Delivering data to the tactical edge



Military organizations around the globe rely on iOra to deliver data over challenging networks

Background

In recent times, more than ever, the development of solutions delivering operational efficiency, whilst maintaining the accuracy of information, is paramount for Warfighters. Exploiting solutions such as data distribution in joint common operating environments, mission command software, C4ISR systems and deployed devices are all aimed at improving tactical communication and operational coordination.

The use of computers and their networks to support military operations has become a central constituent of modern warfare and planning. Not only do these systems support the essential command and control, the means by which military commands become spread out to the assigned forces, but these systems also record and disseminate intelligence, circulate and control personnel information and manage logistics.

Increasingly these electronic records are also used to forensically record the decision making processes where complex military actions are essential. In addition, they provide historical records that can be legally reviewed later to recreate the information available to the battlefield commander at the point of action execution.

Consequently, for the military commander a key requirement is that any decision that s/he makes has to be made on the latest and most relevant operational data. Ensuring that information is current and consistent across all deployed operational sites, irrespective of location, and what is often called the ‘single point of truth’ is a vital information assurance goal. Providing this assurance is constrained

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by a number of factors that affect data access such as:

Information portals – Portals such as Microsoft SharePoint are becoming the *de facto* standard for militaries to share and collaborate on data; but they depend on good network connections. In extreme, highly agile deployments, the simple process of providing unified consistent access is often infeasible, which in turn leads to isolated deployments.

Collaboration and the need to share – Battles are won and lost on the sharing of data and the ability to collaborate on mission objectives. Controlling and managing electronic information is essential but problematic, particularly when Allied forces are using a mixture of platforms, versions and file formats.

Global deployments - Global deployments require the use of satellites, radio and other methods to serve as the network backbone. These bearers are vulnerable to attack and as a consequence can suffer from high network latency and limited bandwidth. These network bottlenecks can lead to failed communications, frustrations and, more importantly, operational risk.

Information congestion - Network access is also impacted by the sheer volume of data that needs to be transmitted up and down the command chain. Huge volumes of critical time sensitive intelligence data generated at the network edge can have the effect of paralysing limited bandwidth networks.

Limited/intermittent networks – The requirement of operating for extended periods of time over DDIL(Denied, Disrupted, Intermittent, and Limited bandwidth connectivity) networks becomes critical so that deployed forces can be resilient to battlefield conditions.

Industry support the global defense community by delivering the following capabilities

Network accelerators to speed up communications between two points in the network.

Data Compression to reduce the quantity of data being sent over the network. Intelligently tracking data to ensure that the same byte level pattern of data does not get sent more than once over the network. This smart data replication approach can have a dramatic impact on the operational capability of the network.

Data over Radio is a low-cost option compared to satellite and increases the number of usable data bearers. Where communication over satellite in increasingly being consider as a fragile option. Fall-back to data over radio provides a viable option for continuing operations.

iOra

iOra is a leading global provider of the portal and file based data replication technology for organizations that need to operate in the most demanding environments. Our technology enables an intelligent, complete and transparent data exchange strategy that is consistent and guaranteed, irrespective of location or network connection. Trusted by Governments, corporates, military and global organizations, iOra technology has been selected for its proven capabilities in hostile and remote environments. iOra products replicate data between installed Microsoft SharePoint servers, or by creating virtualized servers or web applications for mobile users - thus enabling guaranteed access to up-to-date operational critical information.

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Successfully deployed on tens of thousands of machines over networks with speeds as low as 8kbps.

The iOra Product Suite:

iOra Epsilon is the iOra patented compression engine that is the core component of all iOra replication configurations. The world leading cross file compression technology ensures that data replication over the network is highly efficient. Using unique cross-file data compression iOra Epsilon ensures that the same 256-byte pattern only travels once over the network. This approach to managing data distribute can have the impact of reducing the data load over a network by over 90%. Consequently, operations become more resilience in DDIL conditions and potentially new data distributions sharing applications can be attempted that would otherwise been viewed as infeasible.

iOra Geo-Replicator is a replication platform using iOra Epsilon that provides the tools for defining the scope of what is replicated, as well as managing secure, efficient, automated and transparent data updates.

iOra Monitoring provides a diagnostic user interface to support the operational deployment of iOra technology. The iOra Monitor maintains a graphical indication of the operational health of all deployed replication – both local and remote. When iOra detects a warning or network error, iOra can be used to drill down to more detailed diagnostic information.

Key military benefits of iOra Geo-Replicator:

Improved collaboration and remote access to critical information ***Faster access*** to SharePoint and portal content in remote areas of the world

Release of satellite bandwidth for other purposes
Offline, disconnected access to critical Microsoft SharePoint and portal content
Enhanced CooP capabilities

Customers

Over the years iOra has been deployed in applications with the following military organizations:

US Navy – Distance Support program and other associated programs

NATO – Document handling System (DHS) in addition deployment to NRF 1GNC

US Marine Corp (USMC) – Tactical Collaborative Work Suite (TCWS)

US Special Operations Command (USSOCOM)

UK MoD – Army, Navy and Royal Marines deployment of replication services as part of the Defense Information Infrastructure program (DII)

Australian Department of Defense

Norwegian Defense Force linked to NATO deployment

British Royal Air Force (RAF) – RAFCCIS

US Army and Army Corp of Engineers (ACE)

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