

# Arcserve

## Appliance X Series Storage Node Installation Guide



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### 1. Product Ratings

#### System power

Power	Heat	Voltage	Frequency	Current
2200W	7507 BTU	200-240 VAC	50/60 Hz	11.07-9.23A (x2)

#### 5U Physical system

■ Base System HxWxD	H: 22.23 cm (8.75 inches) x W: 48.30 cm (19.01 inches) x D: 97.47 cm (38.31 inches)
■ Weight (empty)	64.00 kg (141.00 lbs) without drives
■ Weight (max config)	135.00 kg (298.00 lbs)

### 2. Site Preparation

#### Setup location, rack and appliance precautions

- **Elevated Operating Ambient Temperature** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.

Always keep the rack's front door and all panels and components on the appliances closed when not servicing to maintain proper cooling.

- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Leave enough clearance, approximately 25 inches in the front, and 30 inches in the back of the rack to enable you to access appliance components and allow for sufficient air flow.

- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

ALL RACKS MUST BE MOUNTED SECURELY. Ensure that all leveling jacks or stabilizers are properly attached to the rack. If installing multiple appliances in a rack, make sure the overall loading for each branch circuit does not exceed the rated capacity.

Do not slide more than one appliance out from the rack at a time. Extending more than one appliance at a time may result in the rack becoming unstable. Install your appliance in the lower part of the rack because of its weight and also for ease in accessing appliance components.

- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Install near appropriate AC outlets, and Ethernet hubs or individual jacks. Be sure to install an AC Power Disconnect for the entire rack assembly. The Power Disconnect must be clearly marked. Ground the rack assembly properly to avoid electrical shock.



### 3. Unpacking the 5U Storage System Enclosure

#### Before you begin

Examine the packaging for crushes, cuts, water damage, or any other evidence of mishandling during transit. If you suspect that damage has happened, photograph the package before opening, for possible future reference. Retain the original packaging materials for use with returns.

#### **WARNING**

Before you set up and operate your 5U storage system, review the safety instructions included in the shipping carton.

#### **CAUTION**

- A 5U enclosure does not ship with Disk Drive in Carriers (DDICs) installed, but the rear panel controller modules or IOMs are installed. This partially populated enclosure is weights approximately 64 kg (142 lb). You need a minimum of two people to remove the enclosure from the box.
- **BEFORE LIFTING THE ENCLOSURE:** A 5U enclosure, which is delivered without DDICs installed, requires two people to lift it from the box. A mechanical lift is required to hoist the enclosure for positioning in the rack.

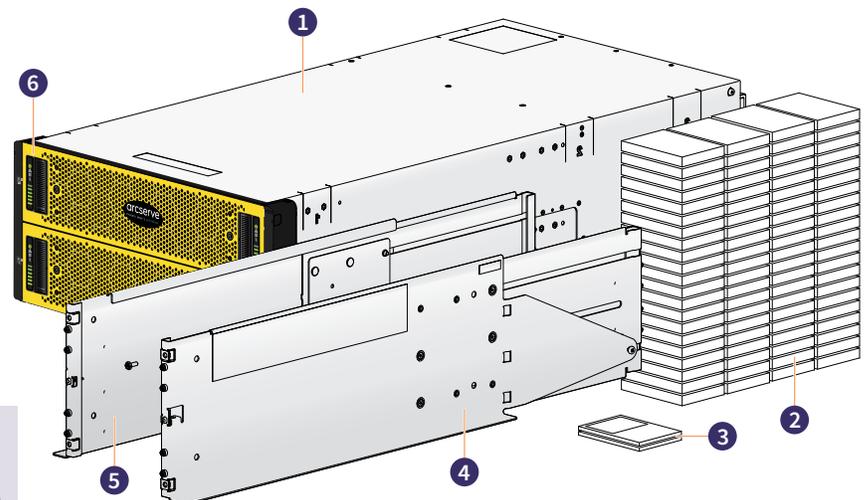
#### The 5U storage system enclosure ship kit includes:

- Documentation
- 5U storage appliance enclosure
- Two power cables
- Separately packaged disk drives (5U enclosure only)
- Fibre Channel or iSCSI SFP+ transceivers or cables (one per host port)
- Host cables (1 per controller module host port)
- Expansion cables (1 per expansion module)
- Optional enclosure bezel set with key (1 per 5U enclosure)
- Appropriate rackmount kit for 5U storage system enclosure

#### The 5U storage system enclosure and installation parts:

- 1 Storage system enclosure
- 2 DDICs (Disk Drives in Carriers)\*
- 3 Documentation
- 4 Rackmount left rail (5U84)
- 5 Rackmount right rail (5U84)
- 6 Drawers (behind bezel)

\* NOTE: DDICs ship in a separate container and must be installed into the enclosure drawers during product installation. For rackmount installations, due to the weight DDICs are installed after the enclosure is mounted in the rack.



**IMPORTANT!**

Install the appliance into the rack prior to installing any INTERNAL hard disk drives due to the weight of the appliance.

## 4. Installing the Rails and the 5U Storage System Enclosure in the Rack

The 5U storage system hardware kit includes:

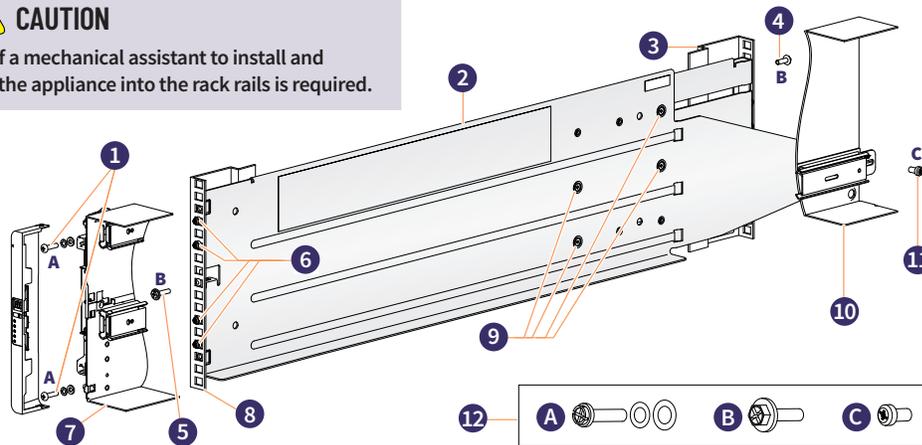
Item	Description
1	Fastening screws (A)
2	Left rail
3	Rear rack post (square hole)
4	Clamping screw (B)
5	Clamping screw (B)
6	Rail location pins (quantity of 4 per rail)
7	5U chassis section shown for reference

Item	Description
8	Front rack post (square hole)
9	Middle slide locking screws
10	5U chassis section shown for reference
11	Fastening screw (C)
12	Rail kit fastening hardware for rackmount installation

A = Fastening; B = Clamping; C = Fastening



**CAUTION**  
Use of a mechanical assistant to install and align the appliance into the rack rails is required.



### The 5U storage system enclosure installation:

The 5U enclosure is shipped without the disks installed. Before mounting, also remove the rear panel modules to reduce the enclosure weight.

- Step 1:** With the preassembled rails at their shortest length, locate the rail location pins inside the front of the rack. Extend the length of the rail assembly to position the rear location pins. Ensure the pins are fully inserted in the square or round holes in the 19 inch rack posts.
- Step 2:** Fully tighten all clamping screws (see B above) and middle slide locking screws (see 9 above).
- Step 3:** Ensure the four rear space clips (not shown) are fitted to the edge of the rack post.
- Step 4:** Slide the 5U enclosure straight in until it is fully seated on the rails.
- Step 5:** Fasten the front and rear of the enclosure using the four enclosure fastening screws (see A above) as shown. Secure the brackets to the rails (left hand rail shown above).
- Step 6:** Reinsert the rear panel modules and proceed to **Section 5** on page 6.

**CAUTION**  
Once the enclosure is mounted, dispose of the lifting straps. The straps are not suitable for reuse.



### 5. Installing the DDICs into the 5U Storage System Enclosure

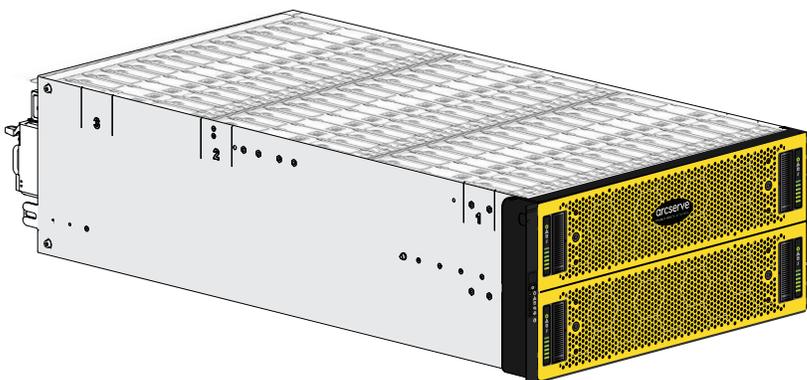
**Step 1:** Locate the carton that contains the DDICs shipped with the product that need to be installed in each of the 5U drawers in the enclosure. Each drive is labeled with a number that corresponds to the drawer slot that it needs to be installed in.

**Step 2:** Ensure that you adhere to the following guidelines to install the DDICs in the drawers:

- The minimum number of disks that are supported by the enclosure is 28, 14 in each drawer.
- DDICs must be added to disk slots in complete rows (14 disks at a time).

**Step 3:** The drives are numbered beginning at the front of each drawer, install each DDIC consecutively by number, and alternately between the top drawer and the bottom drawer. For example, first install the DDICs 0-13 in slots 0-13 in the top drawer, and then DDICs 42-55 in slots 42-55 in the bottom drawer. After that, install slots 14-27, and so on.

- The number of populated rows must not differ by more than one row between the top and bottom drawers.
- Hard disk drives (HDD) and solid-state drives (SDD) can be mixed in the same drawer.
- HDDs installed in the same row should have the same rotational speed.
- DDICs holding 3.5" disks can be intermixed with DDICs holding 2.5" disks in the enclosure. However, each row should be populated with disks of the same form factor (all 3.5" disks or 2.5" disks).



This image shows an example of a drawer that is fully populated with DDICs



This image shows an example of a partially populated drawer with drive labeling.

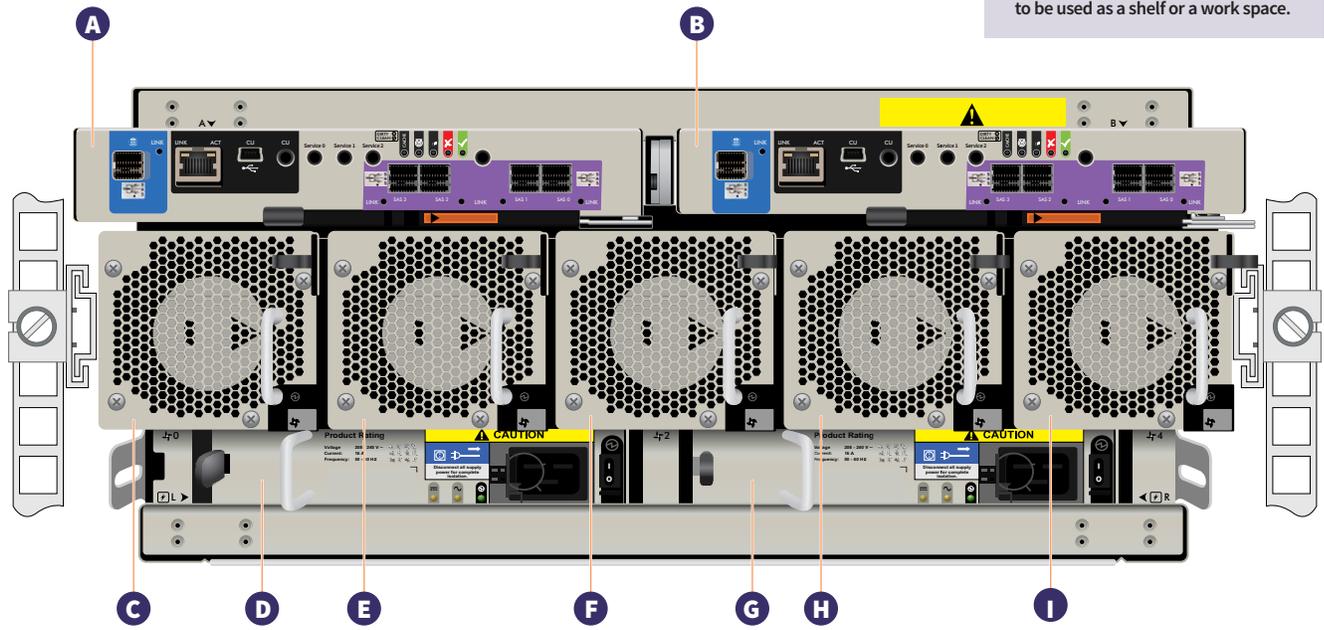
#### CAUTION

- Observe the hot surface label that is affixed to the drawer. Operating temperatures inside enclosure drawers can reach 60°C (140°F). Take care when opening drawers and removing DDICs.
- To prevent a rack from tipping over, drawer interlocks stop users from opening both drawers simultaneously. Do not attempt to force open a drawer when the other drawer in the enclosure is already open. In a rack containing more than one U84 enclosure, do not open more than one drawer per rack at a time.



### 6. Rear Panel Components

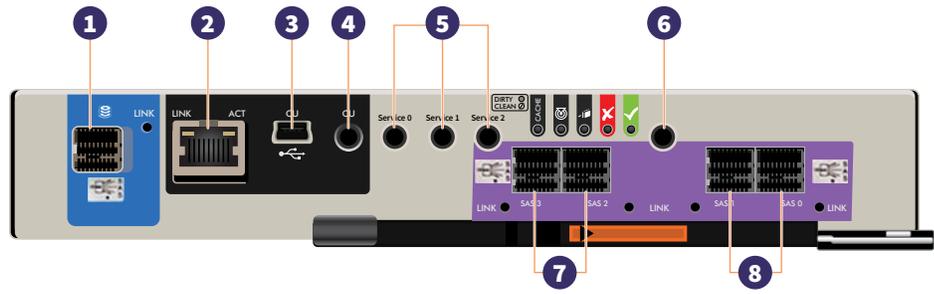
**CAUTION**  
Slide rail/mounted equipment is not to be used as a shelf or a work space.



- A Controller module A
- B Controller module B
- C Fan Control Module (FCM) slot 0
- D Power Supply Unit (PSU) slot 0
- E Fan Control Module (FCM) slot 1

- F Fan Control Module (FCM) slot 2
- G Power Supply Unit (PSU) slot 1
- H Fan Control Module (FCM) slot 3
- I Fan Control Module (FCM) slot 4

### 7A. Rear Panel Controller Modules – A and B Ports Detail



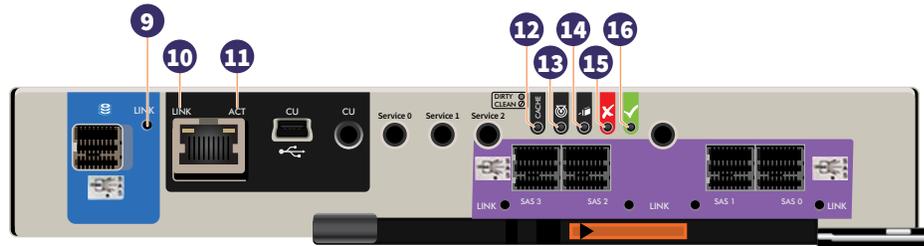
- 1 Back-end expansion SAS port
- 2 Ethernet port used by management interfaces
- 3 USB serial port (CLI)
- 4 3.5 mm serial port (CLI)

- 5 3.5 mm serial ports (service only)
- 6 Reset button
- 7 SAS ports 3 and 2
- 8 SAS ports 1 and 0

Continued on the next page



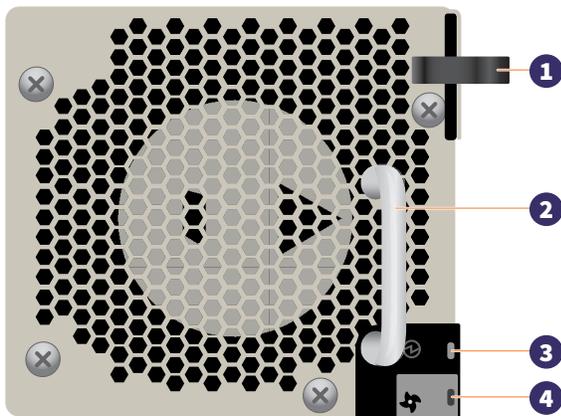
## 7B. Rear Panel Controller Modules – A and B LED Detail (continued)



9	Expansion Port Status	<ul style="list-style-type: none"> <li>Green — The port is connected and the link is up.</li> </ul>
10	Network Port Link Speed	<ul style="list-style-type: none"> <li>Off — Link is up at 10/100base-T negotiated speeds.</li> <li>Amber — Link is up and negotiated at 1000base-T.</li> </ul>
11	Network Port Activity Status	<ul style="list-style-type: none"> <li>Off — The Ethernet link is not established, or the link is down.</li> <li>Green — The Ethernet link is up (applies to all negotiated link speeds).</li> </ul>
12	Cache Status <sup>3</sup>	<ul style="list-style-type: none"> <li>Green — Cache is dirty (contains unwritten data) and operation is normal. The unwritten information can be log or debug data that remains in the cache, so a green cache status LED does not, by itself, indicate that any user data is at risk or that any action is necessary.</li> <li>Off — In a working controller, cache is clean (contains no unwritten data). This is an occasional condition that occurs while the system is booting.</li> <li>Blinking green — A CompactFlash flush or cache self-refresh is in progress, indicating cache activity.</li> </ul>
13	Identify	<ul style="list-style-type: none"> <li>White — The controller module is being identified.</li> </ul>
14	OK to Remove	<ul style="list-style-type: none"> <li>Off — The controller is not prepared for removal.</li> <li>Blue — The controller module is prepared for removal.</li> </ul>
15	Fault	<ul style="list-style-type: none"> <li>Off — The controller is operating normally.</li> <li>Amber — A fault has been detected or a service action is required.</li> <li>Blinking amber — Hardware-controlled power-up or a cache flush or restore error.</li> </ul>
16	OK	<ul style="list-style-type: none"> <li>Green — The controller is operating normally.</li> <li>Blinking green — System is booting.</li> <li>Off — The controller module is not OK, or is powered off.</li> </ul>

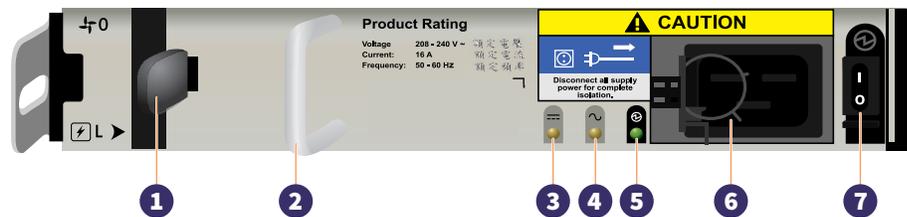


## 8. Rear Panel Fan Cooling Modules 0 through 4 Detail



- 1 Module release latch
- 2 Handle
- 3 Module OK LED (Green)
- 4 Fan Fault LED (Amber / blinking amber)

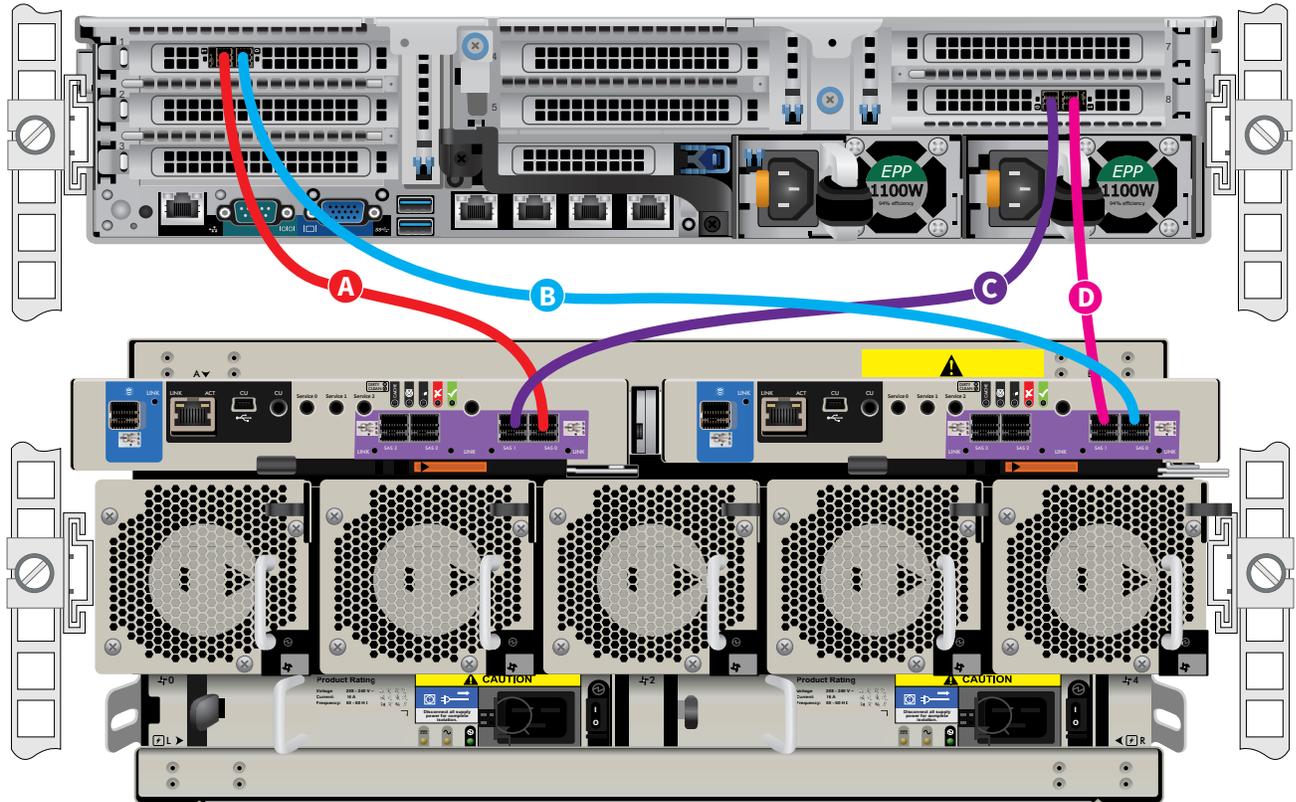
## 9. Rear Panel Power Supply Units 0 and 1 Detail



- 1 Module release latch
- 2 Handle
- 3 PSU Fault LED (Amber / blinking amber)
- 4 AC Fail LED (Amber / blinking amber)
- 5 Power OK LED (Green)
- 6 AC power inlet
- 7 Power I/O switch



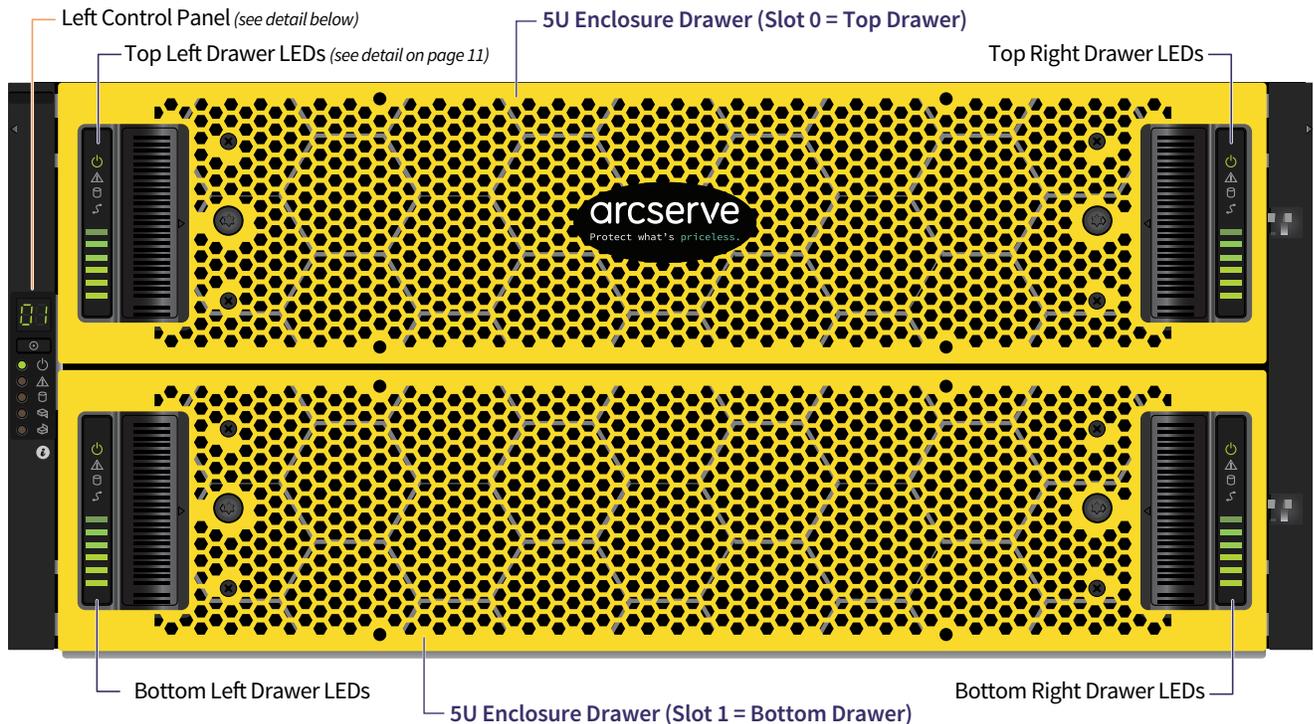
## 10. Cabling the Server to the Array



- A** On the server install the first cable into Slot 1, Port 1 (left port of HBA), then connect the other end to the Storage Unit, Controller A, SAS port 0.
- B** On the server install the second cable into Slot 1, Port 0 (right port of HBA), then connect the other end to the Storage Unit, Controller B, SAS port 0.
- C** On the server install the third cable into Slot 8, Port 0 (left port of HBA), then connect the other end to the Storage Unit, Controller A, SAS port 1.
- D** On the server install the fourth cable into Slot 8, Port 1 (right port of HBA), then connect the other end to the Storage Unit, Controller B, SAS port 1.



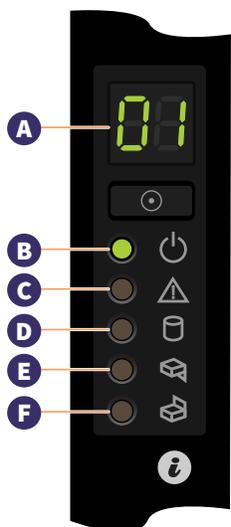
## 11. Front Panel Operation



Opening a drawer does not interrupt the functioning of the storage system. DDICs can be hot-swapped while the enclosure is in operation. However, drawers must not be left open for longer than two minutes, or airflow and cooling will be compromised.

**NOTE:** During normal operation, drawers should be closed to ensure proper airflow and cooling within the enclosure. A drawer is designed to support its own weight, plus the weight of installed DDICs, when fully opened.

### Left Control Panel Detail:



Indicator	Status
A Unit identification display (UID) <sup>1</sup>	■ Green (seven-segment display: enclosure sequence)
B System power on/Standby	■ Constant green: positive power on indication ■ Constant amber: system in standby (not operational)
C Module fault <sup>2</sup>	■ Constant or blinking amber: fault present
D Logical status <sup>3</sup>	■ Constant or blinking amber: fault present
E Top drawer fault	■ Constant or blinking amber: fault present in drive, cable, or sideplane
F Bottom drawer fault	■ Constant or blinking amber: fault present in drive, -cable, or sideplane

**1 Unit identification display:** The UID is a dual seven-segment display that shows the numerical position of the enclosure in the cabling sequence. This is also called the enclosure ID. The controller enclosure ID is 0.

**2 Module fault LED display:** LED turns amber when experiencing a system hardware fault. This LED helps you identify the component causing the fault, which can be associated with a Fault LED on a controller module, IOM, PSU, FCM, DDIC, or drawer.

**3 Logical status LED display:** This LED indicates a change of status or fault from something other than the enclosure management system. This may be initiated from the controller module or an external HBA. The indication is typically associated with a DDIC and LEDs at each disk position within the drawer, which help to identify the DDIC affected.

*Continued on the next page*



## 11. Front Panel Operation (continued)

Drawer Control Panel Detail:



LED Activity	Status / Description
Sideplane OK/Power Good	Green if the sideplane is working and there are no power problems.
Drawer Fault	Amber if a drawer component has failed. If the failed component is a disk, the LED on the failed DDIC will light amber. If the disks are OK, contact your service provider to identify the cause of the failure, and resolve the problem. <b>CAUTION:</b> The sideplanes on the enclosure drawers are not hot swappable or customer serviceable.
Logical Fault	Amber (solid) indicates a disk fault. Amber (blinking) indicates that one or more storage systems are in an impacted state.
Cable Fault	Amber indicates the cabling between the drawer and the back of the enclosure has failed. Contact your service provider to resolve the problem.
Activity Bar Graph	Displays the amount of data I/O from zero segments lit (no I/O) to all six segments lit (maximum I/O).



## 13. Run Arcserve Appliance Wizard

1. When power is initially applied to the appliance, the Arcserve Appliance Wizard is launched. Navigate through each page of the wizard. For more information about the wizard, see the Arcserve Appliance User Guide ([arcserve.com/udp-appliance-userguide](http://arcserve.com/udp-appliance-userguide)).

**Note:** After selecting the Operating System language, a screen to enter Windows license may come up. Skip to proceed here, the OS is already licensed and activated.

### The wizard lets you perform the following tasks:

- Define the Appliance host name.
- Specify LAN connections for the Appliance.
- Configure email and alert settings.
- Create protection plans. *A protection plan lets you define source nodes, backup destination, and configure a backup schedule.*

Upon completion of the wizard, Arcserve Appliance launches the UDP console at the dashboard page.

## 14. Access Arcserve Unified Data Protection (UDP)

Arcserve UDP is a comprehensive solution to protect complex IT environments. The source-side and global deduplication solution protects your data residing in various types of nodes such as Windows, Linux, and virtual machines on VMware ESX servers or Microsoft Hyper-V servers. You can back up data to either a local machine or a recovery point server. A recovery point server is a central server where backups from multiple sources are stored and can be globally deduplicated. For more information about Arcserve UDP, see the Knowledge Center at: [arcserve.com/udp-knowledge-center](http://arcserve.com/udp-knowledge-center).

### Arcserve UDP provides the following capabilities:

- Back up the data to deduplication/non-deduplication data stores on recovery point servers
- Back up recovery points to tape
- Create virtual standby machines from backup data
- Replicate backup data to recovery point servers and remote recovery point servers
- Restore backup data and perform Bare Metal Recovery (BMR)
- Copy selected data backup files to a secondary backup location



## 15. Contact Support

If you encounter any issues with your appliance, please visit our Arcserve Support site to search our Knowledge Base for solutions to common problems or to get Live Support for immediate assistance (the serial number is located on rear of appliance) at: [arcserve.com/support](https://arcserve.com/support).

## 16. Warranty

Each Arcserve Appliance comes with a 3-year hardware warranty. For detailed information about this warranty, please visit: [arcserve.com/udp-appliance-warranty](https://arcserve.com/udp-appliance-warranty).

For more information on Arcserve, please visit [arcserve.com](https://arcserve.com), or call +1.844.639.6792

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