Managers' Guide to Infrastructure as a Service (IaaS)

By SearchCIO.in

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IaaS introduces a new way for organizations to meet their IT needs, and a new deployment paradigm for IT departments. Let's examine this cloud computing platform in detail.

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What is IaaS cloud computing platform?

Infrastructure as a Service (IaaS) is a type of cloud computing platform wherein the customer organization outsources its IT infrastructure including storage, processing, networking, and other resources. Customers access these resources over the internet i.e. cloud computing platform, on a pay-per-use model.

IaaS, earlier called hardware as a service (HaaS), is a cloud computing platform based model. Other models include software as a service (SaaS), and platform as a service (PaaS).

In traditional hosting services, IT infrastructure was rented out for specific periods of time, with a pre-determined hardware configuration. The client paid for the time and configuration, regardless of actual use. With IaaS cloud computing platform, clients can dynamically scale the configuration to meet changing needs, and are billed only for the services actually used.

IaaS cloud computing platform eliminates the need for every organization to maintain IT infrastructure. SMBs can curtail their IT investments using IaaS cloud computing platform.

Enterprises can fulfill contingent needs with IaaS.

IaaS cloud computing platform providers host IT infrastructure on a large scale, segmented for different customers, creating economies of scale. IaaS cloud platform can bring vast computing power, previously available only to governments and large corporations, to smaller organizations.

IaaS is offered in three models: private, public, and hybrid cloud. Private cloud implies that the infrastructure resides at the customer-premise. In case of public cloud, it's located at cloud computing platform vendor's data center; and hybrid cloud is a combination of two with customer choosing the best of both worlds.

Pros and cons of IaaS cloud computing platform

Pros:

- Dynamically choose a CPU, memory, and storage configuration to suit your needs
- Access to vast computing power available on IaaS cloud platform
- Eliminates the need for investment in rarely used IT hardware
- IT overheads handled by the IaaS cloud computing platform vendor
- In-house IT infrastructure can be dedicated to activities central to the organization

Cons:

- There is a risk of IaaS cloud computing platform vendor gaining access to the organization's data. Can be avoided by opting for private cloud.
- IaaS cloud computing platform model is dependent on internet availability.
- Dependence on the availability of virtualization services.
- IaaS cloud computing platform may limit user privacy and customization options.

Points to consider before making a choice

- IaaS cloud computing platform may not replace traditional hosting. Where resource requirements are predictable, viz. for internal databases, applications, and email, traditional hosting may remain the viable option. Apart from contingency needs, IaaS cloud computing platform is useful for application development and testing.

- IaaS cloud computing platform may not eliminate the need for an in-house IT department. It will be needed to monitor the IaaS setup. IT salary expenditure might not reduce significantly, although other IT expenses will.

- Breakdowns at the IaaS cloud computing platform vendor's end can bring your business to a halt. Assess the IaaS cloud computing platform vendor's finances and stability. Ensure that the SLAs provide backups for hardware, network, data, and application failures. Image portability and third-party support is a plus.

- The IaaS cloud computing platform vendor can get access to your sensitive data. Engage only with credible players. Study their security policies and precautions.

IaaS market developments

IaaS cloud computing platform is a new technology, and therefore evolving. Amazon Web Services (AWS) is the first and most popular IaaS cloud computing platform vendor. AWS suite offers technologies and skills developed or acquired by Amazon.com to run its own websites.

Other key international players in IaaS market are Rackspace, Google, GoGrid, and Joyent.

In India, ground infrastructure in the form of widespread internet connectivity and virtualization services remain insufficiently developed. However, that is changing, and studies suggest that IaaS cloud computing platform will be commonplace in Indian enterprises in the near future.

The notable Indian players include Reliance, Tata, Sify, and Netmagic Solutions. Netmagic was the first to offer IaaS in India.

Top vendors and their IaaS offerings

IaaS vendor	IaaS solution	Details
Amazon Web Services	Elastic Compute Cloud (EC2), Elastic MapReduce, Route 53, Virtual Private Cloud, etc.	The cloud computing platform pioneer, Amazon offers auto scaling, cloud monitoring, and load balancing features as part of its portfolio.
Netmagic Solutions	Netmagic IaaS Cloud	Netmagic runs from data centers in Mumbai, Chennai, and Bangalore, and a virtual data center in the United States. Plans are underway to extend services to West Asia.
Rackspace	Cloud servers, cloud files, cloud sites, etc.	The cloud computing platform vendor focuses primarily on enterprise-level hosting services.
Reliance Communications	Reliance Internet Data Center	RIDC supports both traditional hosting and cloud services, with data centers in Mumbai, Bangalore, Hyderabad, and Chennai. The cloud services offered by RIDC include IaaS and SaaS.
Sify Technologies	Sify IaaS	Sify's cloud computing platform is powered by HP's converged infrastructure. The vendor offers all three types of cloud services: IaaS, PaaS, and SaaS.
Tata Communications	InstaCompute	InstaCompute is Tata Communications' IaaS offering. InstaCompute data centers are located in Hyderabad and Singapore, with operations in both countries.

Further reading on IaaS cloud computing platform

Definition from WhatIs.com: What is IaaS?

Buyers' Guide:

Cloud services selection guide for Indian organizations

Tutorial:

Cloud computing - Infrastructure as a service (IaaS) security

Tip: How much are free cloud computing services worth?

Tip: Gartner's cloud computing evaluation checklist

News: Sify-HP pricing details

News: Tata Communications' cloud services: Details & pricing

News: Cloud computing a priority for 53% of Indian cos

News: Lines between cloud computing models blurring