



Discipline(s) : Informatique et télécommunications

ADVANCED CLOUD INFRASTRUCTURES

Nature

UE

RESPONSABLES

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OBJECTIFS

The objective of the ACI module is to study system services for managing advanced cloud infrastructures. We will focus on the novel distributed cloud infrastructures supporting the new generation of mobile and IoT applications, specifically edge clouds, fog computing and Cloud-based IoT.

Privacy and security are important concerns in distributed cloud computing. After analyzing security and privacy threats in distributed clouds, we will present cutting-edge security monitoring systems for cloud-hosted information systems and systems implementing privacy by design in distributed cloud infrastructures in the context of cloud-based IoT.

KEYWORDS

Edge cloud, fog computing, IoT, cloud security

PREREQUISITES

Operating system, distributed system, distributed algorithms, cloud computing (IaaS, PaaS)

CONTENTS

1. Introduction to distributed cloud computing and taxonomy of distributed cloud infrastructures
2. Resource management in distributed cloud infrastructures
3. Application management in distributed cloud infrastructures
4. Edge and fog Computing
5. Cloud-based IoT: smart device management and stream processing
6. Security and Privacy threats in cloud-based IoT
7. Security in distributed clouds (infrastructure security services, OS mechanisms, security monitoring)
8. Privacy-by-design in distributed clouds
9. Open issues and R&D initiatives in distributed clouds

LEARNING OUTCOMES

Design and implementation of services for distributed cloud infrastructures
Integration of security mechanisms and services in distributed cloud infrastructures

APPARTIENT À

Master 2 informatique parcours Science Informatique

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