A first attempt to define my Ph.D. project

in Video Streaming Issues

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Outline

- Possible Problems
- Objectives
  - General (provisional)
  - Specifics (provisional)
- Possible Contributions
- Related Works (Matrix)
- Planned Schedule
- References

How can we contribute for better QoE users on Video Streaming services?

Possible Problem 1 Impact of Live Migration VM in VoD service provided in private clouds

Possible Problem 2 Multiple users in Video Streaming over wireless heterogeneous networks

General Objectives (provisional)

Impact of Live Migration VM in VoD service provided in private clouds

The first effort in this case is to propose models for evaluation and estimate any service degradation impact while a migration is running

Multiple users in Video Streaming over wireless heterogeneous networks

In this case, the effort will be to provide models that contribute to better service quality in case of multi-user access to video stream service in multiple heterogeneous wireless networks

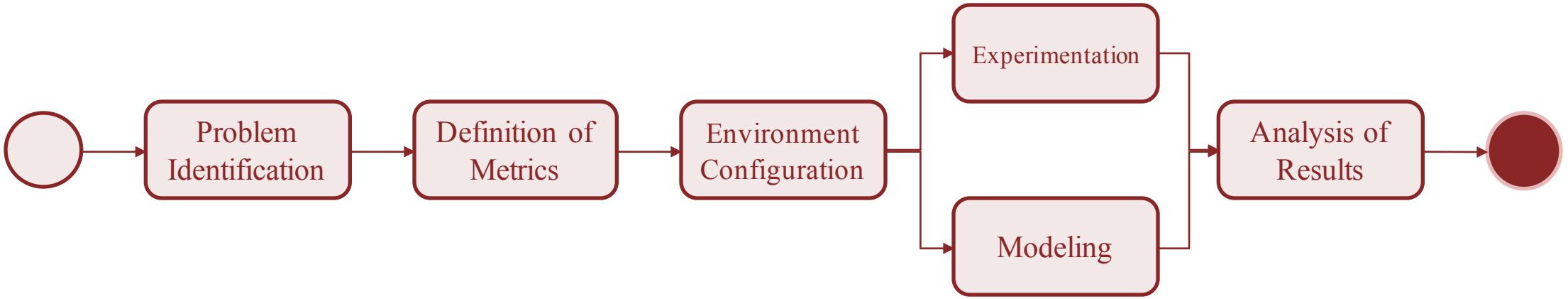
Specific Objectives (provisional)

- Develop strategies to guide companies at providing better VoD services
- Create a Test-bed environment to simulate a real world VoD service
- Propose VoD service dependability and performance models

Aimed Contributions

- Provide models for dependability and performance evaluation
- A supporting methodology that describes the activities required in order to support companies to provide or improve their services
- Users will benefit from the improvements from companies

Planned Performance Evaluation Methodology

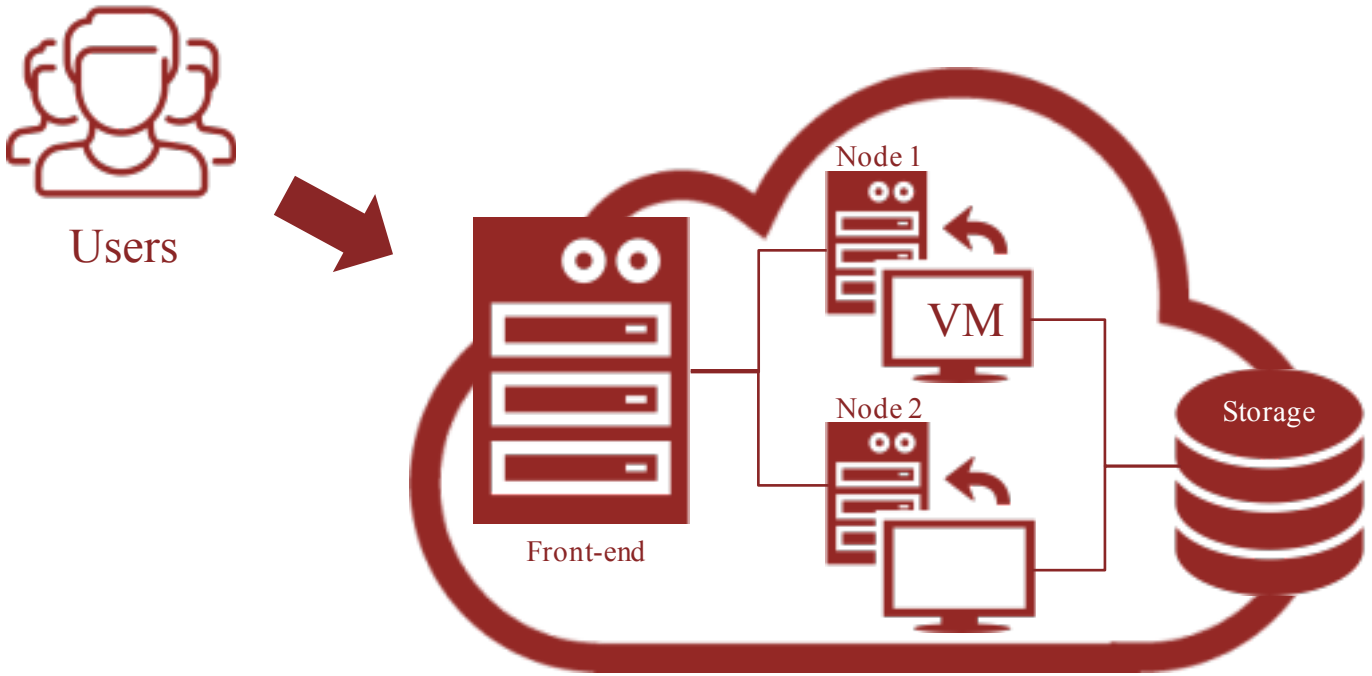


Definition of Metrics

- Time
  - Video streaming response time
- Dependability
  - Availability
  - Reliability

Environment Configuration

Baseline Architecture



Experimentation

- Analytics modeling
  - RBD
  - SPN
  - Markov Chains
- Measurement
  - Obtain more accurate results
  - Models validation

Related Works (Matrix)

	Live Migration	Video Streaming	Cloud Computing	MCC	Modeling
Torquato et al., 2015	Yes	No	Yes	No	Yes
Bezerra et al., 2015	No	Yes	Yes	No	Yes
Liu Weining et al., 2011	Yes	No	No	No	No
Silva et al., 2015	No	No	Yes	Yes	Yes
Melo et al., 2015	No	Yes	Yes	No	Yes
Dantas et al., 2012	No	Yes	Yes	No	Yes
Campos et al., 2015	No	No	Yes	No	Yes
This Ph.D. project	Yes	Yes	Yes	Yes	Yes

Planned Schedule

	Apr	May	Jun	Jul	Aug
Paper	x	x	x	x	
Test-bed	x	x			
Model	x	x	x	x	x
Experiment			x	x	x

References

- Herzog, U. (2001). Formal methods for performance evaluation. In Lectures on Formal Methods and Performance Analysis
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- Cassandras, C. G. (1993). Discrete event systems: modeling and performance analysis. CRC.
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Thank you

Workshop MoDCS Mar'16