

Application Note

Deploying Microsoft Office Communications Server 2007 with a VegaStream Gateway

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The VegaStream Group was established in 1998 to design & develop VOIP gateways to connect legacy telephony networks to the new generation of IP networks. Since then the company has gone from strength to strength as the IP market has matured and demand for its products has increased significantly.

Background

One of the most exciting recent developments has been the introduction of Office Communications Server (OCS) from Microsoft. Office Communications Server 2007 allows companies to integrate VOIP applications into existing telephony infrastructure so eliminating the need for expensive technology overhauls.

VegaStream has recently been qualified by Microsoft for Office Communications Server interworking and we bring with this a number of exciting new developments including survivability for IP devices and SIP trunking for connecting to the networks of Internet Telephony Service Providers (ITSPs).

According to a recent Gartner report 80% of businesses who have deployed communications enabled business processes will have acquired **significant competitive and revenue differentiation** because of them.

Office Communications Server is probably the most significant development in this area of advanced communication enabled business processes the industry has ever experienced.

Gateways, in particular VegaStream gateways, offer customers with an existing telephony infrastructure an elegant evolution strategy to deployments of this exciting new technology as well as some unique advantages to the deployment of Office Communications Server for 'Greenfield sites'.

The Market for OCS & Gateways

OCS has been introduced into a telephony market which has some unique characteristics which makes an evolutionary approach to its deployment particularly attractive.

- The PSTN is sometimes called the '**biggest machine in the world**' and any new technology being enabled has to be able to connect to the existing infrastructure – whether in the network or at a customer's premises.
- Typically only 2% of new telephony solutions are deployed into Greenfield sites with the other 98% are deployed to replace existing solutions.
- The overall churn of the installed base to new equipment is less than 15% per annum.
- The introduction of VOIP solutions has not accelerated the churn of this existing TDM legacy telephony equipment. The typical life of a PABX or a Key System has remained at between 7 and 10 years and this has not been accelerated by the introduction of VOIP. This means that organisations are not replacing their telephone systems any faster to access new VOIP applications.
- In order to take advantage of these new applications an evolutionary approach is considered to be far more cost effective than a 'Rip & Replace' strategy promoted by some PBX vendors. This will maintain an organisation's existing telephony infrastructure and protects a considerable investment.
- As well as the capital cost of a new PBX, there are costs associated with re-cabling a building, retraining staff and the general business upheaval associated with an installation of this nature.

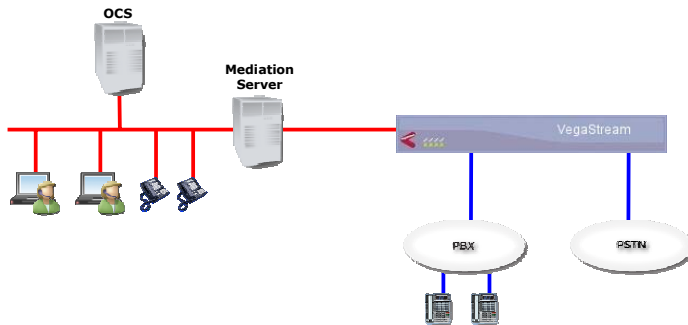
So these factors demand that any new VOIP applications such as OCS has got to have the ability to interface with legacy technology and in particular the wide range of telephony interfaces including analogue (FXS and FXO), ISDN (BRI and PRI), E1 and T1.

Gateways & OCS

There are a number of different scenarios where VegaStream gateways will connect OCS to the legacy world of PABX's, Key Systems and the PSTN. Here we have described the most common we believe our customers will encounter in the market.

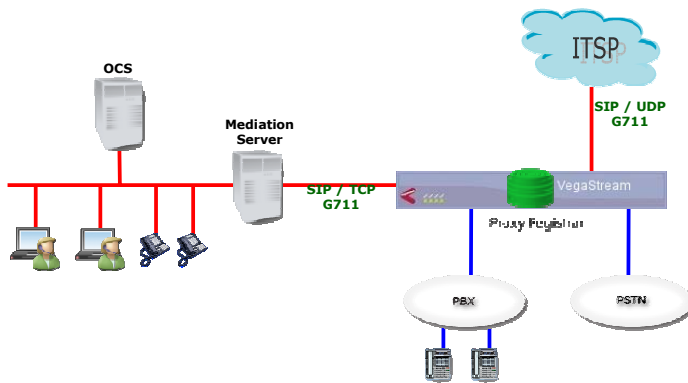
1) If OCS is being deployed with a legacy PBX then the gateway can be installed as in Figure 1. It allows IP extensions on the OCS network to call extensions on the PABX. This is particularly useful when a department within an organisation wants to move to OCS first and still have connectivity to the company PABX. In this scenario calls from the OCS handsets and the PABX extensions are routed over the PSTN.

Figure 1 OCS – Legacy PBX & PSTN Integration



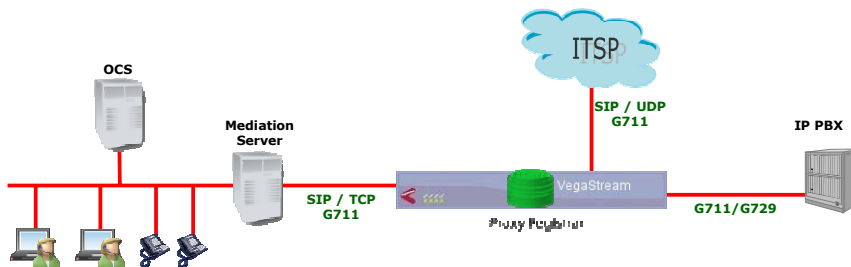
2) It is also possible to route calls over an ITSP network (sometimes called SIP trunking) from the OCS handsets as well as from the PABX. SIP trunking offers organisations significant benefits in cost reduction of voice calls and line rental of exchange lines. As figure 2 clearly demonstrates the VegaStream gateway converts the SIP transport layer from Transmission Control Protocol (TCP) media sent from the Mediation Server to User Datagram Protocol (UDP) to send IP calls to an ITSP. Typically ITSP use UDP as it is more a more time sensitive protocol.

Figure 2 OCS – Legacy PBX with SIP Trunking



3) No Legacy PBX – In this installation scenario the VegaStream gateway connects the OCS deployment to the IP network of the Internet Telephony Service Provider (ITSP) by converting SIP TCP to SIP UDP. In addition it can connect to the PSTN (Analogue, BRI or PRI) if there any outages with the Broadband connection or if Emergency calls need to be routed over a local connection. It is also possible to connect an IPPBX to the OCS installation.

Figure 3 – OCS in a ‘Greenfield Site’



- 4) A VegaStream gateway can also be used to connect analogue phones and fax machines to an OCS deployment. This can allow a network of IP phones and analogue phones to be deployed and communicate with each other. This is particularly attractive for customers who already have high amounts of analogue phones deployed, for example, in 'campus' type environments. Again this scenario allows for calls to be routed over a SIP connection to an ITSP or to the PSTN.

Figure 4 OCS – Analogue Device Connectivity with SIP Trunking

