INTERFACING GUIDE

ACI for Windows 95/NT

ABBA Media Libary

Client

Interface

Order-No. DOC F00 015

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1 Before You Begin Working with this Manual

1.1 Explanation of Symbols and Notes

The following symbols and highlighted passages draw attention to important information.



Explanation of these symbols (☞ “Hazard Alert Messages” from page 1 - 2)

Information/Advice

Information important for understanding this introduction.

“abcd” Headline e.g. section 2 “Configuration”
File name or directory names e.g. “etc/config”

`ABCD` Information displayed on screen

- Software messages displayed on screen
- Commands
- User (root)
- Variable names, including environment variables

`[abc]` Parameters which are optional are shown enclosed in square brackets `[ ]`

☞ Reference to a description

- either on another page (☞ page 1 - 1)
- or another manual (☞ DAS administration guide)

abcd Variable

- Variable command parameters
- Variable values referenced in software

1.2 Hazard Alert Messages

We classify the hazards in several categories. The following table shows the relation of symbols, signal words, the actual hazard, and its possible consequences.

Symbol	Damage to ...	Signal word	Definition	Consequences
	**Material**	**ATTENTION!**	potentially damaging situation	possibly damaging to: • the product • its environment
		Information	tips for users and other important/useful information and notes	no hazardous or damaging consequences for persons or property
		-	identifies the address of your contact person	no hazardous or damaging consequences for persons or property

1.3 Assistance

If you cannot solve problems using this Manual, please contact your contract partner:

For Europe and Africa:

GRAU Storage Systems GmbH & Co.
Eschenstrasse 3
89556 Boehmenkirch
Germany

For all other countries:

EMASS Inc.
10949 East Peakview avenue
Englewood, CO 80112
U.S.A.

We will be pleased to help you.

United States

emass Technical Assistance Center (ETAC)	1-88-827-3822

Europe and Africa

Weekdays between 07.00 and 19.00

CUSTOMER HELPDESK

Telephone:	+(49) 73 32 - 8 3-371
Telefax:	+(49) 73 32 - 8 3-3 72
CompuServe:	100317,2576
E-Mail:	SUPPORT@GRAU.DE

At all other times - weekends, night-time etc.

Central hotline:	+(49) 69 - 75 90 92 46
Mobile telephone:	+(49) 1 72 - 2 00 89 88

1.4 About This Manual

1.4.1 Purpose

This guide presents the programming Interface for applications using the ABBA Media Libary connectivity from Windows NT or Windows 95.

1.4.2 Audience

This guide is intended for Windows NT or Windows 95 programmers and Administrators using the ACI for Windows NT and Windows 95.

If you cannot solve a problem,

- call a specialist
- ask for information from your service partner or GRAU Storage Systems or EMASS Inc.

1.4.3 Related Publications

You may wish to reference the following documents:

- AMU Installation Guide DOC E00 003
- AMU Problem Determination Guide DOC E00 007
- AMU Reference Guide DOC E00 005
- DAS Administration Guide DOC F00 010

1.5 Copyright

1.6 Product Observation

We are obliged by law to monitor our products even **after** delivery to the customer.

Therefore please communicate every point of interest.

- modified set-up data
- experiences with the product
- repetitive faults
- difficulties with this manual

For Europe and Africa:

GRAU Storage Systems GmbH & Co.
Eschenstrasse 3
89556 Boehmenkirch
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Telephone: + 49 / 73 32 / 83-0
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EMASS Inc.
10949 East Peakview avenue
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2 Product Description

2.1 About ACI for Windows NT and Windows 95

ACI (ABBA Media Libary Client Interface) for Windows NT or Windows 95 is the interface between a user application on Windows NT or Windows 95 and the DAS Software from GRAU Storage Systems.
All request relating the operation on the AML can be called via the ACI on the Windows platform. The ACI pipe the requests automatically via remote shell to the DAS administration tool on the OS/2 PC with the AMU Software. Additional you have also an administration tool (command line) for the Windows platform.
.

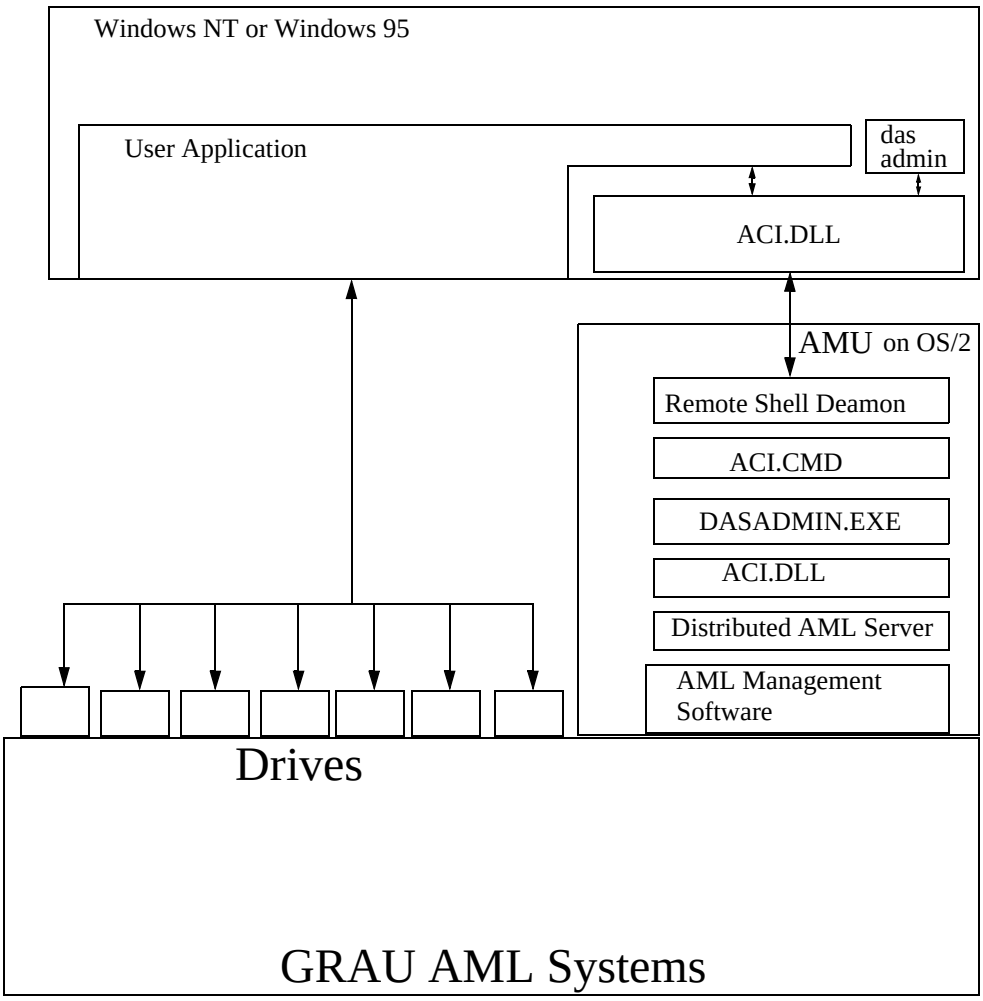

Fig. 2-1: ACI for Windows NT or Windows 95 - Integration

2.2 Compatibility

2.2.1 Software

The programm is tested with the following releases:

- Microsoft Windows NT 3.51 and 4.0
- Microsoft Windows 95
- GRAU Storage Systems DAS 1.30

2.2.2 Drives

All drives which are

- supported by DAS 1.30

are supported by ACI for Windows NT and Windows 95

3 Installing and Configurating

3.1 Installation ACI on Windows NT

Step 1 Enter the disk "ACI for Windows 95 and Windows NT" in the drive a:

Step 2 Copy the file 'ACI.DLL', 'RCMD32.DLL' and 'DASADMIN.EXE' into your Windows system directory.
(On Windows NT 4.0 it is the directory: \winnt\system32).

Step 3 Copy the file 'ACI.H', 'ACI.LIB' and 'ACITEST.C' into your compilers directories.

Step 4 Remove the disk vom drive a:

3.2 Configuration DAS Client on the OS/2 PC

Step 1 Enter the disk in the AMU-PC

Step 2 Open an OS/2 window and enter:

```
C:> copy a:aci.cmd c:\os2
```

Step 3 Edit the file C:\DAS\ETC\CONFIG by entering:

```
C:> epm c:\das\etc\config
```

Step 4 Add a new client to the list of DAS clients
(Details ☞ DAS Administration Guide)

- client_name: alphanumeric name for authorisation
- ip_adress or hostname: TCP/IP identification of OS/2 PC (AMU)
- requests: complete
- options: (avc, dismount)
- volumes: up to 10 ranges of the media names
- drives: alphanumeric names simular to the Description in the Graphical Configuration in the AMU

Example:

```
client  client_name = arcserve,
#       ip_address = 192.63.193.60,
        hostname = AMU,
        requests = complete,
        options = (avc,dismount),
        volumes = ((OD0001 - OD9999)),
        drives = ((LIBRARYA-LIBRARYZ))
```

Step 5 Select TCP/IP and TCP/IP Configuration Icon for open the Window TCP/IP Configuration

Step 6 Configure and Start the RSH daemon on the AMU PC

Step 7 Configure the Security for the RSH (Add the HOST-Name of the Windows-NT machine in the list "HOST authorized to use RSH")

Step 8 Configure and Start an Telnet Deamon on the AMU PC (optional for VirOp Administrator menue)

Step 9 Save the CONFIG file on a floppy for print out.

Step 10 Close all applications on the AMU PC and restart the PC

3.3 Configuration Windows for the ACI

Information

The following configuration is only necessary, if you work with the command line tool `dasadmin`**.**

Step 1 Set the necessary environment variables:
(details ☞ DAS Adminstration Guide)

Environment Variable	Explanation
DAS_SERVER	TCP/IP Identification of the AMU (OS/2) PC for the commands
DAS_CLIENT	Name for authorisation of the command related to the configuration in file `config` on the AMU (OS/2) PC
ACI_MEDIA_TYPE	Default media type for the commands

Example

```
set DAS_SERVER=AMU
set DAS_CLIENT=arcserve
set ACI_MEDIA_TYPE=DECDLT
```


Information

Start the environment variables on the startup with AUTOEXEC.BAT or your on login script.

4 DAS ACI (AML Client Interface)

4.1 DAS ACI for Windows NT and Windows 95

The ACI operates synchronously. Once a request is made to the AML, the request process does not regain control until the operation has completed or has otherwise terminated. (An exception is the inventory call, which starts a physical inventory, and returns.)

The ACI for Windows NT and Windows 95 uses Remote Shell to request DAS services and to receive replies over the network.

4.2 ACI Function Conventions

This chapter lists the DAS 1.3 ACI functions. The conventions for the DAS ACI functions are as follows:

- brief description of the command
- command syntax in `Courier font`
- command return codes
- command example

All ACI function calls and ACI structures are defined in the header file "aci.h".

4.2.1 aci_call

Provide an "universal" DAS ACI function for all dasadmin commands (☞ DAS Administration Guide).

```
#include "aci.h"

int aci_call(   char *server,
                char *client,
                char *mediatype,
                char *command,
                char *aci_msg)
```

The `aci_call` function will be used for all activities with the robot and all commands from administration tool "dasadmin".

Command Parameters

Parameter	Explanation
`server`	TCP/IP Identification of the AMU (OS/2) PC
`client`	variable for authorisation on the Distributed AML Server related to the file config (☞ environment variable DAS_Client in the DAS Adminitration Guide)
`mediatype`	variable for additional confirmation of the media type in the mixed media environment (☞ page 5 - 2)
`command`	command to be execute (syntax of the command ☞ DAS Administration Guide - DAS Admin tool)
`aci_msg`	variable for the return code of the command (☞ Return Value)

Information

The command ’dasadmin qvolsrange "" "" ...’ for get a list of all volser don’t work with the ACI for Windows NT.

Return Values

After execution the program returned an integer errorlevel

- 0: The call was successful
  Returned informations are stored in the variable aci_msg
- -1: The call failed. An DAS error occured on the OS/2 PC
  Returned error message is stored in the variable aci_msg
- -2: The call failed because the DAS is not active
  Returned error message is stored in the variable aci_msg
- -3: The call failed because of a connection problem
- -4: The call failed because of a syntax failure or invalid parameters

DAS error messages ☞ DAS Administration Guide:

Example

```
/* Print drive status of the client arcserve */


#include <windows.h>
#include <stdio.h>
#include "aci.h"
int main (void)
{
     char server [20] = "amu";
     char client [20] = "arcserve";
     char dmtype [20] = "DECDLT";
     char command[128]= "listd";
     printf( "Return Code: %d\n\n",\
     aci_call(server, client, dmtype, command, aci_msg));
     printf("%s\n",aci_msg);
     return(0);
}
```

4.2.2 aci_volume_state

Provide an access to the AMU database to get informations about a specific Volser (volume serial number).

```
#include "aci.h"

int aci_volume_state(char *server,
                     char *client,
                     char *mediatype,
                     char *volume)
```

The `aci_volume_state` function will be used for information requests about the medias in the AML.

Command Parameters

Parameter	Explanation
`server`	TCP/IP Identification of the AMU (OS/2) PC
`client`	variable for authorisation on the Distributed AML Server related to the file config (☞ environment variable DAS_Client in the DAS Adminitration Guide)
`mediatype`	variable for additional confirmation of the media type in the mixed media environment (☞ page 5 - 2)
`volume`	Volser serial number for identification of the medias in the library (barcode label) alphanumeric value up to 16 digits)

Return Values

After execution the program returned an integer errorlevel

- 3: Volser is not registered in the AMU database
- 2: The requested client has not the permission for the Media with the requested Volser
- 1: Media with the requested volser is actual in use
- 0: The media is available
- -1: The call failed. An DAS error occured on the OS/2 PC
- -2: The call failed because the DAS is not active
- -3: The call failed because a connection problem
- -4: The call failed because a syntax failure or invalid parameters

Example

```
/* Print media status of the Volser OD0815*/


#include <windows.h>
#include <stdio.h>
#include "aci.h"
int main (void)
{
     char server [20] = "amu";
     char client [20] = "client5";
     char dmtype [20] = "OD_THICK";
     char volume [16] = "OD0815";
     printf( "Return Code: %d\n\n",\
     aci_volume_state(server, client, dmtype, volume));
     return(0);
}
```

4.2.3 aci_drive_state

Provide an access to the Disributed AML Server and the AMU database to get informations about a specific drive.

```
#include "aci.h"

int aci_drive_state(char *server,
                    char *client,
                    char *mediatype,
                    char *drive)
```

The `aci_drive_state` function will be used for information requests about the drives in the AML und set the allocation UP to the requested client.

Command Parameters

Parameter	Explanation
`server`	TCP/IP Identification of the AMU (OS/2) PC
`client`	variable for authorisation on the Distributed AML Server related to the file config (☞ environment variable DAS_Client in the DAS Adminitration Guide)
`mediatype`	variable for additional confirmation of the media type in the mixed media environment (☞ page 5 - 2)
`drive`	drive name defined in the AMU configuration (**`Description`**) and confirmed in the file config. Alphanumeric value up to 9 significant digits (Details ☞ DAS Administration Guide)

Return Values

After execution the program returned an integer errorlevel

- 4: Drive is not configured in the AML
- 3: Drive is occupied (information from the AMU database)
- 2: The requested client has not the permission for the named drive
- 1: The named drive is not yet allocated
- 0: The named drive is allocated and available
- -1: The call failed. An DAS error occured on the OS/2 PC
- -2: The call failed because the DAS is not active
- -3: The call failed because a connection problem
- -4: The call failed because a syntax failure or invalid parameters

Example

```
/* Print media status of the drive1*/


#include <windows.h>
#include <stdio.h>
#include "aci.h"
int main (void)
{
     char server [20] = "amu";
     char client [20] = "client2";
     char dmtype [20] = "3480";
     char drive [9] = "drive1";
     printf( "Return Code: %d\n\n",\
     aci_drive_state(server, client, dmtype, drive));
     return(0);
}
```

4.3 DASADMIN Tool

For diagnostic and operations with scripts also provided an admin tool for the AML.

Syntax

`dasadmin` *`command [options] [parameter]`*

A list of all commands displayed with `dasadmin -h:`

```
DASADMIN - Distributed AML Server Administrator for Windows 95/NT
COPYRIGHT (c) 1996,1997 by GRAU Storage Sytems
---------------------------------------------------------------
usage......:  dasadmin <command> [options] [parameters]

commands...:  mo[unt]            dism[ount]        scr_set
              ej[ect]            in[sert]          scr_unset
              inventory          view              scr_mount
              catf               rmf               scr_get
              all[ocd]           l[ist]d           scr_info
              scop               scap              scr_insert
              show
              list               can[cel]
              shut[down]         qversion
              qvolsrange

environment:  set DAS_SERVER     = servername
              set DAS_CLIENT     = clientname
              set ACI_MEDIA_TYPE = default media type


Errorlevels: 0 -> Command execution successful.
             1 -> Command execution failed
             2 -> DAS Server is not running on AMU/DAS-PC.
             3 -> Network connection problem.
             4 -> Wrong command or invalid parameter(s).
             5 -> Missing environment variable(s)
```

For the detailed explanation of all commands and returned values ☞ DAS Administration Guide.

Information

The command ’dasadmin qvolsrange "" "" ...’ for get a list of all volser don’t work with the ACI for Windows NT.

5 Appendix

5.1 Files on Installation Disk

File Name	Explanation
ACI.DLL	ACI Dynamic Link Library.
ACI.LIB	ACI Library for to link into your code
ACI.CMD	OS/2 command script file for call the OS/2 dasadmin tool in the remote shell
RCMD32.DLL	Additional dynamic link libary for ACI.DLL
ACI.H	ACI header file.
ACITEST.C	Easy example for an ACI program
README	Text file with the last release and installation informations
DASADMIN.EXE	DAS administrator command line tool for Windows.

5.2 Mediatypes

In the following table printed the mapping of the mediatype names.

mediatype	Explanation	AMU-Types
3480	3480 and 3490 and 3490E cartridges	C0
3590	3590/8590 cartridges	C2
4MM	DDS or DAT cartridge (4mm) (Digital Data Storage)	V2
8MM	D8 cartridge (8 mm)	V1
BETACAM	BETACAM small and large cartridge	V8 (V9)
CD	CD-ROM disk (CD-Caddy)	C6
D2	D2 small and medium cartridge	V3 (V4)
DECDLT	TK-85 Digital Linear Tape (DLT)	C1
DTF	DTF small and large cartridge	V6 (V7)
OD-THICK	Optical disk 512, MO/WORM (11mm)	O1
OD-THIN	Optical disk Reflection (9 mm)	O0
TRAVAN	TRAVAN cartridge	V5
VHS	VHS cartridge	V0

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