



DETAILED USER'S MANUAL v1.0

Introduction

About this User Manual

Thank you for using the product of Sans Digital Technology Inc..

This user manual will introduce the **Sans Digital MN2LP** products. It is recommended that you read this manual carefully before using the **MN2LP** product. Although the information has been verified before published, specifications are subject to change without prior notice. Please refer to **www.sansdigital. com** or contact your sales representative for any product specification or update of related information.

If you have any questions on Sans Digital products or need the latest product information, user manual or firmware, please contact us at **tech@sansdigital.com** and we will get back to you as soon as possible.

NOTE: **Sans Digital** only provides technical support and service to Sans Digital direct customers. For end users or non-direct customers, please contact your distributor for prompt and better responses. If your product is not purchased directly from Sans Digital, please do not contact us directly since you may not get any reply.

All the product information in this manual is the property of **Sans Digital**, All rights reserved

Contents

Chapter 1	RAID Introduction	5
1.1	What is RAID?	5
1.2	RAID Functions	5
1.3	RAID 0 vs. RAID 1	5
Chapter 2	Installation	7
2.1	Accessories Check	7
2.2	Hardware Installation	10
2.3	Initial Setup	11
Chapter 3	User Interface Introduction	13
3.1	User Interface Architecture	13
3.2	Login	14
3.3	Set RAID Directly without Formatting	16
3.4	Basic	17
3.4.1	Wizard	17
3.4.2	Add User	20
3.4.3	Add Group	21
3.4.4	Add Share	22
3.5	Control Panel	23
3.5.1	Users and Groups	23
3.5.1.1	User Management	23
3.5.1.2	Group Management	
3.5.2	File	24
3.5.2.1	File Server	24
3.5.2.2	Share Management	24
3.5.3	System	26
3.5.3.1	LAN Setting	26
3.5.3.2	Time Setting	
3.5.3.3	Turn Off Server	27
3.5.3.4	Information	
3.5.3.5	Disk Usage	
3.5.3.6	Error Notification Setting	
3.5.4	Network Service	
3.5.4.1	DHCP Server	
3.5.4.2	Bonjour	
3.5.5	Maintenance	
3.5.5.1	Disk Utility	
3.5.5.2	RAID Setting	31

Firmware Upgrade	32
Save Configuration	32
Restore Configuration	33
Factory Reset	33
Log File	33
Samba Log File	33
FTP Log File	34
DHCP Server Log File	34
System Log File	34
Administrator Log File	34
Personal Information	34
Operation Methods for Change and Search of the IP Address	
of MN2LP	35
Logout	35
Use Method of IP Setup.exe	35
Complete Firmware Update Process	39
Introduction of LCD Display Items	41
	Save Configuration Restore Configuration Factory Reset Log File Samba Log File FTP Log File DHCP Server Log File System Log File Administrator Log File Personal Information Operation Methods for Change and Search of the IP Address of MN2LP

Chapter 1 RAID Introduction

1.1 What is RAID?

RAID (redundant array of independent disks or redundant array of inexpensive disks) Whenever and wherever we are, we store our data in a hard drive. Abnormally access, slower speed and unresponsiveness are all expected when an accident occurs or the hard disk reaches its service life because a hard disk is widely used. By then, all data stored within may be destroyed and become permanently irretrievable. RAID technology spares you from the threats of losing your data again!

RAID (redundant array of independent disks or redundant array of inexpensive disks) allows you to store your data into multiple drives by dividing them up into segments. It provides data redundancy and creates a fault-tolerant environment for data storage. With multiple drives used (at least 2) in a RAID, it increases storage capacity as well as enhances the speed of data transfer. Be equipped with it and you will never have to worry about the integrity of your data again because your data will be 100% protected.

1.2 RAID Functions

- · Expanding storage capacity
- Increasing data transfer speed
- · Saving cost
- Inherent Fault Tolerance
- Hot Swap Capability
- Auto-Rebuild of Data
- Hot Spare Drive
- On-line Capacity Expansion

1.3 RAID 0 vs. RAID 1

MN2LP provides RAID 0 and RAID 1 functions described as follows: Striping (fast, has no fault tolerance; requires at least two hard disks)



The RAID 0 array does not backup data, so it is not regarded as a real RAID application. If one of the hard disks is damaged, the entire array will fail, and all data in the array will be lost. Therefore, the fault tolerance of RAID 0 is lower than that of any hard disk in the array. However, RAID 0 is still the term widely used to describe these arrays. It is because that its basic idea is similar to real RAID application.

Mirroring (High security; at least 2 hard disks required)



In the RAID 1 array (commonly referred to as mirroring array), hard disks are paired up; each of the two disks contains identical data. As data is written into the mirroring array, it will be written at once and read simultaneously. Mirroring array is highly reliable. Because it will not fail until the paired hard disks fail at the same time. For instance, in a mirroring array of five-pair hard disks, even as many as five hard disks fail, the array still can maintain the data integrity --as long as each pair has one good hard disk left.

Below is the comparison between 2 RAID levels:

RAID Level	Basic Operation Method	Hard Disk Available Capacity	Data Reliability	Data Transfer Speed	Minimum Number of Hard Disks
0	Striping data across each drive	Total capacity of all the hard disks	Low	Highest	2
1	Mirroring	Half of total capacity of all the hard disks	High	Lower	2

For more information of RAID, refer to our website at www.sansdigital.com.

Chapter 2 Installation

2.1 Accessories Check

After you open the outer package, make sure that the following items are contained in the package:

- MN2LP unit
- AC Power Cord
- CD (including information such as setup software and user manual)
- User Manual
- Accessory Kit

Make sure the related accessories and the product body are not damaged or missing. If you have any questions, contact the Sans Digital.



MN2LP



MN2L

- Notice : 1. If the hard disks are inserted and the formatting or disk array setting is completed, do not change the position of the disks arbitrarily.
 - To replace or remove the hard disks, please shut down the machine and turn off the power first. Removing the hard disks while the power is on will result in system malfunction and may damage the data.

Description of LED Indicators

MN2LP

	Alarm LED	Access LED
Power On	Lights on blue permanently	Blinks blue
System Ready	Lights on blue permanently	N/A
RAID Fail	Lights on purple permanently	Blinks red
Rebuilding	Blinks blue	Blinks between blue and purple
Fan Fail	Blinks purple	N/A
Over High Temperature	Lights on purple permanently	N/A
Access	Lights on blue permanently	Blinks blue

MN2L

	Status LED	Access LED
Power On	Blinks blue	Blinks blue
System Ready	Lights on blue permanently	N/A
RAID Fail	Lights on blue permanently	Blinks red
Rebuilding	Blinks between blue and purple	Blinks between blue and purple
Fan Fail	Blinks between blue and purple	N/A
Over High Temperature	Lights on purple permanently	N/A
Access	Lights on blue permanently	Blinks blue



MN2LP



- 1. The indicator on the left will light on green when Gigabit LAN Port is connected to Gigabit LAN and the indicator on the right will light on orange when Host Access is enabled.
- 2. With startup completed, press and hold the "Reset" key for 5 seconds and the system will be reset to default settings.

2.2. Hardware Installation

Please follow the procedure below to complete the hardware installation of MN2LP:

1. Open the outer package and take out the product body. (Make sure the related accessories and the product body are not damaged or missing. If you have any questions, contact the distributor or sales)



2. Mount the product to a stable surface. Make sure that the fan is not blocked and there is appropriate space around for heat dissipation. (Do not place the product nearby water area or any environment that may cause damage to the product)



Take out the tray and install your hard disk in it. Make sure to fasten the hard disk securing screws to prevent damages caused by unnecessary movement.



4. Once the installation is completed, insert the tray back and fix it firmly in the proper place.



- 5. Connect the LAN port and the power cord.
- 6. Hardware installation is completed. You can power on the system to start the setup via Web Brower.

2.3. Initial Setup

MN2LP supports the use of the graphic user interface (GUI) for system management. You can manage settings via the GUI. It takes about 2 minutes to boot up MN2LP. The unit will be be accessible before the boot up is complete.

 Open the Web browser and enter the IP address, e.g. http://10.1.2.200 (your own host IP address). Change the IP address of MN2LP first (the factory default IP address is 192.168.1.1) to 10.1.2.XXX. Refer to Chapter 3 for more detail on changing the IP address.



The default account and password are as follows: Login Username: admin Default Password: admin

- 2. If you use formatted hard disks, the system will display current system information and setting will be available. If you use two new hard disks, you need to format the hard disks or create a disk array first. Enter "Maintenance" and click "Disk Utility" if you want to format the hard disks separately or "Disk Array" if you want to set the disk array directly. Once formatting or disk array setting is completed, the system will restart. After re-logon, the system will display the system information and setting is available. For detailed descriptions of system setting and hard disk formatting, refer to Chapter 3.
- % If you use formatted hard disks, the system will display the present system information and be ready for setting.

	BACKUP PROTECT RESTORE	
Basic Control Panel Personal Info	Logout	
System Information		
Product Name Firmara Version Product Vendor P Address	NYSIIP 242C 58m Dighal 192168.100.153	

% When a new hard disk is detected, the system will require formatting first.



3. Once the hard drive is available, enter "Basic Setting" and click "Wizard" to change the system related information, including host name, IP address and password, etc. For detailed descriptions, refer to Chapter 3.

			BACKUP PROTECT RESIGNE
	el Personal In	fo	Logout
Quick Setup	Step 4/6		
	Internet Protoc	ol Se	atting
🔺 Add Group	IP Address	•	Obtain IP Address automatically Use following IP Address IP Address Soften Maak 205 Defade Greenergy 100 100
	DNS Server	•	Otain DNS Server Address automatically Use following DNS Server Address Pianary 100 Secondary 100 Otters 1
			(Back, Next) Cancel

Change IP setting

- Notice : 1. Hard drive formating will erase system information. Please make sure system information is set after the hard drive being format.
 - 2. If you need to install additional MN2LP, please make sure to change the host name and IP address to the deployed unit to prevent conflict.
- 4. Once the system information is changed, the system will restart automatically. After login, you can use the system normally and installation is complete. You can start to setup the network share and user settings.

Notice : 1. If you change the IP address, the system may display "unable to open the web" after restart. Enter the new IP address in the browser and you will see the login page.

Chapter 3 User Interface Introduction

3.1 User Interface Architecture

The following is the Web Interface architecture:

	1	
Basic		
Quick Setur		Wizard
		Add User
		Add Group
		Add Share
Control panel		
Users and Group		User Management
		Group Management
File	: →	File Server
		Share Management
System	\rightarrow	LAN Settings
		Time Settings
		Turn Off Server
		Information
		Disk Usage
		Error Notification
Network Service	\rightarrow	DHCP Server
		Bonjour
		BTorrent
Maintenance	: →	Disk Utility
		RAID Settings
		Firmware Upgrade
		Save Configuration
		Restore Configuration
		Factory Reset
Log File	\rightarrow	Samba Log
		FTP Log
		DHCP Server Log
		System Log
		Administration Log
Personal Info		
Personal Information	\rightarrow	Account
	_	

3.2 Login

MN2LP supports graphic user interface (GUI) in Web Browser to manage the system. Make sure that the network cable is connected and the setting program is installed first. For the example below, IP address is: 10.1.2.200 (your own host IP address) Open the browser and input: http://10.1.2.XXX

	BACKUP PROTECT RESTORE	
Username		
Usename Password		

The default account and password are as follows: Login account: admin Default Password: admin

After login, you can choose the following screen is display for more functions.



A Notice : You can choose to format the hard disk separately or create the disk array system directly.

1. To format the hard disk separately, refer to the following procedures: Enter "Maintenance" and click "Disk Utility".

					BACKUP PROTECT	RESTORE		
Control Panel		L.	ogout				-	
🔤 System	Disk Utility							
Network Service								
Maintenance Disk Utility	Device Name	Туре	Mount Point	Status	Encrypt:Password/Format Type/Format	Scandisk	Umount	Health
RAID Setting Firmware Upgrade	/dev/hdb	none		unmount	encrypt ext2 w Format	Scan	Umount	PASSED Detail
Save Configuration Restore Configuration Factory Reset	/dev/hda	none		unmount	encrypt ext2 v Format	Scan	Umount	PASSED Detail
🖾 Log File					Refresh			
	Found New D) isk, P	lease Forma	t.				

 Choose the hard disk to be formatted and choose file format. MN2LP provides 3 formats: Fat32, Ext2 and Ext3 After choosing, click "Format". The system will start to format automatically and display the progress.

				8.	ACKUP PROTECT RESIDE	E			
Control Panel	Disk Utility		ogout						^
Maintenance	Device Name	Туре	Mount Point	Status	Encrypt:Password/Format Type/Format	Scandisk	Umount	Health	
RAID Setting Firmware Upgrade	/dev/hdb	none		unmount	ext2 w Format	Scan	Umount	PASSED Detail	
Save Configuration Restore Configuration Factory Reset	/dev/hda			formatting:70%	encrypt ext2 w Format	Scan	Umount	PASSED Detail	
🖾 Log File					Refresh				
	Found New D		lease Forma	t.					
	Please wait an		not do anyth	ing					~

Notice : 1. If you choose to format the hard disks separately, the system information will be recorded on the first hard disk that is formatted, which, once damaged, may result in system malfunction.

2. MN2LP can perform 128bits loop-AES encryption for Ext2 file format only.

3. If you choose the Fat32 file format, you will be unable to set the disk array subsequently.

3. Once formatting is completed, the system will restart automatically. After login, enter "Disk Utility" and you can see related information that formatting is complete. You can repeat the above procedures to finish formatting the other hard disk.

					BACKUP PROTECT	RESIGRE		
	el Personal	Info				Logout		
Users and Groups File and Print	Disk Utility							
System	Device Name	Туре	Mount Point	Status	Encrypt:Password/Forma Type/Format	Scandisk	Umount	Health
Network Service Maintenance Disk Utility	/dev/hdb	ext2	/mnt/ide2	mounted	encrypt	Scan	Umount	PASSED Detail
RAID Setting Firmware Upgrade Save Configuration	/dev/hda	none		unmount	ext2 m Format	Scan	Umount	PASSED Detail
Restore Configuration					Refresh			
Factory Reset								

- Notice : 1. If you choose to format the hard disks separately, the system information will be stored in the first formatted hard disk.
 - 2. The space of the second formatted hard disk will be set to fully open and all users will have the access permission.

3.3 Set RAID Directly without Formatting

1. Enter "Maintenance" and click "Disk Array".



2. Select "Disk Array Mode" and "Format File System". After choosing, click "Create Disk" and the system will start to perform hard disk formatting and RAID system setting automatically.

Control Pariel	_	Logout	
System	RAID Set	ting	
Maintenance Disk Utility RAID Setting		level: RAID 0 ystem: EXT3	
Firmware Upgrade Save Configuration Restore Configuration	Disk S	itatus	_
Restore Computation Factory Reset Log File	(Creating Raid system 50%	Z
		/dev/hda	/devibab
		WDC WD1600JS-60MHB5 160 GBytes	WDC WD1600JS-60MHB5 160 GBytes

3. Once formatting is complete, the system will restart automatically. Control Panel will be display and provide more setting for the unit.

	BACKUP PROTECT RESTORE
Basic Control Panel Personal Info	Logout
System Information	1
Product Name	e MN2LP
Firmware Versio	n 2.42C
Product Vendo	or Sans Digital
IP Addres	s 192.168.100.153

- Notice : 1. Since MN2LP will store the system settings in the hard disk, you must format the hard disks prior to setup so that the new settings can be stored.
 - 2. Once the setting is complete, if you change format the hard disk, the system will be reset to the default values and you will be reset the system setting.

3.4 Basic

Enter Basic function group contain "Quick Setting", which includes 4 functions: "Wizard", "Add User", "Add Group" and "Add Share".

3.4.1 Wizard

The installation wizard may guide you to complete the basic function setting of the system within 6 steps described as follows:

1. Select Language

MN2LP can display a language in accordance with the language used by the browser or you can select any of the 3 default languages: "English", "Simplified Chinese" and "Traditional Chinese".



2. New Password Setting (for admin)

A new password can be set for the "admin" account If you do not want to change the password, click "Next" directly.



- Notice : 1. The password limited to 16 characters and must be English character in lower case and numeric numbers.
 - 2. It is recommended that you change the default password to prevent users from changing your system information via the default password.

3. Host Name Setting

Please set the host name of MN2LP over the network in this step. It is the network name of the unit.

	NACKUP PROTECT RESTORE
Basic Control Panel Personal Info	Logout
Quick Setup Step 3/6	
Hostname Setting	l de la construcción de la constru
Hostname	MN2LP
NOTE: The Hostna	me is the name given to the server by which Window based machine may access.

- Notice : 1. The number of characters is limited to 15 characters, which must consist only English characters, numeric numbers or "-".
 - 2. Since each MN2LP has an identical default host name, if you want to install more than two MN2LPs, changing the host name of each of them to avoid errors.

4. Network Communication Protocol Setting Network IP seeting, including DNS information can be setup via this screen..

Basic Control Panel	Personal In	ifo		Logout
Quick Setup	tep 4/6	_		
 Wizard 				
	ternet Protoc	ol Se	etting	
	IP Address	۲	Obtain IP Address	automatically
 Add Share 		0	Use following IP Ad	idress
			IP Address	192 168 100 153
			Subnet Mask	255 255 255 0
			Default Gateway	192 168 100 254
	DNS Server	۲	Obtain DNS Serve	r Address automatically
		0	Use following DNS	Server Address
			Primary	192 168 0 71
			Secondary	192 168 0 101
			Others	

5. Time Setting

System date, time and time zone and designate the NTP server.

Basic Control Panel Personal Info
Basic Condervater Personal Into
Step 5/6
Wizard
Add User Time Settings
Add Group Date Month 1 V Day 1 V Year 2007 V
Add Share Time Hour 12 ♥ Minute 7 ♥ PM ♥
Time Zone (GMT-08:00) Pacific Time (US & Canada). Tijuana 💌
NTP Server Default None
User Define

The NTP (network time protocol) server provides data and time information over the network automatically. The system is to provide two NTP server addresses: time.windows.com and time.nist.gov for users to choose from.

6. Verifying the related equipments

All setting information will be displayed together. If everything is OK, click "Finish" to finish the setting; if the setting is incorrect, click "Previous Page" to return to the pervious screen to change.

		BACKUP	PROTECT RESTORE
	Panel Personal Info		Logout
Quick Setup	Step 6/6		
▲ Add User	Wizard Setting Confi	irmation	
 Add Group 		Current Settings	New Settings
 Add Share 	UI Language	set From Browser Options	English
	Hostname	MN2LP	MN2LP
		Automatic Obtain	Automatic Obtain
	IP Address	IP Address	IP Address
	11 2001000	Subnet Mask	Subnet Mask
		Default Gateway	Default Gateway
		Automatic Obtain	Automatic Obtain
	DNS Server	Primary	Primary
	DIA9 GEIAEI	Secondary	Secondary
		Others	Others

3.4.2 Add User

With this function, we can add a user within 3 steps. Please refer to the following instructions:

1. User ID and Password Setting

Click "Add User" and fill in the name and password of the new user. A private folder with limited size can be created for "Home" folder purposes. The private folder will only be access by that user only.

			BACKUP PROTECT RESTORE	
E Owick Setup	I Personal Info Step 1/3		Logout	
> Add User A	dd User			
🔺 Add Group	User Name	SansDigital]	
 Add Share 	Password	•••••]	
		•••••	Please type your password again	
	Description (optional)			
		Create Shared priva	te Folder	
		Shared Private Fold	er Location /mnt/md1	
		Enable Quota of	MB	

Notice : 1. User ID is limited 20 characters in length. Only English characters in lower case and numeric numbers, "-", "_" or "." is allowed. The first character must be an English character.

2. The password is limited to 16 characters in length which must be English characters in lower case.

2. User Management

Â

After setting the Username and password, you can add newly created user into user group. (If you are setting for the first time, only the "guest-share" group is available).

		BACKUP PROTECT RESTORE
Basic Control Pa	inel Personal Info	Logout
Quick Setup	Step 2/3	
> Add User	User Management - sansdigital	
 Add Group Add Share 	Member	Non-member
And Share	END LIST	<< Add guest-share END LIST
		Remove >>

3. Share Permission Setting

To setup user premission, selecct the from the folder list to allow access (Read Only or Writable) or deny the access. Writable will allow both read and write premission.

	nel Personal Info	BACKUP PROTECT RESTORE
2 Quick Setup Mizard	Step 3/3 Share Permission - sansdigital	Logout
Add User Add Group Add Share	Access Granted	Access Denied
	END LIST	<c only="" public<="" read="" th=""></c>
		Remove >>

Once the setting is complete, you can find the share folder in the Network Neighbors.

3.4.3 Add Group

"Group" contains different users for centralize access managements. Add Group Wazard will create the user group and add members.

1. Group Name Setting

Input the group name.

		BACKUP PROTECT RESTORE
Basic Control P	anel Personal Info	Logout
Quick Setup	Step 1/3	
 Wizard 		
🔺 Add User	Add Group	
> Add Group	Group Name	
 Add Share 		

2. Group Members Selection

Select the user on the left and click "Add" to add to the group.

5	AL		BACKUP PROTECT RESIGRE
Basic	Control Pa	nel Personal Info	Logout
Quick Setup		Step 2/3	
Add User		Group Member - admin	
Add Group Add Share		Member	Non-member
Aug Share		END LIST	<< Add admin guest-share sansdigtal END LIST

3. Share Permission Setting

Folder permission can be set as Read Only, Writeable and Deny.

3.4.4 Add Share

Share is the Network Folder that allow sharing the date. Add Share will setup the folder in the follow step.

1. Setting of the Share Folder's Name

Type the folder name, and move to a blank area on the screen. Click anywhere to setup the path.

	rol Panel Personal Info	BACKUP PROTECT RESTORE
Quick Setup	Step 1/3	
🔺 Add User	Add Share	
 Add Group 	Share Name	
> Add Share	Path	
	Optional)	

Notice : The share name is limited 20 characters. Only English characters in lower case, numeric numbers, "-,", "_" or "." is allowed. The first character must be an English character.

2. Setting of Windows and FTP Access Premission

To set the premission to access the folder, check the "allow access by all" to allow all users or select via the user and group list on the left.



3. Setting of NFS Access Premission

To set the access premission of NFS, check "allow access by all users" to allow all access or fill in the IP address of the NFS client.

		BACK	SUP PROTECT RESTORE
Basic Co	ntrol Panel Personal Info		Logout
Quick Setup	Step 3/3		
🔺 Add User	NFS Access - guest	share	
 Add Group 	Grant access to all		
> Add Share	Allowable IP/Subnet		
	END LIST	Add	
		Remove O Subnet	

3.5 Control Panel

3.5.1 Users and Groups

In Users and Groups, you can set and manage two items: users and groups.

3.5.1.1 User Management

The user management menu will display all users in the present system. You can add or delete a user via the "Save" or "Delete User" button. Click "Add to Group" to add it to a group.

Add User

* Fill out the table with related contents and then click "Save".

Notice : 1. User ID shall be 20 characters in length at maximum which must be English characters in lower case and numeric numbers, "-", "_" or "." and the character must be an English character.

2. The password limit to 16 characters which must be English characters in lower case.

To add a user to a group, click the name of the user and click "Add to Group" to enter group setting .

			BACKUP PROTECT RESTO	RE
Basic Control P	anel Personal Info		Logo	ut
Users and Groups	User Manager	ment		
> User Management		edmin	_	
 Group Management 		guest-share		
File and Print	Existing Users	sansdigital END LIST		
🔤 System				
Network Service				
Maintenance	User Name			
🖾 Log File				
	Password			
			Please type your password again	
	Description (optional)			
		ed private Folder		
	Shared Priva	te Folder Location /m	nt/md1	
	Enable Quota	of MB		
		Save Clear Form	n Groups Delete User	

3.5.1.2 Group Management

The group management menu will display all groups in the system. You can add or delete groups via the "Save" or "Delete User" button. To add or remove a user in an existing group, click the group first and then add or remove users.

			BACKUP PROTECT	RESTORE
	nel Personal Info			Logout
Users and Groups	Group Managemei	nt		
User Management Group Management		guest-share END LIST		
File and Print	Existing Groups			
🖾 System				
Network Service			1	
Maintenance	Group Name			
🖾 Log File	Save	Clear Form Membe	rs Delete Group	
				_

3.5.2 File

This menu includes "file server" and "share management".

3.5.2.1 File Server

- Windows Setting
- Check "Enable" to permit the Microsoft Windows connection.
- Set group name and description
- · Set the IP address of the WINS server (not mandatory)
- FTP Server Setting

%Check "Enable" to initiate the FTP function. The port is 21 by default.

- Notice : You can change the port of the FTP port, which, however, make sure there is no conflict with the port used by other related applications. For instance, do not use port 80 as the position is used by the Web Browser.
 - NFS Server Setting

% Check "Enable" to initiate the NFS server function.

Guest Access Setting

☆Click "Enable" to permit guest access.

% Check "Enable Disk Quota" to set the upper limit of data (Mega Bytes) uploaded by the guest.



3.5.2.2 Share Management

The share management screen will display all existing share names. "public" is the factory default.

Add Share

% Fill in the "Share Name" with the new share folder's name, move the mouse to a blank area, click the left mouse key and the system will fill in the "Path" automatically and then click "Save" to add a new share name.

Notice : The share name is 20 characters in length at maximum which must be English characters in lower case, numeric numbers, "-", "_" or "." and its first character must be an English character.

Update Share

%Click a share name in the "Existing Shares" and click the "windows, FTP access" or "NFS access" button to change the property of the share folder.

			BACKUP PRC	DTECT RESTORE	
Basic Control Pa	nel Personal Info			Logout	
Users and Groups File and Print	Share Manageme	ent			
File Server Share Management Printer Server	Existing Shares	guestshare public END LIST			
System Network Service Maintenance		/mnt/md1 /			
🖬 Log File	Description (Optional)	lows,FTP Access	NFS Access S	Save Clear Form	Delete Share

Windows and FTP Access

%Check "Allow access by all users" to permit all users to access the share space in the server or select a user or group name from the list and set the "Read Only" or "Write-in" permission.

			BACKUP PROTEC	CT RESTORE
Il Users and Groups File and Print > File Server > Share Management > Printe Server System Network Service Maintenance	The prefix "@" denotes Gr	<< Read Drity gui << Writable Remove >>	are Access Denied min exchare exchare exchare exchare excent sectors excent ex	Logout

NFS access

%Check "Allow access by all users" to permit all users to access. Or add the IP of the access computer or subnet mask in the list to permit access.

	RACKUP PROTECT RESTORE
Basic Control Pa Users and Groups File and Print > File Server > Share Managament > Printer Server System System Network Service	Add IP Add Add Remore Subart
🖾 Maintenance 🖾 Log File	Save Cancel

· Delete Share

%After selecting a folder name, click "Delete Share" to delete the designated share name.

Notice : To delete the data in the folder, please backup the data prior to deletion. Once a folder is deleted, the data originally stored in the folder will also be deleted.

3.5.3 System

System setting includes 6 functions: "Network Setting", "Time Setting", "Server Startup", "Information", "Disk Capacity" and "Error Notice Setting".

3.5.3.1 LAN Setting

Hostname

%You must set an independent name for MN2LP over the LAN.

Notice : 1. The number of characters is limited to 15 characters, which must consist only English characters, numeric

- numbers or "-".
- Since the default host names of MN2LP are identical, if you want to install more than 2 MN2LP, be sure to change the host name of each MN2LP to avoid recognition error on the IP setting software.

IP Address Setting

*Obtain IP address automatically

If you have installed the DHCP server, the system will obtain the IP address from the DHCP server automatically. If the IP address cannot be obtained from DHCP, the default IP address is 192.168.1.1.

℁Use static IP address

You can consult related MIS personnel to obtain the IP address, subnet mask and default gate and fill them in related fields.

*Obtain DNS server address automatically

The system obtains the IP address of the DNS server from the DHCP server automatically. %Use static DNS server address

You can consult related MIS personnel to obtain the DNS address and fill it in the related field.

Notice : When MN2LP is connected to the network, the system will obtain the IP address automatically through the DHCP server. In case that the IP address cannot be obtained through the DHCP server, MN2LP will initiate its own DHCP function to become the DHCP server. Confirm the IP address of MN2LP (by default, 192.168.1.1) first and then set the PC to the same LAN to enter the system login screen.

Physical Address

Δ

%The physical address is displayed as MN2LP.

Ubers and Groops LAN Settings File and Print Hostname [M/2LP] System IP Address Setting Obtain IP Address automatically Lan Settings IP Address Setting Obtain IP Address Tame Settings IP Address Setting Obtain IP Address Turn Off Server IP Address Indemation Default devery Oirk Usage 0 Obtain IDNS Server Address Errer ModRisation Use following DNS Server Address	Obtain IP Address automatically Use following IP Address	
System Hostname MP2LP LAN Settings IP Address Setting © Obtain IP Address automatically Tame Settings Use following IP Address Tame Settings IP Address Tame Settings IP Address Default General Subnet Mask Default General Obtain IP Address Default General IP Address Default General Subnet Mask Error Indification Obtain DNS Server Address automatical	Obtain IP Address automatically Use following IP Address	
Trans Other P Address Autoress LAN Settings © Use tollowing IP Address IP Address IP Address Trans Settings IP Address IP Address IP Address Tom Off Server IP Address IP Address IP Address Subort Mask 255 255 255 Default Outers IP Outer Instruction IP Outer Instruction Oilek Urage © Obtain DNS Server Address automatical © Use tollowing DNS Server Address IP Address IP Address	Obtain IP Address automatically Use following IP Address	
Christwings Constantings Constantings Constantings Constantings Constanting Const	Use following IP Address	
Time Suttings IP Address 192 168 100 Turn Off Server Subnet Mask 255 255 255 105 Information Default Gateway 192 168 100 1014 Usage 0 total IDNS Server Address automatical Error Itodification 0 Use following DNS Server Address		
	IP Address 192 168 100	153
Disk Usage © Obtain DNS Server Address automatical Error McCharlion © Use following DNS Server Address	Subnet Mask 255 255 255	0
Error McCation	Default Gateway 192 168 100	254
	Obtain DNS Server Address automatical	y .
Primary 192 168 0	Primary 192 168 0	71
Secondary 192 168 0	Secondary 192 168 0	101
Maintenance Others .	Others .	
Log File MAC Address 00:50:C2:2B:E7:BC		

3.5.3.2 Time Setting

The date, time and time zone can be set. Or you can designate an NTP server to synchronize the time and date.

		BACKUP PROTECT RESTORE
Ellerer and Course	Time H Time Zone (NTP Server (

The NTP (network time protocol) server is one that is provided over the network primarily for network time checking of the user's host. By default, the system now provides two NTP server addresses, time. windows.com and time.nist.gov, for users to choose.

3.5.3.3 Turn Off Server

Click the "Restart" key to restart the server.Click the "Shutdown" key to shut down the server.

	BACKUP PROTECT RESTORE
Basic Control Par Sources and Groups File and Print System A LAN Settings Time Settings Sources Information Information Information Record Service Maintenance Iog File	Resental Info Legout Turn Off Server To restart the server, click the Restart button. To turn off the server, click the Turn off button. Restart Turn off

3.5.3.4 Information

Display system related information: %Product Name %Firmware Version %Product Vendor %IP Address



3.5.3.5 Disk Usage

Display information about the use status of the present hard disk and restriction on user capacity. %Overview of present hard disk status

				BACKUP PROT		
Basic Control Pa Users and Groups File and Print	nel Personal Inf Disk Usage	0			Logout	
System		Last Ch	recked: 1/2/2	007 05:40:25		
LAN Settings	Please select statistics information: Summary					
 Time Settings 	Disk Name	Capacity	Used	Free	Disk Usage (%)	
 Turn Off Server 	/dev/md	299456MB	128MB	299328MB	0%	
 Information 			Refrest			
> Disk Usage						
 Error Notification 						
Network Service						
Maintenance						
Log File						

*Use status and capacity restriction for each user.

			Б	ACKUP	PROTECT RESIGNE	
Basic Control Panel Pe	rsonal Info				Logout	
	Usage					
EFile and Print	-	Last Observe		00 40.00	00	
System		Last Checke				
▲ LAN Settings	Please select statistics information: User					
 Time Settings 	ser Name	Quota	Used	Free	Disk Usage (%)	
 Turn Off Server 	admin	unlimited	OMB	-		
 Information 	uest-share	unlimited	OMB	-		
> Disk Usage S	ansdigital	unlimited	OMB	-	-	
 Error Notification 			Refresh			
Network Service						
Maintenanco						
ELog File						

Basic Contro	I Panel Personal Info Logout
Users and Groups	Error Notification Setting
🔤 System	Monitoring Services Setting
 LAN Settings 	Disk Usage 🔲
 Time Settings 	Windows File Sharing Server
 Turn Off Server 	FTP Server
 Information 	DHCP Server
🔺 Disk Usage	Check Interval
> Error Notification	Interval Hourty
Network Service	Email Notification Setting
Maintenance	
🔤 Log File	Enable Send Test Pop-Up
	Error Handling Pop-Up Machine Name

- 3.5.3.6 Error Notification Setting
 - Monitoring Services Setting

 - If checked, the system will notify the administrator in case of 90% of hard disk capacity.
 - % Windows File Sharing Server
 - Once checked, if Samba operates abnormally, the system will notify the administrator.
 - ℁FTP Server
 - Once checked, if FTP server operates abnormally, the system will notify the administrator. $\ensuremath{\circledast} \mathsf{DHCP}$ Server
 - Once checked, if DHCP server operates abnormally, the system will notify the administrator.
 - Check Interval
 - System can be set to be detected on an hourly or daily basis.
 - Email Notification Setting
 - Check "Enable" to set whether to notify the administrator by Email.
 - ℁Error Handling Mail Server

Please fill in your mail host address (should be in the same LAN without passing through the Router).

℁Error Handing Mail Addresses

Please fill in the administrator's mailbox.

- Pop-Up Notification Setting
- %Check "Enable" to choose whether to display related information by means of popping up a window.
- %Error Handling Pop-Up Machines

The host name of the administrator computer that displays the error window can be designated.

3.5.4 Network Service

3.5.4.1 DHCP Server

Check "Server Enable" to start the DHCP server. If the DHCP function is selected, fill in a related IP address.

- Notice : 1. If MN2LP cannot obtain the IP address from DHCP, the system will initiate its own DHCP function.
 - If MN2LP has obtained the IP address from DHCP, you should set "use the static IP mode" and designate a static IP for MN2LP before initiating the DHCP server function.



3.5.4.2 Bonjour

MN2LP supports Apple's Bonjour protocol and iTunes server %Check "Enable" to initiate the Bonjour protocol.

		BACKUP PROTECT RESIGRE
Basic Control Pa Il Users and Groups Il File and Print System Network Service DHCP Server Bonjour Maintenance Il Log File	nel Personal Info	Legout

3.5.5 Maintenance

System maintenance includes: There are six options: disk utility, disk area, firmware update, storage configuration, restore configuration and factory reset.

3.5.5.1 Disk Utility

Disk information will display hard disk name, file system type, total capacity, used capacity, cluster configuration and all configured hard disks.

Encrypt Box

MN2LP can perform 128bits loop-AES encryption for Ext2 file format only. To perform this function, you need to input the 20-character password and format the hard disks again.

Format

You can format the hard disks via this key. MN2LP supports 3 file formats: Fat32, Ext2 and Ext3.

- Scan
- You can check whether the hard disks are normal via this key.
- Detail

If your hard disks support the S.M.A.R.T function, click this key to display related status information of the hard disks.

To avoid wrong commands, before formatting and scanning of the hard disks, the system will bring up a window requesting you to confirm. Moreover, MN2LP supports USB disks and you can share the data by inserting the USB disk into the USB port at the rear of the unit. When you insert a USB hard disk, the system will display /mut/usb1 in "Disk Utility" and name the share folder as "usb 1" automatically in Network Neighborhood.





- Notice : 1. Once the USB disk is detected by the system, you need to set the read permission before reading the "usb1" folder.
 - 2. To remove the USB disk, click "Uninstall" before removal.

3.5.5.2 RAID Setting

MN2LP supports two disk array level applications: RAID 0 and RAID 1. If only one hard disk is inserted, the "disk array" window will display "unable to set the disk array"; if two hard disks are inserted, the "disk array" window will display two options: "RAID0 and RAID1". After selecting the RIAD mode and file format, click "Create Disk" to set the disk array.

3.5.5.3 Firmware Upgrade

Click firmware upgrade to display the present firmware version. You can download the latest firmware version onto your PC and designate the correct file path in "Updated File" to upgrade the firmware. Network service will stop when you upgrade the firmware.

		BACKUP PROTECT RESIDE
Basic Co	ntrol Panel Personal Info	Logout
Users and Groups	Firmware Upgrade	
EFile and Print		
System	Current Firmware Version	2.42C
Network Service	Upgrade File	Browse
Maintenance		Upgrade
 Disk Utility 		
 RAID Setting 	and the second se	
> Firmware Upgrade	• · · · · · · · · · · · · · · · · · · ·	
	n	
 Restore Configurat 	tion	
 Factory Reset 		
Log File		

Once the firmware is upgraded, the system will restart automatically.

Notice : Random firmware upgrade may cause your system unable to operate normally. If your system operates normally, it is recommended that you not upgrade the firmware. If you have any question about firmware upgrade, contact the technical support or write to tech@sansdigital.com.

3.5.5.4 Save Configuration

The system configuration file can be saved in the hard disk for backup. The file name is "config.tar" by default.



3.5.5.5 Restore Configuration

When the system's configuration file is destroyed, lost or changed incorrectly, you can use restore configuration to restore the configuration file you saved previously. Browse the System configuration file, and click Restore.

	BACKUP PROTECT RE	ESTORE
Basic Control Pa	nel Personal Info	ogout
Users and Groups	Restore Configuration	
File and Print	*	
🖾 System	You can Restore (Upload) a previously saved configuration file from you restore the server configuration, select the file you wish to restore and cli	
Network Service	"Restore" button.	ICK INE
Maintenance	Restore File Browse	
🔺 Disk Utility	Restore	
 RAID Setting 		
 Firmware Upgrade 		
 Save Configuration 		
> Restore Configuration		
 Factory Reset 		
🖾 Log File		

3.5.5.6 Factory Reset

By clicking Factory Reset, you can reset the system configuration file to the factory default. All system information will be lost upon the Factory Reset.

	RACKUP PROTECT RESIDRE
Basic Control Pa	nel Personal Info Logout
Users and Groups	Factory Reset
File and Print	To restore the factory default settings, click the Factory Reset button.
🔤 System	Caution!! You will lose all user data.
Network Service	Factory Reset
Maintenance	Pactory reset
🔺 Disk Utility	
 RAID Setting 	
A Firmware Upgrade	
 Save Configuration 	
A Restore Configuration	
> Factory Reset	
🔤 Log File	

3.5.6 Log File

Login records include: Five items: "Samba Log File", "FTP Log File", "DHCP Server Log File", "System Log File" and "Administrator Log File".

3.5.6.1 Samba Log File

Display all Microsoft Network Sharing information and its related records.

		el Personal Info		BACKUP	PROTECT RESTORE		
Users and Grou File and Print		Samba Log	-				
System		User	From	Time	Informat	ion	
Network Servic		Clean					
Maintenance							
🖾 Log File							
> Samba Log							
▲ FTP Log							
 DHCP Server I 	Log						
 System Log 							
- Administration	n Log						

3.5.6.2 FTP Log File

All related log files connected through FTP. If you do not initiated the FTP function, no information will be displayed.

3.5.6.3 DHCP Server Log File

Display all DHCP related log files. If you do not initiated the DHCP function, no information will be displayed.

3.5.6.4 System Log File

Display all system related records, including failure log.



3.5.6.5 Administrator Log File

Display all records relating to the "Administrator".

3.6 Personal Information

"User Account" is the only option in this item. In the user account page, you can change the password of "admin" and displayed language. In addition, "Share List", "System Disk Quota" and "Percentage of Used Disk Capacity" will also be displayed.

		8.4	CKUP PROTECT RESTOR
Basic Control Par	nel Personal Info		Logou
Personal Information Account	Account Information -	admin	
		•••••	
		•••••	(Please type your password
		again)	
	Language Preference	English	~
	Description (Optional)		
		Quota.	unlimited
	Disk Usage	Used	0.00MB
	Lisk osage	Percentage	-
	Share List	public (Writable) ===== END LIST == Save Re	===
	L. L.	oure No	100H

Account: mysgl or admin

LCD for more detail. 3. IP address can also setup via IP Setup.exe software from Windows in Appendix A.

"Down" arrow key and press enter button at "System Setup"

3.7 Change and View the IP Address using MN2LP LCD Display

Enter the password (Default: 0000000) by using the arrows and ENT key.

1. To change the IP address of MN2LP, press the "ENT" key on the panel. Press the

3.8 Logout

Click "Logout" to log out the system directly.

Restart the unit to finish the setting.

Appendix A Using IP Setup.exe

1. Change System Information via Software (For Windows)

In addition to changing system information through Web GUI, (e.g. IP address and time, etc.), you can change these system information by running "SetupUtil.exe", which is described as follows:

To Setup DHCP network, Select Yes, For Static IP, select NO and follow the screen for IP address,

2. The IP address of MN2LP, will display on the LCD. You can also select "Network Info" function in the

1.1 Click to run "IP Setup.exe" and click "Setup".



- 1.2 The IP Setup software will detect MN2LP unit automatically and present the result to
 - screen. In case multiple MN2L/MN2LP are installed over the network, multiple unit will display on the left.

Step 1. Netwo	ork Storage Link(s	s) Have Been Found
If you have one Netw	ork Storage Link, you ca	n make changes to the
	have more than one Ne Itility again to configure (twork Storage Link, you will
itorage Link.	unity again to configure (cach separate Network
Selection		
MN2LP	Server Name	MN2LP
	P Address	192.168.100.153
	Subnet Mask	255.255.255.0
	Default Gateway	192.168.100.254
	DNS Server	192.168.0.71
Search again	MAC Address	00:50:C2:2B:E7:BC

To change Networl information of the MN2LP, select the hostname of the unit and click "OK".

- Notice : If you need to install more than 2 MN2LPs at the same time, make sure hostname and IP address is not the same to aviod conflict.
- 1.3 Click "OK" to confirm the setting , enter the current administrator password. The default password is "admin".

Verify admin password	
Please enter current admin	*****
ОК	Cancel

1.4 Enter the IP address manually or select DHCP to obtain IP address automatically. Click Next to complete.

Server	mn2lp	
Set IP co	onfiguration mai	• obtain an IP
IP	192 . 168 . 100 . 153	address An IP address must
Subnet	255.255.255.0	be specified in order
Gateway	192 . 168 . 100 . 254	to access the Network Storage Link
DNS	192.168.0.71	from the network.

1.5 Enter the Date and Time setting and click Next



1.6 Confirm the setting and click Save.

	Old Settings	New
Server Name	MN2LP	mn2lp
IP Address	192.168.100.153	192.168.100.15
Subnet Mask	255 255 255 0	255.255.255.0
Default Gateway	192.168.100.254	192.168.100.25
IP Status	DHCP	DHCP
Date	2007/01/02	2007/01/02
Time	06:46:57	06:46:57

1.7 After you click "Save", the system will again ask you if you are sure to change the setting. If so, click "OK". If you do not want to change, click "Cancel".

You are about to change th Press "OK" to save new se Press "Cancel" if you want settings.	ettings.
OK	Cancel

1.8 Setting is completed. Once the system is reset, it will jump back to the beginning screen. To change other servers, repeat the above procedures. If you have finished setting, click "Exit". It takes about 2 minutes to start MN2LP after power on. Before the startup is completed, the system will be unable to find MN2LP.

Notice : When MN2LP is connected to the network, the system will obtain the IP address automatically through the DHCP server. In case that the IP address cannot be obtained through the DHCP server, MN2LP will initiate its own DHCP function to become the DHCP server. Confirm the IP address of MN2LP (by default, 192.168.1.1) first and then set the PC to the same LAN to enter the system login screen.

Appendix B Complete Firmware Update Process

- 1. In order to prevent from data loss caused by software update please backup data to other storage before starting update process.
- 2. Start to update software firmware after backup. Related update process please refer to the following description.
- 2.1 Click "Control Panel", "Maintenance", "Software Update", the following image will appear. Then upload firmware. Browse the firmware files. The new firmware files can be downloaded from www.sansdigital.com or contact tech@sansdigital.com.

		BACKUP PROTECT RESTORE	
Basic Control Pa	nel Personal Info	Logout	
E File and Print	Firmware Upgrade Current Firmware Version Upgrade File		
🔤 System		2.42C Browse	
Network Service	opgrade File	Upgrade	
Maintenance		obligation	
 Disk Utility 			
RAID Setting Firmware Upgrade	-		
Save Configuration			
Restore Configuration			
 Factory Reset 			

2.2 The status will be update via the below screen. Once the update process is completed, the system will reboot and ask for username and password to login the system.

		BACKUP	PROTECT RESIDRE
Basic Control Pa	nel Personal Info		Logout
Users and Groups	Firmware Upgrade Process		
File and Print	0%		
🔤 System			
Network Service			
Maintenance			
 Disk Utility 			
 RAID Setting 			
> Firmware Upgrade			
 Save Configuration 			
 Restore Configuration 			
 Factory Reset 			
🖾 Log File			

2.3 After completing update, please click "Remove raid system" to rebuild RAID system. For detail information please refer to Chapter 3. Please note all the data will be remove.



2.4 After completing above process, please move data back to MN2LP and the update process is finished.

Appendix C Introduction of LCD Display Items



WWW.SANSDIGITAL.COM