

McAfee Embedded Security

Prevent Unauthorized Changes to your Embedded Devices

“We identified uncontrolled change as the primary cause of POS unavailability issues and maintenance costs for our POS devices. McAfee Embedded Security on our POS systems gives us complete control and certainty over what changes on each device. The added control enables us to drastically reduce our support costs by preventing all out-of-policy changes and eliminating emergency patching procedures.”


—Hiroshi Komura
General Manager
i-Appliance division, NEC Infrontia

Business Challenges in the Embedded Industry

Embedded devices and appliances are widely deployed in critical infrastructure today. These include point of sale terminals, self-checkout devices, kiosks, handheld devices in retail stores, point of care medical modalities (XRay, Ultrasound, CT-Scan, MRI devices in hospitals), ATMs in banks, thin clients in enterprises, critical infrastructure for process control systems or SCADA devices, industrial plant controllers, and storage appliances.

For decades, embedded devices consisted of specialized hardware running proprietary software. In recent times, there has been a shift towards standardization catalyzed by standards organizations, such as UPOS in retail. Standardization has enabled devices to become increasingly interconnected and use off-the-shelf software on commoditized hardware running commercial or open operating systems.

This has benefited the device manufacturers, the channel and the end customers, allowing each of these groups to focus on their core business. It has enabled flexibility in software selection, faster time to market, and mid-cycle adoption of new technologies.

Past	Today
Proprietary OS	Windows OS 
Isolated Network	Internet Connected
High Dev Cost	Low Dev Cost
Low Support Cost	Higher Support Cost
Patching Rare	Patching Common
Unique Security Risk	Increased Security Risk

Embedded Systems are Changing

“Physicians rely on CADstream every day for their breast MRI studies, and we recognize that our customers cannot afford to have unauthorized changes compromise system integrity and availability. Integrating McAfee Embedded Security into CADstream will improve CADstream security, availability and support.”

—Paul Budak Vice President of Research and Development Confirma

The same standardization and flexibility has a downside. Similar to a standard PC, these embedded devices become susceptible to security risks, constant patching and the frequent updates required by anti-virus solutions. They also become more vulnerable to more unauthorized changes causing in field breakage. This can lead to non-compliant devices as they get serviced in the field. Often, the device manufacturers and the service channel do not have control over what software is installed, by whom, when and what is currently running, as these devices get built and deployed. This **increases the total cost of ownership** of a device during its lifecycle. As a result it is increasingly hard to make the claim that—*an embedded device will continue to work in the field, as shipped.*

Enhance Device Control with McAfee

McAfee Embedded Security prevents unauthorized changes. It enables the device manufacturers and the service channel to Build → Deploy → Control.

"[McAfee] will lock down a system (also known as system hardening) based on a known good application configuration so that no other application can execute. Some providers also include the base OS in the hardening process. This style works well for embedded systems, fixed-function servers, and kiosks."

—Neil MacDonald Group VP and Research Director Information Security and Privacy Gartner Group

It can enforce channel-friendly software change policies on the deployed embedded devices to prevent unauthorized and out-of-policy software changes, reduce in-field breakage and keep the devices compliant. It provides enhanced security, reduces patching cycles and protects against zero day attacks.

It is a low footprint, low overhead software solution that runs transparently on the devices. It can be setup quickly on the device with low initial and ongoing operational overhead. It integrates with the device manufacturer, the service channel's and the end customer's manufacturing, provisioning, monitoring, change management and in-field maintenance processes and helps enhance control over the deployed embedded device for whoever services it in the field.

McAfee Embedded Security

McAfee Embedded Security has two key features.

Change Control

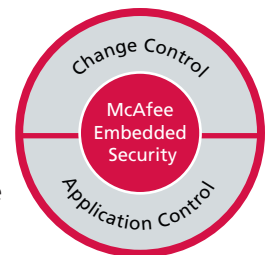
McAfee Embedded Security offers flexibility to enforce the device owner's software change control policy in two distinct workflows. First, as the device flows through its multi-stage manufacturing lifecycle as multiple channel vendors install their own software and value added services. Second, during in-production operational maintenance and support as the device owner or the multiple channel vendors issue software updates for their software/hardware.

This feature provides flexibility in the operations during a device's lifecycle. For example: McAfee can enforce that only the software certified by the device owner can be applied to the device during manufacturing and in-production and none other. Alternatively, it can also allow selective channel partners to be able to make updates to the device and log the updates made for compliance or forensics.

In addition, McAfee Embedded Security can be utilized to enforce that the control requirements are met for PCI, FDA, HIPAA, and other regulatory mandates. It ensures that the necessary tamperproof audit logs are present on the device to prove that regulatory controls are in place.

Application Control

McAfee Embedded Security helps provide protection against existing and any unknown zero day polymorphic threats via malware such as worms, viruses, Trojans and buffer-overflow threats, etc thereby ensuring that the device when in production is secure and cannot be compromised. It also helps eliminate emergency patching, reduces number and frequency of patching cycles and enables more time for testing before patching. It also reduces any security risk on difficult to patch devices that are remote and distributed in areas with little or no local support. The Application Control feature helps reduce costs of operations by reducing both planned patching and unplanned recovery downtime, thereby increasing device availability. This turns out to be an ideal solution especially for lower end devices as it reduces the support costs by reducing number of touch points needed.



“McAfee’s innovative software and IT protection is an important component of NCR Secure, our holistic approach to self-service channel protection. At NCR, we’re serious about continuing to help the industry anticipate, plan and implement best-in-class strategies that help maintain consumer trust in the ATM channel.”

—Bob Tramontano
Vice President of Self-Service
NCR—Financial Solutions Division

McAfee Embedded Security provides customers with a comprehensive solution for controlling their IT infrastructure.

Benefits to Device Manufacturers

The table below summarizes the common challenges faced by embedded device manufacturers and the benefits realized by McAfee Embedded Security customers.

Embedded Lifecycle Challenges	McAfee Benefits
<p>Increased security vulnerability due to larger attack surface</p> <p>Lack of control when and what software gets installed and run during multi-vendor lifecycle.</p> <p>High support costs</p> <ul style="list-style-type: none"> Unauthorized changes during support and maintenance procedures lead to in-field breakage Need to test and validate every patch Onsite personnel support such as centralized software distribution model does not suit at all <p>Non-compliant to FDA, HIPAA, PCI and other regulatory controls due to in-field changes.</p> <p>High overhead third party software: Third party software have high peak and average performance impact, require constant updates and administrator attention.</p>	<p>Enhanced security against known and zero day attacks.</p> <p>Channel friendly control: flexibility to enforce manufacturer and service channel software control policies.</p> <p>Reduced cost of ownership</p> <ul style="list-style-type: none"> Reduced in-field breakage and support calls, reduced number of touch points Makes it possible to avoid patching or batch patches Enables multiple models of controlled software updates <p>Out of box compliance via software change control and runtime control.</p> <p>Low impact solution: Minimal performance impact, no ongoing updates, reduced administrator overhead.</p>

Summary

McAfee Embedded Security software is the industry’s first and only solution to secure embedded devices and automate the enforcement of software change control policies on them. It reduces total cost of ownership for the embedded device manufacturer and its service channel. McAfee Embedded Security is deployed by major manufacturers of automated teller machines, point-of-sale terminals, medical devices, thin clients, storage appliances and other devices. These customers have realized significant and rapid returns on their investment by reduced ongoing in-field support and breakage incidents due to unauthorized changes.

Specifications

Platforms Supported

- Windows XP Professional
- Windows XP Embedded
- Windows Embedded for Point of Service (WEPOS)
- Windows NT4 Server, Workstation
- Windows 2000 Enterprise,
- Advanced, Professional, Standard
- Windows 2003 Enterprise,
- Advanced, Storage
- Linux ES 3.0
- Solaris 8
- Solaris 9
- Vista
- WEPOS
- Windows 2008

System Requirements

- Windows/UNIX/Solaris
- Single/Multiple Intel Pentium
- 256 MB RAM
- 25 MB free disk space
- Administrator privileges on the system

About McAfee, Inc.

McAfee, Inc., headquartered in Santa Clara, California, is the world's largest dedicated security technology company. McAfee is relentlessly committed to tackling the world's toughest security challenges. The company delivers proactive and proven solutions and services that help secure systems and networks around the world, allowing users to safely connect to the Internet, browse and shop the web more securely. Backed by an award-winning research team, McAfee creates innovative products that empower home users, businesses, the public sector and service providers by enabling them to prove compliance with regulations, protect data, prevent disruptions, identify vulnerabilities, and continuously monitor and improve their security. www.mcafee.com.

