Xerox

Xerox® WorkCentre 7120
Fax over Internet Protocol (FoIP)

WorkCentre 7120 Fax Kit

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Document version 1.0: June 2010

Introduction

This guide is intended for System Administrators or service providers, with responsibility for configuring the settings of Xerox devices that fax over an IP network.

For other fax configuration settings refer to the System Administration Guide that was supplied with your device.

Overview - FoIP

FoIP stands for Fax over Internet Protocol and refers to the process of sending and receiving faxes using an IP Network.

Fax over IP works with T.38 standard, refer to What is T.38? on page 4, and requires a T.38 capable VoIP gateway as well as a T.38 capable fax machine, fax card or fax software.

Fax server software that can talk 'T.38' allows sending and receiving faxes directly via a VoIP gateway and, consequently, does not need any additional fax hardware.

VoIP - Voice Over Internet Protocol

Internet Protocol (IP) networks carry data in a digital packet format. Voice signals must be encoded into this digital format before being transmitted over IP. This encoding also compresses the data to reduce the load (bandwidth) on the network.

VoIP gateway allows the device to relay fax communications between the IP network and the public telephone network. A VoIP gateway is required for communicating with a G3 Fax device.

What is T.38?

T.38 is a protocol (ITU-T standard) that describes how to send a fax over a IP network. T.38 is needed because fax data can not be sent over an IP network in the same way as voice communications.

With T.38 a fax is converted to an image, sent to the receiving T.38 fax device and then converted back to analog fax signal.

T.38 is not a call set up protocol, therefore T.38 protocol devices need to use standard call setup protocol to negotiate the T.38 call using SIP, refer to

What is SIP?

The SIP (Session Initiation Protocol) is a signalling protocol, widely used for controlling multimedia communication sessions such as voice and video calls over Internet Protocol (IP).

Using a SIP server, IP Fax destinations can be designated by SIP user name and telephone number.

The main features of a SIP server are:
- Receive address information of the device in the IP network, and register the address in the database (registrar server).
- Relay request and response from the SIP client (proxy server).

Before you Begin

IP Fax can be used in the following four connection configurations:

> Note: Method to input IP Fax destination differs depending on the connection configuration.

- **FoIP (SIP) Device Only**
  FoIP devices communicate with each other directly, using IP network (Intranet).
  SIP device address of the communication target shall be designated as an IP Fax between IP Fax devices. For example, **1111@192.168.1.1** (address of SIP device).
- **SIP Server Installed**
  FoIP devices communicate via a SIP server, using an IP network (Intranet).
  Since SIP server utilizes address translation, FoIP can be sent to FoIP devices by a designated SIP user name or telephone number. For example **1111** (SIP user name) or **0312345678** (telephone number).
- **VoIP Gateway Installed**
  In addition to direct communication between FoIP devices in an IP network (Intranet), communication with a G3 Fax device, which does not have FoIP feature, is possible using a VoIP gateway.
  FoIP can be sent in the following two methods:

- For FoIP device, designate the SIP device address of the communication target. For example, **1111@192.168.1.1** (SIP device address).
- For G3 Fax device, designate the telephone number. For example, **0312345678** (telephone number).

- **SIP Server and VoIP Gateway Installed**

  In addition to the communication between a FoIP device using a SIP server in an IP network (Intranet). Communication with a G3 Fax device, which does not have a FoIP features, is possible using a VoIP gateway. Since SIP server utilizes address translation, an IP Fax can be sent to an IP Fax device by designating the SIP user name or telephone number.

  For G3 Fax device, IP Fax can be sent by designating telephone number. For example, **1111** (SIP user name) or **0312345678** (telephone number).

To Configure FoIP

Ensure the following have been enabled or installed:
- Fax card is installed
- IP Fax service must be enabled at the machine.
- T.38 Protocol must be configured.
- The SIP (Session Initiation Protocol) must be configured.

How to Set Up FoIP Environment

The following table shows how to set up FoIP depending connection configuration.

Setting Item / System Configuration	Activation of Port and TCP/IP Setting	SIP device Address Setting	Fax Environ-ment Setting	SIP Server Setting	VoIP Gateway Registration	Setting Of Send / Receive Restriction by Domain
FoIP (SIP) Device Only	Setting required	Setting required	Setting required	Setting not required	Setting not required	Setting required when necessary
SIP Server Installed Only	Setting required	Setting required	Setting required	Setting required	Setting not required	Setting required when necessary
VoIP Gateway Installed	Setting required	Setting required	Setting required	Setting not required	Setting required	Setting required when necessary
SIP Server and VoIP	Setting required	Setting required	Setting required	Setting required	Setting required	Setting required

Enable Fax at the Device

1. Press the **Machine Status** button on the control panel.
2. Touch the **Tools** tab.
3. If prompted, enter the *Administrator Login ID* and *Passcode*. The default is **admin** and **1111**. Click on **OK**.
4. Touch **System Settings**.
5. Touch **Common Service Settings** from the *Group* table.
6. Touch **Other Settings** from the *Feature* table.
7. Touch **Fax Service**, then touch **Change Settings**.
8. The **Fax Service Page** displays:
   a. Select **Scan to Fax**.
   b. Touch **Save**.

   Note: To activate the selection the printer will reboot.

Configure T.38 Protocol (VoIP Gateway)

1. At your workstation, open the Web browser and enter the IP address of the device in the Address Bar.

    Note: If prompted, enter the administrator's *User Name* and *Password*. The default is **admin** and **1111**. Click on **OK**.

2. Click **Properties** > **Connectivity** > **Protocols** > **T.38**.
3. The **T.38** page displays. In the **General** area:
    a. Select the type (either **TCP/UDP**) of transport protocol from the **T.38 Transport Protocol** drop-down menu.
    b. Enter the port number in the following fields:
        *   **UDPTL Listening Port Number** (UDPTL User Data Protocol Transport Layer)
        *   **TCP Listening Port Number**
        *   **RTP Listening Port Number** (Real-time Transport Protocol)
    c. Enter the amount in the **Prioritize IP Packets** field.
4. Click on **Apply.**
5. If prompted, enter the administrator's *User Name* and *Password*. The default is **admin** and **1111**.
6. Click **OK**.

Configure SIP Protocol

1. At your workstation, open the Web browser and enter the IP address of the device in the Address Bar.

    Note: If prompted, enter the administrator's *User Name* and *Password*. The default is **admin** and **1111**. Click on **OK**.

2. Click **Properties** > **Connectivity** > **Protocols** > **SIP**.
3. The **SIP** page displays. In the **General** area:
    a. Enter the SIP protocol port number in the **Port Number** field.
    b. Enter details in the **SIP User ID (Sign-in Name)** field.
    c. Select the protocol transport type (either **TCP/UDP**) from the **SIP Transport Protocol** drop-down menu.
    d. Select either **Yes** or **No** from the **Enable SIP Server** drop-down menu.
    e. Select either **DHCP** or **Static** from the **SIP Server IP Address Resolution** drop-down menu.
    f. Block or allow fax transmissions to or from specific domains:
        *   From the **Domain Filtering** drop-down menu select **Allow Domains** or **Block Domains**.

- Click on **Edit**.
- Type the domain names on the **Domain Filter Settings** page.
- Click **Apply**.
- The **SIP** page displays.

4. In the **Primary SIP Proxy Server Setup** area:
    a. Enter the SIP Proxy Server details in following fields:
        - **Server IP Address (Host Name) & Port Number**
        - **Login User Name**
        - **Login Password**
        - **Retype Login Password**
    b. Select the type of server from the **Server Type** drop-down menu.
5. In the **Secondary SIP Proxy Server Setup** area, repeat step **4a** and **b**.
6. In the **Primary SIP Registrar Server Setup** area:
    a. Enter the SIP Registrar Server details in following fields:
        - **Server IP Address (Host Name) & Port Number**
        - **Login User Name**
        - **Login Password**
        - **Retype Login Password**
    b. Select the type of server from the **Server Type** drop-down menu.
7. In the **Secondary SIP Registrar Server Setup** area, repeat step **6a** and **b**.
8. Click **Apply**.
9. If prompted, enter the administrator's *User Name* and *Password*. The default is **admin** and **1111**.
10. Click **OK**.

Create a VoIP Gateway

1. At your workstation, open the Web browser and enter the IP address of the device in the Address Bar.

    Note: If prompted, enter the administrator's *User Name* and *Password*. The default is **admin** and **1111**. Click on **OK**.

2. Click **Properties > Connectivity > Protocols > VoIP Gateway**.
3. The **VoIP Gateway** page displays, click **Create**.
4. The **Register VoIP Gateway** page displays. In the **VoIP Gateway** area:
    a. Enter an ID for the gateway in the **ID** field.
    b. Enter detail in the **Gateway Address** field.
    c. Click **Apply** to return to the **VoIP Gateway** page.

Additional Information

For further information refer to the following:

- User Guide - contains instructions and information about all the features on the machine, including using the fax feature.
- System Administration Guide - provides detailed instructions and information about connecting your machine to the network and installing optional features, including the fax feature.
- www.xerox.com/support.