

# Converge<sup>™</sup> Software v2.2

## SETUP AND REFERENCE GUIDE

Publication Number 100039539

Revision E



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**Revision history :** Pub. No. 100039539

| Revision | Date              | Description  |
|----------|-------------------|--|
| E        | 10 September 2019 | <ul style="list-style-type: none"><li>Updated the Converge™ Software version to v2.2 throughout the document. Added procedure to upgrade to Converge™ Software v2.2.</li><li>Added information for the Custom Ion AmpliSeq™ SNP Panels.</li><li>Added information for the Integrative Genomics Viewer (IGV).</li></ul>   |
| D        | 13 September 2018 | Update procedures for Converge™ Software v2.1.   |
| C        | 15 November 2017  | <ul style="list-style-type: none"><li>Update references to the Dell™ PowerEdge™ T110 II equipment to "T110 II or later".</li><li>Refer users to the <i>Thermo Fisher Scientific Software Licensing Quick Reference</i> (Pub. No. MAN0016342) to manage software licenses.</li><li>Add a troubleshooting procedure for recognizing the USB drive on the server.</li></ul> |
| B        | 24 March 2017     | Added information on new NGS and Audit modules.  |
| A        | 11 February 2016  | New user guide.  |

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# System description and setup

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## About this guide

The *Converge™ Software v2.2 Setup and Reference Guide* includes the following information.

- Instructions for initial setup and configuration of the Converge™ Software Server and Converge™ Software
- Instructions for managing the Converge™ Software Server and licenses
- Kinship and paternity module pedigree tree examples

For additional Converge™ Software information, see “Related documentation” on page 74.

## System components

The Converge™ system consists of the following components.

- **Converge™ Software Server**—A Linux™-based file server system provided by Thermo Fisher Scientific that hosts the server-based Converge™ Software using an Internet Protocol (IP) address configured in the system. The Converge™ Software Server requires an Administrator to manage user accounts. For more information about the server, see Appendix E, “About the Converge™ Software Server”.
- **Converge™ Software v2.2**—A software application that is pre-installed on the Converge™ Software Server. The Converge™ Software supports the human identification workflow and can be configured to use the following modules. For information on using the Converge™ Software, see the *Converge™ Software Help*.

| Analysis modules   | Management modules   |
|--|--|
| <ul style="list-style-type: none"> <li>– <b>NGS module</b>—Next-generation sequencing (NGS) data analysis and review; integrates with the Torrent Suite™ Software for automatic import of sample data.<br/>The following modules are available:               <ul style="list-style-type: none"> <li>– <b>NGS mtDNA module</b> for mitochondrial DNA</li> <li>– <b>NGS SNP module</b> for single nucleotide polymorphisms</li> <li>– <b>NGS STR module</b> for short tandem repeats</li> </ul> </li> <li>– <b>Kinship and Paternity module</b>—Integrates with the Case Management module; adds kinship and paternity analysis and reporting at the case level.</li> </ul> | <ul style="list-style-type: none"> <li>– <b>Case Management module</b>—Supports case, subject, and genotype or haplotype profile information management.</li> <li>– <b>Audit module</b>—Provides optional traceability for all user actions within the Converge™ Software. The Audit module is not enabled for use with the NGS mtDNA module.</li> </ul> |

## Browser and software requirements

### Browser requirements

The Converge™ Software v2.2 modules are supported for use with the following browsers.

| Module                            | Browser   |
|-----------------------------------|---|
| NGS module v1.2                   | Google™ Chrome™ 66 or later   |
| Case Management module v2.2       | <ul style="list-style-type: none"> <li>• Google™ Chrome™ 66 or later</li> <li>• Apple™ Safari™ 11.0.3 or later</li> <li>• Microsoft™ Internet Explorer™ 11</li> </ul> |
| Kinship and Paternity module v1.0 |   |
| Audit module v1.0                 |   |

### Software requirements for the NGS module

The Converge™ Software v2.2 NGS module requires the following versions of the Torrent Suite™ Software and HID Genotyper Plugin:

| NGS module | Torrent Suite™ Software | HID Genotyper Plugin |
|------------|-------------------------|----------------------|
| v1.2       | v5.10                   | v2.2                 |

---

**IMPORTANT!** Torrent Suite™ Software v5.10 is the only version supported for use with the Converge™ NGS module. Do not use other versions of the Torrent Suite™ Software. For additional information, contact [HIDTechSupport@thermofisher.com](mailto:HIDTechSupport@thermofisher.com).

---

### About the HID Genotyper Plugin

The HID Genotyper Plugin is an analysis plugin that runs on the Torrent Server and is configured through the Torrent Suite™ Software. The plugin performs the following functions:

- Analyzes barcoded libraries
- Creates optimized sequence alignments
- Generates the allele calls
- **When configured for use with the Converge™ Software**, automatically transfers the Torrent Suite™ Software analysis results to the Converge™ Software for secondary analysis with the appropriate Converge™ NGS module.

## Requirements for the IGV

The Integrative Genomics Viewer (IGV) can provide additional analysis features for the Converge™ NGS module.

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**IMPORTANT!** We do not provide customer support for the IGV. For more information on the IGV, see [software.broadinstitute.org/software/igv/](https://software.broadinstitute.org/software/igv/).

---

### Minimum computer requirements for the IGV

- Java™ v8, 64-bit

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**IMPORTANT!** Ensure that you use only the 64-bit version of Java™. If you have a 32-bit version of Java™ on your system, uninstall the 32-bit version.

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- ≥6 GB of RAM  
Depending on the size of the BAM file, 8 GB of RAM may be required.
- Any operating system that runs the Java™ Virtual Machine

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**IMPORTANT!** If you have a Windows™ operating system, it must be a 64-bit system.

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- ≥1 CPU

To set up the IGV, see page 37.

## System setup and configuration workflow

**Note:** This workflow is for new installations only. If you are upgrading an existing Converge™ Software database to Converge™ Software v2.2, go to “Upgrade to Converge™ Software v2.2” on page 60 .

### Chapter 2, “Unpack and connect the Converge™ Software Server”

“Unpack and inspect materials” on page 13



“Confirm that the site meets requirements” on page 14



“(If needed) Obtain electrical protective devices” on page 14



“Determine if the Converge™ system will be standalone or networked” on page 14



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### Chapter 3, “Configure the Converge™ Software Server”

“Sign into the Converge™ Software Server” on page 18



“Enable the ethernet port” on page 19



“Set the system time zone” on page 22



“Start the Converge™ Software services and create a domain name” on page 22



“Configure the Converge™ Software Server IP address” on page 23



### Chapter 4, “Start Converge™ Software v2.2, activate licenses, and configure settings”

“Access the software from the Converge™ Software Server desktop” on page 26



“Activate software licenses” on page 28



“Check for Converge™ Software updates” on page 30



“(Network systems only) Access the Converge™ Software from another computer” on page 30



“Configure user account and system settings” on page 31



**Chapter 5, “Set up the software for the NGS module”**

“Download the configuration files” on page 32



“Install the HID Genotyper Plugin and connect the Torrent Suite™ and Converge™ Software Servers” on page 34



“Install the configuration files in the Torrent Suite™ Software” on page 35



# Unpack and connect the Converge™ Software Server

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- Confirm that the site meets requirements ..... 14
- (If needed) Obtain electrical protective devices ..... 14
- Determine if the Converge™ system will be standalone or networked ..... 14
- Connect the Converge™ Software Server ..... 16

## Unpack and inspect materials

1. Unpack and inspect the materials required for installation as listed in the following table.

**Note:** The information in this table is subject to change. For the latest information, contact HID Technical Support. See “Customer and technical support” on page 75.

| Item   | Quantity |
|--|----------|
| Dell™ PowerEdge™ T130 Tower Server, motherboard v2 or later, with cabled hard drives | 1        |
| Dell™ Flat Panel Monitor, 23 inches (or equivalent) with cable                       | 1        |
| Dell™ Quiet Key USB Keyboard   | 1        |
| Dell™ Laser USB Mouse  | 1        |
| Power cord <sup>[1]</sup>  | 2        |
| RJ45 CAT6 Ethernet cable   | 2        |
| USB drive (Converge™ Software) <sup>[2]</sup>  | 1        |
| USB drive (Converge™ Software documentation <sup>[3]</sup> )                         | 1        |
| USB drive (for file transfer, database backup, and audit archive data storage)       | 1        |

<sup>[1]</sup> Supplied with the server and monitor. Supplies 13A/125V depending on the geographic location of the installation.

<sup>[2]</sup> Do not insert this USB drive in a port on a Windows™ system, this may corrupt the software on the USB drive.

<sup>[3]</sup> Includes instructions for software installation.

2. If any components are missing or damaged, contact your HID account manager for assistance.

## Confirm that the site meets requirements

Confirm that the installation site meets the environmental and electrical requirements explained in the manufacturer's documentation that accompanies the Converge™ Software Server or on the manufacturer's website.

### *(If needed)* Obtain electrical protective devices

We recommend several protective devices in environments with large voltage and power fluctuations.

| Recommended devices  |
|--|
| <p><b>Power line regulator</b></p> <ul style="list-style-type: none"> <li>• 1.5-kVA power line regulator</li> <li>• Use in areas where the supplied power fluctuates in excess of <math>\pm 10\%</math> of the normal voltage.</li> <li>• Power fluctuations can adversely affect the function of the instrument and computer.</li> </ul> <p><b>Note:</b> A power line regulator monitors the input current and adjusts the power supplied to the instrument or computer. It does not protect against a power surge or failure.</p>  |
| <p><b>Surge protector</b></p> <ul style="list-style-type: none"> <li>• 10-kVA surge protector (line conditioner)</li> <li>• Use in areas with frequent electrical storms or near devices that are electrically noisy, such as refrigerators, air conditioners, or centrifuges.</li> <li>• Short-duration, high-voltage power fluctuations can abruptly terminate the function of, and thereby damage the components of, the computer and the instrument.</li> </ul> <p><b>Note:</b> A dedicated line and ground between the instrument, computer, and the building's main electrical service can also prevent problems caused by power fluctuations.</p> |

## Determine if the Converge™ system will be standalone or networked

You can connect the Converge™ Software Server to a local network, or operate the server as a standalone (not networked) system.

- If you plan to operate the server as a standalone system, proceed to “Connect the Converge™ Software Server” on page 16.
- If you plan to connect the server to a local network, perform the following steps.
  1. Review your network policy for obtaining IP addresses (automatic DHCP or static IP) with a network administrator.
  2. If your network policy requires a static IP address assignment, obtain the address from a network administrator.

If needed at a later date, you can transition between a network system and a standalone system.

- To transition a networked system to a standalone system, see “Reset the Converge™ Software Server IP address” on page 52.
- To transition a standalone system to a networked system, see “Reconfigure the Converge™ Software Server IP address” on page 44.

If you require a custom network setup, contact HID Technical Support for more information. See “Customer and technical support” on page 75.

## Connect the Converge™ Software Server

1. Connect the keyboard, mouse, and monitor to the Converge™ Software Server according to the manufacturer's documentation.

**Note:** Ensure that at least one USB port is available on the front of the server for software installation and file transfers.

2. Install the blue DVI cable, USB, and power cable according to the manufacturer's documentation.

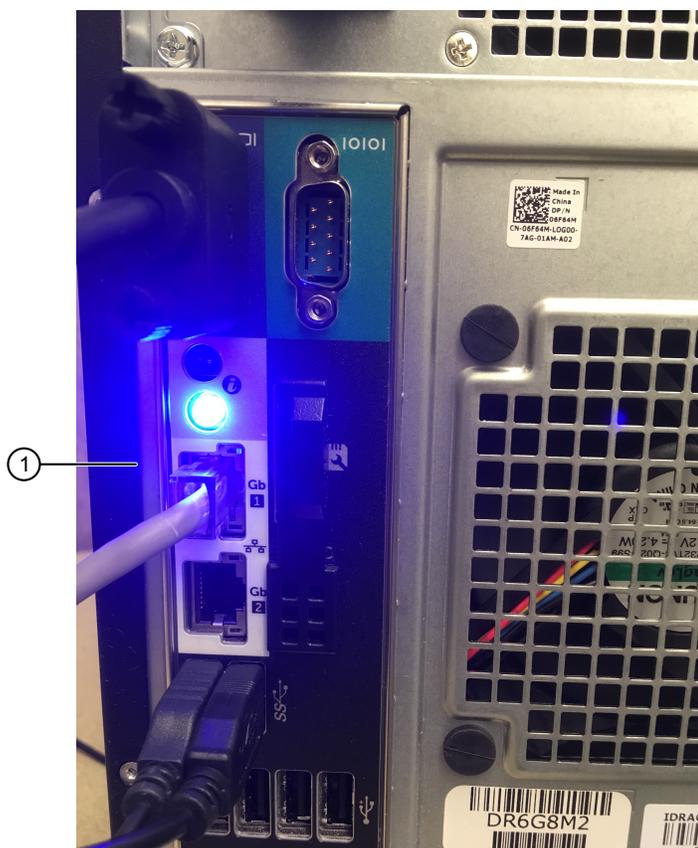
**Note:** If the monitor comes with a white VGA cable already attached, remove the VGA cable.

3. (If you will be accessing the server through a local network) Connect the Ethernet cable from the top port (1) on the back of the Converge™ Software Server to the local network.

---

**IMPORTANT!** The server has two ports. Use only the top port (1) because the Converge™ Software can read only this port.

---



① Top port (1)

4. Connect the monitor and the server to the power sockets.



# Configure the Converge™ Software Server

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- Enable the ethernet port ..... 19
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- Set the system time zone ..... 22
- Start the Converge™ Software services and create a domain name ..... 22
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## Sign into the Converge™ Software Server

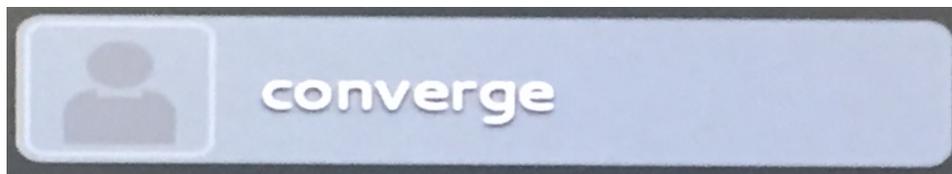
1. Press the power button on the front of the Converge™ Software Server, then wait 1–2 minutes for the server to power on.

---

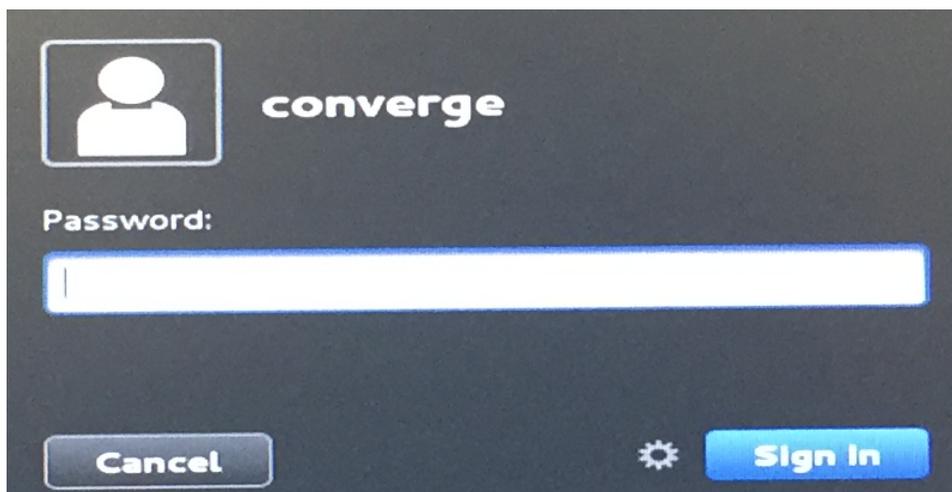
**IMPORTANT!** Do not interrupt the power on sequence until it is finished. If the server does not start, contact HID Technical Support for assistance.

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2. Click **converge** (this is the Converge™ Software Server UNIX™ account name).



3. When prompted, enter the initial password: **converge-admin**, then click **Sign In**.



4. (Recommended) Change the server (UNIX™) password.

---

**IMPORTANT! Potential data loss issue: When you change the server password, carefully document and store the new password. If the server (UNIX™) password is lost, the only way to reset the server password is to reboot the server and re-install the software. Data that have been backed up and stored in a different location can be restored; data that are stored on the server cannot be restored.**

---

- a. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
- b. In the **Terminal** window, type **passwd**, then press **Enter** on the keyboard.
- c. At the prompt, type the current password, then press **Enter** on the keyboard.

- d. At the prompt, type the new password, press **Enter** on the keyboard, then repeat to confirm the new password.

The password:

- Must be a minimum of 8 characters long
- Must consist of alphabetic and numeric characters
- Can contain hyphens, but not as the first or last character in the password
- Cannot include spaces or special characters ( ; : " < > \* + = \ | ? , )

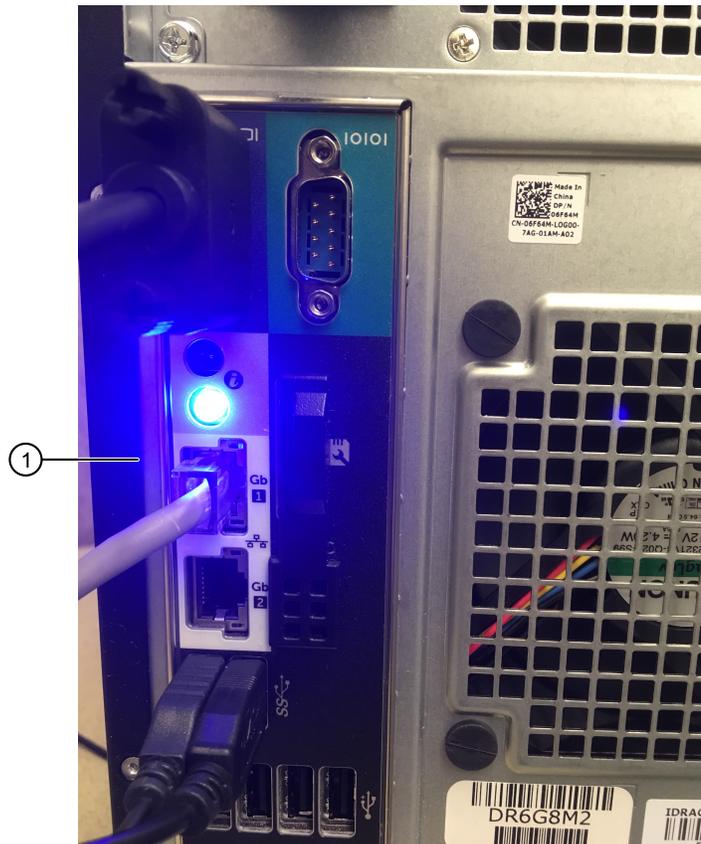
## Enable the ethernet port

1. Ensure that the Ethernet cable is connected to the top port (1) on the Converge™ Software Server.

---

**IMPORTANT!** The server has two ports. Use only the top port (1) because the Converge™ Software can read only this port.

---



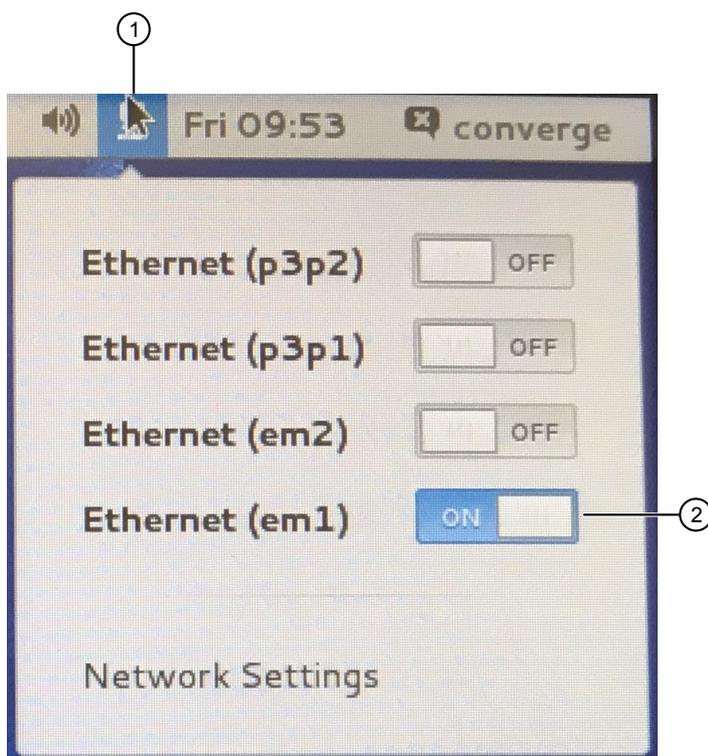
① Top port (1)

2. In the top right corner of the Converge™ Software Server desktop, click the network icon.
3. Click **Ethernet (em1)** to enable the port.

---

**IMPORTANT!** Click only the **Ethernet (em1)** port. The **Ethernet (em1)** port enables the top port (1) on the server, which is the only port that the Converge™ Software can read.

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- ① Network icon
- ② em1 port

## Access the CUTIL application

Use the CUTIL application to configure the Converge™ Software Server.

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard. The **Converge – Main Menu** is displayed.

```

~ — converge@converge-appliance:~ — ssh converge@10.43.40.77
Converge – Main Menu
appliedbiosystems by Thermo Fisher Scientific

0. exit
1. start converge services
2. shutdown converge services
3. re-configure the system
4. capture logs for diagnosis
5. reset superuser password
6. seed country
7. reset the server IP to factory settings
8. manage converge audit partitions
9. update server TimeZone

enter your option [0..n] : █
    
```

| Option  | Procedure   |
|---|---|
| <b>0. exit</b>                                    | To close the CUTIL application, select <b>0</b>                             |
| <b>1. start converge services</b>                 | “Start the Converge™ Software services and create a domain name” on page 22 |
| <b>2. shutdown converge services</b>              | “Shut down the Converge™ Software Server” on page 43                        |
| <b>3. re-configure the system</b>                 | “Configure the Converge™ Software Server IP address” on page 23             |
| <b>4. capture logs for diagnosis</b>              | “Access log files” on page 51   |
| <b>5. reset superuser password</b>                | “Reset Converge™ Software superUser password” on page 47                    |
| <b>6. seed country</b>                            | “Update or change countries and states” on page 46                          |
| <b>7. reset the server IP to factory settings</b> | “Reconfigure the Converge™ Software Server IP address” on page 44           |
| <b>8. manage converge audit partitions</b>        | “Retrieve archived audit records” on page 42                                |
| <b>9. update server TimeZone</b>                  | “Set the system time zone” on page 22                                       |

## Set the system time zone

If your system is not connected to a network, follow this procedure to set the system date and time.

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **9** (update server TimeZone), then press **Enter** on the keyboard.  
A list of geographic areas and time zones is displayed.
4. At the prompt "enter the geographic area by choosing from the above list", type your time zone or geographic location as shown on the screen, then press **Enter** on the keyboard.  
**Note:** Match the case and format of the listed zones and areas. For example, if you are located in the United States, type **US**.  
If there are multiple time zones within the area or zone that you enter, a second list of geographic areas/time zones is displayed.
5. *If prompted* "enter the sub\_geographic area by choosing from the above list", type your time zone or geographic location as shown in the second list on the screen, then press **Enter** on the keyboard.
6. Type **y**, then press **Enter** on the keyboard to confirm the time zone update.

## Start the Converge™ Software services and create a domain name

---

**IMPORTANT!** The first time that you start the services on the Converge™ Software Server, you are prompted to enter a domain name. **The domain name cannot be changed later.** When users sign in to the Converge™ Software, the domain is entered with the user name (<user>@<domain>). The domain name:

- **Must** contain an email suffix, such as ".com", ".org", and so on
- **Must** contain only alphabetic and/or numeric characters
- **Can** contain capital letters
- **Cannot** include spaces or special characters ( ; : " < > \* + = \ | ? , \_ - )

- 
1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
  2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
  3. In the **Converge – Main Menu**, type **1** (start converge services), then press **Enter** on the keyboard to start the services.
  4. (*First time starting services only*) Enter a domain name.
    - a. At the prompt, enter a domain name, then press **Enter** on the keyboard.

- b. At the prompt, enter the domain name again to confirm, then press **Enter** on the keyboard.
  - c. Note the domain name for later use.
5. At the prompt, enter the Converge™ Software Server UNIX™ password that you created in “Sign into the Converge™ Software Server” on page 18, then press **Enter** on the keyboard.

When the prompt is displayed again, the services are started.

## Configure the Converge™ Software Server IP address

Use the following procedure to configure the Converge™ Software Server IP address for both networked and standalone (not networked) systems. For more information on network and standalone systems, see “Determine if the Converge™ system will be standalone or networked” on page 14.

**Note:** If needed, you can reset the server to the default IP address later. See “Reset the Converge™ Software Server IP address” on page 52.

1. If you will use a static IP address, obtain the address from a network administrator.
2. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
3. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
4. In the **Converge – Main Menu**, type **3** (reconfigure the system) , then press **Enter** on the keyboard.
5. At the prompt “is the system IP address XX.XX.XX.XX> (y/n)”, enter an IP address according to the following table.

**IMPORTANT!** The IP address is required to access the software.

| Option   | Description  |
|--|--|
| Standalone system (not networked)                  | Enter <b>y</b> to accept the default IP address (127.0.0.1), then press <b>Enter</b> on the keyboard.  |
| Networked system: Use the auto-detected IP address | <ol style="list-style-type: none"> <li>1. Make note of the system IP address for later use.</li> <li>2. Enter <b>y</b> to accept the detected IP address, then press <b>Enter</b> on the keyboard.</li> </ol>  |
| Networked system: Enter a specific IP address      | <ol style="list-style-type: none"> <li>1. Enter <b>n</b> to specify a different IP address.</li> <li>2. At the prompt, enter the new IP address, then press <b>Enter</b> on the keyboard.<br/>Enter only numbers and "." (for example, <b>127.0.0.1</b>). Do not enter alphabetic characters.</li> </ol> |

**Note:** If you accidentally accept or enter the wrong IP address, see “Reconfigure the Converge™ Software Server IP address” on page 44.

The Converge™ Software is ready to use.



# Start Converge™ Software v2.2, activate licenses, and configure settings

- Access the software from the Converge™ Software Server desktop ..... 26
- Activate and manage software licenses ..... 27
- Check for Converge™ Software updates ..... 30
- (Network systems only) Access the Converge™ Software from  
another computer ..... 30
- Configure user account and system settings ..... 31

## Access the software from the Converge™ Software Server desktop

**Note:** A Converge™ Software administrator account (superUser) provides initial access to the Converge™ Software so that an administrator can activate and install the software licenses, set up additional user accounts, and perform additional configuration as needed.

1. On the Converge™ Software Server desktop, select **Application ▶ Internet ▶ Google Chrome** to launch the web browser.
2. In the browser address bar, enter the Converge™ Software Server IP address, then confirm that the Converge™ sign-in screen is displayed in the browser window. (In the example below, the user entered the IP address 172.16.254.1.)
  - **For networked systems**—Enter the IP address that you noted in “Configure the Converge™ Software Server IP address” on page 23.
  - **For standalone systems (not networked)**—Enter the default IP address 127.0.0.1.



3. At first sign-in to the software, enter the default Converge™ Software administrator account and password:  
 User name: **superUser@<domain>**  
 where <domain> is the domain you created in “Start the Converge™ Software services and create a domain name” on page 22.  
 Password: **superUser**  
**Note:** If you cannot sign in to the software, contact HID Technical Support.
4. When prompted, change the initial password.

---

**IMPORTANT!** If needed, the superUser account password can be reset. See “Reset Converge™ Software superUser password” on page 47. **However, you cannot reset the Converge™ Software Server UNIX™ password.** See “Sign into the Converge™ Software Server” on page 18.

---

**Note:** For information about managing user profiles, see the *Converge™ Software Help*.

5. After signing in for the first time, read and accept the End User License Agreement(s) (EULA).

**Note:** If you have purchased multiple Converge™ Software modules, accept the EULA for each module.

## Activate and manage software licenses

Obtain the computer MAC address

1. Sign into the Converge™ Software, then navigate to **Admin ▶ Manage Licenses**.
2. In the **Manage Licenses** window, select **More ▶ Activate License**.

Manage Licenses

Install License More

Page 1 of 1 10

| Application  | Version | Key                | Count | In Use* | Start        | Expiration   | Action |
|--|---------|--------------------|-------|---------|--------------|--------------|--------|
| Platform   | 2.2     | AID-80d0-5aa1-...  | 5     | 1       | Apr 17, 2019 | Apr 18, 2022 | ...    |
| Renewal URL: <a href="https://licensing.appliedbiosystems.com/activation">https://licensing.appliedbiosystems.com/activation</a> |         |                    |       |         |              |              |        |
| Kinship  | 1.0     | AID-851a-cff3-0... | 5     | 1       | Apr 17, 2019 | Apr 18, 2022 | ...    |
| ngs  | 1.2     | AID-7e25-29c7-...  | 5     | 1       | Apr 17, 2019 | Apr 18, 2022 | ...    |

\* You may need to refresh the browser window to see recent changes in the number of licenses in use.

Timeout (min): 10 Notification (days): 15 Save

### ① More ▶ Activate License

3. In the **Activate License** dialog box, record the **License Host ID**. The License Host ID is the computer MAC address.

Activate License

Application Module \*:

Activation Code \*:

Notification Email \*:

License Host ID:

Activation URL:

If you have Internet access, fill in the required fields, then click Activate License. If you do not have Internet access, copy the License Host ID and Activation URL from this page, paste the Activation URL into a browser on a machine with Internet access, then follow the instructions to activate the license.

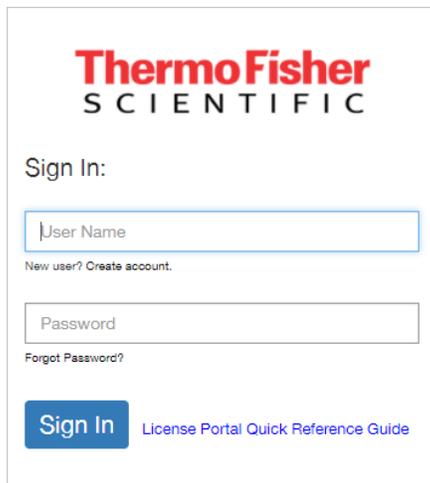
Cancel Activate License

For information on using the Converge™ Software, see the *Converge™ Software Help*.

## Activate software licenses

Activate software licenses through the Thermo Fisher Scientific Licensing website.

1. Navigate to [licensing.appliedbiosystems.com](https://licensing.appliedbiosystems.com), then click **License Portal Quick Reference Guide** to download the *Thermo Fisher Scientific Software Licensing Quick Reference* (Pub. No. MAN0016342).



ThermoFisher  
SCIENTIFIC

Sign In:

User Name

New user? [Create account.](#)

Password

[Forgot Password?](#)

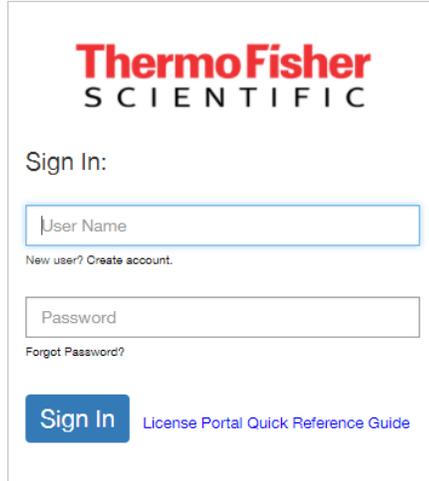
**Sign In** [License Portal Quick Reference Guide](#)

2. Perform the following procedures in the *Thermo Fisher Scientific Software Licensing Quick Reference*:
  - a. (If needed) Create a new account
  - b. Add a license key to your account
  - c. Activate a license, using the computer MAC address from “Obtain the computer MAC address” on page 27  
**Note:** Enter the MAC address without hyphens (-). For example, the MAC address **00-15-E9-2B-99-3C** should be entered as **0015E92B993C**.
  - d. Download a license (LIC file)
3. Upload the software license (LIC file) to the Converge™ Software:
  - a. In the Converge™ Software, navigate to **Admin ▶ Manage Licenses**.
  - b. In the **Manage Licenses** window, click **Install License**, navigate to the LIC file that you downloaded in substep 2d, then click **Install**.**Note:** For information on using the Converge™ Software, see the *Converge™ Software Help*.
4. If you have purchased multiple Converge™ Software modules, repeat this procedure for each module purchased. The following modules are available:
  - NGS module
  - Kinship and Paternity module
  - Case Management module

## Manage software licenses

Manage software licenses through the Thermo Fisher Scientific Licensing website.

1. Navigate to [licensing.appliedbiosystems.com](https://licensing.appliedbiosystems.com), then click **License Portal Quick Reference Guide** to download the *Thermo Fisher Scientific Software Licensing Quick Reference* (Pub. No. MAN0016342).



ThermoFisher  
SCIENTIFIC

Sign In:

User Name

New user? [Create account.](#)

Password

[Forgot Password?](#)

[Sign In](#) [License Portal Quick Reference Guide](#)

2. Perform the following procedures in the *Thermo Fisher Scientific Software Licensing Quick Reference* to manage the software license:
  - Resend a license
  - Renew an expired license
  - Move a license to a different computer

## Check for Converge™ Software updates

Before using the Converge™ Software, visit the Converge™ Software page at [thermofisher.com](http://thermofisher.com) to check for recent software updates.

### (Network systems only) Access the Converge™ Software from another computer

1. Confirm that your computer has a network connection and that it is connected to the same network as the Converge™ Software Server.
2. Open a browser window and go to `http://<server IP address>`, using the `<server IP address>` you received from your server administrator (see “Configure the Converge™ Software Server IP address” on page 23). In the example shown below, the `<server IP address>` is `172.16.254.1`.



**Note:** Using your browser settings, confirm that JavaScript is turned on for the website to function correctly. If you cannot access the website, contact HID Technical Support.

3. Sign into the software as:
  - **Administrator**—Enter the user name `superUser@<domain>` and the password from “Access the software from the Converge™ Software Server desktop” on page 26.
  - **End-user**—Enter the user name `<user>@<domain>` and password you received from your server administrator.

**Note:** If you cannot sign in to the software, contact HID Technical Support.

For information on using the Converge™ Software, see the *Converge™ Software Help*.

## Configure user account and system settings

Perform the following steps to configure user account and system settings in the Converge™ Software. For procedures, see the *Converge™ Software Help*.

1. Set up user roles.
2. Set user account security policies.
3. Set up user accounts.

# 5

## Set up the software for the NGS module

- Before the first run ..... 32
- Download the configuration files ..... 32
- Install the HID Genotyper Plugin and connect the Torrent Suite™ and Converge™ Software Servers ..... 34
- Install the configuration files in the Torrent Suite™ Software ..... 35
- IGV setup: Configure Java™ and start the IGV ..... 37

### Before the first run

You can run the Precision ID panels on the HID Ion Chef™ System and HID Ion S5™ System, then use the Converge™ Software to perform secondary analysis on the run results.

To perform the secondary analysis, set up the Converge™ Software for the NGS module before the first run.

### Download the configuration files

Download the configuration files. For download information, see the Converge™ Software v2.2 Release Notes or go to the Converge™ Software download page: [thermofisher.com/us/en/home/technical-resources/software-downloads/converge-software.html](http://thermofisher.com/us/en/home/technical-resources/software-downloads/converge-software.html)

| File type                             | File name   |
|---------------------------------------|---|
| HID Genotyper Plugin                  | HIDGenotyper.zip<br><b>IMPORTANT!</b> For plugin installation, the zipped version of this file is required. After downloading, confirm that the file is still zipped. Some browsers automatically extract zipped files. |
| <b>Files for the NGS mtDNA module</b> |   |
| Reference genome <sup>[1]</sup>       | PrecisionID_mtDNA_rCRS(Mito)  |
| Panel hotspot BED                     | None  |
| Panel target BED                      | <ul style="list-style-type: none"> <li>• Precision_ID_mtDNA_Whole_Genome_Panel_Targets_vX.X.bed, <i>or</i></li> <li>• Precision_ID_mtDNA_Control_Region_Panel_Targets_vX.X.bed</li> </ul>                               |

| File type                           | File name  |
|-------------------------------------|--|
| Analysis parameters JSON            | Precision_ID_mtDNA_Panel_AnalysisParams_vX.X.json<br><b>Note:</b> This file contains the default/recommended analysis parameters.  |
| <b>Files for the NGS SNP module</b> |  |
| Reference genome <sup>[1]</sup>     | hg19(Homo sapiens)   |
| Panel hotspot BED                   | <ul style="list-style-type: none"> <li>• <b>Precision ID Ancestry Panel</b>—Precision_ID_Ancestry_Panel_Hotspot_vX.X.bed</li> <li>• <b>Precision ID Identity Panel</b>—Precision_ID_Identity_Panel_Hotspot_vX.X.bed</li> <li>• <b>Custom Ion AmpliSeq™ SNP Panels</b>—You must create your own hotspot regions BED file; see the <i>Precision ID SNP Panels with the HID Ion S5™/HID Ion GeneStudio™ S5 System Application Guide</i> (Pub. No. MAN0017767)</li> </ul>                            |
| Panel target BED                    | <ul style="list-style-type: none"> <li>• <b>Precision ID Ancestry Panel</b>—Precision_ID_Ancestry_Panel_Targets_vX.X.bed</li> <li>• <b>Precision ID Identity Panel</b>—Precision_ID_Identity_Panel_Target_vX.X.bed</li> <li>• <b>Custom Ion AmpliSeq™ SNP Panels</b>—You must create your own target regions BED file; see the <i>Precision ID SNP Panels with the HID Ion S5™/HID Ion GeneStudio™ S5 System Application Guide</i> (Pub. No. MAN0017767)</li> </ul>                              |
| Analysis parameters JSON            | <ul style="list-style-type: none"> <li>• <b>Precision ID Ancestry Panel</b>— Precision_ID_Ancestry_Panel_AnalysisParams_vX.X.json</li> <li>• <b>Precision ID Identity Panel</b>—Precision_ID_Identity_Panel_AnalysisParams_vX.X.json</li> <li>• <b>Custom Ion AmpliSeq™ SNP Panels</b>—<i>(Recommended)</i> Use the default analysis parameters that are provided with the HID Genotyper Plugin.</li> </ul> <p><b>Note:</b> These files contain the default/recommended analysis parameters.</p> |
| <b>Files for the NGS STR module</b> |  |
| Reference genome <sup>[1]</sup>     | hg19 (Homo sapiens)  |
| Panel hotspot BED                   | Precision_ID_GlobalFiler_NGS_STR_Panel_Hotspot_vX.X.bed  |
| Panel target BED                    | Precision_ID_GlobalFiler_NGS_STR_Panel_Targets_vX.X.bed  |
| Analysis parameters JSON            | Precision_ID_GlobalFiler_NGS_STR_Panel_AnalysisParams_vX.X.json<br><b>Note:</b> This file contains the default/recommended analysis parameters.  |
| Control JSON                        | Control_Samples.zip, contains the following JSON files: <ul style="list-style-type: none"> <li>• Precision_ID_GlobalFiler_NGS_STR_Control_Sample_9947A_and_male007_and_NegCtrl_vX.X.json</li> <li>• Precision_ID_GlobalFiler_NGS_STR_Control_Sample_9947A_vX.X.json</li> <li>• Precision_ID_GlobalFiler_NGS_STR_Control_Sample_male007_vX.X.json</li> <li>• Precision_ID_GlobalFiler_NGS_STR_Control_Sample_NegCtrl_vX.X.json</li> </ul>   |

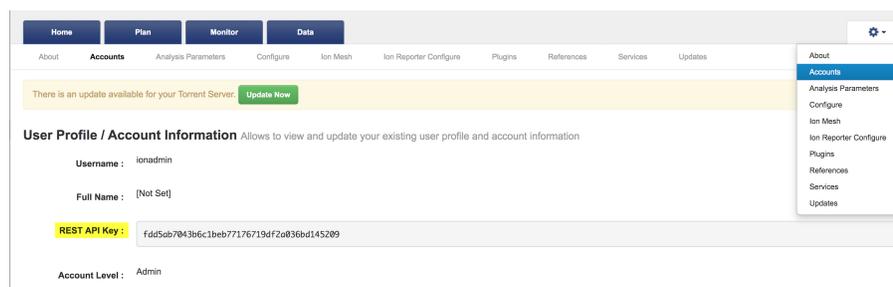
<sup>[1]</sup> The reference genome is pre-installed in the Torrent Suite™ Software.

## Install the HID Genotyper Plugin and connect the Torrent Suite™ and Converge™ Software Servers

Before you begin:

- Obtain the HIDGenotyper.zip file (see “Download the configuration files” on page 32).
  - Obtain the Torrent Suite™ Software URL.
  - Obtain the Converge™ Software URL from your system administrator.
1. Sign in to the Torrent Server via the Torrent Suite™ Software.
  2. Select  ▾ ▶ **Plugins**.
  3. Click **Install or Upgrade Plugin**, click **Select File**, navigate to the HIDGenotyper.zip file, then click **Upload and Install**.
  4. When the upload is complete, click **Rescan Plugins for Changes**.
  5. In the **HIDGenotyper** row, confirm that the **Enabled** checkbox is selected, then click  ▾ ▶ **Configure**.  
The **Converge Account Configuration** dialog box is displayed.
  6. Complete the **Converge Configuration** information: Enter your Converge™ Software user name and password and the Converge™ Software URL (in the format `http://<server IP address>/`, for example `http://172.16.254.1/`; ensure that you include the final `/` in the URL).
  7. (Optional) Complete the **TSS Configuration** information:
    - a. Enter your Torrent Suite™ Software user name and API key.

**Note:** To obtain the API key: In the main Torrent Suite™ Software window, click  ▾ ▶ **Accounts**. Under **User Profile/Account Information**, see **REST API Key**.



- b. From the **Default Template** dropdown list, select one of the following supported run plan templates:
- **Precision ID mtDNA Control Region Panel - S5**
  - **Precision ID mtDNA Whole Genome Panel - S5**
  - **Precision ID Ancestry Panel - S5**
  - **Precision ID Identity Panel - S5**
  - **Precision ID GlobalFiler STR Panel - S5**
8. Click **Submit**, confirm that a green checkmark is displayed to the left of the **Submit** button, then click **Close**.

The Torrent Server and Converge™ Software Server are now connected, enabling automatic upload of sequencing results to the Converge™ Software Server.

**Note:** If the green checkmark does not appear, see “Resolve failed account configuration” on page 54.

## Install the configuration files in the Torrent Suite™ Software

**Note:** Do not install the JSON file. The JSON file is installed when you create a Planned Run. For information on creating Planned Runs, see the appropriate Precision ID Panel Application Guide.

1. Sign in to the Torrent Server via the Torrent Suite™ Software.
2. Select  , then click **References**.
3. Upload the target BED file.
  - a. In the left navigation pane, select **Target Regions**, then click **Add Target Regions**.
  - b. Click **Select File**, then navigate to and select the appropriate target BED file.

| NGS module       | Target BED file  |
|------------------|--|
| NGS mtDNA module | <ul style="list-style-type: none"> <li>• <b>Precision_ID_mtDNA_Whole_Genome_Panel_Targets_vX.X.bed</b></li> <li>• <b>Precision_ID_mtDNA_Control_Region_Panel_Targets_vX.X.bed</b></li> </ul> |

| NGS module     | Target BED file   |
|----------------|---|
| NGS SNP module | <ul style="list-style-type: none"> <li>• <b>Precision_ID_Ancestry_Panel_Targets_vX.X.bed</b></li> <li>• <b>Precision_ID_Identity_Panel_Target_vX.X.bed</b></li> <li>• For Custom Ion AmpliSeq™ SNP Panels, select the target regions BED file that you created for your panel; see the <i>Precision ID SNP Panels with the HID Ion S5™/HID Ion GeneStudio™ S5 System Application Guide</i> (Pub. No. MAN0017767)</li> </ul> |
| NGS STR module | <b>Precision_ID_GlobalFiler_NGS_STR_Panel_Targets_vX.X.bed</b>  |

- c. From the **Reference** dropdown list, select the appropriate reference, (optional) enter a description and notes, then click **Upload Target Regions File**.

| NGS module       | Reference   |
|------------------|---|
| NGS mtDNA module | None<br><br><b>Note:</b> The PrecisionID_mtDNA_rCRS(Mito) is not available in the dropdown list. To download the reference file, see the Converge™ Software v2.2 Release Notes or go to the Converge™ Software download page:<br><a href="http://thermofisher.com/us/en/home/technical-resources/software-downloads/converge-software.html">thermofisher.com/us/en/home/technical-resources/software-downloads/converge-software.html</a> |
| NGS SNP module   | <b>hg19(Homo sapiens)</b>   |
| NGS STR module   | <b>hg19 (Homo sapiens)</b>  |

- d. Click  **Reload this page** to confirm that the files are installed.
4. Upload the hotspot BED file.
- In the left navigation pane, select **Hotspots**, then click **Add Hotspots**.
  - Click **Select File**, then navigate to and select the appropriate hotspot BED file.

| NGS module       | Hotspot BED file  |
|------------------|---|
| NGS mtDNA module | None  |
| NGS SNP module   | <ul style="list-style-type: none"> <li>• <b>Precision_ID_Ancestry_Panel_Hotspot_vX.X.bed</b></li> <li>• <b>Precision_ID_Identity_Panel_Hotspot_vX.X.bed</b></li> <li>• For Custom Ion AmpliSeq™ SNP Panels, select the hotspot regions BED file that you created for your panel; see the <i>Precision ID SNP Panels with the HID Ion S5™/HID Ion GeneStudio™ S5 System Application Guide</i> (Pub. No. MAN0017767)</li> </ul> |
| NGS STR module   | <b>Precision_ID_GlobalFiler_NGS_STR_Panel_Hotspot_vX.X.bed</b>  |

- c. From the **Reference** dropdown list, select the appropriate reference, (optional) enter a description and notes, then click **Upload Hotspots File**.

| NGS module       | Reference   |
|------------------|---|
| NGS mtDNA module | None<br><br><b>Note:</b> The PrecisionID_mtDNA_rCRS(Mito) is not available in the dropdown list. To download the reference file, see the Converge™ Software v2.2 Release Notes or go to the Converge™ Software download page:<br><a href="http://thermofisher.com/us/en/home/technical-resources/software-downloads/converge-software.html">thermofisher.com/us/en/home/technical-resources/software-downloads/converge-software.html</a> |
| NGS SNP module   | <b>hg19(Homo sapiens)</b>   |
| NGS STR module   | <b>hg19 (Homo sapiens)</b>  |

- d. Click  **Reload this page** to confirm that the files are installed.

## IGV setup: Configure Java™ and start the IGV

The Integrative Genomics Viewer (IGV) can provide additional analysis features for the Converge™ NGS module.

---

**IMPORTANT!** We do not provide customer support for the IGV. For more information on the IGV, see [software.broadinstitute.org/software/igv/](http://software.broadinstitute.org/software/igv/).

---

### Minimum computer requirements for the IGV

- Java™ v8, 64-bit  


---

**IMPORTANT!** Ensure that you use only the 64-bit version of Java™. If you have a 32-bit version of Java™ on your system, uninstall the 32-bit version.
- ≥6 GB of RAM  
 Depending on the size of the BAM file, 8 GB of RAM may be required.
- Any operating system that runs the Java™ Virtual Machine  

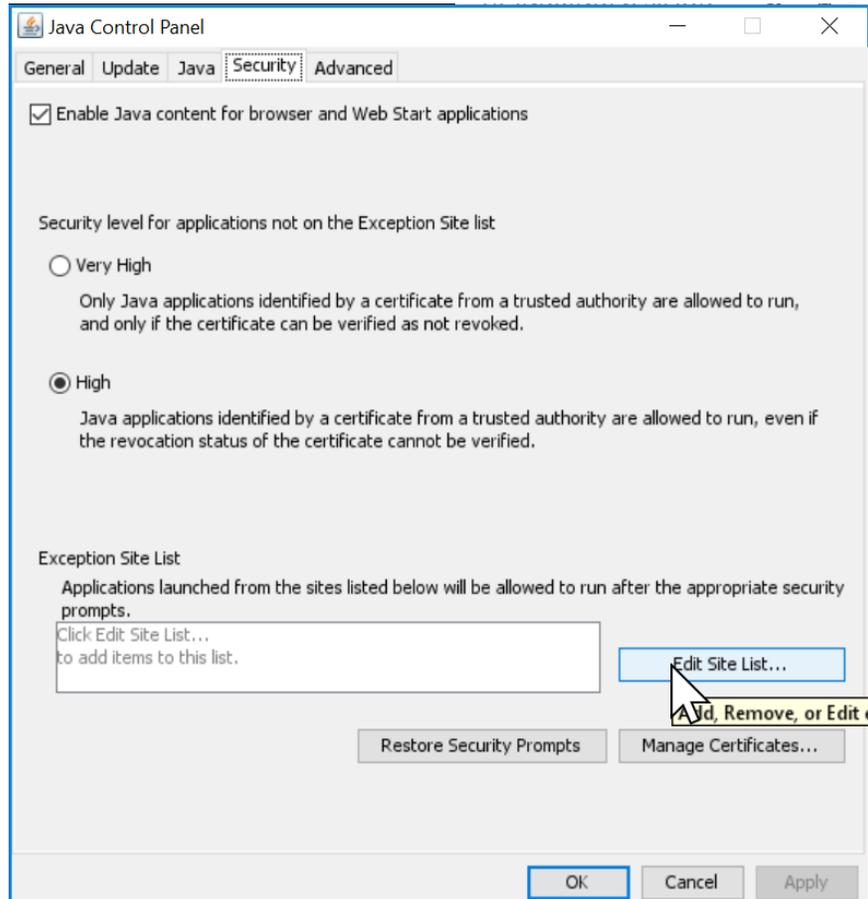

---

**IMPORTANT!** If you have a Windows™ operating system, it must be a 64-bit system.
- ≥1 CPU

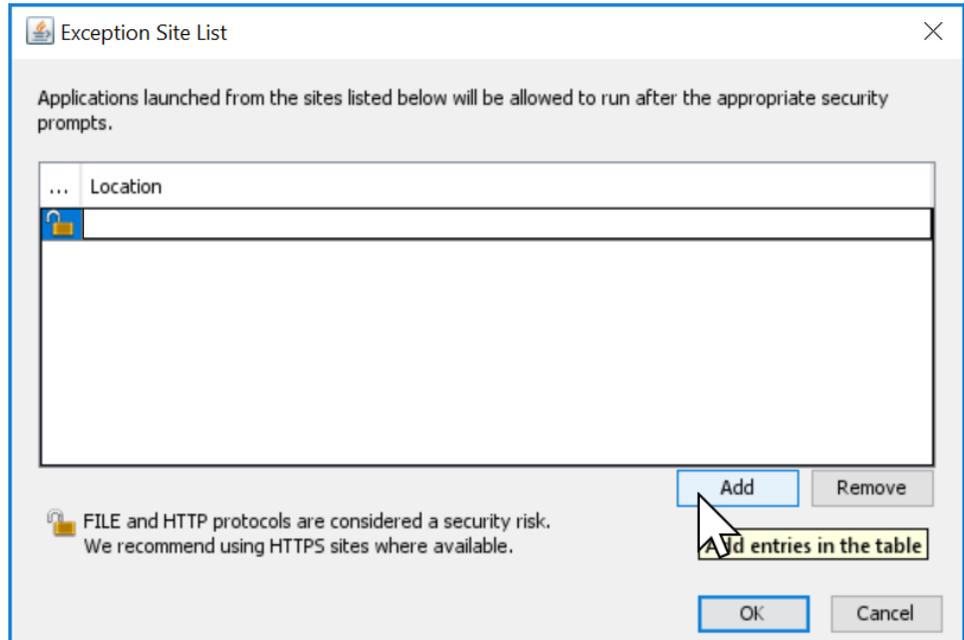
### Configure the Java™ security settings

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, enter **javaws -viewer** (ensure that you include a space before the hyphen).

3. Click the **Security** tab, then click **Edit Site List**.



- In the **Exception Site List** dialog, enter the IP address of the Ion Torrent™ Server, click **Add**, then click **OK**.



## Start the IGV

There are several ways to start the IGV.

| Start from the...                          | Additional requirements <sup>[1]</sup> | Action   |
|--|--|--|
| Converge™ Software Server desktop computer | Converge™ Software v2.2 or later       | On the Converge™ Software Server desktop, click  ( <b>ConvergeIGV</b> ) to start the IGV application.<br><br><b>Note:</b> If you are connecting to the Converge™ Software Server from another computer, you will not be able to see the icon. Start the IGV from within the Converge™ Software. |
| Converge™ Software                         | Any Converge™ NGS module               | See the appropriate Converge™ NGS module section in the <i>Converge™ Software Help</i> .   |

<sup>[1]</sup> The requirements listed in this table are in addition to the minimum computer requirements listed on page 37.



# Manage the Converge™ Software Server

- Database backup and audit archive functions ..... 40
- Backup and restore the Converge™ Software database ..... 41
- Retrieve archived audit records ..... 42
- Shut down, restart, or move the Converge™ Software Server ..... 43
- Reconfigure the Converge™ Software Server IP address ..... 44
- Update or change countries and states ..... 46
- Reset the system time zone ..... 46
- Reset Converge™ Software superUser password ..... 47

The Converge™ Software Server UNIX™ account password is required for some of the server management functions. See “Sign into the Converge™ Software Server” on page 18.

**Note:** For additional information, or if you experience issues with server performance, contact HID Technical Support. See “Customer and technical support” on page 75.

## Database backup and audit archive functions

| Feature       | Backup  | Audit archive   |
|---------------|---|---|
| Purpose       | Create a single file, which the user can move to a separate location to protect against data loss.                            | Archive older audit records on the Converge™ Software Server to optimize system efficiency.                                     |
| Affected data | All data (case, batch, archived and unarchived audit records, etc.) and installed modules.                                    | Audit records older than 12 months.   |
| Process       | User must manually initiate data backup and restoration. See “Backup and restore the Converge™ Software database” on page 41. | The system automatically archives audit data. Archived data can be retrieved. See “Retrieve archived audit records” on page 42. |

## Backup and restore the Converge™ Software database

### Back up the Converge™ Software database

---

**IMPORTANT!** We recommend that you back up the Converge™ Software database regularly (consistent with your laboratory standard operating procedures) and keep copies of the backup files in a secure location.

---

**IMPORTANT!** Run the backup utility during off-peak hours; users cannot access the system while the backup runs.

---

1. On the Converge™ Software Server desktop, double-click the **Converge BackupRecovery Utility** icon.
2. At the prompt “What do you want to perform (backup/recover)”, type **backup**, then press **Enter** on the keyboard.
3. Enter the Converge™ Software Server UNIX™ password, then press **Enter** on the keyboard.  
When the backup script is finished, the message “Completed the requested action backup” is displayed.
4. Press **Enter** on the keyboard to close the window.
5. On the desktop, double-click the **Converge BackupFiles** icon, navigate to the backup file (system\_bkup\_YYYYMMDD\_HH\_MM\_SS.tar.gz), then move or copy the backup file to a secure location. A blank USB drive is provided with the system for this purpose (see “Unpack and inspect materials” on page 13).

### Restore the Converge™ Software database from a backup file

In the event of data loss, restore the Converge™ Software database using the most recent backup file.

1. Locate the most recent backup file and note the exact file name.

---

**IMPORTANT!** If you have upgraded to a later version of the Converge™ Software since creating your last backup file, you cannot go back to an earlier version without losing all of your data.

---

2. On the Converge™ Software Server desktop, double-click the **Converge Backup Files** icon, navigate to the `home/apps` directory, then move the backup file to the **restore** folder.
3. Update the `Init.cfg` file.
  - a. On the Converge™ Software Server desktop, double-click the **Converge Backup/Recovery Configuration** icon.
  - b. Right-click the `Init.cfg` file, then select **Open with** ▶ **KWrite**.
  - c. In the **KWrite** window, enter the exact name of the backup file in the `RESTORE_SYSTEM_BKUP` field (for example, `RESTORE_SYSTEM_BKUP=system_bkup_20150824_19_35_42.tar.gz`), then save and close the file.

4. On the Converge™ Software Server desktop , double-click the **Converge BackupRecovery Utility** icon.
5. At the prompt "What do you want to perform (backup/recover)", type **recover**, then press **Enter** on the keyboard.
6. At the prompt "have you updated init.cfg...", type **y** , then press **Enter** on the keyboard to confirm that you updated the init.cfg file.
7. At the prompt "Do you want to continue", type **y** , then press **Enter** on the keyboard to confirm that you want to restore the database.  
The restore script runs. When the restore script is finished, the message "Completed the requested action restore" is displayed.
8. At the prompt, type the Converge™ Software Server UNIX™ password, then press **Enter** on the keyboard.
9. At the prompt, type the Converge™ Software Server UNIX™ password again, then press **Enter** on the keyboard.
10. Press **Enter** on the keyboard to close the window.

## Retrieve archived audit records

To optimize system efficiency, all audit records older than 12 months are automatically archived on the Converge™ Software Server on the fifth day of each month at 11 PM local time. The archived audit records cannot be viewed in the Converge™ Software.

**Note:** All audit records (archived and unarchived) are backed up when the Converge™ Software is backed up. See "Back up the Converge™ Software database" on page 41.

To retrieve the archived records for viewing, perform the following steps.

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **8** (manage converge audit partitions), then press **Enter** on the keyboard.
4. When prompted, enter the starting date and end date range (YYYY/MM) for the audit records to retrieve, then press **Enter** on the keyboard.

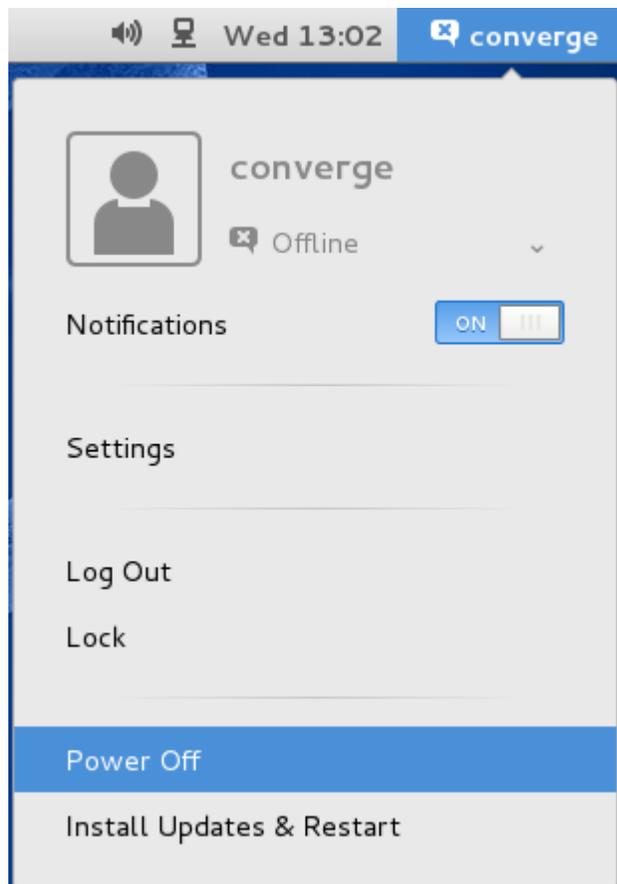
The retrieved audit records are displayed in the Converge™ Software **Audit Dashboard** until the next audit archive runs (on the fifth day of the next month).

## Shut down, restart, or move the Converge™ Software Server

### Shut down the Converge™ Software Server

If you need to power off the Converge™ Software Server (for example, before moving the server), perform the following steps.

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **2** (shutdown converge services), then press **Enter** on the keyboard to stop the services.
4. In the top right corner of the screen, select **converge ▶ Power Off** to power off the server.



### Restart the Converge™ Software Server

To restart the Converge™ Software Server after a shutdown, perform the following steps.

1. Press the power button on the front of the server, then wait 1–2 minutes for the server to power on.

---

**IMPORTANT!** Do not interrupt the power on sequence until it is finished. If the server does not start, contact HID Technical Support for assistance.

---

2. Click **converge**, then enter the Converge™ Software Server UNIX™ password.



3. On the Converge™ Software Server desktop, select **Applications ▸ Utilities Terminal**.
4. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
5. In the **Converge – Main Menu**, type **1** (start converge services), then press **Enter** on the keyboard to start the services.
6. When prompted, enter the Converge™ Software Server UNIX™ password, then press **Enter** on the keyboard.

When the prompt is displayed again, the services are started and the application is ready to use.

### Move the Converge™ Software Server

1. Follow the instructions in “Shut down the Converge™ Software Server” on page 43.
2. Move the server to the new location.
3. Follow the instructions in “Restart the Converge™ Software Server” on page 43.
4. Follow the instructions in “Configure the Converge™ Software Server IP address” on page 23.

## Reconfigure the Converge™ Software Server IP address

Follow this procedure:

- If you accidentally accept or enter the wrong IP address during IP address configuration. See “Configure the Converge™ Software Server IP address” on page 23.
- If you have been running the Converge™ system as a standalone system (not networked) with the default IP address (127.0.0.1), and you now want to add the Converge™ Software Server to a network. For more information, see “Determine if the Converge™ system will be standalone or networked” on page 14.

**Note:** If needed, you can reset the server to the default IP address later. See “Reset the Converge™ Software Server IP address” on page 52.

1. If you will use a static IP address, obtain the address from a network administrator.
2. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
3. In the **Terminal** window, type **dhcp**, then press **Enter** on the keyboard.
4. At the prompt, enter the Converge™ Software Server UNIX™ password, then press **Enter** on the keyboard.
5. At the prompt, type **cutil**, then press **Enter** on the keyboard.
6. In the **Converge – Main Menu**, type **3** (reconfigure the system), then press **Enter** on the keyboard.
7. At the prompt "is the system IP address XX.XX.XX.XX> (y/n)", enter an IP address according to the following table.

---

**IMPORTANT!** The IP address is required to access the software.

---

| Option   | Description   |
|--|---|
| Standalone system (not networked)                  | Enter <b>y</b> to accept the default IP address (127.0.0.1), then press <b>Enter</b> on the keyboard.   |
| Networked system: Use the auto-detected IP address | <ol style="list-style-type: none"> <li>1. Make note of the system IP address for later use.</li> <li>2. Enter <b>y</b> to accept the detected IP address, then press <b>Enter</b> on the keyboard.</li> </ol>   |
| Networked system: Enter a specific IP address      | <ol style="list-style-type: none"> <li>1. Enter <b>n</b> to specify a different IP address.</li> <li>2. At the prompt, enter the new IP address, then press <b>Enter</b> on the keyboard.<br/>                     Enter only numbers and "." (for example, <b>127.0.0.1</b>). Do not enter alphabetic characters.</li> </ol> |

## Update or change countries and states

By default, the country and state dropdown lists in the Converge™ Software are pre-populated with United States information. If needed, use the following procedure to update the countries and states available for selection.

**Note:** The Converge™ Software superUser account is required to update the country and state information. (Alternatively, you can use another account if it has been set up with privileges equivalent to the superUser account; see “Configure user account and system settings” on page 31.)

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **6** (seed country), then press **Enter** on the keyboard.
4. Scroll through the list, then note the number(s) associated with the country or countries that you want to be available for selection.

---

**IMPORTANT!** Include any currently listed countries that you want to keep on the list, otherwise these countries are removed.

---

5. At the prompt, enter the number that is associated with the selected country. To enter multiple countries, separate each number with a comma (no spaces), for example: **13,43,181**.
6. When prompted, enter your Converge™ Software user name and password.

## Reset the system time zone

If it is necessary to reset the system date and time after the initial system setup, see “Set the system time zone” on page 22.

## Reset Converge™ Software superUser password

A Converge™ Software administrator account (superUser) provides initial access to the Converge™ Software so that an administrator can activate and install the software licenses, set up additional user accounts, and perform additional configuration as needed.

**Note:** This account name and password are different from the Converge™ Software Server UNIX™ account name and password.

At the first sign-in (see “Access the software from the Converge™ Software Server desktop” on page 26), you are prompted to change the superUser password. If you need to reset the superUser password, perform the following steps:

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **5** (reset superUser password), then press **Enter** on the keyboard.  
The password is set to **Superuser@15**.



# Troubleshooting

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- Access log files ..... 51
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- Reset the Converge™ Software Server IP address ..... 52
- (T110 server) Resolve USB recognition ..... 53
- Resolve failed account configuration ..... 54

## Troubleshoot server networking

| Observation                                    | Possible cause   | Recommended action   |
|--|--|--|
| The <b>License Activation</b> screen is blank. | The em1 interface in the Converge™ Software Server does not have the iNet address enabled. | If the Converge™ Software Server is a Dell™ T110 server, two network interfaces are provided by default: p4p1 and em1. If you want the Converge™ Software Server to be networked, we recommend that you select <b>automatic DHCP</b> or <b>static IP</b> on the em1 interface. Your IT Administrator must assign the IP address to em1. For more information, see “Enable the ethernet port” on page 19. |



| Observation   | Possible cause   | Recommended action   |
|---|--|--|
| <p>The Converge™ Software crashes and reboots if you try to save the CompareProfileGrids.xlsx file from the <b>Downloads</b> folder to another location.</p>  | <p>The CompareProfileGrids.xlsx file is incompatible with the Red Hat™ Enterprise Linux™ operating system.</p> | <ol style="list-style-type: none"> <li>1. On the Converge™ Software Server desktop, select <b>Application</b> ▶ <b>Utilities</b> ▶ <b>Terminal</b>.</li> <li>2. In the <b>Terminal</b> window, enter the following command to navigate to the <b>Downloads</b> folder:<br/>cd/home/Converge/Downloads</li> <li>3. Enter the following command to unzip the CompareProfileGrids.xlsx file to a directory:<br/>unzip CompareProfilesGrid.xlsx -d CompareProfilesGrid</li> <li>4. Enter the following commands to copy the extracted files to your computer:<br/>cp -r CompareProfilesGrid /home/converge/Desktop</li> <li>5. Copy the CompareProfilesGrid directory to an external USB drive or other storage device, then paste it into a Windows™ computer.</li> <li>6. Use the 7zip application in the Windows™ computer to re-zip the CompareProfilesGrid directory.</li> <li>7. Open the CompareProfileGrids.xlsx file using Microsoft™ Excel™.</li> </ol> <p>In File Manager, change the file extension of the CompareProfileGrids.xlsx file, export the file to a Windows™ computer, then change the extension back to <b>xlsx</b>.</p> |
| <p>The Converge™ Software Server is not working over the network. Some functions are unresponsive; for example, the <b>+New Subject</b> button in the <b>Case &lt;ID&gt;</b> pane does not work, or you cannot import a BEF file in the <b>Batch Dashboard</b>.</p> | <p>The network IP address in the Converge™ Software is not updated.</p>  | <ol style="list-style-type: none"> <li>1. On the Converge™ Software Server desktop, select <b>Application</b> ▶ <b>Utilities</b> ▶ <b>Terminal</b>.</li> <li>2. In the <b>Terminal</b> window, type <b>cutil</b>, then press <b>Enter</b> on the keyboard.</li> <li>3. In the <b>Converge – Main Menu</b>, type <b>3</b>, then press <b>Enter</b> on the keyboard.</li> <li>4. At the prompt "Is the system IP address XX.XX.XX.XX&gt;{y/n}?", enter <b>y</b>.</li> </ol>  |
| <p>The Converge™ Software Server frequently cannot be reached.</p>  | <p>The Converge™ Software Server does not have a static IP address.</p>  | <p>For more information, see "Determine if the Converge™ system will be standalone or networked" on page 14.</p> <ol style="list-style-type: none"> <li>1. On the Converge™ Software Server desktop, select <b>Settings</b> ▶ <b>Network</b> ▶ <b>Ethernet [em1]</b> ▶ <b>Add Profile</b> ▶ <b>IPv4</b>.</li> <li>2. In the <b>Server</b> section, enter the DNS IP address.</li> <li>3. In the <b>Routes</b> section, enter the static IP address, enter the Netmask IP addresses, then enter the gateway address.</li> <li>4. Select <b>Manual</b> from the dropdown list.</li> </ol>  |



| Observation   | Possible cause  | Recommended action  |
|---|---|---|
| The HID Genotyper Plugin will not create a BEF file.<br>The HID Genotyper Plugin will not automatically create a batch (BEF) file in the Converge™ Software if the Ion Torrent™ Server is not networked or the HID Genotyper Plugin is not configured to the Converge™ Software Server.   | The Torrent Suite™ Software server has Converge™ Software IP address configured, but not in the network.  | Ensure that you use the correct URL when you configure the Converge™ Software.  |
| You cannot import a batch. The following message is displayed: <i>This web page is being re-directed to a new location. Would you like to resend the form data you have typed to new location?</i>  | The wrong IP address is assigned to the Converge™ Software Server's index.html file.  | <ol style="list-style-type: none"> <li>1. On the Converge™ Software Server desktop, select <b>Application ▶ Utilities ▶ Terminal</b>.</li> <li>2. In the <b>Terminal</b> window, type <b>cutil</b>, then press <b>Enter</b> on the keyboard.</li> <li>3. In the <b>Converge – Main Menu</b>, type <b>3</b>, then press <b>Enter</b> on the keyboard.</li> <li>4. At the prompt "Is the system IP address XX.XX.XX.XX&gt;[y/n]?", enter <b>y</b>.</li> </ol>   |
| <i>Program Terminated</i> error during Converge™ Software installation.<br>When installing the Converge™ Software ("Manually install the Converge™ Software" on page 64), you receive the following error message at step 6: <i>The directory /home/partimag/YYYY-MM-DD-img-Converge-Vx for the input name does NOT exist! Program Terminated!</i> . The installation terminates. | Clonezilla identifies the cable that connects the Converge™ Software Server to the monitor as a USB device and tries to locate the Converge™ Software image on that device. | <ol style="list-style-type: none"> <li>1. Ensure that the following cables and devices are connected to the Converge™ Software Server: <ul style="list-style-type: none"> <li>• Power cord, plugged into the wall outlet</li> <li>• USB mouse</li> <li>• USB keyboard</li> <li>• Monitor cable</li> </ul> </li> <li>2. Disconnect all other cables and devices from the Converge™ Software Server.</li> <li>3. Connect a USB drive to the back of the Converge™ Software Server, then install the Clonezilla image. To install the image, see "Manually install the Converge™ Software" on page 64.</li> </ol> <p>After the image is loaded onto the Converge™ Software Server and the server is running, you can reconnect any accessory cables and devices.</p> |

## Troubleshoot password issues

| Observation  | Possible cause   | Recommended action   |
|--|--|--|
| The Converge™ Software does not accept a new password. | If you start the Converge™ Software after it has been idle for >12 months, the software requests a password change but the new password is not accepted. | Restart the system and start converge services. See "Stop and restart Converge™ Software services" on page 51. |

## Access log files

If HID Technical Support requests the Converge™ Software system log files, obtain the most recent log files as described in the following procedure.

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **4** (capture logs for diagnosis) , then press **Enter** on the keyboard.
4. At the prompt, enter:
  - **y** to provide all log file information including your server IP address and list of user names. User passwords are *not* included in the log files.
  - **n** to exclude your server IP address and list of user names from the log files. Excluding this information can limit the ability of HID Technical Support to troubleshoot an issue.
5. Double-click the **home** folder, navigate to **/home/converge/apps/logs**, then locate the compressed log file with the most recent time stamp.
6. Copy the log file to an external storage device or to an accessible server location, then email the log file to HID Technical Support. See “Customer and technical support” on page 75.

**Note:** The log files are password protected and can only be viewed by HID Technical Support.

## Stop and restart Converge™ Software services

You may need to stop and restart the Converge™ Software services, for example, if the Converge™ Software is not responsive, or if directed to do so by HID Technical Support.

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
3. In the **Converge – Main Menu**, type **2** (shutdown converge services), then press **Enter** on the keyboard to stop the services.
4. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
5. In the **Converge – Main Menu**, type **1** (start converge services), then press **Enter** on the keyboard to start the services.



## Reset the Converge™ Software Server IP address

**Note:** Resetting the server IP address does not affect any data that are stored on the server.

Reset the server IP address to the default IP address if:

- You are directed by HID Technical Support to reset the server IP address, *or*
  - The Converge™ Software Server is networked, and you want to switch to a standalone system (not networked)
1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
  2. In the **Terminal** window, type **cutil**, then press **Enter** on the keyboard.
  3. In the **Converge – Main Menu**, type 7 (reset the server IP to factory settings), then press **Enter** on the keyboard.

The server IP address is reset to the default IP address (127.0.0.1).

## ***(T110 server) Resolve USB recognition***

If the Converge™ Software Server does not recognize the USB drive, perform the following steps.

1. Ensure that the following cables and devices are connected to the Converge™ Software Server:
  - USB mouse
  - USB keyboard
  - Monitor cable
2. Ensure that the server power cord is plugged into the wall outlet.
3. Disconnect all other cables and devices from the server, including the following:
  - Network LAN
  - USB A-B cable between the monitor and server (The USB A-B cable provides power to the monitor USB ports.)
  - USB scanner
  - Ethernet cable (the Cat6 cable that connects to the Internet)
4. Connect a USB drive to the back of the Converge™ Software Server, then install the Converge™ Software image. To install the image, see “Manually install the Converge™ Software” on page 64.
5. After the image is loaded and the server is running, reconnect the cables and devices.

**Note:** We strongly recommend that you no longer use the front USB port. Instead, use the rear USB port (USB A-B).

## Resolve failed account configuration

If a green checkmark does not appear in the **Converge Account Configuration** dialog box after attempting to connect the Torrent Server and Converge™ Software Server, you may have entered an incorrect **User Name**, **Password**, and/or **URL**, or there may have been a connectivity issue.

Converge Account Configuration

| Converge Configuration                          | TSS Configuration                         |
|---|---|
| User Name*:<br>converge@hid.com                 | TSS User Name:<br>Test                    |
| Password*:<br>.....                             | API Key:<br>fdd5ab7043b6c1beb7717         |
| URL*:<br>http://10.43.40.77/                    | Default Template:<br>Precision_ID_mtDNA_C |
| Default Instrument:<br><input type="checkbox"/> |   |

(\*) Required fields

Submit

Perform the following steps to resolve the failed account configuration.

1. On the Converge™ Software Server desktop, select **Application** ▶ **Internet** ▶ **Google Chrome** to launch the web browser.
2. In the browser address bar, enter the Converge™ Software URL, then confirm that the Converge™ Software sign-in screen is displayed.
3. Enter your user name and password, then confirm successful sign-in.
  - If the sign-in screen does not appear or sign-in is not successful, contact your system administrator.
  - If sign-in is successful, return to the **Converge Account Configuration** dialog box, reenter your **User Name**, **Password**, and **URL**, then click **Submit**. If the green checkmark still does not appear, contact HID Technical support.



# Upgrade to Converge™ Software v2.1

Perform these procedures if you are upgrading an existing Converge™ Software database to Converge™ Software v2.1.

## Download the upgrade files

1. See the Converge™ Software v2.1 Release Notes to locate the following files:
  - upgradecvg
  - ConvergeUpgrade-2.1-0.x86\_64.rpm
  - (If you purchased the NGS module) Converge-NGS-1.1.zip
2. Download the files to a USB device inserted into a readable port of the Converge™ Software Server.
3. Copy the downloaded files from the USB device to the **Home** folder on the Converge™ Software Server desktop. The file path is `/home/converge`.

```
-rw-r--r--. 1 converge postgres 713291262 Sep 10 23:09 Converge-NGS-1.1.zip
-rw-r--r--. 1 converge postgres 458948088 Sep 12 00:37 ConvergeUpgrade-2.1-0.x86_64.rpm
-rwxrwxrwx. 1 converge postgres 16433 Sep 11 11:33 cutil
drwxr-xr-x. 2 converge converge 4096 Mar 20 2017 Desktop
drwxr-xr-x. 2 converge converge 6 Aug 17 2015 Documents
drwxr-xr-x. 2 converge converge 45 Sep 10 22:19 Downloads
drwxr-xr-x. 2 converge postgres 4096 Sep 11 00:33 Licenses
drwxr-xr-x. 2 root root 4096 Sep 11 00:34 logs
drwxr-xr-x. 2 converge converge 6 Aug 17 2015 Music
-rw-r--r--. 1 root root 6893981 Sep 11 10:51 mvc.Log
drwxr-xr-x. 2 converge converge 6 Jan 11 2016 Pictures
drwxr-xr-x. 2 converge converge 6 Aug 17 2015 Public
-rwxr--r--. 1 converge postgres 13177 Sep 10 10:36 qfe
drwxr-xr-x. 2 root root 6 Sep 11 12:21 temp
drwxr-xr-x. 2 converge converge 6 Aug 17 2015 Templates
lrwxrwxrwx. 1 converge converge 26 Aug 31 2015 tomcat -> /opt/apache-tomcat-8.0.24/
-rwxr--r--. 1 converge postgres 13192 Sep 10 22:34 upgradecvg
drwxr-xr-x. 2 converge converge _ 6 Aug 17 2015 Videos
```

## Back up databases

1. Back up the existing Converge™ Software database to a network, USB drive, or other external device. See “Back up the Converge™ Software database” on page 41.

---

**IMPORTANT!** Back up the database as a precaution only. After you upgrade to Converge™ Software v2.1, you cannot go back to an earlier version without losing all of your data.

---



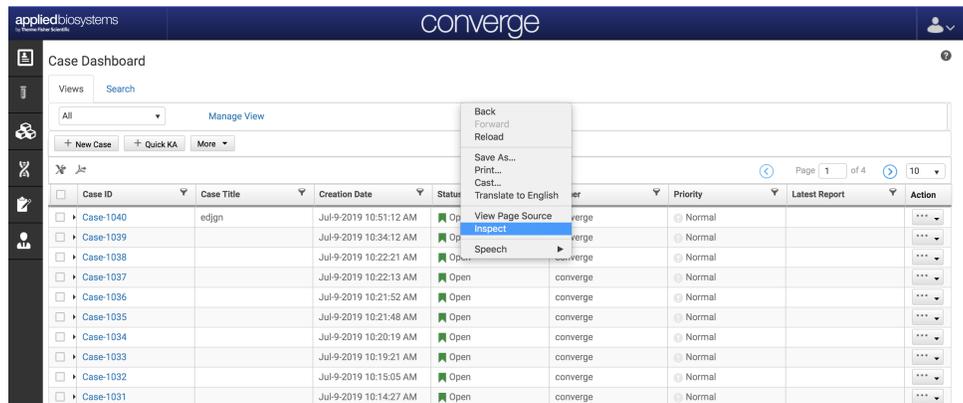
7. Confirm that the **Release ID** is **df70f6b-201808231621**: Click the dropdown list in the top-right corner, then select **About**.



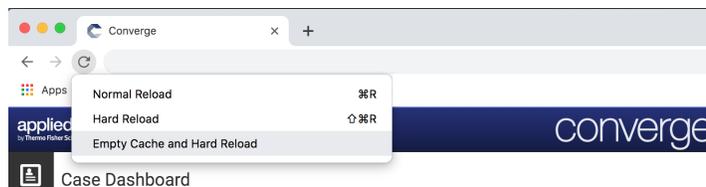
## Clear the cache and cookies

In your Chrome™ browser, clear the cache and cookies to remove inconsistencies between Converge™ Software versions.

1. In the Converge™ Software, right-click in any screen, then select **Inspect**.



2. In the browser toolbar, click **Refresh**, then select **Empty Cache and Hard Reload**.



## Review module licenses

If your earlier version of the Converge™ Software included the Kinship and Paternity module and/or the NGS module, and the licenses have not expired, note the following:

- **Kinship and Paternity module**—After the upgrade, the licenses are retained. You do not need to reinstall the licenses.
- **NGS module**—After the upgrade, the licenses are not retained. You do not need to purchase new licenses for the NGS module, but you will need to install the Converge-NGS-1.1.zip file and reinstall the existing licenses. See “(If needed) Install the NGS module and licenses” on page 58.

### *(If needed)* Install the NGS module and licenses

If you have NGS batches in Converge™ Software v2.0 or v2.0.1, you must install the Converge™ Software v2.1 NGS module and licenses before you can view the batches from the earlier version.

1. Sign in to Converge™ Software v2.1.
2. In the **Admin Dashboard**, select **Global Settings** ▶ **Manage Applications**.
3. Click  **Install Application**, then navigate to the **Converge-NGS-1.1.zip** file that you downloaded in “Download the upgrade files” on page 55.
4. Select **Converge-NGS-1.1.zip**, click **Upload**, then follow the prompts. The following applications are installed: Ancestry, Identity, NGS-Batch, NGS-MH, NGS-Mito, NGS-SNP, and NGS-STR.
5. Follow the instructions in “Activate software licenses” on page 28 to deploy your existing licenses and install any new licenses.
6. Import all existing cases. See “Import a case” in the *Converge™ Software Help*.



# Upgrade to Converge™ Software v2.2

Perform these procedures if you are upgrading an existing Converge™ Software database to Converge™ Software v2.2.

---

**IMPORTANT!** If you have Converge™ Software v2.0.1, you must upgrade to v2.1 before upgrading to v2.2. See Appendix B, “Upgrade to Converge™ Software v2.1”.

---

## Download the upgrade files

1. See the Converge™ Software v2.2 Release Notes to locate the following files:
  - upgradecvg
  - ConvergeUpgrade-2.2-0.x86\_64.rpm
  - (If you purchased the NGS module) Converge-NGS-1.2.zip
2. Download the files to a USB device inserted into a readable port of the Converge™ Software Server.
3. Copy the downloaded files from the USB device to the **Downloads** folder on the Converge™ Software Server desktop. The file path is `/home/converge/downloads`.

```
[converge@converge-appliance Downloads]$ pwd
/home/converge/Downloads
[converge@converge-appliance Downloads]$ ls -ltr
total 2149660
-rwxr-xr-x. 1 converge postgres 13183 Sep 3 21:28 upgrade
-rw-r--r--. 1 converge postgres 516284856 Sep 3 21:31 ConvergeUpgrade-2.2-0.x86_64.rpm
-rw-r-----. 1 converge postgres 1040356934 Sep 3 21:40 Converge-NGS-1.2.zip
-rw-r-----. 1 converge postgres 16893 Sep 3 21:42 Precision_ID_mtDNA_rCRS.fasta
-rw-r-----. 1 converge postgres 3233596 Sep 3 21:42 Precision_ID_GlobalFiler_NGS_STR_Panel_v1.1.zip
-rw-r-----. 1 converge postgres 91044 Sep 3 21:44 README 2.2.pdf
-rw-r-----. 1 converge postgres 641234807 Sep 3 21:49 HIDGenotyper-2.2.zip
[converge@converge-appliance Downloads]$ █
```

## Back up databases

1. Back up the existing Converge™ Software database to a network, USB drive, or other external device. See “Back up the Converge™ Software database” on page 41.

---

**IMPORTANT!** Back up the database as a precaution only. After you upgrade to Converge™ Software v2.2, you cannot go back to an earlier version without losing all of your data.

---



2. (Recommended) Back up the new Converge™ Software v2.2 database to a network, USB drive, or other external device. See “Back up the Converge™ Software database” on page 41.

**Note:** Backing up the new Converge™ Software v2.2 database provides a safe checkpoint if you experience any problems with the server at a future point.

## Upgrade to Converge™ Software v2.2

1. On the Converge™ Software Server desktop, select **Applications ▶ Utilities ▶ Terminal**.
2. Navigate to the **Downloads** folder: In the **Terminal** window, type `cd /home/converge/downloads`, then press **Enter** on the keyboard.
3. Provide permission to execute the `UPGRADECVG` file: In the **Terminal** window, type `chmod u+x upgradecvg`, then press **Enter** on the keyboard.
4. Start the upgrade: In the **Terminal** window, type `./upgradecvg --installrpm ConvergeUpgrade-2.2-0.x86_64.rpm --mode execute`, then press **Enter** on the keyboard.

Do not close the **Terminal** window while the upgrade command is processing. When the upgrade is complete, a notification will be displayed.

```
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file kinship.war completed
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file ui.war completed
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file igv.jar completed
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file ConvergeIOV.desktop completed
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file startIOV.sh completed
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file jnlp.desktop completed
Current version:0f78f6b-201808231621
Intended version:4b8cd383b-201908300532
.... ADDING/UPGRADING file igv.png completed

##### CONVERGE APPLIANCE SERVER UPGRADE FINISHED AS A PART OF HOTFIX REVISION 4b8cd383b-201908300532 #####
Starting up tomcat server....
....starting apache-tomcat server.
....donot close this window or terminate it in any other way until the process is complete and the command prompt is rendered
Tomcat started.
....waiting for the Tomcat to launch the converge application
done

Release Note:
-----
CONVERGE RELEASE (Revision #4b8cd383b-201908300532) : 1. Converge Redwood SNP and Mito enhancement release.
SUPPORTED BASE APPLICATION VERSION : 1. CONVERGE 2.1(0f78f6b-201808231621).
END USER IMPACT : 1. No impact to existing functionalities & performance of the application.
IN CASE OF ANY ASSISTANCE PLEASE CONTACT : 1. Level 1 & 2 : MID Tech Support , +1 (888) 821-4443 #1 , hidtechsupport@thermofisher.com.
: 2. Level 3 : Mid-Software-Support@thermofisher.com , Create a Jira ticket at https://jira.amer.thermo.com/secure/RapidBoard.jspa?rapidView=521
: Get assistance from Level 1 or Level 2 team to create it.

-END
-----
[converge@converge-appliance Downloads]#
```

5. At the prompt, close the **Terminal** window.
6. Sign in to Converge™ Software v2.2.



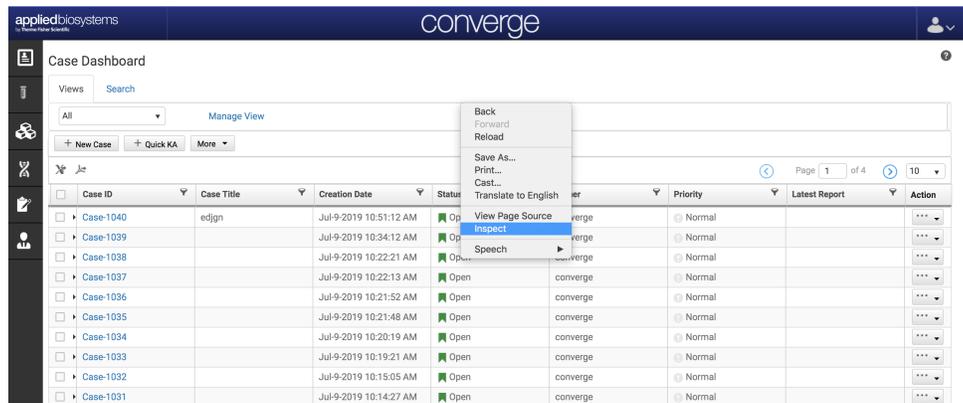
7. Confirm that the **Release ID** is **4b0cd38-201908300532**: Click the dropdown list in the top-right corner, then select **About**.



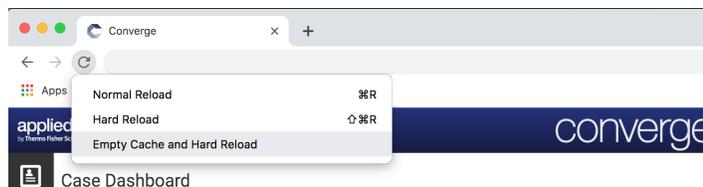
## Clear the cache and cookies

In your Chrome™ browser, clear the cache and cookies to remove inconsistencies between Converge™ Software versions.

1. In the Converge™ Software, right-click in any screen, then select **Inspect**.



2. In the browser toolbar, click **Refresh**, then select **Empty Cache and Hard Reload**.



## Review module licenses

If your earlier version of the Converge™ Software included the Kinship and Paternity module and/or the NGS module, and the licenses have not expired, the licenses are retained after the upgrade. You do not need to reinstall the licenses.



## (If needed) Install the NGS module

If you have NGS batches in Converge™ Software v2.0, v2.0.1, or v2.1, you must install the NGS module before you can view the batches from the earlier version.

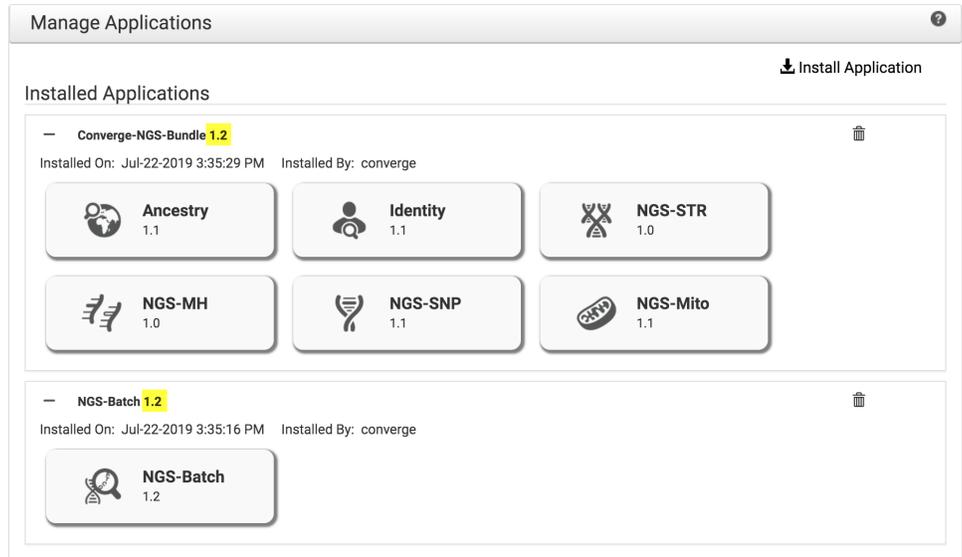
1. Sign in to Converge™ Software v2.2.
2. In the **Admin Dashboard**, select **Global Settings** ▶ **Manage Applications**.
3. Click  **Install Application**, then navigate to the **Converge-NGS-1.2.zip** file that you downloaded in “Download the upgrade files” on page 55.
4. Select **Converge-NGS-1.2.zip**, then click **Upload**.
5. In the **Preview Installation** dialog, click **+Install**.



The following applications are installed: Ancestry, Identity, NGS-Batch, NGS-MH, NGS-Mito, NGS-SNP, and NGS-STR.



6. Confirm that the **Converge-NGS-Bundle** and the **NGS-Batch** both display version **1.2**: In the navigation pane, click **Admin**. Under **Global Settings**, click **Manage Applications**.



7. Import all existing cases. See "Import a case" in the *Converge™ Software Help*.



# Manually install the Converge™ Software on the Converge™ Software Server

## When to manually install the Converge™ Software

You may need to manually install the Converge™ Software for the following reasons.

- The Converge™ system crashes.
- You forget your Converge™ Software Server UNIX™ account password.
- You need to reimage the Converge™ Software Server for any reason.

The time that is required to install the Converge™ Software on the Converge™ Software Server can vary depending on the type of networking solution that you select (automatic DHCP or static IP). This document provides procedures to integrate the server into an automatic DHCP network architecture. For information on integrating the server into a static IP network architecture, contact HID Technical Support.

## Manually install the Converge™ Software

---

**IMPORTANT!** If you reinstall the software after the first installation, **all existing data on the Converge™ Software Server is overwritten.** If you are installing the same software version, back up all data and store the backup in a different location before reinstalling the software. See “Back up the Converge™ Software database” on page 41. If you are installing a different version of the software, see “Back up databases” on page 55.

---

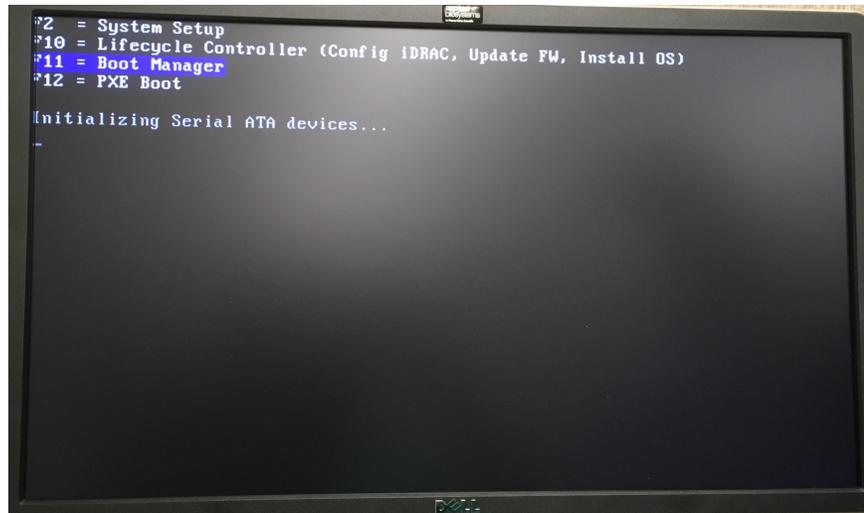
1. Insert the Converge™ Software USB drive [labeled "T130 (or later) Gen2 Converge SW vX.X"] into any USB slot on the front of the Converge™ Software Server.
  2. **IMPORTANT!** Read through all of step 2 before you perform it.
- 

Press the power button on the front of the server. Wait for the start-up options to appear in the top left corner of the screen, then *immediately* press **F11** on the keyboard.

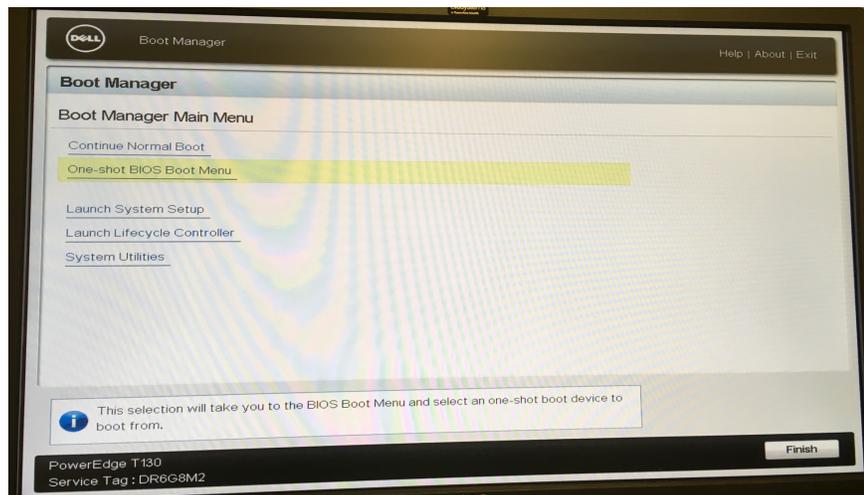
---

**IMPORTANT!** The Boot Manager menu option is displayed only briefly. If you miss the opportunity to press **F11** when the option is displayed, press and hold the power button until the system powers off, wait a few seconds, then repeat step 2.

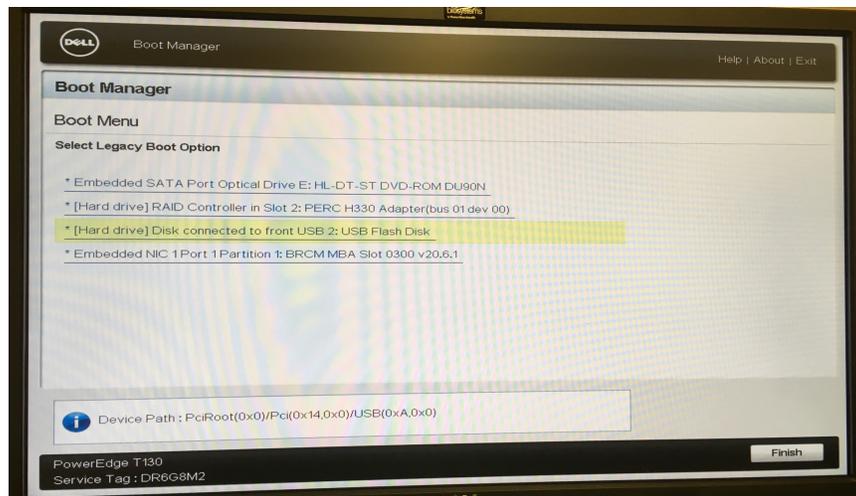
---



3. When the Dell™ Boot Manager is displayed, use the arrow keys on the keyboard to select **One-shot BIOS Boot Menu**, then press **Enter** on the keyboard.

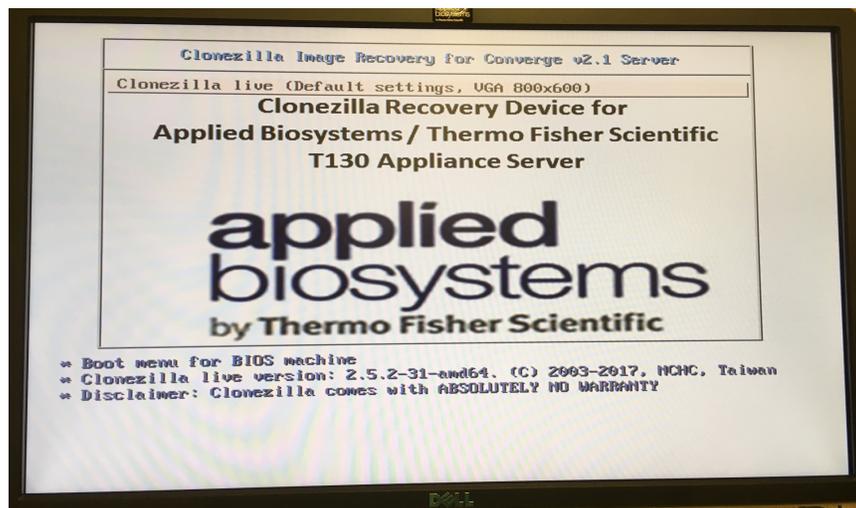


4. In the Dell™ Boot Manager, use the arrow keys to select the *third* option ["(Hard drive) Disk connected to front USB 2: USB Flash Disk" in the example, but the text that is shown on your monitor may be different], then press **Enter** on the keyboard.



The server loads the operating system from the USB drive.

5. When the following screen is displayed, press **Enter** on the keyboard.





- When the following screen is displayed, press **Enter** on the keyboard.

```
The jobs in /etc/ocs/ocs-live.d/ are finished. Start "/usr/sbin/ocs-sr -g auto -e1 auto -e2 -c -r -j
2 -p true restoredisk 2016-01-12-18-Img-Converge-V1 sdb" now.
Found ocs_prerun* parameter in boot parameters...
The order to run: ocs_prerun1
*****
Now run "ocs_prerun1": mount /dev/sda2 /home/partimag/...
Setting the LVM as linux
Starting /usr/sbin/ocs-sr at 2016-02-04 21:41:32 UTC...
*****
Clonezilla image dir: /home/partimag
*****
Shutting down the Logical Volume Manager
Shutting Down logical volume: /dev/rhel/home
Shutting Down logical volume: /dev/rhel/root
Shutting Down logical volume: /dev/rhel/swap
Shutting Down volume group: rhel
Finished Shutting down the Logical Volume Manager
*****
Target disk sdb does not exist in the image saved from disk(s) "sda".
Creating a tmp Clonezilla image "2016-01-12-18-Img-Converge-V1-tmp-cnvted" based on the image "2016-
01-12-18-Img-Converge-V1" so that we can restore the image 2016-01-12-18-Img-Converge-V1 (was saved
from sda) to sdb...
//NOTE// If the restored OS is GNU/Linux, you might have to modify /etc/fstab and grub config file
in the restored GNU/Linux to affect these changes so that it can boot successfully!
Press "Enter" to continue.....
```

- You are prompted twice "Are you sure you want to continue?". At both prompts, press **y**, then press **Enter** on the keyboard.

```
Shutting Down volume group: rhel
Finished Shutting down the Logical Volume Manager
*****
Activating the partition info in /proc... done!
Setting /dev/sda1 info...
Setting /dev/sda2 info...
*****
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
imag/2018-08-31-22-Img-Converge-V1" -> "sda sda1 sda2"
The image was created at: 2018-0831-2233
-WARNING!!! WARNING!!! WARNING!!!
-WARNING, THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: PowerEdge T130
sda (2000GB_PERC_H330_Adp_)_36d0946602bcc5b0022f6dcb41672a095)
sda1 (500M_xfs(In_PERC_H330_Adp_)_36d0946602bcc5b0022f6dcb41672a095)
sda2 (1.8T_LVM2_member(In_PERC_H330_Adp_)_36d0946602bcc5b0022f6dcb41672a095)
*****
Are you sure you want to continue? (y/n) y
JK, let's do it!!
This program is not started by clonezilla server.
*****
Let me ask you again.
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
imag/2018-08-31-22-Img-Converge-V1" -> "sda sda1 sda2"
The image was created at: 2018-0831-2233
-WARNING!!! WARNING!!! WARNING!!!
-WARNING, THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: PowerEdge T130
sda (2000GB_PERC_H330_Adp_)_36d0946602bcc5b0022f6dcb41672a095)
sda1 (500M_xfs(In_PERC_H330_Adp_)_36d0946602bcc5b0022f6dcb41672a095)
sda2 (1.8T_LVM2_member(In_PERC_H330_Adp_)_36d0946602bcc5b0022f6dcb41672a095)
*****
Are you sure you want to continue? (y/n) y
```

The installation proceeds and takes approximately 4–5 minutes to complete.

- When installation is complete, the following screen is displayed. Use the arrow keys to select **Poweroff**, then press **Enter** on the keyboard.

```
Clonezilla - Opensource Clone System (OCS) | Mode: restoredisk
Now you can choose to:

0 Poweroff
1 Reboot
2 Enter command line prompt

<Ok> <Cancel>
```

- After the server powers off, remove the USB drive and store it in a secure location.

**IMPORTANT!** Store the USB drive in a secure location for future use. Do not insert this USB drive in a port on a Windows™ system because it may corrupt the software on the USB drive.



# About the Converge™ Software Server

The Converge™ Software Server is a Linux™-based file server system provided by Thermo Fisher Scientific that hosts the server-based Converge™ Software using an Internet Protocol (IP) address configured in the system. The Converge™ Software Server requires an Administrator to manage user accounts and comes pre-configured with the following components and settings:

- Dell™ PowerEdge™ T130 Tower Server, motherboard v2 or later
- Red Hat™ Enterprise Linux™ operating system
- Apache® Tomcat® application server that runs the Converge™ Software
- PostgreSQL database server that stores the data for the server and software
- Google™ Chrome™ browser
- Automatic configuration of Internet Protocol (IP), Domain Name Service (DNS), and Windows Name Service (WINS) settings via Dynamic Host Configuration Protocol (DHCP)

**Note:** See the manufacturer's documentation accompanying the server or go to the manufacturer's website for the network requirements, specifications, and product details.

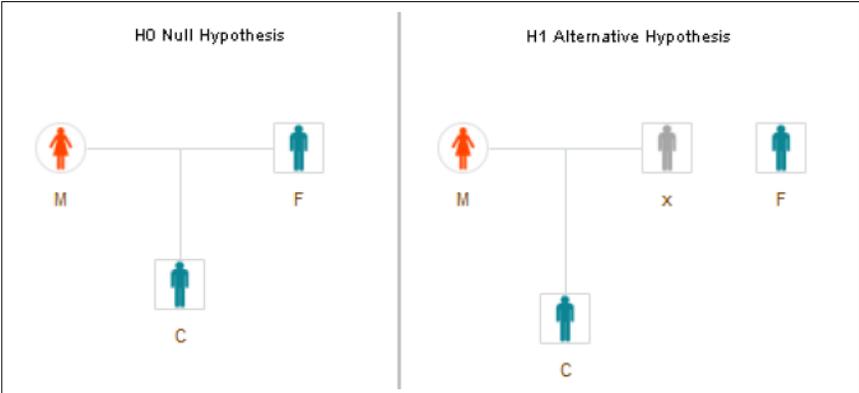
## Converge™ Software Server specifications

| Specification    | Description   |
|------------------|---|
| Processor        | Intel™ Xeon™ Processor E3-1270 v6, 3.8 GHz, 8M cache, 4C/8T, turbo (72 W) |
| Memory           | 16 GB of memory (2 × 8 GB), UDIMM, 2400 MT/s, Single Rank, x8 Data Width  |
|                  | DVD ROM, SATA, Internal   |
| Hard drive (two) | 2 TB 7.2 K RPM NLSAS, 12 GB/s, 3.5-in cabled hard drive (RAID1)           |
| Data storage     | RAID 1; PERC H330 Integrated Controller for 3.5-inch cabled hard drive    |
| Operating system | Red Hat™ Enterprise Linux™ operating system                               |
| Browser          | Google™ Chrome™ 66 or later   |

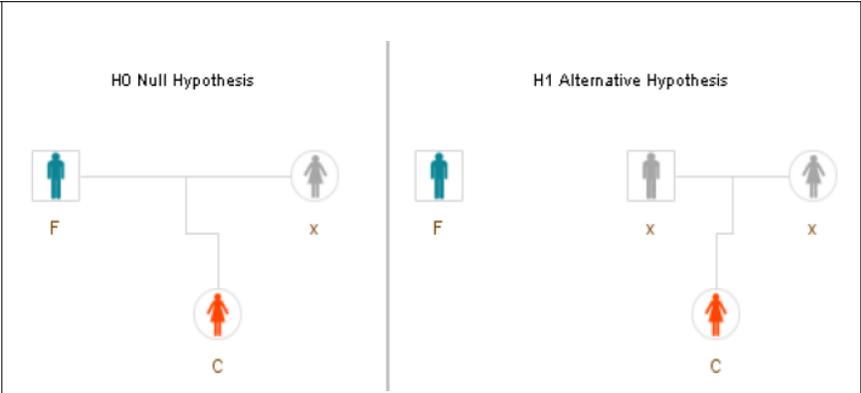


# Pedigree tree examples

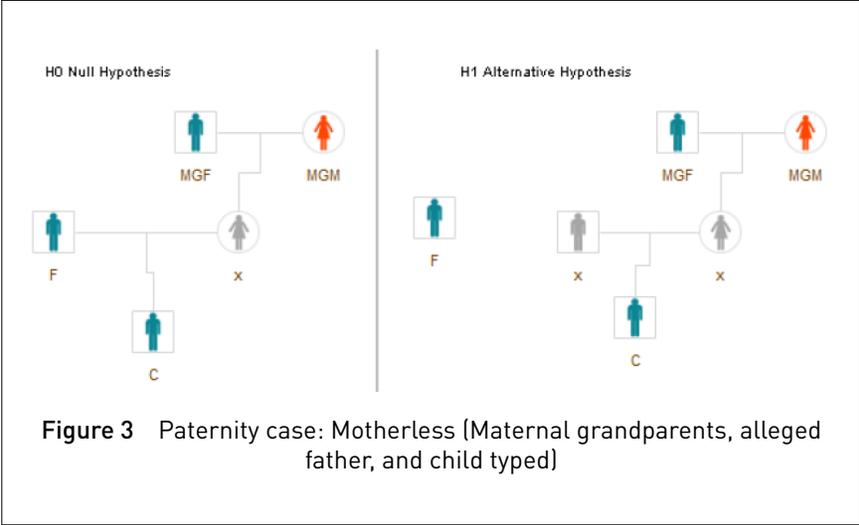
Figure 1 on page 70 through Figure 15 on page 73 are examples of Converge™ Software pedigree trees for some of the hypotheses that can be examined using the Converge™ Kinship and Paternity module. For assistance with creating pedigree trees for other scenarios, contact HID Technical Support.



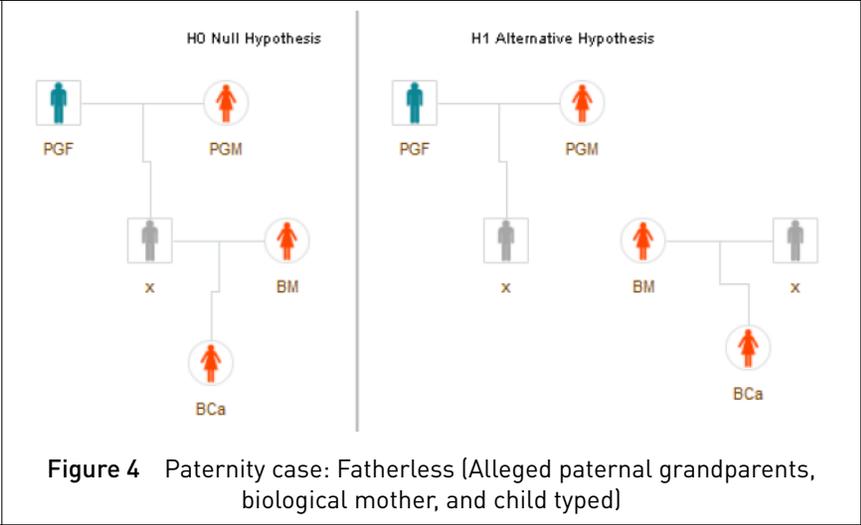
**Figure 1** Paternity case: Standard trio (Biological mother, alleged father, and child typed)



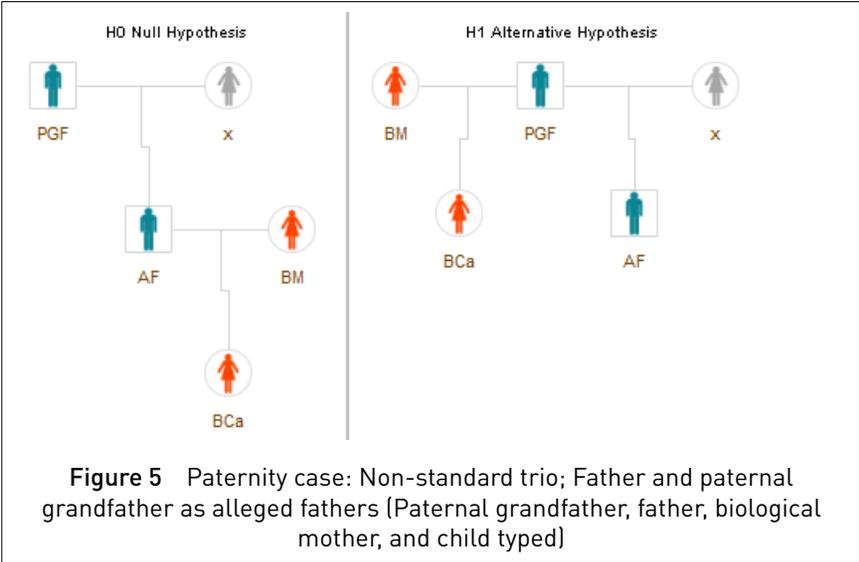
**Figure 2** Paternity case: Motherless duo (Alleged father and child typed)



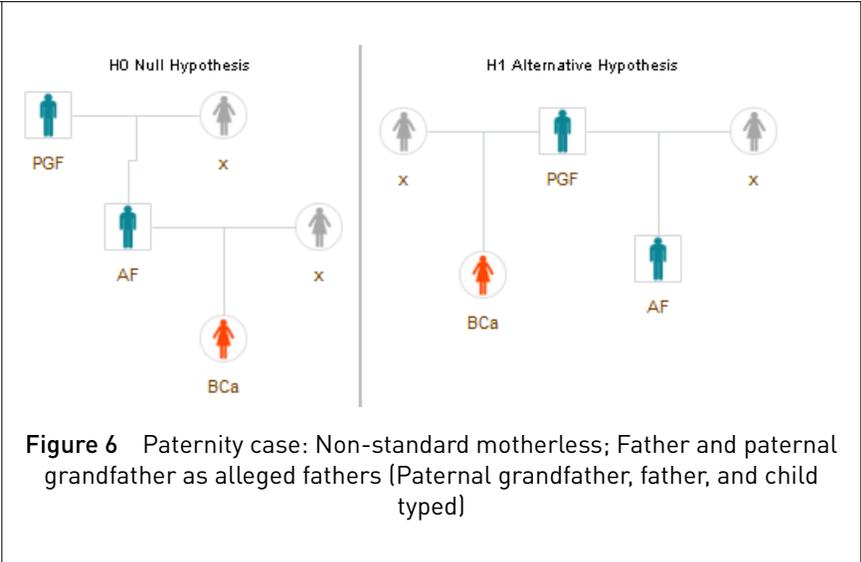
**Figure 3** Paternity case: Motherless (Maternal grandparents, alleged father, and child typed)



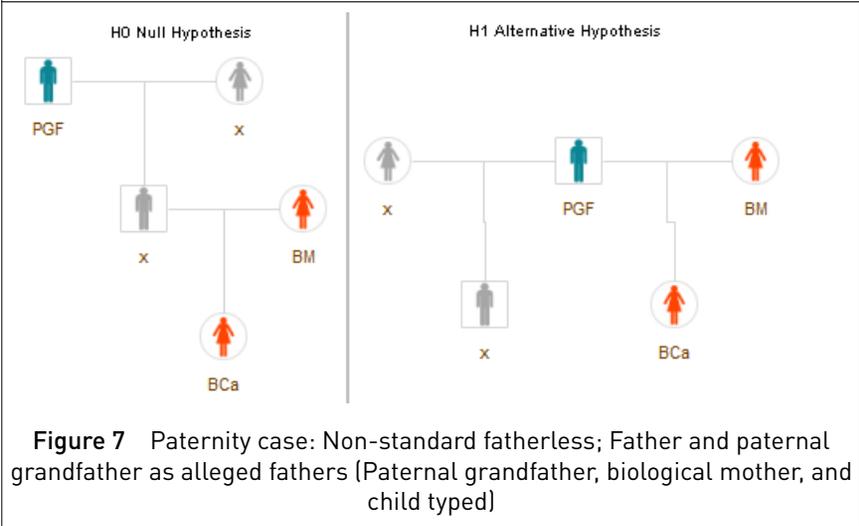
**Figure 4** Paternity case: Fatherless (Alleged paternal grandparents, biological mother, and child typed)



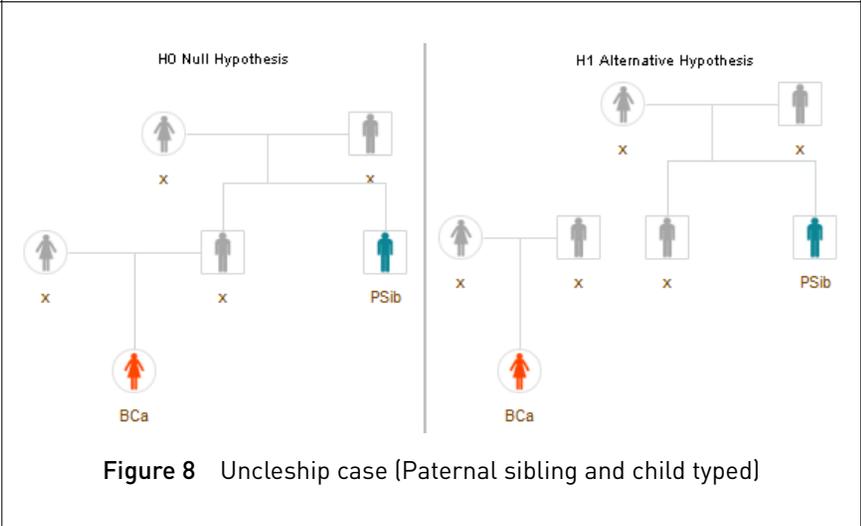
**Figure 5** Paternity case: Non-standard trio; Father and paternal grandfather as alleged fathers (Paternal grandfather, father, biological mother, and child typed)



**Figure 6** Paternity case: Non-standard motherless; Father and paternal grandfather as alleged fathers (Paternal grandfather, father, and child typed)



**Figure 7** Paternity case: Non-standard fatherless; Father and paternal grandfather as alleged fathers (Paternal grandfather, biological mother, and child typed)



**Figure 8** Uncleship case (Paternal sibling and child typed)



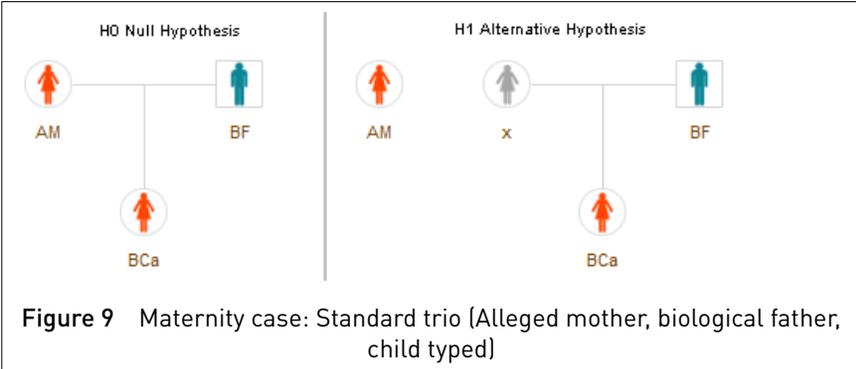


Figure 9 Maternity case: Standard trio (Alleged mother, biological father, child typed)

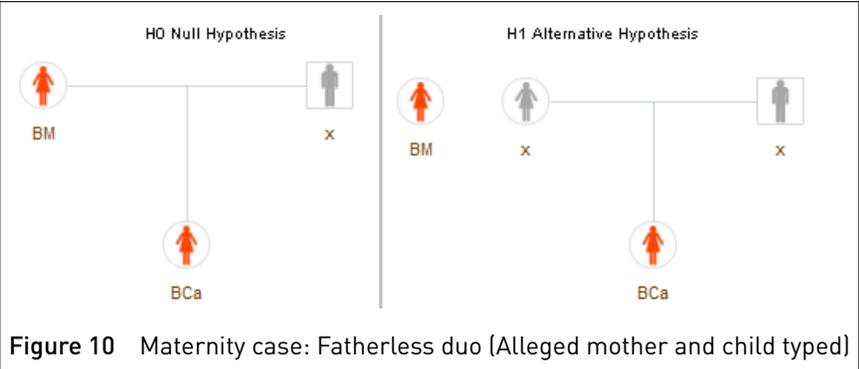


Figure 10 Maternity case: Fatherless duo (Alleged mother and child typed)

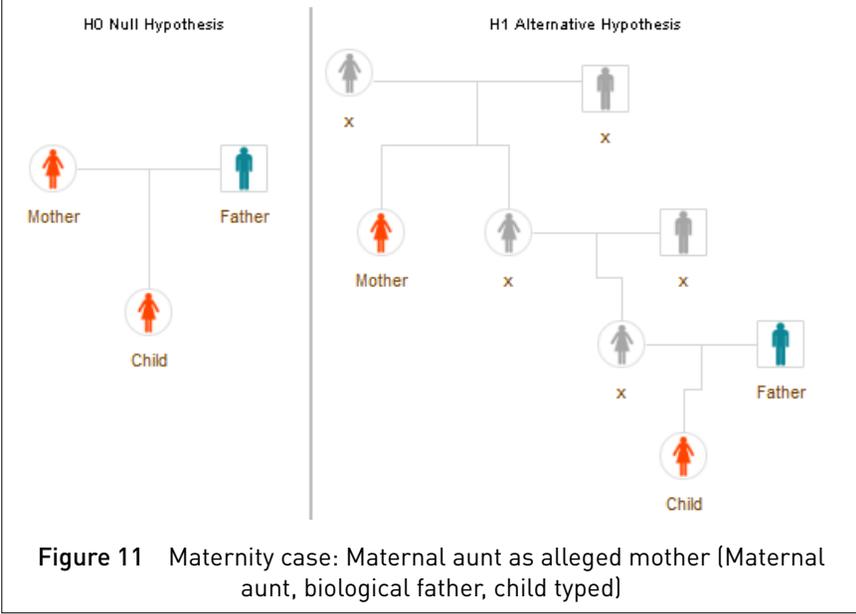


Figure 11 Maternity case: Maternal aunt as alleged mother (Maternal aunt, biological father, child typed)

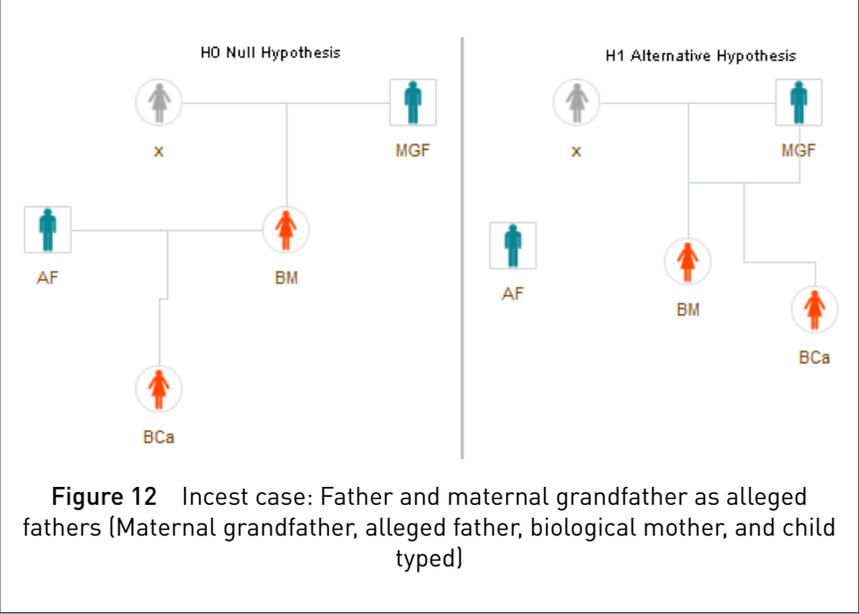


Figure 12 Incest case: Father and maternal grandfather as alleged fathers (Maternal grandfather, alleged father, biological mother, and child typed)

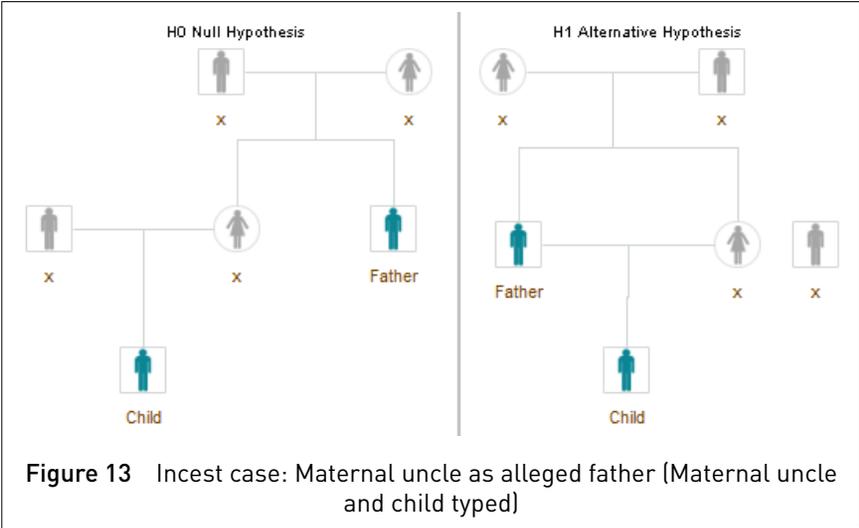


Figure 13 Incest case: Maternal uncle as alleged father (Maternal uncle and child typed)

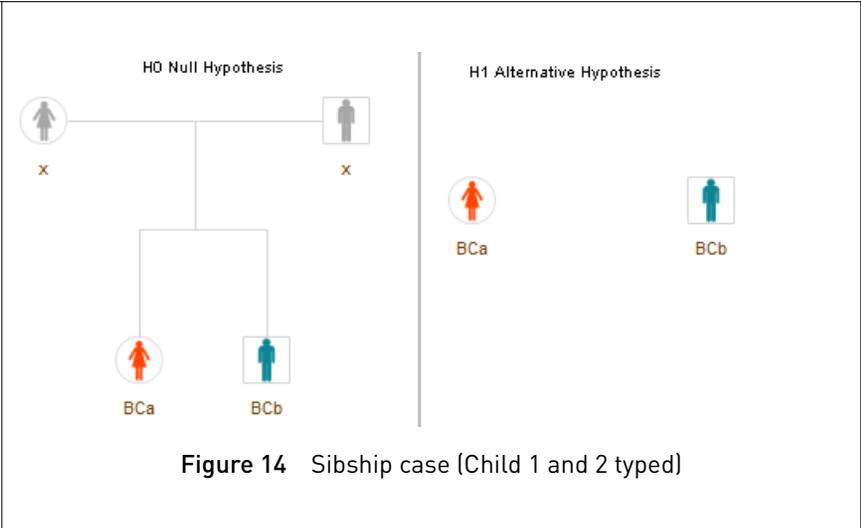


Figure 14 Sibship case (Child 1 and 2 typed)

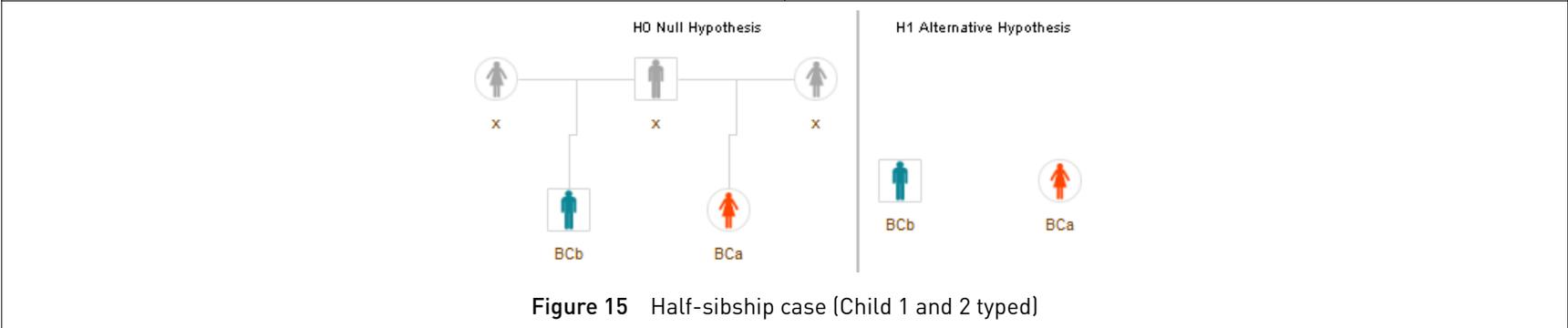


Figure 15 Half-sibship case (Child 1 and 2 typed)

# Documentation and support

## Related documentation

The following related documents are available:

| Document  | Publication number |
|---|--------------------|
| <i>Converge™ Software Help</i>  | —                  |
| <i>Thermo Fisher Scientific Software Licensing Quick Reference</i>  | MAN0016342         |
| <i>Precision ID mtDNA Panels with the HID Ion S5™ /HID Ion GeneStudio™ S5 System Application Guide</i>                  | MAN0017770         |
| <i>Precision ID SNP Panels with the HID Ion S5™ /HID Ion GeneStudio™ S5 System Application Guide</i>                    | MAN0017767         |
| <i>Precision ID GlobalFiler™ NGS STR Panel v2 with the HID Ion S5™ /HID Ion GeneStudio™ S5 System Application Guide</i> | MAN0016129         |
| <i>Converge™ Software Batch (Automated) Kinship Analysis User Bulletin</i>  | 100039540          |

**Note:** For additional documentation, see “Customer and technical support” on page 75.

## Obtaining information from the Help system

The Converge™ Software has a Help system that describes how to use each feature of the user interface. Access the Help system by clicking  in the toolbar of the Converge™ Software window.

You can use the Help system to find topics of interest by:

- Reviewing the table of contents
- Searching for a specific topic

## Customer and technical support

For Converge™ Software support:

- **In North America** — Send an email to [HIDTechSupport@lifetech.com](mailto:HIDTechSupport@lifetech.com), or call **888-821-4443 option 1**.
- **Outside North America** — Contact your local support office.
- For latest services and support information for all locations, go to [thermofisher.com/support](http://thermofisher.com/support).

## Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at [www.thermofisher.com/us/en/home/global/terms-and-conditions.html](http://www.thermofisher.com/us/en/home/global/terms-and-conditions.html). If you have any questions, please contact Life Technologies at [www.thermofisher.com/support](http://www.thermofisher.com/support).

