

*Notes on
Architectural
Constraints
Modeling of Self-
adaptive
Applications*

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July 2007

This presentation will:

Talk about the:

- > “MDA approach for configuration files for middleware weaver”

Main focus:

- > What is the best “Environment setting”
 - for this solution
- > Should we use MDA?
 - relative to the size and complexity of the design in question.

This “Design – Deploy”

I based on:

- > Well-understood and modeled components
- > Pre-described features
- > Alternative non-efficient solution:
 - Façade logic for each component

Is it sensitive to

- > # components and # features?
- > Frequency of running the matching algorithm?
- > Complexity of introducing new middleware?
- > Aggregations and summations of all hierarchies?

Can you show me a large scale modeled system?

- > What about strong business role engine?
- > Can we form the most efficient "MDA" model?

Intermediate Conclusions:

It is good for

- > Small standalone OS and application
- > Single architecture

Interesting questions:

- > Where is the boundary between small and large systems?
- > What about environment constrains (CPU, Memory, Battery)?
- > What about balancing multiple applications?
- > What about tuning just one self-adaptive application in an environment that not all are adaptive?
- > What is the dependency on the order of change in self-adaptive system?

MDA

- > Is it a “Silver bullet” for any system?
- > What is actually done in the field?
- > Does it speed up development process?
- > Does it promote error-free development?
- > What is the effect of complexity and size got to do with the selection of MDA approach?

What is important to remember?

Balance between

- > Modeling weaving and variation code vs manual configurations
- > Environment sensitivity?
- > Why use MDA?