CASE STUDY

Contec Protects Embedded Computing with Whitelisting

McAfee® Application Control blocks unauthorized code

Contec Co., Ltd.

Customer Profile
Global manufacturer of industrial and embedded computers

Industry
High technology

www.contec.com

With a corporate mission to create "technology for a better life," Contec is a leading manufacturer of industrial and embedded computers, control and measurement devices, and industrial local area network (LAN) and wireless communications equipment. The company is based in Osaka, Japan, with facilities in Japan, the US, China, Taiwan, Holland, Korea, and Singapore and employs 600 employees.

Rising to Customers' IoT Security Challenges

Contec customers are looking to deploy embedded computing solutions for Internet of Things (IoT) applications ranging from factory line control to automation for electric power and water plants. This is a highly competitive corner of the embedded computing industry, and security can be a key differentiator.

Unlike earlier generations of embedded devices that operated in closed networks, embedded computers for IoT need the ability to connect to the internet, but, by their nature, they may not be subject to established IT security policies, thus making them more vulnerable to attacks. Since embedded devices are not specifically designed to connect to cloud services, decentralized fog computers such as Contec's new BX-825 provide the link, enabling embedded devices to send and receive Big Data via the cloud.

The Case for Whitelisting

In order to give its BX-825 embedded fog computer a competitive advantage and offer customers advanced security, Contec turned to whitelisting technology.

"Whitelisting is the only viable security solution for embedded computers, whose system resources, including memory, are typically very limited," said Kenichi Kaneda, manager of sales promotion group, Contec. "Traditional antivirus solutions require the ability to store updated virus definition and pattern-matching files locally to protect against current threats, and they also use memory when scanning for malware. Whitelisting, however, works without consuming local resources by blocking unauthorized applications."

Industrial-Strength Embedded Security

For its whitelisting solution, Contec chose McAfee® Application Control, a robust security system that uses application whitelisting to block execution of unauthorized code and make embedded devices resilient to malicious zero-day malware attacks.

McAfee whitelisting technology maintains the integrity of the new Contec BX-825 computer by allowing only authorized code to run and only authorized changes to be made. It automatically creates a dynamic whitelist of the "authorized code" on the embedded system. Once the whitelist is created and enabled, the system is locked down to the known good baseline, meaning that no program or code outside the authorized set can run and unauthorized changes are blocked.

Challenges

- Meet customers' security requirements for embedded IoT deployments
- Maintain leadership in a competitive market

McAfee Solution

- McAfee Application Control

Results

- Comprehensive malware protection that preserves local memory resources
- Strengthened regulatory compliance
- An easy-to-configure and easy-to-maintain solution for end users that are not security experts

Meeting Complex Technical Requirements

After evaluating embedded security and whitelisting solutions on the market, Contec chose McAfee Application Control based on its wide deployment for IoT and embedded applications and its cost performance, along with world-class support from McAfee. Another major selling point was the solution's support of Microsoft Windows 10 IoT Enterprise, Microsoft's operating system family for embedded computers. This has enabled Contec to provide whitelisting as an integrated component of the new computer's operating system.

Using the whitelisting inventory feature, the McAfee system finds and manages application-related files. It groups binaries (EXEs, DLLs, drivers, and scripts) across a Contec customer's enterprise by application and vendor; displays them in an intuitive, hierarchical format; and intelligently classifies them as well-known, unknown, and known-bad applications. In this manner, the user can prevent attacks from unknown malware by allowing only known, good whitelisted applications to run.

"The McAfee technology is not only a very effective whitelisting solution, but it's also extremely easy to configure and maintain," said Kaneda. "This is very important for the end users of our products, who typically are not security professionals."

True Competitive Advantage

In a highly competitive market defined by features rather than price, Contec was looking to make a difference with its newest embedded computers. Advanced McAfee whitelisting capabilities deliver the competitive advantage Contec needed for this successful product launch. "Thanks to McAfee technology, Contec is the first embedded PC vendor to apply whitelisting as a standard security measure on our devices. This gives us a huge competitive advantage," said Kaneda. "McAfee is the right partner for helping us respond flexibility to the security demands of each of our vertical markets."

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—Kenichi Kaneda, Manager of Sales Promotion Group, Contec

Embedded Computer (BX-825) Specifications

Item name	BX-825
Processor	Intel Atom Processor E3845 (1.91GHz) SoC
BIOS	AMI BIOS
Memory	4GB PC3-10600 (DDR3L 1333) ECC, 1x 204-pin SO-DIMM
Processor graphics	Intel HD Graphics
LAN controller	Intel I210IT
Internal storage	32GB SDD mSATA (MLC)
Interface	
Display	1x DVI-I (29-pin DVI-I connector), 1x DisplayPort
Memory card	1x CFast slot (CFast 1.1, Type I)
LAN port	3x 1000BASE-T/100BASE-TX/10BASE-T (3x RJ-45)
USB port	2x USB 3.0 (TYPE A) 3x USB 2.0 (TYPE A)
Serial port	1x RS-232C/RS-422/RS-485 (9-pin D-SUB)
RAS port	General-purpose I/O : Photocoupler insulation 7 inputs / 8 outputs, Remote power switch 1 input, Power status 1 output (25-pin D-SUB)
RAS	
Watchdog timer	1 sec - 255 sec (software programmable)
Hardware monitoring	CPU temperature, power voltage
RTC/CMOS	The real-time clock: accurate within ±3 minutes (at 25°C) per month Lithium backup battery life: 10 years or more
Power management	Power on by Ring/Wake On LAN, Supports PC98/PC99 ACPI
Power supply	
Rated input voltage	12 ~ 24VDC
Power consumption	12VDC : 3.0A, 24VDC : 1.6A
Physical dimensions (mm)	192(W) x 119(D) x 50(H) (no protrusions)
Weight	About 1.3kg (excluding attachment fittings)

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