



USER DOCUMENTATION

How to Set Up an SIP2 Server for Self-Check Systems

Ex Libris

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1 Overview

Self-check systems are part of a global trend toward self-service in library operations. They enable library patrons to borrow and return materials without the assistance of library staff, usually by means of scanning the barcodes on the item and on the patron's library card.

In order to provide an interface between the ALEPH Circulation module and an external self-check system, you must set up a self-check server.

This document tells you how to operate and prepare your ALEPH 500 system for the installation of a SIP2-compliant self-check system.

SIP2 is an acronym for the Standard Interchange Protocol, Version 2, which was developed by the 3M company. SIP2 is now the standard protocol for data transfer between library automation devices (such as self-check machines) and library circulation systems (such as the ALEPH 500 Circulation module). It facilitates the exchange of patron information and / or library material information.

The communication between ALEPH and the self-check system is based on XML.

1.1 Loans

The ALEPH SIP2 server uses the ALEPH Circulation settings. Therefore, the checks that are active for the SIP2 server are the same as those used by the Circulation client. The Circulation loan checks are defined in the library's `<ADM library>/tab/tab_check_circ` table.

The relevant section in `tab_check_circ` is LOAN.

In addition, the loan transaction is not completed in the event of the following errors:

- Patron's barcode not found
- Item's barcode not found
- Item on loan to another patron
- Patron removes the item before completion of the loan procedure (the loan transaction has been completed, but the desensitizing procedure has not been completed). The system actually performs an automatic return procedure.

Note that the SIP2 Server consults `tab_attr_sub_library`. A loan is only performed if the self-check machine is registered as type 1 in Column 2 of `tab_attr_sub_library`.

1.2 Short Loans

Short Loan functionality is supported by the SIP2 server in the same way as it is when a Short Loan is made from the GUI. The preview period for Short Loans through the self-check machine is defined under the environment variable `item_schedule_preview_period` in `./aleph/proc/sip2_server`.

Note that this variable is also defined under `pc_server_defaults`. The value there is only relevant for the Short Loan preview period in the GUI.

1.3 Renewals

The Renew / Renew All functions are supported by the SIP2 server in the same manner as the Renew / Renew All when they are done through the Web OPAC. The two paths are similar because of the fact that in both cases the patron performs renew himself with no help from the librarian.

The same checks that are done in the Renew / Renew All process in the Web are also done when these activities are done through the SIP2 server. The SIP2 server consults the relevant sections in `tab_check_circ`. The relevant sections are:

```
RENEW-GBL  
RENEW
```

When a loan is performed, if the item is already loaned, and the patron who has the item on loan is the same as the patron performing the loan, a renewal transaction is registered.

1.4 Returns

When a return is performed, if the item is returned late and a fine is to be levied, the system charges a fine. The system does not process outstanding hold requests when the item is returned. Therefore, the library will have to check for requests by entering the barcodes in the Circulation client in the Return function, or via the Requests/Hold Request/Print Letter – Hold Request Filled command and fully process these requests. There are several conditions where a special return message is given, dependent on setup in `tab_sip2.conf` defined in the `./<ADM library>/tab` directory (see section 2.1, `tab_sip2.conf` below). These conditions are:

- When the returned item has an active hold request attached
- If there is a circulation note on the item (Z30-NOTE-CIRCULATION)
- When the item's sublibrary is not registered as a home library for this station (no matching entry for type 3 in Column 2 of `tab_attr_sub_library`).
- If the returned item is a short loan item.

This message can tell the patron to place the returned item in a separate box, thereby indicating to the library staff that these items need special handling.

You can block the return of an item marked as magnetic media and direct the patron to the circulation desk to make the return.

Note that the SIP2 Server consults `tab_attr_sub_library`. A return is only performed if the self-check machine is registered as a type 1 or 2 in Column 2 of `tab_attr_sub_library`.

1.5 Hold Requests

The Hold functionality is supported by the SIP2 server in the same manner as the Hold request when it is done through the Web OPAC. The two paths are similar due to the fact that in both cases, the patron places the Hold request himself without the librarian's intervention.

The same checks that are activated when the patron places the hold request through the Web OPAC are active when the request is placed through the SIP2 server. The SIP2 server consults the relevant sections in `tab_hold_request`. The relevant sections are:

PRE
POST

2 SIP2 Server Settings

By default, the server monitors the 533\${ALEPH_SUB_PORT} port, although the SIP2_SERVER_PORT environment variable can be set to any different free port. The following lines must be present in aleph_start and aleph_startup:

aleph_start

```
setenv SIP2_SERVER_PORT 533${ALEPH_SUB_PORT}
setenv SIP2_STARTUP_LIBS "usm50"
```

aleph_startup

```
if (${SIP2_STARTUP_LIBS}) then
    echo "starting sip2_server..."

    @ n = $1_sip2_server_port
    foreach lib (${SIP2_STARTUP_LIBS})
        start_proc00 $lib
        echo " - $active_library"
        csh -f $aleph_proc/sip2_server $n >& /dev/null &
    @ n ++

end
```

The SIP2 server settings for compatibility with self-check clients are defined in the tab_sip2.conf file and in the tab_sip2_translate file.

2.1 tab_sip2.conf

This table is in the ADM library's tab directory (for example, ./usm50/tab). It sets the operative definitions for the server.

The codes and the values are not case-sensitive.

The structure of the file is as follows:

<operative definition> = <value>

```
[HOST]
error_correction = N
institution_id = ALEPH
online_status = Y
checkin_ok = Y
checkout_ok = Y
stat_update_ok = Y
offline_ok = N
desensitize = Y
resensitize = Y
alert = Y
sc_language = 001
pin_required = N
match_id_type = 01
```

```
[ALERT]
serveradmin = <mail-address>
```

```

[DEBUG]
verbose_msg = N
level = 0

[TIMEOUT]
retries_allowed = 010
timeout_period = 030

[SIP]
field_delimiter = |
protocol_version = 2.00
return_message = N
extensions = Y

[CHAR-CONV]
input = 8859_1_TO_UTF
output = UTF_TO_8859_1

```

2.1.1 Key to Operative Definitions

[HOST]

<code>error_correction</code> <code>s/[n]</code>	<p>If the default is set to "S" (serial), then the ALEPH 500 SIP2 server performs a checksum of the messages received from the self-check system and adds a checksum to the messages sent to the self-check system.</p> <p>If the default is set to "N" (none), no checksum operations are performed.</p> <p>The setting of <code>error_correction</code> must be the same as the setting of this flag in the self-check system configuration.</p>
<code>institution_id</code>	Enter your institution's name
<code>online_status</code> <code>[y]/n</code>	This field is provided by the ALEPH 500 SIP2 server to indicate whether the system is online or offline.
<code>Checkin_ok</code> <code>[y]/n</code>	Y indicates that the self-check system is allowed to return items.
<code>checkout_ok</code> <code>[y]/n</code>	Y indicates that the self-check system is allowed to loan items.
<code>Stat_update_ok</code> <code>[y]/n</code>	This feature is not supported by the ALEPH 500 SIP2 server. Default is set to Y.
<code>Offline_ok</code> <code>y/[n]</code>	This feature is not supported by the ALEPH 500 SIP2 server. Default is set to N.

Desensitize - [y]/n Y desensitizes each item (discharges the magnetic security load) when the item is checked out.

Note: ALEPH does not support sensitization / desensitization of items according to the item's attributes

Resensitize - [y]/n This feature is not supported by the ALEPH 500 SIP2 server. Default is set to Y.

alert [y]/n Y generates an audible sound in the self-check system. The alert will indicate conditions such as articles on hold, articles belonging to another library branch, or other alert conditions. The alert signal will alert the library staff to special article handling conditions during discharging operations.

When set to N and the return_message is set to Y, the system will initiate a special response message telling the patron to place the returned item in a separate box.

sc_language [001] ALEPH 500 SIP2 server conversation language code (can also be found in the self-check system manual). A valid code is a three-digit number.

<u>Language</u>	<u>Code</u>
Unknown (default)	000 (the language is not specified)
English	001
French	002
German	003
Italian	004
Dutch	005
Swedish	006
Finnish	007
Spanish	008
Danish	009
Portuguese	010
Canadian-French	011
Norwegian	012
Hebrew	013
Japanese	014
Russian	015
Arabic	016
Polish	017
Greek	018
Chinese	019
Korean	020
North American Spanish	021
Tamil	022
Malay	023
United Kingdom	024
Icelandic	025
Belgian	026
Taiwanese	027

pin_required y/[n] If set to "Y", each patron is expected to supply their Personal Identification Number in order to borrow a

book. More specifically, the "patron password" field of SIP messages is expected to have a value.

match_id_type

01, 02, and so on. The Match-ID is used **only** for verification. Most commonly, this would be the SSN or university ID.

[ALERT]

serveradmin

Write the mailing address of the server administrator or the library staff so that the self-check system can notify the library staff that, for example, a patron card has been blocked.

[DEBUG]

verbose_msg y/[n]

If set to Y, incoming and outgoing messages are logged by the ALEPH 500 SIP2 server.

level 1/[0]

If set to "1", a variety of error, warning, and informational messages are logged to files by the ALEPH 500 SIP2 server.

[TIMEOUT]

retries_allowed

Number of retries to get an answer from the self-check system.

timeout_period [999]

Response time (in tenths of a seconds) of the ALEPH 500 SIP2 server before doing a retry or giving up. Enter a three-digit value (for example, 225 equals 22.5 seconds). 999 indicate that the timeout is unknown.

[SIP]

field_delimiter

Character used to delimit fields. Normally it would be the pipe character | (code hexadecimal 7C). It cannot appear anywhere except as the last character of the field. Some languages use 'code 7C' as a printable character. In this case, another delimiter character must be defined.

protocol_version
[2.00]

Version 2.00 of the 3M Standard Interchange Protocol. Version 2.00 builds on top of Version 1.00 of the protocol, adding new messages, and new fields to already existing messages.

return_message

If this parameter is set to Y, and if one of the following conditions is met during return, the special message 36 (*Return performed - please put this item into the red box.*) from `$alephe_root/error_eng/sip2_server` instead of message 26 (*Item returned*) is displayed.

The conditions are:

- The item has active hold requests (Z37-record)
- The item has a circulation note in the item record (Z30-NOTE-CIRCULATION) - this can be used in order to identify ILL material.
- The item's sublibrary is not registered as a home library for this station. The item has to be transferred to the item's library. (No matching entry for type 3 in column 2 of `tab_attr_sub_library`).
- The item is a "short-loan" item. An item is a short-loan item if a "reserved items schedule" is defined for the current date for this item in `tab43`.

The patron is asked to set aside problematic items. This way an appropriate action (for example, printing transfer slips), can be taken by the staff using the Circulation GUI.

Extensions

When this parameter is set to Y, the SIP2 server adds the following extensions to the Checkin Response message:

Field ID	Field	ALEPH
CR	collection code	Z30-COLLECTION
CS	call number	Z30-CALL-NO
CT	destination location	Z30-CALL-NO-2
CV	alert type	00 = undetermined
CY	hold patron id	Z37-ID
DB	hold patron name	Z303-NAME

These additions are used for booksort.

Other possible options for the CV field, that are not supported in ALEPH, are:

- 01 hold for this library
- 02 hold for other branch
- 03 hold for ILL
- 04 send to other branch
- 99 other

[CHAR-CONV]

input

Character conversion as defined in the `alephe/unicode/tab_character_conversion_line` table. The `8859_1_TO_UTF` line must be present to translate data from the self-check system to the ALEPH 500 SIP2 server.

output

Character conversion as defined in the `alephe/unicode/tab_character_conversion_line` table. The `UTF_TO_8859_1` line must be present order to translate data from the ALEPH 500 SIP2 server to the self-check system.

2.2 tab_sip2_translate

This table is in the ADM library's `tab` directory (for example, `./usm50/tab`). It matches the Z30 Material field (in ALEPH 500) with the Media Type field (in the self-check system) and defines the description for this field.

The structure of the file is as follows:

```
!      1              2              3              4
!!!!!!!!!!!!!!!!!!!!-!!!!-!!!!!!!!!!!!-!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
MEDIA-TYPE      000              other
MEDIA-TYPE      001      BOOK      book
MEDIA-TYPE      002      ISSUE     magazine
MEDIA-TYPE      003              bound journal
MEDIA-TYPE      004              audio tape
MEDIA-TYPE      005              video tape
MEDIA-TYPE      006              CD/CDROM
MEDIA-TYPE      007              diskette
MEDIA-TYPE      008              book with diskette
MEDIA-TYPE      009              book with CD
MEDIA-TYPE      010              book with audio tape
```

Col. 1 Type of line:

- MEDIA-TYPE - enumerated material type
- ITEM-STATUS - circulation status

The ITEM-STATUS line type is not supported by the ALEPH 500 SIP2 server.

Col. 2 Self-check definition (can also be found in the self-check server's user guide). Valid codes consist of three digits.

Col. 3 ALEPH definition. Only the material types *book* and *issue* are defined by default. Further adjustments have to be made.

Col. 4 Description of the Media Type in Col. 2

2.3 Circulation Checks

Circulation activity through any self-check machine is subject to the same checks that are performed when done through the Circulation desk or through the Web OPAC.

The SIP2 server consults `tab_check_circ` general settings for regular circulation checks and consults specific entries of the table for checks that are only in force for self-check circulation activities. These sections are:

- SIP-AUTH: checks during the authentication of a patron through in SIP2 server
- SIP-LOAN: checks when the item is loaned/renewed through SIP2 server
- SIP-RETURN: checks when the item is returned through SIP2 server

2.3.1 Patron Block Check

A patron block check can be activated using the `check_circ_1_a` program under the SIP-AUTH section in `tab_check_circ`. The program checks whether at least one of the three block fields of the Global Patron Record (Z303) is filled. The block status (Y = blocked ; blank = not blocked) is put into the *Patron Status* field. Although the *Patron Status* field lets you differentiate between several kinds of blocks, ALEPH sets every position to Y if the patron is blocked.

2.3.2 Patron Authentication Response

ALEPH returns the result of the authentication check to the SIP2 interface by filling the following fields:

Valid Patron

- Y = patron ID is valid
- N = patron ID is not valid

Valid Patron Password

- Y = patron password is valid
- N = patron password is non valid.

2.3.3 Magnetic Media check

A magnetic media check can be defined for both the SIP-LOAN and SIP-RETURN sections in `tab_check_circ` (located under the `./usm50/tab` directory). If the patron tries to loan, renew or return an item marked as magnetic media, an error message is displayed and the patron is referred to the Circulation Desk. The identification of an item as a magnetic media is done according to Column 4 of `tab25.lng` (Material types).

The check is `check_circ_2_e`.

For example:

```
SIP-LOAN  check_circ_2_e
SIP-RETURN check_circ_2_e
```

3 Client-Server Activation

3.1 Server Activation

To activate the ALEPH 500 SIP2 server:

From the Unix command prompt, enter:

```
>>>dlib <ADM library> (for example, dlib USM50)
>>>util W
```

The following menu displays:

```
W. Server Management (WWW, PC, Z39)
-----
  0. Exit Procedure
  1. Monitor Servers
  2. Stop Servers
  3. Start Servers
  4. View Log File
```

Please select [exit]:

When 3 (Start servers) is entered, the following menu appears:

Start Servers

```
  0. Exit Procedure
  1. WWW Server
  3. PC Server
  4. Z39 Server
  5. Z39 Gate
  6. HTTP (Apache) Server (Root Password is Required)
  7. Other Server
```

Enter number [0]

When 7 (Other Server) is entered, the following menu appears:

Start 'Other' Servers

```
  0. Exit Procedure
  1. ILL Server
  2. LSSU Server
  3. NCIP Server
  4. OCLC Server
  5. SIP2 Server
  6. SLNP Server
```

Enter Number [0]

Port number is the port number to be used by the ALEPH 500 SIP2 server. The port number must be the same as that set in the self-check system configuration.

The server creates a log file under \$LOGDIR. The name of the log file is sip2_server_<portnumber>.log

4 ALEPH 500 SIP2 Server Messages

The messages for the ALEPH 500 SIP2 server are defined in the following files in `alephe/error_<lng>`.

- `sc_global`
- `sip2_server`

If you want to modify the text, note that the messages must not contain control characters or any other special ALEPH editing characters.

5 ALEPH and the 3M Standard Interchange Protocol Version 2.00

The following section contains the descriptions of SIP2 messages and fields supported by ALEPH. These descriptions are taken from Version 2.00 of the 3M Standard Interchange Protocol as rendered by the 3M company. Version 2.00 builds on top of Version 1.00 of the protocol, adding new messages, and new fields to already-existing messages.

All new messages and fields are indicated by having “2.00” in front of them in the message definitions. Any messages and fields that are not prefixed by “2.00” existed in earlier versions of the protocol.

Acronyms and Abbreviations

ACS = Automated Circulation System = ALEPH SIP2 Server
SC = The 3M SelfCheck system or any library automation device dealing with patrons or library materials

5.1 Command Messages to the ACS

Patron Status Request

This message is used by the SC to request patron information from the ACS. The ACS must respond to this command with a Patron Status Response message.

23<language><transaction date><institution id><patron identifier><terminal password><patron password>

<u>Field</u>	<u>ID</u>	<u>Format</u>
patron identifier	AA	variable-length required field
patron password	AD	variable-length required field

Checkout

This message is used by the SC to request to loan an item, or to cancel a Checkin request that was not successfully completed. The ACS must respond to this command with a Checkout Response message.

11<SC renewal policy><no block><transaction date><nb due date><institution id><patron identifier><item identifier><terminal password><patron password><item properties><fee acknowledged><cancel>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	patron identifier	AA	variable-length required field
	item identifier	AB	variable-length required field
2.00	<i>patron password</i>	<i>AD</i>	<i>variable-length optional field</i>
2.00	<i>cancel</i>	<i>BI</i>	<i>1-char, optional field: Y or N</i>

Checkin

This message is used by the SC to request the return of an item, or to cancel a Checkout request that did not successfully complete. The ACS must respond to this command with a Checkin Response message.

09<no block><transaction date><return date><current location><institution id><item identifier><terminal password><item properties><cancel>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	item identifier	AB	variable-length required field
2.00	cancel	BI	1-char, optional field: Y or N

Block Patron

This message requests that the patron card will be blocked by the ACS. This is, for example, sent when the patron is detected tampering with the SC or when a patron forgets to take their card. The ACS should invalidate the patron's card and respond with a Patron Status Response message. The ACS could also notify the library staff that the card has been blocked.

01<card retained><transaction date><institution id><blocked card msg><patron identifier><terminal password>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	patron identifier	AA	variable-length required field

SC Status

The SC status message sends SC status to the ACS. It requires an ACS Status Response message reply from the ACS. This message will be the first message sent by the SC to the ACS once a connection has been established (exception: the Login Message may be sent first to login to an ACS server program). The ACS will respond with a message that establishes some of the rules to be followed by the SC and establishes some parameters needed for further communication.

99<status code><max print width><protocol version>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	protocol version		4-char, fixed-length required field: x.xx

Request ACS Resend

This message requests the ACS to re-transmit its last message. It is sent by the SC to the ACS when the checksum in a received message does not match the value calculated by the SC. The ACS should respond by re-transmitting its last message. This message should never include a "sequence number" field, even when error detection is enabled, (see "Checksums and Sequence Numbers" below) but would include a "checksum" field since checksums are in use.

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2.00 Login

This message can be used to login to an ACS server program. The ACS should respond with the Login Response message. Whether to use this message or to use some other mechanism to login to the ACS is configurable on the SC. When this message is used, it will be the first message sent to the ACS.

93<UID algorithm><PWD algorithm><login user id><login password><location code>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
2.00	login user id	CN	variable-length required field
2.00	login password	CO	variable-length required field

2.00 Patron Information

This message is a superset of the Patron Status Request message. It should be used to request patron information. The ACS should respond with the Patron Information Response message.

63<language><transaction date><summary><institution id><patron identifier><terminal password><patron password><start item><end item>

<u>Field</u>	<u>ID</u>	<u>Format</u>
patron identifier	AA	variable-length required field
patron password	AD	variable-length optional field

2.00 Item Information

This message may be used to request item information. The ACS should respond with the Item Information Response message. An item can be retrieved either by barcode or by call number (Z30-CALL-NO).

17<transaction date><institution id>< item identifier ><terminal password>

<u>Field</u>	<u>ID</u>	<u>Format</u>
item identifier	AB	variable-length required field.

2.00 Renew

This message is used when a loan is renewed. The ACS should respond with a Renew Response message. Either or both of the 'Item Identifier' and the 'title identifier' must be present for the message to be useful.

29<third party allowed><no block><transaction date><nb due date>
<institution id><patron identifier><patron password><item identifier>
<title identifier><terminal password><item properties><fee acknowledged>

<u>Field</u>	<u>ID</u>	<u>Format</u>
patron identifier	AA	variable-length required field
patron password	AD	variable-length optional field
item identifier	AB	variable-length optional field

2.00 Renew All

This message is used to renew all items that the patron has checked out. The ACS should respond with a Renew All Response message.

65<transaction date><institution id><patron identifier><patron password>
<terminal password><fee acknowledged>

<u>Field</u>	<u>ID</u>	<u>Format</u>
transaction date		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
patron identifier	AA	variable-length required field
patron password	AD	variable-length optional field

2.00 Holds

This message is used to create, modify or delete a hold. The ACS should respond with a hold Response message. Either or both of the 'item identifier' and the 'title identifier' fields must be present for the message to be useful.

15<hold mode><transaction date><expiration date><pickup location>
<hold type><institution id><patron identifier><patron password><item identifier><title identifier><terminal password><fee acknowledged>

Field	ID	Format
hold mode		1-char, fixed-length required field '+'/'-' Add , delete
expiration date	BW	18-char, fixed-length optional field: YYYYMMDDZZZZHHMMSS
patron identifier	AA	variable-length required field
patron password	AD	variable-length optional field
item identifier	AB	variable-length optional field

5.2 Response Messages from the ACS

Patron Status Response

The ACS must send this message in response to a Patron Status Request message as well as in response to a Block Patron message.

24<patron status><language><transaction date><institution id><patron identifier><personal name><valid patron><valid patron password><currency type><fee amount><screen message><print line>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	patron status		14-char, fixed-length required field
	language		3-char, fixed-length required field
	transaction date		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
	institution id	AO	variable-length required field
	patron identifier	AA	variable-length required field
	personal name	AE	variable-length required field
2.00	<i>valid patron</i>	BL	1-char, optional field: Y or N
2.00	<i>valid patron password</i>	CQ	1-char, optional field: Y or N
	screen message	AF	variable-length optional field
	print line	AG	variable-length optional field

Checkout Response

This message must be sent by the ACS in response to a Checkout message from the SC.

12<ok><renewal ok><magnetic media><desensitize><transaction date><institution id><patron identifier><item identifier><title identifier><due date><fee type><security inhibit><currency type><fee amount><media type><item properties><transaction id><screen message><print line>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	ok		1-char, fixed-length required field: 0 or 1.
	magnetic media		1-char, fixed-length required field: Y or N or U.
	desensitize		1-char, fixed-length required field: Y or N or U.
	transaction date		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
	institution id	AO	variable-length required field
	patron identifier	AA	variable-length required field
	item identifier	AB	variable-length required field
	title identifier	AJ	variable-length required field
	due date	AH	variable-length required field
2.00	<i>media type</i>	CK	3-char, fixed-length optional field
	screen message	AF	variable-length optional field
	print line	AG	variable-length optional field

The OK and Desensitize fields should be set according to the following rules:

OK	should be set to 1 if the ACS loaned the item to the patron. should be set to 0 if the ACS did not loan the item to the patron.
Desensitize	should be set to Y if the SC should desensitize the article.

should be set to N if the SC should not desensitize the article (for example, a closed reserve book, or the checkout was refused).

Checkin Response

This message must be sent by the ACS in response to a SC Checkin message.

10<ok><resensitize><magnetic media><alert><transaction date><institution id><item identifier><permanent location><title identifier><sort bin><patron identifier><media type><item properties><screen message><print line>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	ok		1-char, fixed-length required field: 0 or 1.
	resensitize		1-char, fixed-length required field: Y or N.
	magnetic media		1-char, fixed-length required field: Y or N or U.
	transaction date		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
	institution id	AO	variable-length required field
	item identifier	AB	variable-length required field
2.00	permanent location	AQ	variable-length required field contains Z30-COLLECTION name
2.00	<i>patron identifier</i>	AA	<i>variable-length optional field. ID of the patron who had the item checked out.</i>
2.00	<i>media type</i>	CK	<i>3-char, fixed-length optional field</i>
	screen message	AF	variable-length optional field
	print line	AG	variable-length optional field

The OK, and Resensitize fields should be set according to the following rules:

OK	should be set to 1 if the ACS returned the item. should be set to 0 if the ACS did not return the item.
Resensitize	should be set to Y if the SC should resensitize the article. should be set to N if the SC should not resensitize the article (for example, a closed reserve book, or the checkin was refused).

ACS Status

The ACS must send this message in response to a SC Status message. This message will be the first message sent by the ACS to the SC, since it establishes some of the rules to be followed by the SC and establishes some parameters needed for further communication (exception: the Login Response Message may be sent first to complete login of the SC).

98<online status><checkin ok><checkout ok><ACS renewal policy><status update ok><offline ok><timeout period><retries allowed><date / time sync><protocol version><institution id><library name><supported messages><terminal location><screen message><print line>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	online status		1-char, fixed-length required field: Y or N.
	checkin ok		1-char, fixed-length required field: Y or N.
	checkout ok		1-char, fixed-length required field: Y or N.
	ACS renewal policy		1-char, fixed-length required field: Y or N.
	status update ok		1-char, fixed-length required field: Y or N.
	offline ok		1-char, fixed-length required field: Y or N.
	timeout period		3-char, fixed-length required field
	retries allowed		3-char, fixed-length required field
	date / time sync		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
	protocol version		4-char, fixed-length required field: x.xx
	institution id	AO	variable-length required field
	library name	AM	variable-length optional field
2.00	<i>supported messages</i>	BX	<i>variable-length required field</i>
	screen message	AF	variable-length optional field

print line AG variable-length optional field

Request SC Resend

This message requests the SC to re-transmit its last message. It is sent by the ACS to the SC when the checksum in a received message does not match the value calculated by the ACS. The SC should respond by re-transmitting its last message. This message should never include a "sequence number" field, even when error detection is enabled, (see "Checksums and Sequence Numbers" below) but would include a "checksum" field since checksums are in use.

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2.00 Login Response

The ACS should send this message in response to the Login message. When this message is used, it will be the first message sent to the SC.

94<ok>

<u>Field</u>	<u>ID</u>	<u>Format</u>
ok		1-char, fixed-length required field: 0 or 1.

2.00 Patron Information Response

The ACS must send this message in response to the Patron Information message.

64<patron status><language><transaction date><hold items count><overdue items count><charged items count><fine items count><recall items count><unavailable holds count><institution id><patron identifier><personal name><hold items limit><overdue items limit><charged items limit><valid patron><valid patron password><currency type><fee amount><fee limit><items><home address><e-mail address><home phone number><screen message><print line>

	<u>Field</u>	<u>ID</u>	<u>Format</u>
	patron status		14-char, fixed-length required field
	language		3-char, fixed-length required field
	transaction date		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
2.00	hold items count		4-char, fixed-length required field
2.00	institution id	AO	variable-length required field
	patron identifier	AA	variable-length required field
	personal name	AE	variable-length required field
2.00	valid patron	BL	1-char, optional field: Y or N
2.00	valid patron password	CQ	1-char, optional field: Y or N
2.00	home address	BD	variable-length optional field
2.00	e-mail address	BE	variable-length optional field
2.00	home phone number	BF	variable-length optional field
	screen message	AF	variable-length optional field
	print line	AG	variable-length optional field

2.00 Item Information Response

The ACS must send this message in response to the Item Information message.

18<circulation status><hold queue length><security marker><fee type><transaction date><due date><recall date><hold pickup date><item identifier><title identifier><owner><currency type><fee amount><media type><permanent location><current location><item properties><screen message><print line>

<u>Field</u>	<u>ID</u>	<u>Format</u>
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2.00	circulation status		2-char, fixed-length required field (00 thru 99)
	transaction date		18-char, fixed-length required field: YYYYMMDDZZZZHHMMSS
2.00	hold queue length	CF	variable-length optional field
	due date	AH	variable-length optional field.
2.00	recall date	CJ	18-char, fixed-length optional field: YYYYMMDDZZZZHHMMSS
	item identifier	AB	variable-length required field
	title identifier	AJ	variable-length required field
2.00	owner	BG	variable-length optional field
2.00	media type	CK	3-char, fixed-length optional field
2.00	permanent location	AQ	variable-length optional field
	screen message	AF	variable-length optional field
	print line	AG	variable-length optional field

2.00 Renew Response

This message must be sent by the ACS in response to the Renew message by the SC.

30<ok><renewal ok><magnetic media><desensitize><transaction date>
<institution id><patron identifier><item identifier><title identifier><due
date><fee type><security inhibit><currency type><fee amount><media
type><item properties><transaction id><screen message><print line>

Field	ID	Format
ok		1-char, fixed-length required field: 0 or 1.
renewal ok		1-char, fixed-length required field: Y or N.
transaction date		18-char, fixed-length required field: YYYYMMDDZZ ZZHHMMSS
institution id	AO	variable-length required field
patron identifier	AA	variable-length required field
item identifier	AB	variable-length required field
title identifier	AJ	variable-length required field
due date	AH	variable-length required field
screen message	AF	variable-length optional field
print line	AG	variable-length optional field

2.00 Renew All Response

The ACS should send this message in response to the Renew All message from SC.

66<ok ><renewed count><unrenewed count><transaction date><institution
id><renewed items><unrenewed items><screen message><print line>

Field	ID	Format
ok		1-char, fixed-length required field: 0 or 1
renewed count		4-char fixed-length required field
unrenewed count		4-char fixed-length required field
transaction date		18-char, fixed-length required field: YYYYMMDDZZ ZZHHMMSS
institution id	AO	variable-length required field
renewed items	BM	variable-length optional field (this field sent for each renewed item)
unrenewed items	BN	variable-length optional field (this field sent for each unrenewed item)
screen message	AF	variable-length optional field
print line	AG	variable-length optional field

2.00 Hold Response

The ACS should send this message in response to the Hold message from the SC>

16<ok><available><transaction date><expiration date><queue position>
<pickup location><institution id><patron identifier><item identifier><title
identifier><screen message><print line>

<u>Field</u>	<u>ID</u>	<u>Format</u>
ok		1-char, fixed-length required field: 0 or 1.
available		1-char, fixed-length required field: Y or N.
transaction date		18-char, fixed-length required field: YYYYMMDDZZ ZZHHMMSS
institution id	AO	variable-length required field
patron identifier	AA	variable-length required field
item identifier	AB	variable-length optional field
title identifier	AJ	variable-length optional field
screen message	AF	variable-length optional field
print line	AG	variable-length optional field

6 Example: 3M SelfCheck™ Systems

The 3M SelfCheck System is manufactured by the 3M company (see the 3M Web site: <http://www.3m.com/library>).

The 3M SelfCheck allows the patron to borrow items (with accompanying demagnetization). The loan process begins when a patron places a library card under the scanner. A receipt is printed after a loan is successfully transacted. This shows the patron's name, book and item details and due date. If the loan was not completed, a message is displayed to the patron, instructing him to apply to the circulation desk. The 3M SelfCheck always relates to a specific ADM library.

The 3M SelfCheck interface supports both SIP1 and SIP2 protocols/software. SIP2 is a richer protocol. ALEPH 500 supports, in addition to the features that were available in SIP1, some of its new features as well. The 3M SelfCheck models that have been checked for use with ALEPH 500 are 4210 (shown below) /5210/5220/6210.



3M SelfCheck™ System Model 4210

6.1 Client Activation

A separate user guide is provided by 3M.

The 3M SelfCheck contains different configuration menus. The following are the settings for the configuration menus. The settings in the 3M SelfCheck and the SIP2 server must match.

- Select Host Communication from the SelfCheck configuration menu
- Select TCP/IP Control
- Line 1, 2, 3, must be provided by the system manager.
- Line 4 Host IP address of the machine where the ALEPH 500 SIP2 server is running
- Line 5 Host Port number. This must be the same as the port number on which the ALEPH 500 SIP2 server is activated.

- Line 7 Error Correction Protocol. There are two options: NONE and SERIAL. This must be the same value as in the `error_correction` field in the `tab_sip2.conf` file in the ADM library's `tab` directory (for example, `./usm50/tab`).