

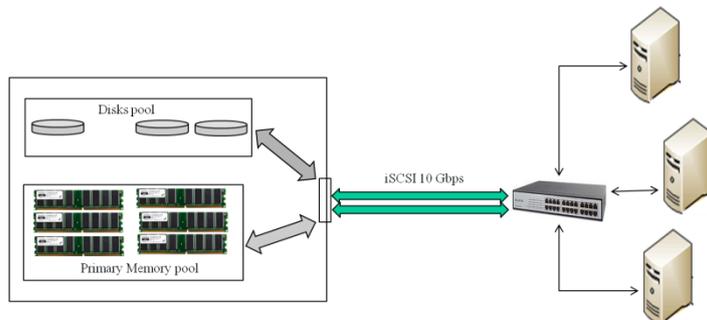


GED-i Flash Storage System GFSS

User Manual and Reference Guide

Version 1.0

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1 Introduction

The **GFSS** product line is a set of fast **SAN storage** solutions for performance demanding applications that need to **read/Write** data at **maximum** speed.

1.1 Main Features

GED-I's technology utilizing **standard** HW platform presents set of **Fast SAN Storage** (GFSS) products for applications which need to:

- "READ" at very fast speed,
- "WRITE" at very fast speed (or no writing at all).

GFSS supports data link at high speed on iSCSI or FC links.

1.2 Terms and Acronyms

In this document we will use the following terms and abbreviations:

"GFSS" - Ged-i's Flash Storage System

"LU" - Storage Logical Unit

"ACL" - Storage Access List

"Initiator" - Serve used to connect and transfer and receive data from the GFSS

"Portal" – Storage's port assigned to link with initiators

"GUIA" – GED-I's User Interface Application.

2 Installation

This section describes the procedure how to install and connects the GFSS storage device to your storage network, as well as how to configure it for your own use.

Installing GFSS unit into the storage network is done as follows

1. Connect the GFSS behind your storage switch
2. Configure the GFSS through DHCP or static port
3. Configure the initiator to match the storage configuration
4. Save and backup (locally and remotely) the configuration.
5. Start to use your GFSS unit.

All steps are described in more detail below

2.1 Product Layout

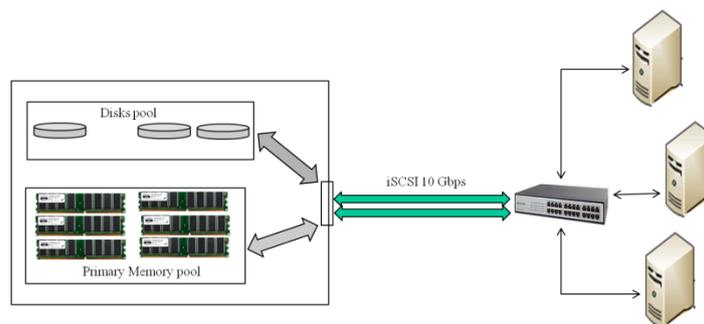


Figure 1 – GFSS

Port #1 on the backplane is set to static IP: 22.22.22.22 Net Mask: 255.255.255.0
Port #4 on the backplane is set to DHCP mode.

3 Configuration

This section describes how to configure and connect the GFSS storage device to your storage network.

3.1 First time Turn On

When the GFSS is turned on, the system runs its self test procedure and load any service needed for its ongoing operation. This may take few minutes.

From now on, you'll configure, manage and use your GFSS through GED-I's User Interface Application (GUIA).

GED-I User Interface Application (GUIA) is a Client-Server application that runs on the GFSS. To access it, all you need is to start your browser and type the predefined static address 22.22.22.22 or any DHCP address that your DHCP server assigned to the GFSS.

Port #1 on the backplane is set to static IP: 22.22.22.22 Net Mask: 255.255.255.0
Port #4 on the backplane is set to DHCP mode.

3.2 Login

To login, type into your browser's URL tab the GFSS static address (22.22.22.22) or the dynamic address assigned by your DHCP server.

If your browser succeeded to connect to the GFSS, you'll be requested to type in "Username" and "password".

If this is your first time to connect to the GFSS unit or if this is a login after system reboot or shutdown, you'll be requested to type in **system** "Username" and "password".

In this case, the login window is a system alarm type window. Please type in the "Username" and "password". These "Username" and "password" are unique to your system.

Now, GED-i's Human Interface application (GUIA) login page will be presented expecting for your **personal** user name and password.

The initial Login and Password assigned for you by GED-i are "admin" "admin".



Fast Storage Setup

Login

USER NAME :

PASSWORD :

Confirm

Please type in the “Username” and “password” and select the “Continue” button. You will be transferred to GUIA main menu.

3.3 Main Menu

GUIA “Main Menu” helps you to navigate to the configuration and operation menus. Please note that in addition to the “main Menu” navigation tabs, you can move directly from operation menu to another operation menu.

The “Main Menu” consists of 6 tabs for each specific configuration purpose. A short description of each tab is presented.



Fast Storage Setup

[Home](#)[Help](#)[Logout](#)[LU Setup](#)[Access Control](#)[Portals](#)[Global](#)[system](#)[Admin](#)

Main Menu

Please select one of the Setup options :

LU Setup - To define the required LU number, size and status

Access Control - To define the required IQN name, address and status

Portals - To define the required Portals name, IP address and status

Global - To define the storage's Backup/Restore and global parameters such as link type, name, data replication, etc

System - To set the Network parameters, view network speed, disks usage and cpu usage

Admin - To Reboot, Shutdown or to Change Password

For the first usage please select the “Global” tab.

3.4 “Global”

The “Global” page presents you GFSS general definitions. Please review the information and make sure it is suitable to your information about the system. If you find any discrepancy, please connect your reseller immediately.



Fast Storage Setup

Home Help Logout

LU Setup	Access control	Portals	Global	system	Admin
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Storage Global Setup

Storage Link :	<input type="text" value="iSCSI"/>	?
Storage IQN name :	<input type="text" value="iqn.2003-01.org.linux-iscsi.ramsan-t1.x8664:sn.fd3c26ddb4b"/>	?
Max RAM Storage size :	<input type="text" value="246"/> <input type="text" value="GB"/>	?
Max HDD Storage size :	<input type="text" value="929.5"/> <input type="text" value="GB"/>	?
Storage Type :	<input type="text" value="Hybrid"/>	?
Data Replication :	<input type="text" value="No"/>	?
RAID mode :	<input type="text" value="NA"/>	?

Create/Reload Restore Point:	<input type="text" value="No"/>	<input type="button" value="Apply"/>
Backup last Restore Point	<input type="button" value="Download"/>	
Reload Restore Point file:	<input type="button" value="Choose File"/> No file chosen	<input type="button" value="Reload"/>

“Storage Link” – Specify if your GFSS is connected through iSCSI link or FC link.

“Storage IQN name” - Set by GED-i and it is unique to your GFSS.

“Max RAM Storage Size” – The total amount of RAM assigned as RAM-SAN.

“Max HDD Storage Size” – The total amount of SSD assigned as HDD-SAN.

“Storage Type” – Presents if your GFSS is RAM based only, SSD based only, or based on combination of RAM and SSD - **Hybrid**.

“Data Replication” – Specify if your RAM-SAN is replicated to dedicated SSD.

“RAID mode” – Specify the RAID mode used for the Data Replication if applicable.

The Global page includes the option to save your current configuration. Configuration may be saved on the storage local/internal disk or it can be downloaded to your own computer.

You can restore it back at any time.

Please note that “Restore” operation may result in total loss of the data resides on your GFSS.

If the “Global” page information matches your expectations select the system tab.

3.5 System

The system page presents the existing GFSS ports and enables you to configure them according to your needs.

On the “System” page you’ll find 3 local tabs at the left column of the page. The “Network” local tab is the first and the default view of the “System” page as it is presented.

3.5.1 System - Network

In this page you’ll see a list of the existing GFSS ports with the current assigned IP address and net-mask for each one.

The screenshot shows the 'Fast Storage Setup' web interface. At the top, there is a blue header with the GED-i Ltd logo and the text 'SECURING YOUR STORAGE'. To the right of the logo, the title 'Fast Storage Setup' is displayed in large, bold, black letters. Below the header is a navigation bar with 'Home', 'Help', and 'Logout' links. A secondary navigation bar contains 'LU Setup', 'Access control', 'Portals', 'Global', 'system' (selected), and 'Admin' tabs. The main content area is titled 'System Parameters' and features a left sidebar with 'Network', 'Platform', and 'Speed' tabs. The 'Network' tab is active, displaying a table of network interfaces with columns for '#', 'I/F Name', 'IP Address', 'Net Mask', and 'Type'. Below the table are 'Apply Changes', 'Restart Port', and 'Abort' buttons.

#	I/F Name	IP Address	Net Mask	Type
1	em1	192.168.0.118	255.255.255.0	dhcp
2	em2	22.22.22.22	255.255.255.0	static
3	em3	33.33.33.33	255.255.0.0	static
4	p5p1	192.168.0.117	255.255.255.0	dhcp
5				
6				
7				
8				

If you decided to assign a new IP address or new Net Mask, please do not forget to click on the “Apply Changes” button after confirmation of any warning displayed by the system.

Please note that ports speed may be 10Gbps or 1Gbps. Your own GFSS ports configuration depends on your actual order.

It is possible to “Restart” selected port if you find any need for it.

Please select the “Platform” tab.

3.5.2 System – Platform

In this page you’ll see information describing your GFSS platform status such CPU usage, Disk usage and OS.

The screenshot shows the 'Fast Storage Setup' web interface. At the top, there is a logo for 'GED-i Ltd SECURING YOUR STORAGE' and the title 'Fast Storage Setup'. Below the title is a navigation bar with 'Home', 'Help', and 'Logout'. A secondary navigation bar contains tabs for 'LU Setup', 'Access control', 'Portals', 'Global', 'system' (which is selected), and 'Admin'. The main content area is titled 'System Parameters' and contains three sections: 'Platform Info', 'CPU Usage', and 'Disk Usage'. Each section has a table of data.

Operation System	Storage Name	Date	CPU Type	# of Processors
Linux 3.5.0-42-generic	RAMSAN-T1	11/03/13	x86 64	16 CPU

% User	% Nice	% System	% IO Wait	% Steal	% Idle
0.02	0.00	0.08	0.01	0.00	99.90

Name	Tps	kB_read/s	kB_wrtn/s	kB_read	kB_wrtn
sda	1.80	50.67	4.49	136232	12068
sdb	0.27	0.80	0.00	2152	0

Abort

You need to reload the page to refresh its’ content.

3.5.3 System – Speed

In this page you’ll see a list of the ports used as storage portals and speed of data transferred through these portals.



Fast Storage Setup

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LU Setup Access control Portals Global **system** Admin

System Parameters

Network

Platform

Speed

Please select the “Start” button to receive the speed information.
 The system presents speed of ports used in the “Portal Setup” only.
 It is highly recommended to select the “Stop” button while leaving this page.
 Please note that speed value is “0” if no data is being transferred through the specific port.



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System Parameters

Network

Platform

Speed

Name	Gbps	Download	Gbps	Upload
p3p1	0	0 2 4 6 8 10	0	0 2 4 6 8 10

3.6 LU Setup

Use this page to configure the LU you will use on your GFSS.

For each LU please assign Number, Size, Size Unit and select if this LU will be allocated on RAM disk or on SSD.

Legal LU number is in the range of 1-128. Please see the “Known Limitation” section for additional information on LU numbers and size.

The system calculates the volume of allocated RAM or HDD space and will prevent you to exceed the amount installed on your GFSS.

#	LU Number	Size	Size Unit	Type	Disk Name	Action
1	0	50	GB	RAM	RAM_0_50G	Save ▼
2	1	250	GB	HDD	sdb1	Save ▼
3	10	50	GB	RAM	RAM_10_50G	Save ▼
4	11	500	GB	HDD	sdb11	Save ▼
5	20	146	GB	RAM	RAM_20_146G	Save ▼

Please select “Add New LU” to add LU one by one. Set the required parameters and select the “Apply Changes” button.

Please repeat this procedure until you complete to define the LU needed for your operation. You always can return to this page to add more LU.

You can delete LU by selecting “Delete” option in the “Action” column of the table. Please consider this option very carefully since you’ll lose all the data resides in this LU.

3.7 ACL Setup

Use this page to configure the Access List to your GFSS.
For each ACL please assign legal IQN name.
ACL name represent the GFSS Initiator iSCSI name.

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Fast Storage Setup

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LU Setup Access control Portals Global system Admin

ACL Setup

Number of IQN : 1 Active IQN : 1

#	IQN	Status	Action
1	iqn.1991-05.com.microsoft.win-43kv7vn1ka	Active	Save

Apply Changes Add New acl Discard Changes Abort

Please select “Add New ACL” to add ACL one by one. Set the required and a **legal** IQN name and select the “Apply Changes” button.

Please repeat this procedure until you complete to define the ACL needed for your operation. You always can return to this page to add more ACL.

You can delete ACL by selecting “Delete” option in the “Action” column of the table Please consider this option very carefully since you’ll be disconnected from the initiator.

3.8 Portal Setup

Use this page to configure which GFSS ports are open to connect the initiator to your GFSS.
For each Port you’ll select, the system shows its’ IP address and default port (3260).
You may change the port number.



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Portal Setup

Number of Portals : Active Portals :

#	I/F Name	IP address	Port #	Status	Action
1	<input type="text" value="em2"/>	<input type="text" value="22.22.22.22"/>	<input type="text" value="3260"/>	Active ▾	Save ▾
2	<input type="text" value="em3"/>	<input type="text" value="33.33.33.33"/>	<input type="text" value="3260"/>	Active ▾	Save ▾

Please select “Add New Portal” to add Portal one by one. Change the port number if required and select the “Apply Changes” button.

Please repeat this procedure until you complete to define the Portals needed for your operation. You always can return to this page to add more Portals.

You can delete Portal by selecting this option in the “Action” column of the table Please consider this option very carefully since you’ll lost connection to initiator.

3.9 Backup and Restore

If you complete the configuration process, or if you decided to take a break, Please select the “Global” tab and Backup the configuration you assigned to your GFSS.



Fast Storage Setup

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Storage Global Setup

Storage Link :	<input type="text" value="iSCSI"/>	<input type="button" value="?"/>
Storage IQN name :	<input type="text" value="iqn.2003-01.org.linux-iscsi.ramsan-t1.x8664:sn.fd3c26ddb4b"/>	<input type="button" value="?"/>
Max RAM Storage size :	<input type="text" value="246"/> <input type="button" value="GB"/>	<input type="button" value="?"/>
Max HDD Storage size :	<input type="text" value="929.5"/> <input type="button" value="GB"/>	<input type="button" value="?"/>
Storage Type :	<input type="text" value="Hybrid"/>	<input type="button" value="?"/>
Data Replication :	<input type="text" value="No"/>	<input type="button" value="?"/>
RAID mode :	<input type="text" value="NA"/>	<input type="button" value="?"/>

Create/Reload Restore Point:

Backup last Restore Point

Reload Restore Point file: No file chosen

You always can restore your GFSS configuration from saved backup file.

To restore you configuration from your local computer, please select the “Reload Restore Point File”.

To restore your configuration from the copy saved on the GFSS itself, please select the “Restore” option from the drop down menu “Create/Reload Restore Point” option.

Please note that “Restore” operation may result in total loss of the data resides on your GFSS.

3.10 Password

Please change the default password set to you by GED-i to any password you choose. Please take the required measures to remember your new password.

Please select the “Admin” tab to change your password.

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Fast Storage Setup

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Administration

Reboot
 Shutdown

Change Password

User Name :

Password :

New Password :

New Password :

To change the password you are requested to type in your username, current password and the new password.
Please select the “Confirm” button to complete the password change procedure.
The initial Login and Password assigned for you by GED-i are “admin” “admin”.

4 Shutdown-Reboot

To “Shutdown” or to “Reboot” the GFSS, please select the “Admin” tab and check the option before selecting it.



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Administration

 [Reboot](#) [Shutdown](#)

Change Password

User Name :

Password :

New Password :

New Password :

Please be sure you really need to “Shutdown” or to “Reboot” the system as you’ll stop any activity immediately.

5 Known Limitations

5.1 LU number for HDD (SSD)

5.1.1 Currently LU number can't include the digit "0" for LU assigned to HDD.

6 Troubleshooting

TBD