Abstract

Rockwell Collins is responsible for providing training software for the E6 Aircraft TACAMO system. This system is comprised of multiple disparate systems that must be able to communicate with each other. Our solution incorporates an Enterprise Service Bus to manage service and data routing in addition to providing simulated components for testing.

Architecture

The ESB we implemented is part of the Virtualized Mission System Platform of the larger Weapon System Trainer for the E6. Though a small part of the overall system, our design will provide the framework for integrating the disparate system components from the E6 into a single virtualized system.

Impact

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With our project, an operator is no longer required to train on a real E6 system. The individual subsystems could be virtualized much easier with our solution.

Results

ESB Process

Message Server Process

PBX Emulator Process

Status Update from ESB

Presentation Layer Homepage

Summary

We created the backend that is used in the virtualization, which facilitates communications between the ESB and other components. The front-end Presentation Layer populated the webpage with system data and allow connection to the homepage.

Our project runs on a bare-metal machine running an instance of the KVM hypervisor. The hypervisor then spins up multiple guest images which then run their respectively assigned components. This allowed full simulation of a complete training system on one machine.