

FAX VIRTUALIZATION:

The route to a centralized and
consolidated fax environment

A Lane Guide



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Lane's Guide to Fax Virtualization

The fax market is in a state of transition and has been for some time. While many organizations around the world are seeing fax traffic rise, a significant number are seeing a sustained year-on-year decline. Whichever scenario is relevant; the driving forces of greater efficiency and lower costs are ever present and have been given added impetus by the current global economic climate. Consolidation, centralization and virtualization have become the focus of activity throughout the IT world and fax has not escaped this movement. Indeed, fax and messaging servers provide significant opportunities for organizations of all sizes to make progress in these areas.

Within this white paper we discuss some of the innovations in fax technology, such as Fax over IP (Fax over Internet Protocol, also called IP fax), that provide opportunities to create a fax environment that fully integrates with the latest Unified Communications and Voice over IP (Voice over Internet Protocol) installations in a highly centralized and virtualized environment. We also look at the issue of costly over-capacity in fax provision within an organization that can be the legacy of declining long term fax traffic. Fax vendors, such as Lane, have

met this challenge head-on by developing centralized, fully featured fax server solutions that are packaged and priced to address the needs of any organization or department for whom fax is still a business-critical resource.

The business imperatives that are driving the adoption of new technology in the fax market have really brought the issue of fax provision into focus for organizations of all sizes. Now is a very good time to review fax infrastructures in relation to broader strategic IT objectives. Whether these are driven by the need to improve integration of fax with broader networked communications, re-balance the provision of fax with the current requirement in order to save costs, meet changing compliance obligations, take advantage of virtualization opportunities, or even to move towards a more environmentally sustainable communications infrastructure.

We start by looking at FoIP, as this is the technology that allows modern fax and messaging servers to support a centralized

communications infrastructure to exist within a virtualized environment. With FoIP, organizations are able to achieve greater consolidation within IT and communications.

Fax over IP

Most medium to large businesses made the shift from stand alone fax machines to fax servers some time ago. Now, many are looking at the next phase in the evolution of integrated

business communications and considering moving fax onto their IP networks. Demand for greater convergence of data and communications networks is fueled primarily by the cost savings that may be achievable through more efficient communications management and lower infrastructure overheads. Convergence in the voice market has gathered pace over recent years as well. Standards have become well established and vendors have integrated IP capabilities into their equipment which has made migration relatively straightforward.

In the rush to integrate voice communications into IP networks, fax has been somewhat overlooked. But, this is now changing and organizations are becoming aware of the role that fax servers play in fully integrating communications and seamlessly exchanging documents throughout the business. Among other things, legacy back-office systems can be linked in to allow production fax runs over IP networks and inbound faxes can be routed to appropriate workflows via various data capture technologies within the fax server. The fax server becomes the central document exchange hub in the enterprise; linking remote locations and allowing the business to achieve compliance goals across the whole organization.

FoIP is a method of sending faxes over the Internet. FoIP changes the transmission method of faxing in much the same way that VoIP changes the transmission method of a phone call. In both FoIP and VoIP, data travels most of the distance between sending and receiving devices on a packet-switched network, often avoiding the long distance phone lines of the telephone network. This reduces the cost of transmission and can be a more efficient setup for a business.



Benefits of FoIP

Installing an IP fax server delivers wide ranging benefits due to their centralized and fault tolerant nature. The primary advantages are:

Lower Maintenance Costs – In an IP fax solution it is possible for fax traffic to enter the IP environment via a gateway rather than through the PBX. As the maintenance costs of routers can be significantly less than those for a PBX, regular maintenance contract costs can be greatly reduced. The greatest cost savings are possible when a VoIP infrastructure is already in place; as no new system components or additional support are required.

Lower Operating Costs – Complex network infrastructures made up of disparate technologies are common in medium to large enterprises. Complexity is forced on the company as it expands and having to operate separate data and telephone networks adds to this issue. Integration of data, voice, and fax communications over the IP network eliminates the need for a telephone network and allows support resources and personnel to be focused on the data network.

Easier Deployment and Maintenance – In a VoIP/FoIP environment, the location of the IP fax server is independent of the PSTN network access point as gateways provide the connection to the PSTN. The fax processing resources simply need access to a data network, Local Area Network (LAN) or Wide Area Network (WAN), where the gateway resides.

Better Disaster Readiness – With a FoIP solution in place, the location of the fax server is independent of the user. Fax server deployment can, therefore, be reduced to one or two strategically located data centers. The number of sites requiring rapid response is significantly reduced and fax servers can be located in the most secure and stable environments.

Lower Risk of Connection Failure – FoIP networks provide the flexibility to route traffic via fully functional nodes even if part of the network is down. A single fax server or multiple load balanced redundant servers can be installed on multiple network nodes, effectively eliminating the risk that the fax server will be without access to the network. This is critical where fax is the method of delivery for vital health or natural disaster alerts.

Least Cost Routing – Using the gateways installed at remote locations as part of the FoIP network companies can route calls and faxes across their WAN to avoid long distance call charges even if the fax is sent across the world. This allows businesses to improve customer service by using local fax numbers in each country.

Enhanced Business Productivity – Fax server technology sits at the heart of communications infrastructure and can be used to enhance a company's ability to streamline business process automation and improve document management. Investment in FoIP solutions provides an opportunity to integrate communications and document management into corporate workflows.

Virtualization – Virtualization of software improves efficiency and consolidates hardware resources. FoIP solutions that are compliant with leading manufacturers virtualization software, such as Lane's Passport Fax Server, can co-exist in a virtualized environment.

Fax Lives Comfortably in a Virtual World

Many organizations have been considering how to leverage fax technology in their strategic planning. Opportunities exist to bring fax onto the IP network and to gain access to the many potential benefits as described above. Whether a business can actually realize all of these benefits depends on a number of factors that relate to fax usage and the nature of the existing communications infrastructure. The one that is available to all, however, is virtualization of the fax server. Consolidation of multiple servers into one virtual server utilizes available hardware capacity, as opposed to the traditional approach of running one application per server.

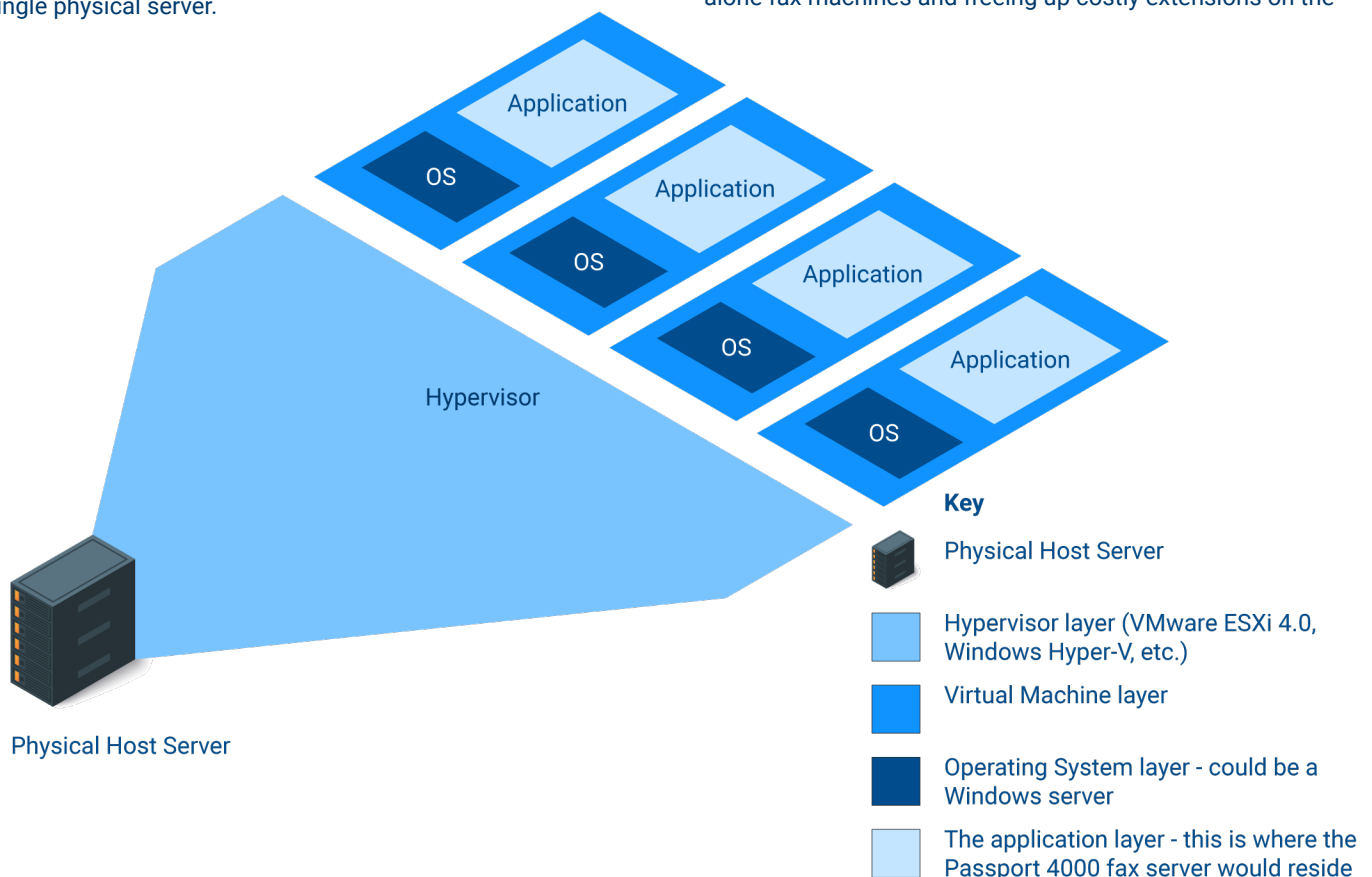
The diagram below shows how the various software layers reside on the physical server with VM software allocating resources dynamically and creating multiple simulated computer environments, each capable of acting as an independent server. The virtual machines are able to run separate operating systems and applications - one of which could be the fax server.

Lane's Passport 4000 Fax over IP (FoIP) solution leverages field proven Dialogic® Brooktrout® fax technology to deliver high performance, reliability, and scalability. Brooktrout SR140 Fax Software performs well in virtual environments and has been tested running multiple SR140 channels simultaneously on separate VMs on a single host server. This enables hosting of multiple fax services, hosting fax and voice services on a single physical server.

Lower Costs

Passport 4000 can deliver cost reductions in a number of ways and savings take many forms from hardware rationalization, to infrastructure consolidation and lower call charges. The seamless integration of fax into an efficient communications system enables intelligent and automatic delivery of information to and from users, workgroups or workflows, whether they are inside or outside your organization, without user intervention.

Consolidation of fax operations into a single robust fax server reduces the number of distributed fax lines required and makes better use of the lines being used. Savings are realized by canceling expensive direct analog exchange lines for stand alone fax machines and freeing up costly extensions on the



in-house PBX. Most stand alone fax machines are idle for the majority of the day, but they are still using electricity and taking up valuable office space. Passport 4000 eliminates these costs; and because it uses no consumables, further savings can be made when stand-alone machines are removed.

In a Fax over IP installation, as discussed above, the fax server environment can be virtualized to consolidate communications over your IP network. Centralizing fax traffic through Passport 4000 over the network reduces IT management time associated with operating multiple fax implementations across the company.

Tracking of inbound and outbound faxes and monitoring fax transactions anywhere on the network becomes a simple task. Many organizations may already have a mix of various fax server systems and stand alone fax machines resulting in high maintenance fees. Much lower annual maintenance costs can be achieved by consolidating all fax functions into Passport 4000 and retiring stand alone fax machines.

As organizations evaluate their fax requirements, packaged and cost-effective solutions such as Passport provide an easy way of migrating to a lower cost solution while maintaining or enhancing fax service provision throughout the organization. Lane will offer a discount when upgrading to a Passport fax server from an existing system to ease the transition to a more appropriately scaled solution. In addition to cost reduction, Passport can:

- Fax-enable users at their desks for improved efficiency.
- Integrate back office and in-house applications for greater control.
- Deliver fast and secure document distribution through direct routing.
- Meet business and regulatory compliance

So, What Does All This Look Like in Practice?

Strategic consolidation, virtualization, and centralization policies are driven by the quest for greater efficiency and lower costs and have been the driving force behind change in the fax market. However, new fax server technologies have enabled the fax industry to respond with solutions that deliver lower costs, deeper integration and considerable productivity improvements. Lane has transitioned a number of its clients to Passport 4000 fax and messaging server resulting in significant benefits. A good example of this is an international trading and shipping business with offices in the US, Europe and Asia. They trade grains, oilseeds, vegetable oils, oilseed meals, and ocean freight. With the recognition that fax remained a critical part of the communications infrastructure, this business needed to review requirements and find ways of managing the reduction in fax traffic into the future.

A strategy of growth through acquisition meant that the business inherited a disparate range of systems and applications throughout its businesses. In a strategic move to reduce costs and improve efficiencies, the goal was to move towards standardization and centralization.



After carefully reviewing their options, this business elected Passport 4000 as their solution. Lane fully understood the requirement, and provided a field-proven solution that included a packaged Fax over IP infrastructure with the necessary Exchange and business systems integration.

Utilizing Fax over IP enabled the Microsoft Certified Passport 4000 fax server to be virtualized, while allowing for media gateways to be located in strategic geographic locations to meet regional faxing needs as additional offices were brought online.

The end result was a system that significantly reduced ongoing costs through reduced maintenance, telephone line costs, as well as server and data-center costs as the system was implemented in a virtual environment. The single centralized system makes the task of administering the fax environment much simpler and because there are no physical fax cards, the issue of fax card obsolescence is removed completely.

Conclusion

As organizations roll out plans for greater centralization and consolidation of communications systems, they are increasingly looking to virtualized environments as a way to achieve these goals. The fax industry has responded with new technologies that address these needs very effectively. In many cases, the cost savings can be so large that an investment in a new packaged solution such as Lane's Passport 4000, is the best way forward. Our fax solution is not only fully integrated and virtualized, it is scalable to match ongoing fax requirements of any business.

Contact Lane today to learn more about our leading faxing technology, thought leadership and economics to help your business transform into today's market.



About Lane

Since its formation in 1976 Lane has been at the forefront of messaging communications and is now recognized internationally as a leader in fax integration, across the financial, healthcare, manufacturing, and transport industries. Based in the UK, US and Singapore, Lane has implemented systems across 50 countries and provided professional services in all time zones.

Lane offers the very best solutions for integrating fax servers as a part of wider communications networks. As specialists in messaging solutions for over 46 years, Lane delivers seamlessly integrated fax and messaging systems across entire organizations and into consolidated data networks, across one site, many sites or across borders.



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