

Partner Release Document for Fax For Asterisk

Created: Monday, February 23, 2009
Last Updated: Thursday, April 6, 2009

Revision History

Revision	Date	By	Notes
0.1	February 23, 2009	Malcolm Davenport	Begin Initial Draft
0.2	February 26, 2009	Malcolm Davenport	FAQ Updates
0.3	March 6, 2009	Malcolm Davenport	Date, FAQ and Overview presentation updates
0.4	March 10, 2009	Malcolm Davenport	Date and FAQ updates
0.5	March 16, 2009	Malcolm Davenport	README updates
0.6	March 16, 2009	Malcolm Davenport	Updated Other Documentation
0.7	March 18, 2009	Malcolm Davenport	Schedule updates
0.8	April 6, 2009	Malcolm Davenport	Update README



Notice to Digium Partners:

The Digium product **Fax For Asterisk** has been set for release. This document contains partner-specific information about the product. All information in this document is to remain **CONFIDENTIAL** until **Monday, March 23rd, 2009** as noted in the **Release Schedule** section. Failure to adhere to the confidentiality of this information **WILL RESULT IN YOUR IMMEDIATE AND PERMANENT TERMINATION** as a Digium channel partner.

Product Synopsis:

Digium's Fax For Asterisk is a commercial facsimile (Fax) termination and origination solution designed to enhance the capabilities of Open Source and commercial Asterisk as well as Switchvox. Fax For Asterisk bundles a suite of user-friendly Asterisk applications and a licensed version of the industry's leading fax modem software from Commetrex. Fax For Asterisk provides low speed (14400bps) PSTN faxing via DAHDI-compatible telephony boards as well as VoIP faxing to T.38-compatible SIP endpoints and service providers. Licensed on a per-channel basis, Digium's Fax For Asterisk provides a complete, cost-effective, commercial fax solution for Asterisk users.

Release Schedule:

- **Monday, March 23rd, 2009**
 - **General Release Date**
 - Product becomes available for purchase by users of open source Asterisk 1.4 and 1.6
 - Availability for Switchvox will coincide with Switchvox SMB 4.0 General Release Date – not March 23rd, 2009
 - Availability for Asterisk Business Edition will coincide with ABE C.3 General Release Date – not March 23rd, 2009



Product Overview

Fax For Asterisk provides two components: `res_fax` and `res_fax_digium`. `Res_fax` is an Asterisk resource module that adds fax termination and origination functionality in Asterisk. It provides Asterisk dialplan functions and dialplan applications to enable the user to build highly-customizable fax solutions. `Res_fax_digium` provides core fax processing functionality in the form of several supported fax modems – V.21, V.27ter, V.29, and V.17 – to achieve speeds up to 14400bps.

Fax For Asterisk provides the functionality to send and receive faxes to / from TDM and IP channels – TDM channels are established across Digium telephony boards and IP channels can use regular G.711 audio encoding or T.38 encapsulation. Faxes transmitted and received by Fax For Asterisk begin and end as TIFF image files. TIFF files may be readily converted into or from other formats using standard Linux command-line utilities.

Digium's customers of Fax For Asterisk may purchase license keys coded for a specific number of channels. Each channel of capability allows Fax For Asterisk to initiate one modem session and process one fax session. As customers need additional channel capacity, they may purchase additional channels of fax capacity and register those keys to their existing Asterisk system to use the aggregate number of channels available across all keys registered to a single Asterisk.

One channel of Fax For Asterisk is provided to all customers of Switchvox SMB 4.0 as well as all customers upgrading from SMB 3.5 who maintain active user subscriptions and software maintenance. In order to enable Fax capability in Switchvox, please locate your Switchvox activation code and visit the Switchvox website for instructions on receiving your complimentary Fax For Asterisk license key to unlock Fax capability in Switchvox.

Additionally, each open source or commercial Asterisk system is eligible to receive from Digium, a single channel of Fax For Asterisk, for no cost, provided as Free Fax For Asterisk. Free Fax For Asterisk is available to all Asterisk users as a free, zero cost purchase from the Digium webstore. Only one channel of Free Fax For Asterisk may be used with an installation of Asterisk. If you require multiple channels of Fax capability, you may purchase channels of Fax For Asterisk.

Fax For Asterisk and Free Fax For Asterisk are currently provided only for x86 Linux systems. x86_64 users should install the 32-bit Linux compatibility layers on their servers.

Product Frequently Asked Questions / F.A.Q.

Q: What fax machines are compatible with Fax For Asterisk?

A: As far as we know, every standards-compliant fax machine should work with Fax For Asterisk. In our lab and field testing, we have not yet found any standards-compliant fax machine that fails to be able to send or receive a fax when communicating with Fax For Asterisk.

Q: What is T.38 and how does it work with Fax For Asterisk?

A: T.38 is a specification for transmitting faxes across IP networks. Asterisk 1.4 provides the capability to allow one T.38 enabled endpoint to setup a call to another T.38 enabled endpoint for the purposes of fax transmission. Asterisk 1.4 is not, though, capable of terminating those T.38 calls into Asterisk; they can only be passed through. Asterisk 1.6 provides the capability to terminate a T.38 call into Asterisk. Fax For Asterisk may be used to establish a fax session using T.38 between Asterisk and a T.38-enabled endpoint or VoIP service provider.

Asterisk and Fax For Asterisk do not support T.38 relay, meaning that a fax session from a T.38 enabled endpoint cannot be directed in real-time to a fax machine on the PSTN. In order to accomplish this, it is necessary to use Fax For Asterisk to first receive one leg of the fax into a TIFF file, and then upon its completion, establish a second call and transmit the TIFF file to the remote fax machine.

Q: Does Fax For Asterisk guarantee reliable VoIP faxing using G.711 instead of T.38?

A: No. VoIP faxing is made reliable by T.38. VoIP faxing in the absence of T.38 is unreliable and depends on the quality of your network. If you attempt VoIP faxing using regular G.711 instead of T.38, then network issues such as jitter or packet loss can / will cause your faxes to fail. Fax For Asterisk can be used for VoIP faxing using G.711, instead of T.38, but its reliability cannot be guaranteed.

Q: What if I have fax issues when using TDM/PSTN fax?

A: Please perform the following steps and contact Digium technical support.

1. At the Asterisk CLI, type “fax set debug on”
2. At the Asterisk CLI, type “core set verbose 6”. Verbosity can be 6 or higher.
3. At a Linux command prompt, type “dahdi_monitor <channel> -r <rx audio file> -t <tx audio>”
4. Redirect a manager session with “call” class permissions to a file.



5. Reproduce the issue.
6. Submit the Asterisk CLI output, dahdi_monitor recordings, and manager session output to Digium.

Q: What if I have fax issues when using T.38 fax?

A: Please perform the following steps and contact Digium technical support.

1. At the Asterisk CLI, type “fax set debug on”
2. At the Asterisk CLI, type “core set verbose 6”. Verbosity can be 6 or higher.
3. Redirect a manager session with “call” class permissions to a file.
4. Reproduce the issue.
5. Submit the Asterisk CLI output and manager session output to Digium.

Q: What versions of Asterisk are compatible with Fax For Asterisk?

A: For the 1.4 series, customers should use the latest version. As of this writing, it is version 1.4.23.

For the 1.6 series, customers should use the latest version. As of this writing, it is version 1.6.0.

Q: Does Fax For Asterisk provide the same capabilities when used with Asterisk 1.4 and Asterisk 1.6?

A: No. When used with 1.4 Asterisk, Fax For Asterisk provides only TDM fax capabilities – faxing to and from DAHDI-compatible (Digium) telephony boards. When used with 1.6 Asterisk, Fax For Asterisk provides both TDM fax capabilities and T.38 fax capabilities – faxing to and from T.38 compatible SIP endpoints and VoIP service providers.

Q: What defines a channel of Fax?

A: A “channel” as it relates to Fax For Asterisk is an in-use instance of the fax modems provided by the res_fax_digium resource module. Every use of a modem requires one channel license. This means that every individual fax that you send or receive will claim and use one fax channel license. If you are sending and receiving a fax at the same time, then you are engaging two instances of the fax modems and would require two channel licenses. If you are only sending or only receiving one fax, then you would only require one channel license.

Q: What happens to a new fax call if I run out of fax licenses?

A: In the event that all of your available fax channel licenses are in use, perhaps two calls are in progress and two licenses are available, and another call, the third, requests access to the fax modems, then the third call will fail. Asterisk does not queue up calls pending the release of a fax license from an active session because remote fax machines do not sit idle waiting to begin transmitting a fax, they respond better if the call is hung up – most fax machines include automated redial capabilities. Best practice then is to always maintain one more channel of Fax For Asterisk licenses than you think that you will need.

Q: How can I get my channel of Free Fax For Asterisk?

A: Channels of Free Fax for Asterisk are available for acquisition from the Digium online store (<https://store.digium.com>). Use your existing digium.com account, or sign up for a new one, and browse to the “Free Fax For Asterisk” product. Put the item in your cart (limit one channel and one line item per order) and check out. Because Free Fax For Asterisk is provided at no charge to users of Asterisk, no purchase method (credit card, Paypal, etc.) is required. Once the order enters Digium’s processing servers, you will receive an e-mail in your Inbox with your Free Fax For Asterisk registration key and instructions on how to register it.

Q: Can I use more than one channel of Free Fax For Asterisk with a single instance of Asterisk?

A: No. Only a single channel of Free Fax For Asterisk may be run with an instance of Asterisk. If you need more than one channel of fax capability with an instance of Asterisk, you will need to purchase channels of the paid Fax For Asterisk product.

Q: How can I get additional channels of Fax, beyond the first, working with Asterisk?

A: Additional channels of fax capability, beyond the first, require purchase of the Fax For Asterisk product. Channels of Fax For Asterisk are available from your Digium reseller.

Fax For Asterisk is also available from the Digium online store under the “Fax For Asterisk” product. Unlike Free Fax For Asterisk, Fax for Asterisk is a paid product and cannot be delivered for free, so a method of payment is required.

Q: Can I move my Fax For Asterisk or Free Fax For Asterisk key to a different computer?

A: When you run the register utility to enable Fax For Asterisk, your registration key is tied to the hardware on which you perform the registration. Your key was provided to you with three



(3) registrations. The first is used when you first register your Fax Key. You have two more available registrations with your key, beyond the first, in the event that you need to move your key to a different system. Digium reserves the right to refuse requests to provide additional registration attempts – this applies more generally to Fax For Asterisk customers are Free Fax For Asterisk users can always register a second Free key and disable the first.

Q: Do Free Fax for Asterisk keys work with Switchvox SMB 4.0?

A: No. Switchvox only works with Fax For Asterisk keys. Switchvox SMB 4.0 will ignore any attempts to apply a Free Fax for Asterisk key.

Q: Will users of running systems be able to use Fax For Asterisk without reinstalling?

A: Yes. If they are currently running a new version of Asterisk 1.4 or 1.6, then they can put the `res_fax` and `res_fax_digium` modules into the Asterisk modules directory, run the register utility, and load the fax modules from the Asterisk CLI.

Q: Does Fax For Asterisk provide analog modem termination / origination capability in addition to its fax modems?

A: No. Fax For Asterisk does not provide the capability to talk to regular analog modems for the purposes of data communication, Remote Access Servers, etc. Fax For Asterisk provides fax modems for the purposes of originating or terminating fax sessions.

Q: I have significant timing slip between a PRI card and an analog card, will Fax For Asterisk help?

A: In the event that you experience significant timing slips between a PRI card and an analog card such that a direct card-to-card fax is not possible, Fax For Asterisk can be used to build a store and forward application. On the first leg of the call, Fax For Asterisk can be used to receive the fax. After receiving the fax, Asterisk can be instructed to place a second call out to the analog card's FXS port and then send the fax to an attached fax machine.

Q: My VoIP service provider uses G.729. Can I use Fax For Asterisk?

A: G.729 is a voice compression codec, it is not related to fax except that it is not possible to send a fax across VoIP when G.729 compression is used. The preferred method of faxing across VoIP when using Fax For Asterisk is T.38 (a standard developed to make internet faxing reliable). If T.38 is not possible, Fax For Asterisk can fall back to G.711 faxing, but the success



rates will be lower than T.38 and connections with excessive jitter, packet loss or latency will not reliably pass fax calls. When faxing across VoIP, T.38 is always recommended.

Q: What kind of CPU will I need to run Fax For Asterisk?

A: Fax For Asterisk can successfully transmit or receive two faxes safely, while still running other Asterisk applications like calls and transcoding, on a 1.2GHz Intel Celeron class CPU.

Q: Does Fax For Asterisk negotiate different speeds when talking to fax machines across the PSTN?

A: Yes. Fax For Asterisk is capable of operating at 2400, 4800, 7200, 9600, 12000, or 14400 baud.

Q: Does Fax For Asterisk support T.30e, color faxes?

A: No. Fax for Asterisk does not support faxing in color per ITU T.30e.

Q: When Digium releases new versions of Fax For Asterisk, how do I find out and how do I download them?

A: Digium provides a mailing list called digium-announce that provides product update announcements. You can subscribe to the mailing list by visiting <http://lists.digium.com> and clicking the digium-announce link.

Digium provides the Fax For Asterisk software for download at <http://downloads.digium.com/pub/telephony/fax>

Q: How does Fax For Asterisk differ from spandsp?

A: Fax For Asterisk is very similar to spandsp. From Asterisk's perspective, it entirely replaces the capabilities of spandsp – with a few exceptions noted in the Fax For Asterisk Administration manual. In Digium's internal testing, Fax For Asterisk provides better support for multi-page faxes and older fax machines as compared to spandsp.



Part Numbers and List (MSRP) Pricing:

The SKUs, Descriptions, and MSRP pricing for all SKUs associated with Fax For Asterisk are contained in the embedded spreadsheet.



Fax For Asterisk
SKUs.xls

Product Certifications:

Fax for Asterisk provides V.21, V.27ter, V.29 and V.17 fax modems.

No known regulatory certifications are required for the use of Digium's Fax For Asterisk product.

Digium has licensed fax modem technology from Commetrex, the leading worldwide supplier of fax and fax-related technologies. Commetrex other customers include Sonus, Lucent, NMS Communications, Spirent, Broadsoft and Motorola.

Declaration of Conformity:

No Declarations of Conformity are required for the use of Digium's Fax For Asterisk product.

Product Physical Characteristics:

Fax For Asterisk is provided to customers via one method:

- 1) Software-only Download – Customer is provided with registration key via e-mail and instructions for download of Fax For Asterisk software and registration utility from Digium-controlled download locations on the public Internet.

Fax For Asterisk maintains no physical characteristics and is not provided on physical medium.



Data Sheet:

No Data Sheet is provided for Fax For Asterisk.

Digium Product Compatibility:

Fax For Asterisk **is compatible** with the following Digium PSTN board products:

TDM400P, Four port modular analog PCI 3.3/5.0V card (EOL, not supported)

TDM410, Four port modular analog PCI 3.3/5.0V card

AEX410, Four port modular analog PCI-Express x1 card

TDM800, Eight port modular analog PCI 3.3/5.0V card

AEX800, Eight port modular analog PCI-Express x1 card

TDM2400, Twenty-four port modular analog PCI 3.3/5.0V card

AEX2400, Twenty-four port modular analog PCI-Express x1 card

TE110P, One span digital T1/E1/PRI PCI 3.3/5.0V card (EOL, not supported)

TE120P, One span digital T1/E1/PRI PCI 3.3/5.0V card

TE121, One span digital T1/E1/PRI PCI-Express x1 card

TE122, One span digital T1/E1/PRI PCI 3.3/5.0V card

TE205/TE207, Two span digital T1/E1/PRI PCI 5.0V card

TE210/TE212, Two span digital T1/E1/PRI PCI 3.3V card

TE220, Two span digital T1/E1/PRI PCI-Express x1 card

TE405/TE407, Four span digital T1/E1/PRI PCI 5.0V card

TE410/412, Two span digital T1/E1/PRI PCI 3.3V card

TE420, Four span digital T1/E1/PRI PCI-Express x1 card

B410P, Four span digital EuroISDN BRI PCI 3.3/5.0V card

S110M, Single channel station (FXS) module

S400M, Quad channel station (FXS) module

X100M, Single channel trunk (FXO) module

X400M, Quad channel trunk (FXO) module

Quick Start Guide:

In lieu of a Quick Start guide, a copy of the Fax For Asterisk README is provided here:



README.fax

Product Information Powerpoint:

A copy of the product information Powerpoint is embedded here:



Fax For Asterisk
Overview Presentation

Product Manual:

A copy of the Fax For Asterisk manual is embedded here:



fax_for_asterisk_ad
min_manual.pdf

Sales Training

Sales training is covered in the Product Information Powerpoint.

Digium Partner F.A.Q.:

Q: Do standard channel discount structures apply to Fax For Asterisk?

A: Yes. Fax For Asterisk is provided under Digium's standard channel discount structures.

Q: If I order quantity X of Fax For Asterisk, how many keys will I get?

A: Each line item of Fax For Asterisk that you order will result in one key for the number of channels that corresponds to the quantity of that line item. If you wish to purchase multiple keys, please place separate line-item orders.

Q: Will Digium split a larger channel key into multiple smaller channel keys?

A: No. Digium will not split a larger channel key into multiple smaller channel keys. If you need smaller channel keys, please order keys with low channel densities.

Q: Can Digium guarantee operation with a particular fax machine or VoIP service provider?

A: No. Due to variable line conditions, both PSTN and Internet, Digium cannot guarantee operation. Digium's Fax For Asterisk stack exhibits better than industry standard characteristics for dealing with poor quality lines, but some lines cannot transmit fax reliably.



Pictures and Logos:

This section contains pictures and, or logos approved for use by partners.

Updated Digium corporate Logo:



digium_CMYK.png

Other Documentation:

A copy of the e-mail sent to customers that purchase Fax For Asterisk is embedded here:



email.template.816-0003.txt

Website Copy:

This section of copy has been approved for use on Partner websites to describe Fax For Asterisk:

Digium's Fax For Asterisk is a commercial facsimile (Fax) termination and origination solution designed to enhance the capabilities of Open Source and commercial Asterisk as well as Switchvox. Fax For Asterisk bundles a suite of user-friendly Asterisk applications and a licensed version of the industry's leading fax modem software from Commetrex. Fax For Asterisk provides low speed (14400bps) PSTN faxing via DAHDI-compatible telephony boards as well as VoIP faxing to T.38-compatible SIP endpoints and service providers. Licensed on a per-channel basis, Digium's Fax For Asterisk provides a complete, cost-effective, commercial fax solution for Asterisk users.

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Each open source or commercial Asterisk system is eligible to receive from Digium, a single channel of Fax For Asterisk, for no cost. Free Fax For Asterisk is available to all Asterisk users as a free, zero cost purchase from the Digium webstore. Only one channel of Free Fax For Asterisk may be used with an installation of Asterisk. If you require multiple channels of Fax capability, you may purchase channels of Fax For Asterisk.

Fax For Asterisk and Free Fax For Asterisk are currently provided only for x86 Linux systems. x86_64 users should install the 32-bit Linux compatibility layers on their servers.

Press Release:

Digium’s Press Release for Fax For Asterisk is embargoed until Monday, March 23rd 2009 at 8am Central Daylight Time (GMT -5).

Replaced Product and Upgrade Information:

Fax For Asterisk is designed to make the migration from spandsp as simple as possible. Users of 1.6 Asterisk should require no dialplan or configuration changes for a successful migration. Users of 1.4 Asterisk should only require modification to the “rxtxappnames” configuration option in the fax.conf Asterisk configuration file. Setting the option to yes will register applications called “RxFAX” and “TxFAX” to Asterisk. Leaving the option unset, the default option, registers applications called “ReceiveFAX” and “SendFAX.”