

# Application BASTRI

## Fiches Equipes

### AVALON (SR0657BR)

Algorithms and Software Architectures for Distributed and HPC Platforms  
AVALON (SR0508QR) □ AVALON

**Statut:** Décision signée

**Responsable :** Christian Perez

**Mots-clés de "A - Thèmes de recherche en Sciences du numérique - 2024" :** *Aucun mot-clé.*

**Mots-clés de "B - Autres sciences et domaines d'application - 2024" :**  
*Aucun mot-clé.*

**Domaine :** Réseaux, systèmes et services, calcul distribué  
**Thème :** Calcul distribué et à haute performance

**Période :** 01/07/2014 -> 30/06/2026

**Dates d'évaluation :** 12/10/2016 , 07/10/2021

**Etablissement(s) de rattachement :** U. LYON 1 (UCBL), ENS LYON, CNRS  
**Laboratoire(s) partenaire(s) :** LIP (UMR5668)

**CRI :** Centre Inria de Lyon

**Localisation :** Ecole normale supérieure de Lyon - Laboratoire de l'Informatique du Parallélisme (LIP)

**Code structure Inria :** 121013-0

**Numéro RNSR :** 201221039W

**N° de structure Inria:** SR0657BR

### Présentation

The Avalon research team is a joint group between INRIA, CNRS, ENS Lyon, the University Claude Bernard Lyon 1, and the University of Lyon. The long term goal of the Avalon team is to contribute to the design of programming models supporting a lot of architecture kinds, to implement it by mastering the various algorithmic issues involved, and by studying the impact on application-level algorithms. Ideally, an application should be written once; the complexity is to determine the adequate level of abstraction to provide a simple programming model to the developer while enabling efficient execution on a wide range of architectures.

The challenge is to design models, systems, and algorithms to execute applications on resources while ensuring user constraints (price, performance, etc.) as well as system administrator constraints (maximizing resource usage, minimizing energy consumption, etc.). The team focuses in particular in energy and data intensive application profiling and modelization, data management, component based application description, and application mapping and scheduling.

Theoretical results of the team are validated with simulations and real experiments on Grid'5000 or production platforms.

### Axes de recherche

The four research directions of Avalon are:

- Axis 1: Energy Efficiency for Next Generation Sustainable Ultrascale Systems
- Axis 2: Data Management
- Axis 3: Distributed Ressource Management
- Axis 4: Resource Agnostic Application Models

### Relations industrielles et internationales

#### Contact

- **Responsable :** Christian Perez
- **Tél :** 04.23.26.38.88
- **Secrétariat Tél :** 04.72.72.84.58

#### En savoir plus

- Site de l'équipe
- Site sur [inria.fr](http://inria.fr)
- Site du [responsable](#)
- Derniers Rapports d'Activité : [2016](#) , [2017](#) , [2018](#) , [2019](#) , [2020](#) , [2021](#) , [2022](#) , [2023](#)

#### Documents sur la structure

- [Intranet](#)
- [Privés](#)

#### Décisions

- [10413](#) (20/10/2014) : création
- [12275](#) (26/06/2017) : prolongation
- [14888](#) (21/06/2021) : prolongation
- [15701](#) (12/10/2022) : prolongation

#### Localisation

- **Adresse postale :** ENS de Lyon, LIP Site Jacques Monod  
46 allée d'Italie 69364 Lyon  
Cedex 07 France
- **Coordonnées GPS :** 45.72983, 4.826677

