Installation Guide

EMC® DD OS

EMC Data Domain Operating System USB Installation Guide

This guide provides instructions for installing the Data Domain operating system (DD OS) from a USB key (a.k.a. keychain drive, thumb drive, or flash memory stick).

This installation method is intended for:

◆ New Data Domain systems shipped without DD OS software on the system disk

◆ Overwriting a system's DD OS software

Note

The procedure in this guide does not support upgrading DD OS software using EMC Data Domain System Manager or CLI commands. For information on upgrading with these methods, refer to the *EMC Data Domain Operating System Release Notes* for the DD OS version you want to install and the *EMC Data Domain Operating System Administration Guide* and *EMC Data Domain Operating System Command Reference Guide* for your current version of DD OS.

This document covers the following topics:

EMC²

Requirements

System Installation and Setup
If you are installing DD OS software on a new system that was shipped without DD OS installed, get the *Installation and Setup Guide* printout in the system controller's shipping box, or download it from the Product Documentation area of the Support Portal:

https://my.datadomain.com/US/en/platform.jsp

(Support login is required.)

Go to Section 1, "Installation and Setup Steps", and perform the steps, but stop at "Turn on the system." Do not power on the system until you are directed to do so by the instructions in this guide.

⚠ **CAUTION**

If you are performing a system controller upgrade, install the DD OS software prior to connecting external storage and starting the controller upgrade operation.

System Console
To install the software, a console must be connected to the Data Domain system. If your system does not have a console, see Connecting a Console to the System on page 11.

System Password
If the system is up and running DD OS, you must log in as `sysadmin` to:

◆ Issue the `system reboot` command to install DD OS software from a USB key.

◆ Configure DD OS software after installing it.

The Data Domain default `sysadmin` password is provided in the Knowledge Base article, "System Password Not Working," on the Data Domain Support Portal:

https://my.datadomain.com/download/kb/all/System_Password_Not_Working.html

(Support login is required.)

However, if this password has been changed, you need the new password prior to starting the procedures in this guide.

USB Key with DD OS Image
You must have a dedicated USB key, 2 GB or larger, to install the software.

Instructions for downloading the USB image for DD OS and loading it onto a USB key are provided in Downloading Installation Files on page 3 and Writing the DD OS Image to a USB Key on page 4.

Software Licenses
A *License Keys* document, with a list of all license keys purchased, is included in the shipping package with the Data Domain system controller. You need to enter license keys after installing the DD OS software and rebooting. If you do not have this printout, contact Data Domain Support.

Time Required
The typical time needed to install and configure the DD OS software is 75 minutes:

◆ 45 minutes to install the software

◆ 30 minutes to configure the installed software

Downloading Installation Files

Note

If you are installing DD OS software on a new system shipped without this software installed, check the *EMC Data Domain Operating System Release Notes* in the system controller's shipping box and obtain the version of DD OS to be installed.

Contact Data Domain Support and request that the USB image for the version of DD OS you need be made available for downloading on the Support Portal.

Follow the steps below to download the DD OS USB image and Win32 Disk Imager tool (required for Windows environments). These are provided in a single Zip file.

Procedure

1. Log in to the Data Domain Support Portal:

   https://my.datadomain.com/US/en/downloads.jsp

   (Support login is required.)

2. Click **Download Software,** then select your platform and click **View.**

3. Find the DD OS USB image for your system.

   USB image names take the form *x.x.x*_USB_Image, where *x.x.x* is the DD OS release number. For example:

Version	Date	Size
5.1.1.0 USB Image	Jun 13, 2012	639.9 MB
✚ Details and Download		

4. Then click the **Details and Download** link for the release.

Version	Date	Size
5.1.1.0 USB Image	Jun 13, 2012	639.9 MB
✚ Details and Download		
About this release		
Full documentation on this release		
(Download) (View MD5)		

   Note

   If using Windows, a USB Image Writer utility is required to make the USB drive bootable. This is included in the download. For the latest installation instructions, click on the **Full documentation on this release** link.

5. Click **Download** and accept the End User License Agreement (EULA) to start the transfer.

   Note

   The **View MD5** button displays the value for the Zip download file. The MD5 value for the image file is in the Zip archive.

After you finish

Go to the next section, .

Writing the DD OS Image to a USB Key

This section provides instructions for:

◆ Windows systems (see below)
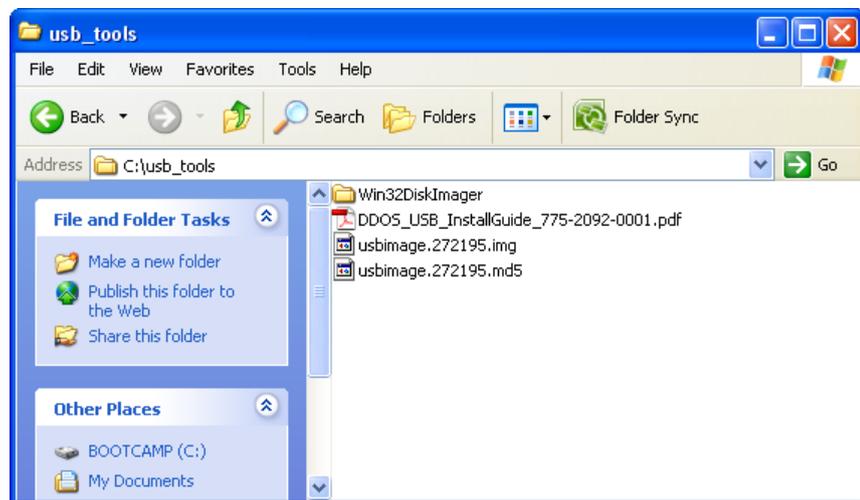
◆ Linux/Unix systems (see)

Using Windows Systems

Procedure

1. Create a USB work folder in Windows, such as `C:/usb_tools`.

2. Unzip the download file and move the folder contents into your USB work folder.

   Your USB work folder should contain the following:

   • `Win32DiskImager` tool folder

   • This installation guide (`.pdf`)

   • The DD OS USB image file (`.img`)

   • The image file's MD5 checksum (`.md5`)

3. Format the USB key.

   a. Insert a 2 GB or larger USB key into your computer's USB port.
   b. Go to My Computer and note the letter assigned to the USB key. For example, `E`.

   > **⚠ CAUTION**
   >
   > **Copy off any files you want to keep; the key will be reformatted and all data will be lost.**

   c. Right-click the USB key icon and select **Format** from the menu. The formatting menu appears.
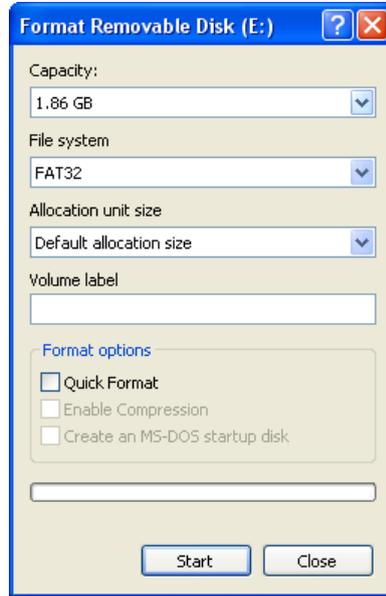
d. Select **FAT32** as the file system, clear **Quick Format** (if necessary), then click **Start** to begin formatting the USB key.

4. Write the DD OS image to the USB key.

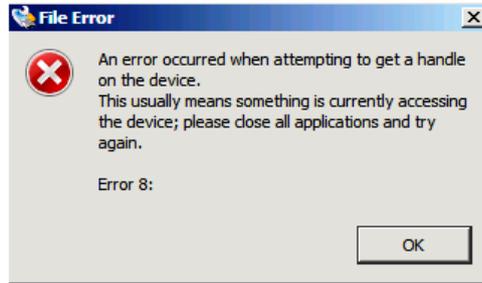   a. Open the `Win32DiskImager` folder in your USB work folder.
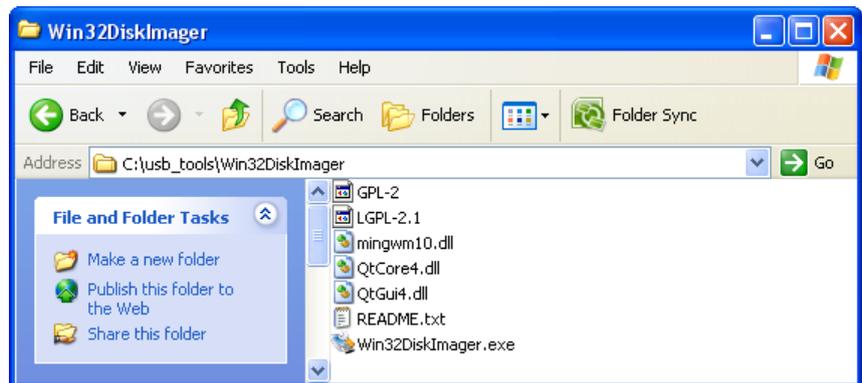
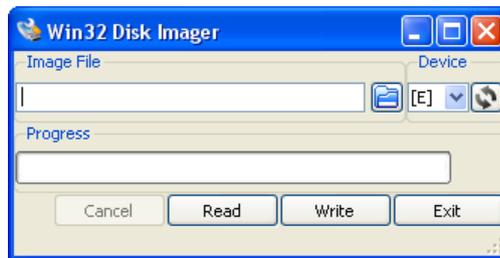   b. Double-click `Win32DiskImager.exe` to launch the application.
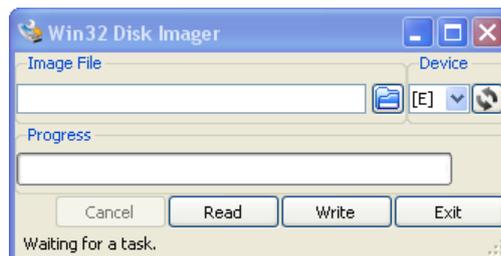
Note

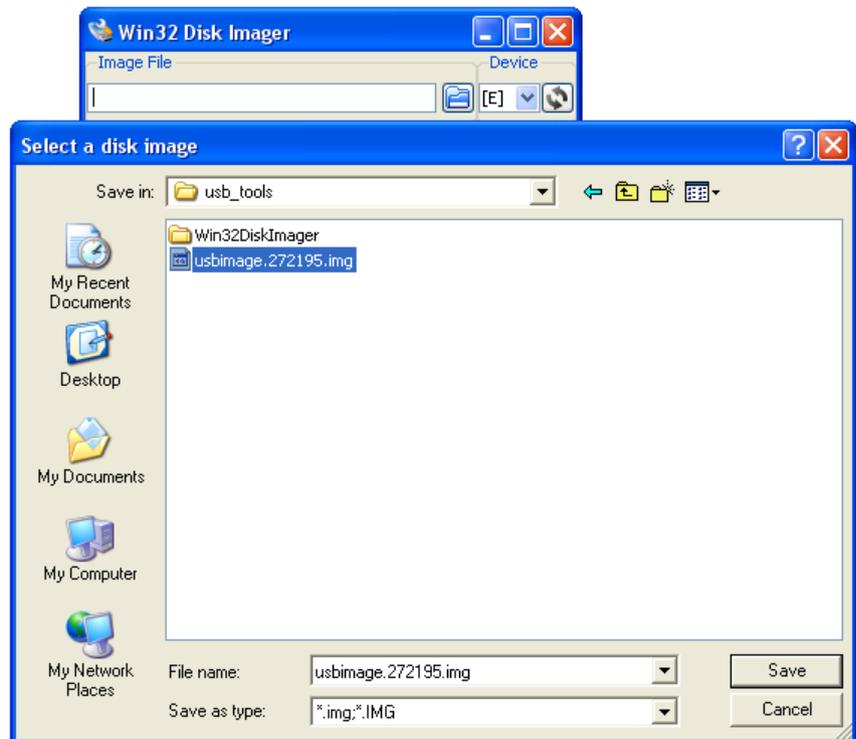When you launch Win32DiskImager, this error message may appear:

Click **OK** to ignore it.

c. Click the refresh icon. Then select the USB key to which you will write the DD OS image by clicking the down arrow icon under Device and selecting the target USB key from the list. USB device E is shown.

d. Select the image file to be written to the USB key. Start by clicking the folder icon in the Win32 Disk Imager window and then click the up folder icon in the image selection window. Select the image file and click **Save.**

The image selection window disappears and the image name appears in the Win32 Disk Imager tool.
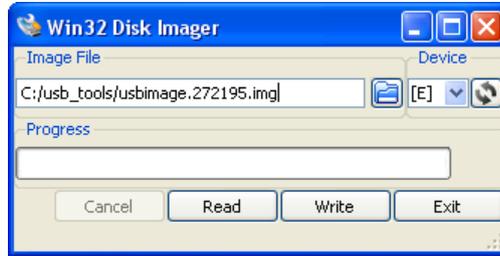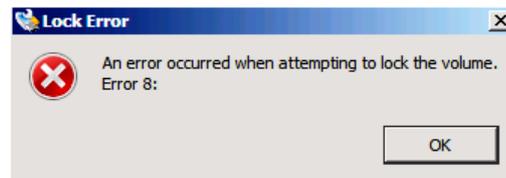
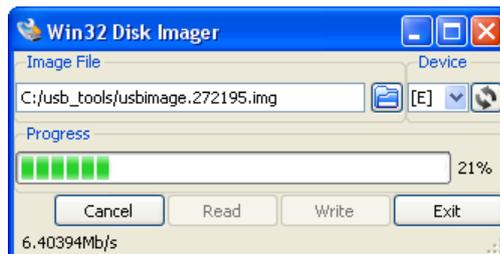e. Click **Write,** then **Yes** to confirm and start the write operation.
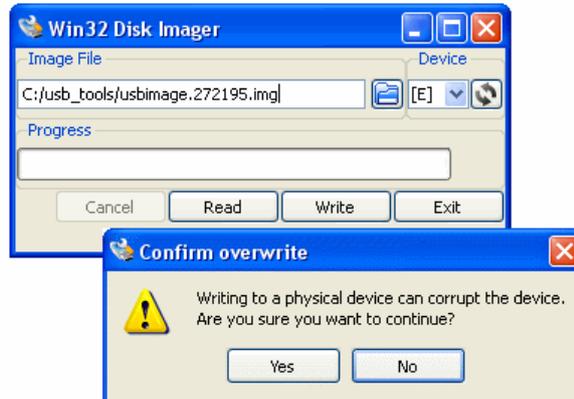
Note

When you click **Write,** this message may appear.

This error indicates that the USB key is being used by other processes, such as being opened by Internet Explorer when it is plugged in. To continue, close these processes and try again.

The write operation starts, indicated by progress bars.

When the write operation completes, click **Exit** to quit the program.

f. Go to My Computer, right-click the USB key, and select **Eject** to unmount it. Then remove the key from your computer.

Using Linux/Unix Systems

Procedure

1. Log in to your Linux or Unix computer as **root.**

2. Create a USB work directory to hold the download files.

3. Unzip the download file and move the folder contents into your USB work directory.

   Your USB work folder should contain the following:

   - `Win32DiskImager` tool subdirectory (not used for Linux/Unix)

   - This installation guide (`.pdf`)

   - The DD OS USB image file (`.img`)

   - The image file's MD5 checksum (`.md5`)

4. Insert a 2 GB or larger USB key into your computer's USB port.

   ⚠ CAUTION

   Copy off any files you want to keep; the key will be reformatted and all data will be lost.

5. Run `mount` to find the device name, or, if your system does not automount, run `dmesg` and look for USB information:

   ```
   # mount
   ```

   or

   ```
   # dmesg
   ```

   An example device name is `/dev/sdc`.

6. Unmount the USB drive.

   For example, to unmount device `/dev/sdc` enter:

   ```
   # umount /dev/sdc
   ```

7. Write the DD OS image to the USB key.

   For example, to write image `/ws/toolsbin/mkusb2/usbimage.272195.img` to USB key `/dev/sdc`, enter the following command as root:

   ```
   # dd if=/ws/toolsbin/mkusb2/usbimage.272195.img of=/dev/sdc
   ```

8. Sync the USB key:

   ```
   # sync;sync;sync
   ```

9. Remove the USB key from your computer.

After you finish

Go to .

Installing and Configuring DD OS Software

⚠ CAUTION

If you are performing a system controller upgrade, install the DD OS software prior to connecting external storage and starting the controller upgrade operation.

Procedure

1. Insert the USB key with the DD OS image into a USB port on the system. (For USB port locations, refer to your system's *Hardware Overview* manual.)

2. If the system is powered down, power it up as follows:

   - If the system has a power button on the front, press it.

   - If the system does not have a power button on the front, remove (if inserted) the AC power cords from the power supplies, wait until the power supply LEDs have turned off, then reconnect the power cords.

   Skip to step 4.

3. If the system is powered up with a system prompt on the console, then log in as `sysadmin` (see System Password on page 2) and enter:
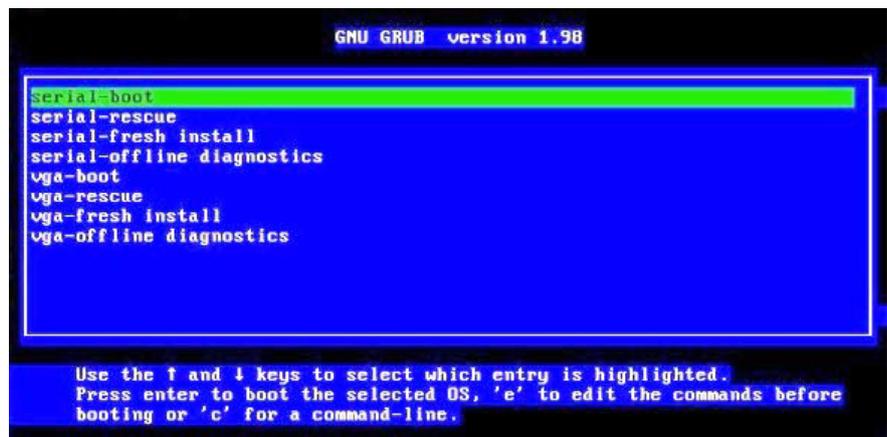
   ```
   # system reboot
   ```

   Answer **yes** to the `Are you sure?` prompt.

4. After the system boots from the USB key, select a DD OS software installation option from the boot menu.

   Note

   If you cannot boot the system from the installation USB key, contact Data Domain Support as BIOS changes may be required.

   - If you are installing DD OS 5.4 or later, this boot menu appears:

   Scroll down using the down arrow key to highlight the **fresh install** option for your console interface, then press **Enter** to select it.

   Note

   VGA options are not supported for newer systems, such as DD2500, DD4200, DD4500, and DD7200. See Connecting a Console to the System on page 11 for details.

   If you selected **serial-fresh install**, a screen summarizing serial console connection settings will appear for 10 seconds, or until you press any key.

Note

Offline diagnostics are not available for all systems. For more information, see the *EMC Data Domain Operating System Offline Diagnostics Suite User's Guide* for your DD OS version.

* If you are installing DD OS 5.3 or earlier, this boot menu appears:
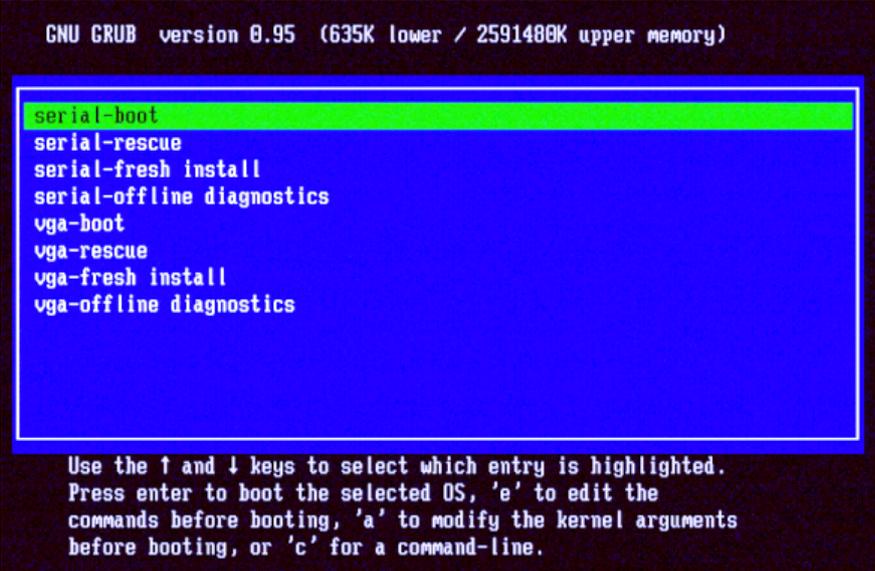
Note

If you are installing DD OS 5.3 or earlier using a serial connection and the boot menu does not appear, contact Data Domain Support.

Scroll down using the down arrow key and highlight the **fresh install** option for your console type. Then press **Enter** to select it.

If you selected **serial-fresh install,** a screen summarizing serial console connection settings will appear. Press any key to dismiss it.

Note

Offline diagnostics are not available for all systems. For more information, see the *EMC Data Domain Operating System Offline Diagnostics Suite User's Guide* for your DD OS version.

5. Before software installation starts, the following prompt appears:

```
Confirm: Do you want to delete all existing data?
[deleteallexistingdata/quit]
```

⚠️ **WARNING**

Entering `deleteallexistingdata` destroys the information on all system controller disks and expansion disks, including DD OS software, configuration settings, and data.

Continue with the DD OS installation by manually entering:

`deleteallexistingdata`

Note

If there is no response after you enter the prompt phrase, verify that the correct interface was selected in the boot menu.

6. After installation completes, the system automatically reboots.

   Remove the USB key when the installation process prompts that it will be rebooting.

   Note

   Remove the USB key now to ensure rebooting from the system disk. You do not use the USB key after DD OS is installed on the system.

7. After the system reboots from disk, you are prompted to accept the End User License Agreement (EULA) and then to log in.

   Note

   Service personnel should respond to the EULA prompt as follows:
   - If the customer is present, show the customer the EULA, and how to view it later. Then you or the customer can accept the EULA and continue with the installation.

   - If the customer is not present, press **Ctrl+C** to continue and the customer can accept the EULA later (when the customer first logs on to the system). Under no circumstances are you to accept the EULA for the customer.

8. At the prompt, log in as sysadmin with the default system password (see System Password on page 2), then change this password to a password of your choice.

9. You are prompted to enter additional configuration information, including license keys. Follow the instructions as prompted.

   Note

   A *License Keys* document, with a list of all license keys purchased, is included in the shipping package with the Data Domain system controller. If you do not have this printout, contact Data Domain Support.
   For complete information on DD OS configuration, refer to your system's *EMC Data Domain Operating System Initial Configuration Guide* or *EMC Data Domain Operating System Administration Guide*, available in the Product Documentation area of the Support Portal:
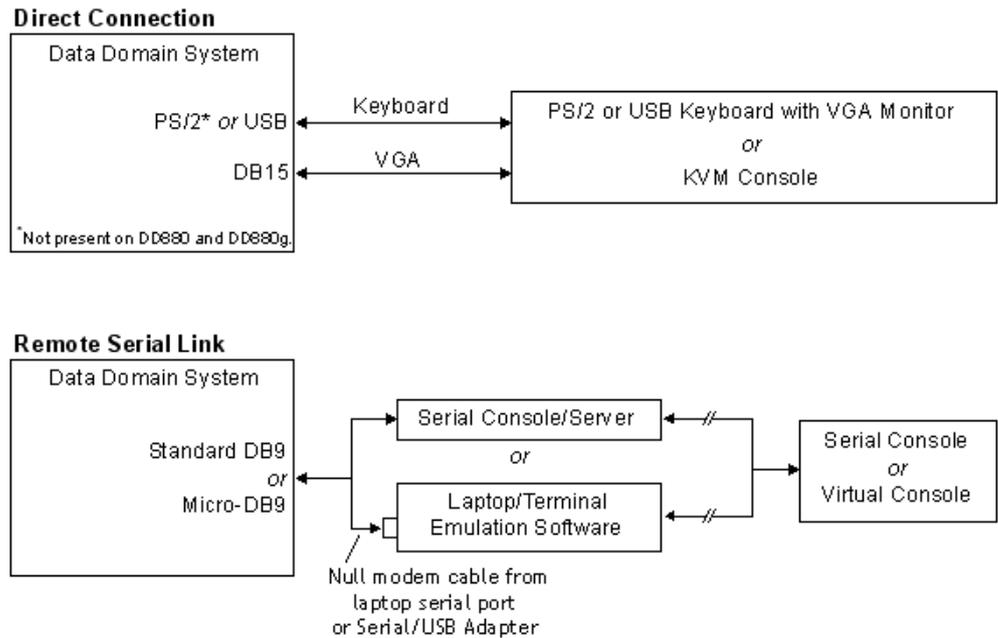
   https://my.datadomain.com/US/en/platform.jsp

   (Support login is required.)

10. After software configuration is complete, all DD OS commands and system resources are available.

Connecting a Console to the System

Data Domain systems provide several ways to attach a console, as shown in the next figure and descriptions that follow:

Figure 1 System Console Connections

Direct Connection

- ◆ Supported consoles:
  - PS/2 or USB keyboard with a VGA monitor
  - KVM console

    Note

    DD2500, DD4200, DD4500, and DD7200 systems do not support KVM direct connection.

- ◆ System connectors:
  - DIN-type ports for a PS/2 keyboard and mouse
  - USB-A for a USB keyboard
  - DB15 female for VGA

    Note

    (DD880 and DD880g systems do not provide a PS/2 port. A USB-to-PS2 converter is needed to use a PS/2 keyboard with these systems.)

- ◆ Additional information:
  - Make sure that the system is powered off when you connect a PS/2 or KVM keyboard to the system's DIN-type connector. The PS/2 keyboard does not function at all unless it is plugged in before the system is powered up.
  - The system confirms the presence of the keyboard during powerup by flashing the Num Lock, Scroll Lock, and Caps Lock LEDs once.

  For more information, refer to the Knowledge Base article, "Connecting a PS/2 Keyboard," on the Data Domain Support Portal:

  https://my.datadomain.com/download/kb/all/Connecting_a_PS-2_Keyboard.html

(Support login is required.)

Remote Serial Link

◆ Supported consoles: Serial console or laptop with terminal emulation software such as Secure CRT, PuTTY, or HyperTerminal (required for running DD OS commands). A null modem cable with a DB9 female connector is required to connect a serial console or laptop to the system. Cisco "rollover" cables cannot be used.

◆ System connector: Standard DB9 male or micro-DB9 female.

Note

DD4200, DD4500, and DD7200 systems provide a female micro-DB9 connector. A null modem cable with male micro-DB9 and standard female DB9 connectors is included for a typical laptop connection. Laptops without a serial DB9 connector should use a USB/Serial adapter (not included) with the null modem cable.

◆ Additional information: Configure the terminal software to use the correct COM port with the following settings:
- Baud rate: 9600

- Bits: 8

- Parity: None

- Stop bits: 1

- Flow control: None

- Terminal emulation type: VT100

    Note

    The default terminal emulation type for PuTTY is `ESC[n~`. Change this to VT100+; otherwise, function keys do not work properly.

For more information, refer to the Knowledge Base article, "Connecting to a Data Domain System with a Serial Cable", on the Data Domain Support Portal:

https://my.datadomain.com/download/kb/all/
Connecting_to_the_Data_Domain_System_with_a_Serial_Cable.html

(Support login is required.)

Note

If you cannot achieve a working link between the system and the console or laptop, contact Data Domain Support as BIOS changes may be required.