Case Study – Defense Industry

Customer Details

The customer is considered to be one of the most high-tech armies in the world, possessing top-of-the-line weapons and computer systems. The Communication Corps Technology Division provides IT support and infrastructure to all forces including the Army, Air Force, Navy and intelligence. The IT infrastructure consists of a wide variety of platforms, applications and development environments

Resilient Connectivity Without Central Points of Failure

The Technology Division is tasked with providing combat units, support units and command facilities with an IT infrastructure that is flexible, resilient, and continuously available in an environment subject to rapidly changing conditions. Following an exhaustive research effort, the Technology Division has decided to deploy an inter-corps enterprise service bus (ESB) that ensures interconnectivity between the Army, Air Force, Navy and Intelligence Corps.

At first, it appeared that any traditional ESB vendor would be able to address the requirements as presented by the customer. However, once the tender conditions were published, it became obvious that a far more sophisticated technological approach would be critical to ensure the success of the ESB deployment.

The first and most important requirement is architectural resiliency. The customer's infrastructure cannot tolerate any fault that disrupts the availability of its distributed information sources. Centralized servers, even with clustering and failover logic, represent potential single points of failure that are critical shortcomings in military operations. Another specific requirement is that all end-points must be able to communicate directly with each other.

In order to meet this challenge, BEA Systems, one of the leading ESB and SOA solution providers, and Coridan have created a partnership to offer a solution that uses Coridan's unique MantaRay messaging technology to extend the capability of BEA's AquaLogic ESB product. The key to this joint solution is the how the lightweight MantaRay module, which is installed on each individual network node, enhances the AquaLogic's powerful ESB capabilities by adding non-server-based messaging functionality.

AquaLogic provides the complete ESB feature set and functionality. It establishes the communication handshake between remote nodes. However, MantaRay physically delivers data directly between nodes without passing through the AquaLogic servers. This combined ESB solution guarantees communication survivability because all end-points maintain their connection with each other even if the central ESB server is unavailable.

Extended ESB to support Mobile, Inter-Corps Communication

Another significant challenge is to extend traditional ESB functionality to mobile devices used by combat units to facilitate communication with each other, as well as with headquarters and support units, in order to exchange real time data and intelligence. Mobile devices, by their very nature, suffer from frequent disconnection from the network infrastructure and therefore, require dependable persistency and durability support. Handheld devices also demand lightweight software footprints due to their limited memory and storage capacities.

MantaRay enhances the AquaLogic ESB is by inserting a small intermediate "transport layer" between applications and the devices on which they are deployed. Applications are freed from the "burden" of knowing the state and level of connectivity of the underlying device. They behave as if they are always connected, while MantaRay physically manages device connectivity, thereby insuring persistency and guaranteed data delivery.

The distributed nature of AquaLogic with the MantaRay messaging architecture allows the customer to easily deal with any future scalability issues that may arise. Because is not dependant on any central entity responsible for the data transmission, additional systems, applications and computers can be added to the environment with little or no investment in hardware to support increased data volume.

MantaRay also provides the customer with built in interfaces for applications written in Java, C++ or .NET as well as support for audio and video streaming.

About Coridan

Coridan is a leading provider of open source inter-application and SOA messaging solutions. Based on MantaRay, a distributed messaging infrastructure, Coridan's highly scalable suite of solutions enable companies to share application data across the extended enterprise from desktops to company level applications, while offering greater performance than traditional messaging systems. Coridan's unique messaging solutions are quickly becoming the leading choice of major financial, government, defense and healthcare organizations. Founded in 2003, Coridan is managed by a group of high tech veterans, providing world-class software infrastructure products to global 2000 companies.