AMD and Dell Cloud Client Computing

Providing Dell Cloud Client Computing with the flexibility to create scalable, low-cost and feature-rich products.

Learn more. Here:
Small footprint, low-power, graphics-rich Embedded solutions

AMD has an extensive history of leadership in the thin client market, contributing to solutions that help provide reduced operating costs and power consumption, higher durability and increased longevity over personal computers. AMD helps to provide faster, high-definition video and graphics overlays, an enhanced Internet experience, widely scalable platform performance, and industry-leading display support. By employing AMD Embedded Accelerated Processing Unit (APUs) in Dell Wyse clients that incorporate a Graphics Processing Unit (GPU) and a Central Processing Unit (CPU) onto one die, Dell Wyse clients have the added benefit of improved data transfer rates, and space savings on the motherboard, allowing for the creation of smaller, more powerful devices.
**What Dell and AMD bring together**

AMD Accelerated Processing Units provide Dell Cloud Client Computing with the flexibility to create scalable, low-cost and feature-rich products, while driving energy conservation into their systems. And they do it all without compromising application performance or compatibility, graphics performance or features.

In addition to these traditional benefits, Dell Wyse clients built around AMD Embedded G-Series processors offer graphics quality not usually found in thin client solutions. The enhanced Internet experience afforded through AMD Embedded APUs includes high-definition video display with high quality, and discrete-level GPUs. AMD Embedded G-Series APUs offer cost-efficient solutions. AMD Embedded G-Series SOCs – which combine a CPU GPU and I/O Controller onto a single die – offer low-power, compact solutions.

**Features and benefits of AMD processors**

- **High-definition, high quality video display** - Hardware-assisted, high-definition video decode for H.264, VC-1, MPEG-2, MPEG-4 Part 2, and DivX. Multiple video streams supported include Decode HD + SD on select APU models, SD + SD on all models, plus additional SD streams in the CPU.¹

- **Discrete-level GPU performance** - Features the latest DirectX® 11 and OpenGL 4.2 graphics with 80 shader processors; easily handles graphics overlays for HD video, including videos found on sites such as YouTube and Hulu.

- **Scalability** - Models range from dual-core to quad-core.

- **Industry-leading display support** - Offers high-resolution on two independent displays and a variety of display formats, including DisplayPort 1.2, HDMI™, DVI, LVDS 18-bit², and VGA.

- **Key embedded features** - Small form factor designs for smaller footprints and thermals as low as 3W³ with a dual CPU core.

- **Longevity** - Five years of production availability planned, plus an additional two years under contract.

- **Broad software support** - Compatible with VMware and Citrix; supports Windows® XPe, Windows 7, Windows Embedded Standard 7, Windows Embedded Compact 7, Linux®, Android, and others.

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**2013 Hardware Embeddy Winner:**

The winner of the VDC Hardware Embeddy Award for the 2013 Design West/ESC show was AMD for their new G-Series family of SOC processors.

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**What is an APU?**
What is an APU?

**CPU**
(Multi-core CPUs)
Designed for:
- General purpose tasks
- Most common applications
- Compute intensive

**APU**
(AMD Accelerated Processing Unit)
- Harnessing the computational power of a CPU designed for general purpose computing
- Leveraging the processing capabilities of a GPU optimized for graphics and visual applications
- Combining CPU & GPU elements into a single architecture to form a single chip on the same die

**GPU**
(With external GPU Sub-Systems)
Designed for:
- Specialized tasks (e.g. graphics, video)
- Most visual applications
- Data processing in parallel

What is an SOC?
What is an SOC?

APU (AMD Accelerated Processing Unit)
- Harnessing the computational power of a CPU designed for general purpose computing
- Leveraging the processing capabilities of a GPU optimized for graphics and visual applications
- Combining CPU & GPU elements into a single architecture to form a single chip on the same die

SOC (System on a Chip)
- The next step in the evolution of x86 technology integration
- Combining the APU (CPU+GPU) and I/O elements into a single architecture on the same die
- A single chip providing the next level of compute and graphics performance with the extensive I/O capabilities expected from x86 platforms

I/O (Input/Output)
- Designed for:
  - Transmission medium: exchanging data and supporting legacy functions
  - Communication port: connects transmission media to the embedded board
  - Communication interface: manages data exchange between the processing unit and the device

AMD Embedded G-Series SOC benefits
AMD Embedded G-Series SOC benefits

Power-efficient platform

The AMD Embedded G-Series SOC platform is a high-performance, low-power System-on-Chip (SOC) design, featuring enterprise-class error-correction code (ECC) memory support, dual and quad-core variants, integrated discrete-class GPU and I/O controller on the same die.²

The AMD G-Series SOC achieves superior performance per watt in the low-power x86 microprocessor class of products when running multiple industry standard benchmarks. This helps enable the delivery of an exceptional HD multimedia experience and provides a heterogeneous computing platform for parallel processing. The small-footprint, ECC-capable SOC sets the new foundation for a power-efficient platform for content-rich multimedia processing and workload processing that is well-suited for a broad variety of embedded applications.

Superior performance per watt

The AMD Embedded G-Series SOC platform delivers an exceptionally high-definition visual experience and the ability to take advantage of heterogeneous computing while maintaining a low-power design.

Features and benefits

First generation SoC design - Delivers up to 70% overall improvement over AMD G-Series APU and integrates Controller Hub functional block as well as CPU+GPU+NB.³

‘Jaguar’ CPU core with performance increases - Dual-core and quad-core, up to 2MB shared L2. 113% CPU performance improvement over AMD G-Series APU.⁷

Next generation graphics core - 20% compute performance improvement over AMD G-Series APU when running multiple industry-standard graphics-intensive benchmark. DirectX® 11.1 graphics support

Improved power saving features - Power gating added to Multimedia Engine, Display Controller & NB. DDR P-states for reduced power consumption.

memory support: Single-channel DDR3 - Up to DDR3-1600 – 1.35V and 1.25V voltage levels supported. Up to 2 UDIMMs or 2 SO-DIMMs and ECC support

Integrated display outputs - Supports two simultaneous displays, 4-lane DisplayPort 1.2, DVI, HDMI™ 1.4a and Integrated VGA. Integrated eDP or 18bpp single channel LVDS.

Updated I/O (features may be SKU dependent) - Four x1 links of PCIe® Gen 2 for GPPs, One x4 link of PCIe Gen 2 for discrete GPU. 8 USB 2.0 + 2 USB 3.0. 2 SATA 2 x/3 x (up to 6Gb/s) and SD Card Reader v3.0 or SDIO controller.
Dell Cloud Client Computing end points

Z class
The Dell Wyse Z class brings unrivalled high performance to users demanding more from their virtual desktops. Featuring fast processing, accelerated graphics and multimedia, fast and flexible user connectivity and excellent energy-efficiency never seen before in a cloud client, the Dell Wyse Z class delivers uncompromising high performance when users need it most with its AMD G-Series processors.

Learn more.
 Specification.
 Management.

D class
Designed to flourish within demanding desktop environments, the Dell Wyse D class offers you new dimensions in performance, high definition multimedia and operational flexibility in a compact affordable form. Driving the D class' high speed and performance are two AMD G-Series processors that offer you an all around platform on which to support an increasingly diverse range of user, application and operating requirements.

Learn more.
 Specification.
 Management.

X class
The Dell Wyse X class m family provides your mobile users with all the processing power and flexibility they need including rich multimedia playback with the AMD G-Series processor. Altogether the Dell Wyse X class puts secure, high performance, mobile cloud computing into the hands of those users who need it most.

Learn more.
 Specification.
 Management.

Xenith Pro / Pro 2
Delivering major advances in performance, simplicity and longevity, the Xenith range of next generation zero clients are yet again redefining the category Dell Wyse itself created. All about security and performance, the Xenith Pro 2 is Dell’s fastest zero client for Citrix yet.

Learn more.
 Specification.
 Management.

Dell.com
Dell Wyse Z class featuring AMD G-T52R / G-T56N and G-Series SOC processors

When performance matters most

Fast processing. Accelerated graphics and multimedia.
Fast and flexible user connectivity. Excellent energy-efficiency.

From the instant the new Dell Wyse Z class boots up it delivers everything that today and tomorrow’s users need in order to tackle the most demanding virtual desktop environments.

At its heart beats the very latest dual- or quad-core AMD G-Series Accelerated Processing Units or APUs, where all the processing, graphics and HD video tasks are performed on the same piece of silicon, giving a dramatic leap in user experience and the ideal platform to reap the benefits of Dell Wyse cloud, virtualization and management software.

Processor

The AMD Embedded G-Series platform is the world’s first low power processor and advanced GPU that’s integrated into a single embedded APU.

High definition multimedia experience

Display, manipulate and work with stunning high definition multimedia graphics, voice and video in virtual desktop environments that are ready for Unified Communications. That’s the promise the Dell Wyse Z class more than delivers on, with great performance across 2D, 3D and HD video applications. Its new design takes them all in its stride and is the first to include hardware accelerated DirectX® 11 graphics with OpenGL 4.0 and OpenCL™ support.
**Dell Wyse D class** featuring AMD G-T48E and G-Series SOC processors

**New dimensions on your desktop**

The D class’ compact frame hosts an array of display, peripheral and network connectivity plus further flexible networking, storage and I/O options; everything in fact to offer you the ideal cloud client for Citrix, Microsoft and VMware VDI environments.

**Energy efficient**

When it comes to energy efficiency the D class is designed to out-perform other more power hungry desktop alternatives, including other thin clients in its class. Its silent, disk and fan-less design contributes considerably to lowering an organization’s carbon footprint through power usage and emissions.

**High performance on your desktop**

Need to deploy a dependable platform to display, manipulate and work with high definition multimedia, voice and video in a virtualized environment? The D class’ hardware acceleration engine and dual monitor support offers your users outstanding performance and display capabilities across 2D, 3D and HD video applications.

Driving the D class’ high speed and performance are two powerful, energy saving processors that offer you a strong all around platform on which to support an increasingly diverse range of user, application and operating requirements: the 1.4GHz dual-core AMD Embedded G-Series T48E APU processor and 1.5GHz quad-core AMD Embedded G-Series SOC.
All the access, flexibility and performance you need, where and when you need it

The new next-generation Dell Wyse X class m family mobile thin client powerhouse features Dell Wyse enhanced SUSE Linux, Windows Embedded Standard 2009 and Windows Embedded Standard 7, a crisp 14” LED backlit display and a dual core high performance and graphics-combined CPU – delivering excellent HD multimedia capabilities, as well as advanced SuperSpeed USB 3.0 connectivity. Altogether the Dell Wyse X class puts secure, high performance, mobile cloud computing into the hands of those users who need it most.

High performance and security on the move

Dell Wyse X class m family mobile cloud clients feature the dual-core AMD G-T56N processor, giving your mobile users all the processing power and flexibility they need including rich multimedia playback. The X class m family clients also feature bright LED backlit displays delivering excellent on-screen performance for graphics applications and multimedia presentations.

No hard drives. No worries.

Their hard drive-free design contributes to a far longer lifespan than other comparative laptops. And of course no hard drive means no data whatsoever is lost or compromised if a Dell Wyse X class is stolen or mislaid. Finally, everything’s encased in slim, robust designs ideal for today’s hard working and pressurized mobile workers.
Your desktop just got easier

Delivering major advances in performance, simplicity and longevity, the Xenith range of next generation zero clients are yet again redefining the category Dell Wyse itself created.

**Performance** Built for Citrix HDX - users receive an ‘instant-on’ desktop and enjoy a rich media experience that doesn’t tax servers or networks.

**Simplicity** And it’s easy too. With simple plug-n-play operation and auto-configuration.

**Longevity** Xenith takes care of everything it needs to stay up-to-date by adapting to network security and protocol advances.

**Flexibility** Tailor your zero clients to your performance, budget, and size requirements. All from Dell Wyse. The company building more zero clients today than anyone else.

Xenith Pro

With higher performance and even higher levels of connectivity. Choose Xenith Pro when you need a zero client for Citrix HDX performance, truly dazzling multimedia, HD Flash content and unified communications. Dual digital display support and L-shaped configurations are supported as well as class-leading connectivity: with 6 USB and 2 serial ports for excellent up to date and legacy peripheral support.

Xenith Pro 2

Our fastest zero client for Citrix yet, focused on security and performance. The advanced technology contained in the dual-core Accelerated Processing Unit (APU) from AMD enables exceptional graphics and display performance with integrated Radeon graphics processing.
Thin client management  Dell Wyse Device Manager

Dell Wyse Device Manager (WDM) addresses key management requirements for deploying powerful thin clients. With its centralized management and administration, WDM helps IT departments deliver effective remote thin client support while minimizing end user downtime.

Security is assured with HTTPS based imaging, updates and downloads.

WDM delivers organization-wide benefits:

**Operations**
- Centralized management.
- Collect and organize asset information.

**Administration**
- Health status reports.
- Automated client settings.
- Update client firmware and add applications.

**End User IT Costs**
- Easy, effective remote support.
- Create custom scripts and packages.

**Minimize downtime**
- Restart or reset thin clients in less than a minute.
- Enforce policies. Minimize user errors.

**At a glance features**

- **Security**
  - HTTPS based imaging / updates
  - Fully encrypted network traffic
  - Delegated admin access (MS AD) support

- **No-Hassle deployment**
  - Complete device imaging / patching / updates
  - Bandwidth throttling for efficiency / reliability
  - Software updates and add-ons

- **Device administration and monitoring**
  - Device health status / reporting
  - Remote shadowing / control
  - Default device configuration

- **Reduce end user IT costs**
  - Reduce energy consumption with scheduled up/down times

- **Scalability**
  - Distributed architecture
  - Microsoft SQL database support / Multiple remote repository support

- **Complete asset visibility**
  - Automated device discovery
  - Detailed hardware asset information
  - Installed software asset information.
Citrix Receiver 3.x for Xenith

Designed by Dell Wyse in collaboration with Citrix specifically for these Dell Wyse zero clients, Dell Wyse Xenith Pro and Xenith Pro 2 provide:

- HDX Multi-Stream
- HDX MediaStream
- HDX 3D & HDX 3D Pro
- HDX RealTime
- HDX Plug-n-Play
- Session reliability
- Progressive display
- Bandwidth measurements
- Local text echo
- CSG & CAG support (in CSG mode)
- Desktop restart
- Citrix logon experience

Dell Wyse Xenith Manager

Designed in collaboration with Citrix, Xenith Manager, now part of Citrix XenDesktop 5 and later, delivers tighter integration and vital flexibility and device longevity benefits. And, as it’s provided on the XenDesktop 5 install media – XenDesktop and Xenith™ deliver a fully integrated and unprecedented combination of simplicity, performance and security for office-based workers, while ensuring a high-definition user experience.

Integrated intelligence works with XenDesktop to take care of discovery, initial configuration and updates through the network – as well as giving you control – when and if you need it. Xenith is the only end point integrated into XenDesktop management console (Desktop Studio).
Loveland Public Library

The new plans specified almost 140 PCs for public use – but no additional budget for technical support. Adamson knew right away that he and his one technician, Kent Bumguardner, could not possibly support that many PCs.

They knew they needed a virtualization solution. Adamson began testing alternatives, from virtual desktop infrastructure (VDI) with Citrix or VMware to desktop streaming with Doubletake or WSM. In tests, the ease of use of WSM set it apart from the VDI options. Adamson still had many options for endpoint devices. He selected 140 Dell Wyse Z00D cloud PCs.

The Z00D devices feature high performance AMD processors, allowing Internet browsing or work with Microsoft Office applications. In the children’s department, five Z00Ds with a child-friendly browser enable children to visit approved websites, where they play educational games and watch videos. In the teen’s department, nine more Z00Ds offer shortcuts to social sites, multiplayer games, online research tools, and productivity tools, including Microsoft Office.

Challenge
• Provide more PCs for public use
• Reduce IT support costs
• Allow for future expansion
• Support LEED certification.

Solution
• WSM streams Windows 7, Internet browsers, and applications to 140 Dell Wyse Z00D cloud PCs with AMD processors.

Results
• Quadrupled number of PCs, from 37 to 140, without increasing staff
• Slashed per-device maintenance time and increased uptime
• Enabled inexpensive expansion for future
• Reduced overall PC energy expenditure.

“We were confident that the Dell Wyse cloud PCs would deliver a much longer useful life, while ordinary PCs cycle in and out... Plus, the Dell Wyse devices did the best in our benchmarks. They were stable, and performed just like native desktops.”

Shane Adamson
Library Technology Manager
Loveland Public Library, Loveland Colorado
Consulting services

Dell is a leader in desktop virtualization consulting services with end-to-end services to evaluate, design, pilot and implement desktop virtualization solutions. The process starts by identifying user groups and applications which will benefit from virtualization. Dell then designs a production pilot based on user performance profiles. The pilot validates performance, sizing and ROI. Implementation services include image creation, application virtualization and profile migration.

Dell ProSupport

Dell ProSupport provides comprehensive hardware and software support. This means your organization spends less time focused on problem resolution and they have more time to focus on critical business initiatives to improve organizational productivity. From live support to email ticket submission and online status notification, all the bases are covered to help you resolve any issue quickly and effectively. Dell ProSupport can provide your organization with remote assistance and deployment of updates and patches for VDI software and hypervisors.

Learn more here.
### Specifications: Z50S & Z50D, Z90SW & Z90DW, Z90S7, Z90D7 & Z90Q7 thin clients & Z00D cloud PC

| Processors | 1.5GHz dual-core AMD G-T52R APU with integrated AMD Radeon™ HD 6310 graphics  
1.65GHz dual-core AMD G-T56N APU with integrated AMD Radeon™ HD 6320 graphics  
2.0GHz quad-core AMD GX-420 SOC with integrated AMD Radeon™ |
|---|---|
| Memory | Z50S & Z50D  
2GB Flash / 2GB DDR3 RAM  
Z90SW & Z90DW  
2GB Flash / 2GB DDR3 RAM  
Z90S7, Z90D7 & Z90Q7  
4GB Flash / 2GB DDR3 RAM  
Z90D7p  
8GB Flash / 4GB DDR3 RAM  
Z00D  
16GB Flash / 8GB DDR3 RAM  
Configurable up to 16GB Flash / 8GB DDR3 RAM  
SSD storage also supported |
| I/O peripheral support | One DisplayPort. (Optional DisplayPort to DVI-I adapter available)  
One DVI-I port. DVI to VGA (DB-15) adapter included  
Six total USB ports: Four USB 2.0 ports (two front, two rear) and Two SuperSpeed USB 3.0 ports on rear (backward compatible with USB 2.0)  
Enhanced USB keyboard with Windows Keys (104 keys) and PS/2 mouse port  
PS/2 optical mouse included  
Factory options: Legacy connectivity - adds 2 serial ports, 1 parallel port and 1 PS/2 keyboard port |
| Networking | 10/100/1000 Gigabit Ethernet  
Factory options: Dual Band 802.11 a/b/g/n Wireless  
Fiber NIC network connectivity available for Z90Q7 |
| Display | VESA monitor support with Display Data Control (DDC) for automatic setting of resolution and refresh rate  
DisplayPort: 2560x1600@32bpp  
DVI-I: 1920x1200@32bpp  
Dual display: 1920x1200@32bpp |
| Audio | For all models except for Z90Q7: Output: 1/8-inch mini jack, full 16 bit stereo, 48KHz sample rate, Digital audio out, Internal Mono speaker  
Input: 1/8-inch mini jack, 8-bit stereo microphone  
Z90Q7: Composite audio jack: 1/8-inch mini, 16-bit stereo. Internal mono speaker |
| Physical characteristics | Height: 7.87 inches (200mm)  
Width: 1.85 inches (47mm)  
Depth: 8.85 inches (225mm) |
| Weight | 2.47 lbs. (1.12kg) |
| Mountings | Vertical feet standard  
Horizontal feet optional*  
Optional VESA mounting bracket for mounting to flat surfaces, such as walls.  
Please note: Z class clients cannot mount directly to the backs of monitors.  
Optional Ergotron mounting stand for mounting with Dell monitors |
| Device security | Built-in Kensington security slot (cable sold separately) |
| Power | Worldwide auto-sensing 100-240 VAC, 50/60 Hz.  
Energy Star 5.2  
Phase V external and EUP compliant power adapter  
Average power usage with device connected to 1 keyboard with 1 PS/2 mouse and 1 monitor: Under 15 Watts |
| Temperature range | Operating: 50° to 104° F (10° to 40° C), horizontal and vertical positions  
Storage: 14° to 140° F (-10° to 60° C) |
| Humidity | 20% to 80% condensing  
10% to 95% non-condensing |
| Safety certifications | German EK-ITB 2000, ISO 9241-3/-8  
cULus 60950, TÜV-GS, EN 60950  
FCC Class B, CE, VCCI, C-Tick  
WEEE, RoHS compliant  
Energy Star 5.2 certified**  
EPEAT Silver certified*** |
| Warranty | Three-year limited hardware warranty.  
Optional WyseChoice extensions and upgrades at www.wyse.com/warranties.  
* Z90Q7 should not be positioned horizontally  
** Z50S, Z50D and Z00D Energy Star certifications pending  
*** Z50S and Z50D EPEAT certifications pending |
# Specifications

**Dell Wyse Z90DE7 thin client**

## Processor
- 1.65GHz dual-core AMD G-T56N APU with integrated AMD Radeon™ HD 6320 graphics

## Memory
- Z90DE7: 4GB Flash / 2GB DDR3 RAM
- Configurable up to 16GB Flash / 8GB DDR3 RAM
- SSD storage also supported

## I/O peripheral support
- One DisplayPort. (Optional DisplayPort to DVI-I adapter available)
- One DVI-I port. DVI to VGA (DB-15) adapter included
- Six total USB ports: Four USB 2.0 ports (two front, two rear) and Two SuperSpeed USB 3.0 ports on rear (backwards compatible with USB 2.0)
- Enhanced USB keyboard with Windows Keys (104 keys) and PS2 mouse port
- PS/2 optical mouse included
- Z90DE7: One PCIe 2.0 slot capable of accommodating up to x16 PCIe card

### Factory options:
- Legacy connectivity - adds 2 serial ports, 1 parallel port and 1 PS/2 keyboard port

## Networking
- 10/100/1000 Gigabit Ethernet

### Factory options:
- Dual Band 802.11 a/b/g/n Wireless
- Integrated smart card reader

## Display
- VESA monitor support with Display Data Control (DDC) for automatic setting of resolution and refresh rate
- DisplayPort: 2560x1600@32bpp
- DVI-I: 1920x1200@32bpp
- Dual display: 1920x1200@32bpp

## Audio
- Output: 1/8-inch mini jack, full 16 bit stereo, 48KHz sample rate, Digital Audio Out, Internal Mono speaker
- Input: 1/8-inch mini jack, 8 bit stereo microphone

## Physical characteristics
- Height: 8.46 inches (215mm)
- Width: 2.72 inches (69mm)
- Depth: 8.85 inches (225mm)
- Weight: 3.5 lbs. (1.59kg)

## Mountings
- Vertical feet standard
- Horizontal feet optional
- Optional VESA mounting bracket for mounting to flat surfaces, such as walls.
- Please note: Z class clients cannot mount directly to the backs of monitors.
- Optional Ergotron mounting stand for mounting with Dell monitors.

## Power
- Worldwide auto-sensing 100-240 VAC, 50/60 Hz.
- Energy Star 5.2
- Phase V external and EuP compliant power adapter
- Average power usage with device connected to 1 keyboard with 1 PS/2 mouse and 1 monitor: Under 15 Watts*

## Temperature range
- Operating: 50° to 104° F (10° to 40° C), horizontal and vertical positions
- Storage: 14° to 140° F (-10° to 60° C)

## Humidity
- 20% to 80% condensing
- 10% to 95% non-condensing

## Safety certifications
- German EKI-ITB 2000, ISO 9241-3/-8
- cULus 60950, TÜV-GS, EN 60950
- FCC Class B, CE, VCCI, C-Tick
- WEEE, RoHS compliant
- Energy Star 5.2 certified

## Warranty
- Three-year limited hardware warranty.
- Optional WyseChoice extensions and upgrades at www.wyse.com/warranties.

* Can use up to 35 watts with the expansion slot occupied and operational.
Specifications

Operating system

- Dell Wyse Windows® Embedded Standard 7, Windows® Embedded Standard 2009 or Dell Wyse enhanced SUSE Linux Enterprise

Processors

- 1.4GHz dual-core AMD G-T48E with integrated AMD Radeon Radeo™ HD 6250 graphics
- 1.5GHz quad-core AMD G-Series SOC with integrated Radeon™ HD 8000 graphics

Memory

- D50D: 2GB Flash / 2GB DDR3 RAM; SSD storage also supported
- D90DW: 2GB Flash / 2GB DDR3 RAM; SSD storage also supported
- D90D7 & D90Q7: 4GB Flash / 2GB DDR3 RAM; SSD storage also supported
- D00D: 0GB Flash / 2GB DDR3 RAM; SSD storage also supported
- Expandable up to 16GB Flash / 4GB DDR3 RAM / SSD storage also supported

I/O peripheral support

- One DisplayPort. (Optional DisplayPort to DVI-I adapter available)
- One DVI-I port. DVI to VGA (DB-15) adapter included
- Four external USB 2.0 ports (2 front, 2 back)
- D90Q7: Four USB 2.0 ports and two USB 3.0 ports
- Serial and parallel connectivity supported through USB 2.0 adapters
- Enhanced USB keyboard with Windows Keys (104 keys) and PS/2 mouse port.
- PS/2 optical mouse included.

Networking

- 10/100/1000 Base-T Gigabit ethernet
- RJ45 or SFP module
- Factory options:
  - Single and dual Band 802.11 a/b/g/n integrated wireless with external dual antenna
  - SFP module support for Fiber NIC network connectivity
  - Bluetooth connectivity

Display

- VESA monitor support with Display Data Control (DDC) for automatic setting of resolution and refresh rate
- DisplayPort: 2560x1600@32bpp
- DVI-I: 1920x1200@32bpp
- Dual display: 1920x1200@32bpp

Audio

- Composite audio jack: 1/8-inch mini, 16-bit stereo.
- Internal mono speaker.

Physical characteristics

- Height: 6.7 inches (170mm)
- Width: 1.6 inches (40mm)
- Depth: 7.3 inches (185mm)
- Weight: 2.05 lbs. / 0.93 kg

Mountings

- Vertical feet standard.
- Optional VESA mounting bracket for mounting to flat surfaces, such as walls.
- Please note: D class clients cannot mount directly to the backs of monitors.
- Optional Ergotron mounting stand for mounting with Dell monitors.

Device Security

- Built-in Kensington security slot (cable sold separately)
- Power
  - Worldwide auto-sensing 100–240 VAC, 50/60 Hz 65W, 19V DC.
  - Energy Star V.5.0
  - Phase V external and EuP compliant power adapter
  - Average power usage with device connected to 1 keyboard with 1 PS/2 mouse and 1 monitor: Under 9 watts

Temperature Range

- Operating: 32° to 104° F (10° to 40° C), horizontal and vertical positions.
- Storage: 14° to 140° F (-10° to 60° C)

Humidity

- 20% to 80% condensing
- 10% to 95% non-condensing

Safety Certifications

- German EKI-ITB 2000, ISO 9241-3/-8
- cULus 60950, TÜV-GS, EN 60950
- FCC Class B, CE, VCCI, C-Tick
- WEEE, RoHS compliant

Warranty

- Three-year limited hardware warranty.
- Optional WyseChoice extensions and upgrades at www.wyse.com/warranties.
## Specifications

**Dell Wyse X50m, X90mw, X90m7 mobile thin clients & X00m mobile cloud PC**

### Processors
- 1.65GHz dual-core AMD G-T56N APU with integrated AMD Radeon™ HD 6320 graphics

### Memory
- **X50m**: Dell Wyse enhanced SUSE Linux: 2GB Flash / 2GB RAM DDR3 1333MHz
- **X90mw**: Windows Embedded Standard 2009: 2GB Flash / 2GB RAM DDR3 1333MHz
- **X90m7**: Windows Embedded Standard 7: 4GB Flash / 2GB RAM DDR3 1333MHz
- **X00m for WSM**: 128GB SSD / 2GB RAM DDR3 1333MHz

### I/O peripheral support
- One VGA port
- One DisplayPort
- One USB 2.0 port and two USB 3.0 ports
- Media card reader slot for additional storage
- One Mic In / One Line Out
- Built-in 1.3 mega pixel camera and microphone
- ExpressCard slot (factory option)
- 3G/4G capable (PCIe slot available)
- Smart card reader (Factory installed configuration option)

### Networking
- 10/100/1000 Mbps Gigabit Ethernet
- Integrated wireless 802.11 a/b/g/n dual band (2.4 Ghz and 5Ghz)

### Display
- 14” WXGA 1366 x 768 LED backlight

### Audio
- Output: 1/8-inch mini jack, full 16 bit stereo, digital audio out
- Input: 1/8-inch mini jack, 8 bit microphone

### Speakers
- Two internal stereo speakers

### Specifications

<table>
<thead>
<tr>
<th>Physical characteristics</th>
<th>Width: 13.5 inches (341.6mm)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Depth: 9.32 inches (239.2mm)</td>
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<tr>
<td></td>
<td>Height: 1.14 inches (28.9-35.5mm)</td>
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</table>

| Weight                  | 4.0lbs (1.83kg) |

| Device Security         | Built-in Kensington security slot (cable sold separately) |

| Keyboard and mouse      | Keyboard / touchpad |

| I/O peripheral support  | US, US international, UK, French, German |

| Battery                 | 6-cell Li-Ion battery (5200mAh) |

| Power                   | Worldwide auto-sensing 100-240 VAC, 50/60 Hz. Energy Star V5.0 compliant power supply |
|                        | 19V/65W AC adapter |

| Temperature Range       | 50° to 104° F (10° to 40° C) |

| Humidity                | 20% to 80% condensing |
|                        | 10% to 95% non-condensing |

| Safety Certifications   | UL/IEC 60950-1, TUV |
|                        | EMC: CE (EN 55022, EN 55024), FCC 15B |
|                        | FCC ( Part 15C), CE (EN 300 328, EN 301 489), Richtlinie 1999/5/EC |
|                        | RoHS, WEEE |

| Warranty                | One-year limited warranty. 6 months battery warranty. Optional WyseChoice extensions and upgrades at [www.wyse.com/warranties](http://www.wyse.com/warranties) |

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**Start** | **Introduction** | **End points** | **Management** | **Use cases** | **Services** | **Specifications** | **Next steps**
## Specifications Dell Wyse Xenith Pro

<table>
<thead>
<tr>
<th>Processors</th>
<th>1.5 GHz AMD Sempron processor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>128MB Flash / 512MB RAM</td>
</tr>
<tr>
<td>I/O peripheral support</td>
<td>One DVI-I port / one DVI-D port / Two PS/2 ports / Two serial ports / Six external USB 2.0 ports (2 front, 4 back) / One mic in / One line out</td>
</tr>
<tr>
<td>Included</td>
<td>Enhanced PS/2 keyboard with Windows keys (104 keys) and PS/2 optical mouse</td>
</tr>
<tr>
<td>Networking / comm</td>
<td>10/100/1000 Base-T Gigabit ethernet / 802.11 b/g/n (factory option)</td>
</tr>
<tr>
<td>Display</td>
<td>VESA monitor support with Display Data Control (DDC) for automatic setting of resolution and refresh rate / Dual monitor supported / Single: 2560x1600 32 bpp 60Hz / Dual: 1920x1200 max support for dual monitors / Hardware accelerated monitor rotation support (L-shaped dual monitors)</td>
</tr>
<tr>
<td>Audio</td>
<td>Output: 1/8-inch mini, 16 bit stereo. Internal mono speaker / Input: 1/8-inch mini, 8 bit stereo microphone</td>
</tr>
<tr>
<td>Physical characteristics</td>
<td>Height: 9.80 inches (250mm) / Width: 8.80 inches (225mm) / Depth: 2.10 inches (53mm)</td>
</tr>
<tr>
<td>Shipping weight</td>
<td>6.50 lbs. (2.95kg)</td>
</tr>
<tr>
<td>Mountings</td>
<td>Vertical feet [optional horizontal feet] / Optional VESA mounting bracket</td>
</tr>
<tr>
<td>Device security</td>
<td>Built-in Kensington security slot (cable sold separately)</td>
</tr>
<tr>
<td>Power</td>
<td>Worldwide auto-sensing 100-240 VAC, 50/60 Hz. Energy Star® V.5.0 compliant power supply. Average power usage with device connected to 1 keyboard with 1 PS/2 mouse and 1 monitor: 14.6 Watts in idle state</td>
</tr>
<tr>
<td>Temperature range</td>
<td>Horizontal position: 50° to 95° F (10° to 35° C) / Vertical position: 50° to 104° F (10° to 40° C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>20% to 80%</td>
</tr>
<tr>
<td>Certifications</td>
<td>German EKI-ITB 2000, ISO 9241-3/-8 / cULus 60950, TÜV-GS, EN 60950 / FCC Class B, CE, VCCI, C-Tick / WEEE, RoHS compliant</td>
</tr>
<tr>
<td>Warranty</td>
<td>Three-year limited hardware warranty. Optional WyseChoice extensions and upgrades at <a href="http://www.wyse.com/warranties">www.wyse.com/warranties</a></td>
</tr>
</tbody>
</table>
# Specifications

**Dell Wyse Xenith Pro 2**

<table>
<thead>
<tr>
<th>Processor</th>
<th>1.4GHz dual-core AMD G-T48E with integrated AMD Radeon HD 6250 Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>2GB Flash / 2GB DDR3 RAM</td>
</tr>
</tbody>
</table>
| I/O peripheral support | One DisplayPort. (Optional DisplayPort to DVI-I adapter available)  
One DVI-I port. DVI to VGA (DB-15) adapter included  
Four External USB 2.0 ports (2 front, 2 back)  
Serial and Parallel connectivity supported through USB 2.0 adapters  
Enhanced USB Keyboard with Windows Keys (104 keys) and PS/2 mouse port.  
PS/2 Optical mouse included. |
| Networking | 10/100/1000 Base-T Gigabit Ethernet  
RJ45 or SFP Module  
**Factory options:**  
Single and Dual Band 802.11 a/b/g/n integrated wireless with external dual antennas  
SFP Module support for Fiber NIC network connectivity |
| Display   | VESA monitor support with Display Data Control (DDC) for automatic setting of resolution and refresh rate  
DisplayPort: 2560x1600@32bpp  
DVI-I: 1920x1200@32bpp  
Dual display: 1920x1200@32bpp |
| Audio     | Composite Audio Jack: 1/8-inch mini, 16-bit stereo.  
Internal Mono speaker. |
| Physical characteristics | Height: 6.7 inches (170mm)  
Width: 16 inches (400mm)  
Depth: 7.3 inches (185mm) |
| Weight    | 2.05 lbs. / 0.93 kg |

| Mountings | Vertical feet standard.  
Horizontal feet optional.  
Optional Dell Ergotron mounting bracket. |
| Device Security | Built-in Kensington security slot (cable sold separately) |
| Power     | Worldwide auto-sensing 100–240 VAC, 50/60 Hz 65W, 19V DC.  
Energy Star V5.0  
Phase V external and EuP compliant power adapter  
Average power usage with device connected to 1 keyboard with 1 PS/2 mouse and 1 monitor: Under 9 Watts |
| Temperature Range | Operating: 32° to 104° F (0°C to 40°C), horizontal and vertical positions.  
Storage: 14° to 140° F (-10°C to 60°C) |
| Humidity  | 20% to 80% condensing  
10% to 95% non-condensing |
| Safety Certifications | Ergonomics: German EKI-ITB 2000, ISO 9241-3/-8  
Safety: cULus 60950, TÜV-GS, EN 60950  
RF Interference: FCC Class B, CE, VCCI, C-Tick  
Environmental: WEEE, RoHS Compliant. |
| Warranty  | Three-year limited hardware warranty.  
Next steps in your journey

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1 AMD does not provide a license/sublicense to any intellectual property rights relating to any to any standards including but not limited to any audio and/or video codec technologies such as AVC/H.264/AVC-4, AVC, VC-1, H.263, and DivX

2 The low-power x86 microprocessor class includes: GX-420CA @ 25W TDP scored 19; GX-425CA @ 15W (13); GX-225CA @ 15W (12); CT-212H @ 9W (12); CT-218H @ 9W (12); CT-215H @ 9W (12); G-T56N @ 18W (7); G-T58R @ 4.5W (12); Intel Atom N270 @ 15W (12); Intel Atom D2700 @ 15W (12); Intel Celeron G490 @ 35W (5). Performance score based on an average of 10 scores from the following benchmarks: Sandra Engineering 2011 Dhrystone ALU, Sandra Engineering 2011 Whetstone MMX, 3DMark® 06 (1280 x 1024), PassMark Performance Test 7.0 2D Graphics Mark, and EEMBC CoreMark Multi-thread. All systems running Windows® 7 Ultimate for Sandra Engineering, 3DMark® 06 and PassMark. All systems running Ubuntu version 11.10 for EEMBC CoreMark. All configurations used DirectX 11.0. AMD G-Series APU system configurations used iBase MI958 motherboards with 4GB DDR3 and integrated graphics. All AMD G-Series SOC systems used AMD G-Series SOC Reference Design Board with 4GB DDR3 and integrated graphics. Intel Atom D2700 was tested with Jetway NC9KDL-2700 motherboard, 4GB DDR3 and integrated graphics. Intel Celeron system configuration used MSI H45M-225 motherboard with 4GB DDR3 and integrated graphics. Intel Atom N270 system configuration used MSI MS-9810 motherboard (as per http://download.intel.com/design/iasf/products/314466.pdf). Intel G495 G-Series SOC systems used HCL HS-2212 motherboard with platform integrated 4GB DDR3 and integrated graphics.