

Securing Your Data in Today's Mobile/BYOD and Virtualized World:

A Guide for Midsize Manufacturing Companies

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Introduction

Midmarket manufacturers and their companion firms in distribution and retail face a range of technical and business challenges. They lack the financial clout to drive as hard a bargain “upstream” as their large enterprise competitors, and at the same time, are expected to innovate and provide value more nimbly “downstream”.

Strategically-applied technology can be a tremendous advantage to overcoming and excelling in the face of those disadvantages. In particular, mobility, collaboration, and simple data access can improve cycle time and spur innovation. However, those same technologies open the door to business risk, whether through security breaches, unanticipated downtime or lost data.

This paper examines how HP has addressed the intersection of efficiency and security for midsize businesses in the manufacturing sector. First, we will examine the areas that can drive competitive advantage, and the risks they can bring. Second, we will evaluate HP’s products and solutions that address these risks, HP calls this set of solutions “Secure Access and Continuity,” part of the HP Just Right IT (JRIT) portfolio for Small and Midsize Businesses (SMBs). This should be of interest to midmarket manufacturing firms, as the breadth of the HP portfolio can potentially enable them to reduce vendor count and reduce IT infrastructure spend, while protecting business data and improving overall service levels.

Industry Challenges for Midsize manufacturers

While midsize firms in the manufacturing sector face a host of challenges, the challenges outlined below have a critical dependency on data. It is not surprising, then, that data security is one of the top strategic priorities for most midsize manufacturers. In the latest SMB survey by AMI-Partners, respondents were asked to indicate the strategic importance of “enhancing data security & privacy for your company’s PCs and network”. Results from midsize manufacturing company respondents in North America showed that 40 percent of respondents indicated that data security was very important (“5” on a 5-point scale) as a strategic priority, and another 35 percent indicated it was an important (“4”) strategic priority.

The following industry challenges are driving this strategic priority focused on data security:

- Enabling and securing process innovation
- Driving more automation with less labor
- Improving logistics
- Supporting Lean manufacturing
- Maintaining data privacy

Enabling and Securing Process Innovation

Intellectual property embedded in application systems, such as workflows and bill of materials, is what drives a manufacturer’s and a distributor’s competitive advantage. These strengths need to be protected from system failure and natural and malicious disasters. In large organizations, much of this has been traditionally hosted on UNIX server clusters, running heavily customized ERP or CRM applications. Smaller manufacturers tend to deploy a wide range of solutions, frequently on industry-standard servers and using a variety of environments from Microsoft, VMware, Red Hat, and others. Access to applications requires an open, yet secure solution. As tablets, portals and cloud applications proliferate; effective means of validating credentials must be established. At the same time, application uptime (and recovery time) must be enabled for a broad range of standards-based environments. Security-related IT spent by midsize manufacturing businesses worldwide is forecasted to grow from \$280 million in 2012 to \$369 million in 2017 (AMI-Partners, 2013).

Driving More Automation with Less Labor

Competition and reducing cycle times have increased the dependence on automation to improve productivity. Radio frequency identification (RFID) tags or cards are increasingly being implemented for payment transactions. For example, improved payment technology can help process transactions faster and reduce customer waiting times. Self-checkout appeals to customers with small transactions and helps reduce labor needs. New and varying payment options increase the need to adapt and secure these transactions properly. With automated processes, if an application goes down, the result is lost productivity, lost revenue, or both.

Improving Logistics

Investment in distribution technology and better logistics communication helps midsize companies minimize inventories and speed distribution. Advancements include satellite and cell-based communication links with delivery trucks, cargo containers with communication capabilities, specialized cargo ships that can be unloaded in hours, and RFID tags. Improved communication between suppliers and manufacturers eases production scheduling and product flow. While these initiatives improve business results, protecting proprietary processes and the accompanying logistic data is critical to avoid theft and loss of inventory and maintain competitive advantage.

Supporting Lean Manufacturing

Lean manufacturing requires continuous examination to eliminate or minimize waste. Organizations must define, analyze, and redesign processes to be more efficient. Information systems need to support process changes, provide the real-time data required for lean manufacturing, and integrate with both suppliers and customers. The data within these systems must be secured and protected to ensure the continued efficiency of manufacturing. This continuous examination requires constant monitoring, which translates into employees and suppliers accessing systems using a range of devices and from any location.

Maintaining Data Privacy

Customers and supply chain partners need to be assured that their data is protected. Security breaches in shared business processes can generate business losses or loss of trade secrets.

Growing concern over identity theft and credit card fraud has resulted in increased scrutiny over the security of customer data. For loyalty programs and purchasing ease of use, web portals and supporting backend database systems must meet stringent requirements to store confidential customer information and credit card payment data.

Technology Imperatives for Midsize Manufacturers

In order to overcome the industry challenges outlined above, midsize manufacturers must strategically apply technology to support a mobile workforce, protect the data that is being accessed 24x7 from a range of devices and maintain continuous access to business-critical data. IT solutions must address these strategic requirements in a consistent, efficient manner. In addition, solution offerings must recognize that midsize organizations have limited resources and must have a stepwise path to bring on these capabilities within budget and resource parameters.

Let's explore the following technology imperatives in more depth:

- Secured mobility
- Virtualization
- Resilient data delivery

Secured Mobility

Most midsize manufacturing companies today have mobile employees. Of the 40 percent of North American midsize manufacturing businesses that indicated data security was a “very important” strategic priority, 75 percent were using tablets in 2012, and of those, 91 percent allowed use of BYOD. Access granted to those devices must be sufficiently fine-grained to support the business, yet not so onerous as to prevent their effectiveness. In addition, it must enable access to critical data without populating user devices with easily stolen copies of that data.

Virtualization

To meet the needs outlined above, technology infrastructure must be highly available, run on a secure network, and be protected against data loss and unauthorized access. At the same time, it must accelerate business efficiency and growth. A key enabling technology that helps businesses increase flexibility and agility while reducing the cost of delivering IT services is virtualization across servers, storage, network, clients and management. By running applications within virtual machines hosted on larger servers or in private cloud environments, companies can scale workloads flexibly and easily balance workloads across available physical resources. Adoption of virtualization among midsize businesses continues to grow. AMI-Partners research indicates that 46% of North American midsize manufacturing companies were virtualizing servers in 2012, and the adoption rate will continue to increase over the next five years. In addition, IDC estimates that 69 percent of workloads will be virtualized by 2013.¹ Midsize business are also now looking at client virtualization as a way to meet their employees’ demands for flexibility, while retaining control of the computing infrastructure for IT and realizing the increased security, efficiency, and potential cost savings that client virtualization can deliver.

With a Virtual Desktop Infrastructure (VDI) client virtualization solution, users’ desktops run in server-based virtual machines, making them available remotely over a network. These centralized desktops offer a number of distinct benefits for SMBs:

- Flexible desktop delivery: VDI makes flexible work scenarios for employees possible, including working from home, hot desking (multiple workers using a single physical work station or surface during different time periods), and supporting contractor or offshore information workers.
- Increased data security and compliance: A VDI solution keeps data safe in a central location and helps eliminate the risk of laptop data theft. In addition, centralized tracking helps simplify the burden of regulatory compliance.
- Easy and efficient management: IT can install desktop operating systems and applications once, instead of having to install them on every desktop in the organization. This makes it easier to provision and refresh desktops and applications rapidly and on demand.

Resilient Data Delivery

Large enterprises have achieved 24x7 application availability for decades by relying on expensive, proprietary, mainframe or UNIX solutions. Midsize organizations need those same levels of data and application availability, but at a scaled down price point. Fortunately, the decline in cost for server and storage technologies, as well as faster networks, provides a new suite of technology options.

For example, virtual machine rehosting using VMware or Hyper-V replaces dedicated server clusters and platform-specific “failover” technologies. Data deduplication and disk-to-disk copy technologies ensures that data is stored securely, but is also available for recovery whenever necessary, even over low-bandwidth networks. For the midsize business, the challenge is obtaining the required service levels at a minimum cost, and avoiding duplication of feature sets, staff training overlaps, and multi-vendor support issues, as these solutions are put into practice.

¹ “Market Analysis Perspective: Worldwide Datacenter Trends and Strategies,” IDC, 2011

HP Approach for the Midsize Business: Just Right IT

Customers face an almost bewildering set of product choices. Large enterprises cope with this by maintaining staffs of solution architects and planners to convert business strategy to value-added technology services. Midsize manufacturing firms, frequently already burdened by core business capital expenses and engineering resources, have fewer resources, but must solve similar problems. Whenever possible, they look to standard designs, reference configurations, and their IT reseller partners to deploy solutions.



HP has recognized that need by developing a portfolio of “Just Right IT” solutions to guide the IT staffs when deploying new, or refreshing old, technology solutions. These solutions cover the core storage, networking and server technologies and services mapped to the “maturity level” of the organization. Maturity levels are based on HP’s long-term experience selling to the midmarket and provide a practical way to address the stepwise path mentioned earlier. The diagram above is a simplified view of how HP aligns solutions and maturity levels to common IT requirements.

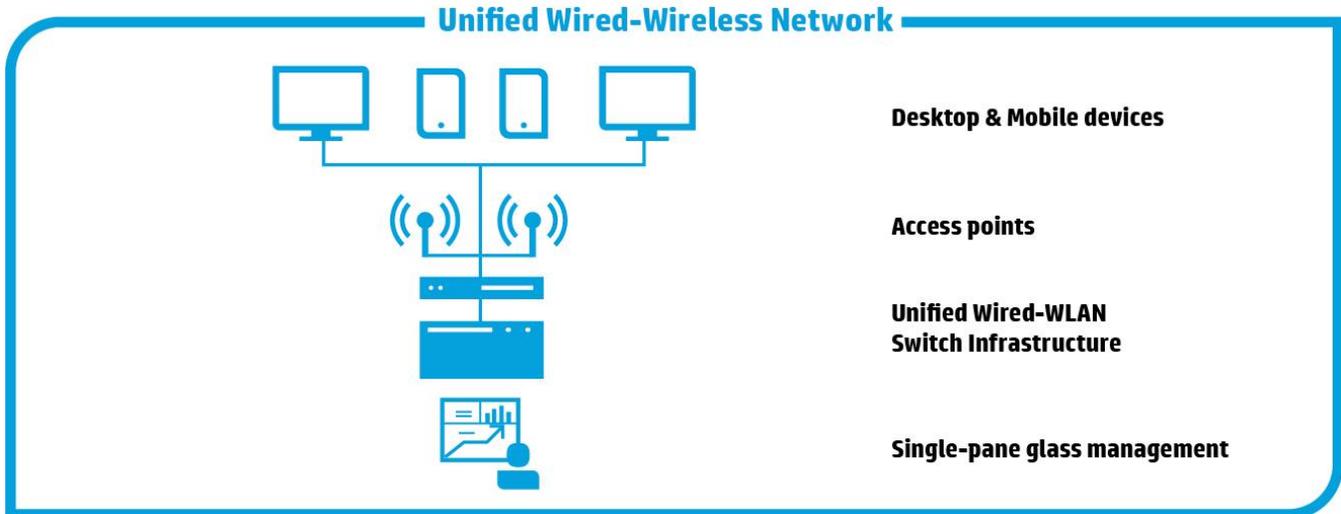
HP believes this model enables organizations and their IT reseller partners to self-identify best-fit solution sets as a starting point for deployment planning. This can save enormous amounts of time and reduces risks of improper sizing or product incompatibility.

HP Secure Access and Continuity Solutions

HP maps core solutions to key challenges driving business protection and continuity requirements. These Secure Access and Continuity solutions fit within the “building momentum” and “business expansion” maturity stages, providing high availability, data protection and security, network security, and offsite disaster recovery feature sets. These can be deployed incrementally based on business needs and the IT maturity of the organization and its supporting reseller. HP solutions in this space integrate HP products with mainstream technologies from vendors such as Microsoft and VMware to provide complete solutions that are simple to deploy.

Secure Mobile Access

Mobility and access must be tightly integrated and simple to manage. HP has taken the approach of unifying wired and wireless access points. This reduces wiring complexity from the core switches to the edge and enables the network to be managed through a single interface, the HP Intelligent Management Center (IMC). Core-to-edge connectivity is illustrated below:



There are three elements to managing users on the network:

- Onboard the users through a combination of self-registration and advanced device identification.
- Provision access based on user policies (guest, employee, administrator, etc.)
- Monitor usage to ensure optimal performance, as well as recognize suspicious behavior pattern through the User Behavior Auditor.

Data Availability

Ensuring that data is available both to 24x7 applications and to mobile users requires multiple technologies:

- Single deduplication technology across the organization means data can be restored directly without additional steps. HP StoreOnce is a unified system for single deduplication reducing performance issues and risk.
- Veeam® Backup and Replication ensures cost-effective and timely backup of virtual machines as well as image-based replication either on-site for high availability or off-site for disaster recovery. Co-developed with HP and part of Veeam Backup Free Edition, Veeam Explorer for SAN Snapshot allows VMs, guest files and applications, including Microsoft Exchange, to quickly be restored directly from HP StoreVirtual snapshots.
- For simplified data protection across remote offices and multi-sites, HP StoreOnce allows the use of lower bandwidth and lower cost transmission links by locally removing duplicate data before replication.
- In larger environments, replication can be provided by VMware, Microsoft Hyper-V or HP MSA 2000 (P2000 G3) Remote snap.
- Failover for virtual machines with products from VMware and Microsoft ensure that applications can be restored automatically and accessibility maintained.
- HP provides a holistic approach with disk and tape using HP StoreOnce and HP StoreEver tape technologies for data protection and long-term retention.

Protect and Scale Applications

Virtual machine and private cloud environments provide an additional level of protection to ensure that data and applications are delivered at appropriate service levels.

- Products such as VMware Vmotion and Microsoft Live Migration allow re-hosting of virtual machines between nearby racks or even between local data centers.
- Performance-based hosting policies, backed by performance monitoring tools, can ensure that even as business demands grow, workload capacity can be scaled to meet end user needs.
- Scale to handle VM expansion with data protection designed for virtualization. Products such as HP StoreOnce with HP StoreEver Tape provide the ability to scale nearline with a 20:1 deduplication, and HP StoreEver provides a low-cost, long-term storage option ideal for long-term digital archive

Recover Data Simply and Rapidly

Business requirements for data restoration can be immediate, in the case of lost files, or over a longer term; for example, to meet a compliance request for data from three years ago. HP solutions such as HP Data Protector software provide backup and archiving solutions that deploy backups quickly, transparently, and automatically. These integrate with existing disk-to-disk backup to provide a seamless extension for archiving. In addition, many aspects of manufacturing now face tighter regulations. As an example, the ability to retrieve data quickly is critically important to businesses in the face of a product recall.

Business Protection for Applications and Data

No matter where you place a data center, there are outage risks. Whether it is a natural disaster or human error, data center resources have failure risks. When disaster strikes, your data must be accessible—from an alternate location and for an unknown length of time. And every minute your system is down means you are not manufacturing or delivering products, and employees are not working. HP offers a family of solutions to meet the data availability and business protection needs of midsize businesses across disk and tape. These include:

- HP StoreOnce single architecture—disk-based backup and restore, deduplication and off-site disaster recovery
- HP StoreOnce Catalyst software—accelerates backup speeds, federated deduplication and remote office solution
- HP StoreEver LTO-6 tape libraries and drives
- HP MSA 2000 (P2000 G3) for simple and efficient shared storage and HP MSA 2040 when higher performance is required
- Veeam® Backup & Replication™ agentless backup and recovery of virtual machines
- HP Data Protector unified data protection solution for larger midsize businesses
- HP StoreVirtual VSA and StoreVirtual 4000 for a scale-out storage platform
- HP StoreEasy for secure file storage with built-in encryption
- HP Business Continuity and Recovery Services

Supporting HP Products and Services

HP enables midsize businesses to deploy complete solutions from a single vendor to deliver high availability, data protection and security, network security, and off-site disaster recovery.

HP Converged Infrastructure

The HP Just Right IT approach for midsize businesses leverages HP Converged Infrastructure, HP's approach to simplify the data center with a modular approach and an integrated, standards-based product portfolio of servers, storage, and networking.

HP ProLiant Gen8 servers

HP ProLiant Gen8 server architecture reflects HP's commitment to reduce management costs. Built on the HP ProActive Insight architecture, the HP ProLiant line provides streamlined tools for maintenance, application optimization, energy efficiency, and support to help increase application uptime and reduce operational costs. Capabilities such as iLO remote management and HP Insight Control, self-identification, continuous diagnostics, and intelligent, unified management enable IT organizations to control operations costs.

HP Storage solutions

HP Storage offers a set of solutions built on a common, modular infrastructure. These cover direct attach, SAN, backup, archiving, replication and de-duplication. Leveraging this broad set of capabilities can provide opportunities for simplification and cost reduction.

HP Networking solutions

HP has released a range of innovative access, switching, security and management products. Taken as a whole, they can simplify network architectures, reduce redundancy, and cut operational costs.

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions.

HP Services

HP provides a range of services directly and through HP authorized resellers.

- HP Installation Services—includes initial installation of HP branded hardware and software products as well as HP-supported products from other vendors.
- HP Support Services—integrated hardware and software support services, including reactive onsite hardware support and over-the-phone software support around-the-clock.
- HP Care Pack Services—support packages that expand and extend standard warranties for HP hardware and software.
- HP Proactive Care Services—leverages remote technologies and remote specialist resources to provide advice, recommendations and reporting that helps avoid problems, as well as rapid, expert support to resolve problems quickly and effectively. Based on IDC analysis, HP claims that Proactive Care Services reduce unplanned outages by 66% with proactive reporting and expert advice.²

² IDC White Paper sponsored by HP & Intel, The Business Value of the HP Proactive Insight Experience, Doc# 239119, March 2013

Best Practices Recommendations

Secure access to data is critical to business performance, and network access management is an essential part of ensuring that only properly-credentialed users can access sensitive network resources. IT organizations must simultaneously protect and provide simple access to customer data, intellectual property, and other confidential information.

For most IT organizations, the goal is to work smarter not harder. Streamlining processes and reducing expenses has direct bottom line impact. The HP approach of unifying wired and wireless access, while managing user access, is a solid, efficient approach that should reduce IT costs and enhance overall security. HP solutions such as HP Intelligent Management Center and HP Insight Control deserve consideration because they provide broad, consistent management services across the network and the server infrastructure. With HP Insight Control, coupled with VMware or Microsoft Hyper-V, operations staff can execute non-disruptive system upgrades, reducing both unplanned and planned downtime.

Backup and data protection solutions, such as those provided by HP, enhance backup reliability by fully automating processes and supporting data encryption capabilities. In addition, HP backup devices and disaster recovery offerings extend to include offsite backup tapes for secure archival.

Relying on documented solutions from a well-recognized vendor that enable you to secure your data and provide business continuity has many advantages. It reduces business risk, simplifies decision-making and returns resources to the core business for innovation. With HP Just Right IT solutions, midsize manufacturing businesses can incrementally deploy the services they need to align with their IT requirements and budget as the products work together efficiently and easily, with the ability to scale with business needs.

Engaging with HP and HP Partners

HP and HP Authorized resellers can help midsize manufacturers determine immediate needs and a long-term roadmap to improving key service levels. Secure data access, user mobility and continuity of application services is critical to manufacturing efficiencies and business growth. Ask your HP reseller for an assessment to determine how you can take advantage of these Just Right IT solutions from HP.

For More Information

www.hp.com/go/justrightit

www.hp.com/go/secureaccesscontinuity