

Unified Storage Server

v4.0



Quick Start Guide

Installation & Basic Configuration

Congratulations on purchasing Chelsio's Unified Storage Server (USS), a complete SAN + NAS software solution. This *Quick Start Guide* describes the steps to install and complete the basic configuration of the product.

Conventions Used

Special attention should be given to the following symbols for completing the installation successfully:



Action: Instruction to be followed to ensure proper installation of the product.



Result: Denotes the result to be expected after following an Action.



Note: Additional information provided to facilitate installation of the product or better understanding of the guide.

Step 1

Verify the Packing List of Items

Check that the following items have been included with your software:

1. One *Unified Storage Server* installation ISO image
2. One *Unified Storage Server Quick Start Guide* (this document)

The USS ISO image and related documents can also be downloaded from the [Chelsio website](#).

Missing items: If any of these items are missing or need replacement, contact Chelsio Support at: support@chelsio.com.

Step 2

Verify the System Requirements

The system used for this product must meet the following minimum system requirements:

Motherboard / Processor	PCIe Gen3 server with Processor of at least 8 cores
Memory	32 GB
Ethernet NIC	Chelsio T6/T5 adapter
Storage	Any of SAS, SATA, SSD, NVMe
OS Drive	SAS/SATA/SSD/NVMe disk of at least 250 GB

Step 3

Boot from the USS ISO

The Chelsio USS ISO is a completely bootable Operating System that contains the storage software and documentation. It can be installed from the IPMI and USB.

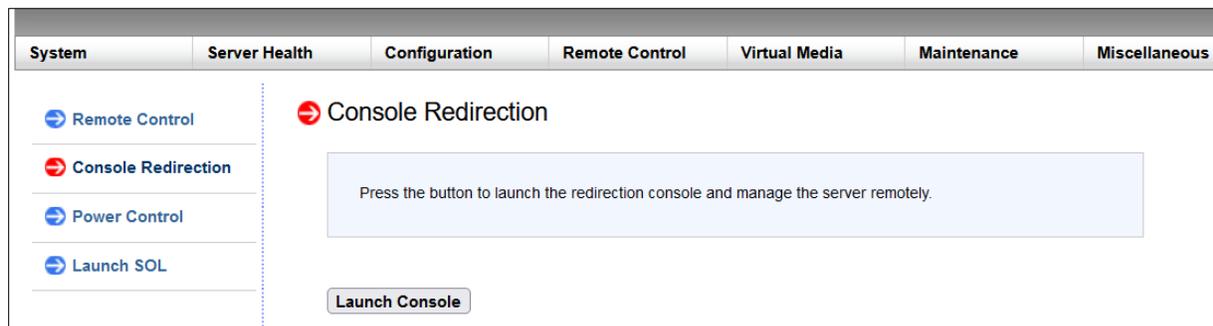
Using IPMI

Login to the IPMI of the machine and launch the **Remote Console**. Mount the downloaded USS ISO as a virtual device, reboot the machine, and boot from the virtual device.

For example, below are the steps to boot ISO using a Supermicro system.



Login to the IPMI, navigate to **Console Redirection** and click **Launch Console**.



The IPMI Console Redirection page

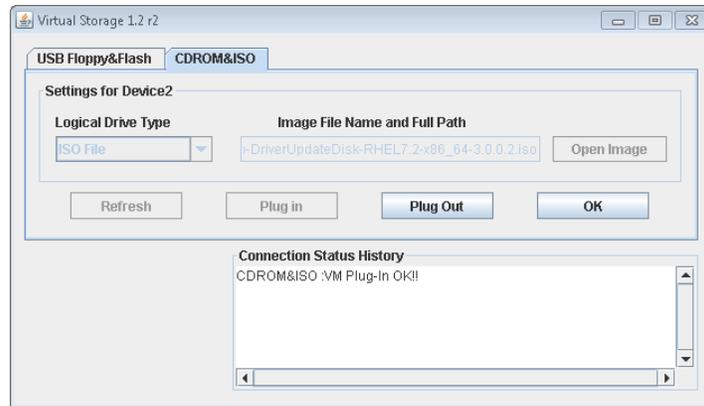
From the main menu of the Remote Console, navigate to **Virtual Media > Virtual Storage**.



The **Virtual Storage** dialog box appears.



Click on the **CDROM&ISO** tab. From the **Logical Drive Type** drop-down, select **ISO File**. Browse and select the ISO image file and click **Plug in** and **OK**.



Virtual Storage dialog box



Power on the system with the USS ISO drive.

After power on, press **F11** for boot menu. Select the **IPMI Virtual CDROM 3000** option to boot and proceed with the installation.



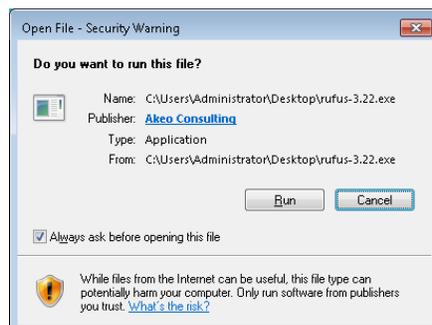
Selecting the boot option

Using USB

- **On Windows Machine**



Open and run the **Rufus** application.



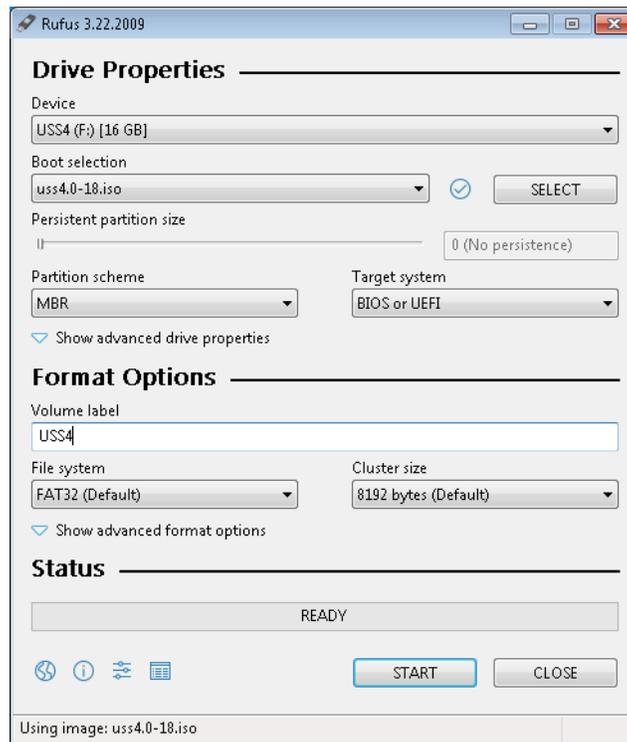
Rufus application dialog box



The **Drive Properties** dialog box appears.



Under **Device**, select **USB Drive**. Select the USS ISO from the **Boot selection** drop-down menu. Ensure that the **Volume label** is **USS4** under **Format Options**. Click **START**.



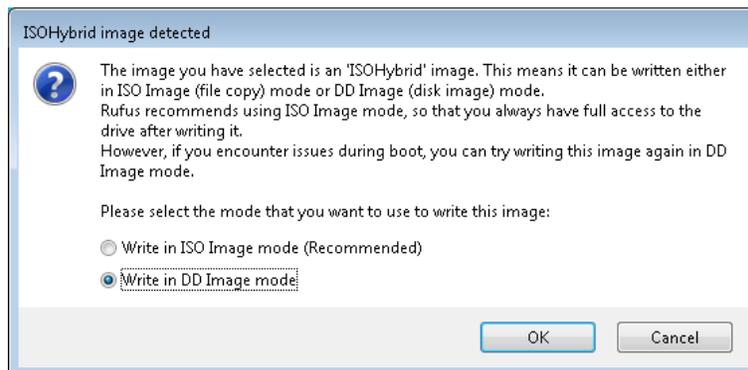
Drive properties



The **ISOHybrid** dialog box appears.



Select the **Write in DD Image mode** option and click **OK**.





Power on the system with the USS ISO drive.

After power on, press **F11** for boot menu. Select the **USB** option to boot and proceed with the installation.

- **On Linux Machine**



Verify the USB label using the following command:

```
lsblk -o NAME, LABEL
```

```
NAME          LABEL
sda
├── sda1       USB1
├── sda2
│   ├── rhel-root
│   └── rhel-swap
```

Rename the USB label using the following command:

```
sudo e2label /dev/sda1 "USS4"
```

Verify the USB label using the following command:

```
lsblk -o NAME, LABEL
```

```
NAME          LABEL
sda
├── sda1       USS4
├── sda2
│   ├── rhel-root
│   └── rhel-swap
```



To write an ISO file to a USB disk (assuming the USB is `sda`), use the following command:

```
sudo dd if=new_disk.iso of=/dev/sda bs=4M status=progress
```

After writing the ISO to the USB, proceed with the installation.

Step 4

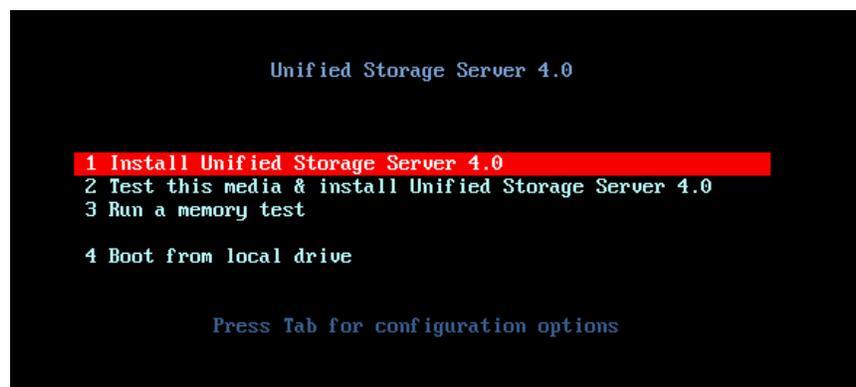
Installing USS

The USS boot screen transitions to the **Chelsio Unified Storage Installer Wizard**. This wizard will walk you through the necessary steps to install the software.



Screen 1: Choose the Installation type

The first screen of the wizard will ask for the installation type. Select the **Install Unified Storage Server 4.0** option for a new installation.



USS Installation Wizard screen 1: Fresh Install



Screen 2: Select a storage device

The second screen scans and displays all the available storage devices in your system. Enter the number corresponding to the storage device where USS is to be installed.

```
Starting installer, one moment...
anaconda 34.25.4.9-1.el9_4.rocky.0.3 for Rocky Linux 9.4 started.
* installation log files are stored in /tmp during the installation
* shell is available on TTY2
* if the graphical installation interface fails to start, try again with the
  inst.text bootoption to start text installation
* when reporting a bug add logs from /tmp as separate text/plain attachments
10:38:37 Running pre-installation scripts
minimun 7 GB required
skip sdb. 0 GB is too small.

0 - sda : ST3500413AS_____ : 465 GB

Please select disk# to install or b, n
0
```

USS Installation Wizard screen 2: Select a storage device



The installation starts now and details of the process are displayed.

```
Prt5 and 6 = 8000
10*8 records in
10*8 records out
41943040 bytes (42 MB, 40 MiB) copied, 0.625042 s, 67.1 MB/s
Value out of range.
4: unknown command
Partition #3 contains a swap signature.
Partition #4 contains a xfs signature.
Partition #5 contains a xfs signature.
Partition #6 contains a xfs signature.
Re-reading the partition table failed.: Device or resource busy
Warning: Unable to open /dev/sr0 read-write (Read-only file system). /dev/sr0 has been opened read-only.
pci-0000:00:1f.2-ata-2-part5 part5 exists
pci-0000:00:1f.2-ata-2-part6 part6 exists

Some warnings occurred during reading the kickstart file:
The option --isUtc will be deprecated in future releases. Please modify your kickstart file to replace this option with its preferred alias --utc.
10:40:28 Not asking for UNC because of an automated install
10:40:28 Not asking for UNC because text mode was explicitly asked for in kickstart
Starting automated install....Saving storage configuration...
Checking storage configuration...
.
.
.
.
=====
Installation
=====
1) [x] Language settings                2) [x] Time settings
   (English (United States))           (America/Los_Angeles timezone)
3) [x] Installation source              4) [x] Software selection
   (Local media)                       (Minimal Install)
5) [x] Installation Destination        6) [x] Kdump
   (Custom partitioning selected)      (Kdump is enabled)
7) [x] Network configuration           8) [ ] User creation
   (Connected: enp4s0f0)               (No user will be created)

=====
Progress
=====
.
Setting up the installation environment
Configuring storage
Creating xfs on /dev/sda6
Creating xfs on /dev/sda5
```

Installation in progress



After the installation is complete, the system reboots automatically. After reboot, ensure that the drive selected for installation is the current boot device in the system BIOS.



The **Login Screen** appears.



Enter the root credentials (username: **root**, password: **uss**) and press **Enter**.

```
Rocky Linux 9.4 (Blue Onyx)
Kernel 6.6.33 on an x86_64

localhost login: root
Password:
Last login: Tue Jan 28 01:43:04 on tty1
which: no storelibtest in (/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin)
Chelsio>_
```

The login page



If the USS machine has been assigned a dynamic IP through DHCP, type the `net list` command in the Chelsio CLI prompt to find the DHCP-assigned IP address, and press **Enter**.



The screen with the DHCP IP address appears (Chelsio CLI).

```
eth1  Link Type: (Ethernet)  Link Present: yes
      HWaddr: 00:25:90:99:b2:4f  MTU: 1500
      IP Addr: 10.193.187.56  Bcast:  Mask:
      ONBOOT:  BOOTPROTO:

eth2  Link Type: (Ethernet)  Link Present: no
      HWaddr: 00:07:43:3c:bc:48  MTU: 1500
      IP Addr:  Bcast:  Mask:
      ONBOOT:  BOOTPROTO:

eth3  Link Type: (Ethernet)  Link Present: no
      HWaddr: 00:07:43:3c:bc:48  MTU: 1500
      IP Addr:  Bcast:  Mask:
      ONBOOT: yes  BOOTPROTO: static

lo    Link Type:  Link Present: yes
      HWaddr:  MTU: 65536
      IP Addr: 127.0.0.1  Bcast:  Mask:
      ONBOOT:  BOOTPROTO:

Chelsio>_
```

The DHCP IP address – Chelsio CLI prompt



To find the DHCP-assigned IP address in Linux CLI prompt, type `exit` to exit from the Chelsio CLI prompt. Now type `ip addr` command in Linux CLI prompt and press **Enter**.

```
valid_lft forever preferred_lft forever
inet6 ::1/128 scope host
valid_lft forever preferred_lft forever
2: eth0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
    link/ether 00:25:90:99:b2:4e brd ff:ff:ff:ff:ff:ff
    altname enp4s0f0
3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group defa
ult qlen 1000
    link/ether 00:25:90:99:b2:4f brd ff:ff:ff:ff:ff:ff
    altname enp4s0f1
    inet 10.193.187.56/22 brd 10.193.187.255 scope global dynamic noprefixroute
eth1
    valid_lft 85985sec preferred_lft 85985sec
    inet6 fe80::615f:6b05:8c90:9ec5/64 scope link noprefixroute
    valid_lft forever preferred_lft forever
4: eth2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
    link/ether 00:07:43:3c:bc:48 brd ff:ff:ff:ff:ff:ff
    altname enp131s0f4
5: eth3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group
default qlen 1000
    link/ether 00:07:43:3c:bc:48 brd ff:ff:ff:ff:ff:ff
    altname enp131s0f4d1
[root@localhost ~]#
```

The DHCP IP address – Linux CLI prompt



If the USS machine does not have a DHCP-assigned IP, assign a static IP to the management interface using either of the below commands:

With Chelsio CLI:

```
Chelsio>net set interface=ethX ipaddr=<ip address>  
mask=<netmask> onboot=<yes/no>
```

```
Chelsio>net set interface=eth1 ipaddr=102.1.1.192 mask=255.255.255.0 onboot=yes  
Im onboot: yes,  
assigning on boot t  
  
Assigning IP Address...  
Done.
```

With kernel CLI:

```
[root@localhost ~]# ifconfig ethX <ip address>/<netmask> up
```

```
[root@localhost ~]# ifconfig eth1 102.1.1.22/24
```



Note: To return to the Chelsio CLI, type `cli` and press **Enter**.

```
[root@localhost]# cli  
Chelsio>
```



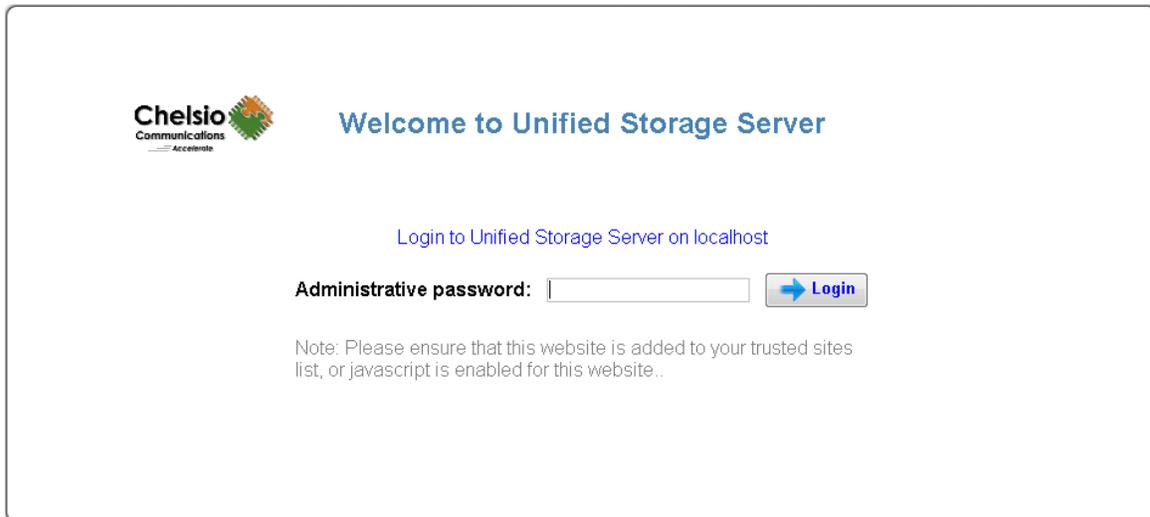
To access the USS GUI on a remote machine, open a web browser, enter the IP address of the USS machine, and press **Enter**. Skip to [Step 5](#) now.

Step 5

System Setup Wizard

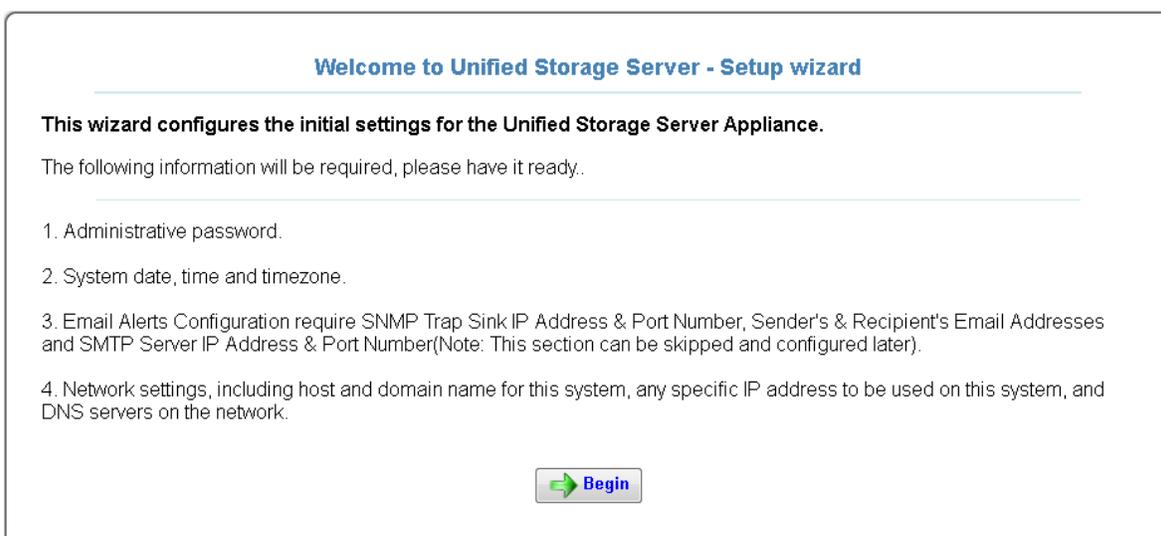


Complete this wizard on a remote machine through a web browser. In the welcome screen, type **uss** as the password and click **Login**.



The USS System Setup Welcome screen

The next screen lists the prerequisite for the successful completion of the wizard. Ensure that you have all the details before proceeding. Click **Begin** when ready.



System Setup wizard requirements



The first page of the wizard displays the EULA acceptance page.



Read and agree to the EULA by clicking on the **I agree and accept the above EULA** button.

Step 1 of 5: End User License Agreements

Chelsio iSCSI Target and Management software End User License Agreement:

June 1, 2006
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Chelsio EULA agreement



Accepting the agreement brings up the next screen in the wizard to set the Administrator password.

Change the Administrator (root) Password



Type the administrative password for USS twice and click **Next**.

Step 2 of 5: Change Administration (root) password

New password:

Confirm password:

Setting up the administrator password



The next screen in the wizard appears to set the time and date information.
Date & Time Settings



Configure the date and time settings on this wizard page and click **Next**.

Step 3 of 5: Date & Time settings

Description	Current setting	Change Setting
Date:	13 December 2024	New Date: 13 December 2024 <input type="button" value="Edit"/>
Time:	03:31:09	New Time: 03 : 31 : 09 (hh:mm:ss) (UTC/GMT offset Code Continent/City)
Timezone:	+1200 +12	<div style="border: 1px solid #ccc; padding: 5px;"><p style="text-align: center;">Timezone</p><ul style="list-style-type: none"><input type="checkbox"/> +0500 PKT Asia/Karachi<input type="checkbox"/> +0530 +0530 Asia/Colombo<input checked="" type="checkbox"/> +0530 IST Asia/Kolkata<input type="checkbox"/> +0545 +0545 Asia/Kathmandu<input type="checkbox"/> +0600 +06 Asia/Bishkek<input type="checkbox"/> +0600 +06 Asia/Dhaka<input type="checkbox"/> +0600 +06 Asia/Ornsk<input type="checkbox"/> +0600 +06 Asia/Thimphu</div>
Network Time synchronization:	Enabled <input type="checkbox"/> Currently stopped	NTP servers: 2.thel.pool.ntp.org <input type="button" value="Remove server"/> Add custom NTP server hostname / IP : <input type="text"/> <input type="button" value="Add"/>

Date & Time settings



The next screen in the wizard appears to set the Email alerts.

Email Alerts Configuration



Disable the **Email alerts** option and click **Next**.



By default, the **Email alerts** option is enabled.

Step 4 of 5: Email Alerts Configuration

SNMP Traps: Enable

Email alerts: Enable (Recommended)

Email Alerts Configuration



The next screen in the wizard appears to set the network parameters.

Networking configuration



Configure the network interface settings on this wizard page and click **Finish**.

Step 5 of 5: Networking configuration

System hostname:
(hostname.domainname, eg.: system.example.com)

Network Devices: Click and highlight a device in the list, to configure it.

Devices:	Configuration:
<div style="border: 1px solid #ccc; padding: 2px;"><p>eth0: 00:25:90:99:b2:4e - 1000 Mb/s</p><p>eth1: 00:25:90:99:b2:4f - Inactive</p><p>eth2: 00:07:43:3c:bc:40 - Inactive</p><p style="background-color: #e0e0e0;">eth3: 00:07:43:3c:bc:48 - Inactive</p></div>	<p>Device: eth3: 00:07:43:3c:bc:48</p> <p>Device Description: Chelsio Communications Inc T62100-SO-CR Unified Wire Ethernet Controller</p> <p>Configuration type: <input type="text" value="Statically assign"/></p> <p>IP address: <input type="text" value="192.168.20.5"/></p> <p>Subnet mask: <input type="text" value="255.255.255.0"/></p> <p>Default Gateway: <input type="text" value="192.168.20.1"/></p> <p>Broadcast address: <input type="text"/></p> <p>Device activated: <input type="text" value="on System startup"/></p>

DNS servers:

Server 1:

Server 2:

Server 3:

Networking configuration



The wizard is now complete, and an interim page appears for a few moments. Then the **USS Main Management** page appears.

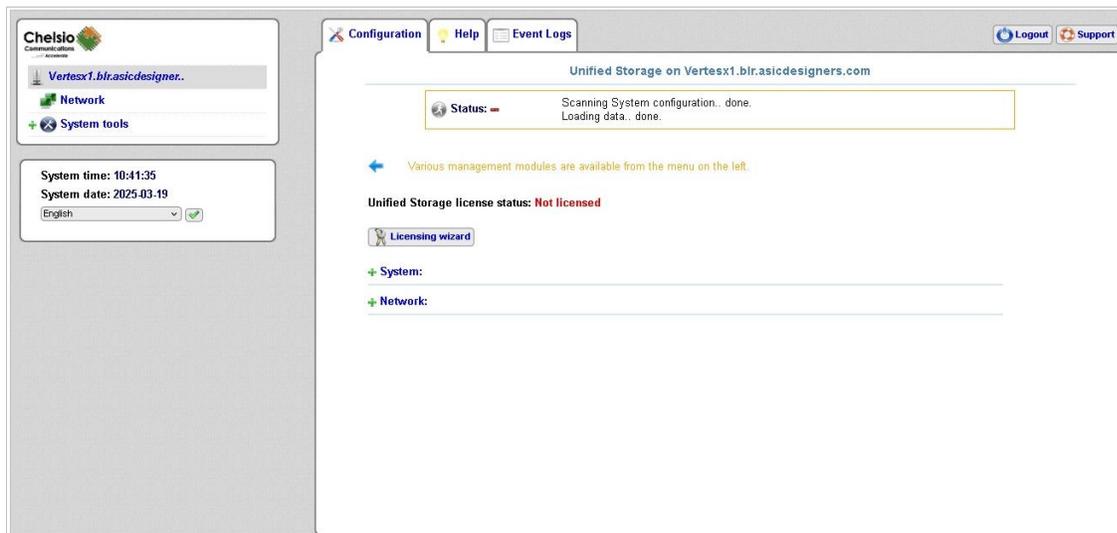
Step 6

Licensing USS

USS includes a default 30-days evaluation license. After 30 days, you must generate an info file and send it to Chelsio to obtain either an extended evaluation or a production license.



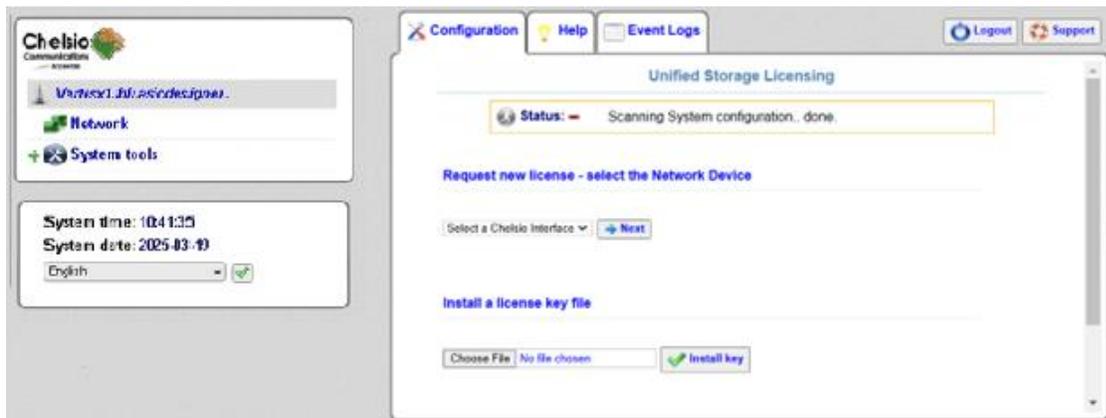
Complete this wizard to license the USS system through a web browser. To generate the information file on the **Main Management** page, click **Licensing wizard**.



Licensing USS



The **License** page appears.



USS Licensing page



In the **Request new license** section, select the Chelsio interface and click **Next**.

Request new license - select the Network Device

eth2 - 00:07:43:3C:BC:40

Selecting the Chelsio interface



The next screen in the wizard appears to download the info file.



In the **Network device selected...** section, select the **Download the hardware...** option and click **Download file** to download the information file.

Network device selected for license: **eth2 (MAC:00:07:43:3c:bc:40)**

Download the hardware profile information file

Save and Request for the license by entering details at our Web based license portal (<http://service.chelsio.com/licenses>) Or email the hardware configuration file along with the product serial number, to Chelsio at support@chelsio.com or your sales representative, for obtaining the Unified Storage Server license key.

Email the file to your mail account

Downloading the information file



Once you have downloaded the information file, send it to [Chelsio Support](#). Chelsio generates the license file and shares it with you.



Copy the license file to the local drive on the machine.



On the **Main Management** page, click **Licensing wizard**. In the **Install a license key file**, browse and select the license file and then click **Install key**.

Install a license key file

Installing the license key



USS is now successfully licensed.

Step 7

Next Steps

The USS system is now ready and can be configured for SAN and NAS operations.

For support and questions, contact [Chelsio Support](#).

Serial Number:



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