

Secure based Financial Transactions in Banks using Community Cloud

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Abstract

Cloud computing is one of the option knowledge for the banking Institutions with its vibrant scalability and handling of virtualized hardware assets as a tune-up through the Internet. It is a first-rate substitute for banking institutions to maneuver their information systems effectively. Banks can take benefit of existing cloud-based applications accessible by service providers and facilitate their own clientele to act upon different financial transactions. This paper is an analysis more specific to the diverse security issues that are associated with relevant to financial dealings made by the authorized customer as well as the internal transactions of the banks. Especially in the Banks where the use of computers are more intensive and there has been a lot of inconsistency with sharing of transactional data between Banking Institutions and their customers. This results in delay of transactional processing's and also incoherent dealings and other inefficiencies. These issues can be minimized by using the virtualization of the community cloud technology in banking systems on a pay on use basis, now the customer can have the capability to do various types of transactional handing out by having way in to the core banking systems from anywhere.

Keywords: Banking institutions, cloud computing, community cloud technology, financial transactions, virtualization

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INTRODUCTION

Cloud computing is a method to boost the capability or add capabilities with dynamism without investing in new virtual and real systems, training and development of future manpower, or licensing new software. It extends Information Technology's (IT) existing capacities and capabilities. In a lapse of two years, cloud computing has developed from being a hopeful business concept to one of the fast budding segments of the IT industry. The swift surfacing of cloud computing is transforming the way financial institutions reflect about how they guzzle their IT resources. Until now, technology has in general been a pricey stumbling block for financial institutions, mostly individuals in upcoming markets where developing customized solutions or investing in advanced banking platforms has either been unfeasible or the result has been too many failures, too many resources used and too much time wasted. Cloud computing, which in the most

fundamental of conditions offers infinite computing source as a service on a pay on use basis, is confirmed to openly interpret to less blunt, capital expense and abridged IT expenses, offering a lucrative, uncomplicated substitute to accessing enterprise-level IT without the connected costs [1].

Cloud Computing: What Is It?

The cloud is a pattern shift in computing, by which unlimited computing capabilities and possessions (servers, storage space, network, application and services) are delivered as a service to customers using internet technology. There is incongruity about the clear-cut classification, but basically cloud computing means remote computing with software accessed through the internet. This software is usually paid for according to the quantity that it is worn; in a few cases at hand is also a humble payment bill, and in others the software is free of charge for use and paid for with advertising. Cloud computing is part

of a common architectural style in the computer trade, moving from users doing computing on their own hardware using copies of software that they possess, to users doing computing on other peoples equipment somewhere in the cloud, using software that they lease. Cloud computing is related to (but not identical to) software as a service, grid computing, Web 2.0, on-demand computing, utility computing, Internet service platforms, ASPs, and everything as a service [2]. These are buzzwords that were previously trendy.

Payments: Already In the Cloud

As banks cautiously look to stir more functions to hosted environments, possibly one of the most usual to carry to the cloud is expenses. After all, banks are by now doing some payments dispensation in the cloud, even if they don't realize it. Several vendors by now offer services run nearly that involve expenses, such as hosted online banking and card processing, to which loads of banks already promise [3].

Preventing Disintermediation

One more cause for banks to hold close cloud payments is to stave off the danger of disintermediation. Payments are conceivably the one area where a startup tech outfit can jump in and compete with banks right away. And they can often do payments better. In a non-cloud world, payments are owned by the bank or one or two vendors. In a cloud world, you can have many diverse firms and disaggregation of the value chain. Parallel to what's happened in music and other industries, dedicated vendors can take personage pieces of the supply chain and optimize it, and because those services are all hosted distantly, they can do them in ways better in the past. While it's highly improbable banks will ever be cut totally out of the payments representation, they can be marginalized in the modus operandi and danger losing primary revenue. Eventually funds flow into and out of bank accounts, and you need banks for certain belongings, like having keep back currencies, but there are other, more consumer-facing belongings that big banks can't do as good quality a job of and can't be as nimble and supple [4, 5]. Banks own the rails the monetary system runs on, but the trains, cars and the food served on them can be run by smaller companies.

BANKING INDUSTRY TRENDS

With the rise of on hand and new, non-traditional rivalry, banking faces an altering trade scene. Satisfying customer demands has turn into more compound as clientele insist more expediency and power over their banking services. At the same time, regulators are ushering in a new era of government oversight. Banks currently face challenges in a number of key areas:

- A. Capital Inadequacy:** that depresses profit margins.
- B. Emboldened Customers:** who expect rapidly evolving new services and offerings?
- C. Fierce Competition:** for customers has spawned industry consolidation and the entrance of nontraditional firms.
- D. Changing Business Models:** have shifted from product-centric to customer-centric.
- E. Enhanced Regulation:** increases government oversight and intervention.
- F. Increasing Social and Government Pressure:** for financial inclusion.

WHY CLOUD COMPUTING FOR BANKS?

Cloud computing can help financial institutions improve performance in a number of ways.

Cost Savings and Usage-based Billing

With cloud computing, financial institutions can turn a large open capital expenses into a slighter, ongoing operational cost. There is no necessitating for heavy hoard in new hardware and software. In addition, the exclusive character of cloud computing allows financial institutions to select and decide the services requisite on a pay as you go base [6].

Business Continuity

With cloud computing, the provider is responsible for managing the technology. Financial firms can gain a higher level of data protection, fault tolerance and disaster recovery. Cloud computing also provides a high level of redundancy and back-up at lower price than traditional managed solutions.

Business Agility and Focus

The elasticity of cloud-based in service models lets financial institutions experience shorter progress cycles for novel products. This ropes a quicker and more capable reaction to the needs of banking clientele. Since the cloud is accessible on-demand, less infrastructure investments are essential, saving initial set-up time. Cloud computing also allows new product progress to move onward devoid of capital investment. Cloud computing also allows businesses to move non-critical services to the cloud, plus

software patches, maintenance, and other computing issues. As a result, firms can focus more on the business of financial services, not IT [7, 8].

Green IT

Organizations can use cloud computing to transfer their services to a virtual surroundings that reduces the energy consumption and carbon footprint that comes from setting up a physical infrastructure. It also leads to more efficient utilization of computing power and less idle time.

Table 1: Cloud Platform Configuration.

	Discovery <i>Agility</i>	Department <i>Cost-effectiveness</i>	Enterprise <i>Security</i>
Use	Tests and developments	Infrastructure applications such as: messaging, internet service	Enterprise critical data such as SAP, Web logic, data base.
Benefits	Fast access to new temporary resources	High density consolidation Simplified infrastructure Improved TCO	Secured heavy production Quality of service Banking - class security Ultra-fast
Reliability	Memory Protection Simple Backup	Memory Protection High Availability Simplified Management	Memory Protection, Enterprise Backup, global PRA
Scalability	Cloud Services Web-provisioning 300 Virtual Machines	Hyper consolidation: 168 apps on a single 4-socket server 500 VMs	Hyper Scalability: 8 to 16-sockets 700 Virtual Machines

Choosing The Right Model

Cloud service models offer financial institutions the choice to shift as of a capital-intensive approach to a more elastic business model that lowers operational expenses. The key to achievement lies in choosing the right cloud services model to equivalent business needs. In this segment we assess a variety of models for cloud computing services, operations and deployment.

Cloud Service Models

1) Software-as-a-Service (SaaS): A cloud service supplier provides the business software and related information, and users access the software and data via their web browser. Types of software like ERP, CRM, HRM etc.

2) Platform-as-a-Service (PaaS): A cloud service supplier offers a complete Application Development and Deployment. This allows businesses to simplify the growth, preservation and sustain of custom applications, reducing lowering IT costs and minimizing the need for hardware, software, and hosting environments.

3) Infrastructure-as-a-Service (IaaS): It provides the Combination of Hardware and Network Resources that are needed for the Business Environment .This cloud model allows businesses to buy those resources as a fully outsourced service [9].

Cloud Deployment Models

There are three categories of service providers most usually deploy clouds:

1) **Private Clouds:** This cloud infrastructure is operated exclusively for a definite business. It may be managed by the Business or a third party and could be on or off the site. This is the most secure of all cloud options.

2) **Public Clouds:** This cloud infrastructure is made accessible to the general community or a huge business set and is owned by a group that sells cloud services.

3) **Hybrid Clouds:** This cloud infrastructure is self-possessed of two or more clouds (private or public) that linger exclusive entities but are associated in order to provide services.

4) **Community Clouds:** In a community cloud, Businesses with related necessities share a cloud infrastructure. It may be implicit as a

generalization of a private cloud, a private cloud being an infrastructure which is only accessible by one certain Business Institutions [10].

PROPOSED SYSTEM

Enter the Age of Self-Help

In addition to saving time and enabling business to focus on business, a private cloud creates a fundamental shift in how some IT costs are managed. Traditionally IT spends a lot of time serving requests from internal business services. This is costly in terms of time and human resources. The complete automation built into Oracle Enterprise Manager 12c so that customers can consolidate their applications on the standard platform, manage the platform, and enable self-service provisioning and chargeback on that platform. These features translate to reduced costs. Provisioning a new application in the Oracle private database cloud is now a self-service activity. This saves us a lot of money.

For Customers' Eyes Only

With financial information on the line, Banks also requires high procedures of security to protect its customers. When we fashioned our Community cloud platform, we needed to ensure that all customer data is secure. The application team has restricted access, ensuring

that none of the sensitive data is exposed. Banks has invested a lot of time in identifying the regular activities that the application teams require, which makes setup time for novel applications nominal.

Solution

Banking Institutions would utilize Community Cloud for dealings with the help of the PaaS and SaaS cloud for extremely secured transactions. And it would use a public cloud for upper layer of its application. For validation point of view the structural design for secure cloud for banking application authentication protocol that works on ticket basis and offer individuality, designed for secure authentication by which identity is proved by this protocol. Kerberos uses symmetric key cryptography and requires a trusted third party through definite phases of authentication. Dynamic Firewall is used to guard the stranger attacks. Honey Pot is used to sense unauthorized utilization of data. These honey pots do not append direct value to a Business Institutions. As an alternative, they are used to investigate the attacks for the organizations and used to guard against individual attacks. Intrusion detection system is used to check the network or strategy violations and give information to Banking Institutions. Several systems may perhaps effort to stop an intrusion attempt.

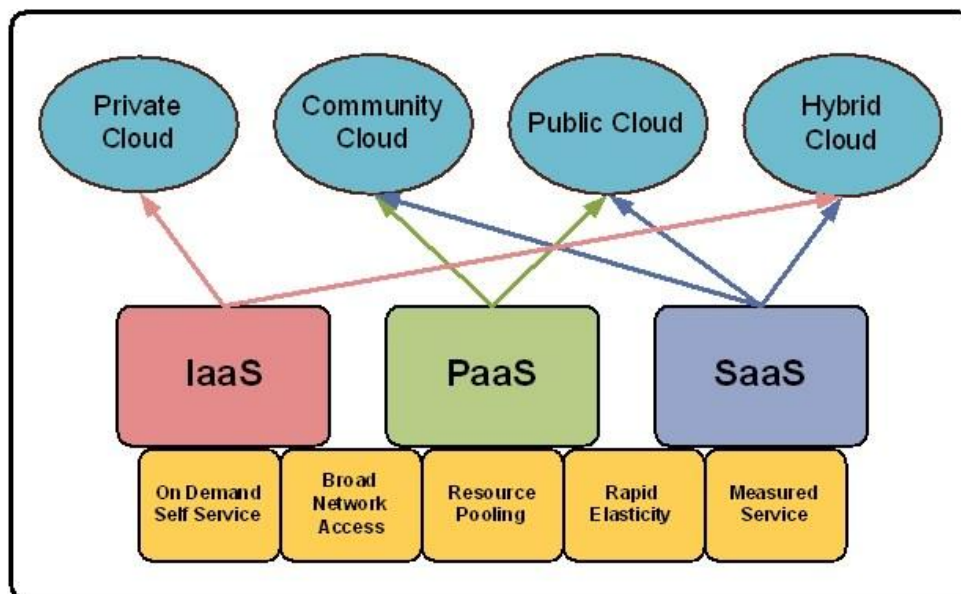


Fig. 1: Cloud Architecture.

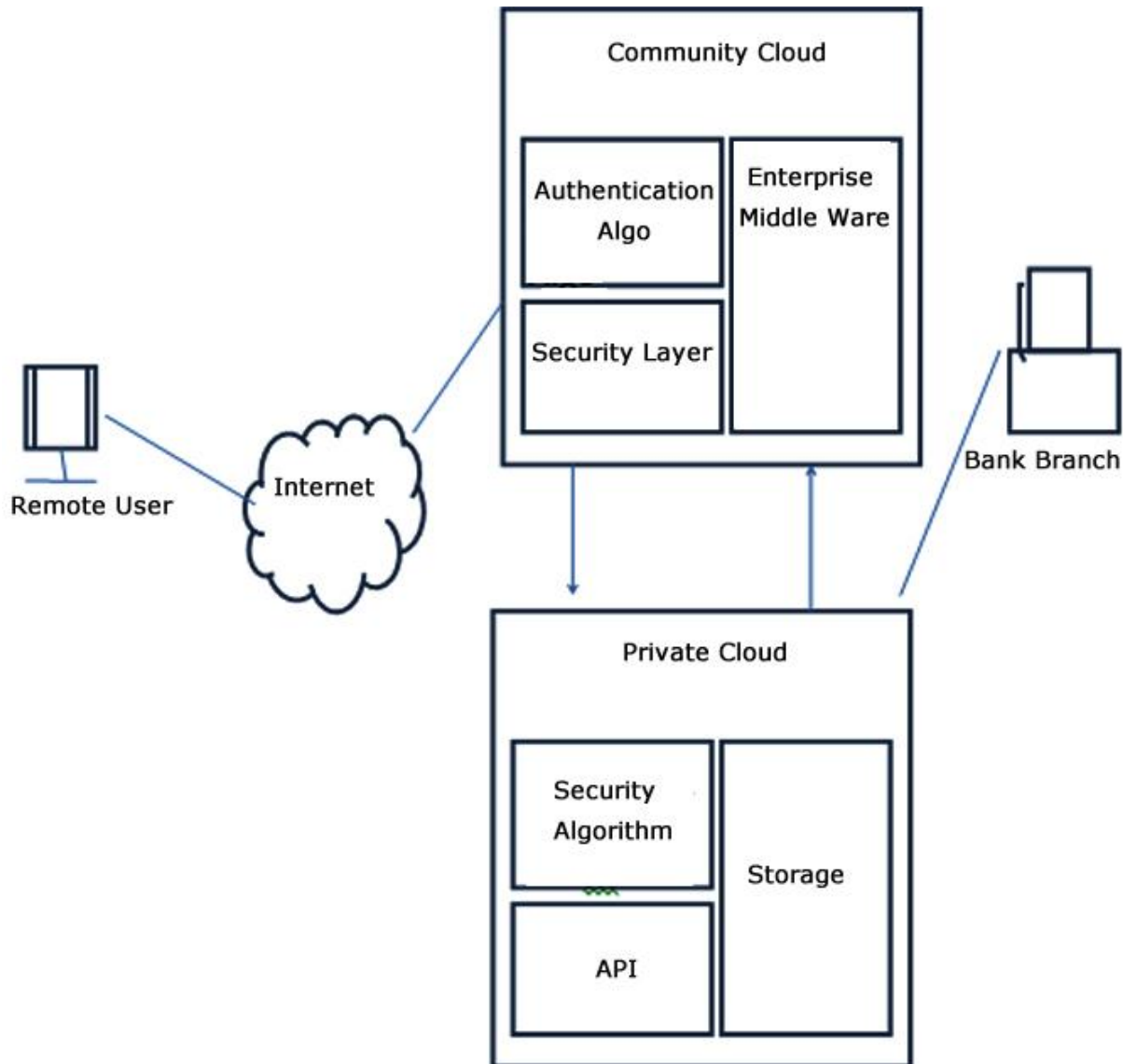


Fig. 2: Architecture for Secure Cloud for Banking Application.

CONCLUSION

Our proposed architecture of Community Cloud provides a secured Financial Transactions for all the transactions of the Banking Institutions. By using the Cloud computing as one of the alternative technologies for the banking Institutions, with its vibrant scalability and handling of virtualized hardware assets as a tune-up through the Internet, It is a first-rate substitute for banking institutions to maneuver their information systems effectively. Banks can take benefit of existing cloud-based applications accessible by service providers and facilitate their own clientele to act upon different financial transactions. This paper is an analysis more specific to the diverse security issues that are associated with

relevant to financial dealings made by the authorized customer as well as the internal transactions of the banks. By using the virtualization of the community cloud technology in banking systems on a pay on use basis, now the customer can have the capability to do various types of transactional processing by having access to the core banking systems from anywhere.

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