

Dialogic® Brooktrout® SR140

IP Fax Driver

SR140 is an IP Fax driver that leverages the field proven Brooktrout T.30 Fax protocol to deliver high performance, reliable and scalable fax transmission and reception on IP networks.

SR140 delivers highly reliable faxing over IP Networks by using the T.38 Fax protocol to send real-time fax messages over IP networks. As the T.38 protocol retains the standard T.30 Fax data stream, it can be used with legacy T.30 based devices and with newer T.38 solutions.

The SR140 T.38 stack has been certified in SIP, H.323 and MGCP environments and has undergone significant interoperability testing with IP PBXs and VoIP gateways from leading vendors including Cisco, Avaya, Audiocodes and Dialogic.

SR140 is scalable from 2 to 120 channels in a physical or virtual server.

T.30 ENGINE

T.30 remains at the heart of fax connection and session management for both real-time over the PSTN and over IP. A critical issue often not widely recognised with PSTN-based faxing is that many of the fax machines currently in use around the world do not closely adhere to the T.30 specification, particularly during negotiations and training.

A robust and forgiving T.30 protocol engine is required to compensate for errors that may occur during the negotiation and training phase of T.30. The more forgiving the T.30 protocol engine, the greater the ability to connect to a much higher percentage of fax machines that do not handle network or protocol problems very well.

As the intelligent fax technology market leader with over 73% market share and over 20 years of experience, Brooktrout T.30 is the most thoroughly field tested offering compared to those of all other fax technology vendors.

FEATURES

BENEFITS

Integrates with VoIP Networks	Can reduce long distance bills and lower administrative and maintenance costs
Boardless fax processing	Simplifies deployment because no boards need to be installed, maintained or stocked
Based on V.34 fax standard	Can process faxes at twice the speed of V.17 fax products
Uses the T.38 IP Fax protocol that encapsulates Brooktrout T.30 Fax data stream	Brooktrout has 20 years of experience with its implementation of the T.30 stack. It is constantly enhanced to maintain interoperability with new fax machines ensuring a high degree of reliability and efficient fax processing
Lightweight, high-performance fax engine	Provides exceptionally low CPU utilization
Patented inbound fax routing	Allows support of fax servers, fax-to-email, unified messaging, fax document management, workflow and document delivery and compliance systems

HOST-BASED PROCESSING

Host-based processing allows media processing and call control functions - traditionally performed by specialised digital signal processors (DSP) on boards - to be performed on general purpose host CPU's that run on industry standard servers.

Processor, speed and memory	% CPU utilization with simultaneous fax channels				
	4 lines	8 lines	24 lines	48 lines	120 lines
Pentium 4 – 2.4 GHz, 512 MB memory	1%	3%	5%	10%	25%
Pentium 4 – 3 GHz, 512 MB memory	1%	2%	2%	5%	12%
Dual Xeon – 3.4 GHz, 512 MB memory	1%	1%	2%	2%	6%

BANDWIDTH

As with any IP-based service, the network should be provisioned to provide the necessary bandwidth which will vary depending on usage patterns. Fax over IP traffic typically uses only about 1/3 the bandwidth of VoIP traffic, and therefore will have a much smaller impact on the required network bandwidth needs.

SR140 uses T.38 over UDP whereas other products may use a codec such as G.711. G.711 over RTP is a VoIP connection, much like streaming a fax over a VoIP line and consumes 64kbps.

SR140 puts traffic on the IP line at the modulation rate negotiated with the end fax device on the PSTN. With a V.17 connection, this will consume IP bandwidth at a rate of 14.4 kbps.

T.38 is reliable on an IP network using UDP as it has the capability to send redundant packets to be sure the connection stays up despite jitter and latency. This is a user configurable parameter on SR140 which is generally set to send 2x redundancy, which means a V.17 connection would consume 28.8 kbps of bandwidth.

If the modulation rate to the end fax device is less than 14.4 kbps, less bandwidth is required.

SECURITY

SR140 introduces no additional threat to security from network attack. Data is examined at four levels.

- Invalid T.38 packets are dropped
- Invalid T.30 messages are dropped
- Invalid T.4/T.6 image data is dropped
- Invalid T.30 messages or T.4/T.6 image data for a specific point in the call are dropped

NETWORK DELAY / LATENCY/JITTER

Acceptable IP latency ranges from 250-300 milliseconds or less for each packet. A network properly configured for VoIP will support IP Fax.

- Loss of consecutive packets can cause the fax process to fail
- T.30 will fail if 3 consecutive signals are missing overcome by the T.38 driver sending redundant packets
- Jitter, variable timing between packets, is overcome by adding time stamps to the T.38 packets ensuring signals are 'played' at the right instance by the gateway.

SR140 SPECIFICATIONS

FAX

ITU T.38 (endpoint)
ITU T.30 Group 3 V.34, V.17, V.29, V.27ter, V.21 & V.33
modulation with auto fallback MH, MR, MMR compression
A4, A3, and B4 page sizes with scaling
Error correction mode (ECM)
Resolution 100x100, 200x200, 300x300, 400x400, 600x600,
800x400, 400x800, 600x1200, 1200x1200 Aligned/unaligned
MSB/LSB
Line error detection/correction
Font download

SIGNALING

SIP (RFC 3261)
H.323 (version 4)

SYSTEM DENSITY

SR140 will support from 2 to 120 ports in a physical or virtual server

MINIMUM SYSTEM REQUIREMENTS

Pentium 4/2.66 GHz
512 MB PC2100 DDR SDRAM memory
Ethernet connection

LICENSING REQUIREMENTS

SR140 Fax Software uses Product Activation technology. As part of the installation of the Brooktrout® SR140, Product Activation is completed via the Internet or email.



Level 8, 9 Help Street, Chatswood, NSW 2067, Australia
www.mmanager.com info@mmanager.com

AUSTRALIA Tel: +61 2 8448 8800 Fax: +61 2 8448 8811
UNITED KINGDOM Tel: +44 1727 730022 Fax: +44 1727 730023
UNITED KINGDOM Toll Free: 0800 169 8226
NEW ZEALAND Toll Free: 0800 445 308
CANADA Toll Free: 1877 3701 261
USA Toll Free: 1877 8841 664