

SIPPING  
Internet-Draft  
Intended status: Standards Track  
Expires: January 13, 2009

B. Rosen  
NeuStar, Inc.  
H. Schulzrinne  
Columbia U.  
H. Tschofenig  
Nokia Siemens Networks  
July 12, 2008

Session Initiation Protocol (SIP) Event Package for the Common Alerting Protocol (CAP)

[draft-rosen-sipping-cap-02.txt](#)

#### Status of this Memo

By submitting this Internet-Draft, each author represents that any applicable patent or other IPR claims of which he or she is aware have been or will be disclosed, and any of which he or she becomes aware will be disclosed, in accordance with [Section 6 of BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at <http://www.ietf.org/ietf/1id-abstracts.txt>.

The list of Internet-Draft Shadow Directories can be accessed at <http://www.ietf.org/shadow.html>.

This Internet-Draft will expire on January 13, 2009.

#### Abstract

The Common Alerting Protocol (CAP) is an XML document format for exchanging emergency alerts and public warnings. This document allows CAP documents to be distributed via the event notification mechanism available with the Session Initiation Protocol (SIP).

Internet-Draft

SIP CAP

July 2008

## Table of Contents

<a href="#">1.</a>	Introduction . . . . .	<a href="#">3</a>
<a href="#">2.</a>	Terminology . . . . .	<a href="#">3</a>
<a href="#">3.</a>	The 'common-alerting-protocol' Event Package . . . . .	<a href="#">3</a>
<a href="#">3.1.</a>	Package Name . . . . .	<a href="#">3</a>
<a href="#">3.2.</a>	Event Package Parameters . . . . .	<a href="#">4</a>
<a href="#">3.3.</a>	SUBSCRIBE Bodies . . . . .	<a href="#">4</a>
<a href="#">3.4.</a>	Subscription Duration . . . . .	<a href="#">4</a>
<a href="#">3.5.</a>	NOTIFY Bodies . . . . .	<a href="#">4</a>
<a href="#">3.6.</a>	Notifier Processing of SUBSCRIBE Requests . . . . .	<a href="#">5</a>
<a href="#">3.7.</a>	Notifier Generation of NOTIFY Requests . . . . .	<a href="#">5</a>
<a href="#">3.8.</a>	Subscriber Processing of NOTIFY Requests . . . . .	<a href="#">5</a>
<a href="#">3.9.</a>	Handling of Forked Requests . . . . .	<a href="#">6</a>
<a href="#">3.10.</a>	Rate of Notifications . . . . .	<a href="#">6</a>
<a href="#">3.11.</a>	State Agents . . . . .	<a href="#">6</a>
<a href="#">3.12.</a>	Examples . . . . .	<a href="#">6</a>
<a href="#">3.13.</a>	Use of URIs to Retrieve State . . . . .	<a href="#">6</a>
<a href="#">3.14.</a>	PUBLISH Bodies . . . . .	<a href="#">6</a>
<a href="#">3.15.</a>	PUBLISH Response Bodies . . . . .	<a href="#">7</a>
<a href="#">3.16.</a>	Multiple Sources for Event State . . . . .	<a href="#">7</a>
<a href="#">3.17.</a>	Event State Segmentation . . . . .	<a href="#">7</a>
<a href="#">3.18.</a>	Rate of Publication . . . . .	<a href="#">7</a>
<a href="#">4.</a>	Examples . . . . .	<a href="#">7</a>
<a href="#">5.</a>	Security Considerations . . . . .	<a href="#">9</a>
<a href="#">6.</a>	Known Open Issues . . . . .	<a href="#">9</a>
<a href="#">7.</a>	IANA Considerations . . . . .	<a href="#">9</a>
7.1.	Registration of the 'common-alerting-protocol' Event Package . . . . .	<a href="#">9</a>
7.2.	Registration of the 'application/common-alerting-protocol+xml' MIME type . . . . .	<a href="#">9</a>
<a href="#">8.</a>	Acknowledgments . . . . .	<a href="#">10</a>
<a href="#">9.</a>	References . . . . .	<a href="#">10</a>
<a href="#">9.1.</a>	Normative References . . . . .	<a href="#">10</a>
<a href="#">9.2.</a>	Informative References . . . . .	<a href="#">11</a>
	Authors' Addresses . . . . .	<a href="#">11</a>
	Intellectual Property and Copyright Statements . . . . .	<a href="#">12</a>

Internet-Draft

SIP CAP

July 2008

## [1.](#) Introduction

The Common Alerting Protocol (CAP) [[cap](#)] is an XML document format for exchanging emergency alerts and public warnings. This document allows CAP documents to be distributed via the event notification mechanism available with the Session Initiation Protocol (SIP).

## [2.](#) Terminology

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](#) [[RFC2119](#)].

## [3.](#) The 'common-alerting-protocol' Event Package

[RFC 3265](#) [[RFC3265](#)] defines a SIP extension for subscribing to remote nodes and receiving notifications of changes (events) in their states. It leaves the definition of many aspects of these events to concrete extensions, known as event packages. This document defines such an event package. This section fills in the information required for all event packages by [RFC 3265](#).

Additionally, [RFC 3903](#) [[RFC3903](#)] defines an extension that allows SIP User Agents to publish event state. According to [RFC 3903](#), any event package intended to be used in conjunction with the SIP PUBLISH method has to include a considerations section. This section also fills the information for all event packages to be used with PUBLISH requests.

We define a new "common-alerting-protocol" event package. Event Publication Agents (EPA) use PUBLISH requests to inform an Event State Compositor (ESC) of changes in the common-alerting-protocol event package. Acting as a notifier, the ESC notifies subscribers about emergency alerts and public warnings.

### [3.1.](#) Package Name

The name of this package is "common-alerting-protocol". As specified in [RFC 3265](#) [[RFC3265](#)], this value appears in the Event header field present in SUBSCRIBE and NOTIFY requests. As specified in [RFC 3903](#) [[RFC3903](#)], this value also appears in the Event header field present in PUBLISH requests.

### [3.2.](#) Event Package Parameters

[RFC 3265](#) [[RFC3265](#)] allows event packages to define additional parameters carried in the Event header field. This event package, "common-alerting-protocol", does not define additional parameters.

### [3.3.](#) SUBSCRIBE Bodies

According to [RFC 3265](#) [[RFC3265](#)], a SUBSCRIBE request can contain a body. The purpose of the body depends on its type.

[Editor's Note: It is an open issue whether subscriptions to the "common-alerting-protocol" event package carry information in their body, such as a polygon defining an area for which notifications should be received. See [Section 6](#).]

### [3.4.](#) Subscription Duration

The default expiration time for subscriptions within this package is 3600 seconds. As per [RFC 3265](#) [[RFC3265](#)], the subscriber MAY specify an alternate expiration in the Expires header field.

### [3.5.](#) NOTIFY Bodies

As described in [RFC 3265](#) [[RFC3265](#)], the NOTIFY message will contain bodies describing the state of the subscribed resource. This body is in a format listed in the Accept header field of the SUBSCRIBE request, or a package-specific default format if the Accept header field was omitted from the SUBSCRIBE request.

In this event package, the body of the notification contains a Common Alerting Protocol (CAP) document, i.e., an XML document. The format of the XML documents used by CAP are described in [[cap](#)].

For an initial notify, unlike for other event packages, there is no current initial state, unless there's a pending alert. Hence, returning a NOTIFY with a non-empty body only makes sense if there are indeed active alerts.

All subscribers and notifiers of the "common-alerting-protocol" event package MUST support the "application/common-alerting-protocol+xml" data format. The SUBSCRIBE request MAY contain an Accept header field. If no such header field is present, it has a default value of "application/common-alerting-protocol+xml" (assuming that the Event header field contains a value of "common-alerting-protocol"). If the Accept header field is present, it MUST include "application/common-alerting-protocol+xml".

### [3.6.](#) Notifier Processing of SUBSCRIBE Requests

The contents of a CAP document contains public information. Hence, providing CAP documents may not require authorization by subscribers.

### [3.7.](#) Notifier Generation of NOTIFY Requests

[RFC 3265](#) [[RFC3265](#)] details the formatting and structure of NOTIFY messages. However, packages are mandated to provide detailed information on when to send a NOTIFY, how to compute the state of the resource, how to generate neutral or fake state information, and whether state information is complete or partial. This section describes those details for the common-alerting-protocol event package.

A notifier MAY send a NOTIFY at any time. Typically, it will send one when an alert or early warning message is available. The NOTIFY request contains a body containing one or multiple CAP document(s). The times at which the NOTIFY is sent for a particular subscriber, and the contents of the body within that notification, are subject to any rules specified by the authorization policy that governs the subscription.

In the case of a pending subscription, when final authorization is determined, a NOTIFY can be sent. If the result of the authorization decision was success, a NOTIFY SHOULD be sent and SHOULD contain a complete CAP document. If the subscription is rejected, a NOTIFY MAY be sent. As described in [RFC 3265](#) [[RFC3265](#)], the Subscription-State header field indicates the state of the subscription.

The body of the NOTIFY MUST be sent using one of the types listed in the Accept header field in the most recent SUBSCRIBE request, or using the type "application/common-alerting-protocol+xml" if no Accept header field was present.

Notifiers will typically act as Event State Compositors (ESC) and thus will learn the 'common-alerting-protocol' event state via PUBLISH requests sent from authorized Event Publication Agents (EPAs).

### [3.8.](#) Subscriber Processing of NOTIFY Requests

[RFC 3265](#) [[RFC3265](#)] leaves it to event packages to describe the process followed by the subscriber upon receipt of a NOTIFY request, including any logic required to form a coherent resource state.

### [3.9.](#) Handling of Forked Requests

[RFC 3265](#) [[RFC3265](#)] requires each package to describe handling of forked SUBSCRIBE requests.

This specification only allows a single dialog to be constructed as a result of emitting an initial SUBSCRIBE request.

### [3.10.](#) Rate of Notifications

[RFC 3265](#) [[RFC3265](#)] requires each package to specify the maximum rate at which notifications can be sent.

Notifiers SHOULD NOT generate notifications for a single user at a rate of more than once every five seconds.

### [3.11.](#) State Agents

[RFC 3265](#) [[RFC3265](#)] requires each package to consider the role of state agents in the package and, if they are used, to specify how authentication and authorization are done. This specification allows state agents to be located in the network.

### [3.12.](#) Examples

An example is provided in [Section 4](#).

### [3.13.](#) Use of URIs to Retrieve State

[RFC 3265](#) [[RFC3265](#)] allows packages to use URIs to retrieve large state documents.

CAP documents are fairly small. This event package does not provide a mechanism to use URIs to retrieve large state documents.

### [3.14.](#) PUBLISH Bodies

[RFC 3903](#) [[RFC3903](#)] requires event packages to define the content types expected in PUBLISH requests.

In this event package, the body of a PUBLISH request may contain a CAP document. A CAP document describes an emergency alert or an early warning event.

All EPAs and ESCs MUST support the "application/common-alerting-protocol+xml" data format and MAY support other formats.

Note that this document does not mandate how CAP documents are made available to the Public Warning System, for example by authorities or similar organizations. The PUBLISH mechanism is one way.

### [3.15.](#) PUBLISH Response Bodies

This specification assumes that a PUBLISH also conveys a CAP document that is later sent further on to watchers.

### [3.16.](#) Multiple Sources for Event State

[RFC 3903](#) [[RFC3903](#)] requires event packages to specify whether multiple sources can contribute to the event state view at the ESC.

This event package allows different EPAs to publish CAP documents for a particular user. The concept of composition is not applicable for this application usage.

### [3.17.](#) Event State Segmentation

[RFC 3903](#) [[RFC3903](#)] defines segments within a state document. Each segment is defined as one of potentially many identifiable sections in the published event state.

This event package defines does not differentiate between different segments.

### [3.18.](#) Rate of Publication

[RFC 3903](#) [[RFC3903](#)] allows event packages to define their own rate of publication.

There are no rate-limiting recommendations for common-alerting-protocol publication. Since emergency alerts and early warning events are typically rare there is no periodicity, nor a minimum or maximum rate of publication.

## [4.](#) Examples

Here is an example of a CAP document.



```

<alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
  <identifier>KST01055887203</identifier>
  <sender>KSTO@NWS.NOAA.GOV</sender>
  <sent>2003-06-17T14:57:00-07:00</sent>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <scope>Public</scope>
  <info>
    <category>Met</category>
    <event>SEVERE THUNDERSTORM</event>
    <urgency>Severe</urgency>
    <certainty>Likely</certainty>
    <eventCode>same=SVR</eventCode>
    <senderName>NATIONAL WEATHER SERVICE SACRAMENTO</senderName>
    <headline>SEVERE THUNDERSTORM WARNING</headline>
    <description> AT 254 PM PDT...
      NATIONAL WEATHER SERVICE
      DOPPLER RADAR INDICATED A SEVERE
      THUNDERSTORM OVER SOUTH CENTRAL ALPINE COUNTY...
      OR ABOUT 18 MILES SOUTHEAST OF
      KIRKWOOD... MOVING SOUTHWEST AT 5 MPH. HAIL...
      INTENSE RAIN AND STRONG DAMAGING WINDS
      ARE LIKELY WITH THIS STORM </description>
    <instruction> TAKE COVER IN A SUBSTANTIAL SHELTER
      UNTIL THE STORM PASSES </instruction>
    <contact>BARUFFALDI/JUSKIE</contact>
    <area>
      <areaDesc> EXTREME NORTH CENTRAL TUOLUMNE COUNTY
        IN CALIFORNIA, EXTREME NORTHEASTERN
        CALAVERAS COUNTY IN CALIFORNIA, SOUTHWESTERN
        ALPINE COUNTY IN CALIFORNIA </areaDesc>
      <polygon> 38.47,-120.14 38.34,-119.95 38.52,-119.74
        38.62,-119.89 38.47,-120.14 </polygon>
      <geocode>fips6=006109</geocode>
      <geocode>fips6=006109</geocode>
      <geocode>fips6=006103</geocode>
    </area>
  </info>
</alert>

```

Example for a Severe Thunderstorm Warning

## 5. Security Considerations

[Editor's Note: A future version of this document will describe security considerations.]

## 6. Known Open Issues

Frequently, alerting events are only of regional interest since they only have regional impact. For example: The public in NYC does not really need to be alerted about a wild fire at Lake Tahoe. One possible solution is the ability to allow SUBSCRIBE bodies to have a region description that describes the geographic region of interest, as a polygon.

LoST may also play a role here, namely to get back a list of URLs where I can send the SUBSCRIBE requests to. There may be a need for urn:service:alerts service URN registry.

## 7. IANA Considerations

### 7.1. Registration of the 'common-alerting-protocol' Event Package

This specification registers an event package, based on the registration procedures defined in [RFC 3265](#) [[RFC3265](#)]. The following is the information required for such a registration:

Package Name: common-alerting-protocol

Package or Template-Package: This is a package.

Published Document: RFC XXX [Replace by the RFC number of this specification].

Person to Contact: Hannes Tschofenig, Hannes.Tschofenig@nsn.com

### 7.2. Registration of the 'application/common-alerting-protocol+xml' MIME type

To: ietf-types@iana.org

Subject: Registration of MIME media type application/ common-alerting-protocol+xml

MIME media type name: application

MIME subtype name: common-alerting-protocol+xml

Required parameters: (none)

Optional parameters: charset; Indicates the character encoding of enclosed XML. Default is UTF-8 [[RFC3629](#)].

Internet-Draft

SIP CAP

July 2008

Encoding considerations: Uses XML, which can employ 8-bit characters, depending on the character encoding used. See [RFC 3023 \[RFC3023\], Section 3.2.](#)

Security considerations: This content type is designed to carry payloads of the Common Alerting Protocol (CAP).

Interoperability considerations: This content type provides a way to convey CAP payloads.

Published specification: RFC XXX [Replace by the RFC number of this specification].

Applications which use this media type: Applications that convey alerts and early warnings according to the CAP standard.

Additional information: OASIS has published the Common Alerting Protocol at [http://www.oasis-open.org/committees/documents.php?wg\\_abbrev=emergency](http://www.oasis-open.org/committees/documents.php?wg_abbrev=emergency)

Person & email address to contact for further information: Hannes Tschofenig, Hannes.Tschofenig@nsn.com

Intended usage: Limited use

Author/Change controller: IETF SIPPING working group

Other information: This media type is a specialization of application/xml [RFC 3023 \[RFC3023\]](#), and many of the considerations described there also apply to application/common-alerting-protocol+xml.

## [8.](#) Acknowledgments

The authors would like to thank Cullen Jennings for supporting this work. We would also like to thank the participants of the Early Warning Adhoc meeting at IETF#69.

## [9.](#) References

### [9.1.](#) Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", March 1997.

[cap] Jones, E. and A. Botterell, "Common Alerting Protocol v.

1.1", October 2005.

[RFC3265] Roach, A., "Session Initiation Protocol (SIP)-Specific Event Notification", [RFC 3265](#), June 2002.

[RFC3903] Niemi, A., "Session Initiation Protocol (SIP) Extension for Event State Publication", [RFC 3903](#), October 2004.

[RFC3023] Murata, M., St. Laurent, S., and D. Kohn, "XML Media

Rosen, et al.

Expires January 13, 2009

[Page 10]

---

Internet-Draft

SIP CAP

July 2008

Types", [RFC 3023](#), January 2001.

[RFC3629] Yergeau, F., "UTF-8, a transformation format of ISO 10646", STD 63, [RFC 3629](#), November 2003.

## [9.2](#). Informative References

### Authors' Addresses

Brian Rosen  
NeuStar, Inc.  
470 Conrad Dr  
Mars, PA 16046  
US

Phone:  
Email: [br@brianrosen.net](mailto:br@brianrosen.net)

Henning Schulzrinne  
Columbia University  
Department of Computer Science  
450 Computer Science Building  
New York, NY 10027  
US

Phone: +1 212 939 7004  
Email: [hgs+ecrit@cs.columbia.edu](mailto:hgs+ecrit@cs.columbia.edu)  
URI: <http://www.cs.columbia.edu>

Hannes Tschofenig  
Nokia Siemens Networks  
Linnoitustie 6  
Espoo 02600  
Finland

Phone: +358 (50) 4871445  
Email: Hannes.Tschofenig@gmx.net  
URI: <http://www.tschofenig.priv.at>

Rosen, et al.

Expires January 13, 2009

[Page 11]

---

Internet-Draft

SIP CAP

July 2008

#### Full Copyright Statement

Copyright (C) The IETF Trust (2008).

This document is subject to the rights, licenses and restrictions contained in [BCP 78](#), and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY, THE IETF TRUST AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

#### Intellectual Property

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information

on the procedures with respect to rights in RFC documents can be found in [BCP 78](#) and [BCP 79](#).

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at [ietf-ipr@ietf.org](mailto:ietf-ipr@ietf.org).