Johnson Controls

Digital Vision Network

5000 Series

System Drive Replacement Instructions

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DVN 5000 System Drive Replacement

This document provides instructions for replacing the Digital Vision Network (DVN) 5000 Series system drive provided in one of the following kits:

Table 1: DVN 5000 System Drive Replacement Kits

Product Code[1]	Description
DVN-DESKHDD-002	DVN 5000 Desktop (250 GB) Hard Drive Replacement Kit
DVN-DESKHDD-005	DVN 5000 Desktop (500 GB) Hard Drive Replacement Kit
DVN-DESKHDD-007	DVN 5000 Desktop (750 GB) Hard Drive Replacement Kit
DVN-DESKHDD-010	DVN 5000 Desktop (1 TB) Hard Drive Replacement Kit
DVN-SYSHDD-16	DVN 5000 Rackmount System Drive Replacement Kit (16 Channels)
DVN-SYSHDD-32	DVN 5000 Rackmount System Drive Replacement Kit (32 Channels)

1. One per DVN

NOTES

- *Information in this document is for Johnson Controls Branch office use only.*
- *The instructions provided in this document should be performed only by a qualified DVN technician (in Europe, technicians must be DVN-certified). Mishandling of the DVN by an unqualified or uncertified individual resulting in damage to the system voids the DVN's warranty.*
- *Other upgrade options are available that enable you to upgrade the DVN 5000 using a Johnson Controls DVD or USB flash drive. For more information, refer to the DVN 5000 Rackmount Series Server Upgrade Instructions (Part Number 24-10248-129).*
- *To view a list of new features included in software Release 2.9, refer to the DVN 5000 Version 2.9 Software Release Notes (Part Number 24-10318-29).*
- *During the installation procedure, you may observe an error message generated by the **sstore.exe** process. This does not affect DVN operation and can be ignored.*

UPGRADE CHECKLIST

This section provides a checklist to help you quickly upgrade a DVN 5000 Series server to software Release 2.9 by replacing the system drive. The checklist provides only the essential steps required to upgrade the DVN 5000 server's software. Detailed upgrade instructions are covered elsewhere in this document.

CAUTION

The checklist is intended only for qualified and experienced DVN technicians. Before upgrading a DVN server with instructions in this section, you must have a thorough understanding of the upgrade process. Mishandling of the DVN by an unqualified or inexperienced individual resulting in damage to the system voids the DVN's warranty.

Getting Started

- ❑ Unpack the equipment. See page 8.
- ❑ Carefully inspect the equipment for damage as soon as you receive it. If the contents of a container are damaged in any way, notify the carrier and your Johnson Controls representative immediately. See page 8.
- ❑ **Rackmount Only:** If you are upgrading the DVN 5000 to support more than 16 channels, determine the current amount of RAM in the DVN. (Setup>System Configuration>Performance – Open). See page 14.

  The DVN Rackmount unit must have a minimum of 2 GB of RAM to support more than 16 channels. Install additional RAM, if necessary. See page 9.
- ❑ Verify that all coax cables are properly labeled. See page 13.
- ❑ **Rackmount Only:** Verify that the status of each RAID drive is **Normal** or **Ready** (for DVNs with a Broadcom® or Ciprico® RAID controller) or **Optimal** (for DVNs with an Adaptec® RAID controller). See page 15.
- ❑ Write down the current network settings, which you must reconfigure after replacing the system drive. (Setup>System Configuration>Network Cards). See page 16.
- ❑ Export the DVN configuration settings. (Setup>System Configuration> Configuration Settings – Export). See page 17.
- ❑ **Rackmount Only:** Delete the storage drive, but do **not** delete the allocated disk space. (Setup>Storage Configuration). See page 18.
- ❑ **Desktop Only:** Export any video to DVD.

NOTE

For DVN Desktop units, replacing the hard drive erases all video history (i.e. existing video cannot be accessed from the new hard disk drive). After replacing the drive, place the old one in a secure location in case you need to access the video at a later date.

RAID Controller BIOS Update and Configuration (Rackmount Models Only)

- ❑ If applicable, update the RAIDCore™ RAID controller BIOS (required only on DVN 5000 servers with a RAIDCore RAID controller). See page 11 and page 20.
  1. Shut down the DVN. See page 22.
  2. **DVNs with a BCM Motherboard Only:** Insert the USB flash drive.

     DVNs with an Intel® Motherboard Only: Insert the supplied floppy disk into the DVN's floppy drive.
  3. Restart the DVN 5000 server.
  4. **DVNs with a BCM Motherboard Only:** Enter the motherboard's BIOS configuration (Password: **P001**). Continue with steps 6-11.
  5. **DVNs with an Intel Motherboard Only:** Follow the on-screen prompts to update the RAIDCore RAID controller BIOS. Skip to the next check box.
  6. Select the USB flash drive as the first **Hard Disk Boot Priority**.
  7. Save and exit the BIOS configuration.
  8. When prompted, press **1** on your keyboard to update the RAID controller BIOS.
  9. When prompted again, press **2** on your keyboard to quit.
  10. When you see the command prompt, remove the USB flash drive.
  11. Restart the DVN by pressing the power button on the front of the unit.
- ❑ If applicable, configure the controller to boot even if the RAID is in a critical state (required only on DVNs with a RAIDCore RAID controller). See page 21.
  1. Shut down and then restart the DVN.
  2. During the initial boot sequence, press **<CTRL-R>** to enter the RAID configuration.
  3. Select **Controller Options** and press **<Enter>**.
  4. Set the following fields to **Off**: **Toggle Pause if Critical**, **Toggle Pause if Offline**, and **Toggle Pause if Error**.
  5. Press the **<Esc>** key to save and exit the RAID configuration.
- ❑ If applicable, enable Cache on the controller (required only on DVNs with a RAIDCore RAID controller). See page 21.
  1. Use RemoteControl's System Maintenance feature to open Windows® Explorer.
  2. Access the following directory: *C:\Program Files\RAIDCore\noproc*
  3. Run the **bc_winraid.exe** file. If the Service dialog box appears, click **Cancel**.
  4. In the left pane of the RAIDConsole window, expand the directory tree to **Controller Group>Array>RAID5 or RAID0** (depending on your current RAID configuration).

5. Select **RAID5** or **RAID0** (depending on your current RAID configuration).
6. On the menu bar, select **Array>Modify Cache Settings>Read + Write Back Cache**.
7. Close the RAIDConsole window and exit the Maintenance screen.

❑ If applicable, disable Hyper-Threading on the Intel motherboard's BIOS configuration (DVN5016-L, DVN5016-M, DVN5008-L, and DVN5008-M models **only**). See page 21.

System Disk Drive Replacement

❑ Shut down the DVN 5000 server. See page 22.

❑ **Rackmount Only:** Determine the system drive type. See page 23.

1. Open the front access door of the DVN.
2. Verify whether the DVN has a 5-bay drive chassis, 4-bay drive chassis, a single-bay drive chassis, or no RAID drive chassis.
   A. If the DVN has a 5-bay drive chassis with all 5 drives populated, then the DVN has a SATA system drive, which is located in the right-most slot.
   B. If the DVN has a 5-bay drive chassis with only 4 drives populated (the right-most slot is empty with no drive), then the DVN has an IDE system drive, which can only be accessed by opening up the unit.
   C. If the DVN has a 4 bay drive chassis, then the DVN has an IDE system drive, which can only be accessed by opening up the unit.
   D. If the DVN has three horizontal metallic slot covers located behind the front access door, the DVN has either an IDE or SATA system drive, which can only be accessed by opening up the unit.
   E. DVN Desktop units have a single-bay drive chassis.

❑ Replace the system disk drive.

A. SATA System Disk Drive in a 5-Bay Drive Chassis (see page 25)

1. Shut down the DVN. Wait 20 seconds after shutdown for the drives to stop rotating.
2. Disengage the drives in slots 0-3 from the drive chassis, but do not remove them entirely.
3. Remove the system drive from the right-most drive slot (slot 4).
4. Insert and latch the replacement system drive only.

B or C. IDE System Disk Drive on a DVN with a 4-Bay or 5-Bay Drive Chassis (see page 26)

1. Shut down the DVN. Wait 20 seconds after shutdown for the drives to stop rotating.
2. Disengage the drives in slots 0-3 from the drive chassis, but do not remove them entirely.

3. If the DVN's top cover has not been removed, remove the four screws that secure the cover.
4. Contact Johnson Controls Technical Support for approval to cut the warranty label (see "Contact Information" on page 13).
5. Cut the warranty label and slide the cover off to expose the DVN's internal components.
6. Disconnect the IDE and power cables from the internal IDE system drive.
7. Disconnect the IDE cable from the motherboard.
8. **DVNs with a 5-Bay Drive Chassis Only:** Carefully insert and secure the replacement disk drive into the right-most slot (slot 4) of the drive chassis. Then connect one end of the SATA cable on the drive cage and the other end to the motherboard. Skip to step 16.
9. **DVNs with a 4-Bay Drive Chassis Only:** Remove the IDE system drive from the DVN chassis by removing the two screws that secure the hard drive to the DVN chassis. Continue with step 10.
10. Separate the old IDE drive from its respective bracket.
11. Separate the new SATA drive provided in the kit from its respective bracket by removing the four screws (two on each side) that secure the drive to the bracket.
12. Attach the new SATA drive provided in the kit to the drive bracket removed from the IDE drive and secure it using the four screws.
13. Insert and secure the SATA drive with its new bracket into the same location where the IDE drive was removed.
14. Connect one end of the SATA cable provided in the kit to the new SATA system drive. Connect the other end to the motherboard.
15. Connect the power connector to the new system drive. The power connector is located below the SATA connector.
16. Verify that all cables are securely connected and are not obstructing the CPU fan.
17. Secure the top cover to the DVN and reconnect the DVN's power cable to its power source if previously disconnected.

D. No RAID Drive Chassis (see page 32)

1. Shut down the DVN. Wait 20 seconds after shutdown for the drives to stop rotating.
2. If the DVN's top cover has not been removed, remove the four screws that secure the cover.
3. Contact Johnson Controls Technical Support for approval to cut the warranty label (see "Contact Information" on page 13).
4. Cut the warranty label and slide the cover off to expose the DVN's internal components.
5. Locate the two internal data drives.
6. Label the cables connected to the data drives (there are two cables per drive, one data cable and one power cable).

7. Disconnect the data cables and power cables from the two internal data drives. This may require you to remove the glue that helps secure the cables to the drives.
8. Locate the system drive inside the DVN.
9. If the system drive has a 1 1/2-inch wide ribbon cable connecting the drive to the motherboard, the DVN has an IDE system drive. Disconnect both ends of the ribbon cable (from the system drive and the motherboard).

   If the system drive uses a narrow 1/2-inch wide SATA cable (not a ribbon cable) connecting the drive to the motherboard, the DVN has a SATA system drive. Disconnect the SATA cable only from the system drive.
10. Disconnect the power cable from the system drive.
11. Remove the system drive from the DVN chassis by removing the two screws that secure the hard drive to the DVN chassis.
12. Separate the old system drive from its respective bracket.
13. Separate the new SATA drive provided in the kit from its respective bracket by removing the four screws (two on each side) that secure the drive to the bracket.
14. Attach the new SATA drive provided in the kit to the drive bracket removed from the old system drive and secure it using the four screws.
15. Insert and secure the SATA drive with its new bracket into the same location where the old system drive was removed.
16. If you replaced an IDE system drive, connect one end of the SATA cable provided in the kit to the new SATA system drive. Connect the other end to the motherboard.

    If you replaced a SATA system drive, connect the SATA cable already connected to the motherboard to the new SATA system drive.
17. Connect the power cable to the new system drive. The power connector is located below the SATA connector.
18. Reconnect the DVN's power cable to its power source if previously disconnected.

E. DVN Desktop (see page 35)

1. Shut down the DVN 5000 if you have not done so already. See page 22.
2. Open the door on the front of the unit to access the drive bay.
3. Unlock the drive by moving the locking switch to the right.
4. Carefully remove the hard disk drive from the unit.
5. Unmount the existing hard disk drive from its bracket.
6. Mount the new hard disk drive to the bracket.
7. Insert the new hard disk drive into the drive bay slot.
8. Press the hard disk drive into the slot until the drive is secure.
9. Lock the drive into place by moving the locking switch to the left.

Finalizing the Installation

- ❑ Restart the DVN 5000. See page 37.
- ❑ If the Files Needed dialog box appears requesting the **bcraid.sys** file, browse and open the file from the following directory (see page 37):

  C:\Program Files\RAIDCore\driver\bcraid\i386

  Repeat if the system requests the **bccfg.sys** file.
- ❑ When prompted, select the language and click **OK**. See page 37.
- ❑ On the Software License Agreement screen, click **Accept**. See page 37.
- ❑ Select and confirm the video standard: **PAL** (Europe standard) or **NTSC** (North America standard). See page 37.
- ❑ Activate the system license. (Setup>System Configuration>License). See page 38.
- ❑ Import the system configuration (DVN 5000 servers running software version 2.5 and higher only). See page 41.
- ❑ Configure the unit's network settings. (Setup>System Configuration>Network Cards). See page 42.

  Some DVN servers may require you to configure the network settings directly from the Windows XP® Embedded Operating System (OS). See page 43.
- ❑ **Rackmount Only:** Reconnect the data drives. See page 46.

  DVNs *with* a RAID Drive Chassis

  1. Shut down the DVN 5000.
  2. Press each RAID drive into the slot until is secured.
  3. If you are using external storage via the DVN's SCSI port on the back of the server, reconnect the cable to this port.
  4. Restart the DVN and log onto RemoteControl.

  DVNs *without* a RAID Drive Chassis

  1. Shut down the DVN 5000. Then unplug the DVN 5000 from its power source (wall socket or UPS device).
  2. Locate the two internal data drives
  3. Locate the cables previously labeled that connect to the data drives (there are two cables per drive, one data cable and one power cable).
  4. Reconnect the data cables and power cables to the two internal data drives.
  5. If you are using external storage via the DVN's SCSI port on the back of the server, reconnect the cable to this port.
  6. Verify that all cables are securely connected and are not obstructing the CPU fan.
  7. Replace the top cover and secure it with the four screws previously set aside.
  8. Reconnect the DVN 5000 to its power source (wall socket or UPS device).

9. Restart the DVN and log on to RemoteControl.

❑ **Rackmount Only:** Import the storage drives. See page 47.

1. In RemoteControl, navigate to the **Setup>Storage Configuration** screen.
2. Select a storage group in the left pane and click **Import Disk**.
3. Click **Browse** and separately select the drive you wish to import.
4. Click **Ok**. Click **Ok** on the Select Disk to Import screen.
5. Repeat steps 1-4 for all storage groups and drives previously deleted.
6. Play back video footage to verify that recorded video has not been lost.

UNPACKING THE EQUIPMENT

Carefully inspect the shipping container as soon as you receive it (with the delivery agent present). Some shipping companies want to have an agent present when a damaged container is opened. If a container is damaged, open it immediately, inspect the contents, and have the agent make note on the shipping document. Check the purchase order against the packing slips to ensure the order is complete. If the contents of a container are damaged in any way, notify the carrier and your Johnson Controls representative immediately. Report any discrepancies to your Johnson Controls representative. Save the packing materials for possible return shipments.

Package Contents for Rackmount Kits

Table 2: Package Contents for Rackmount Kits

Product Code	Description
DVN-SYSHDD-16 DVN-SYSHDD-32	■ DVN 5000 Serial ATA System Drive with Attached Front Panel Bracket ■ One Serial ATA Cable[1] ■ Johnson Controls USB flash drive[2] with an updated DVN RAIDCore RAID controller BIOS (also includes client software and user documentation) ■ Johnson Controls 1.44” floppy disk[3] with an updated DVN RAIDCore RAID controller BIOS ■ DVN 5000 Series System Drive Replacement Instructions

1. Required only if the DVN has an IDE system drive (not required for DVNs with a system drive installed in a 5-bay drive chassis).
2. Required only if the DVN has a BCM motherboard and a RAIDCore RAID controller (see “Determining the Motherboard Manufacturer (Rackmount Only)” on page 9 and “Determining the RAID Controller Manufacturer” on page 11).
3. Required only if the DVN has an Intel motherboard and a RAIDCore RAID controller (see “Determining the Motherboard Manufacturer (Rackmount Only)” on page 9 and “Determining the RAID Controller Manufacturer” on page 11).

Package Contents for Desktop Kits

Table 3: Package Contents for Desktop Kits

Product Code	Description
DVN-DESKHDD-002	■ 250 GB Replacement Hard Drive ■ DVN 5000 Series System Drive Replacement Instructions
DVN-DESKHDD-005	■ 500 GB Replacement Hard Drive ■ DVN 5000 Series System Drive Replacement Instructions
DVN-DESKHDD-007	■ 750 GB Replacement Hard Drive ■ DVN 5000 Series System Drive Replacement Instructions
DVN-DESKHDD-010	■ 1 TB Replacement Hard Drive ■ DVN 5000 Series System Drive Replacement Instructions

Equipment You May Need (Not Included in Replacement Kit) for Rackmount Models

Two 512 MB DDR400 SDRAM modules – may be ordered through Johnson Controls using part number **DVN-MEM** (order two DVN-MEMs to equal 1 GB of additional RAM)

NOTE

*The RAM modules are required **only** if you are upgrading the DVN 5000 to support more than 16 channels **and** the DVN has 1 GB of RAM.*

Equipment You May Need (Not Included in Replacement Kit) for Desktop Models

The following equipment is required to complete the upgrade on a DVN 5000 **Desktop** Series server:

- Keyboard

DETERMINING THE MOTHERBOARD MANUFACTURER (RACKMOUNT ONLY)

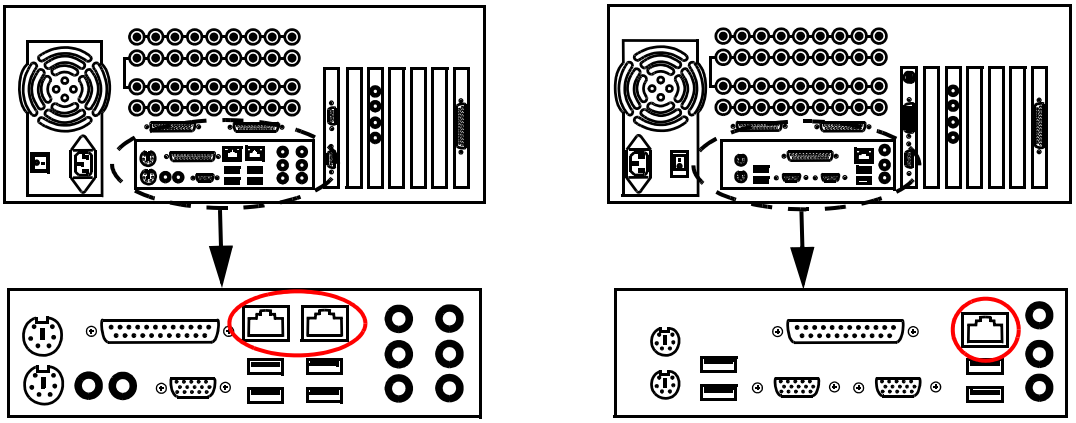
Follow the instructions in this section to determine whether your DVN 5000 has a BCM or Intel motherboard. You need to know this information to progress through the upgrade.

NOTE

Johnson Controls has been shipping new DVN 5000 units with the BCM motherboard since January, 2007.

➤ **To determine whether your DVN 5000 has a BCM or Intel motherboard:**

1. On the back of the DVN, verify the number of network ports. See Figure 1.



If the DVN has **two** network ports, your DVN has a BCM motherboard.

If the DVN has **one** network port, your DVN has an Intel motherboard.

Figure 1: Determining the Motherboard Manufacturer

You may also determine whether your DVN 5000 has a BCM or Intel motherboard by performing the following instructions:

2. On the RemoteControl Main screen, click the **Shutdown** button.

   The Shutdown button only appears when running RemoteControl locally at the server.

3. Wait 1 minute after the DVN has shut down and then restart it.
   - If you see the old Johnson Controls logo (see below) during the initial boot sequence, your DVN 5000 server has a BCM motherboard.

   - If you do not see the old Johnson Controls logo during the initial boot sequence, your DVN 5000 has an Intel motherboard.

NOTE

New DVN 5000s with BCM main boards shipped from the factory will display the new Johnson Controls logo.

RAID Controller BIOS Update Determination (Rackmount Series Only)

Use the information in this section to help determine whether or not you need to update the DVN 5000 Rackmount Series server's RAID controller BIOS during the system drive replacement process.

For DVN 5000 Desktop Series units, skip to "Contact Information" on page 13.

Consider the following before proceeding:

Who is the DVN RAID controller's manufacturer?
The DVN has either a Broadcom (or Ciprico) RAIDCore RAID controller or an Adaptec RAID controller. See "Determining the RAID Controller Manufacturer" on page 11.

- If the DVN has a **Broadcom (or Ciprico) RAIDCore** RAID controller, you must update the RAIDCore RAID controller BIOS. Go to the next question to determine the update method.
- If the DVN has an **Adaptec** RAID controller, you do **not** have to update the RAID controller's BIOS.

Who is the DVN motherboard's manufacturer?
The DVN has either a BCM or Intel motherboard. If you do not know which one is installed on the DVN, see "Determining the Motherboard Manufacturer (Rackmount Only)" on page 9.

- If the DVN has a **BCM** motherboard, you will need the Johnson Controls USB flash drive (included in kit) to update the RAID controller BIOS.
- If the DVN has an **Intel** motherboard, you will need the Johnson Controls 1.44" floppy disk (included in kit) to update the RAID controller BIOS.

Table 4: RAID Controller Update Determination

RAID Controller	Motherboard	Update RAID Controller BIOS?	Use USB Flash Drive or Floppy Disk
RAIDCore	BCM	Yes	USB Flash Drive
RAIDCore	Intel	Yes	Floppy Disk
Adaptec	n/a	No	n/a

Determining the RAID Controller Manufacturer

Follow the instructions in this section to determine the RAID controller manufacturer.

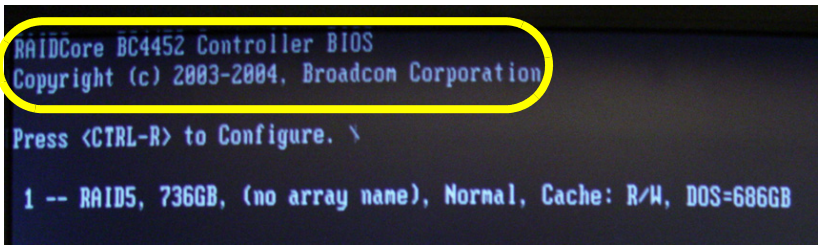
➤ To determine the RAID controller manufacturer:

1. On the Main screen, click **Shutdown**.

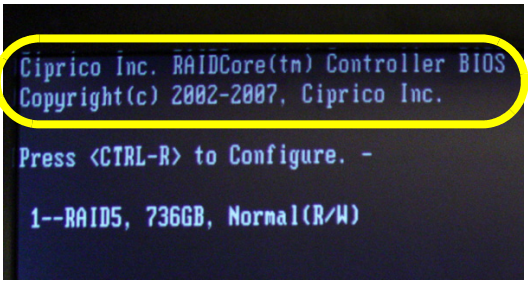
The **Shutdown** button only appears when running RemoteControl locally at the server.

2. Click **Yes** when the warning message appears.
3. Once the DVN has shut down, restart it.
4. During the initial boot sequence, information about the RAID controller manufacturer appears:

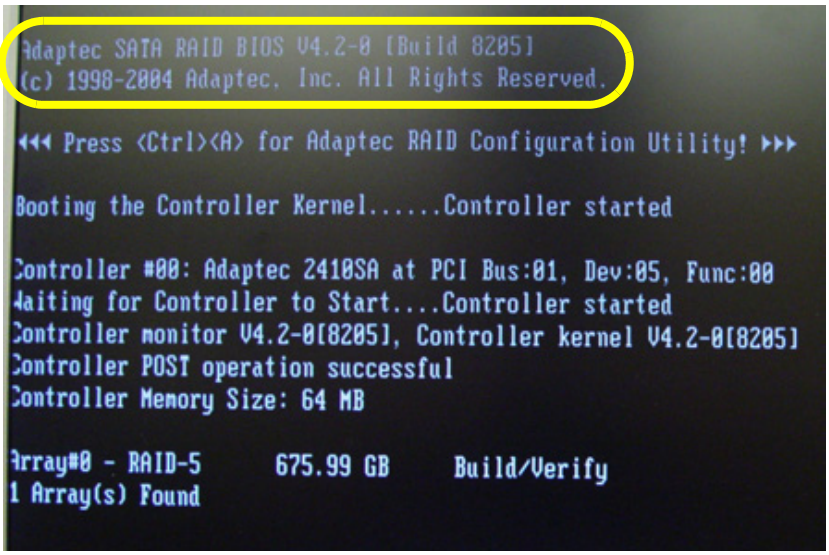
Broadcom RAID Controller



Ciprico RAID Controller



Adaptec RAID Controller



CONTACT INFORMATION

When you are prompted to obtain an authorization code during the replacement process, or if you require technical support assistance, contact the Johnson Controls Product Sales Team at 1-800-ASK-JNSN (1-800-275-5676) for 24-hour assistance in the USA, Technical Support at 805-582-3117 (menu option 5) in the USA, or one of the following numbers for Europe:

- +49 20 12 40 04 50
- +33 6 72 99 49 66

Authorization codes may also be obtained by downloading the code generator (**maintenance.zip**) from the following site:

ftp://cardkey:cardkey2000@ftp2.johnsoncontrols.com/cardkey-out/dvn_software/5000.v2.9/Tools/

PREPARATION

Before replacing the DVN 5000's system disk drive, perform the following series of preparatory steps:

- Determine the current amount of RAM in the DVN[1] (see page 14).
- Verify that all coax cables are properly labeled, as you may need to disconnect and then reconnect them during the system drive installation, depending on the accessibility of the DVN.
- (Rackmount Only) Verify that the status of each RAID drive is **Normal** or **Ready** (for DVNs with a Broadcom or Ciprico RAID controller) or **Optimal** (for DVNs with an Adaptec RAID controller) (see page 15).
- Write down the current network settings, which you must reconfigure after replacing the system drive (see page 16).
- Export the DVN configuration settings (see page 17).
- Saving existing video (see page 18).
- (Rackmount Only) Update the DVN's RAIDCore RAID controller BIOS, if applicable (see page 20).
- (Rackmount Only) Configure the RAIDCore RAID controller[2] (see page 21).
- Disable Hyper-Threading (DVN5016-L, DVN5016-M, DVN5008-L, and DVN5008-M models **only**) (see page 21).

1. Required only if you are upgrading the DVN 5000 Rackmount to support more than 16 channels.
2. Required only if the DVN has a RAIDCore RAID controller (see "Determining the RAID Controller Manufacturer" on page 11).

- Shut down the DVN 5000 server (see page 22).
- (Rackmount Only) Determine the system drive type (see page 23).
- Print a copy of the *DVN 5000 Release 2.9 Software Release Notes*, which is available on the Johnson Controls USB flash drive included with the kit – you will need to update the DVN 5000 clients after replacing the DVN 5000 server's system drive.

NOTE

If the DVN 5000's system drive has completely failed and you are unable to restart the server or log in to RemoteControl, skip to "Shutting Down the DVN 5000 Server" on page 22.

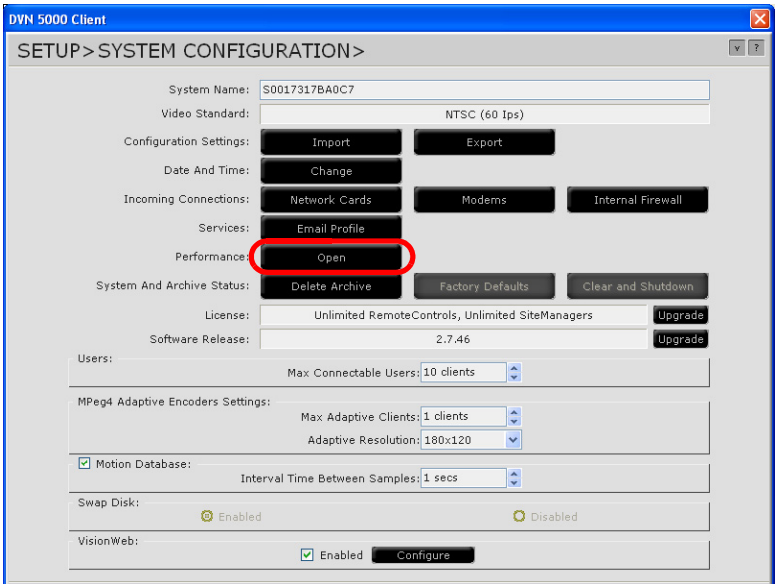
Determining the RAM Amount in the DVN

You must increase the amount of RAM in the DVN 5000 **only** for *Rackmount* Series servers currently with 1 GB of RAM *and* you plan to upgrade the DVN to support more than 16 channels. In this case, install two 512 MB RAM modules to increase the total amount of RAM to 2 GB.

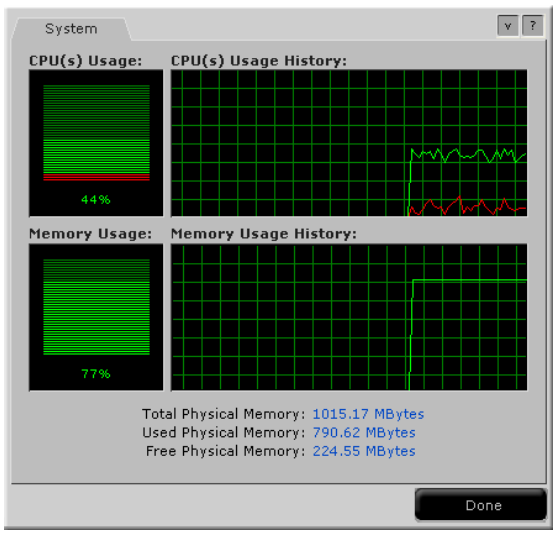
For RAM module specifications, see "Equipment You May Need (Not Included in Replacement Kit) for Rackmount Models" on page 9.

➤ To determine the amount of RAM in your DVN 5000:

1. On the Main screen, click **Setup**.
2. On the Setup screen, click **System**.
3. On the Setup>System Configuration screen, click **Open** next to **Performance**.



The System performance screen appears.



- If the **Total Physical Memory** is approximately 1000 MB, then the DVN has 1 GB of RAM. If you need to increase the amount of RAM to 2 GB, refer to the *DVN 5000 Server Upgrade Instructions (Version 2.9)* for information on installing extra RAM modules. These instructions can be downloaded from the following site:

  ftp://cardkey:cardkey2000@ftp2.johnsoncontrols.com/cardkey-out/DVN_Software/5000.v2.9/

- If the **Total Physical Memory** is approximately 2000 MB, then the DVN has 2 GB of RAM. You are not required to increase the amount of RAM.

Verifying the RAID Drive Status (Rackmount Series Only)

Before you can replace the DVN 5000 server's system drive, all RAID drives must have a status of **Normal** or **Ready** (if the DVN has a Broadcom or Ciprico RAID controller) or **Optimal** (if the DVN has an Adaptec RAID controller).

For DVN 5000 Desktop Series units, skip to "Viewing the DVN's Current Network Settings" on page 16.

➤ To verify the status of the RAID drives:

1. Restart the DVN 5000.
2. During the boot sequence, press <CTRL-R> (for Broadcom or Ciprico RAID controllers) or <CTRL-A> (for Adaptec RAID controllers) when prompted.

TIP

*Press the **<Pause>** key on your keyboard during the boot sequence to pause the information on the screen. To continue the boot sequence, press any key (except the <Pause> key).*

3. If the DVN has a Broadcom or Ciprico controller, the RAID drive status appears, as seen in the following example:

   1 -- RAID5, 2.1TB, Storage, *Normal*, Cache: R/W, DOS=1.9TB

   Confirm that the drive's status is **Normal** or **Ready**. If the status of a RAID drive is **Critical** or **Offline**, contact Johnson Controls for assistance (see "Contact Information" on page 13).

4. If the DVN has an Adaptec controller, the RAID drive status appears, as seen in the following example:

   Array#0-RAID0 701.18 GB *Optimal*

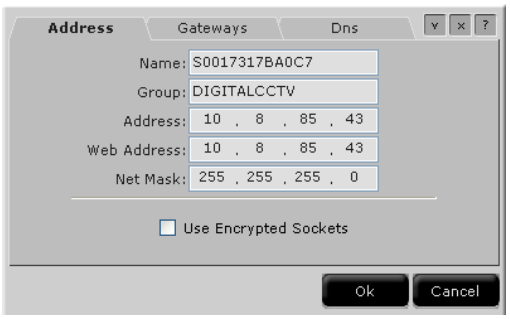
   Confirm that the drive's status is **Optimal**. If the status of a RAID drive is **Missing** or an array error message appears, contact Johnson Controls for assistance (see "Contact Information" on page 13).

Viewing the DVN's Current Network Settings

Since you will need to manually reconfigure the DVN's network settings after replacing the system drive, we recommend writing down the DVN's current network settings as a reference.

➤ To view the DVN's current network settings:

1. At the Main screen, click **Setup**. The Setup window appears.
2. Under **General Settings**, click **System**. The System Configuration screen appears.
3. Click **Network Cards** next to **Incoming Connections**. The Network Settings screen appears.



4. Write down the DVN 5000 server's current network settings (IP address, Net Mask, and Gateway).

   The Gateway address is located on the **Gateways** tab.

5. Click **Ok**.

Exporting the DVN Configuration Settings

Export (save) the DVN configuration settings to a separate USB flash drive, so that they can be uploaded (imported) once you replace the system drive. If you do not export the system configuration, you will have to manually re-configure the settings once you replace the system drive.

NOTE

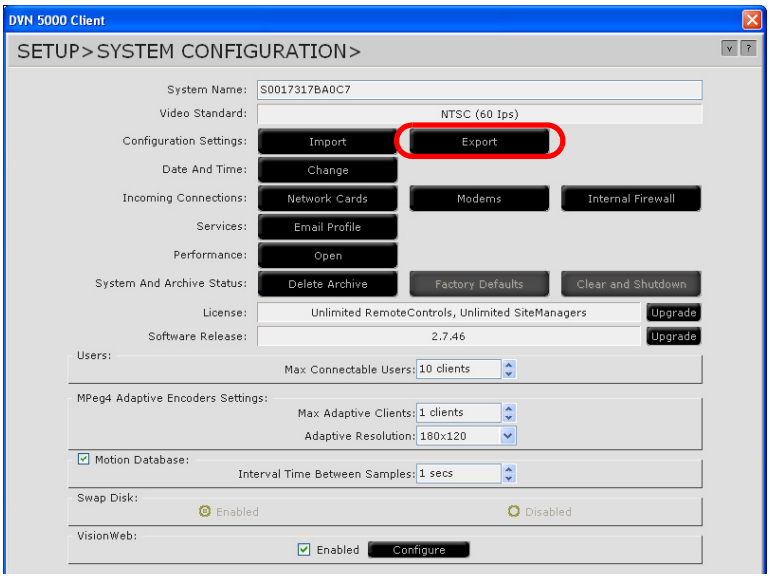
If running software Version 2.3 or lower, any exported DVN configuration settings cannot be imported (this issue does not affect DVN servers running software Version 2.5 or higher). For DVN servers running software Version 2.3 or lower, we recommend writing down the current configuration settings (network configuration, camera names, PTZ dome protocol information, etc.), so you can manually reconfigure them.

NOTE

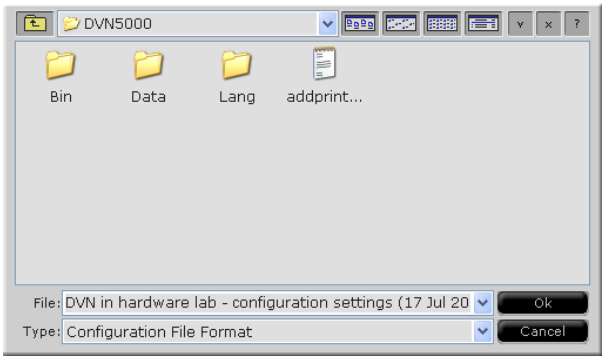
*The configuration settings are exported into a single **.txt** file on a USB flash drive.*

➤ **To export the DVN system configuration (for DVN servers running software Version 2.5 or higher only):**

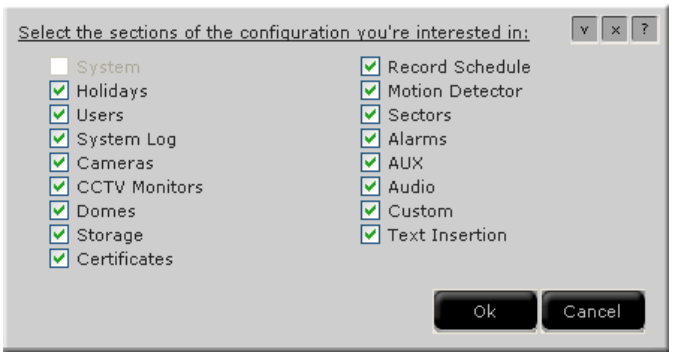
1. Insert the USB flash drive into one of the DVN's available USB ports.
2. On the Main screen, click **Setup**.
3. On the Setup screen, click **System**.
4. Click **Export** next to **Configuration Settings**.



The Export Configuration screen appears.



5. Enter a descriptive name for the configuration file, so the DVN configuration can be easily identified amongst other DVN configuration files.
6. Save the configuration file to your USB flash drive.
7. Click **Ok**. The Select the sections screen appears.



8. Verify that all of the check boxes are selected. The **System** check box cannot be selected – it is disabled.
9. Click **Ok**.

Saving Existing Video

Follow the instructions in this section to save existing video stored in the DVN 5000 server.

CAUTION

Failure to properly follow the procedures in this section will cause of loss of recorded video and audio data.

The procedures for saving existing video differ according to the type of DVN 5000 Series unit you are upgrading (e.g. Rackmount or Desktop):

- For information on **Rackmount** units, see “Saving Existing Video on Rackmount Units” on page 19.

- For information on **Desktop** units, see "Saving Existing Video on Desktop Units" on page 20.

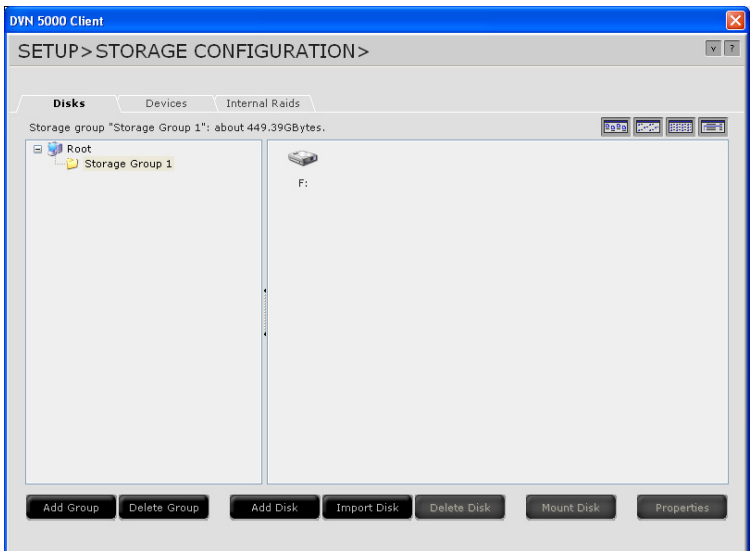
Saving Existing Video on Rackmount Units

Saving existing video on Rackmount units occurs by deleting the storage drive (but not the allocated disk space), which disconnects the disk drives from the controller, prior to replacing the system drive.

➤ To delete the storage drive:

1. On the Main screen, click **Setup**.
2. On the Setup screen, click **Storage**.

   The Setup>Storage Configuration screen appears.



3. On the **Disks** tab, select a storage group on the left pane and then the drive on the right pane.
4. Click **Delete Disk**.
5. When asked if you want to delete the allocated disk space too, click **No**.

   CAUTION

   Do NOT click Yes, as this deletes existing video from the storage drives.

6. Repeat steps 1-5 for all disks within all storage groups.
7. Click ! to save your changes.

Saving Existing Video on Desktop Units

To save existing video on Desktop units, simply place the old hard drive in a safe place once you remove it from the unit and disconnect it from its bracket. If you need to access the video on this disk, simply reconnect it to its bracket and plug it back into the unit.

As another option, you can export video to a DVD prior to replacing the hard drive. For more information on exporting video, refer to the *DVN 5000 Series Software Installation and Configuration Manual*, which can be downloaded from the following site:

ftp://cardkey:cardkey2000@ftp2.johnsoncontrols.com/cardkey-out/DVN_Software/5000.v2.9/

Updating the DVN 5000 Server's RAIDCore RAID Controller BIOS (Rackmount Series Only)

If applicable, update the DVN 5000 Rackmount Series server's RAIDCore RAID controller BIOS. See "RAID Controller BIOS Update Determination (Rackmount Series Only)" on page 11 to determine whether you need to update the DVN 5000 Rackmount server's RAIDCore RAID controller BIOS.

NOTE

*If the DVN is a **Desktop** Series unit, skip to "Shutting Down the DVN 5000 Server" on page 22.*

NOTE

*If the DVN has an **Adaptec** RAID controller, skip to "Disabling Hyper-Threading (DVN5016-L, DVN5016-M, DVN5008-L, and DVN5008-M Models Only)" on page 21.*

For detailed instructions on updating the RAIDCore RAID controller BIOS, refer to the *DVN 5000 Server Upgrade Instructions (Version 2.9)*. The server upgrade instructions can be downloaded from the following site:

ftp://cardkey:cardkey2000@ftp2.johnsoncontrols.com/cardkey-out/DVN_Software/5000.v2.9/

After you update the RAID controller BIOS, skip to "Configuring the RAIDCore RAID Controller (Rackmount Series Only)" on page 21.

Configuring the RAIDCore RAID Controller (Rackmount Series Only)

If the DVN has a Broadcom or Ciprico RAIDCore RAID controller (see page 11), perform the following actions:

- Configure the controller to boot, even if the RAID is in a critical state, so that upon power failure, the DVN would automatically recover (even with one missing RAID drive)
- Enable Cache on the controller

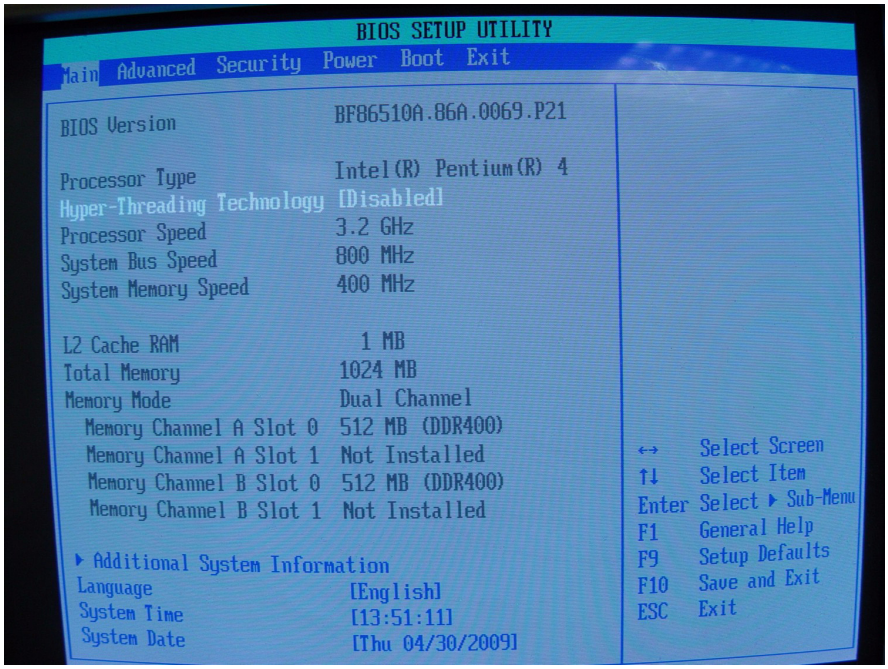
These actions are covered in detail in the *DVN 5000 Server Upgrade Instructions (Version 2.9)*.

Disabling Hyper-Threading (DVN5016-L, DVN5016-M, DVN5008-L, and DVN5008-M Models Only)

For all other DVN models, skip to "Shutting Down the DVN 5000 Server" on page 22.

➤ **To disable Hyper-Threading:**

1. Shut down the DVN. See "Shutting Down the DVN 5000 Server" on page 22.
2. Restart the DVN.
3. During the boot sequence, press the **<F2>** key on your keyboard to enter the BIOS configuration. When prompted to enter the BIOS password, enter `P001` and press **<Enter>**.
4. On the **Main** tab, select **Hyper-Threading Technology**.
5. Change the setting to **[Disabled]**.



6. Press **<F10>** to save and exit.

NOTE

*Once you have disabled hyper-threading, upon shutting down the DVN, you may briefly observe an error message generated by the **sstore.exe** process. This does not affect DVN operation and can be ignored.*

Shutting Down the DVN 5000 Server

The DVN 5000 server must be shut down before attempting to install the system disk drive.

➤ **To shut down the DVN 5000 server:**

1. On the RemoteControl Main screen, click the **Shutdown** button.

NOTE

The Shutdown button only appears when running RemoteControl locally at the server.

---

2. Click **Yes** when the warning message appears.

NOTE

If you need to open the DVN to replace the system drive, unplug the DVN 5000 from its power source (wall socket or UPS device).

Determining the System Drive Type (Rackmount Series Only)

The DVN 5000 Rackmount model has either a SATA or IDE system drive. You must determine which type of system drive is installed in the DVN 5000 server before replacing the drive.

➤ **To determine the system drive type:**

1. Open the front access door of the DVN.
2. Verify whether the DVN has a 5-bay drive chassis, 4-bay drive chassis, or no RAID drive chassis. See Figure 2 and Figure 3.

NOTE

DVN50xx-M models do not have external access to the data drives. These models have three horizontal metallic slot covers located behind the front access door.

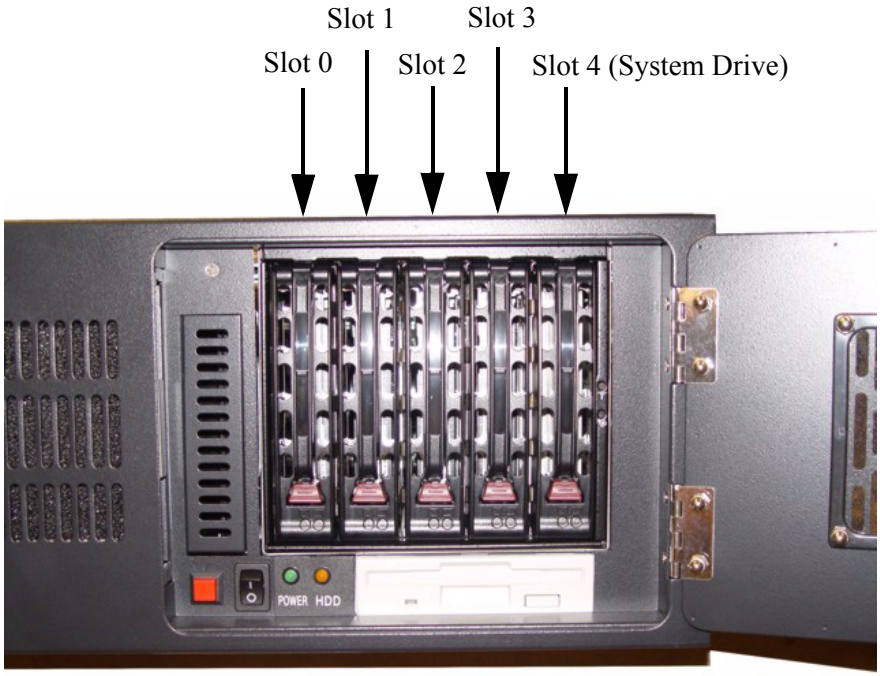


Figure 2: DVN 5000 with a 5-Bay Drive Chassis

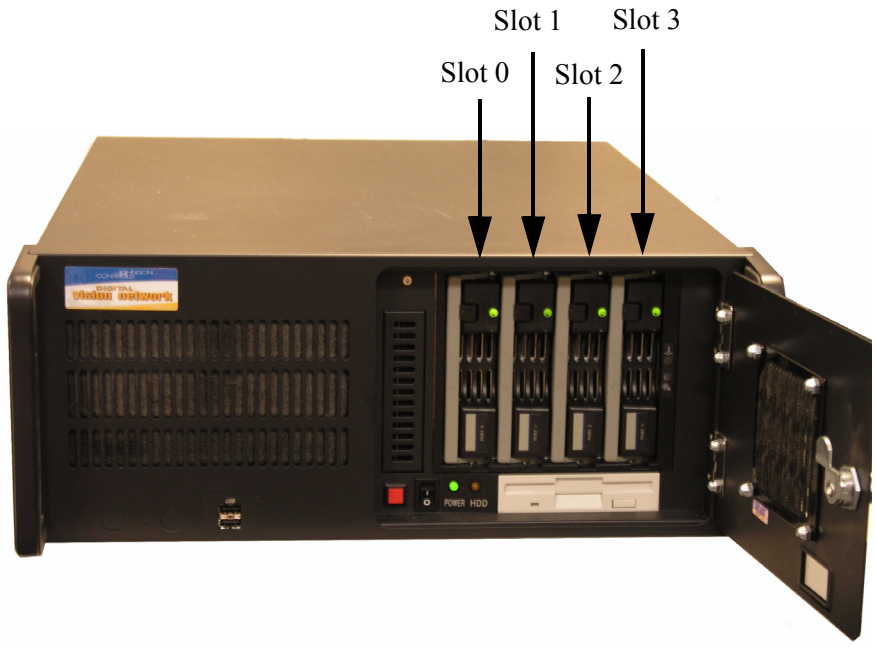


Figure 3: DVN 5000 with a 4-Bay Drive Chassis

- If the DVN has a 5-bay drive chassis with all 5 drives populated, then the DVN has a SATA system drive, which is located in the right-most slot (Slot 4 in Figure 2).
- If the DVN has a 5-bay drive chassis with only 4 drives populated (the right-most slot is empty with no drive), then the DVN has an IDE system drive, which can only be accessed by opening up the unit.
- If the DVN has a 4 bay drive chassis (see Figure 3), then the DVN has an IDE system drive, which can only be accessed by opening up the unit.
- If the DVN has three horizontal metallic slot covers located behind the front access door, the DVN has either an IDE or SATA system drive, which can only be accessed by opening up the unit.

3. Continue with the instructions in “Replacing the System Disk Drive” on page 25.

REPLACING THE SYSTEM DISK DRIVE

Before replacing the system disk drive(s), please note the following:

- If the DVN Rackmount has a 5-bay drive chassis with all 5 drives populated, follow the instructions in "Replacing the SATA System Disk Drive (5-Bay Drive Chassis)" on page 25.
- If the DVN Rackmount has a 5-bay drive chassis with only 4 drives populated, skip to "Replacing the IDE System Disk Drive on DVN 5000 Units with a 4-Bay or 5-Bay Drive Chassis" on page 26.
- If the DVN Rackmount has a 4-bay drive chassis, skip to "Replacing the IDE System Disk Drive on DVN 5000 Units with a 4-Bay or 5-Bay Drive Chassis" on page 26.
- If the DVN Rackmount has three horizontal metallic slot covers located behind the front access door, skip to "System Disk Drive Replacement (No RAID Drive Chassis)" on page 32.
- If replacing the hard disk drive on a DVN 5000 Desktop Series unit, skip to "Hard Disk Drive Replacement (DVN 5000 Desktop)" on page 35.

Replacing the SATA System Disk Drive (5-Bay Drive Chassis)

➤ **To replace the SATA system disk drive on a DVN 5000 with a 5-bay drive chassis:**

1. Shut down the DVN 5000 if you have not done so already. See page 22.
2. Wait 20 seconds after shutdown for the drives to stop rotating.
3. Disengage the drives in slots 0-3 from the drive chassis, but do not remove them entirely (see Figure 2 on page 23).

NOTE

The drives in the 5-bay drive chassis are labeled 0-4. Drive number 4 is the system drive.

If you choose **not** to disengage the RAID drives during the system drive replacement procedure, you may lose all video saved on these drives.

To disengage a drive from the drive chassis, press the drive slot's release button and pull the handle until the drive is no longer fully secured in the drive chassis.

NOTE

If you are also using external storage via the DVN's SCSI port on the back of the server, disconnect the cable from this port.

4. Remove the System drive from the right-most drive slot (Slot 4 in Figure 2 on page 23).
5. Carefully insert the replacement System drive into Slot 4 and press the handle until it clicks and is secured.
6. Skip to "Finalizing the Installation" on page 36.

Replacing the IDE System Disk Drive on DVN 5000 Units with a 4-Bay or 5-Bay Drive Chassis

The following instructions differ according to whether the DVN has a 4-bay or 5-bay drive chassis.

- If the DVN has a 4-bay drive chassis, skip to "IDE System Disk Drive Replacement (4-Bay Drive Chassis)" on page 26.
- If the DVN has a 5-bay drive chassis, skip to "IDE System Disk Drive Replacement (5-Bay Drive Chassis)" on page 29.

IDE System Disk Drive Replacement (4-Bay Drive Chassis)

➤ **To replace an IDE system disk drive (4-bay drive chassis):**

1. Shut down the DVN 5000 if you have not done so already. See page 22.
2. Wait 20 seconds after shutdown for the drives to stop rotating.
3. Disengage the drives in slots 0-3 from the drive chassis, but do not remove them entirely (see Figure 3 on page 24).

   CAUTION

   If you choose not to disengage the RAID drives during the system drive replacement procedure, you may lose all video saved on these drives.

   To disengage a drive from the drive chassis, press the drive slot's release button and pull the handle until the drive is no longer fully secured in the drive chassis.
4. If the DVN's top cover has not been removed, remove the four screws that secure the cover.
5. Contact Johnson Controls Technical Support for approval to cut the warranty label (see "Contact Information" on page 13).
6. Cut the warranty label and slide the cover off to expose the DVN's internal components.
7. Disconnect the IDE and power cables from the IDE system drive (see Figure 4).

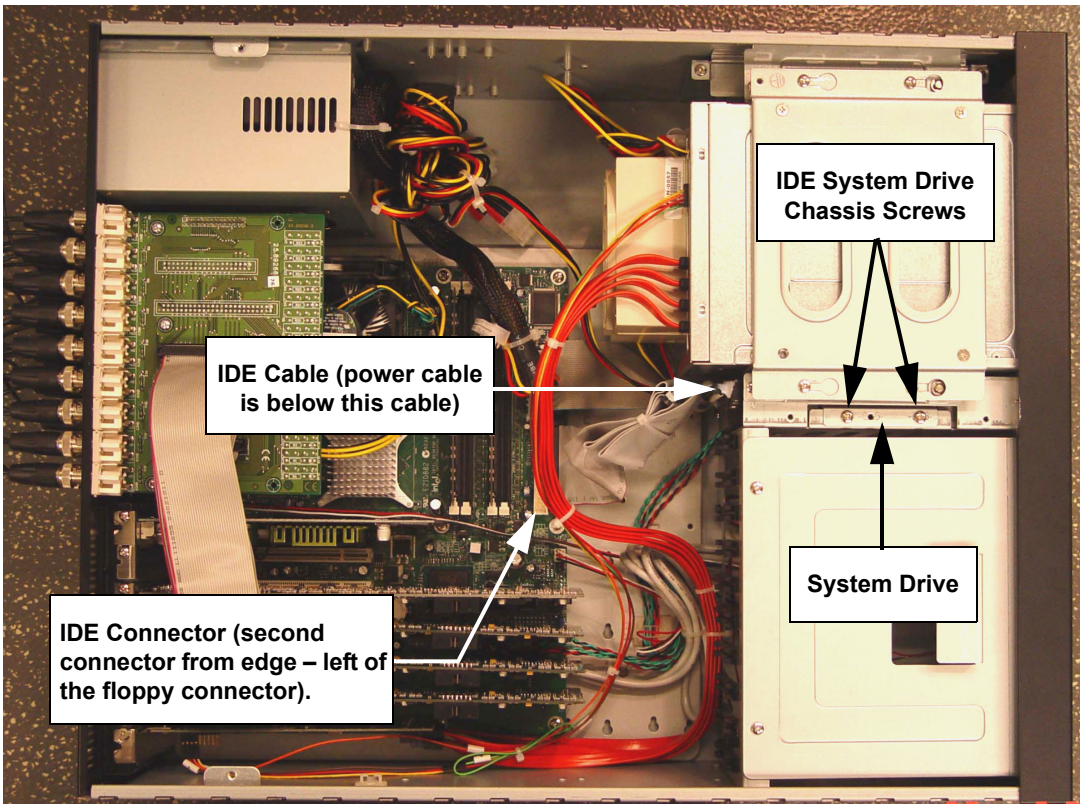


Figure 4: IDE System Drive Components

8. Disconnect the IDE cable from the motherboard.
9. Remove the IDE system drive from the DVN chassis by removing the two screws that secure the hard drive to the DVN chassis.

NOTE

If the RAM modules and video card are obstructing the IDE system drive, remove them from the motherboard to remove the system drive. Once you have replaced the system drive, you must re-install the RAM modules and video card into their proper connectors on the motherboard before restarting the DVN.

10. Separate the old IDE drive from its respective bracket.
11. Separate the new SATA drive provided in the kit from its respective bracket by removing the four screws (two on each side) that secure the drive to the bracket.
12. Attach the new SATA drive provided in the kit to the drive bracket removed from the IDE drive and secure it using the four screws.
13. Insert and secure the SATA drive with its new bracket into the same location where the IDE drive was removed. See Figure 5.

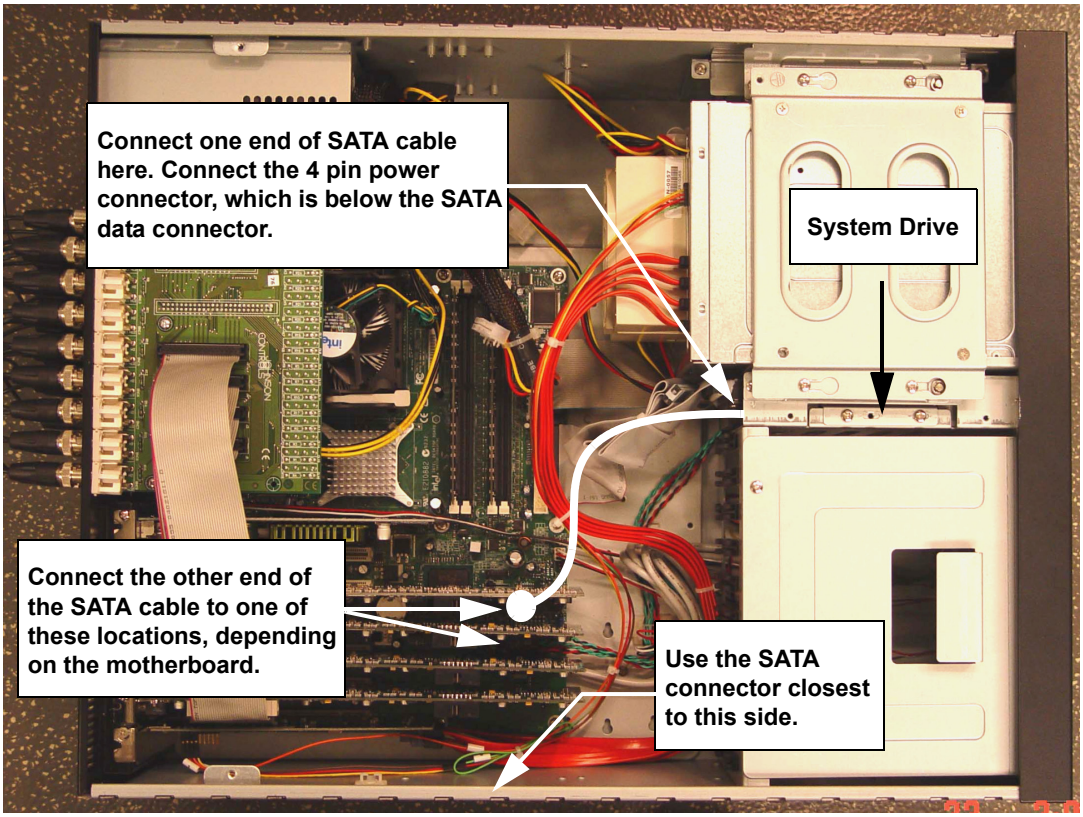


Figure 5: SATA Cable Connections (4-bay Drive Chassis)

14. Connect one end of the SATA cable provided in the kit to the new SATA system drive. Connect the other end to the motherboard according Figure 5.

NOTE

There are 2 or 4 SATA connectors on the motherboard. When connecting the SATA cable to the motherboard, connect the cable to the connector furthest from the CPU (see Figure 5).

NOTE

The SATA cable connector on the motherboard lies between two video capture boards. Do not connect the cable to a connector on one of the capture boards.

15. Connect the power connector to the new system drive. The power connector is located below the SATA connector.
16. Verify that all cables are securely connected and are not obstructing the CPU fan.
17. Secure the top cover to the DVN and reconnect the DVN's power cable to its power source if previously disconnected.
18. Skip to "Finalizing the Installation" on page 36.

IDE System Disk Drive Replacement (5-Bay Drive Chassis)

➤ **To replace an IDE system disk drive (5-bay drive chassis):**

1. Shut down the DVN 5000 if you have not done so already. See page 22.
2. Wait 20 seconds after shutdown for the drives to stop rotating.
3. Disengage the drives in slots 0-3 from the drive chassis, but do not remove them entirely (see Figure 2 on page 23).

   CAUTION

   If you choose not to disengage the RAID drives during the system drive replacement procedure, you may lose all video saved on these drives.

   To disengage a drive from the drive chassis, press the drive slot's release button and pull the handle until the drive is no longer fully secured in the drive chassis.
4. If the DVN's top cover has not been removed, remove the four screws that secure the cover.
5. Contact Johnson Controls Technical Support for approval to cut the warranty label (see "Contact Information" on page 13).
6. Cut the warranty label and slide the cover off to expose the DVN's internal components.
7. Disconnect the IDE and power cables from the IDE system drive.

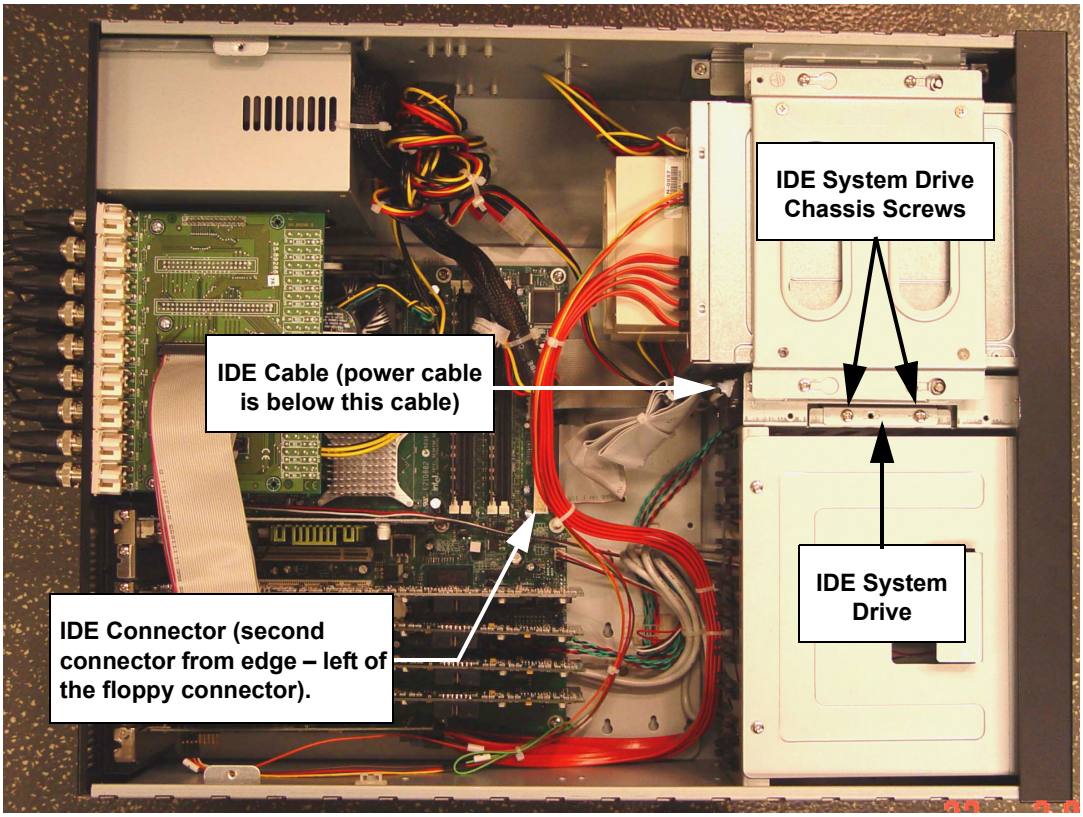


Figure 6: IDE System Drive Components

8. Disconnect the IDE cable from the motherboard.

NOTE

There is no need to remove the old IDE system drive from the DVN chassis, as long as both cables are disconnected. However, to eliminate future confusion, you may remove the drive.

9. Carefully insert the replacement disk drive into the right-most slot (Slot 4 in Figure 2 on page 23) of the drive chassis. Press the handle until it clicks and the drive is secured.
10. Connect one end of the SATA cable on the drive cage and the other end to the motherboard according to Figure 7. Power is automatically connected from the chassis.

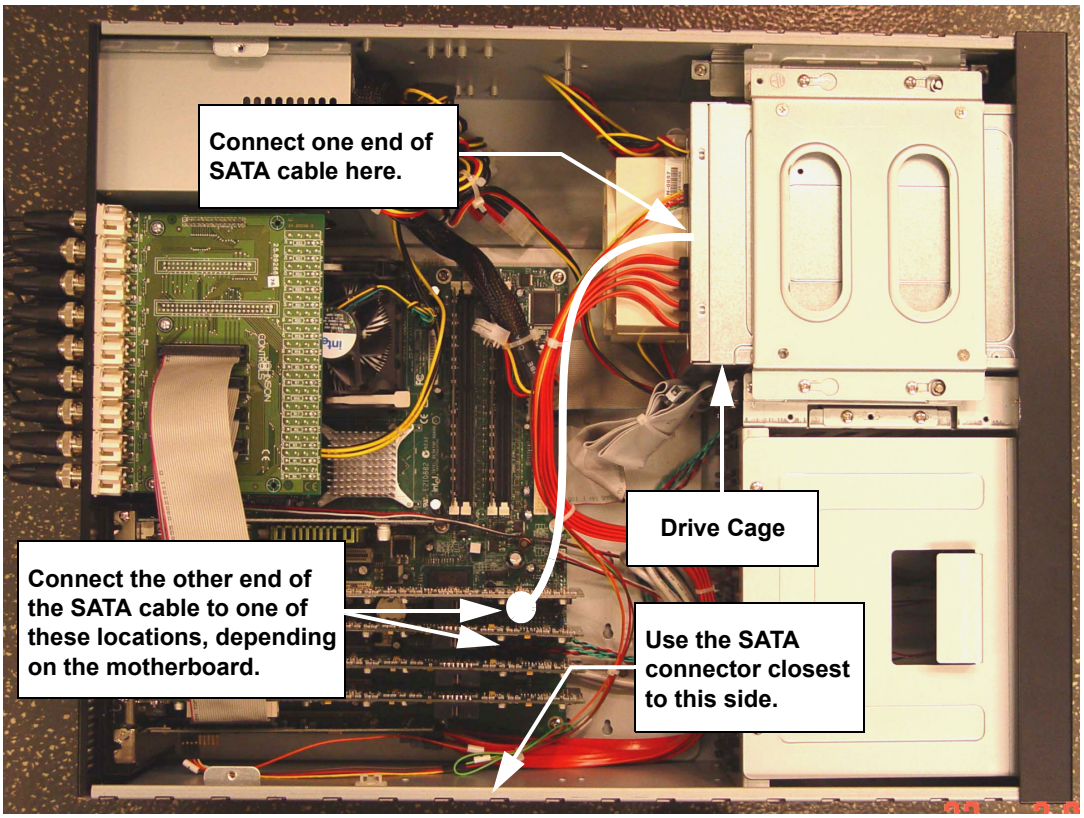


Figure 7: SATA Cable Connections (5-bay Drive Chassis)

NOTE

There are 2 or 4 SATA connectors on the motherboard. When connecting the SATA cable to the motherboard, connect the cable to the connector furthest from the CPU (see Figure 7).

NOTE

The SATA cable connector on the motherboard lies between two video capture boards. Do not connect the cable to a connector on one of the capture boards.

11. Verify that all cables are securely connected and are not obstructing the CPU fan.
12. Secure the top cover to the DVN and reconnect the DVN's power cable to its power source if previously disconnected.
13. Continue with the instructions in "Finalizing the Installation" on page 36.

System Disk Drive Replacement (No RAID Drive Chassis)

If the DVN 5000 does not have a RAID drive chassis, the system drive may be IDE or SATA and is located inside the unit. The procedure for replacing this drive differs slightly, according to the drive type.

➤ **To replace the system disk drive (no RAID drive chassis):**

1. Shut down the DVN 5000 if you have not done so already. See page 22.
2. If the DVN's top cover has not been removed, remove the four screws that secure the cover.
3. Contact Johnson Controls Technical Support for approval to cut the warranty label (see "Contact Information" on page 13).
4. Cut the warranty label and slide the cover off to expose the DVN's internal components.
5. Locate the two internal data drives (see Figure 8 on page 33).
6. Label the cables connected to the data drives (there are two cables per drive, one data cable and one power cable). You will need to disconnect them and then reconnect them later.
7. Disconnect the data cables and power cables from the two internal data drives. This may require you to remove the glue that helps secure the cables to the drives.

   If you choose not to disconnect the cables from the data drives, you may lose all video saved on these drives.

8. Locate the system drive inside the DVN (see Figure 8).
9. If the system drive has a 1 1/2-inch wide ribbon cable connecting the drive to the motherboard, the DVN has an IDE system drive (see Figure 8). Disconnect both ends of the ribbon cable (from the system drive and the motherboard).

   If the system drive uses a narrow 1/2-inch wide SATA cable (not a ribbon cable) connecting the drive to the motherboard, the DVN has a SATA system drive. Disconnect the SATA cable **only** from the system drive.

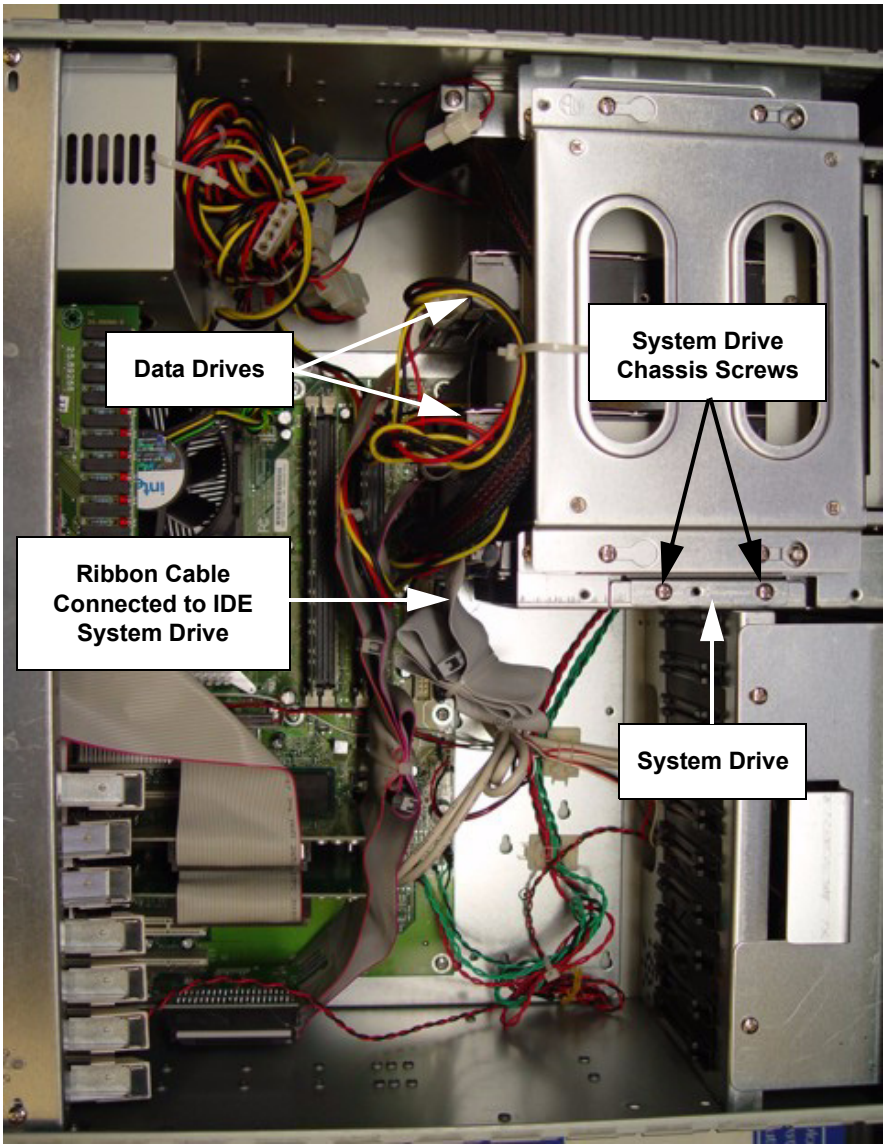


Figure 8: Location of System and Drive Drives

10. Disconnect the power cable from the system drive.
11. Remove the system drive from the DVN chassis by removing the two screws that secure the hard drive to the DVN chassis.

NOTE

If the RAM modules and video card are obstructing the system drive, remove them from the motherboard to remove the system drive. Once you have replaced the system drive, you must re-install the RAM modules and video card into their proper connectors on the motherboard before restarting the DVN.

12. Separate the old system drive from its respective bracket.

13. Separate the new SATA drive provided in the kit from its respective bracket by removing the four screws (two on each side) that secure the drive to the bracket.
14. Attach the new SATA drive provided in the kit to the drive bracket removed from the old system drive and secure it using the four screws.
15. Insert and secure the SATA drive with its new bracket into the same location where the old system drive was removed. See Figure 8.
16. If you replaced an IDE system drive, connect one end of the SATA cable provided in the kit to the new SATA system drive. Connect the other end to the motherboard according to Figure 9.

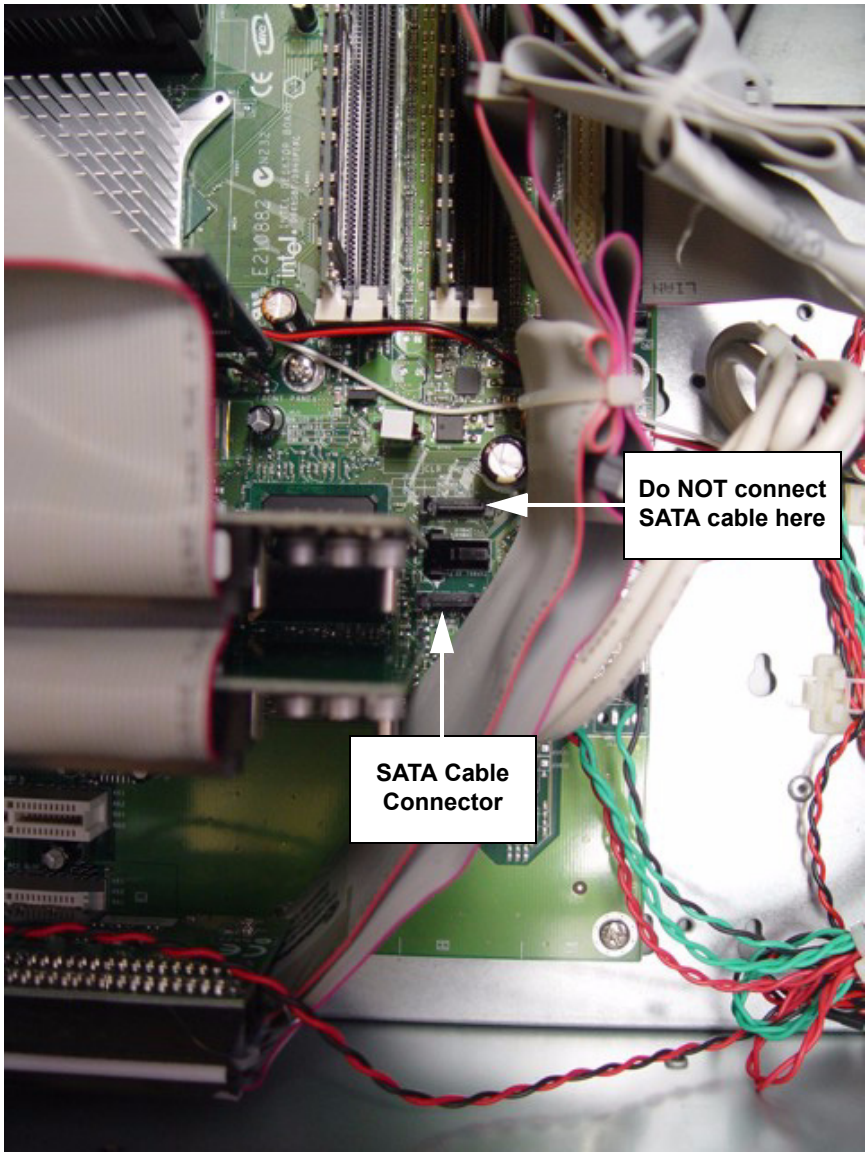


Figure 9: SATA Cable Connection (No RAID Drive Chassis)

If you replaced a SATA system drive, connect the SATA cable already connected to the motherboard to the new SATA system drive.

17. Connect the power cable to the new system drive. The power connector is located below the SATA connector.
18. Leave the top cover off of the DVN and reconnect the DVN's power cable to its power source if previously disconnected.
19. Skip to "Finalizing the Installation" on page 36.

Hard Disk Drive Replacement (DVN 5000 Desktop)

➤ **To replace the hard disk drive on a DVN 5000 Desktop Series unit:**

1. Shut down the DVN 5000 if you have not done so already. See page 22.
2. Open the door on the front of the unit to access the drive bay.
3. Unlock the drive by moving the locking switch to the right. See Figure 11 for the location of the locking switch.
4. Carefully remove the hard disk drive from the unit.
5. Unmount the existing hard disk drive from its bracket.

   To unmount it, remove the two screws securing the cover to the case. Then remove the cover by sliding it down the case. Then remove the 4 screws securing the drive to the bracket (see Figure 10). Set aside all screws.

Figure 10: Location of Screws

6. Mount the new hard disk drive to the bracket.

   To mount it, insert the hard disk drive inside the case and make sure the power connectors are aligned to the back of the rail. Secure the drive using the 4 screws previously set aside. Then install the cover by sliding it over the case. Secure the cover with the 2 screws previously set aside.
7. Insert the new hard disk drive into the drive bay slot. See Figure 11.

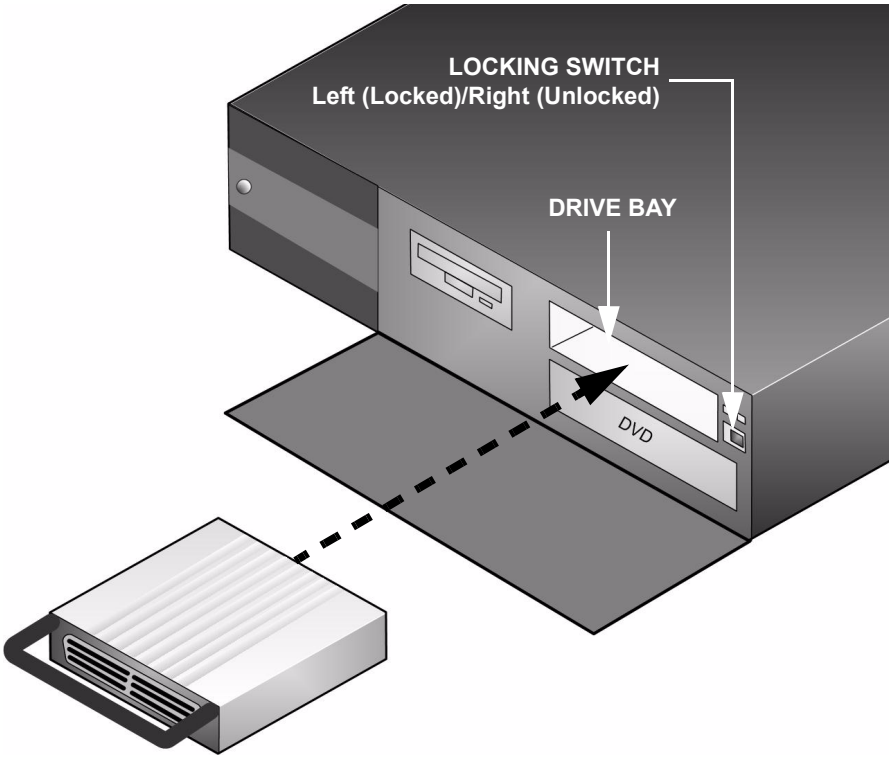


Figure 11: Inserting the Hard Disk Drive (DVN 5000 Desktop)

8. Press the hard disk drive into the slot until the drive is secure.
9. Lock the drive into place by moving the locking switch to the left.

FINALIZING THE INSTALLATION

Once you have replaced the system drive, perform the following series of steps:

- Restart the DVN 5000
- Activate the system license (see page 38)
- Import the system configuration (see page 41)
- Configure the network settings (see page 42)
- (Rackmount Only) Reconnect the data drives (see page 46)
- (Rackmount Only) Import the storage drives (see page 47)

Restarting the DVN 5000

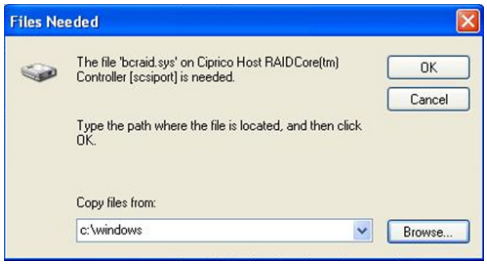
If you previously disconnected the DVN's coax cables, re-connect them in the correct order before continuing with the following instructions.

NOTE

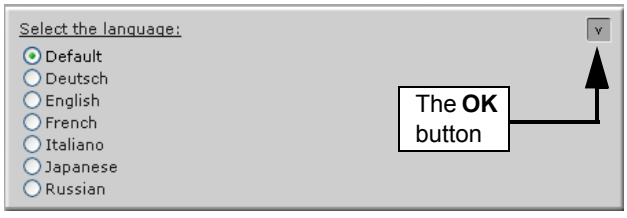
(Rackmount Only) *Do **not** re-engage the RAID drives at this time.*

➤ **To restart the DVN 5000:**

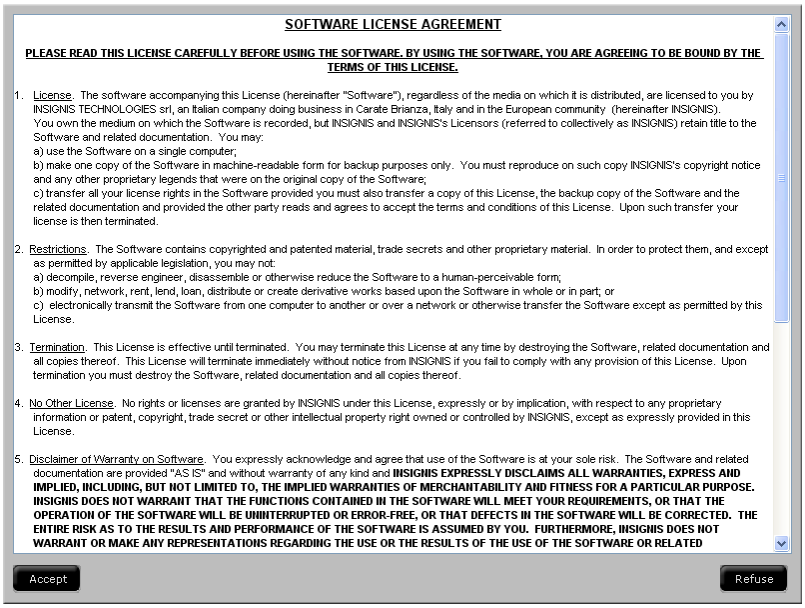
1. Press the main power button, which is located behind the front access door for Rackmount units, or on the left side of the front panel for Desktop units.
2. If the Files Needed dialog box appears (before step 11) requesting the **bcraid.sys** file, select **Browse** and continue with step 3. If the dialog box does not appear yet, skip to step 9.



3. On the Locate File window, browse to the following directory:
   C:\Program Files\RAIDCore\driver\bcraid\i386
4. Select the **bcraid.sys** file.
5. On the Locate File window, Click **Open**.
6. On the Files Needed dialog box, click **OK**.
7. On the Found New Hardware Wizard, click **Finish**.
8. If the Files Needed dialog box also prompts you for the **bccfg.sys** file, repeat steps 2-7 and select the **bccfg.sys** file in step 4.
9. Wait for the language selection screen to appear. Select the language and click the **OK** button. The default language is English.



10. On the Software License Agreement screen, click **Accept**.



11. Select and confirm the video standard: **NTSC** (North America standard) or **PAL** (Europe standard).

CAUTION

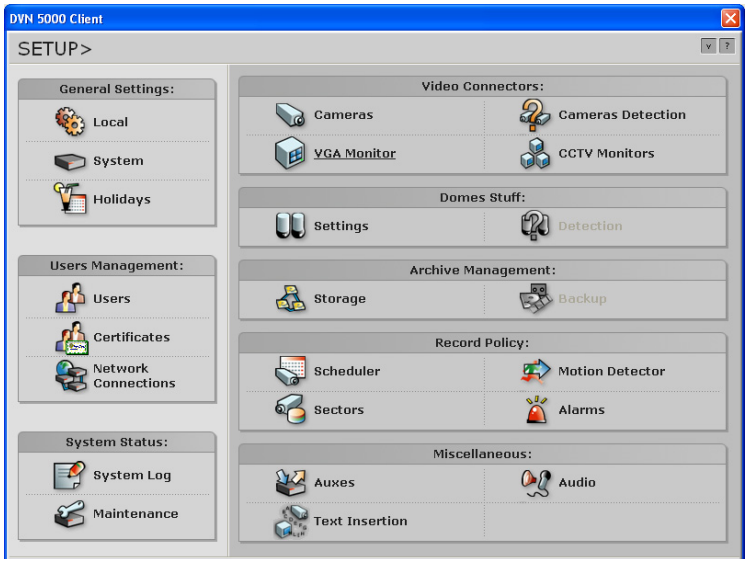
Once you select and confirm the video standard, it can be changed only by using the **Clear System and Shutdown** feature. This feature erases all customer settings and requires an Authorization key that can be obtained from Johnson Controls or from the code generator (see “Contact Information” on page 13).

Activating the System License

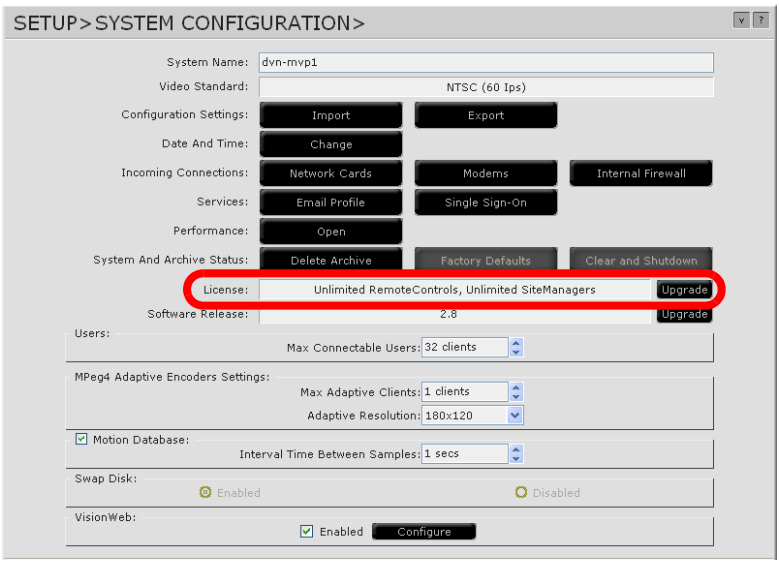
You may need to activate the DVN 5000’s system license as a result of replacing the system drive.

➤ To determine whether you need to activate the system license:

1. Log on to the server using the DVN 5000 RemoteControl software.
2. At the Main screen, click **Setup**. The Setup window appears.



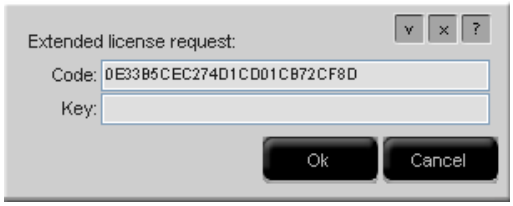
3. Under **General Settings**, click **System**. The Setup>System Configuration screen appears.



4. Verify the current **License**.
5. If the DVN 5000 license *does not* include unlimited RemoteControls, or the SiteManager license *does not* match the option you have purchased, continue with the instructions for activating the system license.
6. If the DVN 5000 license is correct, you do not have to activate the system license. Skip to “Importing the System Configuration (DVN 5000 Servers Running Software Version 2.5 and Higher Only)” on page 41.

➤ To activate the system license:

1. On the Setup>System Configuration screen, click **Upgrade** next to the **License** field. The Extended License Request dialog box appears.



2. Contact a JCI Customer Service representative for a license key.
   - **Phone (Americas/Asia):** (414) 524-7906 (call between 7:30 and 4:15 CST)
   - **Phone (Europe):** +49 20 12 40 04 50 or +33 6 72 99 49 66 (call between 0900 and 1700 GMT – Germany)

   As an alternative, send an e-mail to:

   Americas/Asia: *software.manufacturing@jci.com*

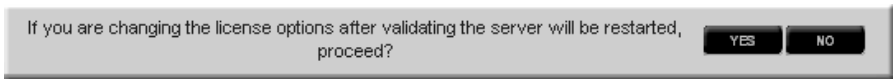
   Europe: *sw.authorize@jci.com*

   Include the code number, serial number, user name, city, and state.

NOTE

The unlimited RemoteControl client access license is provided at no charge. However, you will need to activate the SiteManager license, which is a purchased option. Available SiteManager licenses are DVN-SW-SMGR1 (one client license), DVN-SW-SMGR5 (five client license), or DVN-SW-SMGRUNL (unlimited access license).

3. Enter the license key into the **Key** field and click **OK**.
4. Answer **Yes** to the message stating that the server may be restarted.



5. Click **OK** again. If the server restarts, log on again and verify the DVN's license information is correct.
6. If you replaced a system drive that had completely failed (you were previously unable to restart the server or log in to RemoteControl), skip to "Configuring the Network Settings" on page 42.

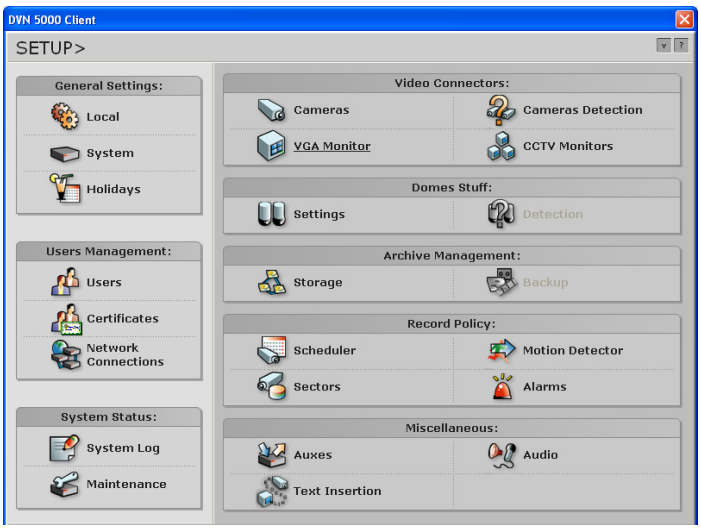
Importing the System Configuration (DVN 5000 Servers Running Software Version 2.5 and Higher Only)

NOTE

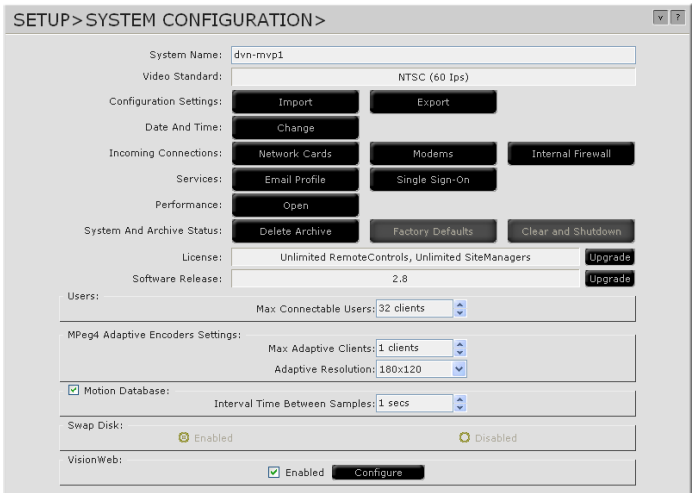
If you are running DVN 5000 server software Version 2.3 or lower, you must manually re-configure the DVN settings.

➤ **To import the system configuration:**

1. Insert the USB flash drive into one of the DVN's available USB ports.
2. At the Main screen, click **Setup**. The Setup screen appears.

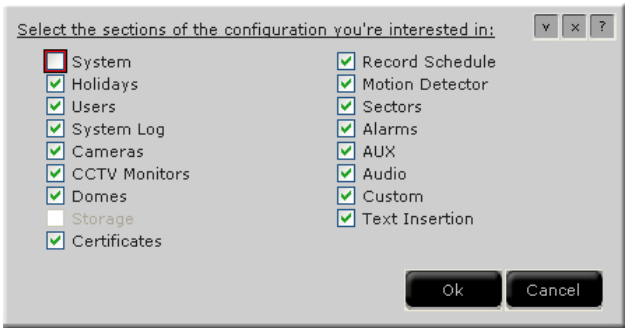


3. Under **General Settings**, click **System**. The Setup>System Configuration screen appears.



4. Click **Import** next to **Configuration Settings**.

5. On the USB flash drive, select the file that was saved as a result of the instructions in "Exporting the DVN Configuration Settings" (see page 17). Click **Ok**.
6. Select all sections, except **System** and **Storage** (these options are not supported when replacing the DVN's system drive). Click **Ok**.



7. Click **Yes** when warned about using this configuration file on a different system.

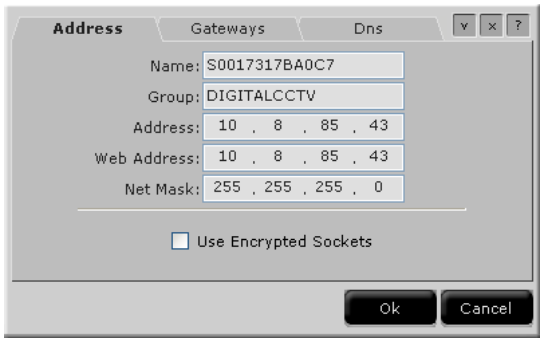
   The DVN 5000 will import the configurations.
8. Click **OK** on the Sections Imported Successfully message.

Configuring the Network Settings

The following instructions describe how to configure the DVN 5000 server's network settings, such as manually setting the IP address. Some DVN servers may require you to configure the network settings directly from the Windows XP® Embedded Operating System (OS).

➤ To configure the network settings:

1. At the Main screen, click **Setup**. The Setup screen appears.
2. Under **General Settings**, click **System**. The Setup>System Configuration screen appears.
3. Click **Network Cards** next to **Incoming Connections**. The Network Settings screen appears.



4. On the network settings screen, enter the DVN 5000 server's network settings (IP address, Net Mask, etc.).

   If you are not allowed to modify the network settings, you must manually edit the network settings from within the Windows XP Embedded OS (see below).

5. Click **Ok**.
6. Click **Yes** when asked whether you wish to reboot.
7. Click the **Apply** button  . The DVN automatically restarts.
8. Skip to "Reconnecting the Data Drives (Rackmount Series Only)" on page 46.

➤ **To modify the DVN 5000 server's network settings via the Windows XP Embedded OS:**

NOTE

The following steps are required only if you cannot manually modify the network settings on the network settings screen (see above).

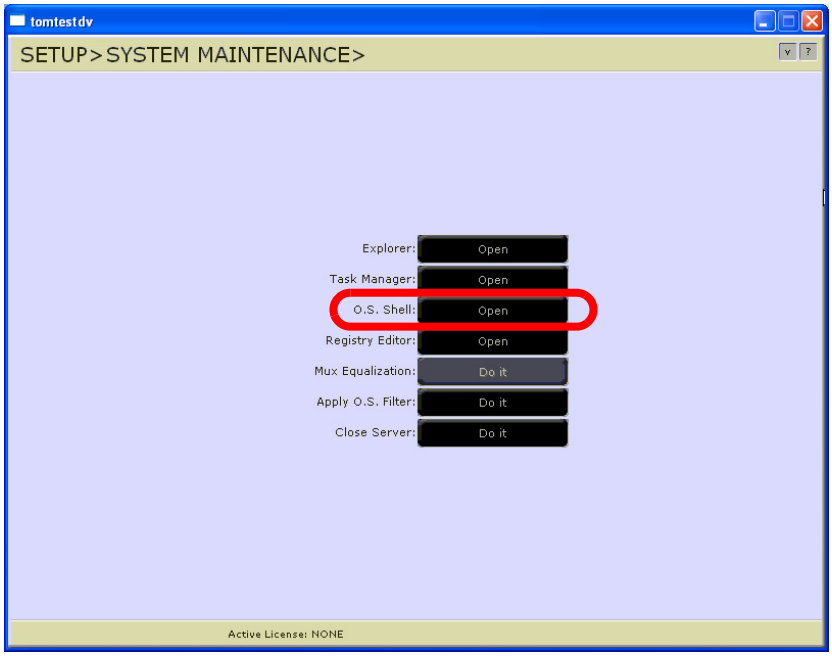
---

1. From the Main screen, click **Setup**. The Setup screen appears.
2. Select the **Maintenance** option in the System Status box.

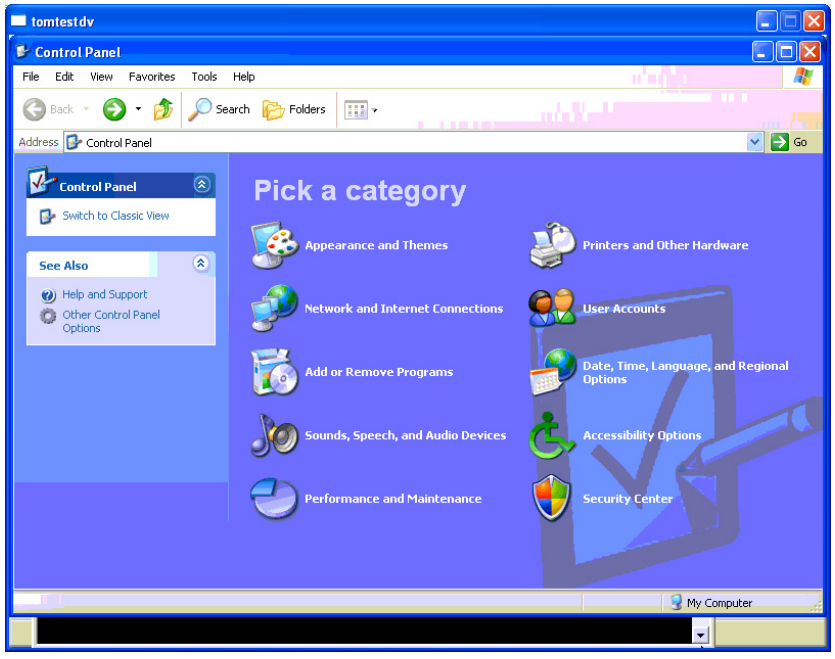
   The Maintenance Authorization screen appears.

3. To obtain an authorization code, use the code generator or contact Johnson Controls (see "Contact Information" on page 13).
4. Enter the code and click **Ok**.

   The System Maintenance screen appears.



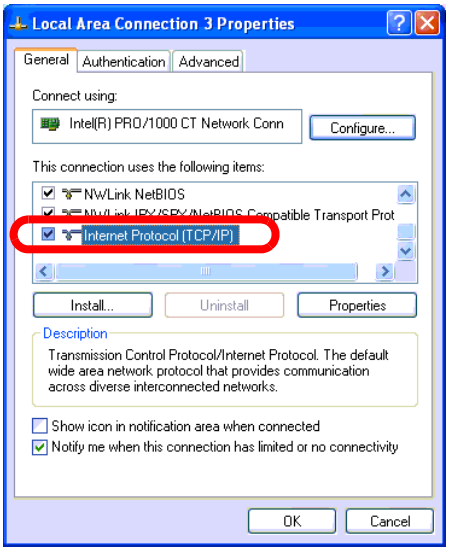
5. Click **Open** next to **O.S. Shell**. A DOS window opens.
6. Type `control` and press **<Enter>** on your keyboard. The Windows XP Embedded control panel opens.



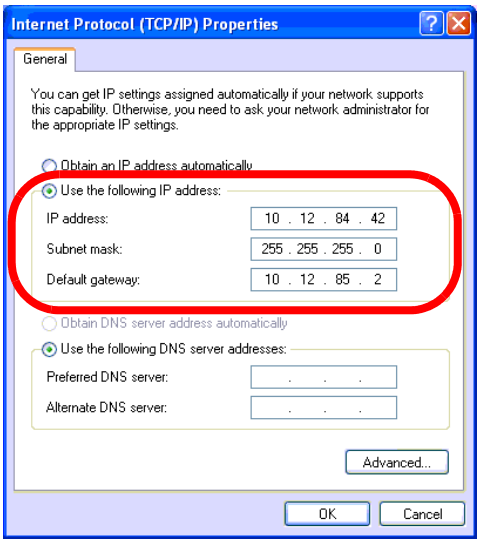
7. Click **Network and Internet Connections**.
8. Click **Network Connections**.
9. Select **Local Area Connection *n*** (where *n* is a variable number).
10. In the left pane under **Network Tasks**, click **Change settings for this connection**.

The Local Area Connection *n* properties dialog box appears.

11. In the **This connection uses the following items** box, select **Internet Protocol (TCP/IP)**.



12. Click **Properties**. The Internet Protocol (TCP/IP) Properties dialog box appears.
13. Select **Use the following IP address** radio button.
14. Enter an **IP address**, **Subnet mask**, and **Default gateway**.



15. Click **OK**.
16. Click **OK** on the Local Area Connection 3 properties dialog box.
17. Close the Network Connections window followed by the DOS window.
18. Exit maintenance.
19. Shut down the DVN 5000. See page 22.

Reconnecting the Data Drives (Rackmount Series Only)

The DVN Rackmount unit is now ready to have the data drives reconnected. Follow the instructions in this section to reconnect the data drives according to whether the DVN has a RAID drive chassis or internal data drives.

➤ To reconnect the RAID data drives (for DVNs with a RAID drive chassis):

1. Shut down the DVN 5000 using the **Shutdown** button on the Main screen.
2. Press each RAID drive into the slot until is secured. You should hear a click, which confirms that the drive has been inserted completely and is secured.

   If your DVN has a 5-bay drive chassis, see Figure 2 on page 23.

   If your DVN has a 4-bay drive chassis, see Figure 3 on page 24.
3. If you are using external storage via the DVN's SCSI port on the back of the server, reconnect the cable to this port.
4. Restart the DVN and log on to RemoteControl.
5. Skip to "Importing the Storage Drives (Rackmount Series Only)" on page 47.

➤ To reconnect the cables to the internal data drives (for DVNs without a RAID drive chassis):

1. Shut down the DVN 5000 using the **Shutdown** button on the Main screen. Then unplug the DVN 5000 from its power source (wall socket or UPS device).
2. Locate the two internal data drives (see Figure 8 on page 33).
3. Locate the cables previously labeled that connect to the data drives (there are two cables per drive, one data cable and one power cable).
4. Reconnect the data cables and power cables to the two internal data drives.
5. If you are using external storage via the DVN's SCSI port on the back of the server, reconnect the cable to this port.
6. Verify that all cables are securely connected and are not obstructing the CPU fan.
7. Replace the top cover and secure it with the four screws previously set aside.
8. Reconnect the DVN 5000 to its power source (wall socket or UPS device).
9. Restart the DVN and log on to RemoteControl.
10. Continue with the instructions in "Importing the Storage Drives (Rackmount Series Only)" on page 47.

Importing the Storage Drives (Rackmount Series Only)

NOTE

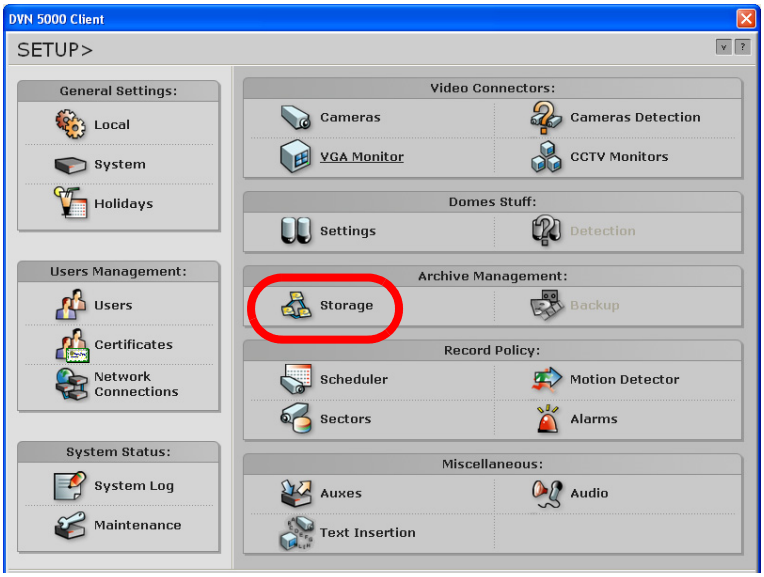
If you replaced a system drive that had completely failed (you were previously unable to restart the server or log in to RemoteControl), you do not have to perform the steps in this section. You have completed the system drive replacement procedure.

➤ To import the storage drives:

CAUTION

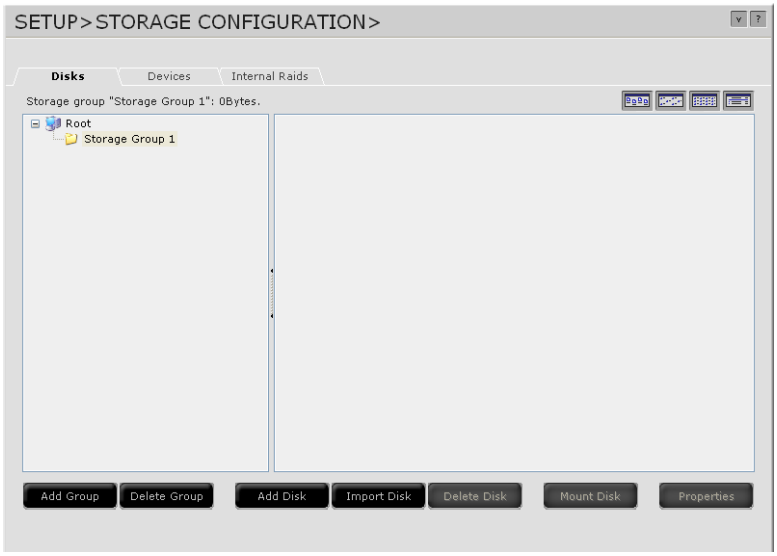
Do **not** use the Cameras Detection function while the DVN maps the storage drive, since doing so results in a loss of all previously recorded video.

1. Restart the DVN 5000 and log on to RemoteControl.
2. At the Main screen, click **Setup**. The Setup screen appears.



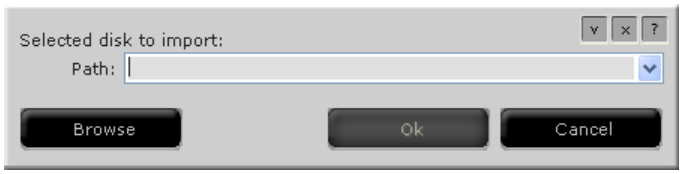
3. Click **Storage** under **Archive Management**.

The Setup>Storage Configuration screen appears.



4. Select a storage group in the left pane and click **Import Disk**.

   The Select Disk to Import screen appears.



5. Click **Browse** and separately select the drive you wish to import.

   The typical letter designation for the DVN storage drive is **E**.

6. Click **Ok**.
7. Click **Ok** on the Select Disk to Import screen.

   The DVN 5000 starts the import process and the stored video will be available in a few minutes.

8. Repeat steps 1-7 for all storage groups and drives deleted as a result of the Rackmount instructions in “Saving Existing Video” (see page 18).
9. Play back video footage to verify that recorded video has not been lost. Refer to the *DVN 5000 Series Software User Manual* for information on playing back video footage.

DVN 5000 Series and P2000 Software Integration

Johnson Controls provides integration between the P2000/P2000LE Security Management System (SMS) and DVN 5000 Series systems via the P2000 Digital Video Recording (DVR) Integration (AV) Option.

If integrating a DVN 5000 with a P2000 SMS, refer to Table 5 to identify which software versions are compatible between the two products.

Table 5: DVN 5000 Series and P2000 Software Integration Compatibility Chart

	DVN 5000 Software Version				
P2000 Software Version[1]	**2.0**	**2.3**	**2.5**	**2.7**	**2.9**
3.8	---	---	---	Yes	Yes[2]
3.4	---	---	Yes	Yes	---
3.1	Yes	Yes	Yes	---	---

1. May require the installation of the latest P2000 service packs.
2. Requires installation of the DVN Software Development Kit (SDK) on each P2000 server and workstation. See "DVN Software Development Kit (SDK) and Integration with P2000 Software" on page 49.

Notes

- *The DVN 2000 is not currently compatible with the P2000 SMS.*
- *DVN 5000 Series servers and clients running software version 2.9 are not backwards compatible with DVN products running software version 2.7 or earlier. In addition, upgrading any single DVN 5000 server or client to software version 2.9 requires all DVN products in the system to be upgraded to software version 2.9.*

DVN Software Development Kit (SDK) and Integration with P2000 Software

The DVN SDK component is a fully customizable ActiveX control that can interface with Johnson Controls digital video recorder servers, such as the DVN 5000 and DVN 3000 Series models, with the Johnson Controls P2000 Security Management System (SMS) software (Release 3.8 and higher), and can be embedded in third-party applications developed with common software environments that support ActiveX technology, such as Microsoft Internet Explorer, Microsoft .NET framework, Microsoft Visual C++, Microsoft Visual Basic, Borland® Delphi, and Borland C++ Builder.

If you wish to interface a DVN 5000 with the P2000 software (Release 3.8 and higher), you must run the **JCI DVN SDK 2.9.*x*.exe** file on each P2000 server and workstation.

This file is available on the USB flash drive included in the upgrade kit, or can be downloaded for free from the following site:

ftp://cardkey:cardkey2000@ftp2.johnsoncontrols.com/cardkey-out/dvn_software/5000.v2.9/

For more information on the DVN SDK, refer to the *DVN 5000 and DVN 3000 Series Software Development Kit (SDK) Reference Manual*.