

The Deutsches Institut für Internationale Pädagogische Forschung (DIPF), an educational research institute, needed to secure a connection between the Deutsches Forschungsnetzwerk (DFN), a government sponsored research network, and their internal VoIP network. DIPF turned to UM Labs to provide security for this VoIP network, which is tightly integrated with their Microsoft Active Directory infrastructure. The UM Labs product also lays the groundwork for the introduction of Secure Video Conferencing

The Problem

The Deutsches Institut für Internationale Pädagogische Forschung (DIPF), German Institute for Educational Research wished to link their internal VoIP network with the Deutsches Forschungsnetzwerk (DFN) a government sponsored research network. A DFN connection brings many benefits including reduced cost phone services and links to other research institutes.

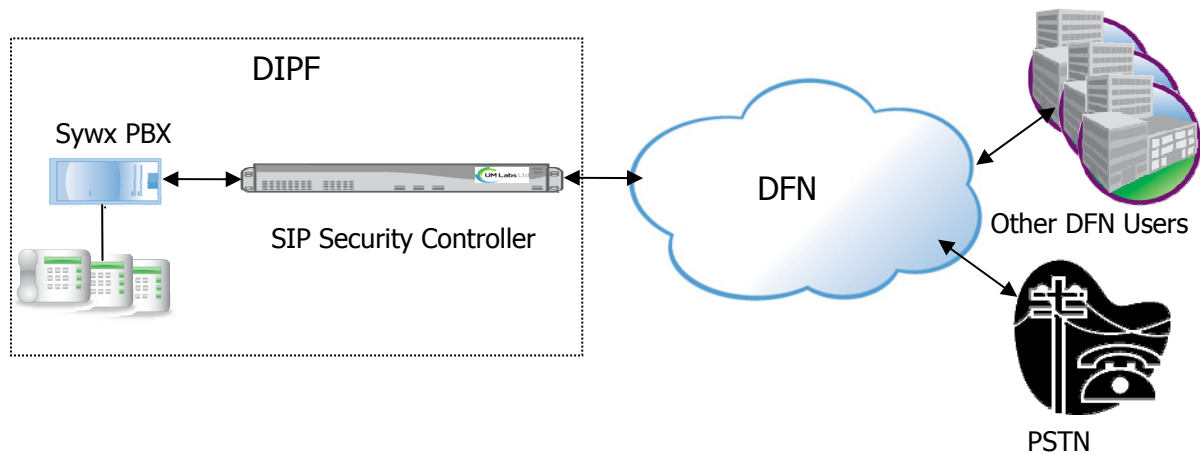
DFN provides many services including a SIP trunk service which offers low cost connections and calls to the public phone network and to other DFN members. While the benefits are compelling, the nature of DIPF's work which includes handling personal and confidential information, plus the fact that their VoIP network is closely linked with their Microsoft Active Directory and their data network meant that DIPF needed to implement security controls on that external connection. These controls should protect DIPF's network against VoIP specific attacks.

In common with many commercial trunk providers, DFN delivers VoIP services over an Internet connection to pre-defined IP addresses. While this approach makes the service is easy to configure, there is a significant security risk because DFN uses the Session Initiation Protocol (SIP) running over UDP (a connectionless transport service) to deliver VoIP. UDP is vulnerable to IP spoofing which means that systems are open to flooding and denial of service attacks which could trigger a complete failure of the phone service. SIP is also potentially vulnerable to a number of other attacks that include call disruption, toll fraud and unauthorised eavesdropping on calls. In a network where voice and data systems are integrated, DIPF have linked their VoIP system to Active Directory, there is also a risk that an attack on voice systems may spread to the data network. A standard IP Firewall would not be able to protect against these VoIP specific threats.

Although a connection to DFN offers some significant benefits including lower costs and improved services, DIPF were not willing to complete this connection without effective security controls.

The Solution

DIPF selected a UM Labs SIP Security Controller to secure their connection to DFN. They chose an EC-4200 which is the enterprise grade product which will easily support all users in DIPF's network and allow capacity for growth as new services are introduced. Installing this controller as a gateway device between the Internet and the PBX, ensures that DIPF receive the full set of benefits that the DFN connection offers without exposing their voice or data network to attack.



Solution Benefits

With the DFN connection and the UM Labs SIP Security controller in place DIPF are able to benefit from reduced rate phone calls to any phone subscriber world-wide and enjoy additional benefits when calling other organisations on the DFN.

Installing the SIP Security controller also simplified the task of connecting the Sywx PBX which runs DIPF's internal phone system with DFN. DFN's service is delivered via a Sonus Session Border Controller. The UM Labs controller is designed to promote interoperability between vendors.

DIPF are also planning to use the same secure VoIP connection to secure remote user connections to the PBX and to provide a secure video conferencing service using Lifesize video terminals. Pre-installation tests have already proven that the UM Labs controller will secure video calls from Lifesize terminals, encrypting those calls where necessary.

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