System Dependability Evaluation

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

In brief

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Presentation

Objectives

Knowledge of the principles and techniques for evaluating the dependability of computer systems. In the first part, we present the main dependability measures and methods for evaluating and comparing different system architectures. The second part presents techniques to follow the evolution and analyze the quality and reliability of software systems.

Description

The lecture is divided into the following sections:
1) Introduction: Objectives and place of evaluation in the life cycle
2) Qualitative analysis (FMECA: Failure Modes Effects and Critical Analysis)
3) Dependability measures
4) Evaluation methods of system architectures: Reliability Diagrams, Fault Trees, Markov Chains
5) Evaluation of fault-tolerant architectures: Coverage factor
6) Software reliability analysis: Role in the development process
7) Characterization of reliability growth and trend tests
8) Case studies

Pre-requisites

Basic concepts and techniques of dependable computing
Basic concepts in probabilities and statistics

Useful info

Place

> Toulouse