Conquering the challenges of data center complexity

A thought leadership paper from HP
Table of contents

3 Conquering the challenges of data center complexity
  Who owns the problem?
  Where is my data, really?
  Where is John? Where is Satchiko? Where is Ashok?
  How can you manage change?
  And most important: whom will you call?
4 The CIO’s new role
  Is learning to deal with complexity
4 Eight important features for you to look for in an external service provider
  1. Means and method for total control
  2. Predictive and proactive
  3. A single contact and cross-stack competence
  4. Support tuned to mobility and technology convergence
  5. Management of patches and upgrades
  6. Broad, even worldwide, scope
  7. Commitment to resolution times
  8. And a variety of targeted options
5 Real-world example: HP Technology Support Services
  HP Foundation Care: when you want economical and efficient reactive support
  HP Proactive Care: when you’re betting the business on x86
  HP Datacenter Care: when you want custom support for your IT solution
  HP Lifecycle Event Services: when you want added incremental value at every stage
5 Other choices, too
  The added bonus of HP support automation
8 Summing up
Conquering the challenges of data center complexity

Today, servers based on industry-standard processors, along with Microsoft® or open-source operating systems, are supplanting proprietary, single-vendor solutions. That’s true even for business-critical applications such as order processing and online commerce, where even a trace of downtime might cost you millions. What’s more, as virtualization tools become more robust, they could demand additional capability from those economical hardware solutions, boosting usability rates and lowering the cost of providing each individual virtual server. And even the most security-conscious CIOs are looking to tie into computing resources from the cloud, whether to handle short-term demand or as a matter of everyday operations.

While all of these trends can help lower the cost of computing and make it both more efficient and more secure, there’s a fly in the ointment: they add complexity.

Who owns the problem?

Purchasing hardware and software separately provides flexibility, cost savings, and the ability to react quickly to business opportunities—but it also means that you’re dealing with multiple entities if something goes wrong. Add in a hypervisor from a separate virtualization vendor and your environment gets even more complex. Plus, isolating a problem in a hardware–firmware–software stack is not a trivial exercise.

Where is my data, really?

A closely allied issue is the flexible—make that transitory—location of data in a virtualized environment. Increased virtualization, while improving the overall efficiency of physical hardware such as servers and storage, makes it more difficult to locate and correct the root cause of a problem. Let’s say you’re using VMware vMotion to seamlessly move a server and its workload from one box to another; it’s a reality that managers could find themselves a few steps behind. Virtual machines, virtual storage, virtual networking—they all add to the difficulty in isolating a problem to hardware or software, let alone pinning down which actual asset is the culprit.

Where is John? Where is Sachiko? Where is Ashok?

Telecommuting is rapidly on the rise and, while prized by employees, the remote–worker arrangement is proving to be a headache. In fact, according to a survey of CIOs by Computerworld UK, performance issues have led to IT departments spending more time and money supporting staff working offsite. Some 32 percent of CIOs polled said their IT departments were spending half their time supporting remote workers.¹ The problems range from the difficulty of keeping all these remote employees updated with the latest software patches, to the struggle to provide cost-effective support, to the effort required to troubleshoot and repair remotely.

How can you manage change?

Managing change, and keeping your software and hardware up to date, can become a career in itself. Such change management, including upgrades, patches, and the like, isn’t sexy, but it’s essential to your operations. Unfortunately, the change process can squander an inordinate amount of IT staff time and effort. And in spite of that, it’s often not done very well.

And most important: whom will you call?

With all this added complexity to deal with, it would appear that more staff is needed. But even though you’re now using x86 servers for business-critical applications in a way you didn’t in the past—and even betting your business more and more on your x86 environment—it’s likely you’ll have to handle these new complexity-related problems with your current budget and staff.

The CIO’s new role...

If you’re a CIO, you’ve seen your role change. You’re being expected to assume an altogether new definition of your IT mission. You’re being asked to reinvent your duties and transform your position into that of a business leader who must also provide superior technical leadership. IDC tells us, “Business managers are looking to IT for help in attaining better business results—and that requires a shift in resources from maintaining existing systems to implementing strategic projects that can directly impact the bottom line.”²

... Is learning to deal with complexity

But how can you move your business forward and execute on strategic initiatives if you’re continually battling fires—fires whose origin can often be traced back to complexity?

Thankfully, there’s a way to deal with complexity, and break free from its grip. The secret is to rely on services from another organization for the day-to-day, time-consuming work of managing your IT environment and dealing with problems that arise—while you and your staff focus on building competitive advantage with high-value projects that advance your business. What follows is a discussion of how third-party services can help you conquer the challenges of data center complexity.

Eight important features for you to look for in an external service provider

The optimum solution is to relegate your support to an external service provider who can help you reduce complexity and simplify operations in your organization. But what exactly should you look for?

1. Means and method for total control

Top of the list in utilizing an external service provider is that you need someone to be in charge. A recent IDC survey found that nearly half of respondents were relying on 10 or more software support services, and more than a quarter had upwards of 20 vendors delivering support. The survey found similar trends for hardware support. Such a profusion of providers actually leads to an increase, rather than the desired decrease, in complexity.

For this reason, smart CIOs increasingly choose a single vendor to manage all their support services. Enlisting a primary service vendor can provide you with overall service management expertise and ensure that your service management vision is executed. You want a primary service vendor that can implement a broad span of control and oversee the big picture.

2. Predictive and proactive

The next key to reducing complexity and improving efficiency is with support that is both predictive and proactive. Waiting for a red light is too late. In a complex environment you want to simplify troubleshooting with a predictive approach that can “fix it before it breaks.” That means you want a primary service vendor who will replace manual activities with automated systems, who can offer continual data collection and monitoring, and who has proactive processes that reduce risk and enable the enforcement of compliance policies. Look for a proven vendor with remote data-gathering and diagnostic capabilities, automated support delivery systems, online savvy, and well-designed, easy-to-use portals for interacting with the vendor’s online support.

3. A single contact and cross-stack competence

It goes without saying that any provider of technical services must be able to operate in all parts of your system. They must have a thorough knowledge of hardware and firmware, as well as an understanding of products from key independent software vendors (ISVs). Ideally, you want that service vendor to offer a single point of contact for hardware, software, and data center support. You want someone who will own the problem and act as your arbiter in disputes.

4. Support tuned to mobility and technology convergence
In today’s world, it is important for your service vendor to be comfortable handling a variety of converging technologies. With the rise of remote workers, and the widespread adoption of smartphones, tablets, and other mobile devices, your staff wants support when and where they need it.

5. Management of patches and upgrades
Patches and upgrades are a major source of complexity, and they’re often the main activity for IT personnel in many organizations. Think about the time your IT staff spends coordinating, deploying, testing, and verifying patches and upgrades. Incredibly, some organizations rely on time-consuming manual processes such as spreadsheets to manage this level of complexity. A primary service vendor handling patch and upgrade management can release your own internal resources for strategic IT initiatives that advance your business and make it more competitive.

6. Broad, even worldwide, scope
No CIO wants to bet their business on a small shop. In a world where enterprises regularly span states, countries, and continents, you’ll want a provider that can offer consistent support offerings across multiple geographies, and across all your product lines. Besides ensuring predictable uptime throughout the interlinked IT ecosystem, such consistency can help you reduce and make sense of all the contracts for support services. In fact, coordinating support delivery and consolidating support contracts can significantly reduce IT complexity and can also help in the day-to-day management of issues and problems.

“A consistent process across the IT environment can make it easier to diagnose and resolve complex issues that involve multiple technologies supporting business processes worldwide.”

7. Commitment to resolution times
Break-fix support should be your last line of defense. But when there’s an outage, your service vendor should be able to commit to a specific window of time when it will be repaired. Indeed, time-to-repair is a serious issue for the IT department and the business, and often reflects one of the main reasons for the cost differences in service contracts.

8. And a variety of targeted options
You want to look for a vendor that has a range of targeted service offerings, allowing services to be tailored to your particular IT environment and support needs. You may find it best to choose a vendor that can deliver top-level management and predictive support for your entire IT environment, a vendor that can take ownership of any and all problems and see them through to completion. Such a vendor will be effective at getting you back online quickly.

You may find it more cost-effective to choose a service level that can help you simply isolate and diagnose a problem and then allow you to deal with the hardware or software vendor yourself. You may even want to choose one service level for most of your organization and a higher level for mission-critical applications and infrastructure. The important thing is that you have a flexible menu of choices.

Real-world example: HP Technology Support Services
While it may seem like a tall order, HP has become that industry-leading primary-service vendor who can offer most, if not all, of the features of the ideal service provider. In fact, we’ve recently rolled out a revamped, simpler suite of HP Technology Support Service offerings designed to reduce operating expenses while combating IT complexity and freeing your staff for more business-relevant duties.

HP Technology Support Services for industry-standard servers has all the attributes needed to help you conquer complexity:

| 1. Total control | ✔ |
| 2. Predictive and proactive | ✔ |
| 3. Single point of contact | ✔ |
| 4. Technology convergence | ✔ |
| 5. Patch, upgrade management | ✔ |
| 6. Worldwide scope | ✔ |
| 7. Commitment to repair times | ✔ |
| 8. Targeted options | ✔ |

Besides reducing complexity, the new HP Technology Support Services portfolio is also designed to simplify the support experience and make it at once more proactive and more personal.
**HP services alleviate complexity by helping you:**

- Design your infrastructure better
- Test it more completely
- Deploy it faster
- Manage change more efficiently
- Keep your technology up-to-date and optimized

An explanation of all the services in the new portfolio is beyond the scope of this white paper. But you can see something of the wide range of available choices in the four levels of care represented by HP Foundation Care, Proactive Care, Datacenter Care, and Lifecycle Event Services.

**HP Foundation Care: when you want economical and efficient reactive support**

In today’s non-stop world, the onus is on IT to drive innovation, leading organizations to prioritize resources for core competencies and leaving few for IT support. However, it is the rare business that can afford much downtime. Any unplanned outage can cause loss of revenue and reputation alike.

HP Foundation Care is a family of hardware and software support services with a targeted range of response times, coverage windows, and length-of-term options. With an end-to-end approach that covers all parts of your IT system, HP Foundation Care offers the reliable hardware and software support services necessary to drive improved availability, quickly resolve any disruptions to your IT, and keep your business growing and competitive.

With today’s intricate IT infrastructures, knowing which part of the system is the root cause of an outage is often time-consuming and difficult to identify. It could be anywhere in that complex stack of hardware, firmware, and software elements.

But at HP, we understand your converged and virtualized server environment. And with HP’s new Collaborative Support services, we offer a cost-effective solution for reactive support. If you have Collaborative Support, HP takes your call 24x7 and helps resolve the issue.

Collaborative Support is a services support solution that gives you a single point of contact for server problem diagnosis, hardware problem resolution, basic software diagnosis, and problem isolation and resolution where a remedy is available to HP. If the reported incident is related to a supported third-party software product and cannot be resolved by applying a known fix, HP will contact the third-party vendor and create a problem incident with them. For you as the customer, this means you don’t have to bounce between multiple vendors or wade through multiple support levels to identify whether there is a hardware or software problem.

**HP Proactive Care: when you’re betting the business on x86**

The best option is HP Proactive Care when you’re betting the business on more complex virtualized x86 server environments. These innovative, high-value, and cost-effective proactive support services deliver high levels of application availability. They also shield you from complexity because HP manages the complete IT environment. With HP Proactive Care you get:

- Full-stack support, including hardware and software
- Firmware/software management and best-practice advice
- Direct line to advanced technical skills from HP specialists
- Assigned Technical Solution Specialist
- Technical Account Manager for proactive report reviews
- Multiple hardware support levels
- Commitment to repair time
- Rapid connect for problem triage and impact mitigation
- Rapid engagement of HP Centers of Excellence and partners as required

These are development-enhanced HP proactive services designed specifically for industry-standard (x86) server platforms. Moreover, they come at a price point that is highly economical, thanks to our rollout of new product technology, as well as substantial investment in our support infrastructure.

**HP Datacenter Care: when you want custom support for your IT solution**

HP Datacenter Care is a custom service solution designed to meet your specific needs. This support solution provides specialists who possess the essential skills and knowledge to proactively reduce your system downtime, improve service processes, cut operations costs, and accelerate growth by aligning service levels with business needs. HP Datacenter Care Services are especially effective at reducing the complexity of designing, implementing, and supporting cloud, multivendor, and virtualized solutions. Available services include:

- **IT Transformation**
  
  These strategic advisory and implementation services for the enterprise help you tighten the alignment between your IT operations and business requirements.

- **Enterprise Private Cloud**
  
  Services transform inefficient, siloed, legacy IT-oriented architectures and data centers into flexible, efficient, business service-oriented, shared service clouds—including clouds that are on premises as well as hybrid clouds.

- **Converged Data Center**
  
  These services design, build, and support your multivendor data center according to a model that is highly consolidated, virtualized, and automated, allowing you to gain greater value from both capital and operational expenditures.
HP Lifecycle Event Services: when you want added incremental value at every stage

HP Lifecycle Event Services offers comprehensive, end-to-end technical services that address and add value at every stage of the IT lifecycle. These services include:

- **Decision stage**
  Strategy-focused services help you develop a roadmap and understand the financial impact of the solution.

- **Planning stage**
  Design services provide more formal planning, including assessment and architecture design and planning services.

- **Installation and deployment**
  HP installation and deployment services help you determine what level of services you’ll need. If your needs aren’t met by standard-offering HP Care Pack services, we can provide a custom statement of work for the deployment.

- **Ongoing operation**
  After deployment, we provide ongoing operational and optimization services to keep your system performing at top-notch levels.

- **Training**
  HP education services offer extensive classes and certifications to get your staff up to speed on new technologies.

**Other choices, too**

These are just a few of the several levels of support services available from HP. The variety of support offerings means you can limit complexity with support tailored to your particular IT environment, no matter your budget or availability requirements.

The added bonus of HP support automation

A key element used by HP to reduce complexity is **support automation**, a unique integrated, automated management and support experience that delivers seamless management and HP know-how across the x86 server lifecycle—from server deployment to ongoing support to continual improvement. Support automation is found in most HP support offerings; for example, both HP Proactive Care and HP Foundation Care rely on automation such as:

- **HP Support Center**
  A convenient, comprehensive support portal where you can manage contracts and warranties online, submit support cases, and chat with HP experts.

- **HP Insight Remote Support**
  A remote monitoring and support platform based on innovative onboard management capabilities. Besides providing secure 24x7 monitoring, accurate troubleshooting, and fast problem resolution, Insight Remote Support reduces complexity and saves time with rapid setup and configuration for server features such as onboard phone-home support. It provides:
  - Continuous remote monitoring, 24x7, for better control and stability of your environment
  - Automated notification, so you can do more with less
  - Accurate problem resolution in less time

- **HP Insight Online**
  Secure, one-stop access to the information you need to support your IT environment from anywhere, anytime. Through the HP Support Center portal, Insight Online provides the ability to easily track service events and support cases, view device configurations, and proactively monitor your HP contracts and warranties. Such information allows your own staff or HP Authorized Services Partner to be more efficient in supporting your HP environment.
Summing up

As long as IT departments continue to couple commodity x86 servers from a variety of vendors with separately purchased business and professional software suites, IT complexity is likely to remain a significant issue, with the most conspicuous effects appearing along the fault line between hardware and software. CIOs and IT professionals who would follow industry advice to work on projects that advance the business are instead held back by the time and effort they must devote to managing and troubleshooting problems in this complicated environment. But by drawing on the services of a primary service vendor for support—a vendor such as HP—organizations in the enterprise and SMB space alike can conquer complexity and free their IT staffs to cultivate greater business value.

For more details about HP services, or to contact HP, see: hp.com/services.