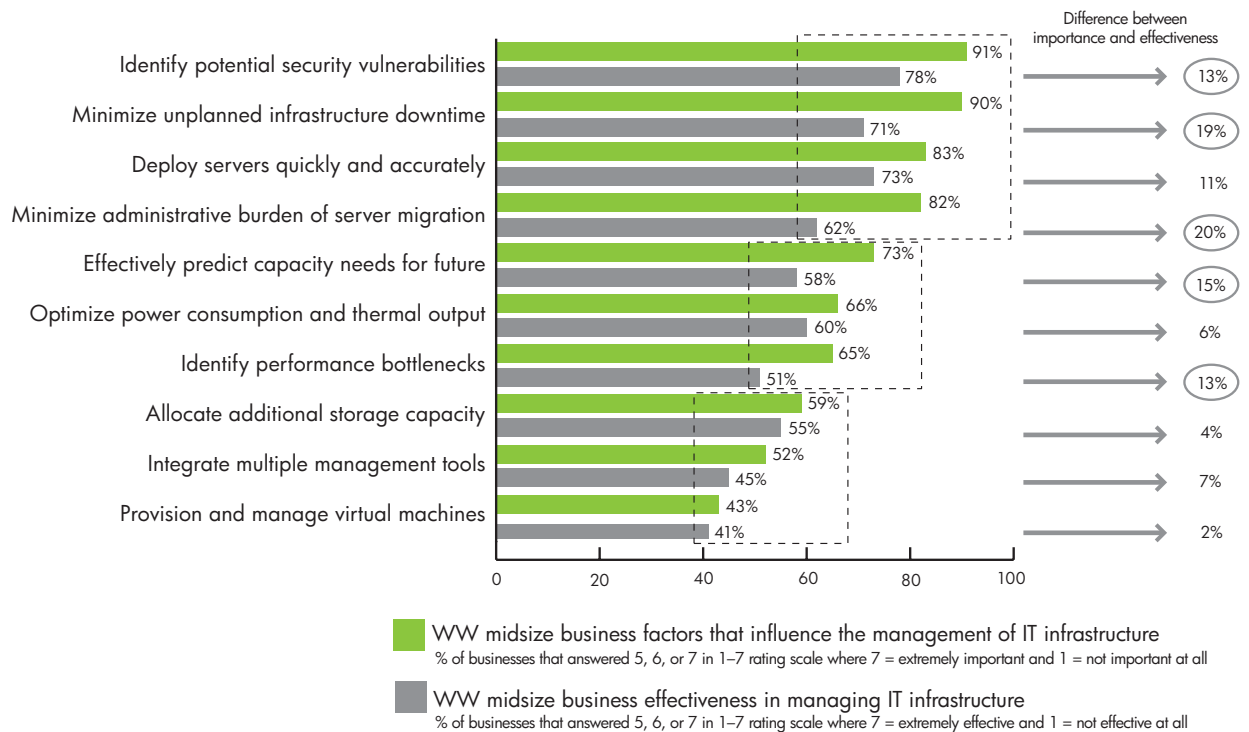




Infrastructure management solution guide for midsize businesses

Learn how HP can help you address your five most vexing infrastructure management challenges—without breaking the budget!



In a recent survey, HP asked IT managers and executives at midsize businesses around the world what their infrastructure management priorities were. The respondents listed the following issues in order of importance:

- Identify potential security vulnerabilities
- Minimize downtime
- Deploy servers quickly and accurately
- Minimize administrative burdens during server migrations
- Effectively predict future capacity needs
- Optimize power consumption and thermal output
- Identify performance bottlenecks
- Allocate additional storage capacity
- Integrate multiple management tools
- Provision virtual machines

In that same survey, the same managers were then asked how effective they were at addressing each of the priorities they'd listed. And this is where the data got interesting. As it turns out, there were often sizable gaps between the importance of an issue and the ability of management to address it. Therefore, the larger the gap, the greater the need for a solution. The chart above illustrates this point.

As you can see, the five items with the largest gaps are:

- Minimize administrative burden for server migration
- Minimize unplanned infrastructure downtime
- Effectively predict capacity needs for the future
- Identify performance bottlenecks
- Identify potential security vulnerabilities

If your organization is struggling with any of these issues, you're reading the right solution guide. In the following pages we'll explain how HP Systems Insight Manager (HP SIM) software and the HP Insight Control Environment management suites (HP ICE) can help you address these issues effectively and permanently, helping to make your infrastructure more secure, easier to manage, and less costly to operate. We'll begin by showing you how the Insight Control software management tools address the five key gaps listed here. Then, we'll examine Insight Control's proven ROI, and finally, we'll explain what each application is intended to do, above and beyond addressing these crucial infrastructure management gaps.

Addressing each of the five specific effectiveness gaps

Gap #1: Minimize the administrative burden of server migration

The issue

Migrating a server means taking a new server and manually building it to the exact same level of functionality (from an OS and application perspective), then moving data and settings over from the old server, testing the new server, and finally retiring the old server. This process constitutes a significant administrative burden, and one which is rarely completed without errors. It is simply too easy for administrators to miss something—and in this situation, skipping even one step can have costly consequences.

The solution

Physical or virtual, the fastest and easiest way to migrate your servers is with HP Server Migration Pack—Universal Edition. It allows you to replicate the server you know and trust with the only product of its kind—a migration tool with a single interface for automating both physical and virtual migration needs that is tailored specifically for HP ProLiant servers of all form factors (tower, rack, and blade).

SMP-UE does more than just migrate—it creates an exact replica of your existing system. Our unique technology allows us to inject drivers into the target system (an HP ProLiant server) to make sure it boots, giving you the flexibility to copy some or all of the volumes (which can come from any brand of server) and resize them as necessary. This process is possible across server generations and architectures (i.e., Intel® to AMD), and we've done everything possible to ensure that your source system is unaltered in any way.

At HP, we build the hardware, and therefore have unique knowledge of the ProLiant server architecture, as well as control of the BIOS, firmware, and drivers that are built for that system. We are thus uniquely positioned to deliver superior migration technology. So SMP-UE not only works seamlessly across the

entire ProLiant line, but is also extremely easy to use. What's more, because it performs a peer-to-peer migration, it doesn't bog down the network by routing traffic through the management console. Migrating an Exchange server supporting 100 users, each with 100 MB of data in the mailbox, from a physical server to a ProLiant server takes an average of merely two hours from start to finish.

Gap #2: Minimize unplanned infrastructure downtime

The issue

Unplanned downtime is expensive—regardless of the cause. Whether your infrastructure goes down because of security vulnerabilities, performance problems, hardware failures, circuit overload, or an unsuccessful server migration, the most important item on your agenda once it happens is finding out what the problem is, repairing the problem, and bringing the system online again as quickly as possible.

Of course that's easier said than done.

Troubleshooting performance problems can be a very time-consuming process.

With a hardware failure, you take for granted that you're going to get an alert, but actually identifying what the hardware failure is—especially if you have to physically walk into the data center to look at the light path diagnostics—can take quite some time.

If the server isn't close by, you have to get in the car, pay for gas, and drive to the location—and that alone can take an hour. So your ability to actually physically get to the server prevents you from recovering quickly in certain scenarios.

The solution

HP SIM enables you to monitor the health of your systems and react to a potential problem in a timely manner.

- HP SIM points systems administrators to a problem system.
- By being alerted to potential problems, you can address them before they happen, avoiding unwanted downtime and contributing to excellent and continuous infrastructure operation.

Also, available at no extra charge with your warranty, support contract, or HP Care Pack service, the **Service Essentials Remote Support Pack** plug-in integrates with HP SIM and can help you to:

- **Speed and simplify support.** It automates your entire support process for fault detection and automatically generates support requests to HP.
- **Be proactive and minimize unplanned downtime.** It averts potential disruptions caused by unplanned downtime. Instead of reacting to problems, you monitor activity and plan interventions at your convenience with HP support help.
- **Recover quickly from unpredictable failures.** Equipment with remote monitoring is restored, on average, 20 percent faster due to quicker problem detection, better diagnosis, and more rapid initiation of repair activities.
- **Improve diagnostic accuracy.** Cases detected and diagnosed through remote monitoring have a near-100 percent first-time fix rate, due to the availability of detailed diagnostic information.

The first step in adapting to future capacity growth is to efficiently manage storage as a dedicated resource by consolidating data into a high-performance storage array or dedicated network attached storage (NAS) system.

The HP StorageWorks All-in-One Storage System is a unified storage solution that delivers both NAS and iSCSI SAN capabilities in a single product. It includes an application-centric management interface that allows you to dynamically migrate data from capacity-constrained servers and setup quotas and alerts to proactively manage capacity allocation.

Gap #3: Effectively predict future capacity needs

The issue

In order to consistently meet SLAs, not only do you have to create an infrastructure that is adequate to the task, but you must also upgrade it regularly so that it is capable of handling the increased traffic and larger files that naturally come with company growth and evolution. This means that you must predict your future capacity needs accurately—which has traditionally been a difficult proposition, considering the complexity of the typical infrastructure.

The solution

Insight Control Environment—performance management and capacity planning

HP Insight Control Environment (ICE) provides performance bottleneck analysis that allows you to pinpoint performance issues within your ProLiant and Integrity servers and MSA storage. ICE identifies relatively visible issues such as consistently high CPU and memory utilization as well as harder-to-pinpoint configuration issues such as mismatches between array controllers and drive speeds or suboptimal NIC configurations.

ICE records bottlenecks as they occur and allows those bottlenecks to be replayed in a compressed time frame. It also captures the amount of time that a particular asset spends in a degraded performance state. This historical view of performance provides an ongoing capacity planning function, helping systems administrators identify servers that may need to be replaced or those that would benefit from a memory, CPU, I/O, or storage subsystem upgrade.

Gap #4: Identify potential security vulnerabilities

The issue

OS vendors have tools to check for the presence of patches and apply patches, but these tools only define vulnerabilities by the absence of patches. That means many more known server vulnerabilities go unnoticed and continue to pose enormous risk to the uptime of servers and the security of data on those servers.



The solution

HP Vulnerability & Patch Management (VPM), available only with ICE, reduces the risk of outage and security vulnerabilities while dramatically decreasing patch deployment times. VPM is the perfect solution because it checks for vulnerabilities—not just by OS vendors, but by seven renowned databases—and it offers desired state management of patches, so that if even the smallest part of the patch (such as a registry setting), is undone, it will redo it. The seven databases that VPM accesses are:

- Microsoft®
- Red Hat
- CVE—Common Vulnerabilities & Exposures list
- Bugtrac
- US-CERT—Computer emergency response team
- SANS—SysAdmin, Audit, Network, Security
- CIAC—US Dept. of Energy Computer Incident Advisories Center

What makes VPM such a good fit for smaller and midsize businesses is the fact that HP does the vulnerability scanning and patch building for you. All you have to do is apply the patches. This is in sharp contrast to other vendor solutions, which typically offer separate tools for scanning and patching, where someone builds a long list of vulnerabilities and it's up to someone else to manually choose a patch to match each vulnerability.

At HP we do not subject our customers to such trying and time-consuming exercises—we simply build a list of appropriate patches and hand it over. You reap the time savings and improved security.

VPM is complemented by HP Integrated Lights Out (iLO), an intelligent processor and firmware that provide standard and advanced levels of lights-out functionality. While VPM is good at dealing with and avoiding potential problems, iLO is the tool for dealing with problems that have already occurred. It allows you to take a server off the network, run the utility on a remote system, get it fixed, bring it back on the network, and record the whole operation. A new feature with Integrated Lights-Out is the ability to record server “Port 84 POST Codes” as the system boots. These codes document the progress of the server through the booting process.

Gap #5: Identify performance bottlenecks

The issue

Without specialized tools or a catastrophic disturbance, infrastructure performance problems can go unnoticed (or unreported) for months or even years at a time—quietly cutting into end-user productivity and running up your company's operational costs.

Unfortunately, most monitoring tools on the market today only provide performance data—rather than performance analysis. They give you nice graphs of CPU utilization, memory utilization, etc., but they don't pinpoint the performance issues and they don't provide easy-to-understand solutions.

Furthermore, most of these tools are aware of the OS and above, but really don't have an understanding of the hardware configuration. So there are all sorts of opportunities to create a system that performs badly by the way you configure it.

The solution

Proactive Performance Management software, available only with ICE, helps you get the most out of your existing server infrastructure by quickly pinpointing opportunities for configuration improvement and providing you with advice on how to take advantage of them.

Most reliable performance alerting tools are based on knowledge of a specific application because they're measuring application performance, which means they must be tailored per server to perform that task. On the flip side, PMP just looks at the hardware load of the five subsystems and knows when one of those subsystems is overloaded—without knowing or needing to know what the application is. The result is an easy install that's up and running quickly. Whereas competing tools need significant tailoring, PMP goes to work instantly and without customization. This can be particularly valuable if you're working with a small IT staff that is already stretched to its limits and has no time for labor-intensive manual tasks.

And now, some great news

If you own a ProLiant 300 series server (or higher), you already have access to the foundation for addressing these gaps. We think HP Systems Insight Manager is such an important component of successful infrastructure management that we include it at no additional cost with the purchase of these servers. For entry-level servers such as the ProLiant 100 series, we provide Lights-Out 100—an even simpler management application that delivers many of the same benefits as HP SIM while using fewer server resources.

If you're already aware that you have HP SIM, but have been reluctant to try it, read on. We're convinced that once you understand how easy it is to use and how incredibly beneficial it can be to your business, you'll be eager to implement it and make it your primary management tool.

HP Systems Insight Manager

HP Systems Insight Manager (SIM) is a tremendously powerful management application that allows you to monitor and manage all of your HP servers and storage—plus other devices such as printers and PCs—from a single console. One of the core elements of ICE, SIM works across a number of operating systems, supports virtual as well as physical platforms, and serves as the foundation of HP's unified infrastructure management strategy. Key HP SIM capabilities include:

- **Automatic discovery and identification**—automatically discovers and identifies devices attached to the network. Use Discovery Filters to prevent discovery of unwanted device types. Manual discovery options also available.
- **Event and fault management**—provides proactive notification of actual or impending component failure alerts. Automatic event handling allows users to configure policies to execute scripts, forward events, and notify appropriate users of failures via e-mail, pager, or SMS gateway.
- **Consistent multi-system management**—a single command from a Central Management Server (CMS) where the HP SIM application resides can initiate a task on multiple systems or nodes, eliminating the need for tedious, one-at-a-time operations on each system.
- **Data collection and inventory reports**—performs comprehensive system data collection and enables users to quickly produce detailed inventory reports for managed devices. Save reports in multiple formats for easy incorporation into popular reporting packages.
- **Two user interfaces**—HP SIM provides a Web browser-based graphical user interface (GUI) and a command line interface (CLI) to make it easy to incorporate HP SIM into your existing management processes.

“Before installing HP SIM, 20% of our time was spent maintaining the hardware. Now I’d say it’s 1%, if that much.”

—A midmarket North American financial services firm

- **Role-based security**—allows effective delegation of management responsibilities by giving systems administrators precise control over which management operations users can perform on selected devices.
- **HP Version Control**—automatically downloads the latest BIOS, driver, and agent updates for ProLiant and Integrity servers running Windows and Linux. Identifies systems running out-of-date systems software and enables system software updates across groups of servers.
- **Secure remote management**—leverages OS security for user authentication and Secure Sockets Layer (SSL) and Secure Shell (SSH) to encrypt management communications.
- **Tool definitions**—simple XML documents that allow customers to integrate off-the-shelf or custom command line and Web-based applications or scripts into the HP SIM user interface.
- **Warranty and contract support**—ability to automatically retrieve and download warranty and contract details. Provides predefined and custom reports. Automatic notification 90, 60, and 30 days before warranty or contract expires. Needs Service Essentials Remote Support Pack, which also comes at no additional cost to be installed at the Central Management Server.

And today, HP SIM is easier to use than ever. The new First Time Wizard makes initial configuration of management protocols, discovery, and notification a snap, and the initial ProLiant Support Pack (PSP) deployment makes it easy to automate deployment of management agents to ProLiant servers running Microsoft Windows® or Linux operating systems. With the latest release, HP Systems Insight Manager 5.2 is the clear choice for managing HP servers and storage by being the easiest and least expensive way for HP system administrators to maximize system uptime and health.

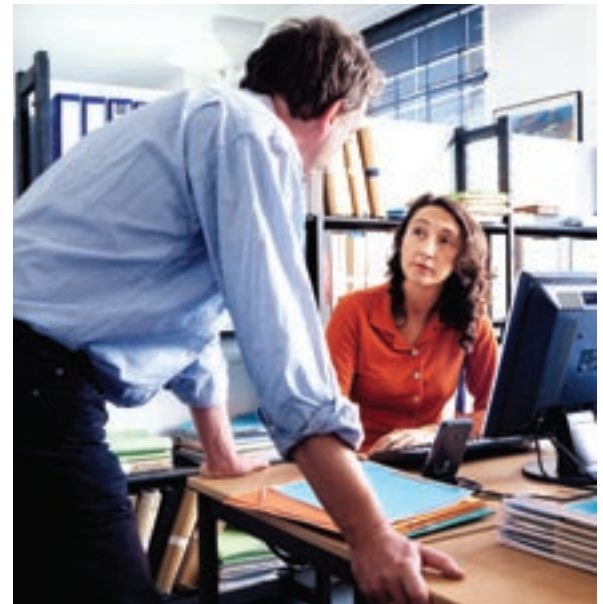
“It (ICE) makes for a quicker recovery when something blows up. I’d say it saves about 50 hours per year in downtime.”

—A major North American healthcare provider

HP Insight Control Environment (ICE)

HP Insight Control Environment software, together with the HP Server Migration Pack—Universal Edition, extends the capabilities of HP Systems Insight Manager by providing integrated management functions such as unattended deployment, automated migration, performance monitoring, vulnerability scanning, virtualization management, server inventory, warranty reporting, and software version control. These capabilities help improve IT operations by streamlining IT service rollouts, reducing incidence of unplanned downtime, increasing power efficiency, and delivering unified management of the physical and virtual infrastructure. Key capabilities of this powerful software package include:

- **Comprehensive health monitoring**—proactively monitors server health and triggers critical alerts in a timely fashion. Alerts can be generated to notify of actual or pending hardware failures.
- **Proactive performance management**—pinpoints hardware performance bottlenecks precisely for faster, more effective troubleshooting.
- **Lights-out remote control**—allows you to take control of your servers securely from anywhere, independent of OS state. Key capabilities include virtual KVM for remote system console, virtual media for remote software update and file copy, and embedded system health monitoring.
- **Precise power management and regulation**—provides administrators with a true understanding of power consumption and thermal output, and allows them to set power regulation policies across groups of servers.
- **Rapid server deployment**—enables on-the-fly server configuration and provisioning of operating system and application images.
- **Quick and easy inventory reporting**—creates comprehensive inventory reports for your entire server population in under a minute, and exports results to CSV files for use in other applications such as Microsoft Excel.
- **Consolidated vulnerability and patch management**—scans for OS and application security vulnerabilities, and patches them in concert.
- **Powerful system software version control**—allows you to pinpoint out-of-date BIOS, driver, and agent versions and update them en masse from within HP Systems Insight Manager.



HP Server Migration Pack—Universal Edition

The HP Server Migration Pack—Universal Edition (SMP Universal) provides an automated, accurate and affordable way to migrate existing servers and their content to the latest HP BladeSystem or ProLiant server technologies. SMP Universal supports Physical to Physical ProLiant (P2ProLiant), Virtual to Physical ProLiant (V2ProLiant), Physical to Virtual (P2V), and Virtual to Virtual (V2V) migrations, and can run standalone or integrate with HP SIM. Physical or virtual, the fastest and easiest way to migrate your servers is with HP Server Migration Pack—Universal Edition.

The benefits of HP SIM and HP ICE

The reasons to use HP SIM and HP ICE are simple: They make it easier to manage your IT infrastructure, and they save you a significant amount of money in the process. We'll get into the financial element of this discussion later in the brochure when we examine very specific (and impressive) ROI figures for ICE. But first, a list of the ways that HP SIM and HP ICE make things easier and less expensive:

- **Improved IT staff efficiencies.** Stated simply, HP ICE and HP SIM help your IT staff get more done in less time. So much more in fact, that you may be able to avoid or delay adding new bodies to your IT team

(a recent IDC survey showed that companies using HP SIM were able to nearly double the number of servers managed per administrator, increasing the server-to-administrator ratio by an average of 98%). That in itself can result in tremendous savings. A few examples of how HP SIM makes this happen:

- Single sign-on to managed nodes reduces the time needed to administer servers by allowing administrative staff to sign on to managed nodes securely from a single console.
- The command execution feature allows administrators to manage more systems by allowing them to schedule commands to be executed at remote locations.
- Unified management reduces the need for management software maintenance and consolidates personnel requirements, allowing staff sharing across domains.
- Logical system groupings with aggregate status also allow more systems to be managed.

- **Increased user productivity.** By alerting administrators about potential hardware failures and bottlenecks before they can cause system-wide problems, HP SIM and HP ICE help reduce unplanned downtime and improve end-user productivity.
- **Delayed/Avoided infrastructure expenses.** These benefits include costs saved by reducing the number of servers deployed per year, avoided costs for server and OS upgrades, reduced need for storage capacity and system monitoring, and reduced travel costs.

Return on investment for HP ICE

HP ICE extends the capabilities of HP SIM and also requires an upfront expense. However, as it is based on HP SIM, it delivers attractive returns that make an investment in this product a wise choice for our customers who are investing in HP ProLiant servers.

To quantify the ROI, HP hired IDC and asked them to conduct a study of companies already using HP Insight Control to manage their IT infrastructures. The companies interviewed for the study used at least one element and as many as five elements of HP Insight Control. The results were stunning. Overall, IDC found that HP Insight Control users were able to realize a significant return on investment, with ROI in excess of 400% when implementing a single HP Insight Control product and over 500% when implementing all HP Insight Control products. Highlights of the three-year ROI include the following:

- Total benefit per 100 users: \$48,380
- Investment (undiscounted): \$6,021
- NPV (net present value): \$32,978
- ROI (NPV/investment): 563%
- Payback: 6.1 months

A deeper analysis of the fiscal benefits of HP Insight Control Environment reveals the following:

- After HP SIM was deployed, the amount of downtime dropped by an average of 77%, declining from 2.1 hours per month to 0.6 hours per month.
- The benefits were found to improve as more HP SIM extensions were added to the mix; the average ROI for implementing a single product was 402%, while the average ROI associated with implementing all products grew to 563%. Similarly, the benefits realized over three years per 100 users were \$24,085 for a single product, growing to \$48,380 for companies that implemented all products.
- On average, the largest contributor to economic benefits was found to be increased IT staff productivity, representing 42% of overall average three-year benefits. Customers in the study found that their IT departments became more efficient and saved time in server deployment hours, server asset management, server hardware maintenance, and new application deployment. This was followed by line-of-business user productivity savings, estimated to be 26% of overall benefits, and IT infrastructure cost savings, estimated to be 18% of overall savings. Finally, IDC found that by protecting and improving system uptime, HP Insight Control can also safeguard company revenue; for example, in cases where companies rely upon the Web for revenue streams. IDC estimated that protected revenue contributed 14% of overall economic benefits.
- Different components provide a different breakdown of benefits. For example, the Rapid Deployment Pack drives the greatest percentage of benefits in IT staff savings, while Integrated Lights-Out remote management provides the greatest percentage of benefits in safeguarding end-user productivity.



HP Care Pack offerings

HP ProLiant Essentials and Insight Control Services include easy-to-use HP Care Pack service packages as well as more comprehensive services that can be tailored to your unique requirements:

- Insight Control Management Suites Implementation Services—for Insight Control Environment, iLO Power Management Pack, Insight Control Linux Edition, and Insight Control Data Center Edition software bundles
- HP Care Pack Startup and Installation Service for SIM—for smaller-scale, single-site HP SIM initiatives
- The HP Installation and Startup Service for HP Server Migration Pack—Universal Edition (SMP Universal)—provides for the installation, configuration, and execution of the migration feature of HP Server Migration Pack—Universal Edition for one server migration P2P, X2P, or X2V
- Software support and updates—24x7 Software Technical Support and Update service bundled with ProLiant Essentials and Insight Control products
- Education and training—HP's Insight Control Environment curriculum builds both core and advanced skills; multi-level courses cover HP ProLiant systems deployment and systems management

HP Financial Services

Don't forget HP provides financial solutions for managing total cost of ownership, from planning and acquiring business technology all the way to replacing and retiring it. It's just one more tool HP offers to help you get to where you want to be sooner and more easily. For more information, visit www.hp.com/hpfinancialservices.

For more information

To learn more about HP Systems Insight Manager and HP Insight Control Environment, visit www.hp.com/go/insightcontrol or contact your HP sales representative or authorized reseller today.

To read the IDC white paper reports for yourself, visit www.hp.com/go/iceroipaper.

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