

IMAP4 ID extension

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Abstract

The ID extension to the Internet Message Access Protocol - Version 4rev1 (IMAP4rev1) protocol allows the server and client to exchange identification information on their implementation in order to make bug reports and usage statistics more complete.

1. Introduction

The IMAP4rev1 protocol described in [IMAP4rev1] provides a method for accessing remote mail stores, but it provides no facility to advertise what program a client or server uses to provide service. This makes it difficult for implementors to get complete bug reports from users, as it is frequently difficult to know what client or server is in use.

Additionally, some sites may wish to assemble usage statistics based on what clients are used, but in an environment where users are permitted to obtain and maintain their own clients this is difficult to accomplish.

The ID command provides a facility to advertise information on what programs are being used along with contact information (should bugs ever occur).

2. Conventions Used in this Document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [KEYWORDS].

The conventions used in this document are the same as specified in [IMAP4rev1]. In examples, "C:" and "S:" indicate lines sent by the client and server respectively. Line breaks have been inserted for readability.

3. Specification

The sole purpose of the ID extension is to enable clients and servers to exchange information on their implementations for the purposes of statistical analysis and problem determination.

This information is to be submitted to a server by any client wishing to provide information for statistical purposes, provided the server advertises its willingness to take the information with the atom "ID" included in the list of capabilities returned by the CAPABILITY command.

Implementations MUST NOT make operational changes based on the data sent as part of the ID command or response. The ID command is for human consumption only, and is not to be used in improving the performance of clients or servers.

This includes, but is not limited to, the following:

Servers MUST NOT attempt to work around client bugs by using information from the ID command. Clients MUST NOT attempt to work around server bugs based on the ID response.

Servers MUST NOT provide features to a client or otherwise optimize for a particular client by using information from the ID command. Clients MUST NOT provide features to a server or otherwise optimize for a particular server based on the ID response.

Servers MUST NOT deny access to or refuse service for a client based on information from the ID command. Clients MUST NOT refuse to operate or limit their operation with a server based on the ID response.

Rationale: It is imperative that this extension not supplant IMAP's CAPABILITY mechanism with a ad-hoc approach where implementations guess each other's features based on who they claim to be.

Implementations MUST NOT send false information in an ID command.

Implementations MAY send less information than they have available or no information at all. Such behavior may be useful to preserve user privacy. See Security Considerations, section 7.

3.1. ID Command

Arguments: client parameter list or NIL

Responses: OPTIONAL untagged response: ID

Result: OK identification information accepted
BAD command unknown or arguments invalid

Implementation identification information is sent by the client with the ID command.

This command is valid in any state.

The information sent is in the form of a list of field/value pairs. Fields are permitted to be any IMAP4 string, and values are permitted to be any IMAP4 string or NIL. A value of NIL indicates that the client can not or will not specify this information. The client may also send NIL instead of the list, indicating that it wants to send no information, but would still accept a server response.

The available fields are defined in section 3.3.

```
Example: C: a023 ID ("name" "sodr" "version" "19.34" "vendor"
                "Pink Floyd Music Limited")
        S: * ID NIL
        S: a023 OK ID completed
```

3.2. ID Response

Contents: server parameter list

In response to an ID command issued by the client, the server replies with a tagged response containing information on its implementation. The format is the same as the client list.

```
Example: C: a042 ID NIL
        S: * ID ("name" "Cyrus" "version" "1.5" "os" "sunos"
                "os-version" "5.5" "support-url"
                "mailto:cyrus-bugs+@andrew.cmu.edu")
        S: a042 OK ID command completed
```

A server MUST send a tagged ID response to an ID command. However, a server MAY send NIL in place of the list.

3.3. Defined Field Values

Any string may be sent as a field, but the following are defined to describe certain values that might be sent. Implementations are free to send none, any, or all of these. Strings are not case-sensitive. Field strings MUST NOT be longer than 30 octets. Value strings MUST NOT be longer than 1024 octets. Implementations MUST NOT send more than 30 field-value pairs.

name	Name of the program
version	Version number of the program
os	Name of the operating system
os-version	Version of the operating system
vendor	Vendor of the client/server
support-url	URL to contact for support
address	Postal address of contact/vendor
date	Date program was released, specified as a date-time in IMAP4rev1
command	Command used to start the program
arguments	Arguments supplied on the command line, if any if any
environment	Description of environment, i.e., UNIX environment variables or Windows registry settings

Implementations MUST NOT use contact information to submit automatic bug reports. Implementations may include information from an ID response in a report automatically prepared, but are prohibited from sending the report without user authorization.

It is preferable to find the name and version of the underlying operating system at runtime in cases where this is possible.

Information sent via an ID response may violate user privacy. See Security Considerations, section 7.

Implementations MUST NOT send the same field name more than once.

4. Formal Syntax

This syntax is intended to augment the grammar specified in [IMAP4rev1] in order to provide for the ID command. This specification uses the augmented Backus-Naur Form (BNF) notation as used in [IMAP4rev1].

```
command_any ::= "CAPABILITY" / "LOGOUT" / "NOOP" / x_command / id
              ;; adds id command to command_any in [IMAP4rev1]
```

```
id ::= "ID" SPACE id_params_list
```

```
id_response ::= "ID" SPACE id_params_list
```

```
id_params_list ::= "(" #(string SPACE nstring) ")" / nil
                 ;; list of field value pairs
```

```
response_data ::= "*" SPACE (resp_cond_state / resp_cond_bye /
                              mailbox_data / message_data / capability_data / id_response)
```

5. Use of the ID extension with Firewalls and Other Intermediaries

There exist proxies, firewalls, and other intermediary systems that can intercept an IMAP session and make changes to the data exchanged in the session. Such intermediaries are not anticipated by the IMAP4 protocol design and are not within the scope of the IMAP4 standard. However, in order for the ID command to be useful in the presence of such intermediaries, those intermediaries need to take special note of the ID command and response. In particular, if an intermediary changes any part of the IMAP session it must also change the ID command to advertise its presence.

A firewall MAY act to block transmission of specific information fields in the ID command and response that it believes reveal information that could expose a security vulnerability. However, a firewall SHOULD NOT disable the extension, when present, entirely, and SHOULD NOT unconditionally remove either the client or server list.

Finally, it should be noted that a firewall, when handling a CAPABILITY response, MUST NOT allow the names of extensions to be returned to the client that the firewall has no knowledge of.

6. References

- [KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", RFC 2119, March 1997.
- [IMAP4rev1] Crispin, M., "Internet Message Access Protocol - Version 4rev1", RFC 2060, October 1996.
- [RFC-822] Crocker, D., "Standard for the Format of ARPA Internet Text Messages", STD 11, RFC 822, August 1982.

7. Security Considerations

This extension has the danger of violating the privacy of users if misused. Clients and servers should notify users that they implement and enable the ID command.

It is highly desirable that implementations provide a method of disabling ID support, perhaps by not sending ID at all, or by sending NIL as the argument to the ID command or response.

Implementors must exercise extreme care in adding fields sent as part of an ID command or response. Some fields, including a processor ID number, Ethernet address, or other unique (or mostly unique) identifier allow tracking of users in ways that violate user privacy expectations.

Having implementation information of a given client or server may make it easier for an attacker to gain unauthorized access due to security holes.

Since this command includes arbitrary data and does not require the user to authenticate, server implementations are cautioned to guard against an attacker sending arbitrary garbage data in order to fill up the ID log. In particular, if a server naively logs each ID command to disk without inspecting it, an attacker can simply fire up thousands of connections and send a few kilobytes of random data. Servers have to guard against this. Methods include truncating abnormally large responses; collating responses by storing only a single copy, then keeping a counter of the number of times that response has been seen; keeping only particularly interesting parts of responses; and only logging responses of users who actually log in.

Security is affected by firewalls which modify the IMAP protocol stream; see section 5, Use of the ID Extension with Firewalls and Other Intermediaries, for more information.

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