Georgios E. Kappes

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Profile

Georgios Kappes was born in Ioannina, Greece in 1987. He graduated the 2nd High School of Ioannina in 2004 and obtained his B.Sc from the Department of Computer Science, of the University of Ioannina in 2011. He obtained his M.Sc degree from the same department which was upgraded and renamed to Department of Computer Science & Engineering in 2013. Currently, he is a Ph.D candidate at the same department and a member of Systems Research Group (SRG) of the University of Ioannina.

Education

11/2013 - PRESENT

Ph.D Candidate, Department of Computer Science & Engineering, University of Ioannina.

Academic Supervisor: Stergios V. Anastasiadis.

3/2011 - 10/2013

M.Sc. Degree in Computer Science, Department of Computer Science & Engineering, University of Ioannina. GPA: 9.1/10 ("Excellent").

Field of Specialization: Computer Systems.
Thesis: "Scalable Access Control for Secure Multi-Tenant Filesystems".
Academic Supervisor: Stergios V. Anastasiadis.

In our research we emphasize the need for a new access control architecture in collaborative multitenant virtualization environments that consolidate storage at the filesystem level. We propose an architecture that is backwards compatible to object-based filesystems, and combines native access control with namespace isolation. We develop a prototype over Ceph, an object-based distributed filesystem. We experimentally evaluate our prototype implementation on a local cluster and the Amazon public cloud. The conducted experiments demonstrate that our solution incurs limited added performance overhead in comparison to traditional single-tenant filesystems and achieves better performance than existing multitenant solutions.

9/2004 - 2/2011

B.Sc. Degree in Computer Science, Department of Computer Science, University of Ioannina. GPA: 6.82/10 ("Very Good").

Thesis: "Logging File Access Patterns for a More Efficient File Search on Filesystems".
Academic Supervisor: Stergios V. Anastasiadis.

Several desktop file system search tools have combined traditional content analysis with contextual relationships to create a graph that represents contextual related files. This approach has several drawbacks, from generating loads of false connections between files to serious performance bottlenecks. These methods can generate too many false connections between files and also lead to performance bottlenecks due to the file connections that they maintain in a graph structure. In order to feed the search engine with the right results we developed a prototype filter driver over Windows NTFS to record important access characteristics of the local files.

9/2001 - 8/2004

High School Certificate, 2nd High School of Ioannina. GPA: 18.5/20 ("Excellent").

Experience

2/2014 - 11/2014

Graduate Researcher for the project "Ofidia: Operational Fire-Danger Prevention Platform", European Territorial Cooperation Programme "Greece-Italy 2007-2013".

Tasks: Design of storage models for climate-change data. In particular, determination of models for storing and processing scientific data on multicore systems and virtual machines.

2/2013 - 8/2013

Teaching assistant for the undergraduate course "Security of Computer Systems and Networks", Department of Computer Science, University of Ioannina.

Course Instructor: Prof. Stergios V. Anastasiadis.

3/2011 - TODAY

Teaching assistant for the undergraduate course "Operating Systems", Department of Computer Science & Engineering, University of Ioannina.

Course Instructor: Prof. Stergios V. Anastasiadis.

9/2009 - 1/2010

"Systems Support Team", Department of Computer Science, University of Ioannina.

Tasks: System administration and maintenance, development of a web application for management of the toner levels of local printers, development and maintenance of the support's web page, student support.

Publications

CONFERENCE PAPERS

Giorgos Kappes, Andromachi Hatzieleftheriou, Stergios V. Anastasiadis, Virtualization-aware Access Control for Multitenant Filesystems, IEEE International Conference on Massive Storage Systems and Technology (MSST), Santa Clara, CA, USA, June 2014 (to appear).

TECHNICAL REPORTS

Giorgos Kappes, Andromachi Hatzieleftheriou, Stergios V. Anastasiadis, Dike: Virtualization-aware Access Control for Multitenant Filesystems, Technical Report DCS2013-1, Department of Computer Science, University of Ioannina, February 2013.

Invited Talks

9/2014

15th TERENA TF-Storage Task Force Meeting, "Virtualization-aware Access Control for Multitenant Filesystems", 22 September 2014.

Research Interests

VIRTUALIZATION

Virtual machine file systems.

STORAGE SYSTEMS

Distributed file and storage systems.

SECURITY AND PRIVACY

Distributed systems security, file system security.

INFORMATION SYSTEMS

Information search and retrieval.

Languages

GREEK	Native language.
ENGLISH	Level: B2, “First Certificate In English”.

Awards

USENIX ASSOCIATION	Usenix student grant to attend the 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI 2014) in Broomfield, CO, USA.
ACM ASSOCIATION	ACM Scholarship to attend the 2013 European Conference on Computer Systems (EuroSys 2013) in Prague, Czech Republic.

Technical Skills

PROGRAMMING LANGUAGES	C, C++, Fortran, Java, SQL.
PROGRAMMING LIBRARIES	Message Passing Interface (MPI), Open Multiprocessing (OpenMP), Posix Threads (Pthread).
KERNEL PROGRAMMING	Linux, Minix.
DRIVERS	Windows Filter Drivers (Windows Driver Model).
MARKUP LANGUAGES	Latex, HTML/ CSS.
VIRTUALIZATION	Xen, Vmware Workstation, Oracle Virtual Box.
CLOUD ENVIRONMENTS	Amazon Web Services (AWS).
OPERATING SYSTEMS	GNU/ Linux, Microsoft Windows, Oracle Solaris.
TOOLS	Microsoft Visual Studio, Oracle NetBeans IDE.
SIMULATORS	CSIM, ns-2, Sniper.

Memberships

3/2015 - PRESENT	Member of IEEE, the Institute of Electrical and Electronics Engineers.
2/2013 - PRESENT	Member of EuroSys, the European Professional Society on Computer Systems.
9/2012 - PRESENT	Member of USENIX, the Advanced Computing Systems Association.