

Product Information Note

PlantCruise by Experion[®] Virtualization Solutions



Honeywell's PlantCruise by Experion Virtualization Solutions set the standard for the process automation industry and bring the major benefits of virtualization technology to industrial organizations of all sizes.

Nowadays, industrial organizations face immense pressures in both constructing new plants in the shortest time and for the lowest cost possible, and operationally to reduce rising lifecycle maintenance costs while maintaining or improving reliability. Additionally, the immense skills shortage is requiring companies to do more with less, now more than ever.

Intelligently leveraged, virtualization is a game-changing technology in the way it is able to tackle key challenges that our industry faces. Honeywell Process Solutions has taken a unique approach to delivering the benefits of virtualization to our customers, allowing you to run more of your system virtualized and reap greater benefits. We also understand that end-users are always looking to reduce complexity and improve performance, reliability and supportability, and our solutions are designed with that in mind.



Virtualization is a game-changing technology for today's industrial organizations.

Current Issues in Plant Construction

With the ever-increasing demand for resources and manufactured goods, plants are becoming more complex than ever before along with constant pressures to reduce time to production and build costs. Among the challenges facing customers constructing new plants are:

- **Geographically distributed engineering** – With increasing plant complexity, the need to draw upon multiple labor sources and the desire to distribute risk is causing plant construction to become more geographically distributed than ever before. This distributed engineering model is the driving force behind new project implementation methods and approaches.
- **Project complexity** – As natural resources become scarce, projects are becoming more and more complex. This requires industry to respond with new techniques and technologies that can deal with the uncertainties these projects bring.
- **Accelerated project schedule** – New plant construction represents a significant investment on behalf of companies and there is a constant pressure to achieve completion. Additionally, there can be other compounding factors like patent expirations that make it imperative to get plants running quickly.

Current Issues in Existing Operations

In a demanding economy, industrial companies must find ways to do more with less, which means reducing operating costs while maintaining or increasing production levels. As such, there is an urgent need to identify inefficiencies and ensure operations are as productive and economical as possible. Some of the current challenges in maintaining control systems include:

- **Proliferation of computer hardware** – There is a huge amount of computer infrastructure used in modern plants and each one of those machines needs to be patched, maintained and refreshed.
- **Facility and utility costs** – For each piece of computer hardware that is added, there is an associated impact on space, power, cooling and maintenance. This can be particularly impactful in offshore applications where space, weight and power are at a premium.
- **Costly and time-consuming OS and application patching** – Patching operating systems (OS) and applications, or reloading computer hardware for the purposes of a hardware refresh, is extremely time-consuming. It also introduces risk into plant operations. Customers want to maximize the time between having to touch the OS or applications and reduce the risk to operations when it is required.
- **Limited skills to maintain open systems** – Strong computer hardware and networking skills coupled with knowledge of the industrial domain are a must for maintaining open control systems. While most companies have been increasing these skills within process control groups, the right skills are still in short supply. Improving the efficiency of these limited resources is very important.

PlantCruise by Experion Virtualization Benefits

PlantCruise by Experion® Virtualization Solutions provide substantial benefits for new projects and existing installations alike. For new projects, new paradigms are enabled for greater project flexibility; for existing systems, there are major lifecycle management advantages.

Benefits for customers building new plants

- **Extend Design Freeze Dates** – By leveraging virtualized staging resources, development work can start as soon as there is a minimum set of requirements to begin engineering. Given that this work can commence without requiring actual controller or server hardware, it provides valuable additional time for design work.
- **Delay Hardware Purchases** – Given that development can start without having to purchase computer hardware, the final purchase of this equipment can be delayed — ensuring that no costly and disruptive mid-project refresh required. Additionally, having the latest

hardware when the plant goes into production is ensured.



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Benefits for customers with existing plants

- **Hardware Refresh Optimization** – PlantCruise by Experion Virtualization Solutions allow more than one workload to run on a physical box. This reduces the quantity of hardware required for the control system and, therefore, the total number of refreshes that need to be conducted over a period of time — thus the benefit is cumulative. When a refresh is required, we can do this online, transparently to your operations.
- **Facility and Utility Savings** – With a reduction in the amount of computer hardware required to run PlantCruise by Experion, there is a corresponding reduction in space, power, cooling and maintenance required. These reductions are particularly valuable for installations where space, weight and power are a premium.
- **System Management Benefits** – PlantCruise by Experion Virtualization Solutions provide a single view into the virtual infrastructure. Though this single portal, you can see the performance of the virtual environment, access desktops, and turn virtual machines on and off. New virtual machines can also be deployed from this same portal. In a traditional system, it can take weeks to deploy a piece of computer hardware. With a virtualized PlantCruise by Experion system, a new workload can be deployed in hours.
- **High Availability Solutions for Computer Hardware** – One of the most common areas of operating system instability is with drivers. PlantCruise by Experion Virtualization provides a very robust and stable driver layer at both the hardware and virtual machine layer,

which improves stability. In the event of a host failure, a new host can be installed very quickly, and restoring is a matter of copying the virtual machines back. PlantCruise by Experion Virtualization provides a built-in backup package for virtual machines, as well as high availability features providing the ability to automatically restart virtual machines on another physical machine in the event of a hardware failure. All of these features combined provide better availability than traditional physical deployments.

- **Improved Hardware, OS and Third-party App Compatibility** – Before virtualization, operating systems and the applications running inside of them had to be compatible with certain hardware platforms. With PlantCruise by Experion Virtualization Solutions, Honeywell still offers recommended and tested platforms, however, we now provide improved choices because of the hardware independence that virtualization provides. OS compatibility is driven by what the hypervisor can support rather than by the underlying hardware. Third-party application compatibility is improved because through virtualization, a number of virtual machines that could be running applications from different vendors can all be running totally isolated on the same computer hardware.
- **Simplified, Lower Risk Upgrades and Patching** – Upgrading hardware with PlantCruise by Experion Virtualization Solutions is easy, and depending on the type of virtual infrastructure deployed, can even be done transparently to process operations. Leveraging templates, base virtual machines that are customized to site policies can be developed, reducing risk when deploying new virtual machines. The ability to quickly and easily duplicate an on-process environment for offline staging ensures quick and accurate testing of

For More Information

Learn more about how Honeywell's PlantCruise by Experion solution can improve plant performance, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

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patches. In the event of the unexpected, snapshot capabilities allow for the rapid rollback of a system to a known good point in time.

- **Increased Desktop Security and Reliability with Lower Heat and Noise** – Virtualized PlantCruise by Experion Workstations enable computer hardware to be moved out of the control room and into the instrumentation room for a fraction of the cost of traditional techniques. This allows for a quiet, cost-effective and secure thin client to be the only thing that is present out in the floor of the control room. Virtualized PlantCruise by Experion Workstations also allow for rapid recovery in the event of a failure and can even result in superior performance due to a common set of high-performance hardware that can be shared, instead of each desktop requiring equivalent power that can become cost-prohibitive.

How to Get Started

Contact your Honeywell Account Manager to find out more about how PlantCruise by Experion Virtualization Solutions can transform your business. Honeywell can start by providing an assessment of the virtualization opportunities in your facility and quantifying the business return that moving to a virtual environment can bring to your facility.

The good news for industrial companies is that virtualization can be applied gradually, starting small and growing over time. If you are unfamiliar with virtualization, good places to start include:

- **Off-process development:** Off-process development systems are by their nature non-critical, making them a great place to start applying virtualization.
- **Non-critical ancillary nodes:** Where supported by the vendor, industrial sites can begin to virtualize non-critical ancillary nodes such as web access portals, active directory servers and OPC servers.
- **Business domain interface software:** Virtualization is being widely adopted for enterprise applications such as SAP and Oracle. As such, industrial control applications used to interface with these applications are great places to start virtualizing since there is a well-established precedent for employing virtualization with these types of applications.

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