Frequently Asked Questions

What are the benefits of virtualization?
In Honeywell we talk about the following benefits of Virtualization,

- **Lower the quantity of PC hardware required**
  - Consolidate multiple physical servers. By reducing the amount of hardware, customers save on space, power, cooling and maintenance.

- **Reduced frequency and impact and frequency of operating system and hardware changes**
  - Virtualization separates hardware from operating systems. This separation reduces the frequency of operating system and hardware change. When change occurs, virtualization reduces the impact and magnitude of that change.

- **Easier overall system management**
  - Through improved installation techniques along with the ability to centrally administer a system from a single pane of glass simplifies system administration.

- **Improved availability, reliability and disaster recovery**
  - Provide availability features that were previously never available to applications if they were deployed physically. Take advantage of new solutions such as the Backup Control Center Solution to protect an entire control room.

What are the downsides of using virtualization?
Virtualization provides the benefits listed above. However, customers need to be aware that there is a new virtualization layer that is added and has impacts in the following areas:

- **Estimation**
  - Estimating hardware and other resource requirements can be challenging. With physical deployments, there is a one to one relationship between an application/OS and the physical hardware. Since virtual systems put many operating systems on each physical server, the relationship between application needs and hardware is more complex. This makes estimation challenging in terms of determining of processing power, storage, and system memory. Though in some ways it can also be easier as if a new application/OS needs to be added, it can be done without the addition of new hardware assuming there is sufficient spare capacity.

- **Troubleshooting**
  - In physical, if an application was performing badly, you only needed to worry about that application and the server it was running on. With virtualization there are more complex inter-relationships.
• Additional Layers
  o There are additional virtualization layers that need to be maintained and supported that are not present in a physical system. For instance, VMware needs to be managed.

• IT skills
  o Virtualization helps IT staff in many ways; however, a complex virtual environment requires additional IT skills beyond what is needed for physical servers.

Are all Honeywell applications supported virtualized?
No. Most are, but a few are not supported. While Honeywell has an ever increasing range of applications that are supported virtualized, you should refer to the HPS Virtualization Spec for the latest information.

What virtualization products are supported?
Honeywell tests and supports VMware Virtualization products. Other vendors such as Microsoft and Oracle offer virtualization products, however we only test and support VMware. Refer to the HPS Virtualization Spec for the latest information.

What is the difference between applications that are “approved” and “certified” to run virtualized?
Honeywell uses the term “approved” to indicate that a Honeywell product has been approved for a specified use, with the limitations that performance testing usually has not been done, no specific guidance is available on virtual image configuration, and commercially reasonable limits may apply when investigating performance issues. The term “certified” means that a Honeywell product is approved and more testing has been done, especially in the area of performance.

How much testing have we done in virtual systems? What scenarios have been tested?
The amount of testing varies by product line. Generally speaking, products that are approved for virtualization have been put through the same tests in a virtual environment as a physical environment. We do not attempt to test every scenario in every configuration of Windows and other software, but rather aim to test the most common combination and the scenarios that appear to be the riskiest. Products that have been certified go through a more rigorous set of performance characterization.

Is virtualization supported for all the same operating systems and other platforms?
Yes. Unless stated otherwise, if an application is supported on a particular version of Windows that is installed natively, it is also supported on the same version of Windows when virtualized. For instance, if an application supports both 32- and 64-bit versions of Windows Server 2008, then it will support both Windows versions when virtualized.

Can I have a mixture of virtual and physical servers working together?
Yes. Operating system, or platform, virtualization is generally used to run multiple systems—virtual images—on a single physical computer. Generally each virtual system will have its own IP address and will appear to other systems like any other computer in the network.

Is virtualization supported for both on-process and off-process use?
It depends. Some applications do not make a distinction between on- and off-process use with respect to virtualization. However, some applications (e.g., Experion) have more demanding specifications, especially for on-process use, and there may be differences in what is supported.

Please see the HPS Virtualization Spec to see if there are any differences between on and off process for the application that you want to run virtualized.
How do I estimate the performance needs of the physical host?
There are two main scenarios depending on whether an application is certified or approved

- **Approved Applications**
  - For the most part, similar computer resources will be required for a virtual system as a physical system. For instance, if a dual processor physical server is needed for adequate performance, the same software running in a virtual system will also require two processors. When planning a single physical server that will host several virtual images, start by adding up the typical hardware requirements that would be required for those systems to run independently and add resources needed for the host VMware system to determine the typical hardware requirements for the physical host.

- **Certified Applications**
  - Certified applications as mentioned above have additional performance data. All of the performance dimensions relevant to a virtualized environment (CPU, Memory, Disk Space, Disk Performance, Network Performance) are documented. Applications can be added together on the same host as long as the total is less than the performance available from the hardware platform chosen.

Please note that commercially reasonable limits may apply when investigating performance issues and Honeywell will not take responsibility for poor performance on undersized hardware. This is documented further in the HPS Virtualization Support Policy. Information on which applications have been certified approved along with any relevant performance information can be found in the HPS Virtualization Spec.

Do we support virtualizing Oracle, SQL Server, and other third party products?
There are two scenarios that apply here,

- **Honeywell uses an embedded database or ships a database as an integrated part of the product**
  - In this scenario, if we support that particular product virtualized, then we also support any embedded databases that are supplied with that product virtualized.

- **Honeywell provides customer choice as to the database that should be used and doesn’t ship it as part of the product.**
  - The vendors are ultimately responsible for supporting third party products in a virtual environment. All Honeywell can do is pass along the vendors’ virtualization support policies. Microsoft SQL Server, Oracle Server, and Crystal Reports are examples of third party products that do support virtualization. Consult the vendors for more information.

Is there any change to the licensing policies for Honeywell products in a virtual environment?
No. In general the policies are the same. A virtual system is treated the same as a physical system for licensing. There are a few exceptions,

- When Experion is used in an Off Process virtual environment, there are some more flexible Experion licensing options that allow customers to maximize the potential offered by the virtual environment. Contact your Honeywell account manager for further information.

- There are some additional virtualization licensing options being introduced to Experion that will apply to On Process Experion systems only. These will be launched with the next Experion Virtualization phase in Q3 2011.
**Does TAC support virtualized applications?**
TAC supports applications running in a virtual environment to the same extent and in the same way that those applications are supported in a physical environment.

**Does Honeywell deliver any of its products as virtual machines/appliances to customers directly?**
Generally not. We sometimes choose to ship a complete solution virtualized if (a) the project is implemented by Honeywell, (b) the solution includes hardware, and (c) the solution includes Windows as well as Honeywell software. Orders for software only will not be shipped virtualized.

**Does Honeywell support for the Virtual Infrastructure (VMware and associated hardware?)**
The Virtual Infrastructure includes VMware itself, the VMware configuration, and the hardware. The virtual environment hosts one or more virtual systems. We support our applications running in a virtual system regardless of who provides the virtual infrastructure, but we only support the virtual infrastructure if we sold the hardware and software. If a customer provides the virtual environment, then we expect the customer to work with their supplier of the virtual infrastructure for support, and our responsibility is limited to supporting our applications running within the virtual images. See the virtualization support policy for further information.

**Does Honeywell sell VMware and hardware to run virtual systems?**
Yes.

**Does Honeywell’s ULM licensing tool support virtualization?**
Yes, provided that you plan for virtualization. A number of Honeywell products use ULM for license management, including Plan View, Asset Manager, Profit Suite, Uniformance Process Studio, and UniSim Design. ULM licenses can be locked to a particular server or can be set up as network licenses. When a virtual image is copied or moved, ULM sometimes thinks that it is running on new hardware which can cause a ULM standalone license to expire. There could be a problem if a site uses standalone licenses on a virtual image, the underlying hardware fails, and the image is transferred to a new server. The license management software might prevent the Honeywell software in the image from working correctly. This situation can be avoided by setting up network licenses using the ULM license server software. In general, you should consider how licenses will be served up when planning for virtualization.

**See Also**

*HPS Virtualization Specification*, EP03-700-100. Describes HPS products and solutions that are supported in a virtual environment, the types of virtualization supported, and qualified virtualization products.

*HPS Virtualization Technical Assistance Policy*. A policy document that provides guidance on the Honeywell’s terms for supporting virtualization.

*HPS Virtualization Overview PIN, PN-11-16-ENG*. Comprehensive overview of HPS’s Virtualization portfolio.
More Information
For more information on Honeywell’s Virtualization Solutions, visit www.honeywellprocess.com or contact your Honeywell account manager or field service leader.

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