CASE STUDY
HARTING

macmon
nac smartly simple

HARTING´S Local Networks now monitored by macmon, the NAC Solution

After implementing the macmon automatic Network Access Control system, the world´s leading manufacturer of industrial coupling devices has gained full overview over nearly 3000 end-user devices. The access control system monitors five network segments at its Espelkamp headquarters as well as five networks abroad. Special attention is devoted to the numerous mobile systems, whose movements within the company premises could up to now only be monitored imprecisely. Now, however, the administrator is able to determine any device´s status and current location up to the minute, as well as whether a device is authorised to access the network, or not. Illegally introduced devices are automatically locked out by blocking the corresponding access port.

Protection of networks in the manufacturing area to avoid production loss due to network failure

HARTING´s initial situation was typical for many enterprises. Without proper Network Access Control, the corporate administrative and production areas risked being paralyzed at any moment by omnipresent attacks on a local network. Apart from internal service staff that may connect a device for maintenance purposes to the HARTING network from anywhere within the corporate premises, external contractors, technicians and support staff may require access to production network segments for their notebooks. "Such alien devices, unexpectedly introduced to a production network, pose a constant threat to servers often running under vintage OS versions for which there are no current security patches available" is how Jens Wandelt, system administrator with the HARTING technology group in Espelkamp describes a significant security threat to this type of local network. For some time he had therefore been on the lookout for a system, "that allows a simple protection of networks from within" when he came across an article on macmon in an IT magazine. Due to the heterogeneous network infrastructure at HARTING, proprietary NAC systems could not be considered. Even making use of the IEEE 802.1X standard was no option, since not all deployed devices supported it, besides its being very complex to administrate. "By identifying devices through their MAC-address, macmon presented itself to him as a universally adaptable, uncomplicated solution" Wandelt remembers. After having contacted mikado, macmon´s developer, the rest is quickly told. It took only half a year from the initial product presentation to macmon´s productive operation in the HARTING network.

HARTING headquarters at Espelkamp

Surprisingly simple implementation

At the Espelkamp headquarters, macmon was installed on a central Windows Server, with Microsoft SQL Server as database. Wandelt fondly remembers the implementation and startup phases. "With the presence of a mikado specialist we were able to carry out installation and training in a single day."

The initial challenge was to include around 60 switches with over 1200 attached devices distributed across five buildings into the monitoring scheme. The devices comprised PCs, iPhones, scanners and printers as well as assembly line robots and NC devices. For this initial implementation, data on the various switch models was directly imported from an Excel file supplied with macmon. Much of the data required to populate the reference list could be extracted from files available with the macmon installation pack.

Jens Wandelt,
System Administrator

"macmon is a quickly implemented, efficient and easily manageable tool . We employ it at our Espelkamp head office and in our subsidiaries at over 30 sites worldwide."

Wandelt furthermore states about this initial phase: "During the initial phase, macmon was able to detect a number of unknown devices in the network that had not been documented in asset lists. Once locations and device names were available, this information could be entered into the NAC system". The association of industrial machinery present in the network to device types was somewhat more elaborate, since no DNS names were prespecified. On-site inspection of these devices was required to uniquely identify them. "The initial set-up phase was concluded after two weeks, and since then the system has been operating reliably, causing little administrative or support effort". A subsequent replacement of Cisco and 3Com network components by HP equipment was also easily accomplished.

HARTING assembly line

- Simple installation and configuration, little administrative effort, easily integrated, easy scalability
- Manufacturer-independent regarding IT infrastructure components and end devices
- Modularly expandable to suit security requirements - be it authentication by MAC addresses, a certificate-based solution along IEEE 802.1X or implementation of security concepts of the Trusted Computing Group
- Supports standards such as 802.1X, SNMP, IF-MAP
- Localises and monitors non-802.1X-capable devices (printers, Thin Clients, IP-Telephones)
- Has interfaces to other security systems (Antivirus-Systems, e.g. McAfee, Kaspersky, Sophos or IDS/IPS)
- Also manages network access for Mobile Devices (WLAN-Support)
- Optimization of resources
- Reduction of administrative effort
- Proven Return-On-Investment

Automation is Welcome

Switches, known to macmon by their DNS names, are scanned by macmon at two minute intervals. Upon detecting an unauthorised MAC address at any switch port, macmon will automatically block the port and sent a notifying E-Mail to the help desk system. The port will automatically become unblocked after 15 minutes, and become reblocked, should the unwanted intruder still be present. "Nobody has to intervene", Wandelt describes the advantage of this event management. He sees an additional advantage of macmon in the fact "that it is a passive system". No other application would be adversely affected, should the monitoring system itself fail for any reason. "Other NAC concepts, e.g. those based on 802.1X, risk endangering the whole network as a consequence of an authentication system - e.g. Radius server - failing, since no device can thereafter be attached anymore".

New devices to be introduced into the network are authenticated by the IT department´s Desktop-Service simply by attaching the device to a locally configured Learning-Port. No further activity by an admin is required. Alternatively, the new device´s parameters may be manually input into the reference list. macmon can also handle once-on location data, thereafter detecting any relocation and prompting the admin to update location-relevant documentation.

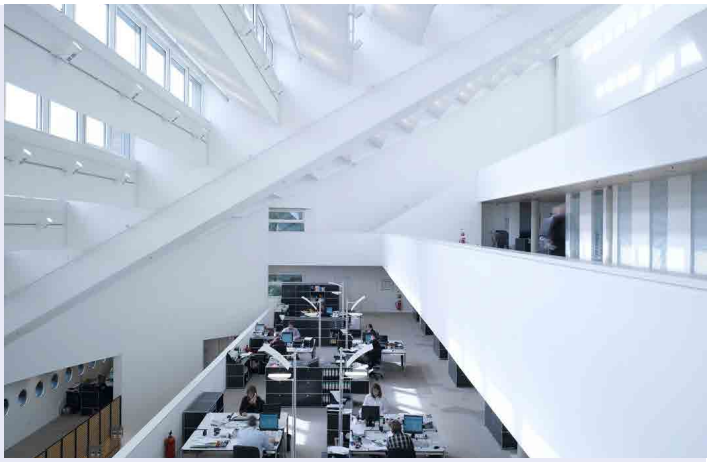
macmon International Deployment

Following the successful introduction of macmon at the Espelkamp headquarters, the rollout to subsidiaries began. The HARTING technology group´s international network spans over 30 sites, with network segments interconnected via VPN. Local networks in five subsidiaries are already being protected by the NAC-Appliance at the Espelkamp office. Learn-Ports are available there to introduce new devices. If desired, new devices abroad may also be authenticated by the IT-dept. in Espelkamp. The number of devices already monitored by the central server tops 3000.

User satisfaction is significant. According to Wandelt, "macmon is an efficient and mostly hands-off tool that can be rapidly deployed". Its hassle-free operation in subsidiaries abroad only confirms this impression anew.

Outlook

Due to access rights reasons, macmon is installed centrally, with an instance for each subsidiary. "With the upcoming multi-client capability, however, macmon needs to be installed only once", is how Wandelt perceives the simplification which the new feature will bestow upon site-spanning administration.



HARTING sales dept.

The HARTING Technology group

The HARTING Technology group, competent in the areas of coupling, transmitting and networking electrical, electronic and optical signals, has specialized in developing custom solutions to couple and relay electrical energy and electronic data. Areas of activity are NC machines, railway technology, wind energy systems, and telephony.

HARTING also manufactures electromagnetic components for the automotive industry and specializes in developing housings, cabling systems and automated salessystems. HARTING staff is over 3200 worlwide. Turnover for the business year 2007/08 (as per 30.09.2008) was 385 million Euro.

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