Vision Paper

Intelligent Desktop Virtualization

Why you should read this document

This paper captures Intel's vision of Intelligent Desktop Virtualization, an evolution of desktop management that eliminates the compromise between IT and users by empowering you to:

- Maintain central control and use the local compute resources of the user's device

- Create layered images to simplify management and allow for user customization

- Use device-native management to supplement central management and leverage hardware resources for a robust computing platform

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Intelligent Desktop Virtualization

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Why Do We Need Intelligent Desktop Virtualization?

For nearly two decades, traditional desktop management has been business as usual. But today's IT environment is anything but usual. Powerful forces are driving rapid change—including the rise of consumerization, cloud computing applications, and server virtualization. Users want to work using any device from any location, and the concept of "bring your own IT" makes it possible to readily access cloud services, regardless of IT approval. Despite many advances, such as classic virtual desktop infrastructure (VDI) and desktop virtualization, traditional desktop management is poised for change.

Intel's vision is an evolutionary framework—called Intelligent Desktop Virtualization, or IDV—in which the overall system of managing user computing is made significantly more intelligent. IDV maximizes the user experience while also giving IT professionals the control they need—all within an economically viable framework.

Three Tenets of Intelligent Desktop Virtualization

There are three key tenets that distinguish Intelligent Desktop Virtualization from desktop virtualization. Each tenet is considered to be *central* to IDV, whereas the concepts are usually considered to be *peripheral* in desktop virtualization. The three tenets represent a progression: If IT departments embrace the first tenet, there will be critical benefits to proceeding to the second tenet. If the first two tenets are fully adopted, the third tenet will be considered essential.

By evaluating desktop virtualization solutions according to these tenets, IT can implement a desktop management infrastructure that meets the needs of both users and IT, making IDV a solution that is truly without compromise.

Tenet 1:
Manage Centrally with Local Execution

The first tenet of Intelligent Desktop Virtualization is essentially a division of labor that delivers the benefits of both central management and local execution. IT retains full control over operating system and application updates by managing a golden, or master, image from the data center, and relies on the local compute resources of the end-point PC to deliver a rich user experience. With the first tenet, IT can:

- Improve manageability and security by controlling operating system and application updates
- Provide the best possible user experience—and better economics— with local compute resources
- Optimize data center resource usage
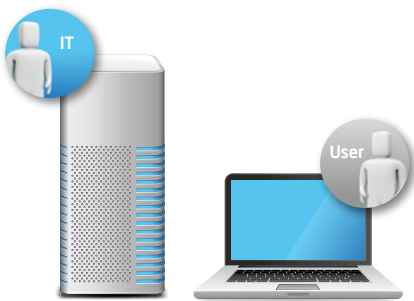
Tenet 2:
Deliver Layered Images Intelligently

The second tenet of Intelligent Desktop Virtualization is based on two concepts: creating layered images to allow for user customization and simplified management of the golden image, and using bidirectional synchronization with de-duplication (also known as single-instance storage) for intelligent delivery.

By dividing the traditional desktop image into layers—versus managing it as a single entity—and using bidirectional synchronization, IT can gain the flexibility to:

- Enhance central management
- Deliver the appropriate layers transparently to user-chosen computing platforms
- Use bidirectional synchronization and de-duplication for intelligent delivery and storage
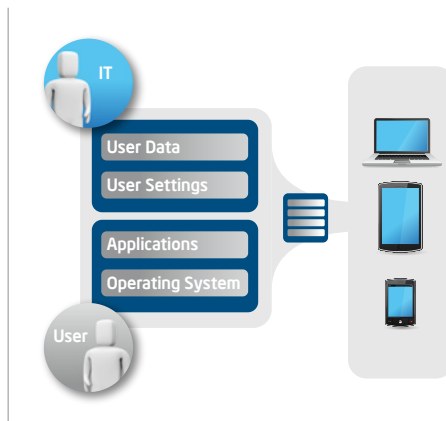
Tenet 3:
Use Device-Native Management

The third tenet of Intelligent Desktop Virtualization is based on the assertion that both virtual and physical device management are required for a complete IDV solution. To fully manage user computing, end-point devices require physical management. With the third tenet, IT can:

- Supplement central management capabilities for operational excellence
- Leverage hardware resources independent of the operating system to ensure a robust computing platform and gain unparalleled flexibility

The Role of Intelligent Clients

In addition to employing the three tenets, IT must find the right balance between the data center and desktops to create an infrastructure that meets unique organizational needs. By using intelligent clients, IT can achieve balanced computing with Intelligent Desktop Virtualization.

- Intelligent end points offer the processing power, security, and management features that complement central management—all without placing additional strain on the data center.
- Intelligent clients offer a range of native management options, including support for multiple desktop virtualization models, as well as mobile computing, compute-intensive applications, rich media, offline work, and local peripherals.
- By design, intelligent client computing helps IT avoid expensive data center expansion and maximizes total cost of ownership.

Moving Forward: The Intel Commitment

Intelligent Desktop Virtualization builds on today's virtualization technologies to create a better future—one that eliminates the ongoing compromise between IT and users. With IDV, IT gains complete control and maximum flexibility, and users get the uncompromising computing experience they expect.

As a leader in Intelligent Desktop Virtualization, Intel is committed to its ongoing innovation. Intel is currently collaborating with its ISV ecosystem partners to achieve full-scale functionality that encompasses all three tenets to bring holistic IDV solutions to market. Intel will also continue to invest in virtualization technologies that enhance client hypervisor solutions and support additional use-case scenarios.

Take the Next Steps to Full-Scale IDV

As you move toward a full-scale IDV solution, remember: One size does not fit all. Most companies need more than one delivery model based on unique business requirements.

For organizations still in the planning stage:

- Thoroughly investigate all models of desktop management.
- Evaluate solutions according to the three tenets and ask potential vendors about their support for each.

- Investigate options for intelligent clients to deliver the best user experience and the most effective management and security measures.

For organizations that have already implemented virtual desktop infrastructure (VDI):

- Take the remaining steps toward a full-scale IDV solution.
- Off-load processing to the local client (for example, redirect multimedia tendering to intelligent clients) to further improve virtual machine density and boost VDI economics.

To learn more about desktop virtualization, visit the Intel IT Center at www.intel.com/desktopvirtualization.

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