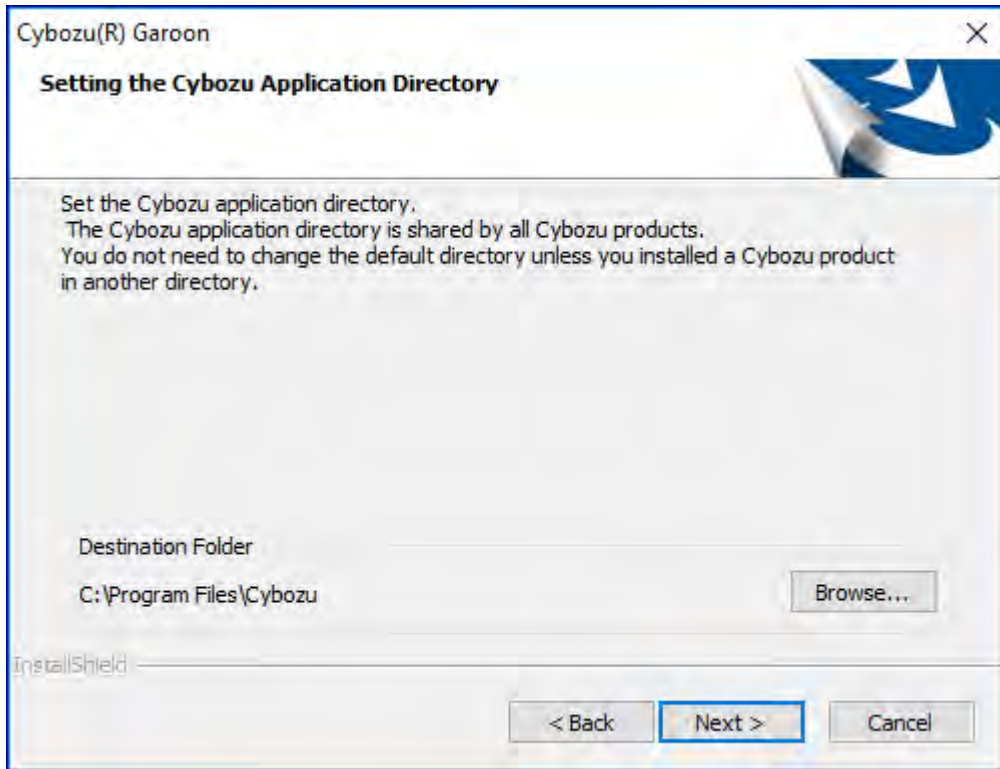


**5. Select "Install the bundled MySQL Community Server (GPL) automatically (Recommended)" and click Next.**

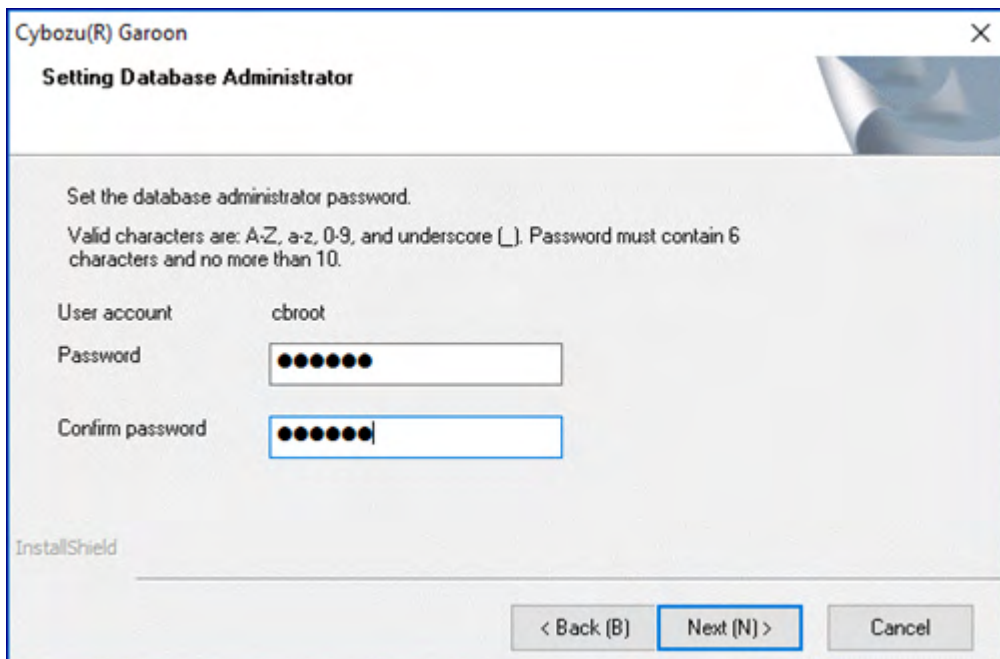


**6. Confirm the Cybozu application directory and click Next.**

If you want to change the Cybozu application directory, click "Browse" and select another directory.

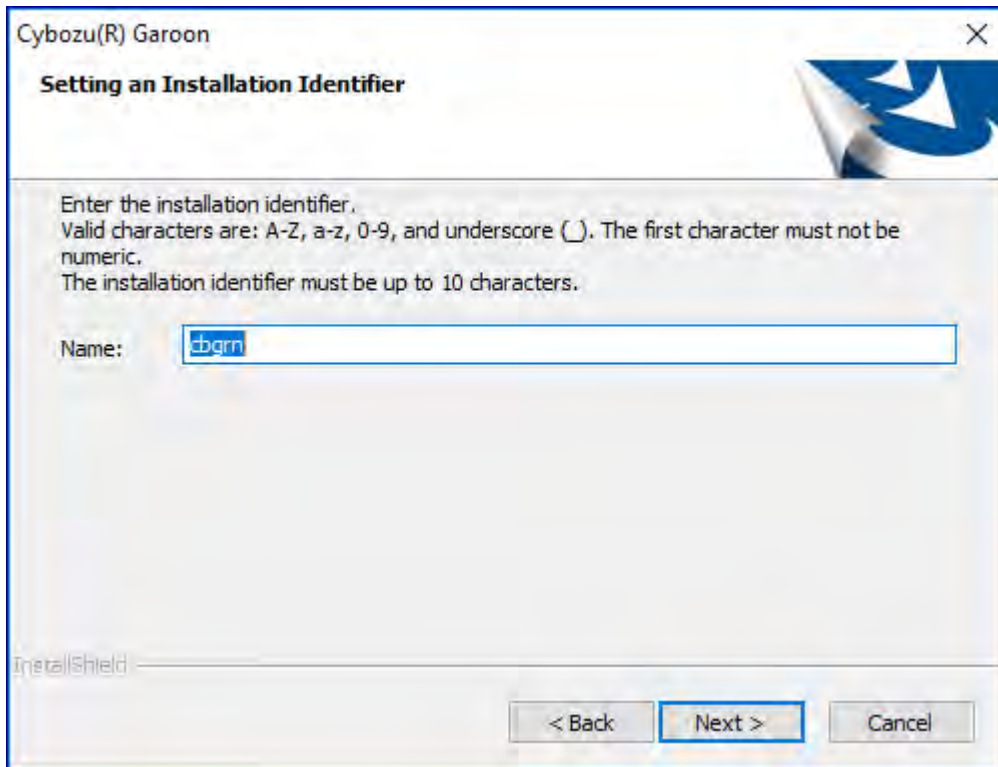


**7. Enter the database administrator password and click Next.**



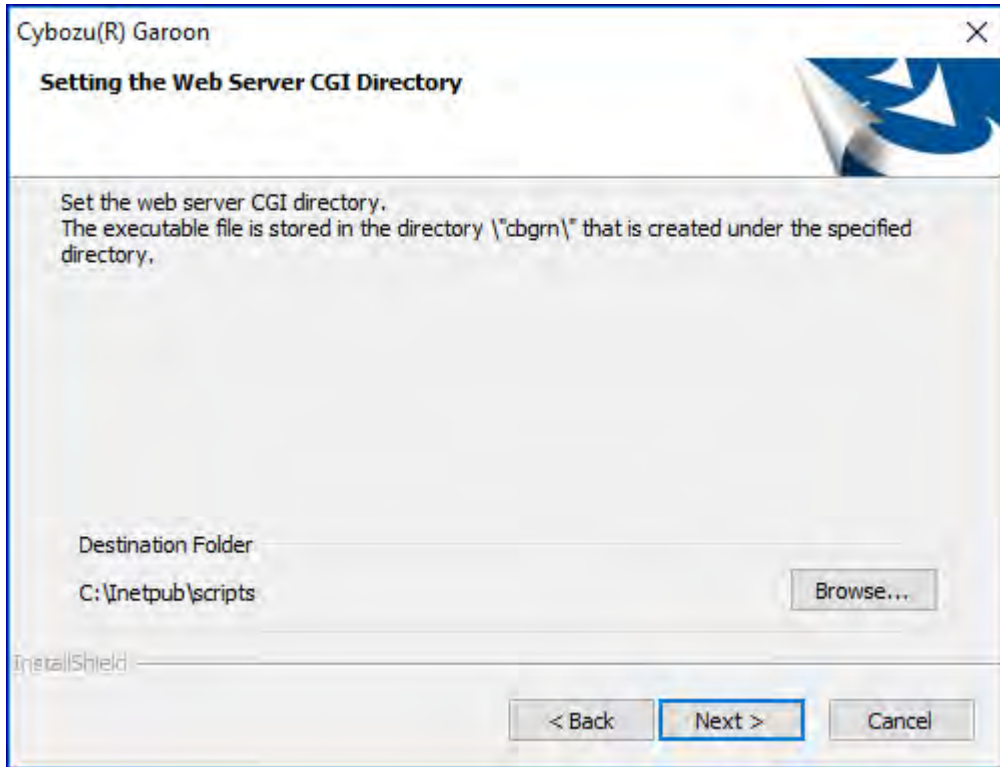
## 8. Enter an installation identifier and click Next.

- The initial setting is "cbgrn". If you want to change the setting, type any installation identifier and press the Enter key.
- If IIS is not running on port 80, you will get a "Failed to detect a web server" error message and the installer stops.



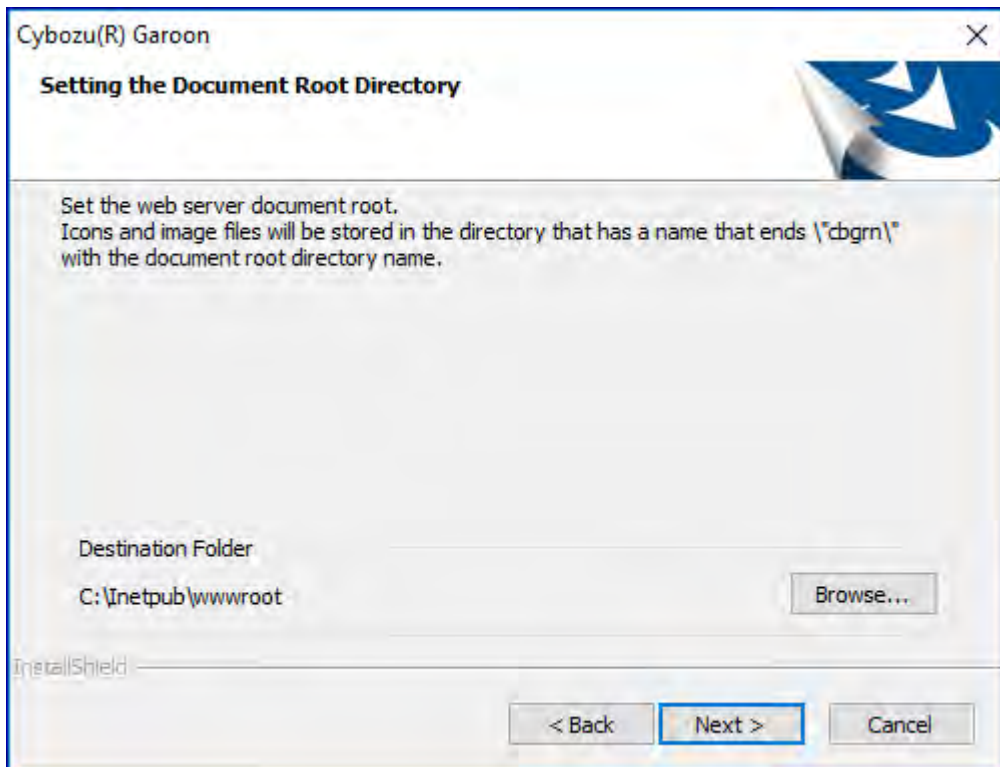
## 9. Confirm the CGI directory of the Web server and click Next.

If you want to change the CGI directory, click "Browse" and select another directory.



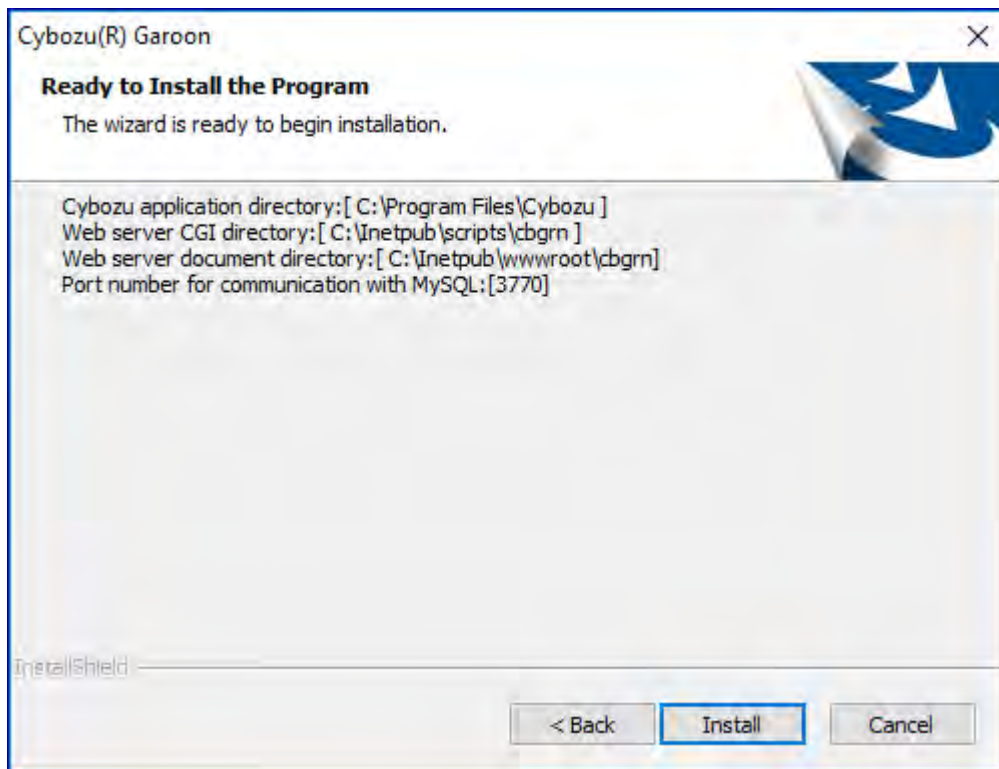
**10. Confirm the document root directory of the Web server and click Next.**

If you want to change the document root directory, click "Browse" and select another directory.

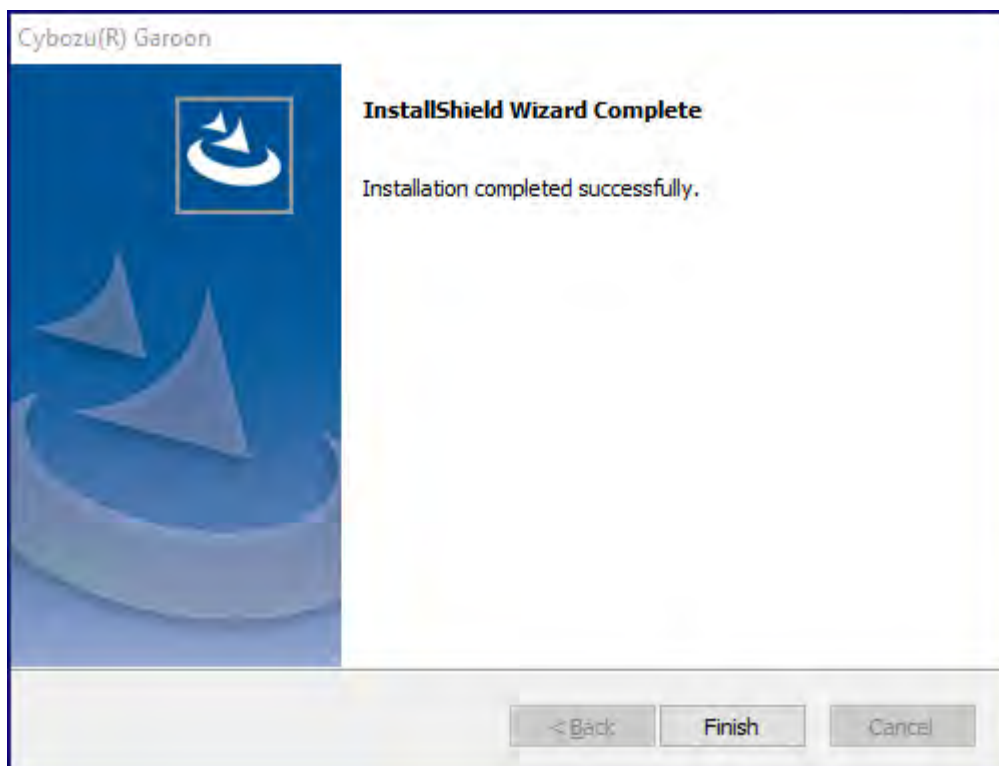


**11. Verify the displayed settings and click "Install".**

The installation starts.

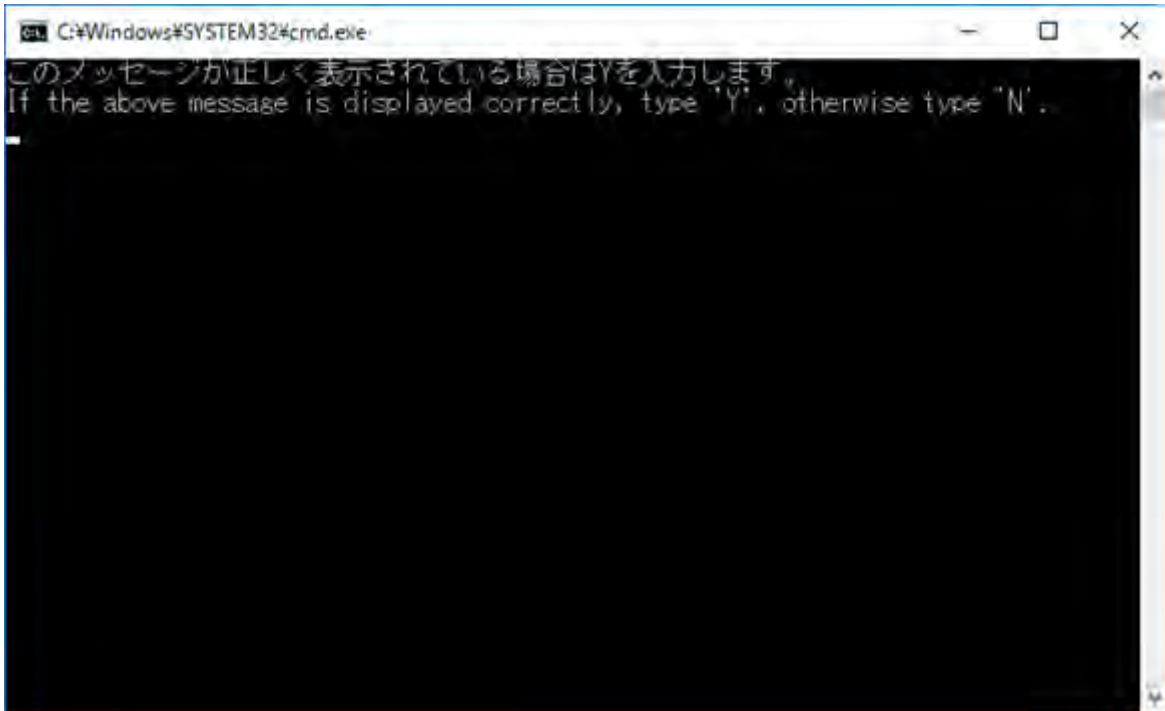
**12. Click "Finish" on the "InstallShield Wizard Complete" screen.**

The installer exits.





**13. When the Command Prompt window appears, follow the instruction on the screen to initialize Garoon.**



During the initialization, you configure passwords for Garoon administrators and database users.

For details on the password requirements and the operation steps, refer to the step 4 and later in [Initializing Garoon on Windows\(31Page\)](#).

**14. After you complete the initialization of Garoon successfully, change the IIS settings.**

For details, refer to [Changing IIS Settings\(35Page\)](#).

---

**Note**

- The installation log file for Garoon and MySQL is saved in the following directory if you installed Garoon with the default settings:  
C:\WINDOWS\SysWOW64\\_cb\_installer.log

## Initializing Garoon on Windows

---

This section describes how to initialize Garoon.

To initialize Garoon, use Command Prompt and run initialize.bat.

### Caution

- If you cancel the initialization process while it is in progress, Garoon may become unusable.  
If you cancel the initialization process midway, roll back Garoon to its pre-initialization state, and start the initialization process again from the beginning.
- To delete standard data and sample data, you must initialize Garoon. The initialization of Garoon also deletes other data.

### Steps:

#### 1. Stop the scheduling service.

On Windows, select "Administrative Tools" > "Services" to stop the following service:

Cybozu\_Scheduling\_Service\_cbgrn

Replace "cbgrn" with your installation identifier.

#### 2. Go to the initialize directory.

Execute the following command:

```
cd (CGI directory)\(installation identifier)\initialize
```

Example:

```
cd C:\inetpub\scripts\cbgrn\initialize
```

#### 3. Type the following command and press the Enter key:

For example, you can use the following command when you installed MySQL bundled in the Garoon installer:

```
initialize.bat ja "C:\\Program Files\\Cybozu\\mysql-5.0" cybozu
```

### ■ About initialize.bat

Syntax:

```
initialize.bat [language] [path to the MySQL directory] [database administrator password]
```

Parameters:

language	Specify one of the following: ja: Japanese. The time zone is "Asia/Tokyo". en: English. The time zone is "Europe/London". zh: Chinese. The time zone is "Asia/Shanghai".
path to the MySQL directory	If you installed MySQL bundled in the Garoon installer, the directory path is as follows: C:\Program Files\Cybozu\mysql-5.0  If MySQL was already installed on the server, specify the MySQL installation directory.

#### 4. Check the displayed information, type 'Y' or 'N', and press the Enter key.

When you type 'Y', messages for step 5 and beyond will be shown in Japanese. When you type 'N', messages for step 5 and beyond will be shown in English. The following procedure assumes that you type 'Y':

```
If the above message is displayed correctly, type 'Y', otherwise type 'N'.  
If the above message is displayed correctly, type 'Y', otherwise type 'N'.
```

#### 5. Type the database user password and press the Enter key.



Initializing Garoon.

Set a password for the database user.

Valid characters are: a-z, A-Z, 0-9, and underscore (\_).

Passwords must be 6 to 10 characters.

## 6. Type the Administrator password and press the Enter key.

Set a password for "Administrator".

- Passwords must be 6 to 10 characters long.
- Passwords can contain the following characters.
  - a-z
  - A-Z
  - 0-9
  - \_
- The following characters are not acceptable: less than sign (<), greater than sign (>), vertical bar (|), and ampersand (&). In some environments, other symbols are also unacceptable.
- If you want to use symbols in your password, initialize Garoon and then use "System Administration" to change the password. For instructions on how to change passwords, refer to the [Editing User Profile](#).

## 7. Select which data sets you want to install, and press the Enter key.

You can select which data sets to install only if you typed 'Y' in step 4 and the display language is Japanese. This message does not appear if you typed 'N' in step 4.

Select the data that you want to install on Garoon. Select "Nothing" to install no data.

1: Standard data

Installs standard data, including Japanese holidays and request forms.

2: Nothing

[1|2]:

In the standard data, holidays, samples of workflow request form, and other information are registered. It is recommended that you install standard data if you plan to create users from scratch in Garoon.

You can also install standard data at a later time. For details, see the "[Garoon Initializing Commands](#)" section.

## 8. Check the displayed information, type "yes", and press the Enter key.

The initialization will start.

```
Summary of initialize configuration
```

```
database administrator password: "cybozu"  
database connection user password: "cybozu"  
"Administrator" password: "cybozu"  
Data to be installed: [Your selection in step 7]
```

```
Are you sure you want to initialize Garoon with the above settings? Are you  
sure?
```

```
[yes or no]
```

To cancel the initialization, type "no" and press the Enter key.

```
Initialization is aborted.
```

```
To initialize again, execute the following command:
```

```
CD "C:\inetpub\scripts\cbgrn\initialize\  
initialize.bat ja "C:\Program Files\Cybozu\mysql-5.0" [CBROOT_PASSWORD]
```

## 9. Confirm that the initialization is completed successfully.

```
The installation has completed successfully.
```

```
Start a web browser and access the URL below:
```

```
http://(FQDN or IP address of the server)/(virtual path to the CGI  
directory)/cbgrn/grn.exe
```

```
Example) http://webserver.cybozu.co.jp/scripts/cbgrn/grn.exe
```

```
Example) http://10.10.203.55/scripts/cbgrn/grn.exe
```

## 10. Start the scheduling service.

On Windows, select "Administrative Tools" > "Services" to start the following service:

Cybozu\_Scheduling\_Service\_cbgrn

Replace "cbgrn" with your installation identifier.

## Changing IIS Settings

---

This section describes how to change the IIS settings.

You can change the following:

- Add MIME types
- Enable directory browsing
- Edit handler mappings

### Steps:

#### 1. Start Server Manager.

#### 2. Start IIS Manager.

Click "Tools" and select "Internet Information Services (IIS) Manager".

#### 3. In the "Connections" section, click "(computer name)".

#### 4. In the Features View, double-click "MIME Types".

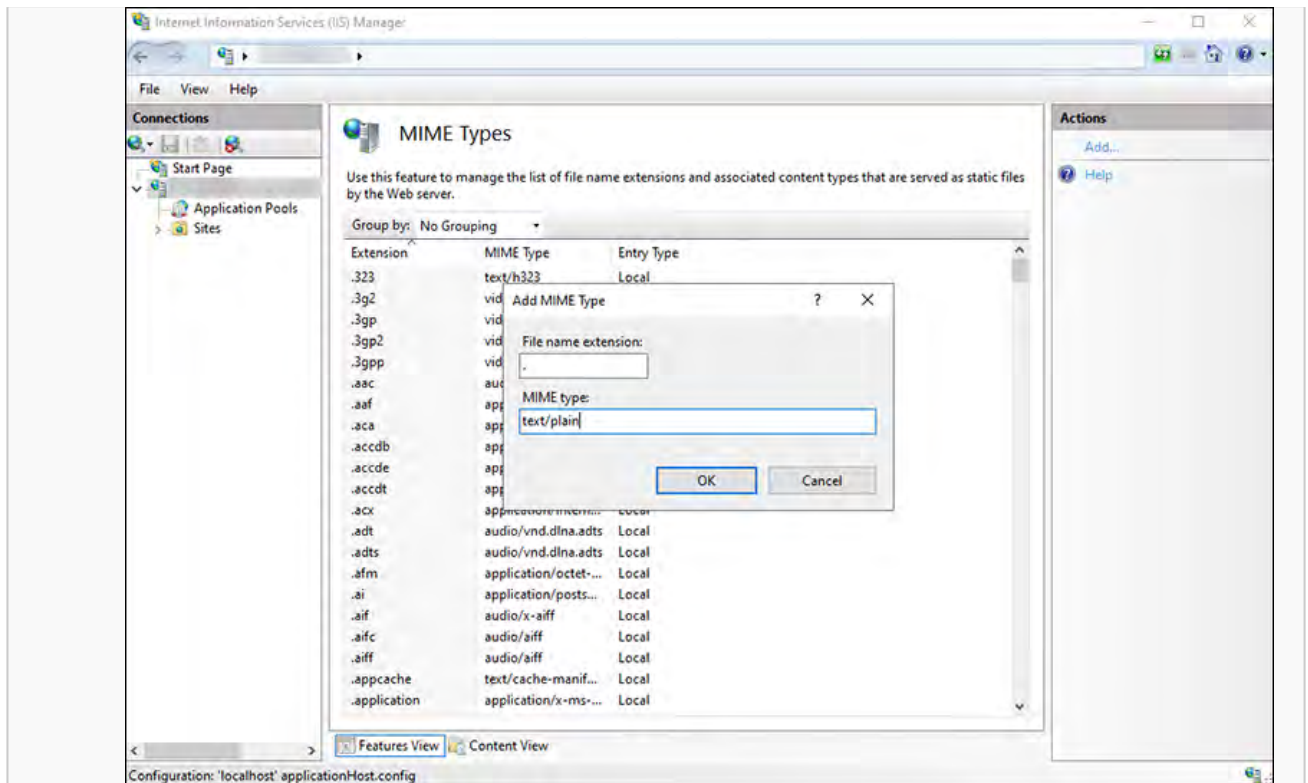
#### 5. On the "MIME Types" screen, add MIME types for "no extension" and ".md".

- "no extension"

1. Click **Add** in the "Actions" section.

2. In the "Add MIME Type" screen, configure the file name extension and MIME type.

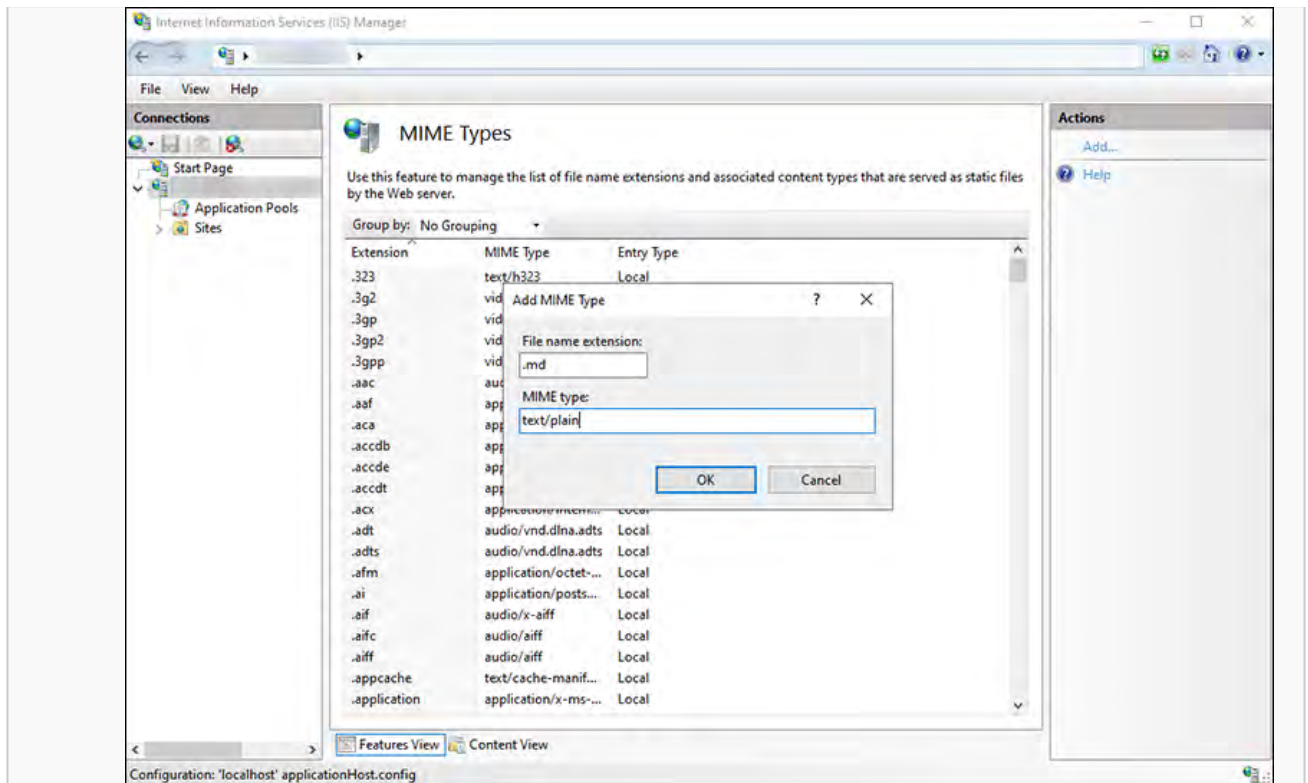
- File name extension: Enter ".".
- MIME type: Enter "text/plain".



1. Confirm your settings and click **OK**.

- **".md"**

1. Click **Add** in the "Actions" section.
2. On the "Add MIME Type" screen, configure the file name extension and MIME type.
  - File name extension: Enter ".md".
  - MIME type: Enter "text/plain".

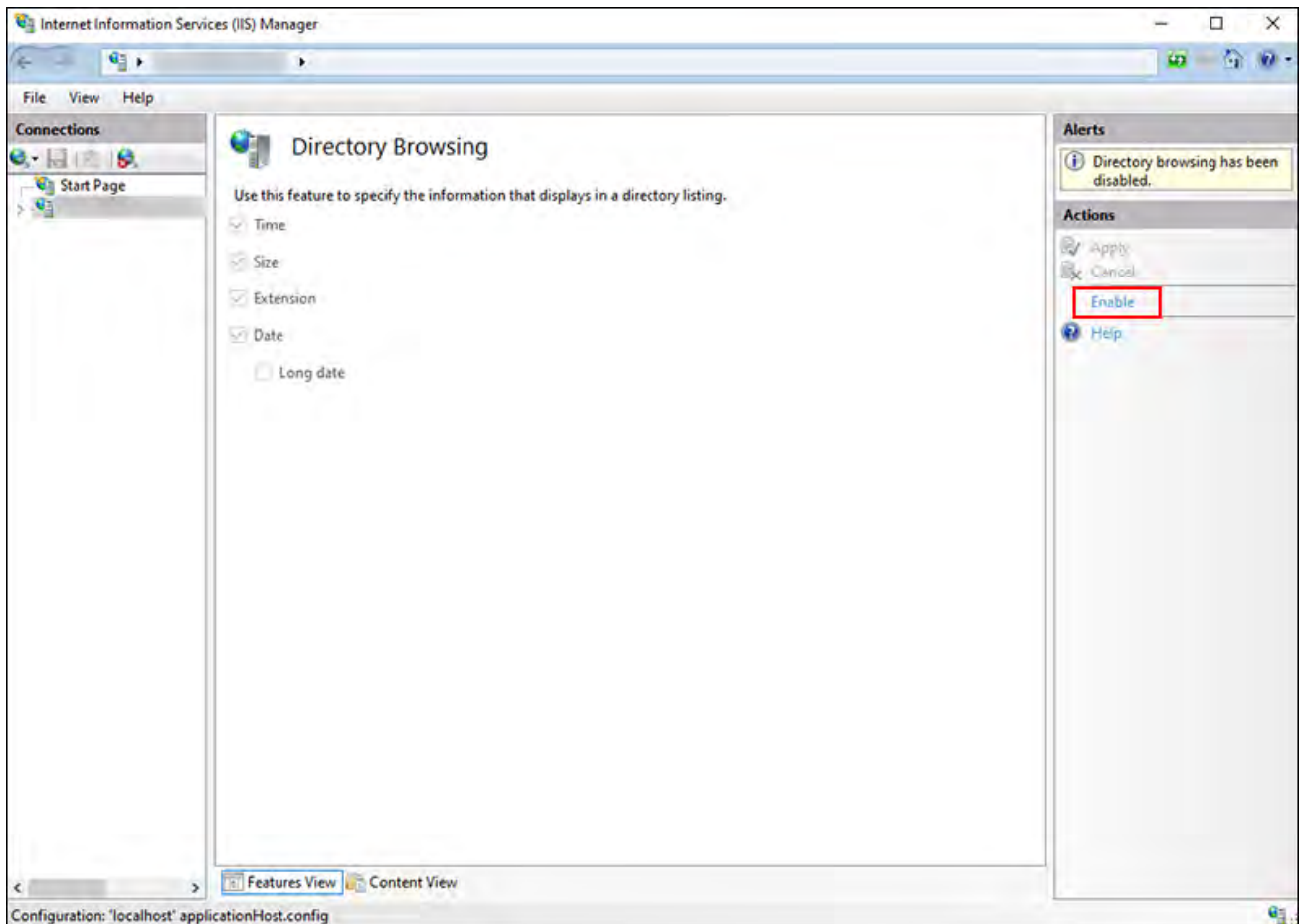


1. Confirm your settings and click **OK**.

6. In the "Connections" section, click "(computer name)".

7. In the Features View, double-click "Directory Browsing".

8. In the "Actions" section for Directory Browsing, click "Enable".

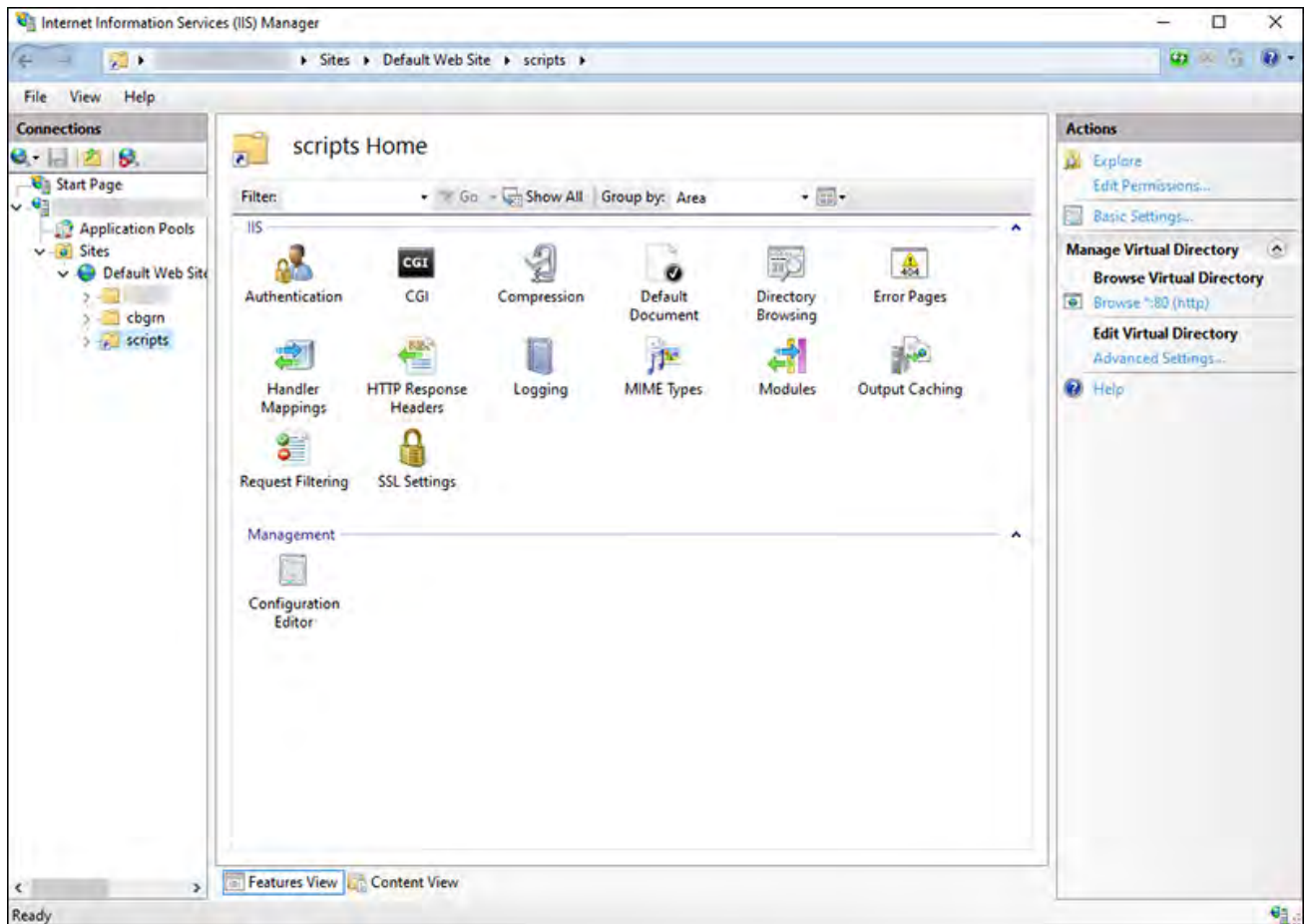


**9. In the "Connections" section, click "(computer name)" and then "Sites".**

**10. Click "Default Web Site" and select "scripts".**

If "scripts" does not appear under "Default Web Site", check the virtual directory settings. The CGI directory of the Web server, which was specified during Garoon installation, must be configured as a virtual directory.

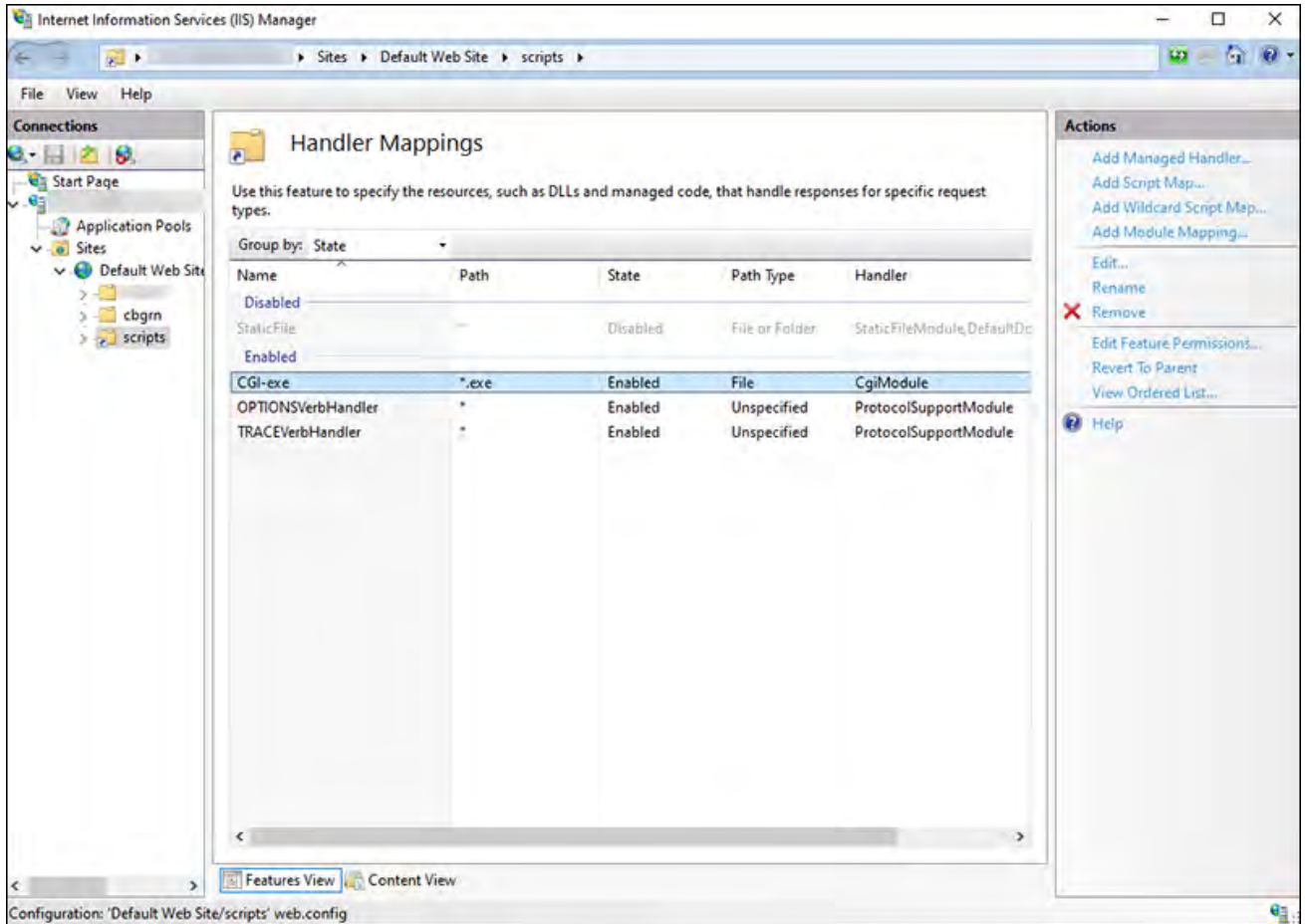
For details, refer to [How to Create a Virtual Directory](#).



**11. On the "Features View", double-click "Handler Mappings" in "scripts".**

**12. Right-click "CGI-exe" and click "Edit".**

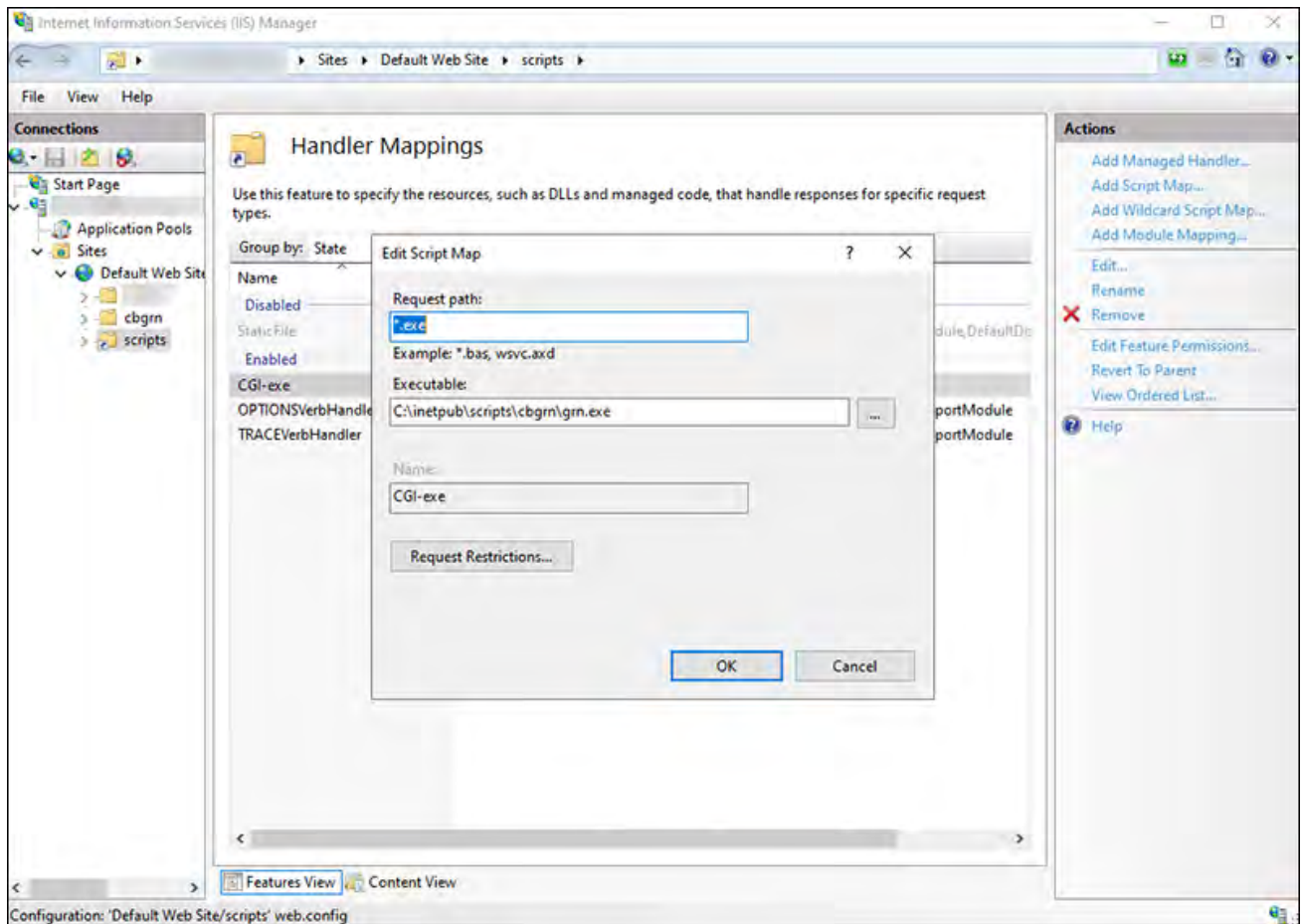
When other exe files in the same virtual directory also use "scripts", you must set a handler mapping for each exe file.



**13. On the "Edit Module Mapping" dialog box, in the "Executable" field, enter the path and name of the file "grn.exe", and then click OK.**

Example: C:\inetpub\scripts\cbgrn\grn.exe





**14. If you are asked "Do you want to allow this ISAPI extension?", click Yes (Y).**

When the ISAPI extension is allowed, the Garoon program runs on the IIS process.

If the state of "CGI-exe" is "Disabled", right-click "CGI-exe" to select "Edit Feature Permissions". Check the permissions, and if "Execute" is not selected, select **Execute** and click **OK** to apply your change.

**15. Access the Garoon URL to check that the login screen appears.**

**16. Configure Garoon's initial settings.**

For details, refer to [Post-Installation Tasks\(52Page\)](#).

### Note

- If you access the Garoon URL but the screen is not displayed properly, check the following points:
    - IUSR of IIS can access the document root directory.
    - The Web server has virtual directories configured properly.  
For details, refer to [How to Create a Virtual Directory](#).
    - The firewall is configured correctly.
  - If an error occurs when you try to attach a file in Garoon, refer to "[Error \(FW00039\): Cannot continue processing" Is Displayed](#) in the support guide.
  - If any of the following problems occur, you must change the settings appropriately:
    - An error (HTTP 404) occurs when users attempt to open or download a file.  
For details, refer to the article [Cannot download files containing single-byte spaces or "+" in their names](#) in the FAQ.
- 

## 2.3. Installing on Linux

---

This section describes how to install Garoon on Linux.

For example, the steps below are based on the following operation environment:

- OS : Red Hat Enterprise Linux 8
- Web server service: Apache 2.4.37
- CGI directory of the Web server: /var/www/cgi-bin
- Document root directory of the Web server: /var/www/html
- MySQL: Using MySQL bundled in the Garoon installer

**Caution**

- Before you start the installation, refer to [\(Only for Linux\) Installing Libraries Required for Garoon\(23Page\)](#) and ensure that the libraries required for running Garoon are installed.
- Do not install a new version of Garoon on a server machine where an older version of Garoon is already installed. Installing different versions of Garoon on one server machine causes the older version to fail.
- You must keep the database administrator password and database user password strictly confidential. If you lose the password, you will not be able to reset the password or migrate Garoon to another server machine.
- Do not operate more than one Garoon installation on one server machine.
- Before you start installing Garoon, ensure that the Web server service is running.

**Steps:**

- 1. Log into the server machine as a root user.**
- 2. Check httpd.conf to ensure that KeepAlive is disabled.**

For details on how to check or edit KeepAlive settings, refer to [\(Only for Linux\) Disabling KeepAlive in Apache\(19Page\)](#).

**Note**

- When you choose to enable KeepAlive, you should adjust the KeepAliveTimeout value for your environment.  
The greater the value of KeepAliveTimeout, the more likely Garoon is to respond slowly when Garoon handles many requests.

- 3. Check that the THP function is disabled.**

```
[root@garoon admin]# cat /sys/kernel/mm/transparent_hugepage/enabled
```

If "never" is surrounded by [ ], the THP function is disabled.

Example:

```
always advise [never]
```

If "[always] advise never" or "always [advise] never" is displayed, the THP function is enabled.

Disable THP, if it is enabled. For details, refer to [\(Only for Linux\) Disabling Transparent Huge Pages \(THP\)\(20Page\)](#).

#### **4. Move to the directory where the installer exists.**

#### **5. Execute the installer.**

```
[root@garoon admin] # sh grn-5.15.0-linux-x64.bin
```

#### **6. Check the displayed information, type 'Y' or 'N', and press the Enter key.**

When you type 'Y', messages for step 7 and beyond will be shown in Japanese. When you type 'N', messages for step 7 and beyond will be shown in English. The following procedure assumes that you type 'Y':

```
Installing starts. このメッセージが正しく表示されている場合はYを入力し  
ます。
```

```
Installing starts. If the above message is displayed correctly, type 'Y',  
otherwise type 'N'.
```

#### **7. Read the Software License Agreement carefully. If you agree with it, type "yes" and press the Enter key.**

To scroll the window, press the Space or Enter key.

#### **8. Type an installation identifier and press the Enter key.**

The initial setting is "cbgrn". If you want to change the setting, type any installation identifier and press the Enter key.

The installation identifier that you enter here will be included in the URL to access Garoon.

Enter the installation identifier.

Valid characters are: a-z, A-Z, 0-9, and underscore (\_). An identifier cannot start with a number.

The installation identifier must be up to 10 characters.

[cbgrn]:

### **9. Select which MySQL installation to use. Select '1' and press the Enter key.**

Select whether to install the bundled MySQL Community Server (GPL) automatically (Recommended), or to use MySQL already installed on the server.

1: Install the bundled MySQL Community Server (GPL) automatically

2: Use MySQL already installed on the server

[1|2]:

### **10. Confirm the installation directory for Garoon programs and data, and then press the Enter key.**

If you want to change the installation directory, type the absolute path of another directory, and then press the Enter key.

Specify a directory for program files.

Check available free disk space. The data size may become large.

[/usr/local/cybozu]

### **11. Type the database administrator password and press the Enter key.**

Enter a password for the database administrator (cbroot).

Valid characters are: a-z, A-Z, 0-9, and underscore (\_).

Passwords must be 6 to 10 characters.

Enter Password:

### **12. Type the database user password and press the Enter key.**

Enter a password for the database user.  
Valid characters are: a-z, A-Z, 0-9, and underscore (\_).  
Passwords must be 6 to 10 characters.

Enter Password:

### 13. Type the Administrator password and press the Enter key.

Enter a password for "Administrator".  
Enter Password:

- Passwords must be 6 to 10 characters long.
- Passwords can contain the following characters.
  - a-z
  - A-Z
  - 0-9
  - \_
- The following characters are not acceptable: less than sign (<), greater than sign (>), vertical bar (|), and ampersand (&). In some environments, other symbols are also unacceptable.

### 14. Confirm the CGI directory of the Web server and press the Enter key.

If you want to change the CGI directory, type the absolute path of another directory, and then press the Enter key.

Set the CGI directory.  
The installation directory is set to "(CGI directory)/cbgrn".  
Example: /var/www/cgi-bin/cbgrn  
[/var/www/cgi-bin]

### 15. Confirm the document root directory of the Web server and press the Enter key.

If you want to change the document root directory, type the absolute path of another directory, and then press the Enter key.

```
Specify the document root directory.  
The installation directory is set to "(document root directory)/cbgrn".  
Example: /var/www/html/cbgrn  
[/var/www/html]
```

## 16. Confirm the name of the Run As user of the Web server and press the Enter key.

When you want a different Run As user, type the name of the user and press the Enter key.

```
Enter the Web server Run As user name.  
[apache]:
```

When "nobody" is displayed, it indicates that the Web server service is not running. Press Ctrl + C to suspend the installation. Start the Web server service, and then execute the installer again.

## 17. Select which data sets you want to install, and press the Enter key.

You can select which data sets to install only if you typed 'Y' in step 6 and the display language is Japanese. This message does not appear if you typed 'N' in step 4.

```
Select the data that you want to install on Garoon. Select "Nothing" to  
install no data.  
1: Standard  
   Installs standard data, including Japanese holidays and request forms.  
2: Nothing  
[1|2]:
```

In the standard data, holidays, samples of workflow request form, and other information are registered. It is recommended that you install standard data if you plan to create users from scratch in Garoon.

You can also install standard data at a later time. For details, refer to [Initializing Garoon on Linux\(50Page\)](#).

**18. Check the displayed information. If it is correct, type "yes", and then press the Enter key.**

The installation will start.

```
Summary of install configuration
Installation directory for program files:      /usr/local/cybozu
Database administrator: croot
Database administrator password: cybozu
"Administrator" password:      cybozu
Database user password: cybozu
Data to be installed:  Standard data
Installation identifier:cbgrn
Web server user name:  apache
CGI installation directory:  /var/www/cgi-bin/cbgrn
Installation directory for image files: /var/www/html/cbgrn
Port number for communicating with MySQL:      3770
Installation script for scheduling service:      /etc/rc.d/init.d/cyss_cbgrn
Uninstallation script for Cybozu products:      /var/www/cgi-bin/cbgrn/
uninstall_cbgrn
Installation script for MySQL:  /etc/rc.d/init.d/cyde_5_0
Uninstallation script for MySQL: /usr/local/cybozu/mysql-5.0/
uninstall_cyde_5_0

Are you sure you want to install the product with the above settings? Are
you sure?
[yes or no]:
```

**19. The installation process may take a few moments. Afterwards, confirm that the installation is complete.**

```
Installing MySQL...
Installing CGI...
installing DB Script...
Installing Cybozu Scheduling Service...
Installing Web files...
Copying license files...
Installing uninstall scripts...
DataBase Initialization...
done.
```



The installation has completed successfully.  
Start a web browser and access the URL below:

`http://(FQDN or IP address of the server)/(virtual path to the CGI directory)/cbgrn/grn.cgi`

Example) `http://webserver.cybozu.co.jp/cgi-bin/cbgrn/grn.cgi`

Example) `http://10.10.203.55/cgi-bin/cbgrn/grn.cgi`

The message below may appear during the installation process, but the installation is completed successfully. No action required.

Warning: Using a password on the command line interface can be insecure.

## 20. Configure Garoon's initial settings.

For details, refer to [Post-Installation Tasks\(52Page\)](#).

### Note

- For Garoon version 3.5.0 and later, Garoon is initialized during the installation process. Therefore, it is not necessary for you to initialize Garoon before you can start using Garoon. After you start using Garoon, you can initialize Garoon if you want to delete data that you entered for trial use. For details on the initialization, refer to [Initializing Garoon on Linux\(50Page\)](#).
- If you access the Garoon URL but the screen is not displayed properly, check the following points:
  - The Run As user of the Web server ("apache" in the example above) has the Read permission on the document root directory of the Web server.
  - The Web server has virtual directories configured properly.  
For details, refer to [How to Create a Virtual Directory](#).
  - SELinux is disabled.
  - The firewall is configured correctly.

- The installation logs for Garoon and MySQL are saved in the following directories:
    - Installation log for Garoon: (directory where the installer was executed)/install.log
    - Installation log for MySQL: (directory where the installer was executed)/install\_cycle.log
- 

## Initializing Garoon on Linux

---

You can initialize Garoon when you want to delete sample data or data that you entered for trial use.

The initialization involves setting passwords for the Administrator of Garoon and the database user.

### Caution

- If you cancel the initialization process while it is in progress, Garoon may become unusable. If you cancel the initialization process midway, roll back Garoon to its pre-initialization state, and start the initialization process again from the beginning.
- 

### Steps:

#### 1. Start a command-line console, and stop the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn stop
```

#### 2. Move to the following directory:

```
(CGI directory)/(installation identifier)
```

Example:

```
cd /var/www/cgi-bin/cbgrn
```

### 3. Type the following command and press the Enter key:

Example:

```
./grn.cgi -C -q code/command/grn_initialize.csp db_admin_password='cybozu'
db_user_password='cybozu' garoon_admin_password='cybozu'
default_timezone='Asia/Tokyo' default_locale='ja' init_data='1'
```

Parameters:

db_admin_password	Specify the database administrator password.
db_user_password	Specify the database user password.
garoon_admin_password	Specify the Administrator password.
default_timezone	Specify the time zone information.
default_locale	This is a locale information. Select a language you use. ja: Japanese en: English zh: Chinese
init_data	Specify whether to install any data. <ul style="list-style-type: none"> <li>• 1: Installs standard data.</li> <li>• 0: Installs no data.</li> </ul> <p>In the standard data, holidays, samples of workflow request form, and other information are registered.</p>

### 4. Type 'y' and press the Enter key.

```
Do you really initialize Garoon? (y/[n]) :
```

To cancel the initialization, type 'n' and press the Enter key.

## 5. Confirm that the initialization is completed successfully.

```
Done in 18 minutes 18 seconds.
```

## 6. Start the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn start
```

## 2.4. Post-Installation Tasks

---

After Garoon is installed and initialized, perform additional tasks such as checking the log file and configuring settings on Garoon for starting its operation.

### Checking the Log File

---

You can view the `grn_initialize.log` file to check whether the initialization completed successfully. The `grn_initialize.log` file is stored in the following directory if Garoon was installed in the default installation directory:

- For Windows: `C:\inetpub\scripts\cbgrn`
- Linux: `/var/www/cgi-bin/cbgrn`

#### Example of `grn_initialize.log` (for Windows)

```
2021-09-02 15:56:28 Writing to log file: C:
\inetpub\scripts\cbgrn\grn_initialize.log
2021-09-02 15:56:28 Garoon: Version 5.15.0
2021-09-02 15:56:28 Operating System: Windows NT TC-WIN2022-2 10.0 build 14393
(Windows Server 2022) AMD64
```

```
2021-09-02 15:56:28 Command Line Parameters: db_admin_password='cybozu'  
db_user_password='cybozu' garoon_admin_password='cybozu' default_timezone='Asia/  
Tokyo' default_locale='ja' force_initialize='yes' init_data='1'  
2021-09-02 15:56:28 Starting  
2021-09-02 15:56:41 Done in 13 seconds.1
```

<sup>1</sup>: After the initialization is completed, this line indicates how much time the process took.

## Changing MySQL Settings

---

When your server machine has 8 GB or more memory installed, change the mysqld settings. To change the mysqld settings, edit the MySQL configuration file (my.ini or my.cnf).

### Steps:

#### 1. Stop the Web server service.

#### 2. Stop Garoon services.

For details, refer to the [Stopping Services\(83Page\)](#) section.

#### 3. Back up the MySQL configuration file.

- If you installed MySQL bundled in the Garoon installer and installed Garoon in the default installation directory, the configuration file exists in the following directory:
  - For Windows: C:\Program Files\Cybozu\mysql-5.0\etc\my.ini
  - For Linux: /usr/local/cybozu/mysql-5.0/etc/my.ini
- If you use your existing MySQL installation, rather than installing MySQL along with Garoon, back up the configuration file of the existing MySQL installation.
  - Example of the directory on Windows: C:\ProgramData\MySQL\MySQL Server 8.0\my.ini
  - Example of its directory on Linux: /usr/my.cnf

#### 4. Edit the configuration file to change the setting values.

For details, refer to [Recommended Values in the Configuration File \(my.ini or my.cnf\)](#) (54Page).

## 5. Start Garoon services.

For details, refer to the [Starting Services\(82Page\)](#) section.

## 6. Start the Web server service.

### Recommended Values in the Configuration File (my.ini or my.cnf)

Recommended values vary depending on the amount of memory installed on the server machine where MySQL is running.

Leave the default values for all items except "innodb\_buffer\_pool\_size" and "max\_connections".

#### If the Amount of Installed Memory Is 80 GB or Less

Item	8GB	16GB	24GB	48GB	80GB
Amount of memory consumed by Garoon	5.2GB	12GB	18GB	36GB	60GB
Setting values for innodb_buffer_pool_size	4600M	11200M	17100M	34600M	57700M
Setting values for max_connections	50	50	50	50	100

#### If the Amount of Installed Memory Is 128 GB or More

Item	128GB	154GB	180GB	206GB	232GB	256GB
Amount of memory consumed by Garoon	96GB	115.5GB	135GB	154.5GB	174GB	192GB
Setting values for innodb_buffer_pool_size	92800M	111400M	130500M	149100M	168100M	185300M

Item	128GB	154GB	180GB	206GB	232GB	256GB
Setting values for max_connections	100	150	150	200	200	250

## Configuring Anti-virus Software

When you install Garoon on the same server where anti-virus software is running, you must exclude the following directories from anti-virus scanning.

- (CGI directory)/(installation identifier)
- (document root directory)/(installation identifier)
- (installation directory)/directories under mysql-5.0, except "files" directory

In the default settings, Garoon is installed in the following directory path.

For Windows:

- C:\inetpub\scripts\cbgrn
- C:\inetpub\wwwroot\cbgrn
- Windows OS: Directories other than "files" under C:\Program Files\Cybozu\mysql-5.0

For Linux:

- /var/www/cgi-bin/cbgrn
- /var/www/html/cbgrn
- Directories other than "files" under /usr/local/cybozu/mysql-5.0

### Note

- If you run anti-virus software on the server machine where Garoon is in operation, the performance of Garoon may be degraded.
- If you run the full-scan of anti-virus software, you must stop Garoon.  
For details, refer to [Starting and Stopping Services\(82Page\)](#).

## Configure Necessary Settings to Start the Operation of Garoon

---

Register customer information and system administrator, and configure the necessary Garoon settings before you start the operation of Garoon. For details, refer to [Introduction Flow](#).



## 3 chapter Upgrade

Direct upgrade to Garoon version 5.15 is supported only from versions 5.x.x.

If you are using Garoon prior to version 5.0, upgrade it to version 5.0 first, then upgrade it to 5.15.

### Note

- The upgrade may take a long time depending on the amount of data, usage conditions, and the performance of the server running Garoon. It is recommended to check the time required for the upgrade in the test environment before upgrading the production environment.

For the approximate time required for upgrading, refer to the article [I would like to know the approximate time to upgrade "Garoon"](#) in the FAQ.

- If you have any questions, consult our official partners or your vendor.  
You can find our partners by searching [Cybozu Partner Network](#) in our product site.
- With Garoon version 4.0.0 or later, you cannot use Cybozu Garoon 3 Reminder. After you upgrade Garoon to version 4.0.0 or later, you must use Cybozu Desktop 2.
- If you upgrade Garoon to version 5.15 in the environment where the Full Text Search Server is currently in use, the Full Text Search Server must also be upgraded to version 2.0.3 or later. The following table describes the supported combinations of Garoon versions and Full Text Search Server versions:

Garoon version	Supported Full Text Search Server version
Garoon version 4.6.x, 4.10.x, 5.0.x, 5.5.x, 5.9.x, 5.15.x	2.0.3
Garoon version 4.2.x	2.0.1, 2.0.2, 2.0.3
Garoon version 4.0.x	2.0.1, 2.0.2, 2.0.3

- The following Power Up Kit series cannot be used with Garoon version 5.0.0 or later.
  - Power Up Kit Series Workflow Paper Layout for Garoon

- Power Up Kit Series Workflow External Database Connector for Garoon
  - Power Up Kit Series Multi-Company for Garoon
  - If you have used Garoon 4.0.x, 4.2.x, or 4.6.x, upgrading to Garoon 5.15.0 may fail. To confirm that Garoon you are using is affected by this issue, please consult with our official partner.
    - **For official partners:**  
For details on this issue, refer to [Cybozu Knowledge Base site: Articles exclusively for partners](#) (official partner site). You need to log in to CyPN Portal to refer to the article.
- 

## 3.1. Preparing for Upgrading

---

To upgrade Garoon, the following preparation steps are required:

### Checking Upgrade Requirements

---

If you use Power Up Kit Series Group Mail for Garoon, you must consult our official partners or your vendor.

You can find our partners by searching [Cybozu Partner Network](#) in our product site.

### Backing Up the Current Garoon Instance

---

Before you upgrade Garoon, you must back up the data for your current instance. For details on how to back up, refer to [Backup and Restoration](#) in the "Administrator Help" for the version you are currently using.

## Ensuring that You Know the Database Administrator Password

---

You must know the database administrator password that was set when the current Garoon instance was installed.

## Changing IIS Settings

---

If you upgrade Garoon in Windows environment, perform the following to change IIS settings.

- Add MIME types
- Enable directory browsing
- Edit handler mappings:

Change this setting if you use the different versions of IIS before and after the upgrade.

For details on how to configure the settings, refer to [Changing IIS Settings\(35Page\)](#).

## Checking Libraries

---

For Linux, ensure that the libraries required for running Garoon are installed. For libraries used by Garoon, refer to [Necessary Libraries on Linux \(Garoon 5.x.x or later\)](#).

## Stopping the Full Text Search Server

---

When using the Full Text Search Server, stop Solr and Worker on the server machine where the Full text search server is deployed.

It is recommended that you stop the Full Text Search Server after stopping Garoon.

**For Windows:**

1. From Administrative Tools on Windows, open "Services".
2. Select the following services, and click "Stop Service".
  - Cybozu\_SearchServer\_Worker
  - Cybozu\_SearchServer\_Solr

### For Linux:

Run the following commands sequentially.

```
[root@garoon admin]# /etc/init.d/cbss_solr stop
[root@garoon admin]# /etc/init.d/cbss_worker stop
```

For details on how to stop the services, refer to the [Full Text Search Server Guide](#).

## 3.2. Upgrading on Windows

---

This section describes how to upgrade Garoon, based on the following assumptions:

- OS: Windows Server 2022
- Web server service: IIS 10.0
- CGI directory of the Web server: C:\inetpub\scripts
- Document root directory of the Web server: C:\inetpub\wwwroot
- Installation identifier: cbgrn
- MySQL: Installing MySQL bundled in the Garoon installer

### Caution

- Do not terminate the upgrade process when the process is in progress.
- Installing Garoon also installs the Visual C++ redistributable packages for Visual Studio 2013 and 2015. Do not delete the package.

- When you are using Full Text Search Server, it is recommended that you start and stop the server by taking the following steps.
    - Stopping:  
Stop the Full Text Search Server after stopping Garoon
    - Starting:  
Start the Full Text Search Server before starting Garoon
- 

**Steps:**

- 1. Log in to the server machine where Garoon is installed as a user who has local Administrator rights on a destination server.**
- 2. Stop the Web server service.**
- 3. On Windows, from Administrative Tools, open "Services".**
- 4. Select "Cybozu\_Scheduling\_Service\_cbgrn" and click "Stop Service".**
- 5. If the following services are running, click [Stop Service] to stop them.**
  - DHCP Client
  - Windows Event Log

If the above services are running, upgrading Garoon may fail.

- 6. Check that the status of Cybozu\_Database\_Engine\_5\_0 is "Running", and then close the "Services" window.**

If "Cybozu\_Database\_Engine\_5\_0" is not running, click "Start Service" and close the "Services" window. If you leave the window open and start the upgrade process, the process may fail.

- 7. Launch the installer for Garoon version 5.15.0 and click Next.**
- 8. Enter the database administrator password and click Next.**

The installation starts.

- 9. On the "Update complete" screen, click "Finish".**

- 10. On Windows, from Administrative Tools, open "Services".**
- 11. Select "Cybozu\_Scheduling\_Service\_cbgrn" and click "Start Service".**
- 12. If you stopped the following services at step 5, click [Start Service] to start them.**
  - DHCP Client
  - Windows Event Log
  
- 13. Start the Web server service.**

---

#### Note

- When you upgrade Garoon, log files are generated in the following locations:
    - Installation log for MySQL: C:\WINDOWS\SysWow64\\_cb\_installer.log
    - Upgrade log: C:\inetpub\scripts\cbgrn\versionup\_###.log  
The placeholder "###" represents a three-digit number.
    - MySQL errors: C:\ProgramFiles\Cybozu\mysql-5.0\data\error.log
  
  - The message below appears during the upgrade process, but the process is completed successfully. No action required.
    - Warning: Using a password on the command line interface can be insecure.
    - Warning: Trigger cb\_cbgrn.\_queue.notify\_to\_worker does not have CREATED attribute.
-

---

## 3.3. Upgrading on Linux

---

This section describes how to upgrade Garoon, based on the following assumptions:

- OS : Red Hat Enterprise Linux 8
- Web server service: Apache 2.4.37
- CGI directory of the Web server: /var/www/cgi-bin
- Document root directory of the Web server: /var/www/html
- Installation identifier: cbgrn
- MySQL: Installing MySQL bundled in the Garoon installer

### Caution

- Before you start an upgrade, ensure that the libraries required for running Garoon are installed.

For details, refer to [\(Only for Linux\) Installing Libraries Required for Garoon\(23Page\)](#).

- The installer must be in a directory for which the Run As user of the Web server service has Execute and Write permissions. The Run As user must have Execute and Write permissions on all parent directories of the directory that contains the installer.
- Do not terminate the upgrade process when the process is in progress.
- When you are using Full Text Search Server, it is recommended that you start and stop the server by taking the following steps.
  - Stopping:  
Stop the Full Text Search Server after stopping Garoon
  - Starting:  
Start the Full Text Search Server before starting Garoon

---

### Steps:

- 1. Log into the server machine as a root user.**
- 2. Stop the Web server service on the server machine.**

```
[root@garoon admin]# systemctl stop httpd.service
```

### 3. Stop the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn stop
```

### 4. Check the status of the MySQL service.

```
[root@garoon admin]# /etc/init.d/cyde_5_0 status
```

Start the MySQL service if it is not running.

```
[root@garoon admin]# /etc/init.d/cyde_5_0 start
```

### 5. Check httpd.conf to ensure that KeepAlive is disabled.

For details on how to check or edit KeepAlive settings, refer to the following section:

For details, refer to [\(Only for Linux\) Disabling KeepAlive in Apache\(19Page\)](#).

---

#### Note

- When you choose to enable KeepAlive, you should adjust the KeepAliveTimeout value for your environment. The greater the value of KeepAliveTimeout, the more likely Garoon is to respond slowly when Garoon handles many requests.
- 

### 6. Check that the THP function is disabled.

```
[root@garoon admin]# cat /sys/kernel/mm/transparent_hugepage/enabled
```

If "never" is surrounded by [ ], the THP function is disabled.

Example:



```
always madvise [never]
```

If "[always] madvise never" or "always [madvise] never" is displayed, the THP function is enabled.

Disable THP, if it is enabled. For details, refer to [\(Only for Linux\) Disabling Transparent Huge Pages \(THP\)\(20Page\)](#).

## 7. Move to the directory where the installer exists.

## 8. Execute the installer.

```
[root@garoon admin] # sh grn-5.15.0-linux-x64.bin
```

## 9. Check the displayed information, type 'Y', and then press the Enter key.

Garoonのインストールを開始します。このメッセージが正しく表示されている場合はYを入力します。

Installing starts. If the above message is displayed correctly, type 'Y', otherwise type 'N'.

## 10. If you agree with the Software License Agreement, type "yes" and press the Enter key.

To scroll the window, press the Space or Enter key.

If you do not agree with the Software License Agreement, type "no" and press the Enter key. The upgrade process will stop.

## 11. Choose the option to upgrade. Type '1' and press the Enter key.

Garoon is already installed.

1: Upgrade

2: Partial Uninstallation (Customizable resource files and database files remain undeleted.)

3: Complete Uninstallation (Completely remove all features and components.)

[1|2|3]:

**12. Confirm the directory where program files will be installed. Type the database administrator password and press the Enter key.**

Cybozu program files will be installed in the directory `"/usr/local/cybozu"`.

Enter a password for the database administrator (cbroot).

Valid characters are: a-z, A-Z, 0-9, and underscore (\_).

Passwords must be 6 to 10 characters.

Enter Password:

**13. Check the displayed information. If it is correct, type "yes", and then press the Enter key.**

The installation will start.

To cancel the installation, type "no" and press the Enter key.

Summary of install configuration

Installation directory for program files: `/usr/local/cybozu`

Database administrator: `cbroot`

Database administrator password: `cybozu`

Installation identifier: `cbgrn`

Web server user name: `apache`

CGI installation directory: `/var/www/cgi-bin/cbgrn`

Installation directory for image files: `/var/www/html/cbgrn`

Port number for communicating with MySQL: `3770`

Installation script for scheduling service: `/etc/rc.d/init.d/cyss_cbgrn`

Uninstallation script for Cybozu products: `/var/www/cgi-bin/cbgrn/`

`uninstall_cbgrn`

Installation script for MySQL: `/etc/rc.d/init.d/cyde_5_0`

Uninstallation script for MySQL: `/usr/local/cybozu/mysql-5.0/`

`uninstall_cyde_5_0`

Are you sure you want to install the product with the above settings? Are you sure?

[yes or no]:

**14. Confirm that the upgrade has completed successfully.**

```
Upgrade completed successfully.  
Installing Cybozu Scheduling Service...  
Installing Web files...  
Copying license files...  
Installing uninstall scripts...
```

```
The installation has completed successfully.  
Start a web browser and access the URL below:
```

```
http://(FQDN or IP address of the server)/(virtual path to the CGI  
directory)/cbgrn/grn.cgi
```

```
Example) http://webserver.cybozu.co.jp/cgi-bin/cbgrn/grn.cgi
```

```
Example) http://10.10.203.55/cgi-bin/cbgrn/grn.cgi
```

### 15. Start the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn start
```

### 16. Check that the scheduling service is running.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn status
```

When the scheduling service is running, this command returns the process ID of the running process.

Example of a returned process ID:

```
sched(31622) is running...
```

### 17. Start the Web server service on the server machine.

```
[root@garoon admin]# systemctl start httpd.service
```

### 18. Check that the Web server service is running on the server machine.

```
[root@garoon admin]# systemctl status httpd.service
```

When the Web Server Services are running, the service status shows "active (running)".

Example of the service status:

```
Active: active (running)
```

---

### Note

- When you upgrade Garoon, log files are generated. The log files exist in the following directories:
    - Installation log for Garoon: `/(directory where the installer was executed)/install.log`
    - Installation log for MySQL: `/(directory where the installer was executed)/install_cycle.log`
  - You may encounter the following warnings during the upgrade, but you do not need to take any action. The installation has been successfully completed.
    - Warning: Using a password on the command line interface can be insecure.
    - Warning: Trigger `cb_cbgrn._queue.notify_to_worker` does not have `CREATED` attribute.
- 

## 3.4. Post-Upgrade Necessary Tasks

---

Perform the following tasks if required:

### Checking the Log File

---

Open the log files to check whether files were updated successfully.

The log files contain the following results:

- Report on the MySQL update process
- Report on the updated Garoon data
- Report on the update program execution

If you installed MySQL bundled in the Garoon installer and installed Garoon in the default installation directory, the log files are generated in the following files (where the placeholder "###" represents a three-digit number):

- **For Windows:**

- Installation log for MySQL: C:\WINDOWS\SysWow64\\_cb\_installer.log
- Execution result of the update program: C:\inetpub\scripts\cbgrn\versionup\_###.log
- MySQL errors: C:\ProgramFiles\Cybozu\mysql-5.0\data\error.log

- **For Linux:**

- Installation log for Garoon: /(directory where the installer was executed)/install.log
- Installation log for MySQL: /(directory where the installer was executed)/install\_cycle.log
- Report on the update program execution: /var/www/cgi-bin/cbgrn/versionup\_###.log
- MySQL errors: /usr/local/cybozu/mysql-5.0/data/error.log

## How to View the Execution Results of the Update Program (versionup\_###.log)

The following is an example of the log file generated on Windows:

```
[Tue, 02 Aug 2022 13:00:28 +0900] DB root password corrected!
(省略)
20220802 13:00:30 [INFO] Started gm5_15_0_remote_main.
20220802 13:00:30 [INFO] Start update garoon.ini.
20220802 13:00:30 [INFO] Start set System version.
20220802 13:00:30 [INFO] End set System version.
20220802 13:00:30 [INFO] End update garoon.ini.
20220802 13:00:30 [INFO] Finished gm5_15_0_remote_main.
20220802 13:00:30 [INFO] Finished updating.
20220802 13:00:30 +0900 [INFO] Started updating after installation.
20220802 13:00:37 +0900 [INFO] Remove all files of smarty cache directory.
20220802 13:00:37 +0900 [INFO] Remove all the session data.
20220802 13:00:37 +0900 [INFO] Removed all files in the directory where the compiled container is located.
20220802 13:00:37 +0900 [INFO] Finished updating after installation.
[Tue, 02 Aug 2022 13:00:37 +0900] start removing versionup scripts
[Tue, 02 Aug 2022 13:00:37 +0900] end removing versionup scripts
```

- a): Report on the updated Garoon data
- b): Execution result of the update program

### Caution

- If you find a message with a state other than "INFO" or "OK", you must take appropriate action according to the message. If the cause of the error is unknown, consult our official partners or your vendor.

You can find our partners by searching [Cybozu Partner Network](#) in our product site.

### Checking Installation Log for MySQL (\_cb\_installer.log or install\_cyde.log)

Check whether the installation log for MySQL contains the error output.

The following errors may be reported on Windows, but the upgrade is completed successfully.

```
[ERROR] Check Groupmail  
[ERROR] Command = -c "C:\\Inetpub\\scripts\\cbgrn\\php.ini" -C -q -d  
output_buffering=false "(directory path)\\check_groupmail.csp"
```

However, if the error below is also reported after the errors above, the upgrade failed.

```
[ERROR] failed = 1
```

For a solution to the error, refer to [Recovering Garoon from an Upgrade Failure\(76Page\)](#).

### Checking MySQL Errors (error.log)

Check whether the installation log for MySQL contains the error output.

If it contains any errors or warnings, restart MySQL after the upgrade. If no errors or warnings are reported to error.log when you restart, the upgrade is completed successfully.

**Note**

- You do not need to take any action on the following warnings or errors. The upgrade has been successfully completed.
  - [Warning] 'NO\_AUTO\_CREATE\_USER' sql mode was not set.
  - [Warning] '(Strings)' entry '(Strings)' ignored in --skip-name-resolve mode.
  - [Warning] [MY-010995] [Server] Error in renaming mysql\_index\_stats.ibd
  - [Warning] [MY-011068] [Server] The syntax '--ssl=off' is deprecated and will be removed in a future release. Please use --tls-version=invalid instead.

## Checking Settings Required for Connecting to LDAP over SSL

To enable Garoon to connect to an LDAP server over SSL, additional configurations are required. For setting instructions, refer to [Enabling SSL/TLS Connections to LDAP Servers](#).

## Registering Your License

When you upgrade Garoon from version 4.10.x or earlier, you must register a license for version 5.15.0. Garoon runs in trial mode until you register the license. If the license is not registered within 60 days after the upgrade, Garoon applications will be no longer accessible.

**Steps:**

- 1. Log into Garoon with a system administrator account.**
- 2. In the "System settings" screen, select "Basic system administration" tab.**
- 3. Click License.**
- 4. Click Manage licenses.**
- 5. Click Register license.**

6. Enter your license key and click "Register".
7. Check that the license information is correct and click "Register".

## Receiving Weather Information

---

Weather information is unavailable temporarily immediately after an upgrade. Although weather information is received automatically every six hours, this means that weather information can be unavailable for up to about six hours.

To receive weather information immediately after an upgrade, you must receive it manually.

### Steps:

1. Log into Garoon with a system administrator account.
2. In the "System settings" screen, select "Application settings" tab.
3. Click "Cybozu Online Service".
4. Click "Receive event data".
5. Select the check box for weather information, and click "Receive".

## Starting the Full Text Search Server

---

When the Full Text Search Server is used, start Solr and Worker on the server machine where the Full Text Search Server is deployed.

It is recommended that you start the Full Text Search Server before starting Garoon.

### For Windows

1. From Administrative Tools on Windows, open "Services".
2. Select the following services, and click **Start Service**.
  - Cybozu\_SearchServer\_Worker
  - Cybozu\_SearchServer\_Solr



**For Linux**

Run the following commands sequentially.

```
/etc/init.d/cbss_worker start
/etc/init.d/cbss_solr start
```

For details on how to start the services, refer to the [Full Text Search Server Guide](#).

---

## Updating Indexes on the Full Text Search Server

---

When the Full Text Search Server is used, you must update indexes on the Full Text Search Server.

However, if you have executed "full\_index.csp" to recreate indexes after the upgrade, you do not need to update indexes.

Index updates can be updated during business hours, because the load on Garoon is low.

- **When to Update Indexes**

From the next version, if you upgrade Garoon to the latest version, it is recommended to update indexes after the upgrade.

- Garoon 4.0.x
- Garoon 4.2.0
- Garoon 4.2.1
- Garoon 4.2.2

If you upgrade Garoon 4.2.3 or later to the latest version, you do not need to update indexes.

- **Messages Displayed after the Command Execution**

By executing the command, indexes of the data related to Messages and Spaces are updated. Messages that are displayed are as follows.

- When indexes of the data related to Messages are updated:  
"Finish indexing of message data" is displayed. If you can search the data related to Messages, updating indexes has been completed.

- When indexes of the data related to Spaces are updated:  
"Finish indexing of space data." is displayed. If you can search the data related to Spaces, updating indexes has been completed.
- When updating indexes is not necessary:  
"No need to update index." is displayed.

---

### Note

- Full-text search is available even while updating indexes.
- 

### For Windows

- 1. Log in to the server machine as a user who has local Administrator rights.**
- 2. Start Command Prompt and move to the following directory:**

```
(CGI directory)/(installation identifier)
```

Example:

```
cd C:\\inetpub\\scripts\\cbgrn
```

- 3. Type the following command and press the Enter key:**

```
.\grn.exe -C -q code\\command\\fts\\update_index.csp exec
```

### For Linux

- 1. Log into the server machine as a root user.**
- 2. Move to the following directory:**

```
(CGI directory)/(installation identifier)
```

Example:

```
cd /var/www/cgi-bin/cbgrn
```

### 3. Type the following command and press the Enter key:

```
./grn.cgi -C -q code/command/fts/update_index.csp exec
```

## Delete unnecessary data on Workflow

---

If you have used the Workflow feature on Garoon before the upgrade, you may need to delete unnecessary data. By deleting unnecessary data, you can reduce data volume and expect the performance improvement.

We provide tools to delete unnecessary data. For details such as how to run the tool, refer to [if you click \*\*Change\*\* on the "Change branching conditions for request route step" screen, records in the database related to the route branching may be duplicated.](#) in the Cybozu Knowledge Base site (available only in Japanese).

## Confirm Whether Some Images in Bulletin Board Are Missing or Not

---

If you have used the following versions of Garoon before the upgrade, some images posted in Bulletin Board may be missing.

- Version 5.0.0, 5.0.1, or 5.0.2 (without applying patches)

These losses may be caused while using the versions of Garoon mentioned above. This issue is not caused by the upgrade.

Garoon version 5.15.0 includes the tool to output the list of missing images. Run the tool and confirm whether some images are missing or not.

For details on the issue and how to run the tool, refer to [Vulnerability of missing data in Bulletin Board](#) in the Cybozu Knowledge Base site (available only in Japanese).

## 3.5. Recovering from an Upgrade Failure

---

If an upgrade to version 5.15.0 failed, use the steps below to restore the previous version.

### Steps:

#### 1. Back up upgrade log files.

Back up log files that were generated when the upgrade failed. The log files are required for troubleshooting the failure. For details on the log files to be backed up, refer to [Checking the Log File\(68Page\)](#).

#### 2. Uninstall Garoon.

Select "Complete uninstallation" for the uninstallation option.  
For details, refer to [Uninstallation\(78Page\)](#).

#### 3. Install the previous version of Garoon as a new instance.

If any Service Pack was applied to the previous Garoon instance, apply the same Service Pack to the new instance.  
For details on how to install Garoon version 5.9.0 or earlier, refer to [Installation Guide](#).

#### 4. Restore backed up Garoon data.

Restore the backed up data of the previous Garoon instance to the new Garoon instance that you installed in step 3.  
For details on how to restore data, refer to [Backup and Restore](#).

### Note

- You can restore Garoon only by following the steps described above.
- You can download the version 5.x.x installer from the archive library. For the user name and password required to access the archive library, refer to "archive library" in our online support.

Log in to Garoon as a user who has the Administrator rights to access the online support.

Next, click the Administration Menu icon in the header, and then click **Support**. When the "Support" screen is displayed, follow the instructions on the screen to proceed.

---

## 4 chapter Uninstalling

---

This chapter describes how to uninstall Garoon.

### 4.1. Uninstalling on Windows

---

This section describes how to uninstall Garoon on Windows.

The steps below assume that you installed MySQL bundled in the Garoon installer and set the installation identifier to "cbgrn".

#### Caution

- Follow the steps described below to uninstall Garoon completely. Otherwise, some files may remain on the server machine.
- When the Full Text Search Server is used, firstly you must uninstall the Full Text Search Server and then uninstall Garoon if the following conditions are true. If you start with uninstalling Garoon, the Full Text Search Server might fail to be uninstalled.
  - The Full Text Search Server and Garoon are installed in the same directory on the same server.
  - You plan to use "Complete Uninstallation" to uninstall Garoon.

Under the conditions listed above, if you start with uninstalling Garoon and the Full Text Search Server fails to be uninstalled, please contact us.

---

#### Steps:

- 1. Log in to the server machine that you want to install Garoon on as a user who has local Administrator rights.**

**2. On Windows, from Control Panel, open "Programs and Features".**

**3. On the "Programs and Features" screen, right-click "Cybozu(R) Garoon 5.15.0 (cbgrn)" and click "Uninstall".**

The uninstaller starts.

**4. Select "Complete Uninstallation" and click "Next".**

The uninstallation process starts.

To cancel the uninstallation, click "Cancel".

**5. When the "Maintenance complete" screen appears, click "Finish".**

After the uninstallation is completed, a dialog box for selecting whether to restart the computer may be displayed. If you want to continue with uninstalling MySQL, select "No, I will restart my computer later".

**6. On the "Programs and Features" window, right-click "MySQL Community Server (GPL)" and click "Uninstall".**

The uninstaller starts.

**7. Select "Complete Uninstallation" and click "Next".**

The uninstallation process starts.

To cancel the uninstallation, click "Cancel".

**8. Restart the server machine.**

---

#### Note

- If you are using an existing MySQL installation instead of installing MySQL bundled in the Garoon installer, the Garoon uninstallation process does not uninstall the existing MySQL installation. If you want, you can uninstall the existing MySQL installation manually after you uninstall Garoon.

## 4.2. Uninstalling on Linux

---

This section describes how to uninstall Garoon on Linux.

### Caution

- Follow the steps described below to uninstall Garoon completely. Otherwise, some files may remain on the server machine.
- 

### Steps:

1. Log into the server machine as a root user.
2. Move to the directory where the installer exists.
3. Execute the installer.

```
[root@garoon admin] # sh grn-5.15.0-linux-x64.bin
```

4. Check the displayed information, type 'Y', and then press the Enter key.

```
Installing starts. このメッセージが正しく表示されている場合はY を入力しま
す。
```

```
Installing starts. If the above message is displayed correctly, type 'Y',
otherwise type 'N'.
```

5. Read the Software License Agreement carefully. If you agree with it, type "yes" and press the Enter key.

To scroll the window, press the Space or Enter key.

If you do not agree with the Software License Agreement, type "no" and press the Enter key. The installer exits.



**6. Type '3' to uninstall Garoon completely, and then press the Enter key.**

Type '2' when you want to keep resources such as configuration files and the database files.

**7. Type '3' to uninstall MySQL completely, and then press the Enter key.**

---

**Note**

- If you are using an existing MySQL installation instead of installing MySQL bundled in the Garoon installer, the Garoon uninstallation process does not uninstall the existing MySQL installation. If you want, you can uninstall the existing MySQL installation manually after you uninstall Garoon.
-

## 5 chapter Starting and Stopping Services

---

This chapter describes how to start and stop the scheduling service and the MySQL service. The steps below assume that you installed MySQL that is bundled in the Garoon installer and set the installation identifier to "cbgrn".

### 5.1. Starting Services

---

Start the MySQL service first, and then the scheduling service.

#### For Windows

---

**Steps:**

- 1. On Windows, from Administrative Tools, open "Services".**
- 2. Select "Cybozu\_Database\_Engine\_5\_0" and click "Start Service".**  
When you use an existing MySQL installation, rather than installing MySQL bundled in the Garoon installer, start the service of the existing MySQL installation.
- 3. Select "Cybozu\_Scheduling\_Service\_cbgrn" and click "Start Service".**

#### For Linux

---

**Steps:**

- 1. Start the MySQL service.**

```
[root@garoon admin]# /etc/init.d/cyde_5_0 start
```

When you use an existing MySQL installation, rather than installing MySQL bundled in the Garoon installer, start the service of the existing MySQL installation.

## 2. Start the scheduling service.

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn start
```

## 5.2. Stopping Services

---

Stop the scheduling service first, and then the MySQL service.

### For Windows

---

#### Steps:

1. On Windows, from Administrative Tools, open "Services".
2. Select "Cybozu\_Scheduling\_Service\_cbgrn" and click "Stop Service".
3. Select "Cybozu\_Database\_Engine\_5\_0", and click "Stop Service".

When you use an existing MySQL installation, rather than installing MySQL bundled in the Garoon installer, stop the service of the existing MySQL installation.

### For Linux

---

**Steps:**

**1. Stop the scheduling service.**

```
[root@garoon admin]# /etc/init.d/cyss_cbgrn stop
```

**2. Stop the MySQL service.**

```
[root@garoon admin]# /etc/init.d/cyde_5_0 stop
```

When you use an existing MySQL installation, rather than installing MySQL bundled in the Garoon installer, stop the service of the existing MySQL installation.

## 6 chapter Organization of Files

This appendix describes how Garoon files are organized. The description assumes that the installation identifier is "cbgrn". The installed files are categorized into the following four groups:

- CGI application files
- MySQL
- Full Text Search Server
- Image file

### 6.1. Organization of Files on Windows

#### ■ CGI application

The CGI application of Garoon is installed in the CGI directory that you specified during installation. The various files of the CGI application are stored in a subdirectory of the CGI directory that is named with your installation identifier.

- Example of the CGI directory: C:\inetpub\scripts

```

C:\inetpub\scripts      CGI directory
├─ \cbgrn              installation identifier
│  └─ \code            Garoon programs
│     └─ \command
│     └─ \doc_root
│     └─ \include
│     └─ \pear
│     └─ \plugin
│     └─ \sched
│     └─ \smarty
│     └─ \vendor
├─ \db
└─ \extensions         Necessary PHP extension files

```

```
├ \grn      Necessary configuration files for Garoon
├ \help
├ \initialize
├ \locale   Garoon language resources
├ \logs
├ \page     Garoon template files
├ \sessiondata  PHP session data
├ \smarty
│   ├── \cached      Cache data of the smarty library
│   └── \compiled    Compiled templates of the smarty library
├ \tmp      Temporary files created by PHP scripts
├ \upload_temp  PHP temporary uploaded files
│
├ \cacert.pem
├ \common.ini
├ \db_error.log
├ \garoon.ini
├ \garoon_lwc.ini
├ \garoon_policy.ini
├ \grn.exe
├ \grn_initialize.log
├ \icudt71.dll
├ \icuin71.dll
├ \icui71.dll
├ \icuio71.dll
├ \icuuc71.dll
├ \libcrypto-1_1-x64.dll
├ \libmariadb.dll
├ \libsasl.dll
├ \libssh2.dll
├ \libssl-1_1-x64.dll
├ \LICENSE_en.txt
├ \LICENSE_ja.txt
├ \LICENSE_zh.txt
├ \logger.ini
├ \lwc.ini
├ \nghttp2.dll
├ \php.ini
├ \php8.dll
├ \sched.exe
├ \sched.ini
├ \sched.log
```

```

└─ \state.ini
└─ \system_admin.ini

```

## ■ MySQL

MySQL files are stored in the installation directory that you specified during installation.

- Example of the installation directory: C:\Program Files\Cybozu

C:\Program Files\Cybozu installation directory

```

└─ \mysql-5.0 MySQL files
  └─ \bin
    │ └─ \libcrypto-1_1-x64.dll
    │ └─ \libprotobuf-lite.dll
    │ └─ \libssl-1_1-x64.dll
    │ └─ \my_print_defaults.exe
    │ └─ \mysql.exe
    │ └─ \mysqladmin.exe
    │ └─ \mysqlbinlog.exe
    │ └─ \mysqlcheck.exe
    │ └─ \mysqld.exe
    │ └─ \mysqldump.exe
    │ └─ \mysqlimport.exe
    │
  └─ \data MySQL data and logs
    │ └─ \cb_cbgrn
    │ └─ \cb_slash
    │ └─ \mysql
    │ └─ \performance_schema
    │ └─ \sys
    │ └─ \#ib_16384_0.dblwr
    │ └─ \#ib_16384_1.dblwr
    │ └─ \auto.cnf
    │ └─ \error.log
    │ └─ \ib_buffer_pool
    │ └─ \ib_logfile0
    │ └─ \ib_logfile1
    │ └─ \ib_logfile2
    │ └─ \ibdata1
    │ └─ \ibtmp1
    │ └─ \mysql.ibd

```

```
|   └─ \mysql.pid
|   └─ private_key.pem
|   └─ public_key.pem
|   └─ \slow.log
|   └─ \undo_001
|   └─ \undo_002
|
└─ \etc
   └─ \Samples
   └─ \my.ini
   └─ \worker.ini
|
└─ \files Attachments in Garoon
   └─ \cbgrn
└─ \lib
   └─ \plugin
   └─ \private
└─ \share
   └─ \charsets
   └─ \english
└─ \tmp
```

### ■ Full Text Search Server

The Full Text Search Server files are stored in the installation directory that you specified during installation.

- Example of the installation directory: C:\Program Files\Cybozu

```
C:\Program Files\Cybozu installation directory
└─ \cbfts Full Text Search Server files
   └─ \conf
      └─ \cb
         └─ \fts.json
└─ \logs
```



**Note**

- The Garoon installation process deploys Full Text Search Server files but they are limited to files that are required for Garoon to connect the Full Text Search Server. The Full Text Search Server program is not installed.

When the Full Text Search Server program is installed, many directories and files that are not listed above are deployed.

**Image file**

Image files are stored in a subdirectory named with your installation identifier.

- Example of the document root directory: C:\inetpub\wwwroot

```
C:\inetpub\wwwroot      Document root directory
├─ \cbgrn      installation identifier
├─ \3rd_party_license      Third party license information
├─ \api      Files used by related products
├─ \fw      Framework image files, and so on
├─ \grn      Garoon image files, and so on
│   ├─ \common
│   ├─ \html
│   └─ \image
│       ├─ \cybozu
│       └─ \oauth
├─ \help
├─ \js      Garoon Help files
└─ \tinymce      Image files for rich text format, and so on
```

## 6.2. Organization of Files on Linux

**CGI application**

The CGI application of Garoon is installed in the CGI directory that you specified during installation. The various files of the CGI application are stored in a subdirectory of the CGI directory that is named with your installation identifier.

- Example of the CGI directory: `/var/www/cgi-bin`

```
/var/www/cgi-binCGI directory
└─ /cbgrn      installation identifier
   └─ /code    Garoon programs
      └─ /command
      └─ /doc_root
      └─ /include
      └─ /pear
      └─ /plugin
      └─ /sched
      └─ /smarty
      └─ /vendor
      |
      └─ /data
      └─ /db
      └─ /extensions      Necessary PHP extension files
      └─ /grn            Necessary configuration files for Garoon
      └─ /locale         Garoon language resources
      └─ /logs
      └─ /page           Garoon template files
      └─ /sessiondata    PHP session data
      └─ /smarty
      |   └─ /cached      Cache data of the smarty library
      |   └─ /compiled    Compiled templates of the smarty library
      |
      └─ /tmp            Temporary files created by PHP scripts
      └─ /upload_tmp     PHP temporary uploaded files
      └─ /common.ini
      └─ /cyss_cbgrn.pid
      └─ /db_error.log
      └─ /garoon.ini
      └─ /garoon_lwc.ini
      └─ /garoon_policy.ini
      └─ /grn.cgi
      └─ /grn.exe
```

```

├ /grn_initialize.log
├ libmariadb.so
├ libmariadb.so.3
├ /LICENSE_en.txt
├ /LICENSE_ja.txt
├ /LICENSE_zh.txt
├ /logger.ini
├ /lwc.ini
├ /php.ini
├ /sched
├ /sched.ini
├ /sched.log
├ /script.log
├ /state.ini
├ /system_admin.ini
└ /uninstall_cbgrn

```

## ■ MySQL

MySQL files are stored in the installation directory that you specified during installation.

- Example of the installation directory: `/usr/local/cybozu`

```

/usr/local/cybozu      MySQL files
├ /mysql-5.0
│ └ /bin
│   ├── /my_print_defaults
│   ├── /mysql
│   ├── /mysqladmin
│   ├── /mysqlbinlog
│   ├── /mysqlcheck
│   ├── /mysqld
│   ├── /mysqld_safe
│   ├── /mysqldump
│   └ /mysqlimport
│
└ /data
  ├── /cb_cbgrn
  ├── /cb_slash
  ├── /mysql
  └ /performance_schema

```

```
|  └ /sys
|  └ /#id_16384_0.dblwr
|  └ /#id_16384_1.dblwr
|  └ /#innodb_temp
|  └ /auto.cnf
|  └ /error.log
|  └ /ib_buffer_pool
|  └ /ib_logfile0
|  └ /ib_logfile1
|  └ /ib_logfile2
|  └ /ibdata1
|  └ /ibtmp1
|  └ /mysql.ibd
|  └ /mysql.sock
|  └ /mysql.sock.lock
|  └ private_key.pem
|  └ public_key.pem
|  └ /rhel8-153126.pid
|  └ /slow.log
|  └ /undo_001
|  └ /undo_002
|
└ /etc
  └ /Samples
  └ /my.ini
  └ /worker.ini
  |
└ /files
  └ /cbgrn
  |
└ /lib
  └ /plugin
  └ /private
  |
└ /share
└ /support-files
└ /tmp
└ /uninstall_cyde_5_0
```

## Full Text Search Server

The Full Text Search Server files are stored in the installation directory that you specified during installation.

- Example of the installation directory: `/usr/local/cybozu`

```

/usr/local/cybozu      installation directory
├─ /cbfts             Full Text Search Server files
│  └─ /conf
│     └─ /cb
│        └─ /fts.json
└─ /logs

```

### Note

- The Garoon installation process deploys Full Text Search Server files but they are limited to files that are required for Garoon to connect the Full Text Search Server. The Full Text Search Server program is not installed.

When the Full Text Search Server program is installed, many directories and files that are not listed above are deployed.

### Image file

Image files are stored in a subdirectory named with your installation identifier.

- Example of the document root directory: `/var/www/html`

```

/var/www/html        Document root directory
├─ /cbgrn            installation identifier
│  └─ /3rd_party_license  Third party license information
│  └─ /api
│  └─ /fw            Framework image files, and so on
│  └─ /grn          Garoon image files, and so on
│     └─ /common
│     └─ /html
│     └─ /image
│        └─ /cybozu

```

```
|      └ /oauth
├ /help
├ /js      Files such as JavaScript files for displaying screens
└ /tinymce Image files for rich text format, and so on
```

### ■ Start-Up Script Files

The start-up script files are installed in the start-up script directory.

- Example of the start-up script directory: `/etc/rc.d/init.d`

```
MySQL service start-up script   : /etc/rc.d/init.d/cyde_5_0
Scheduling service start-up script:   : /etc/rc.d/init.d/cyss_cbgrn
```

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