

Customer Tips

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... for the user

Token Ring Source Routing

Purpose

This document helps you to determine which Document Centre token ring source routing option is appropriate in your environment. Symptoms that might occur with incorrect settings are also discussed.

Recommendation

“Multiple” is the recommended setting for token ring source routing to enable the Document Centre to communicate with all hosts on the network.

Supporting Information

Token ring source routing is part of the 802.5 (token ring) protocol, allowing printers on one ring to send packets to a printer on a different interconnected ring. See the following diagram.

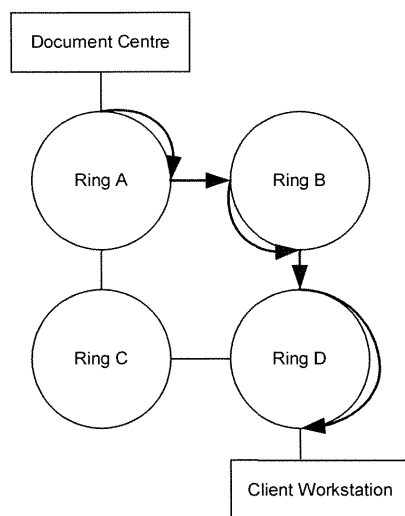


Figure A - Single Source Routing

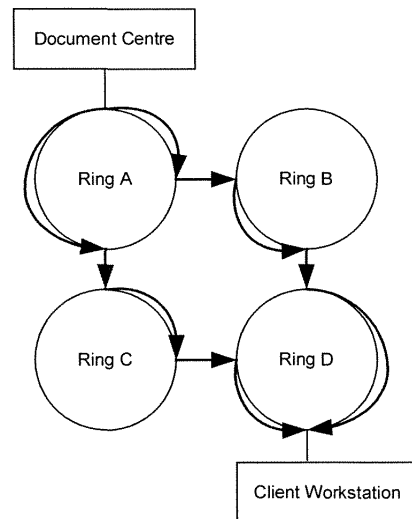


Figure B - Multiple Source Routing

This document applies to these **Xerox** products:

	WC Pro 32/40 Color
	WC Pro 65/75/90
	WC Pro 35/45/55
	WC M35/M45/M55
	DC 555/545/535
x	DC 490/480/470/460
x	DC 440/432/425/420
x	DC 340/332
x	DC 265/255/240
x	DC 230/220
	DCCS 50

The Document Centre has three options for token ring source routing.

Source Routing Setting	Source Routing Capability	DC Behavior
Multiple	Determines all routes to each remote host. If the current route fails, alternate routes are attempted.	This is the preferred setting for most token ring environments. The Document Centre is able to communicate with all hosts on the network.
Single	A single route to each remote host is determined per reboot.	The Document Centre is able to communicate with all hosts on the network if the network topology remains static. Any network changes could require you to reboot the Document Centre.
None	No source routing is attempted.	The Document Centre is only able to reach hosts that are on the same ring.

The Document Centre attempts to determine a route to a host based on the source routing settings the first time the Document Centre has any packets for that host. This route is retained until the Document Centre is rebooted. The route discovery algorithm generates only once per host and only a few small packets per ring. In most large networks, a Document Centre only communicates with a few hosts (print and scan servers). This communication is not enough to cause any noticeable network impact, even if there are 100 or more Document Centres connected.

Do not confuse token ring source routing with TCP/IP source routing. Many modern hosts drop packets with TCP/IP source routing information. This is in direct contrast to token ring source routing (which is enabled in most modern token ring implementations, and required in most large token ring networks).

Settings

If you must set the Token Ring source routing option to something other than Multiple, follow the guidelines below.

NOTE: If a Document Centre is used in a token ring environment, it should have at least the following ESS release versions loaded. There are known issues with earlier versions.

- DC 220/230: 1.12.28.2
- DC 220/230: SMP 1.06
- DC 332/340: 1.12.35.1
- DC 332/340: SMP 1
- DC 240/255/265: 17.8.12
- DC 240/255/265: System software version 5.06
- DC CS 50: Release 2.0 controller version 1.35
- DC CS 50: General Release 2.0
- DC 460/470: 19.01.010.0
- DC 460/470: System software version 7.00
- DC 420/442/440: 2.1.2s
- DC 420/442/440: Launch configuration
- DC 480/490: Launch configuration

NOTE: DCCS 50's with Cobra II controller version 3.x and higher no longer support token ring.

The **multiple** setting works in most network environments. In most environments where source routing is not necessary, the extra traffic is not significant.

Some of the reasons that single or none (vs. multiple) is selected include the following:

- Reduces the insignificant added volume of network traffic generated by the route discovery algorithm
- For very complex network environments where source routing may be a problem
- For bridges that do not correctly process the packets used in the route discovery algorithm

A source route setting of single or multiple is required in any environment where multiple rings are interconnected using bridges. Single source routing generates slightly less traffic than multiple and is less robust. In many networks (particularly those designed with a tree structure), the network topology precludes multiple routes to a host. Multiple source routing is equivalent to single source routing in these cases.

In general, any network with multiple rings requires source routing enabled. Any network that has built-in fault tolerance can benefit from the multiple setting. In all cases, the additional network traffic is insignificant.

NOTE: Many token ring implementations do not have an option to disable source routing. Implementations are hard coded to either single, or more typically, to multiple.

Troubleshooting

If a Document Centre can communicate with hosts on the same ring (not other rings) the source routing option is a likely cause.

If the Document Centre is on the same ring as a router, the router can forward information to remote hosts although there would be hosts on interconnected rings that are not visible.

Additional Information

Xerox Customer Service welcomes feedback on all documentation - send feedback via e-mail to: USA.DSSC.Doc.Feedback@mc.usa.xerox.com.

You can reach Xerox Customer Support at 1-800-821-2797 (USA), TTY 1-800-855-2880 or at <http://www.xerox.com>.

Other Tips about Xerox multifunction devices are available at the following URL: <http://www.xerox.com/DocumentCentreFamily/Tips>.

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