



Quickstart GUIDE

COLDSTORE CSTORE16-3U-PRO-DW

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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.

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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 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, or 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 always held securely, 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 & 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 on protective packaging blocks, Rackmount Slide Rails, an Accessories Box and a copy of this Quickstart Guide.

| The COLDSTORE unit will contain 16 x empty 3.5" hard disk trays.

The accessories box will contain:

| 64 x Hard disk tray mounting screws
| 2 x Power cables (UK, EU or US).

D) Basic Requirements

For the 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 a laptop (running Windows 10 or a later Windows operating system)
- | Ethernet Network (including network cables and a switch)
- | Preferred Video Management System – DW Spectrum

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 3U, 19" rack unit with 16 x 3.5" disk bays. The disk cage is accessible by releasing the catches on the left and right of the unit's 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 section G) below. Other connections are for engineering purposes only and are not required for normal configuration and operation.

F) Chassis Mounting

The rackmount lugs should be fitted to the unit as a first step. This is recommended whether the unit will be mounted in an equipment rack or not. 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 rackmounted, it is essential that the unit is mounted on a rack tray or shelf for support – it should not be mounted on the rackmount lugs alone.



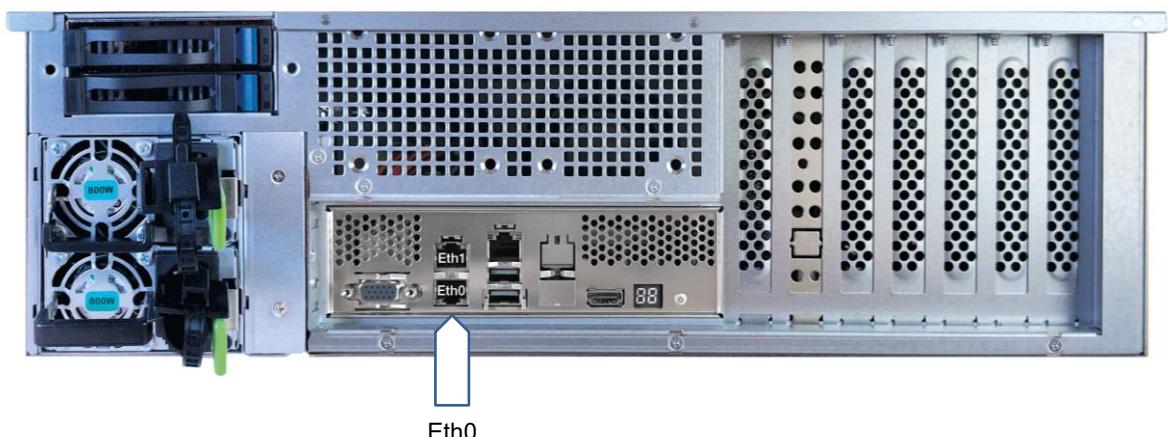
We highly recommend that the unit is mounted in the rack (or, if not to be rackmounted, placed in the desired location) before any disks are inserted. The unit is quite heavy when empty but very heavy when fully populated with hard disks. Therefore, care should be taken when lifting the unit, and this 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 and ready for connection. However, at this stage, do not switch on the power. See the rear panel photo below for the location of the connectors.

Steps:

- 1 Connect a network cable from your network switch to one of the network ports. If connecting one cable, only use Eth0.
- 2 Connect the power cable to the unit, but do not switch the unit on.



H) Disk Loading

COLDSTORE is delivered with 16 disk trays. To remove a tray, click the blue tab on the right, releasing the black lever. Pull the lever outwards and gently slide the disk 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 setup 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 on the top row from the left - Disk Slot 1 is on the left. Place the disks in order all the way to the right-hand side - Disk Slot 4 is on the right in the same row. On the next row down, Disk Slot 5, is on the left, and the Disk Slot on the right on the same row is Disk Slot 8 (as shown above). Fill each slot in sequence with as many disks as required in the sequence shown above. The trays should be inserted as follows:

With the tray level and 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 left side of the Disk Cage, thus firmly pushing the disk into the slot and into the SATA connectors on the backplane. The lever will click into place, and the blue tab will latch to hold the Disk Tray shut.



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, switch on the unit using the power switch on the front panel.

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 is common practice with any disk array type, as 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 – SITECAPE®

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

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



Please note that SITECAPE 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 the SITESCAPE User Guide.

Installing SITESCAPE

To install SITESCAPE on your computer:

- 1 Download the latest SITESCAPE installer compressed archive from www.veracitydownloads.com Go to Downloads, then SITESCAPE on the dropdown tabs.
- 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 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 dialogue 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. Find out the COLDSTORE's current network settings, as described in section J). Skip step 4 in part ii) of this section to complete the COLDSTORE setup.

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 the current IP address and other network settings of the COLDSTORE as described in section J).

COLDSTORE 3U DW devices have 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.

(i) 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 Disconnect any network lead currently attached to the Ethernet connection on the rear panel of the COLDSTORE.
- 2 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.
- 3 Change your computer's network settings to IP address 10.0.0.139 and the same subnet mask and gateway as the COLDSTORE.

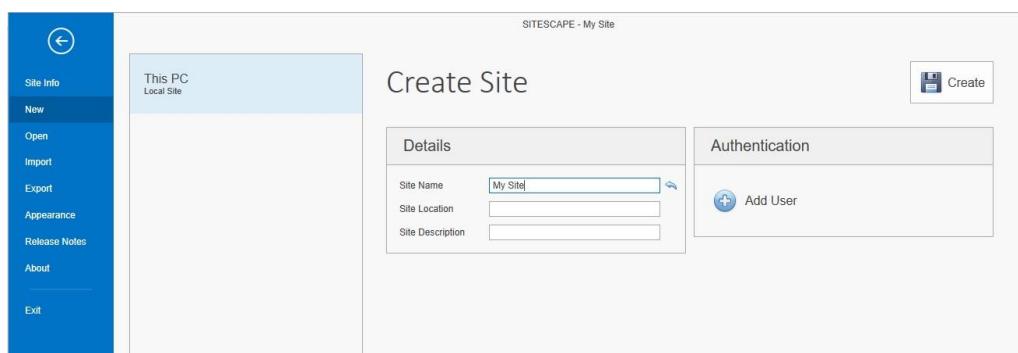
If the COLDSTORE is not using the default network settings, then choose an IP address for the computer that does not clash with the IP address of the COLDSTORE but matches the subnet and gateway addresses.

- 4 Using the Windows Start Menu, navigate to All Apps>Veracity. Click SITECAPE.

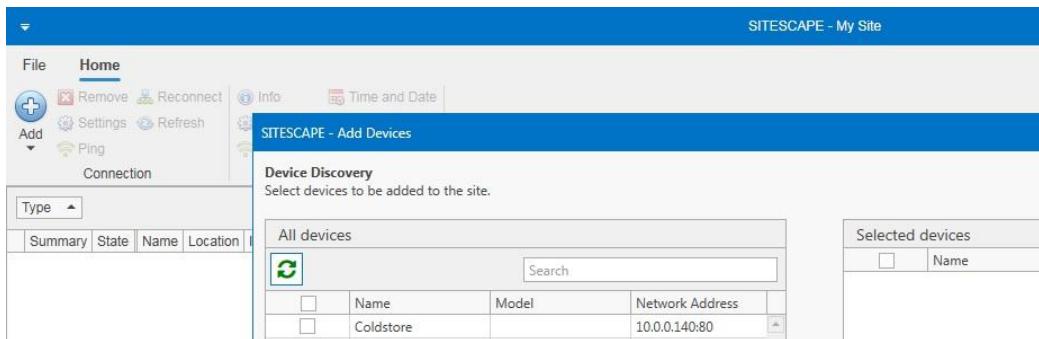
If Window User Account Control is enabled, click Yes when prompted.

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

The SITECAPE application start window is shown to allow for the selection of sites for configuration. If no sites have already been defined, select 'New', define a 'Site Name' and then select 'Create'.



5 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.



6 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.

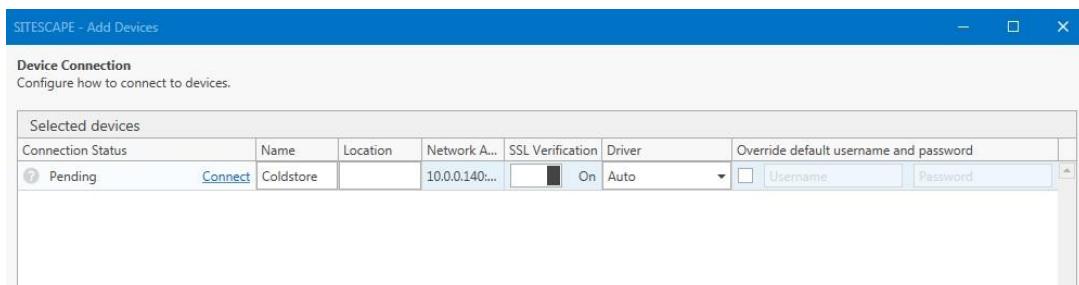
If a warning dialog or other notification is shown by a network firewall protection application, choose to allow the SITECAPE application full access to the network.

Should the automatic search method be unsuccessful, go to step 8 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.

7 It will be necessary to add some extra details to the device prior to it being added to the Site list.

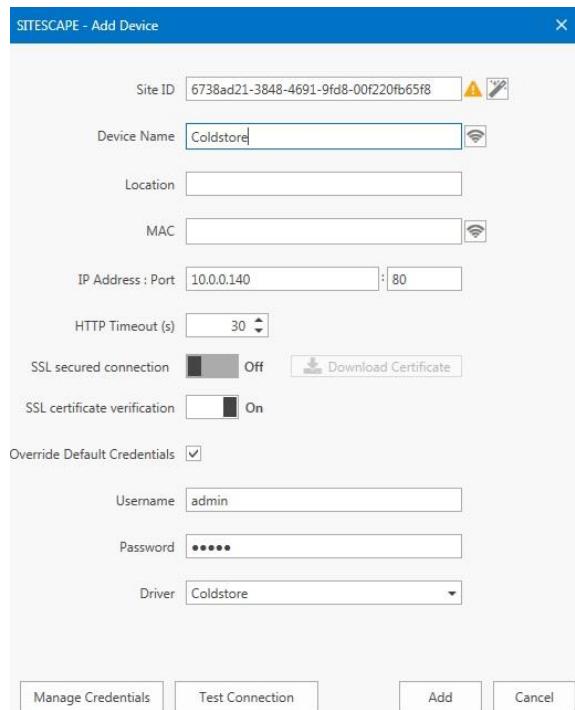
- a Override Default Credentials
- b Username = admin
- c Password = admin
- d Driver = Coldstore



Then select 'Add' and go to step 9.

8 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.

- 9 If a COLDSTORE entry is now shown, you have successfully added the COLDSTORE, and it is ready for configuration. Skip to section K).
- 10 Should there be any problems during automatic or manual entry of details, verify that the correct details have been added, the device is online, and there are no firewalls 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 SITECAPE and have added your COLDSTORE to My Site. If you have not done this, please complete section J) before continuing.

Aside from using SITECAPE 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, SITECAPE can be used to query the COLDSTORE's array and disk status e.g. checking that the loaded disks are visible, correct and are writable.



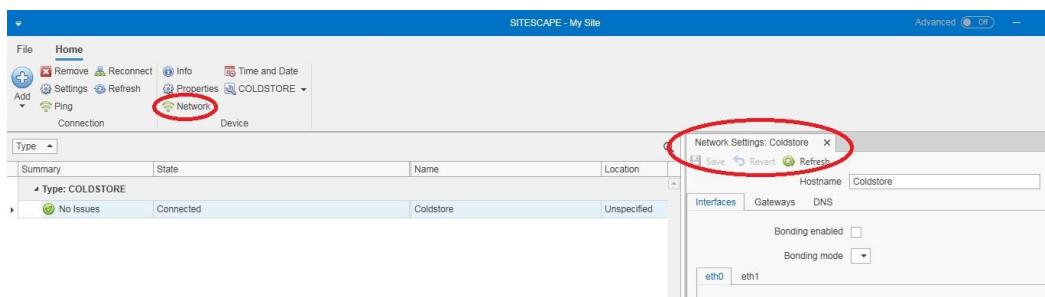
Correct time sync may be essential for correct operation, depending upon the application. It is strongly recommended that a master NTP time server system be added to the network. Veracity's TIMENET Pro is a suitable hardware device – see www.veracityglobal.com for full details.



If the network settings of the COLDSTORE are to be changed, this should be the last operation done using SITECAPE. 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 SITECAPE 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 computer's 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 SITECAPE application can then be used to search for and add all the COLDSTORE devices on the installation's network to My Site. SITECAPE can then be used to fully manage all aspects of COLDSTORE configuration and operation and retrieve diagnostic information.

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 and tray into 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. The blue tab will click shut.

Removal of disks requires a simple procedure.

To remove a disk, use SITECAPE to check if the disk is powered on prior to removal. If the system is powered on, select the 'Remove Disk' option in SITECAPE, selecting the disk you want to remove. This must be done prior to physically removing the disk.

Only remove a disk if the Disk Bay State is off. Use SITECAPE to check the Disk Bay State. The "Remove Disk" function is used to turn the Disk Bay off.

Disk Bays containing faulty drives will automatically turn off.

M) DW Spectrum Server

The CSTORE16-3U-PRO-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 later 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.

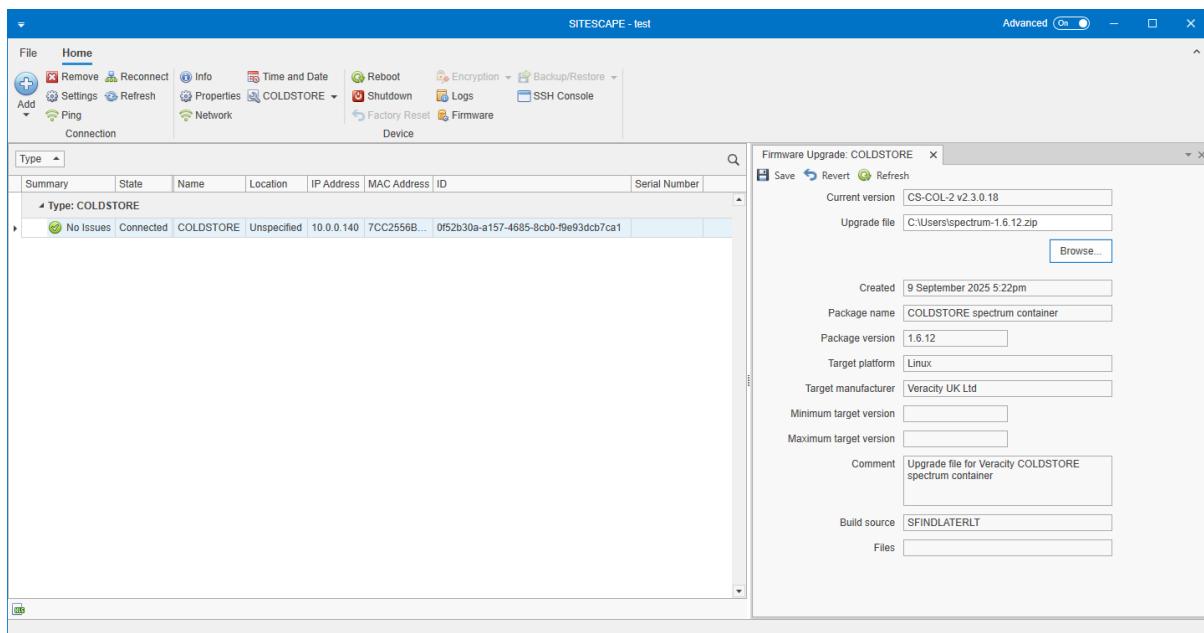
For full details of DW Spectrum and how to use it, refer to the Digital Watchdog website (<https://dwspectrum.com/>).

Most conventional interactions with DW Spectrum are accomplished using the DW Spectrum Client Application. This allows for the configuration of camera recording as well as system configuration where required. This application can be downloaded from the Network Optix 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 on the right-hand side of the display.



- 5 Pressing 'Browse' will allow the 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 that 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 will illuminate when power is present. If this is not on, check that the unit power switch is on. Check that both power cables are fully inserted into the PSUs. Check both power cables' fuses, and if necessary, replace a 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 disks, preferably three disks, to the array as described above.

A COLDSTORE in this state will not appear in SITECAPE 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 SITECAPE 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 is required for a failed disk, and there is 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 it into the empty disk slot. The new disk will automatically be 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 and 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.

DW Spectrum Upgrade Failure

It is not possible to upgrade the version of DW Spectrum installed in the CSTORE16-3U-PRO-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 SITECAPE, as described earlier.

DW Spectrum General

It is inadvisable to change any system parameters without a detailed understanding of how they will impact 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 COLDSTORE unit and that any hard disks are transported in a separate, suitably secure and robust 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

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