IBM

**Orchestrating your IT resources to maximize
business value and responsiveness.**

*e* business on demand.

In today's volatile economic climate, to remain competitive you have to maintain — and continually improve — the quality of service that you provide, while minimizing IT expenditures. You have to ensure that resources are available to support spikes in demand; that you can respond quickly to emerging market opportunities; and that your IT infrastructure can keep pace as your business needs change — with a minimum of human intervention. So your staff can focus on creating new revenue streams and on your business strategies — instead of the technology that supports them.

**Delivering business value in an on demand world**

Like other business leaders striving to maintain — and gain — competitive advantage, you're faced with difficult decisions. You must define a business strategy that can help guide your organization to meet the needs of your customers, shareholders, employees and trading partners. You must also be sure that your company can execute on your strategy by building an IT environment that can support it.

The underlying technical infrastructure that can help your business transform into a more resilient, responsive, flexible and variable organization is what IBM calls the *on demand operating environment*. By tightening the link between the technologies that run your business and your overall business goals, you can use your IT infrastructure to help you execute your business strategies more efficiently. And the right combination of hardware, open-standards-based software and industry-leading services can help your organization build an infrastructure management solution that can support your business objectives around the clock. One that maximizes the use of your existing resources — hardware, software, applications and people — and reduces costs.

**Automation lets your IT infrastructure manage itself**

Consider the on demand era, with its ubiquitous integration of business processes, systems, applications and billions of devices. To keep pace, you need to be able to reduce IT management complexities to make better use of your existing assets. You also need to improve your organization's ability to adapt to changing customer and trading partner demands on the fly — according to your business objectives. Research shows that, on average, a business uses less than 15 percent of its IT infrastructure capacity,* significantly increasing management costs. The solution? Automation — through a self-managing infrastructure that can increase efficiencies and simplify the allocation of resources. And simplify the allocation of resources. In an on demand operating environment, your systems automatically handle everything from shifting workloads to providing new-user

access, based on predefined policies that your organization chooses. With assured availability, you can reduce IT administration costs. And reallocate valuable IT and human resources to higher-value work. You won't have to worry about processes and functions like embedded security and privacy protection, workload balancing, software upgrades and guarding against internal and external threats.

Through automation capabilities, you can reduce management complexity to make better use of your IT and human assets; improve availability and resiliency, so your business can adapt quickly to market and customer demands; and reduce costs based on your business objectives. Automation helps you enhance:

- *Availability—to promote the health of your IT environment*
- *Security—to protect your organization's information assets, confidentiality and data integrity*
- *Optimization—to make the most-productive use of your IT infrastructure*
- *Provisioning—to deliver the right resources to the right processes and people at the right time*
- *Business service management—to understand your IT environment in business terms and managing service levels to dynamically address your business objectives*
- *Orchestration—to enable your IT infrastructure to sense, trigger and respond according to your business goals*

The key to successfully managing your IT environment is orchestration. With the IBM Infrastructure Management family of offerings, you can provide your business with the robust infrastructure orchestration capabilities and resources that it needs to help you handle fluctuating demand.

**Orchestrating business-critical IT resources to drive down costs and increase efficiencies**

Orchestration allows your IT team to move from *just-in-case* provisioning — to help ensure you have enough resources to meet peak demand — to *just-in-time* provisioning, allowing you to automate your IT infrastructure and execute changes as need arises, virtually eliminating human error. Orchestration enables you to use your IT resources where your business needs are most critical, by proactively sensing and responding to peaks in demand and allocating IT resources to the most-important processes based on your business policies. So you can support your organization's business goals more efficiently.

Through orchestration, your IT infrastructure can:

- *Be changed in real time—according to predefined business policies—to help you achieve desired business goals.*
- *Sense changes in demand for resources and automatically trigger action to reallocate resources throughout the entire system— including hardware, software and applications.*
- *Use automation to act as the intelligence across availability, security, optimization and provisioning—helping to ensure that your IT environment is aligned to your business goals.*
- *Increase organizational productivity by automating the allocation of your IT resources—without disrupting the way your business currently operates.*

You don't have to rip out and replace your current systems — orchestration software adapts to your existing hardware, software, architecture and processes. So you have the flexibility to grow your orchestration solution at a pace that suits your needs.

By moving from just-in-case to just-in-time provisioning, you can avoid underutilizing your resources and automate your infrastructure so that it can respond quickly to fluctuating business demands — while helping you stay in line with your business objectives. As a leading provider of hardware, software and services, IBM can help you choose an infrastructure management solution that lets you manipulate your IT environment in real time to help you achieve your specific business goals.

The IBM Infrastructure Management family of offerings:

- *Makes it possible for you to choose a solution that allows you to leverage your organization's current skills and IT resources to simplify automation of your IT infrastructure. From a base, do-it-yourself product to complete outsourcing solutions — it all depends on your business needs.*

- *Enables your systems to sense and respond to disruption or threat before it occurs, helping you provide consistent levels of service to everyone in your value chain.*

- *Reduces the complexity — and the time and human resources required — of maintaining IT operations, helping you realize significant cost savings.*

- *Helps you dynamically grow your resource capacity and provision new resources at a pace that suits your business needs.*

- *Allows you to take advantage of industry-leading hardware and software — and gives you the option of using the expertise of IBM Global Services to help you manage your IT environment more efficiently.*

**IBM Infrastructure Management family of offerings**



| Do it yourself | IBM assists | IBM does it for you |
| --- | --- | --- |
| Orchestration capability | | |
| Best practices | | |

| Product | Solution offerings | IT service offerings | Outsourcing |
| --- | --- | --- | --- |

**Choose a solution that meets your unique business needs**

Whatever your business needs, IBM can help with solutions for infrastructure management that automate functionality to save time and money. Solutions that offer the option of combining IBM consulting services to help you manage a more complex environment. Or that allow you to purchase a strategic outsourcing solution to reduce labor and infrastructure costs. Whatever your business needs, an orchestrated infrastructure enables your IT environment to become self-managing. Minimizing the need for human interactions. And providing the automation that your organization requires to meet your quality-of-service objectives.

*Maximize server utilization to increase efficiency and reduce costs*

An orchestrated IT environment senses an increase in the demand for resources. It automatically takes action to reallocate and deploy unused IT resources — hardware and software — to address immediate business priorities. And it shifts those resources back to other business applications when they're no longer needed. So you can save the cost of underutilized infrastructure components and the staff that supports them. Increasing your organization's ability to respond to business demands — without having to add server capacity to meet peak usage.

IBM Tivoli® Intelligent ThinkDynamic™ Orchestrator can help you tap into the processing function that you need to adapt on the fly to changing market conditions and customer demand. With Tivoli Intelligent ThinkDynamic Orchestrator, server capacity is allocated automatically — based on priorities your business dictates — whenever and wherever it's needed. On demand. Prebuilt workflows — customized according to your organization's policies and procedures — and automated systems let you control how the processes are executed: manually (user-initiated), semi-automatically (Tivoli Intelligent ThinkDynamic Orchestrator initiated with user authorization required) or automatically (Tivoli Intelligent ThinkDynamic Orchestrator initiated and authorized). And you can use your existing hardware, software and network devices without rewiring or building from the ground up.

**US Open wins big with orchestrated, on demand access to event information**

As the governing body for tennis in the United States, the United States Tennis Association (USTA) is a nonprofit organization dedicated to promoting the sport to an ever-widening audience. To meet this objective, the USTA's premier event — the US Open — serves as its most visible and strategically important asset. Broadcast in 165 countries, the US Open represents the USTA's most valuable property.



Leveraging the full economic value of the US Open Web site through sponsorships, advertising and merchandise revenue is paramount. With only two weeks per year to generate the bulk of its annual revenue, the USTA needed to provide a truly differentiated experience to online fans and to effectively communicate match-related information to a global audience — quickly and accurately. To achieve this, USTA turned to IBM. Although IBM couldn't add any more seats for the US Open, what they could do was orchestrate the operation of the US Open IT infrastructure to help ensure fans could get a courtside seat through the Internet.

Just as two tennis professionals must determine how hard or soft to hit the ball based on their court position, ball speed and court conditions, the IBM Tivoli Intelligent ThinkDynamic Orchestrator offering helps prioritize which IT resources should be doing what, based on predefined business rules — leveraging your existing resources — with the ability to bring new resources online almost as fast as an overhand serve.

The Web infrastructure needs of the USTA are 50 times greater during the US Open than other times of the year. To handle this disparity, IBM developed a responsive hosting infrastructure, based on IBM Tivoli Intelligent ThinkDynamic Orchestrator and managed by IBM Global Services. During peak match times, Tivoli Intelligent ThinkDynamic Orchestrator allocates all system resources to US Open Web applications. At nonpeak times, the excess Web capacity is allocated back to other Web applications. From action on the court to results on the Web, fans can follow every point in every match, as it happens.

The result for USTA? On demand access to server resources when they're most needed — during the US Open event — with the flexibility to pay only for what the USTA uses. And an orchestration solution that helps the USTA take advantage of business opportunities and increase revenue — and gives them competitive advantage.

*Combine industry-leading solutions with robust
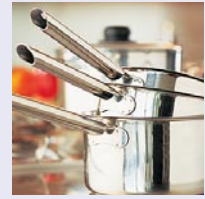infrastructure orchestration*

A strong Web- and application-serving solution can give your organization the tools that you need to turn your Web server investment into a vital component of an on demand operating environment. So you can maintain service levels — and competitive advantage — while maximizing the performance of your IT infrastructure. When demand subsides, your servers are reallocated to other business applications — according to your specifications.

The IBM Web Infrastructure Orchestration offering is a Web- and application-serving solution that includes IBM hardware, software and optional implementation services — all coordinated according to your business policies by Tivoli Intelligent ThinkDynamic Orchestrator. The IBM Web Infrastructure Orchestration offering can automatically modify or add resources to your Web-serving environment and adjust Web capacity immediately to streamline operations, optimize resources and lower management costs. Minimizing implementation time. Speeding time to market. And earning a faster return on your investment.

The IBM Web Infrastructure Orchestration offering helps you move to on demand resource allocation by consolidating server resources and assigning them to where they're most needed. When demand subsides, your servers are reallocated to other business applications — according to your specifications. To speed the deployment of your Web- and application-serving solution, you have the option of engaging the expert team at IBM Global Services to help plan, develop and deploy an orchestration solution that gives you full control over your own business policies. And can help you extend your solution to accommodate future growth.

**IBM Infrastructure Management solutions cook up better customer service**

Gourmet cookware. Electrics. Specialty foods. Your kitchen products are sold worldwide to consumers through storefronts, catalogs and the Web. Based on the season, you can estimate when some of your peak ordering periods will occur. But unexpected spikes in demand can compromise your availability and erode customer satisfaction and confidence. Those spikes also dictate the need to dedicate staff who can ensure that server capacity is available to handle the load — a costly proposition that takes IT staff time away from business-critical tasks.

The IBM Web Infrastructure Orchestration offering lets your IT team define — upfront — business policies for your commerce application, based on what your servers can handle. Then, the orchestration capabilities of the IBM Web Infrastructure Orchestration offering keep pace by allocating capacity on IBM @server® BladeCenter™ servers as needed. When the load falls below the required threshold, the server capacity can be shifted to other IBM WebSphere® technology-based applications. And if Web traffic increases, potentially preventing the application from responding quickly, IBM Web Infrastructure Orchestration can allocate server capacity to the application — and keep your business running smoothly.

The IBM Web Infrastructure Orchestration offering can help you streamline your IT operations, optimize resources and lower management costs. In real time.

Another solution from IBM that balances workloads and allocates resources on demand is the IBM Server Allocation for WebSphere Application Server offering — designed to orchestrate workloads and optimize capacity for WebSphere software environments. With the IBM Server Allocation for WebSphere Application Server offering, your WebSphere technology-based systems can balance workloads and allocate resources for WebSphere applications — increasing resource utilization and driving down costs. Your IT team can download and deploy parallel applications to automatically use their excess capacity when Web-based, transactional applications aren't experiencing peak volume.

***Build your own orchestrated, utility-computing environment***
Adopting an in-house, usage-based computing model based on the IBM Infrastructure Management Assessment Services portfolio provides the ability to pool and maximize the value of resources across business units, so your organization can tap into critical components of your IT infrastructure as needed. With IBM Infrastructure Management Assessment Services, you can design a blueprint that can help you simplify and increase the efficiency and reliability of your organization's IT operations. Based on IBM's extensive expertise in operating hundreds of data centers worldwide — and on open, industry standards — Infrastructure Management Assessment Services enable you to automate many data-center operations, so your IT staff can focus on other, more important, tasks.

The Infrastructure Management Assessment Services team works closely with your company to define your unique technical and business requirements. To help you improve server, storage and network usage. To standardize your computing environment for greater operational efficiency. And to improve security through proven automation software and processes from IBM. Key areas include:

- *Systems management — to monitor system availability across your organization's IT infrastructure*

- *Asset management — to manage complex monitoring and usage environments*

- *Change management — to help decrease the risk of IT system downtime*

- *Service management — to facilitate the smooth integration and transition of new technologies into your existing data environment*

- *Security management — to deploy robust security measures and to continually monitor both your day-to-day business activities and crises*

A detailed assessment of your IT operations helps you understand how to incorporate automated capabilities into your existing infrastructure, integrate new resources and manage back-office processes to help your IT infrastructure efficiently handle peak activity periods.

**Outsource your orchestration solution to reduce your in-house costs**

If you're interested in reducing IT costs through outsourcing, IBM provides the IBM Infrastructure Management Outsourcing offering to address your needs. This offering leverages the IBM Universal Management Infrastructure (UMI) to create an on demand, usage-based computing environment within an IBM data center to deliver infrastructure services to multiple enterprises — reducing your costs. Whether you want IBM to manage parts of your infrastructure or you'd rather outsource the management of your entire IT environment, an IBM Infrastructure Management Outsourcing solution helps you to:

- *Reduce your capital investment and risk. You can choose from a selection of IBM technology that can consolidate and improve utilization of your existing assets.*

- *Increase access to the computing resources and IT expertise you need to meet your business objectives. Dynamic resource provisioning and management, based on your defined business rules, allows new resources to be added in minutes and hours – instead of days and weeks.*

- *Support flexible, usage-based billing models.*

- *Standardize processes across your enterprise. Data silos that isolate your business units and drive disparate IT purchases are replaced. Best practices are applied uniformly for your IT processes using standard workflows and templates.*

- *Optimize predictability and reduce IT errors as a result. You can avoid human error introduced through manual server provisioning, unknown configuration changes and inaccurate monitoring.*

By leveraging UMI to outsource the management of your infrastructure, you have the flexibility of a robust, on demand, usage-based computing environment that's available when you need it. That incurs costs only for what you use. And that supports your unique business goals. IBM Infrastructure Management Outsourcing offerings give you access to integrated, flexible, open-standards-based hardware, software, tools and services that can meet your specific business and budgetary requirements.

**Leading-edge hardware, software and services to address your orchestration needs**

Combining significant, real-world expertise with leading technology, products and services, IBM can help you on the journey to becoming an on demand business. Wherever you are in the on demand development cycle, IBM offers comprehensive solutions that can address your unique business requirements.

Leverage the information and insights that helped IBM shape its services and product strategies to design, build and deploy your own orchestrated infrastructure strategy. At a pace that supports your business goals. The IBM Infrastructure Management family of offerings can give you the tools you need to succeed in an on demand world.

**For more information**

To learn more about the IBM Infrastructure Management family of offerings, visit:

**ibm.com**/ondemand/inframgmt

**IBM**®

 * John Humphreys, senior research analyst. From
presentation: "Architecting Service-Centric
Infrastructure." IDC. ServerVision Conference,
September 2002.