E-Service Composition: Models and Formalisms

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The emerging paradigm of electronic services promises to bring to distributed computation and services the flexibility that the web has brought to the sharing of documents. An understanding of fundamental properties of e-service composition is required in order to take full advantage of the paradigm. This paper examines proposals and standards for e-services from the perspectives of workflow, process models, and automata theory. Key areas for study are identified, including behavioral models of services and their compositions, techniques for verifying properties of compositions, and techniques for synthesizing compositions. A sampling of emerging results and techniques in each of these areas is presented.