

PROJECT



Topics

□ Survey:

- Security and Privacy for Big Data: A Survey and Future Directions

□ Experiment:

- MapReduce Jobs For Video Conversion

1. Survey

- Write a good survey in English on
 - Security and Privacy for Big Data: A Survey and Future Directions
- Cite at least 20+ references (IEEEExplore and ACM Digital Lib)
- Paper organization
 - Classify these works in different categories, from different angles
 - Extensive comparisons
 - Identify future directions (i.e., what are the missing pieces?)

Survey

- ❑ How BIG the data can be? Why privacy becomes an issue?
- ❑ Data collection:
 - Security for sensor networks
 - Security for machine-to-machine (M2M) communications
- ❑ Data storage
 - Cloud: HDFS/GFS, HBase (MongoDB, BigTable...)
 - Real-time data streaming
 - Public and private cloud
 - Security for Data center networks
- ❑ Data analytics:
 - Framework: MapReduce (private and public cloud)
 - algorithms...
- ❑ Applications
 - IoT: transportation, healthcare...
- ❑ Commercial products: HP, EMC, IBM, Google

□ IEEE Xplore: <http://ieeexplore.ieee.org/>



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PUBLICATION YEAR

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2011 2013

From: 2011

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☐ **SAPSC: Security Architecture of Private Storage Cloud Based on HDFS**

Qingni Shen ; Yahui Yang ; Zhonghai Wu ; Xin Yang ; Lizhe Zhang ; Xi Yu ; Zhenming Lao ; Dandan Wang ; Min Long
Advanced Information Networking and Applications Workshops (WAINA), 2012 26th International Conference on
Digital Object Identifier: 10.1109/WAINA.2012.80
Publication Year: 2012 , Page(s): 1292 - 1297
IEEE CONFERENCE PUBLICATIONS
Quick Abstract | PDF (309 KB)
HTML

☐ **SecDM: Securing Data Migration between Cloud Storage Systems**

Qingni Shen ; Lizhe Zhang ; Xin Yang ; Yahui Yang ; Zhonghai Wu ; Ying Zhang

http://dl.acm.org



Beijing Institute of Technology

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1 [Benchmarking cloud security level agreements using quantitative policy trees](#)

[Jesus Luna Garcia](#), [Robert Langenberg](#), [Neeraj Suri](#)

October 2012 **CCSW '12: Proceedings of the 2012 ACM Workshop on Cloud computing security workshop**

Publisher: ACM [Request Permissions](#)

Full text available: [PDF](#) (956.43 KB)

Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 438, Downloads (Overall): 480, Citation Count: 0

While the many economic and technological advantages of Cloud computing are apparent, the migration of key sector applications onto it has been limited, in part, due to the lack of security assurance on the Cloud Service Provider (CSI). However, ...

Keywords: cloud security, security benchmarks, security level agreements, security metrics, security quantification

2 [All your clouds are belong to us: security analysis of cloud management interfaces](#)

[Juraj Somorovsky](#), [Mario Heiderich](#), [Meiko Jensen](#), [Jörg Schwenk](#), [Nils Gruschka](#), [Luigi Lo Iacono](#)

October 2011 **CCSW '11: Proceedings of the 3rd ACM workshop on Cloud computing security workshop**

Publisher: ACM [Request Permissions](#)

Full text available: [PDF](#) (756.42 KB)

Bibliometrics: Downloads (6 Weeks): 42, Downloads (12 Months): 489, Downloads (Overall): 1478, Citation Count: 8

ADVANCED SEARCH

Other Materials

- ❑ <http://www-03.ibm.com/security/solution/intelligence-big-data/>
- ❑ <https://ssl.www8.hp.com/ww/en/secure/pdf/4aa4-4051enw.pdf>
- ❑ <http://www.emc.com/collateral/industry-overview/big-data-fuels-intelligence-driven-security-io.pdf>
- ❑ http://www.isaca.org/Groups/Professional-English/big-data/GroupDocuments/Big_Data_Top_Ten_v1.pdf
- ❑ http://www.trendmicro.com/cloud-content/us/pdfs/business/white-papers/wp_addressing-big-data-security-challenges.pdf
- ❑ <http://scholarlycommons.law.northwestern.edu/njtip/vol11/iss5/1/>

3. MapReduce For Video Conversion

- ❑ Convert huge number of video files from one format to another.
- ❑ using the open source video converter FFMPEG (<http://ffmpeg.org/download.html>).
- ❑ Data stored on HDFS
- ❑ Create an app doing it (running on Google AppEngine)

Mechanism

- Working in group: 4 students, clear roles, mixed of nationalities
- Email me (ase_bit@yahoo.com) by this Friday (Dec 6)
 - Team leader, Team members
 - Topic
- **Deadline: 27 December 2013!**
- Deliverable: project report
 - Introduction (motivation, WHY?)
 - Related Work (What others have done)
 - Your proposal (HOW?)
 - Performance Evaluation
 - Conclusion
- **Presentation (29 December 2013)**