Cloud Computing

IPsoft

Solution Overview
Overview

As a partner to Cloud providers, IPsoft delivers a full operational platform for public, private, or hybrid Clouds. The core IPsoft service delivery platform, IPcenter, runs on the Cloud provider infrastructure, delivering comprehensive orchestration, cross-platform governance and automation.

For even the most complex of implementations, including environments with multiple proprietary cloud infrastructures (internal and external), IPsoft resolves governance, security, and integration challenges.

The infrastructure of tomorrow will not be managed by people, but by expert systems. The IPsoft Cloud platform is completely autonomic, from enablement to performance management. Via the IPautomata application, IPcenter can deploy targeted automata, which are intelligent software agents that have been developed to handle critical business and technical functions. IPautomata seamlessly interacts with other IPcenter components (detailed in Appendix A: IPcenter) to execute tasks and manage information.
**IPsoft Cloud Services**

- Service or application management – Managing what runs on cloud resources
- Storage and network management – Storage/network-based cloud resources
- Hardware management – Optimizing the hypervisor; e.g., VMware ESX
- Virtual machine management – Define and deploy virtual machines; IP address management
- Monitoring – Autonomic monitoring, fail over, bursting, and predictive deployment
- Reporting – Standard hardware-level reporting as well as service-level reporting
- Design and architecture maintenance

**Responsibility, Visibility and Control**

IPsoft leverages your existing technology and builds new functionality while delivering the most transparent and flexible Cloud services platform available across the operations stack. ITIL v3 and Six Sigma are built into the platform, which means that best practices are operationally enforced throughout.

While the benefits of Cloud computing—optimized utilization, flexibility, agile/rapid provisioning, reduced costs, etc.—are increasingly accepted and apparent, delivery has lagged behind this potential. Cloud providers generally lack the broad underlying operational framework essential to delivering the Cloud from their infrastructure.

**Visibility**

A thorough look across the industry reveals that IPsoft is positioned uniquely in covering this entire Cloud framework. IPcenter, IPsoft’s mature ITIL-v3 aligned service delivery platform delivers a single portal with complete, real-time visibility into any aspect of the platform, including (details in Appendix A: IPcenter):

- Billing – Generate reports—or exports of data—giving utilization patterns per user for billing purposes
- Resource charge – Define how a cost is associated with an instance of a resource or a profile, and along which axes; e.g., per-CPU hour or per-MB used
• Resource definition – Identifying the resources; e.g., CPU, and their allocation types, e.g., per-CPU)
• Resource profile definition – Define collections of resources around which allocation can be performed
• Hardware discovery – What’s there

**Automation**

Underlying IPcenter is unique automation capability, which learns from millions of prior client and technology-specific engineer actions. IPcenter automation agents, or automata, perform near-instantaneous Level 1 and Level 2 event resolution, with a degree of consistency impossible with human engineers alone.

• Deploy intelligent management automation, reduce operational expenditure
• Speed resolution and to ensure consistent outcomes.

**Simplicity**

IPcenter allows IPsoft to assume full responsibility of the stack via a simplified view of complex platforms.

• Single management platform (interoperate between multiple environments)
• Reduce virtual sprawl through cross platform governance
• Incorporate existing Infrastructure assets
• Intuitive User Interfaces for cloud provider and user
• End-user API

**Flexibility**

One of the key benefits of Cloud Services is the flexibility and self-determination the approach provides, which IPsoft ensures with:

• Seasonal expansion ("cloud bursting")
• Reduced cloud vendor lock-in; i.e., the ability to diversify providers
Security

At the same time, IPsoft delivers the highest level of Cloud security available, via:

- VM segregation, auditing, reporting
- User, role, and utilization profiles – Who can leverage the cloud and to what extent
- Utilization tracking – Who’s running what

Benefiting the Value Chain

IPsoft methods provide the following effects on value chain activities:

- Infrastructure – Optimization of power, footprint, hardware and software based on real-time analysis
- Human Resource Management – Optimization of tactical workforce, re-alignment to R&D and primary business activities; automation handles performance analysis and introduction of new compute nodes from the cloud
- R&D – Virtualized environments on-demand to support rapid prototyping, QA and Staging analysis
- Procurement – GAP analysis of perceived environment (within a CMDB) versus actual environment (when using discovery agents); reduces overspending and optimizes current compute nodes
- Service & Operations – Increasing QoS, reducing MTTR through the introduction of automation
- Marketing & Sales – Optimization of the traditional method of routing customer requests through existing channels by capturing data from disparate systems and real-time analysis of customer assets; introduction of a new bottom-up method: identifying new opportunities via routing new opportunities based on real-time analysis of customer assets.
- Logistics – Streamline exceptions within inbound/outbound logistics by examining disparate internal and external systems. Introduce automated remediation or escalate to tactical support personnel, with increased visibility into the issue.

The IPsoft cloud, combined with IPautomata, benefits the value chain as shown by the following summary table.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Goal</th>
<th>Net Effect</th>
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<tbody>
<tr>
<td><strong>Infrastructure &amp; Procurement</strong></td>
<td></td>
<td></td>
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<tr>
<td>Hardware</td>
<td>▪ Better align IT spend with changing needs of environment.</td>
<td>▪ Virtualization rate is typically 4:1 on 60% of existing hardware.</td>
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<td></td>
<td>▪ Better analyze, inventory and allocate existing assets.</td>
<td>Additional efficiencies can be attained through the increase of</td>
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<td></td>
<td>▪ Increase use of existing hardware via virtualization software and cloud computing.</td>
<td>physical attributes of existing systems to push ratio to 10:1 on</td>
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<td></td>
<td></td>
<td>80% of existing hardware. A cost increase of about 10% is expected to</td>
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<tr>
<td></td>
<td></td>
<td>acquire and deploy these enhancements.</td>
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<tr>
<td></td>
<td></td>
<td>▪ IPautomata pushes information to decision makers combining external</td>
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<tr>
<td></td>
<td></td>
<td>research and internal requests,</td>
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<td></td>
<td></td>
<td>▪ IPautomata provide insight and delta between perceived environment</td>
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<td></td>
<td>(IPcmdb) and actual environment (IPdiscover), eliminating gaps and</td>
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<tr>
<td></td>
<td></td>
<td>wasted budget.</td>
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<td></td>
<td></td>
<td>▪ IPautomata provides unattended rapid roll-out platform for both fixed</td>
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<td></td>
<td></td>
<td>and virtual assets within the cloud.</td>
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<td></td>
<td></td>
<td>▪ IPautomata makes real-time assessments of virtual instance utilization</td>
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<tr>
<td></td>
<td></td>
<td>and deploys new virtual operating systems, application and data services</td>
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<tr>
<td></td>
<td></td>
<td>where needed within the cloud.</td>
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<tr>
<td></td>
<td></td>
<td>▪ Effect:</td>
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<td></td>
<td></td>
<td>▪ TTM: 50% decrease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ MTTR: 30% decrease</td>
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<tr>
<td>Software</td>
<td>▪ Add virtualization layer to existing IT estate</td>
<td>▪ Company expects a software increase between 0% and 20% for virtual</td>
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<tr>
<td></td>
<td></td>
<td>software acquisition based on decision for free versus licensed-based</td>
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<td></td>
<td></td>
<td>solutions.</td>
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<td></td>
<td>▪ IPautomata is backed by IPsoft service and is responsible for deploying</td>
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<tr>
<td></td>
<td></td>
<td>and configuring. Company does not require internal training nor new-hires</td>
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<tr>
<td></td>
<td></td>
<td>to cope with new technology.</td>
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<tr>
<td></td>
<td></td>
<td>▪ IPautomata provides unattended rapid roll-out platform for host</td>
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</tbody>
</table>
Consolidating physical hosts onto virtualized platform reduces footprint and power consumption. In the case of leased space, this has significant impact on facilities expenditure.

- IPautomata provide insight and delta between perceived environment (IPcmdb) and actual environment (IPdiscover), to identify unneeded equipment which can then be turned off or removed.
- IPautomata can then re-introduce dormant equipment, responding to immediate changes to production environments.
- Effect:
  - Power: 30% decrease
  - Space: 50% decrease

Introduction of IPautomata reduces MTTR and uptime through the remediation of exceptions, currently 30%-70%.

- IPautomata provides real-time exception and performance analysis of environment which enables immediate remediation by IPautomata and efficient alignment of existing tactical resources. This increases QoS. (IPradar + IPmon + IPescalate + IPautomata)
- IPautomata introduces new virtual or physical assets to cope with immediate needs
- Corporation does not need to invest in SDL for automation platform, processes and applications are absorbed by IPsoft and existing libraries are matched and customized, further decreasing TTM.
- Introducing IPautomata for service management, corporation is able to severely reduce staff by 30%-40%, shifting IT expenditure to R&D from tactical resources.
Appendix A: IPcenter v3

IPcenter v3 is the IPsoft operational service delivery portal. IPcenter manages client technology environments and is designed from the ground up to align business goals with IPsoft’s service delivery.

IPcenter v3 delivers:

- **End-to-end automation**: Every task moves from inception to satisfactory resolution in the shortest possible time.

- **An integrated ITSM framework**: Trying to manage your IT environment with many different systems undermines productivity. IPcenter gives you a consolidated command console, integrating the management tools you need and allowing data to flow seamlessly between applications, with a strong Configuration Management Database (CMDB) underpinning it all.
•  **Programmatically enforced process engineering:** Best practices aligned with the process engineering concepts of 6-sigma and COBIT models are built into the IPcenter toolset. Process adherence is automatically enforced to help yield consistent business outcomes.

•  **ITILv3 alignment:** IPcenter v3 is based on ITIL v3’s conceptual alignment of IT service functions with business goals. IPcenter’s interface features configurable portals for service design, service transition, service operation, service delivery management, and continuous service improvement.

IPcenter v3’s comprehensive service center framework will create unique operational efficiencies throughout your IT environment.

**Service Design**

**IPdiscover**

IPdiscover detects and collects information about the servers, networks and storage devices on the parts of your network you have made visible/accessible to discovery agents. Intra-server discovery modules allow you to discover databases and applications residing on servers that allow discovery agents.

**IPdca**

IPdca is a datacenter automation application; it facilitates datacenter management, including provisioning new infrastructure, managing change and compliance, and standardizing builds and configurations at the time of deployment.

**IPvm**

IPvm supports the management of virtualized environments and will facilitate enhanced efficiency and utilization of your server infrastructure. IPvm will work in an integrated fashion with IPdiscover and IPdca to optimize efficiency in your infrastructure.
IPnet
IPnet is a network traffic analyzer. It provides you live network monitoring, mapping, and traffic analysis for 24x7 intelligence on overall network operations, including bandwidth usage, network traffic, and performance degradation.

Service Transition

IPcmdb
IPcmdb is IPsoft’s Configuration Management Database implementation. It gives your organization complete visibility into attributes, relationships, and dependencies of the components in your enterprise-computing environment. IPcmdb provides a standard framework for federating and accessing IT information, which integrates communication between the IT management tools.

IPproject
IPproject is a complete, web-based enterprise project management application, which helps you plan, execute and deliver your projects on time. It is completely interoperable with Microsoft Project and globally accessible (without requiring Project Server installation.) IPproject facilitates rapid project plan development through templates, and it integrates into the IPradar workflow management system to facilitate the end-to-end, tightly controlled execution of tasks in the pipeline.

IPkm
IPkm allows you to do complete enterprise knowledge management, providing document management, collaboration, records management, web content management, imaging, free text information administration and ability to search the entire archive.

IPdeploy
IPdeploy automates service deployments, providing push-button automated deployment cycle to speed the time to creation of accounts, ticket queues, workflow engines, contact base and escalation engine population.
Service Operation

IPmon

IPmon is IPsoft’s monitoring, embedded intelligence, system and network management software. It allows you to monitor network services and host resources, through a simple plug-in design that allows you to develop your own service checks. The checks are run in a parallelized mode to allow optimal scalability for your growing infrastructure.

IPim

IPim is IPsoft’s Incident Management application. It tracks your incidents through the integrated workflow system, IPradar, ensuring the progression of an incident from inception to satisfactory resolution in the shortest possible time. It provides you complete auditability and transparency into the way events in your environment were handled.

IPpm

IPpm is the problem management process responsible for managing the complete lifecycle of all problems. IPpm’s objectives are to prevent the problem from happening, to eliminate recurring incidents and to minimize the impact of incidents. It is able to automatically detect and flag trends in incidents by interacting with IPim, IPmon and other event management modules.

IPcm

IPcm is the change management engine designed to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes. All changes to service assets and configuration items are recorded in IPcmdb, and all actions associated with the change are logged in IPim tickets for transparency to the end-user.

IPescalate

IPescalate is IPsoft’s escalation engine; it facilitates the escalation of incidents and problems within IPsoft and to customer, partner, and vendor staff, drawing on contact information and attributes stored in IPcontact.
IPradar

IPradar is IPsoft’s workflow/queue management system. It facilitates an integrated control for your entire operations, as you are able to see all exceptions, events, alerts, trouble tickets and even project tasks flowing through your system in a consolidated framework. This degree of operational control ensures that all tasks within your environment are executed in an efficient manner within committed timelines, ensuring higher availability and consistent performance for business users.

IPcc

IPcc unifies and automates workflow to the best available engineering resources for the task at hand. Whether exceptions are originated from alerts, trouble tickets or customer calls, IPcc intelligently routes the incoming request to the most knowledgeable resource. This optimizes the time to resolution, as it removes the overhead created by requirements to identify the right resources to address a problem.

IPcal

IPcal is the master display calendar within IPcenter. You can use the IPcal application to display asynchronous events and scheduled batch processes (set up in IPschedule.)

IPschedule

IPschedule allows you to schedule application and batch processes. You can start any application or batch process at a designated time; the event will also be logged in IPcal to provide a consolidated view of all events, scheduled applications or manually requested meetings happening in your environment.

IPcontact

IPcontact stores customer and partner contact information and attributes. All IPsoft executives working on your account are at your fingertips and within easy reach through the IPcontact portlet in your IPcenter customer service portal.
IPreports

IPreports is IPsoft’s reporting application. You can run “canned” (already developed) reports from within IPreports, as well as develop custom reports. IPreports allows you to view performance and availability trends, as well as characteristics of your servers, network devices and applications.

IPsem

IPsem is IPsoft’s portal interface to Arcsight, an integrated set of security products for collecting, analyzing, and managing enterprise event information.

IPscan

IPscan provides penetration & vulnerability testing utilizing Retina, Nessus, LANGuard and other tools that are a part of the integrated IPsecure offering.

IPflow

IPflow provides anomaly detection utilizing Netflow and Orion, which together comprise a global threat detection system aggregating security alerts, advisories and global honey nets.

Continual Service Improvement

IPitpa

IPitpa is IPsoft’s IT Process Automation tool, which reports on the extent to which automation is reducing the entropies in your system. Available process automation statistics in your overall environment include the total number of events, the number of events for which automated remediation ran, and the percentage of time automated remediation was able to fix the problem.

IP6sigma

IP6sigma supports the Six Sigma quality management paradigm. It enforces DMAIC concepts to keep DPMOs in your environment to industry leading levels. As opposed to static concepts in theory, IP6sigma builds service delivery best practices right into the
operational delivery engines, making it highly enforceable, as opposed to relying on manual methods of verification and enforcement.

**Service Delivery Management**

**IPsurvey**

IPsurvey is IPsoft’s customer satisfaction survey tool. Customer surveys help IPsoft ensure that operational delivery is and remains aligned with customer business requirements. Feedback is critical to this process, and we gather feedback at the tactical level (through IPim) on every task handled, as well as soliciting higher-level feedback on a quarterly basis from customer executives.

**IPslr**

IP service level reporting facilitates comprehensive service level reporting for IT and business managers. It reports on all delivery metrics, including service operations, service delivery management, and continual service management improvement parameters.

**Service Technology**

**IPuniversity**

IPuniversity is a complete e-learning environment for IPcenter users. Register with IPuniversity to take self-paced study courses on various IPcenter topics.

**IPmanager**

IPmanager is IPsoft’s Virtual Manager software. While IPautomata automates tasks performed by engineers, IPmgr automates tasks performed by managers. This enhances consistency of delivery and facilitates scalability, making it possible for managers to stay on top of the myriad aspects of productivity and QoS management of hundreds of staff.

**IPautomata**

IPautomata is IPsoft’s toolkit for building intelligent software agents to facilitate data gathering, management, and remediation of detected issues. IPautomata adaptively learns
about your systems and networks, and is able to generate autonomic agents that self-correct and heal exceptions in your environment.

**IPpredictive**

IPpredictive is IPsoft’s predictive analytics tool. It facilitates proactive remediation in your environment (as opposed to reactive kick-off of remediation measures once the application has already failed.) It improves the availability characteristics of business critical processes within your environment.

**IPclassify**

IPclassify is IPsoft’s Bayesian classification engine that allows IPsoft to map incoming exceptions to the most qualified resource capable of handling the exception. IPcc and IPdispatch leverage it. IPclassify translates an incoming alert or trouble ticket to a fully defined set of parameters, which include the criticality of the alert, the client affected, and the domain (and even the subdomain) that the alert relates to. This full classification is then leveraged by IPdispatch (for automated ticket dispatches) and its superset, IPcc (for dispatching all tickets and calls) for mapping the exception to the best-qualified engineer for handling the event.

**IPsec**

IPsec is an event correlator that uses a rules-based engine to correlate events that are related to each other. It uses CMDB and precedence relations to eliminate white noise from your environment and to track down the root cause of the exception.