Multi-tenancy, the sharing of the whole technological stack by different consumers at the same time, allows service providers to maximize resource utilization and reduce servicing costs per customer. Essential components of the contemporary enterprise environment like the Enterprise Service Bus (ESB) are therefore required to raise to the challenge of supporting and enabling multi-tenancy.

Addressing the requirements for multi-tenant ESB solutions as fundamental building blocks in the Platform as a Service (PaaS) Cloud delivery model, we propose ESBMT, a solution for dealing with multiple tenant contexts on the level of middleware. ESBMT is an implementation-agnostic multi-tenant aware ESB architecture that we instantiate based on the Apache ServiceMix ESB open source solution.

In the scope of 4CaaSt, the Taxi Scenario use case has been defined, where a service provider offers a taxi management software as a service to different taxi companies, i.e., tenants. Taxi company customers, who are the users of the tenant, submit their taxi transportation requests to the company they are registered with. The taxi company uses the taxi management software to contact nearby taxi drivers. Once one of the contacted taxi drivers has confirmed the transportation request, the taxi management software sends a transport notification containing the estimated arrival time to the customer.

Multi-tenancy has to be largely transparent, apart from providing access credentials when using the service or application. More importantly, consumers must have the impression that they are the only ones using the multi-tenant service or application, without suffering from side effects caused by other consumers regarding, e.g., quality of services.

Further Information

Selected Publications


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