An Environment for Managing Evolving Product Line Architectures

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Abstract: The use of product lines is recognized as beneficial in promoting and structuring both component and architecture reuse throughout an organization. While the business practices of using product lines are well-understood and representations for specifying and capturing the underlying architecture of a product line are coming of age, support environments for managing the evolution of a product line architecture are still lacking. In this paper, we present Ménage, an environment specifically designed to alleviate this problem. Key features of Ménage are its support for: (1) specifying variation points in a product line architecture as optional and/or variant elements, (2) tracking the evolution of a product line architecture and its constituent elements through explicit versioning techniques, and (3) selecting one or more product architectures out of an overall product line architecture by applying user-specified criteria. In this paper, we introduce the approach underlying Ménage, discuss its detailed functionality, and demonstrate its use with a product line architecture for entertainment systems.