IBM FlashSystem V9000 8.1.3
MTM 9846-AC3, 9848-AC3, 9846-AE2/AE3,
9848-AE2/AE3

Quick Start Guide

Edition notice

This edition applies to version 8, release 1, modification 3 of IBM FlashSystem V9000 and to all subsequent modifications until otherwise indicated in new editions.

Safety and environmental notices

Review all safety notices, environmental notices, and electronic emission notices before you install and use the product.

Suitability for telecommunication environment: This product is not intended to connect directly or indirectly by any means whatsoever to interfaces of public telecommunications networks.

To find the translated text for a caution or danger notice, complete the following steps.

1. Look for the identification number at the end of each caution notice or each danger notice. In the following examples, the numbers (C001) and (D002) are the identification numbers.

   CAUTION:
   A caution notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury. (C001)

   DANGER

   A danger notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. (D002)

2. Locate the *IBM Systems Safety Notices* with the user publications that were provided with your system hardware.
3. Find the matching identification number in the *IBM Systems Safety Notices*. Then, review the topics about the safety notices to ensure that you are in compliance.
4. (Optional) Read the multilingual safety instructions on the system website.
   a. Go to www.ibm.com/support
   b. Search for " FlashSystem V9000"
   c. Click the documentation link.

Chapter 1. Overview

This guide provides a high-level roadmap to guide the customer, IBM® service support representative (SSR), and IBM lab based services (if applicable) through the planning, installation, and initial configuration steps that are needed to set up this system (MTM 9846-AC3, 9848-AC3, 9846-AE2/AE3, 9848-AE2/AE3, 9846/9848-12F, 9846/9848-24F, 9846/9848-92F).

For detailed instructions, refer to FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Important: Hearing conservation program (HCP) procedures are required for service personnel that service an operating 9846-92F or 9848-92F SAS expansion enclosure.

This system consists of two AC3 control enclosures and one AE2/AE3 storage enclosure. These three enclosures form a 6U *building block* (BB). When the three enclosures and their 6U bezel are installed, the components of the FlashSystem V9000 appear as shown in the following figure:

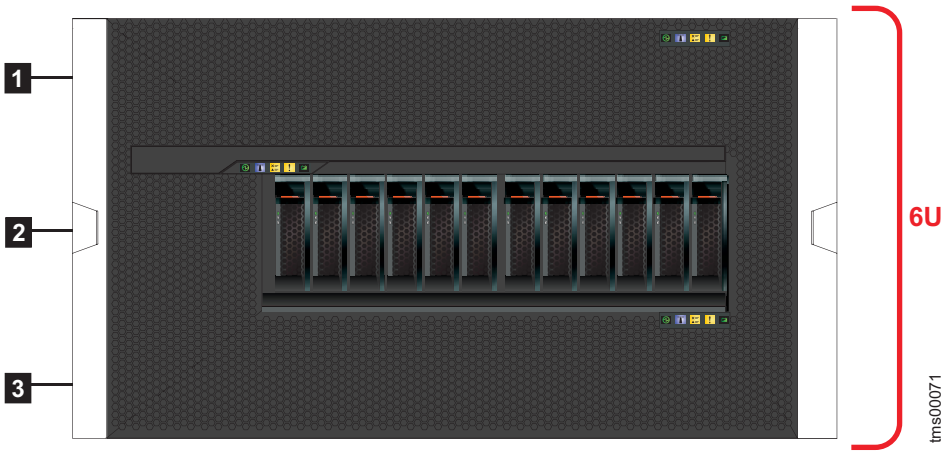

Figure 1. FlashSystem V9000 building block

1. AC3 control enclosure (2U)
2. AE2/AE3 storage enclosure (2U)
3. AC3 control enclosure (2U)

There are two types of building blocks: *fixed building blocks* and *scalable building blocks*. The type of building block determines the particular planning and installation steps that must be followed.

- In a *fixed building block*, the AC3 control enclosures and AE2/AE3 storage enclosure are directly connected without the use of switches or a storage area network (SAN) fabric. A fixed building block is usable and self-reliant in system operation and management. It can be scaled later, but the scaling process for a fixed building block is physically disruptive.
- A *scalable building block* is designed so that the AC3 control enclosures and AE2/AE3 storage enclosure are connected either through an internal Fibre Channel (FC) storage fabric by using dedicated FC switches, or through the

customer SAN fabric. Management connections to the AC3 control enclosures and FC switches are established through an Ethernet switch to create a private management LAN.

Additional scalable building blocks and flash expansion enclosures can be added by installing AC3 control enclosures and AE2/AE3 storage enclosures and connecting them to the internal or external SAN fabric, and to the Ethernet switch.

9846/9848-12F, 9846/9848-24F, or 9846/9848-92F SAS expansion enclosures can also be connected to each building block. Specific combinations of SAS expansion enclosures are supported based on the capacity of each of the enclosures.

Chapter 2. Planning (customer task)

The customer should ensure that they complete the prerequisite planning tasks and worksheets before the IBM service support representative (SSR) and lab based services proceed with the installation.

Planning overview and prerequisites

It is important to plan the FlashSystem V9000 configuration and to complete the planning tasks and worksheets before system installation.

Before the system is installed and configured, the customer must complete all the planning worksheets.

When the planning worksheets are completed, the customer submits them to the service support representative (SSR).

Prerequisites for installation

Before the SSR installs the FlashSystem V9000, the customer must have the following items available:

- Workstation with USB port for initial configuration.
- Supported web browser.
- Ethernet connection.
- Rack spaces for the AC3 control enclosures, AE2/AE3 storage enclosure, and optional SAS expansion enclosures.
- If the customer chooses to use a Power Distribution Unit (PDU), the network and power provisions for the PDU must already be in place.
- Fibre Channel or Ethernet host connections set up by the customer.

Planning worksheets (customer task)

The customer should complete the planning worksheets for the building block to provide information to the IBM service support representative (SSR), and IBM lab based services, if applicable.

Worksheets for fixed building blocks

For detailed worksheets used in a fixed building block installation, the customer should see **Planning** > **Planning for the hardware installation** > **Planning worksheets for fixed building blocks** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).

When the planning worksheets are completed, the customer submits them to the SSR for use during the installation process.

Worksheets for scalable building blocks

For detailed worksheets used in a scalable building block installation, the customer should see **Planning** > **Planning for the hardware installation** > **Planning worksheets for scalable building blocks** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).

When the planning worksheets are completed, the customer submits them to the SSR and lab based services for use during the installation process.

Chapter 3. Installing the hardware (IBM SSR task)

The IBM service support representative (SSR) is responsible for installing the FlashSystem V9000 hardware in the rack.

In the case of a scalable building block, installing components in the specified rack locations allows the SSR to add additional building blocks without disrupting service to existing building blocks.

Note: If you are installing scalable building blocks, the optional 9846/9848-12F, 9846/9848-24F, 9846-92F, or 9848-92F SAS expansion enclosures are not installed in the same rack as the building blocks. In this case, the SAS expansion enclosures are installed in a separate rack.

The following table shows component locations in an MTM 7014-T42 rack for up to four scalable building blocks.

Table 1. Rack hardware location chart

Rack Shelf	Component	Comments	Notes
EIA 42	Open space		
EIA 41			
EIA 40			
EIA 39			
EIA 38			
EIA 37			
EIA 36	Additional AE2/AE3 4	Optional for scaling an AE2/AE3	
EIA 35			
EIA 34	Additional AE2/AE3 3	Optional for scaling an AE2/AE3	
EIA 33			
EIA 32	Additional AE2/AE3 2	Optional for scaling an AE2/AE3	
EIA 31			
EIA 30	Additional AE2/AE3 1	Optional for scaling an AE2/AE3	
EIA 29			
EIA 28	Mgmt Ethernet (EN) SW	Required	
EIA 27	Internal FC SW 2	Required	
EIA 26	Internal FC SW 1	Required	
EIA 25	Console	Customer Preference	
EIA 24	Building block 1 AC3 Node 1	Required	
EIA 23			
EIA 22	Building block 1 AE2/AE3	Required	
EIA 21			
EIA 20	Building block 1 AC3 Node 2	Required	
EIA 19			

Table 1. Rack hardware location chart (continued)

Rack Shelf	Component	Comments	Notes
EIA 18	Building block 2 AC3 Node 1	Optional. For scaling 2 building blocks	
EIA 17			
EIA 16	Building block 2 AE2/AE3	Optional. For scaling 2 building blocks	
EIA 15			
EIA 14	Building block 2 AC3 Node 2	Optional. For scaling 2 building blocks	
EIA 13			
EIA 12	Building block 3 AC3 Node 1	Optional. For scaling 3 building blocks	
EIA 11			
EIA 10	Building block 3 AE2/AE3	Optional. For scaling 3 building blocks	
EIA 09			
EIA 08	Building block 3 AC3 Node 2	Optional. For scaling 3 building blocks	
EIA 07			
EIA 06	Building block 4 AC3 Node 1	Optional. For scaling 4 building blocks	
EIA 05			
EIA 04	Building block 4 AE2/AE3	Optional. For scaling 4 building blocks	
EIA 03			
EIA 02	Building block 4 AC3 Node 2	Optional. For scaling 4 building blocks	
EIA 01			

Installing the FlashSystem V9000 enclosures (IBM SSR task)

Installing the FlashSystem V9000 enclosures in a building block involves installing the two AC3 control enclosures and the AE2/AE3 storage enclosure.

To install the enclosures in a building block, complete the following steps:

1. Using the customer-supplied hardware location worksheets for guidance, install the support rails for the AC3 control enclosures and the AE2/AE3 storage enclosure in the rack. See **Installing** > **Installing the hardware** > **Installing the support rails** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.
2. If applicable, also install the support rails for the optional 9846/9848-12F, 9846/9848-24F, 9846-92F, or 9848-92F SAS expansion enclosures in the rack that will contain them. (If you are installing scalable building blocks, the SAS expansion enclosures are not installed in the same rack as the building blocks, but in a separate rack.) See **Installing** > **Installing the hardware** > **Installing the support rails** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.
3. Install the two AC3 control enclosures in the rack. See **Installing** > **Installing the hardware** > **Installing the AC3 control enclosures** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.
4. Install the AE2/AE3 storage enclosure in the rack. See **Installing** > **Installing the hardware** > **Installing an AE2/AE3 storage enclosure** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

5. If applicable, install the optional 9846/9848-12F, 9846/9848-24F, 9846-92F, or 9848-92F SAS expansion enclosures now. See **Installing** > **Installing the hardware** > **Installing an optional 5U SAS expansion enclosure** or **Installing an optional 2U SAS expansion enclosure** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Installing the Fibre Channel switches (scalable building blocks only - IBM SSR task)

The IBM service support representative (SSR) is responsible for physically installing Fibre Channel (FC) switches in the specified rack locations.

Note: In order for the SSR to install the FC switches, the customer must establish prior arrangements such as a local contract or Racking Premium Service.

Refer to the FC switch documentation for switch installation information. Refer to Chapter 3, “Installing the hardware (IBM SSR task),” on page 5 or the planning worksheets for component placement in the rack.

Installing the Ethernet switch (scalable building blocks only - IBM SSR task)

The IBM service support representative (SSR) is responsible for installing the G8052 Ethernet switch in the specified rack location.

Note: In order for the SSR to install the Ethernet switch, the customer must establish prior arrangements such as a local contract or Racking Premium Service.

Refer to the G8052 Ethernet switch documentation for installation information. Refer to Chapter 3, “Installing the hardware (IBM SSR task),” on page 5 or the planning worksheets for component placement in the rack.

Chapter 4. Connecting the components (IBM lab based services or IBM SSR task)

After the hardware is installed in the rack, the various components must be connected to each other, to power, to the Ethernet management network, and to the hosts.

Connecting the components in a fixed building block

The IBM service support representative (SSR) is responsible for connecting (cabling) the enclosures in the building block. See **Installing** > **Connecting the components** > **Connecting the components in a fixed building block** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Connecting the components in a scalable building block

Lab based services is responsible for connecting (cabling) the enclosures, the Fibre Channel switches, and Ethernet switch in a scalable building block. There are many possible scalable building block cabling configurations, depending on the number of building blocks, the type of host adapters that are installed in the AC3 control enclosures, and if optional SAS expansion enclosures are installed.

For cabling details for your particular configuration, see **Installing** > **Connecting the components** > **Connecting the components in a scalable building block** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Chapter 5. Completing the hardware installation (IBM SSR or lab based services task)

After the components are installed in the rack and connected, they must be initialized.

For a fixed building block, the IBM service support representative (SSR) is responsible for completing the hardware installation process.

For a scalable building block, IBM lab based services is responsible for completing the hardware installation process.

See **Installing** > **Completing the hardware installation** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Chapter 6. Initializing an AE3 storage enclosure (IBM SSR or lab based services task)

An AE3 storage enclosure must be initialized before the first building block is initialized to create a new V9000 system, or before a new AE3 enclosure can be added to an existing V9000 system. (This step is not used for AE2 storage enclosures, which are initialized by the V9000 system software.)

For a fixed building block, the IBM service support representative (SSR) is responsible for this process.

For a scalable building block, IBM lab based services is responsible for this process.

Important: Before initializing the AE3 storage enclosure, you must confirm that the latest software version is installed and update the software if necessary.

For detailed information on updating the enclosure software and initializing the enclosure, see **Installing** > **Initializing an AE3 storage enclosure** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required..

Chapter 7. Initializing a fixed building block or the first scalable building block in a scaled system (IBM SSR or lab based services task)

Both a fixed building block and the first scalable building block in a scaled system must be initialized by using an Ethernet connection to a notebook computer.

For a fixed building block, the IBM service support representative (SSR) is responsible for this process.

For a scalable building block, IBM lab based services is responsible for this process.

For detailed information, see **Installing** > **Initializing a fixed building block, or the first scalable building block in a scaled system** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Chapter 8. Completing the service setup of the components (IBM SSR or lab based services task)

After the components are installed in the rack, connected, and initialized, the service setup process must be completed.

For a fixed building block, the IBM service support representative (SSR) is responsible for completing the service setup process.

For a scalable building block, IBM lab based services is responsible for completing the service setup process.

The procedures for your installation depend on whether you are installing a fixed building block, installing a first scalable building block, or adding an additional scalable building block to an existing system.

- To complete the service setup process for a fixed building block or a first scalable building block, see **Installing** > **Completing the service setup for a new system** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.
- To complete the service setup process if you are adding an additional scalable building block, see **Installing** > **Scaling from one building block to two, three, or four building blocks** in FlashSystem V9000 Knowledge Center for service (https://ibm.biz/fs_V9000_service_kc). **Note:** IBM intranet connection required.

Chapter 9. First customer tasks

After the components are installed in the rack, connected, and initialized, the customer completes the initial configuration and updates the system firmware and software.

1. First, the customer completes the initial configuration by entering a new password, licensing information and other site-specific information, and creating the storage arrays and storage pools. See **Installing** > **Initial customer configuration of the system** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).
2. Next, the customer should update the system with the latest firmware and software. See **Installing** > **Verify and update the system firmware and software** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).

Note: If the customer purchased IBM FlashSystem V9000 Enterprise Class services, the IBM SSR (fixed building block installations) or lab based services (scaled building block installations) performs the update. See **Updating the system** > **Updating system software using FlashSystem V9000 Enterprise Class services** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).

Chapter 10. Adding hardware to scale-up or scale-out the system

After the initial system installation is completed, the customer can choose to add hardware to scale-up or scale-out the system, and arrange for installation by an IBM service support representative (SSR) and IBM lab based services.

Before the installation process can begin, the customer should update the system with the latest firmware and software. See **Installing** > **Verify and update the system firmware and software** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).

Next, the customer should complete the necessary planning tasks necessary to ensure that the system is ready to accept the new hardware, and that all site-specific information that is needed by the IBM service provider is available.

Finally, an IBM SSR and IBM lab based services performs the hardware update.

For details on various hardware upgrades for scale-up or scale-out, including planning and installation information, see **Updating the system** > **Upgrading the system hardware** in FlashSystem V9000 Knowledge Center (https://ibm.biz/fs_V9000_kc).

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