

WHITE PAPER

Through Hardware Innovation Comes Support Automation

Sponsored by: HP

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EXECUTIVE SUMMARY

Operating a datacenter entails working with a myriad of complex technologies. Decisions regarding equipment, design, support, and overarching cost have far-reaching implications. One of the aspects that is often addressed later rather than sooner is support of the IT environment. However, placing more emphasis on the support aspect can drive tremendous benefits when it really counts.

Systems providers, whether of storage, networking, or servers, have made advancements — to varying degrees — in the architecture design and the physical attributes of their equipment with support in mind. They have done so not only through more reliable components but also through logical design that enables technicians and support staff to more rapidly identify, troubleshoot, and repair systems when the inevitable issue occurs. By leveraging these capabilities, enterprises will be able to reap the benefits immediately, which will relate directly to operational cost savings. Some of the pain points these systems will address include:

- ☒ Reducing manual operations that support servers
- ☒ Reducing the chance of human error
- ☒ Growing server energy and facilities expense costs
- ☒ Reducing unplanned downtime

HP is focusing on the automation of converged infrastructure (CI) as the single most effective way to help resolve these customer concerns. HP's announcement of the Gen8 servers has two primary purposes: to provide a technology refresh of the HP ProLiant rack, blade, tower, and scalable systems and to improve the operational efficiency of datacenters for Web, cloud, and scale-out computing environments.

IN THIS WHITE PAPER

This IDC white paper outlines the support-oriented benefits of evolving technology incorporated into the physical box itself as well as technologies that enable remote support. As vendors develop new systems, storage, and network devices, tools and automation functionality will be an essential part of what will be embedded in these new designs. As the complexity of these environments increases, the ability to easily support and troubleshoot the fundamental components will be essential to datacenter staff and engineers. Some of the capabilities these new technologies will include are:

- ☒ Agentless management
- ☒ Preventive maintenance
- ☒ Cloud-embedded capabilities
- ☒ Ergonomic design for ease of maintenance
- ☒ Automated support
- ☒ Legacy support

In this white paper, IDC discusses the benefits of these new designs and tools and identifies ways in which IT environments can take advantage of them to reduce support costs and increase system availability.

SITUATION OVERVIEW

This section outlines the typical challenges related to supporting complex and interconnected IT environments. It provides an overview of the challenges IT faces in managing datacenters and identifies the primary reasons to implement these tools. It additionally highlights how these evolving technologies are impacting business. IDC shows what can be done to meet and exceed expectations for the business and maximize performance across the complex IT landscape.

Support Issues

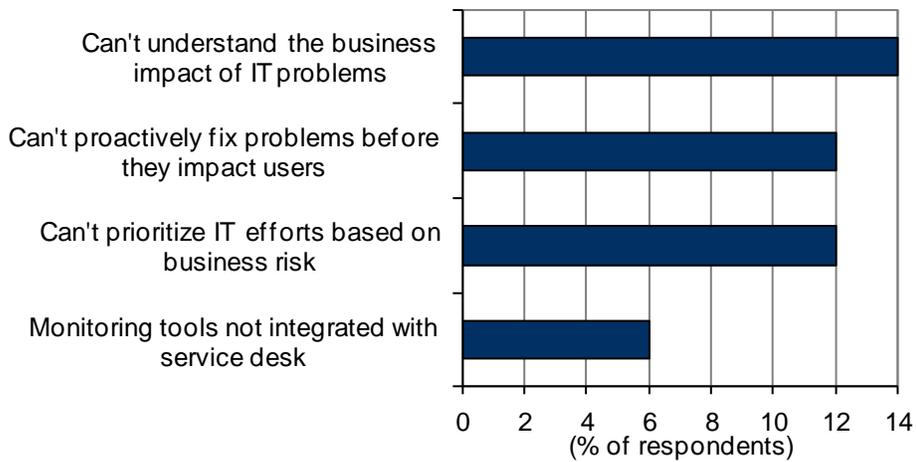
Human error, such as pulling the wrong drive, destroying a RAID set, or powering down the wrong system, is still one of the largest causes of downtime in datacenters today. This facet of datacenter management plagues enterprises and will continue to do so until systems can physically repair themselves. System design plays a key role in helping prevent this type of downtime. Smarter designs enable engineers to repair problems quicker with less chance of further damage to an already downed system. Forward-looking organizations are assessing innovative systems engineered to help reduce time to resolution, overall risks, and downtime in enterprise environments.

Other issues in datacenters today center around the ability to integrate the advanced tools and automation embedded in these new systems with a customer's existing legacy service infrastructure. The ability to easily integrate new and more capable systems into an organization's support infrastructure is key in understanding the larger picture of the business impact when issues do arise.

In recent anecdotal conversations with customers, IDC reconfirmed data from a 2007 IDC study that shows some of the top pain points related to service (see Figure 1).

FIGURE 1

Pain Points in Service Management



n = 78

Source: IDC, October 2007

Support Issues Continued

As IT managers and CIOs are tasked to move toward a more converged infrastructure, they face more pressure to deliver an effective solution they can support. Cloud and virtualized infrastructures bring a whole new complexity to an already diverse environment. Datacenters already have a dizzying array of applications, hardware, and middleware providers, and some other top-of-mind areas of concern around support of all these technologies are:

- ☒ **Time to resolution.** This continues to be an area of focus for most IT organizations facing issues in their IT environments. IT managers have critical SLAs with internal and external customers that must be met.
- ☒ **Security risks.** Remote support access is still perceived as an area of vulnerability. Automation tools that extend outside a customer's datacenter have perceived risks as an open door to intruder attacks.
- ☒ **Inventory data.** Lack of access to up-to-date contract management and inventory to check entitlement and support coverage to make sure all assets are properly covered continues to be an issue for most IT organizations.
- ☒ **Patch and firmware management.** This involves reducing the amount of time spent coordinating, deploying, and verifying patches and upgrades and requires a well-thought-out methodology for keeping systems up to date.
- ☒ **Identifying support path and key contact points.** This involves knowing who to contact when problems occur and the best way to engage support providers. Since most enterprises are managing heterogeneous environments with multiple

layers of technology providers, coordinating support can pose significant issues. Isolating and diagnosing potential issues can be a back-and-forth nightmare with support providers. This often leads to finger-pointing between providers instead of integrated efforts to solve the problem. Customers are typically caught in the middle as referee and are left frustrated with the lack of attention to the actual issue at hand.

- ☒ **Legacy support.** Lack of support tools for legacy systems or the complexity of getting these legacy systems onto a robust management platform is an area of concern.

Support Features to Consider

Since most enterprises are asking CIOs to manage ongoing IT operations with progressively fewer resources, IT managers are starting to look to innovation from vendors to assist in improving overall performance while reducing and improving resource allocation in the IT environment. Vendors are responding with system designs that include new tools, utilities, and features to help address these outstanding issues. Such innovations also allow corporate users access to information from anywhere at any time to help respond to demanding customers to help keep their organizations competitive. Maximizing availability and performance of IT infrastructure to push initiatives forward and to minimize downtime is critical both for customer-facing systems and for internal applications and systems. As enterprises consider the total cost of operations for their environment, the value of the right tools becomes more relevant. For those reasons, vendors are expanding their system designs to more easily enable onboard diagnoses and troubleshooting of issues sometimes even before they occur. What to look for and the reasons to implement these new support tools include:

- ☒ **System design that enables fast access to the components for quick and efficient replacement.** Engineers and customers appreciate systems that are easy to work on. Datacenters tend to be cramped, confined, and noisy; the simpler it is to access a system's internals, the quicker a system can be restored to operation.
- ☒ **Patch and upgrade management functionality.** IDC recommends that organizations look for online tools that coordinate patches and upgrades across the IT environment, particularly across multiple vendors. An integrated approach to patch management can greatly simplify the management process. In addition, enterprises should look for patch management that can differentiate requirements by device and by current level of installation — with tracking capabilities for existing customer systems in the datacenter.
- ☒ **Secure management access.** As enterprises adopt policies and procedures to enable the remote and mobile workforce, IDC expects that IT staff will increasingly have the opportunity to work remotely. As a result, enterprises should consider support providers with support capabilities that can be used either online exclusively or via mobile devices that can connect to the relevant systems. This functionality can enable the IT organization to address potential issues more quickly from a variety of locations and can help decrease system downtime and accelerate resolution.

- ☒ **Proactive and preventive support delivery.** Remote monitoring capabilities and automated tools can identify problems before systems experience downtime.
- ☒ **Cloud-enabled access to a personalized dashboard.** These tools should provide service and support ticket tracking and warranty/entitlement contract management capabilities. Many enterprises struggle to maintain an accurate, consistent, up-to-date inventory of their technology and the associated warranties and support contracts across their IT landscape. IT organizations attempt to sort this data with a spreadsheet or other documentation, which can require significant configuration and tracking efforts and can be difficult to maintain in a rapidly changing IT environment.
- ☒ **Advanced self-diagnosis tools and utilities.** Customers can use these tools to gather information about their servers that can be used to benchmark against like topologies to show best practices and proper configurations to keep their systems running optimally. The tools should also provide system analytics that will offer insight into the servers' resiliency and redundancy.
- ☒ **Multiple forms of support engagement.** Support processes include telephone, online, email, and chat options — especially processes that are integrated to reduce restating problems and issues with each interaction.
- ☒ **Support communities.** IT staff members often consult mentors and colleagues for advice on everything from diagnosing and resolving problems to optimizing existing IT infrastructure to migrating and deploying new technology. Support providers can help enable these interactions and discussions between relevant parties, creating forums that reach across a variety of customer engagements and multiple levels of product use. IDC recommends looking for support communities that allow members to contribute knowledge beyond forum posts and chat sessions, such as user-sponsored articles and guidance as well as best practices and lessons learned.

Support Delivery Innovation and New Design Features: Onboard, Remote, and Online

HP has developed an integrated management and support experience that automates and simplifies the support process for HP ProLiant Gen8 servers and legacy systems. The experience begins with fast deployment of support tools for HP ProLiant Gen8 servers, continues with 24 x 7 remote monitoring with a personalized online support portal for ongoing operation and continual improvement, and ends with new design features that allow more reliable and quicker replacement of failed components. This won't be limited to only Gen8 servers; legacy systems too will be able to take advantage of these tools in the next version of HP Insight Remote Support 7.0 (Release date: TBD this summer). The new support delivery capabilities include:

- ☒ HP Insight Remote Support 7.0
- ☒ HP Insight Online
- ☒ Gen8 System Design

HP Insight Remote Support 7.0: Remote Support Platform

HP Insight Remote Support 7.0 (Insight RS 7.0) has been redesigned to enhance the remote support experience to be quicker and simpler to use. This technology will also further automate the delivery of remote support in a converged infrastructure. This new experience is anchored by new innovations in onboard intelligence and an online portal. HP's new iLO Management Engine provides an innovative set of capabilities embedded on the HP ProLiant Gen8 server to support the complete life cycle of the server, from faster deployment to one-touch software/firmware updates and ongoing diagnostics. HP iLO Management Engine users can also take advantage of these onboard, agentless capabilities to more quickly begin their HP Insight Remote Support 7.0 installation process.

HP Insight Remote Support 7.0 continues to provide 24 x 7 monitoring and Active Health System, which continuously tracks logs for over 1,600 system parameters and 100% of all configuration changes, empowering organizations with the insight to keep their systems running at peak performance with minimal downtime and effort. Version 7.0 also adds the ability to:

- View the status of the IT environment anytime, anywhere via HP Insight Online — HP's new, personalized addition to the HP Support Center. According to HP research, HP Insight Remote Support provides up to 66% faster problem resolution and up to 95% first-time fix rate. Organizations can begin the HP Insight Remote Support 7.0 installation process directly from an HP ProLiant Gen8 Server without the installation of agents.
- HP has simplified the setup procedures and graphical user interface.
- HP Insight Remote Support 7.0 is available for preview with HP ProLiant Gen8 servers (until general release) and lets organizations experience the full capabilities of HP Insight Online. With HP Insight Remote Support 7.0, HP Authorized Resellers will be able to:
 - View the customer's IT environment anytime, anywhere via the new HP Insight Online (only with the customer's permission)
 - Reduce the amount of time required to set up HP Insight Remote Support software

HP Insight Online: Anytime, Anywhere Support

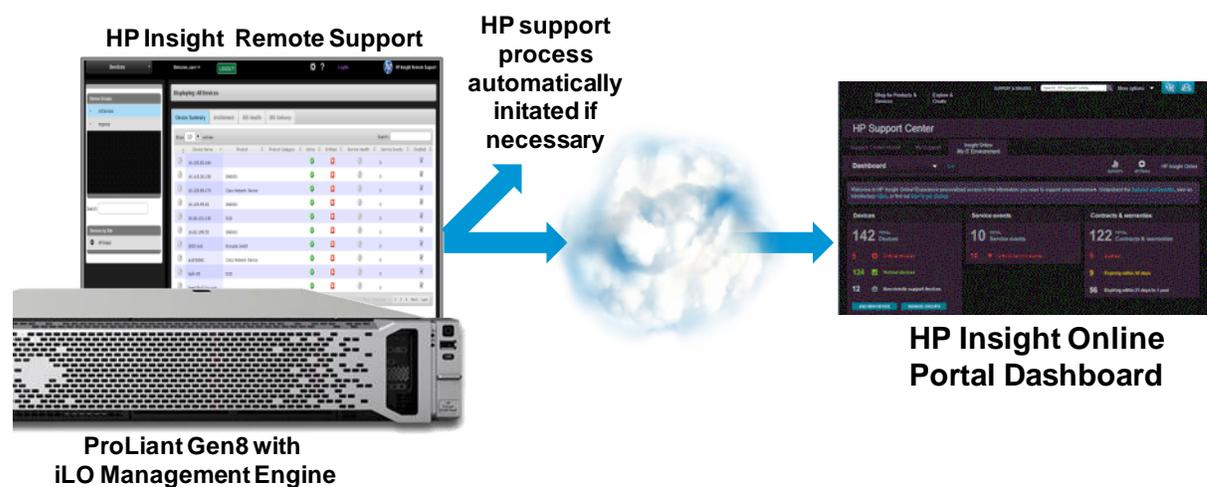
HP Insight Remote Support 7.0 is seamlessly connected to HP Insight Online, which is the newest addition to the HP Support Center. With HP Insight Online, customers can quickly and securely access relevant IT information anytime, anywhere to remotely manage their infrastructure. HP Insight Online can automatically display devices monitored by HP Insight Remote Support 7.0 and lets customers easily track service events and support cases, view device configurations, and proactively monitor the status of their HP warranties, HP Care Pack Services, and HP contractual support agreements (see Figure 2). HP Insight Online may also be used to manage HP Proactive Select service credits from a single interface.

Key features include:

- ☒ **Personalized Dashboard.** The HP Insight Online Dashboard integrates customers' support and product information into one at-a-glance or "single pane of glass" view for management of their IT environment. The dashboard allows customers to share their IT information with other users within their organization and/or HP Authorized Resellers for recommendations and advice.
- ☒ **Service Events.** This feature provides online monitoring and management of devices using HP Insight Remote Support 7.0. Users can view all key event information, such as severity, problem description, date and time generated, status, and related support case ID.
- ☒ **Contracts and Warranties.** This feature allows users to track contract and warranty status by device and by contract. Users can see what contracts they have as well as their associated access rights and when they expire. Additional privileges are possible, such as access to certain support content or to patches or software updates.
- ☒ **My Customers.** This feature is available to HP Authorized Channel Partners only. It allows them to view their customers' remotely monitored environments anywhere, anytime. HP Authorized Service Partners may also view the service events that are generated by HP Insight Remote Support 7.0 and automatically submitted into HP's Channel Service Network. Customers can take advantage of this feature when they want to work more closely with their partner.

FIGURE 2

HP Remote Dashboard and Diagnostics



Source: HP, 2012

Gen8 System Design

A system's physical design has great importance to the IT staff members who work on it; hence HP has made over 150 design innovations to help increase productivity during setup, upgrade, and repair of the new servers. The new features in the ProLiant Gen8 have intelligent system components, which help systems administrators virtually eliminate common problems that cause failures, downtime, and data loss. HP has also introduced the following features to help provide quicker and more reliable service:

- ☒ HP Smart Drive carrier proactively prevents data loss by warning administrators about which drives are safe to remove.
- ☒ HP Smart Socket guide eliminates 80% of failures caused by improper installation of processors, the most common cause of motherboard damage.
- ☒ HP SmartMemory delivers a 35% uptime improvement and up to a 25% increase in memory bandwidth to improve application performance.
- ☒ Tool-less access everywhere reduces time to install or remove components.
- ☒ Clear, intuitive labeling helps find and fix components faster.
- ☒ Precise placement of each serviced component prevents damage to other components.

Active Health System

HP has enabled a new iLO Management Engine capability embedded within the HP ProLiant Gen8 servers. HP Active Health System continually gathers diagnostics information from the system. HP's ProLiant Gen8 Server Master Certified Support Professionals use this data in the HP Global Solution Centers to more quickly and accurately troubleshoot issues and resolve problems faster. This data is also utilized to further improve product and service quality.

Lastly, HP is also enhancing the parts provisioning process for HP ProLiant Gen8 Servers and is certifying HP Account Support Managers for accounts with mission-critical needs. In addition, HP is offering new customer education services, including extensive HP ProLiant Gen8 Server hands-on training.

FUTURE OUTLOOK

With the increasing focus on new technologies such as virtualization, business intelligence applications, big data, cloud, and mobility solutions, IT environments will only grow in complexity over the next five years. Although many of these new technologies are meant to simplify business processes, they will add significant levels of difficulty for already-strapped IT staff managing ongoing operations. Resource-constrained IT organizations will increasingly rely on innovative tools and automation to help manage these environments.

IDC expects that enterprises will be looking for support services and devices that specifically focus on decreasing time to resolution when problems occur. In addition, IT organizations tasked with minimizing downtime will expect vendors to make significant investments in the tools and processes that can maximize performance. Further, the ability to accommodate an increasingly mobile and remote workforce while delivering a high-quality, consistent support services experience will be invaluable. If implemented properly, these new server designs will help customers attain these goals. They will also provide partners with the proper tools to deliver high-quality services.

CHALLENGES/OPPORTUNITIES

IDC understands the need to create and develop advanced system designs and automation features in these new dynamic IT environments, but educating the customer about the benefits and effective use is another story. HP and its partners will need to help bring these features to light when selling these new systems. They will also need to show how these new software tools can help support legacy assets and that they are not just for the "new" system but will enhance the support of the entire datacenter. The design of these new features and functionality will need to be easy to use and reduce the time required for deployment, training, and ongoing maintenance.

Organizations may need some time to get used to the new design changes, but if the newly incorporated features are used as designed, they should help diminish the amount of human error in the repair of these systems.

Security concerns are still a factor for some customers, but they are becoming the minority. The training, time, and effort required to set up these tools tend to be where customers fall short. Taking the time and making the effort to enable these features will help in the long-term support of the datacenter. As HP continues down the support services path, it should consider monitoring other vendors' systems to provide the single point of contact customers look for in complex datacenters.

CONCLUSION

The enterprise IT environment will continue to grow in complexity and sophistication as organizations increasingly deploy advanced technologies such as business intelligence applications, mobility solutions, private clouds, and virtualization through converged infrastructures. Managing ongoing IT operations in these heterogeneous

IT landscapes will continue to present significant challenges for resource-strapped IT departments. As such, CIOs and IT managers will increasingly look for innovative tools and system designs to assist in addressing ongoing IT operations. IDC believes that the new Gen8 design with its embedded iLO capabilities can be suitable for customers looking for advanced support tools and utilities across the IT environment. By utilizing features in the new servers and software management tools, HP customers can take advantage of functionality to help expedite self-diagnosis and resolution, as well as capabilities for mobile support delivery, improved contract management, and expanded communities and knowledge sharing among peers and colleagues.

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