Intelligent Workload Management

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Enterprise Risk Services

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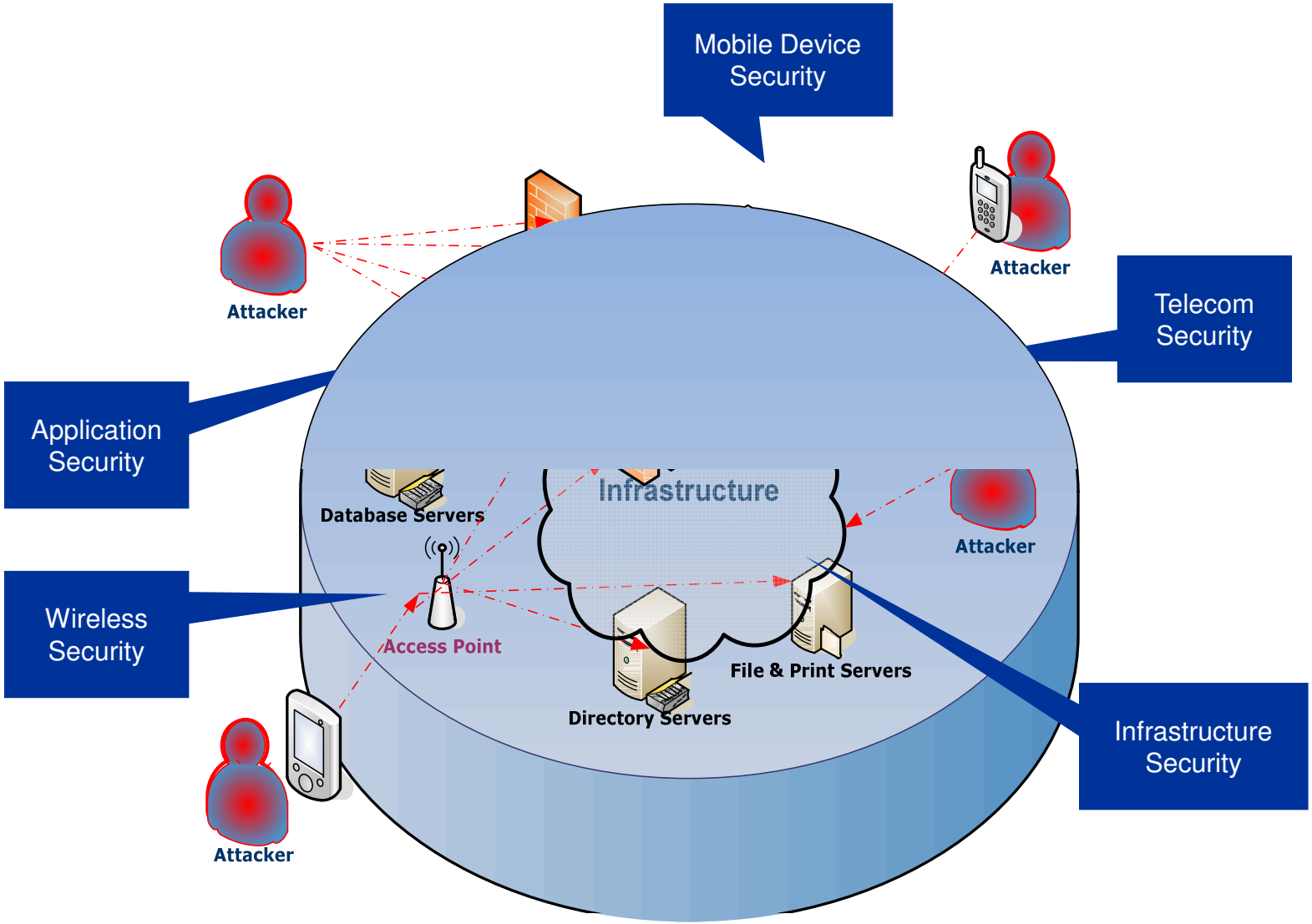
Background

Intelligent Workload Management - Definition

"IWM" is the means for keeping consumption of computing resources efficient whilst still making sure business tasks are supported by all the resources they need and that this is all done securely

Background



Background: Intelligent Workload Management System

Latest Trends

Virtualization

Over a period of time, processing power is seen as utility that clients pay for as required. The main reason for industry to move towards virtualization is to reap the benefits of centralized administrative tasks by improving workloads and scalability. Kind of virtualization includes:

- ✓ Hardware Virtualization
- ✓ Software Virtualization
- ✓ Desktop Virtualization
- ✓ Memory Virtualization
- ✓ Storage Virtualization
- ✓ Data Virtualization
- ✓ Network Virtualization

Cloud Computing

Cloud Computing provides majority of the services to clients/end-users with end-user having no knowledge or realization about where actually the data, software or storage is taking place. Most cloud computing infrastructures consists of services delivered through shared data-centers. There are various deployment models which includes :

- ✓ Public Cloud
- ✓ Community Cloud
- ✓ Hybrid Cloud
- ✓ Private Cloud

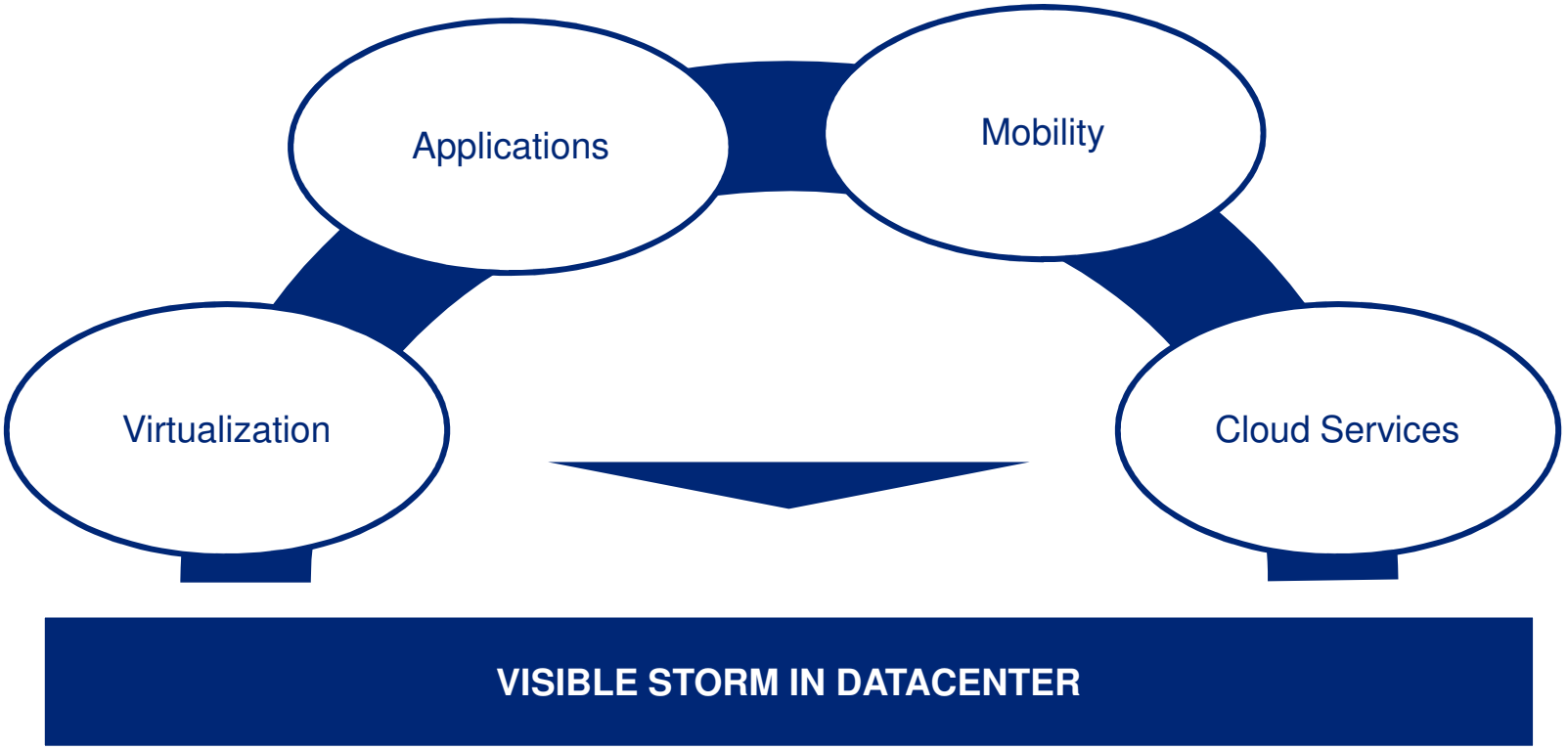
Software as a Service

One of the Cloud Application Service which has become very popular of late. Cloud application service delivers software as a service over the internet.. SaaS eliminates the need to deploy the application at the customers own computers.

SaaS is more popular than a Infrastructure as a service or platform as a service.

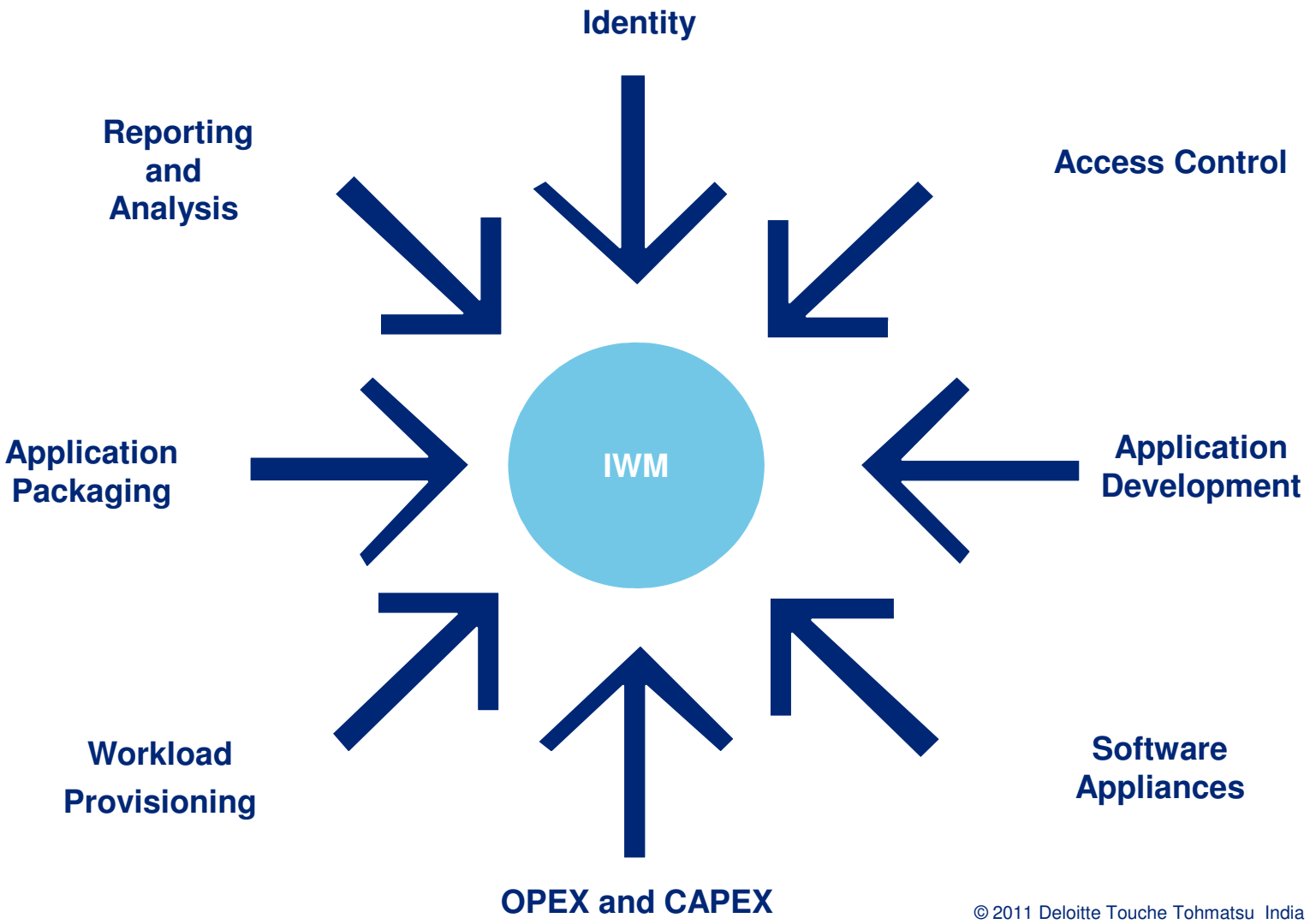
Challenges: Major Need For Intelligent Workload Management System

IWM tools support the building, management, monitoring and securing of workloads.



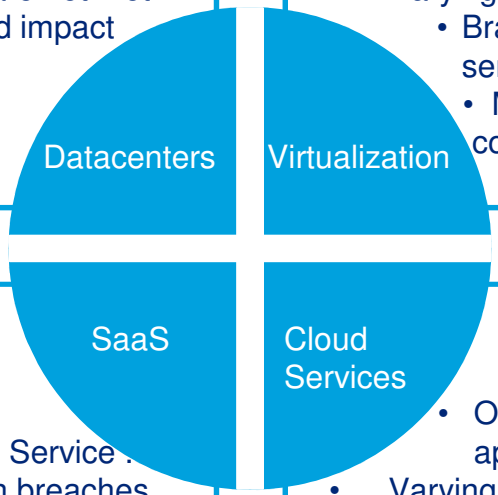
Challenges: Major Need For Intelligent Workload Management System

Is There Any Other Way



Summary: Challenges

Combinations of following forces demands more automated , better policy driven systems which can be customized as per organizational needs



- There is a visible storm at Data Centers.
- Workload Management becoming very complex.
- Managers are nothing but human beings . They are not in stage of convincing themselves to be providers of "Satisfactory Services to Clients".
- Varying industry specific requirements are not met.
- Heightened concerns about security and impact on brand.
- Increasing scrutiny from regulators
- More enforcement actions anticipated

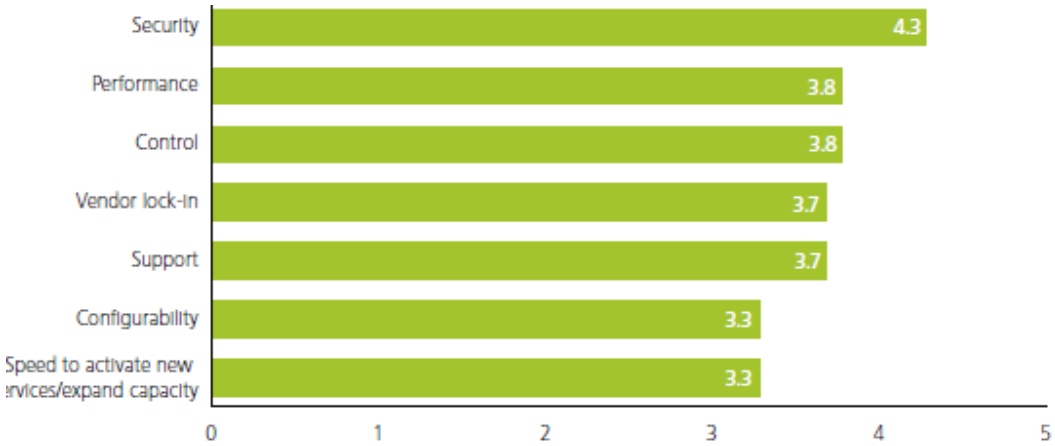
- Workload Management becoming very complex.
- Increasing scrutiny from individual customers and business partners
- Liability for breaches / violations being formalized in business agreements
- Varying security standards being required
- Brand impact from security breach or service disruption.
- Multitier applications increase operational complexity .

- Complexities involved in Sustenance of secure management of Software as a Service .
- Increasing risk & liability associated with breaches
- Anticipation of system disruptions and interruption in business operations.
- Migration and auditing services is a big challenge.
- Access Control capabilities posses a great challenge.

- Workload Management becoming very complex.
- On demand computing an various hosted applications complicate IT operations.
- Varying policies demand different access-controls, automation of procedures and no standardization.
- Heightened awareness and concerns about security and privacy.
- Identity Management is a big concern.
- Varying security standards being required.

Intelligent Workload Management: Security Concerns

Security is topmost Concern in the Cloud.



Source: Information Week Analytics Cloud Computing Survey-Fall2008

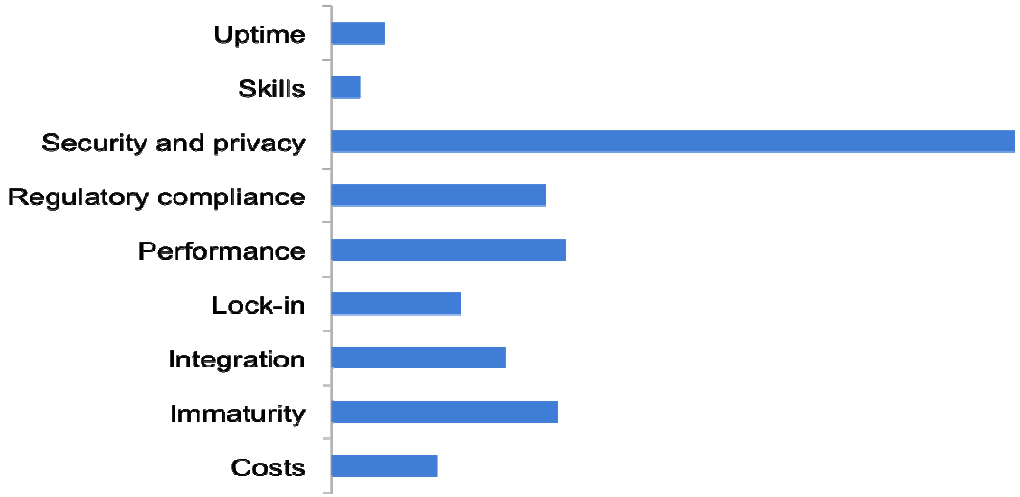
Source: 12/2009 Gartner Datacenter Conference Poll

Weighted scores:

1st priority = 3

2nd priority = 2

3rd priority = 1



Intelligent Workload Management: Identity Concerns

The cross-border nature of cloud computing complicates the control over data location and therefore the compliance with local legal requirements. Deloitte recommends, it is important for cloud users to request evidence from service providers of their compliance with prevailing regulations. Knowledge of risk due to identity concerns in the cloud is very important.

Scenario

Of late technological advantages facilitates various service providers to amalgamate their efforts to address broader business space. Generally, consumers hold multiple accounts with the service providers like GMAIL, eBay, etc. Identity has to be verified against central trusted policy assumed by the system. Therefore, much is at the stake if identities are not handled with extreme precautions. Such scenarios are very common to high end applications hosted on cloud computing environment. Therefore, identity management also take top most priority in the whole area of cloud security.

> *"... leaders at all levels of government and industry need to be able to make business and investment decisions based on knowledge of risks and potential impacts."*
>
> Cyberspace Policy Review, February 2009

Intelligent Workload Management: Addressing Concerns

What makes Workload Intelligent

- **Policy-driven: IWM** enables self –regulation and management according to business policy. It understands its security protocols and processing requirements. Automated support for routine patch management activities which compliments security as pro-active component
- **Identity and Security Concerns:** Both the concerns are well addressed in workload identity and access controls move with the workload between environments. Built-in log management and compliance reporting capabilities, real-time event tracking, monitoring and alerting makes it very intelligent
- **Integrated:** Workload works with new management framework which takes care the business needs very well
- **Optimized Performance:** Workload finds alternatives when computing capacity is required to optimize performance. Workload would track virtualized resources and would reclaim and reassign when the workload is no longer active. In peak hours, additional instances of a workload may need to be deployed quickly

Intelligent Workload Management: Addressing Concerns

Identity and Access Management (IAM) and security information and event management (SIEM) are often used in conjunction with one another to address security as well as identity concerns. Workload addresses this specific concern by

- ✓ Logging, tracking, and monitoring are critical functions for cloud environments. Of late either IAM products have started to offer reporting and logging to achieve integrated security or IAM vendors have partnered with security vendors.
- ✓ These components can be used to track sensitive information in or out of the cloud to address the vital issue of cloud users " what goes out of cloud" . These functions allow to introduce the Forensics capability in the cloud.
- ✓ These kind of capabilities also serve to make cloud providers more accountable . Capability of the data movement between virtual machines will also be available.
- ✓ Security is further enhanced in the cloud by implementing proven mechanisms such as SSL VPN and strong authentication technologies.

Intelligent Workload Management System

IWMS is not only a vision but ambition for IT industry which will gradually become successful , mature as well as flexible model for IT Managers. This emerging trend will address the typical and complex requirements by integrating various technologies:

Identity and Access Management

To support growing number of users form various IT firms to have the access to variety of enterprise applications, concerns related Identity and Access management technologies take a lead . Hence, these technologies become very imp element of IWM.

Security Management

SIEM solutions are often required to be used in conjunction with Identity and Access Management for strict adherence to security as well as compliance issues which have become more complex with cloud services & virtualization.

Policy Based Automation

Service level or policy based automation policies are highly desired to achieve Standardization in the cloud or virtualized environment.

Monitoring and Analysis

Regulatory compliances demand the monitoring and analysis technologies. This technology is another important component while addressing IWM. Very important during investigations and Forensics analysis.

Software Appliances

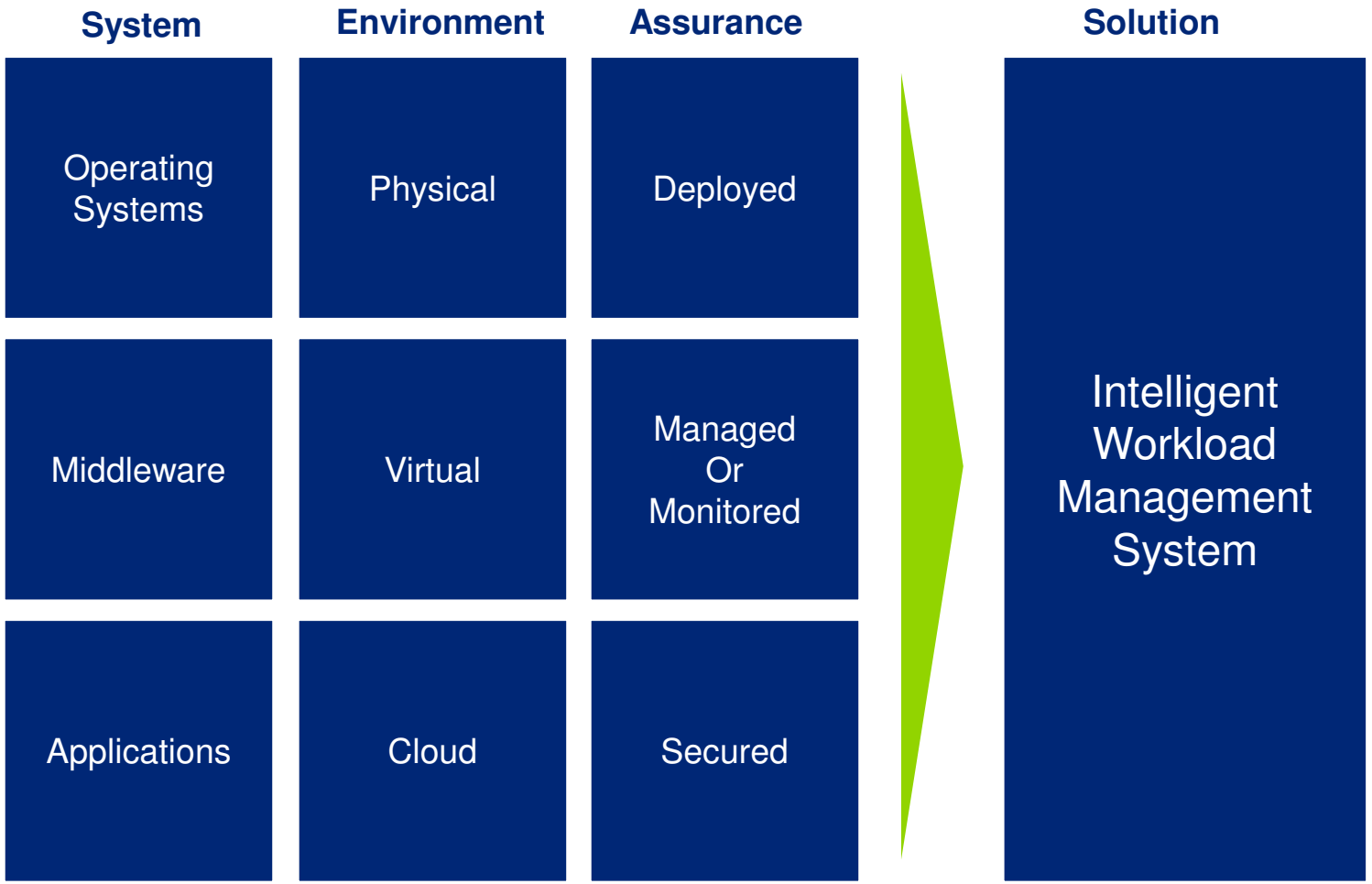
Ideally speaking workloads must be portable as well as easily moved across resources as needed. Hence, Intelligent Workload Management is strongly desired by incorporating Software Appliances.

Configuration Management and Performance

Complexities involved while addressing virtualization as well as cloud services requires continuous Configuration Management as well as performance statistics. Dynamic Configuration Changes needs to be analyzed vis-à-vis performance.

Vision – Intelligent Workload Management System

Vision is to look for intelligent automated solution which brings bundled unit in a secure form irrespective of whether it is deployed onto physical, virtual or cloud infrastructure which can further be easily managed or monitored with automated controls.



Future of Intelligent Workload Management System

- Presently, some models exist in the form of software appliances. However, as more and more industrial units move into virtualization and utilize cloud services, there is expected surmounting pressure of adoption of policy –based workload management system and reliable identity management capabilities .
- Besides, IWM is an ambitious vision and over a period of time Enterprises are wise to consider how these automation and security investment can be utilized in the form of Intelligent Workload management system.
- In future, combination of automation and security are going to be key to success for any IT driven or dependent organization. IWM will not only reduce cost of operations but will also protect the enterprise's information assets.
- Growing interest in cloud and Software as a Service extends the boundaries of the datacenter and puts tremendous pressure on IT teams to provide reliable solution. Hence, IWM incorporating best technologies will be optimum solution for sure.
- Gartner estimates that the current market for cloud services accounts for approximately R348 billion globally and that it will reach R1125.75 billion by 2013 which also means there will be significant growth in Intelligent Workload Management System.

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