SYSTEM AND METHOD FOR A CLOUD COMPUTING ABSTRACTION LAYER WITH SECURITY ZONE FACILITIES

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ABSTRACT:-

Federation of clouds is the future of cloud computing, mobile cloud computing, Internet of things, and big data applications provides a catalog of security and privacy controls for federal information systems and organizations a process for selecting controls to protect organizational operations(including mission, image, functions, and reputation), organizational assets, individuals, other organizations, the Nation from a diverse set of threats including hostile environment cyber-attacks, image, natural disasters, structural failures, and humanerrors. These controls are implemented aspart of an organization-wide process thatmanages information security and privacyrisk. The control address a diverse is set ofsecurity and privacy requirements across thefederal government and criticalinfrastructure, derived from legislation,Executive Orders, policies, directives,regulations, standards, and/ormission/business needs. This paper alsodescribes how to develop specialized sets ofcontrols, or overlays, tailored for specifictypes of missions/business functions,technologies, or environments of operation.Finally, the catalog of security controlsaddresses security from both a functionalityperspective (the strength of securityfunctions and mechanisms provided) and anassurance perspective (the measures ofconfidence in the implemented securitycapability). We motivated the need toformalize SSpecs of distributed applicationsand align domain RSpecs for an efficient joint performance and security drivenworkflow management across federatedmulti-cloud resources. We showed how aprocess of breaking down the securityrequirements across workflow lifecyclestages and applying NIST basedcategorization can facilitate formalization ofapplicationSSpecs.These Securityfunctionality and security assurances ensuresthat information technology products andthe information systems built from thoseproducts using sound systems and securityengineering principles are sufficientlytrustworthy.

1. INTRODUCTION

Data-intensive science applications in fields such as bio informatics, materialscience and high-energy physics areincreasingly multi-domain in nature. Toaugment local private cloud resources, theseapplication workflows rely on mult-institutional resources, i.e., community andpublic clouds as illustrated that are remotely accessible (e.g., scientific instruments,supercomputers, federated data repositories,public clouds). They execute variouslifecycle stages and the data may havedifferent security requirements as itundergoes transformations. A growing trendin multi-domain resource federations thatsupport multi-disciplinary initiatives is tocombine expertise of geographically distributed collaborators as seen in exemplar application communities such as: Large Hadron Collider for physicists, iPlantCollaborative that uses federated resources for informatics, and cyber-enabling of expensive scientific instruments (e.g.,electron microscopes, spectrometers) infields such as material science and bio chemistry. Thus,

secure and efficientallocation of federated multi-cloud resourcescomprising of multi-institution resources fordata-intensive science collaborations in usercommunities is becoming increasinglycritical.

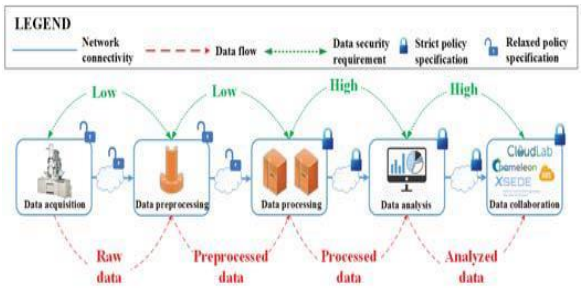
2.RELATED WORK

Existing System deals with Storing andmanaging of all files in the single cloud. Ouroptimization problem involves resourceallocation across multiple domaininfrastructures with multiple constraints.Such a problem is NPhardand known to beintractable even for a moderate number ofresources. Existing system using ADON - Application-driven Overlay Network as aService. And then this existing system shouldbe process are Low Speed and Not soreliable

Proposed concept deals with thispaper, we motivated the need to formalizeSSpecs of distributed applications and aligndomain RSpecs for an efficient jointperformance and security driven workflowmanagement across federated multi-cloudresources.And then proposed system using isan RSpecs-compliant resource allocation.High Speed and high efficiency. Based onmodern cloud models for storing largeamount of data's.

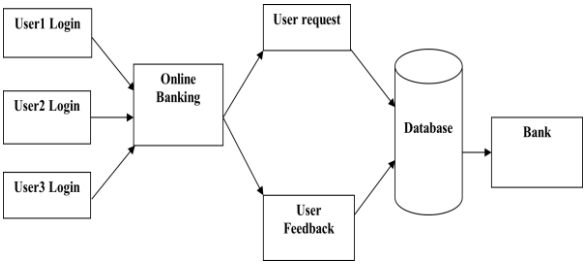
ARCHITECTURE DIAGRAM

Additionally based on applications'performance and quality of service (QoS)considerations i.e., QSpecs-driven (e.g., datathroughput, execution time). Someapproaches such as also consider keysecurityand privacy requirements.



SYSTEM ARCHITECTURE

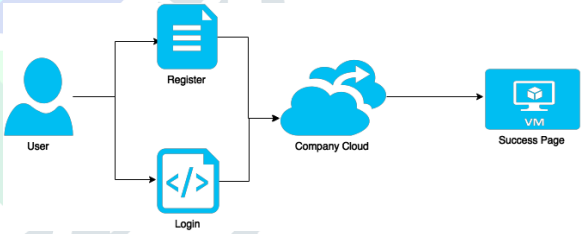
Systems architect establishes the basicstructure of the system. This systemsarchitect provides the architects view of theusers' vision. This diagram user first login tothe account then the enter query and itsearch which are available in server anddisplayquery.



3.MODULAR DESCRIPTION

3.1 USER INTERFACE DESIGN

User connect with server must give theirusername and password then only they canable to connect the server. If the user isalready exits it directly can login into theserver else user must register their detailssuch as username, password and Email id,into the server. The Server will be creatingthe account for the entire user to maintainupload and download rate. Name will be setas user id. This Logging is usually used toenter a specific page.



3.2 FILE REQUESTING

If the users access the same server,then the server uses the time schedulingalgorithm to serve the user. There aremultiple number of users are available toaccess the server.

3.3 REQUESTING/RESPONSE FILE

Requesting a file means as you are notowner of the file but you need to read ordownload the file that is possible only byadmin approval. The person who need thefile must be requested to file admin for thetokens once the tokens have been given bythe admin the person can able to read/viewthe file withthe token otherwise the personcan't able to get the file.

3.4 ADMIN LOGIN

To connect with user admin must give their username and password then only they can able to connect the user. If the admin already exits directly can login into the server else admin must register their details such as username, password and Email id, into the server. Server will create the account for the admin to maintain upload and download rate. Name will be set as admin id. . Logging in is usually used to enter a specific page.

3.5 RECEIVE NOTIFICATION

After receiving the request fromthe users, the admin is responsible to givethe access to the users. But the n number ofuser access the same server at a time. Henceavoid the systems crash we follow the time scheduling algorithm. Finally thenotification sent to the users.

4.CONCLUSION

We motivated the need to formalizeSSpecs of distributed applications and alignddomain RSpecs for an efficient jointperformance and security driven workflowmanagement across federated multi-cloudresources. We showed how a process ofbreaking down the security requirementsacross workflow lifecycle stages andapplying NIST based categorization canfacilitate formalization of applicationSSpecs. Our formal SSpecs data structure isintuitive and comprehensive enough toaccount for a wide range of securityrequirements pertaining to data-intensiveapplication workflows. Our unique use ofPortunes algebra to align diverse domainpostures resulted in homogenizing domainRSpecs that is easily comparable with a data-intensive application's SSpecs to achieve joint QSpecs-SSpecs-driven,RSpecs-compliant resource allocation. Ourmodeling and solution of the jointoptimization problem achieves close tooptimal resource allocation of federatedresources across multiple domains. Ourimplementation of OnTimeURB and multicloudenvironment evaluations with the SoyKB and EMC applications demonstratedthe benefits of our proposed approach Weensured satisfaction of both performanceand security requirements.

5.REFERENCES

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