MEGATRIS COMP LLC

SSBArchitecture.

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SSB Architecture Introduction

Smart System Bus (SSB) Introduction

Megatris basic architecture for Internet of Objects.

W e give a light introduction SSB architecture to describe the basic topics and advantages to manage the Internet of Things (IoT).

Some Definitions

Our world is always more complex and now we are all facing massive changes in our computing environments. Changes are brought by the adoption of technologies like Internet of Objects (IoT), cloud computing and mobile technology.

Megatris Comp. has developed an enterprise integration platform to embrace such technological evolution: **Smart System Bus (SSB), a cloud based connected internet objects.**

Internet Objects (IO) are embedded computing devices spread out in networks. An IO combines the abilities to compute, communicate, act and sense. Possible applications are medical monitoring of different health parameters (intra and extracorporeal), environment monitoring, control of industrial machines and devices. An IO connected to web realizes the Internet of Objects that are Objects of the physical world connected through Web protocols. Mobiles are a conspicuous example of IO interconnected using web services and push server.

We believe that consumer devices, enabled with our context aware software, will engage sensors 100 percent of the time: monitoring and learning about the consumer so that the **SSB can actively "proact," rather than passively interact, with its users.** Using sensors to detect user context need not compromise battery life. To interpret sensor data in this most power efficient way, **SSB has layered framework that interpret message arriving from IOs, update user's context, run analytics if necessary or simulations and generate forecasts or recomandations.**

SSB (Smart System Bus)

An enterprise service bus (ESB) is a software architecture model used for designing and implementing the interaction and communication between mutually interacting software applications in Service Oriented Architecture.

As a software architecture model for distributed computing it is a specialty variant of the more general client server software architecture model and promotes strictly asynchronous message oriented design for communication and interaction between applications. Its primary use is in Enterprise Application Integration of heterogeneous and complex landscapes.

SSB is a type of Enterprise System Bus. It is a Message-oriented Middleware (MoM) that uses event-driven and standards-based MoM in combination with message queues is technology frameworks.

Web services are a central point to perform orchestration, mediation and routing allowing the development team to concentrate on delivering functionality and value.

SSB permits Interaction Services using Web Services (WS). A set of Web Services are the interfaces with the Processes Services and Automation running under SSB umbrella. Appropriate Web Dashboards and Mobile Applications are the key for cloud analytics accesses from anywhere, with any device.

Systems Bus Architecture

SSB is a modular and component based architecture. In SSB, an application will communicate with automation hardware and web services via the bus. This approach reduces the number of point-to-point connections between communicating applications. Therefore messages need to be routed consequently through the message bus for buffering (message queuing) to allow management of content as well as filtering and correction of message flows.

It is an **essential design concept of SSB that every client** (IoT entity, web services or mobile) **directs all its requests through the ESB instead of passing it directly to a potential server**. This allows the SSB to monitor and log the traffic.

The message model defines a standard set of messages that the SSB will both transmit and receive. When the SSB receives a message, it routes the message to the appropriate application.

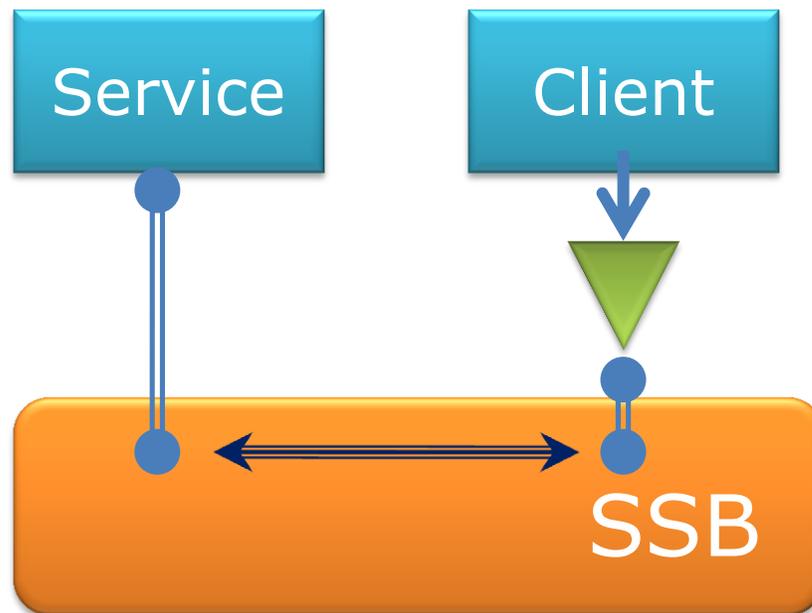A client can communicate with SSB using XML/RPC, SOAP or JSON.

Fig. 1 – Client Service Interaction

The existing components are:

- **Binding Component**

- **Services Engine:**

- SSC (Smart System Controller): it is Messages Reader and Processer

- Delivery server (deliver communication using email, sms, push messages, …)

- SM (Simulation Module)

- IMCP (a rule base decision maker)

  o Context manager

- Extractor (prepare data using specific rules)

- A suite of web services

SSB integrated architecture is based on Messages and Web Services interacting from the cloud to the external world. This is the bases on which is constructed a pile of SSB layers.

Process Automation is at the top and benefits of all services offered by SSB. The relationships events–processes start NE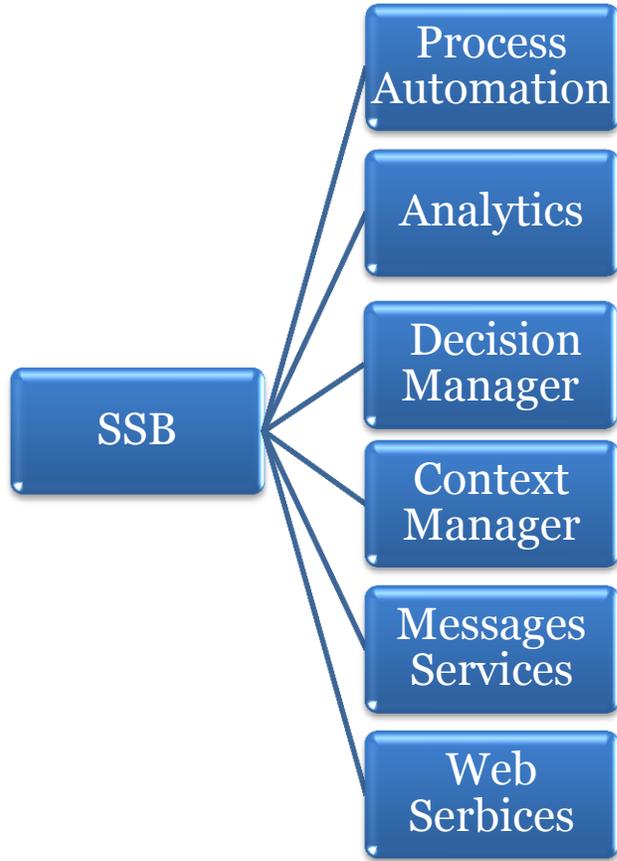P (Never Ending Processes) or normal processes.