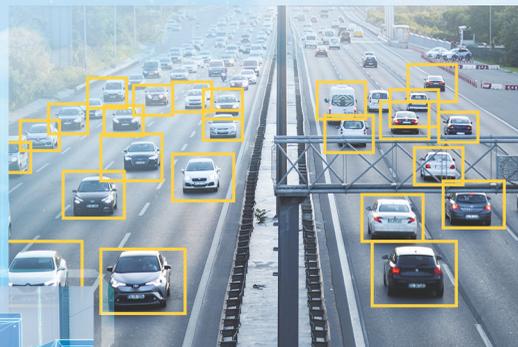


# DeviceOn

Remotely manage over 10,000 AIoT devices in any environment

- ✓ Boost profits
- ✓ Enhance operational efficiency
- ✓ Speed up AI



**ADVANTECH**

*Enabling an Intelligent Planet*

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# Vision

# Develop an IoT Omniverse

Advantech DeviceOn weaves through the first and last mile of your IoT omniverse, synchronizing the virtual world with edge reality. Adaptive to multiple cloud settings, the off-the-shelf edge orchestration platform helps you design, build, and manage the embedded systems of tomorrow.



## Maximize AIoT Devices From Anywhere

Leveraging Advantech's 40 years of embedded expertise, DeviceOn, an edge orchestration platform, remotely manages over 10,000 AIoT devices across x86/RISC, Windows/Linux/Android, and in private or public clouds.



Retail  
**Facial recognition**  
AI deployment



Medical  
**First aid medical device**  
Automated system check



Automotive  
**Production line**  
Real-time monitoring



Transport  
**Airport terminal**  
OTA update



Energy  
**Wind farm**  
Data management



High-tech  
**Semiconductor foundry**  
Remote troubleshooting



Transport  
**High speed rail**  
Real-time monitoring



IoT Field  
**System integrator**  
Process efficiency

# Features

# Manage Devices and Data on the Fly

### Over-the-Air Update

1-to-many update of firmware, software, BIOS configuration, and even OS on single portal.

### Signage Anomaly Detection

AI-based detection of pop-up window, frozen screens, and customized scenarios.

### Diagnostics & Alert

Customizable rule engine for monitoring various device health conditions, including CPU, HDD, HDMI, and network connections.

### Whitelisting & Auto-Recovery

Built-in tools for last-mile protection and resilience

### Remote Control

Batch operation of remote terminals, on-screen displays, KVM, Windows Lockdown, reboot, screen shot, and more.

### Container Management

Deploy and monitor AI applications from cloud AI/ML to edge devices in groups.

### 500+ API/SDKs

Integration with customer's front-end portal and 3rd-party business operation and visualization services.

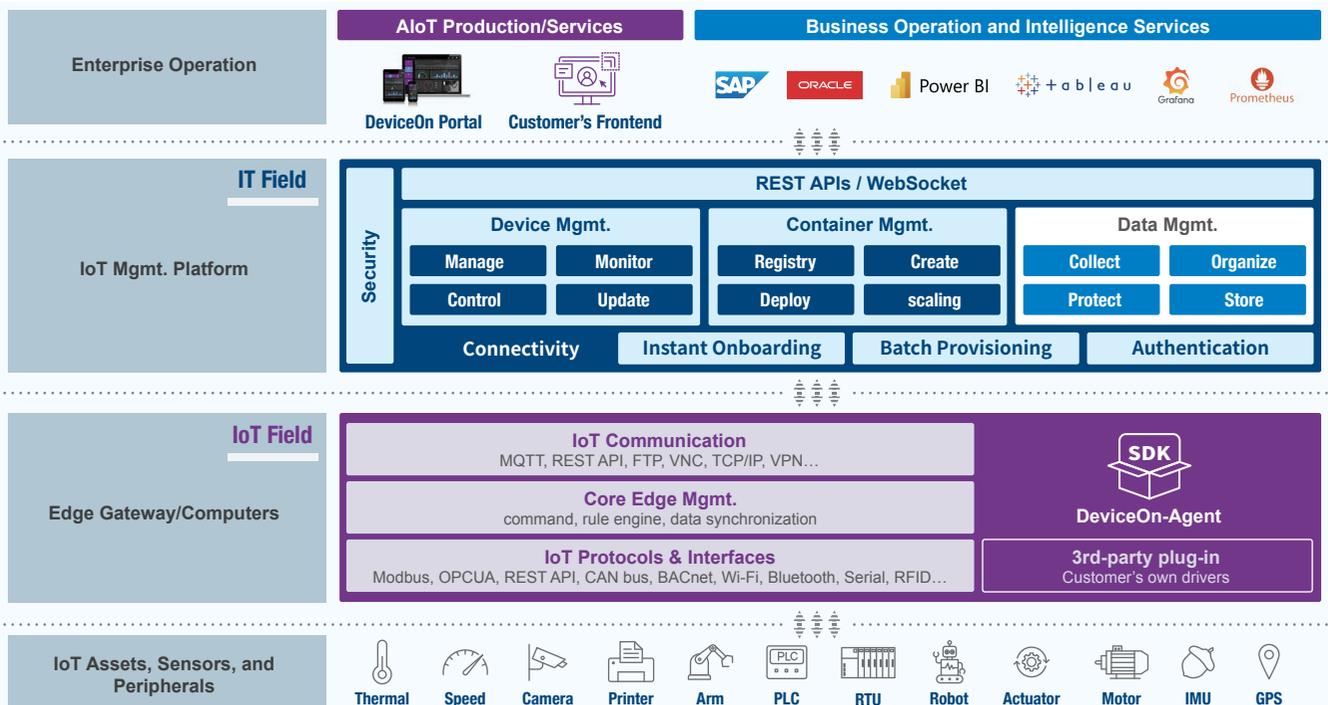
### Zero-Touch Onboarding, Secured

Ensure device authenticity by Certificate Authority with TPM.



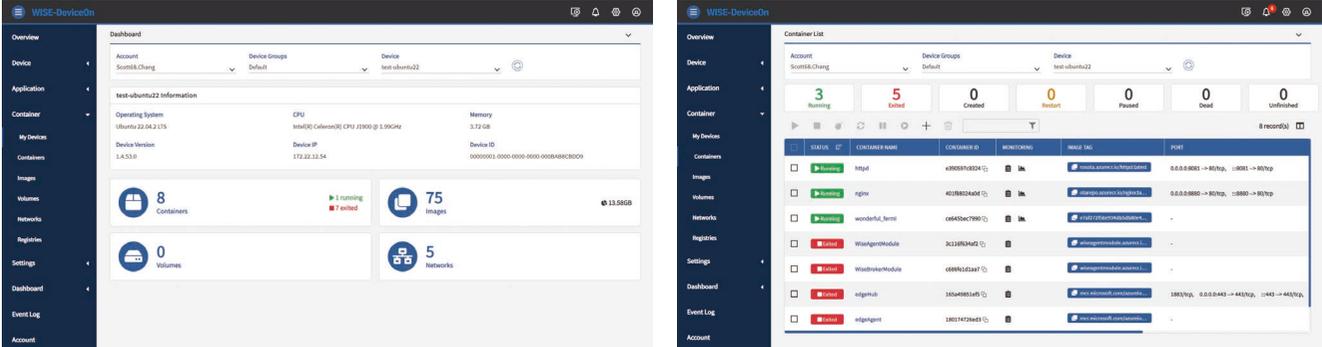
## Secured Server-client Architecture on any Cloud

- An agent installed on each IoT device
- SDK/API allow for integration with customer's front-end or 3rd-party programs and services
- Supports major industrial protocols for data collection
- Secured front-end, back-end, and data transportation, using x.509 Certificates to authenticate edge device



# Speed up AI Securely Deploy AI Containers at Scale

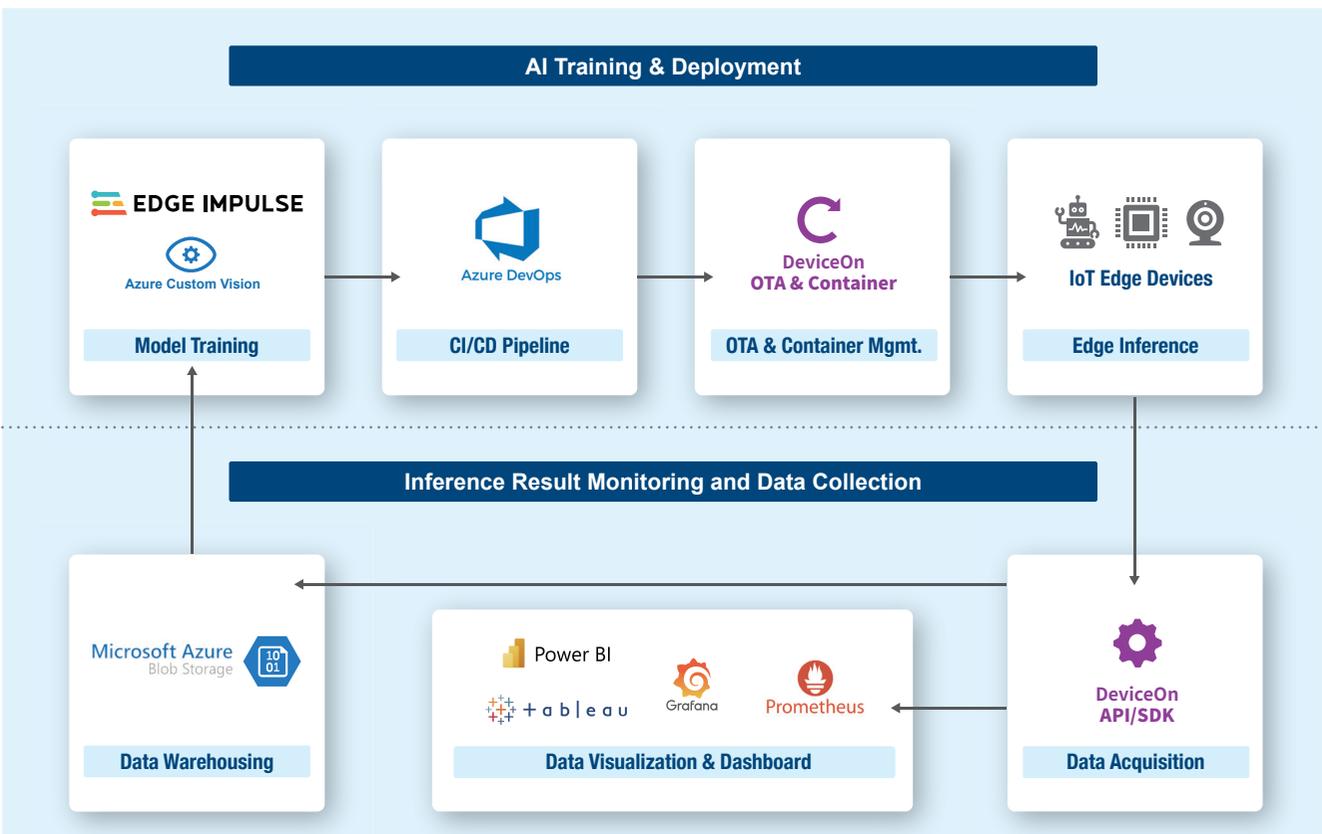
Integrated with public Azure Container Registry and local harbor as a container repository, DeviceOn simplifies container lifecycle management to build, store, secure, scan, replicate, and manage container images. In addition, the DeviceOn container management GUI enables developers to streamline AI development, deployment, and patching.



## Bridge the gap: Cloud AI/ML vs. Edge Production

Edge AI encompasses more than just executing models on edge devices; it also entails accelerated training, efficient deployment, and model enhancement at reduced costs. An increasing number of companies now opt for public cloud services to train their AI models.

DeviceOn revolutionizes the AI deployment process by offering an automated, end-to-end pipeline that is ten times faster. This breakthrough enables experts with diverse skill sets to collaborate seamlessly in training and deploying AI on the edge. The pipeline encompasses Container Management, OTA Update, and API/SDK, forming a comprehensive cloud-to-edge AI workflow that spans from model training to data acquisition.



# Schedule Emergency Medical Equipment Checks



## Project Introduction:

Like fire extinguishers, AED are distributed around public infrastructure for use in emergencies — and are thus hard to manage and maintain. AED must remain able to function even when in sleep mode.

## Our Solution:

Advantech DeviceOn provides a cloud solution that periodically self-tests AED devices and ensures functional integrity. The solution includes a timed self-test and self-awake connection to ensure power supply over a long period of time. In addition, DeviceOn provides a visual map on the dashboard that displays failed equipment, maintenance events, notifications, and firmware OTA updates.

## Highlighted Features

- A cloud solution is needed to periodically self-test AED devices to ensure functional integrity
- A timed self-test and self-awake connection ensures power supply over a long period of time
- Visual map dashboard highlights failed equipment, maintenance events, notifications, and firmware OTA updates.

# Auto System Recovery Boosts Smart Grid Availability



## Project Introduction:

Smart grids fail for myriad reasons. One of their main weakness is a vulnerability to hacking and sabotage. This is due to their reliance on the cloud — a fragile and complex network of data centers that is more susceptible to blackouts than traditional systems.

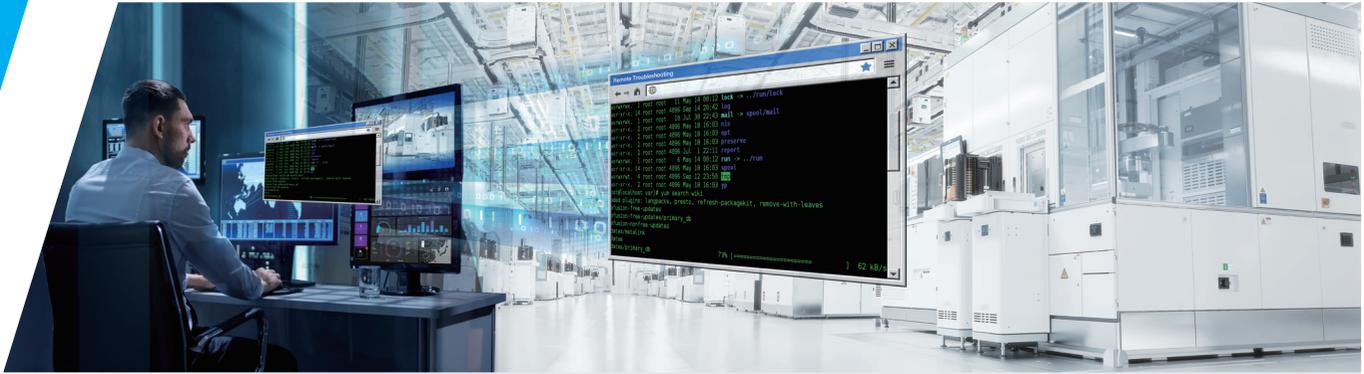
## Our Solution:

DeviceOn can be hosted on public cloud where it delivers device and data management for widely-distributed applications . The system auto-recovery feature provided by DeviceOn ensures smart grid availability even after a system failure. Utility companies or grid operators can leverage DeviceOn key features into their front-end interface — these features include real-time monitoring, remote control, notifications, and OTA updates.

## Highlighted Features

- Provisioned cloud infrastructure; device and data management solutions for widely-distributed EV chargers
- Protocol converter connects critical components within EV chargers
- A flow control and inference engine for predictive maintenance
- A situation room manages key information from the real-time power generation status

# Semiconductor & Smart Production Applications



## Project Introduction:

Device management in semiconductor manufacturing is a complex process that requires careful attention to detail. The need to manage large numbers of devices while ensuring their proper and efficient operation presents manufacturers with unique challenges.

## Our Solution:

A global semiconductor company chose to use Advantech's DeviceOn to enable remote control and real-time monitoring. By ensuring the immediate reporting of emergency events, DeviceOn reduces the system downtime caused by abnormal conditions. Managers can now actively monitor a large number of production devices and receive notifications (via Email, SMS) when equipment fails. DeviceOn simplifies troubleshooting for semiconductor fabrication plants by providing an easy-to-use interface that monitors device health.

## Highlighted Features

- Monitor numerous production process management devices at any time — including software and hardware health
- Notify administrators (via Email or SMS) if equipment fails, and conduct OTA SW/FW updates
- Remote troubleshooting reduces equipment repair time and improves production utilization

# 90-Second Transport Hub Solutions via DeviceOn



## Project Introduction:

Managing digital signage in public areas can be challenging. Pop-up windows and frozen screens can be caused by a variety of issues — including software bugs, hardware problems, and overheating.

## Our Solution:

A major airport in China deployed a new FIDS (information display systems) solution developed by Advantech to deliver instant broadcasts to passengers. According to the customer, DeviceOn enables remote management capabilities that enhance customer experiences and efficiency. DeviceOn's built-in AI-powered anomaly detection feature helps minimize the problems caused by pop-up windows, frozen screens, and other playback errors; ensuring smooth operation and preventing public communication problems.

## Highlighted Features

- Anomaly detection
- Blue screen recovery
- Windows pop-up blocker
- Automated alert notifications
- Auto system backup & recovery

# Full Control Across OS

Highlight	Feature	DeviceOn	Other AIoT Management
Deployment	On-prem	•	
	Public cloud	•	
	SaaS	Cloud PaaS	•
Device Management	Role-based access control	•	•
	Device zero-touch onboarding	•	
	Management	•	•
	Device threshold detection (rule-based engine)	•	•
	Notification & alert	•	•
	Device real-time & historical data monitoring	Chipset, RAM, storage, network, on-screen display, fan, GPIO, battery	Chipset, RAM, storage, network
	OTA update, software, firmware provisioning	Software, BSP, firmware, driver	
	Container management	•	
	Power control, terminal, screenshot, remote desktop	•	•
	Device data with zero-downtime	•	
	Batch control & statistical analysis)	•	•
Built-in Security	Audio volume control	•	
	Whitelisting	•	•
Out-of-Band Management	Auto Backup and Recovery	•	
	Wake-on-LAN	•	
	AMT	•	
	Open AMT	•	Additional component required
Integration	BMC	iBMC & EdgeBMC	
	Interfaces	500+ API/SDK Plug-in design	
Advantech Hardware Support	Hardware watchdog monitoring	•	
	Brightness & backlight control	•	
	Hardware sensor monitoring	•	
	BIOS Update	•	
Windows 10 & 11 Lockdown	USB Drive Block	•	
	Keyboard lock & filter	•	
	Touch screen & gesture lock	•	
	Windows notification block	•	
Support OS	UWF protection	•	
	Windows 7/8/10/11	•	•
	Ubuntu 20.04/22.04 LTS	•	
	Ubuntu on ARM (NVIDIA Jetson)	•	
	Linux on RISC (Yocto)	•	
	Android on RISC	•	

# DeviceOn Components and Quick Demo

## DeviceOn Server

Software installed on-premises or in the cloud. A license file is required to activate DeviceOn Server.



## DeviceOn Agent

A lightweight program running on the devices. Advantech charges by the number of Agents.



## Web UI

The web user interface can be accessed from where DeviceOn Server is installed.



Watch the demo

## Regional Service and Customization Centers

**China** Kunshan  
86-512-5777-5666

**Taiwan** Taipei  
886-2-2792-7818

**Netherlands** Eindhoven  
31-40-267-7000

**Poland** Warsaw  
00800-2426-8080

**USA** Milpitas, CA  
1-408-519-3898

## Worldwide Offices

### Greater China

**China**  
Toll Free 800-810-0345  
Beijing 86-10-6298-4346  
Shanghai 86-21-3632-1616  
Shenzhen 86-755-8212-4222  
Chengdu 86-28-8545-0198  
Hong Kong 852-2720-5118

**Taiwan**  
Toll Free 0800-777-111  
Taipei & IoT Campus 886-2-2792-7818  
Taichung 886-4-2372-5058  
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Israel 072-2410527

### Asia

**Japan**  
Toll Free 0800-500-1055  
Tokyo 81-3-6802-1021  
Osaka 81-6-6267-1887  
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**Korea**  
Toll Free 080-363-9494  
Seoul 82-2-3663-9494

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Singapore 65-6442-1000

**Malaysia**  
Kuala Lumpur 60-3-7725-4188  
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Hanoi 84-24-3399-1155

**Indonesia**  
Jakarta 62-21-751-1939

**Australia**  
Toll Free 1300-308-531  
Melbourne 61-3-9797-0100

**India**  
Bangalore 91-80-2545-0206  
Pune 91-94-2260-2349

### Europe

**Netherlands**  
Eindhoven 31-40-267-7000  
Breda 31-76-523-3100

**Germany**  
Toll Free 00800-2426-8080/81  
Munich 49-89-12599-0  
Düsseldorf 49-2103-97-855-0

**France**  
Paris 33-1-4119-4666

**Italy**  
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**UK**  
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**Spain**  
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**Sweden**  
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**Poland**  
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**Russia**  
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### Americas

**North America**  
Toll Free 1-888-576-9668  
Cincinnati 1-513-742-8895  
Milpitas 1-408-519-3898  
Irvine 1-949-420-2500  
Ottawa 1-815-434-8731

**Brazil**  
Toll Free 0800-770-5355  
São Paulo 55-11-5592-5367

**Mexico**  
Toll Free 1-800-467-2415  
Mexico City 52-55-6275-2727

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