

WISE-Cloud IoT Software Services

Designed for IoT Solution Developers

- ✓ Cloud Services
- ✓ Sensor & Device Management
- ✓ Embedded Applications
- ✓ Embedded BIOS & OS



Cloud Services

Microsoft Azure



IoT SDK Packages



**Sensor &
Device Management**

SUSIAccess

ADVANTECH

Enabling an Intelligent Planet



Windows Embedded

McAfee Acronis

www.advantech.com/embcore

Advantech WISE-Cloud (PaaS)

With the maturation of web technology and emergence of the Internet of Things (IoT), a web interface for managing applications through cloud technology has become an essential technology. To satisfy the real needs of enterprises, Advantech proactively invests in relevant research and development. Advantech's WISE-Cloud (Wireless IoT Sensing Embedded) Platform as a Service (PaaS) is a cloud platform that provides the infrastructure for building, deploying, and managing applications and services. By adopting Advantech's WISE-Cloud, IoT solution developers can rapidly build and deploy applications, or expand cloud applications into Software-as-a Service (SaaS) applications, ensuring a faster time to market.

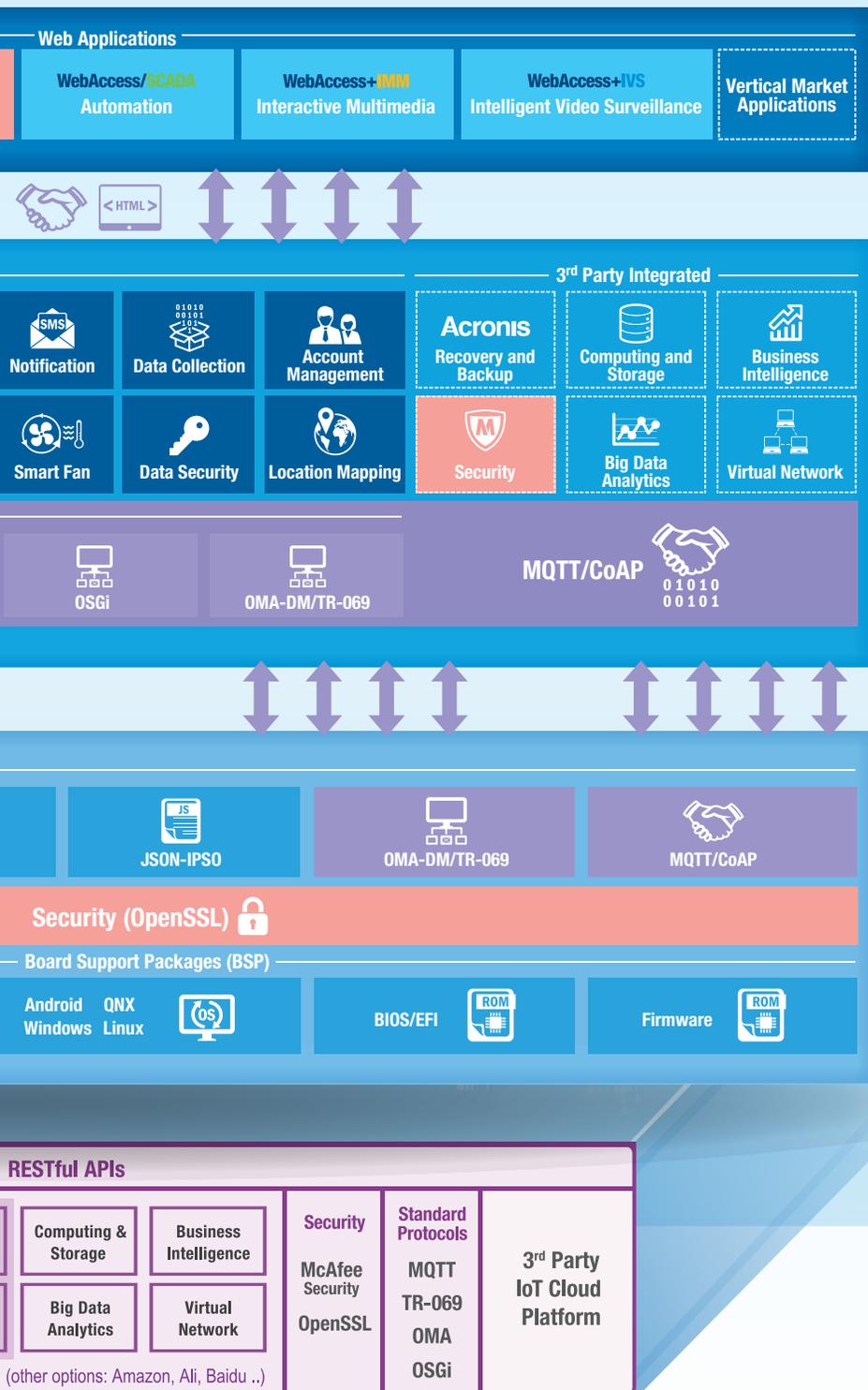
WISE-Cloud IoT



SUSIAccess as a Core Engine

SUSIAccess is the core engine that delivers software packages for developing the WISE-Cloud platform according to the demands of various IoT solutions. By ensuring interoperability among hardware/software components, systems, and platforms, SUSIAccess enables machine-to-machine communication. The three main offerings of SUSIAccess are as follows: (1) Sensor and Device Management, for connecting sensors and devices to the cloud using standard MQTT, TR-069, OMA, and OSGi protocols; (2) Cloud Services, for providing web services and adopting an open infrastructure for big data analytics; and (3) IoT SDK, for simplifying application and service development. Thus, SUSIAccess enables IoT solution developers to easily and effectively construct IoT cloud solutions.

Software Services

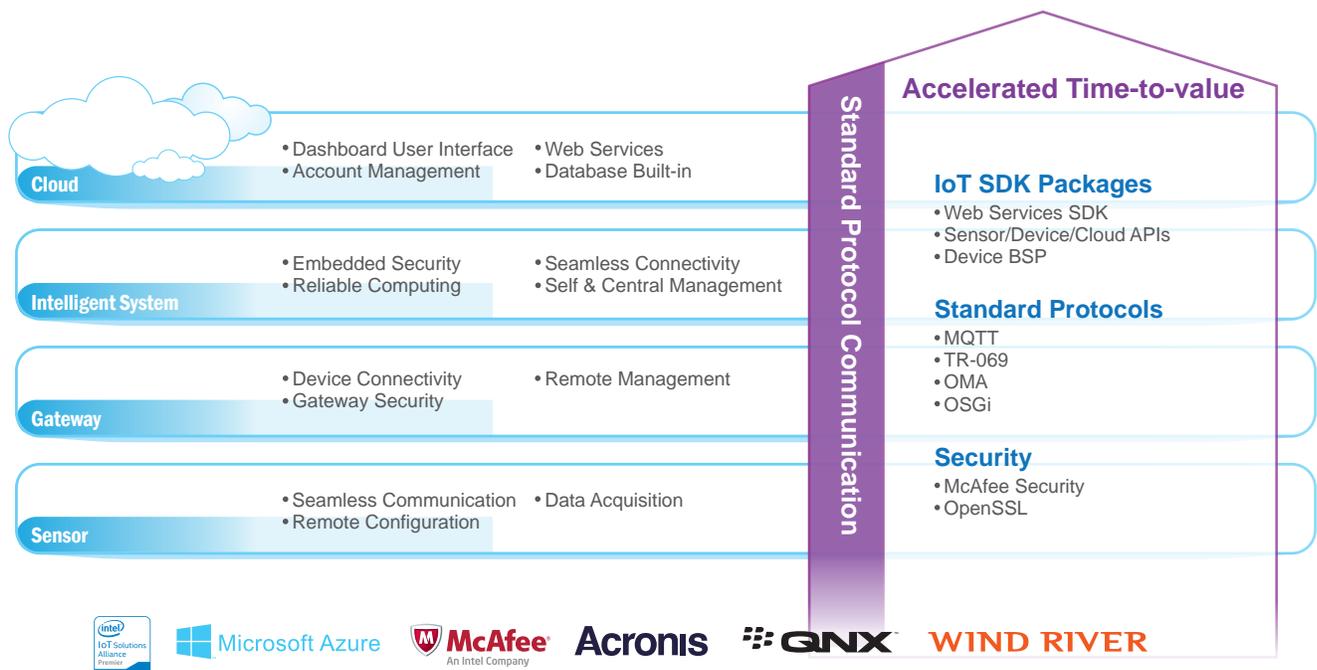


Accelerating IoT Development with Software

IoT Software Services should include the operating system, middleware, applications, software APIs, and central management system, that can be bridged across layers. Advantech provides complete IoT software services which makes it easier for embedded developers to securely connect, manage, and control from sensor, gateway, systems and cloud layers. Advantech strives to integrate partner solutions, such as Intel, Microsoft, Windriver, McAfee, Acronis and 3rd party IoT cloud platform by providing pre-integrated, pre-validated hardware and software building blocks to enable seamless and secure data flow from sensor to cloud.

Advantech provides complete IoT software packages to fulfill the different requirements of each layer, and also serves as key to bridge standard protocol communications; simplifying development, integration, and deployment.

Segment	Value-added IoT Software Services
Cloud	Makes it easier for customers to build their own cloud with device management, database integration and account management, and it provides different management levels via a web-based dashboard.
Intelligent System	Provides a remote management API that lets users monitor and control a large number of intelligent systems with centralized real-time maintenance. It also integrates System Recovery (by Acronis) and System Protection (by McAfee) to ensure complete security and reliability.
Gateway	Enables an IoT gateway to securely aggregate, share, and filter data for analysis. It helps ensure that federated data generated by devices and systems can travel securely and safely from the sensor to the cloud and back.
Sensor	Tiny sensors collect data and can be embedded anywhere. IoT software services makes it easier for remote data setting and acquisition. It also integrates different technology protocols to ensure seamless communication.



SUSIAccess: Ensuring Devices Manageability Security and Connectivity

With the rise of IoT, managing large quantities of equipment and devices through cloud technology has become a fundamental feature. In order to satisfy the real needs of applications, Advantech provides powerful, yet simple management software services in SUSIAccess, making it easier to manage your IoT devices. SUSIAccess features remote management functions and incorporates system security from McAfee and back-up recovery from Acronis to help customers centralize monitoring and management of remote embedded devices in real-time.



SUSIAccess

Enabling Intelligent & Embedded Systems

SUSIAccess/Remote Management

SUSIAccess features remote device monitoring through Intel AMT or OpenVNC to control devices with Power On/Off and Remote KVM (Keyboard, Mouse, and Monitor) in a flexible setting; so customers can easily manage devices via auto-notifications and respond quickly.

- Device Monitoring
- Remote Control
- Auto-Notification

SUSIAccess+Security

In the IoT era, more and more embedded devices are becoming connected so sophisticated security is critical. SUSIAccess Security ensures your IoT devices are protected from cyber threats and attacks, including application whitelisting and change management using built in McAfee Whitelisting technology.

- Operation Protection
- Anti-virus
- Internet Security

SUSIAccess+Recovery

Rapid Restore brings devices back to normal operation. Backup/Recovery is one of the efficient ways SUSIAccess leverages Acronis technology. The Backup/Recovery engine with remote control simplifies the scheduling mechanism for remote backup or recovery; all from a SUSIAccess centralized console.

- Remote Recovery
- Remote Backup
- Scheduled Backup

Benefits for IoT



Accelerated time-to-value

Capitalize on Advantech's investments in back-end infrastructure and pre-built connections to many popular platforms.



Robust development environment

Utilize built-in APIs to easily extend IoT Software Services



Cross-platform applicability

Leverage SUSIAccess's cross-platform interoperability to integrate with virtually any connectable endpoint.



Scalable management

Extend built-in management to create compelling business and operational intelligence and management solutions.

Embedded Applications

McAfee

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, helping manufactures ensure that their products and devices are protected from cyberthreats and attacks. McAfee solutions span a wide range of technologies to address all challenges, including application whitelisting, change management and integrity. Our solutions can be tailored to meet the specific design requirements for a manufacturer's device and its architecture. It helps accelerate time-to-market by providing a quick to deploy software solution that provides out of the box security, lockdown, software change control and compliance, the essentials of a production ready system.

Advantech offers a total solution for your Embedded Security

Level 1: McAfee Application Control

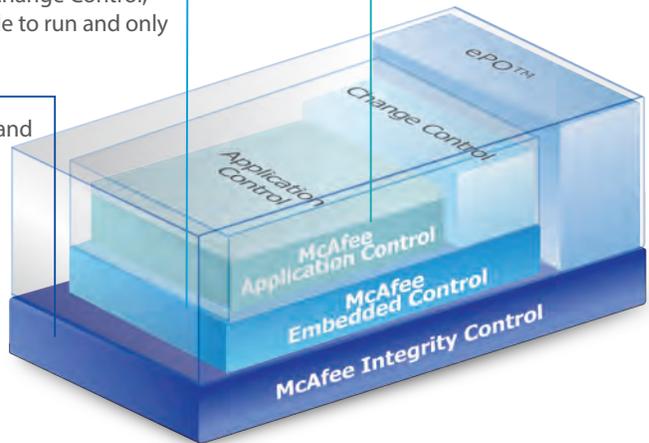
Application Control is McAfee's fundamental product to provide an effective way to block unauthorized applications and code on fixed-function devices.

Level 2: McAfee Embedded Control

McAfee Embedded Control combines Application Control and Change Control, providing advanced protection by only allowing authorized code to run and only authorized changes to be made.

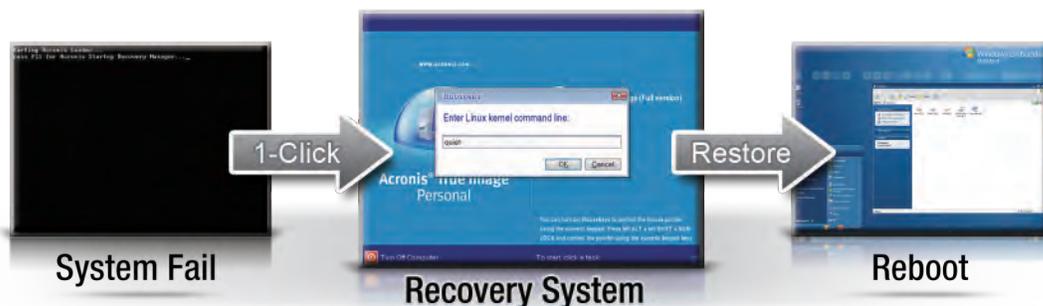
Level 3: McAfee Integrity Control

McAfee Integrity Control combines McAfee Embedded Control and the McAfee ePolicy Orchestrator® (McAfee ePO™) console—providing integrated audit and compliance reports to help satisfy multiple compliance regulations.



Acronis

Advantech Acronis solution provides a powerful data recovery utility: OEM Acronis True Image, which enhances the stability of industrial products, prevents unexpected hazards from harming important data and systems, minimizes loss, and reduces reaction time for improving the software protection capability, all of which keeps your embedded devices alive and thriving.

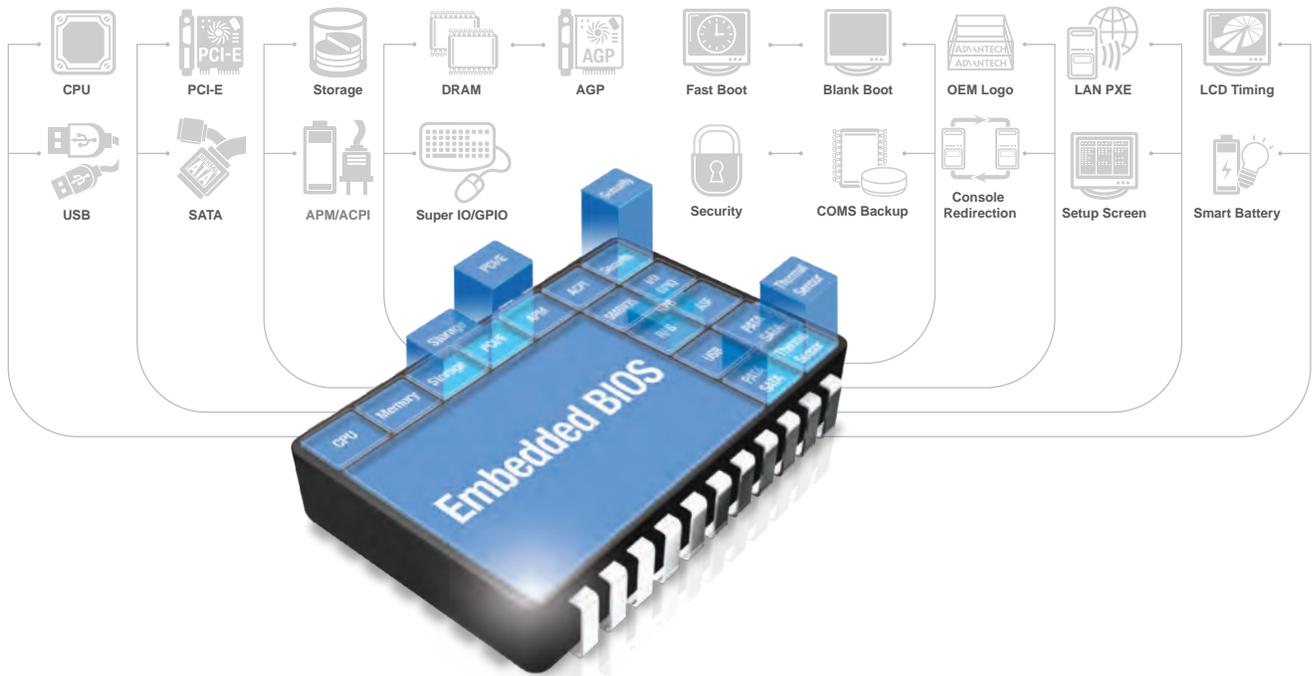


Benefits

- System Backup – Secures your software and important data, saving them to hidden storage preventing accidental damage.
- Rapid Data Restore – 1-click recovers the entire system to its original state so disasters have no effect.
- Secure Data Destruction – Absolute removal of sensitive hard drive data prevents theft.

Embedded BIOS

Advantech provides full-featured Embedded BIOS solutions that deliver the superior performance compatibility and functionality that systems integrators need. The various options and extensions let customers tailor their products to a wide range of designs for their target markets. In addition, Advantech continues to focus on providing more unique embedded features that help differentiate your solution from the competition.



Core Competence

Modularized BIOS

We offer modularized solutions for the uEFI environment to speed up system development: eg. screenshot print outs, recovery, BIOS Flash and Fastboot. We also offer a customizable method for creating enhanced secure systems.

Secure BIOS

Advantech provides 3 methods to secure your systems

- Secure the BIOS Flash to avoid the BIOS changes
- Secure storage for operation only on the right platform
- Secure platform boot on the right package

uEFI Utility

Advantech has developed a series of unique utilities for developers.

- BIOS Manager utility for Read/Write BIOS settings in the Windows environment.
- On-click BIOS upgrade, combines the BIOS image with desired parameters.

SUSI APIs

If you are a software developer or a system integrator you are all too familiar with the following problem: You are writing an application that requires direct hardware access. Unfortunately, that access is no longer available in modern operating systems. So you have to locate and study reams of specifications to write the appropriate drivers, and that is a complex and time-consuming job. To ease the burden, Advantech has created SUSI (Secure and Unified Smart Interface), a suite of application program interfaces that allows users to directly monitor and control digital I/O, I2C, CPU stepping speed, watchdog timers, smart fans and access hardware monitoring sensors.



iManager APIs

To fulfill the ever-changing specialized demands of various industrial applications, Advantech designed an intelligent self-management agent with software control functions and standalone hardware design: iManager, a built-in solution chip, is a perfect solution that provides a standardized API, integrating several unique platform consolidating functions needed by embedded system integrators to help improve consistency, lighten the development effort and speed-up a product's time-to-market.

Benefits

OS-Independent

- Cross-Platform Programming
- Real-time Response
- Plug & Play

Self-Management

- Intelligent Resource Management
- Auto-Protection & System restore
- Security Enhancement

Software API (SUSI: Secure & Unified Smart Interface)

Better Products, Faster Time-to-Market, More Reliable

Time to market — Not having to delve into chipset hardware specs and develop drivers for each new board and application reduces the overall project effort and means quicker time to market and therefore profit.

Enhance hardware reliability — Use of SUSI APIs can help reduce heat and power consumption, resulting in increased reliability. This allows the setup of warning mechanisms, event triggers, display adjustments, and other critical settings and actions that enhance overall system reliability and lower maintenance requirements.

Flexible upgrades — New functions and settings can easily be implemented via SUSI and new versions of SUSI; no need to rewrite an entire application.

Embedded OS

Complete Solution for Rapid Application Development

Advantech provides custom Embedded OS and built-in configuration utilities on our platforms to facilitate system integration.

- Various OS Support
- Longevity Support
- Total Cost Ownership
- Tool & Utility Ready

Windows Embedded

Microsoft offers a comprehensive suite of operating systems and tools that can help device manufacturers reduce time to market and improve connected device performance. Windows Embedded technology powers embedded systems that enable organizations to connect to IT infrastructure, increase staff efficiency, and improve customer satisfaction. Advantech started using Windows Embedded from 1996, and over 15 years experience later we are now a Microsoft Valued Professional (MVP) expert and can provide complete services:

Customization Services

We offer a ready to use embedded OS image. It provides a complete set of components that enable rapid proto-typing and application development.

- Windows Embedded Standard 2009, 7, and Windows Embedded 8 Standard
- Windows Embedded POSReady 2009, 7 and Windows Embedded 8, 8.1 Industry
- Windows CE 4.2, 5.0, 6.0 and Windows Embedded Compact 7 and 2013.

Board Support Package (BSP) Services

We work with silicon vendors and independent hardware vendors to get the latest embedded drivers. We integrate them with our modified kernel, boot loader and our own SUSI Software API, & embedded utilities to produce a fully tested and verified BSP. With Advantech BSP, a customer can build up a Windows CE Image and rapidly bring up the operating system on their custom hardware.

Innovation Utility Services

- Booting Manager: A utility for setting boot-up logo, color and shell application
- EWF Manager: A utility for Microsoft HORM (Hibernation Once Resume Many) technology, and to control the write protect function.

Strength with Microsoft partnership from OEM to Distribution

- Windows Embedded Gold Partner form 2004.
- Early access member with Windows Embedded 8 and Windows Embedded Compact 2013.



Real-Time OS

Advantech provides a series of Real-Time OS services for Advantech Platforms, including VxWorks, QNX, and Windows Embedded Compact (Win CE).



Multi-Core BSP Support

- Supports latest multi-Core CPU and Chipset
- Complete verification on Advantech Platforms



Installation Wizard

- Advantech CE-Builder for Windows CE OS,
- Advantech VxTool for WindRiver VxWorks
- Advantech QNX-Builder for QNX OS



Fast Boot-up

- Modify driver loading process to speed boot-up process
- Windows CE less than 3 seconds
- QNX loader for less than 6 seconds



Software API/Utility Service

- SUSI Software API for controlling the onboard hardware I/O
- Design new API for custom functions
- Useful embedded Utilities for fast deployment



System Performance Optimization

- Enhanced Kernel for Windows CE
- Customized background services depending on application
- Modified driver for IDE/USB/SATA/COM Port etc.



Global Software Design Expertise

Design Support Centers are located in Taiwan Taipei, China Xi'an and US Irvine to offer instant design service

Wind River VxWorks

Powering the World's Real-Time Platforms

The stakes are high for your real-time embedded systems and you can't afford failure. Wind River® has a long history of consistently supporting your key requirements for high performance, absolute determinism, and minimal footprint—a history that has kept VxWorks® the market-leading real-time operating system (RTOS) year after year.

As the first RTOS with 32-bit and 64-bit processing, multi-core and multi-OS support, and diverse connectivity options, VxWorks provides you with the functionality and support you require to stay competitive. And as your platform plans evolve to take advantage of next-generation processor capability, we continue to stay ahead of the technology curve, continually expanding VxWorks' proficiency to extract maximum performance from the new multi-core landscape. VxWorks' unique combination of high speed and scalability with trusted safety and security capabilities will keep your platforms running at the leading edge of the latest embedded technology.

QNX

The QNX® Neutrino® RTOS is a full-featured and robust OS that scales down to meet the constrained resource requirements of realtime embedded systems. Its true microkernel design and its modular architecture enable customers to create highly optimized and reliable systems with low total cost of ownership.

True microkernel OS

The QNX Neutrino RTOS (realtime operating system) is so reliable because it is a true microkernel operating system. Under QNX Neutrino, every driver, protocol stack, filesystem and application runs in the safety of memory-protected user space, outside the kernel. Virtually any component can fail — and be automatically restarted — without affecting other components or the kernel. No other commercial RTOS offers this degree of protection.

Multicore migration

The QNX Neutrino RTOS has a field-proven strategy for migrating from single-processor to multi-processor embedded environments. Its unique bound multi-processing (BMP) technology takes the risk out of migration by enabling developers to decide exactly where every process and thread will run.

Linux & Android Solutions

Linux

Linux is a popular operating system in the embedded market, Advantech provides three major Linux integration services:

General Linux Distribution Services

We offer installation and verification for Ubuntu, SUSE/open SUSE, Red Hat, Fedora, and CentOS, depending on customer requirements.

Linux Driver Modification & Configuration Services

We offer SUSI software API/driver development service based on the customer's defined Linux Kernel or distribution, including API for Watchdog Timer, GPIO, SMBus, backlight on/off, and brightness. We can also help configure the right parameters for graphic drivers, and network drivers etc.

Third party solutions

We leverage McAfee and Acronis solutions for several Linux distributions to provide a security and backup/recovery solution.



Android

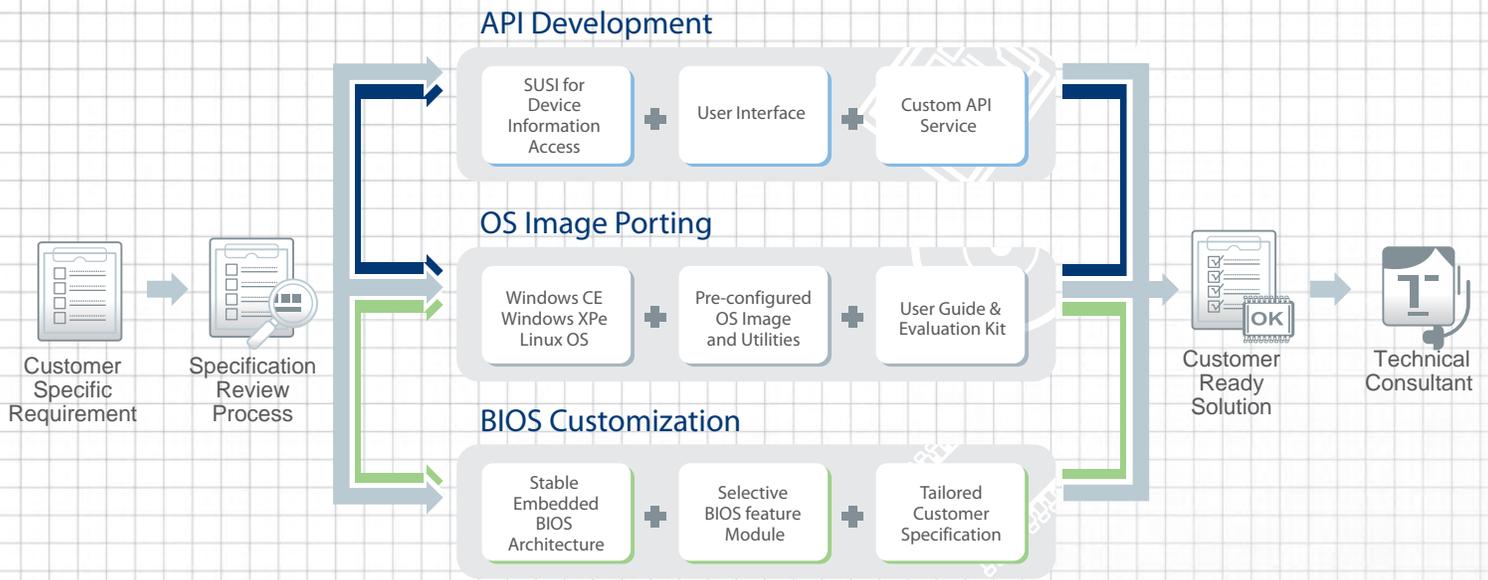
Android has become one of the fastest-growing embedded operating systems for its openness, customizable features, and robust ecosystem. But growing competitive pressures make it difficult for many companies to meet time-to-market deadlines with the differentiated features and quality levels demanded by their customers.

Android gives you everything you need to build best-in-class app experiences. It gives you a single application model that lets you deploy your apps broadly to hundreds of millions of users across a wide range of devices—from phones to tablets and beyond.

Android also gives you tools for creating apps that look great and take advantage of the hardware capabilities available on each device. It automatically adapts your UI to look its best on each device, while giving you as much control as you want over your UI on different device types.

Advantech provides Board Support Package (BSP) Services: we work with Intel and independent hardware vendors to get the latest embedded drivers. We integrate and produce a fully verified BSP that helps customers quickly build up Android OS for their solution.

Embedded Software Service Flow



Regional Service & Customization Centers

China

Kunshan
86-512-5777-5666

Taiwan

Taipei
886-2-2792-7818

Netherlands

Eindhoven
31-40-267-7000

Poland

Warsaw
48-22-33-23-730

USA

Milpitas, CA
1-408-519-3898

Worldwide Offices

Greater China

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Shanghai 86-21-3632-1616
Shenzhen 86-755-8212-4222
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Hong Kong 852-2720-5118

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Xindian 886-2-2218-4567
Taichung 886-4-2329-0371
Kaohsiung 886-7-229-3600

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0800-500-1055
Tokyo 81-3-6802-1021
Osaka 81-6-6267-1887

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080-363-9494
Seoul 82-2-3663-9494

Singapore
Singapore 65-6442-1000

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1800-88-1809
Kuala Lumpur 60-3-7725-4188
Penang 60-4-537-9188

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Jakarta 62-21-751-1939

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Bangkok 66-2-248-3140

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1800-425-5071
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Bangalore 91-80-2545-0206

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1300-308-531
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Sydney 61-2-9476-9300

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Münich 49-89-12599-0
Hilden/ D'dorf 49-2103-97-885-0

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Paris 33-1-4119-4666

Italy
Milano 39-02-9544-961

Benelux & Nordics
Breda 31-76-5233-100

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Reading 44-0118-929-4540

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Warsaw 48-22-33-23-740/741

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St. Petersburg 7-812-332-5727

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