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Abstract

Cloud resource usage tracking and invoicing in a trusted manner are inevitable and critical for the cloud service provider. The credibility of the service is measured in terms of accuracy in invoicing for the service consumed. In the existing system the limitations are, complexity, computational overhead and no way to validate the usage. Here, we propose OSIRIS: The consumption based efficient invoicing of the service oriented transaction in cloud computing. This system addresses all the existing concerns. It uses a concept called cloud notary authority and is responsible for accuracy in invoicing. This acts as an interface between cloud service provider and user and usage can be verified on either side. We have trusted SLA monitoring

mechanism too that is built on trusted platform module called I-Mon. The performance evaluation confirms that the overall latency of OSRIS invoicing transactions is much shorter than the latency of the existing leading methodology. OSIRIS guarantees identical security features as a PKI [10].

References

ences

- Amazon Web Services, "Amazon Elastic Compute Cloud EC2, Simple Storage Service," <http://aws.amazon.com/ec2>, <http://aws.amazon.com/s3>, Apr. 2011.
- Microsoft, "Microsoft, Windows Azure Platform," <http://www.microsoft.com/windowsazure>, 2010.
- M. Armbrust and A. E. Fox, "Above the Clouds: A Berkeley View of Cloud Computing," Technical Report UCB/EECS-2009-28, Electrical Engineering and Computer Sciences Dept., Univ. of California, Berkeley, Feb. 2009.
- N. Santos, K. P. Gummadi, and R. Rodrigues, "Towards Trusted Cloud Computing," Proc. Conf. Hot Topics in Cloud Computing (HotCloud), 2009.
- R. T. Snodgrass, S. S. Yao, and C. Collberg, "Tamper Detection in Audit Logs," Proc. 30th Int'l Conf. Very Large Data Bases (VLDB'04), pp. 504-515, 2004.
- L. Cornwall, M. Craig, R. Byrom, and R. Cordenonsib, "APEL: An Implementation of Grid Accounting Using R-GMA," Proc. UKE-Science All Hands Conf., Sept. 2005.
- F. Tannenbaum, L. Foster, and Tuecke, "Condor-G: A Computation Management Agent for Multi-Institutional Grids," Cluster Computing, vol. 5, pp. 237-246, 2002.
- O.-K. Kwon, J. Hahm, S. Kim, and J. Lee, "GRASP: A Grid Resource Allocation System Based on OGSA," Proc. IEEE 13th Int'l Symp. High Performance Distributed Computing, pp. 278-279, 2004.
- "Tivoli: Usage and Accounting Manager," IBM press release, 2009.
- PKIX Working Group, <http://www.ietf.org/html.charters/pkixcharter.html>, 2008.
- A. Guarise, R. Piro, and A. Werbrouck, "Datagrid Accounting System—Architecture—v1.0," technical report, EU DataGrid, 2003.
- P. Gardfill, E. Elmroth, L. Johson, O. Mulmo, and T. Sandholm, "Scalable Grid-Wide Capacity Allocation with the SweGrid Accounting System (SGAS)," Concurrency Computation: Practice Experience, vol. 20, pp. 2089-2122, Dec. 2008.
- A. Barmouta and R. Buyya, "Gridbank: A Grid Accounting Services Architecture (GASA) for Distributed Systems Sharing and Integration," Proc. 17th Int'l Symp. Parallel and Distributed Processing (IPDPS '03), pp. 22-26, 2003.
- G. von Voigt and W. Muller, "Comparison of Grid Accounting Concepts for D-Grid," Proc. Cracow Grid Workshop, pp. 459-466, Oct. 2006.
- NexR, "iCube Cloud Computing and Elastic-Storage Services," <http://www.nexr.co.kr/>, Mar. 2011.
- H. Rajan and M. Hosamani, "Tisa: Toward Trustworthy Services in a Service-Oriented Architecture," IEEE Trans. Services Computing, vol. 1, no. 4, pp. 201-213, Oct.-Dec. 2008.
- S. Meng, L. Liu, and T. Wang, "State Monitoring in Cloud Datacenters,"

IEEE Trans. Knowledge and Data Eng. , vol. 23, no. 9, pp. 1328-1344, Sept. 2011.

- C. Olston and B. Reed, "Inspector Gadget: A Framework for Custom Monitoring and Debugging of Distributed Dataflows," Proc. ACM SIGMOD Int' Conf. Management of Data (SIGMOD '11), pp. 1221-1224, 2011.
- P. Leitner, A. Michlmayr, F. Rosenberg, and S. Dustdar, "Monitoring, Prediction and Prevention of SLA Violations in Composite Services," Proc. IEEE Int' Conf. Web Services (ICWS), pp. 369-376, 2010.
- A. Herzberg and H. Yochai, "MiniPay: Charging per Click on the Web," Proc. Selected Papers from the Sixth Int' Conf. World Wide Web, pp. 939-951, 1997.
- R. Rivest, A. Shamir, "PayWord and MicroMint: two simple micropayment schemes,", 1996 International Workshop on Security Protocols, Lecture Notes in Computer Science, vol. 1189, Springer, pp. 69-87
- V. Patil, R. K. Shyamasundar, "An efficient, secure and delegable micro-payment system,", 2004 IEEE International
- X. Dai and J. Grundy, "NetPay: An Off-Line, Decentralized Micro-Payment System for Thin-Client Applications," Electronic Commerce Research Applications, vol. 6, pp. 91-101, Jan. 2007.
- S. Pearson and B. Balacheff, Trusted Computing Platforms: TCPA Technology in Context. Prentice Hall Professional, 2003.
- "Intel Trusted Execution Technology, Hardware-Based Technology for Enhancing Server Platform Security," white paper, Intel, 2010.

Index Terms

Computer Science

Cloud Computing

Keywords

Osris Sla Compliance Usage Tracking μ -contract