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# Galileo International

Technical Support Documentation

## Firewall & Proxy Specifications

*For Focalpoint® , Viewpoint™ & Focalpoint Print Manager™*  
(GALILEO® and APOLLO® PRODUCTION SYSTEMS)



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## Introduction

This document will outline the typical configurations required by a firewall administrator to properly open ports for the Focalpoint®, Viewpoint™ and Focalpoint Print Manager™ applications to talk to the computer reservation system (CRS). Galileo International provides this information as a guide for the end user. Configurations indicated in this document are the configurations for the subscriber's firewall ("inbound" indicates traffic passing into the subscriber's network from the reservation system. "Outbound" indicates traffic passing out of the subscriber's network to the reservation system).

Configuration of a firewall being placed between a subscriber location and the Galileo® or Apollo® systems is the responsibility of the subscriber to install and configure such device. It is strongly recommended that the subscriber or firewall administrator contact their respective firewall providers prior to making changes to support Galileo International products. Galileo International does not provide technical or help desk support in these types of configurations.

To identify which reservation system you will be accessing, please contact your Travel Management Company or refer to your system access contract. In general Galileo International subscribers outside North America access the Galileo® reservation system while North American subscribers access the Apollo® reservation system.

## What is Focalpoint® and Viewpoint™?

Interaction with the Galileo® and Apollo® systems are provided through two applications installed at the end user's workstation.

Focalpoint® is Galileo's proprietary terminal emulation program allowing the user to input cryptic formats to the host system to complete a travel reservation. Viewpoint™ provides a Graphical User Interface (GUI) to allow users to build a travel reservation in a simplified, Microsoft Windows™ based, point and click environment.

When either form of user access to the CRS host is used, the requirements for customer firewalls are the same.

## What is Focalpoint Print Manager™?

Focalpoint Print Manager™, commonly referred to as "FPM" or "Print Manager", is a Windows™ based software product that manages host-printing functions (Ticket Printer, Invoice Printer and Back Office Interface (MIR)). The PC that runs this software may be dedicated to this function or be installed on a workstation running Galileo's Focalpoint® or Viewpoint™ reservation products.

After a determined amount of time, the Focalpoint Print Manager™ will enter a sleep mode until a print image is sent and a wake-up established. For wake-up to successfully occur, the PC running the Print Manager software must have a static IP address and be mapped in the firewall. The Config Server will try to establish a successful TCP handshake with the TCP/IP address of Print Manager. If successful, a wake-up message will be sent and print documents will generate.

Not all Galileo® or Apollo® subscribers use Focalpoint Print Manager™. Firewall Administrators should check with their Travel Management Company to determine if this application will be used.

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## How do I determine my access type to Apollo/Galileo?

Access to the CRS systems is provided via a dedicated TCP/IP circuit or via the Internet when using either the Nortel Extranet IPSec client or Microsoft PPTP VPN Protocol. This document will describe the firewall configuration for the following types of connection:

- **TCP/IP Frame Relay:** Galileo installs a dedicated TCP/IP Frame Relay or point-to-point circuit. Galileo will install and configure a site premise router to connect either to the Local Area Network or connected directly to a subscriber provided router.
- **Internet/VPN:** With a Internet Service Provider (ISP) connection to the Internet, a VPN tunnel is created using either the Nortel Extranet client or Microsoft PPTP VPN protocol. Galileo allows split tunneling in this configuration, which will allow the user to access the reservation service and Internet simultaneously. Customers using Galileo's FocalpointNet™ product will use this type of connection.

Before proceeding with configuring your firewall, identify which connection type you will be using to access the Galileo® or Apollo® reservation system. Follow the configuration specifications on the following pages that apply to your connection type.

## What Galileo devices will you need to reach?

- **Configuration Servers: (All Subscribers)**

**Purpose:** The Configuration Servers, referred to as Config Servers, authenticate the user by validating their access is via a known communication path as well as assigns the access to the Galileo® or Apollo® reservation system.

**Protocol Used:** UDP (User Datagram Protocol / Protocol 17) / TCP/IP (Transmission Control Protocol/Internet Protocol / Protocols 4 & 6)

- **IP Concentrators: (All Subscribers)**

**Purpose:** The IP Concentrators, referred to as IPCs, translate the TCP/IP packet into a format accepted by the Galileo® or Apollo® reservation system.

**Protocol Used:** TCP/IP (Transmission Control Protocol/Internet Protocol / Protocols 4 & 6)

- **VPN Switch: (Internet/VPN Subscribers Only)**

**Purpose:** The VPN Switch authenticates the VPN client, either Nortel Extranet or Microsoft PPTP, onto the Galileo® or Apollo® reservation system.

**Protocol Used:** Based on the VPN client being used.

Microsoft PPTP = GRE (General Routing Encapsulation / Protocol 47)

Extranet IPSec = ESP (Encapsulation Security Payload / Protocol 50) and AH (Authentication Header / Protocol 51)

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## Configuring a Firewall for a dedicated TCP/IP circuit

**NOTE:** This configuration should only be used when access to the reservation system is via a dedicated communication line provided by Galileo. If you are accessing the reservation system via the Internet, please refer to the instructions on page 6 – Configuring a Firewall for access via the Internet/VPN.

### PROTOCOLS:

- TCP/IP (Protocols 6 & 4)
- UDP (Protocol 17)

### PORTS: (PAT-Port Address Translation is NOT permitted)

**Config Servers:** 5067 / UDP Traffic / Outbound Only  
5068 / UDP Traffic / Inbound Only  
5069 / TCP Traffic / Inbound Only (**FPM Requirement**)

*Print Manager will receive all wake-up messages from the Galileo Config Server TCP/IP addresses:  
57.8.81.13 or 57.8.81.113*

**IP Concentrators:** 2748 / TCP Traffic / Outbound Only (**Apollo® system only**)  
2749 / TCP Traffic / Outbound Only (**Galileo® system only**)  
2750 / TCP Traffic / Outbound Only (**VTF-IP Concentrators**)

### IP FILTERING:

Galileo International recommends filtering to the entire IP Subnet versus specific addresses.

Galileo® System:	57.8.81.0	Mask 255.255.255.0
Apollo® System:	198.177.164.128	Mask 255.255.255.224
	57.8.81.0	Mask 255.255.255.0

**Specific IP Addresses: *These addresses are subject to change without notice!***

<u>Device</u>	<u>Galileo® System &amp; Apollo® in Canada</u>	<u>Apollo® System USA</u>
<b>Config Servers</b>	57.8.81.13	198.177.164.151
	57.8.81.113	198.177.164.152
		57.8.81.13
		57.8.81.113
<b>IP Concentrators</b>	57.8.81.11	198.177.164.131
	57.8.81.111	198.177.164.132
		198.177.164.133
		198.177.164.134
		198.177.164.145
		198.177.164.146
		198.177.164.147
		198.177.164.148
		57.8.81.11
		57.8.81.111

**NOTE:** Focalpoint Print Manager **MUST** be assigned a static IP address for the wake-up process to work properly.

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## Configuring a Firewall for Access via the Internet/VPN

**NOTE:** This configuration should only be used when access to the reservation system is via a dial-up or dedicated Internet connection. If you are accessing the reservation system via a circuit provided by Galileo, refer to page 5 – Configuring a Firewall for Dedicated TCP/IP Circuit. Follow the instructions based on the client you are using (PPTP or IPSec).

### PROTOCOLS:

- TCP/IP (Protocols 6 & 4)
- UDP (Protocol 17)
- PPTP: GRE (Protocol 47 mapped to port 1723) – Microsoft PPTP VPN ONLY
- IPSec: ESP & AH (Protocols 50 & 51) – Nortel Extranet client ONLY

### PORTS: (PAT-Port Address Translation is NOT permitted)

<b>PPTP Switch:</b>	1723 / TCP Traffic / Outbound Only (Microsoft PPTP VPN ONLY. Not necessary for IPSec clients.)
<b>IPSec Switch:</b>	500 / UDP Traffic / Outbound & Inbound (Nortel Extranet Client ONLY. Not necessary for PPTP clients. UDP Protocol 17 only on this port.)
<b>Config Servers:</b>	5067 / UDP Traffic / Outbound Only 5068 / UDP Traffic / Inbound Only 5069 / TCP Traffic / Inbound Only ( <b>FPM Requirement</b> )
<b>IP Concentrators:</b>	2748 / TCP Traffic / Outbound Only ( <b>Apollo® system only</b> ) 2749 / TCP Traffic / Outbound Only ( <b>Galileo® system only</b> ) 2750 / TCP Traffic / Outbound Only ( <b>VTF-IP Concentrators</b> )

### DNS SUPPORT: (Must be able to PING from the client workstation:)

**Microsoft PPTP VPN Client:** PING vpn.galileo.com  
**Nortel Extranet IPSec Client:** PING fpnet.galileo.com

### IP FILTERING: (Must be able to ping after VPN established)

**Specific IP Addresses:** *These addresses are subject to change without notice!*

<u>Device</u>	<u>Galileo® System</u>	<u>Apollo® System</u>
<b>PPTP VPN Switch</b>	<a href="http://fpnetpptp.galileo.com">fpnetpptp.galileo.com</a> <a href="http://192.168.32.103">192.168.32.103</a>	<a href="http://Fpnetpptp.galileo.com">Fpnetpptp.galileo.com</a> <a href="http://192.168.32.103">192.168.32.103</a>
<b>IPSec VPN Switch</b>	<a href="http://fpnetipsec.galileo.com">fpnetipsec.galileo.com</a> <a href="http://192.168.32.105">192.168.32.105</a>	<a href="http://fpnetipsec.galileo.com">fpnetipsec.galileo.com</a> <a href="http://192.168.32.105">192.168.32.105</a>
<b>Config Servers</b>	vpnipcs.galileo.com 172.20.200.2	vpnipcs.galileo.com 172.20.200.2
<b>IP Concentrators</b>	vpnipc.galileo.com 172.20.200.1	vpnipc.galileo.com 172.20.200.1

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## Frequently Asked Questions

### **How do I know if my Firewall will support access to the Galileo® and Apollo® systems?**

Subscribers using a direct, dedicated connection to the Internet should not have problems providing the port and protocol settings addressed in this document can be supported. Internet/VPN access subscribers must be able to support the ports and protocols as well as support the VPN technologies of Microsoft PPTP or the Nortel Extranet IPsec client.

### **My firewall performs port address translation. Will that be an issue?**

Yes, it will be an issue. The Focalpoint® and Viewpoint™ authentication process will not function properly if Port Address Translation is used. Either avoid performing PAT or establish another solution.

### **My firewall performs NAT for the Local Area Network users and Internet Access is via a proxy server. Why can't I get Focalpoint® or Viewpoint™ working correctly?**

The Focalpoint® and Viewpoint™ authentication process allows for one and only one Network Address Translation mapped for both inbound and outbound traffic. Attempts have been unsuccessful with subscribers performing “double-NATing” so Galileo strongly recommends either performing a single Address Translation or providing the user with another solution.

### **My firewall is configured to the specifications in this document. One user can access the reservation system but subsequent users cannot. What is wrong?**

This is an indication that multiple users are sharing a single IP address. Access via the Galileo TCP/IP dedicated circuit is required to show a unique IP address when authenticating into the system. For this configuration, you are required to perform a one-for-one network address translation for each user. Internet/VPN subscribers are experiencing this problem due to a problem with validating multiple VPN sessions through a single address. Try assigning a one-for-one address translation for Internet access or use a proxy server to share a single Internet connection among several users.

### **Do I have to open all the ports, protocols and IP addresses specified for my configuration?**

Failure to support one of the configuration requirements in this document will prevent authentication to the Galileo® or Apollo® reservation system. If policies or procedures prevent opening the ports, protocols or IP subnets as specified, it is recommended that another method of connection be used to access the reservation service.

### **I have completed all the steps in configuring the firewall but still cannot get access to the reservation service. Where do I go for help?**

For liability reasons, Galileo International employees are not permitted to touch or configure Firewalls owned and maintain by a subscriber. The information included in this document is complete and accurate as of the date published. In the event you are still unable to access the reservation service, contact your vendor who provided the firewall or the firewall manufacture's technical support desk.

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**Why must the Focalpoint Print Manager™ be assigned a fixed or static IP address when installed in a dedicated TCP/IP site?**

The wake-up message generated from Galileo/Apollo will initiate an unsolicited IP packet to the Print Manager PC. For this to occur properly, the IP address must be fixed and identified during the initial authentication process.

**You indicate that the Focalpoint Print Manager™ requires TCP messages to be accepted on port 5069 for the wake-up to be successful. The firewall administrator must understand that the source TCP port is random, or from any to 5069.**

Focalpoint Print Manager™ must be able to receive a TCP handshake from the Galileo configuration servers and must be successful for the actual wake-up message to be sent. Since this handshake will be established on TCP port 5069, port 5069 must be open inbound. To further secure a firewall, traffic from these messages will only be passed through the Galileo configuration servers 57.8.81.13 and 57.8.81.113.

\* Wake up message format is from Galileo Destination=5069 -- Source=ANY.

\* If your firewall application cares about inbound Source ports, select Inbound Source=ANY. Normally this is not needed.

\* Example – Inbound Rule TCP Destination:5069 Source:Any 57.8.81.13 /113

**My Travel Management Company uses a DOS based “Print Server” to issue travel documents. Do I need to open ports for that device too?**

No. The Focalpoint Print Servers use a different technology that does not require a wake-up message to be received. Standard Focalpoint® or Viewpoint™ firewall configurations will be sufficient.

**The Print Manager is not waking up. What’s wrong?**

The first test to perform is to bring the Print Manager up manually (refer to the instructions for Installing the Focalpoint Print Manager™). If documents print when the Print Manager is manually connected, then the problem most definitely is firewall or routing related. Please double check your firewall settings and make sure TCP traffic can pass inbound between 57.8.81.13 and 57.8.81.113 on TCP port 5069 to the specified Print Manager PC. If problems persist, please contact your Galileo or Apollo Account Representative to arrange for further technical assistance.



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# Special Configurations for Galileo Distribution Companies

## GALILEO CANADA SUBSCRIBERS ONLY

- **LeisureLink™**

**Purpose:** LeisureLink™ is a leisure booking product with instant access to the reservations systems of dozens of Canadian tour operators.

**Protocol Used:** TCP/IP (Transmission Control Protocol/Internet Protocol / Protocols 4 & 6) / Standard HTML messages.

**Ports to be Open:** 8180 / TCP Traffic / Outbound Only

<b>IP Filtering:</b>	<b><u>TCP/IP Frame Relay</u></b>	<b><u>Internet/VPN</u></b>
	leisurelink.galileo.ca	leisurelink.galileo.ca
	167.125.255.210	172.20.200.28