

Defining Generic Architecture for Cloud Infrastructure as a Service Provisioning Model

Infrastructure as a Service (IaaS) is one of the provisioning models for Clouds as defined in the NIST Clouds definition. Although widely used, current IaaS implementations and solutions doesn't have common and well defined architecture model. The paper attempts to define a generic architecture for IaaS based on current research by authors in developing novel architectural framework for provisioning Infrastructure Services On-Demand (ISOD) that is originated from the telecommunication and networking area and allows for combined network and IT resources provisioning. The proposed architecture combines SOA and Next Generation Network (NGN) technologies and defined as the Composable Services Architecture (CSA) for dynamically configurable virtualised services. The proposed CSA includes also another important component the Services Delivery Framework (CSA SDF) that defines the services provisioning workflow and supporting infrastructure for provisioned services lifecycle management (SLM). The CSA SDF extends existing lifecycle management frameworks with additional stages such as "Registration and Synchronisation" and "Provisioning Session Binding" that specifically target such scenarios as the provisioned services recovery or re-planning/migration and provide necessary mechanisms for consistent security services provisioning as part of the provisioned on-demand infrastructure. The presented architecture is the result of the on-going cooperative effort of the two EU projects GEANT3 JRA3 Composable Services and GEYSERS.

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