



# **OpenText RightFax Bar Code Routing**

## **Solutions for Cost-Effective Fax Routing Using Bar Codes**

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## Executive Summary

In the second half of the 20th century, the optically scanned bar code made its debut in the railroad industry for labeling rail cars. After some fallbacks and inroads into other sectors, the technology found success in the supermarket industry, allowing grocery items to be scanned, identified and priced almost instantaneously. Since then, the barcode has revolutionized more businesses including those that rely greatly on the processing business documents and standardized business forms. Today, bar codes are used regularly on application forms, claims forms, invoices, legal contracts and many other documents for the purposes of identifying information about the content.

These critical documents are exchanged between trading partners, suppliers, vendors or customers using fax servers. Many businesses that receive faxed documents need them to be identified for their content and then routed to the appropriate person, department or workflow system. Integrating received fax documents into business applications to help automate business workflows is of critical importance for departments such as human resources, accounts payable, accounts receivables, sales, marketing, legal, production and manufacturing.

Enterprise Fax Servers offer numerous methods to properly capture fax documents and route them internally for further processing. Bar code routing provides a simple fax routing solution that automates inbound fax routing to any recipient, any workflow, or any other business process based on recognition of a bar code located on the document or form. This results in the elimination of error, a more streamlined and productive processes, faster service and the avoidance of additional costs associated with telephony routing solutions.

This paper introduces bar code routing (BCR) now available in OpenText RightFax.



## Introduction

Fax servers are well known for providing various methods to route faxes received by an organization. Most fax routing methods use some type of telephony-based routine to identify where and to whom a fax must be sent based on known parameters about the phone lines and/or signaling characteristics. In these scenarios, the method by which the dedicated fax lines are provisioned is the determining factor that triggers the routing rule. Direct inward dial (DID) or call subscriber identification (CSID) are two of the more popular types among a notable list of others.

However, many organizations are unable to effectively deploy a phone system-based routing solution due to limited telephony resources. Moreover, many of the telephony solutions are fee based and add to the fax server's cost of ownership. An alternative method for fax data identification, which does not rely on telephony resources, is Optical Character Recognition (OCR). OCR methods can scan a fax document for a series of recognizable numbers or letters which are compared to a routing table and then automatically forward the fax to the correct recipient. OCR however, relies on the sender to have the correct information on the page, in the correct location and use an acceptable font and resolution (and in some cases the right language) in order for it to be interpreted correctly.

An alternative that offers a greater degree of accuracy and efficiency is bar code recognition. Bar codes come in many formats and types and have been around for many years helping various industries track information about products. It is important to understand that a bar code doesn't specifically contain the information about a product or a route to take in the case of a transmitted fax, but rather contains a reference number that corresponds to a table or database which contains the descriptive data about the item. In many scenarios using bar codes is considered more accurate. As a matter of fact, bar codes are known to have read errors of less than 1 in 100,000. (Source: julierubin.com) The objective of using a bar code for fax routing is to capture information about the fax document (like a claim form, legal forms, applications, etc.) such that it can be routed to a destination for timely and accurate processing.

Types of Bar Codes	
1D bar code	<ul style="list-style-type: none"><li>A standard 1D bar code is a, "series of varying width vertical lines (called bars) and spaces. Bars and spaces together are named "elements". There are different combinations of the bars and spaces which represent different characters" (Source: Worth® Data 2010).</li></ul>
2D bar code	<ul style="list-style-type: none"><li>A 2D code adds symbols and shapes in addition to the vertical lines and can contain more information.</li></ul>



## Inbound Fax Routing Options

Before discussing the various time-tested methods for routing the inbound faxes, it is helpful to understand where faxes need to go within an organization. People, groups of people or business applications all may be a required destination for a company's received faxes. Once a particular routing method is employed, the destinations for smartly routed faxes can include:

- Individual user inboxes
- Group inboxes
- Workflow systems
- Content Management systems
- Email recipients
- MFPs/Printers
- Network folders
- Business Applications

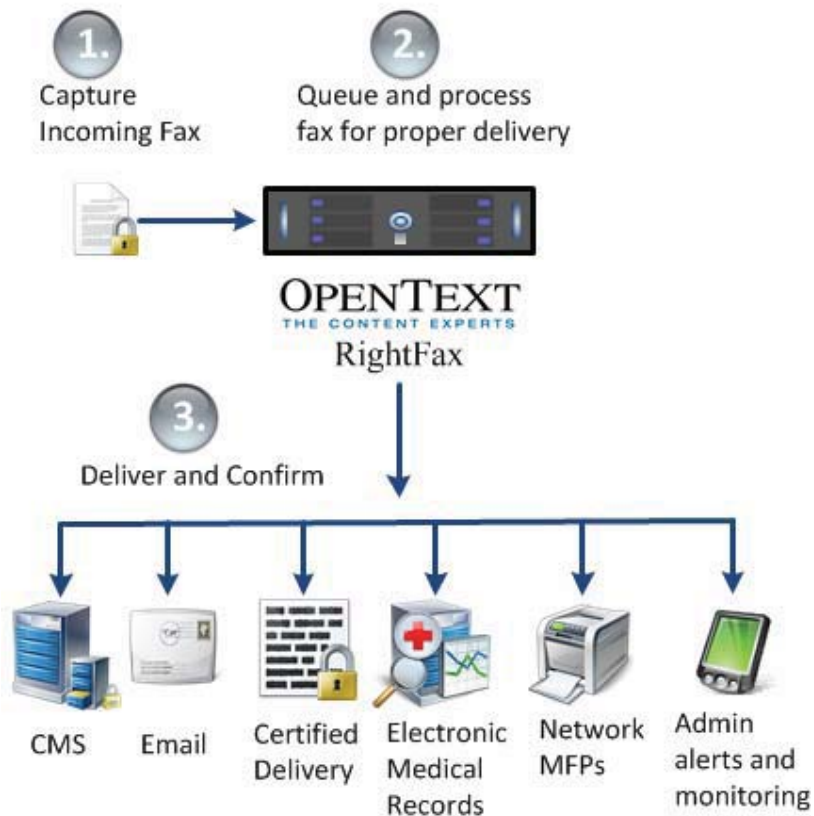


Figure 1: RightFax can route received faxes to a variety of people, groups of people, devices or various business systems for processing.



## Inbound Fax Routing Methods

OpenText Fax Server offers numerous routing methods to suit the unique needs of individual organizations. For some organizations fax routing based on telephony resources is a suitable option. For others where fax document content is important for routing purposes, optical and bar code character recognition may be appropriate.

The tables below describe the different routing options available with RightFax and considerations organizations should make when determining the routing method that works for their specific needs and circumstances.



Conventional Telephony-Based Methods for Routing Received Faxes	
Routing Type	Description
DID/DNIS	<ul style="list-style-type: none"><li>• <b>Description:</b> Direct Inward Dial and Dialed Number Identification Service. Each RightFax user is assigned a personal fax mailbox that is assigned a DID/DNIS number (routing code). When a call comes in with a valid DID/DNIS number, the fax is placed in the corresponding user's fax mailbox.</li><li>• <b>Considerations:</b> DID and DNIS are fee based services and require the provisioning of many local phone numbers (DID numbers) for routing.</li></ul>
DTMF	<ul style="list-style-type: none"><li>• <b>Description:</b> Dual-Tone Multi-Frequency. The person sending the fax dials this number and the call connects normally. Before the fax transmission starts, the fax board prompts the caller with a tone or voice prompt to enter a routing code for the fax they are sending.</li><li>• <b>Considerations:</b> Requires the sender to remain on the line and listen for the DTMF prompt. Requires configuration of DTMF for the phone system.</li></ul>
ANI	<ul style="list-style-type: none"><li>• <b>Description:</b> Automatic Number Identification. Uses the sending party's ANI information to route inbound faxes to a user mailbox based on the phone number that the fax originated from.</li><li>• <b>Considerations:</b> Not all received faxes come from a known number and thus some numbers may not be recognized.</li></ul>
Channel	<ul style="list-style-type: none"><li>• <b>Description:</b> Faxes are routed based on the phone line (fax channel) on from which they are received.</li><li>• <b>Considerations:</b> May require the need for extra channels, driving up TCO. Not all faxes received on this channel may be intended for the recipient.</li></ul>
CSID	<ul style="list-style-type: none"><li>• <b>Description:</b> Caller Subscriber Identification. Routes inbound faxes to a specific mailbox based on the ID of the sending device.</li><li>• <b>Considerations:</b> Not all sending devices have CSID. The sender may use different sending devices or locations</li></ul>



Character Recognition-Based Methods for Routing Received Faxes	
Routing Type	Description
OCR	<ul style="list-style-type: none"><li>• <b>Description:</b> Optical Character Recognition. Applies OCR methods to inbound faxes, creates an associated text file, and is able to automatically route those faxes to their intended recipient based on the "To" name found on the cover sheet. Multiple viewers can be used to view the OCR text information.</li><li>• <b>Considerations:</b> Limited in resolution and in its ability to read distorted characters. Sender must ensure characters are readable and in the right location.</li></ul>
BCR	<ul style="list-style-type: none"><li>• <b>Description:</b> Bar code routing expands on the OCR method described above. Placing a recognizable bar code on the cover page of a received fax or on standard forms will ensure a higher degree of routing accuracy. Companies that have trading partners or those that require standard forms (insurance claims, loan applications, for example) regularly use bar codes that are encoded with information that is used to compare to a lookup table that aids in identifying the routing destination.</li><li>• <b>Considerations:</b> Some sort of collaboration must occur between sender and recipient to ensure the correct codes are in place. Sender must ensure the bar code is on the sent fax. Dozens of codes are supported.</li></ul>

## Providing Support for Bar Codes

### *Solution Overview*

OpenText RightFax responds to the challenges of automated inbound fax routing by supporting 1 and 2 dimensional bar codes with its new Bar Code Routing (BCR) Module. The result is a lower TCO solution that streamlines the recognition and routing process. This drives up productivity and eliminates costly errors and bottlenecks.

A summary of high-level benefits is as follows:

#### **Lowers Cost**

- Significantly less than other fee based telephony routing methods.
- One time cost versus monthly or annual fee
- Eliminates staffing requirements associated with manual fax routing



**Increases Efficiency and Productivity**

- Provides reliable routing method that eliminates errors associated with user-based manual routing
- Initiates and speeds workflow processes and order processing by automating fax routing

**Enhances Security and Compliance**

- Provides seamless routing to users, groups or shared network folder
- Facilitates compliance with regulatory mandates

*Solutions Highlights*

Feature	Description	Benefits
<ul style="list-style-type: none"> <li>• Supports 1d and 2d bar codes</li> </ul>	<ul style="list-style-type: none"> <li>• Routes inbound faxes based on bar code data</li> <li>• Data is matched against a user-configured lookup table</li> <li>• 2d codes are a service of OpenText Professional Services</li> </ul>	<ul style="list-style-type: none"> <li>• Improves automation of inbound faxes</li> <li>• Bolsters customer service and turn around/processing times</li> </ul>
<ul style="list-style-type: none"> <li>• Supports approx. 11 types of common bar codes</li> </ul>	<ul style="list-style-type: none"> <li>• Users can utilize a variety of 1D or 2D bar code types</li> <li>• Codes can be entered into routing tables for lookup and matches</li> </ul>	<ul style="list-style-type: none"> <li>• Provides flexibility</li> <li>• Eases integration into existing business practices</li> <li>• Uses readily available, commercial, off-the-shelf bar codes fonts</li> </ul>
<ul style="list-style-type: none"> <li>• The BCR Process is integrated into the RightFax WorkServer architecture</li> </ul>	<ul style="list-style-type: none"> <li>• Provides a familiar method for setup and administration</li> <li>• Allows for offloading or distributing BCR processing for load balancing</li> <li>• A central BCR mailbox is setup where received faxes reside and then are forwarded based on the routing table lookups</li> </ul>	<ul style="list-style-type: none"> <li>• Eases administration</li> <li>• Maintains overall system availability</li> </ul>
<ul style="list-style-type: none"> <li>• Auditable routing history</li> </ul>	<ul style="list-style-type: none"> <li>• Bar code information is placed in fax history record</li> <li>• History records are auditable and traceable</li> </ul>	<ul style="list-style-type: none"> <li>• Supports compliance initiatives</li> <li>• Reduces business risk</li> </ul>
<ul style="list-style-type: none"> <li>• Bar codes match to user-defined lookup table</li> </ul>	<ul style="list-style-type: none"> <li>• Seamless routing to users, groups or shared network folders</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminates costs associated with manual routing</li> <li>• Increases productivity</li> </ul>



## Inbound Fax Bar Code Capture and Routing

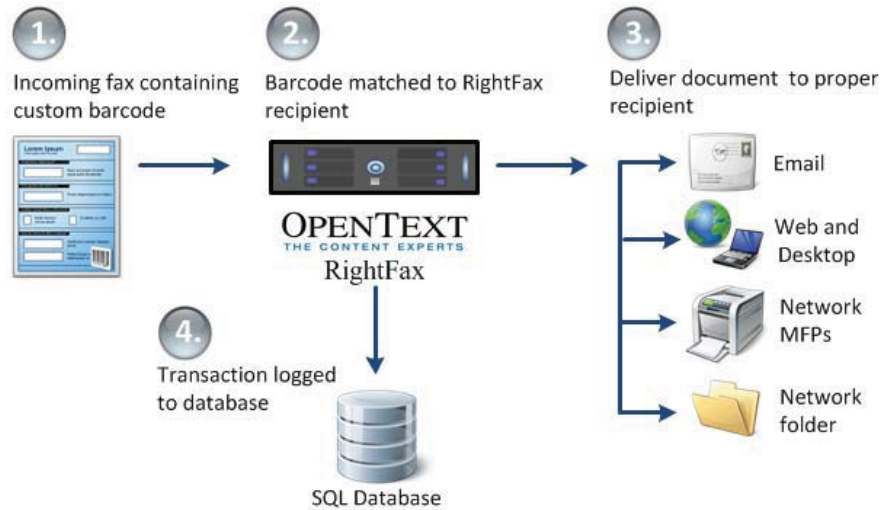


Figure 2: OpenText RightFax Bar Code Routing Module quickly recognizes bar codes that allow for fast, efficient routing to a variety of destinations.

## Technology Overview: Bar Code Routing

### OpenText RightFax Bar Code Routing: How it works

The process of bar code routing (BCR) in RightFax is very much like OCR routing, making it easy for users to setup and administer.

A centralized mailbox is setup to facilitate inbound barcode routing. Faxes that contain barcodes on the first page will be sent to the central mailbox. From there, the mailbox performs a routing table look-up, associates the fax to the user, and routes it to the user. In the event of a failed lookup, the fax will remain in the centralized mailbox and can be viewed by anyone who has permissions to do so, ensuring that no faxes are misplaced or erroneously routed.



## Specifications

- RightFax 10.0 or greater
- Available for Business and Enterprise Servers
- Bar Code Routing (BCR) Module
- Bar Code compatibility (see list below)
- 2D Bar Codes available with OpenText Professional Services

## Supported Bar Codes

### 1 Dimensional (1D)

- 3 of 9
- 2 of 5
- Codabar
- 93
- 128
- UPC-A
- UPC-E
- EAN 8
- EAN 13

### 2 Dimensional (2D)

- PDF 417
- Data Matrix

*Note: 2 Dimensional Bar Code implementations are available from OpenText Professional Services.*



## Summary

As a lower cost and less resource alternative to telephony routing methods, and a more accurate recognition technique than traditional OCR, RightFax Bar Code Routing offers the ability to interpret bar codes directly from fax cover sheets or other standard business forms which are then automatically routed to the correct recipient for timely and error-proof processing. Bar code fonts are widely available today, meaning organizations that do not use codes today can initiate this method into their strategic business process plans. And, those companies that do have bar codes procedure in place can now leverage this functionality in OpenText RightFax. Organizations will recognize immediate benefits in improved productivity and turn-round times; a bolstering of document compliance objectives as a result, and an increased fax server ROI.

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