PPP LCP CallBack

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Abstract

The Point-to-Point Protocol (PPP) [RFC-1661] provides a standard method for transporting multi-protocol datagrams over point-to-point links. PPP defines an extensible Link Control Protocol (LCP) for establishing, configuring, and testing the data-link connection. This document defines the CallBack option.
1. Introduction

CallBack is a facility that permits a call originating party (caller) to request that the call terminating party (callee) originate a subsequent call in the reverse direction. This might be used for many diverse purposes, such as savings on toll charges.

Unlike most PPP operations, CallBack is not a strictly peer-to-peer service. The semantics of CallBack differ depending on which peers are the caller and callee.

The successful operation of CallBack requires a significant amount of administrative configuration. Such configuration might include permission to use the CallBack facility, locations and time of day for which the CallBack is allowed, and time delays prior to and following disconnection.

- The callee might disconnect quickly, and return the call as soon as possible.
- CallBack might be used to re-establish service at later time, when sufficient additional traffic arrives at the callee to warrant another connection.
- When the user is roaming, CallBack might be used to register a variable contact location.

Such policy considerations are beyond the scope of this specification.

1.1. Terminology

In this document, the key words "MAY", "MUST", "MUST NOT", "recommended", and "SHOULD", are to be interpreted as described in [RFC-2119].

2. Additional LCP Configuration Options

The Configuration Option format and basic options are already defined for LCP [RFC-1661].

Up-to-date values of the LCP Option Type field are specified in the most recent "Assigned Numbers" [RFC-1700]. This document concerns the following values:
2.1. CallBack

Description

This Configuration Option provides a method for an implementation to request a dial-up peer to call back. By default, no call back occurs.

Nota Bene:

Like all such PPP options, this indicates that the installation has the capability to be called back. If the option is rejected, link operation continues normally [1 page 39].

Moreover, acknowledgment of the option does not require that the peer take any additional action [ibid].

A peer that Configure-Acks this option SHOULD Configure-Request the Authentication-Protocol option. The user information learned during authentication can be used to determine the user location, or limit a user to certain locations, or merely to determine whom to bill for the service.

When CallBack is successfully negotiated, and the Authentication phase is complete, the peer will eventually enter the Link Termination phase. At the conclusion of the Link Termination phase, the peer will disconnect the link.

Then, after a suitable interval of time, the peer will re-establish the link. When mutual authentication is desired, the implementation SHOULD Configure-Request the Authentication-Protocol option as it answers the call.

Implementation Notes:

The delay times between calls are characteristics of the calling environment, and MUST be configured on a per user and location basis.

Since the information is redundant, the implementation is not required to Configure-Request the CallBack option as it answers the call. However, inclusion MUST NOT affect the operation of the protocol.
A summary of the CallBack Option format is shown below. The fields are transmitted from left to right.

```
+-----------------+-----------------+-----------------+-----------------+
|     Type      |    Length     |   Operation   |  Message ...   |
+-----------------+-----------------+-----------------+-----------------+
```

**Type**

13

**Length**

>= 3

**Operation**

The Operation field is one octet and indicates the contents of the Message field.

Up-to-date values of the CallBack Operation field are specified in the most recent "Assigned Numbers" [2]. This document defines the following values:

0  Identification from the Authentication phase will be used for a database lookup to determine the callback parameters. The Message field is not present.

This method is required to be supported in all conformant implementations.

1  Dialing string, the format and contents of which assumes configuration knowledge of the specific device that is making the callback.

A North American example might be: 10222,,,(800)555-1212.

This method is commonly supported, but suffers from frequent configuration error.

2  Location identifier, which may or may not be human readable, used together with Authentication phase information for a database lookup to determine the callback parameters.

3  E.164 number. The implementation converts this to an appropriate signalling sequence.
4 X.500 distinguished name, used together with Authentication phase information for a database lookup to determine the callback parameters.

5 E.165 number. The implementation converts this to an appropriate signalling sequence.

Message

The Message field is zero or more octets, and its general contents are determined by the Operation field. The actual format of the information is site or application specific, and a robust implementation SHOULD support the field as undistinguished octets. The size is determined from the Length field.

It is intended that only an authorized user will have correct site specific information to make use of the CallBack. The codification of the range of allowed usage of this field is beyond the scope of this specification.

Security Considerations

Unauthenticated and unrestricted use of CallBack could lead to a significant denial of service, or excessive service charges. Authentication is required to be supported. In addition, it is recommended that an implementation be capable of logging usage.

Changes from RFC-1570

LCP Configuration Options were removed to separate documents.

Minor reorganization. Abbreviations have been expanded. Additional Rationale has been added.
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References


Comments about this document should be discussed on the ietf-ppp@merit.edu mailing list.

This document was reviewed by the Point-to-Point Protocol Working Group of the Internet Engineering Task Force (IETF). The working group can be contacted via the current chair:

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