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MacTCP 2.0.6: Invalid Domain Name, Syntax Error (12/94)

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TOPIC -----

We have discovered a problem when running MacTCP 2.0.6. We have duplicated the error on a PowerBook Duo 270c, Macintosh IIci, and Macintosh IIfx. System software involved is System 7.5 and System 7.0.1 (on IIfx).

When we attempt to connect to an IP host with an underscore character in the name, we get a MacTCP error. For example, when we use Telnet 2.6 to connect to an IP host with a valid name of hlan_pager.pnl.gov.

The error returned was "The connection to <hostname> cannot be opened because the domain name given was invalid. Internal error 0. Mac OS error -23041". Error -23041 is a name syntax error. This naming convention caused no problems with MacTCP 2.0.4, what's wrong?

DISCUSSION -----

MacTCP 2.0.6 was changed to adhere to RFC 1034 (Section 3.5) and RFC 1035 (Section 2.3.1) in regards to domain name syntax.

Here is section 3.5 from RFC 1034:

3.5. Preferred name syntax

The DNS specifications attempt to be as general as possible in the rules for constructing domain names. The idea is that the name of any existing object can be expressed as a domain name with minimal changes. However, when assigning a domain name for an object, the prudent user will select a name which satisfies both the rules of the domain system and any existing rules for the object, whether these rules are published or implied by existing programs.

For example, when naming a mail domain, the user should satisfy both the rules of this memo and those in RFC-822. When creating a new host name, the old rules for HOSTS.TXT should be followed. This avoids problems when old software is

converted to use domain names.

The following syntax will result in fewer problems with many applications that use domain names (e.g., mail, TELNET).

<domain> ::= <subdomain> | " "

<subdomain> ::= <label> | <subdomain> "." <label>

<label> ::= <letter> [[<ldh-str>] <let-dig>]

<ldh-str> ::= <let-dig-hyp> | <let-dig-hyp> <ldh-str>

<let-dig-hyp> ::= <let-dig> | "-"

<let-dig> ::= <letter> | <digit>

<letter> ::= any one of the 52 alphabetic characters A through Z in upper case and a through z in lower case

<digit> ::= any one of the ten digits 0 through 9

Note that while upper and lower case letters are allowed in domain names, no significance is attached to the case. That is, two names with the same spelling but different case are to be treated as if identical.

The labels must follow the rules for ARPANET host names. They must start with a letter, end with a letter or digit, and have as interior characters only letters, digits, and hyphen. There are also some restrictions on the length. Labels must be 63 characters or less.

For example, the following strings identify hosts in the Internet:

A.ISI.EDU XX.LCS.MIT.EDU SRI-NIC.ARPA

As you can see, host and domain names that start with a period or that contain underscore characters are illegal. MacTCP is not going to be changed to allow illegal host and domain names. The only options we see for the customer is to revert back to MacTCP 2.0.4 or change their host and domain naming conventions to be in line with the RFCs. We suspect the latter option is the right one to take.

Support Information Services

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