METZ CONNECT

We realize ideas

Patch Management System – For Automated Infrastructure Management

P | Cabling

Crucial Point Network Infrastructure
Keep sight of your network infrastructure!

Growing network infrastructures

- Increasing number of devices and applications with network connection
- Company growth is reflected in rapidly growing communication environments
- Consolidation of data centers
- Dependency from the physical network infrastructure
- Missing information about resources

Transparency, clarity and traceability

- Lack of clarity
- Lack of timeliness and information
- Complex current manual documentation
- Documentation spread over different sheets, files or data bases
- Missing information about resource utilization, for example free or occupied ports

Security

- Networks need a high availability and system stability
- Downtimes are often caused by the physical infrastructure
- Undesired or planned patchings cannot be detected and documented

Cost

- Increased expenditure, growing operating cost by operative work (management, monitoring, documentation, planning, fault diagnostic and troubleshooting)
- Administrative effort
- Increased investment in new resources

Applicable Standards
Requirements and recommendations according to DIN EN 50174-1

A management system has to be specified for an effective operation, maintenance and repair of the cabling infrastructure. All information created for or by the management system have to be dated. Inspections of the changes have to be made and records have to be kept for a defined minimum of time.

Minimum requirements for the management system are specified by degrees of complexity in operation based on the kind of building and the number of managed connections.

DEGREE OF COMPLEXITY IN OPERATION

Number of managed connections	2 to 100	101 to 5000	> 5000
Office buildings	Degree 1	Degree 2	Degree 3
Buildings for industrial use	Degree 1	Degree 2	Degree 3
Data centers	Degree 2	Degree 3	Degree 3
Home	Degree 1	Degree 1	Degree 1
Residential complex	Degree 1	Degree 2	Degree 3

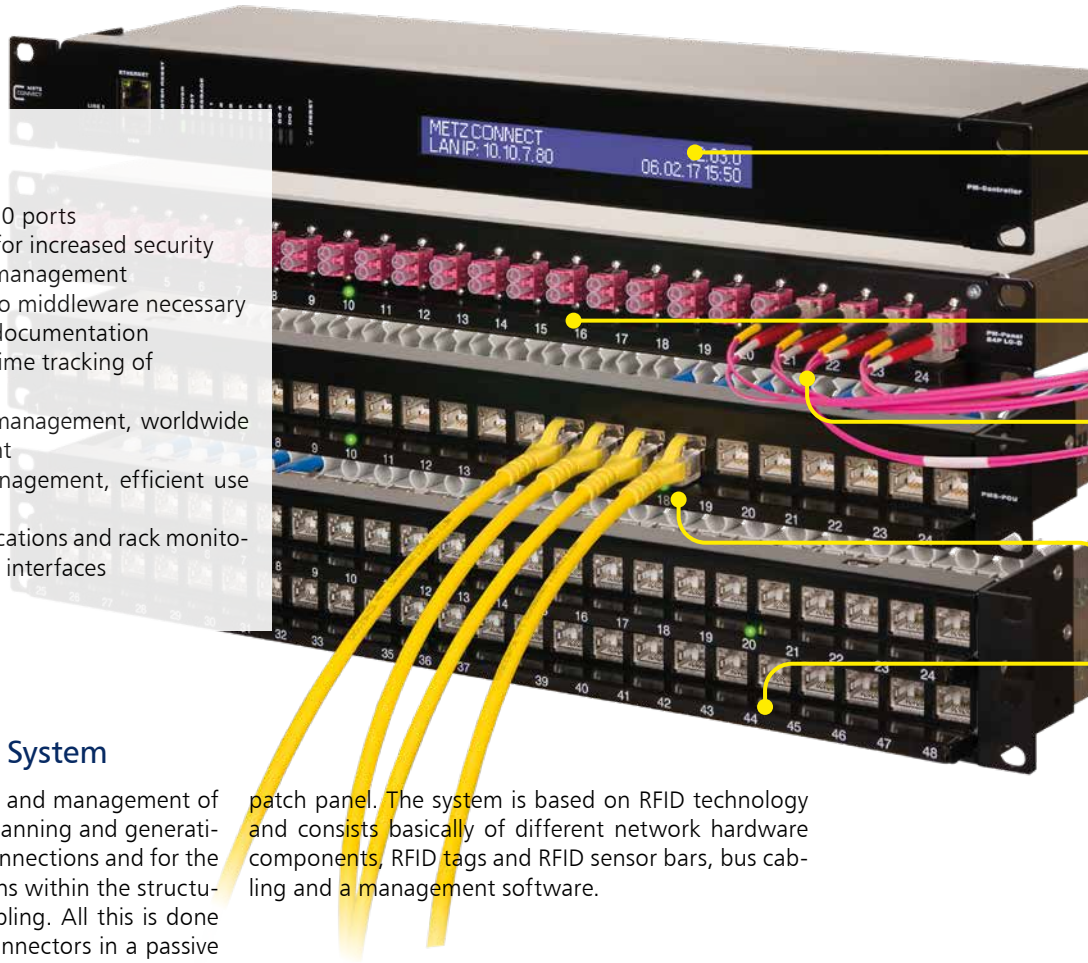
MINIMUM REQUIREMENTS TO A MANAGEMENT SYSTEM IN OPERATION

Complexity level	1	2	3	Extended
Rankings	None	Manual	Electronically	Automatically
Locatable devices	None	None	None	Automatically

Note: Automated records include all data of Automated Infrastructure Management systems (AIM systems) that identify connection/disconnection of cords and/or the presence of traceable devices in the network.

The METZ CONNECT Patch Management System

The solution for growing network infrastructures and increasing complexity



Main features

- Controller for up to 1920 ports
- Intelligent patch cords for increased security
- Platform independent management
- Integrated data base, no middleware necessary
- Precise and consistent documentation
- Real-time monitoring, time tracking of network changes
- Location independent management, worldwide access and management
- Asset and capacity management, efficient use of resources
- Extended security applications and rack monitoring by integrated I/O interfaces

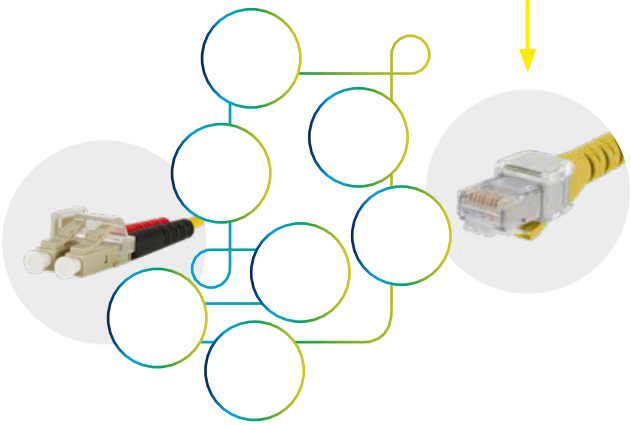
The Patch Management System

is used for automatic monitoring and management of the network infrastructure, for planning and generation of work orders for network connections and for the documentation of the connections within the structured building and data center cabling. All this is done by an active registration of all connectors in a passive patch panel. The system is based on RFID technology and consists basically of different network hardware components, RFID tags and RFID sensor bars, bus cabling and a management software.

Why Patch Management System?

- Automated documentation, monitoring and precise planning of the network infrastructure
- Increases reliability, availability, security, resource optimization, cost savings and helps to reduce downtimes
- Tool to reduce the workload of network administrators and to support them
- Simplification and optimization of operation
  - Performance optimization
  - Reduction of operating costs

Hardware
Description of the components



PM Controller

The PM Controller serves as central communication interface. It has an integrated data base, a web based configuration tool and serves as gateway between Sensor Bar and Management Software. The PM Controller is designed to connect up to 80 PM Sensor Bars as well as to integrate different applications via I/O interfaces.

Rack monitoring for integrated I/O interfaces

PM Panels

The PM Panels RJ45 24 port, 48 port and 24 port LC duplex are basically the module frame for the modular connectors. The PM Sensor Bar at the PM Panel - either integrated or added later - allows to verify the individual ports and their connections with the PM Patch Cords and to record their data. So, the PM Panel is able to monitor the status of the ports, to identify changes, to signal them actively via integrated LEDs and to transfer the data to the PM Controller.

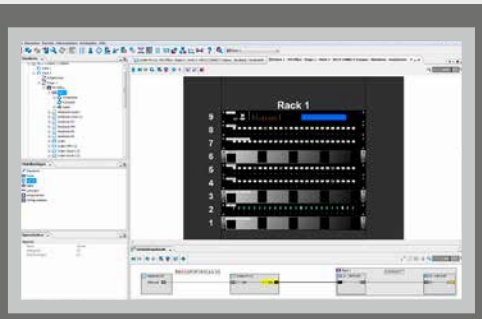
PM Sensor Bar

The PM Sensor Bar can be added to already installed PM Panels without Sensor Bar to monitor ports and patch cords, to detect changes, to actively signal status, changes and work orders via integrated LEDs. The connection data are recorded and sent to the Patch Management Software via Patch Management Controller.

PM Patch Cord

The PM Patch Cords with integrated RFID tag enable permanent, contactless monitoring of all ports in an "intelligent" PM Panel with RJ45 or LC-D connectors. The connectors are equipped with a RFID tag mounted on a carrier for clear identification. The most important data are written to this tag at the manufacturer. This data are actively recorded and transmitted by the PM Sensor Bars at the PM Panels.

Software and Functions
Description of the software and its functions



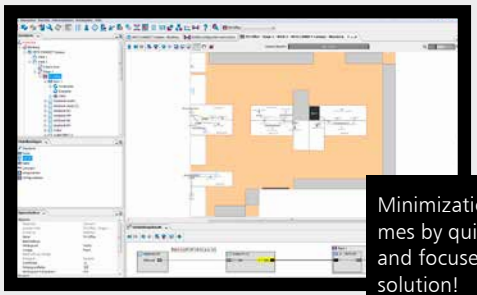
PM Software

The PM Software allows easy modeling of the network landscape, management of copper and fiber optic infrastructures, generation and sending of work orders, automatic monitoring of the individual ports and a security management.

Extended by manual documentation of the remaining infrastructure- and much more!

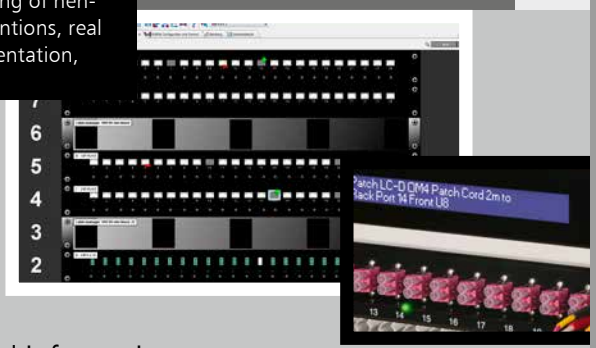
Track, name and continue connections

Connections are easy to visualize and to track by single one click. Always knowing which way to go!



Minimization of dowtimes by quick error search and focused problem solution!

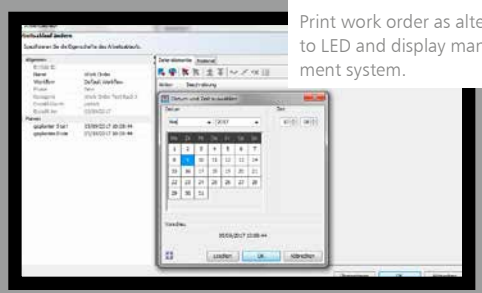
Time recording of nenwork interventions, real time documentation, alerts.



Precise and consistent documentation, no different system due to a change inpersonnel!

Add tasks, combine and collect tasks.

Print work order as alternative to LED and display management system.



Displayed information

The tasks entered to the work order to make new connections between patch panels, to remove existing patch cords or changes of ports are displayed in the software by symbols that are removed when the task has been accomplished.

The tasks – add, remove or change connections – entered to a work order are also signaled at the hardware so that the automated interaction between software and hardware makes sense. The task is shown in the display and at the PM Sensor Bar the,LEDs of the respective ports are flashing.

Unauthorized connections are signaled at the hardware by flashing LEDs and in the software as flashing, yellow framed ports.

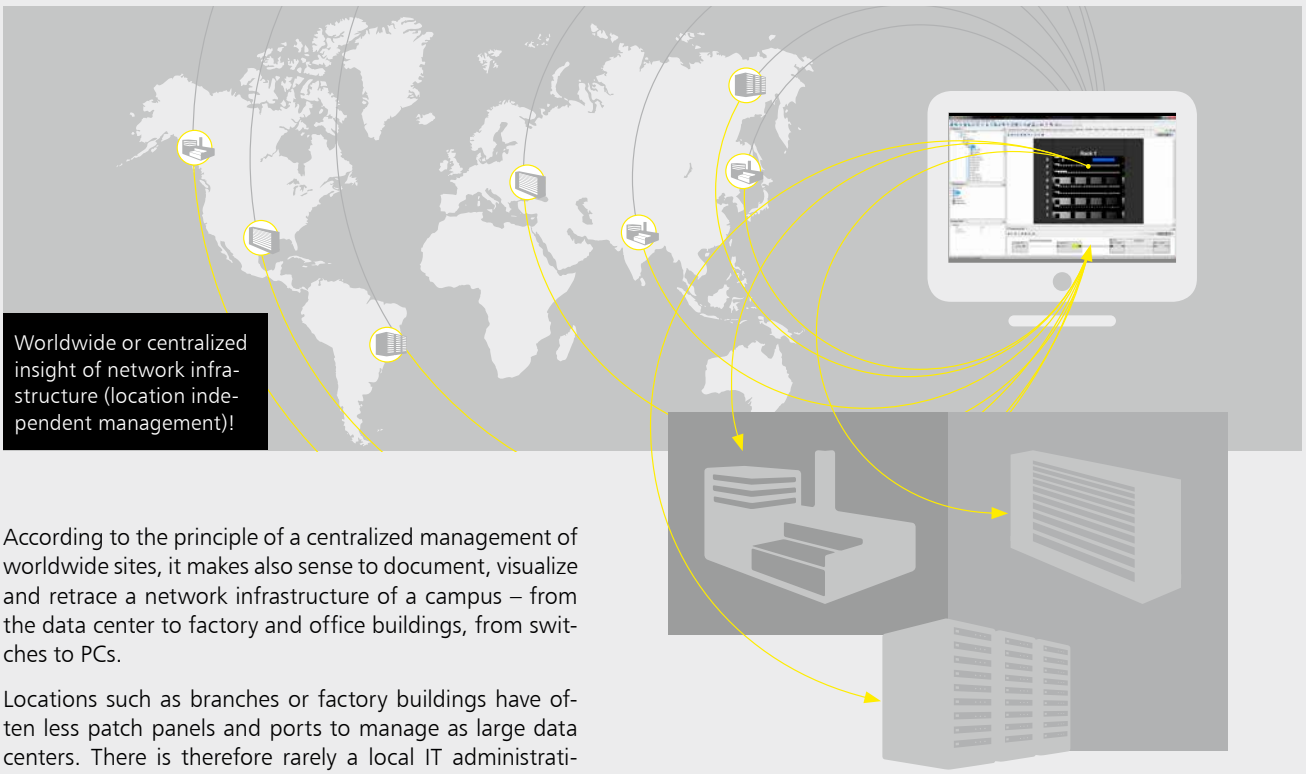
Work order

A work order is created in the software to make sure that the correct ports are connected at each site in the respective distribution cabinet. This means that the order gets a name, a date and a time slot when this work order has to be executed and then the respective ports are connected to each other in the software. The „time management" of the work order provides the advantage that the tasks can only be implemented on the defined date and time slot.

Fields Of Application
Examples for possibilities and applications

The Patch Management System can be used in nearly all areas. Whether it is for worldwide sites of a company or a large number of branches that need a centralized management from one site or for example in public transport at different stations. The conclusion is that the Patch Management System is not limited to a data center. It can also be used in many small distribution cabinets at different sites needing a management that should be preferably situated at a central location.

Multisite, worldwide, location independent management means that software access is possible from any defined location to manage the network infrastructure. This is an advantage for a complete company campus, for distribute buildings and company sites all around the world.



Worldwide or centralized insight of network infrastructure (location independent management)!

According to the principle of a centralized management of worldwide sites, it makes also sense to document, visualize and retrace a network infrastructure of a campus – from the data center to factory and office buildings, from switches to PCs.

Locations such as branches or factory buildings have often less patch panels and ports to manage as large data centers. There is therefore rarely a local IT administration. But such ports have to be monitored, managed and some times reconnected, too. In such a situation it would be helpful to see into the respective building and patch connections from a central IT location. It would be possible to send for example „patch orders“ to these distribution cabinets and a local employee could then precisely execute these orders. Unauthorized connections or disconnection of existing connections on the other hand would be identified and immediately signaled to the responsible persons.

Data center

Don’t lose track of your network infrastructure!

In the beginning, most networks are clearly structured but an infrastructure is a living system, work places change, new devices are added.

	PRODUCT NAME	VARIANTS	P/N
	PM software	On Premise Software (software installed on an internal server) Software as a Service (SaaS, software at an external storage)	
	PM controller	PM controller with display 19 inch 1RU	13PC1B-E
	Patch management patch panel 24 Port RJ45	PM panel 24P RJ45 S 1RU - with sensor bar	13PP11B-E
		PM panel 24P RJ45 1RU - without sensor bar	13PP10B-E
	Patch management patch panel 48 Port RJ45	PM panel 48 Port RJ45 S 1.5RU - with sensor bar	13PP21B-E
		PM panel 48 Port RJ45 1.5RU - without sensor bar	13PP20B-E
		Suitable connectors: C6$_A$modul, E-DAT modul and UAE modul	
	Patch management patch panel 24 Port LC-D	PM panel 24P LC-D OM3 S 1RU - with sensor bar	13PP1173B-E
		PM panel 24P LC-D OM4 S 1RU - with sensor bar	13PP1175B-E
		PM panel 24P LC-D OM3 1RU - without sensor bar	13PP1073B-E
		PM panel 24P LC-D OM4 1RU - without sensor bar	13PP1075B-E
	Patch management sensor bar to retrofit PM panels RJ45	PM sensor bar RJ45 24P 1RU	13PS1B-E
		PM sensor bar 48P 1.5RU	13PS2B-E
	Patch management sensor bar to retrofit PM panels LC-D	PM sensor bar LC-D OM3 1RU fix	13PS1173B-E
		PM sensor bar LC-D OM4 1RU fix	13PS1175B-E
	Patch management patch cord RJ45	PM PCC patch cord Cat.6$_A$	13P846xxyy-E
		PM PIC patch cord Cat.6$_A$	
		xx = length yy = color CC = for cross-connect connections (patch panel to patch panel) IC = for inter-connect connections (switch to patch panel)	
	Patch management patch cord LC-D	PM PCC patch cord OM3 LC-D	13PJ1JOJOxx-E
		PM PIC patch cord OM3 LC-D	13PJ1JOJOxx1E
		PM PCC patch cord OM4 LC-D	13PS1JOJOxx-E
		PM PIC patch cord OM4 LC-D	13PS1JOJOxx1E
		xx = length yy = color CC = for cross-connect connections (patch panel to patch panel) IC = for inter-connect connections (switch to patch panel)	

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