PYTHIA TECHNOLOGIES

PYTHIA DM · DEPLOYMENT OPTIONS

Your DM, where you need it. Rack, wall or panel.

The same Pythia DM runs on a 1U server in your rack, on servers in a locking wall-mount cabinet, or in a Smart Panel on the wall. Connect it over the site LAN, cellular or Starlink, with one as primary and another as backup.

MSE

DM Enterprise

MSE-DM
MSE-DM-RK

FRONT



All connections are on the front of the chassis

REAR



Ventilation grill and pull-out service tag — no rear connections

MSS

DM Standard

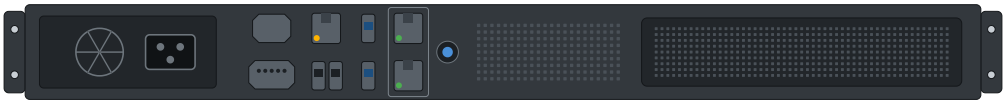
MSS-DM
MSS-DM-RK

FRONT



Control panel only — no front connections

REAR



All power, network and console connections are on the rear

Images are representative. Actual servers may differ.

3
ways to deploy: rack mount, wall-mount cabinet or Smart Panel

2
DM servers, MSS and MSE, as a single server or a redundant pair

3
paths out: site LAN, cellular or Starlink, primary and backup

1
DM software everywhere: console, alarms, trends and the AI Connector

Rack mount

One server or a redundant pair in your rack.

Wall mount

A locking cabinet for rooms without a rack.

Smart Panel

A complete DM in a panel for smaller sites.

Connectivity

LAN, cellular or Starlink, with backup.

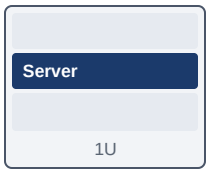
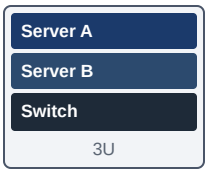
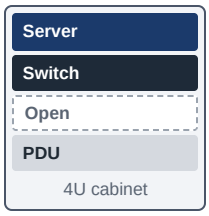
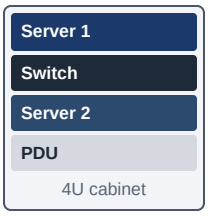
Data centers · Equipment rooms · Electrical rooms · Remote sites

pythiatech.com

OPTIONS AT A GLANCE

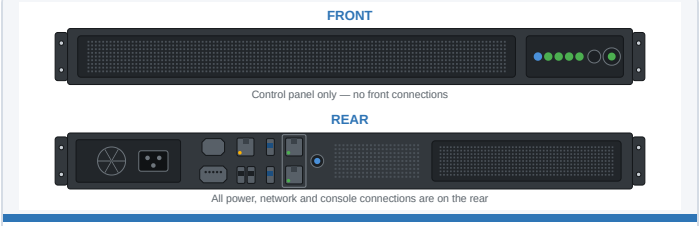
Where the DM runs.

Every option runs the same DM software under the same licensing: console, alarms, notifications, trends, dashboards, publishing and the AI Connector. Choose where it goes, and whether the site needs a standby server.

	SINGLE SERVER	REDUNDANT PAIR
Rack mount In your equipment rack	MSS-DM · MSE-DM · 1U **One server in the rack** Interface 0 connects to your network. A dedicated IPMI port gives out-of-band management. 	MSS-DM-RK · MSE-DM-RK · 3U **Two servers and a switch** The DM is replicated to a standby server that can take over. The servers can also go in separate racks. 
Wall mount Locking cabinet, 8 in. off the wall	WALL CABINET · 3U OF 4U **Server, switch and PDU** For rooms without a rack. 1U stays open in the cabinet for a second server later. 	WALL CABINET · 4U **The pair, on the wall** Both servers, the switch and the PDU fill the cabinet. The same standby copy and failover as in the rack. 
Smart Panel A DM in a wall-mount panel	SPDM · SPDM-ND **A complete DM in a panel** Onboard inputs and an optional display. Add SPDM-CELL or SPDM-STAR for cellular or Starlink. 	

Also available: DM Cloud. The same standard DM server build as a dedicated virtual machine, hosted by Pythia in Microsoft Azure and connected to your network through firewall rules at both ends.

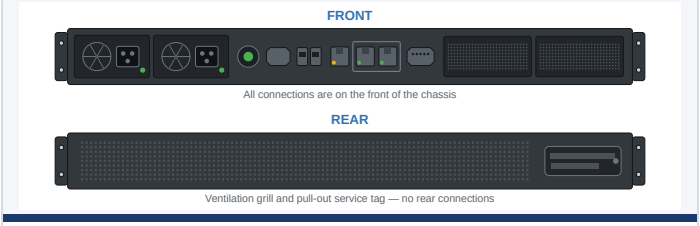
CHOOSING THE SERVER



MSS · DM STANDARD

A single site or a modest fleet

- 1U short depth, 14.5 in.; cabled from the rear
- Single power supply and data drive
- Dual 1 GbE; around half the MSE's capacity



MSE · DM ENTERPRISE

Larger fleets and sites that need redundancy

- 1U, 16.9 in. deep; all connections on the front
- Dual redundant, hot-swap power supplies
- Mirrored data drives; dual 10 GbE; about twice the MSS's capacity

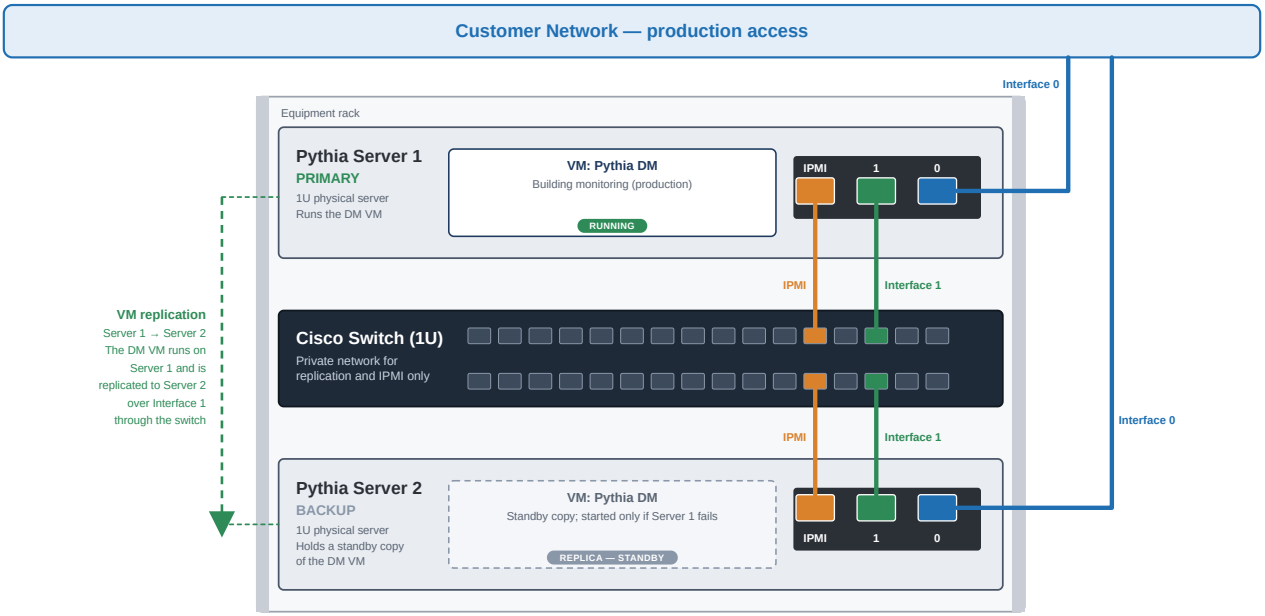
OPTION 1 · RACK MOUNT

In your rack: one server, or a redundant pair in 3U.

A single server takes 1U and connects to your network on Interface 0. The redundant pair adds a second server and a dedicated switch: the DM runs on Server 1 and is replicated to Server 2, which is ready to take over if Server 1 fails.

Redundant DM Server Pair

Two Pythia DM servers (primary and backup) and a dedicated Cisco switch, installed together



Interface 0 — Customer network

Connects each server to the customer network. Normal production access to the Pythia DM.

Interface 1 — VM replication

Replicates the DM VM from Server 1 to Server 2 through the Cisco switch, so Server 2 is ready if Server 1 fails.

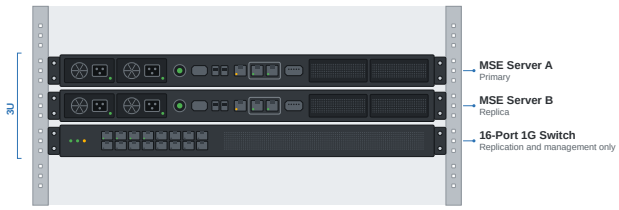
IPMI — Out-of-band management

Remote console, power on/off/reset and hardware health, even when the OS is down. Private switch only.

Local server redundancy: protects the site against the failure of a single server.
Where separation is required, the servers can go in separate racks, each with its own switch.



MSS-DM-RK. Two MSS servers and a 16-port switch in 3U. Cabled from the rear.



MSE-DM-RK. Two MSE servers and a 16-port switch in 3U. Cabled from the front.

Separate racks where the site requires it. Each server can go in its own rack with its own switch, joined by one inter-switch cable. Replication and IPMI stay on the private switch, off your network.

OPTION 2 · WALL MOUNT

On the wall: rack servers, no rack required.

Electrical, switchgear and mechanical rooms rarely have a rack. The wall-mount cabinet holds the same 1U DM servers, a switch and a PDU, and mounts on the wall in the room with the equipment it monitors. Where it replaces an older monitoring system, existing panels and field wiring can stay in place.



- 4U of 19 in. rack space for equipment up to 20 in. deep. The MSS (14.5 in.) and MSE (16.9 in.) both fit
- Extends just 8 in. from the wall; 28.8 in. high × 25.6 in. wide
- Locking top panel and front door; vented steel
- Mounts on 16 in. studs; cable ports top and bottom

Redundant pair · 4U

Slide-out 2U bracket	patch panel
Server 1	primary
Network switch	
Server 2	standby
PDU	

Single server · 3U

Slide-out 2U bracket	patch panel
Server	DM
Network switch	
Open	second server
PDU	

Choose wall mount when

- The room has no rack, or no rack space to spare
- The servers belong in the room with the equipment they monitor
- The equipment needs to be locked away

Equipment stays on its own network

- Equipment connects through the cabinet switch on a private network
- Kept off the customer network
- Existing panels and field wiring can be reused when replacing an older system

Pythia supplies

- The cabinet with servers, switch and PDU installed
- The DM set up for the site's equipment, alarms and notifications
- Connection of the equipment network to the cabinet switch

The site provides

- Wall space and backing in the equipment room
- An AC circuit for the PDU, UPS-backed where possible
- A customer-network connection for each server

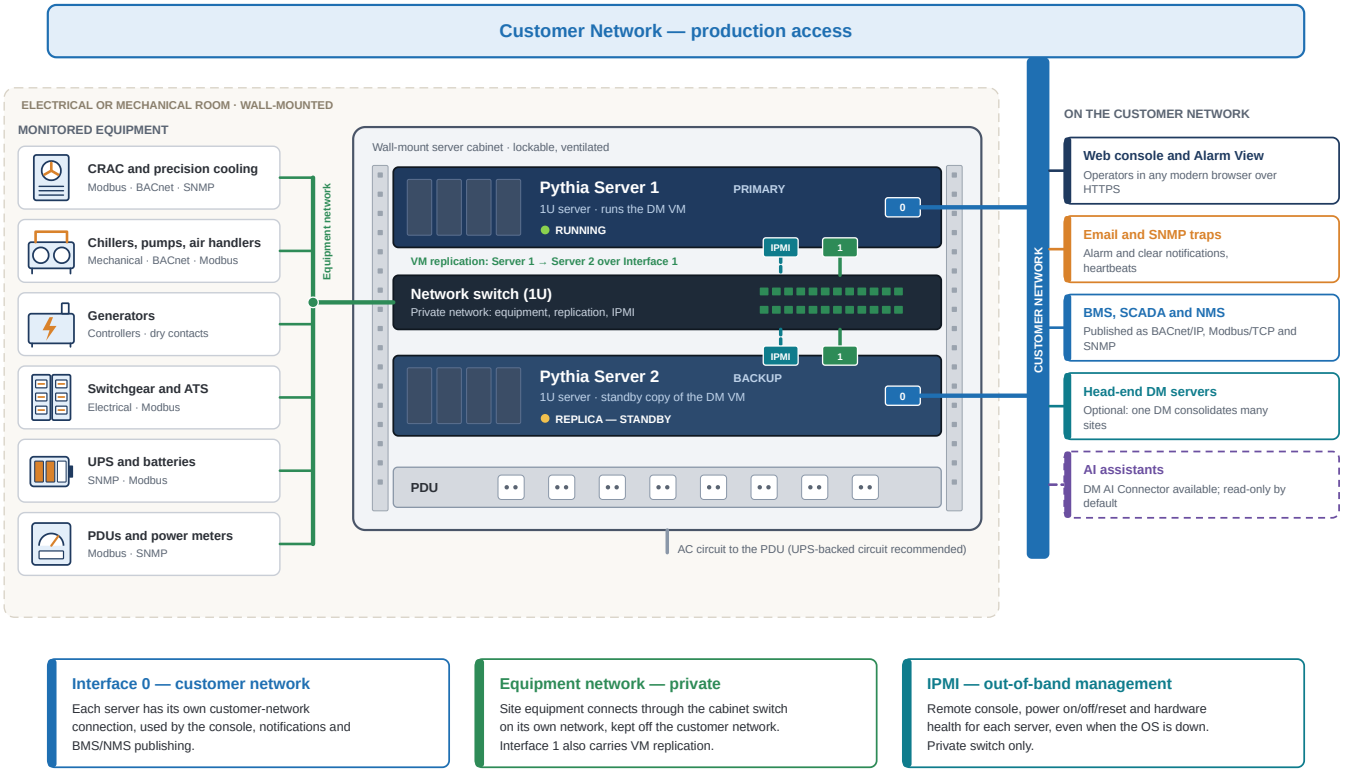
WALL MOUNT · REDUNDANT PAIR

Two servers and a switch, in 4U on the wall.

The DM runs on Server 1 and a standby copy is kept on Server 2, so monitoring continues if Server 1 fails, without waiting for a replacement to ship.

Wall-Mount DM Server Cabinet — Redundant Pair

Two Pythia DM servers and a switch in a locking wall-mount cabinet, in the room with the equipment they monitor



Interface 0 — customer network
Each server has its own customer-network connection, used by the console, notifications and BMS/NMS publishing.

Equipment network — private
Site equipment connects through the cabinet switch on its own network, kept off the customer network. Interface 1 also carries VM replication.

IPMI — out-of-band management
Remote console, power on/off/reset and hardware health for each server, even when the OS is down. Private switch only.

If Server 1 fails, Server 2 starts the DM from its standby copy and monitoring continues.
The cabinet mounts on the wall of an electrical or mechanical room; no rack is needed.

Normal operation

Server 1 is the primary. It runs the DM and handles all monitoring. Users and networked equipment reach it over your network through Interface 0.

Replication

The DM virtual machine is continuously replicated to Server 2 over Interface 1 and the cabinet switch. This traffic stays off your network.

If the primary fails

The standby copy on Server 2 is brought online and monitoring continues. Server 2 has its own connection to your network.

Equipment stays on its own network. Site equipment connects to the cabinet switch on a private network, kept off the customer network. Each server's IPMI port is on the same private switch for remote console, power control and hardware health.

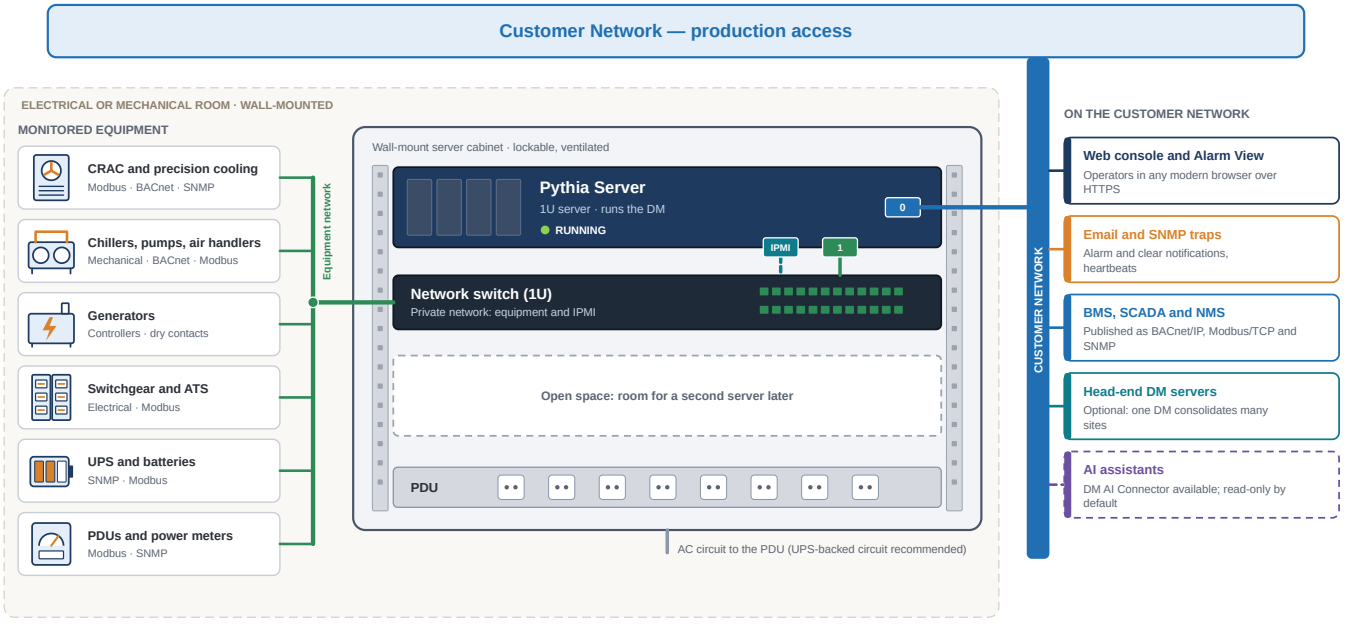
WALL MOUNT · SINGLE SERVER

One server, a switch, and room to grow.

A single DM server monitors the room's equipment. The server, switch and PDU use 3U, which leaves 1U open in the cabinet for a second server later.

Wall-Mount DM Server Cabinet — Single Server

One Pythia DM server and a switch in a locking wall-mount cabinet, in the room with the equipment it monitors



Interface 0 — customer network
The server's connection to the customer network, used by the console, notifications and BMS/NMS publishing.

Equipment network — private
Site equipment connects to Interface 1 through the cabinet switch, on its own network kept off the customer network.

IPMI — out-of-band management
Remote console, power on/off/reset and hardware health, even when the OS is down. Private switch only.

One DM server monitors the room's equipment; 1U stays open for a second server later.
The cabinet mounts on the wall of an electrical or mechanical room; no rack is needed.

INSTALLING THE CABINET

1
Mount
The cabinet goes on the wall of the equipment room, on 16 in. stud spacing, with cable ports top and bottom.

2
Prepare
Pythia sets up the DM for the site's equipment, alarms and notifications before the changeover.

3
Connect
The equipment network connects to the cabinet switch, and the server's Interface 0 to the customer network.

4
Commission
Each piece of equipment is brought online in the DM, with its alarms, notifications and trends checked.

OPTION 3 · SMART PANEL

A complete DM in a wall-mount panel.

The Smart Panel DM is not a gateway that reports to a server. It is a DM, running the same software, built into a wall-mount panel with its own inputs. Smaller sites, remote sites and rooms without a rack take a panel.

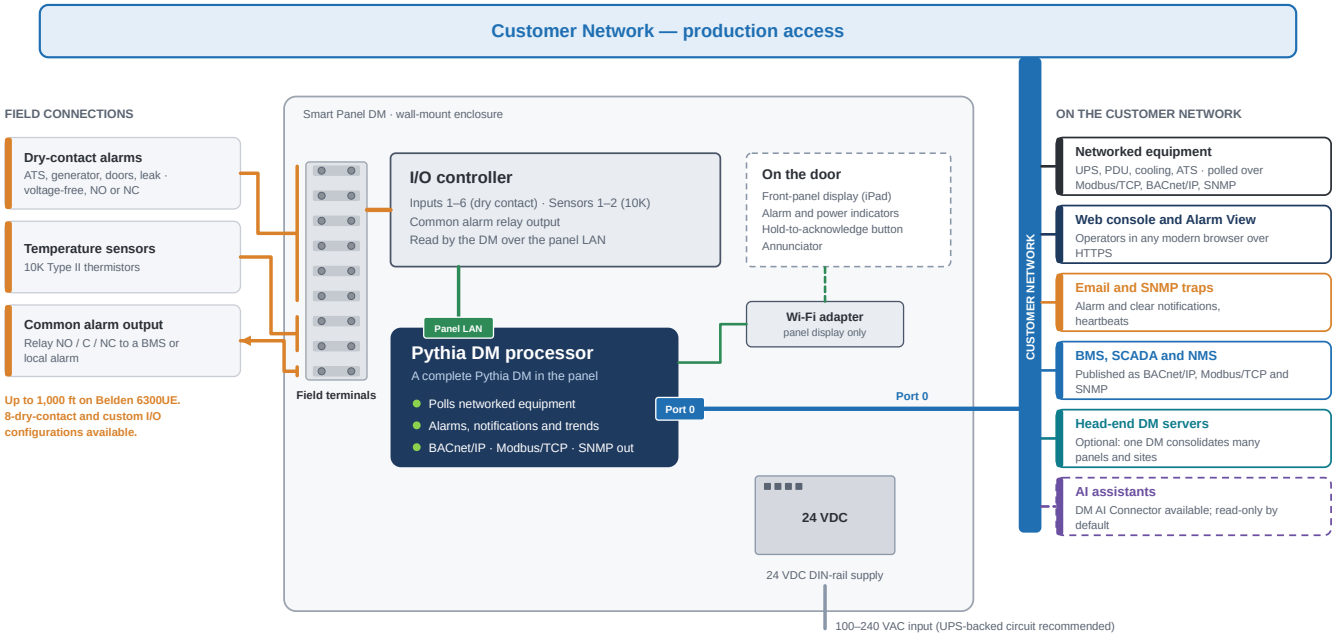


- Polls networked equipment over Modbus/TCP, BACnet/IP and SNMP, and older serial equipment on the wiring already in place
- Eight onboard inputs, each a dry contact or a 10K thermistor, plus a common alarm relay output
- Integrated front-panel display (SPDM) or none (SPDM-ND); both are functionally identical
- One network connection, Port 0, to the customer network
- SPDM-CELL adds a cellular router and outdoor antenna; SPDM-STAR adds Starlink
- A single DM, licensed on its own; for a standby copy, choose a server pair

For Liebert equipment on IGM wiring, the Smart Panel IGM (SPIGM) replaces a SiteLink on the existing RS-422 pairs.

Smart Panel DM (SPDM) — Connections

A complete Pythia DM in a wall-mount panel: it polls networked equipment and watches its own field inputs



Port 0 — customer network
The panel's one connection to the customer network. The DM polls equipment and serves the console, notifications and BMS/NMS maps.

Panel LAN — inside the panel
Links the DM processor to its I/O controller, and to the front-panel display through the Wi-Fi adapter. Factory wired by Pythia.

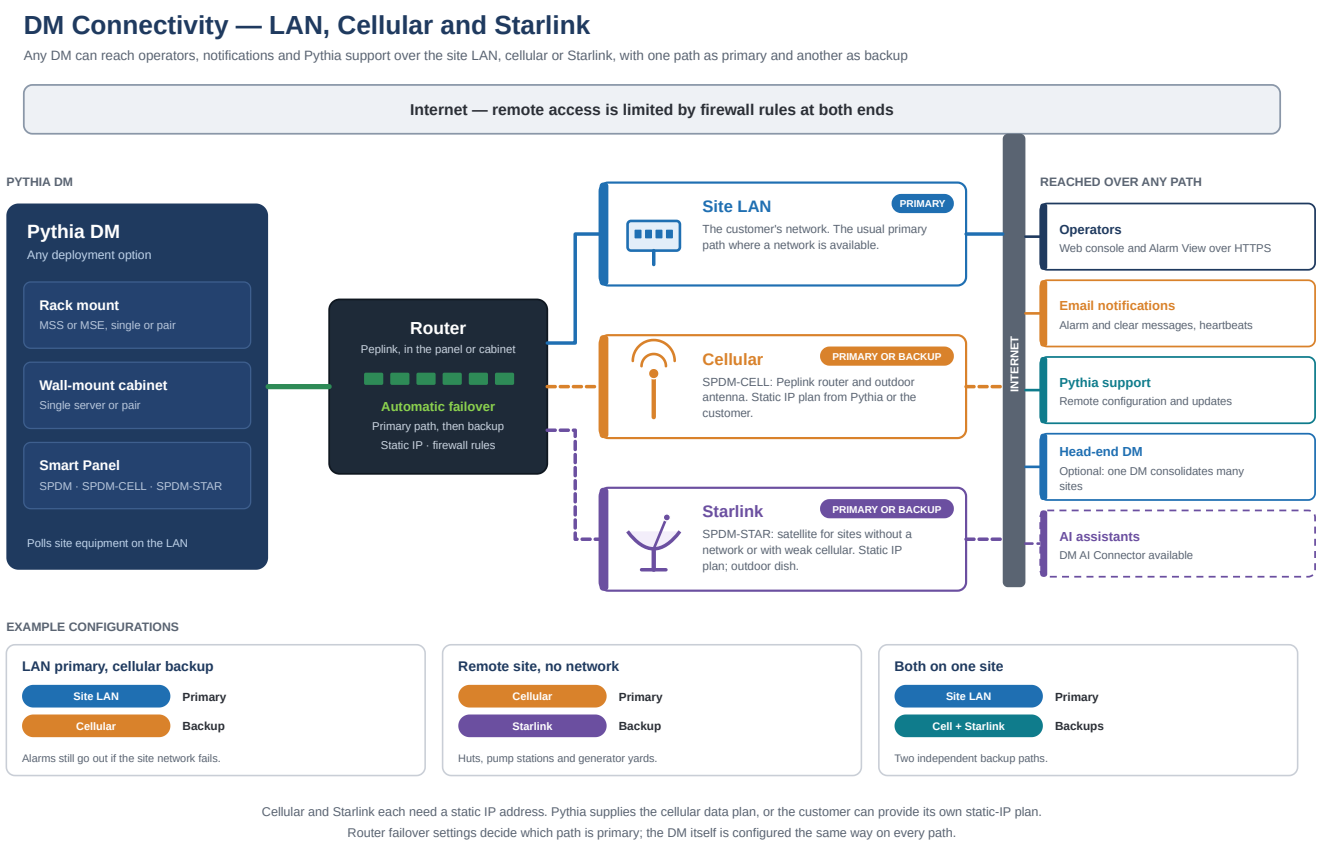
Field wiring — contacts and sensors
Voltage-free dry contacts (NO or NC) and 10K Type II sensors land on labeled terminals. A common alarm relay is available as an output.

One panel monitors the site's networked equipment plus its own field inputs, with nothing installed on operators' PCs.
The same DM software runs on Pythia DM servers; a head-end DM can consolidate many panels.

CONNECTIVITY

Site LAN, cellular or Starlink, with a backup path.

Any DM, on a server, in the wall cabinet or in a Smart Panel, can reach operators, notifications and Pythia support over the site LAN, cellular or Starlink. One path is primary and another takes over if it fails, so alarms still go out when a network goes down.



SITE LAN

The customer's network

The usual primary path. Remote access is limited to each side's static IP addresses by firewall and router rules at both ends.

SPDM-CELL

Cellular

A Peplink router with an outdoor omnidirectional antenna. Pythia supplies the data plan, or the customer provides its own plan with a static IP.

SPDM-STAR

Starlink

Satellite service where there is no cellular coverage, with an outdoor dish. Requires a plan with a static IP. In service at a customer site today.

Primary or backup, your choice. Run on the site LAN with cellular or Starlink as backup, or run a remote site on cellular with Starlink as backup. Cellular and Starlink backup paths are available for rack-mount and wall-mount servers as well as the Smart Panel.

SPECIFICATIONS

Servers, cabinet, panel and connectivity.

	MSS — DM Standard MSS-DM · redundant kit MSS-DM-RK	MSE — DM Enterprise MSE-DM · redundant kit MSE-DM-RK
Built for	A single site or a modest fleet	Larger fleets, and sites that require redundancy
Form factor	1U short-depth rack mount	1U rack mount, front access
Dimensions	17.2 in. W × 1.7 in. H × 14.5 in. D	17.2 in. W × 1.7 in. H × 16.9 in. D
Cabling	All connections on the rear	All connections on the front
Power	Single power supply	Dual redundant, hot-swap power supplies
Storage	Single data drive	Dual mirrored data drives plus a separate boot drive
Network	Dual 1 GbE, plus dedicated IPMI port	Dual 10 GbE, plus dedicated IPMI port
Polling	Standard parallelism	Around double the parallelism of Standard
Capacity	Comfortable to around half the Enterprise ceiling	Roughly twice the monitored units of Standard
Trend history	Limited by database size	Unlimited, retained at full resolution
Redundant pair	Two servers and a switch, with replication. Fits the wall cabinet	Two servers and a switch, with replication. Fits the wall cabinet

WALL-MOUNT CABINET	
Model	Rocstor SolidRack 4U low-profile, vertical-mount wall cabinet (Y10E069-B1)
Rack space	4U, EIA 19 in., equipment up to 20 in. deep, plus a slide-out 2U bracket for patch panels up to 2.5 in. deep
Size and load	28.8 in. high × 25.6 in. wide; extends 8 in. from the wall. 150 lb static load capacity
Construction	Heavy-duty steel, black powder coat, vented. Locking top panel and reversible locking front door
In the cabinet	DM server(s), 1U switch and 1U PDU. One AC circuit; a UPS-backed circuit is recommended
SMART PANEL AND CONNECTIVITY	
Smart Panel	SPDM (with display) · SPDM-ND (no display). Eight inputs, dry contact or 10K thermistor; common alarm relay; 100–240 VAC
Cellular	SPDM-CELL: Peplink router, outdoor omnidirectional antenna (2G–5G). Pythia data plan, or the customer's static-IP plan
Starlink	SPDM-STAR: Starlink with an outdoor dish; plan with a static IP required
Backup paths	Cellular or Starlink as primary or backup for any deployment; router failover selects the active path

Specifications describe each server's capability class; components may be substituted with parts of equal or greater capability. Server hardware carries the manufacturer's own warranty. Cabinet specifications are the manufacturer's. Wall-mount installations are quoted per site.

Rack, wall or panel.

Tell us about the site, where the DM will live and how it connects, and we'll recommend the platform and configuration. Contact us for a demo or pricing.

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