Fax Server Virtualization

Virtualized fax server solutions are quickly becoming the standard platform of choice. Corporations are making the paradigm shift from physical servers to adopting such virtualization technologies as VMware, Microsoft Hyper-V, XEN and Citrix. By leveraging virtualization technologies, FAXCOM Server and FAXCOM Suite for Windows enables customers to lower capital and operational costs while providing an efficient and flexible faxing solution.

BENEFITS:

- Business continuity
- Increased server utilization
- Reduced software and hardware costs
- A smaller data center footprint with no reduction in scalability
- Simplified fax server deployment

Fax Server Virtualization

FAXCOM fax server solutions can be implemented in a virtualization environment by using the Dialogic Brooktout SR140 software. The SR140 software enables a seamless integration with Cisco, Avaya, Nortel, Quitum and Dialogic Voice Over IP networks and media gateways.

The FAXCOM Server can be installed in a virtual server farm in order to provide high availability and redundancy for your fax server solution. The FAXCOM Server can be rapidly deployed by using a virtual server. Virtualization software can be configured automatically to relocate the FAXCOM server from one host to another.

What is Fax over IP

Fax over IP (FoIP) refers to the process of sending and receiving faxes via a Voice over IP (VoIP) network – such as those from Cisco, Avaya, Alcatel-Lucent, Quintum, and others.

More and more organizations have come to realize the cost savings and productivity benefits that derive from deploying a FoIP server that integrates with their existing equipment to route faxes over their IP network. In fact, even if an enterprise doesn't have a VoIP network in place today, they can still implement FoIP and virtualize their fax servers through use of the Dialogic Brooktrout SR140 fax software and media gateway.
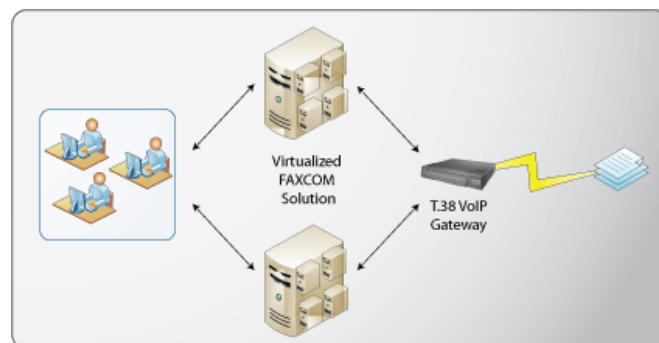
FoIP works via T.38, where T.38 is a protocol that describes how to send a fax over a computer data network. As shown in the diagram above, T.38 requires a T.38-capable VoIP gateway as well as a T.38-capable fax device.

To implement a FAXCOM Server as a T.38-capable fax device, you use the Dialogic Brooktout SR140 fax software, available in densities ranging from 2 to 60 channels and supporting up to 120 ports in a single server. Additional channels can be installed with new software license keys.

The Dialogic SR140 FoIP product is compliant with the T.38, SIP, and H.323 industry standards, and Biscom regularly tests its T.38 FoIP solution with additional PBXs, Gateways, SIP Trunking interfaces, and other devices to confirm additional interoperability. To verify interoperability with your IP environment, contact Biscom for an analysis of your IP environment and configuration recommendations.
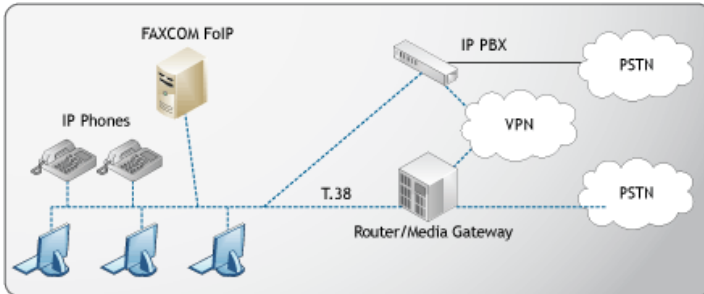

FoIP Benefits

- Eliminate hardware dependency through software virtualization

- Take advantage of existing IP infrastructure

- Remove inter-company PSTN charges

- Simplify disaster recovery by leveraging virtualization

- Lower total equipment, maintenance and operating costs due to network consolidation

- Reduce long distance costs and eliminate the need to maintain fax ports on your PBX system

- Have a migration path from traditional fax to IP fax in the move to VoIP networks

Traditional Fax Servers vs. Virtual Fax Servers

In a traditional fax server implementation the fax server includes fax boards that connect directly to the phone network (PSTN) through a local PBX or to the Central Office. The fax server sends and receives faxes over the phone network to remote fax devices.

In a T.38 FoIP implementation, the fax server is "boardless" -- running only the fax server software licenses. The IP fax server routes faxes to T.38-enabled endpoints on the VoIP network, such as VoIP routers or gateways. The VoIP routers or gateways then connect to the phone network to send and receive faxes to remote fax devices. Even though the VoIP network is the endpoint for sending faxes over the phone network, the fax communication is still a point-to-point, real-time delivery from the IP fax server.

Implementation of T.38 FoIP requires a VoIP implementation with routers and gateways configured for T.38 support. It is generally necessary for customers to configure their VoIP network to support T.38 FoIP – it is not a default feature of the VoIP implementation. Customers will need access to technical resources able to configure their VoIP routers and gateways to assist Biscom with the implementation.

Virtualization Requirements

Supported hypervisors include:

• VMware ESX/ESXi Server version 3.0.1 or later

• Microsoft Server 2008 with Hyper-V

• Citrix XenServer 5.0 or later

The virtual environment must meet SR140 minimum requirements as well as the minimum processor emulated by VMware. Therefore, the minimum requirements of the virtual machine presented to SR140 are: 2 GHz processer, 1024 MB memory. This configuration results in approximately 15% CPU utilization when running 120 simultaneous SR140 faxes.

The table below outlines the network utilization for a virtualized fax server on VMware ESXi server with a gigabit network card.

VMware SR140	Active Lines	VMware Networking Usage			Avg. mb/sec
		min	max	average	
SIP RX	42	0.10%	0.44%	0.15%	1.157
SIP TX	42	0.14%	1.00%	0.18%	1.327
H.323 RX	42	0.10%	0.38%	0.16%	1.225
H.323 TX	42	0.10%	0.66%	0.20%	1.317