

OpenText™ RightFax Shared Services Module

Business continuity and fax capacity scaling

Fax is a critical communication technology for many companies and businesses. A reliable, scalable fax solution is a critical business requirement for these enterprises. Business continuity and scalability must be a part of their fax infrastructure. This paper outlines the OpenText RightFax Shared Services Module and how it is used to build shared services environments to meet these needs.

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Introduction

As companies grow organically or through acquisition, infrastructure must grow and evolve to meet the demands of the business. Many verticals, such as finance, healthcare, manufacturing, legal and government have similar requirements. Enterprise information systems, including fax servers, must have features and deployment options that fit within a company's Business Continuity Plan.

Why is fax still used so widely in many businesses? Many customers today still rely on fax as a vital communication method for receiving contracts, orders, financial transactions, etc. Fax communication is considered to be secure because it uses the Public Switched Telephone Network (PSTN). From a legal perspective, a faxed document is considered to be non-reputable. Therefore, without a reliable fax solution, business processes are at risk.

OpenText RightFax has been the leader in fax server technology for many years, holding a great reputation within the IT community for its scalability, reliability and vast integration options. It provides a scalable secure platform to cover the faxing requirements of any organization.

RightFax servers commonly have a variety of integration points, as well as different client options. User-driven fax can be done via RightFax clients, like FaxUtil and Web Client, and email clients, like IBM® Notes® and Microsoft® Exchange. Hard copy faxing is achieved through our integrations with most multifunction printer (MFP) devices. Users can fax their hard copy documents from the MFP via RightFax without a phone line or fax kit in the MFP. Back end applications, like Oracle®, SAP®, AS/400 and mainframes, can be fax enabled via our integration module and other methods.

Glossary of Terms

Active-Active: All nodes in the shared services environment are running and processing faxes. An active-active architecture means a shared services environment can lose 1 or more application nodes and maintain channel capacity and availability.

DocTransport: DocTransport service on a RightFax server controls the telephony interface. The fax server will have either a physical fax board or a virtual fax board. This service can be used on the RightFax server or alone on a different server or virtual machine (VM).

Fax over IP (FoIP): Sending and receiving faxes over an IP network.

IP Traffic Manager, Load Balancer: A computer network technology to distribute workload across multiple computers or computer resources.

Internet Protocol-Private Branch Exchange (IP-PBX): An IP-PBX is a business telephone system designed to deliver voice or video over a data network and interoperate with the normal Public Switched Telephone Network.

Private Branch Exchange (PBX): A PBX is a telephone system within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines.

Public Switched Telephone Network (PSTN): PSTN is the network of the world's public circuit-switched telephone networks. It consists of telephone lines, fiber optic cables, microwave transmission links, cellular networks, communications satellites, and undersea telephone cables, all inter-connected by switching centers, thus allowing any telephone in the world to communicate with any other telephones or fax devices.

RightFax Application Server: The application server is responsible for most of the work being done: document conversion, cover sheet creation, notifications, and client connections. It is the central hub for processing and communication for the IP portion of the fax server.

Shared Services Environment: Multiple RightFax Enterprise servers using the Shared Services Module share a common database and fax images, processing, etc.

SR140: This is the software stack that receives the FoIP call. SR 140 communicates with an IP-PBX or other IP media gateway or Fax gateway. SR140 is the software version of a physical fax board. SR140 is manufactured by Dialogic.

Microsoft Message Queuing (MSMQ): An application used by RightFax for job task queuing.

RightFax and Business Continuity

For businesses that rely on fax for secure document transfer, there is a requirement to have a scalable and highly available fax server. A fax server outage is not an option. The RightFax Shared Services Module provides an architecture for Business Continuity.

Shared Resources for Multiple RightFax Servers

The RightFax Shared Services Module allows multiple RightFax Enterprise servers to share a common database and images. This architectural option provides a scalable active-active platform. Servers configured with the Shared Services Module are called a “shared services environment.” This architecture provides the following capabilities:

- Increases workload processing capacity by dispersing work among multiple servers, including document intake, conversion, scheduling, transmission, routing, printing, notifications, etc.
- Increases environment availability by providing redundant connection points. In the event a server becomes unavailable, other RightFax Shared Services members ensure that processing of documents continues.

Components of a RightFax Server Shared Services Environment

The RightFax Shared Services Module can be added to RightFax Enterprise servers. Multiple Enterprise servers with the RightFax Shared Services Module become a shared services environment.

There are 3 tiers to the shared services environment: application tier, data tier and the telephony tier.

1. Application Tier: This tier consists of a minimum of 2 and a maximum of 12 RightFax Enterprise servers. The application tier is where most of the work is done by the fax server. Rendering of cover sheets, native document conversion, notifications and many other tasks are done by the Application tier. It is also where the clients and remote services connect.

2. Data Tier: All of the servers in the shared services environment share a single set of data. The data tier covers three areas:

- The database used by the RightFax servers. RightFax uses Microsoft SQL Server to store user profile data, fax history and metadata, phonebooks and job queues.
- The fax images themselves. Fax images are stored on a shared network storage device, such as SAN, NAS, File server, etc.
- The Microsoft Message Queue (MSMQ), which is used for job tasking throughout the system.

Note: The application owner is responsible for providing high availability for SQL, MSMQ, and the image storage.

3. Telephony Tier: RightFax sends and receives faxes through phone circuits which connect to the DocTransport service. DocTransport services can be either local or remote to the application tier. DocTransport may have physical fax boards where phone circuits terminate. Optionally, it could also use what is considered a “virtual fax board”. This virtual fax board is software that replaces the function of the physical fax board in DocTransport. SR140 is the virtual board. Instead of traditional phone circuits like PRI, T1, or analog it receives the fax call via Fax over IP (FoIP).

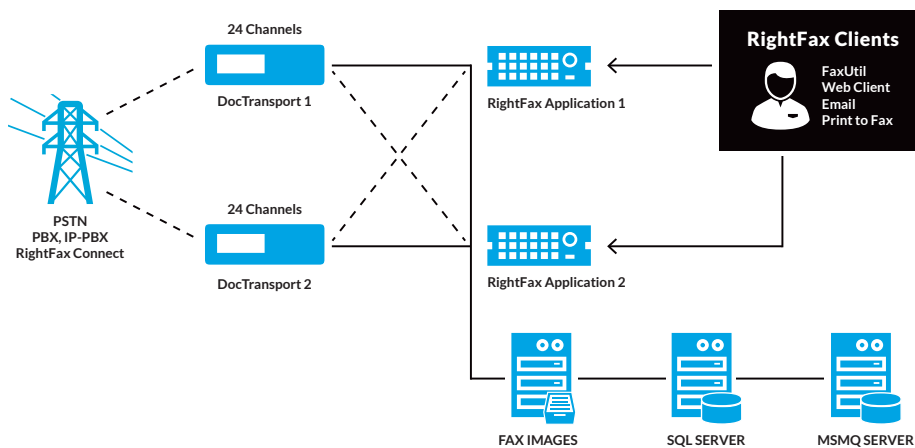


RightFax Shared Services Architecture

Scenario: Normal State

In the Normal state, there is a 48 channel RightFax Shared Services environment. There are 2 RightFax Enterprise servers with the Shared Services Module and 2 DocTransport servers. The two application servers are licensed for 24 fax channels. Both servers share a common set of data. The DocTransport servers is where the fax channels are actually located.

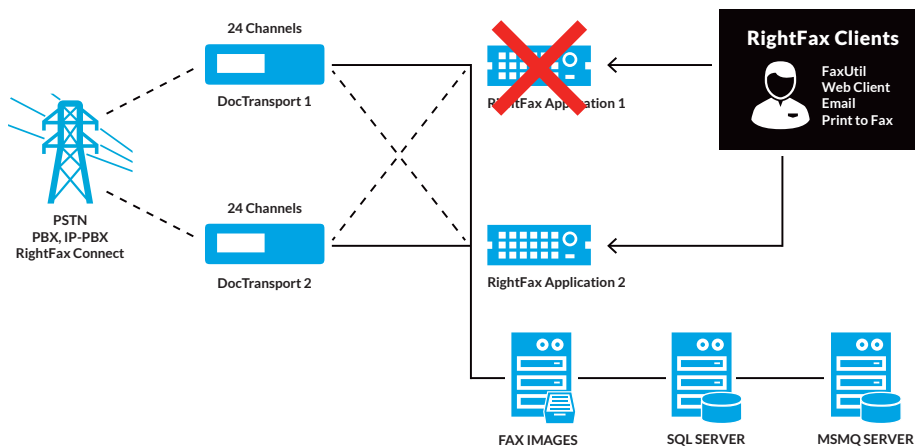
Faxes can be sent and received by all 48 channels. User client sessions are routed to either server by the IP traffic manager. RightFax Application 1 can send faxes through either of the DocTransport servers based on dialing rules. Inbound calls are distributed to both DocTransport servers by the PBX or carrier.



With all components in the shared services environment running, this system is running at 100% and both application nodes and all 48 channels are available.

Scenario: Application Node 1 Becomes Unavailable

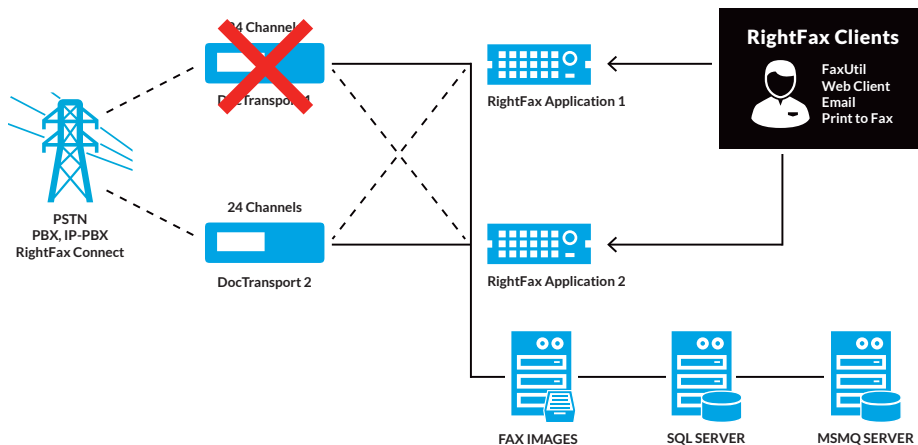
If RightFax Application node 1 is down, there is no loss of functionality or telephony bandwidth. All 48 channels are available for use. RightFax Application 2 will receive all the RightFax client connections. Inbound faxes will be delivered to the database and image store by DocTransport 1 and 2.



With RightFax Application node 1 down this shared services environment is able to send and receive on all 48 channels. There is no interruption in fax server access and usage or channel capacity.

Scenario: DocTransport 1 Becomes Unavailable

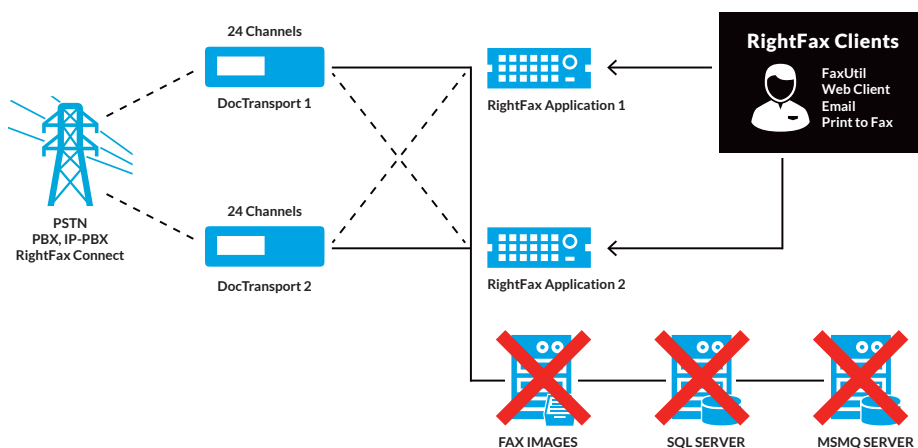
If DocTransport 1 is down, there is no loss of functionality or connectivity for client sessions. Fifty percent (50%) of the fax channel capacity is unavailable. Outbound faxes will queue and be sent as fax channels become available. Inbound fax calls will receive a busy signal once the 24 lines on DocTransport 2 become saturated with calls.



With DocTransport 1 down this shared services environment is able to send and receive on DocTransport 2 using 24 channels. There is a loss of capacity but no loss of functionality.

Scenario: Data Tier Becomes Unavailable

If there is a failure within the data tier, it could be a SQL Server failure or fax image file storage failure. Network outage could also make the data tier unavailable to the RightFax shared services environment. Fax channels that are set for inbound calls only will continue to receive and send queued faxes at the DocTransport layer. These faxes will not be available on the RightFax server until the data tier becomes available. Only channels set to receive only will still receive faxes. From a desktop user perspective, the system appears to be down. RightFax clients will not be able to access the server or faxes.



If the data tier is lost the DocTransport servers can still receive faxes. DocTransport servers cannot deliver fax images or make SQL database entries until those resources have returned to service.

Considerations and Planning for Business Continuity

There are many ways to accomplish business continuity for faxing. RightFax Shared Services is just one of the ways RightFax accomplishes business continuity.

RightFax provides a scalable, secure platform to cover the faxing requirements of any organization. A shared services environment should be architected to suit the needs of the specific business or customer. Careful planning is necessary for both planned and unplanned outages. Answering these questions will help an organization build a business continuity plan for RightFax.

- What is the business impact if the fax server fails?
- Is multisite disaster recovery a requirement?
- What might be an acceptable time for recovery in the event of an outage?
- Can the system process the volume of faxes during peak traffic times?
- What is the estimated growth? What scalability requirements are there?
- During an outage can the business function with partial capacity?
- What changes in telephony infrastructure need to be made if any?

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