

MASTER'S PROJECT (SPRING 2012)

TOPIC: *Prototyping an Ontology-Based Semantic UDDI for Cloud Services*

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LOCATION: Dion 305

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ABSTRACT

The rapid growth of cloud services makes it difficult for service consumers to effectively search for required services from Universal Description, Discovery and Integration (UDDI) using traditional keyword matching techniques. The main reason for this is two-fold: one is the difficulty of publishing services in a semantic manner that can precisely describe the services; and the other one is the difficulty of discovering services accurately from an extensive collection of existing cloud services in order to meet certain user requirements. As opposed to traditional keyword-matching UDDI, in this project, we introduce an ontology-based semantic UDDI that utilizes a reasoner to classify the domain knowledge represented using ontologies, and allows a user to search for cloud services in a smart manner. To demonstrate the advantages of our approach, we develop a prototype and adopt a restaurant locator application that can smartly search for restaurants with the required food items based on user inputs. In our approach, we specify restaurant types and food item types using ontologies, so the ontology-based semantic UDDI can reason about the type of restaurant, and produce a collection of keywords that are semantically related to the user inputs. By doing so, it not only narrows down the number of restaurant services to be searched, but also provides a way to search for food items based on the semantics of the user inputs. Finally, with the type of restaurant and a set of semantically related keywords, the restaurant locator can invoke the proper restaurant services in the clouds.