



# **GlobeSurfer® III**

## **Failover Principle**

## About this document

### Overview and Purpose

This document provides a description of how to configure the Failover functionality on the GlobeSurfer® III.

### Confidentiality

All data and information contained or disclosed by this document is confidential and proprietary of Option NV, and all rights therein are expressly reserved. By accepting this document, the recipient agrees that this information is held in confidence and in trust and will not be used, copied, reproduced in whole or in part, nor its contents revealed in any manner to others without prior and written permission of Option NV.

### Version History

Date	Version	Author	Revision	Remarks
Jan 27, 2009	v001draft	F. Arboleda	<i>Not reviewed</i>	Initial version
Feb 5, 2009	v002ext	F. Arboleda	P. Vandeneede	Revision

**Author:** F. Arboleda  
**Creation Date:** Jan 27, 2009

**Version:** v002ext  
**Page:** 1 of 14

**Option Confidential:** This document is Option Confidential - it may not be duplicated, neither distributed externally without prior and written permission of Option NV.

## Table of contents

1	INTRODUCTION .....	3
2	FAILOVER CONFIGURATION .....	4
2.1	Activation of the functionality .....	4
2.2	Failover configuration .....	8
2.2.1	Failover configuration page .....	8
3	CONFIGURATION EXAMPLE .....	10

## 1 INTRODUCTION

Failover is the transfer of operation from a failed device to a similar device to ensure uninterrupted data flow and operability. The GlobeSurfer® III (GS3) supports failover between two different WAN devices.

WAN failover takes place when a WAN device fails due to disconnection or an unsuccessful DNS test. This means that if the primary WAN interface fails, its routing rules are removed, and all traffic will now be routed through the secondary WAN interface according to its routing scheme, until the primary WAN interface resumes its connectivity.

The activation and configuration of this functionality on the GS3 is covered on this manual.

## 2 FAILOVER CONFIGURATION

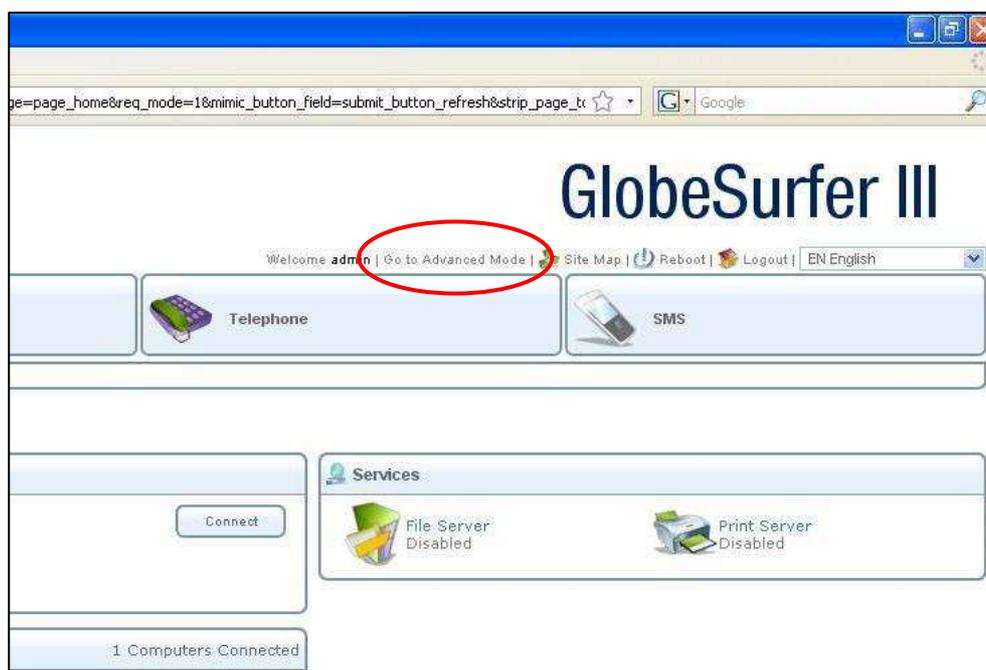
The following explanation is based on GS3 firmware version R1A35 and GS3's default settings (Option standard), any change to the default settings may change, in some degree, the accuracy of this document.

Connect a computer to the GS3 and log in to the web GUI (Browsing to 192.168.1.1 and entering the needed user and password)

### 2.1 Activation of the functionality

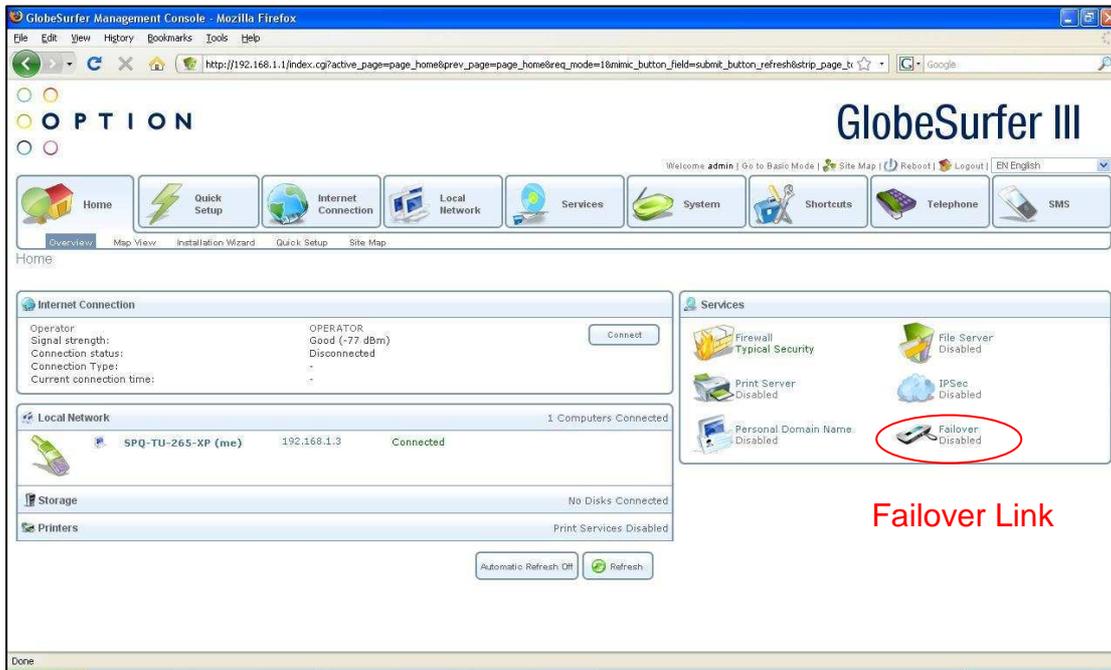
Follow the next steps to activate the failover functionality on the GS3:

**Step 1:** Go to the Advance Mode on the GS3 GUI (See Figure 1)



**Figure 1: Go to Advance Mode.**

Once in the Advance Mode and on the Home page, there are three different sections the first one is for the “Internet Connection”, the second one is for the “Services” and the last one is for the connected devices like “Local Network”, “Storage” and “Printers” (See Figure 2). There is a possibility to have more sections depending on the active services on the GS3, but this will not be covered on this manual.



**Figure 2: Advance Mode Home page’s sections.**

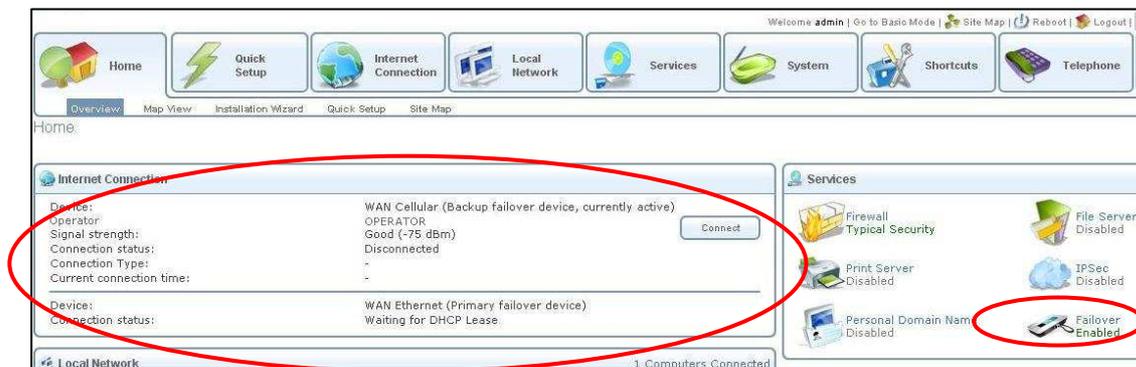
**Step 2:** Click on the Failover Link located on the “Services” section, the GUI will prompt you to the Failover configuration page where the functionality has to be enabled. To enable the functionality check the “Enabled” check box. (See Figure 3)



**Figure 3: Enabling Failover functionality.**

**Note: Be aware that this functionality demands a GS3 reboot in order to reconfigure one of the Ethernet ports to become a WAN Ethernet port. On Figure 3 the reboot button has to be pressed.**

After the reboot, the Home page of the GUI is going to show information about the new failover functionality. (See Figure 4)



**Figure 4: Home page with Failover functionality enabled.**

The Network connections page (Under System>Network Connections) also shows a new device called “WAN Ethernet” which is one of the two physical Ethernet interfaces on the GS3. (See Figure 5 and Figure 6)



**Figure 5: Comparison between Old and New Network Connections page.**



**Figure 6: LAN Ethernet and WAN Ethernet interfaces on the GS3.**

Now the Failover functionality is enabled, but there are some others parameters to check before we can use it. These parameters will be explained on the next section.

## 2.2 Failover configuration

To configure the parameters of the Failover functionality the user has to go to the Failover page on the web GUI of the GS3 by clicking on the Failover link on the “Services” section under the Advance Mode Home page.

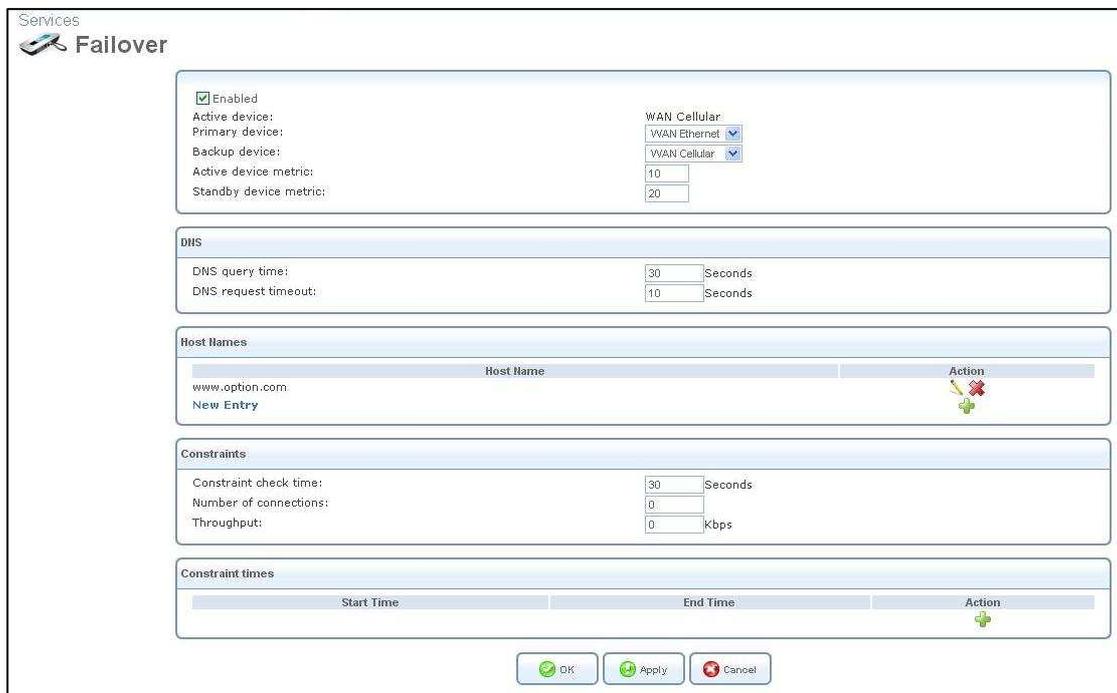
### 2.2.1 Failover configuration page

The Failover configuration page has change after the reboot of the GS3 and now it shows the different configuration parameters that are available for the Failover (See Figure 7).

On the Failover page we can distinguish five different sections:

- **General section:** In which you can find:
  - **The enabled check box:** to activate or deactivate the failover functionality.
  - **The Active device:** shows the device that is currently in use.
  - **Primary device:** is the first device to use. By default this device will be the WAN Ethernet, but it can be changed.
  - **Secondary device:** is the device to go when the first device fails. By default this device will be the WAN Cellular, but it can be change.
  - **Active device metric:** this metric is applied to the “Active device” to force the device to send all the data through that interface. This value always has to be lower than the “Standby device metric”. The default value is 10.
  - **Standby device metric:** this metric is applied to the Non-Active device and always has to be bigger than the “Active device metric” to ensure that all the packages are send through the “Active device”. The default value is 20.
  
- **DNS section:** In which you can find:
  - **DNS query time:** at this interval the GS3 will send DNS request out to check the “Active device” connection to internet. The default value is 30 seconds.
  - **DNS request timeout:** as it can take few seconds before the GS3 gets an answer from the DNS server, this parameter set how patient the GS3 is before it decides that there is no connection through the “Active device”. The default value is 10 seconds.

- **Host Names section:** this is the list of hosts to resolve with the DNS request. The GS3 will attempt to resolve each host on the list each “DNS query time” until the end of the list or until a host can be resolved. If at least one of the hosts can be resolved, the connection is assumed to be OK. The user can add or remove host from this list, be aware that the list has to have at least one host.
- **Constraints section:** In which you can find:
  - **Constraints check time:** at this interval, the GS3 will see if it is OK to switch back to the “Primary device” if it is currently using the “Secondary device”. The default value is 30 seconds.
  - **Number of connections:** if at a “Constraint time check” interval, the number of ongoing TCP connections is greater than this value, no attempt will be made to switch back to the primary device. The default value is 0 which means that the number of connections doesn’t matter for the failover.
  - **Throughput:** if at a “Constraint time check” interval, the current throughput is greater than this value, no attempt will be made to switch back to the primary device. The default value is 0 which means that the throughput doesn’t matter for the failover.
- **Constraint times section:** a list of time periods in which it is ok to switch back from the “Secondary device” to the “Primary device”.



Services Failover

Enabled

Active device: WAN Cellular

Primary device: WAN Ethernet

Backup device: WAN Cellular

Active device metric: 10

Standby device metric: 20

**DNS**

DNS query time: 30 Seconds

DNS request timeout: 10 Seconds

**Host Names**

Host Name	Action
www.option.com	 
New Entry 	

**Constraints**

Constraint check time: 30 Seconds

Number of connections: 0

Throughput: 0 kbps

**Constraint times**

Start Time	End Time	Action
		

OK Apply Cancel

**Figure 7: Failover configuration page**

**Author:** F. Arboleda  
**Creation Date:** Jan 27, 2009

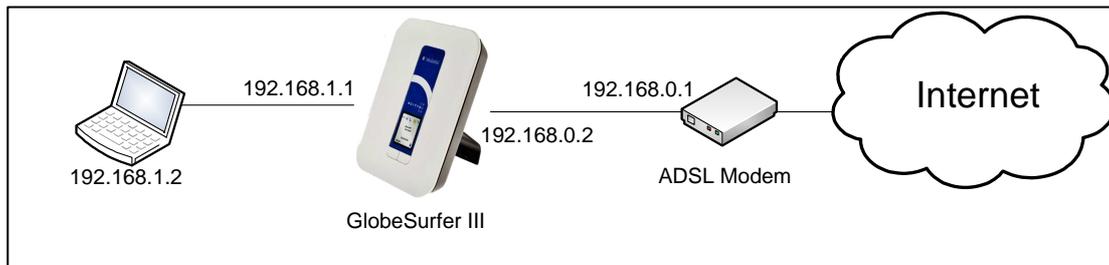
**Version:** v002ext  
**Page:** 9 of 14

**Option Confidential:** This document is Option Confidential - it may not be duplicated, neither distributed externally without prior and written permission of Option NV.

### 3 CONFIGURATION EXAMPLE

The following example will cover the configuration of the failover functionality together with a possible configuration for the WAN cellular interface.

The following Network diagram (See Figure 8) shows the network configuration that will be used on this example.



**Figure 8: Network Diagram**

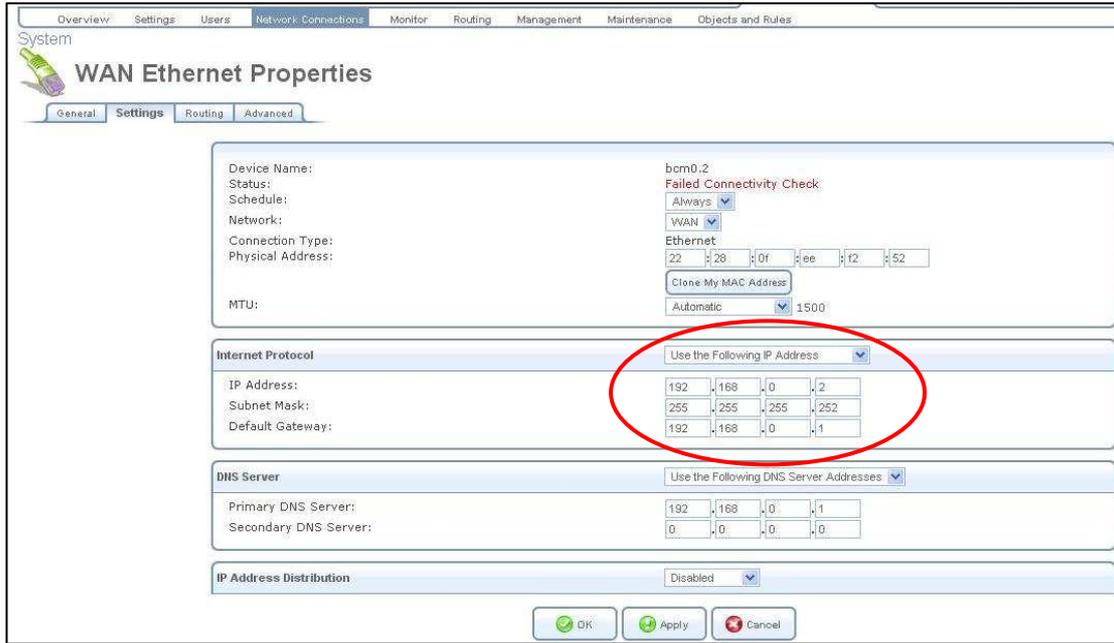
In this example the ADSL Modem was already configured to be connected to the internet and with its LAN connection as follows:

IP Address: 192.168.0.1  
 Network mask: 255.255.255.252 (Only two devices on the network)

**Step 1:** The first step is enabling the Failover functionality and to do that we have to follow the section 2.1 and after that the home page should look like Figure 4.

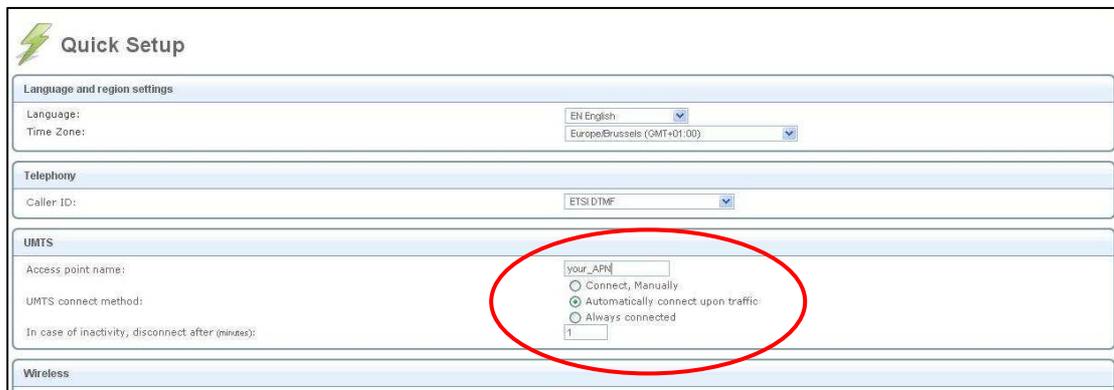
**Step 2:** For this second step we will use the default configuration of the Failover, no changes have to be done on the Failover configuration page. The Failover configuration page should look like Figure 7.

**Step 3:** By default the IP address of the WAN Ethernet is set to DHCP but in our case we will use a static IP address due to the configuration of the ADSL modem. To change this just go to System>Network Connections, click on WAN Ethernet and under Settings change the Internet Protocol to “Use the Following IP address”. (See Figure 9)



**Figure 9: WAN Ethernet Properties page**

**Step 4:** Now we are going to change the quick setup and change the UMTS connection to “Automatically connect upon traffic” and the inactivity timer to one. (See Figure 10)



**Figure 10: Quick Setup**

**Note:** Using this UMTS configuration the GS3 will be disconnected from the 3G network unless we loose connection through the WAN Ethernet port, this connection will remain until there is a gap of one minute without traffic on the 3G interface. This is only a possibility for the configuration; each of the three UMTS types of connection should work with their own specifications.

**Step 5:** We are now ready to connect our GS3 to the ADSL Modem, remember that there is a specific Ethernet port for the WAN Ethernet (See Figure 6). After connecting the GS3 to the ADSL router you should be able to see on the Home page and on the Failover page that the “Active device” changes to WAN Ethernet instead of WAN Cellular. You can also check the change on the LCD screen of the GS3. (See Figure 11, Figure 12 and Figure 13)



**Figure 11: Home Page view**



Figure 12: Failover Configuration page view



Figure 13: LCD screen view

## References

Ref	Document

**Author:** F. Arboleda  
**Creation Date:** Jan 27, 2009

**Version:** v002ext  
**Page:** 14 of 14

**Option Confidential:** This document is Option Confidential - it may not be duplicated, neither distributed externally without prior and written permission of Option NV.