

AllJoyn Overview

January 25, 2015

Overview of AllJoyn

What is AllJoyn?

- A software infrastructure for distributed applications.
- It has the form of a library.
- Provides API with which users can write a program.

Which abstraction does AllJoyn adopt?

- It's mostly based on two abstractions:
 - PULL: Method invocation
 - PUSH: Signal notification

How is it AllJoyn Implemented

- Method invocation and signal notification are implemented using **message bus**.

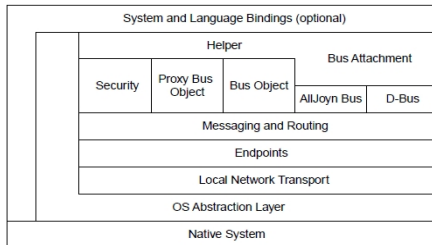
Where is AllJoyn located

- Sits between OS and user application.

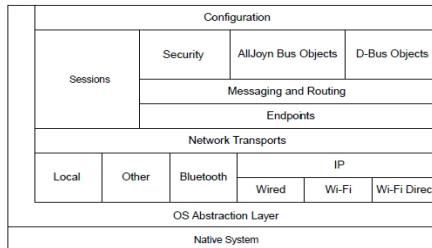
Component of AllJoyn Framework

Architecture of AllJoyn Framework

Static architecture



Runtime architecture



Distributed services

Three essential functionalities

- Discovery
- Announcement
- Service: Pull-based and Push-based

Session vs Sessionless (i.e. Request/Reply)

Issue: Naming

Issue: Discovery

Issue: Announcement

Issue: Fault Tolerance

Issue: Consistency

Issue: Atomicity

Issue: Security

Issue: Performance

Limitation of AllJoyn

- **Inheritance-based:** CORBA is inheritance-based while Spring was composition-based.
- **Not symmetric:** full-fledged pull-service; half-baked push-service (notification/signal)
- **Tied to object model:** good but why; message is more generic and more efficient.