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IANA Considerations for RPC Net Identifiers
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Abstract

This Internet-Draft lists IANA Considerations for RPC Network Identifiers (netids). This Internet-Draft updates, but does not replace, [RFC1833](#).

Requirements Language

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 [RFC 2119](#) [1].

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1. Introduction and Motivation

The concept of an RPC ([3]) Network Identifier (netid) was introduced in [2] for distinguishing universal network addresses of multiple protocols. [2] states that a netid ``is defined by a system administrator based on local conventions, and cannot be depended on to have the same value on every system.'' Since the publication of RFC1833, it has been found to be necessary that protocols like [4] and [5] depend on consistent values of netids across every system, and current practices tend to ensure this consistency. Thus, this document identifies the considerations for IANA to establish a registry of netids for RPC and specifies the initial content of the registry.

2. Security Considerations

See section 9 of [6].

3. IANA Considerations

This section uses terms that are defined in [6].

IANA will create a registry called "ONC RPC Netids". The remainder of this section describes the registry.

All assignments to the ONC RPC Netids registry are made on one of two bases:

- o First Come First Served basis per section 4.1 of [6].
- o Standards Action per section 4.1 of [6].

Netids can be up to $2^{32} - 1$ octets in length. However, to ensure that practical values for Standards Track protocols are not exhausted, the values of netids one to eight octets long should be used for netids assigned on the Standards Action basis. Assignments made on a First Come First Served basis should be assigned netids of length 9 to 128 octets long. All netids, regardless of length, that start with the prefixes "STDS" or "FCFS" are Reserved, in order to extend the name space of either basis. In addition, to give IESG the flexibility in the future to permit Private and Experimental Uses, all netids with the prefixes "PRIV" or "EXPE" are Reserved. The zero length netid is Reserved. Some exceptions are listed in Table 2. A recommended convention for netids corresponding to transports that work over the IPv6 protocol is to have "6" as the last character in the netid string name.

Since netids are not constructed in an explicit hierarchical manner, this document does not provide for Hierarchical Allocation of netids. Nonetheless, the octet "." in a netid string is Reserved for future possible provision of Hierarchical Allocation.

The registry of netids is a list of assignments, each containing six fields for each assignment made on a First Come First Served basis, and five fields for each assignment made on a Standards Action basis. Regardless of basis, all six fields must be provided to IANA.

1. A US-ASCII string name that is the actual netid. This name MUST NOT conflict with any other netid. This string name can be zero to 128 octets long.
2. A constant name that can be used for software programs that wish to use the transport protocol associated with protocol. The name of the constant typically has the prefix: 'NC_', and a suffix equal to the upper case version of the netid. This constant name should be a constant that is valid in the 'C' programming language. This constant name MUST NOT conflict with any other netid constant name. Constant names starting with "NC_STDS", "NC_FCFS", "NC_PRIV", or "NC_EXPE" are reserved. Constant names with a prefix of "NC_" and a total length of 11 characters or less should be for assignments made on the Standards Action basis. The constant name can be 1 to 131 octets long.
3. For assignments made on a First Come First Served basis a description, which can be up to 1024 US-ASCII characters (or more if IANA permits) how the netid will be used. For assignments made on a Standards Action basis, the description field is provided to the Designated Expert to enable the review, but the description is not recorded in the registry, and IANA may dispose of the description once IESG approves the assignment.
4. For assignments made on a First Come First Served basis, if applicable, a reference to a published description of the transport protocol (preferred), or a reference to a published use of the transport protocol. This reference can consume up to 256 octets (or more if IANA permits). For assignments made on a Standards Action basis, the RFC number of the protocol the netid is associated with must be provided.
5. For assignments made on a First Come First Served basis, if applicable, a reference to a published description of the network protocol (preferred), or a reference to a published use of the transport protocol. This reference can consume up to 256 octets (or more if IANA permits). For assignments made on a Standards Action basis, if the previous field refers to a transport

protocol, the RFC number of the network protocol the netid is associated with must be provided.

6. For assignments made on a First Come First Served basis, a point of contact, including an email address. The point of contact can consume up to 256 octets (or more if IANA permits). Subject to authorization by a Designated Expert, the point of contact may be omitted for extraordinary situations, such as the registration of a commonly used netid where the owner is in unknown. For assignments made on a Standards Action basis the point of contact is always IESG.

3.1. Initial Registry

The initial list of netids is broken into those assigned on a First Come First Serve basis in Table 1 and those assigned on a Standards Action basis in Table 2. These lists will change when IANA registers additional netids as needed, and the authoritative list of registered netids will always live with IANA.

Netid	Constant Name	Description	PR	NR	PoC
"ticlts"	NC_TICLTS	The loop back connectionless transport used in System V Release 4 and other operating systems. Although this assignment is made on a First Come First Served basis and is fewer than 9 characters long, the exception is authorized.	[7]		

"ticots"	NC_TICOTS	The loop back connection-oriented transport used in System V Release 4 and other operating systems. Although this assignment is made on a First Come First Served basis and is fewer than 9 characters long, the exception is authorized.	[7]			
"ticotsord"	NC_TICOTSORD	The loop back connection-oriented with orderly-release transport used in System V Release 4 and other operating systems.	[7]			

Table 1

PR: Protocol Reference. NR: Network protocol Reference. PoC: Point of Contact.

Netid	Constant Name	PR	NR	PoC
"-"	NC_NOPROTO	RFC1833 [2]		IESG
"dccp"	NC_DCCP	RFC4340 [8]	RFC0760 [9]	IESG
"dccp6"	NC_DCCP6	RFC4340 [8]	RFC2460 [10]	IESG
"icmp"	NC_ICMP	RFC0777 [11]	RFC0760 [9]	IESG
"icmp6"	NC_ICMP6	RFC0777 [11]	RFC2460 [10]	IESG
"rdma"	NC_RDMA	RFCTBD1 [5]	RFC0760 [9]	IESG
"rdma6"	NC_RDMA6	RFCTBD1 [5]	RFC2460 [10]	IESG
"sctp"	NC_SCTP	RFC2960 [12]	RFC0760 [9]	IESG
"sctp6"	NC_SCTP6	RFC2960 [12]	RFC2460 [10]	IESG
"tcp"	NC_TCP	RFC0675 [13]	RFC0760 [9]	IESG
"tcp6"	NC_TCP6	RFC0675 [13]	RFC2460 [10]	IESG
"udp"	NC_UDP	RFC0768 [14]	RFC0760 [9]	IESG
"udp6"	NC_UDP6	RFC0768 [14]	RFC2460 [10]	IESG

Table 2

3.2. Updating Registrations

Per section 5.2 of [6] the point of contact is always permitted to update a registration made on a First Come First Served basis "subject to the same constraints and review as with new registrations." IESG or a Designated Expert is permitted to update any registration made on a First Come First Served basis, which normally is done when the PoC cannot be reached in order to make necessary updates. Examples where an update would be needed included, but are not limited to: the email address or other contact information becomes invalid; the reference to the corresponding protocol becomes obsolete or unavailable; and [RFC1833](#) [2] is updated or replaced in such a way that the scope of netids changes, requiring additional fields in the assignment.

Only IESG, on the advice of a Designated Expert, can update a registration made on a Standards Action basis.

4. References

4.1. Normative References

- [1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997.
- [2] Srinivasan, R., "Binding Protocols for ONC RPC Version 2", [RFC 1833](#), August 1995.

4.2. Informative References

- [3] Srinivasan, R., "RPC: Remote Procedure Call Protocol Specification Version 2", [RFC 1831](#), August 1995.
- [4] Shepler, S., Callaghan, B., Robinson, D., Thurlow, R., Beame, C., Eisler, M., and D. Noveck, "Network File System (NFS) version 4 Protocol", [RFC 3530](#), April 2003.
- [5] Talpey, T. and B. Callaghan, "Remote Direct Memory Access Transport for Remote Procedure Call", [draft-ietf-nfsv4-rpcrdma-08](#) (work in progress), April 2008.
- [6] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 5226](#), May 2008.
- [7] American Telephone and Telegraph Company, "UNIX System V, Release 4 Programmer's Guide: Networking Interfaces, ISBN 0139470786", 1990.

- [8] Kohler, E., Handley, M., and S. Floyd, "Datagram Congestion Control Protocol (DCCP)", [RFC 4340](#), March 2006.
- [9] Postel, J., "DoD standard Internet Protocol", [RFC 760](#), January 1980.
- [10] Deering, S. and R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification", [RFC 2460](#), December 1998.
- [11] Postel, J., "Internet Control Message Protocol", [RFC 777](#), April 1981.
- [12] Stewart, R., Xie, Q., Morneault, K., Sharp, C., Schwarzbauer, H., Taylor, T., Rytina, I., Kalla, M., Zhang, L., and V. Paxson, "Stream Control Transmission Protocol", [RFC 2960](#), October 2000.
- [13] Cerf, V., Dalal, Y., and C. Sunshine, "Specification of Internet Transmission Control Program", [RFC 675](#), December 1974.
- [14] Postel, J., "User Datagram Protocol", STD 6, [RFC 768](#), August 1980.

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