COLDSTORE™

veracity

Quick Start GUIDE

COLDSTORE CSTORE8-2U(D)-DW

Version 1.0.5

Contents

A) Quick Start Guide Legends

ⓘ The Information icon highlights particularly useful information or items which are very important to note when using or configuring the product.

🖐 The Caution icon indicates possible actions or procedures which could prevent proper operation or cause a system malfunction and the associated text will explain how to avoid this.

⚡ The Warning icon highlights important basic safety issues which if ignored may have a potential for damage to the hardware, property damage, personal injury or even death.

⚡ Users are urged to read the safety information before connecting and using the product.

ⓘ References to further product information are listed at the end of this guide or may be downloaded from the Veracity website www.veracityglobal.com. Refer to these resources for full product information, information about terms and conditions of use, limited warranties, returns, software licence agreements, environmental and recycling procedures and any other regulatory notices.

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ⓘ COLDSTORE is covered by the following patents:
US Patent No. 8190837; European Patent No. 1999554B; Australian Patent No. 2007231179; Japanese Patent No. 2009-502184.

⚡ The storage array should NOT be moved once powered up as this is very likely to cause disk damage – this applies to all types of disk storage arrays.

Information in this guide is subject to change without notice.

B) Safety Instructions

These safety instructions are important and are provided to help prevent equipment damage and injury to the installers and operators of the system. Please read and understand all of these instructions before connecting and switching on the product.

⚡ Do not use a damaged power cable with the product. If the cable is cut, damaged, severely twisted, or if the plug is loose, replace the power cable with a new one.

⚡ Do not place liquids (e.g. tea, coffee etc.) on top of the product. Specifically, do not spill any liquids onto or into the product. If this happens, immediately switch off the power at the wall outlet and disconnect all cables from the unit.

⚡ Do not handle the product or the power cable with wet hands. This could result in electric shock and even death.

⚡ Do not insert any items into the air vents or openings anywhere on the unit, especially the power supply unit. To do so may cause damage to fans and other components, may cause the system to malfunction and may result in electric shock and even death.

⚡ The product is heavy. Ensure that proper lifting techniques are used when moving the unit to avoid personal injury. It is highly recommended that the unit is installed in a proper 19" equipment rack before disks are inserted. The unit is extremely heavy when fully populated with disks.

⚡ Ensure that the product is securely held at all times as dropping the product will almost certainly damage it (possibly beyond repair) and more importantly, may cause severe personal injury, especially to hands and feet. Extreme caution is essential.

⚡ This equipment is not suitable for use in locations where children are likely to be present.

✋ Do not move the system once powered up. To do so may result in damage to the disks and potential loss of data.

C) Product Package Contents

Carefully unpack the package contents. This will consist of the main unit wrapped in a protective polythene bag and mounted in foam blocks, Rackmount Slide Rails, an accessories box and a copy of this Quick Start Guide.

| The COLDSTORE unit will contain 8 x empty 3.5" hard disk trays.

The accessories box will contain:

| Rack mount lugs and mounting screws (note these are left- and right-handed)
| 32x Hard disk tray mounting screws
| Power cable (UK, EU or US). 2 cables supplied for 2UD version.
| Standard warranty statement

D) Basic Requirements

For correct setup and operation of the system, the following items will be required:

| SATA Hard disks (minimum three units – any capacity).
| A computer such as a PC or laptop (running Windows 7 (or later Windows operating system)
| Ethernet Network (including network cables and a switch)
| Preferred Video Management System (see website for list of supported systems)

E) System Overview

COLDSTORE is a hard disk array system specifically designed for video surveillance storage. It uses our LAID sequential writing system, our SFS sequential disk filing system and custom-designed hardware and firmware to achieve a high-capacity, high-reliability, very low power system ideally suited to surveillance storage.

COLDSTORE itself is a 2U, 19" rack unit with 8 x 3.5" disk bays. The disk cage is accessible by releasing the catches on the left and right of the unit front panel.

All information may be viewed, configuration carried out and control executed over a network connection using the SITESCAPE application program.

The rear panel provides mains power and network connections as shown in G) below. Other connections are for engineering purposes only and are not required for normal configuration and operation.

F) Chassis Mounting

The rack mount lugs should be fitted to the unit as a first step. This is recommended whether or not the unit will be mounted in an equipment rack. This makes the unit easier and safer to handle.

If the unit is to be used free-standing, we recommend fitting the base feet to avoid damaging supporting surfaces with the metal case.

✋ We highly recommend that the unit is mounted into a rack for normal operation.

✎ Before extending the rack to the installation position, read the installation instructions. Do not put any load on the slide-rail mounted equipment in the installation position. Do not leave the slide-rail mounted equipment in the installation position.

✎ If rack-mounted, it is essential that the unit is mounted on a rack tray or shelf for support – it should not be mounted on the rack-mount lugs alone.

✎ We highly recommend that the unit is mounted in the rack (or if not to be rack mounted, placed in the desired location) before any disks are inserted. The unit is quite heavy when empty, but very heavy when fully populated with hard disks. Therefore, care should be taken when lifting the unit, and this is best done before the disks are fitted. This also removes the risk of physical shock damage to hard disks when moving the unit into place. (See section M), Disk Management – Adding & Removing Disks, below).

G) System Connections

Once properly located, the power and network cables can be prepared ready for connection. However, at this stage, do not switch on the power. See rear panel photo below for location of connectors.

Steps:

1   Connect a network cable from your network switch to one of the network ports. If connecting 1 cable only use Eth0.

2   Connect power cable to the unit, but do not switch the unit on.

2U Rear Panel

2UD Rear Panel

H) Disk Loading

COLDSTORE is delivered with 8 disk trays. To remove a tray, slide the top section of the tray upwards, releasing the lower section. Pull the lower section down and outwards (as illustrated) and gently slide the tray out.

Any make, model or size of SATA hard disk may be used in COLDSTORE. For optimum use of disk space, we recommend that all disks be of identical capacity. Load the disks into the trays using the mounting screws provided. Use four screws per disk for secure mounting.

COLDSTORE requires at least two disks for set up and configuration. A minimum of three disks are required for typical operation (normal COLDSTORE mirrored overlapping-pair mode).

✋ Ensure the system has not yet been switched on before mounting the first disks – the COLDSTORE start up procedure requires disks to be present for full boot-up and normal operation. If the system has been switched on in error, simply switch the unit off before proceeding. Note that further disks can be added later while the system is running.

Carefully insert the loaded trays into the COLDSTORE unit, starting from the left (Disk Slot 1) and filling each slot in sequence with as many disks as required. The trays should be inserted as follows:

With the tray level wide open, insert the tray into the slot taking care that the tray guide lines up with the disk cage runners. Slide the tray in fully and then close the lever, engaging the teeth of the lever at the bottom with the lip of the disk cage, thus firmly pushing the disk into the slot and into the SATA connectors on the backplane.

Disk insertion should not be forced and should take a medium pressure only. If the disk will not engage, check that the tray is correctly aligned – pull the tray out and re-insert. The tray should run smoothly into the slot.

I) Power Up Sequence

Once the disks are properly loaded, insert the power cables and use the switch at the rear to power the unit on. For the 2UD unit, 2 power cables must be inserted for correct operation.

As COLDSTORE boots, each fitted, drive status indicator will illuminate as the drives are prepared for operation.

Once switched on, the unit must NOT be moved, as in common with any disk array type, this may risk damage to disks in operation.

If setting up more than one COLDSTORE, power on one unit and configure it fully before powering on the next. Continue this procedure until all COLDSTORES are fully configured.

J) COLDSTORE Set up and Maintenance software - SITESCAPE

SITESCAPE is a software application which works with all configurable Veracity network devices.

For COLDSTORE, SITESCAPE can be used to set up, apply firmware upgrades, obtain status and view diagnostics. The latest version of SITESCAPE and COLDSTORE system firmware can be obtained from Veracity's download site veracitydownloads.com.

Please note that SITESCAPE requires Microsoft .NET Framework. The latest versions of Windows desktop operating systems include the Framework. If the Framework is not present, then it will be downloaded from Microsoft over the internet during the installation.

During the installation or operation of SITESCAPE a network protection application such as a firewall may notify you that network access is blocked for SITESCAPE. If prompted or otherwise, please choose to allow the SITESCAPE full access to the network. Note also that some network protection applications may not notify you that access has been blocked. If you repeatedly fail to access the COLDSTORE using SITESCAPE consider checking the configuration of your firewall and ensure that the SITESCAPE has full, unblocked network access.

For more information about installing and using SITESCAPE, see COLDSTORE User's Guide.

Installing SITESCAPE

To install SITESCAPE on your computer:

1   Download the latest SITESCAPE installer compressed archive from http://veracitydownloads.com/Home/Perma?code=SITESCAPE_LATEST.

2   Extract the contents of the archive to a temporary folder.

3   Right-click the executable application file and choose Run as Administrator to begin the installation.

For Windows 8.1 or Window 10, if Windows SmartScreen is enabled, click the More info link then click Run Anyway.

If Window User Account Control is enabled, click Yes when prompted.

The Licence Terms and Conditions dialog window is shown.

4   Scroll through the licence terms and conditions and, if you agree with them, check the box against I agree to the license terms and conditions. If you do not agree, click Close to abandon installation of SITESCAPE.

To change the default installation location for SITESCAPE on your computer, click Options. In the Setup Options dialog, either type the full folder path to your preferred installation location into the Install location box or click Browse to use the Folder Browser dialog to help specify the location. In either case, click OK on the Setup Options dialog to use the chosen installation location, or click Cancel to use the default installation location.

Click Install to begin SITESCAPE installation.

The Setup Progress window is shown. You may be presented with other windows or dialogs not controlled by SITESCAPE if your computer has specialist protection software installed. Follow the instructions from that software to allow installation of SITESCAPE.

If successful, the Installation Setup Completed dialog is shown.

Getting Connected

i)   Network with DHCP server

By default, COLDSTORE has DHCP server support disabled.

If DHCP server support on the COLDSTORE is enabled then, after powering up your COLDSTORE, the COLDSTORE will use the network settings assigned by the DHCP server on your network. Use the front panel to find out the COLDSTORE's current network settings, as described in section J). Skip step 5 in part ii) of this section to complete COLDSTORE set-up.

ⓘ   If DHCP on the COLDSTORE has been enabled but no DHCP server is available, use the front panel to show the COLDSTOREs current network settings, as described in section J), then continue to the next part of this section.

ii)   Network without DHCP server

On networks without a DHCP server, or when DHCP server support is disabled, assigning network settings suitable for your installation to a COLDSTORE typically requires you to temporarily change your computer's network settings. This change ensures that your computer is on the same logical network as your new COLDSTORE.

Before proceeding, check that the current IP address and other network settings of the COLDSTORE using the front panel menu, as described in section J).

COLDSTORE 2U DW devices has two Ethernet connections. By default:

 Eth0 is configured as IP address 10.0.0.140, subnet mask 255.255.255.0 and gateway 10.0.0.1

 Eth1 is configured as IP address 10.0.1.141, subnet mask 255.255.255.0 and gateway 10.0.1.1.

ⓘ   This section assumes that the network settings of the COLDSTORE are set to their defaults. If the network settings differ from the default, you will need to adapt the instructions in this section to suit the current network settings of the COLDSTORE.

Steps:

1   Ensure that the Status LED on the front panel of the COLDSTORE is flashing before continuing.

If the Status LED is not flashing, the COLDSTORE is still in the boot-up phase. Please wait until the Status LED is flashing before proceeding.

2   Disconnect any network lead currently attached to the Ethernet connection on the rear panel of the COLDSTORE.

3   Either attach a standard, CAT5E network cable directly from your computer to the Eth0 network port on the COLDSTORE, or temporarily connect your computer and the COLDSTORE to a simple, unmanaged network switch.

4   Change your computer's network settings to IP address 10.0.0.139 and the same subnet mask and gateway as the COLDSTORE.

     If the COLDSTORE is not using the default network settings, then choose an IP address for the computer that does not clash with the IP address of the COLDSTORE but matches the subnet and gateway addresses.

5   Using the Windows Start Menu, navigate to All Apps>Veracity. Click SITESCAPE.

     If Window User Account Control is enabled, click Yes when prompted.

     The SITESCAPE splash screen is shown momentarily. The software's version number is shown on the splash screen.

     The SITESCAPE application start window is shown, to allow for selection of sites for configuration. If no sites have already been defined, select 'New', define a 'Site Name' and then select 'Create.
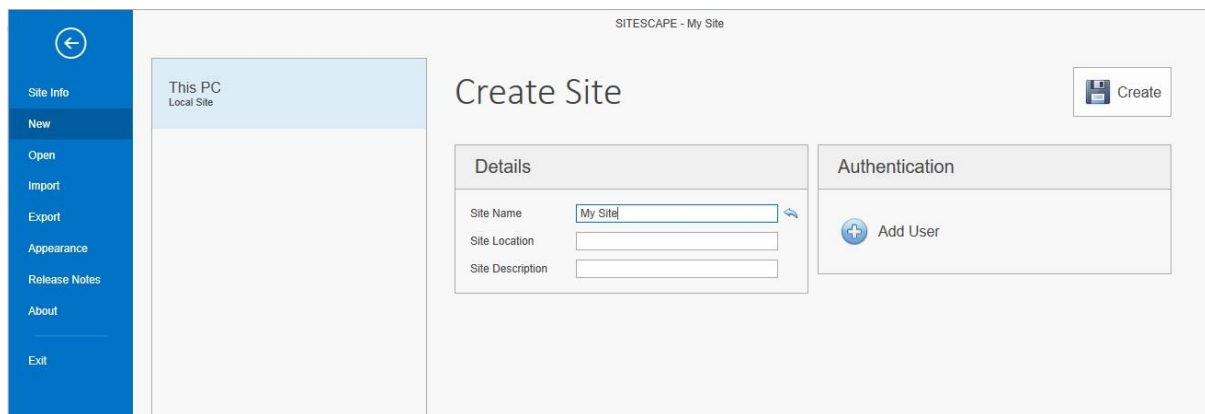
6   You will now be presented with the main system screen, and to find your COLDSTORE device on the network, click the 'Add' button on the top left, and select 'Discover Devices…' to display the Discovery window.
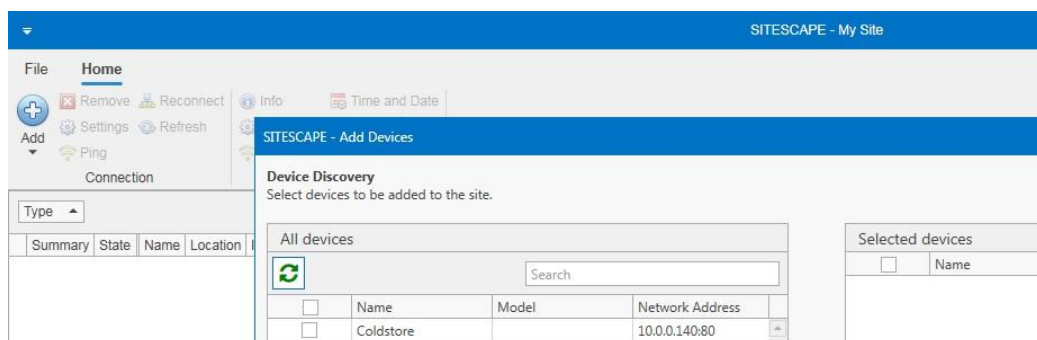
7   The COLDSTORE should be listed with the default IP address, if it does not appear initially, click the refresh button to scan for devices again.

     If a warning dialog or other notification is shown by a network firewall protection application, choose to allow the SITESCAPE application full access to the network.

     Should the automatic search method be unsuccessful, go to step 9 and try to add the device manually.

Select the appropriate device and click the arrow to move it into the list of Selected Devices and then press Continue.
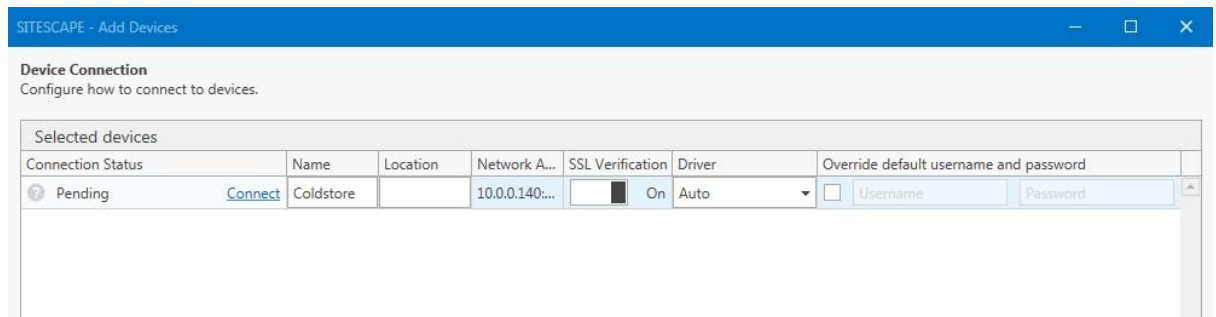
8   It will be necessary to add some extra details to the device prior to it being added to the Site list.

    a   Override Default Credentials

    b   Username = admin

    c   Password = admin

    d   Driver = Coldstore

Then select 'Add' and go to step 10.

9   The process to add a COLDSTORE manually is as follows:

    a   Exit the Discovery window and select the 'Add' button again, this time selecting 'Add Devices Manually…' which will display the 'Add Device' dialog.

    b   Enter the following details-

       1   Device Name = Coldstore

       2   IP Address : Port = 10.0.0.140 : 80

       3   Override Default Credentials

       4   Username = admin

       5   Password = admin

       6   Driver = Coldstore

c   Click Add.

The Add device manually dialog closes and the COLDSTORE will now be listed in the main Site window.

10   If a COLDSTORE entry is now shown, you have successfully added the COLDSTORE and it is ready for configuration. Skip to section K).

11   Should there be any problems during automatic or manual entry of details, verify the correct details have been added, the device is on-line and there are no firewall or similar protective mechanisms preventing network access.

Repeat the automatic or manual discovery process if necessary.

K) System Configuration

This section assumes you have installed SITESCAPE and have added your COLDSTORE to My Site. If you have not done this, please complete section J) before continuing.

Aside for using SITESCAPE to make changes to the COLDSTORE network settings required for your installation, some other changes that should be considered are: enter the address of the primary NTP server on the network, and set the correct time zone for the geographical location of the COLDSTORE.

Also, SITESCAPE can be used to query the COLDSTORE's array and disk status e.g. checking the loaded disks are visible, correct and are writable.

See COLDSTORE User's Guide gives full details of all operations possible with SITESCAPE.

Correct time-sync may be essential for correct operation, depending upon application. It is strongly recommended that a master NTP time server system be added to the network. Veracity's TIMENET PRO is a suitable hardware device – see www.veracityglobal.com for full details.

If the network settings of the COLDSTORE are to be changed, this should be the last operation done using SITESCAPE. After changing the network settings, it will be necessary to re-add the COLDSTORE to My Site to interact with the COLDSTORE. Also, depending on the network settings changes made, it may be necessary to change the computer's network settings in order to communicate fully with the COLDSTORE.

To configure the network address of your COLDSTORE proceed as follows:

1   Open the SITESCAPE application and select the appropriate site name (My Site, if following previous instructions).

2   Select the COLDSTORE device in the list and then select 'Network' to display the current network settings.
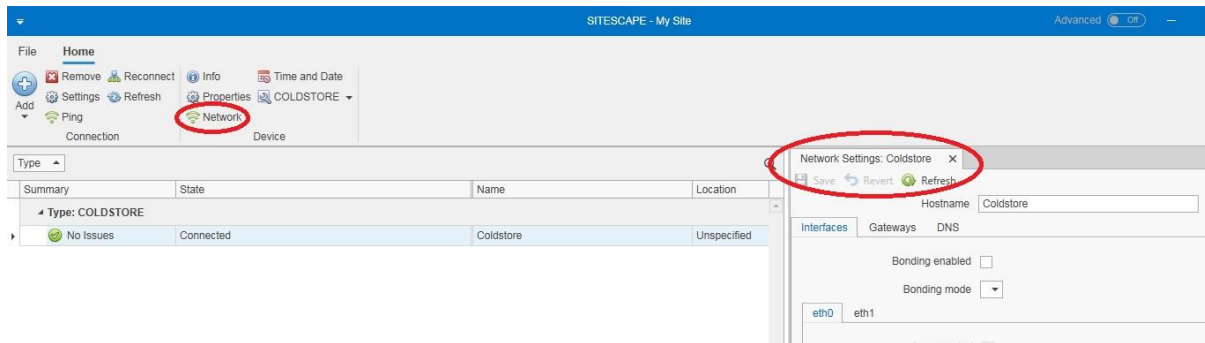
3   The network settings can now be changed as required.

ⓘ   After following the remaining steps, your COLDSTORE will switch to the network settings requested. You may need to alter your computers settings to re-establish a connection.

4   Click Save.

A confirmation message box is shown.

5   Click OK to confirm the changes made or Cancel to abandon the changes made.

If OK was clicked the COLDSTORE will now automatically reboot and will have the network settings you specified.

If other COLDSTORE devices require initial network settings configuration, repeat the Getting Connected part of section J) until all COLDSTOREs have been given network settings suitable for the installation.

Once all the COLDSTORE devices have been configured, if necessary, change the network settings of the computer to the values suited for the installation and re-attach the computer to the installation's network switch.

The SITESCAPE application can then be used to search for and add all the COLDSTORE devices on the installation's network to My Site. SITESCAPE can then be used to fully manage all aspects of COLDSTORE configuration, operation and retrieve diagnostic information.

For full details on how to use SITESCAPE with COLDSTORE, refer to the COLDSTORE User's Guide.

L) Disk Management – Adding & Removing Disks

Further disks may be added to the array at any time, and these may be added with the system either on or off. The new disks will be incorporated into the array automatically. No disk configuration is required. Simply slide the disk & tray in the first empty drive slot and close the disk tray lever, ensuring the tray is fully inserted and that the disk is engaged with the backplane connector.

Removal of disks requires a simple, yet specific, procedure. Please refer to the COLDSTORE User's Guide.

✋   To remove a disk from the array, follow the proper procedure as described in the COLDSTORE User's Guide. Specifically, do not remove disks when COLDSTORE is switched off. Failure to follow proper procedure will not result in data loss, but disks removed in this way will require some manual intervention before they will be readable in DISKPLAY or other USB docking station.

M) DW Spectrum Server

The CSTORE8-2U(D)-DW is supplied with DW Spectrum server pre-installed. It may also be pre-configured with recording licenses, if ordered. Further licenses can be added at a later date if required. The unit is also supplied with the custom DW Spectrum COLDSTORE plugin pre-installed. This is configured such that the COLDSTORE storage will be the storage target for any configured cameras.

For full details of DW Spectrum and how to use it, refer to the Digital Watchdog website (https://dwspectrum.com/).

Most conventional interactions with DW Spectrum are accomplished using the DW Spectrum Client application. This allows for configuration of camera recording as well as system configuration where required. This application can be downloaded from the Digital Watchog site.

Default server credentials are 'admin', 'pa$$word' and it is advisable that these are changed on first use.

Note that DWSpectrum Server cannot be upgraded through the client interface due to the integration with the COLDSTORE product, instead the following process should be followed to perform an upgrade of the DW Spectrum server using the SITESCAPE application.

1   Download the latest COLDSTORE DW Spectrum upgrade file. This can be found at veracitydownloads.com ->Downloads->VMS Integrations-> DWSpectrum->COLDSTORE.
2   From SITESCAPE select the COLDSTORE requiring the DW Spectrum upgrade.
3   On the title bar of SITESCAPE, enable the 'Advanced' option which will display certain operations not normally available.
4   Selecting 'Firmware' will display a panel at the right-hand side of the display.
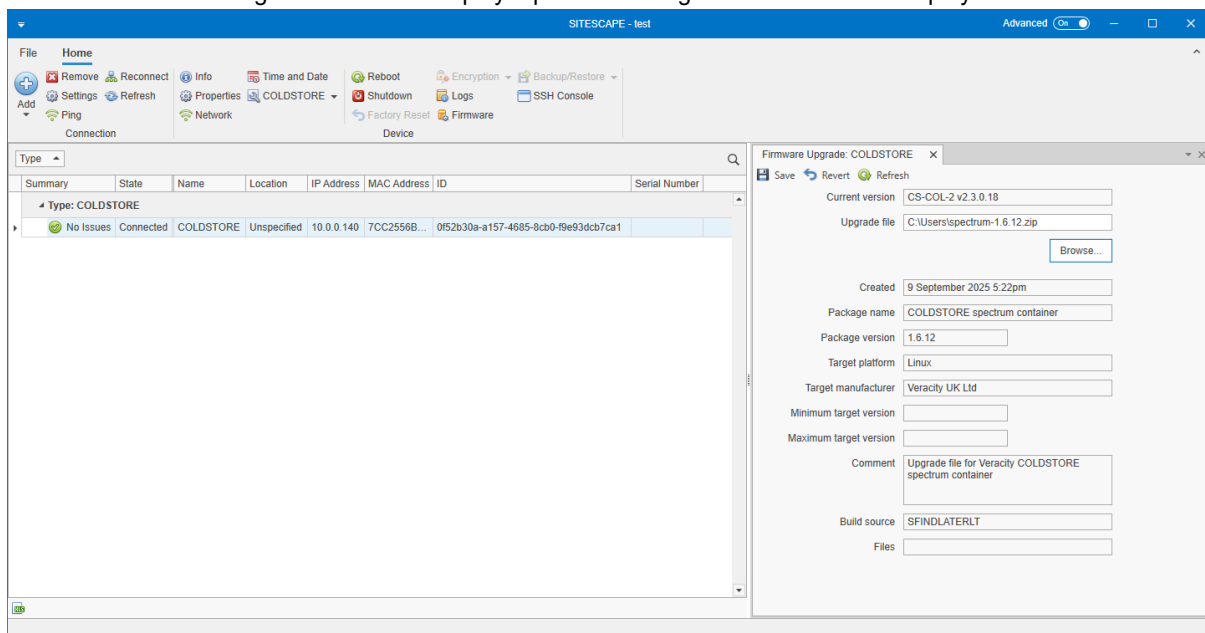
5   Pressing 'Browse' will allow selection of the DW Spectrum upgrade file downloaded in step 1.
6   Press 'Save' to perform the upgrade process, after a confirmation step.
7   The process will take a few minutes and will include a reboot, during which time SITESCAPE will indicate the system is offline.
8   Once the unit is online, it can be accessed using DW Spectrum Client as normal.

N) Troubleshooting

No power

The power LED on the front panel will illuminate when power is present. If this is not on, check the unit power switch is on. Check the power cable is fully inserted into the PSU. Check the power cable fuse and if necessary, replace the fuse or try a different power cable. Check that the wall socket is live by plugging another device into it.

No disk

If there are no disks present, COLDSTORE will not be able to operate. Please switch off the unit and add at least two, preferably three disks to the array as described above.

A COLDSTORE in this state will not appear in SITESCAPE search results.

Check the IP address of the unit as described in section J) above. Open a Command Prompt window on the computer and use the ping command to send an ICMP ping to the COLDSTORE IP address. If there is no response, check the network, the network connections and the computer's network settings.

If the ICMP ping is successfully received, try searching for the IP address by entering the address manually in SITESCAPE as described in Section K) above.

If this still fails to connect to COLDSTORE, check your firewall settings and the network switch configuration or contact your IT Network Administrator.

Disk fail

Any disk drive failure will result in a red LED highlighting the failed drive. Extract the disk tray from the array (no special procedure required for a failed disk, and no need to switch off the system). Remove the failed disk from the tray, clearly label it and set it aside. Fit a spare disk to the tray and re-insert into the empty disk slot. The new disk will be automatically incorporated into the array.

🖐 If a disk has failed on first use within the array, it may already have been faulty or may have been handled incorrectly during assembly. It is essential that all disks are handled carefully, are not dropped or even knocked against hard objects, including table surfaces.

🖐 If a disk has been dropped it should NOT be used to store critical data. The most common cause of early disk failure is rough handling of the disk prior to installation in a disk array. All disk manufacturers provide free test programs which may be downloaded from their websites to check disk health.

ⓘ If you are unsure of the status of a disk, it is strongly recommended that it be tested first before use.

For recommendations on processing failed disks, see the COLDSTORE User's Guide.

DW Spectrum Upgrade failure

It is not possible to upgrade the version of DW Spectrum installed in the CSTORE8-2U(D)-DW using normal upgrade procedures. Please contact Veracity for details on the latest available upgrade and how to install it.

DW Spectrum Storage location

The default storage location for DW Spectrum is coldstore://127.0.0.1/dw and as such is consistent across IP address changes.

DW Spectrum Inaccessible

If the server cannot be detected by the client or through the web interface (x.x.x.x:7001) then this may be due to incompatible IP parameters. A valid gateway and DNS address are required for full access. These must be set using SITESCAPE as described earlier.

DW Spectrum General

It is inadvisable to change any system parameters without detailed understanding of how they will impact on the operation of this product due to the close connection between the DW Spectrum Server and the COLDSTORE API.

O) System Transportation

If the unit is to be transported for any reason, it is recommended that the original packaging be retained for this purpose. All warranties will be void if the product is transported in sub-standard packaging.

It is strongly recommended that all hard disks are removed before transporting the unit and that any hard disks are transported in a suitably secure separate package. The hard disks add considerably to the weight of the unit and they are also the most sensitive to rough handling in shipment. They will not be properly protected from shock and damage if shipped inside the COLDSTORE unit itself. Please refer to the disk drive manufacturer's recommendations regarding disk drive transportation.

P) Further Information & Resources

Further information on COLDSTORE may be found in the COLDSTORE User's Guide and on the Veracity website. For further information on specific VMS integrations, please refer to the relevant manufacturer or your system supplier.

Veracity Website - www.veracityglobal.com

Digital Watchdog Website - www.dwspectrum.com