Daniel Rosendo, Ph.D.

Research Scientist, Oak Ridge National Laboratory, USA

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Appointments

Nov/2024 – Present **Research Scientist** , *Oak Ridge National Laboratory: Computing and Computational Sciences Directorate - National Center for Computational Sciences - Advanced Technologies Section - Workflows and Ecosystem Services Group*, USA, [1, 2, 3, 4, 5, 6]

Nov/2024 - Present **Member** , *Workflows Community - Network of international workflow users, developers, and researchers*

Feb/2025 - Present **Member** , *Autonomous Science Network - Interconnected autonomous science laboratories for accelerated discovery*

Jan/2025 - Present **Member** , *Research Data Alliance (FAIR4ML) - FAIR for Machine Learning Interest Group*

Dez/2023 – Oct/2024 **Holidays after my Ph.D.**

Mar/2023 – Nov/2023 **Research Engineer**, *Inria*, France

Jul/2022 – Sep/2022 **Intern**, *Argonne National Laboratory*, USA

Oct/2019 – Mar/2023 **Ph.D. Candidate**, *Inria*, France

Sep/2014 – Sep/2019 **R&D Staff**, *Networking and Telecommunications Research Group, UFPE*, Brazil

Research Interests

AI-assisted workflows

Large-scale workflow management

Workflow benchmarking

FAIR workflows

Technology specialties

HPC/Cloud/Edge Computing, Agentic AI, Workflow Management Systems, Big Data Analytics, Python, C, Git, Docker, Ansible, Jupyter Notebooks.

Education

Oct/2019 – Mar/2023 **Ph.D. degree in Computer Science**, *Inria, INSA Rennes*, France
Manuscript (available here) Methodologies for Reproducible Analysis of Workflows on the Edge-to-Cloud Continuum
Presentation (slides available here)
Publications: [7, 8, 9, 10, 11, 12]
Advisors: Gabriel Antoniu (Inria) ; Alexandru Costan (Inria) ; Patrick Valduriez (Inria)
Description: This thesis proposes methodologies that aim at overcoming the complexities of understanding, optimizing, and reproducing workflows on the Edge-to-Cloud Continuum. We validated our methodologies by implementing them in the E2Clab framework available open source and then applying them to understand and optimize the performance of real-life applications, such as Pl@ntNet . E2Clab supports reproducible experiments, application optimization, and efficient workflow provenance capture on large-scale scientific testbeds such as Chameleon , Grid5000 , and FIT IoT LAB .

Mar/2015 – Mar/2017 **Master's degree in Computer Science**, *Federal University of Pernambuco*, Brazil
Manuscript (available here): A High-level Authorization Framework for Software-Defined Networks
Publications: [13, 14].
Advisors: Judith Kelner and Patricia Takako Endo .

Mar/2010 – Aug/2014 **Bachelor's degree in Information Systems**, *University of Pernambuco*, Brazil
Exchange (Sep/2012 – Jul/2013): University of Oviedo, Spain. Course: Computer Engineer in Information Technologies.

Experience in Research & Development Projects

Oct/2025 - Present **OPAL - Orchestrated Platform for Autonomous Laboratories**
Employer name: Oak Ridge National Laboratory
Job title: Research Scientist.
Job description: Agentic AI for the Advanced Plant Phenotyping Laboratory.

Oct/2025 - Present **Genesis Mission and The American Science Cloud (AmSC)**
Employer name: Oak Ridge National Laboratory
Job title: Research Scientist.
Job description: Intelligent Interfaces and Core Agentic Framework.

Apr/2023 - Nov/2023 **Project: Edge-to-Cloud Workflow Deployment**
Employer name: Centre Inria de l'Université de Rennes, France.
Job title: Research engineer.
Job description: Development, testing, and documentation of edge-cloud platforms of the E2Clab software .

Oct/2022 - Sept/2023 **Joint Laboratory for Extreme-Scale Computing (JLESC)** , *Advancing Chameleon and Grid'5000 testbeds II*
Employer name: Centre Inria de l'Université de Rennes, France (internship at Argonne National Laboratory, USA).
Job title: PhD candidate.

Oct/2019 - Sept/2022 **HPC-BigData Inria Project Lab** , *High Performance Computing and Big Data*
Employer name: Centre Inria de l'Université de Rennes, France.
Job title: PhD candidate.

Sep/2014 – Sep/2019 **Networking and Telecommunications Research Group, UFPE (access to certificate)**
I have contributed to the following five research projects:

Oct/2018- Sept/2019 **Project: DCAV II - Cloud Data Center Availability II**
Employer name: Federal University of Pernambuco (in partnership with Ericsson Sweden)
Job title: Project Manager & Researcher.
Job description: Project management, follow-up meetings, software development, and writing articles.
Publications: [15, 16, 17, 18, 19, 20]
Certificate: available here

Oct/2016- Sep/2018 **Project: DCAV - Cloud Data Center Availability**
Employer name: Federal University of Pernambuco (in partnership with Ericsson Sweden)
Job title: Researcher.
Job description: Software development, executing experiments, and writing articles and technical reports.
Publications: [21, 22, 23, 24, 25, 26, 27, 28, 29]
Certificate: available here

Apr/2016– Sep/2016 **Project: NoPaaS - Novel Plataform-as-a-Service**
Employer name: Federal University of Pernambuco (in partnership with Ericsson Sweden)
Job title: Researcher.
Job description: Software development, executing experiments, and writing articles and technical reports.
Publications: [30]
Certificate: available here

Apr/2015– Mar/2016 **Project: Enchanter - Developing SDN Applications for HP VAN Controller**
Employer name: Federal University of Pernambuco (in partnership with Hewlett-Packard)
Job title: Researcher.
Job description: Software development, executing experiments, and writing articles and technical reports.
Publications: [31]
Certificate: available here

Sep/2014– Mar/2015 **Project: SIRCAM - Control and Automation Network Information Security**
Employer name: Federal University of Pernambuco (in partnership with CHESF Hydroelectric)
Job title: Researcher.
Job description: Software development, executing experiments, and writing articles and technical reports.
Certificate: available here

Internship

Jul/2022 – Sep/2022 **Argonne National Laboratory (U.S. Department of Energy)**
Project title: *Advancing Reproducibility in Chameleon and Grid'5000 testbeds*
Advisor: Kate Keahey (ANL and University of Chicago)
Description: The main research goal of this internship is to enable scientists to cost-effectively reproduce experiments on the Edge-to-Cloud Continuum by integrating open scientific testbeds (*e.g.,* Chameleon , Grid5000 , and FIT IoT LAB .) through the E2C*lab* experiment methodology with Jupyter Notebooks and the Trovi sharing portal . **New project at JLESC with Kate Keahey (Argonne National Laboratory):** Advancing Reproducibility in Chameleon and Grid'5000 testbeds. **Duration:** 2 years. **Description:** `https://jlesc.github.io/projects/e2clab_project/`. **Outcome:** KheOps, a collaborative environment designed to enable cost-effective reproducibility of Edge-to-Cloud experiments. KheOps core elements such as Chameleon Trovi sharing portal + Jupyter Notebooks and the E2Clab experiment methodology will be explored at the **SC24 Reproducibility Challenge** .

Jun/2013 – Aug/2013 **Westcon Group (Madrid, Spain)**
Advisors: Miguel Pérez Bonomini (Westcon Group) , Alfredo Santiago Alguero García (University of Oviedo)
Description: Provisioning, installation, and maintenance of IT and communications equipment, including fixed and mobile telephony, using internal and external resources and following the company's administrative procedures. Supporting Afina employees in the use of corporate IT and communications equipment, escalating internally to other areas of the Services Department or to product suppliers if necessary. Reporting of incidents and IT needs formulated by users.

Teaching

2020–2022 **Bachelor level**, *Algorithms for Big Data, 10 hours/year lectures, lab sessions, INSA Rennes, France*

2019–2022 **Master level**, *Miage Big Data, Business Intelligence and Learning (BDDA), 24 hours/year lab sessions, M2, ISTIC Rennes 1 University, France*

Awards

Dec/2025 **Oak Ridge National Laboratory Supplemental Performance Award (SPA) Extraordinary Accomplishment**, *ORNL*

Nov/2025 **Distinguished Paper: The (R)evolution of Scientific Workflows in the Agentic AI Era: Towards Autonomous Science** , *SC25 WORKS - 20th Workshop on Workflows in Support of Large-Scale Science*

Oct/2023 **Accessit at the BDA PhD Thesis Award** , *BDA: 39th Data Management Conference – Principles, Technologies and Applications*

May/2018 **Honorable Mention Master Thesis Award** , *SBRC - Brazilian Symposium on Computer Networks and Distributed Systems*
Master: A High-level Authorization Framework for Software-Defined Networks.

Recent Software Contributions

Academy , *Build and deploy stateful agents across federated resources*

WfCommons , *Framework for enabling scientific workflow research and development*

Flowcept , *Runtime data integration system for capturing and querying workflow provenance*

Software: new software developed during my PhD

Main Contributions

E2C*lab*

Scientific Description: **E2C***lab* is a framework that allows researchers to reproduce in a representative way the application behavior in a controlled environment for extensive experiments and, therefore, to understand the end-to-end performance of applications by correlating results to the parameter settings. **E2C***lab* provides a rigorous approach to answering questions like: *How to identify infrastructure bottlenecks? Which system parameters and infrastructure configurations impact performance and how?*

Functional Description: High-level features provided by **E2C***lab*: *(i)* Reproducible Experiments: Supports repeatability, replicability and reproducibility. *(ii)* Mapping: Application parts (Edge, Fog, and Cloud/HPC) and physical testbed. *(iii)* Variation & Scaling: Experiment variation and transparent scaling of scenarios. *(iv)* Network Emulation: Edge-to-Cloud communication constraints. *(v)* Experiment Management: Deployment, execution and monitoring (*e.g.,* on Grid'5000, Chameleon, and FIT IoT LAB). *(vi)* Optimization: configuration search of application workflows. *(vii)* Provenance: data capture of Edge-to-Cloud workflows.

In April/2024, **Inria hired** Thomas Badts (software engineer) to make E2Clab a **production-ready software** used in many collaborative projects, with a large user base.

- **Link:** `https://gitlab.inria.fr/E2Clab/e2clab`
- **Size and language(s):** ∼3K lines, Python.
- **License:** GNU General Public License v3.0
- **Documentation:** `https://e2clab.gitlabpages.inria.fr/e2clab/`
- **+10 tutorials and Jupyter Notebooks:** `https://e2clab.gitlabpages.inria.fr/e2clab/examples/index.html`

ProvLight

Scientific Description: ProvLight is a framework that allows researchers to efficiently capture provenance data of workflows running on IoT/Edge infrastructures. ProvLight presents low capture overhead regarding capture time, CPU and memory usage, network usage, and power consumption.

Functional Description: ProvLight follows a *master/worker* architecture where the *master* receives the captured data from *workers* and then translates and sends to provenance systems. ProvLight also provides a Python library (which follows the W3C PROV-DM recommendation) that allows users to capture data from their workflows (through application code instrumentation).

Currently, ProvLight is at the core of a **collaboration between Inria and Oak Ridge National Laboratory** (Me, Alexandru Costan , Silvina Caino-Lores , Renan Souza , Rafael Ferreira) exploring how provenance can support explainable AI across the Continuum.

- **Link:** `https://gitlab.inria.fr/provlight/provlight`
- **Size and language(s):** ∼700 lines, Python.
- **License:** GNU General Public License v3.0

- **Documentation:** `https://e2clab.gitlabpages.inria.fr/e2clab/provenance/index.html`
- **Tutorials:** `https://e2clab.gitlabpages.inria.fr/e2clab/examples/provenance_capture.html`

Contribution to Existing Software

EnOSlib

Scientific Description: EnOSlib is a Python library focusing on reproducible-driven experimental research in distributed computing. It aims at helping researchers in the process of developing their experimental artifacts and running and reproducing them over different infrastructures.

Functional Description: EnOSlib brings reusable building blocks for configuring the infrastructure, provisioning software on remote hosts, and organizing the experimental workflow. Interaction with the testbeds (*e.g.,* Grid'5000, FIT IoT LAB, and Chameleon) is deferred to EnOSlib's provider, and various actions on remote hosts also rely on mechanisms offered by the library.

Our Contribution: We enable EnOSlib to support the management of complex Edge-to-Cloud workflows on the Chameleon Cloud and CHI@Edge testbeds. We extended EnOSlib's *Providers* abstraction to enable researchers to lease resources (*e.g.,* compute, storage, and networking) from the Chameleon testbeds, as well as deploy and execute their workflows.

- **Link:** `https://gitlab.inria.fr/discovery/enoslib`
- **Size and language(s):** ∼1K lines, Python.
- **License:** GNU General Public License v3.0
- **Documentation:** `https://discovery.gitlabpages.inria.fr/enoslib/tutorials/chameleon.html`

Reproducibility-oriented Tools and Artifacts

KheOps

Scientific Description: KheOps is a collaborative environment designed to enable cost-effective reproducibility and replicability of Edge-to-Cloud experiments in large-scale scientific testbeds. It allows researchers to easily find and share experiment artifacts and easily understand, reconfigure, and perform experiments.

Functional Description: KheOps is composed of three core elements: *(i)* Trovi sharing portal for packaging and sharing artifacts; *(ii)* Jupyter notebooks for combining experiment processes with executable code; and *(iii)* **E2C***lab* methodology for performing experiments in testbeds such as Chameleon Cloud, CHI@Edge, Grid'5000, and FIT IoT LAB testbeds. The goal is to lower the barrier to reproducing research by combining the artifacts and the experimental environment and providing an open-access repository of research artifacts that are visible and reproducible across testbeds. KheOps core elements will be explored at the **SC24 Reproducibility Challenge** .

- **Link:** `https://gitlab.inria.fr/KheOps/kheops`
- **Size and language(s):** ∼800 lines, Python
- **Jupyter Notebook:** `https://www.chameleoncloud.org/experiment/share/347adbf3-7c14-4834-b802-b45fdc`
- **Demo video:** `https://drive.google.com/file/d/1ulsqrJKVBQlKfRd69ykpKtEzFVA8HQBq`

International Conferences Program Committee Member

2020-2023 **SC'23 WORKS** , *Workshop on Workflows in Support of Large-Scale Science*
ISPDC'23 , *IEEE International Symposium on Parallel and Distributed Computing*

*I've also reviewed articles from (please click on each conference to see my reviews) **SC 2022** , **ISC High Performance 2023** , **IEEE Cluster 2020** , **IEEE Cluster 2021** , **IPDPS 2022** , and **IEEE BigData 2022** .

2020-2023: New project & talks at the Joint Laboratory for Extreme Scale Computing - JLESC

JLESC Workshop gathers leading researchers in high-performance computing from the JLESC partners INRIA, the University of Illinois, Argonne National Laboratory, Barcelona Supercomputing Center, Jülich Supercomputing Centre, RIKEN Center for Computational Science and the University of Tennessee to explore issues in advancing the field of HPC.

- **New project with Kate Keahey (Argonne National Laboratory):** Advancing Reproducibility in Chameleon

and Grid'5000 testbeds. **Duration:** 2 years. **Description:** `https://jlesc.github.io/projects/e2clab_project/`. **Outcome:** KheOps, a collaborative environment designed to enable cost-effective reproducibility of Edge-to-Cloud experiments. KheOps core elements such as Chameleon Trovi sharing portal + Jupyter Notebooks and the E2Clab experiment methodology will be explored at the **SC24 Reproducibility Challenge** .

- **5 talks:** 11th JLESC Workshop 2020 , 12th JLESC Workshop 2021 , 13th JLESC Workshop 2021 , 14th JLESC Workshop 2022 , and 15th JLESC Workshop 2023 .

Main PhD Publications

Journal Articles

- **[*172 citations]** **Daniel Rosendo**, Alexandru Costan, Patrick Valduriez, Gabriel Antoniu. Distributed intelligence on the Edge-to-Cloud Continuum: A systematic literature review. **JPDC** - *Journal of Parallel and Distributed Computing*, *Elsevier*, 2022, 166, pp.71-94. **CORE Rank A** *at the time of publication*.
  Available at: `https://hal.science/hal-03654722`.

International Conferences

- **Daniel Rosendo**, Kate Keahey, Alexandru Costan, Matthieu Simonin, Patrick Valduriez, Gabriel Antoniu. KheOps: Cost-effective Repeatability, Reproducibility, and Replicability of Edge-to-Cloud Experiments. **ACM REP 2023** - *ACM Conference on Reproducibility and Replicability*, Jun 2023, Santa Cruz California, United States.
  Available at: `https://hal.science/hal-04157720`.
- **Daniel Rosendo**, Marta Mattoso, Alexandru Costan, Renan Souza, Debora Pina, Patrick Valduriez, Gabriel Antoniu. ProvLight: Efficient Workflow Provenance Capture on the Edge-to-Cloud Continuum. **Cluster 2023** - *IEEE International Conference on Cluster Computing*, October 2023, Santa Fe, New Mexico, United States. **CORE Rank A** *at the time of publication* (acceptance rate 25%).
  Available at: `https://hal.science/hal-04161546`.
- **Daniel Rosendo**, Alexandru Costan, Gabriel Antoniu, Matthieu Simonin, Jean-Christophe Lombardo, Alexis Joly, Patrick Valduriez. Reproducible Performance Optimization of Complex Applications on the Edge-to-Cloud Continuum. **Cluster 2021** - *IEEE International Conference on Cluster Computing*, Sep 2021, Portland, OR, United States. pp.23-34. **CORE Rank A** *at the time of publication* (acceptance rate 29%).
  Available at: `https://hal.science/hal-03310540`.
- **[*63 citations]** **Daniel Rosendo**, Pedro Silva, Matthieu Simonin, Alexandru Costan, Gabriel Antoniu. E2Clab: Exploring the Computing Continuum through Repeatable, Replicable and Reproducible Edge-to-Cloud Experiments. **Cluster 2020** - *IEEE International Conference on Cluster Computing*, Sep 2020, Kobe, Japan. pp.1-11. **CORE Rank A** *at the time of publication* (acceptance rate 31%).
  Available at: `https://hal.science/hal-02916032`. Video of the presentation

Posters at International Conferences

- **Daniel Rosendo**, Alexandru Costan, Gabriel Antoniu, Patrick Valduriez. E2Clab: Reproducible Analysis of Complex Workflows on the Edge-to-Cloud Continuum. **IPDPS 2021** - *35th IEEE International Parallel and Distributed Processing Symposium*, May 2021, Virtual, France. **CORE Rank A**.
  Available at: `https://hal.science/hal-03269852v2`.

PhD Thesis International Collaborations

Pedro Silva **(Hasso Plattner Institute, Germany)**, Marta Mattoso **(Federal University of Rio de Janeiro, Brazil)**, Renan Souza **(Oak Ridge National Laboratory, USA)**, and Kate Keahey **(Argonne National Laboratory, USA)**

PhD Thesis Impact: The Research Community is Using E2Clab

- **E2Clab main article has over 60 citations** in papers published at IPDPS 2022, SC 2022, DAIS 2021, TPDS 2021, SBAC-PAD 2021, etc. **Our systematic literature review has over 170 citations** in papers published at FGCS 2023, CCGRID 2023, Sensors 2022, IoT 2022, etc.

- **Validation with PI@ntNet** , a real-life application used by **more than 10 million users** around the world. Large-scale experimental validation on Grid'5000 shows that our methodology has proven helpful for understanding and improving the performance of PI@ntNet.
- **KheOps project at JLESC:** in collaboration with Kate Keahey (ANL, USA). KheOps core elements such as Chameleon Trovi sharing portal + Jupyter Notebooks and the E2Clab experiment methodology will be explored at the **SC24 Reproducibility Challenge** . **Demo video:** `https://drive.google.com/file/d/1ulsqrJKVBQlKfRd69ykpKtEzFVA8HQBq`
- **ProvLight:** Currently, it is at the core of a collaboration between Inria and Oak Ridge National Laboratory (Me, Alexandru Costan , Silvina Caino-Lores , Renan Souza , Rafael Ferreira) exploring how provenance can support explainable AI across the Continuum.
- **International project** - ENGAGE: towards a faster and more reliable AI in the processing of complex tasks (collaboration between DFKI and INRIA) . **E2Clab is being used to** deploy AI workflows that involve simulations and data analysis on hybrid Edge-to-Cloud infrastructures.
- **National project** - French PEPR Cloud STEEL project (*Storage and data processing across the edge-cloud-HPC continuum*). **E2Clab will be used to** deploy strategies for allocating multi-tier storage resources within complex memory/storage hierarchies across the continuum.
- **Used by Ph.D. students at Inria (KerData team):** Thomas Bouvier , Cédric Prigent , and Mathis Valli .
- **E2Clab as a production-ready software:** in April/2024 the KerData team at Inria hired an engineer, Thomas Badts , with the role of making E2Clab a production-ready software used in many collaborative projects, with a large user base.

Languages

English	Upper Intermediate, EF SET .
Spanish	Intermediate.
French	Intermediate.

Publications

All publications are available at Google scholar .

All Publications

[1] D. Rosendo, S. DeWitt, R. Souza, P. Austria, T. Ghosal, M. McDonnell, R. Miller, T. Skluzacek, J. Haley, B. Turcksin *et al.*, "Ai agents for enabling autonomous experiments at ornl's hpc and manufacturing user facilities," in *Proceedings of the SC'25 Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, 2025, pp. 2354–2361.

[2] W. Shin, R. Souza, D. Rosendo, F. Suter, F. Wang, P. Balaprakash, and R. Ferreira da Silva, "The (r) evolution of scientific workflows in the agentic ai era: Towards autonomous science," in *Proceedings of the SC'25 Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, 2025, pp. 2305–2316.

[3] R. Souza, T. Poteet, B. Etz, D. Rosendo, A. Gueroudji, W. Shin, P. Balaprakash, and R. Ferreira da Silva, "Llm agents for interactive workflow provenance: Reference architecture and evaluation methodology," in *Proceedings of the SC'25 Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, 2025, pp. 2257–2268.

[4] R. Souza, A. Gueroudji, S. DeWitt, D. Rosendo, T. Ghosal, R. Ross, P. Balaprakash, and R. F. Da Silva, "Prov-agent: Unified provenance for tracking ai agent interactions in agentic workflows," in *2025 IEEE International Conference on eScience (eScience)*. IEEE, 2025, pp. 467–473.

[5] T. J. Skluzacek, P. Bryant, A. Ruckman, D. Rosendo, S. Prentice, M. J. Brim, R. Adamson,

S. Oral, M. Shankar, and R. F. da Silva, "Secure api-driven research automation to accelerate scientific discovery," *arXiv preprint arXiv:2506.11950*, 2025.

[6] R. F. Da Silva, D. Bard, K. Chard, I. Foster, T. Gibbs, C. Goble, W. Godoy, J. Gustafsson, S. Hudson, S. Jha *et al.*, "Workflows community summit 2024: Future trends and challenges in scientific workflows," 2024.

[7] D. Rosendo, P. Silva, M. Simonin, A. Costan, and G. Antoniu, "E2clab: Exploring the computing continuum through repeatable, replicable and reproducible edge-to-cloud experiments," in *2020 IEEE International Conference on Cluster Computing (CLUSTER)*. IEEE, 2020, pp. 176–186.

[8] D. Rosendo, A. Costan, G. Antoniu, M. Simonin, J.-C. Lombardo, A. Joly, and P. Valduriez, "Reproducible performance optimization of complex applications on the edge-to-cloud continuum," in *2021 IEEE International Conference on Cluster Computing (CLUSTER)*. IEEE, 2021, pp. 23–34.

[9] D. Rosendo, A. Costan, P. Valduriez, and G. Antoniu, "Distributed intelligence on the edge-to-cloud continuum: A systematic literature review," *Journal of Parallel and Distributed Computing*, 2022.

[10] D. Rosendo, K. Keahey, A. Costan, M. Simonin, P. Valduriez, and G. Antoniu, "Kheops: Cost-effective repeatability, reproducibility, and replicability of edge-to-cloud experiments," in *Proceedings of the 2023 ACM Conference on Reproducibility and Replicability*, 2023, pp. 62–73.

[11] D. Rosendo, M. Mattoso, A. Costan, R. Souza, D. Pina, P. Valduriez, and G. Antoniu, "ProvLight: Efficient Workflow Provenance Capture on the Edge-to-Cloud Continuum," in *IEEE Cluster 2023 - IEEE International Conference on Cluster Computing*. Santa Fe, New Mexico, United States: IEEE, Oct. 2023, pp. 1–13. [Online]. Available: https://hal.science/hal-04161546

[12] D. Rosendo, A. Costan, G. Antoniu, and P. Valduriez, "E2Clab: Reproducible Analysis of Complex Workflows on the Edge-to-Cloud Continuum," IPDPS 2021 - 35th IEEE International Parallel and Distributed Processing Symposium, May 2021, poster. [Online]. Available: https://hal.archives-ouvertes.fr/hal-03269852

[13] D. Rosendo, P. T. Endo, D. Sadok, and J. Kelner, "An autonomic and policy-based authorization framework for openflow networks," in *2017 13th International Conference on Network and Service Management (CNSM)*. IEEE, 2017, pp. 1–5.

[14] A high-level authorization framework for software-defined networks. [Online]. Available: https://repositorio.ufpe.br/handle/123456789/25356

[15] D. Rosendo, D. Gomes, G. L. Santos, G. Goncalves, A. Moreira, L. Ferreira, P. T. Endo, J. Kelner, D. Sadok, A. Mehta *et al.*, "A methodology to assess the availability of next-generation data centers," *The Journal of Supercomputing*, vol. 75, no. 10, pp. 6361–6385, 2019.

[16] G. Gonçalves, D. Rosendo, L. Ferreira, G. L. Santos, D. Gomes, A. Moreira, J. Kelner, D. Sadok, M. Wildeman, and P. T. Endo, "A standard to rule them all: Redfish," *IEEE Communications Standards Magazine*, vol. 3, no. 2, pp. 36–43, 2019.

[17] D. Rosendo, D. Gomes, G. Leoni Santos, L. Silva, A. Moreira, J. Kelner, D. Sadok, G. Gonçalves, A. Mehta, M. Wildeman *et al.*, "Availability analysis of design configurations to compose virtual performance-optimized data center systems in next-generation cloud data centers," *Software: Practice and Experience*, vol. 50, no. 6, pp. 805–826, 2020.

[18] L. Ferreira, P. T. Endo, D. Rosendo, G. L. Santos, D. Gomes, A. L. C. Moreira, G. E. Goncalves, J. Kelner, D. Sadok, A. Mehta *et al.*, "Standardization efforts for traditional data center infrastructure management: the big picture," *IEEE Engineering Management Review*, vol. 48, no. 1, pp. 92–103, 2020.

[19] L. Ferreira, G. Goncalves, D. Rosendo, G. L. Santos, A. Moreira, J. Kelner, D. Sadok, M. Wildeman, A. Mehta, and P. T. Endo, "Maximizing the availability of composable systems of next-generation data centers," in *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*. IEEE, 2019, pp. 573–580.

[20] G. L. Santos, D. Rosendo, D. Gomes, L. Ferreira, A. Moreira, D. Sadok, J. Kelner, G. Goncalves, M. Wilderman, and P. T. Endo, "A methodology for automating the cloud data center availability assessment," in *International Conference on Advanced Information Networking and Applications*. Springer, 2019, pp. 1011–1023.

[21] P. T. Endo, G. L. Santos, D. Rosendo, D. M. Gomes, A. Moreira, J. Kelner, D. Sadok, G. E. Gonçalves, and M. Mahloo, "Minimizing and managing cloud failures," *Computer*, vol. 50, no. 11, pp. 86–90, 2017.

[22] G. L. Santos, P. T. Endo, G. Gonçalves, D. Rosendo, D. Gomes, J. Kelner, D. Sadok, and M. Mahloo, "Analyzing the it subsystem failure impact on availability of cloud services," in *2017 IEEE symposium on computers and communications (ISCC)*. IEEE, 2017, pp. 717–723.

[23] D. M. Gomes, P. T. Endo, G. Gonçalves, D. Rosendo, G. L. Santos, J. Kelner, D. Sadok, and M. Mahloo, "Evaluating the cooling subsystem availability on a cloud data center," in *2017 IEEE Symposium on Computers and Communications (ISCC)*. IEEE, 2017, pp. 736–741.

[24] D. Rosendo, G. Leoni, D. Gomes, A. Moreira, G. Gonçalves, P. Endo, J. Kelner, D. Sadok, and M. Mahloo, "How to improve cloud services availability? investigating the impact of power and it subsystems failures," in *Proceedings of the 51st Hawaii international conference on system sciences*, 2018.

[25] P. T. Endo, G. E. Gonçalves, D. Rosendo, D. Gomes, G. L. Santos, A. L. C. Moreira, J. Kelner, D. Sadok, and M. Mahloo, "Highly available clouds: system modeling, evaluations, and open challenges," in *Research Advances in Cloud Computing*. Springer, 2017, pp. 21–53.

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