1 Introduction 3
2 Typography 4
3 Starting 6
  3.1 Locating the TrueCommand™ IP Address .................................................. 6
  3.2 Adding TrueCommand™ as an Exception .................................................. 6
    3.2.1 Adding an Exception in Firefox ......................................................... 7
    3.2.2 Adding an Exception in Chrome ......................................................... 8
  3.3 Signing Up for TrueCommand™ ................................................................. 9
4 Dashboard 13
  4.1 Managing NAS Databases ........................................................................... 15
5 Systems 16
  5.1 Groups ....................................................................................................... 17
  5.2 Discovered Systems .................................................................................. 17
6 Users 19
  6.1 Add User ..................................................................................................... 19
  6.2 Edit User ..................................................................................................... 20
7 Teams 22
  7.1 Add Team .................................................................................................... 22
  7.2 Edit Team .................................................................................................... 22
8 Alerts 24
  8.1 System Alerts ............................................................................................. 25
  8.2 TrueCommand™ Alert Rules ....................................................................... 25
  8.3 Alert Plugins ............................................................................................... 27
9 Reports 28
  9.1 Create Report .............................................................................................. 28
  9.2 View Report ................................................................................................. 29
  9.3 Share Report ............................................................................................... 30
10 Logs 32
11 Administration 33
12 Update 37
13 Help Text 38
14 User Menu 39
### 15 Restart or Shut Down

### 16 System Configuration Utility
16.1 Manage Services ........................................................................... 44
16.2 Manage Networking ...................................................................... 44
16.3 Date/Time Settings ....................................................................... 44
16.4 Manage Updates ........................................................................... 45
16.5 Reset UI User Password ................................................................. 45
16.6 Reboot System ............................................................................. 45
16.7 Shutdown System .......................................................................... 45
16.8 Root Terminal ............................................................................... 45

### 17 Installation
17.1 System Requirements .................................................................... 46
17.2 Virtualization ............................................................................... 46
   17.2.1 VirtualBox ............................................................................. 46
   17.2.2 VMware ESXi ......................................................................... 53
17.3 Installing TrueCommand™ .............................................................. 57
Welcome to TrueCommand™!

TrueCommand™ is a top-level management solution for managing multiple FreeNAS and TrueNAS systems. This is sometimes called a “single pane of glass” appliance and provides a unified administration for multiple users and multiple systems on networks.

TrueCommand™ can monitor an entire network of FreeNAS® and TrueNAS® systems. This includes showing system statistics on storage usage, network activity, active services, and more. Even more, TrueCommand™ has the ability to create custom reports about individual systems or a combination of many systems.
These typographic conventions are referenced throughout the docs:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>🔄</td>
<td>Configure</td>
<td>Configurable options.</td>
</tr>
<tr>
<td>🔒</td>
<td>Administration</td>
<td>Administration page. Only visible to admin accounts.</td>
</tr>
<tr>
<td>🌐</td>
<td>Systems</td>
<td>Systems page.</td>
</tr>
<tr>
<td>🚀</td>
<td>Teams</td>
<td>Teams page.</td>
</tr>
<tr>
<td>🗑</td>
<td>Delete</td>
<td>Delete item.</td>
</tr>
<tr>
<td>🚨</td>
<td>Alert Error</td>
<td>Critical alert.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Alert Warning</td>
<td>Warning alert.</td>
</tr>
<tr>
<td>🕵️</td>
<td>Alert Information</td>
<td>Information alert.</td>
</tr>
<tr>
<td>✔️</td>
<td>Alert Resolve</td>
<td>Resolve alert.</td>
</tr>
<tr>
<td>🔔</td>
<td>Alert Rules</td>
<td>Alert rules page.</td>
</tr>
<tr>
<td>📝</td>
<td>Report Share</td>
<td>Share report with other users.</td>
</tr>
<tr>
<td>👀</td>
<td>Show</td>
<td>Show item.</td>
</tr>
<tr>
<td>📦</td>
<td>Expand</td>
<td>Expand item.</td>
</tr>
<tr>
<td>📆</td>
<td>Calendar</td>
<td>Choose a date.</td>
</tr>
<tr>
<td>🖋️</td>
<td>Edit</td>
<td>Edit item.</td>
</tr>
<tr>
<td>🤔</td>
<td>Help</td>
<td>Display additional help text for items.</td>
</tr>
<tr>
<td>📊</td>
<td>Metrics</td>
<td>Show item metrics.</td>
</tr>
<tr>
<td>🔒</td>
<td>Offline</td>
<td>Offline status.</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Plus Icon]</td>
<td>Plus</td>
<td>Add item.</td>
</tr>
<tr>
<td>![Minus Icon]</td>
<td>Minus</td>
<td>Remove item.</td>
</tr>
<tr>
<td>![Power Icon]</td>
<td>Power</td>
<td>Shut down TrueCommand™.</td>
</tr>
<tr>
<td>![Restart Icon]</td>
<td>Restart</td>
<td>Shut down and restart the system.</td>
</tr>
<tr>
<td>![Update Icon]</td>
<td>TrueCommand™ Update</td>
<td>Update TrueCommand™.</td>
</tr>
<tr>
<td>![Database Backup Icon]</td>
<td>System Update</td>
<td>Update the desired system.</td>
</tr>
<tr>
<td>![Database Restore Icon]</td>
<td>All Alerts</td>
<td>All alerts page.</td>
</tr>
<tr>
<td>![Database Restore Icon]</td>
<td>Database Backup</td>
<td>Back up the system database.</td>
</tr>
<tr>
<td>![Restart Icon]</td>
<td>Database Restore</td>
<td>Restore system databases.</td>
</tr>
<tr>
<td>![System Interface Icon]</td>
<td>System web interface</td>
<td>View the system web interface.</td>
</tr>
</tbody>
</table>
Please see the Installation (page 46) chapter for instructions on installing TrueCommand™ to a virtual machine or hardware if it has not already been installed.

The Appliance Status screen appears when TrueCommand™ is running.

![Appliance Status](image)

**Fig. 3.1: Appliance Status**

**Locating the TrueCommand™ IP Address**

The IP address of the TrueCommand™ system is displayed at the top of the Appliance Status menu. Enter the DNS hostname or IP address in a browser to access the TrueCommand™ web interface.

**Adding TrueCommand™ as an Exception**

TrueCommand™ uses a self signed certificate (https://en.wikipedia.org/wiki/Self-signed_certificate) for a secure connection. Because of this, most internet browsers consider the IP address or DNS hostname untrustworthy. The IP address or DNS hostname must be added as an exception to connect.
Adding an Exception in Firefox

Click *Advanced* to view information about the error code.

![Firefox Connection Warning](image)

**Fig. 3.2: Firefox Connection Warning**

Click *Add Exception*.... *Set Permanently store this exception* to keep the IP address or DNS hostname permanently stored in Firefox.

*Click Confirm Security Exception.*
Fig. 3.3: Firefox Add Exception

Adding an Exception in Chrome

Click *Advanced* to view information about the error code.

Click *Proceed to hostname (unsafe).*
Signing Up for TrueCommand™

Follow these steps to create a new admin user:

1. **Log in using the default username** (admin) and password (admin). This username is only present when there are no actual users defined in the database.
2. Enter a username and password. Read the terms of service, set *I have read and agree to the terms of service*, and click **SIGN UP**.
3. Log in with the administrator user just created. The TrueCommand™ web interface is displayed.
Fig. 3.7: Empty Dashboard

The Dashboard (page 13) is empty until TrueCommand™ begins monitoring systems.
The dashboard is used to manage and monitor FreeNAS® and TrueNAS® systems. It displays system storage capacity, CPU usage, memory usage, network statistics, and other useful information. To open the dashboard, click the TrueCommand™ logo in the upper-left side of the web interface.

The dashboard is empty when first setting up TrueCommand™ because no systems are being monitored. Add Systems (page 16) to view them on the dashboard. All added systems are shown on the dashboard by default. Each system summary has options for that system, including viewing more details, opening the system web interface, installing updates, and others. These options change according to the account permissions that is currently logged in to the TrueCommand™ web interface.

To hide a system on the dashboard, unset the checkbox in the Systems side panel. Access the system by clicking System web interface (page 5) in the side panel. This opens the system interface associated with the DNS hostname or IP address. TrueCommand™ uses SSL by default to connect to other systems. This means if an authentic certificate authority is not used on the system, TrueCommand™ cannot connect to view the system web interface. See Certificate Authorities (https://www.ixsystems.com/documentation/freenas/11.2-U6/system.html#cas) and Certificates (https://www.ixsystems.com/documentation/freenas/11.2-U6/system.html#certificates) for more detailed information on how to create a certificate.
Live statistics are displayed for each connected system. To edit the TrueCommand™ settings for a system, click the *edit* (page 4) button. FreeNAS® or TrueNAS® systems with available updates show a *system update* (page 5) button. Clicking *system update* (page 5) installs updates and reboots that system.

Clicking *System web interface* (page 5) in the side panel accesses that system. This opens the system interface associated with the DNS hostname or IP address.

To hide a system on the dashboard, unset the checkbox in the *Systems* side panel. View more information about a specific system by hiding all other systems on the dashboard. When only one system is shown, additional tabs show more system details. There are also system controls for user accounts that can administrate the FreeNAS® or TrueNAS® system:

- **Metrics** shows a variety of system usage statistics. These can be filtered by date.
- **Storage** summarizes the storage pool status. Clicking *metrics* (page 4) for a pool shows more usage details and dataset notes.
  
  Clicking *expand* (page 4) shows the disk status. Clicking *metrics* (page 4) for one of the related disks shows the full activity history of that disk.

- **Network** shows the configuration and current bandwidth of each physical and virtual network interface. Clicking *metrics* (page 4) for a device shows more detailed traffic graphs.
- **Services** lists every available service. Service states are displayed, along with options to stop, start, or set a service to auto-start.
- **Jails** lists jails with configuration details and current state. Jails can be started or stopped.
- **Virtual Machines** lists virtual machines (VM) with configuration details and current status. VMs can also be started or stopped.
• Alerts shows alerts (page 24) generated by the FreeNAS® or TrueNAS® system. Alerts are sorted between Active and Resolved notices. To see more details or comments on an alert, click the alert error (page 4) icon. Alerts can be marked as resolved or removed completely.

• Database Backups manages database files copied from attached iXsystems™ NAS systems. This feature is only available with a TrueCommand™ license.

• Audit tracks changes that have been made to the system configuration. TrueCommand™ updates the audit log every 30 minutes with entries that show which item changed and whether a TrueCommand™ user initiated the change. To keep log information secure, it is recommended to secure NAS connections with SSL (page 35). To view the complete entry for the configuration change, click show (page 4).

Managing NAS Databases

This feature is only available with a TrueCommand™ license.

TrueCommand™ detects when changes are made to an attached iXsystems™ NAS system configuration and creates a copy of the NAS database. These database copies can be restored to one or more iXsystems™ NAS systems, cloning that configuration. FreeNAS® or TrueNAS® systems must be version 11.2 or greater to permit automated database backups.

By default, TrueCommand™ saves up to seven copies of a single system database. This count resets when the attached iXsystems™ NAS is updated to a new version of FreeNAS® or TrueNAS®. For example, say TrueCommand™ has saved five different database files from a TrueNAS® 11.2 system. When that system is updated to TrueNAS® 11.3, TrueCommand™ keeps the existing 11.2 database copies and automatically saves up to seven copies of the 11.3 system database.

Automated backup settings are located in the TrueCommand™ configuration options (page 35).

To back up a NAS database manually, go to the Dashboard and click database backup (page 5).

Saved database files can be located by going to the Dashboard, showing details for a single system, and clicking the Database Backups tab. Each entry shows the FreeNAS® or TrueNAS® database version, when the database was copied to TrueCommand™, and buttons to delete or restore the database.

Restoring a Database

**Danger:** Do not restore a database to a system that has a different version of FreeNAS® or TrueNAS® installed! See the FreeNAS® or TrueNAS® documentation (https://www.ixsystems.com/documentation) for instructions about rolling a system back to a software version that matches the database being restored.

Clicking database restore (page 5) shows restore options for the selected database. Click ADD SYSTEM to choose a system to restore to that database configuration. Choosing multiple systems applies that database to all selected systems, allowing easy cloning of a single FreeNAS® or TrueNAS® configuration across multiple systems. Systems are unavailable in both TrueCommand™ and the individual NAS web interface while the database is applied.
Systems contains all the options for TrueCommand™ to begin monitoring a system. The systems page has three tabs: Systems (page 16), System Groups (page 17), and Discovered Systems (page 17). View the systems page by going to configure (page 4) → systems (page 4).

Click configure (page 4) → systems (page 4) → + NEW SYSTEM to begin monitoring a system. Enter the system IP address or DNS hostname, nickname, and password. If a mistake is made, the contents of the fields can be reset by clicking RESET FORM. To add the new system, click ADD SYSTEM. Adding a system with an incorrect password shows that system as offline (page 4) in the dashboard and added systems list.

Click Systems to view all added systems.

Systems can be edited by clicking edit (page 4). Change the system information by entering new information in the fields and clicking SAVE CHANGES. To go back to the original contents of the fields, click RESET FORM.

A system can be removed from TrueCommand™ monitoring by clicking delete (page 4).
Groups

Groups are collections of systems that are organized by TrueCommand™ administrators. Systems are organized into groups to efficiently manage permissions and reports.

Click System Groups to view the list of created groups and the systems they contain. Groups are created by clicking configure (page 4) → Systems → + NEW GROUP. Enter a group name. Click ADD SYSTEM to add a system to the group. Repeat this step to add multiple systems to a group. Click CREATE GROUP when all desired systems are added to the group.

Editing a group allows updating the group name or changing which systems are members of that group. To delete a system group, click delete (page 4). Confirm the deletion by clicking YES.

Discovered Systems

Click Discovered Systems to view a list of systems TrueCommand™ has detected on the local network.
A system can be added to TrueCommand™ monitoring by clicking *plus* (page 5). Enter a nickname and the password for the system, then click *ADD SYSTEM*.
TrueCommand™ allows multiple people to connect to the system with personalized settings. Each person has a unique user account.

Add User

Register a new user by clicking configure (page 4) → Users → NEW USER. Enter a descriptive username and an authentication method for the user. The DEFAULT authentication method uses the TrueCommand™ web interface to log in. LDAP/AD allows for a single sign on experience through Lightweight Directory Access Protocol (LDAP) (https://en.wikipedia.org/wiki/Lightweight_Directory_Access_Protocol) or Active Directory (AD) (https://en.wikipedia.org/wiki/Active_Directory). Usernames and passwords are provided through LDAP or AD. This means a user can log in with an LDAP or AD account without creating a TrueCommand™ login. The LDAP server IP address or DNS hostname and Domain are required to use LDAP/AD. The LDAP or AD Username (optional) is required if the TrueCommand™ username does not match the LDAP or AD credentials.

After entering the information, click CREATE USER to add the user to TrueCommand™. Repeat this process to add multiple users.
Users can be assigned to Teams (page 22). When a team is created, select a team from the drop-down to add the user to that team. Users can be members of multiple teams.

Users can be deleted by clicking delete (page 4).

Warning: Deleting a user permanently removes the user and cannot be undone.

Edit User

Edit users from the configure (page 4) → Users → edit (page 4) menu. Editing a user requires entering the current password for that user. These details can be changed for a user:

- **AVATAR**: Click edit (page 4) and choose an avatar image. An avatar is a picture associated with the user.
- **USER DETAILS**: A user can be given administrator privileges by clicking the slider. The Username, Full Name, Title, Email, Phone, and Auth method can be changed. The LDAP server IP address or DNS hostname and Domain are required to use LDAP/AD. The LDAP or AD Username (optional) is required if the TrueCommand™ and LDAP or AD username are different. To go back to the original contents of the fields, click RESET FORM.
- **JOINED TEAMS**: The CREATE A NEW TEAM button appears if no teams exist. When teams are present, the JOIN TEAM button appears. Click JOIN TEAM to add the user to a team. Users can be added to multiple teams. Click minus (page 5) to remove the user from a team.
- **SYSTEM ACCESS**: The MANAGE SYSTEMS button appears if a system has not been added to TrueCommand™. When a system has been added, the ADD SYSTEM button appears. Click ADD SYSTEM and select a system from the drop-down to give the user access to that system. To assign the type of access to the system, choose...
read or read/write from the ACCESS drop-down. To remove a user's access to a particular system, click minus (page 5) on the desired system.

- **SYSTEM GROUPS**: A MANAGE GROUPS button appears if a group has not been created. When a group has been created an ADD GROUP button appears. Click ADD GROUP and select a group from the drop-down to give the user access to all the systems in that group. To assign the type of access to the group, choose read or read/write from the ACCESS drop-down. To remove a user's access to a particular group, click minus (page 5) on the desired group.

- **End User License Agreement (EULA)**: The EULA can be viewed by clicking VIEW THE EULA.

Fig. 6.2: Editing a User
Teams are a collection of users. They provide a more efficient way of managing users. For example, changing the permissions for one team is much faster than changing the permissions for many individual users.

Add Team

A team is created by clicking \textit{configure} (page 4) $\rightarrow$ \textit{TEAMS} $\rightarrow$ \textit{CREATE TEAM}. Enter a name and select an avatar for the new team. Click \textit{CREATE TEAM} to create the team.

![Fig. 7.1: Adding a New Team](image)

Edit Team

Click \textit{configure} (page 4) $\rightarrow$ \textit{Teams} $\rightarrow$ \textit{edit} (page 4) to edit a team. These options can be changed:
• **TEAM AVATAR**: Click *edit* (page 4) to upload an avatar image or use an existing image.

• **MEMBERS**: To add users to the team, click *ADD USER* and choose them from the drop-down. To remove users from the team, click *minus* (page 5) on the desired user.

• **SYSTEM ACCESS**: Give the team access to specific systems by clicking *ADD SYSTEM* and selecting systems from the drop-down. This gives all users that are a part of the team access to the systems selected. To change the type of access, click *read* or *read/write* from the *ACCESS* drop-down. To remove a system from access by the team, click *minus* (page 5) on the desired system.

• **SYSTEM GROUPS**: Give the team access to *created groups* (page 17) of systems by clicking *ADD GROUP* and selecting groups from the drop-down. This gives all members of the team access to the group of systems selected. To change the type of access, click the *ACCESS* drop-down and select *read* or *read/write*. To remove a group from access of the team, click *minus* (page 5) on the desired group.

---

**Fig. 7.2: Editing a Team**
TrueCommand™ alerts provide visual warnings for monitored systems that require attention. These alerts are either generated by the monitored system or an alert rule (page 25) created in TrueCommand™.

To see all alerts that TrueCommand™ has discovered, go to the User Menu (page 39) and click all alerts (page 5). Administrator accounts can see all generated alerts. A non-administrator account can only view alerts for systems that the individual account has permission to read.

![Fig. 8.1: Alert Notices](image)

The Active Notices tab shows all unresolved alerts. Alerts are moved to the Resolved Notices tab by clicking alert resolve (page 4). To resolve multiple alerts, select each alert and click alert resolve (page 4).

Click alert information (page 4) to view additional comments about an alert. To write notes about an alert, enter information in the Leave a comment field and click ADD COMMENT.

Administrator accounts can delete an alert by clicking delete (page 4). Deleting an alert cannot be undone. To delete multiple alerts, select each alert and click delete (page 4).
System Alerts

Alerts generated by a monitored system display in both Systems (page 16) and the Dashboard (page 13) as a number above the system icon. To view all alerts for a single system, go to the Dashboard, select a single system, and click the Alerts tab (page 14).

Each active and resolved alert is visible in this tab. Clicking alert information (page 4) shows details for that alert, including the option to leave comments about the alert.

To globally configure which system alerts are ignored by TrueCommand™, go to configure (page 4) → administration (page 4), and select configure (page 4). Find ignore alerts from a connected NAS and choose the Alert Categories. NAS-generated alerts marked with the selected categories will not be shown by TrueCommand™.

Individual systems can have their own ignored alert categories. This overrides the global value set in administration (page 4). To set ignored alerts for a single system, go to configure (page 4) → systems (page 4), edit a system entry (edit (page 4)), and set the Alert Categories.

TrueCommand™ Alert Rules

Alerts in TrueCommand™ are generated from alert rules. Several default rules are built into TrueCommand™. TrueCommand™ administrators and team members (page 22) with the appropriate permissions can create new alert rules.

To give a team permission to create new alert rules, go to configure (page 4) → teams (page 4), edit a team, and set Enable alert creation. Team members are restricted to creating rules for those systems that the team member has permission to view.

To view all TrueCommand™ alert rules, open the User Menu (page 39) and click alert rules (page 4).
Details about each TrueCommand™ alert rule are shown on this page, including which user account created the rule. Alert rules can be activated (▶) or suspended (■), edited (✔), or deleted () by either an administrator account or the account that created the rule.

New TrueCommand™ alert rules can be created to monitor a wide variety of system information and generate a TrueCommand™ alert if specific conditions occur. To create a new alert rule, click + NEW ALERT RULE and follow the creation wizard:
Fig. 8.3: Adding a New Alert Rule

1. **Select a System**: The rule will apply to these systems.

2. **Select a Data Source**: Choose a data source for the rule. This is the type of information that can trigger an alert. For example, choosing `cpu_temp` means the alert rule monitors the temperature of the chosen system.

3. **Type and Threshold**: Create the rule conditions:
   - **Data type**: This is the specific data TrueCommand™ will monitor. The options change depending on the Data Source.
   - **Priority level**: Choose Information, Warning, or Critical. This determines the category of alerts generated by this rule.
   - **Comparison type**: A conditional statement that applies to the Data type and the Comparison value.
   - **Comparison value**: Enter a value appropriate to the options scenario and options selected. This can act as a threshold or limitation on when an alert is generated by the rule.

4. **Finished**: To create the new alert, click **CREATE ALERT**. To start over, click **RESET**.

**Alert Plugins**

TrueCommand™ uses plugins to expand how alerts are communicated to individual users or administrators. TrueCommand™ administrators can install an alert plugin by going to **configure** (page 4) → **Alert Plugins. Installed** plugins are shown first. Select the **Browse** tab and install the chosen plugin by clicking +.

Individual user accounts can use the installed plugins to manage how that account is notified of an alert. To configure a plugin, open the **User Menu** (page 39) and click **Plugins**. Find the desired plugin and click **configure** (page 4).
The Reports page provides a list of reports created by and shared with the current user. A default report is already created and is available to all users. The default report shows network traffic, storage percent used, and memory utilization for the chosen systems.

View the Reports page by clicking *User Menu* (page 39) → *Reports*.

![Fig. 9.1: Reports Page](image)

**Create Report**

Click *CREATE REPORT* to create a customizable report. Enter a report name and an optional description for the report. Click *BROWSE WIDGETS* or *WIDGET* to add charts to the report. Most charts are already configured to report certain settings. To create a custom chart with custom settings, add *Custom Area Chart, Custom Bar Chart, or Custom Line Chart*. Fill in these options when adding a custom chart:
Fig. 9.2: Adding a New Chart

1. **General Settings**: Enter a Title, Subtitle (optional), Axis label (optional), Point size, Line size, Y min (optional), and Y max (optional) for the chart. *Stack the values* can be set to bring data points on the chart closer together. This setting is useful for charts that have many different data points at the max Y value. Click NEXT.

2. **Data sources**: Add data sources to the chart by clicking *expand* (page 4) and selecting appropriate sources. Multiple data sources can be added to one chart. Click NEXT.

3. **Summary**: This step shows the values set in **General Settings** and the data sources selected. Click SAVE to continue. Click BACK to go back and change a setting or data source.

After adding charts to the report, click SAVE to create a report specific to that user.

**View Report**

Go to *User Menu* (page 39) → *Reports* and click show (page 4) on the appropriate report. Select the systems to be used for the report. Select the time period for the report. 1D generates a report with data going back one day, 1W generates a report with data going back one week, and 1MO generates a report with data going back one month. Click GENERATE to view the report.
Share Report

Reports can be shared by going to User Menu (page 39) → Reports and clicking report share (page 4) on the report to be shared. Reports can also be shared by going to User Menu (page 39) → Reports → show (page 4) and clicking SHARE REPORT.

Reports can be shared with individual users or entire teams. Set either OWNER or SHARED WITH for the desired user. Every user can be by clicking OWNER or SHARED WITH. Users with OWNER status can edit the report. Users with SHARED WITH status can only view the report. Click SAVE to confirm the sharing settings.
Fig. 9.4: Reports Sharing
Logs track user activity on TrueCommand™. For example, if a user deletes a system from TrueCommand™, the log records which user deleted it along with other information associated with the deleted system. Click an entry in the logs to show more information.

The SYSTEMS panel has options to HIDE ALL or SHOW ALL actions affecting connected systems. The USERS panel also has HIDE ALL and SHOW ALL options for user related actions.

Logs can be filtered by date. Change the end and start date by manually entering a specified date or click calendar (page 4) to select a date from the calendar. Click REFRESH to refresh the list with the latest entries.

Fig. 10.1: Log Entry
The ADMINISTRATION page has these tabs: About, Updates, Email Setup, and Configuration. The ADMINISTRATION page is accessed from configure (page 4) → Administration.

**Note:** The Administration option is only available to users with administrator permissions.

The About tab contains:

- **SYSTEM INFO:** Show the current TrueCommand™ system ID and version.
- **LICENSE:** Display details about the current license or request a quote for a TrueCommand™ license.
- **CONTACT:** Show the iXsystems™ Support phone number and email address as well as the Sales phone number and email.

![Fig. 11.1: Administration Information](image)
• **UPLOAD LICENSE**: Click *Browse...* to open the file browser. Select the new license file to upload. Click *UPLOAD LICENSE* to apply the new license to TrueCommand™.

**Note**: Contact iXsystems™ support to upgrade the TrueCommand™ license.

---

Fig. 11.2: Administration Updates

The *Updates* tab contains an update wizard:


2. **Update file**: If *Update file URL* was chosen, enter the URL of an update file. If *Manual* was chosen, upload an update file.

3. **Perform update**: Shows the status of the update.

4. **Success**: Shows if the update succeeded.

The system must be rebooted to complete the update process. The system can be rebooted immediately or a future time can be chosen. Choosing a future time adds a system reboot countdown to the web interface.
The Configuration tab contains:

- **General Options:**
  - *System statistics polling interval:* The amount of time, in seconds, TrueCommand™ pulls statistics from systems being monitored. The minimum is 10 seconds.
  - *System statistics retention policy:* The amount of time, in months, TrueCommand™ keeps statistics that were pulled from systems being monitored.
  - *Number of NAS database backups to store automatically:* Number of database copies that TrueCommand™ stores for a single attached iXsystems™ NAS system. See *Managing NAS Databases* (page 15) for more details.

  This feature is only available with a TrueCommand™ license.

- **SSL options:**
  - *Require SSL for all connections:* Set to require SSL for all connection types. This is useful when a monitored system does not allow SSL-secured access or if the monitored system is using a custom port.
  - *Ignore all SSL errors (no certificate validation):* Set to disable SSL certificate validation.
  - *Accept self-signed certificates:* Set by default. Allows TrueCommand™ to connect to systems using self-signed certificates.
  - *Accept certificates even if there is a hostname mismatch:* Set by default. Accepts certificates that have the system hostname, but was registered in TrueCommand™ with an IP address or vice-versa.

- **Alert Options:**
- **Ignore alerts from a connected NAS**: Chose an alert category to ignore. Multiple categories can be selected.

- **LDAP**:
  - *Allow LDAP user creation*: Set this to enable LDAP users to be dynamically created in TrueCommand™ when logging in with LDAP credentials.
  - *LDAP servers*: Enter an LDAP server IP address or DNS hostname and Domain. Multiple LDAP servers and Domains can be added by clicking *ADD SERVER*. LDAP server credentials can be removed by clicking *delete* (page 4).

- **LDAP Teams**:
  - Teams can be selected so that each TrueCommand™ user created through LDAP is automatically assigned to the chosen teams. Teams can be removed from the list by clicking *minus* (page 5).

Click *SAVE* to save the new system configuration. To reset the fields back to the previous values, click *CANCEL*. 
When TrueCommand™ detects that an update is available, the TrueCommand™ update (page 5) icon appears on the configure (page 4) icon and TrueCommand™ update (page 5) is added to the configure (page 4) menu. Clicking TrueCommand™ update (page 5) opens the configure (page 4) → Administration page at the Updates tab (page 34).
TrueCommand™ includes a help text feature that shows additional information when the mouse pointer is held over an element in the web interface.

Click *help* (page 4) to enable the help text dialog. When the dialog is enabled it is displayed in the bottom left corner of the web interface. When help text is enabled and the mouse pointer is held over an element, additional text about the element is displayed in the dialog. If help text is disabled and the mouse pointer is held over an element, a small tool tip is displayed.

![Fig. 13.1: Help Text for Dashboard button](image-url)
The user avatar is displayed in the top right corner of the web interface. Click the avatar to display a list of options that include Profile, API, Alerts, and Log out.

- **Profile**: Edit the current user. See *Edit User* (page 20) for the available options that can be edited.
- **API**: Interface to test API calls to the middleware. Advanced users and developers can use the middleware to program their own monitoring applications. API calls generate a response which is displayed on the page. Click **UI LOG** to download the web interface log. Click **MW LOG** to view the middleware log.

TrueCommand™ API documentation is available by adding /docs to the end of the TrueCommand™ host-name or IP address in the browser address bar.

![API Interface](image)

*Fig. 14.1: API Interface*
• *Log Out*: Log out of the TrueCommand™ web interface.
TrueCommand™ administrators have options to *Restart* or *Shutdown* the system. Clicking one of these options shows a dialog to delay the action for up to 12 hours. Choosing a delay option adds a countdown timer at the top of the TrueCommand™ web interface. This timer is shown to all users that are logged in to TrueCommand™.

![Fig. 15.1: Restart](image.png)
Fig. 15.2: Shut Down
TrueCommand™ can be configured with the system configuration utility. To start the utility, press \texttt{Enter} at the \textit{Appliance Status} screen.

```
Appliance Status
BTAJ (20190311015316)
(hit 'Enter' to launch setup)
------------------------
IP Address: 10.0.2.15
Time: 15:15:16 UTC
------------------------
Database started
Middleware started 00:00:32 (0)
WebUI started
sshd started
------------------------
```

Fig. 16.1: Appliance Status

Use the arrow keys to move up and down. Press \texttt{Enter} to select an option:
Manage Services

- **Middleware**
  - Display the status of the `ix_middleware`. Display options to **Start**, **Stop**, **Restart**, or **Force Stop** the service.

- **WebUI**
  - Display the status of the `nginx`. Display options to **Start**, **Stop**, **Restart**, or **Force Stop** the service.

- **sshd**
  - Display the status of the `sshd` service. Display options to **Start**, **Stop**, **Restart**, **Force Stop**, or **Enable Root Login/Disable Root Login** the service.

Manage Networking

- **Custom Gateway NO**
  - Enter a custom gateway number.

- **DNS Settings**
  - Add or remove a DNS nameserver.

- **Network Interface settings.** This option depends on the network device connected. For example, a system with an Intel network card shows up as `em0`.
  - This option contains settings to **Enable DHCP**, **Set Static IP**, and **Restart Device**.

Date/Time Settings

- **Set Time Zone**
  - Choose a time zone to set the time.
• **Resync with NTP**

**Manage Updates**

Display the current update train of TrueCommand™.

• **Perform Updates**
  - Only appears when updates are available. Select to download and install the latest update.

• **Force Update All**
  - Force the system to update.

**Warning**: This reboots the system and interrupts all web interface sessions.

• **Switch Trains**
  - Switch between *Release*, *Stable-Nightly*, and *Nightly* trains.

• **Rollback Update**
  - Choose a different boot environment. The chosen boot environment is activated after a reboot. Rolling back does not delete other boot environments. This screen shows the current boot environment and the boot environment to be used after reboot.

• **Prune Rollback Environments**
  - Choose a different boot environment. The chosen boot environment is activated after a reboot. **All other boot environments are deleted when the system is rebooted.**

**Reset UI User Password**

• Enter a TrueCommand™ username and a new password for the user. To cancel the password change, leave the password blank and press Enter.

**Reboot System**

• Power off and restart the system.

**Shutdown System**

• Power off the system.

**Root Terminal**

• Start a shell as the root user. The root password set during installation is required.
TrueCommand™ is usually installed inside a virtual machine. It can also be installed on standalone hardware. Download TrueCommand™ for free on the iXsystems website (https://www.ixsystems.com/truecommand/download/) to get started.

System Requirements

The system requirements for TrueCommand™ are:

- x86 64-bit CPU
- at least 4 GiB or 4096 MiB of RAM
- at least 80 GiB of disk space

Virtualization

VirtualBox

VirtualBox (https://www.virtualbox.org/) is an open source virtualization program originally created by Sun Microsystems. VirtualBox runs on Windows, BSD, Linux, Macintosh, and OpenSolaris.

To install or run TrueCommand™ in VirtualBox, start VirtualBox. Click the New button.
Enter a name for the virtual machine. Click the Type drop-down menu and select BSD. Select FreeBSD (64-bit) from the Version drop-down. Click Next.

Change the base memory size to at least 4 GiB or 4096 MiB (see System Requirements (page 46)). Click Next.
Click Create.

Fig. 17.3: Virtual Machine Reserved Memory

Fig. 17.4: Virtual Machine Hard Disk
Select VDI and click Next.

Fig. 17.5: New Virtual Hard Disk Type

Select Dynamically allocated. Click Next.
Storage on physical hard disk

Please choose whether the new virtual hard disk file should grow as it is used (dynamically allocated) or if it should be created at its maximum size (fixed size).

A **dynamically allocated** hard disk file will only use space on your physical hard disk as it fills up (up to a maximum **fixed size**), although it will not shrink again automatically when space on it is freed.

A **fixed size** hard disk file may take longer to create on some systems but is often faster to use.

- [ ] Dynamically allocated
- [ ] Fixed size

Fig. 17.6: Virtual Disk Storage Type

Set the size of the Virtual Disk. Set the Virtual Disk size to at least 80 GiB (see *System Requirements* (page 46). Click Create to create the new VM.
Highlight the VM and click **Settings** to create a device for the installation media.

Click **Storage** in the left column to show storage options.
Select Empty from the Storage Devices frame and click the CD icon in the Attributes frame. Click Choose Virtual Optical Disk File to browse to the location of the TrueCommand™.iso file.

![Fig. 17.9: Adding the ISO Installation Media](image)

Configure the network adapter by opening the VM settings and clicking Network. Select Bridged Adapter in the Attached To drop-down menu. Choose the name of the physical interface from the Name drop-down menu. Click Ok to save the new settings.

![Fig. 17.10: Configuring a Bridged Adapter](image)

Click Start to power on the VM and begin the TrueCommand™ installation (page 57).
After the installation is complete, shut down the VM. Remove the installation media by right-clicking the IDE icon and selecting *Remove Disk from Virtual Drive*.

![Choose Virtual Optical Disk File...](image1.png)

![Remove Disk from Virtual Drive](image2.png)

**Fig. 17.11: Remove Installation Media**

**VMware ESXi**

ESXi is a bare-metal hypervisor architecture created by VMware Inc. Commercial and free versions of the VMware vSphere Hypervisor operating system (ESXi) are available from the [VMware website](https://www.vmware.com/products/esxi-and-esx.html).

When the VMware vSphere client is installed, use it to connect to the ESXi server. Enter the username and password created when installing ESXi to log into the interface. After logging in, go to *Storage* to upload the TrueCommand™ .iso. Click *Datastore browser* and select a datastore for the TrueCommand™ .iso. Click *Upload*. Use the file dialog to choose the TrueCommand™ .iso from the host system.

Click *Create / Register VM* to create a new VM. The *New virtual machine* wizard opens:

1. **Select creation type**: Select *Create a new virtual machine* and click *Next*. 

![New virtual machine wizard](image3.png)
2. **Select a name and guest OS:** Enter a name for the VM. Leave ESXi compatibility version at the default. Select Other as the Guest OS family. Select FreeBSD12 or later versions (64-bit) as the Guest OS version. Click Next.

3. **Select storage:** Select a datastore for the VM. The datastore must be at least 80 GiB (see *System Requirements* (page 46)).
4. **Customize settings**: Enter at least 4 GiB or 4096 MiB of memory and at least 80 GiB of virtual storage (see *System Requirements* (page 46)). Select *Datastore ISO file* from the *CD/DVD Drive 1* drop-down. Use the Datastore browser to select the uploaded TrueCommand™ .iso. Click *Next.*
5. **Ready to complete**: Review the VM settings. Click *Finish* to create the new VM.
Click Virtual Machines → {VM}, where VM is the TrueCommand VM name. Click Power on to start the VM. Click Console → Open browser console and install (page 57) TrueCommand™.

Installing TrueCommand™

The TrueCommand™ installer boot menu appears first. After a short pause, it automatically continues. To boot with one of the options, type the number of the option.
Press **Enter** to select the default option, **Install**.

Available disks are shown. Use the arrow keys to choose the target disk. Press **Spacebar** to select the desired disk. Press **Enter** to continue.

Press **Enter** to reserve the entire disk for TrueCommand™.
Use the arrow keys to select GPT. MBR should only be used on legacy clients that cannot use GPT. Press Enter.

Set and confirm the root password. The root user is for system maintenance and is not used to access the TrueCommand™ web interface. TrueCommand™ accounts are created through the web interface after installation.
Press Enter to continue.

![Fig. 17.16: Set root password](image)

Enter TrueCommand as the system hostname and press Enter.

![Fig. 17.17: Set Hostname](image)

Press Enter to Enable networking.
Use the arrow keys to select the network card. A static IP address is strongly recommended. DHCP can be used, but can result in the system unexpectedly moving to new IP address.

When using a static IP address, the IP address, gateway, and netmask are required. DNS is optional, but recommended for name resolution.
Press Enter to the Enable SSH. Enabling SSH is not required, but recommended.

![Enable SSH]

**Fig. 17.20: Enable SSH**

Select *install* and press Enter.

![Start the Installation]

**Fig. 17.21: Start the Installation**

Wait for the *Installation finished!* message and press Enter.
Setting em0 to DHCP on the system.
Running chroot command: cat ~/.tmpPass | pw useradd -n TrueView -c "Sam" -h 0 -s "/bin/sh" -m -d "/home/TrueView" -G "wheel,operator"
Setting hostname: sam.local
Setting root password
Running chroot command: cat /.rootpw | pw usermod root -h 0
Running chroot command: newaliases
newaliases: aliases are not used in sSMTP
Running chroot command: rc-update add sshd default
* service sshd added to runlevel default
ZFS Unmount: tank/var/tmp
ZFS Unmount: tank/var/mail
ZFS Unmount: tank/var/log
ZFS Unmount: tank/var/audit
ZFS Unmount: tank/usr/src
ZFS Unmount: tank/usr/ports
ZFS Unmount: tank/usr/obj
ZFS Unmount: tank/usr/jails
ZFS Unmount: tank/usr/home
ZFS Unmount: tank/tmp
ZFS Unmount: tank/root
Unmounting: /mnt
Installation finished!
Press ENTER to continue

Fig. 17.22: Finish Installation

Use the down arrow to select quit. Press Enter.

Fig. 17.23: Quit Install Wizard

Restart the TrueCommand™ system. Remove the TrueCommand™ install media so the system boots from the hard drive.