The Jamcracker Enterprise CSB AppStore

Unifying Cloud Services Delivery and Management for Enterprise IT

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Cloud Computing – Changing the Game for Enterprise IT

Cloud computing is an enterprise IT game-changer. It helps reduce costs and provides easy access to information and services for employees and customers. Within the enterprise, the cloud signifies IT's ongoing transformation to a services-management role, enabling IT to source infrastructure and deliver services to speed innovation and grow the bottom line.

The cloud is impacting IT's traditional role in other ways. In the past, IT acted as the organization's central resource for procurement, management, administration, and security for all applications and infrastructure. With the advent of public cloud services, these elements have become decentralized, resulting in less visibility and control by IT.

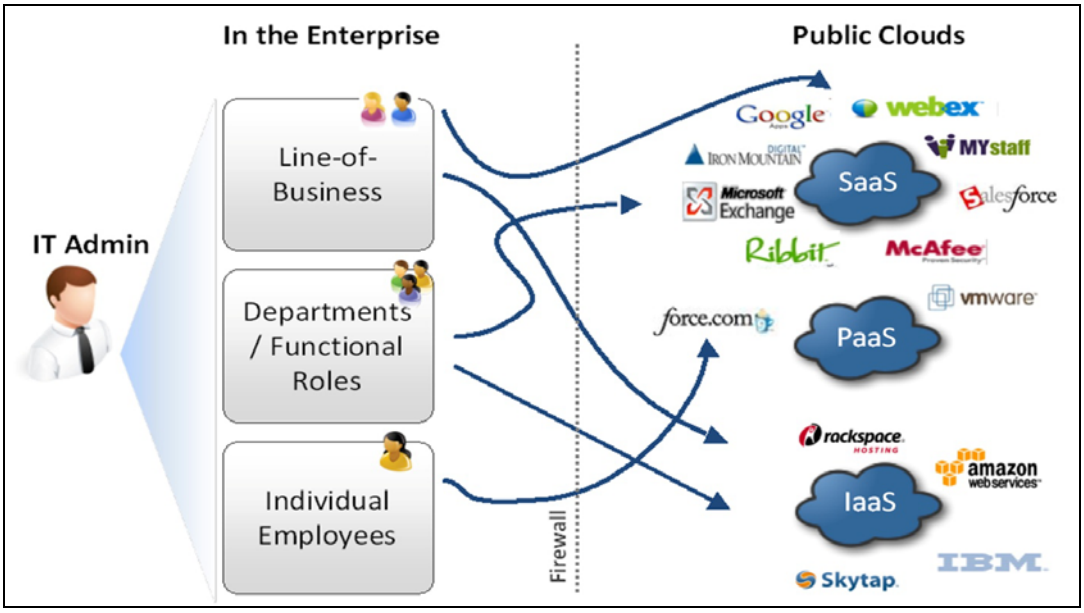


Figure 1: Ad-hoc adoption of clouds by departments, lines of business and Individual employees is putting pressure on Enterprise IT Administrators and CIOs

Compounding IT's control and visibility challenges, each cloud has its own provisioning, authentication, authorization, billing, administration, and support, raising concerns around:

- **Security**: Enabling single-sign on (SSO), enforcing corporate password policy, and limiting employees' and ex-employees' access to public cloud services
- **Compliance**: Keeping track of the location of corporate data and controlling access to it
- **Auditability**: Demonstrating compliance
- **Accountability**: Implementing enterprise-wide licensing and departmental chargeback capabilities across external and internal services
- **Supportability**: Enabling provisioning, administration, and support for external services without IT involvement

Alleviate these concerns requires that IT unify services management across public and private clouds. Key requirements include:

- Enforcing compliance, security, and access control policies
- Managing licensing, administration, and support
- Self-service fulfillment for users
- Enabling departmental charge-backs for services
- Integrating with internal IT assets and processes

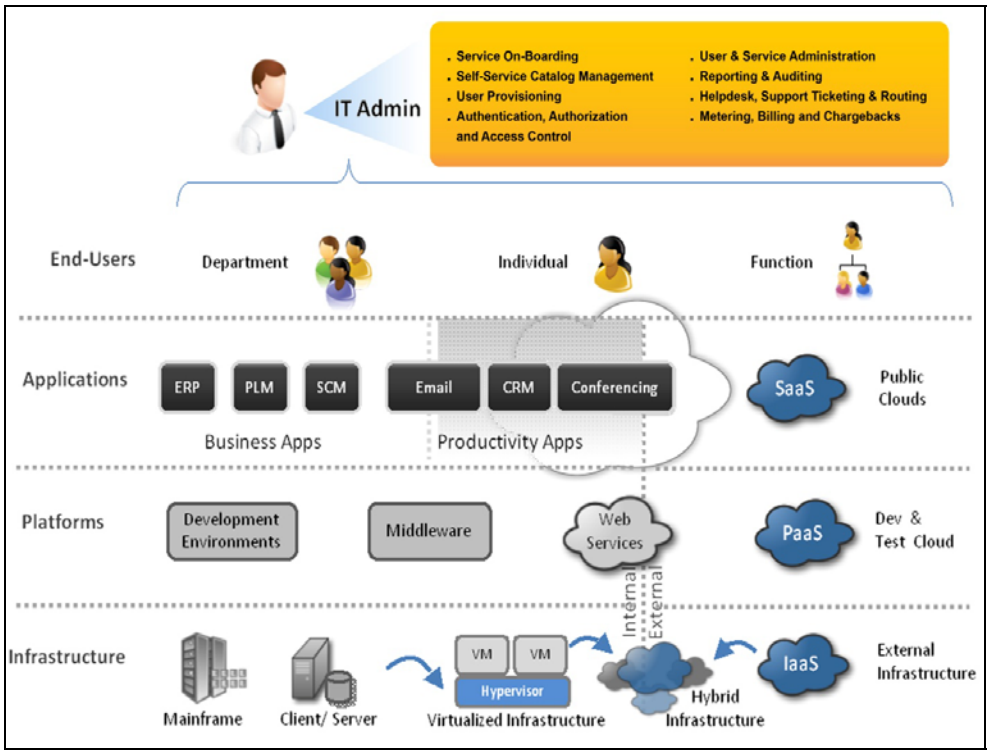


Figure 2: Fragmented IT poses a challenge for achieving end-to-end visibility and control. The cloud is exacerbating this trend.

Cloud services brokerages for enterprise IT

Cloud services provide significant benefits to operations. Services are easy to access, companies pay only for what they use, trying new options is simple, and it supports bottom-up innovation and efficiency. From an IT perspective, however, adopting cloud services presents significant challenges. Implementing cloud services from multiple vendors creates cumbersome management and complicated billing, and CIOs have compelling concerns around security, compliance, auditability, accountability and supportability.

A highly effective way for organizations to unify cloud services management and delivery is through internal cloud services brokerages (CSBs). CSBs can help IT provide unified security, compliance, license management, and support.

Having a large number of clouds in an organization is at odds with the traditional role of IT. In the past, IT centralized procurement, management, administration, and security for all applications and

infrastructure. However, public cloud services cater to decentralized needs and distributed buying centers, and their ease of access and relatively low cost results in a reduction of centralized visibility and control. Moreover, each cloud has its own provisioning, authentication, authorization, billing, administration and support characteristics.

The hurdles created by implementing cloud services in the enterprise are challenging, but they are not insurmountable. Mitigating these issues requires implementing a new delivery architecture. Organizations must unify services management across public and private clouds with the following features:

- Compliance, security, and access control policy enforcement
- Lifecycle management
- Self-service fulfillment for users
- Enabling departmental charge-backs for external and internal services
- Integration with internal IT assets and processes

Leveraging CSB AppStores for better business

The most effective architecture for delivering the features listed above is a Cloud Services Brokerage AppStore. A CSB AppStore allows enterprise IT to unify the delivery and lifecycle management of public and private cloud services across the enterprise.

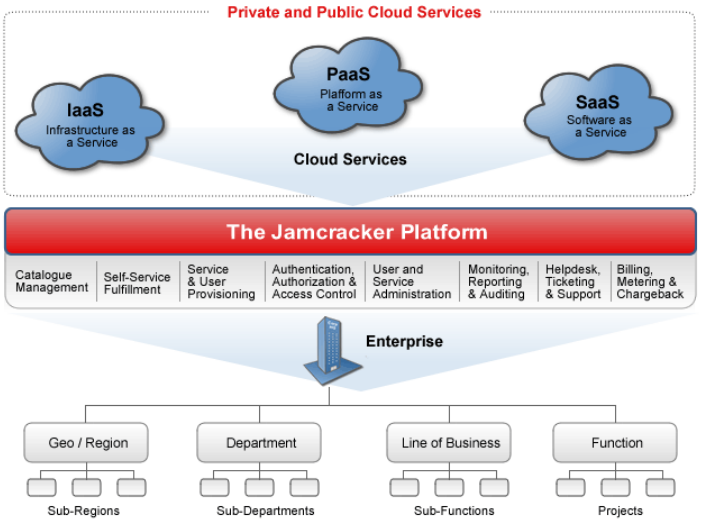
Many people are familiar with AppStores for mobile consumer applications, but AppStores also have enormous potential for enterprises' employees and customers. There are three types of AppStores: internal, external, and community: Internal AppStores aggregate cloud services to unify intra-organizational consumption; external AppStores offer core and third-party services to customers or via channel partners; and community AppStores aggregate cloud services delivery across member organizations.

Implementing an AppStore includes the following steps:

- Identify the services portfolio to match business objectives
- Secure buy-in from internal and external customers and partners
- Develop and validate the catalog topology, policies, and use-cases, and map against current approaches where possible
- Determine business and operations support services requirements and do a gap analysis
- Select a Cloud AppStore enablement solution and partnering approach

The potential return-on-investment from CSB AppStores is significant. AppStores improve the cloud end-user experience by providing a single point-of-services discovery and access. AppStores also reduce third-party services administration and management costs, and they reduce the risk of corporate data loss as ex-employees are automatically deprovisioned from all services. Finally, AppStores centralize access and provisioning of employees to cloud services. All of these factors increase control and decrease costs.

The diagram below illustrates the typical structure of an AppStore integrating both private and public clouds:



Migrating to cloud operations is not easy, but adopting a CSB can alleviate the growing pains associated with implementing cloud e-mail, security, storage, etc. Once cloud services are fully implemented, IT organizations are free to serve customers and employees instead of focusing on administrative problems.

By employing CSB AppStores, companies can adopt cloud services easily and improve their overall efficacy. Integrating the cloud into business operations is inevitable, but overlooking the challenges to cloud services face is simply too costly, making the CSB AppStore even more necessary.

Realizing CSB AppStore ROI

Internal CSBs can help reduce significantly cloud services lifecycle management and licensing costs within the organization. Deploying an Enterprise Cloud AppStore will enable your IT organization to:

- Reduce third-party services administration and management costs. The average overhead cost for administration and management across industries averages 28 percent. As cloud services adoption continues to grow exponentially as a core component of IT services, this overhead cost will continue to grow as a percentage of overall IT spend.
- Manage licenses via cloud services usage optimization and cost consolidation.
- Around 40 percent of all IT helpdesk calls are for lost passwords. Enabling SSO and centralized password management across cloud services in the organization can significantly reduce the number of calls.
- Reduce exposure to corporate data loss from employees who have left the organization, but who have not been deprovisioned automatically from access to cloud services.

Centralizing access and provisioning employees to cloud services allows companies to centralize usage auditing, thereby reducing the cost of verifying regulatory compliance.

Why app stores?
Enterprise app stores are an effective way for IT organizations to:

- Achieve more effective governance, compliance, and security. Enterprise cloud app stores can identify who accesses which services and when.
- Allow employees to connect only with cloud services that meet corporate security policies.
- Provide role-based access to cloud services.
- Save money by controlling which cloud services can be downloaded and how many licenses are in use, and by eliminating licenses for unused and unpopular services.

Jamcracker End-to-End CSB Platform

"Cloud consumers need brokerages to unlock the potential of cloud services."
—Gartner

"The future of cloud computing will be permeated with the notion of brokers negotiating relationships between providers of cloud services and the service customers. In this context, a broker might be software, appliances, platforms, or suites of technologies that enhance the base services available through the cloud. Enhancement will include managing access to these services, providing greater security, or even creating completely new services."
—Frank Kenny, Gartner Research Director, July 2009.

The Jamcracker Platform is a cloud services brokerage, enabling IT to 1) unify the delivery and lifecycle management of public and private cloud services across the enterprise and 2) provide app stores for employees to access approved apps that meet companies' policies. The platform does this by integrating with existing enterprise systems and enabling company policies and workflows to include cloud services.

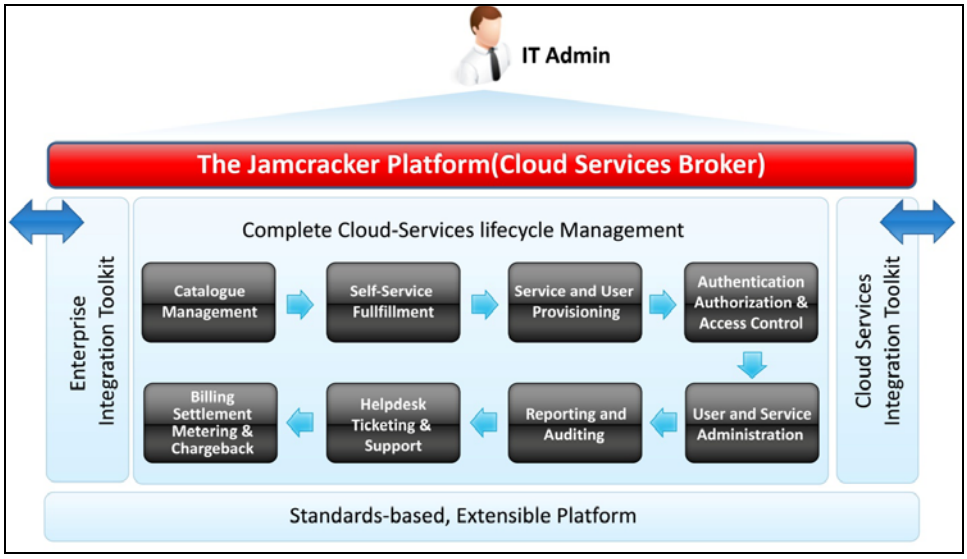


Figure 3: The Jamcracker Cloud Services Broker Platform unifies cloud services lifecycle management and delivery within the enterprise.

The Jamcracker Platform's standards-based architecture, extensible data model, and integration toolkit enable seamless integration with external and private cloud services and existing enterprise IT support systems.

Key platform highlights

Standards-based platform

The Jamcracker Platform is based on Java EE. It enables integration with other solutions and services regardless of technology, with support for standard Web-services protocols such as SOAP/XML, SAML, WSDL, and DSML.

Extensible data model

The platform's extensible data model allows it to be customized and scaled as needed.

Configurable workflow engine

The Jamcracker Platform provides an integrated workflow engine that facilitates business processes required for cloud services lifecycle management within the enterprise.

N-tiered architecture

The platform's N-tiered architecture enables role-based visibility and control of all cloud-service-lifecycle-management and delivery-related tasks. Figure 4 shows an example. The Jamcracker Platform's N-tiered architecture enables centralized control, with delegated administrative capabilities at any level.

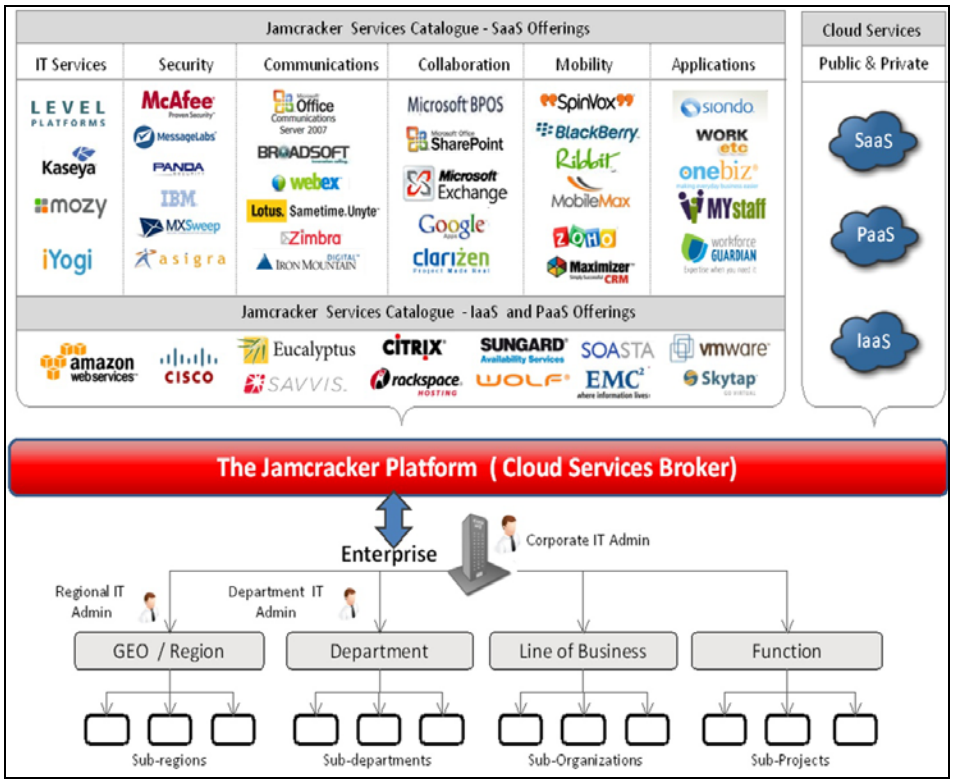


Figure 4: The Jamcracker Platform's architecture is designed to support an enterprise's tiered organizational hierarchy

Federated cloud management and delivery

The Jamcracker Platform enables lifecycle management for all cloud services across the enterprise. The platform authenticates users, then redirects them to the private or public cloud service. The platform orchestrates management and administration workflows by leveraging its direct integration with individual cloud services.

Jamcracker integration framework

The Jamcracker Integration Framework is a set of prepackaged toolkits and APIs to enable integration with cloud services and existing enterprise systems. This includes a service integration toolkit with XML-based templates to help accelerate the integration with a variety of cloud services, including IaaS, PaaS or SaaS offerings. A directory integration toolkit enables integration with LDAP or active directory directories. Another toolkit enables integration with financial and billing systems.

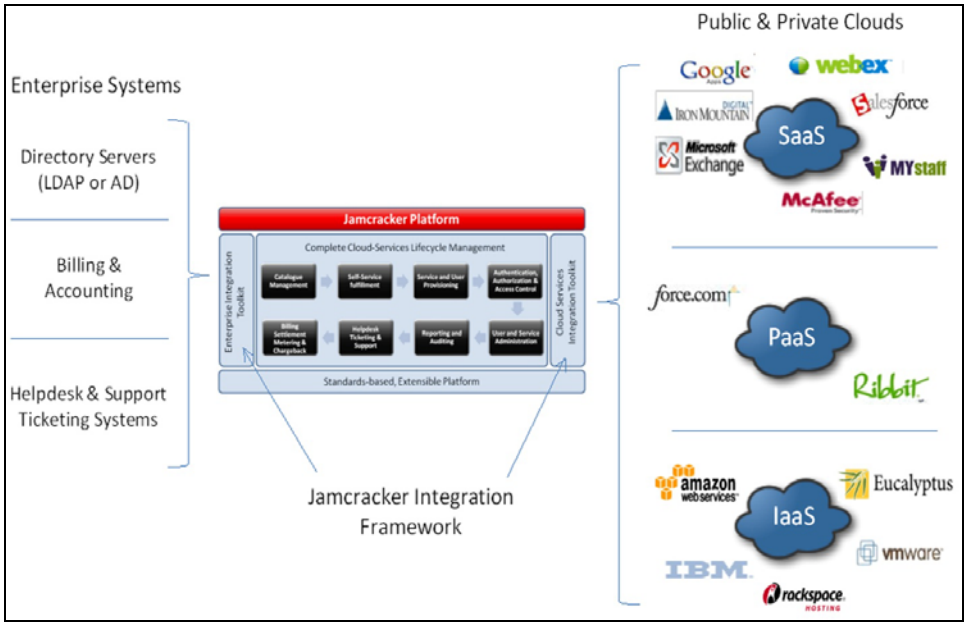


Figure 5: Jamcracker Integration Framework

Once a cloud service has been integrated with the Jamcracker Platform, the enterprise can manage all aspects of the service's lifecycle, including catalog management, service provisioning, security and access control, administration, reporting and auditing, support, and billing.

Licensed software or hosted service

The Jamcracker Platform is available as a licensed software platform that installs and runs on the company's infrastructure, or Jamcracker can manage and operate the platform as a hosted service.

Jamcracker Platform's Service Lifecycle Management Features

The Jamcracker Platform enables key cloud-services-lifecycle-management features for enterprises, including:

- Service catalog management
- Service and user provisioning
- Authentication, authorization, and access control
- User and service administration
- Reporting and auditing
- Helpdesk and support ticketing and support
- Metering, billing, and chargeback

These features are outlined below.

Service catalog management

With the Jamcracker Platform, any private or public cloud service can be incorporated quickly and offered through the services catalog. The platform's service catalog management functionality helps the enterprise create and manage department, line-of-business, and function-specific catalogs from a list of approved private and public cloud services. Various sub-features include:

- Service definition and on-boarding
- Tiered catalog management
- Jamcracker services catalog
- Service bundling

Service and user provisioning

- Centralized self-service
- Policy-based automated provisioning
- Bulk provisioning

Authentication, authorization, and access control

- Single-sign-on (SSO)
- Enterprise directory services integration
- Roles-based authorization and access control
- Password policy enforcement

User and service administration

- Centralized and automated move, add, change (MAC) requests
- Delegated administration controls

Dashboards, auditing, and reporting

The Jamcracker Platform provides dashboards and reports to track user activity and administrative events. The Platform also allows integration of data from these reports with third-party reporting and business intelligence systems, and enterprise dashboards.

- Role-based dashboards
- Auditing
- Reporting

Helpdesk ticketing and support

The Jamcracker Platform's help-desk functionality provides a centralized, configurable way to manage support and change requests from end-users. Jamcracker help-desk functionality can be used in conjunction with existing trouble ticket, helpdesk, and call center systems. It acts as a front-end for users while helping route tickets to external service providers and existing in-house helpdesks. The helpdesk tracks SLA data, elevates trouble tickets across the services ecosystem, and sends notifications across multiple organizations to facilitate support ticket resolution.

- Helpdesk console
- Helpdesk ticketing and routing
- Multi-channel support
- Knowledge base
- Notifications and alerts

Metering, billing settlement, and chargebacks

One of the challenges for an enterprises that use services from external cloud-service providers and IT is how to consolidate billing, reconcile payment terms, measure usage of services by department, and then enable accurate departmental chargebacks. The Jamcracker Platform provides a comprehensive set of processes to manage metering, billing settlement, and chargebacks:

- Metering and billing aggregation
- Consolidated billing settlement and chargeback statements
- Financial and accounting systems integration

Summary

As enterprises continue to combine conventional IT applications, services, and infrastructures with cloud-based alternatives, they are beginning to face challenges maintaining centralized control over these hybrid infrastructures.

Enterprises need a common framework for delivering and managing distributed services. They need to unify services delivery and management across public and private clouds, with key requirements including:

- Compliance, security, and access control policy enforcement
- Lifecycle management, including licensing, administration, and support
- Self-service fulfillment for users
- Departmental charge-backs for external and internal services
- Integration with internal IT assets and processes

The Jamcracker Platform addresses these needs by unifying and centralizing the lifecycle management and delivery of private and public cloud services, enabling enterprises to maintain much more effective control over their hybrid cloud computing infrastructures.

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