OS/2 Network interconnectivity

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OS/2 Network interconnectivity

OS/2 has various types of network interconnectivity:

- FTP-File Transfer Protocol
- Email
- Rsync
-
- Peer to Peer
 - IBM File and Print Services
 - Samba



Peer to Peer (P2P)

Characteristics of a Peer Network

- Peer-to-peer networking is an approach to computer networking in which all computers share equivalent responsibility for processing data.
- Peer-to-peer networking differs from client-server networking, where certain devices have responsibility for providing or "serving" data and other devices consume or otherwise act as "clients" of those servers.
- Computers in a peer-to-peer network run the same networking protocols and software.
- Peer networks devices are often situated physically close to each other but some peer networks, utilize the internet and are geographically dispersed worldwide.



IBM File and Print Services

- IBM's SMB (Server Message Block), became the cornerstone for Windows networking
- Is robust works well within OS/2
- Poor security
- Due to changes in network protocols no longer works well with Windows and other networks.
- This protocol is still available under ArcaOs and can be installed during the installation of ArcaOS. However there are some actions you need to do!



Installation IBM File and Print Services - Ecs

During installation of Ecs on the network page just select IBM File and Print Client

During the Post installation phase, select the Network User ID tab and fill in as required

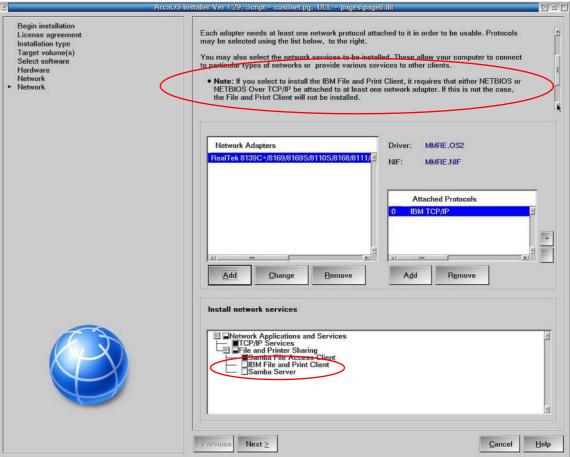
If you need to do this again run x:\ecs\system\ sguide\install\run1st.cmd (where x is your boot drive)

	Posi-Installation Tasks
nal Tasks 🔪 Screen 🔪 USEF	R Setting Network User ID User Interface ACPI Wizard Printer
letwork User ID	
Network User I	D
	Please skip this page if you did not install the local network file and printer sharing features.
6	If you performed a fresh installation, your local user ID and password have been set to the defaults of USERID and PASSWORD, respectively.
Closeffetion	The local user ID and password are used when sharing file and printer resources over a network using eComStations "local network" features. For security reasons, the default values should be changed.
CONTRACTION	Please enter the desired values below and click on Change to apply the changes.
	User ID:
	Password:
	Confirm password:
	Automatically start network services on bootup
	Allow your computer to be seen by others on the network
	Allow sharing of resources in a peer network
	Change
<u>E</u> xit	<u>N</u> ext ►

Installation IBM File and Print Services - ArcaOS

During installation of ArcaOS on the network page

- Add the protocol NETBIOS or NETBIOS over TCPIP
- Select IBM File and Print Client





Installation IBM File and Print Services - ArcaOS

Begin installat

License agree Installation typ Target volume Select software Hardware

Network

During installation of ArcaOS on the workstation page there is the information about the default user name and password which you might miss in the

which you might miss in the info text if you did not scroll down

istaller Ver 1.33, Script = cus9wkst.pg, DLL = .\p	ages\page9b.dll	
and Print Client User names for those must if the IBM File and Print Client has been selet are USERID and PASSWORD, respectively. installation. Note that the ICP/IP configuration entered or Additional interfaces, if any, will need to be c	be set elsewhere after installation. cted for installation, the default user name and password These should be changed as soon as practical after the <u>this page will only apply to the <i>Wart</i> TCP/IP</u> interface. configured manually after the installation.	
Computer name: Workgroup name: Default user name: Home directory:	HOME2 WORKGROUP User Use system volume	
TCP/IP Settings Configure automatically (DHCP) IP address: Subnet mask: Default route: Name server: Domain:		
	W the use and home uncounty. The user names here is not used directly by e and Print Client User names for those must fit the IBM File and Print Client has been selection and PASSWORD, respectively. installation. Note that the ICP/IP configuration entered or Additional interfaces, if any, will need to be a optional. See Help for more information. Computer name: Workgroup name: Default user name: Home directory: TCP/IP Settings If Configure automatically (DHCP) IP address: Subnet mask: Default route: Name server:	The user name here is not used directly by either the Samba networking components nor the IBM File and Print Client User names for those must be set elsewhere after installation. If the IBM File and Print Client has been selected for installation, the default user name and password are USERID and PASSWORD, respectively. These should be changed as soon as practical after the installation. Note that the TCP/IP configuration entered on this name will only apply to the <i>first</i> TCP/IP interface. Additional interfaces, if any, will need to be configured manually after the installation. When not selecting DHCP, the only required fields are IP address and subnet mask. All others are optional. See Help for more information. Computer name: HOME2 Workgroup name: User Home directory: Use system volume TCP/IP Settings If configure automatically (DHCP) IP address: Subnet mask: Subnet mask: Default route: Name server: Name server:



Configure - IBM File and Print Services - ArcaOS

• After installation you need to set up your userid and password by selecting 'Sharing and Connecting'.



- After selecting the file and print client will be started and when ready (<u>+</u>5 secs) a login popup will be given.
- The defaults are USERID and

PASSWORD

Lu	cal Logon	
User ID:	USERID	
Password:	*****	
(P	assword will not disp	lay)
ОК	Cancel	Help
	User ID: Password: (P	Password: ******** (Password will not disp

<u>After login</u> go to the User tab in "Sharing and Connecting" and then 'Create user ...' to add yourself with a new name and password. After checking that this works, delete the USERID entry!

r s ers defined on your	r system	User ID: Description:	
ser ID UEST	Description	User type User	Logon Allowed
SERID	Default User ID	Accounts operator	C Denied
Indate	> «	Password Type password twice:	Options Password required Expire password Password optional
Update	Delete Create user Help	OK Cancel He	

Make sure you give yourself administrator rights as otherwise you are limited

dentity Connections Shares	ring and Connecting
Identity	
Computer name:	HOME2
Description:	
Primary domain name:	WORKGROUP
Primary domain name:	

Identity		
	HOME2	
Computer name:	HOME2	
Computer name: Description:	HOME2	
	HOME2	

with adminstrator rights

- In Ecs you had the option to :
 - 1. Automatically start network services on bootup

<u>کا</u>	Post-Installation Tasks	800
Final Tasks Screen USER	Setting Network User ID User Interface ACPI Wizard Printer	
Network User ID		
Network User IE)	
	Please skip this page if you did not install the local network file and printer sharing features.	
Constantion	If you performed a fresh installation, your local user ID and password have been set to the defaults of USERID and PASSWORD, respectively. The local user ID and password are used when sharing file and printer resources over a network using eComStations "local network" features. For security reasons, the default values should be changed.	
ROUDRINOU	Please enter the desired values below and click on Change to apply the changes.	
	llser ID:	
	Password:	
	Confirm password:	
<	Automatically start network services on bootup Allow your computer to be seen by others on the network Allow sharing of resources in a peer network Change	
<u>E</u> xit		



- In Ecs you had the option to :
 - 1. Automatically start network services on bootup
 - 2. Allow your computer to be seen by others on the network

Posi-Installation Tasks	80
Please skip this page if you did not install the local network file and printer sharing features.	
If you performed a fresh installation, your local user ID and password have been set to the defaults of USERID and PASSWORD, respectively.	
The local user ID and password are used when sharing file and printer resources over a network using eComStations "local network" features. For security reasons, the default values should be changed.	
Please enter the desired values below and click on Change to apply the changes.	
User ID:	
Password:	
Confirm password:	
Automatically start network services on bootup	
Allow your computer to be seen by others on the network	
Allow sharing of resources in a peer network	
Change	
✓ Previous Next ■	
	Please skip this page if you did not install the local network file and printer sharing features. If you performed a fresh installation, your local user ID and password have been set to the defaults of USERID and PASSWORD, respectively. The local user ID and password are used when sharing file and printer resources over a network using eComStations "local network" features. For security reasons, the default values should be changed. Please enter the desired values below and click on Change to apply the changes. User ID: Password: Confirm password: Automatically start network services on bootup Allow your computer to be seen by others on the network Automatically start network services in a peer network Change



- In Ecs you had the option to :
 - 1. Automatically start network services on bootup
 - 2. Allow your computer to be seen by others on the network
 - 3. Allow sharing of resources in a peer network

	Post-Installation Tasks	×0
Final Tasks V Screen VUSE	Setting Network User ID User Interface ACPI Wizard Printer	
Network User ID		
Network User I	D	
	Please skip this page if you did not install the local network file and printer sharing features.	
	If you performed a fresh installation, your local user ID and password have been set to the del of USERID and PASSWORD, respectively.	aults
Carllettor	The local user ID and password are used when sharing file and printer resources over a netw using eComStations "local network" features. For security reasons, the default values should changed.	
COMPRESS	Please enter the desired values below and click on Change to apply the changes.	
	User ID:	
	Password:	
	Confirm password:	
	Automatically start network services on bootup	
	Allow your computer to be seen by others on the network	
<	Allow sharing of resources in a peer network	
	Change	
Exit	Previous	Next ►
Evil.	Lievious	Heve -



Configure - IBM File and Print Services - ArcaOS

In ArcaOS

your computer will by default be seen by others on the network

To hide, edit IBMLAN/IBMLAN.ini and change the line from srvhidden = no

to

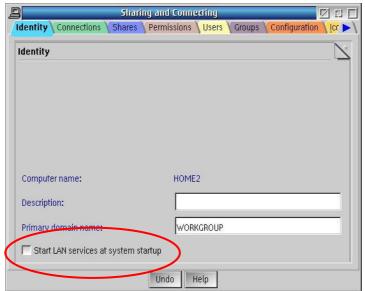
srvhidden = yes

in ARCAOS srvhidden is set to no, in ECS it is set to yes)



In ArcaOS

• to Automatically start network services on bootup select in the Tab, "Identity" in Sharing and Connecting the "start LAN services at system startup" button, or use NET START PEER.





Allow sharing of resources in a peer network

In ArcaOS by default sharing of resources is enabled. This is controlled by the line (in IBMLAN/IBMLAN.ini)

wrkservices = MESSENGER,PEER



- To change your computer name and or domain name after installation edit the file X:\IBMLAN\IBMLAN.INI and at the lines
 Computername = HOME2
 Domain = WORKGROUP
- To use multiple domains, add the other domains to the line othdomains =

```
Seperated by commas, eg:
othdomains = MYDOMAIN,TEST
```

• In both cases either reboot or stop and start the requester



Selecting your shares (method 1)

Open as Open as To allow sharing of Properties Alt+Enter Properties Alt+Enter Help Help . Paste... resources in a Paste... 6 Create shadow... Create shadow... Folder Edit View Pickup ted Help peer network Pickup Find.... Find.... select what you Lock in Place Lock in Place Drive A Drive B Drive C D Drive E Drive F Check disk... Check disk... want to share: Format disk... Format disk... Drive F (376.577 of 399.9 iree) Start sharing... Start sharing... Stop sharing... Manage access... Update share... **Copy filename** Manage access... Create new **Copy filename** Disk **Folder actions** Create new **Command prompts** b. Folder actions Command prompts

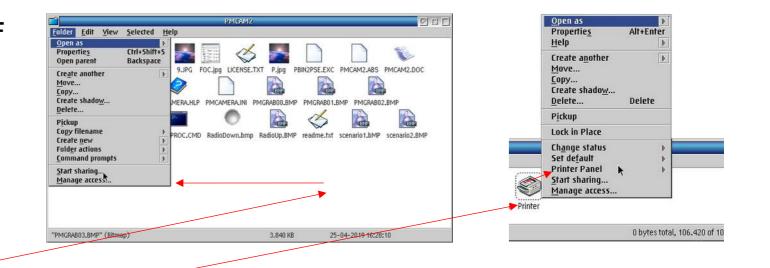


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Selecting your shares (method 1)

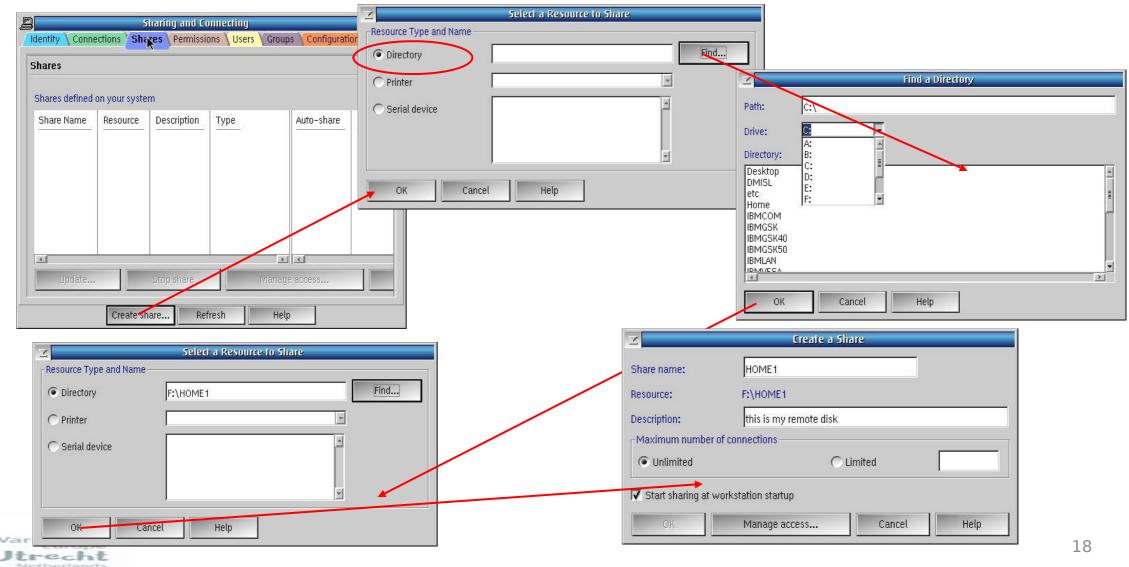
To allow sharing of resources in a peer network select what you want to share:



- Disk
- •Directory
- •Printer
- Serial devices



Selecting your shares (method 2)



Managing access – Basic /Customised

Basic Customised

Manage Access	Manage Access	Manage Access
Resource: C:\	Resource: \PRINT\Printer	c.\
Basic - one access for all users	Basic - one access for all users	one access for all users
C Customized	C Customized	nized
Access Permissions	Access Permissions	Group Access Comment
C No access	C No access	Default Group ID Change access
C Read only	• Access	RXWCDAP RXWCDAP Create group
Read/write		Change Access Permissions
ĸ		Resource name: C:\
		User Access Gr User or group name: GROUPID
		R Access permissions Change access
		□ None □ Create Create user
		☐ Read ☐ Delete
		T write Attributes Show groups
Audit this resource	☐ Audit this resource	is resource
OK Refresh Cancel Help	OK Refresh Cancel Help	Refrest OK Cancel Help

Disk/Directory

Printer Note in Access Permissions : Do not select any permissions if you do not want the user to have any specific permissions to the resource. Then the user has only the group permissions. This is not the same as selecting None, which restricts the user from any 19 access to the resource.

Access Permissions (Group and/or User)

None(N) Cannot access the resource. Read(R) Read or run files not change them Write(W) Only write to files not create them Create(C) Create and write files & subdirectories Run programs in the directory or drive Execute(X) Delete(D) Can delete files & subdirectories Attributes(A) Can change the attributes (i.e. Archive * attribute) Permissions (P) Can change the access permissions for the

* resource.

These permissions are valid for directory and drive resources only. Not for printer or serial device resources.



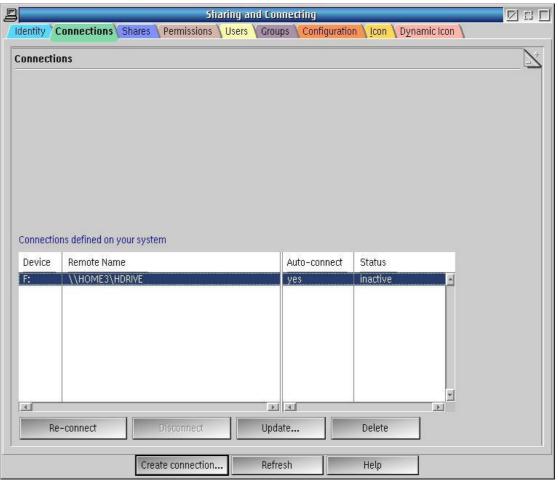
Sharing and Connecting – Connections

The status of any connections to this PC from another network resource

 Inactive: A connection that was previously available (previous session)

•Active : A connection that is available

Note: you can also re-connect /create /delete or update a resource





Sharing and Connecting - Shares

The status of any shares on this PC

•Started : The share is available

•Stopped : The share is not available

Note: you can also start / stop /delete create or manage the access of a specific share



3			Sharing and Con	necting		
Identity Conne	ctions Sha	res Permissio	ons Vusers V Group	s 🔪 Configurati	on <mark>\ I</mark> con \ Dynamic Icor	1
Shares						N
						[_]
Shares defined (on your syster	m				
Share Name	Resource	Description	Туре	Auto-share	Status	
CDRIVE	C:\		directory	yes	started	
DDRIVE	D:\		directory	yes	started	
4			>	4	×	
		Ctan chave	1		Delete	1
Update		Stop share	Manage	e access	Delete]
		Course 1	ukawa 🛛 🖉 🕻	. 1		
		Create	share Refres	Sn H	elp	

Sharing and Connecting - ACL

The access control list (ACL) defined to a particular drive, printer or serial device.

Note: you can, using the GUI create an ACL

Sharing and Connecting Sharing and Connecting Identity Connections Shares Permissions Users Configuration Icon Dynamic Icon	
Permissions	<u></u>
Resource Type Orive C:	
C Printers	
C Serial devices	
Access control lists defined for selected resource type:	
(drive) \ \Desktop	
\Desktop\Computer \Desktop\Computer\Command Prompts	
\Desktop\Computer\Drives \Desktop\Computer\Help Center \Desktop\Computer\Help Center\Information	
Update Delete Apply	
Create ACL Refresh Help	



Sharing and Connecting - Users

Identity 🕇 Connections	Sharing and Connecting Shares Permissions Users Groups Configuration Icon Dynamic Icon	l He
Users		
		He list up
		2
		0
		D
Users defined on your	Description	
GUEST		
USERID	Default User ID	
<u>.</u>		
Update —	Delation	
	Delete	
	Create user Help	

Here the current users are listed and can be changed / updated /deleted

	_
lser ID:	
Description:	
User type	Logon
🖲 User	Allowed
C Accounts operator	C Denied
C Administrator	
Password	Options
Type password twice:	Password required
	Expire password
	C Password optional

Sharing and Connecting - Groups

Identity Connections Shares Permissions Users Groups Configuration Icon Dynamic Groups		He list up
Groups defined on your system Group Description MYLOCAL Users of the local os/2 peer net	Z	list upo
Group Description MYLOCAL Users of the local os/2 peer net		up
Group Description MYLOCAL Users of the local os/2 peer net		upo
Group Description MYLOCAL Users of the local os/2 peer net		
Group Description MYLOCAL Users of the local os/2 peer net		
Group Description MYLOCAL Users of the local os/2 peer net		
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Group Description MYLOCAL Users of the local os/2 peer net		
Group Description MYLOCAL Users of the local os/2 peer net		
MYLOCAL Users of the local os/2 peer net	-	
GBOURD Default Group ID		
< > <	_	
Update	-	
Create group Help		-

Here the current groups are listed and can be changed / updated /deleted

	<u> </u>	Update a Group	
Description: Users of the local os/2 peer net User ID GUEST KEITH TOM USERID Default User ID JAN	Select the users t	be included in the defined group. Select OK when the selection is complete.	
Description: Users of the local os/2 peer net User ID GUEST KEITH TOM USERID Default User ID JAN			
User ID GUEST KEITH TOM USERID JAN C C C C C C C C C C C C C	Group ID:	MYLOCAL	
GUEST KEITH TOM USERID JAN VARAN	Description:	Users of the local os/2 peer net	_
KEITH TOM USERID JAN Control Control C	User ID	Description	
TOM USERID JAN	GUEST		
USERID Default User ID JAN	2011 C 22 C 2		
		Default User ID	
	JAN		
	4		>
OK Cancel Help	ОК	Cancel Help	



Sharing and Connecting - Configuration

_	Sharing and Connecting	
Identity Connections Shares Permissio	ns Users Groups Configuration Lon Dynamic Icon	
Configuration	Configuration – Page	1 of 2
Configure the behavior of your workstation.		
- Maximum values		
Concurrent users:	5	
Shareable resources:	16	
Connections to resources:	26	
Open files:	160	
File locks:	64	
DOS print timeout (seconds):	90	
Cache memory size (kB):	64	
Disconnect idle sessions:	-1	
	Save Default Help	

3		Sharing and Conne	A REAL PROPERTY AND A REAL			
Ide	ntity Connections Shares Permissio	ins Users Groups	Configur	ation Icon Dyn	namic Icon 🔪	
Co	nfiguration			(Configuration - Page (2 of 2
	Serial Device					
	COM open timeout (sec):	3600				
	COM send count (bytes):	16				
		· · · · · · · · · · · · · · · · · · ·				
	COM send timeout (msec):	250				
N	umber of network buffers:	40	Size:	4096		
		·	5126.	14020		
N	umber of big buffers:	4				
		Save Default	Help			



page 1 page 2

Samba

- Samba is a free software re-implementing the SMB networking protocol
- Samba provides file and print services for various Microsoft Windows, Linux and OS/2clients
- The name originally SMB server had to be changed as this was a trademark of Syntax.
- The name Samba was the first word found using grep -i '^s.*m.*b' /usr/share/dict/words



Samba – OS/2

In OS/2 there are two parts to SAMBA

ArcaMapper - the Samba client in ArcaOS (3.3.16)
 Samba Server - the Samba server in ArcaOS (3.6.25)

Currently not at the same level!



The new solution - Samba

ArcaMapper is the OS/2 client in ArcaOS which will connect to other networks supporting SMB such as:

- Windows
- Linux
- OS/2
- It is found in the Network folder on the desktop



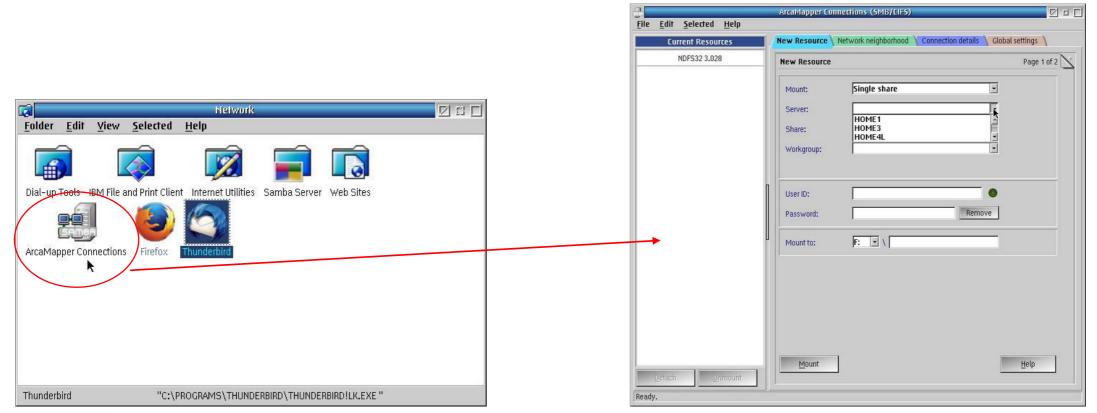


Samba Client – ArcaMapper

- A virtual drive is "Attached" to the system and the various shares are "Mounted" to the virtual drive.
- NETDRIVE provides OS/2 with virtual drives which allows ArcaMapper to map a share to a drive letter as OS/2 does not have Virtual drives
- One virtual drive can have <u>multiple</u> shares mounted to the same drive
- Normally you first "unmount" a share/resource and then "detach" the drive
- NETDRIVE does not directly support printers!



Samba Client – ArcaMapper





ArcaMapper - mount a share (method 1)

1. Select the type of share

- Single share
- All shares on server
- All servers in workgroup
- 2. The Server
- 3. The Share
- 4. The workgroup
- 5. Enter User ID and Password
- 6. Select the virtual drive to mou
- 7. Press "Mount"



Current Resources	New Resource	Network neighborhood 🍸 Connection det	ails 🔪 Global settings 🔪
NDFS32 3.028	New Resource		Page 1 o
	Mount:	Single share	•
	Server:	IX2-HOME	
	Share:	Backups	
	Workgroup:	WORKGROUP	×
	User ID:	Keith I	•
	Password:		Remove
	Mount to:		
		_	
	Mount		Help

ArcaMapper - mount a share (method 1)

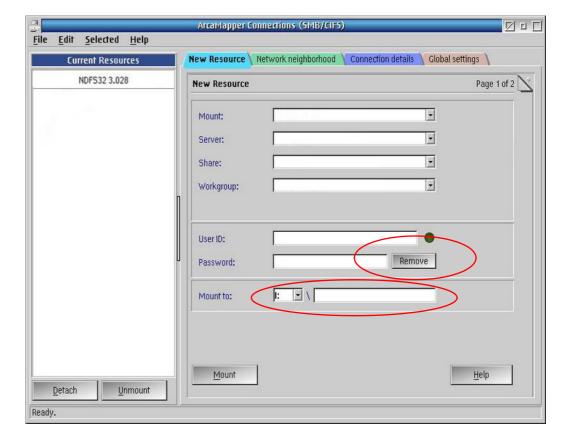
Notes:

The button *Remove* only clears your input, it does not remove a password?

The LED seems to have the same function as *Remove*" when pressed

Mount is in two parts:

- The virtual drive (auto attach)
- The mount point is effectively a subdirectory of the drive (auto creation)





ArcaMapper - mount a share (method 2)

Current Resources	New Resource Network neighborhood Connection details Global set		WORKGROUP \\IX2-HOME\Backups
NDFS32 3.028	Network neighborhood		
E	User context: Guest		Mount to: F: 💌 \
			✓ Support extended attributes
			Mount read-only
	HOME4L		Create mountpoint, even when connection attempt fails
	IX2-200-HOME Iomega StorCenter ix2-200		
	INS-HOME Mount	<u>_</u>	10 🏂 sec. cache timeout
	Backups		32 🔀 listings to cache
	IPC\$ IPC\$ (NAS-HOME)		
	U MediaDB		Support NTLMu1
			V Support Kernel
	🗐 Music		User ID: Keith
	Pictures		User ID: Keith
			OK Password: *****
			Store credentials until next rebo
	Mount Refresh Help		
tach Unmount			<u>O</u> K <u>C</u> ancel

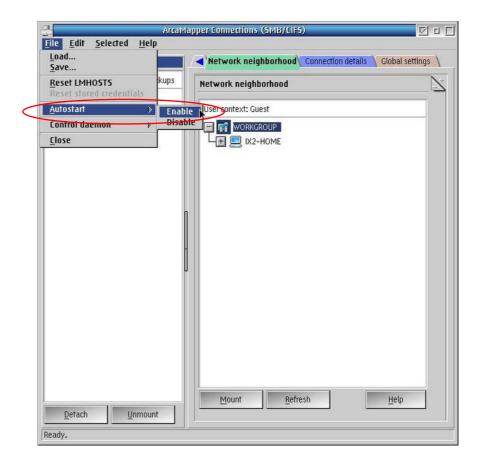
ArcaMapper - mount a share (method 3)

After having mounted you shares use the menu

File -> Autostart -> Enable

So that next time when the startup folder is executed and your shares will be mounted.

The file X:\os2\arcamap.ndc is used to store the data

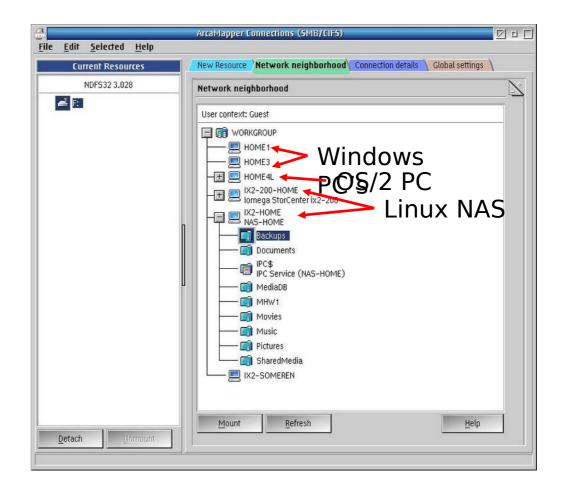




ArcaMapper - Network Neighborhood (Nethood)

In the TAB Network the various domains are shown with their shares.

The shares although for OS/2 (IBM Peer Share) are shown as are the Linux shares, the Windows (W10) shares are not shown!





ArcaMapper – Nethood

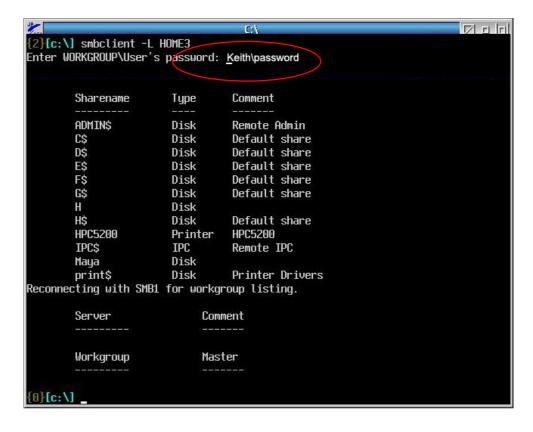
If you need to find the names of the Windows (W10) shares this can be done from the command line using the command smbclient:

smbclient -L Host

And then enter the user and password as

user\password

THE PASSWORD IS DISPLAYED IN PLAIN TEXT!





ArcaMapper – Network Nebourhood

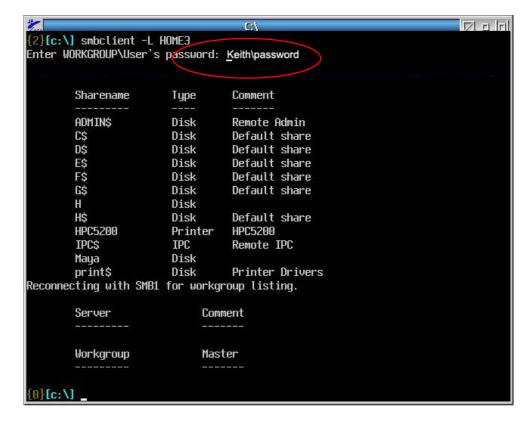
On some windows (w10)machines you need also to specify the workgroup using -W followed by the workgroup

smbclient -L Host –W WORKGROUP

And then enter the user and password as

user\password

THE PASSWORD IS DISPLAYED IN PLAIN TEXT!





ArcaMapper – Network Neighbourhood

On some windows (w10)machines you may be able to use –N to avoid entering the password!

smbclient -L Host -N

4052		_	<u>C:\</u>	
0S/2	Ctrl+Esc -	Window Lis	t	Type HELP = help
Alle: M	smbclient -L	HOMF1 -N)	
	Sharename	Туре	Comment	
	ADMIN\$	Disk	Remote Admin	
	C\$	Disk	Default share	
	D\$	Disk	Default share	
	E\$	Disk	Default share	
	F\$	Disk	Default share	
	G\$	Disk	Default share	
	Н	Disk		
	H\$	Disk	Default share	
	HPC5200	Printer	HPC5200	
	IPC\$	IPC		
	Maya	Disk		
	print\$	Disk	Printer Drivers	
	ting with SMB	1 for vorka	roup listing.	
	Server	Com	ment	
	Vorkgroup	Mas	ter	



ArcaMapper – smbclient

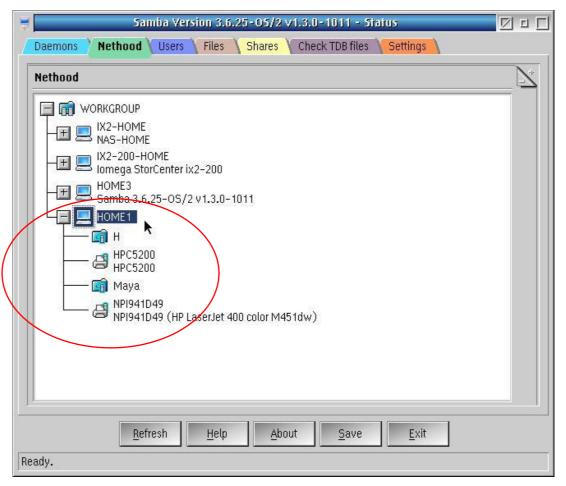
There are various and different versions of the smbclient on the various systems (OS/2 Ecs and ArcaOS)

They all seem to work slightly differently



ArcaMapper – Network Neighbourhood

Note in Samba Status monitor – Samba Server – the W10 shares are shown!

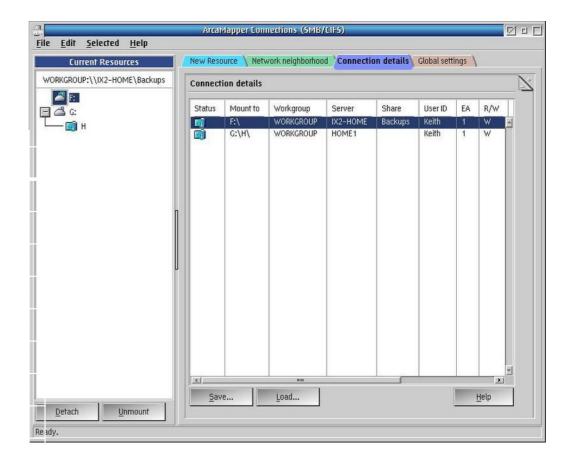




ArcaMapper – Connection details

In the TAB Connection details the various connections are

. Status	-states indicating connection
Mount to	mounted drive share is
Workgro	The workgroup for the share
Server	The host or server concerned
Share	Share name
User ID	The user assigned to this share
EA	EA support status
R/W	- എണ്ട്ട്ട് mode (<u>R</u> ead or Read
_Timeout	. Cache timeout in seconds.
Cache	Listing to cache (default 32)





ArcaMapper – Global Settings

In the TAB Global Settings you can change/set the following:

1. Authenticate for browsing

This (theoretically) allows browsing to use the userid and password supplied.

- 2. Refresh Network neighbourhood immediately This (theoretically) will refresh the browsing window. Generally the refresh key is required
- 3. Use Broadcasts instead of local master browser(LVM) Query network nodes instead of querying the local master browser. (one of the computers in a network is the master browser – in my case the NAS)



ArcaMapper – Global Settings - 2

In the TAB Global Settings you can change/set the following:

4. Show all (special) shares

This (theoretically) shows special shares such as IPC\$. In my case no windows shares are shown!

5. Remember inactive connections

Keeps track of connections that currently cannot be reconnected

6. Store credentials until next reboot

The last used, credentials are stored in memory for reuse. You don't have to keep typing in the same userid and password



ArcaMapper – Global Settings - 3

- In the TAB Global Settings you can change/set the following:
- 7. WINS server

The IP address of the server

8. Name resolution order

The order in which names are resolved to optimize speed for Samba client

9. Manage LMHOSTS

The Samba client manages the LMHOSTS file – this file contains the list of ip addresses and NetBios names



ArcaMapper – Global Settings - 4

In the TAB Global Settings you can change/set the following:

- 7. Logging The IP address of the server
- 8. Log level

The level to be used when logging is enabled

9. Debug

When enabled a console is opened displaying the program actions

10.Mini Icons

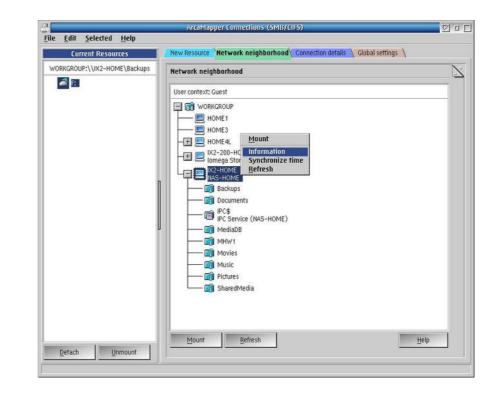
Use mini icons in the Browse and Resource window



ArcaMapper – Bugs (2.6.20180622)

BEWARE:

If an item is selected and then with the menu "Selected" all of the options will refer to an incorrect item if previously a different selection was made, and using the RMB and the popup menu Information was selected. So you might do things on the wrong host



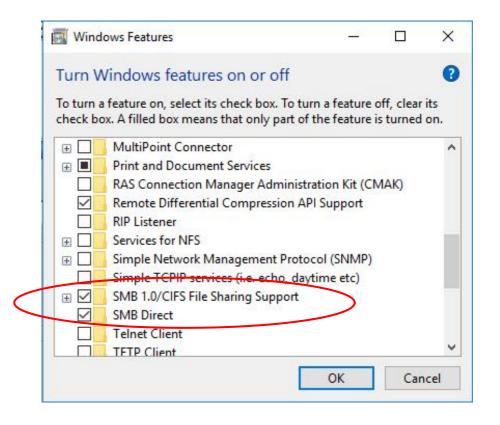


Windows – tweaks

On some windows 10 machines you <u>may</u> need to enable SMB 1.0

To do this select windows features and scroll down to SMB 1.0 and tick the box

Sometimes the firewall or Virus scanner may block access! Disable and then try again





SAMBA Server

The Samba server provides the services so that other hosts can find and connect to the shares on this machine.

- In order to use the server NETBIOS over TCPIP may NOT be used. Samba encapsulates NETBOIS in TCPIP
- So SMB Server and IBM Peer networking cannot co-exist



SAMBA Server

X

B

• The SAMBA Server is a set of programs – the are:

Simple SAMBA Configuration Centre (sscc.exe /install/config) Users and Groups (smbusers.exe) Status (smbmon.exe) Reload configuration (smb.cmd /reload) Restart Server (smb.cmd /restart) Start Server (smb.cmd /start) Stop Server (smb.cmd /stop) Find SMB/CIF machines (findsmb.cmd -X) Edit config & various info

SAMBA Server - Configuration

The simple Samba Configuration Centre is what it is says A <u>simple</u> configuration tool

- When run for the first time the program (ssc.exe) is run with the parameter /install
- After running the parameter is dynamically changed to /config

So if you need to redo things change the parameter back to /install in the program's properties. Make sure that Samba is not running !



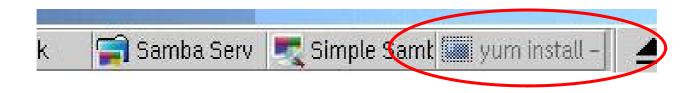
Let's keep it simple and select :

- 1. Erase current "smb.conf" ...
- 2. Erase current "Backend" ...
- 3. Erase current "Imhosts" ...
- 4. Install libraries using YUM
- 5. Press "Continue"

Eile Action Displa		mba Configuration Centre	
Expe	le mode rf mode l icons	Welcome to the Simple Samba Cor Samba files are expected at the following pla	
		Binaries Scripts and tools %UNIXROOT% %ETC% Samba build	
<u>R</u> eload	Start/Stop 017, Herwig Bauernfeind	<u>Bave</u>	<u>C</u> lose



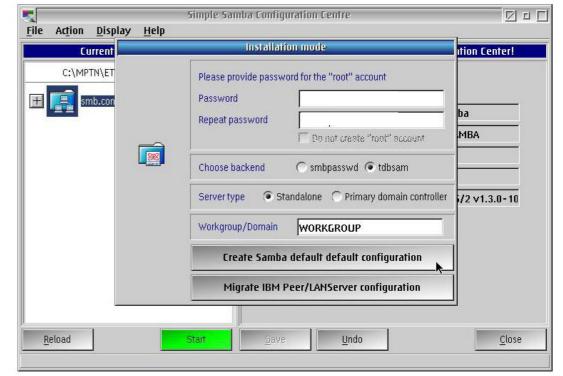
- 1. After pressing *Continue* the installation may take <u>several</u> minutes while YUM is busy
- 2. You can show the progress if you open the minimized yum program





You might get some messages but then eventually the installation mode window appears.

- 1. Enter a password (twice) for the root account (min 5 characters)
- 2. Leave the rest as is
- 3. Select either
 - Create Samba default configuration
 - Migrate IBM Peer/LANServer configuration



- Samba Default configuration will map all your drives

-IBM Peer migration will use your previously defined shares

-You will be informed :

User "root" added

Current configuration	Welcome to the Si	mple Samba Configuration Center!
H:\MPTN\ETC\samba\smb.conf	Samba files are expected Binaries	H:\Programs\samba
Global	Scripts and tools	H:\PROGRAMS\SAMBA
E Homes	%UNIXROOT%	H:
	%ETC%	H:\MPTN\ETC
Call Shared printers	Samba build	Version 3.6.25-05/2 v1.3.0-10
	Simple Samba Configuration Added user root. K	Centre



- Samba Default configuration will map all your drives
- -IBM Peer migration will use your previously defined shares
- -You will be informed :
 - User "root" added
 - User "guest" added

Current configuration	Welcome to the Si	mple Samba Configuration Center!
H:\MPTN\ETC\samba\smb.conf	Samba files are expected	at the following places
	Binaries	H:\Programs\samba
Global	Scripts and tools	H:\PROGRAMS\SAMBA
E Homes	%UNIXROOT%	H:
inomes	%ETC%	H:\MPTN\ETC
[Shared printers	Samba build	Version 3.6.25-05/2 v1.3.0-10
	Simple Samba Configuration Added user guest.	Centre



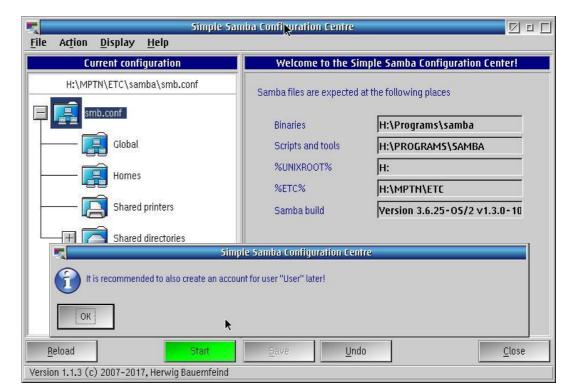
- Samba Default configuration will map all your drives

-IBM Peer migration will use your previously defined shares

-You will be informed :

User "root" added User "guest" added Add user "User later

4. Press close



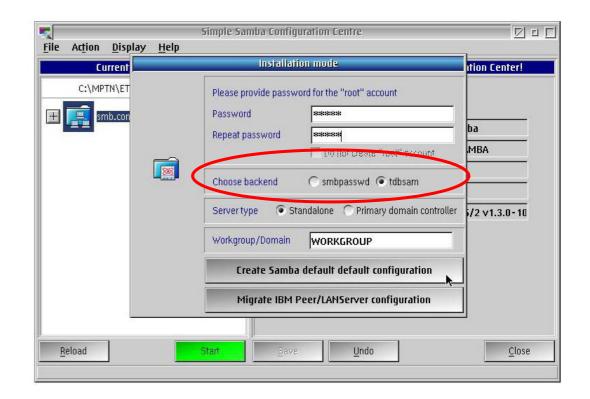


Backends

During the installation you can select one of two backends:

- 1. smbpasswd
- 2. tdbsam (default)

In Samba the backend refers to the encrypted password and account database





Backends (password & account databases)

The three encrypted password database backends that are fully maintained (by the Samba Team) are:

- 1. tdbsam (a trivial database that allows multiple simultaneous writers, binary based file format)¹
- 2. smbpasswd (being obsoleted) This file format has evolved with Samba and has had different formats in the past.¹
- 3. Idapsam (Lightweight Directory Access Protocol directory)² Not used in OS/2

¹ tdbsam is recommended for new installations that do not require UNIX user and group account information

² Only the Idapsam backend stores both POSIX (UNIX) and Samba user and group account information in a single repository.

Server types

In Samba there are three main server types

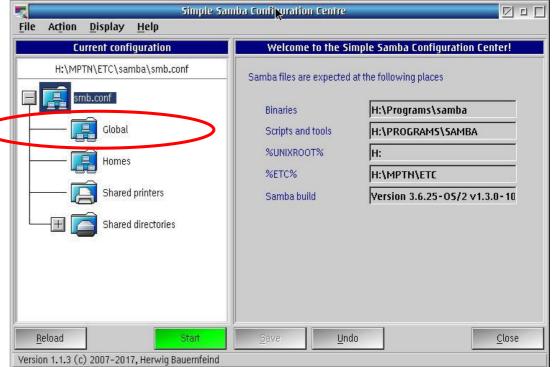
- 1. Standalone Server
- 2. (Primary) Domain Controller
- 3. Domain Member Server

The ArcaOS implementation is for types 1 and 2



SAMBA Server – Configuration tabs

- 1. Re-open SSCC
- 2. Select Global (left panel)
- 3. Check in the first tab of the global settings that the Workgroup has the correct name and any of the other items are as you require





SAMBA Server – Configuration Tabs

In the other tabs there are more configuration items you can select.

in the Simple mode and in the Expert mode there are (29 tabs!!) even more items

All the information is stored in smb.conf in the [global] section



💌 Simple Sar	amba Configuration Centre	
File Action Display Help Cu Simple mode C:\MP Small icons Cu Cu Small icons Cu C	1 2 3 4 5 6 7 8 9 10 11 12 2 Netbios aliases	n -
Reload Start	Obey pam restrictions Password server Bave Undo	<u>C</u> lose
Version 1.1.3 (c) 2007-2017, Herwig Bauernfeind		

smb.conf

The samba configuration file is divided into sections: Global Homes Printers Shares (name of the shared resourtion)

Comments are indicated by a # at column 1 and sections are between square brackets i.e. [GLOBAL]



Samba config file created using SSCC ver. 1.1.3 # from User@HOME3 # Date: 17 May 2019 11:12:49 [global] null passwords = Yes guest account = guest username map = $G:MPTNETC\sambaprivate$ smbusermap $\log file = G:MPTNETC\samba\log\log.smbd.%U.%M$ time server = Yes load printers = No printcap name = $G:\det\operatorname{printcap}$ And a lot more

[HOMES] comment = Home directory path = G:/MPTN/ETC/samba/homes/%u read only = No browseable = No

[HDRIVE] shares path = H:/ read only = No hide files = /*. SF/root/ This is one of my



```
# [PRINTER4L]
comment = Printer
path = G:/MPTN/ETC/samba/spool/Printer
read only = No
create mask = 0700
guest ok = Yes
printable = Yes
print ok = Yes
printing = os2
print command = G:\Programs\samba\smbprint.exe "%s" "%p" "%J" "%c"
                               "%Z"
lpq command = lpq.exe -s %i -p %p
Iprm command = Iprm.exe -s %i -p %p %j
printer name = Printer
```





SAMBA Users

To define users run the gram

"Samba Users and Groups"



the daemons started correctly and then the login appears Login using root and the password you created





SAMBA Users

In the Users dialog you can :

- 1. Create a User
- 2. Edit a User
- 3. Delete a User
- 4. Join a User to a group
- 5. Leave a group

Ħ	Flags	Name	UID	Full name (GECOS)	GID	Home	Map to	Sta
1 2 3 4	U	root User guest Keith	0 100 65534 101	Administrator account Keith Guest account ktm	512 513 514 513	\nonexistent H:\Home \nonexistent C:\MPTN\ETC\samba\homes\Keith	Administrato	r Reate Edit user Delete Jojn Leave
<u>« </u>	nly Samt	pa users			100			Y

The same options are available via RHB as is the selection of symbol or details view



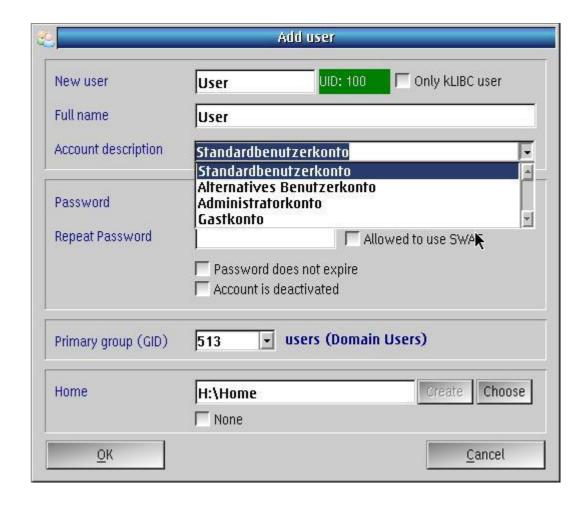
SAMBA Users – create a user

In the Users dialog you specify :

- 1. User
 - 1. name
 - 2. Full name (free format info)
 - 3. kLibC user ???

2. Account type

- 1. Standard
- 2. Alternative
- 3. Administrator
- 4. Guest
- 3. Password
 - 1. Password expiry
 - 2. SWAT
 - 3. Account activation
 - 4. SWAT (Samba Web Administration Tool) allowed
- 4. Primary Group (ID of available groups)
- 5. Home Directory (if any)





SAMBA Users – edit a user

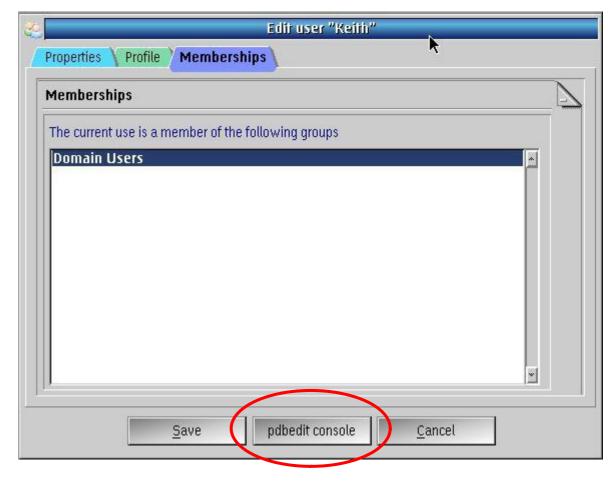
You can only edit a user from the user tab in the users and groups GUI where you select the user.

It is not possible to change the account type, but it is possible to:

- Change the password
- Change password expiration
- Account activation
- Reset logon hours

The profile and membership tabs allow no editing, just info

This is probably possible via the pdbedit console





SAMBA

In the Groups dialog you can:

- 1. Create/Delete a Group
- Map/Unmap a kLIBC group to Samba group
- 3. Create a group restoration script (makes a cmd)
- 4. Create well known Samba Groups (removes existing groups first!)

These options don't work (for me)!!!

Again same options via RHB

rou	ps		5.	694-				50 - 25-	
Ħ	Group name	NT Group name	GID	Users	RID	NT comment	NT type	Status	
1 2 3 4	root admin users guests	(klibcgroup) Domain Admins Domain Users Domain Guests	0 512 513 514	root, root, User,Keith,	512 513 514	Domain Administrators Domain Users Domain Guests	Domain Domain Domain		Cre <u>a</u> te Delete Map Unmap ecovery scrip
	nly Samba grou 2.0.1 2016-12-0	ps RPC console 9 (c) 2007-2016 Her	J (<u>R</u> efresh	<u>H</u> elp <u>é</u>	bout	Exit	

shows/hides only Samba groups



SAMBA Policies

In the Policy dialog you can select

- 1. bad lockout attempt = nThis will block this user when a passwor has incorrectly been used n times. 0 is r lockout!
- 2. disconnect time ?

3. lockout duration The time a lockout exists in minutes



	Local Samba Users and Groups	
Jsers Croups Policies Settings		
olicies		N
Choose policy	Current value:	
bad lockout attempt	- 0	
bad lockout attempt disconnect time	Update	
lockout duration		
min password length		
minimum password age password history		
maximum password age min password length minimum password age password history refuse machine password change reset count minutes		
user must logon to change password		
DDC annula		
RPC console	Save Refresh Help About Exit	
age policies		

SAMBA Policies

In the Policy dialog you can select

- 4. maximum password age The time a password is valid in seconds 0 = allow immediate password change (max = 2^{32} -1)
- 5. min password length The minimum password length allowed (default 5)

6. minimum password age The minimum password age (default 0 = allow immediate change)



<u>1</u>	Local Samba Users and Groups	
Users Groups Policies Settings		
Policies		N
Choose policy	Current value:	
bad lockout attempt	0	
bad lockout attempt disconnect time	Dupdate Update	
lockout duration		
min password length		
min password length minimum password age password history refuse machine password change		
refuse machine password change reset count minutes		
user must logon to change password		
1		
RPC console	Save Refresh Help About Exit	
anage policies		
anage pendes		

SAMBA Policies

In the Policy dialog you can select

7. password history Number of unique passwords before old password may be reused (default - 0 = off)

8. refuse machine password change

Stops the client from changing its machine password

9. reset count minutes

Reset time after lockout in minutes (default: 30)

10.user must logon to change

	Local Samba Users and Groups	
Jsers Groups Policies Settings		
Policies		
Choose policy	Current value:	
bad lockout attempt	0	
bad lockout attempt	Update	
lockout duration		
maximum password age min password length		
minimum password age		
min password length minimum password age password history refuse machine password change reset count minutes		
user must logon to change password		
RPC console		
PPC console 9	Save Refresh Help About Exit	

SAMBA <u>Remote</u> <u>Procedure</u> <u>Call</u> console

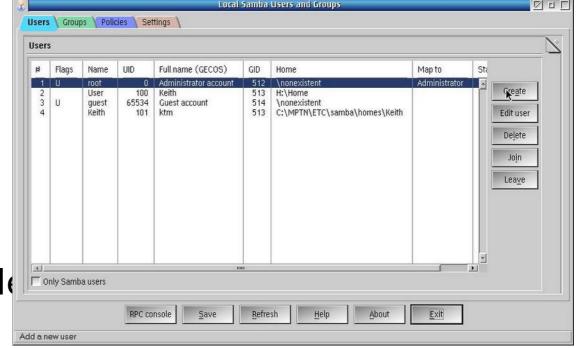
In the Users dialog you can handle users, groups policies and settings

Additionally there are the buttons:

<u>Remote Procedure Call console</u>

Save, Refresh, Help

About and Exit https://mirrors.dotsrc.org/samba/HOWTO/Samba-Rights-HOWTO



SAMBA Flags

- N: No password required
- D: Account disabled
- H: Home directory required
- T: Temporary duplicate of other account
- U: Regular user account
- M: MNS logon user account
- W: Workstation Trust Account
- S: Server Trust Account
- L: Automatic Locking
- X: Password does not expire
- I: Domain Trust Account

sers	S							
Ħ	Flags	Name	UID	Full name (GECOS)	GID	Home	Map to	Sta
2 3 4	U	root User guest Keith	0 100 65534 101	Administrator account Keith Guest account ktm	512 513 514 513	\nonexistent H:\Home \nonexistent C:\MPTN\ETC\samba\homes\Keith	. Administrato	f Greate Edit user Delete Join Lea <u>v</u> e
0	nly Samt	a users						



Auto start ArcaMapper and Samba Server

- By default ArcaMapper and the Samba server do not start automatically.
- In ArcaMapper select Autostart -> enable.
- If required modify in the startup for parameters to add a startup delaced seconds with -delay <n seconds

Note:

by default you should save your Connections to a file X:\OS2\ARCAMAP.ndc



	Ar Ar Edit Selected Help
enable.	Load Save Reset LMHOSTS
Start NetDrive	network connections
rogram Session Ass	sociation Icon <u>W</u> indow Environ
rogram Path and file name:	
G:\SYS\APPS\ARCAMA	P\ARCAMAP.EXE
Parameters:	
G:\OS2\ARCAMAP.ndu	-delay 10 -AUTOCLOSE -NOGUI

Auto start ArcaMapper and Samba Server

- By default ArcaMapper and the Samba server do not start automatically.
- The Samba Server daemons are started via a script "smb.cmd" with the option start. The same script is also used to stop, and restart the daemons.
- To start samba either make a script :

'sleep 10' say "starting Samba" call smb 'start'

• And call this in the startup folder



Performance – my experiences!

Source	Destination	FileSize	Time in secs	MB/Sec
W10 (Home1)	Samba (HOME3)	1.379.926.01 6	24.9	55,42
Samba (HOME3)	W10 (Home1)	1.379.926.01 6	20.6	66.99
W10 (Home1)	W10 (Home3)	1.379.926.01 6	10.6	130,18
W10 (Home3)	W10 (Home1)	1.379.926.01 6	10.6	130,18



Things to know!

- When copying a file across the network EA's are not always copied, and not all filesystem support EA's!
- OS/2 filenames are not case sensitive, copying a file containing an upper case character may result in having two files with the same "basic" name!

i.e. Filename.ext and filename.ext

In a command line window, the two files will be shown with their case

but NOT in a the workplace shell!



Whats happening

- A Samba 4 client is in the 5.0.3.8. beta version of ArcaOS
- Samba client 4.9.5. currently available from the arcanoaesub repository (ditto for Heimdal 7.5.0). Samba 4.10.1 is currently in testing with no stated release date (this includes an updated/matching NetDrive plugin - 3.6
- I have no info on the Sever side but may be Silvan can comment
- The current release from the Samba group is 4.10 was released in March. Samba 4 is all about AD support



Conclusions

- The current OS/2 implementation of SAMBA is here and there incomplete.
- The installation is vastly better than it was. Automatic update with YUM is a big help.
- Unfortunately there are NO help files in the OS/2 implementation and only very limited hints.
- There are many options and associated programs (pbedit, rpc, swat, etc.) that makes it somewhat complex.
- It works well enough for most people!
- The current version on OS/2 does not (yet) support Active Directory.
- Personally I don't have enough knowledge to test all of the options!
- It provides OS/2 with a network capability to connect to most other networks!



Food for thought – Documentation on the net

SYNOPSIS of the smb.conf file <u>https://www.samba.org/samba/docs/current/man-html/s</u> <u>mb.conf.5.html</u>

Using Samba, 2nd Edition - <u>https://www.samba.org/samba/docs/using_samba/toc.ht</u> ml

Samba User Documentation https://wiki.samba.org/index.php/User_Documentation



THANK YOU

