

**Extending the Session Initiation Protocol Reason Header with Warning  
Codes**  
**draft-hautakorpi-reason-header-for-warnings-00.txt**

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Abstract

This document specifies a new protocol value, called 'SIP-Warning', for the Session Initiation Protocol (SIP) Reason header. The values for the name space of 'SIP-Warning' are taken from the Warning codes (warn-codes) of SIP. In addition, this document also defines one new SIP Warning code to be used in situations where User Agent Server (UAS) does not accept calls from an anonymous source.

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## 1. Introduction

The main purpose of this document is to introduce a new protocol value for Session Initiation Protocol (SIP) [3] Reason header field [2]. The Reason header field provides information on why a SIP request was issued.

The protocol value defined in this draft is called 'SIP-Warning' and it consists of the Warning codes (warn-codes) defined in the [Section 20.43](#) of [3]. With 'SIP-Warning', it is possible to convey richer information about the reason why a SIP request was generated.

This draft defines also one new Warning code for the situations where the User Agent Server (UAS) does not accept calls from an anonymous source.

## 2. Terminology

In this document, the key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" are to be interpreted as described in [BCP 14](#), [RFC 2119](#) [1] and indicate requirement levels for compliant implementations.

## 3. Usage

A SIP entity MAY add a Reason header field with the 'SIP-Warning' protocol value to a SIP request. Example syntax is as follows:

```
Reason: SIP-Warning; cause=304; text="Media type not available"
```

Currently, the Reason header field can convey the status code of the response that triggered the generation of the SIP request in question. By utilizing the possibility to convey more than one Reason header field in one request, and by defining a new 'SIP-Warning' protocol value, it is possible to also convey the information contained in the Warning header field of the triggering response to the final recipient.

The use of 'SIP-Warning' is especially useful in the context of SIP Request History Information [4]. This is because SIP Request History Information uses Reason entries to inform about which kind of responses user agents return.



#### 4. Example Use Cases

This section contains two example use cases of the 'SIP-Warning' protocol value. The first example contains two user agent and one third party call controller in the following example use case. A simplified message exchange is illustrated in Figure 1.

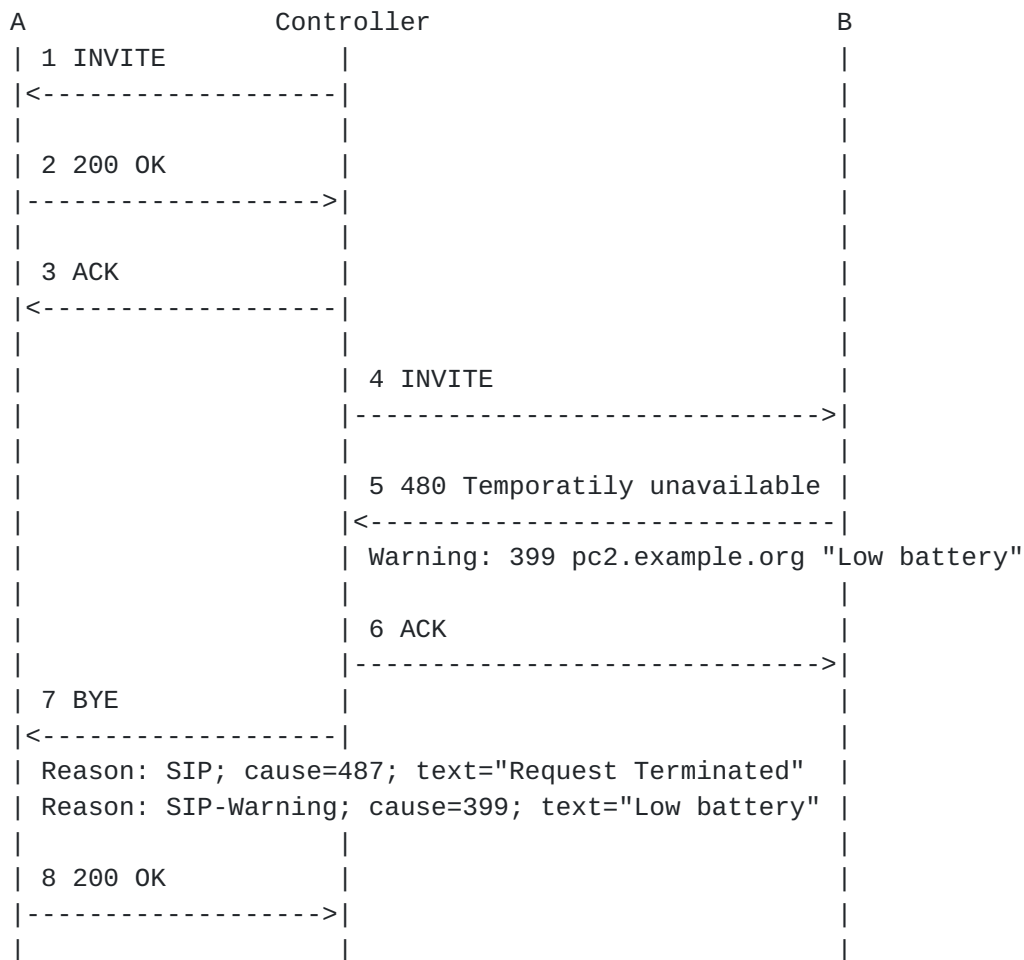


Figure 1: Example Use Case with Third Party Call Controller

The third party call controller tries to establish a session between A and B. However, B has a terminal with a battery, which is running out. So, B do not want to take this call because it would drain out the battery completely. If there would not be a way to convey Warning codes in Reason header field, A would not have any way of knowing why the session establishment really failed.

In the second use case user A tries to establish a sessions with B. User B has registered three user agents, which are B1, B2 and B3. A simplified message exchange is illustrated in Figure 2. When A send



an INVITE, the proxy sends INVITES in sequence to B's registered user agents.



Figure 2: Example Use Case with a SIP Proxy

INVITEs to B1 and B2 fail, and their warning codes are conveyed in responses 3 and 6. Proxy attaches the returned warning codes to History-Info header field (denoted as 'H-I' on the figure). So, when the B3 gets an INVITE, it can see why the previous INVITEs have





failed.

## 5. New Warning Code for SIP

The following SIP Warning code (warn-code) conveys information about the event, where UAS has not accepted a call because it was originated from an anonymous source.

390 Anonymous calls not allowed: UAS does not accept anonymous calls.

The motivation behind the definition of this new Warning code is that there are cases where there is a need to take automated actions based on the fact the UAS has not accepted a call from anonymous source. An example from such case is a situation where an anonymous call from Public Switched Telephone Network (PSTN) is going to an IP network, and then the UAS does not accept it. In this case, the gateway on the communication path may need to take automated actions based on the fact that callee does not accept anonymous calls.

Open issue: SIP's RFC [3] allows only such Warning codes that are related to the Session Description Protocol (SDP). Should this be the case also in the future?

## 6. Security Considerations

An attacker may attempt to add, modify, or remove the values that belong to 'SIP-Warning' name space on Reason header field. This could result in an application behaving in a non-desirable way. So, it is strongly RECOMMENDED that integrity protection be applied to the SIP messages in question. Eavesdropping does not pose any threats or vulnerabilities, and it does not prevent a proper operation.

A new Warning code, specified in [Section 5](#) does not have any security considerations in itself.

## 7. IANA Considerations

This document has two separate IANA considerations. The first one is that this defines a new protocol value for the SIP Reason header field:



Protocol value	Protocol Cause	Reference
-----	-----	-----
SIP-Warning	Warning code	[RFC XXXX]

The second IANA consideration is that a new Warning code for SIP Warning code (warn-code) Registry is defined:

Code	Description	Reference
----	-----	-----
390	Anonymous calls not allowed: UAS does not accept anonymous calls.	[RFC XXXX]

The 'RFC XXXX' tag needs to be replaced with the RFC number of this document.

## **8. References**

### **8.1. Normative References**

- [1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [2] Schulzrinne, H., Oran, D., and G. Camarillo, "The Reason Header Field for the Session Initiation Protocol (SIP)", [RFC 3326](#), December 2002.
- [3] Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A., Peterson, J., Sparks, R., Handley, M., and E. Schooler, "SIP: Session Initiation Protocol", [RFC 3261](#), June 2002.

### **8.2. Informational References**

- [4] Barnes, M., "An Extension to the Session Initiation Protocol for Request History Information", [draft-ietf-sip-history-info-06](#) (work in progress), January 2005.



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