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WHOIS Protocol Specification
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Status of this Memo

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Abstract

This document updates the specification of the WHOIS protocol, thereby obsoleting RFC954. The update is intended to remove the material from RFC954 that does not have to do with the on-the-wire protocol, and is no longer applicable in today's Internet. This document does not attempt to change or update the protocol per se, or document other uses of the protocol that have come into existence since the publication of RFC954.

1. Introduction

WHOIS is a TCP-based transaction-oriented query/response protocol

that is widely used to provide information services to Internet users. While originally used to provide "white pages" services and information about registered domain names, current deployments cover a much broader range of information services. The protocol delivers its content in a human-readable format. This document updates the specification of the WHOIS protocol, thereby obsoleting RFC954 [1].

For historic reasons, WHOIS lacks many of the protocol design attributes, for example internationalisation and strong security, that would be expected from any recently-designed IETF protocol. This document does not attempt to rectify any of those short comings.

Instead, this memo documents the WHOIS protocol as it is. In some areas, this document does document particular well known shortcomings of the WHOIS protocol. The discussion of possible protocols to carry out these functions, with updated capabilities to address the short comings, is being addressed in a separate IETF activitiy (CRISP Working Group).

2. Protocol Specification

A WHOIS server listens on TCP port 43 for requests from WHOIS clients. The WHOIS client makes a text request to the WHOIS server, then the WHOIS server replies with text content. All requests are terminated with ASCII CR and then ASCII LF. The response might contain more than one line of text, so the presence of ASCII CR or ASCII LF characters does not indicate the end of the response. The WHOIS server closes its connection as soon as the output is finished.

The closed TCP connection is the indication to the client that the response has been received.

3. Protocol Example

If one places a request of the WHOIS server located at whois.nic.mil for information about "Smith", the packets on the wire will look like:

```
client                          server at whois.nic.mil

open TCP   ---- (SYN) ------------------------------>
           <---- (SYN+ACK) -------------------------
send query ---- "Smith<CR><LF>" -------------------->
get answer <---- "Info about Smith<CR><LF>" ---------
           <---- "More info about Smith<CR><LF>" ----
close      <---- (FIN) ------------------------------
           ----- (FIN) ------------------------------>
```

4. Internationalisation

The WHOIS protocol has not been internationalised. The WHOIS protocol has no mechanism for indicating the character set in use. Originally, the predominant text encoding in use was US-ASCII. In practice, some WHOIS servers, particularly those outside the USA, might be using some other character set either for requests, replies, or both. This inability to predict or express text encoding has adversely impacted the interperability (and, therefore, usefulness) of the WHOIS protocol.

5. Security Considerations

The WHOIS protocol has no provisions for strong security. WHOIS lacks mechanisms for access control, integrity, and confidentiality. Accordingly, WHOIS-based services should only be used for information which is non-sensitive and intended to be accessible to everyone. The absence of such security mechanisms means this protocol would not normally be acceptable to the IETF at the time of this writing.

6. Acknowledgements

Ran Atkinson created an earlier version of this document.

Normative References

[1] Harrenstien, K., Stahl, M. and E. Feinler, "NICNAME/WHOIS", RFC 954, October 1985.

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