AVNET
Embedded

Microsoft Solutions
GUIDE

P

Windows Embedded

Office

S

V

Microsoft
System Center

Windows Server

Microsoft
SQL Server

E

A COMPREHENSIVE GUIDE TO MICROSOFT PRODUCTS, SOFTWARE SERVICES, LICENSING AND TRENDS

INTEGRATED.

EMBEDDED SOLUTIONS FROM AVNET

Design, source, integrate, test, deploy – Avnet does it all.

When your core competence is system and software design and time to market is critical, you don't have time to worry about the make or buy question. Relax. Avnet Embedded offers expert support and a full suite of highly integrated solutions – from storage, computing, software and networking products to disk drives, flat panels and embedded boards. So, before you start pondering that question again, get in touch with the experts at Avnet first. You'll be glad you did.

What can we do for you? www.avnetexpress.com

Accelerating Your Success!™
1 800 332 8638 | www.avnetexpress.com | ▶️ 🐦 @avnetdesignwire

AVNET®
Embedded

TABLE OF CONTENTS

Let Innovation Blossom.

Intelligent Systems

Take Your Intelligent System Designs to the Next Level

Accelerate your embedded designs into a new world composed of intelligent systems that are connected, context-aware, and adaptive to users' needs. The new 3rd generation Intel® Core™ processor family delivers incredible performance, enhanced graphics, and built-in manageability to satisfy the needs of compute-intensive, connected, intelligent devices.

Meet the 3rd generation Intel® Core™ processor family:

Superior Performance
Due to industry-leading 22nm process technology and 3D Tri-Gate transistors, Intel created the highest performing Intel® Core™ processors to date with even greater power-efficiency.

Smoother Visuals
Built-in visual features such as Intel® Quick Sync Video 2.0 and Intel® Clear Video HD Technology enable compelling user experiences across a wide range of intelligent systems.

Secure Manageability
New features like Intel® Secure Key protect data and assets, while Intel® OS Guard helps detect and block malware. Support for Intel® Active Management Technology allows for remote monitoring and troubleshooting.

Learn more at **intel.com/intelligentsystems/core**

ABOUT AVNET

Avnet, Inc. (NYSE:AVT) is one of the largest distributors of electronic components, including connectors and semiconductors: technology solutions, computer products and embedded technology. Avnet connects the world's leading technology manufacturers with a broad base of more than 100,000 customers by providing cost-effective value-added services and solutions.

Avnet Electronics Marketing Americas (EMA)

Avnet Electronics Marketing is one of the world's largest technology, marketing, distribution and services companies, offering leading design chain services combined with world-class supply chain services in support of the electronics industry. Avnet Electronics Marketing is focused on exceeding our customers' needs and expectations. We serve Electronic Original Equipment manufacturers (EOEMs) and Electronic Manufacturing Services (EMS) providers in more than 70 countries, distributing electronic components and embedded solutions from leading manufacturers. From design to delivery, we are a company that is dedicated to support across the board.

Avnet Electronics Marketing Americas (EMA) is a business region of Avnet Electronics Marketing, serving customers in the United States, Canada, Mexico and Brazil.

DESIGN CHAIN SERVICES

Our design chain services offer engineers a host of services from any point in the design cycle from concept to architectural design to new product introduction and on through next-generation mondifcation or end-of-life. Avnet has the technical products, services and tools to help — including ASIC and programmable logic engineering services, IP cores and more. With offerings that run the gamut from web seminars to connector assembly, Avnet offers it all.

SUPPLY CHAIN SERVICES

Avnet supply chain services provide end-to-end support to original equipment manufacturers (OEMs), electronic manufacturing services (EMS) providers and electronic component manufacturers — enabling the ability to optimize supply chains. By combining internal competencies of global warehousing and logistics, finance, information technology, and asset management with objective, external industry-wide data, Avnet's supply chain services allow customers to increase their overall business knowledge — helping them make more informed decisions.

SEMICONDUCTOR LINE CARD

- ADI Engineering
- Agilent Technologies
- Analog Devices
- Anaren
- Antenova
- Atmel
- BeagleBoard
- Broadcom
- CAO Group Inc
- Citizen
- Colibrys
- Cypress Semiconductor
- Delkin Devices
- e2v
- Edicott Interconnect
- Emerson Network Power
- Epson Electronics
- EuroTech
- Everlight Electronics

- Fairchild Semiconductor
- Freescale Semiconductor
- GSI Technology
- IBM Microelectronics
- Infineon Technologies
- Integrated Silicon Solution
- Intel
- Jennic
- Kingston Technology
- LEDIL
- Leopard Imaging
- LG Electronics
- Lite-On
- Logic
- LS Research
- Luminus Devices
- M/A-COM Technology Solutions
- Maxim Integrated Products
- Micron

- Microsemi
- Microsoft
- Micross Components
- MIDE Technology
- Mindspeed Technologies
- Multi-Tech Systems
- Numonyx
- NXP Semiconductors
- ON Semiconductor
- Opnext
- OSRAM Opto Semiconductor
- OSRAM Sylvania
- Partron
- Pericom
- Phytec
- Prolific Technology Inc.
- Renesas
- ROAL Electronics
- Rochester Electronics

- Rohm Semiconductor
- Samsung Semiconductor
- Seiko Instruments
- Seoul Semiconductor
- Skyworks
- SolarTech Power
- Spansion
- ST-Ericsson
- STMicroelectronics
- Stonestreet One
- TE Connectivity
- Texas Instruments
- Toshiba
- Triad Semiconductor
- UPEK
- Vishay / Semiconductor
- White Electronic Designs
- Xilinx

IP&E LINE CARD

- 3M Interconnect Solutions
- Aavid Thermalloy
- Abracon
- AEP (Applied Engineering Products)
- Aimtec
- Alps Electric
- Amphenol
- Amphenol Alden
- Amphenol Connex
- Amphenol Nexus
- Amphenol PCD
- Amphenol RF
- Amphenol TCS
- API Delevan
- Aras Power Technologies
- AVX
- AVX / ELCO
- Bel
- Bourns
- Carling Technologies

- C&K Components
- Conesys
- Cooper Bussmann
- CTS
- Cymbet
- Discera
- ebm-papst
- Emerson Network Power - Connectivity Solutions
- Emerson Network Power - Embedded Power
- Esterline Power Systems
- FCI
- FOX
- GE Energy
- Glenair
- Grayhill
- House of Batteries
- ITT Interconnect Solutions
- KEMET
- M/A-COM Technology Solutions

- Molex
- Murata Electronics
- NIC Components
- Nidec Copal Electronics
- NMB Technologies
- Nuventix
- OMRON Electronics
- Panasonic
- Panduit
- Portescap
- Power-One
- PowerFilm Inc.
- PUI Audio
- Pulse
- Radiall
- ROAL Electronics
- Samsung
- Samtec
- Schurter
- Sensata Technologies
- SL Power Electronics

- Sola / Hevi-Duty Steward
- Solartech Power
- Stackpole Electronics
- Steward
- Sumida
- Sunon
- Surge Components
- TAIYO YUDEN
- TDK-Lambda Americas Inc.
- TE Connectivity
- Teledyne Relays
- TOKO America
- Tri-Star Electronics
- Tusonix
- Vishay
- Vishay Precision Group

Avnet Embedded

Avnet Embedded operates as a division of Avnet Electronics Marketing Americas. Avnet Embedded offers a technology portfolio that includes processing, storage, display, enterprise, chassis and software solutions from leading manufacturers. In addition, we provide the technical design, integration and supply chain support customers need to quickly and efficiently develop application-specific computing solutions. We also leverage a host of third-party service and product providers to meet just about any customer requirement.

Avnet Embedded is focused on serving the worldwide OEM market for embedded computing applications, along with system integrators, independent software vendors and contract manufacturers. As a result, we are uniquely positioned to create and support full turnkey and custom embedded systems, subsystems and networking products for an array of applications. Custom solutions are achieved by integrating commercial off-the-shelf computing technologies and customized components and then providing pre- and post-production supply chain and logistics services. Other value-add services that help Avnet Embedded achieve these custom solutions include engineering support, product prototyping and integration services.

GAIN A COMPETITIVE ADVANTAGE WITH EMBEDDED SERVICES

Our comprehensive suite of value-added services and solutions can help you access new markets, customers, partners, technologies and programs to grow your business. Avnet supports you throughout the solution sales cycle with the tools, training, resources and guidance necessary to close more deals faster and accelerate your success.

AVNET EMBEDDED SERVICES

» Engineering Services
» Supplier/Technology Trainings
» Field Engineering Support
» Integration Engineering Support
» Prototype Services
» First Article Services
» Customer Specific Testing
» Order Specific Instruction Service

AVNET INTEGRATION SERVICES

Avnet's integration center facilities and resources enable world-class services by focusing on quality, cycle-time and delivery. The integration center provides a wide range of technical expertise to serve Avnet's diverse customer base. These capabilities are delivered in state-of-the-art facilities and processes that include ISO, Lean manufacturing and continuous improvement / Kaizen.

AVNET QUALITY PROGRAM

Avnet Embedded utilizes the strengths of Avnet, Inc.'s backbone competencies – such as quality assurance – to ensure the highest level of customer satisfaction. Avnet has been committed to quality since its founding and has renewed that commitment through the use of Total Quality Management. Avnet has received the Arizona Governor's Award for Quality and holds multiple internationally recognized certifications.

Avnet has selected ISO 9001:2008, ISO 13485:2003 and ISO 14001 as its models for quality assurance. The organization has planned, established, documented and deployed the business management system with the focus on continual improvement.

AVNET GLOBAL CERTIFICATION SERVICES

Avnet Embedded leverages its resources and facilities to provide product testing and certifications as a turnkey service to its customers. Most customers must comply with global regulatory requirements to sell their products in foreign markets and are interested in obtaining product certifications. To reduce product liability and to comply with federal laws and required local codes, the regulatory services Avnet provides are:

» Safety Compliance
  (UL/cUL/CE marks)
» CSA
» NEMKO
» TUV
» BSMI
» CCC
» IEC 60950
» IEC 61010
» AS/NZS 3260

» FCC Compliance Emissions
» EMC Compliance
» Global Access Marks
» Medical product certifications
  including 510K
» Telecom certifications
  including NEBS
» Avnet Custom Services:
  • Custom Chassis Design
  • Custom Packaging Solutions

AVNET FULFILLMENT SERVICES

Avnet Embedded leverages Avnet, Inc.'s direct-ship capabilities to reduce costs and increase turn-around time across all aspects of the integration and fulfillment process.

AVNET SUPPLY CHAIN SERVICES

Avnet Electronics Marketing has more than 20 years experience in developing and implementing the operational activities that support customer specific supply chain models. As an independent division of Avnet Electronics Marketing, Avnet Embedded seeks to implement mutually beneficial supply chain programs that provide customers with the desired outcome for their Supply Chain and Logistics Management.

AVNET LIFECYCLE MANAGEMENT SERVICES

» Preliminary Scope of Work and Pricing
» Project Requirements Planning
» Prototype Planning and Execution
» First Article Planning and Execution
» Initial Production
» On-going Production
» Product Lifecycle Management Process

EMBEDDED SERVICES

CHASSIS CUSTOMIZATION
- Design Services (Solid Edge/CAD, 2D/3D Drawing)
- Prototyping (Sheet Metal/Plastic)
- Thermal Testing
- Paint/Silk Screening

FINANCIAL SERVICES
- Credit Cards
- Custom Billing
- E-Billing
- Flooring Terms
- Leasing
- Open Credit Terms
- Receivables Services Program

NEW PRODUCT INTRODUCTION
- Program Management

SOFTWARE SERVICES
- Software Assessment and Consulting
- Incubation Stage Consulting
- Hands-on Technology Training
- Embedded Implementation Solutions
- Middleware Services
- Application Layer Solutions
- OnLine Solutions
- Quality Assurance (QA) and Testing
- Wireless Data Plans

STORAGE
- Hard Disk Drive (HDD) Performance Testing
- HDD Screening and Configuration
- Data Erasure Services

SUPPLY CHAIN MANAGEMENT
- Inventory Management
- Material Forecasting
- Aggregation of Customer Demand

ENGINEERING
- Systems Requirements
- Engineering and Analysis
- Configuration Management
- Lifecycle Management
- Roadmap Planning
- Prototype and First Article Builds
- Bills of Materials Development
- Product Safety Testing and Certification

FLAT PANEL CUSTOMIZATION
- Touchscreen Integration
- Optical Bonding
- Passive Enhancements
- Anti-Reflective/Anti-Glare
- Brightness Enhancement Film
- Polarizer-Linear/Circular
- Active Enhancements
- CCFL High Bright
- LED Backlighting
- Open Frame Solutions
- Digital Signage
- Conductive Coatings
- EMI/RFI Shields
- Controller Solutions
- Low Cost Controller Kits

REGULATORY COMPLIANCE
- UL, CE, EMC, FCC
- NEBS
- Medical (60601-1)(FDA 510K)
- Global Certifications

ENVIRONMENTAL TESTING
- HALT, HASS, ESS (Temperature and Humidity)
- MIL-STD-810
- Packaging Drop Test
- Shock and Vibration
- Thermal Analysis

WAREHOUSING SERVICES
- Bonded/Reserved Inventory
- Customer-Owned Inventory
- Consignment
- Extended Lifecycle Management
- In-Plant Stores

INTERNATIONAL OPERATIONS
- Global Logistics
- International Integration

IT IMPLEMENTATION SERVICES
- Installation of Servers, Storage and Software
- Configuration of Servers, Storage and Software

INTEGRATION
- Intel Architecture Channel Assembly
- Bios/Firmware Updates
- UNIX Server Channel Assembly
- Testing to SDI Standards
- AIX Software Loads
- Solution Integration
- Cross-Vendor Platforms
- FTP Access for Image Downloads
- Remote Connectivity/VPN Access
- OEM/Custom and Embedded Integration
- Hardware/Software Integration
- System/Device Testing
- Asset Tagging/Serialization
- Custom Labeling
- Advanced Integration Tracking Systems
- Return/Repair Services
- Customer Site Specific Capability

- Kitting Services
- Custom Packaging

WARRANTY
- Extended Warranty
- Global Advanced Replacement
- Installation
- OEM Spares Program
- Refurbishment Program
- Global On-Site Maintenance Program

EMBEDDED LINE CARD

CHASSIS & ENCLOSURES
- AIC
- American Power Conversion
- Chenbro
- Cooler Master
- Intel
- Jetway
- Rittal
- Sliger Designs
- Systium
- Tripp Lite

DISPLAYS
- 3M Touch Systems
- Advantech
- American Industrial Systems
- AOpen
- AU Optronics
- AZ Displays
- Dawar
- Digital View
- Eizo
- Elo TouchSystems
- Endicott Research Group
- Fujitsu
- Future Designs, Inc. (FDI)
- Gunze USA
- IEI Technology USA
- Japan Display Inc. (JDI)
- Kyocera Industrial Ceramics Corporation
- LG Display
- Microsemi
- Microtips
- NEC Display Solutions
- NLT Technologies
- PanJit Touch Systems
- Planar Systems
- Powertip
- Samsung EBD
- Samsung SSI
- Sharp Microelectronics
- Spectrah Dynamics
- Tianma
- ViewSonic

EMBEDDED BOARD & SERVERS
- Aaeon
- ADI Engineering
- ADLINK
- Advantech
- AIC
- AMD
- AOpen
- Axiomtek
- BCM Advanced Research
- congatec
- Dell
- Emerson Embedded Computing
- Eurotech
- IBase
- IEI Technology
- Intel
- DFI-ITOX
- Jetway
- Kontron
- Logic PD
- MSI
- NEXCOM
- NextIO
- Portwell
- RadiSys
- Sapphire Technology
- SECO
- Supermicro
- Tyan
- VIA
- Xi3

ENTERPRISE SYSTEMS
- Cisco
- Dell OEM
- EMC
- Hewlett-Packard
- IBM
- Oracle

MEMORY
- ATP Electronics
- Crucial
- Dataram

- Kingston Technology
- Micron
- PNY
- SMART Modular Technologies
- STEC

NETWORKING
- Chelsio Communications
- Cisco
- Emulex
- Hewlett Packard
- Intel
- Mellanox Technologys
- Mutli-Tech Systems
- Myricom
- QLogic

PERIPHERALS
- EVGA
- Fujitsu
- Gnodal
- Hewlett-Packard
- Intel
- Matrox
- Quadrangle
- Sapphire Technology
- XFX

POWER & THERMAL MANAGEMENT
- American Power Conversion
- Cooljag
- Cooler Master
- Intel

PROCESSORS
- AMD
- Intel
- VIA

SOFTWARE
- Blackbox
- EZ Universe
- FMC TV Limited
- Kore Telematics
- ILS Technology
- InduSoft
- itSoftware

- McAfee Embedded Control
- Microsoft
- Red Hat
- Sonopress/Arvato
- Symbio

STORAGE
- Adaptec by PMC
- AMD
- ATP Electronics
- Brocade
- CRU-DataPort
- Crucial
- Dataram Corporation
- Delkin Devices
- Dell OEM
- EMC
- Enhance Technology
- Finisar
- HighPoint Technologies
- HGST
- IBM
- Intel
- Kingston Technology
- Legacy Electronics
- LSI
- Micron
- NetApp
- OCZ Technology
- PNY Technologies
- Promise
- QLogic
- Rorke Data
- Samsung
- SanDisk
- Seagate
- SMART Modular Technologies
- SMART Storage Systems
- Sony Optiarc
- STEC
- TEAC
- Toshiba
- Western Digital

Avnet Technology Solutions (TS)

As a global solutions distributor dedicated to accelerating the success of our channel partners, Avnet Technology Solutions offers core services and solutions spanning the data center, providing partners with cost-effective approaches to identifying and seizing high-growth opportunities in key markets and technologies. Avnet partners can achieve market specialization and better address the needs and business challenges of all customers—resulting in new revenue and enhanced profitability.

PATH TO SUCCESS: AVNET AND YOU

RELATIONSHIPS ARE KEY

We've spent more than 50 years nurturing relationships with leading technology suppliers and best-in-class solution providers. Our global line card allows us to deliver to you superior solutions across the data center that span supplier lines.

SALES SUPPORT: WE'VE GOT YOUR BACK

Our sales teams are located nationwide and are equipped with expansive product and solution knowledge focusing on high growth markets. Additionally, our dedicated industry, technical and business development experts utilize Avnet's innovative programs and services to give you the tools you need.

» 600+ Sales Professionals
» 250+ Technical Services Professionals
» 40+ Industry-leading Service Partners

LOGISTICS & INTEGRATION DRIVE GROWTH

Logistics and integration are crucial to our mutual success. Avnet's 228,000 sq.ft. (ISO 9001:2000; ISO 13485) advanced integration and logistics center is the hub of our processes designed to simplify and streamline your solution development and delivery process. By utilizing these solutions you'll be able to reduce overhead, reclaim valuable facility space and minimize investment risk.

» Online Tools
» 60,000+ Configurations
» 240,000+ Integrations

FINANCING SOLUTIONS

The more financially flexible and nimble you are, the easier it is to grow. Avnet offers a wide variety of financing solutions such as leasing and receivables services that provide you with greater financial flexibility, allowing you to take on larger, more complex deals.

» Avnet's Receivables Services will manage your receivables and forward profits directly to you.
» Our Leasing Services process platform hardware, software and services into one deal with more affordable payment options.
» Our innovative PayNow program converts annuity payments into upfront payments.

Through our receivables services alone, Avnet facilitates more than 2,500 transactions each year.

BUILD YOUR PIPELINE WITH AVNET'S DEMAND CREATION SERVICES

A strong pipeline of opportunities is the cornerstone of success for all businesses. Avnet's Demand Creation team can help you develop tailored marketing tactics that align to your business goals, and, in turn, help sell more data center technologies into high-growth vertical markets. Our team of experienced marketing strategists leverages a variety of proven marketing approaches that feed your sales pipeline and deliver an excellent return on investment.

Our Demand Creation team creates:
» Over 500 end-user demand generation campaigns annually
» On average, 14,500 leads distributed each year
» $100 million in sales (FY11)
» $500 million in Marketing Pipeline (FY11)
» Average ROI of 32:1* for every dollar spent on demand creation through Avnet

(*ROI is calculated by marketing pipeline and industry average conversion rates plus sales out data, divided by total spend.)

PARTNER TRAINING, ACCREDITATIONS & CERTIFICATIONS

Technology changes at warp speed. As a solutions provider, it is imperative to cost-effectively and continuously gain industry situational knowledge, refresh your selling and technical skills, and stay on top and ahead of trends. Avnet provides our partners a vast training curriculum ranging from product-specific to industry-focused expertise.

We connect you with various industry and supplier sales and technical accreditations and certifications, including:
» National Retail Federation (NRF)
» VMware Sales Professional (VSP)
» Professional Retail Business Credential
» VMware Certified Professional (VCP)
» NetApp Accredited Sales Professional (NASP)
» VMware Technical Certified Professional (VTCP)

Avnet offers, on average, more than 400 training opportunities annually. Training is offered on-site, on-demand and in classroom— whatever works best for your needs.

STATE-OF-THE-ART GLOBAL SOLUTIONS CENTER KEEPS YOU RUNNING SMOOTHLY

Avnet's Global Solutions Center brings the capability to build and ship more than 700,000 systems annually, allowing you to easily meet integration requests of any scope, quickly and effectively. It's just part of our commitment to provide our partners with the most advanced integration and logistical capabilities possible to support current and future business.

With 118,000 sq. ft. of warehouse space and more than 100 technical resources designed to meet the needs of our partners and their end customers, our 45,000 sq. ft. state-of-the-art facility handles large volume and complex builds. We have a vast product inventory and skilled professionals who are dedicated to upholding our rigorous testing standards and quality controls while expeditiously handling any and every request. High quality, fast turnaround time, and top-notch freight and logistics solutions.

DATA CENTER LIFECYCLE SERVICES

Today's customers seek complete solutions and are looking to a solution provider who can consult on all aspects of their data center. Whether the need is to define a cloud strategy or address a network security breach, customers want to rely on a single source that can help them better manage their data centers.

Remaining on top of key trends and knowledgeable about your customers' business requirements is necessary to effectively architect and deliver complete data center solutions that solve key business needs within a particular industry. As your partner, Avnet has the resources and services to give your customers the best possible service solutions while staying ahead of the curve.

CLOUD SOLUTIONS

To help channel partners address their customers' demands for off-premise cloud services, Avnet has invested in more than a year of R&D and market research. The result? Avnet Cloud Solutions, a team dedicated to providing training and minimizing risk so that partners can better meet their customers' needs.

Avnet Cloud Solutions has developed integrated and packaged, annuity-based public, private and hybrid cloud solutions that partners can take to their customers. These repeatable solutions help accelerate time to market and increase profitability—in an increasingly competitive environment.

The Avnet Cloud Solutions Difference:

» Integrated and packaged off-premise cloud offerings for high-demand workloads to help customers migrate to the cloud—with fewer costs, greater repeatability and faster time to market.

» A compelling solution portfolio that meets customers' needs today—with more to come as demand grows.

» Partnerships with a growing ecosystem of industry-leading off-premise cloud providers, while protecting your best interests.

» A dedicated team that provides the knowledge, skills, tools and resources needed to grow your off-premise cloud business, while helping you transition to an annuity-based model.

SOLUTIONSPATH ENGAGEMENT SERVICE™

Avnet SolutionsPath® helps you rapidly enter and specialize in high-growth vertical and technology markets and is backed with an unparalleled portfolio of services, programs and expertise to accelerate your time to market and increase profits with minimal investment and risk.

The SolutionsPath methodology is built upon more than seven years of dedication and focus so we can provide you with the tools and resources necessary to help sell complete data center solutions into key vertical markets. More than 80 percent of Avnet's top partners have leveraged this methodology and related SolutionsPath offerings, helping them to grow faster than the market.

For more information, visit http://www.ats.avnet.com/ts-na.

AVNET TS LINE CARD

SOLUTIONS

Servers
Cisco, HP, IBM, Oracle, VCE

Workstations
HP, Oracle

Notebooks
HP, LG.Philips, Micro-Star, Motion

Handheld PCs
Compaq, HP, IBM, Intel, Toshiba

Software/Security
Akorri, BlockMaster Security, Check Point, Cisco, CommVault, EMC (including Legato, Documentum, Dantz), F5 Networks, Hitachi Data Systems, HP, IBM, Microsoft, NTP Software, Oracle, RSA, Stratum Global, Syncsort, Symantec, Toshiba, VCE, Virtual Bridges, Vision Solutions, VMware, Zeus Technology Ltd.

Storage (Systems and Solutions)
Axiomtek, Brocade, Cisco, Data Domain, DataSpan, EMC, Enhance Technology, F5 Networks, Hitachi Data Systems, D-Link, HP, IBM, Infortrend, NetApp, Oracle, Pillar Data Systems, Promise Technology, QLogic, Sonasoft, VCE, Vision Solutions, Xtore

Networking
Aruba Networks, ATTO Technology, Axiomtek, Belkin, BLADE Network Technologies, Brocade, CCX, Chelsio Communications, Cherry, Cisco, Digi International, D-Link, EMC, F5 Networks, Finisar, Hitachi Data Systems, HP, Intel, LG-Ericsson, Mellanox, Multi-Tech Systems, Next IO, Oracle, QLogic, Riverbed, VCE

Unified Communications
Aruba Networks, LG-Ericsson, Polycom

ENTERPRISE MOBILITY SOLUTIONS

Cellular Modules
Siemens

Mobile Computers
Honeywell Scanning and Mobility

RFID (Tags, software, peripherals)
Stratum Global

Wireless Activation Services (Data/Voice)
AT&T, Bell, Sprint, T-Mobile, Verizon

Wireless Infrastructure
Aruba Networks, LG-Ericsson

Scanners (Barcode/Data Capture)
Honeywell Scanning and Mobility

Enterprise Mobility Software
Stratum Global (RFID application)

Batteries and Accessories
Honeywell Scanning and Mobility

DISPLAYS

CRT and LCD Monitors
NEC Display Solutions, Samsung ITD, Sun Microsystems

TFT Modules
Samsung

LCD Platforms and Solutions
Advantech, NEC Display Solutions

PERIPHERALS

Printers
Fujitsu, HP

Storage Controllers, Communication and Peripheral Cards
Multi-Tech

Point of Sale
NEC

Scanners (PC Document)
HP

ENTERPRISE OEM

Suppliers
ATTO Technology, BarcoView, BLADE Network Technologies, Brocade, Chelsio Communications, Dell, D-Link, Ezio, Finisar, HP, IBM, Infortrend, JDS Uinphase, LG-Ericsson, Mellanox, Microsoft, NEC Display Solutions, Oracle, QLogic, Samsung Electronics of America, USSI, Virtual Bridges, VMware

Rorke Global Solutions

Rorke Global Solutions™ (RGS), a business unit of Avnet Embedded, is a solutions integrator adept at tailoring hardware, software and a full suite of lifecycle services designed to meet the unique needs of customers across a wide range of end-market segments. RGS works to solve the business challenges of OEMs, independent software vendors (ISVs) and channel partners resulting in better cost optimization, deeper market penetration and accelerated sustainable growth for those customers. RGS leverages a wide array of innovative technologies from leading providers, as well as, a portfolio of standard and customizable servers and purpose-built appliances developed in-house under the Paladin™ brand.

To learn more about the capabilities of RGS and the Paladin family, visit http://www.rorke.com.

Avnet Logistics

Leveraging our industry leading position as a B2B distributor of electronic components and enterprise computer equipment, Avnet Logistics provides specialized supply chain and logistics services to the global electronics industry, driving asset velocity, customer satisfaction and total cost reduction for our customers.

Our global logistics network operates facilities in the Americas, Europe and Asia and offers our partners in the technology industry a competitive advantage through specialized supply chain solutions and operational excellence.

● Sales Branch

● Integration Centers

● Warehouses

LOCATIONS

● SALES BRANCH

United States

Atlanta	770-623-4400
Austin	512-219-3700
Baltimore	410-423-8800
Boston	978-898-4400
Chicago	847-797-7300
Cleveland	440-349-7600
Connecticut	203-284-5700
Columbus	614-865-1400
Dallas	800-231-0253
Denver	303-790-1662
Detroit	734-416-5800
Houston	281-243-7330
Huntsville	256-774-2600
Indianapolis	317-575-3500
Irvine	949-789-4100
Kansas City	913-663-7900
Long Island	631-582-7700
Los Angeles	818-594-8200
Miami	305-477-6406
Milwaukee	262-513-1500
Minneapolis	952-346-3000
North Jersey	973-515-1641
Orlando	407-657-3300
Phoenix	480-643-2000
Pittsburgh	724-934-6700
Portland	503-452-6900
Raleigh	919-859-9159
Rio Grande	956-631-1610
Rochester	585-486-8300
Sacramento	916-632-4500
Salt Lake City	801-365-3800
San Diego	858-385-7500
San Jose	408-435-3500
Seattle	425-882-7000
South Jersey	856-355-7400
St.Louis	314-770-6300
Tampa	813-281-4654

Canada

Calgary	403-291-5510
Montreal	514-335-1000
Ottawa	613-696-1450
Toronto	905-812-4400
Vancouver	604-444-3810

Mexico

Chihuahua	656-640-3230
Jalisco	5233-3134-2300

Argentina

Buenos Aires	54-11-4781-6702

Brazil

Sao Paulo	55-11-5079-2150

Columbia

Bogota	57-1-256-7766

Puerto Rico

Puerto Rico	787-706-1888

● INTEGRATION CENTERS

North America

Arizona	Chandler
Massachusetts	Acton
California	San Jose

Latin America

Mexico	Nogales

Europe

Belgium	Tongeren
UK	Hams Hill

Asia

China	Tainjin
China	Shenzhen

Australia

Sydney	

● WAREHOUSES

Americas

Chandler	Warehouse / Programming
Pecos (GSC)	Warehouse / Integration
Cedar Rapids	Warehouse
San Antonio	Warehouse / Integration
McAllen	Warehouse
Toronto	Warehouse
Milpitas	Programming Center
Cleveland	Warehouse
Minneaplois	Warehouse
Guadalajara	Warehouse / Programming Center
Juarez	Warehouse
Nogales, Mexico	Warehouse / IPE Assembly
San Paolo	Whse/ Programming Center
Manaus	Programming Center
Peabody	Integration (not Logistics, TS)

EMEA

Tongren	Warehouse / Integration
Poing	Warehouse / Programming
Israel	Warehouse
S. Africa	Warehouse

Asia

Hong Kong	Warehouse / Programming
Singapore	Warehouse / Programming
Taiwan	Warehouse
Shanghai	Warehouse / Programming
Shanghai	Warehouse
Shenzhen	Warehouse
Melbourne	Warehouse
Sydney	Warehouse
Tianjin	Warehouse / Integration
Korea	Warehouse / (3PL)

AVNET GLOBAL SOLUTIONS CENTER

Avnet is driving to serve your business needs now and in the future with our Global Solutions Center. This state-of-the-art 228,00 square-foot integration and logistics facility located in Chandler, Arizona, showcases our commitment to invest in the most up-to-date capabilities. With the capability to build and ship over 700,000 systems annually, the Avnet Global Solution Center can meet integration requests of any scope, quickly and effectively.

We strive to have a positive impact on our communities, and we are proud that our Global Solutions Center incorporates "green" features, including occupant-sensing technology for automatic control of lighting systems, Low E reflective coating for building's glass of R-6.8 per inch of polyurethane foam applied. Our recycling program recycles on average one ton of cardboard per day.

At Avnet we continually invest in programs and services to ensure you maintain a competitive edge. The integration and logistics services we provide through our Avnet Global Solutions Center are examples of how we deliver real value to help our partners move their business forward.

FACILITY FACTS

The Avnet Global Solutions Center is +228,000 square feet including:
» 118,000 square-feet of warehouse space available to store product for ongoing production
» 45,000 square-foot Integration Center with over 125 technicians
» Dedicated inbound receiving and outbound shipping areas for fast and efficient receipt of products and shipping to customers
» 3,000 square-foot First Article lab
» 3,000 square-foot repair depot

CORE PROCESSES: THE EXPERTISE BEHIND THE SOLUTION

When you put your name on a product, you want to be sure that it meets your company's high standards for quality and reliability. Avnet stands behind every product that we build. Our years of experience, strong supplier relationships and reliance on best-in-class processes provide a true advantage that you can leverage with confidence.

» ISO 9001:2008
» ISO 13485 Medical Compliance
» ISO 14001 Environmental Management System
» Alternate manufacturing site for UL/TUV and FDA requirements
» A culture of continuous improvement
» Lean initiatives, including Kaizen principles
» End-to-end value stream process mapping
» Avnet Build Instruction (ABI) process documentation
» Customized quality assurance inspections
» Integration Tracking System (ITS), including asset tagging and serial number traceability by unit
» Recovery CD/DVD capabilities
» 24x7 integration operations
» FTP access for image downloads
» Order Specific Instruction (OSI) process
» Remote network connectivity to systems on production floor via integration with private network

THE RIGHT PARTNER: AVNET

Avnet is a global solutions distributor dedicated to accelerating the success of its channel partners. Our core services and solutions offering expands across the data center, offering cost effective programs that identify high growth areas in key technologies and markets. Our partners achieve market specialization while addressing their customer needs and business challenges resulting in new revenue and market opportunities.

» Avnet accelerates growth for our partners
» Avnet takes cost out of our partners' businesses
» Avnet delivers a superior customer experience

THE FUTURE OF SOFTWARE SERVICES

Reprinted from IntelligentSystem.com, an Avnet Embedded blog

By Doug Geisler, Avnet Embedded   May 8, 2013

Software Services are not new. Companies have outsourced parts of their software development for many years. What I find interesting is WHY the evolution is happening now.

TRADITIONAL OUTSOURCING TO REDUCE FIXED COSTS

There have always been many reasons for companies to outsource software services development. Traditionally, one of the reasons has been the desire to turn fixed costs into variable ones. When times are tough for companies, it is cheaper for them to outsource part of their development rather than hire new employees or train existing ones. The obvious benefit is the ability to get the exact skills needed at the exact time you need them. It also eliminates the possibility of having too many people on staff after the project is complete and the work load reduced.

While the cost to outsource may appear to be high relative to the sunk cost of your own employee, it is less expensive given the other associated costs. For example, companies that outsource, don't have to invest in training their own employees in order to gain a new required skill that may only be needed briefly. Companies don't have the risk of future lay-offs or the associated costs. Companies can pay for only what they need.

"SPEED OF TECHNOLOGY" & CONSUMERIZATION DRIVE OUTSOURCING TODAY

These reasons to outsource still exist. They may even have become more acute lately, given recent tough times in the market. However, the top reason to outsource cited by the customer lately is "the speed of technology." When I say speed, I don't just mean the pressure to bring products to market quickly. The time to market challenge is very real. But, the speed issue seems to have accelerated recently because of the consumerization of products taking place.

For example, 10 years ago the average person's expectation of software was driven by the desktop computer user experience. Now, that same user carries a smartphone and tablet and has a very different view of how industrial products are supposed to look and feel. This game-changing evolution has sped things up dramatically. These same people are now feeling pressure from a whole slew of new sources. Do their own software development teams have all the necessary skills to create mobile applications? Or support a user experience that includes multi-touch and a host of new connectivity options, such as near field communications (NFC), Bluetooth 4.0, 3G & 4G cellular, etc.?

> "WHAT APPEARS TO BE HAPPENING IN THE MARKET IS THE SOFTWARE DEVELOPMENT TEAMS ARE NOW BECOMING MORE AND MORE LIKE 'RESOURCE MANAGERS' THAN SIMPLY DEVELOPERS."

SOFTWARE DEVELOPERS TASKED AS RESOURCE MANAGERS

What appears to be happening in the market is the software development teams are now becoming more and more like "Resource Managers" than simply developers. They are being asked how to support new technologies and expected to balance time and costs to do these things internally vs. externally. These developers are also being asked to have a far larger business view of the development cycle than ever before.

Doug Geisler is the Business Development Team Manager for Avnet's Embedded Software and Services Group (ESSG).

Visit IntelligentSystem.com for more articles and commentary from Avnet's technology experts.

AVNET®
Embedded

Embedded Software Services & Consulting

FLEXIBLE, END-TO-END SERVICES—FROM CONCEPT TO PRODUCTION AND BEYOND

HELPING CUSTOMERS DO MORE WITH LESS
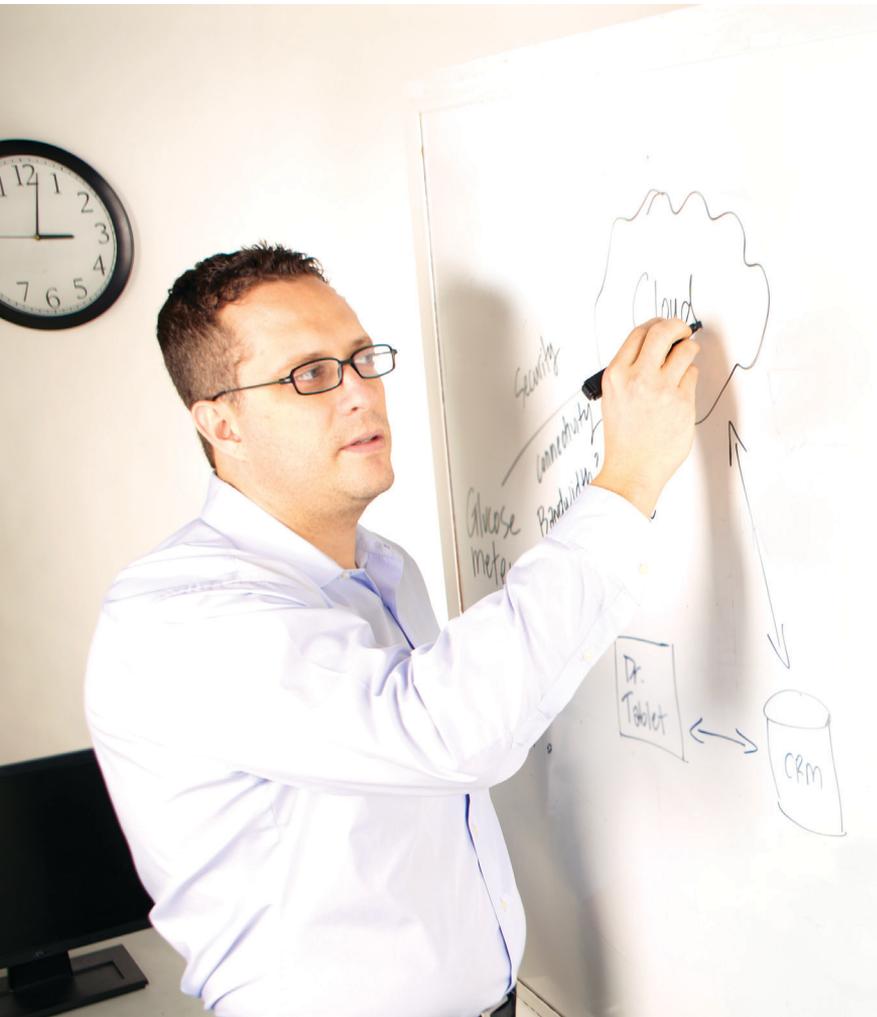
Avnet Embedded optimize your software stack – for virtually any operating system (OS), through the middleware and application layer, all the way up through the cloud.

OUTSOURCE NON-CORE SOFTWARE ENGINEERING

» Take advantage of project-based variable costs vs. fixed-cost headcount
» Access expert skill sets in a variety of disciplines

REDUCE TIME-TO-MARKET

OPTIMIZE FOR LOWEST COST OF HARDWARE

» Get the most out of your hardware

ONLY PAY FOR WHAT YOU USE

» Incur variable costs associated with outsourced resources
- Stay lean and adapt easily to rapidly evolving market needs
- Develop forward thinking applications with industrial design experts

ACCESS GLOBAL MARKETS QUICKER

» Minimize investment in international markets

MAXIMIZE ACCOUNTABILITY

» Engage with partners focused on your needs
» Achieve/maintain regulatory compliance

ADAPTING TO A NEW COMPETITIVE LANDSCAPE

Avnet Embedded leverages more than 1,300 strategists and software engineers to address the complete development lifecycle and entire vertical software stack. Every day, Original Equipment Manufacturers (OEMs), Independent Software Vendors (ISVs) and Systems Integrators look to Avnet to provide guidance and create solution paths that address real-world concerns and business objectives.

Leveraging New Technologies?

- » Buying new hardware?
- » Migrating operating systems?
- » Facing software end-of-life?

- » Delivering a new device?
- » Adding mobility or cloud functionality?
- » Enhancing the user experience?

Charting New Product Roadmaps?

- » Launching a new product?
  - • Supporting a product launch
  - • Sustaining a mature product

- » Customizing for a new buyer?
- » Integrating new services?
  - • Telematics, eCommerce, SNS, etc.?

Adapting to Changes in the Business Environment?

- » Lacking scalability because of cutbacks?
- » Receiving more funding and entering growth mode?

- » Integrating products because of M&A?
- » Working hard stay ahead of competitors?

Pursuing New Target Markets?

- » Expanding into new markets?
- » Seeking to internationalize your product?
- » Needing localization and testing resources?

- » Customizing for new markets?
- » Meeting demand for in-country technical support?

Addressing General Operational Questions?

- » Facing time-to-market challenges?
- » Testing for a new release?
- » Trying to reduce total cost of software ownership?
- » Lacking flexibility and scalability?

- » Having a difficult time finding technical experts?
- » Currently leveraging software service partners but not completely satisfied?
- » Considering aspects of software not core to IP?

Roll-Out to Market

Productize

Sustain

Ideate

Product Development Lifecycle

CLOUD

APPLICATIONS

MIDDLEWARE

OS INTEGRATION

DRIVERS

HARDWARE

Software Solution Stack
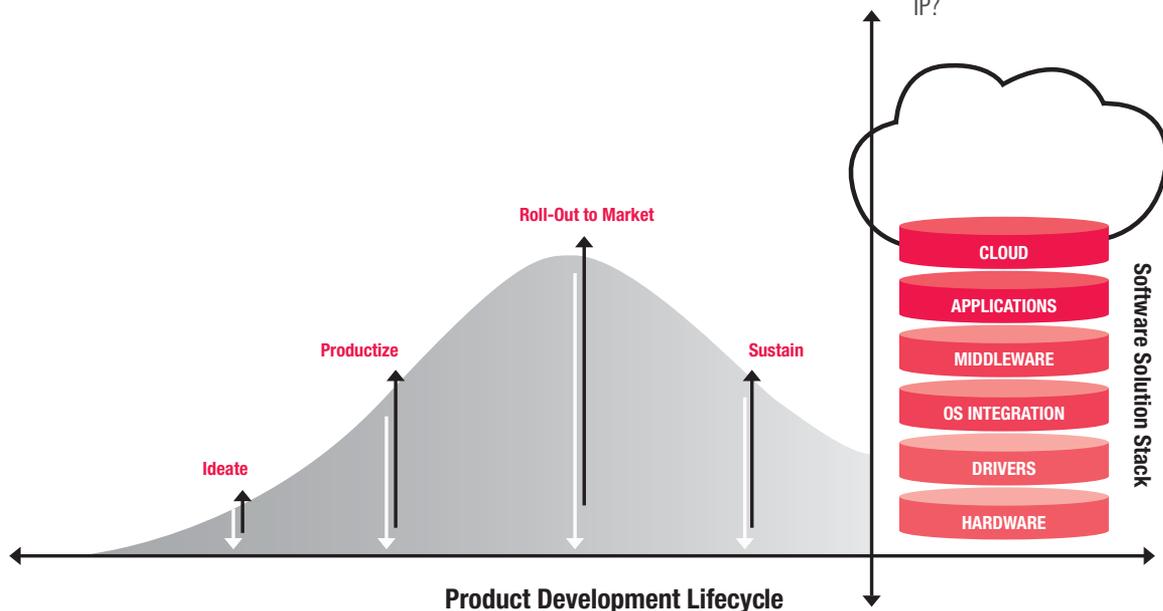
SOFTWARE SERVICES OFFERING

SOFTWARE ASSESSMENT AND CONSULTING

Performed by experienced industry experts, our software assessment and consulting services help you design more user-centric products, mitigate architectural and design risks and solve critical development bottlenecks.

» On-Demand Software Support Packages
» Application Porting/Store Strategy
» User Experience Analysis as a Service for Intelligent Devices
» Cross-Platform Strategy
» Cloud Strategy
» Security
  • Holistic Security Assessment
  • Platform Hardening Analysis
» Internationalization Assessment
» Go-to-Market Strategy
  • Localized User Experience for EMEA and APAC
  • New Market Evangelism
  • Ecosystem Support

INCUBATION STAGE CONSULTING

Our incubation stage consulting services help you determine the optimal technologies to build upon, ensuring the best delivery of your envisioned experience.

» Board Ramp-Up
  • BSP Services
    – Image Creation for Windows Embedded 8 Standard, Windows Embedded Standard 7, WES 2009/XP Embedded, WinCE 6.0, Compact 7 and WEC 2013
    – Boot-time Optimization
    – Library Optimization
  • Process Development and Implementation
» Feasibility Study
  • Viability and Benchmarking
» User Experience Design
» Product Design
  • Application Ideation and Elaboration
  • Product and Technology Roadmap
  • Architecture Design

HANDS-ON TECHNOLOGY TRAINING

Our in-person training will help you address specific challenges and educate thought leaders within your organization on new technologies.

» Software – Operating Systems, Technologies and Processes
  • Operating Systems – Microsoft® Embedded (WES, Compact, Handheld)
  • Agile Process – Agile Software Development, Project Management and QA
  • QA and Testing Processes
» Hands-on Embedded Devices
  • Boot Loader
  • Driver Development
    – Application Development

EMBEDDED IMPLEMENTATION SOLUTIONS

These services include porting services, operating system migration and platform performance and power optimization. Demand for these services is highly dynamic as new hardware and/or operating system migration require continual improvements in performance and user experience.

» Porting Services (Applications, Operating Systems, Drivers, Platforms)
» Operating System and Kernel Adaptation
» Driver Development
» Multimedia Acceleration
» Power Management and Performance Optimization
» Device Conformance, Regression and Validation Testing
» Product Maintenance
» Cellular Design, Test and Certification

MIDDLEWARE SERVICES

These services include middleware development and integration to optimize the operating system and enable an application layer solution.

» Middleware Development and Integration
  • Software Engines and Algorithms (Image, Video, Security)
» UI Frameworks and Engines

SOFTWARE SERVICES OFFERING (CONT.)

APPLICATION LAYER SOLUTIONS

Partnering with you to perform application design and development services, our application layer experts will build out your core IP and deliver your solution to end users in the best manner possible.

» Full Product Lifecycle Co-Creation
» UX and Product Design
» Application Development
» Internationalization and Testing
» Localization Translation and Testing
» QA Solutions and Testing
» Application Maintenance
» Systems Integration
» Legacy System Migration

ONLINE SOLUTIONS

We ensure that your embedded devices can connect and contribute to an intelligent solution. Whether push or pull through the Web/mobile, Bluetooth, near field communications, telematics or the cloud, a connected strategy is paramount to product experience.

» Web Solutions
  • User Experience Design
  • Web Services Integrations
  • Backend and API Development
  • eCommerce Solutions
  • Social Network Enablement
  • Telematics Solutions
» Mobile Solutions
  • Mobile Strategy
  • Rich Mobile Client Design and Development
  • Application Porting and Application Stores
» Cloud Solutions
  • Cloud Strategy
  • Microsoft Azure Solutions
  • Amazon Web Services Solutions

QUALITY ASSURANCE (QA) AND TESTING

Crucial to OEMs for delivering quality, mission-critical applications and a robust user experience, our QA and testing services follow best practices for QA strategy with testing at all levels of product implementation. Typical QA and testing engagements include long-term, third-party testing, planning and certification partnerships.

» Full-Software Stack Testing Services
  • White, Black and Grey Box
» Total Quality Assurance Consulting
» Test Automation and Tools
» Test and Measurement Systems
» Test Planning

DATA PLANS

To meet the demand for extended wireless connectivity, Avnet Embedded has aligned with the leading cellular and satellite providers to offer a wide range of coverage models. Our partners support all cellular frequency standards (UTMS, GSM and CDMA) with access to 2G through 4G LTE networks and coverage in all global regions. Additionally, we have a partnership with the leading satellite provider if you require coverage beyond the range of cellular.

» Global Cellular
  • 2G through 4G LTE
» UTMS
» GSM
» CDMA
» Satellite

APPLICATION DESIGN & DEVELOPMENT SERVICES

AVNET'S GOT YOUR APP. ANY OS, ANY DEVICE

» Speed time-to-market by leveraging focused resources

» Keep fixed costs down by outsourcing projects

» Keep current engineers focused on the big picture

» Develop and port custom apps for Windows® Phone and Windows RT — or go device agnostic with HTML5

As Original Equipment Manufacturers (OEMs) look to mobile applications to enhance customer experiences, the application design and development experts from the Avnet Embedded software services and consulting group can create a world of new possibilities.

APPLICATION DESIGN & DEVELOPMENT

Many OEMs have engineering expertise on staff for current platform development needs, but they may lack the experienced resources required to develop for new platforms and operating systems.

APPLICATION PORTING

Companies that have invested in either in-house or outsourced appdevelopment often only support one or two common platforms. Our experts can port applications from one OS to another to increase adoption of the application and associated hardware — keeping your on-staff engineers focused on the big picture rather than learning new mobile platforms.

COMPLEMENTARY DEVICES

Many users are now demanding access to control and receive data remotely using embedded appliances. The Avnet Embedded software services and consulting group develops applications that provide value-add functionality to end users while allowing you to stay focused on your core solution.

INPUT AND CONTROL DEVICES

Similar to complementary devices, input and control touchscreens make managing and accessing applications simpler. Many OEMs are leveraging touchscreen tablets and all-in-ones as user interfaces to control embedded appliances in a more user-friendly fashion.

LOCALIZATION

The Avnet Embedded software services and consulting group provides complete software localization services to businesses expanding into new markets. From engineering and translation to testing and managing in-country reviews, our team can localize desktop, client server and web applications for you.

NEED ADDITIONAL INFORMATION?

www.em.avnet.com/essg

888-636-3658

services@avnet.com

APPS MAJOR DECISION DRIVER IN NEW DEVICE, OS ADOPTION

Reprinted from IntelligentSystem.com, an Avnet Embedded blog

By Jon Parks, Avnet Embedded   May 16, 2013

To the shock of no one, the availability of our favorite apps weighs heavily on our purchasing decisions when it comes to choosing a mobile device and operating system. We've all seen the user comments in published reviews that bash a particular mobile device or OS based solely on the fact that the user's favorite apps are not available—even if the device or OS rocks!

If not consciously part of the initial purchasing decision, the availability of apps quickly becomes our foremost complaint and may even drive us to quickly change devices when we realize our favorite apps are missing.

Not surprisingly, in a recent interview by Engadget, Nokia's Global Head of Smartphone Marketing admitted, "the biggest complaint is that customers are missing the apps they want."

TARGETING LARGEST AVAILABLE MARKETS FIRST, THEN WHAT?

Personally, I feel as though Windows Phone brings the best user experience to market today, but must confess, I have yet to move due to the lack of some key apps that are important to me. For me, I need to be able to read my work email on the go, so not yet having the Good for Enterprise app for Windows Phone 8 is a non-starter. Similarly, my company uses Concur for our travel and expenses. If I made the switch to WP8, I would

lose that convenience I have today. Finally, baseball is one of my favorite hobbies, and the D-Backs my favorite team. Without the MLB.tv app, I will feel apprehensive about being anywhere but in front of my TV when the D-Backs are playing.

But enough about me, what does this say about you, your application and your company? Companies that release apps make a prudent decision to first release on the most widely available platforms to reach the largest markets for the least cost. However, as these companies' applications mature, users expect that app be available to them on whichever device they choose.

CONSUMER COST VS. BENEFIT

Consumers are quickly becoming more loyal to their applications than their devices, but they reach a tipping point at which the user experience of a particular OS and number of available apps triggers a switch decision. In my case, when Good is released for WP8, I am probably be ready to make the switch, foregoing Concur and MLB.tv (for the time being) for the benefit of the WP8 OS.

So what does a company do? Most are in a tough spot. They've either hired some iOS or Android developers (or both), or they've outsourced to a company that only has the ability to support one, or (if they're lucky) two

operating systems. At that point, the company is faced with finding and hiring new employees or contractors to perform the work. This slows time to market and increases costs.

REACHING MORE CONSUMERS, WHILE KEEPING COSTS DOWN

What does the company do after its app is successfully ported to the new OS? Lay off the new employees? Try to keep them busy doing other things until it's time to release the next version of the app? Then do it all again?

Avnet's Embedded Software & Services Group (ESSG) now offers full mobile application development and porting (or converting an application from one OS to another). Avnet's expert developers turn a long-term variable cost into a short-term fixed cost that gets your application to new markets quicker. Avnet's ESSG supports a variety of mobile operating systems including iOS, Android, Windows Phone and HTML 5—for device-agnostic mobile web sites.

In addition to app development and porting, Avnet's ESSG can perform third-party, bias-free testing on your applications, as well as internationalization (I18N) and localization to help you expand into other regions quickly—driving up adoption of your application while keeping costs in check.

Jon Parks is a Business Development Manager supporting Avnet's Embedded Software and Services Group. Jon has been with Avnet for six years with experience in product marketing, software and digital signage.

Visit IntelligentSystem.com for more articles and commentary from Avnet's technology experts.

LICENSING PROGRAMS

License Types

EMBEDDED LICENSING

Embedded licensing is designed specifically for Original Equipment Manufacturers (OEMs) and allows them to use Microsoft products on their proprietary devices in dedicated scenarios. Embedded licensing is restricted to dedicated function devices and is not permitted for general purpose computing. A COA (Certificate of Authenticity) sticker is required for each device or system and product keys are tied to the system, not the company or user.

OEM DISTRIBUTION & RESELLER - ODR

Formerly known as OEM System Builder, this program from Microsoft offers operating system, application and server software for distributors and resellers to sell to end customers or to pre-install on systems. The OEM Distribution & Reseller Channel is designed to make it easy to acquire and distribute genuine Microsoft software.

OPEN LICENSE

Microsoft Open License programs serve the needs of organizations that acquire multiple licenses, but don't need multiple copies of the media and the documentation and don't want to keep track of numerous individual end-user license terms. Open License offers the potential for substantial savings, ease of deployment, flexible acquisition, varied payment options and other benefits such as ongoing maintenance.

ISV ROYALTY

A specialized licensing program with specific eligibility requirements for Independent Software Vendors (ISVs) who use Microsoft software products along with their own proprietary software to provide a unified solution to their end users.

OPEN GOVERNMENT

For small and midsize government organizations, three Microsoft Volume Licensing options are available that offer flexibility and are sized right for your organization's needs and procurement procedures: Open Value for Government, Open Value Subscription for Government, and Open License for Government.

SELECT AGREEMENT

Select is for organizations (250 or more desktop PCs) that have mixed software requirements. It is based on a forecast licensing model in which use is measured against the forecast. This program offers a flexible and cost-effective way to make licensing purchases on a pay-as-you-go basis.

ENTERPRISE AGREEMENT

Enterprise Agreement is for larger organizations (250 or more desktop PCs) that want to standardize IT across the enterprise. Based on a three-year enrollment term, it provides the deepest pricing discounts of the Open Licensing options and the advantages of Software Assurance.

SPLA

The Services Provider License Agreement (SPLA) is for organizations that want to support additional hosting scenarios. With the SPLA, an organization can license Microsoft licensed products on a monthly subscription basis, during a three-year agreement term, and use these products to provide software services and hosted applications to its customers.

COMPARISON CHART

COLOR INDICATES OFFERS BY AVNET : ■ Offered By Avnet ■ Not Offered By Avnet

Benefits	Embedded	OEM Dist. & Resell	ISV	Open License Program (OLP)	Open Government	Select License	Enterprise Agreement	SPLA
Organizations Served	OEMs & ISVs building single-purpose devices	OEMs building general-purpose devices	ISVs	VARs Supporting Any Size Organization	State & Local Government Organizations	Medium to Large Organizations	Large Organizations	VARs
Microsoft Products	Windows CE, Enterprise, Windows Embedded Standard, Classic, Embedded Server & SQL	Windows, Server, Office	Wide selection of server products (except Windows Operating System) and applications	All commercially available Microsoft software products on the product list.		All commercially available Microsoft license and software assurance software products on the product list.	All commercially available Microsoft license and software assurance software products on the product list.	Wide selection of Microsoft software products (application, system, server, and services) available on the product list.
Program Type	Contractual	Transactional		Transactional	Transactional	Contractual	Contractual or Subscription Options Available	Contractual
Key Benefits	Small Footprint; Lower Cost, Long Lifecycle	Most cost-effective means to license Microsoft for OEM Systems	Cost savings (typically licenses are at Select level D pricing), ISV is always cash positive with Microsoft licenses (reports after sale of unified solution).	Simplified license management for mid-sized organizations; flexible payment programs, volume purchasing for savings	Flexible program allows you to pay for the software licenses you need as you need them — with pricing discounts that benefit your organization	Flexible way to purchase; purchase forecasts for increased savings	Latest Microsoft® technology acquired, standardized IT across the enterprise, simplified license management	SPLA offers you a pay-as-you-go model that benefits service providers in all sizes.
Signed Contract Required	Yes	No	Yes	Value: Yes Business: No Volume: No	No	Yes	Yes	
License Term	2 yr	n/a	1 yr	Value: 3 yr Business: 2 yr Volume: 2 yr	2 yr	3 yr	3 yr	
Forecasting required	No	No	No	No	No	Yes	Yes	
Minimum Purchase Requirement	No Min	No Min	No Min	5+	5+	1500	250+	No Min
Media	Recovery media including the factory image, applications and customizations may be purchased separately.	Included for operating systems, download for Office.	Media must be acquired separately from Microsoft Worldwide Fulfillment via Distributor	Value: Provided for initial product order; additional media available for purchase Business or volume: Media must be purchased separately	Media must be purchased separately	One media kit included per enrollment, updates provided throughout program term	One media kit included per enrollment, updates provided throughout program term	Media must be acquired separately from Microsoft Worldwide Fulfillment.
Minimum Number of Desktop PCs	No Min	No Min	No Min	5+	250+	No Min	250+	No Min
Agreement Term	2 Years	None	3 Years	Value: 3 yr Business: 2 yr Volume: 2 yr	2 Years	3 Years	3 Years	3 Years
Payment Options	Up-Front	Up-Front	Monthly	Up-Front	Up-Front	Annually or Up-Front	Annually	Monthly
Software Assurance	Not Available	Optional	Optional	Value: Included Business: Optional Volume: Optional	Optional	Option	Included	Not Included
Online Services	Not Available	Not Offered	Not Offered	Offered	Offered	Offered	Offered	Limited Offering

■ These licensing models are not offered by Avnet

WINDOWS EMBEDDED

WHAT IS WINDOWS EMBEDDED?

Windows Embedded is a family of embedded operating systems that offer familiar tools and technologies designed to bring the next generation of smart, connected, service-oriented devices to market. Microsoft has four different categories of operating systems available for embedded devices, each of which is designed to target a wide market that ranges from real-time to point-of -sale devices.

WINDOWS EMBEDDED FOR INTELLIGENT SYSTEMS

Embedded systems are truly exploding in the market place based on a category the IT industry has named Intelligent Systems. This is an exciting and growing category that's offering the opportunity for real innovation and growth for your business. Multiple trends and changes in the technology industry are fueling the growth and use of specialized devices. Industry experts predict we'll have 50 billion connected devices by 2020. Growth driving factors are:

» **Connectivity** - devices aren't stand-alone islands anymore. They are connected to other systems.
» **Big Data** - each device generates megabytes of data; now multiply that by billions more devices.
» **Computing Power** - faster chips and processors.
» **Human Interactivity** - social media and interactive platforms are driving increased engagement between people. We want to engage and be a part of a larger whole.
» **Security** - increased data and increased human engagement drive the need to ensure our data is safe and we can trust the system.

Intelligent systems represent what we expect will be the future of our business and your business. And as we prepare for that future, there is a critical reality we each have to face. An intelligent system isn't just a matter of assembling thousands of data-gathering devices. An intelligent system is the amalgamation of devices, software, solutions, connectivity, servers, and analytics that produces business intelligence.

Windows Embedded comes with the support of an extensive and active development community. These industry-leading IHVs, ISVs, distributors and other experts can help ensure the timely delivery and profitability of your embedded device. With comprehensive features, easy-to-use tools, free evaluation kits and access to a large network of community support, Windows Embedded helps yield faster time to market and decreased development costs.

WHY WINDOWS EMBEDDED?

ADVANTAGES OF AN EMBEDDED OS

The Windows Embedded family of products provides the tools and innovative technologies you need to bring your next great device to life. This reliable, high-performance platform is used by developers to deliver products that stand out through rich user experiences and seamless connections. Windows Embedded offers a number of business benefits, including:

» **Faster Time to Market** - Windows Embedded products enable faster time to market with comprehensive product development and familiar, easy-to-use developer tools that help reduce project duration.
» **Lower Cost of Development** - Windows Embedded minimizes your investment by allowing you to evaluate and test most products at no cost within 120 days (180 days for Windows Embedded CE).
» **Pay-As-You-Go Licensing** - Using per-unit licenses with tiered volume discounts, Windows Embedded allows you to defer your up-front investment and pay only when your devices ship. This helps reduce break-even volume and accurately predict total development investment.
» **Shared Source Code Program** - OEM customers worldwide can create and redistribute commercial derivatives of the Windows Embedded CE Shared Source code for shipping in commercial devices without notifying Microsoft or sharing works with the embedded community. The source code is made available to facilitate the product development and support of Windows Embedded hardware, software and devices. The Windows Embedded Shared Source program allows you to access, debug, modify, improve and share the Windows Embedded CE Shared Source code for constant product development.
» **Preservation of Intellectual Property** - While other operating system platforms require you to make your intellectual property public, Microsoft Windows Embedded licensing helps preserve intellectual property and protects you from the liability of using private code that is often found in the public domain.
» **Microsoft's Commitment to Windows Embedded** - Microsoft officially entered the embedded marketplace in November 1996 with the release of Windows CE 1.0. The Windows Embedded team has since expanded the embedded portfolio to a family of multiple products with a long-term roadmap for continued growth and

ongoing product development. The Microsoft Support Lifecycle Policy guarantees that Microsoft provides five years of mainstream support and five years of extended support for Windows Embedded products after release, for a total of 10 years of support.

» **Industry-Leading Partner Network** - Through a worldwide network of industry-leading partners, you gain access to a vibrant ecosystem of valuable resources and services that help speed your device to market. Windows Embedded Partners include distributors, system integrators, independent hardware and software vendors, ODMs, OEMs, silicon vendors, tools vendors and professional training organizations.

» **Community & Support** - Access to an active network of Microsoft developers, Windows Embedded customers and more than 500 Windows Embedded Partners and 60 Windows Embedded MVPs allows members to collaborate on every step of the embedded device product development process. Additional support includes third-party products and services worldwide; training, tutorials and how-to content; and online community forums such as newsgroups, forums, webcasts and blogs.

» **Increased Revenue Opportunity** - Release a wider variety of compelling embedded products in less time than the competition and solidify your standing as an embedded marketplace leader. Windows Embedded makes previous projects reusable and allows easy updates and extended product lines by using existing code.

HOW TO BUY

PURCHASING WINDOWS EMBEDDED TOOLS AND PRODUCTS

The Windows Embedded comparison table can assist in determining which Microsoft Embedded product is right for you. Once you have established the best product for your needs, the following purchase process can be followed.

1. **Evaluate the product** - Trial software enables you to evaluate the product prior to purchase. Download or order a copy of the trial version, or contact Avnet to obtain the trial version of the Windows Embedded product that best fits your needs. With the trial software you can build devices that use Windows Embedded technologies.
2. **Purchase the product's development tools** - After you've completed your evaluation of the Windows Embedded product, contact Avnet to assist you with purchasing licenses.
3. **Acquire runtime licenses for commercial shipment** - Once you complete testing and development and are ready to bring your embedded system to market, it's time to acquire runtime licenses and certificates of authenticity from your Microsoft Authorized

Embedded Distributors for each unit that you ship. The cost for each runtime license may vary, based on the volume of licenses purchased over a given period of time.

4. **Subscribe to Microsoft Developer Network (MSDN)** - A Microsoft Visual Studio Professional Edition with MSDN subscription provides a cost-effective way to license Microsoft platforms and tools, receive technical support and obtain early access to the latest Microsoft updates available. MSDN benefits provide developers of embedded devices with a single subscription for access to the Visual Studio suite of software development tools and the following Windows.

Embedded platforms and technologies:

» **Windows Embedded CE/Compact** - A 32-bit native, componentized, hard real-time operating system designed for small-footprint devices.
» **Windows Embedded Standard** - the next generation of Windows XP Embedded for advanced enterprise devices.
» **Windows Embedded POSReady/Industry** - a flexible operating system designed to seamlessly connect point-of-service (POS) solutions with peripherals, servers and services.

OEM CLA LICENSING PROCESS

The Embedded OEM Customer License Agreement (OEM CLA) is required to be signed for all Microsoft products purchased through the Embedded Distribution channel.

As a Microsoft Authorized Embedded Distributor, Avnet facilitates the licensing process between the Embedded OEM Customer and Microsoft Windows Embedded. The OEM CLA includes the general terms and conditions that govern the licensing of Microsoft Embedded Licensed Products.

Embedded OEM Customers obtain an electronic OEM CLA form from Avnet as a link by e-mail. Click the link in the e-mail and fill in and submit the CLA electronically. You will get then an eDocuSign request back from Microsoft to electronically sign the OEM agreement. Once Microsoft electronically countersigns the OEM CLA, an Embedded OEM Customer may order runtime licenses through Avnet.

If you have a third-party installer, please nominate this company as an "Outsource Manufacturer" (OM) in the additional right agreement (ARA) inside the CLA form. An outsource manufacturer can buy the licenses and install the images in the name of an OEM.

You can nominate a "Third Party Integrator" (TPI) as well. A TPI can develop the operating system image and software solution for the OEM. One company can be nominated for both roles.

The OEM Customer License Agreement (OEM CLA) remains valid for two years.

Microsoft generally contacts OEM customers 45 days prior to their OEM CLA expiration date by e-mail. Your Avnet representative will contact you as well. There is only one OEM CLA for all embedded products.

HOW TO SIGN A MICROSOFT EMBEDDED ECLA 5.0

1. Request the eCLA 5.0 link from your local Silica representative or from microsoft@avnet.com. Avnet will then enter your contact details into a Microsoft online tool and Microsoft will send you an e-mail with a link to the eCLA 5.0.
2. Follow the link to the eCLA 5.0 from Microsoft. You will be asked to sign in with your LiveID. Please note that the LiveID needs to be registered to the exact same e-mail address as to which Microsoft sent you the e-mail! If you do not have such a LiveID account, you can create a new one. Please use the exact same e-mail address to create the new account!
3. Sign in with your LiveID and complete the online eCLA. All fields marked with an asterisk (*) are mandatory.
   a. "A company organized under the laws of" must be answered with a country name, e.g. "United States."
   b. Please use an English job title and not the academic title.
   c. Notification contact may be a technical contact to get all the MS information.
   d. Normally, the Company Ship to Information is the same as Company Information. The ship to address is important for the OPK (installation media) shipments. Microsoft can only ship OPKs to this address.
   e. Don't forget to choose a Device Category from the drop-down menu in the section "Embedded System Device Information."
   f. If you have a third-party INSTALLER, please add an "Outsource Manufacturer" (OM). An OM can buy and/or install the licenses for the OEM.
4. If you have a third-party INTEGRATOR, please add an "Third Party Integrator" (TPI). A TPI can develop the operating system image for the OEM.

5. When finished, submit the eCLA form. Avnet will get then a notification e-mail to review the data. If something was completed incorrectly, you will get a notification back via e-mail to correct the fields. When all fields are ok, the eCLA will sent to Microsoft.
6. Microsoft will review the OEM data and send an e-mail directly to the "signer's" e-mail address with an eDocuSign link to electronically sign the eCLA document. Please note that you can redirect the eDocuSign request to another internal e-mail to sign the agreement. Please eSign the CLA with the eDocuSign process.
7. Once eSigned, Microsoft will re-sign the document under eDocuSign and you will get an eDocuSign e-mail with a carbon copy of the agreement back. You can print out this resigned agreement if you desire.
8. Congratulations! You are now an embedded OEM and are allowed to buy and use Microsoft embedded licenses under the embedded OEM license terms! CLAs expire and must be renewed after a period of two years.

If you have questions about the eCLA process, please contact us at microsoft@avnet.com.

THIRD-PARTY INTEGRATOR
Third-party integrators are companies that the OEM can engage with to create and/or test an image, application, or software driver for systems using Microsoft Embedded products. The OEM must request and receive approval by Microsoft to use a third-party integrator using the Third-Party Integrator Schedule attached to the CLA.

OUTSOURCE MANUFACTURER
An Outsource Manufacturer (OM) is a third party that the OEM can contract to do any of the following:

» Install an image on an embedded system
» Manufacture an embedded system
» Prepare the embedded system for distribution
» Distribute embedded systems

The OEM must request and receive approval by Microsoft to use a third-party Outsource Manufacturer using the appropriate form available from Avnet or downloadable from the MyOEM Portal. The OM can purchase Microsoft Embedded runtime licenses from Avnet, identifying the OEM and CLA#.

WHAT IS A COA?

CERTIFICATES OF AUTHENTICITY (COAS)

Each runtime license contains a sticker that is known as a "Certificate of Authenticity" (COA). This is an anti-piracy device, OEM product-tracking device and proof of license for Microsoft OEM products. The COA is non-removable, sequentially numbered and contains additional anti-piracy features. It should be permanently affixed to an accessible location on or within each embedded system. If attaching the COA is problematic, a waiver may be obtained from Microsoft, which allows an unattached COA to accompany the system.

Product Title	Product Title: line 1 Product Title: line 2
COA Number COA Base Stock Number	**00039-000-000-000** **X11-12345**

COA (actual size 8.74mm X 22.23mm)

RECONCILING COAS

It is the OEM customer's responsibility to accurately reconcile the total number of COAs received with the number of systems shipped with Microsoft software. OEM customers should maintain appropriate records regarding the disposition of all COA labels, including serial number tracking of any COAs damaged as part of the manufacturing process.

PRODUCT IDS (PIDS)

The Product ID (PID) is also known as an Activation Key. This 5X5 sequence of 25 numbers and letters (12345-12345-12345-12345-12345) is used to make the installed Microsoft product "Production Ready." If the PIP is not activated, installation expires after 120 days.

- **Windows for Embedded Systems (FES) and Embedded Server**
  Embedded Enterprise ("For Embedded Systems"-FES) and Embedded Server products have each system's PID printed on the individual COA.

- **CE, WEPos, POS Ready2009, XP Embedded, Windows Embedded Standard 2009**
  For these licenses, the PID is not printed on the COA. Instead, a single PID is printed on a separate flyer that is enclosed in the runtime license envelope (which can contain 1, 10, 100 or 1000 COAs). Only one PID per envelope is available and the Embedded OEM can enter this single PID number in the design tool to permanently unlock the

embedded image. Since the PID does not correspond with the number on the license stickers, any number of systems can share the same number and additional PIDs acquired from subsequent purchases of runtime licenses need not be obtained.

- **POSReady7, Industry 8, WES 7 & 8**
  For these licenses, the PID is not printed on the COA (Certificate of Authenticity). Instead, you must request a PID application from your Avnet at microsoft@avnet.com.

IMPORTANT

DO NOT LOSE THIS FLYER.

IMPORTANT RUNTIME KEY INFORMATION

The Runtime Key, also known as a License Key or Production Identification (PIO) Key, is used by OEM Customers to authenticate and deploy an image across a line of Embedded Systems. Runtime Keys are no longer printed on each device Certificate of Authenticity (COA). Only one Runtime Key is delivered with each Runtime License envelope.

THIS IS THE RUNTIME KEY.

12345-12345-12345-12345-12345

YOU ARE NOT LICENSED AND IN MOST CASES WILL NOT TECHNICALLY BE ABLE TO CREATE A REDISTRIBUTABLE IMAGE FROM THE LICENSED PRODUCT WITHOUT THIS RUNTIME KEY.

Microsoft

PID flyer from inside an embedded license envelope

ADDITIONAL LICENSING TERMS (ALTS OR ATS)

ALTs (formerly "Additional Licensing Provisions" or ALPs) define distribution rights and restrictions specific to each individual Microsoft Embedded Licensed Product. To track inventory and accommodate customer packaging requests, Avnet's part number, which corresponds to the Microsoft part number, signifies how many runtime licenses and COAs are in each envelope. For example, an envelope containing one (1) runtime license of Microsoft part #7WT-00011 would be identified as "7WT-00011-1PK", with larger pack sizes containing "-10PK", "-100PK" and "-1000PK" suffixes.

LICENSING PROVISIONS

Each envelope has a "Break the Seal" (BTS) Agreement. Breaking the seal to open the envelope signifies that the embedded OEM customer accepts the terms and conditions of the LTs. Once the seal is broken, the runtimes cannot be sent back to Avnet or Microsoft. Printed versions of the ALTs are attached to the front of the runtime license envelope. However, a copy of these documents can also be obtained from Avnet's Microsoft team or downloaded from the Microsoft MyOEM Portal.

"for Embedded Systems" versions of Windows XP, Windows Vista, Windows 7 and the embedded versions of Windows Server 2003 and Windows Server 2008 R2.

To use OEM Activation, the OEM must have purchased either 100 copies of Windows Embedded Server or 1,000 copies of the "for Embedded Systems" versions of Windows 7, Vista or XP within the last 12 months.

In order to set up OEM Activation, the OEM must purchase and use a Hardware Security Module (HSM) available from Thales (formerly nCypher), which places markers into the firmware (BIOs tables) of the motherboard intended for use. Thales is the only authorized source for HSMs.

MICROSOFT SOFTWARE LICENSING TERMS (LTS)

Each OEM is required to ship with each system the End User Licensing Terms (LTs). This document serves the same function as the End User License Agreement (EULA) that appears on the screen when a customer activates a non-embedded product. For embedded products, this comes in the form of a printed document that includes the name of the embedded OEM. These license terms are an agreement between the end user and the Embedded OEM. A template for this document is available from Avnet's Microsoft team or can be downloaded from Microsoft's MyOEM Portal. There are different versions of this document for the different types of Microsoft embedded products.

RECOVERY MEDIA

OEMs who use Microsoft Embedded are required to deliver the Embedded OS preinstalled on the system. The OEM is also permitted to create media for image recovery, update or field upgrade. Only an OEM or Microsoft Authorized Replicator can create an image disk. Avnet has partnered with several Microsoft Authorized Replicators and can supply the OEM with the image media, making sure that the media meets the guidelines set by Microsoft. Below is an illustrated guideline showing how the media should be printed.

For more information on Microsoft Windows Embedded, contact Avnet's Microsoft Team at MSTeam@avnet.com or your local Avnet representative.

ACTIVATION

WINDOWS ACTIVATION

Windows Activation is a product used by Microsoft to reduce illegal software piracy. When a computer system with a non-embedded Windows operating system is turned on for the first time, the user is prompted to "activate" the operating system (OS). When the user agrees to allow the OS to be activated, the system connects to Microsoft via the internet and the OS's unique runtime license becomes associated with the unique hardware on which it is installed, and the 30-day use restriction is removed. If an internet connection is not possible, users can activate the key by contacting the Microsoft Product Activation Center and following the steps provided by an automated telephone system or by a customer service representative. Without activation, the OS will stop working after 30 days.

OEM ACTIVATION (OA)

OEM Activation allows OEMs to pre-activate licensed copies of Windows Embedded operating systems at their location, which eliminates the activation process required by users. OA can be used to pre-activate the

COMPANY
LOGO
MICROSOFT PRODUCT
NAME

Customer trademark & copyright notices

Customer version and ancillary info

For use with
Customer Product Name
Customer Product Model #
Boot disk for recovery of existing image only.

Support for these products provided by **Customer Name**
Portions © Microsoft Corporation
All RIghts Reserved.

PRODUCT ACTIVATION CHART

This schedule outlines the product availability and distribution end-of-life dates for Windows Embedded products. These products may not be distributed or installed by Embedded OEMs after the distribution end date. To purchase licensing, contact Avnet's Microsoft Team at MSTeam@avnet.com or (800) 474-3044.

Product	Activation	Type of Activation	KEY/PID location	Downgrade Rights
OEM System Builder (ODR)	YES	Enter Key/Internet	Key on COA sticker	YES - Use existing media and key
OEM Embedded Server	YES	Enter Key/Internet	Key on COA sticker	YES - Free OPK for Media - On own for Key
OEM Embedded Enterprise (FES)	YES	Enter Key/Internet	Key on COA sticker	YES - Free OPK for Media - On own for Key
OEM Embedded Standard (WES)	NO	No Activation	Single Key - No Activation	YES - Use toolkit for Media - request Key
OEM Embedded POS	NO	No Activation	Single Key - No Activation	YES - Use toolkit for Media - request Key
OEM Embedded Industry 8 / WES8	YES	Single PID/Internet	Single Key - Activate Many	YES - Use toolkit for Media - request Key
Retail Package	YES	Enter Key/Internet	Key on Package	NO - Exception is SQL allowed - On own for Media/Key
ISV - SQL	NO	No Activation	Key w/Gold Disc	YES - 24 Month Max - Order Media Kit
ISV - OFFICE	YES	MAK	Key w/Gold Disc - 50 activations	YES - 24 Month Max - Order Media Kit
Open Volume	YES	MAK / KMS	Key in VLSC Website	YES - Key in VLSC Website

WINDOWS EMBEDDED END-OF-LIFE CHART

Product Name	General Availability	Product Distribution End Date
Windows Embedded Compact 2013	June 13, 2013	TBD
Windows Embedded 8 Industry	April 2, 2013	TBD
Windows Embedded 8 Standard	March 20, 2013	TBD
Windows Embedded 8 Pro	March 20, 2013	TBD
Windows Server 2012 for Embedded Systems	October 30, 2012	June 30, 2027
Microsoft SQL Server 2012 for Embedded Systems	May 20, 2012	March 31, 2027
Windows Embedded Compact 7	March 1, 2011	February 28, 2026
Windows Embedded POSReady 7	July 1, 2011	September 10, 2026
Windows Embedded Device Manager 2011	April 1,2011	April 1, 2016
Windows Embedded Handheld 6.5	December 17, 2010	April 30, 2022
Windows Embedded Standard 7	July 27, 2010	July 27, 2025
Microsoft SQL Server 2008 R2 for Embedded Systems	July 20, 2010	July 9, 2024
Windows Embedded POSReady 2009	December 9, 2008	February 11, 2024
Microsoft SQL Server 2008 for Embedded Systems	November 6. 2008	July 9, 2024
Windows Embedded Standard 2009	October 7, 2008	January 8, 2024
Windows Server 2008 for Embedded Systems	May 6, 2008	May 6, 2023
Windows Server 2008 R2 for Embedded Systems	February 6, 2008	February 6,2023
Windows Embedded CE 6.0 Operating System (Toolkit and Runtime), all versions	November 1, 2006	February 28, 2022
Windows Server 2003 R2 for Embedded Systems	March 5, 2006	May 28, 2018
Microsoft SQL Server 2005 for Embedded Systems	January 14, 2006	April 1, 2021
Windows Embedded for Point of Service 1.x, all versions	May 24, 2005	May 24, 2020
Windows CE 5.0	August 31, 2004	August 31, 2019
Windows CE .NET 4.2	June 1, 2003	June 1, 2018
Windows Server 2003 for Embedded Systems	May 28, 2003	May 28, 2018
Windows CE .NET 4.1	October 29, 2002	October 29, 2017
Windows CE .NET 4.0	April 1, 2002	April 1, 2017
Windows XP Embedded (Toolkit and Runtime), all versions	January 30, 2002	January 30, 2017
Windows XP Professional for Embedded Systems	December 31, 2001	December 31, 2016
Microsoft SQL Server 2000 for Embedded Systems	November 30, 2000	November 30, 2015
Windows CE 3.0	July 30, 2000	July 30, 2015
Windows 2000 Server for Embedded Systems	March 31, 2000	March 31, 2015
Windows CE 1.12	August 31, 1999	August 31, 2014
Windows NT Embedded 4.0	August 30, 1999	August 31, 2014

OEM DISTRIBUTOR AND RESELLER - ODR

OEM DISTRIBUTION & RESELLER PROGRAM (FORMERLY OEM SYSTEM BUILDER)

This guide will provide you, the OEM Distribution & Reseller (ODR), with the information you'll need to successfully understand and manage Microsoft ODR software licenses. It will explain the ways OEMs can acquire genuine Microsoft software, how that software can be distributed, and the value of pre-installing genuine Microsoft software. It will also answer common questions concerning licenses.

MICROSOFT OEM DISTRIBUTION & RESELLER (ODR) CHANNEL

WHO ARE OEM DISTRIBUTORS AND RESELLERS?

An original equipment manufacturer (OEM), assembler, refurbisher or pre-installer of software on computer systems who sells the system to an end user or third party.

Microsoft offers operating system, application and server software for distributors and resellers to sell to end customers or to pre-install on systems. The OEM Distribution & Reseller Channel is designed to make it easy to acquire and distribute genuine Microsoft software.

SOFTWARE LICENSES AVAILABLE THROUGH ODR
» **Windows 8** - Windows 8 Professional and Windows 8 Home Premium
» **Windows 7** - Windows 7 Ultimate, Windows 7 Professional and Windows 7 Home Premium
» **Windows Server 2012** - Windows Server 2012 Standard, Windows Server 2012 Datacenter and Windows Server 2012 Essentials
» **Windows Server 2008 R2** - Windows Server 2008 R2 Standard, Windows Server 2008 R2 Datacenter, Windows Server 2008 R2 Enterprise and Small Business Server 2011
» **Office 2013** - Office 2013 Professional, Office 2013 Home & Business and Office 2013 Home & Student

OEM DISTRIBUTOR & RESELLER (ODR) LICENSE

The ODR program license is affixed to the side of the Microsoft OEM Distribution & Reseller program pack for Windows or Server software. By opening the software pack, system builders agree to the license terms. For Office 2013, the ODR license and OEM Pre-installation kit (OPK) are

available to download at the OEM Partner Center website. A complete copy of the OEM Distribution & Reseller program license is available at http://www.microsoft.com/oem/sblicense. License terms include:
» Limited License
» Software Distribution
» Pre-installation using the OPK
» Certificate of Authenticity (COA) Label
» End-User Support
» Activation
» Recovery Media

CERTIFICATE OF AUTHENTICITY (COA)

The COA is included in the System Builder Software Pack. For Windows desktop and Windows Server operating system licenses, when installing the software on new PC hardware, the system builder must affix the COA label to the outside of the fully assembled PC or Server in a visible and easily accessible area. You can learn more about the COA label features at http://oem.microsoft.com/coa.

PRODUCT ACTIVATION
» Microsoft Product Activation is designed to help end users ensure they have a legal, licensed and genuine copy of Microsoft software.
» Product activation is required by the end user in OEM Distribution & Reseller program products.
» Activation works by verifying that the software's product key—required as part of product installation and provided on the COA—has only been used on the PC the software was distributed with initially.
» For more information, visit http://www.microsoft.com/en-us/piracy/.

RECOVERY SOLUTIONS
» The hologram DVD included within the Windows or Windows Server System Builder Pack contains the full version of the Windows or Windows Server software. This DVD is intended for recovery purposes only.
» This hologram DVD must be transferred to the end user with the pre-installed PC.
» The ODR license prohibits the replication of Microsoft software, therefore replicating recovery DVDs and selling them with the systems you build is not allowed under the ODR license.
» System builders can offer hard-disk recovery solutions.
» System builders may use the Windows Pre-installation Environment (Windows PE) or use the software of a third-party to help create a hard-disk recovery solution.

DOWNGRADE RIGHTS

WHAT ARE DOWNGRADE RIGHTS?

Downgrade rights are an end-user right, documented in the Software License Terms that customers accept upon first running Windows software. Thanks to downgrade rights, end users who have acquired a more recent version of the software (such as Windows 8 Pro) can use a prior version of the software (such as Windows 7 Professional) until they are ready to move to the more recent version. Not all products include downgrade rights. But if a product includes downgrade rights, the license terms for that product will indicate which prior versions of the software may be used.

DOWNGRADE RIGHTS FOR WINDOWS SOFTWARE

The following OEM versions of Windows software are eligible for downgrade rights:

» **Windows 8** - Windows 8 Pro includes downgrade rights to Windows 7 Professional and Windows Vista Business
» **Windows 7** - Windows 7 Professional and Windows 7 Ultimate include downgrade rights to:
  • Windows Vista Business and Windows Vista Ultimate
  • Windows XP Professional, Windows XP Tablet PC Edition, or Windows XP x64 Edition

*Note: Other OEM Windows 7 versions (for example, Windows 7 Home Basic and Windows 7 Home Premium) do not include downgrade rights.

DOWNGRADE RIGHTS FOR WINDOWS SERVER 2012 SOFTWARE

The following OEM versions of Windows Server software are eligible for downgrade:

	Windows Server 2012 Datacenter Edition	Windows Server 2012 Standard Edition
Windows Server 2008 R2	Datacenter Enterprise Standard Web Itanium HPC	Enterprise Standard Web HPC
Windows Server 2008	Datacenter Enterprise Standard Web Itanium HPC	Enterprise Standard Web HPC
Windows Server 2003 R2, 2003, etc.	End customers may also downgrade to any previous versions.	

DOWNGRADE MEDIA AND PRODUCT KEYS

End users may use any existing software media product key to install and activate downgrade or down-edition software. The downgrade software and product key may be from any channel (Open, OEM, or retail) and does not need to match the channel license type that is assigned to the server.

*Note: Distribution of downgrade media and product keys is not permitted in the system builder and reseller channels.

ISV ROYALTY

OVERVIEW

Deliver your Unified Solutions to end-users with simplified licensing options through the Microsoft Independent Software Vendor (ISV) Royalty Licensing Program. This licensing program helps make it easy to deliver your business solutions to end-users by allowing you to integrate Microsoft products into other applications and then distribute the Unified Solution to end-users. For more information, please see the program details on the Microsoft Partner Network. Visit http://www.avnetmssolutions.com/licenses/1/title/ISV+Royalty for more details.

The Microsoft ISV Royalty Licensing Program is a worldwide software licensing program that offers ISVs a convenient way to license Microsoft products and integrate them into a software business application.

» Organizations that exclusively develop software or software solutions instead of being part of a computer system or being a hardware manufacturer.

» Organizations that obtain at least 30 percent of their overall revenue from the sales of licenses of that solution.

HOW ISV ROYALTY LICENSING WORKS

The ISV Royalty Licensing Program is a worldwide software licensing program for all solution partner segments. You acquire licenses for your Unified Solution through a Microsoft Authorized Independent Software Distributor ("distributor").

Avnet offers dedicated local support to the ISV product and service needs. Avnet are experts in Microsoft Licensing. Therefore, they are very useful in meeting reporting requirements and managing the licensing agreement, creating a one-stop shopping experience. The program offers access to a wide range of Microsoft licensed products. Please note the ISVR program does not include desktop operating systems, server operating systems, and online services.

PROGRAM BENEFITS

The following are some of the benefits of participating in the ISV Royalty Licensing Program.

» **Deliver a total solution.** Simplify procurement and deployment for your customers by eliminating the need to separately license the Microsoft products that are included with your solution.

» **Reduce costs.** Help reduce installation, configuration, update, and support costs by pre-configuring solution installation with Microsoft products.

» **Potentially increase revenue.** Create an additional revenue stream or increase margins by redistributing Microsoft licenses and Embedded Maintenance upgrade coverage with a Unified Solution.

» **Worldwide distribution.** Distribute a Unified Solution to customers in any part of the world where distribution is allowed.

PROGRAM REQUIREMENTS

To participate in the ISV Royalty Licensing Program, you must:

» **Develop a Unified Solution.** Build a value-added solution that uses Microsoft licensed products and distribute the Unified Solution in a tangible media format.

» **Enroll in the Microsoft Partner Network.** Enroll in the Microsoft Partner Network (MPN) at any level.

» **Complete the agreements.** Complete the ISV Royalty License and Distribution Agreement and Microsoft Business and Services Agreement (MBSA).

» **Submit the paperwork.** Submit the ISV Royalty License and Distribution Agreement and credit application form to Avnet

» **Meet all program requirements.** Comply with the full program requirements as outlined in the ISV Royalty License and Distribution Agreement that you get from Avnet.

After you are accepted into the program, you will receive a welcome letter that contains information on how to get started—including how to order fulfillment media and how to register for the program's online tools.

PRODUCT KEY ACTIVATION

Some products require Volume License Keys (VLKs) to complete installation. The product key is assigned to a company or organization and must be used for desktop PC or administrator installations of products. To obtain an ISV Volume License Key and for a list of products that require VLKs, please contact your distributor.

QUALIFYING FOR INTEGRATION AS AN ISV

To qualify for integration with Microsoft products under the ISV Royalty Licensing Program, the ISV's solution must add significant and primary functionality to the Microsoft product. This requirement may extend to software that the ISV acquires from third parties.

INTEGRATING MICROSOFT PRODUCTS INTO A SOLUTION

An ISV can integrate Microsoft licensed products into their solution by including one or more Microsoft licensed products along with the ISV's software comprising the unified solution and either:

1. Copying onto physical media, which is labeled and packaged as the ISV's solution,

OR

2. Pre-installing, by the ISV, on a computer system for distribution as part of the ISV's unified solution.

PROGRAM REQUIREMENTS FOR AN ISV

» The ISV builds a unified, value-added solution that integrates Microsoft licensed products and distributes the solution in a tangible media form.
» The ISV incorporates any applicable Microsoft license terms into the End Customer Agreement for the unified solution.
» The ISV provides monthly reporting to their distribution partner on all Microsoft licensed products, which are included within their unified solutions. If there are no sales of the solution during a month, then the ISV submits a zero royalty report to their distributor partner.

HOW AN ISV JOINS THE PROGRAM

Enrolling your ISV involves a few easy steps:

» The ISV completes an ISV Royalty License and Distribution Agreement and returns it to Avnet.
» Avnet submits the documents to the Microsoft.
» The ISV receives confirmation of enrollment via a welcome letter and access to the Avnet ISVR reporting portal.

LICENSES USED IN PROGRAM

The ISV default is a "full use" license that gives the ISVs and customers the ability to use Microsoft products with other applications, as long as they are still licensed for the ISVs application. Some products are also offered with an ISV Runtime License, which has more restrictive use rights. For example, the customer can only use the Microsoft licensed products with the ISV solution and cannot use the Microsoft products to run any other application or solution independent of the ISV solution with which the products were acquired.

KEY STEPS TO ENSURING PARTICIPATION

After an ISV is successfully enrolled in the program, the following will assist in ensuring participation and compliance in the ISV Royalty Licensing Program:

» Obtain master copies of software application(s) through Microsoft Worldwide Fulfillment by ordering them via MOET – Microsoft Order Entry Tool
» Ensure that the required Microsoft terms and End-User License Agreement (EULA) text are passed through to ISV end customers
» Schedule a post enrollment meeting to discuss business goals, product needs and review method in which (the distributor will report ISVs royalties due).
» Submit to Distribution a royalty report identifying the number of Microsoft application licenses distributed to customers within 5 days after the end of each calendar month.

OBTAINING VOLUME LICENSING KEYS FOR MEDIA

Most server products, such as SQL Server, do not require a separate key as it is embedded in the media. MBS products, such as CRM and some server products, have the VLK printed on the CD / DVD sleeve. For products requiring a Volume License Product Key, the CD will include the following text below the product name: (Volume Licensing Product Key Required).

The only products requiring VLKs under the ISV Royalty Program are desktop products, such as Project Pro, Visio Std and Visio Pro. To obtain their Volume License Keys (VLKs), contact Avnet.

ADDITIONAL ISVR PROGRAM FAQS

Can ISVs in the ISV Royalty Licensing Program distribute Microsoft products as stand-alone products?
No. With the ISV Royalty Licensing Program, ISVs can distribute Microsoft products only as part of a Unified Solution. However, in some cases, ISVs can distribute additional licenses to a user if they have previously distributed the solution to the user.

Can ISVs integrate only a portion of the Microsoft product with their business solution?

No. Integration of a Microsoft product with their Unified Solution must include the entire product, not just a portion of the product. Based on the solution's functionality, certain features might not be used (for example, development tools), but the entire Microsoft product must be integrated.

Can ISVs disable features of the product if the application does not use them?

Microsoft does not allow ISVs to disable any product features so that users receive fully functional product. In addition, disabling certain features might affect other parts of the product that would be detrimental to the software. However, ISVs may configure the software in accordance with its software documentation.

What types of licenses are used in the program?

The default is the ISV License, which is a "full use" license that gives users the ability to use the underlying Microsoft products with other applications as long as they are still licensed for your application. Some products are also offered with an ISV Run-Time License, which has more restrictive use rights—the user can use the Microsoft products only with the solution, and cannot use the Microsoft products to run any other application or solution independent of the solution with which the products were acquired.

Can ISVs deliver their Unified Solutions to users in other countries?

The ISV Royalty Licensing Program allows for worldwide distribution of the Unified Solution, subject to U.S. export laws and subject to certain agreement provisions. Because Microsoft does not exercise control over who ISVs distribute the Unified Solution to, ISVs are required to have agreements with all third-party business entities that they directly provide the Unified Solution to for distribution (and not for sublicense), directly or indirectly, to users.

What is the agreement term?

The agreement term is three (3) years. If ISVs change distributors during the agreement's term, the three-year term commitment must still be met. If ISVs wish to continue in the ISV Royalty Licensing Program after the three-year term expires, they may re-enroll by signing a new agreement.

What is Embedded Maintenance?

ISVs can give users the option of upgrading to future Microsoft product versions by acquiring Embedded Maintenance for a fee. Only new product versions released during the Embedded Maintenance coverage period are included. Licenses must be enrolled in Embedded Maintenance when the license is originally acquired, and distribution rights apply to Embedded Maintenance as well as to the Microsoft products within the Unified Solution. Coverage must be renewed annually during the agreement's term.

Can I offer Embedded Maintenance to users just for the Microsoft product?

No. The ISV Royalty Licensing Program allows you to sell and distribute Embedded Maintenance to your users for the Unified Solution.

How do users with licenses enrolled in Embedded Maintenance get the Microsoft upgrade product?

ISVs supply the Microsoft upgrade product to their users as part of an upgrade to the Unified Solution.

Who is the legal licensor under the ISV Royalty Licensing Program?

Under the ISV Royalty Licensing Program, Microsoft licenses its products to the ISV, not the end user. The ISV is the sub-licensor of the Microsoft product licensed to end users as part of the unified solution.

What is the policy for price changes?

Microsoft may decrease the price in the price list at any time. Microsoft may increase the price in the price list only (1) once each calendar year on January 1.

OPEN LICENSE

OPEN LICENSE PROGRAM OVERVIEW

Open License program (OLP) is a good volume licensing option if you are a corporate, academic, charitable, or government organization that wants to pay as you go. Because you pay for licenses as you need them, you get maximum flexibility to grow with your organization's increasing and changing business needs.

The Open License agreement requires a minimum initial purchase of five (5) software licenses, but you can acquire additional licensed products through OLP in any quantity at any time during the two-year agreement term. Microsoft® Software Assurance for Volume Licensing can be purchased at the time of the license purchase to help you get the most out of your software investment.

BENEFITS TO OLP

The Open License program offers many benefits, including the following:

MANAGE YOUR LICENSES MORE EASILY

» Place an order and start using Microsoft licensed products immediately through a flexible pay as you go model, eliminating the need for forecasting.

» Once an order is placed, receive a single Authorization Identification Number that you can reuse and share with qualified affiliates used when placing future orders to ensure the two-year price level throughout the two-year agreement.

» Manage licenses easily and conveniently through online tracking tools. With the Volume Licensing Service Center (VLSC), you can electronically manage your license orders, review purchase history, download purchased software, obtain Volume License Keys (VLKs) to activate software, and track compliance.

TAKE CONTROL OF YOUR IT INVESTMENT

» You can upgrade licensed product organization-wide while staying within your budget.

» Pay at the time you acquire software licenses with a one-time transaction.

» License and deploy software products as you need with a flexible purchasing process.

HAVE MORE LICENSING FLEXIBILITY

» Because you pay for licenses as you need them, you get maximum flexibility to grow with your organization's increasing and changing business needs.

» You have easy access to the latest Microsoft technology through a broad worldwide reseller channel, helping ensure that you have convenient and fast access to thousands of software titles.

» You have the option to purchase Software Assurance.

» If your organization requires Microsoft's enterprise solutions, Microsoft Office Professional Plus, Enterprise CAL, and Microsoft® Desktop Optimization Pack (MDOP) are now available.

MANAGE YOUR SOFTWARE COSTS MORE EFFICIENTLY

» Offers discounts off the retail price of software product licenses to stretch software procurement budgets further

» With a simple one-time transaction, you can pay for what you need when you need it, giving you flexibility in managing your software needs

OTHER OPEN LICENSE PROGRAM BENEFITS

SOFTWARE ASSURANCE

Microsoft Software Assurance for Volume Licensing helps boost productivity across your organization by enabling you to get the most out of your Microsoft software with 24x7 support, deployment planning services, end-user and technical training, and the latest software releases and unique technologies, all in one cost-effective program. Open License benefits under Software Assurance include:

» The Software Assurance New Product Versions benefit provides new software version releases so you have access to the latest technology.

» The Home Use Program provides employees with the latest version of Microsoft Office for their home computer, via low-cost download.

» 24x7 Problem Resolution Support provides around-the-clock phone and Web incident support for Microsoft server and desktop products.

» The Microsoft Software Assurance Cold Backups for Disaster Recovery benefit provides licensing for servers used as offline ("cold") backups for disaster recovery purposes.

» TechNet Subscription through Software Assurance gives IT staff access to experts, technical information, plus beta and final versions of products for testing and evaluation.

» The Extended Hotfix Support benefit provides specific product fixes on a per customer incident basis, beyond the standard product support terms and releases.

For more details, see the Software Assurance Benefits Guide at http://www.microsoft.com/softwareassurance.

PURCHASING SOFTWARE ASSURANCE

Open License customers may purchase Software Assurance at any time during their agreement term. However, Software Assurance coverage runs only for the remaining balance of the term of the Open License authorization number. You must always pay for Software Assurance in two-year increments, regardless of when you purchased it. In cases where time has passed after the initiation of an Open License, it may be advantageous for you to open a new Open License to receive the most value from your Software Assurance purchase.

A period of up to 90 days is allowed from the purchase of a full-packaged product (FPP) license in retail or from the purchase of a license from an OEM manufacturer to enroll that product in Software Assurance.

Additionally, Microsoft Office suite licenses that you purchase through an OEM may be enrolled in Software Assurance within 90 days of the license purchase date. All other application product licenses purchased in retail or from an OEM may not be enrolled in Software Assurance.

ADDITIONAL RESOURCES FOR OLP

Microsoft offers a variety of information about the Open License program and other Volume Licensing programs on the Microsoft Volume Licensing website at http://www.microsoft.com/licensing/.

Open Value, Open Value Subscriptions & Open License
http://www.microsoft.com/licensing/programs/open/

Software Assurance
http://www.microsoft.com/softwareassurance

Volume Licensing Options for Industries: Government, Education, Health & Charity
http://www.microsoft.com/licensing/licensing-options/for-industries.aspx

APPETITE FOR APPS GROWS AMONG OEMS AND ISVS

Reprinted from IntelligentSystem.com, an Avnet Embedded blog

By Jon Parks, Avnet Embedded   March 20, 2013

After almost two months of working with OEMs and ISVs to understand how we can help bring their solutions to market faster with software services, one area of surprisingly strong need stands out amongst service requirements—apps.

It would be an understatement to say that apps are everywhere these days. Apps have become the single most important key to new device and operating system adoption amongst consumers. You can have the best OS on the planet, but if you don't have the apps, you're toast! I was surprised to see such a strong demand from customers in the embedded server, storage and appliance space beginning to crave what we consumers now cannot live without.

I wrote previously about how the make vs. buy question is affecting OEMs' preferences to buy off-the-shelf, all-in-one devices such as Windows, Android or iOS tablets rather than having a device custom built with a display, touch screen, single board computer, power supply, enclosure, etc. The cost advantage to leveraging off-the-shelf devices can be very attractive IF the OEM/ISV can get their applications to run on such platforms and operating systems.

The result has been strong demand for app services in several major areas:

» **Application Development** - Many ISVs have engineering teams that are experts in x86 architecture but face the proposition of learning new platforms and operating systems OR hiring new engineers that are familiar with these platforms. This can slow time to market and prove very costly. Many are outsourcing to a trusted partner who already has expertise in this area.

» **Application Porting** - Companies who have already invested in in-house or outsourced app development often only support one or two common platforms (usually iOS and/or Android). Avnet's Software Services experts can port applications from one OS to another to increase adoption of the application and associated hardware from the OEM.

» **Complementary Devices** - Often when thinking about a company selling an appliance running a dedicated application, we don't think about mobile apps for smart phones or tablets (at least I didn't until recently). However, we have seen an influx of OEMs and ISVs looking for complementary or second screens as a way to interact with their appliances. For example, think of an application that allows doctors to show patients images of their scans or medical records. The tablet is not the primary device but provides an additional value-add feature, which in turn can increase demand for the OEM's primary server or storage and software solution.

» **Input and Control Devices** - Similar to complementary devices, input and control touch screens make management and access to applications simpler. Many OEMs are leveraging touch screen tablets in industrial automation environments versus old tired bulky, button-controlled devices. The Nest learning thermostat is used to control your air conditioner/heater and is an excellent example. The Nest not only uses an LCD screen with a simple one button action to control an appliance (in this case, an air conditioner), but also features a smart phone app for iOS and Android. Now, if only they supported Windows Phone (wait, I know a guy!)…

It is for these reasons that OEMs and ISVs are turning to Avnet's Embedded Software & Services Group (ESSG) to reduce time to market while eliminating the fixed costs of adding new headcount. Avnet allows our customers to stay focused on their core solutions while leveraging expert resources to speed time to market for iOS, Windows and Android apps. For more information on our application services, please contact services@avnet.com today!

Jon Parks is a Business Development Manager supporting Avnet's Embedded Software and Services Group. Jon has been with Avnet for six years with experience in product marketing, software and digital signage.

Visit IntelligentSystem.com for more articles and commentary from Avnet's technology experts.

LICENSES

Microsoft Dynamics and Microsoft BizTalk Server are also available. For information and pricing on these products, please contact MSTeam@avnet.com.

WINDOWS 8

Windows 8

WHAT'S NEW IN WINDOWS 8 & WINDOWS 8 PRO

» **The Start screen** - Everything you care about most is on the new Start screen. Tiles on the Start screen are connected to people, apps, folders, photos, or websites, and are alive with the latest info, so you're up to date at a glance.

» **Mouse, keyboard—and now touch** - Windows 8 is perfect for PCs with only a mouse and keyboard, those with touchscreens, and those with both. Whatever kind of PC you have, you'll discover fast and fluid ways to switch between apps, move things around, and go smoothly from one place to another.

» **Apps from the Windows Store** - Windows 8 comes with a new store for apps, the Windows Store. Open the Store right from your Start screen to browse and download apps for cooking, photos, sports, news, and a lot more—many of them free.

» **Millions of streaming songs** - Windows 8 also includes the Xbox Music app, which gives you access to a whole world of music.

» **Your Windows, everywhere** - Sign in with your Microsoft account to any of your PCs running Windows 8 and you'll immediately see your own background, display preferences, and settings.

» **The desktop** - The desktop that you're used to—with its taskbar, folders, and icons—is still here and better than ever, with a new taskbar and streamlined file management.

» **Security** - Stay up to date and more secure with Windows Defender, Windows Firewall, and Windows Update.

» **Speed** - Windows 8 starts up faster, switches between apps faster, and uses power more efficiently than Windows 7.

WHY GO WITH WINDOWS 8?

» **It goes where you go** - Your pictures, files, and settings are easily synced through the cloud, so you can get to what you need almost anywhere.

» **It plays as hard as it works** - Windows 8 gives you the power to quickly browse, watch movies, play games, polish your resume, and pull together a killer presentation—all on a single PC.

» **You keep all your files** - If your PC is running Windows 7, your files, apps, and settings will easily transfer to Windows 8.

» **You keep familiar programs** - Programs that run on Windows 7 will run on Windows 8.

WHICH WINDOWS 8 LICENSE IS RIGHT FOR YOU?

You are:	Windows 8 (Upgrade version)	Windows 8 System Builder (Full Version)
Upgrading your current PC from Windows XP, Windows Vista, Windows 7, or a Windows 8 Preview to Windows 8	✓	
Building a new PC		✓
Installing Windows 8 on a virtual machine or a Mac		✓

AVAILABLE FEATURES IN WINDOWS 8 PRO

	Windows 8	Windows 8 Pro
A beautiful new Start screen with live tiles, plus the familiar desktop.	x	x
Designed for touch, mouse, and keyboard.	x	x
Great built-in apps like Mail, Calendar, Messaging, Photos, and SkyDrive, with many more available from the Windows Store	x	x
Your pictures, files, and settings easily synced through the cloud.	x	x
Includes Internet Explorer 10 for faster, more secure web browsing.	x	x
Keeps you up to date and more secure with Windows Defender, Windows Firewall, and Windows Update.	x	x
Provides enhanced data protection with BitLocker and BitLocker To Go to help keep your information secure.		x
Enables you to host a Remote Desktop Connection on your own PC so you can connect to it when you're using a different PC.		x
Connects to your corporate or school network with Domain join.		x

WINDOWS 8 PROFESSIONAL

License Type	Part Number	Part Description
OEM	FQC-05920	Win Pro 8 32-bit English 1pk
OEM	FQC-05956	Win Pro 8 64-bit English 1pk
OPEN	FQC-02368	Win Pro 8 Software Assurance Only (2-yr.)
OPEN	FQC-02374	Win Pro 8 Upgrade License (w/2-yr. SA)
OPEN	FQC-06457	Win Pro 8 Upgrade License Only (No SA)

WINDOWS 8

License Type	Part Number	Part Description
OEM	WN7-00368	Win 8 32-bit English 1pk
OEM	WN7-00404	Win 8 64-bit English 1pk

WINDOWS 7

You told Microsoft what you loved about Windows XP and how to make it even better. They designed Windows 7 to simplify the things you do every day, work the way you want, and make some exciting new things possible. Want examples? Here are 10 good reasons to make the move to Windows 7.

1. **Get quicker access to all of your stuff**
   Use Pin and Jump Lists to keep the programs and files you use the most right at your fingertips.

2. **Manage open windows more easily**
   Resize and arrange windows simply by dragging their borders to the edge of your screen.

3. **Quickly find what you're looking for**
   Use Windows Search to find a specific file, program, or e-mail in a few seconds.

4. **Share files and printers among multiple PCs**
   From one Windows 7-based PC to another, you can share files, music, photos, and even printers across your home network.

5. **Stay entertained effortlessly**
   With Windows Media Center you get one place to enjoy your photos and music, watch and record live TV, and watch free Internet TV.

6. **Easily create and share movies**
   Create great looking movies and slideshows and share them on YouTube in minutes.

7. **Connect to networks easily**
   View and connect to any available wireless network in as few as three clicks.

8. **Do more and wait less**
   Improvements that can accelerate sleep and resume and make your PC more responsive help you get more done.

9. **Don't leave programs behind**
   Run many Windows XP productivity programs in Windows XP Mode.

10. **Offers your PC better protection**
    Help keep your PC, your information, and your family safe.

WINDOWS 7 PROFESSIONAL

License Type	Part Number	Part Description
OEM	FQC-04617	Win Pro 7 SP1 32-bit English 1pk
OEM	FQC-04649	Win Pro 7 SP1 64-bit English 1pk
OEM	FQC-04696	Win Pro 7 SP1 32-bit English 3pk
OEM	FQC-04725	Win Pro 7 SP1 64-bit English 3pk
OEM	FQC-04765	Win Pro 7 SP1 32-bit English 30pk
OEM	FQC-04770	Win Pro 7 SP1 64-bit English 30pk

WINDOWS 7 ULTIMATE

License Type	Part Number	Part Description
OEM	GLC-01809	Win Ult 7 SP1 32-bit English 1pk
OEM	GLC-01844	Win Ult 7 SP1 64-bit English 1pk
OEM	GLC-01809	Win Ult 7 SP1 32-bit English 1pk
OEM	GLC-01844	Win Ult 7 SP1 64-bit English 1pk
OEM	GLC-01935	Win Ult 7 SP1 32-bit English 30pk
OEM	GLC-01938	Win Ult 7 SP1 64-bit English 30pk

WINDOWS 7 HOME PREMIUM

License Type	Part Number	Part Description
OEM	GFC-02021	Win Home Prem 7 SP1 32-bit English 1pk
OEM	GFC-02050	Win Home Prem 7 SP1 64-bit English 1pk
OEM	GFC-02126	Win Home Prem 7 SP1 32-bit English 3pk

License Type	Part Number	Part Description
OEM	GFC-02153	Win Home Prem 7 SP1 64-bit English 3pk
OEM	GFC-02217	Win Home Prem 7 SP1 32-bit English 30pk
OEM	GFC-02228	Win Home Prem 7 SP1 64-bit English 30pk

Which Windows 7 product is right for you?

WINDOWS 7 COMPARISON CHART

	Home Premium	Professional	Ultimate/Enterprise
HomeGroup: Easily share media, files, printers, and devices across multiple PCs.	x	x	x
Action Center: Fix problems yourself, on your own schedule, with powerful diagnostics and troubleshooting tools.	x	x	x
Device StageTM: Interact and synchronize with any compatible device connected to your computer.	x	x	x
Remote Media Streaming: Send video and audio output from one PC to a network-enabled media player, home stereo, and even other PCs on the network.	x	x	x
Bluetooth Support: Wirelessly synchronize files and folders between your Bluetooth-enabled phone and your computer	x	x	x
Live Taskbar Thumbnails: Mouse over the taskbar or an application icon, and see a visual list of recently used items	x	x	x
Fast User Switching: Switch between users without having to log in, log out, or close any programs.	x	x	x
Computer-to-Computer Networking: Connect to nearby PCs without a network access device via ad hoc wireless networking.	x	x	x
Location and Other Sensors: Enables PCs and applications to adapt to their current environment.	x	x	x
Windows Mobility Center* (with Presentation Mode): Put your most frequently used mobile PC settings in a single, easy-to-find location.	x	x	x
Aero® Glass: See behind application windows with translucent glass-like menu bars.	x	x	x
Aero Background: View the contents of the windows that are currently open with taskbar thumbnails.	x	x	x
Windows Touch: Control a touch-enabled computer by touching the screen, with visual feedback for tap and double tap gestures.	x	x	x
Windows XP Mode:** Run many older productivity and business programs for Windows XP on Windows 7.		x	x

WINDOWS 7 COMPARISON CHART

	Home Premium	Professional	Ultimate/Enterprise
Domain Join and Group Policy: Connect to company networks easily and more securely. Group Policy controls allow businesses to better manage the security and costs of multiple PCs.		x	x
Backup and Restore: Schedule a periodic backup to save your data or entire system image to a network location or a local drive.		x	x
Location-Aware Printing: Send your documents to the right printer, whether you are at work or at home.		x	x
Remote Desktop Host: Access documents and programs on a computer remotely from another computer.		x	x
Advanced Backup and Restore (Network and Group Policy): Back up your data to a network location, and have the ability to recover and restore your documents.		x	x
Encrypting File System: Provides user-level file and folder encryption, ensuring strong data protection and control.		x	x
Offline Folders: Work offline with the ability to automatically synchronize between your PC and the network content.		x	x
BitLockerTM and BitLocker To GoTM drive encryption: Help protect confidential information and stay compliant with business and regulatory policies.			x
AppLockerTM: Specify which applications are available to which end users, reducing the need to modify settings.			x
DirectAccess: Seamlessly connect mobile workers more securely to their network without a virtual private network.			x
BranchCache™: Replicate and synchronize files between a central store and branch locations, enabling more productivity for workers in remote offices.			x
Multilingual User Interface Packs: Switch the user interface from one language to another via a language pack add-on to the English version.			x

Windows Server

WINDOWS SERVER 2012

Windows Server 2012 Datacenter, Windows Server 2012 Standard, and Windows Server 2012 Essentials are now available. Now is the time to differentiate yourself from the competition by helping solve your customers' fundamental business and IT challenges.

Windows Server 2012 not only delivers high-quality solutions on top of single-platform functionality, it delivers more than 300 new features and enhancements that can help you grow your business to.

KEY MARKETING MESSAGES FOR WINDOWS SERVER 2012 INCLUDE:

Beyond virtualization
Windows Server 2012 offers a dynamic multi-tenant infrastructure that goes beyond virtualization to supply a complete platform for building, and connecting to, cloud services.

The power of many servers, the simplicity of one
Windows Server 2012 offers excellent economics by integrating a continuously available and straightforward-to-manage multi-server platform on industry-standard hardware.

Every app, any cloud
Windows Server 2012 is an open application and web platform that lets users build symmetrical and hybrid applications and high-density websites for the data center and the cloud.

Modern work style, enabled
Windows Server 2012 supports a mobile and flexible work style by helping secure users' access to their personalized work environment from virtually anywhere, on any device.

WINDOWS SERVER 2012 CAPABILITIES

SERVER VIRTUALIZATION
Windows Server 2012 with Hyper-V provides a complete virtualization platform, providing increased scalability and performance with an elastic and flexible solution from the datacenter to the cloud. It's now easier

than ever for organizations to realize cost savings from virtualization and to optimize server hardware investments.

VDI
Virtual Desktop Infrastructure in Windows Server 2012 makes it possible for users to access IT from virtually anywhere on popular devices, providing them a rich Windows experience while ensuring enhanced data security and compliance.

NETWORKING
Windows Server 2012 provides an array of new and enhanced features that help reduce networking complexity, making it easier to connect users to IT resources, efficiently manage your datacenter and private clouds, and easily link your infrastructure with public cloud services.

IDENTITY AND ACCESS
Windows Server 2012 makes it easier for administrators to protect corporate resources, build strong data access management and protection, and simplify the deployment of identity management infrastructure.

STORAGE

Windows Server 2012 provides greater efficiency, performance, and innovation through diverse storage choices. New features and enhancements for disk, network, and storage area network storage solutions provide greater choice and flexibility while ensuring high availability and uptime.

SERVER MANAGEMENT AND AUTOMATION

Windows Server 2012 offers excellent total cost of ownership as an integrated platform with comprehensive, multi-server manageability that provides increased management efficiency, simplified deployment of servers and server roles, and resilient automation.

WEB AND APPLICATION PLATFORM

Windows Server 2012 provides enormous flexibility through hybrid, symmetrical, and web-based applications on-premises and in the cloud, increased scalability and elasticity for applications, and enhanced support for open frameworks and open source.

WINDOWS SERVER COMPARISON CHART

	Windows Server 2008 R2	Windows Server 2012
HW Logical Processor Support	64 LPs	320 LPs
Physical Memory Support	1 TB	4 TB
Cluster Scale	16 Nodes up to 1000 VMs	64 Nodes up to 4000 VMs
Virtual Machine Processor	Up to 4 VPs	Up to 64 VPs
VM Memory	Up to 64GB	Up to 1 TB
Live Migration	Yes, one at a time	Yes, with no limits. As many as hardware will allow.
Live Storage Migrations	No. Quick Storage MIgration via SCVMM	Yes, with no limits. As many as hardware will allow.
Server in a Cluster	16	64
VP:LP Ratio	8:1 for Server 12:1 for Client (VDI)	No limits. As many as hardware will allow.

WINDOWS SERVER 2012 HYPER-V ADVANTAGES OVER VMWARE

Capability	Resources	Windows Server 2012 Hyper-V	vSphere 5.0 Ent Plus
Scalability	Active Virtual Machines Per Host	1,024	512
	Memory Per Virtual Machine	1 TB	1 TB
	Virtual Processors Per Virtual Machine	64	32
	Maximum Virtual Machines Per Hyper V-Cluster	64	32
	Maximum Nodes Per Hyper-V Cluster	4,000	3,000
	High Performance VM Networking with SR-IOV	Yes	No
Storage	Native 4KB disk support	Yes	No
	Maximum Virtual Disk Size	64 TB	2 TB
	Encrypted Cluster Storage	Yes	No

WINDOWS SERVER 2012 HYPER-V ADVANTAGES OVER VMWARE (CONTINUED)

Capability	Resources	Windows Server 2012 Hyper-V	vSphere 5.0 Ent Plus
Secure Multitenancy	Open Extensible Switch	Yes	Closed
	Resource Meeting	Yes	Chargeback Req.
Flexible Infrastructure	1GB simultaneous Live Migrations	Unlimited	4
	10GB Simultaneous Live Migrations	Unlimited	8
	Live Storage Migration	Yes	Yes
	Shared-Nothing Live Migration	Yes	No
	Network Virtualization	Yes	Cisco Req.
High Availability	Virtual Machine Replication	Yes	Cisco / API Req.
	Guest OS Aplication Monitoring	Yes	No

WINDOWS SERVER 2012

License Type	Part Number	Part Description
OEM	P71-06769	Win Svr Datacntr 2012 x64 English 1pk 2 CPU
OEM	P71-06787	Win Svr Datacntr 2012 x64 English 1pk 2 CPU Addtl License
OEM	P73-05328	Win Svr Std 2012 x64 ENG 1pk 2CPU/2VM
OEM	P73-05347	Win Svr Std 2012 x64 ENG 1pk 2CPU/2VM Addtl License
OEM	G3S-00123	Win Svr Essentials 2012 64-bit English 1Pk

License Type	Part Number	Part Description
OEM	R18-03665	Windows Server CAL 2012 English 1pk 1 Client Device CAL
OEM	R18-03683	Windows Server CAL 2012 English 1pk 5 Client Device CAL
OEM	R18-03737	Windows Server CAL 2012 English 1pk 1 Client User CAL
OEM	R18-03755	Windows Server CAL 2012 English 1pk 5 Client User CAL

WINDOWS SERVER 2008 R2

Windows Server

Windows Server 2008 R2 builds on the award-winning foundation of Windows Server 2008. By expanding existing technology and adding new features, IT professionals are able to increase the reliability and flexibility of their server infrastructures.

New virtualization tools, Web resources, management enhancements and exciting Windows 7 integration help save time, reduce costs and provide a dynamic and efficiently managed data center. Powerful tools combine to give customers greater control, increased efficiency and the ability to react to front-line business needs quickly.

FEATURES INCLUDE:
» Internet Information Services (IIS) version 7.5
» Updated Server Manager
» Hyper-V platforms
» Windows PowerShell version 2.0

WINDOWS SERVER 2008 R2

License Type	Part Number	Part Description
OEM	P73-05128	Windows Server Standard 2008 R2 w/SP1 x64 1pk 1-4CPU 5 Clt
OEM	P71-06484	Windows Server Datacenter 2008 R2/SP1 64bit/x64 1pk 2 CPU
OEM	P71-06488	Windows Server Datacenter 2008 R2/SP1 64bit/x64 1pk 4 CPU
OEM	P72-04458	Windows Server Enterprise 2008 R2/SP1 64Bit x64 1pk 1-8CPU 25Clt
OEM	P72-04469	Windows Server Enterprise 2008 R2/SP1 64Bit/x64 1pk 1-8 CPU 10 Clt

WINDOWS SERVER CALS

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
OEM	R18-02888	Windows Server CAL 2008 1pk 1 Clt Device CAL
OEM	R18-02869	Windows Server CAL 2008 1pk 5 Clt Device CAL
OEM	R18-02926	Windows Server CAL 2008 1pk 1 Clt User CAL
OEM	R18-02907	Windows Server CAL 2008 1pk 5 Clt User CAL

WINDOWS EMBEDDED ENTERPRISE

Windows Embedded

Also known as "Windows For Embedded Systems" or "FES", these versions of popular standard OSs are available for OEMs who need to use the same drivers and software used on the non-embedded versions of the OS. OEMs creating dedicated-function systems that run on selected versions of XP, Vista or Windows 7 can use Windows Embedded Enterprise versions of those Operating Systems. These versions are guaranteed to be available well beyond the non-embedded versions.

The Embedded Enterprise versions of XP, Vista and Windows7 are technically identical to the standard versions of these OSs, but come with restricted usage terms. In order to operate properly, the system must:

» Have the OS pre-loaded
» Cannot be used as a "General Purpose" PC
» Have an embedded application
» Boot into an embedded application or an shell (desktop) other than the one that comes with the non-embedded OS

One advantage of deploying systems with FES is that the OEM is allowed to create and ship a recovery disk with their system. This allows the end users or field technician to restore the entire hard drive back to the way it was when it shipped, re-installing both the OS and application software. This can dramatically decrease the need to ship the entire system back to the OEM for repair.

Windows Embedded Enterprise is available for the following Windows Operating Systems:

» Windows Embedded 8 Pro
» Windows 7 Professional for Embedded Systems
» Windows 7 Ultimate for Embedded Systems
» Windows Vista Business for Embedded Systems
» Windows Vista Ultimate for Embedded Systems
» Windows XP Professional for Embedded Systems

FEATURES AT A GLANCE:

Footprint	No different from the non-embedded versions of XP, Vista or Windows7
Real-Time	Real-Time support available using third party plug-in
Cost	Same as the corresponding system builder versions
Development Tools	No development tools necessary - free OPK (OEM Preinstallation Kit) available
Processors	x86
Compatibility	Use the same drivers as the corresponding non-embedded versions
Typical Applications	Kiosks, ATMs, POS devices, Industrial Automation and Complex Medical Devices

WINDOWS EMBEDDED 8 PRO

Windows Embedded

Windows Embedded 8 Pro delivers the full power of the Windows 8 operating system in a version designed specifically for industry devices within intelligent systems. Gain improvements in power management, connectivity and enterprise integration with a Windows 8-based intelligent system that advances business growth.

TOP FEATURES IN WINDOW EMBEDDED 8 PRO

» **Rich user interface** - Support new device experiences that use Windows technologies like modern style apps with touch interaction by harnessing the full power of Windows 8 Pro.

» **Intuitive applications** - Equip employees with critical access to information via rich, intuitive Windows 8 style apps that reduce training time and deliver lasting competitive advantage.

» **Single management solution** - Integrate industry devices into identity and access management solutions, gaining all the potential of a network of devices without the additional overhead of IT management.

» **Secure and reliable** - Support for a range of anti-malware solutions; BitLocker for easy hardware recovery, hard drive encryption and protection from cold-boot attacks; and support for VPN capability for secure data transfer.

THINGS OEMS CAN DO WITH WE 8 PRO

ONE TRUSTED PLATFORM

Windows Embedded 8 Pro provides all of the capabilities of Windows 8 Pro in a version designed specifically for industry devices within intelligent systems. Support for industry standards and familiar development tools—such as Visual Studio 2012 and Expression Blend 5—will help device manufacturers accelerate time to market. Windows Embedded 8 Pro is also compatible with off-the-shelf line of business applications, increasing the likelihood of your solution working with a customer's existing technology.

CREATE MULTI-TOUCH & SENSORY INPUT DEVICES

Take your solution into the next generation of device experiences. Windows Embedded 8 Pro supports the rich, multi-touch experience of Windows 8, giving you access to all of the tools you need to create a touch-first app experience. You can also incorporate the skeletal-tracking technology of Kinect for Windows, which opens the door to new usage scenarios. Windows Embedded 8 Pro also provides support for multi-sensory input and sensory fusion, offering device manufacturers new opportunities to offer customers benefits from new streams of data.

EXTEND BUSINESS INTELLIGENCE

Give your customers more than a device solution. Provide an end-to-end intelligent system that connects their devices to the cloud, where they can get a better sense of what's happening on their plant floor, in the backroom or at the point of service. Windows Embedded 8 Pro provides support for network connections using a variety of methods—USB 3.0, NFC, Bluetooth LE and WiFi Direct. This allows you to build more efficient devices that are always available for customers. And with systems and services such as Windows Embedded Server and Microsoft SQL Server, you can deliver a smart, end-to-end solution.

SAMPLE WINDOWS EMBEDDED 8 PRO DEVICES

» **Kiosks** - Drive self-directed shopping experiences by providing customers with accurate gift registry, pricing and store credit-card billing information.

» **Medical Devices** - sonograms and other medical devices enable doctors to monitor a baby's health in utero and send images to researchers in real-time via a wireless network.

» **Digital Signage** - when combined with Kinect for Windows, digital signage creates a larger-than-life interactive experience that draws the customer in and generates data for your business.

» **HMI (human machine device)** - these devices allow you to monitor automated processes, such as manufacturing, to safeguard against diminished product quality or equipment breakdowns.

WINDOWS EMBEDDED 8 PRO

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	42C-00051-1PK	Win Pro Embedded 8 EMB

Embedded Devices: Customization Made Easy

Every device type has its own unique requirement—and each device within a product line has its own strategy for market success.

Avnet Embedded is here to act as your trusted advisor and help you navigate the costs associated with customizing a Windows Embedded device. At Avnet Embedded, we help you:

• Meet security standards
• Integrate into existing applications
• Choose which codecs, languages and inputs are required

For information on customizing embedded devices:
Visit: www.avnetmssolutions.com
Call: (800) 474-3044
Email: msteam@avnet.com

WINDOWS 7 PRO FOR EMBEDDED SYSTEMS

Windows Embedded

Windows 7 Professional for Embedded Systems provides infrastructure improvements that enable you to spend less time on day-to-day maintenance of embedded devices and more time adding value to applications. FES allows you to build in a familiar environment while improving existing or creating new embedded devices. Features of FES include:

» **Windows Security Center** - Safeguards against malicious software attacks
» **Windows Network Diagnostics Tools** - Provide notifications long before you risk losing any important data
» **Windows Backup and Restore Center** - Helps protect your information even in the event of a catastrophic hardware failure

» **Windows Touch** - New Multi-Touch and gesture input technology
» **Virtual Windows XP** - Run legacy applications within Windows 7
» **Sensor and Platform Location** - Unified driver model for all types of sensors

Windows 7 Professional for Embedded Systems provides manageability, reliability and security features to ensure your embedded devices are always up-to-date, more secure and running smoothly. Built-in protection against malicious software, impending hardware failure notification and an array of sophisticated new backup technologies are just a few of the security features included in Windows 7 Professional for Embedded Systems.

WINDOWS 7 PROFESSIONAL FOR EMBEDDED SYSTEMS (FES)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	42C-00022	Win Pro Embedded 7 32-bit/x64 EMB ESD OEI 1-2CPU

Windows Embedded

WINDOWS 7 ULTIMATE FOR EMBEDDED SYSTEMS

Windows 7 Ultimate for Embedded Systems provides new levels of protection against theft of important business data stored on the embedded device and access to multilanguage support. Combining the advanced infrastructure of a business-focused operating system and the digital entertainment features of a consumer-focused operating system. Features found in Windows 7 Professional for Embedded Systems are also found in Windows 7 Ultimate for Embedded Systems and include:

» **Windows BitLocker and BitLocker to Go Drive Encryption** - Prevents a thief from accessing Windows 7 files, system protections or performing offline viewing of files stored on a protected drive. BitLocker to Go enables this encryption for removable drives as well.

» **Multi-Lingual UI** - Offers the ability to install and switch between multiple languages with worldwide language packs supporting multilingual requirements.

» **AppLocker** - Only allows the execution of authorized applications on OEM devices.

» **VHD Boot** - Enabling this feature allows for the storage of multiple versions of OS Images and applications without the need for additional hardware.

» **DirectAccess and BranchCache** - Enterprise and Backend connectivity is becoming increasingly important for remote devices such as Kiosk, ATMs and Remote HMI terminals. DirectAccess enables faster and secure access to corporate intranet data. BranchCache allows the local storage of corporate data to reduce WAN traffic.

WINDOWS 7 ULTIMATE FOR EMBEDDED SYSTEMS (FES)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	44C-00022	Win Ult Embedded 7 32-bit/x64 EMB ESD OEI 1-2CPU

WINDOWS VISTA BUSINESS EMBEDDED SYSTEMS

Windows Embedded

Windows Vista Business for Embedded Systems operating system provides infrastructure improvements that enable you to spend less time on the day-to-day maintenance of embedded devices and more time adding value to applications. Built-in protection against malicious software, impending hardware failures notification and an array of sophisticated new backup technologies are all features of Windows Vista Business for Embedded Systems.

Designed to improve the deployment and management of the operating system, Windows Vista Business for Embedded Systems provides secure, reliable features that ensure your embedded devices are always up-to-date and running smoothly.

» **Windows Security Center** - Safeguards against malicious software attacks
» **Windows Network Diagnostics Tools** - Provide notifications long before you risk losing important data
» **Windows Backup and Restore Center** - Protects data even in the event of a catastrophic hardware failure

WINDOWS VISTA BUSINESS FOR EMBEDDED SYSTEMS (FES)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	4CK-00057	Win Vista Business Embed w/SP1 32-bit/x64 ESD OEI 1-2CPU
EMBEDDED	4CK-00072	Win Vista Business Embed SP2 32-bit/x64 EMB ESD OEI 1-2CPU

WINDOWS VISTA ULTIMATE BUSINESS EMBEDDED SYSTEMS

Windows Embedded

By combining the advanced infrastructure of a business-focused operating system and the digital entertainment features of a consumer-focused operating system, Windows Vista Ultimate for Embedded Systems provides new levels of protection against theft of important data and access to multilanguage support. It also helps reduce application migration and compatibility costs, making your Windows-based embedded device more versatile and providing a safety net for operating-system migration. Unique features of Windows Vista Ultimate for Embedded Systems include:

» **Windows BitLocker Drive Encryption** - Prevents thieves from accessing or breaking Windows Vista files and protects against offline viewing of files stored on a protected drive.
» **Multi-Lingual UI** - Offers the ability to install multiple languages and switch between them as required with the availability of all worldwide language packs supporting embedded devices with multilingual requirements.
» **Subsystem for UNIX-based Applications (SUA)** - Allows UNIX-based applications to run on a Windows Vista Ultimate for Embedded Systems-based embedded device.

WINDOWS VISTA ULTIMATE FOR EMBEDDED SYSTEMS (FES)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	4CJ-00014	Win Vista Ultimate Embed w/SP1 32-bit/x64 ESD OEI 1-2CPU
EMBEDDED	4CJ-00016	Win Vista Ultimate Embed SP2 32-bit/x64 EMB ESD OEI 1-2CPU

WINDOWS XP PRO EMBEDDED SYSTEMS

Windows Embedded

Windows XP Pro for Embedded Systems contains the Windows XP Professional OS and is intended for use in an embedded solution that consists of purpose-built hardware and application software. Windows XP Pro operating system technology includes preemptive multitasking, fault tolerance and system memory protection, which all work to prevent and resolve problems as they keep embedded systems running smoothly.

Microsoft Windows XP Professional for Embedded Systems is available through Microsoft Authorized Windows Embedded Distributors through December 2016. Technical support will be available through April 2014.

Direct Embedded OEMs will be able to purchase Windows XP Pro for Embedded Systems through 2016 as well. OEMs can also migrate to Windows 7 for Embedded Systems and Windows Vista for Embedded systems, also available through Microsoft Authorized Windows Embedded Distributors.

WINDOWS XP PROFESSIONAL FOR EMBEDDED SYSTEMS (FES)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	G82-00037	Windows XP Pro Embed SP3 EMB ESD OEI 1-2CPU
EMBEDDED	31N-00008	WinXP Pro x64 Ed Embedded SP2b EMB ESD OEI

WINDOWS MS-DOS

MS-DOS is a cost-effective solution for simple legacy applications. Available as a ROM-based or disk-based operating system, MS-DOS has minimal resource requirements and is idea for small, mobile applications and those that do not need a user interface.

WINDOWS MS-DOS

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	755-00089	MS-DOS Embed 6.22 EMB ESD OEI Runtime
EMBEDDED	755-00090	MS-DOS Embed 6.22 EMB ESD OEI Runtime Kernel
EMBEDDED	755-00088	MS-DOS Embed 6.22 EMB ESD OEI Runtime Kernel ROM
EMBEDDED	755-00091	MS-DOS Embed 6.22 EMB ESD OEI Runtime ROM

WINDOWS EMBEDDED 8 STANDARD

Windows Embedded

Windows Embedded 8 Standard is a modular operating system that provides enterprises and device manufacturers the freedom to choose which capabilities will be part of their industry devices and intelligent system solutions. Based on Windows 8, Windows Embedded 8 Standard features technologies to create rich, multi-touch experiences that keep customers engaged and employees informed and productive, as well as lockdown tools to ensure it's targeted, secure and consistent.

TOP FEATURES OF WE 8 STANDARD

» **Visually rich** - Create rich line-of-business applications with the user-friendly appearance of Windows 8 style apps. Custom branding feature allows you to customize the entire look and feel of your device.

» **Secure and reliable** - Protection from malware and unauthorized attempts to access devices with Trusted Boot, Bitlocker, Windows Defender and other security measures.

» **Modular and flexible** - Leverage special-purpose devices to meet your unique needs through the modular platform format, supporting the right level of granularity with more than 150 intuitive feature packages.

» **Targeted and consistent** - Deliver a targeted experience and ensure consistent configuration with embedded specific lockdown features, such as Unified Write Filter, Gesture Filter and App Launcher.

THINGS OEMS CAN DO WITH WE 8 STANDARD

ONE TRUSTED PLATFORM

With Windows Embedded 8 Standard, device manufacturers have access to familiar development tools such as Visual Studio 2012 and Expression Blend 5 that help reduce time to market. And support for a variety of security and anti-malware features ensures the solution is secure and stable. Features like Bitlocker and compatibility with a variety of anti-malware solutions help protect the integrity of the device and the data.

Other features, such as Windows Secure Boot and Hibernate-Once-Resume-Many protect the device during boot up to prevent the loading of unauthorized apps and to ensure that all devices start up consistently every time.

CREATE DIFFERENTIATED DEVICES

The modular nature of Windows Embedded 8 Standard provides OEMs with the flexibility to tailor their solutions precisely to the customer's needs, with each component addressing a variety of aspects of the platform—including the bootable core, Windows functionality, industry-specific needs, the launching of custom shells and the use of write filters and lockdown features.

Other customization tools include the Image Builder Wizard and Image Configuration Editor, both of which enable you to omit unwanted functionality and reduce the solution's exposure to attack. And with Windows Embedded 8 Standard's support for Windows 8 apps, you have the ability to create a solution that extends the Windows 8 experience into industry devices and intelligent system solutions.

EXTEND BUSINESS INTELLIGENCE

Windows Embedded 8 Standard provides connectivity options that allow for a variety of industry device scenarios, including connections to remote and mobile devices. Devices can be "connection aware," remaining connected whether awake or in hibernation mode across a range of supported connectivity options, such as NFC, USB 3.0, Bluetooth LE and WiFi direct.

And with the enhanced support for sensory input, you can create solutions that improve your customers' awareness of working conditions and give them the ability to synthesize input for a more complete understanding of conditions. Windows Embedded 8 Standard is also compatible with Microsoft Identity and access-management solutions such as Active Directory and Group Policy, so companies can connect their specialized devices to their corporate network and generate deeper levels of business and operational intelligence.

SAMPLE DEVICES USING WE 8 STANDARD

» **Automated manufacturing solutions** – increase efficiency and

gain greater insight into plant conditions, supply-chain levels and product quality with automated solutions for manufacturing.

» **Kiosks** – drive self-directed shopping experiences by providing customers with accurate gift registry, pricing and store credit-card billing information.

» **Digital signage** – From building brand awareness, to influencing customer purchase decisions, digital signage promotes a guided customer experience.

» **Thin clients** – Provide financial services workers with real-time access to transaction-related information, while ensuring secure, centralized control of the customer's funds.

WINDOWS EMBEDDED 8 STANDARD

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	7WT-00094-1PK	Windows Embedded Standard 8 EMB ESD OEI Runtime

Realize the Potential of Connected Data

The traditional embedded market has recently seen the emergence of a dynamic new category – Intelligent Systems.

Intelligent systems enable an unprecedented flow of data from the device where it is generated, through employees and customers connected to back-end systems, to where it is translated into strategic insight. This insight informs business decisions across retail, manufacturing, medical and other industries.

One Trusted Platform

Partnered with Windows Embedded, Avnet Embedded is focused on helping companies use intelligent systems to glean deep insight and business intelligence. Using the power of Windows and the cloud, Windows Embedded enables enterprises to generate tangible, real-time benefits with anytime, anywhere access to executable data.

For information on intelligent systems:
Visit: www.avnetmssolutions.com
Call: (800) 474-3044
Email: msteam@avnet.com

WINDOWS EMBEDDED STANDARD 7

Windows Embedded

Windows Embedded Standard 7 (WES7) is the fully embedded version of Windows 7. This version of Windows 7 was designed to allow OEMs to create and deploy devices using the same drivers and being capable of running the same application software as Windows 7. There are two versions of Windows Embedded Standard 7, "E" & "P" that are available in either 32bit or 64 bit.

OEMs wishing to use WES7 can build an image on their target platform by using bootable media with the Image Build Wizard (IBW). Using IBW for creating a basic image typically takes less than an hour, so validating that WES7 is compatible with the OEM's hardware and software is quick and easy. The Toolkit's primary development program is ICE (Image Configuration Editor) which allows OEMs to do advanced configuration changes.

This OS allows users to take advantage of unique capabilities known as Embedded Enabling Features. Using HORM (Hibernate Once Resume Many), the OS can boot quickly and valuable data can be protected from accidental corruption using EWF (Enhanced Write Filtering) and FBWF (File Based Write Filter).

The "P" version offers the richest set of components and features that enable advanced consumer and enterprise class devices. The WS7P SKU can include multi-touch, enhanced lockdown, enriched media capabilities and efficient network management using AppLocker, BitLocker and DirectAccess.

FEATURES AT A GLANCE:

Reduced Footprint	As low as 4GB
Real-Time	Real-Time support available using third party plug-in
Low Cost	$95 per run time license for "E" , $145 for "P"
Development Tools	Windows Embedded Standard 7 Toolkit (cost $995)
Processors	Support for multiple processor architectures: - x86 and - x64
Typical Applications	Intelligent Appliances, Networked Media devices and Servers, Industrial Controls, Home Automation Gateways, Gambling Devices

For more information on Microsoft Embedded, contact Avnet's Microsoft Team at MSTeam@avnet.com or your local Avnet representative.

WINDOWS EMBEDDED STANDARD 7 (WES 7)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	5CA-00023	Windows Embd Std Toolkit 7 EMB English ESD OEI ($950.00)
EMBEDDED	2QG-00003	Win Embedded Std C 7 EMB ESD OEI (WS7C) Runtime
EMBEDDED	7WT-00049	Win Emb Std E 7 EMB ESD OEI (WS7E) Runtime
EMBEDDED	7WT-00050	Win Embedded Std P 7 Emb ESD OEI (WS7P) Runtime

Which Windows Embedded Standard 7 product is right for you?

WES7 COMPARISON CHART

Catalog	WS7E	WS7P	WS7C
Applications and Services Development			
.NET Framework			
.Net Framework 3.5 SP1	x	x	x
.NET Framework 2.0 Client Profile	x	x	x
.NET Framework 3.0	x	x	x
.NET Framework 3.0 Client Profile	x	x	x
.NET Framework 3.5	x	x	x
.NET Framework 3.5 Client Profile	x	x	x
Remote Connections			
Remote Desktop Connection	x	x	x
Remote Desktop Protocol 7.0	x	x	x
Remote Desktop Host	x	x	x
Application Support			
COM OLE Application Support	x	x	x
COM+ Application Support	x	x	x
MSMQ	x	x	x
Windows Application Compatibility	x	x	x
Win32 Application Runtimes and Libraries	x	x	x
Internet Services			
Browser			
Internet Explorer 8.0	x	x	x
Internet Explorer 8 Browser	x	x	x
Internet Explorer 8 Engine and Display	x	x	x
Internet Explorer 8 Foundation	x	x	x
Internet Information Services - IIS			
IIS 7.0	x	x	x
Windows Process Activation Service	x	x	x
Consumer			
Consumer applications			

Catalog	WS7E	WS7P	WS7C
AntiMalware		x	
Windows Defender		x	
Add-ons		x	
Mobility Center	x	x	
Windows Sideshow		x	
Snipping tool		x	
Sticky Notes		x	
Windows Journal		x	
Parental Control		x	
Home Group		x	x
Home media streaming, including Play To		x	x
Photo Viewer		x	
Windows Media Center		x	x
Core OS			
CPU support			
32 bit support	x	x	x
64 bit support	x	x	x
Devices and Printers			
Device Framework	x	x	x
Device User Experience		x	x
Driver Frameworks	x	x	x
Fax and Scan	x	x	x
Printing Utilities and Management	x	x	x
Location Aware printing	x	x	x
Sensor and Location Platform	x	x	x
System Services			
Advanced File System	x	x	x
Core File System	x	x	x
File and Folder Synchronization	x	x	x
File Compression Utility	x	x	x

Catalog	WS7E	WS7P	WS7C
Remote Client	x	x	x
Simplified Message Block (SMB)	x	x	x
Remote Procedure Call	x	x	x
Windows Installer	x	x	x
File Systems and Data Store			
Data Access and Storage			
Windows Data Access	x	x	x
Windows Data Access Components	x	x	x
Windows Data Access Components - SQL	x	x	x
Data Integrity			
Shadow Copy Volume Interface	x	x	x
Shadow Copy Volume Service	x	x	x
Windows Side by Side	x	x	x
Diagnostics			
Diagnostics			
Common Diagnostic Tools	x	x	x
Performance Monitoring	x	x	x
Problem Reports and Solutions	x	x	x
User	x	x	x
Advanced Enterprise Features			
Enterprise Features			
Enterprise Search Scopes		x	
BranchCache		x	
DirectAccess		x	
Windows XP Mode			
Fonts			
Fonts			
Bitmap Fonts	x	x	x
Japanese Fonts	x	x	x
Japanese Supplemental Fonts	x	x	x
Korean Fonts	x	x	x
Korean Supplemental Fonts	x	x	x

Catalog	WS7E	WS7P	WS7C
Middle East, South East and South Asian Fonts	x	x	x
Middle East, South East and South Asian Supplemental Fonts	x	x	x
Simplified Chinese Fonts	x	x	x
Simplified Chinese Supplemental Fonts	x	x	x
Traditional Chinese Fonts	x	x	x
Traditional Chinese Supplemental Fonts	x	x	x
TrueType Fonts	x	x	x
Western Fonts	x	x	x
Western Supplemental Fonts	x	x	x
Graphics and Multimedia Technologies			
Graphics and Multimedia			
Dolby Digital Plus Codecs (license required)	x	x	x
MPEG Layer-2 (MPEG2) Codecs (license required)	x	x	x
MPEG Layer-3 (MP3) Codecs (license required)	x	x	x
MPEG Layer-4 (MPEG4) Codecs (license required)	x	x	x
Windows Media Video VC-1 (WMV) Codecs(license required)	x	x	x
Audio and Video Engines and Media Foundation	x	x	x
DirectX and Windows Device Experience	x	x	x
Graphics Platform	x	x	x
Image Mastering API V2	x	x	x
Media Player	x	x	x
Windows Media Player 12	x	x	x
International			
International			
IME Base Components	x	x	x
IME Japanese Support	x	x	x
IME Korean Support	x	x	x
IME Simplified Chinese Support	x	x	x
IME Traditional Chinese Support	x	x	x

Catalog	WS7E	WS7P	WS7C
International Components and Language Services	x	x	x
Language Pack Setup	x	x	x
Multilingual User Interface Packs in same image		x	
Device Management			
Management			
Group Policy Management	x	x	
Microsoft Management Console (MMC)	x	x	x
System Management Administrative Tools	x	x	x
System Management Utilities	x	x	x
Windows Management Instrumentation (WMI)	x	x	x
Windows Update	x	x	x
Windows Update Standalone Installer	x	x	x
Windows Update User Interface	x	x	x
Backup and Restore	x	x	x
Direct Boot from VHD	x	x	x
Join a Domain	x	x	
Offline Folders	x	x	x
Power Management	x	x	x
Windows PowerShell 2.0	x	x	x
Communication Services and Networking			
Networking			
Extensible Authentication Protocol (EAP)	x	x	x
Internet Authentication Service	x	x	x
Networking Base	x	x	x
Networking Foundation	x	x	x
Telnet Server	x	x	x
BITS	x	x	x
Device Connectivity	x	x	x
Bluetooth	x	x	x
IRDA and UNIMODEM	x	x	x
Domain Services	x	x	x

Catalog	WS7E	WS7P	WS7C
Networking protocols	x	x	x
IPv4	x	x	x
IPv6	x	x	x
Network Access Protection	x	x	x
Network and Sharing Center	x	x	x
Network Diagnostics	x	x	x
Peer Networking	x	x	x
Quality of Service	x	x	x
Remote Access Service (RAS)	x	x	x
Small Networking Services	x	x	x
Telephony API Client	x	x	x
Windows Firewall	x	x	x
Wireless Networking	x	x	x
Security			
Security			
Credential Roaming Service	x	x	x
Credentials and Certificate Management	x	x	x
Windows Authorization Manager (AZMAN)	x	x	x
Windows Security Center	x	x	x
Active Directory Rights Management	x	x	
Security Base	x	x	x
Trusted Platform Module (TPM) Management	x	x	x
Bitlocker Secure Startup		x	
Encrypted File System (EFS)	x	x	
Applocker		x	
Bitlocker		x	
Bitlocker-to-go		x	
Tools			
Toolkit			
Image Configuration Editor (ICE)	x	x	x
Image Based Wizard (IBW)	x	x	x
Shell and User Interface			

Catalog	WS7E	WS7P	WS7C
User Interface			
Help	x	x	x
Embedded Core Help Content	x	x	x
Help and Support Engine	x	x	x
Remote Assistance	x	x	x
Speech	x	x	x
Speech and Text	x	x	x
Speech Chinese Simplified	x	x	x
Speech Chinese Traditional	x	x	x
Speech French	x	x	x
Speech German	x	x	x
Speech Japanese	x	x	x
Speech Spanish	x	x	x
Speech UK English	x	x	x
Speech US English	x	x	x
Accessories	x	x	x
Application User Experience	x	x	x
Shell	x	x	x
Shell Controls and UI Support Functions	x	x	x
Command Prompt Shell with Custom Shell Support	x	x	x
Shell Foundation	x	x	x
Windows Explorer Shell	x	x	x
Windows Explorer Shell Resources	x	x	x
System Control Panel	x	x	x
Accessibility	x	x	x
Action Center	x	x	x
Windows Aero? user interface with Glass	x	x	x
Aero Background	x	x	x
Windows Flip	x	x	x
Windows Flip 3D	x	x	x
Live Taskbar Thumbnails	x	x	x
Multiple Monitor Support	x	x	x

Catalog	WS7E	WS7P	WS7C
Natural Language 6	x	x	x
Search Indexing	x	x	x
Text Services Framework	x	x	x
User Account Control	x	x	x
Windows Mobility Center	x	x	x
Windows Search	x	x	x
Windows Taskbar & Jump Lists	x	x	x
Tablet PC Support		x	
Windows Touch (Multi-touch support)		x	
Embedded Features			
Embedded Features			
Boot from USB Stick	x	x	x
Dialog Box Filter	x	x	x
Write Filter technology	x	x	x
Enhanced Write Filter	x	x	x
File Based Write Filter (FBWF)	x	x	x
Hibernate Once Resume Many (HORM-EEF)	x	x	x
Customization	x	x	x
Hide Boot Screens	x	x	x
Custom Logon Desktop Background Images	x	x	x
Custom Shell Support (EEF)	x	x	x
Message Box Default Reply	x	x	x
Notification & Popup suppression (EEF)	x	x	x
OEM Branding Experience (EEF)	x	x	x
RAM Disk Controller	x	x	x
Registry Filter	x	x	x
WSDAPI for .NET	x	x	x

WINDOWS EMBEDDED STANDARD 2009

Windows Embedded

This version of XP was designed for OEMs to create and deploy devices using the same drivers and being capable of running the same application software as XP Pro.

OEMs using WES 2009 utilize a software suite known as Embedded Studio to create a version of the operating system specific to their hardware. With over 12,000 individual components, designers can select only the components and functionality they need in order to create secure, reliable systems with a minimized storage footprint.

In addition to their own custom software, OEMs can also take advantage of familiar Windows software such as Internet Explorer 7 (IE7) and Windows Media Player 11 (WMP11) as well as Silverlight and support for System Center Configuration Manager, a service used to comprehensively assess, deploy and update deployed devices.

Taking advantage of unique capabilities like Embedded Enabling Features, allows an OS to consistently boot quickly using HORM (Hibernate Once Resume Many) and valuable data can be protected from accidental corruption using EWF (Enhanced Write Filtering) and FBWF (File Based Write Filter).

FEATURES AT A GLANCE:

Reduced Footprint	As low as 40MB
Real-Time	Real-Time support available using third party plug-in
Low Cost	$90 per run time license
Development Tools	Windows Embedded Standard 2009 Embedded Studio (cost $995)
Processors	x86 with full Win 32 Application compatibility
Typical Applications	Intelligent Appliances, Networked Media devices and Servers, Industrial Controls, Home Automation Gateways, Gambling Devices

For more information on Microsoft Embedded, contact Avnet's Microsoft Team at MSTeam@avnet.com or your local Avnet representative.

WINDOWS EMBEDDED STANDARD 2009 (WES 2009)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	5CA-00005	Windows Embedded Standard 2009 Toolkit EMB English ESD OEI
EMBEDDED	7WT-00011	Windows Embedded Standard 2009 EMB ESD OEI Runtime

WINDOWS XP EMBEDDED

Windows Embedded

COMPONENTIZED FEATURES OF WINDOWS XP EMBEDDED

Windows XP Embedded is the embedded operating system delivering the power of Windows in componentized form, helping embedded developers to rapidly build reliable and advanced embedded devices. Based on the same binaries as Windows XP Professional, Windows XP Embedded enables embedded developers to choose from over 10,000 individual feature components to achieve optimum functionality in a reduced footprint.

Windows XP Embedded helps provide reliability, security enhancements, and performance along with the latest multimedia and Web browsing capabilities and extensive device support. Windows XP Embedded also incorporates the latest embedded-enabling capabilities, supporting multiple boot, storage, deployment and management technologies.

RAPID TIME TO MARKET
Windows XP Embedded helps you to reduce time-to-market by taking advantage of a familiar programming model and a powerful set of tools.

» Windows Embedded Studio Platform Development Tools
» Application Development Tools
» Use Commodity PC Hardware and Desktop Software

RELIABLE PLATFORMS
Windows XP Embedded supports a vast array of features that help provide for reliable, secure and dependable embedded devices.

» **Robust platform** - improved code protection, device driver rollback, driving signing and I/O throttling.
» **High-performance platform** - accelerated boot and log-on process, resource management, pre-emptive multi-tasking architecture, enterprise-class security, security configuration manager.

DIFFERENCES BETWEEN WINDOWS XP EMBEDDED & WINDOWS XP PROFESSIONAL

Windows XP Embedded helps bring the stability, security, and the rich feature set of Microsoft Windows XP Professional to embedded devices. Windows-based applications can run on Windows XP Embedded, and embedded application developers can use the Windows API set to write applications, just like Windows XP Professional developers do.

However, there are differences between Windows XP Embedded and Windows XP Professional. Most importantly, Windows XP Embedded is engineered for embedded devices, and to support the work of the application developers and OEMs who build embedded devices, including point-of-sale (POS) devices, Windows-based terminals and kiosks.

Componentization makes it easy to build fixed-function devices and to reduce the footprint of a target run-time image. You can use Windows XP Embedded to build a run-time image that includes only the Windows components that your device requires. As long as you include the required dependencies in your run-time image, you can maintain the application compatibility that you need to run your applications.

Componentization also makes it easier to reduce security risks by designing run-time operating systems with limited surface area. The smaller the footprint of your run-time image, the smaller the surface area of the operating system. Less surface area means less risk of intrusion. For example, if you do not require networking capabilities, you can exclude networking components from your run-time image.

WINDOWS XP EMBEDDED - WES XP

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	G80-00005	Windows XP Embed EMB ESD OEI Runtime
EMBEDDED	G81-00065	Windows XP Embed Target Designer Toolkit EMB English

WINDOWS EMBEDDED 8 INDUSTRY

Windows Embedded

Windows Embedded 8 Industry extends Windows 8 to a range of edge devices across retail, manufacturing, healthcare and any other industries in which powerful line-of-business applications and the ability to perform a specialized function in a secure and reliable way is paramount.

WINDOWS EMBEDDED 8 INDUSTRY TOP FEATURES

» **Visually rich** - Deliver immersive experiences through multi-gesture touch interfaces and context-aware applications that are eye-catching and intuitive.

» **Easy to develop** - Deploy device peripherals that are plug-n-play, update peripherals more easily, and decrease support costs through streamlined integration with an open device driver architecture based on industry standards.

» **Targeted and consistent** - Provide a consistent user experience with advanced lockdown features; the fixed platform provides a consistent and predictable development experience, and a high degree of application compatibility.

» **Secure and reliable** - Protect the integrity of the device by securing and encrypting hardware, supporting a range of antimalware solutions, and ensuring the device restarts and acts the same way every time.

THINGS OEMS CAN DO WITH WE 8 INDUSTRY

ONE TRUSTED PLATFORM

The next generation of Windows Embedded POSReady, Windows Embedded 8 Industry represents an ideal solution for industry devices that utilize powerful line-of-business applications. The new name reflects an expanded focus on supporting not just Point of Service (POS) scenarios, but the entire range of devices that power organizations in retail, manufacturing, healthcare, and any other industry that requires the ability to perform a specialized function in a secure, reliable and customizable way.

With Windows Embedded 8 Industry, OEMs can build the next generation of industry-specific devices that easily and seamlessly integrate into the entire suite of Microsoft technologies, providing a rich new source of information that can be deployed, managed and secured by IT using existing skill sets.

CREATE DIFFERENTIATED DEVICES

Windows Embedded 8 Industry is a fixed platform to create and build specialized device experiences, while delivering an immersive user interface through multi-touch and gesture input. Windows 8 Industry-based devices can allow for a consistent, connected architecture from the device layer to back-end software and services, unlocking new streams of information for analysis and insight for customers across multiple industries, including retail, manufacturing and healthcare.

EXTEND BUSINESS INTELLIGENCE

Windows Embedded 8 Industry allows for easy connectivity to on-premise and cloud-based IT assets, enabling devices to deliver business-critical information at the point of impact. By connecting specialized industry devices to enterprise applications, servers and cloud services, OEMs can deliver industry devices that participate in an enterprise's intelligent system and help them realize new value from their IT assets, such as more accurate forecasts, dynamic pricing models, a better understanding of their customers, targeted promotional offers and increased efficiency—using the same Microsoft technologies that enterprise IT professionals already know.

SAMPLE DEVICES FOR WE 8 INDUSTRY

» **POS terminals** - Connecting these devices to back-end software and systems has become a requirement for competitive retailers today.

» **ATMs** - A reliable, straightforward methods for customers to withdraw or deposit money and check on available funds.

» **Automated manufacturing solutions** - Increase efficiency and gain greater insight into plant conditions, supply-chain levels and product quality with automated solutions for manufacturing.

» **Medical devices** - Sonograms and other medical devices enable doctors to monitor a baby's health in utero and send images to researchers in real-time via a wireless network.

WINDOWS EMBEDDED 8 INDUSTRY

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	5JV-00032-1PK	Win Embedded 8 Industry Pro EMB ESD OEI Runtime
EMBEDDED	5JV-00036-1PK	Win Embedded 8 Industry Pro Retail EMB ESD OEI Runtime

WINDOWS EMBEDDED POSREADY 7

Windows Embedded POSReady 7 is an operating system optimized for Point of Service solutions that unleashes the power of Windows 7 platform delivering attractive and compelling user experiences, simplifying management and deployment and ease of connection to the familiar world of Windows. POSReady 7 evolves the usefulness of traditional POS devices, going beyond inventory tracking and tendering, helping to provide comprehensive information access to in-store staff and assisting retailers in dealing with today's challenges while preparing for tomorrow's opportunities.

A new generation of Point of Service devices, helping retailers evolve their in-store transaction processing device to a cutting edge Point of Service device with superior customer experience helping to attract and retain customer spending while increasing staff productivity. Sophisticated Digital Signage devices requiring visually compelling user experiences helping retailers deliver unique user experiences.

NEW FEATURES IN WINDOWS EMBEDDED POSREADY 7

Processor Architecture	Support for x86 and x64 processor architectures
Latest Desktop Technology innovations	Internet Explorer 8 Windows Media Player 12 Remote Desktop Protocol 7.1
Application Compatibility	Applications and drivers for Windows 7 can work on Windows Embedded POSReady 7 without difficult, expensive, and time-consuming porting effort
Enterprise Connectivity and Manageability	Support for Active Directory, Group Policies, Network Access Protection, and IPv6 to enable connectivity, Manageability with System Center Configuration Manager, System Center Operations Manager, Windows Embedded Device Manager 2011 and Windows Server Update Services
Rich Immersive User Experiences	Rich, interactive user experiences with Windows Aero and Windows Touch. A stable Windows Presentation Foundation for building new and innovative experiences
Improved Power Management	Smart power management APIs which help developers build power efficient applications.
Plug-n-Play Peripheral capability	.POS for .NET provides an open device driver architecture that is based upon the Unified Point of Service (UPOS) industry standard

Windows Embedded POSReady 7 combines the power and familiarity of Windows 7 with specific features for point of service (POS) computers. POSReady 7 is a significant update to Windows Embedded POSReady 2009 that incorporates a new product name, new technologies, and improvements in core functionality. You can install and run Windows Embedded POSReady 7 on any computer that meets or exceeds the following hardware requirements:

RECOMMENDED HARDWARE CONFIGURATION

» 1 GHz or faster 32-bit (x86) or 64-bit (x64) processor
  • 32-bit systems:
  • 1 GB RAM
» 16 GB available hard disk space
» 64-bit systems:
  • 2 GB RAM
  • 20 GB available hard disk space
» DirectX 9 graphics device with WDDM 1.0 or a later version driver
» Bootable DVD-ROM drive

NOTE: We recommend that you install POSReady 7 on a computer that has at least 16 GB of available disk space for 32-bit systems and 20 GB for 64-bit systems. Various features in POSReady 7 can quickly increase the disk space requirements. For optimal performance of the hard disk, you need at least 15 percent free space at all times and sufficient space for the paging file, which might be up to two times the size of the system's RAM.

ADDITIONAL REQUIREMENTS

The following additional requirements may be needed to use certain features:

» Internet access (ISP or carrier fees may apply)
» Depending on resolution, video playback may require additional memory and advanced graphics hardware
» Windows Touch and TabletPC features require specific hardware
» BitLocker requires Trusted Platform Module (TPM) 1.2
» BitLocker To Go requires a USB flash drive

Product functionality and graphics may vary based on the system configuration. Some features may require advanced or additional hardware.

COMPUTERS WITH MULTI-CORE PROCESSORS

POSReady 7 is designed to work with today's multi-core processors. All 32-bit versions of POSReady 7 support up to 32 processor cores. 64-bit versions support up to 256 processor cores.

COMPUTERS WITH MULTIPLE PROCESSORS (CPUS)

POSReady 7 supports two physical processors, providing the best performance on these computers.

WINDOWS EMBEDDED POSREADY 7

License Type	Part Number	Part Description
EMBEDDED	S5C-00065	Win Embedded POSReady 7 32-bit/x64 EMB ESD OEI Runtime

WINDOWS EMBEDDED POSREADY 2009

Windows Embedded POSReady (formerly WEPOS) is an operating system designed to be optimized for point-of-service (POS) devices. With built-in networking capabilities and standards-based plug and play support, POSReady makes it easy to connect POS solutions with peripherals, servers and services.

Windows Embedded POSReady an installable operating system and is optimized with only the features and components required for full-function POS devices in retail and hospitality organizations. Similar to Windows XP, POSReady 2009 has unique features that differentiate it from other Microsoft Embedded Operating Systems.

SECURITY FEATURES INCLUDE:

» Tools to harden Internet Explorer
» Security patches through Windows Update (WU)
» Windows Server Update Services (WSUS)
» A semi-stateless system using File Based Write Filter (FBWF)

POSReady 2009 also supports Internet Explorer 7 (IE7), Windows Media Player 11 (for checkout lane advertising and training), Silverlight, .NET Framework 3.5, SQL Express 2008, POS for .NET 1.12 and Office Viewers support for Word, Excel and PowerPoint.

FEATURES AT A GLANCE:

Reduced Footprint	Optimized for Point of Service Devices (min 520MB available hard-disk space)
Real-Time	Real-Time support available using third party plug-in
Low Cost	$100 per run time
Development Tools	No development tools necessary - free OPK (OEM Preinstallation Kit) available
Processors	x86
Compatibility	Full Win 32 Applications , with added POS drivers and POS for .NET 1.12
Typical Applications	Cash Registers, Self-Service Checkouts, Kiosks, Digital Signage, Fuel Pumps

WINDOWS EMBEDDED POSREADY

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	S5C-00011	Win Embedded POSReady 2009 EMB ESD OEI Runtime
EMBEDDED	ZY8-00047	Windows XPe Solutions 1.1 EMB ESD OEI WEPOS Runtime

WINDOWS EMBEDDED COMPACT 2013

Windows Embedded

Windows Embedded Compact 2013 is a streamlined, componentized device operating system that gives developers all the tools they need to create the next generation of intelligent systems solutions. With support for x86 and ARM architectures, Windows Embedded Compact 2013 provides the flexibility and real-time support to help device manufacturers reduce time-to-market while creating easy-to-use, multi-touch intelligent systems that help enterprises improve worker productivity.

TOP FEATURES OF WE COMPACT 2013

» **Ease of development** - Familiar tools like Visual Studio and Expression Blend allow you to create attractive and intuitive user interfaces, and bring differentiated devices to market faster than ever before.

» **Flexible architecture** - Real-time operating system supports an array of hardware requirements and key processor architectures, including x86 and ARM, to power everything from tiny controls to fully automated factories.

» **Robust and secure** - Improved file-system performance gives companies confidence that their devices will always be available; the one-tier security feature is SDL compliant, with reliable wireless connectivity and networking.

WHAT OEMS CAN DO WITH WE COMPACT 2013

ONE TRUSTED PLATFORM

With Windows Embedded Compact 2013, you can develop industry devices within the integrated environment of Platform Builder, to allow adjustments on the hard, real-time operating system while working on specific projects simultaneously. And support for Visual Studio 2012, Expression Blend 5.0 and the .NET Compact Framework 3.9 provides access to the tools that OEMs rely on.

Windows Embedded Compact 2013 also supports the new generation of multi-core processors, ensuring you can get the most out of each device. Windows Embedded Compact 2013 is supported by a 10-year support program from Microsoft, along with the assurance that Windows Embedded Compact 2013 will be available for 15 years from the time it was first released.

CREATE DIFFERENTIATED DEVICES

Windows Embedded Compact 2013 includes a development framework based on XAML and supports a range of ARM and x86. As a result, you have greater flexibility to create devices that match your customers' specifications. Significant improvements in .NET Compact Framework 3.9 enable flexibility in development with generational garbage collection and dramatic speed improvements. Your devices will give enterprises the ability to seamlessly share content on business networks, as well as network devices. And the introduction of Fast Boot will get businesses to work in no time.

EXTEND BUSINESS INTELLIGENCE

Create an experience that helps companies get more done. Windows Embedded Compact 2013 increases opportunities for you to deliver leading intelligent system solutions that meet your customer's needs — including extending their intelligence to get insights that would otherwise be out of reach. With built-in support for WiFi, Cellcore and Bluetooth technologies, you can easily create a robust, connected intelligent system.

SAMPLE DEVICES FOR WE COMPACT 2013

» **Human Machine Interface (HMI)** - These devices provide the ability to monitor automated processes, such as manufacturing, to safeguard against diminished product quality or equipment breakdowns.

» **RFID Scanners** - Speed the completion of common tasks such as inventory, shipping and receiving with these devices.

» **Medical Devices** - Sonograms and other medical devices enable doctors to monitor a baby's health in utero and send images to researchers in real time via a wireless network.

» **GPS Devices** - Help people stay on course to their destinations with these navigation devices.

WINDOWS EMBEDDED COMPACT 2013

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	T9W-00003	Windows Emb Compact 2013 EMD ESD OEI (Entry) Runtime
EMBEDDED	TNA-00028	Windows Emb Compact 2013 EMD ESD OEI (General Embedded) Runtime

License Type	Part Number	Part Description
EMBEDDED	ZH5-00046	Windows Emb Compact 2013 EMD ESD OEI (NR) Runtime
EMBEDDED	814-00359	Windows Emb Compact 2013 Toolkit EMD English

SKU BREAKDOWN

Category	Feature	C13 NR	C13 Entry	C13 General Embedded
Rich User Experience	Software Input Panel (SIP), sample keyboards and subcomponents		x	x
	XAML for Windows Embedded			x
	Win32 Shell		x	x
	Graphical Shell			x
	Control Panel, XAML for Windows Embedded			x
Ease of Use	WMA and MP3 Local Playback	x	x	x
	WMA and MP3 Streaming Playback			x
	Streaming Media Playback	x		x
	Cellcore Data	x	x	x
	Cellcore Voice			x
	Web Service On Devices			x
	PDF Reader			x
	Help		x	x
	VB Script			x

WINDOWS EMBEDDED COMPACT 7

Windows Embedded

Windows Embedded Compact 7 is a real-time operating systems for a wide range of small-footprint consumer and enterprise devices. Development tools like Platform Builder, a Visual Studio 2008 plug in, provide an integrated development environment (IDE) that enables you to build applications and Windows Embedded CE operating system software in a familiar environment.

AVAILABLE SKUs:

"C7E" SKU: Provides OEMs with a comprehensive package of operating components to develop a wide variety of general embedded devices.

"C7P" SKU: Offers the richest set of components and applications to enable complex consumer and enterprise class devices. C7P SKU can satisfy complex scenarios such as remote desktop connectivity, data sync via Active Sync, web browsing, media playback, email, contact management, and voice communication. It also includes a software development kit to allow devices to be customized and extended by end customers. C7P SKU is ideal for many device categories including thin clients, mobile handheld terminals, and industrial automation controllers.

C7T SKU: Use the Thin Client design template to create an OS for a Windows Embedded Compact powered device. The design template provides the following configurable features:

» Remote Desktop Connection
» Audio redirection
» Resource-constrained shell
» Internet Explorer Embedded
» Dial-up Networking (RAS/PPP)
» Emulators and presentation protocols from external vendors (optional)

WINDOWS EMBEDDED COMPACT 7

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	814-00345	Windows Embedded Compact 7 Toolkit ($995)
EMBEDDED	884-00364	Windows Emb Compact Pro 7 EMB ESD OEI (C7P) Runtime
EMBEDDED	TNA-00022	Win Emb Cmpct OtherMobile 7 EMB ESD OEI (C7E) Runtime
EMBEDDED	884-00369	Windows Emb Compact 7 EMB ESD OEI (C7T) Runtime

COMPACT 7 VS. CE COMPARISON CHART

Category	Feature	C6Core	C7E	C7P	C7T
Part #		ZH5-00019	TNA-00022	884-00364	
Development Tool		814-00336	814-00345		
Type		General, for all types of embedded devices			
Rich User Experience	Software Input Panel (SIP) and subcomponents		x	x	x
	Silverlight for Windows Embedded		x	x	x
High Fidelity Internet	Internet Explorer 7.0 and subcomponents			x	x
	Flash Player 10.1			x	x
Ease of Connectivity	Remote Desktop Protocol (RDP) and subcomponents			x	
	Windows Network Projector and subcomponents			x	x
	Terminal Emulator			x	x
	ActiveSync AirSync			x	x
	ActiveSync Inbox Sync			x	x
	Pocket Outlook Database Sync			x	x
	CE Messaging API (MAPI)			x	x
	Pocket Outlook Object Model			x	x
	SMS Transport for CE MAPI			x	x
	Windows Media Player			x	x
	Media Library		x	x	x
	Media Content			x	x
	Media Sync for Windows Device Stage including Media Transfer Protocol (MTP) Responder and subcomponents		x	x	x
	WMA and MP3 Local Playback	x		x	x
	WMA and MP3 Streaming Playback			x	x
	Streaming Media Playback			x	x
	Cellcore Voice			x	x
Ease of Connectivity	Link Layer Topology Discovery Responder			x	x
	Universal Plug and Play (UPnP) and subcomponents	x		x	x
	Web Services On Devices		x	x	x

Category	Feature	C6Core	C7E	C7P	C7T
Part #		ZH5-00019	TNA-00022	884-00364	
Development Tool		814-00336	814-00345		
Type		General, for all types of embedded devices			
Other	Office Viewers and subcomponents			x	x
	PDF Reader			x	x
	WordPad			x	x
	SQL Compact and subcomponents		x	x	x
	Help			x	x
	C Libraries: Open MP Runtime			x	x
	AYG Shell API			x	x
	Graphical Shell	x	x	x	x
	Windows Thin Client Shell			x	
	Screen Configuration		x	x	x
	Control Panel, Silverlight for Windows Embedded		x	x	x

WINDOWS CE

Windows Embedded CE 6.0

Highly reliable and easy to use, Windows CE 6.0 offers endless possibilities to developers. Windows CE 6.0 is a low-cost operating system designed for small footprint devices, ranging from power-conscious GPS handhelds to real-time, mission-critical industrial controllers.

OEMs using CE often utilize a software tool called "Platform Builder" to create a version of the operating system specific to their hardware. Platform Builder includes and works as part of, Visual Studio 2005 – a software suite frequently used by OEMs to create custom software for devices.

One of the primary concerns of OEMs is the need to make the device as easy to use as possible. The latest release of Windows Embedded CE 6.0 (R3) includes the Windows Presentation Foundation (WPF), which now makes it possible for OEMs to design Human Machine Interfaces using Microsoft Expression Blend™. This means that the User Interface (UI) can be designed and created concurrently with the application software, dramatically reducing time to market. The UI can be easily altered and independently customized from the underlying application code. This allows designers to respond to user feedback and make the end product as intuitive and simple to use as possible. In addition, OEMs can include CE versions of Internet Explorer (IE and Windows Media Player (WMP), viewers for Microsoft Office and .pdf files.

Because CE is highly componentized and uses drivers that are different from those used by Windows XP, Vista or Windows 7, it is necessary to begin design by using a Board Support Package (BSP) that includes the necessary drivers specific to the hardware they plan to use. Many manufactures of single board computers have BSPs readily available and most OEMs creating their own systems based on a supported processor start their designs using evaluation hardware and an accompanying BSP offered by the processor manufacturer or a third party software provider.

FEATURES AT A GLANCE:

Small Footprint	Can boot from on board flash or SD or Compact Flash cards, as low as 300KB
Real-Time	32-bit Native Real-Time Support Unified Kernel
Low Cost	CE Core = $3 per run time license CE Pro = $13 per run time license
Development Tools	Platform builder is a plug-in for and comes with Visual Studio 2005 (costs $995)
Processors	ARM, MIPS, x86 or SH4 (up to CE 6.0 R2)
Applications	Handheld Terminals, Industrial and Home automation controllers, Set-top Boxes, Mini-Kiosks, Gaming Devices, Mobile Point of Service

WINDOWS CE 6.0 (REQUIRES PURCHASE OF PLATFORM BUILDER TOOLKIT)

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	814-00336	WinCE Platform Builder 6.0 W/R3 EMB English ESD OEI DVD ($995)
EMBEDDED	ZH5-00019	Windows CE Core 6.0 EMB ESD OEI Core Runtime
EMBEDDED	TNA-00004	Windows CE Core PLUS 6.0 EMB ESD OEI Core PLUS Runtime
EMBEDDED	884-00341	Windows CE Pro 6.0 EMB ESD OEI Pro Runtime

Windows Embedded

WINDOWS EMBEDDED SERVER

Windows Embedded Server, also known as Windows Server for Embedded Systems, provides the basis for deploying solutions with primary functionality determined by the OEM's embedded application. Such solutions are ideal for a multitude of scenarios such as: retail, medical, security & surveillance, industrial automation and others.

Dedicated server appliance solutions that run Windows Embedded Server products can help OEMs develop preconfigured hardware and software solutions, systems designed to quickly connect to existing IT infrastructures, licensing and engineering to reduce TCO while ensuring reliable performance and manageability.

Windows Embedded Server operates in the same way as other Windows Server versions. Since OEMs pay only for features in the version of Server they choose, the cost for Windows Embedded Server is often substantially less. In addition to traditional Windows Server editions such as Standard, Enterprise and Datacenter, the Microsoft Embedded licensing channel has other lower-cost editions, including Essentials and Telecommunication (Telco) that are not available in other Microsoft licensing channels.

There are several different versions of Embedded Server, including:

» **Windows Embedded Server 2012** - including Datacenter, Standard, Essentials and Telecommunications
» **Windows Embedded Server 2008 R2**
» **Windows Storage Server**

Unlike other Server versions, Embedded Server has certain licensing restrictions that specify how the systems are to be used. These restrictions ensure that OEMs create a product that does not use the server operating system as a general-purpose server platform, but as a dedicated embedded server appliance.

REASONS TO USE WINDOWS EMBEDDED SERVER VS. GENERAL PURPOSE SERVERS

» **Optimal Pricing** – Pay only for the functionality used
» **Longer product support** – Products are supported for a minimum of 5 years, with 5 mainstream and 5 extended
» **Guaranteed availability** – Products are guaranteed to be available for 15 years from release

Windows Embedded

WINDOWS EMBEDDED SERVER 2012

Windows Embedded Server, also known as Windows Server for Embedded Systems, provides the basis for deploying solutions with primary functionality determined by the OEM's embedded application. Such solutions are ideal for a multitude of scenarios such as: retail, medical, security & surveillance, industrial automation and others.

Dedicated server appliance solutions that run Windows Embedded Server products can help OEMs develop preconfigured hardware and software solutions, systems designed to quickly connect to existing IT infrastructures, licensing and engineering to reduce TCO while ensuring reliable performance and manageability.

Windows Embedded Server operates in the same way as other Windows Server versions. Since OEMs pay only for features in the version of Server they choose, the cost for Windows Embedded Server is often substantially less.

Unlike other Server versions, Embedded Server has certain licensing restrictions that specify how the systems are to be used. These restrictions ensure that OEMs create a product that does not use the server operating system as a general-purpose server platform, but as a dedicated embedded server appliance.

REASONS TO USE WINDOWS EMBEDDED SERVER VS. GENERAL PURPOSE SERVERS

» **Optimal Pricing** – Pay only for the functionality used
» **Longer product support** – Products are supported for a minimum of 5 years, with 5 mainstream and 5 extended
» **Guaranteed availability** – Products are guaranteed to be available for 15 years from release

There are several different versions of Embedded Server, including:

» **Windows Embedded Server 2012** - including Datacenter, Standard, Essentials and Telecommunications
» **Windows Embedded Server 2008 R2**
» **Windows Storage Server**

WINDOWS EMBEDDED SERVER 2012

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	6FA-00068	Win Svr Emb Std 2012 x64 EMB ESD OEI 2 CPU Std
EMBEDDED	6FA-00070	Win Svr Emb Std 2012 x64 EMB ESD OEI 2 CPU 5 Clt Std
EMBEDDED	6FA-00072	Win Svr Emb Std 2012 x64 EMB ESD OEI 2 CPU 10 Clt Std
EMBEDDED	6FA-00084	Win Svr Emb Std 2012 x64 EMB ESD OEI 2 CPU Essntls
EMBEDDED	6FA-00085	Win Svr Emb Std 2012 x64 EMB ESD OEI 2 CPU Telco
EMBEDDED	6FA-00086	Win Svr Emb Std 2012 x64 EMB ESD OEI 4 CPU Std
EMBEDDED	6FA-00088	Win Svr Emb Std 2012 x64 EMB ESD OEI 4 CPU 5 Clt Std

License Type	Part Number	Part Description
EMBEDDED	6FA-00090	Win Svr Emb Std 2012 x64 EMB ESD OEI 4 CPU 10 Clt Std
EMBEDDED	6FA-00092	Win Svr Emb Std 2012 x64 EMB ESD OEI 4 CPU Essntls
EMBEDDED	6FA-00099	Win Svr Emb Std 2012 x64 EMB ESD OEI 4 CPU Telco
EMBEDDED	6KA-00042	Win Svr Emb CAL 2012 x64 EMB ESD OEI 1 Clt User CAL
EMBEDDED	6KA-00044	Win Svr Emb CAL 2012 x64 EMB ESD OEI 5 Clt User CAL
EMBEDDED	6VC-02050	Win Rmt Dsktp Svcs CAL 2012 x64 EMB ESD OEI 1 Clt User CAL
EMBEDDED	6VC-02051	Win Rmt Dsktp Svcs CAL 2012 x64 EMB ESD OEI 5 Clt Device CAL

WINDOWS EMBEDDED SERVER 2008 R2

Windows Embedded

Windows Server® 2008 R2 for Embedded Systems builds on Windows Server® 2008 for Embedded Systems by expanding existing technology and adding new features to help OEMs deliver solutions with increased reliability and flexibility.

Powerful virtualization features help OEMs increase hardware utilization and run new and legacy functionality side-by-side while ensuring workload isolation. Improved processor power management and power profile features help OEMs reduce carbon footprint in their solutions by minimizing power consumption.

The Server Core installation, in addition to reducing the attack surface of your solution, now supports more server roles, including Microsoft. NET application. Advanced security enhancements include Bit-locker® and Read-Only Domain Controller, which hardens the operating system and protects your server environment to ensure a solid foundation for appliance development.

New virtualization tools, management enhancements, Server Core and features that are designed specifically to work with embedded devices or client computers running Windows® 7, help save time and reduce costs, making Windows Server 2008 R2 for Embedded Systems a highly robust and reliable foundation on which to deliver dedicated solutions and appliances.

Windows Server 2008 R2 for Embedded Systems has made enhancements in these areas:

SERVER CORE

Windows Server 2008 R2 includes an even more granular definition of server roles than in previous Windows Server operating systems. This finer granularity allows OEMs to install only the operating system components and features that are needed to support their applications and services, which results in a more efficient footprint and reduces the attack surface on the solution.

» The Server Core installation option further reduces the attack surface of your solution by eliminating the graphical user interface on Windows Server 2008 R2 for Embedded Systems.

» In addition Windows Server 2008 R2 for Embedded Systems Server Core installation now supports more server roles, such as Microsoft. NET connection software.

VIRTUALIZATION

With its built-in server virtualization technology, Windows Server 2008 R2 for Embedded Systems helps OEMs increase hardware utilization while running both new and legacy functionality side-by-side in order to ensure workload isolation.

» **Hyper-V**
Windows Server 2008 R2 for Embedded Systems includes the much-anticipated update to Microsoft's virtualization technology, Hyper-V™. The new Hyper-V was designed to augment both existing virtual machine management as well as to address specific challenges around server migration.

» **Live Migration**
Hyper-V is an important technology for one of Windows Server 2008 R2 for Embedded Systems' marquee features, Live Migration. With Hyper-V version 1.0, Windows Server 2008 for Embedded Systems is capable of Quick Migration, which moves VMs between physical hosts in milliseconds, enabling invisible migration operations to connected users.

BITLOCKER

BitLocker allows Windows Embedded® Enterprise and Windows Embedded® Standard 2011, OEMs to encrypt removable drives, such as eSATA hard disks, USB hard disks, USB thumb drivers and compact flash drives. This allows the same level of protection for data stored on removable media as the operating system volume.

Active Directory® helps centralize the consistent deployment of the BitLocker feature across the entire OEM solution, including the operating system volume and removable drives which use Windows Embedded Enterprise, Windows Embedded Standard 2011 and Windows Server 2008 R2 for Embedded Systems.

READ-ONLY DOMAIN CONTROLLER

Read-only Domain Controller (RODC) in Windows Server 2008 R2 for Embedded Systems improves OEM device security and reduces risk of stolen information. Furthermore, BitLocker to encrypt removable drives in Windows Embedded Enterprise or Windows Embedded Standard 2011, can be centralized and deployed consistently, working together with Active Directory in Windows Server 2008 R2 for Embedded Systems, helping OEMs deliver secure systems.

» **Agile VPN**

The Agile VPN feature allows a VPN to have multiple paths between points in the VPN tunnel, connecting embedded devices running Windows Embedded Enterprise or Windows Embedded Standard 2011 to servers running Windows Server 2008 R2 for Embedded Systems. In the event of failure, Agile VPN automatically uses another network path to maintain the existing VPN tunnel in order to avoid interruption of connectivity. This allows OEMs to offer robust connectivity for their smart, connected and service-oriented solutions.

» **Direct Access**

DirectAccess is a new technology built into Windows Server 2008 R2 for Embedded Systems, Windows Embedded Enterprise and Windows Embedded Standard 2011. It allows corporations to configure a secure communication path between remote devices and centralized data in headquarters, without going through VPN authentication.

» **PACS (Picture Archiving and Communication Systems)**

Medical devices in the field can access PACS based server appliances directly, thereby eliminating the need for VPN authentication and allowing for easier connectivity.

AVAILABLE EMBEDDED SERVER SKUs

OEMs leverage the benefits made available through Windows Server For Embedded Systems to build and deliver a wide variety of server solutions, including:

» Medical Imaging
» Security & Surveillance
» Industrial Automation
» Document Imaging
» Streaming Media Server
» Telecommunications (PBX Server, Call Center Server, IVR Server and Teleconferencing)

OTHER EMBEDDED SERVER PRODUCTS

» Windows Server 2008 R2 For Embedded Systems
» Windows Server 2008 For Embedded Systems
» Windows Server 2003 R2 For Embedded Systems
» Windows Server 2003 For Embedded Systems

SERVER EDITIONS

Windows Server 2008 R2 for Embedded Systems is available in both Standard and Enterprise Editions. The Enterprise Edition supports larger memory and failover clustering and has enhanced virtualization rights.

Each of these editions has three SKUs. They are: Window Server 2008 R2 for Embedded Systems, Windows Server 2008 R2 For Embedded Systems- Essentials, Windows Server 2008 R2 For Embedded Systems for Telecommunications.

» **Windows Server for Embedded Systems**

Full Server capabilities for OEMs with great flexibility in the design and use of their server product.

» **Essentials (Server Appliance)**

The Essentials SKU has the same key features as the Standard product, but has license provisions applicable to supporting server appliances that OEMs build which have no keyboard, video or mouse connected ongoing.

» **Telecommunications**

Telecommunications system manufacturers that provide systems the following types of systems can make use of the Windows Server products that have license provisions specific to their needs and a price which will allow them to create very price-competitive solutions.

» IP-PBX
» Audio Conferencing
» Video Conferencing
» Voice Mail
» Unified Messaging
» Automated Call Distribution
» Contact Center
» Interactive Voice Response

WINDOWS EMBEDDED SERVER 2008 R2

License Type	Part Number	Part Description
EMBEDDED	6FA-00030	Win Svr Emb Std 2008 R2 64Bit EMB ESD OEI DVD 1-4CPU 5 Clt
EMBEDDED	6GA-00031	Win Svr Emb Ent 2008 R2 64Bit EMB ESD OEI DVD 1-8CPU 25 Clt
EMBEDDED	6FA-00029	Win Svr Emb Std 2008 R2 64Bit EMB ESD OEI DVD 1-4CPU Telecomminucations

License Type	Part Number	Part Description
EMBEDDED	6GA-00027	Win Svr Emb Ent 2008 R2 64Bit EMB ESD OEI DVD 1-8CPU Telecommunications
EMBEDDED	6FA-00032	Win Svr Emb Std 2008 R2 64Bit EMB ESD OEI DVD 1-4CPU Essentials
EMBEDDED	6GA-00029	Win Svr Emb Ent 2008 R2 64Bit EMB ESD OEI DVD 1-8CPU Essentials

WINDOWS EMBEDDED SERVER 2008

License Type	Part Number	Part Description
EMBEDDED	6FA-00008	Win Svr Emb Std 2008 EMB ESD OEI DVD 1-4CPU 5 Clt
EMBEDDED	6FA-00010	Win Svr Emb Std 2008 EMB ESD OEI DVD 1-4CPU Essentials
EMBEDDED	6FA-00012	Win Svr Emb Std 2008 EMB ESD OEI DVD 1-4CPU Telecommunications
EMBEDDED	6HA-00010	Win Svr Emb Std w/oHyperV 2008 EMB ESD OEI DVD 1-4CPU Essentials
EMBEDDED	6HA-00012	Win Svr Emb Std w/oHyperV 2008 EMB ESD OEI DVD 1-4CPU Telecommunications
EMBEDDED	6JA-00008	Win Svr Emb Ent w/oHyperV 2008 EMB ESD OEI DVD 1-8CPU 25 Clt
EMBEDDED	6JA-00010	Win Svr Emb Ent w/oHyperV 2008 EMB ESD OEI DVD 1-8CPU Essentials
EMBEDDED	6JA-00012	Win Svr Emb Ent w/oHyperV 2008 EMB ESD OLC 1-8CPU Telecommunications
EMBEDDED	6KA-00010	Windows Server Embedded CAL 2008 EMB ESD OEI 1 Clt User CAL

License Type	Part Number	Part Description
EMBEDDED	6KA-00012	Windows Server Embedded CAL 2008 EMB ESD OEI 5 Clt User CAL
EMBEDDED	6KA-00014	Windows Server Embedded CAL 2008 EMB ESD OEI 1 Clt Device CAL
EMBEDDED	6KA-00016	Windows Server Embedded CAL 2008 EMB ESD OEI 5 Clt Device CAL
EMBEDDED	G2C-00013	Win Svr Emb Std 2008 EMB ESD OEI WAN Optimization 2Mb
EMBEDDED	G2C-00014	Win Svr Emb Std 2008 EMB ESD OEI WAN Optimization 1Mb
EMBEDDED	G2C-00015	Win Svr Emb Std 2008 EMB ESD OEI WAN Optimization
EMBEDDED	GZC-00012	Win Svr Emb Std w/oHyperV 2008 EMB ESD OEI WAN Optimization 2Mb
EMBEDDED	GZC-00013	Win Svr Emb Std w/oHyperV 2008 EMB ESD OEI WAN Optimization 1Mb
EMBEDDED	GZC-00014	Win Svr Emb Std w/oHyperV 2008 EMB ESD OEI WAN Optimization

WINDOWS STORAGE SERVER

Microsoft Windows Storage Server 2008 is built upon an optimized release of the reliable and flexible file services of Windows Server 2008 for better file serving performance. Microsoft then adds advanced storage technologies such as file de-duplication and an iSCSI software target for unified file- and block-based storage and packages it for delivery within storage appliances. Similarly, Microsoft partners then offer specialized hardware and introduce additional software components to create WSS08-based appliances.
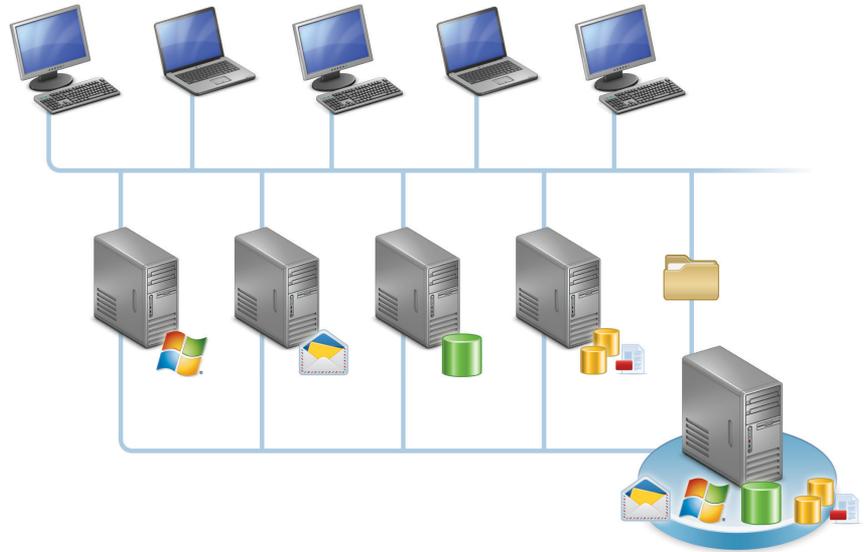
WINDOWS STORAGE SERVER 2012

*All Embedded Licenses are available in multi paks. Please inquire with your Avnet Representative for more information

License Type	Part Number	Part Description
EMBEDDED	7WR-00002	Win StorageSvr Wrkgrp 2012 x64 EMB ESD OEI
EMBEDDED	7VR-00058	Win StorageSvr Std 2012 x64 EMB ESD OEI

License Type	Part Number	Part Description
EMBEDDED	7VR-00065	Win StorageSvr Std 2012 x64 EMB ENG ESD OEI 2CPU/2VM Keyless Addl Lic

WINDOWS STORAGE SERVER 2008 R2

License Type	Part Number	Part Description
EMBEDDED	L91-00450	Windows Storage Server 2008 R2 Essentials 64-bit EMB ESD OEI
EMBEDDED	L91-00451	Windows Storage Server 2008 R2 Standard 64-bit EMB ESD OEI
EMBEDDED	L91-00452	Windows Storage Server 2008 R2 Workgroup 64-bit EMB ESD OEI

License Type	Part Number	Part Description
EMBEDDED	L91-00453	Windows Storage Server 2008 R2 Enterprise 64-bit EMB ESD OEI
EMBEDDED	L91-00455	iSCSI Software Target 3.3 EMB ESD OEI

WHICH CAL IS RIGHT FOR YOU?

Reprinted from IntelligentSystem.com, an Avnet Embedded blog

By Bob Winter, Avnet Embedded   April 29, 2013

"Do I need a User CAL or a Device CAL?" I hear this question about Client Access Licenses (CALs) and Microsoft Volume Licensing all the time.

Simply stated, a User CAL allows each individual user to use any device, while a Device CAL allows the computing device to communicate with the server. See these infrastructure scenarios from Microsoft for more details.
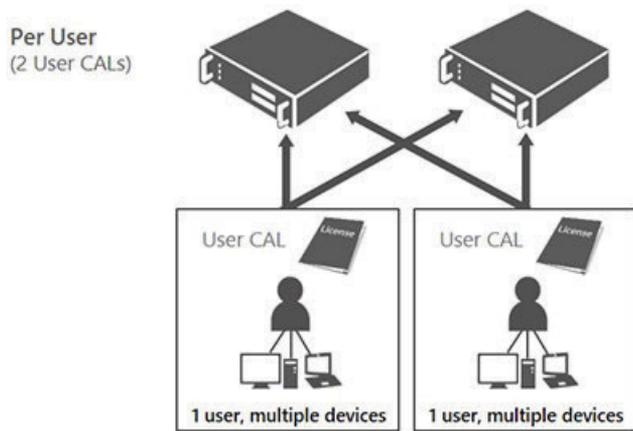
USER CALS

With the User CAL, you purchase a CAL for every user who accesses the server to use services such as file storage or printing, regardless of the number of devices they use for that access. Purchasing a User CAL might make more sense if your company employees need to have roaming access to the corporate network using multiple devices, or from unknown devices, or simply have more devices than users in your organization.
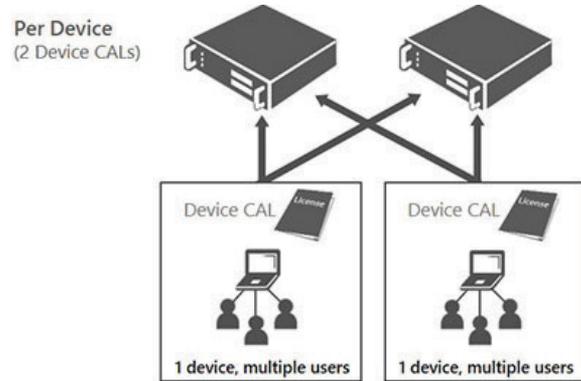
DEVICE CALS

With a Device CAL, you purchase a CAL for every device that accesses your server, regardless of the number of users who use that device to access the server. Device CALs may make more economic and administrative sense if your company has workers who share devices, for example, on different work shifts.

So as you can see, one choice is more economical than the other depending on your particular situation. Remember, Microsoft offers a version of Windows Server OS (Essentials) that does not require CALs, so if your server is headless and qualifies for this licensing, this CAL question is moot. If you use a server license that does require CALs, you will need to decide if your devices pull data or services from or send data to the server. Generally speaking, you need a CAL if that is happening whether you would classify the client as a traditional PC or not.

Learn more about CALs and Microsoft Volume Licensing at http://www.microsoft.com/licensing/about-licensing/client-access-license.aspx.

Bob Winter serves as the No. America Business Development Manager, responsible for all Microsoft products within Avnet.

Visit IntelligentSystem.com for more articles and commentary from Avnet's technology experts.

CLIENT APPLICATIONS

MICROSOFT OFFICE 2013

WHAT'S NEW IN OFFICE 2013?

Office 2013 suites deliver powerful new versions of the applications your customers know and trust. They are perfect for customers who need Office for only one Windows PC.

» **Word** - Add pictures, videos, or online media to documents with a simple drag and drop.
» **Excel** - Recommended charts help you visualize data quickly and effectively.
» **PowerPoint** - Reply to comments right next to the area you're discussing, so it's easy to follow who's commenting.
» **OneNote** - Capture and share photos, web pages and other media in a digital notebook you can access on the go.
» **Outlook** - See your schedule, an appointment, or details about a contact without changing screens.
» **Publisher** - Take the simple path to creating professional publications that make an impact.
» **Access** - Build a database fast to organize data and access it anywhere online.

	Office Home & Student 2013 Accomplish more for home and homework.	Office Home & Business 2013 Manage life and work more efficiently.	Office Professional 2013 Work smart with professional impact.
Licenses	1 PC	1 PC	1 PC
Core Office applications: Word, Excel, PowerPoint	✔	✔	✔
Digital notebook: OneNote	✔	✔	✔
Email, calendars, and tasks: Outlook		✔	✔
Publishing & databases: Publisher¹, Access¹			✔

OFFICE EDITIONS AVAILABLE

» **Office Home & Student 2013** - Best for families who want the new Office on a single PC.
» **Office Home & Business 2013** - Best for those who want the core Office applications plus Outlook on a single PC.
» **Office Professional 2013** - Best for those who want all Microsoft's new, best-in-class applications on a single PC.

OFFICE 2013 OPEN LICENSING EDITIONS

» We offer two suites of Microsoft Office through volume licensing— **Office Professional Plus 2013** and **Office Standard 2013.**

MICROSOFT OFFICE 2013

License Type	Part Number	Part Description
OEM	269-16094	Office Pro 2013 32-bit/x64 English Medialess
OEM	79G-03550	Office Home and Student 2013 32-bit/x64 English Medialess
OEM	T5D-01575	Office Home and Business 2013 32/64 English Medialess
OPEN	79P-04749	OfficeProPlus 2013 SNGL OLP
OPEN	021-10257	OfficeStd 2013 SNGL OLP

HOW TO PRE-INSTALL OEM OFFICE 2013 FOR SYSTEM BUILDERS

Reprinted from IntelligentSystem.com, an Avnet Embedded blog

By Ken Marlin, Avnet Embedded   May 24, 2013

One of my recent blog articles, Office 2013 Products Bring New Changes and Challenges, I touched on many of the new changes and opened the door for more questions from OEMs that want to pre-install the Office 2013 products onto systems before they ship them to customers.

Many of the OEMs aren't even sure which flavor the customer will want so they typically ask how can they load all editions of OEM Office 2013 and let the customer choose. In some cases, they already know which version as the customer has placed an order and requested that the OEM load and activate it for them.

STEPS TO PRE-INSTALL OEM OFFICE 2013

The first step is the OEM needs to download the OEM OPK (OEM Pre-Installation Kit) from the OEM System Builder website located in the Microsoft OEM Partner Center. Simply choose the language of the OPK you require and download the IMG file and burn to a DVD.

The DVD has a small batch file named OEMsetup.en-us and you will launch this batch file with administrator rights. Right click on the file and choose Run as Administrator, which launches the file and starts a full installation. This takes a few moments and once completed, you will see an icon on the Start menu for Microsoft Office.

OEMs can pre-install the Office product onto every system they ship or they can sell a license of Office with the system and perform the installation on behalf of the end user. When the System Builder or the end user clicks on the icon for Microsoft Office, they will get the options:

> "MANY OF THE OEMS AREN'T EVEN SURE WHICH FLAVOR THE CUSTOMER WILL WANT SO THEY TYPICALLY ASK HOW CAN THEY LOAD ALL EDITIONS OF OEM OFFICE 2013 AND LET THE CUSTOMER CHOOSE."

buy, activate or try Office 2013/365. If you are a System Builder and you want to pre-install and pre-activate the Office product for your customer, you should click on Activate and enter the 25-digit code located on the Product Key Card.

The next hurdle with this new version of Office after you activate the license is that Microsoft wants the user to assign the license to a Microsoft Live ID account so the user can sync files with Microsoft Skydrive. This can be a problem for OEM System Builders as in many cases they won't know the user's Live ID account. The solution in this scenario is for the OEM System Builder to go to http://www.outlook.com and create a generic account for the end user customer, then install and activate Office with this generic account. The final step is to give the account information to the customer, and then they can rename and or re-assign the licenses as needed.

View Ken Marlin's how-to video on pre-installing OEM Office 2013 at http://avnetmssolutions.com/news or visit the Videos section on the Avnet MS Solutions web site.

Based in Phoenix, Ariz., Ken Marlin is a Microsoft Champion and Technical Consultant at Avnet Embedded.

Visit IntelligentSystem.com for more articles and commentary from Avnet's technology experts.

MICROSOFT PROJECT 2013

MICROSOFT PROJECT STANDARD 2013

Project Standard 2013 gives you new and easier ways to keep projects organized and on track. Take advantage of flexible features that help you get started and make you more efficient and productive. Easily create modern reports to measure progress and communicate project details effectively with your team and stakeholders.

With Project Standard 2013, you can:

» **Easily plan & manage your projects** with intuitive controls and flexible team tools to help your organization deliver the intended business value.
» **Be efficient and prioritize** by aggregating everyday work, project tasks, important details, and timelines in a visually rich and contextual interface.
» **Deliver effective presentations** that offer immediate insight into task planning, resource allocation, cost efficiencies, and the many important details of your projects.
» **Explore the Office Store** to quickly innovate with flexible options to customize and extend out-of-the-box capabilities.

MICROSOFT PROJECT PROFESSIONAL 2013

Project Professional 2013 gives you powerful new ways to effectively manage important projects. Unlock easy collaboration capabilities to quickly start and deliver winning projects while leveraging the power of SharePoint to work from virtually anywhere. Make communication instantaneous through seamless integration of Lync 2013 to call or instant message team members from Project Professional. Extend Project's functionality with Apps for Office to meet your specific business needs.

In addition to the Project Standard features above, with Project Professional 203 you can:

» **Manage anywhere** with tools to keep you connected with your team and on top of your projects while you're on the go.
» **Anticipate Change** with forward-looking views into the everyday work going into your projects and the resources needed to get that work done
» **Work seamlessly across tools** to help everyone on your team work together with the information they need to be successful.
» **Communicate in real time** with team members down the hall or across the globe with tools designed to transmit your critical conversations quickly and securely.

MICROSOFT PROJECT 2013

License Type	Part Number	Part Description
OPEN	076-05334	Project 2013 SNGL

License Type	Part Number	Part Description
OPEN	H30-04073	Project Pro 2013 with 1 Project Server CAL

COMPARE PROJECT MANAGEMENT FEATURES

	Project Standard 2013	Project Professional 2013
Quickly start projects with enhanced visual experience and an array of new project templates	x	x
Keep projects on track by discovering critical task paths and resolve potential scheduling problems	x	x
Create easily customizable out-of-the-box reports	x	x
Explore the Office Store to extend capabilities with flexible apps	x	x
Manage resources using drag and drop		x
Call or instant message team members from within Project (requires Lync integration, sold separately)		x
Collaborate with others from virtually anywhere (requires SharePoint and Project Online or Project Server 2013, all sold separately)		x
Grow capabilities with the power of unified project and portfolio management (requires Project Online or Project Server 2003, sold separately)		x
Location and Other Sensors: Enables PCs and applications to adapt to their current environment.	x	x
Windows Mobility Center (with Presentation Mode): Put your most frequently used mobile PC settings in a single, easy-to-find location.	x	x
Aero® Glass: See behind application windows with translucent glass-like menu bars.	x	x
Aero Background: View the contents of the windows that are currently open with taskbar thumbnails.	x	x
Windows Touch: Control a touch-enabled computer, with visual feedback for tap and double tap gestures.	x	x
Windows XP Mode: Run many older productivity and business programs for Windows XP on Windows 7.	x	x
Domain Join and Group Policy: Allows businesses to better manage security and costs of multiple PCs.	x	x
Backup and Restore: Schedule backups to save data or entire system image to network location or local drive.	x	x
Location-Aware Printing: Send your documents to the right printer, whether you are at work or at home.	x	x
Remote Desktop Host: Access documents and programs on a computer remotely from another computer.	x	x
Advanced Backup and Restore (Network and Group Policy): Back up your data to a network location, and have the ability to recover and restore your documents.	x	x
Encrypting File System: User-level file and folder encryption, ensuring strong data protection and control.	x	x
Offline Folders: Work offline with the ability to automatically synchronize between PC and network content.	x	x
BitLocker™ and BitLocker To Go™ drive encryption: Help protect confidential information and stay compliant with business and regulatory policies.		x
AppLocker™: Specify which apps are available to which end users, reducing the need to modify settings.		x
DirectAccess: Seamlessly connect mobile workers more securely to network without a virtual private network.		x
BranchCache™: Replicate and synchronize files between a central store and branch locations, enabling more productivity for workers in remote offices.		x
Multilingual User Interface Packs: Switch the user interface from one language to another via a language pack add-on to the English version.		x

MICROSOFT VISIO 2013

MICROSOFT VISIO STANDARD 2013

Visio Standard 2013 is designed for individuals who are looking for a powerful diagramming platform with a rich set of built-in stencils. It helps users to simplify complex information through simple, easy-to-understand diagrams. Visio Standard includes stencils for business, basic network diagrams, organization charts, basic flowcharts, and general multi-purpose diagrams.

Take advantage of built-in templates, many with updated shapes. Visio Standard 2013 includes stencils for general and business diagrams, organization charts, flowcharts, workflows, maps and floor plans, basic network shapes, schedule diagrams and timelines.

Create and customize diagrams easily - Create and customize professional-looking diagrams using a rich set of expanded and improved effects and themes that apply a completely different look to your design in just one or two clicks.

Get to frequently used tools right away with a significantly improved quick-access floating toolbar.

Customize organization charts easily with template and wizard improvements - Use a simple wizard to create your org chart and import data from Microsoft Excel, Microsoft Exchange, or Microsoft Office.

Give and act on feedback with improved commenting - Enable others to add comments to a diagram from virtually any device, whether through Visio or through a browser using Visio Services (requires SharePoint Server or SharePoint Online).

MICROSOFT VISIO PROFESSIONAL 2013

Visio Professional 2013 includes all of the functionality of the standard edition plus the following features:

» **Take advantage of over 60 built-in templates**, many with updated shapes. Includes all of the stencils found in Standard and adds

additional business, engineering, process, maps, floor plans, network, software and database diagrams.

» **Streamline teamwork and reduce the risk of errors** by allowing two or more people to work on the same diagram in a single file at the same time—from rearranging and adding shapes, to writing comments, to applying effects. With just one working file, you avoid the need to email files around, figure out what changes others have made to the original diagram, and manually merge multiple versions together.

» **Bring your data to life with data-linked diagrams** - Link to data from several popular structured data sources, including Microsoft Excel, Microsoft Excel Services, Microsoft SQL Server, Microsoft SQL Azure, and Microsoft SharePoint Lists and Business Connectivity Services.

» **Share and comment on diagrams**—both static and data linked—through a web browser. Avoid having to save your diagram as a PDF or XPS document or having to paste it into a Microsoft PowerPoint presentation just to share it with others.

» **Enhance process management** with advanced features and support for BPMN 2.0 and use the built-in validation rules to help ensure that your diagrams comply with the specification. You can also continue to open and update diagrams that use BPMN 1.2.

» **Create visual SharePoint 2010 and SharePoint 2013 workflows** - Create and publish SharePoint workflows visually with updated support for Windows Workflow Foundation 4.0 (including support for stages and loops and improved integration with Microsoft SharePoint Designer). Microsoft Visio allows users to create and customize drawings and diagrams. Using vector graphics, Visio is the forerunner in the creation of advanced layouts that allows users the functionality of connecting diagrams to data sources in order to relay information graphically.

VISIO PREMIUM 2013

License Type	Part Number	Part Description
OPEN	D86-05338	Visio Standard 2013 SNGL
OPEN	D87-05962	Visio Professional 2013 SNGL

SERVER APPLICATIONS

MICROSOFT LYNC SERVER 2013

Microsoft Lync is an enterprise-ready unified communications platform. Lync connects people everywhere, on Windows 8 and other operating systems including mobile devices, as part of their everyday productivity experience. Lync provides a consistent, single client experience for presence, instant messaging, voice, video and a great meeting experience. Lync users can connect to anyone on Skype, enabling rich communication with hundreds of millions of people around the world.

HOW MICROSOFT LYNC SERVER 2013 WORKS

» **Work Anywhere** - Lync allows users to communicate securely and stay connected with colleagues and customers, from virtually wherever they chose to work.

» **Lync Across Devices** - Users can switch among devices as they choose based on their needs. Lync offers familiar and consistent user experience across PC, phone, browser and tablets.

» **Connected Experiences** - Lync connects millions of people, their communications and the applications they use every day—including multi-party HD video conferencing for Lync Meetings.

» **Simpler to Manage** - Lync is a dependable platform for all real-time communications. A single system reduces complexity in Enterprise IT.

» **Deployment Flexibility** - Lync lets you reach your vision of unified communications—on your timeline following your blueprint.

MICROSOFT LYNC SERVER 2013

License Type	Part Number	Part Description
VOLUME	5HU-00258	Lync Server 2013 SNGL
VOLUME	6ZH-00494	Lync Server Standard CAL 2013 - Device CAL
VOLUME	6ZH-00496	Lync Server Standard CAL 2013 SNGL - User CAL
VOLUME	7AH-00496	Lync Server Enterprise CAL 2013 SNGL - Device CAL (Requires both STD & ENT CAL)
VOLUME	7AH-00498	Lync Server Enterprise CAL 2013 SNGL - User CAL (Requires both STD & ENT CAL)
VOLUME	YEG-01031	Lync Server Plus CAL 2013 SNGL - Device CAL (Requires both STD & Plus CAL)
VOLUME	YEG-01033	Lync Server Plus CAL 2013 SNGL - User CAL (Requires both STD & Plus CAL)
VOLUME	6YH-00726	Lync 2013 SNGL

License Type	Part Number	Part Description
ISV	5HU-00298	Lync Server 2013 ALNG Emb MVL
ISV	6ZH-00531	Lync Server Standard CAL 2013 ALNG Emb MVL Device CAL
ISV	6ZH-00532	Lync Server Standard CAL 2013 ALNG Emb MVL User CAL
ISV	7AH-00452	Lync Server Enterprise CAL 2013 ALNG Emb MVL Device CAL (Requires both Std + Ent CAL)
ISV	7AH-00453	Lync Server Enterprise CAL 2013 ALNG Emb MVL User CAL (Requires Std + Ent CAL)
ISV	YEG-00987	Lync Server Plus CAL 2013 ALNG Emb MVL Device CAL (Requires Std + Plus CAL)
ISV	YEG-00988	Lync Server Plus CAL 2013 ALNG Emb MVL User CAL (Requires Std + Plus CAL)

COMPARE PROJECT MANAGEMENT FEATURES

Project Professional 2013	
Lync Unified Client	Lync 2013 provides a single, unified client for real-time communications, including voice and video calls, Lync Meetings, presence, instant messaging, and persistent chat. Having a single UC client application instead of multiple applications simplifies deployment, adoption, and support.
Lync Windows 8 App	Lync is optimized for touch on Windows 8 (both x86-based Windows8 and Windows RT) and takes advantage of Windows 8 "touch first" capabilities to provide fast, natural, hands-on control of communications across a variety of devices and architectures.
Lync Web App	The Lync Web App allows PC and Mac users to join a Lync Meeting from within an HTML5-based browser, and delivers a full Lync meeting experience, including multiparty HD video, voice over IP, instant messaging, desktop, application, and PowerPoint sharing.
Lync Mobile Clients	Lync Mobile Clients are available for Windows Phone, iPhone, iPad, and Android.
Single Click Conference Join	Joining a Lync Meeting requires only a single click or touch, whether from an Outlook meeting reminder on a Windows PC or from the calendar or meeting pane on Windows Phone, iOS, and Android devices.
Presence	See the availability status of a contact with visual presence indicators. New presence states include: Presenter (while laptop is connected to a projector) and Working Elsewhere (to indicate physically out of the office yet working).
Contact Card	A dynamic card that displays a contact's high resolution photo, their presence, status note, location and organizational details and is consistent across Microsoft Office applications.
Lync Meeting	Previously known as "online meeting", Lync Meetings provide capabilities to interact with people through multiparty HD video, audio, instant messaging, and content sharing.
Meeting View	Meeting View options are designed to bring content and people together while optimizing the Lync Meeting experience for every individual participant's needs. The Meeting View is selected by the participant.
Multiparty HD Video Gallery	Continuous view of multiple HD video streams or contact card photos in conference displayed in a gallery format. Photos replace active speaker video when video is unavailable. Gallery controls enable participants to select video stream of interest, see participant name and identify active speakers.
Persistent Chat	Organize or participate in topic based virtual rooms where workgroups or designated colleagues meet and collaborate in real-time. Discussions are searchable and persist over time enabling efficient information sharing.
OneNote Share	OneNote Share allows users to create and share OneNote digital meeting notes within a Lync Meeting, reducing possible errors caused by later transcription and simplifying communication and follow-up.
Exchange Archiving	Using the Exchange Online archiving, you can store all you emails, instant messages and Lync Online meeting contents, then easily search them using Exchange e-Discovery compliance.
Lync Federation	Lync Federation extends unified communications securely over the Internet to customers, suppliers, and partners using Lync.
Skype Connectivity	Skype Connectivity enables presence sharing, instant messaging (IM), and voice calling with the hundreds of millions of people around the world who use Skype.
Server Role Consolidation	Lync can reduce the number of server roles by co-locating roles which were previously deployed or managed separately, allowing for simplified deployment and management.
Scale and High Availability Improvements	Lync Server front-end architecture has been redesigned allowing a larger number of active users in one pool while improving high availability capabilities that can help lower total cost of ownership.
Active Monitoring	Active Monitoring gives Lync administrators the ability to monitor pools, servers, networks across different datacenters through the public internet.

MICROSOFT EXCHANGE SERVER 2013

Get business email, calendar, and contacts delivered on your PC, phone, and browser. With a simplified approach to high availability and disaster recovery, achieve new levels of reliability and reduce complexity, while protecting sensitive and confidential information.

FEATURES OF EXCHANGE SERVER 2013

ALWAYS ON

Exchange Server 2013 helps to ensure your communications are always available while you remain in control.

» **The Exchange building block model** simplifies deployments at all scales, standardizes high availability and client load balancing, and improves cross-version interoperability.

» **Enjoy more uptime** through faster failover times and support for multiple databases per volume.

» **A built-in monitoring and managed availability** solution provides self-healing features to automatically recover from failures.

» **Simplified load-balancing options** improve flexibility and scale even while reducing cost.

» **Reduce storage costs** by using larger, less expensive disks.

SECURE AND COMPLIANT

Get integrated functionality that eases regulatory compliance and reduces discovery cost.

» **Data Loss Prevention (DLP)** capabilities prevent users from mistakenly sending sensitive information to unauthorized people, while informing them of internal compliance policies.

» **Keep all your important data in one place** by giving users an In-Place Archive with a native, well-integrated user experience.

» **Run In-Place eDiscovery** across Exchange, SharePoint, and Lync data from a single interface through the eDiscovery Center (requires SharePoint Server 2013).

» **Mobile device policies** let you create approved mobile device lists, enforce PIN lock, and remove confidential company data from lost phones.

EASY TO DEPLOY AND MAINTAIN

Exchange Server 2013 offers flexible deployment options and helps decrease the amount of time spent managing your messaging systems.

» **Simplify deployment** with custom instructions for installing or upgrading to Exchange.

» **Manage your organization efficiently** with the Exchange Administration Center, an easy-to-use, web-based interface.

» **Delegate permissions to specialist users** based on job function, such as eDiscovery for compliance officers, without giving them access to the entire Exchange management interface.

» **Move to the cloud on your terms** with full deployment flexibility—whether on-premises, in the cloud, or a hybrid combination of the two.

EXCHANGE SERVER 2013

License Type	Part Number	Part Description
VOLUME	312-04261	Exchange Server Std 2013 SNGL OLP NL
VOLUME	395-04469	Exchange Server Ent 2013 SNGL OLP NL
VOLUME	381-04313	Exchange Std CAL 2013 SNGL OLP NL Device CAL
VOLUME	381-04315	Exchange Std CAL 2013 SNGL OLP NL User CAL
VOLUME	PGI-00620	Exchange Ent CAL 2013 SNGL OLP NL Device CAL w/o Srvcs (Requires both Std & Ent CAL)
VOLUME	PGI-00622	Exchange Ent CAL 2013 SNGL OLP NL UserCAL w/o Srvcs (Requires both Std & Ent CAL)

License Type	Part Number	Part Description
ISV	395-04442	Exchange Server Ent 2013 ALNG Emb MVL
ISV	312-04283	Exchange Server Std 2013 ALNG Emb MVL
ISV	381-04363	Exchange Std CAL 2013 ALNG Emb MVL Device CAL
ISV	381-04364	Exchange Std CAL 2013 ALNG Emb MVL User CAL
ISV	PGI-00552	Exchange Ent CAL 2013 ALNG Emb MVL Device CAL w/o Srvcs (Requires both Std & Ent CAL)
ISV	PGI-00553	Exchange Ent CAL 2013 ALNG Emb MVL User CAL w/o Srvcs (Requires both Std & Ent CAL)

MICROSOFT SHAREPOINT 2013

Welcome to the new way to work together. The next version of SharePoint introduces new ways to share your work and work with others, organize your projects and teams and discover people and information.

FEATURES OF SHAREPOINT 2013

SHARE

» **Put social to work** - Share ideas, discover answers and keep track of what your colleagues are working with new social features throughout SharePoint.

» **Share your stuff** - Publish content to SharePoint from any Office application and share with people inside and outside your organization in a few simple clicks.

» **Take SharePoint on the go** - Share documents, update your activity feed and keep in touch with your colleagues from your mobile phone or tablet.

ORGANIZE

» **Keep projects on track** - Organize all your projects and tasks to get visibility into upcoming deliverables across SharePoint, Outlook and Microsoft Project.

» **Keep your team connected** - Set up a new team site in minutes track meeting notes and bring together all your team's email and documents in one place.

» **Store and sync your docs** - Sync your content in SharePoint to your desktop with SkyDrive Pro, so docs are just a mouse click away, even if you're offline.

DISCOVER

» **Find experts you never knew existed** - Connect with people across your organization and easily discover interests, past projects and documents they've worked on.

» **Discover insights and answers** - Turn raw data into gorgeous interactive reports with Excel 2013 and publish to SharePoint to share insights with the people you work with.

» **Find what you're looking for** - Customize and narrow your search to deliver more relevant results, and get recommendations on people and documents to follow.

BUILD

» **Build apps in the cloud** - Build apps on common web technologies like JavaScript, HTML and oAuth with the new Cloud App Model for SharePoint.

» **Publish apps to the SharePoint store** - Make your apps available to everyone to try and buy through the public Store or only available to your employees through the corporate catalog.

» **Build eye-catching sites** - Use familiar design tools and flexible controls to create dynamic intranet and internet sites to share your organization's vision with everyone.

MANAGE

» **Manage costs** - Reduce your infrastructure costs and extend the boundaries of sharing by running SharePoint in the cloud with Office 365.

» **Manage risk** - New archiving, eDiscovery and case management capabilities extend across SharePoint, Exchange and Lync.

» **Manage your time** - Spend more time delivering innovation and less time managing infrastructure with advances in SharePoint scale, performance and management capabilities.

MICROSOFT SHAREPOINT 2013

License Type	Part Number	Part Description
VOLUME	76P-01501	SharePoint Server 2013 SNGL OLP NL
VOLUME	76M-01513	SharePoint Std CAL 2013 SNGL OLP NL Device CAL
VOLUME	76M-01518	SharePoint Std CAL 2013 SNGL OLP NL User CAL
VOLUME	76N-03699	SharePoint Ent CAL 2013 SNGL OLP NL Device CAL (Requires both Std & Ent CAL)
VOLUME	76N-03701	SharePoint Ent CAL 2013 SNGL OLP NL User CAL (Requires both Std & Ent CAL)

License Type	Part Number	Part Description
ISV	76N-03612	SharePoint Ent CAL 2013 ALNG Emb MVL User CAL (Requires both Std & Ent CAL)
ISV	76M-01434	SharePoint Std CAL 2013 ALNG Emb MVL Device CAL
ISV	76M-01435	SharePoint Std CAL 2013 ALNG Emb MVL User CAL
ISV	76N-03611	SharePoint Ent CAL 2013 ALNG Emb MVL Device CAL (Requires both Std & Ent CAL)
ISV	76P-01470	SharePoint Server 2013 ALNG Emb MVL

SQL SERVER 2012

Microsoft
SQL Server

PRODUCT OVERVIEW

SQL Server 2012 is a significant product release, providing Mission Critical Confidence with greater uptime, blazing-fast performance and enhanced security features for mission critical workloads; Breakthrough Insight with managed self-service data exploration and stunning interactive data visualization capabilities; Cloud On Your Terms by enabling the creation and extension of solutions across on-premises and public cloud. SQL Server 2012 is a Cloud Ready Information Platform.

EDITIONS OVERVIEW

The SQL Server 2012 Editions have been streamlined to better align with how customers are deploying applications and solutions. SQL Server 2012 will be released in 3 main editions*:

» Enterprise for mission critical applications and large scale data warehousing
» Business Intelligence, a new product edition, providing premium corporate and self-service BI
» Standard for basic database, reporting and analytics capabilities

The main editions are now offered in a consistent, tiered model which creates greater consistency across editions, features and licensing. Enterprise Edition will include all features available in SQL Server 2012. The Business Intelligence Edition will include premium BI features as well as all of the Standard Edition features.

*Note: SQL Server 2012 will continue to be available in Developer, Express and Compact editions. Web Edition will be offered in a Services Provider License Agreement (SPLA) model only. Datacenter Edition is being retired with all capabilities now available in Enterprise. Workgroup and Small business Editions are also being retired.

SQL SERVER 2012 LICENSING OPTIONS

SQL Server 2012 will continue to offer two licensing options — one based on computing power, and one based on users or devices. In the computing power-based license model, however, the way we measure power will shift from processors to cores. Core-based licensing provides a more precise measure of computing power and a more consistent licensing metric regardless of where the solution is deployed across on-premises, virtual and cloud scenarios.

» Enterprise Edition (EE) will be licensed based on compute capacity measured in cores
» Business Intelligence (BI) Edition will be available in the Server + CAL model, based on users or devices
» Standard Edition (SE) offers both licensing models to address basic database workloads

SQL Server 2012 Editions		Description	Licensing Options	
			Server + CAL	Core Based
Main Editions	Enterprise	High end datacenter, data warehousing and BI capabilities		✓
	Business Intelligence	Enterprise BI and High Scale Analytics	✓	
	Standard	Basic database and BI capabilities	✓	✓
	Client Access License (CAL)	Access to SQL Server databases licensed per server		

* Requires CALs, which are sold separately **Pricing is for demonstrative uses only

CORE-BASED LICENSING

» To license a physical server, you must license all the cores in the server with a minimum of 4 core licenses required for each physical processor in the server.
» Core licenses will be priced at ¼ the cost of a SQL Server 2008 R2 (EE/SE) processor license.
» AMD systems have different requirements; see SQL Server 2012 Quick Reference Guide.

SQL SERVER 2012 ISV

License Type	Part Number	Part Description
ISV	7LQ-00001	SQL Server Ent Runtime Core 2012 ALNG Emb MVL 2Lic CoreLic
ISV	3ZQ-00013	SQL Server Business Intelligence Runtime 2012 ALNG Emb MVL
ISV	C30-00376	SQL CAL Runtime 2012 ALNG Emb MVL Additional CAL

License Type	Part Number	Part Description
ISV	E65-00244	SQL Server Std Runtime 2012 ALNG Emb MVL 1 Client
ISV	7RQ-00003	SQL Server Std Runtime Core 2012 ALNG Emb MVL 2Lic CoreLic

SQL SERVER 2012 OPEN

License Type	Part Number	Part Description
OPEN	7JQ-00257	SQL Server Ent Core 2012 SNGL OLP 2Lic NL CoreLic - Min 4 QTY core per Processor
OPEN	D2M-00410	SQL Server Business Intelligence 2012 SNGL OLP NL
OPEN	359-05717	SQL CAL 2012 SNGL OLP NL User CAL

License Type	Part Number	Part Description
OPEN	228-09884	SQL Server Std 2012 SNGL OLP NL
OPEN	7NQ-00219	SQL Server Std Core 2012 SNGL OLP 2Lic NL CoreLic - Min QTY 4 core per Processor

SQL SERVER 2012 EMBEDDED

License Type	Part Number	Part Description
EMBEDDED	E66-00201	SQL Server Ent Runtime 2012 EMB ESD OLC 4 Core Ent
EMBEDDED	E66-00196	SQL Server Ent Runtime 2012 EMB ESD OLC 2 Core Add'l Lic Ent
EMBEDDED	3ZQ-00003	SQL Server Business Intelligence Runtime 2012 EMB ESD OLC 1 Client
EMBEDDED	3ZQ-00008	SQL Server Business Intelligence Runtime 2012 EMB ESD OLC 10 Client

License Type	Part Number	Part Description
EMBEDDED	E65-00228	SQL Server Std Runtime 2012 EMB ESD OLC 1 Client
EMBEDDED	E65-00233	SQL Server Std Runtime 2012 EMB ESD OLC 5 Client
EMBEDDED	E65-00223	SQL Server Std Runtime 2012 EMB ESD OLC 4 Core
EMBEDDED	E65-00218	SQL Server Std Runtime 2012 EMB ESD OLC 2 Core Add'l Lic

SQL SERVER 2012 CAL

License Type	Part Number	Part Description
EMBEDDED	C30-00349	SQL CAL Runtime 2012 EMB ESD OLC 1 Clt Device CAL
EMBEDDED	C30-00359	SQL CAL Runtime 2012 EMB ESD OLC 1 Clt User CAL

| License Type	Part Number	Part Description
EMBEDDED	C30-00354	SQL CAL Runtime 2012 EMB ESD OLC 5 Clt Device CAL
EMBEDDED	C30-00364	SQL CAL Runtime 2012 EMB ESD OLC 5 Clt User CAL

SQL SERVER 2012 RETAIL

License Type	Part Number	Part Description
RETAIL	D2M-00063	SQL Server Standard 2012 English US Only DVD 10 Client

License Type	Part Number	Part Description
RETAIL	228-09842	SQL Server Business Intelligence 2012 English US Only DVD 25 Client

SQL SERVER 2008 / 2008 R2

Microsoft
SQL Server

SQL Server 2008 for Embedded Systems is a run-time edition of SQL Server 2008 available to OEMs who want to use SQL Server 2008 as a database for embedded applications. SQL Server 2008 for Embedded Systems is the same as the generally available, retail version of SQL Server 2008. The key difference is that SQL Server 2008 for Embedded Systems must be used as a database for a specified embedded application, where clients do not interact directly with the SQL Server database.
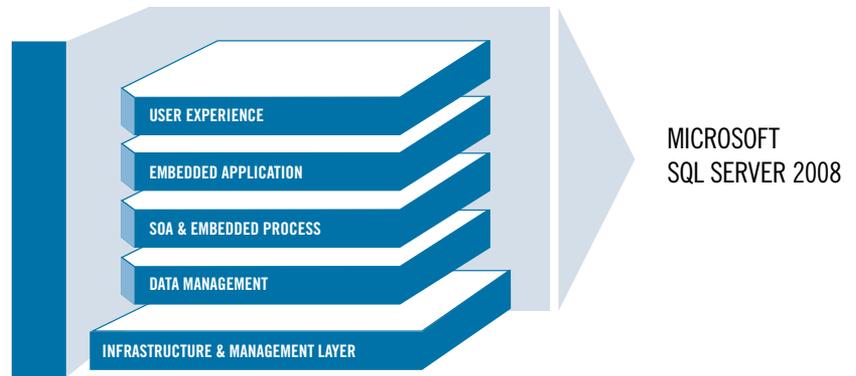
SQL Server 2008 for Embedded Systems is designed for use with Windows Server 2008 for Embedded Systems. Both the operating system and SQL Server 2008 software must be preinstalled on a dedicated server or server appliance solution.

USER EXPERIENCE

EMBEDDED APPLICATION

SOA & EMBEDDED PROCESS

DATA MANAGEMENT

INFRASTRUCTURE & MANAGEMENT LAYER

MICROSOFT
SQL SERVER 2008

SQL SERVER 2008 R2 STANDARD

License Type	Part Number	Part Description
EMBEDDED	E65-00186	SQL Svr Std Ed RUNTIME 2008 R2 EMB ESD OEI 1 CPU
EMBEDDED	E65-00187	SQL Svr Std Ed RUNTIME 2008 R2 EMB ESD OEI 5 Clt
EMBEDDED	E65-00195	SQL Svr Std Ed RUNTIME 2008 R2 EMB ESD OEI 1 Clt
EMBEDDED	C30-00315	SQL CAL Runtime 2008 R2 EMB ESD OEI 1 Clt User CAL Std

License Type	Part Number	Part Description
EMBEDDED	C30-00316	SQL CAL Runtime 2008 R2 EMB ESD OEI 5 Clt User CAL Std
EMBEDDED	C30-00317	SQL CAL Runtime 2008 R2 EMB ESD OEI 1 Clt Device CAL Std
EMBEDDED	C30-00318	SQL CAL Runtime 2008 R2 EMB ESD OEI 5 Clt Device CAL Std

SQL SERVER 2008 R2 ENTERPRISE

License Type	Part Number	Part Description
EMBEDDED	E66-00176	SQL Svr Ent Ed RUNTIME 2008 R2 EMB ESD OEI 10 Clt
EMBEDDED	E66-00181	SQL Svr Ent Ed RUNTIME 2008 R2 EMB ESD OEI 1 Clt
EMBEDDED	E66-00175	SQL Svr Ent Ed RUNTIME 2008 R2 EMB ESD OEI 1 CPU
EMBEDDED	C30-00323	SQL CAL Runtime 2008 R2 EMB ESD OEI 1 Clt User CAL Ent

License Type	Part Number	Part Description
EMBEDDED	C30-00324	SQL CAL Runtime 2008 R2 EMB ESD OEI 1 Clt Device CAL Ent
EMBEDDED	C30-00325	SQL CAL Runtime 2008 R2 EMB ESD OEI 5 Clt User CAL Ent
EMBEDDED	C30-00326	SQL CAL Runtime 2008 R2 EMB ESD OEI 5 Clt Device CAL Ent

SQL SERVER 2008 R2 WORKGROUP

License Type	Part Number	Part Description
EMBEDDED	A5N-00070	SQL Servr Workgrp RUNTIME 2008 R2 EMB ESD OEI 5 Clt
EMBEDDED	A5N-00075	SQL Servr Workgrp RUNTIME 2008 R2 EMB ESD OEI 1 Clt
EMBEDDED	A5N-00069	SQL Servr Workgrp RUNTIME 2008 R2 EMB ESD OEI 1 CPU

License Type	Part Number	Part Description
EMBEDDED	A5L-00041	SQL Workgroup CAL RUNTIME 2008 R2 EMB ESD OEI 5 Clt User CAL Workgroup
EMBEDDED	A5L-00042	SQL Workgroup CAL RUNTIME 2008 R2 EMB ESD OEI 5 Clt Device CAL Workgroup

SQL SERVER 2008 STANDARD

License Type	Part Number	Part Description
EMBEDDED	E65-00138	SQL Svr Standard Edtn RUNTIME 2008 EMB ESD OEI 1 CPU (Unlimited users)
EMBEDDED	E65-00139	SQL Svr Standard Edtn RUNTIME 2008 EMB ESD OEI 5 Clt

License Type	Part Number	Part Description
EMBEDDED	E65-00164	SQL Svr Standard Edtn RUNTIME 2008 EMB ESD OEI 1 Clt

SQL SERVER 2008 ENTERPRISE

License Type	Part Number	Part Description
EMBEDDED	E66-00139	SQL Svr Enterprise Edtn RUNTIME 2008 EMB ESD OEI 1 CPU (Unlimited users)
EMBEDDED	E66-00140	SQL Svr Enterprise Edtn RUNTIME 2008 EMB ESD OEI 10 Clt

License Type	Part Number	Part Description
EMBEDDED	E66-00157	SQL Svr Enterprise Edtn RUNTIME 2008 EMB ESD OEI 1 Clt

SQL SERVER 2008 WORKGROUP

License Type	Part Number	Part Description
EMBEDDED	A5L-00015	SQL Workgroup CAL RUNTIME 2008 EMB ESD OEI 5 Clt User CAL Workgroup
EMBEDDED	A5L-00016	SQL Workgroup CAL RUNTIME 2008 EMB ESD OEI 5 Clt Device CAL Workgroup
EMBEDDED	A5N-00033	SQL Svr Workgroup Edtn RUNTIME 2008 EMB ESD OEI 1 CPU

License Type	Part Number	Part Description
EMBEDDED	A5N-00034	SQL Svr Workgroup Edtn RUNTIME 2008 EMB ESD OEI 5 Clt
EMBEDDED	A5N-00052	SQL Svr Workgroup Edtn RUNTIME 2008 EMB ESD OEI 1 Clt

SQL SERVER 2008 CALS

License Type	Part Number	Part Description
EMBEDDED	C30-00263	SQL CAL Runtime 2008 EMB ESD OEI 1 Clt User CAL Std
EMBEDDED	C30-00264	SQL CAL Runtime 2008 EMB ESD OEI 5 Clt User CAL Std
EMBEDDED	C30-00265	SQL CAL Runtime 2008 EMB ESD OEI 1 Clt Device CAL Std
EMBEDDED	C30-00266	SQL CAL Runtime 2008 EMB ESD OEI 5 Clt Device CAL Std

License Type	Part Number	Part Description
EMBEDDED	C30-00289	SQL CAL Runtime 2008 EMB ESD OEI 1 Clt User CAL Ent
EMBEDDED	C30-00290	SQL CAL Runtime 2008 EMB ESD OEI 1 Clt Device CAL Ent
EMBEDDED	C30-00291	SQL CAL Runtime 2008 EMB ESD OEI 5 Clt User CAL Ent
EMBEDDED	C30-00292	SQL CAL Runtime 2008 EMB ESD OEI 5 Clt Device CAL Ent

MSDN

Building apps that run on Windows, SQL Server or other Microsoft platforms? Then your MSDN Subscription is the best way to get exactly what you need for your next challenging project. Software, services and support –you get the complete package for all your development and testing needs.

As a subscriber to MSDN, users can access software that allows the design, development and testing of applications on all machines and devices. This results in substantial savings on software license costs during development. Also provided is access to newsgroups with a guaranteed response by Microsoft engineers, Online Concierge, and online chat service for help locating online resources.

MSDN Magazine is filled with the latest information on Microsoft tools, development environments and technologies for both Windows and the Web.

Subscribers are entitled to activate as many copies as needed for development purposes. An MSDN subscription also allows access to obsolete software from Microsoft.

VISUAL STUDIO WITH MSDN

License Type	Part Number	Part Description
VOLUME	77D-00092	Visual Studio Pro w/MSDN ALNG LicSAPk OLP
VOLUME	9ED-00130	Visual Studio Prem w/MSDN ALNG LicSAPk OLP
RETAIL	79D-00276	Visual Studio Pro w/MSDN 2012 Retail
RETAIL	9GD-00344	Visual Studio Prem w/MSDN 2012 Retail

MSDN SUBSCRIPTION LEVELS

Avnet Embedded offers two levels of MSDN Subscriptions: Visual Studio Professional with MSDN and Visual Studio Premium with MSDN. See comparison chart below for more details.

SOFTWARE AND SERVICES FOR PRODUCTION USE

Primary Development/Testing Tools	Visual Studio Pro w/MSDN	Visual Studio Prem w/MSDN
Visual Studio Team Foundation Server 2012 and one Client Access License	x	x
Team Foundation Service*		x
Microsoft Office Professional Plus 2013		
Software and Services for Development and Testing*		
Windows, Windows Server	x	x
Windows Azure*	$50 monthly credit	$100 monthly credit
Microsoft SQL Server	x	x
Microsoft Office		x
Microsoft Dynamics		x
All other Servers (SharePoint, Exchange, etc.)		x
Windows Embedded	x	x
Toolkits, Software Development Kits, Driver Development Kits	x	x
Additional Benefits*		
Technical support incidents*	2	4
Office 365 Developer Subscription*		x
Windows Store developer account*	x	x
Windows Phone developer account*	x	x
Priority support in MSDN Forums	x	x
Microsoft E-Learning course collections (typically 20 hours each; per calendar year)	1	2
MSDN Magazine	x	x
MSDN Flash newsletter	x	x
MSDN Online Chat	x	x
Special Offers from Microsoft and partners	x	x

SYSTEMS AND SERVER MANAGEMENT

ADAPTING VIRTUALIZATION TO CLIENTS

Microsoft provides full-fledged virtualization solutions for all customer types and sizes. Windows Server 2012 and System Center provide a highly scalable and reliable virtualization infrastructure for enterprises and medium-sized businesses and best-in-class server virtualization for branch offices and small businesses.

Because System Center can manage both Hyper-V and ESX hosts, Microsoft virtualization benefits both clients who are new to virtualization as well as those who are just starting out.

Virtualization is one of the most effective methods to save costs, increase availability and improve agility within your customer's infrastructure. Benefits of virtualization include the ability to:

CONSOLIDATE SYSTEMS, WORKLOADS AND OPERATING ENVIRONMENTS

» Multiple workloads and operating systems can be combined onto one physical server, reducing the costs of hardware and operations.
» New versions of software can be tested on the hardware that they will later use in production mode without affecting production workloads.
» Virtual systems can be used as low-cost test systems without jeopardizing production workloads.
» Multiple operating system types and releases can run on a single system. Each virtual system can run the operating system that best matches its application or user requirements.

OPTIMIZE USE OF RESOURCES

» Hypervisors can achieve high resource use by dynamically assigning virtual resources (such as processors and memory) to physical resources through mechanisms such as dispatching and paging. The virtual resources that they provide can exceed the physical system resources in quantity and functionality.
» Virtualization allows you to dynamically share physical resources and resource pools, providing higher resource use, especially for variable workloads whose average needs are much less than an entire dedicated resource.

» Different workloads tend to show peak resource use at different times of the day and week, so implementing multiple workloads in the same physical server can improve system use, price and performance.

IMPROVE IT FLEXIBILITY AND RESPONSIVENESS

» Service providers can create one virtual system or clone many virtual systems on demand, achieving dynamic resource provisioning.
» Virtual systems with variable resources enable the manual or automated management of workload resources.

FROM ONE TO MANY: SERVER VIRTUALIZATION WITH HYPER-V

While the term Virtualization is relatively new, the concept is not. Mainframe computers have operated with simultaneous operating systems since the early 1970s. But virtualization rapidly grew from a niche technology used for labs and development work to a core IT infrastructure technology.

IT organizations continue working to solve the problems created by an explosion in the scope and complexity of IT platforms adopted in the 1990s. The migration of application architectures to thin-client, multi-tier architectures, the introduction of multiple generations of Windows servers, and the rapid growth of Linux have swept across IT organizations in successive waves. The result is explosive growth in server counts, network complexity and storage volumes throughout the IT world.

Server virtualization makes complete sense in today's complex IT environments. Dividing physical servers into virtual servers can help tame unruly IT infrastructures and control IT expenditures, while driving strategic business value from IT and increasing IT innovation. Virtualization paves the way for cloud-based services and infrastructures of future datacenters.

ADAPTING TO VIRTUALIZATION

With today's complex IT environments, physical servers can easily max out a datacenter's capacity, making them unwieldy, costly and inefficient. Challenges include:

» **Rising datacenter costs and battered bottom lines.**
Bringing additional physical servers online each time a new application is deployed adds up, increasing capital expenditures. Providing more physical space—and adding to power and cooling requirements as a result—increases operating expenses.

» **Inefficient infrastructures and routine maintenance tasks.**
Adding new applications and servers to an already heterogeneous mix of operating systems, hardware and software requires IT teams to spend more time on routine maintenance tasks and less time on more strategic and innovative IT projects.

» **Under-utilized servers and technology limitations.**
Typical CPU utilization rates run about 10 to 20 percent, leaving most servers sitting unused much of the time. And technology limitations make it nearly impossible to improve those rates.

» **Decreased performance and availability.**
System downtime does nothing for SLA goals. Yet downtime for deployment, updating, patching and backups of physical servers is inevitable. While some of these can be completed in the background, performance is almost always sacrificed and users quickly become frustrated.

To fully realize the value of infrastructure and investments, and establish IT as a strategic business asset, organizations must assess infrastructure and platform levels across IT capabilities in order to deliver a dynamic IT environment. They must optimize their environments to reduce costs and complexity, quickly respond to change and increase innovation.

SOLUTIONS TO VIRTUALIZATION

Microsoft virtualization solutions help your customers build optimized, dynamic IT infrastructures and platforms that connect people, information and business processes that securely, quickly and cost-effectively adapt to changing business needs.

Server virtualization allows the user to dynamically partition a physical server into multiple virtual machines (VMs), which tell an operating system that the virtual machine is actual hardware. Many virtual machines can better maximize a single physical server's potential — and provide a rapid response to shifting datacenter demands.

Instead of integrating costly and under-utilized servers, each dedicated to a specific application; server virtualization allows those workloads to be consolidated onto fewer, yet better-utilized machines.

Effective management is key to virtualization. As an organization's computing environment becomes more virtualized, it also increases in complexity. Challenges arise as IT teams struggle to control their environment.

EASE OF VIRTUALIZATION: HYPER-V AND MICROSOFT SYSTEM CENTER

Hyper-V, Microsoft's hypervisor-based server virtualization solution, allows the software layer to run directly on the physical system hardware for a high-performance virtualization platform. It can be delivered as either a role in Windows Server 2012 or as a free standalone product known as Microsoft Hyper-V Server 2012. Both are based on the same technology, use the same hypervisor, can join a cluster and perform Live Migration.

Hyper-V supports isolation in terms of a partition. While a virtualized partition does not have access to the physical processor, it has a virtual view of the processor and runs in Guest Virtual Address. The hypervisor handles the interrupts to the processor and redirects commands to the respective partition using a logical Synthetic Interrupt Controller (SynIC). Hyper-V can hardware accelerate the address translation between various Guest Virtual Address-spaces by using an IOMMU (I/O Memory Management Unit) which operates independent of the memory management hardware used by the CPU.

Along with Hyper-V, the Microsoft Systems Center family of systems management tools helps your customer keep tabs on their environment. Whether it's hardware or software in the physical or virtual world, Systems Center efficiently monitors and manages the infrastructure to reduce costs and complexity.

Together, Hyper-V and Systems Center management solutions lay the groundwork for Server Virtualization 3.0, a fast-growing ecosystem that combines virtual machine software, virtual server management, server hardware, support services, professional services and external cloud services for the cloud-based datacenter of the future.

Instead of paying for many under-utilized servers, each dedicated to a specific workload, Microsoft server virtualization allows those workloads to be consolidated onto a smaller number of more fully-used machines.

Microsoft Virtualization allows you to:

» **Unlock latent value** in IT by enabling organizations to move and scale faster than competitors.
» **Reduce both capital and operating costs** by leveraging virtualization for server consolidation and high availability.
» **Simplify management** with one suite to manage physical and virtual machines, servers and clients, Hyper-V and ESX.

As one of today's fast-growing small and medium-sized businesses (SMBs), you know all too well the challenges of keeping pace with an increasingly complex IT environment while keeping costs low.

Each new server means more floor space and added power and cooling costs—which increases capital and operating expenditures. At the same time, servers are severely underutilized and your IT team can be overwhelmed by labor-intensive provisioning, patches and upgrades, disaster recovery and other management tasks.

STEP UP TO THE CLOUD FOR GREATER BUSINESS BENEFITS

Fortunately, your IT challenges come at a time when the delivery of IT services is undergoing a transformation to cloud computing. It's not happening overnight, but preparing yourself today for this new future brings powerful business benefits and opportunities.

Microsoft System Center 2012 helps you to start your journey to the private cloud from where you are today. It seamlessly integrates your existing private cloud resources—network, storage, and compute—with public cloud services that can be managed from a single management console. This simplified, easier-tomanage infrastructure reduces costs and increases business efficiency, so that you can respond more quickly—and profitably—to market conditions.

TURN A COMPLEX INFRASTRUCTURE INTO A SIMPLIFIED PRIVATE CLOUD

Turn a complex infrastructure into a simplified private cloud System Center 2012 helps you create an easily managed, streamlined private cloud just by integrating your existing IT infrastructure investments:

» Centrally manage multiple hypervisors, including Windows ServerHyper-V, VMWare vSphere, and Citrix XenServer.
» Monitor Windows Server, Sun Solaris, and various Linux and Unix distributions.
» Integrate toolsets from HP, CA, BMC, EMC, and VMware into automated workflows.

With this affordable, more efficient private cloud, you can:

» Pool physical and virtual resources and manage them from a single management console.
» Build automated workflows for standard processes such as incident management, problem management, change management, and release management.
» Let different departments or application owners request and consume capacity in self-service mode.

KEEP YOUR BUSINESS UP AND RUNNING WITH CONFIDENCE

Applications power your business, so keeping them running is critical to keeping your business running. System Center 2012 lets you holistically manage your applications to maximize availability and uptime by helping you to:

» Pinpoint the root cause of application issues with easy-to-use dashboards for faster discovery and resolution.
» Use graphical reporting features to effectively track and communicate the status of your SLAs.
» Automatically configure and deploy application services to the cloud, and reconfigure them across private and public clouds.
» Speed provisioning of applications to the cloud via Server Application Virtualization (SAV), which removes application dependencies on specific infrastructure.
» Simplify upgrades and maintenance with image-based configuration and management.

ENLIGHTENED I/O

Virtual Devices can take advantage of a Windows Server Virtualization feature, named Enlightened I/O, for storage, networking and graphics subsystems. Enlightened I/O is specialized virtualization-aware implementation of high level communication protocols like SCSI, which is designed to bypass any device's emulation layer to take advantage of VMBus. This makes the communication more efficient, but also requires the guest OS to support Enlightened I/O. Windows, Windows Vista and SUSE Linux are currently the only operating systems that support Enlightened I/O, allowing them to run faster as guest operating systems under Hyper-V than other operating systems using slower emulated hardware.

SYSTEM CENTER 2012 SUITE

License Type	Part Number	Part Description
VOLUME	T9L-00247	System Center Std SNGL LicSAPk OLP NL 2Proc
VOLUME	T6L-00206	System Center Datacenter SNGL LicSAPk OLP NL 2Proc
VOLUME	MFF-00436	System Center Client Mgmt Ste SNGL LicSAPk OLP NL PerOSE
VOLUME	MFF-00449	System Center Client Mgmt Ste SNGL LicSAPk OLP NL PerUsr

System Center 2012 Server Management Licensing includes: App Controller. Configuration Manager, Data Protection Manager, Endpoint Protection, Operations Manager, Orchestrator , Service Manager, and Virtual Machine Manager.

GLOSSARY

.NET Framework
The .NET framework is a software development platform focused on rapid application development, platform independence and network transparency.

A

Advanced Configuration and Power Interface (ACPI)
ACPI is a power management specification that allows an operating system to control the amount of power distributed to the computer's devices. Devices not in use can be turned off, reducing unnecessary power expenditure.

Activation
To permanently install most software, the computer must contact the host through an online connection and verify that it is legal.

ActiveX
These software components from Microsoft enable sound, Java applets and animations to be integrated in a Web page.

Affiliate
A person, organization, or establishment associated with another as a subordinate, subsidiary, or member.

Additional Licensing Provisions (ALP)
See ALT.

Additional License Terms (ALT)
Product family specific license terms which supersede any conflicting language in the CLA.

Application Program Interface (API)
A set of routines provided in libraries that extends a language's functionality.

Associated Product Material (APM)
Materials delivered with the CLA (includes ALT or ALP).

Application
Software written to complete a specific task.

Additional Rights Agreements (ARA)
Provide OEM Customers with additional license grants, above and beyond the rights granted in the OEM CLA.

Advanced RISC Machine (ARM)
A 32-bit processor that is compatible with Windows Embedded CE.

Active Template Library (ATL)
Program software used for automatic tabulating, listing and sorting.

Authorized Education Reseller (AER)
A software reseller authorized by Microsoft to sell Academic Edition software licenses to eligible education customers.

B

Billing and Accounts Receivable Tracking (BART)
An accounting billing system used to bill for products, materials and services which are not billable via Customer Records and Information System (CRIS) or Integrated Access Billing System (IABS) or any other Qwest billing system.

Binaries
The "1"s and "0"s that make up a particular piece of software.

Basic Input/Output System (BIOS)
This is the Basic Input/Output System and is installed on the computer's motherboard. It controls the most basic operations and is responsible for starting your computer up and initializing the hardware.

BitLocker Drive Encryption
A hardware-based security feature that prevents unauthorized access to a computer by providing full-volume encryption and integrity checking of boot components.

Bluetooth
An industry specification for wireless personal area networks (PANs) and provides a way to connect and exchange information between mobile devices over a secure, globally unlicensed short-range radio frequency.

Boot
Booting is a process that begins when a computer system is turned on. A boot sequence is the set of operations the computer performs as it loads the operating system.

Bootstrap Protocol (BOOTP)
Enables a workstation to boot without requiring a disk drive by loading into memory the IP address of a BOOTP server on the network.

Board Support Package (BSP)
The section of a software package that is processor- or platform-dependent. Most commercial real-time operating systems have a BSP to make porting easy.

C

Client Access License (CALs)
A license sold in conjunction with server software that allows clients to connect and use the server's software services.

Campus Agreement
An agreement designed for educational facilities that base the licensing on the number of users rather than the number of computers.

Certificate of Authenticity (COA)
A tag on hardware with a preinstalled Microsoft operating system (OS) that certifies that the OS software is properly installed, fully supported, and legal.

Channel Partners
Distributors, Large Account Resellers (LARs), and other resellers who are qualified to sell Microsoft products.

Certificate of Authenticity (COA)
Sticker or label showing that a Windows OS is legal.

Compact .NET Framework
A programming infrastructure created by Microsoft for building, deploying, and running applications and services that use .NET technologies.

Compact Flash
The most widely used digital memory format that is commonly used to story information on cameras and other digital equipment.

Core CAL
A license that allows you to access Microsoft Windows Server, Microsoft Exchange Server, Microsoft SharePoint Portal Server, and Microsoft Systems Management Server through a single device.

Corporate Error Reporting
A tool that allows IT professionals to monitor and review error information so that they can control the deployment of fixes and resolutions.

D

Deploy
Install and use software.

Dynamic Host Configuration Protocol (DHCP)
A protocol for assigning dynamic IP addresses to devices on a network, which allows a device to have a different IP address each time it connects to the network.

Direct 3D
A software program used to manipulate and display three-dimensional objects.

DirectDraw
Often used to render graphics in applications by allowing applications to run full screen instead of embedded in a window.

DirectShow
Microsoft software component for handling and displaying digital video, including AVI, MPEG, and QuickTime for Windows 95 and Windows NT 4.0.

DirectX
DirectX allows programs to interface with and use built in high speed 3D graphic routines on graphic cards for faster processing.

Dynamic Link Library (DLL)
An external code repository for programs that enables a file to be loaded and executed by programs dynamically, resulting in less storage space.

Data Protection Manager (DPM)
Uses disk, tape, and cloud-based repositories to deliver backup and recovery solutions for Windows environments from Microsoft.

E

Effective Date
The date on which the term of agreement starts. *Note: This is typically the date on which Microsoft accepts the agreement.*

Embedded Application
An industry- or task-specific software program or functionality that provides the primary functionality of the Embedded System, is designed to meet the functionality requirements of a specific industry, and significant functionality in addition to the Product software.

Embedded System
A computing system or device with an image that is designed for and distributed with an Embedded Application.

End User
A person or company that acquires an Embedded System for use.

End-User License Agreement (EULA)
A set of rules that defines how a particular software application must be installed and used. For Microsoft Embedded, these are also called Licensing Terms (LTs).

Enrollment
A Microsoft enrollment provides the basic information you need to buy licenses under a specific agreement.

Windows Embedded Enterprise (Enterprise)
This refers to the non-componentized versions of the XP and Vista operating systems for use on fixed-function or dedicated embedded systems.

Enterprise Agreement (EA)
This agreement is designed for organizations with fewer than 250 PCs, and is more focused on corporations with centralized purchasing and the need to standardize an entire organization on Microsoft technology.

Enterprise Software Advisors (ESAs)
Advisors who offer support during the licensing and decision-making process by answering questions, providing documentation, and helping customers with their annual license maintenance.

Enterprise Subscription Agreement
For organizations with over 250 PCs. This agreement is focused on companies that prefer to acquire licenses on a subscription basis and retain non-perpetual use rights.

eOpen
A secure website that provides Open License customers with access to their Open License account information.

External Connector License
A license that allows an unlimited number of external users to access a copy of the specified server software.

External User
Users that access server software for which a license was acquired, but are not employees of a company.

F

First Boot Agent (FBA)
A set of processes that run Microsoft® Windows® XP Embedded runtime during its first boot.

For Embedded Systems (FES)
Enables OEMs to run different OS configurations on a single device without adding extra hardware, reducing the BOM cost of devices. Now referred to as Embedded Enterprise.

First In, First Out (FIFO)
A type of data buffering that prevents data loss during high-speed communications.

FIM
Forefront Identity Management, a Microsoft product.

Full Packaged Product (FPP)
Physical, shrink-wrapped boxes of licensed product that can be acquired in a retail store or through any software retailer.

G

Graphical User Interface (GUI)
GUI is a type of user interface that allows users to interact with programs through images rather than text commands.

H

High Volume Messaging Services Agreement (HVMS)
A system that utilizes Microsoft Exchange or Office Live Communication Servers (LCS) to manage high volume messaging services to consumers or small businesses.

Health Insurance Portability and Accountability Act (HIPAA)
A US law implemented in 2003 that is designed to provide privacy standards to protect patients' medical records and other health information provided to health plans, doctors, hospitals and other health care providers.

I

Intelligent Application Gateway (IAG)
An application gateway that acts as a firewall and allows the proxy server to communicate without displaying the IP address to external systems.

Internet Explorer (IE)
Microsoft's browser software for looking at the Internet.

Image
A copy of installed software that is used for back-up purposes and for loading software on to multiple devices using volume license media.

Independent Software Vendors (ISVs)
Independent Software Vendors are Microsoft partners who use Microsoft software as the building blocks for value-added services, such as integration, consulting, software customization, and web and application hosting.

Intellectual Property (IP)
Intangible property rights that includes ideas and creative expressions with commercial value.

Intellectual Property Rights (IPR)
These rights enable the owners of the Intellectual Property to select who may access and use their property and protects it from unauthorized use.

Interrupt Service Routine (ISR)
A specific software routine that determines the cause of an interrupt and identifies the best way to respond.

K

Kernel
The central component of operating systems.

Kiosk
An independent stand from which merchandise is sold, often placed in the common area of a shopping center.

L

Large Account Reseller (LAR)
A reseller authorized by Microsoft to offer licenses to end users under Select Agreements and Enterprise Agreements.

License
A license gives you the right to use software (specifically, the version which you buy the license for). You do not own software when you buy a license, just the right to use that software.

License and Software Assurance (L&SA)
A single offering that combines a license with Software Assurance (SA).

License Terms (LTs)
(See EULA).

M

Master Boot Record (MBR)
The first physical sector on a hard disk, which contains the master boot record program and information on how a hard disk is partitioned.

Microsoft Baseline Security Analyzer (MBSA)
A tool that helps businesses determine their security state and offers specific remediation guidance in accordance with Microsoft.

Media
CD or DVD disks holding software.

Multi Function Center (MFC)
Converged devices that can print, scan, fax and copy.

Microsoft Licensing Fulfillment (MLF)
Provides master copies of Microsoft software to be used in conjunction with Microsoft Volume Licensing. The master copies are only media; licenses to use the software are not included.

MPEG-1 Audio Layer-3 (MP3)
A compression scheme used to transfer audio files via the Internet and store in portable players and digital audio servers.

Moving Picture Experts Group (MPEG):
The standard format for compression and storage of motion video.

Microsoft (MS)
The way in which Microsoft refers to itself in presentations.

Microsoft Developer Network (MSDN)
An essential source of information for developers using Microsoft® tools, products, technologies and services.

MSDN Subscription
Purchased developer agreement with Microsoft that includes software downloads.

Multi-user interface (MUI)
Microsoft technology for Microsoft Windows, Microsoft Office and other applications that allows for the installation of multiple interface languages on a single system.

MyOEM
A website for Embedded customers with a CLA and Embedded distributors.

N

Non-Perpetual
Identifies the right to use a specific software package for a limited term.

O

Original Equipment Manufacturer (OEM)
Refers to companies that make products for others to repackage and sell. OEMs provide software, such as a desktop operating system, preinstalled on a computer.

OEM Activation (OA)
The activation of a specific software package, generally referred to as a key.

Original Design Manufacturer (ODM)
A company that designs and manufactures a product that is specified and eventually branded by another firm for sale.

OEM Customer License Agreement for Embedded Systems (CLA)
The Microsoft OEM Customer License Agreement for Embedded Systems ("OEM CLA") is the agreement that an OEM Customer must sign in order to license MS Products through the distribution channel.

OEM Preinstallation Kit
A set of tools, documentation, and samples that enable OEMs to preinstall Windows efficiently on new computers according to the terms of the OEM Licensing Agreement.

Outsource Manufacturer (OM)
The original manufacturer of a software program.

Out-Of-Box Experience (OOBE)
The experience a user has when installing and/or performing initial configuration on a piece of hardware or software.

Open License
A volume licensing program that allows you to buy licenses at a lower cost compared to full packaged product (FPP) through retail outlets.

Open Value
The Open Value program is designed for organizations with as few as five desktops and offers the benefits of Software Assurance.

OEM Preinstallation Kit (OPK)
A set of tools and documentation that help you to automate the process of installation. The OPK usually includes installation instructions, utilities, product software and/or supplements for installing the applicable Product software on the Embedded System.

Operating System (OS)
The foundation software of a machine that schedules tasks, allocates storage, and presents a default interface to the user between applications.

P

Per Device License
A license that requires a separate Windows Client Access License (CAL) for each device that uses server software on any of your servers. A Windows Client Access License (CAL) can be reassigned from one device to another if certain conditions are met.

Per Processor License
A license that is required for each processor in the server on which software is running. It includes access for an unlimited number of users to connect from either inside the local area network (LAN) or wide area network (WAN) or outside the firewall. Purchase of additional server licenses, Client Access Licenses (CALs), or Internet Connector Licenses are not required.

Per Server License
A license that requires a separate Windows Client Access License (CAL) for each user or device that accesses or uses the server software on any of the servers.

Per User License
A license that requires a separate Windows Client Access License (CAL) for each user that accesses the server software on any of the servers.

Perpetual
A perpetual license is one that is owned by you indefinitely, as long as the terms of your license agreement are met.

Product ID (PID)
A specific registration number used to activate a software license.

POSReady – Windows Embedded (POSReady)
An embedded operating system designed to seamlessly connect point-of-service solutions with peripherals, servers, and services.

Product Activation
An anti-piracy technology designed to verify that a product has been legitimately licensed.

Product Key
A key used to install Microsoft products. Product Keys are located either on a flyer in the OPK or on the installation CD of the product itself. A company will enter the Product Key when it installs the product onto the Embedded System during testing and development. Some products do not have Product Keys.

Product Use Rights (PUR)
Documentation provided to the end user that specifies the terms and conditions that apply to a particular product.

R

RDP Remote Desktop Protocol (RDP)
A multi-channel protocol that allows a user to connect to a computer running Microsoft Terminal Services. Clients exist for most versions of Windows, and other operating systems such as Linux.

Recovery CD (media)
A CD or DVD that the end-user can use to restore the original Image to the system.

Recovery Image
A copy of the Image as originally installed on the OEM Customer's Embedded System.

Registry (Windows)
The Windows Registry is a file in Microsoft Windows that stores basic configuration settings and options. It is an integral part of the Windows Operating System.

Real-Time Operating System (RTOS)
An operating system (OS) intended for real-time applications.

Runtime License
Enables the holder to operate software on a network and in some cases to distribute it with other products.

S

School Agreement
An agreement designed for schools and preschools, which makes it easy to license all your computers by counting them just once a year.

Serial Clock (SCLK)
A control line driven by the master, which regulates the flow of data bits.

Software Development Kit (SDK)
A programming package that enables a programmer to develop applications for a specific platform. Typically an SDK includes one or more APIs, programming tools, and documentation.

Select License
You should consider a three-year Select License agreement if you need a volume discount based on your ability to forecast your purchases.

Select Outsourcer
A vendor that is engaged to lease-finance (or to manage on a client's behalf) information and data systems assets, including software licenses.

Server License
A license that is acquired for each individual server that is being used. According to the Product Use Rights (PUR), a Server License can be licensed under Operating Systems, Server/CAL, Management Servers, Per Processor and Specialty Servers.

Service Pack
An update to an existing operating system (OS).

Service Provider Licensing Agreement (SPLA)
Gives service providers the opportunity to deliver Microsoft software as a service on a monthly license fee basis.

Services Provider
An Independent Software Vendor (ISV) with hosted applications running on Microsoft technologies.

Super H (SH4)
A 32-bit reduced instruction set computer (RISC) instruction set architecture (ISA) developed by Hitachi, which is implemented by microcontrollers and microprocessors for embedded systems. An SH4 Processor is capable of running CE (but not XP or Embedded Standard).

Shell
The user interface or menu displayed to the user. The standard shell for XP is the desktop with the blue taskbar at the bottom with the "start" button.

Systems Integrator (SI)
A person who integrates multiple systems for inputting, processing, interpreting, storing, and categorizing data.

Software License Terms (SLT)
End-user license agreement language Microsoft requires be shipped with the product.

Software as a Service (SaaS)
An on-demand hosted software provision service, offered by licensed Services Providers.

Software Asset Management (SAM)
An approach that focuses on assisting customers to effectively manage their software assets effectively, reducing the costs of overall licensing and maintenance costs.

Software Assurance (SA)
Provides the right to run the latest version of specific software as soon as it is available from Microsoft during the license agreement term, and includes the ability to manage payments, deployment tools, software support, training and corporate error reporting.

Software Assurance Step-Up License
Allows client to upgrade from the standard edition of a product to an enterprise or professional edition with Software Assurance coverage included.

Solution Provider
A Microsoft Certified Solution Provider (MCSP) is a value-added provider that offers not only software licenses, but also services and support.

Structured Query Language (SQL)
A database computer language designed for managing data in relational database management systems. The original version called SEQUEL (structured English query language) was designed by an IBM research center in 1974 and 1975. Oracle Corporation first introduced SQL as a commercial database system in 1979.

Set-Top Box (STB)
Set-top box is responsible for receiving, converting and sending the picture and sound of the broadcast to the associated television.

SUS
Server Update Services.

T

Trivial File Transfer Protocol (TFTP)
A simple file transfer protocol built on UDP.

Thin Client
A network computer without a hard disk drive, which, in client/server applications, is designed to be especially small so that the bulk of the data processing occurs on the server.

Third Party Integrator Schedule (TPIS)
An agreement allowing a third party to purchase Microsoft on behalf of an OEM.

Third Party Software Provider (TPSP)
A reusable software component developed to be distributed freely or sold by an entity other than the original vendor of the development platform.

U

User Interface (UI)
Everything in a computer that a human being may interact with, including display screen, keyboard, mouse, light pen, the appearance of a desktop, illuminated characters, help messages, and how an application program or a Web site invites interaction and responds to it.

Upgrade
An updated version of a software product.

V

Virtual Machine
Machines that offer flexibility by giving system administrators a quick and easy way to establish different operating system environments on a single physical computer system. These environments act like physically separate computers.

Visual Studio
Software design suite for developing applications. CE's Platform Builder is a plug-in to Visual Studio 2005.

Volume Licensing 6.0
The current Microsoft Volume Licensing program that includes Software Assurance.

W

WEDM
Windows Embedded Device Manager

Windows Embedded Point of Service (WEPOS)
A flexible operating system designed to seamlessly connect point-of-service solutions with peripherals, servers, and services. (Currently referred to as POSReady. Embedded OS designed using XP Embedded for Point of Service uses an OPK).

Windows Embedded Standard (WES)
The componentized version of Microsoft's desktop operating system software.

Windows Compact Edition (WCE)
A variation of Windows for minimalistic computers and embedded systems. Windows CE is a distinctly different kernel, rather than a 'trimmed down' version of desktop Windows.

Windows Media Audio (WMA)
A proprietary compressed audio file format used by Microsoft.

Windows Media Player (WMP)
Microsoft's Multimedia (music and video) viewer and management software that is packaged with Windows operating systems.

Windows Media Video (WMV)
A generic name for the set of streaming video technologies developed and controlled by Microsoft.

Windows Presentation Foundation (WPF)
Provides developers with a unified programming model for building rich Windows smart client user experiences that incorporate UI, media, and documents.

X

X86
A 32-bit processor (typical processor found in a PC).

Windows XP Embedded (XPE)
The embedded operating system that delivers the power of the Windows operating system in componentized form, enabling embedded developers to rapidly build reliable and advanced embedded devices.

FLEXIBILITY.

DESIGN CHAIN SOLUTIONS FROM AVNET

You think about innovation, we think about the rest.

Our team of engineers has the right mix of technical skills and application experience to give you the support you need – throughout the design chain. Extensive technical support, FPGA design, and world-class training. That's what the No. 1 in design support can do to help you focus on what you do best and successfully compete in the global market. Our solutions bend to meet your needs.

What can we do for you? www.avnetexpress.com

Accelerating Your Success!™
1 800 332 8638 | www.avnetexpress.com | ▶ ✉ @avnetdesignwire

AVNET®
electronics marketing
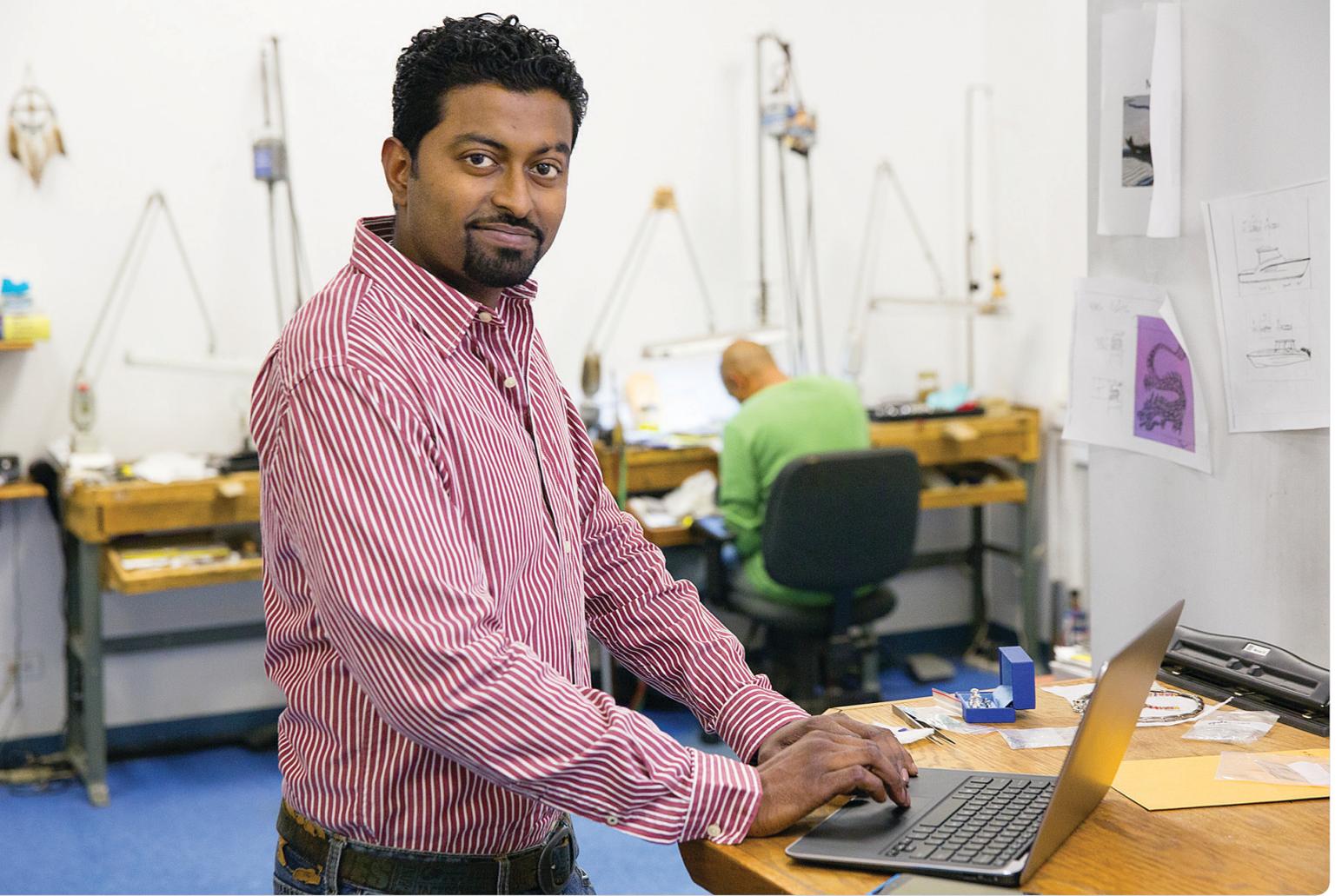
APPENDIX

TECHNOLOGY ACRONYMS

A
ACPI: Advanced Configuration and Power Interface
AER: Authorized Education Reseller
ALP: Additional Licensing Provisions
ALT: Additional License Terms
API: Application Program Interface
APM: Associated Product Material
ARA: Additional Rights Agreements
ARM: Advanced RISC Machine
ATL: Active Template Library

B
BART: Billing and Accounts Receivable Tracking
BIOS: Basic Input/Output System
BOOTP: Bootstrap Protocol
BSP: Board Support Package

C
CAL: Client Access License
CLA OEM: Customer License Agreement for Embedded Systems
COA: Certificate of Authenticity

D
DLL: Dynamic Link Library
DPM: Data Protection Manager

E
EA: Enterprise Agreement
ECE: Mobile and Embedded Communications Extranet
ESA: Enterprise Software Advisors
EULA: End-User License Agreement

F
FBA: First Boot Agent
FES: For Embedded Systems
FIFO: First In, First Out
FPP: Full Packaged Product

G
GUI: Graphical User Interface

H
HVMS: High Volume Messaging Services Agreement
HIPPA: Health Insurance Portability and Accountability Act

I
IAG: Intelligent Application Gateway
IE: Internet Explorer
IPR: Intellectual Property Rights
ISA: Instruction Set Architecture
ISR: Interrupt Service Routine
ISV: Independent Software Vendor

L
L&SA: License and Software Assurance
LAR: Large Account Reseller
LCS: Office Live Communication Servers
LT: License Terms

M
MBR: Master Boot Rec
MBSA: Microsoft Baseline Security Analyzer
MCSP: Microsoft Certified Solution Provider
MFC: Multi Function Center
MLF: Microsoft Licensing Fulfillment
MP3: MPEG-1 Audio Layer-3
MPEG: Moving Picture Experts Group
MS: Microsoft
MSDN: Microsoft Developer Network
MUI: Multi-user interface

O
OA: OEM Activation
ODM: Original Design Manufacturer
OEM: Original Equipment Manufacturer
OM: Outsource Manufacturer
OOBE: Out-Of-Box Experience
OS: Operating System

P
PAN: Personal Area Networks
POSReady: POS Ready – Windows Embedded
PUR: Product Use Rights

R
RDP: Remote Desktop Protocol
RISC: Reduced Instruction Set Computer
RTOS: Real-Time Operating System

S
SA: Software Assurance
SaaS: Software as a Service
SAM: Software Asset Management
SCLK: Serial Clock
SDK: Software Development Kit
SH4: Super H
SLT: Software License Terms
SPLA: Service Provider Licensing Agreement
STB: Set-Top Box

T
TFTP: Trivial File Transfer Protocol
TPIS: Third Party Integrator Schedule
TPSP: Third Party Software Provider

U
UI: User Interface

W
WEPOS: Windows Embedded Point of Service
WES: Windows Embedded Standard
WCE: Windows Compact Edition
WMA: Windows Media Audio
WMP: Windows Media Player
WMV: Windows Media V
WPF: Windows Presentation Foundation

X
XPE: Windows XP Embedded

DESIGN ZONES

Instant Access to the Materials & Information You Need

As an engineer, it's your job to bring innovative products and solutions to market quickly. To help make this happen, Avnet Electronics Marketing has created new Design Zones that bring you instant access to rich product details, selector guides, technical resources and up-to-date industry trends in key market areas such as:

Power   Defense & Aerospace   LEDs
Hardware, Software and Systems   Smart Energy
Interconnect, Passive and Electromechanical (IP&E)