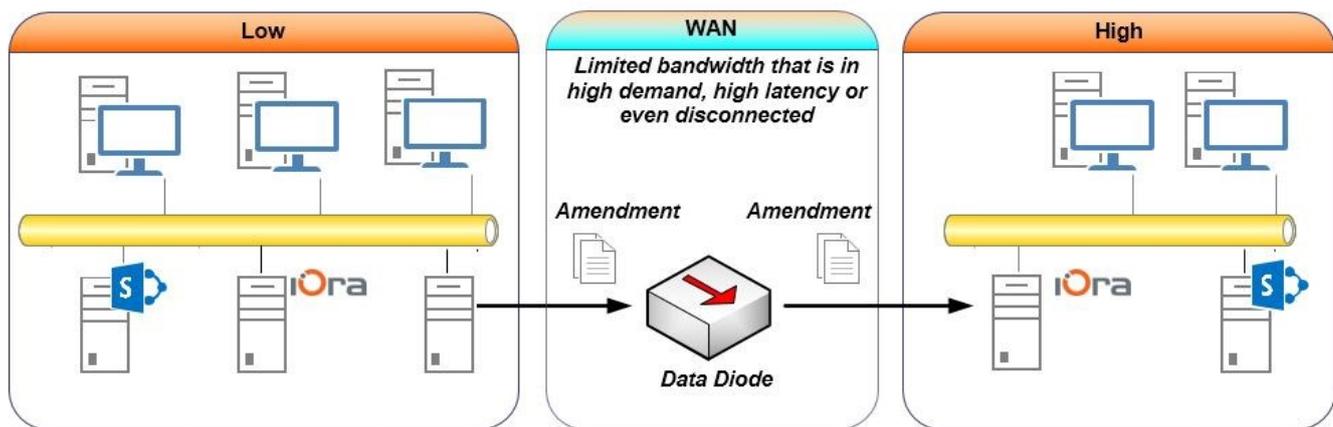# Delivering data to the tactical edge – cross domain

Organizations around the globe increasingly need to replicate data across domains

Background

The replication of data has become established as a key requirement for enabling collaboration for users who are separated by location. This is complicated in environments where the remote users are located towards the network edge and communication is challenged by low bandwidth, high latency networks. Collaboration is further complicated where domains at either end of the network are operating at different levels of security e.g. company A vs company B, or classified vs secret vs top secret. In these instances the replication scheme must be able to be configured in a manner in which the security of data at each location is maintained and assured.

Cross domain replication

The requirement for replicating data over a reliable one way network is most frequently requested by military users. In these applications the ability to

maintain a clear division between classified domains is a fundamental prerequisite. Typically to maintain the one-way flow of data a data diode is installed as a gateway between the two sites. The data diode is a network appliance that is certified to guarantee the passage of data in one direction. The diagram above shows the device between the low environment e.g. classified and the high environment e.g. secret.

The physical nature of unidirectional networks only allows data to pass from one side (referred to as the "low" side) of a network connection to another (referred to as the "high" side), and not the other way around. The benefits for the users of the high side network are that their data is kept confidential while they have access to data from the low side. Such functionality can be attractive if sensitive data is stored on a network which requires connectivity with the Internet. Traditionally the data would be vulnerable to intrusions from the Internet, however with a unidirectional

network separating a high side with sensitive data, and a low side with internet connectivity, one can achieve the best of both worlds.

Unique iOra configuration

iOra's out-of-the-box information distribution capability can be configured to directly address this requirement.

When the iOra Geo-Replicator software processes a particular piece of content for distribution, and manages it later, this is referred to as a publication. A publication consists of content that forms a complete set of information being kept up-to-date by the Geo-Replicator software.

When you modify the original content of a publication, you need also to update the content that you have previously distributed. You use the iOra software to generate files, known as amendments, that contain the changes to the original content. Amendment files are small because they contain only the specific bytes that have changed in the publication. They do not contain the whole content again. For content replicated between servers only this single file needs to be transferred from low to high using the Data Diode device as a network appliance. For replication to be successful all that is required is the simple passage of the file over the network, without the requirement for additional network communication. This is both highly efficient, given that the amendment file is compressed using the world leading iOra patented Epsilon compression technology, and also secure as the Data Diode is maintaining physical server network separation.

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.

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); 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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