

RSS 0.92

Posted by Dave Winer, 12/25/00 at 5:31:21 AM.

Philosophy

RSS is a Web content syndication format.

How 0.92 relates to 0.91

RSS 0.92 is upward-compatible with RSS 0.91.

Every new feature of 0.92 is optional, meaning that a 0.91 file is also a valid 0.92 file.

Example

Here is a RSS 0.92 file that illustrates many of the features described on this page.

<language> is optional

In 0.91, the <language> element is required. In 0.92 it is optional.

Why? If a channel is formed from various input sources there's no way to know that it's going to only contain a single language.

All sub-elements of <item> are optional

In 0.91, <link> and <title> are required sub-elements of <item> and <description> is optional.

In 0.92, all sub-elements of <item> are optional.

Why? When a RSS file reflects the content of a weblog or "blog" site, the structure required by previous versions of RSS was often impossible to synthesize. For example, there is no actual limit on the number of links a weblog item can have.

Further, 0.92 allows entity-encoded HTML in the <description> of an item, to reflect actual practice by bloggers, who are often proficient HTML coders.

<source> sub-element of <item>

<source> is a new optional sub-element of <item>.

Its value is the name of the RSS channel that the item came from, derived from its <title>. It has one required attribute, url, which links to the XMLization of the source.

```
<source url="http://www.myapplenu.com/cgi-bin/surfView.cgi?category=applesurf&mainfull=1000&fmt=scripting&template=scripting">AppleSurf</source>
```

The purpose of this element is to propagate credit for links, to publicize the sources of news items.

<enclosure> sub-element of <item>

<enclosure> is a new optional sub-element of <item>.

It has three required attributes. url says where the enclosure is located, length says how big it is in bytes, and type says what its type is, a standard MIME type.

The url must be an http url.

```
<enclosure url="http://www.scripting.com/mp3s/weatherReportSuite.mp3" length="12216320" type="audio/mpeg" />
```

A use-case narrative for this element is [here](#)

<category> sub-element of <item>

<category> is a new optional sub-element of <item>.

It has one optional attribute, domain, a string that identifies a categorization taxonomy.

The value of the element is a forward-slash-separated string that identifies a hierarchic location in the indicated taxonomy. Processors may establish conventions for the interpretation of categories. Two examples are provided below:

```
<category domain="http://www.superopendirectory.com/">standards/xsl/implementations</category>
```

```
<category domain="http://www.fool.com/cusips">MSFT</category>
```

<cloud> sub-element of <channel>

<cloud> is a new optional sub-element of <channel>. It specifies a Web service that supports the rssCloud interface which can be implemented in HTTP-POST, XML-RPC or SOAP 1.1.

Its purpose is to allow processes to register with a cloud to be notified of updates to the channel.

```
<cloud domain="data.ourfavoritesongs.com" port="80" path="/RPC2"  
registerProcedure="ourFavoriteSongs.rssPleaseNotify" protocol="xml-rpc"/>
```

A full explanation of this element and the rssCloud interface is [here](#).

All limits are eliminated

In RSS 0.91 various elements are restricted to 500 or 100 characters. There can be no more than 15 <items> in a 0.91 <channel>.

There are no string-length or XML-level limits in RSS 0.92.

Processors may impose their own limits, and generators may have preferences that say no more than a certain number of <item>s can appear in a channel, or that strings are limited in length.

Example File¹

```
<?xml version="1.0" ?>
- <!--
RSS generation done by 'Radio UserLand' on Fri, 13 Apr 2001 19:23:02 GMT
-->
: <rss version="0.92">
:   <channel>
:     <title>Dave Winer: Grateful Dead</title>

:     <link>http://www.scripting.com/blog/categories/grateful
:     IDead.html</link>
:     <description>A high-fidelity Grateful Dead song every day.
:     This is where we're experimenting with enclosures on RSS
:     news items that download when you're not using your
:     computer. If it works (it will) it will be the end of the
:     Click-And-Wait multimedia experience on the
:     Internet.</description>
:     <lastBuildDate>Fri, 13 Apr 2001 19:23:02 GMT</lastBuildDate>
:     <docs>http://backend.userland.com/rss092</docs>
:     <managingEditor>dave@userland.com (Dave
:     Winer)</managingEditor>
:     <webMaster>dave@userland.com (Dave Winer)</webMaster>
:     <cloud domain="data.ourfavoritesongs.com" port="80"
:     path="/RPC2"
:     registerProcedure="ourFavoriteSongs.rssPleaseNotify"
:     protocol="xml-rpc" />
:   <item>
:     <description>It's been a few days since I added a song to
:     the Grateful Dead channel. Now that there are all
:     these new Radio users, many of whom are tuned into
:     this channel (it's #16 on the hotlist of upstreaming
:     Radio users, there's no way of knowing how many
:     non-upstreaming users are subscribing, have to do
:     something about this..). Anyway, tonight's song is a
:     live version of Weather Report Suite from Dick's Picks
:     Volume 7. It's wistful music. Of course a beautiful
:     song, oft-quoted here on Scripting News. <i>A little
:     change, the wind and rain.</i></description>
:     <enclosure
:     url="http://www.scripting.com/mp3s/weatherReport
:     DicksPicsVol7.mp3" length="6182912"
:     type="audio/mpeg" />
:   </item>
:   <item>
:     <description>Kevin Drennan started a <a
:     href="http://deadend.editthispage.com/">Grateful
:     Dead Weblog</a>. Hey it's cool, he even has a <a
:     href="http://deadend.editthispage.com/directory/61
```

¹ From <http://static.userland.com/gems/backend/gratefulDead.xml>

```

">directory</a>. <i>A Frontier 7
feature.</i></description>
<source
  url="http://scriptingnews.userland.com/xml/scriptin
gNews2.xml">Scripting News</source>
</item>
: <item>
  <description><a
    href="http://arts.ucsc.edu/GDead/AGDL/other1.htm
l">The Other One</a>, live instrumental, One From
The Vault. Very rhythmic very spacy, you can listen to
it many times, and enjoy something new every
time.</description>
  <enclosure
    url="http://www.scripting.com/mp3s/theOtherOne.
mp3" length="6666097" type="audio/mpeg" />
  </item>
: <item>
  <description>This is a test of a change I just made. Still
  diggin..</description>
  </item>
: <item>
  <description>The HTML rendering almost <a
    href="http://validator.w3.org/check/referer">valida
tes</a>. Close. Hey I wonder if anyone has ever
published a style guide for ALT attributes on images?
What are you supposed to say in the ALT attribute? I
sure don't know. If you're blind send me an email if u
cn rd ths.</description>
  </item>
: <item>
  <description><a
    href="http://www.cs.cmu.edu/~mleone/gdead/dea
d-lyrics/Franklin's_Tower.txt">Franklin's
Tower</a>, a live version from One From The
Vault.</description>
  <enclosure
    url="http://www.scripting.com/mp3s/franklinsTower
.mp3" length="6701402" type="audio/mpeg" />
  </item>
: <item>
  <description>Moshe Weitzman says Shakedown Street is
  what I'm lookin for for tonight. I'm listening right
  now. It's one of my favorites. "Don't tell me this town
  ain't got no heart." Too bright. I like the jazziness of
  Weather Report Suite. Dreamy and soft. How about
  The Other One? "Spanish lady come to
  me.."</description>
  <source
    url="http://scriptingnews.userland.com/xml/scriptin
gNews2.xml">Scripting News</source>
</item>

```

```

: <item>
  <description><a
    href="http://www.scripting.com/mp3s/youWinAgain.mp3">The news is out</a>, all over town..<p>
    You've been seen, out runnin round. <p> The lyrics
    are <a
      href="http://www.cs.cmu.edu/~mleone/gdead/dead-lyrics/You_Win_Again.txt">here</a>, short and
      sweet. <p> <i>You win again!</i></description>
  <enclosure
    url="http://www.scripting.com/mp3s/youWinAgain.mp3" length="3874816" type="audio/mpeg" />
  </item>
: <item>
  <description><a
    href="http://www.getlyrics.com/lyrics/grateful-dead/wake-of-the-flood/07.htm">Weather Report
    Suite</a>: "Winter rain, now tell me why, summers
    fade, and roses die? The answer came. The wind and
    rain. Golden hills, now veiled in grey, summer leaves
    have blown away. Now what remains? The wind and
    rain."</description>
  <enclosure
    url="http://www.scripting.com/mp3s/weatherReportSuite.mp3" length="12216320" type="audio/mpeg" />
  </item>
: <item>
  <description><a
    href="http://arts.ucsc.edu/gdead/agdl/darkstar.html">Dark Star</a> crashes, pouring its light into
    ashes.</description>
  <enclosure
    url="http://www.scripting.com/mp3s/darkStar.mp3"
    length="10889216" type="audio/mpeg" />
  </item>
: <item>
  <description>DaveNet: <a
    href="http://davenet.userland.com/2001/01/21/theUsBlues">The U.S. Blues</a>.</description>
  </item>
: <item>
  <description>Still listening to the US Blues. <i>"Wave
    that flag, wave it wide and high.."</i> Mistake made
    in the 60s. We gave our country to the assholes. Ah
    ah. Let's take it back. Hey I'm still a hippie. <i>"You
    could call this song The United States
    Blues."</i></description>
  </item>
: <item>
  <description><a
    href="http://www.sixties.com/html/garcia_stack_0.html"></a>In
celebration of today's inauguration, after hearing all
those great patriotic songs, America the Beautiful,
even The Star Spangled Banner made my eyes mist
up. It made my choice of Grateful Dead song of the
night realllly easy. Here are the <a
href="http://searchlyrics2.homestead.com/gd_usblu
es.html">lyrics</a>. Click on the audio icon to the
left to give it a listen. "Red and white, blue suede
shoes, I'm Uncle Sam, how do you do?" It's a
different kind of patriotic music, but man I love my
country and I love Jerry and the band. <i>I truly
do!</i></description>
<enclosure
url="http://www.scripting.com/mp3s/usBlues.mp3"
length="5272510" type="audio/mpeg" />
</item>
= <item>
<description>Grateful Dead: "Tennessee, Tennessee,
ain't no place I'd rather be."</description>
<enclosure
url="http://www.scripting.com/mp3s/tennesseeJed.
mp3" length="3442648" type="audio/mpeg" />
</item>
= <item>
<description>Ed Cone: "Had a nice Deadhead experience
with my wife, who never was one but gets the vibe
and knows and likes a lot of the music. Somehow she
made it to the age of 40 without ever hearing Wharf
Rat. We drove to Jersey and back over Christmas with
the live album commonly known as Skull and Roses in
the CD player much of the way, and it was cool to see
her discover one the band's finest moments. That
song is unique and underappreciated. Fun to hear
that disc again after a few years off -- you get Jerry
as blues-guitar hero on Big Railroad Blues and a nice
version of Bertha."</description>
<enclosure
url="http://www.scripting.com/mp3s/darkStarWharf
Rat.mp3" length="27503386" type="audio/mpeg" />
</item>
= <item>
<description><a
href="http://arts.ucsc.edu/GDead/AGDL/fotd.html"
>Tonight's Song</a>: "If I get home before daylight
I just might get some sleep tonight."</description>
<enclosure
url="http://www.scripting.com/mp3s/friendOfTheDe
vil.mp3" length="3219742" type="audio/mpeg" />
</item>

```

```

: <item>
  <description><a
    href="http://arts.ucsc.edu/GDead/AGDL/uncle.html
    ">Tonight's song</a>: "Come hear Uncle John's
    Band by the river side. Got some things to talk about
    here beside the rising tide."</description>
  <enclosure
    url="http://www.scripting.com/mp3s/uncleJohnsBan
    d.mp3" length="4587102" type="audio/mpeg" />
</item>
: <item>
  <description><a
    href="http://www.cs.cmu.edu/~mleone/gdead/dea
    d-lyrics/Me_and_My_Uncle.txt">Me and My
    Uncle</a>: "I loved my uncle, God rest his soul,
    taught me good, Lord, taught me all I know. Taught
    me so well, I grabbed that gold and I left his dead ass
    there by the side of the road."</description>
  <enclosure
    url="http://www.scripting.com/mp3s/meAndMyUncl
    e.mp3" length="2949248" type="audio/mpeg" />
</item>
: <item>
  <description>Truckin, like the doo-dah man, once told me
  gotta play your hand. Sometimes the cards ain't
  worth a dime, if you don't lay em down.</description>
  <enclosure
    url="http://www.scripting.com/mp3s/truckin.mp3"
    length="4847908" type="audio/mpeg" />
</item>
: <item>
  <description>Two-Way-Web: <a
    href="http://www.thetwowayweb.com/payloadsFor
    Rss">Payloads for RSS</a>. "When I started talking
    with Adam late last year, he wanted me to think
    about high quality video on the Internet, and I totally
    didn't want to hear about it."</description>
</item>
: <item>
  <description>A touch of gray, kinda suits you
  anyway..</description>
  <enclosure
    url="http://www.scripting.com/mp3s/touchOfGrey.m
    p3" length="5588242" type="audio/mpeg" />
</item>
: <item>
  <description><a
    href="http://www.sixties.com/html/garcia_stack_0.
    html"></a>In

```


celebration of today's inauguration, after hearing all those great patriotic songs, America the Beautiful, even The Star Spangled Banner made my eyes mist up. It made my choice of Grateful Dead song of the night realllly easy. Here are the [lyrics](http://searchlyrics2.homestead.com/gd_usblues.html). Click on the audio icon to the left to give it a listen. "Red and white, blue suede shoes, I'm Uncle Sam, how do you do?" It's a different kind of patriotic music, but man I love my country and I love Jerry and the band. *I truly do!*

```
<enclosure
  url="http://www.scripting.com/mp3s/usBlues.mp3"
  length="5272510" type="audio/mpeg" />
</item>
</channel>
</rss>
```

A. SOAP meets RSS²

Fri, Jan 5, 2001; by Dave Winer.

Parallel development

I have been fortunate to participate in several successful group development processes in the last few years including XML-RPC which lead to SOAP, a collaboration between UserLand, Microsoft and IBM; and RSS, which was a joining of two syndication formats, one from Netscape and one from UserLand.

Radio UserLand bridges the two technologies. Now it's possible, using the information in an RSS channel, to request that a centralized coordinator, a "cloud", send notification that a channel has changed. Either side of this conversation can use either XML-RPC or SOAP to communicate.

Publish and subscribe

Most aggregators scan for changes once an hour, but in some situations we want to know immediately when a channel has changed. For example, we include RSS Boxes on many of our sites. When an editor routes a item to a box, we want the news to be displayed immediately, but we don't want to read the RSS channel on every hit. Notification makes it possible to always be current yet conserve bandwidth and server cycles.

A new feature for RSS

There's a new <cloud> sub-element of <channel>. It specifies a Web application that supports the rssCloud interface, described below, which can be implemented in either XML-RPC or SOAP.

A <cloud> has five required attributes: domain is the domain name or IP address of the cloud, port is the TCP port that the cloud is running on, path is the location of its responder, registerProcedure is the name of the procedure to call to request notification, and protocol is xml-rpc, soap or http-post (case-sensitive), indicating which protocol is to be used.

Example

Here's an example of a RSS file that includes the new <cloud> element.

```
<cloud domain="radio.xmlstoragesystem.com" port="80" path="/RPC2"
registerProcedure="xmlStorageSystem.rssPleaseNotify" protocol="xml-rpc" />
```

² From <http://www.thetwowayweb.com/soapmeetsrss>

This is telling the aggregator to send an XML-RPC message to `radio.xmlstoragesystem.com` on port 80, with path `/RPC2` to the procedure named `xmlStorageSystem.rssPleaseNotify` to request notification.

Most RSS files produced by Radio UserLand have a `<cloud>` element.

rssCloud interface

A workstation calls the cloud to register. The procedure takes five parameters: the name of the procedure that the cloud should call to notify the workstation of changes, the TCP port the workstation is listening on, the path to its responder, a string indicating which protocol to use (`xml-rpc` or `soap`, case-sensitive), and a list of urls of RSS files to be watched. The cloud can determine the IP address of the caller from the request. A workstation cannot make a registration call on behalf of another. The cloud returns true if it was able to do the registration, false otherwise.

When a subscribed-to channel changes the cloud calls back to the procedure named in the registration call with one parameter, the url of the channel that changed. At that point the workstation could read the channel, or notify other workstations that the channel has changed, clear a cache, send an email or do nothing. The workstation returns true.

By convention registrations expire after 25 hours. Workstations should register every 24 hours for each subscription to keep them current.

UserLand is operating a cloud that conforms to this spec at `radio.xmlstoragesystem.com`. The workstation side is implemented in Radio UserLand.

Important caveat

By design, this protocol/format will *not* work for aggregators that are isolated from the Internet by firewalls or NAT. It will work for systems with non-fixed IP addresses if the workstation software re-registers at startup.

Example File³

```
<?xml version="1.0" ?>
- <!--
RSS generated by Radio UserLand v8.0.5 on Tue, 26 Aug 2003 19:26:21 GMT
-->
= <rss version="2.0">
  = <channel>
    <title>Dave's Handsome Radio Blog!</title>
    <link>http://radio.weblogs.com/0001015/</link>
    <description>A non-smoking weblog since June 14,
      2002.</description>
    <language>en-us</language>
    <copyright>Copyright 2003 Dave Winer</copyright>
    <lastBuildDate>Tue, 26 Aug 2003 19:26:21
      GMT</lastBuildDate>
    <docs>http://backend.userland.com/rss</docs>
    <generator>Radio UserLand v8.0.5</generator>
    <managingEditor>dave@userland.com</managingEditor>
    <webMaster>dave@userland.com</webMaster>
    <category
      domain="http://www.weblogs.com/rssUpdates/changes.
      xml">rssUpdates</category>
  = <skipHours>
    <hour>0</hour>
    <hour>23</hour>
    <hour>1</hour>
    <hour>2</hour>
    <hour>3</hour>
    <hour>22</hour>
    <hour>17</hour>
    <hour>11</hour>
  </skipHours>
  <cloud domain="radio.xmlstoragesystem.com" port="80"
    path="/RPC2"
    registerProcedure="xmlStorageSystem.rssPleaseNotify"
    protocol="xml-rpc" />
  <ttl>60</ttl>
  = <item>
    <link>http://radio.weblogs.com/0001015/2003/08/
      26.html#a1849</link>
    <description><A
      href="http://blogs.law.harvard.edu/bloggerCon/pics
      EdwardsDeanNH"><IMG height=58 alt="A picture
      named edwards.jpg" hspace=15
      src="http://radio.weblogs.com/0001015/images/20
      03/08/26/edwards.jpg" width=45 align=right
```

³ From <http://radio.weblogs.com/0001015/rss.xml>

```

        vspace=5 border=0></A><A
        href="http://blogs.law.harvard.edu/bloggerCon/pics
        EdwardsDeanNH"><IMG height=58 alt="A picture
        named edwards.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/edwards.jpg" width=45 align=right
        vspace=5 border=0></A><A
        href="http://blogs.law.harvard.edu/bloggerCon/pics
        EdwardsDeanNH"><IMG height=58 alt="A picture
        named edwards.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/edwards.jpg" width=45 align=right
        vspace=5 border=0></A><A
        href="http://blogs.law.harvard.edu/bloggerCon/pics
        EdwardsDeanNH"><IMG height=58 alt="A picture
        named edwards.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/edwards.jpg" width=45 align=right
        vspace=5 border=0></A></description>

        <guid>http://radio.weblogs.com/0001015/2003/08/
        26.html#a1849</guid>
        <pubDate>Tue, 26 Aug 2003 19:26:20 GMT</pubDate>

        <comments>http://blogs.law.harvard.edu/comments
        ?u=1015&p=1849&link=http%3A%2F%2F
        radio.weblogs.com%2F0001015%2F2003%2F08%2F
        26.html%23a1849</comments>
    </item>
    = <item>

        <link>http://radio.weblogs.com/0001015/2003/08/
        26.html#a1848</link>
        <description><A
        href="http://127.0.0.1:5335/xxx"><IMG height=63
        alt="A picture named dean.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/dean.jpg" width=45 align=right vspace=5
        border=0></A><A
        href="http://127.0.0.1:5335/xxx"><IMG height=63
        alt="A picture named dean.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/dean.jpg" width=45 align=right vspace=5
        border=0></A><A
        href="http://127.0.0.1:5335/xxx"><IMG height=63
        alt="A picture named dean.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/dean.jpg" width=45 align=right vspace=5
        border=0></A><A
        href="http://127.0.0.1:5335/xxx"><IMG height=63
        alt="A picture named dean.jpg" hspace=15
        src="http://radio.weblogs.com/0001015/images/20
        03/08/26/dean.jpg" width=45 align=right vspace=5

```

**border=0><IMG height=63
alt="A picture named dean.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/26/dean.jpg" width=45 align=right vspace=5
border=0></description>**

**<guid>http://radio.weblogs.com/0001015/2003/08/
26.html#a1848</guid>
<pubDate>Tue, 26 Aug 2003 10:01:36 GMT</pubDate>**

**<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1848&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
26.html%23a1848</comments>**

**</item>
= <item>**

**<link>http://radio.weblogs.com/0001015/2003/08/
25.html#a1847</link>
<description><A**

**href="http://doc.weblogs.com/2003/08/24#loveOn
><IMG height=136 alt="A picture named
docMom.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/25/docMom.jpg" width=65 align=right
vspace=5 border=0><A
href="http://doc.weblogs.com/2003/08/24#loveOn
><IMG height=136 alt="A picture named
docMom.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/25/docMom.jpg" width=65 align=right
vspace=5 border=0><A
href="http://doc.weblogs.com/2003/08/24#loveOn
><IMG height=136 alt="A picture named
docMom.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/25/docMom.jpg" width=65 align=right
vspace=5 border=0><A
href="http://doc.weblogs.com/2003/08/24#loveOn
><IMG height=136 alt="A picture named
docMom.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/25/docMom.jpg" width=65 align=right
vspace=5 border=0></description>**

**<guid>http://radio.weblogs.com/0001015/2003/08/
25.html#a1847</guid>
<pubDate>Mon, 25 Aug 2003 09:27:17 GMT</pubDate>**

**<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1847&link=http%3A%2F%2F**

```

radio.weblogs.com%2F0001015%2F2003%2F08%2F
25.html%23a1847</comments>
</item>
= <item>

    <link>http://radio.weblogs.com/0001015/2003/08/
17.html#a1846</link>
<description><A href="xxx"><IMG height=61 alt="A
picture named schwartzie.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/schwartzie.jpg" width=65 align=right
vspace=5 border=0></A><A href="xxx"><IMG
height=220 alt="A picture named judy.jpg"
hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/judy.jpg" width=220 align=right vspace=5
border=0></A><A href="xxx"><IMG height=61
alt="A picture named cher.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/cher.jpg" width=45 align=right vspace=5
border=0></A></description>

    <guid>http://radio.weblogs.com/0001015/2003/08/
17.html#a1846</guid>
<pubDate>Mon, 18 Aug 2003 01:19:25 GMT</pubDate>

    <comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1846&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
17.html%23a1846</comments>
</item>
= <item>

    <link>http://radio.weblogs.com/0001015/2003/08/
17.html#a1845</link>
<description><A
href="http://ibelgique.iframe.com/cinedestin/films/
e/eclairdelune2.jpg"><IMG height=61 alt="A picture
named cher.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/cher.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://ibelgique.iframe.com/cinedestin/films/
e/eclairdelune2.jpg"><IMG height=61 alt="A picture
named cher.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/cher.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://ibelgique.iframe.com/cinedestin/films/
e/eclairdelune2.jpg"><IMG height=61 alt="A picture
named cher.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/cher.jpg" width=45 align=right vspace=5

```

```

border=0></A><A
href="http://ibelgique.iframe.com/cinedestin/films/
e/eclairdelune2.jpg"><IMG height=61 alt="A picture
named cher.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/cher.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://ibelgique.iframe.com/cinedestin/films/
e/eclairdelune2.jpg"><IMG height=61 alt="A picture
named cher.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/17/cher.jpg" width=45 align=right vspace=5
border=0></A></description>

<guid>http://radio.weblogs.com/0001015/2003/08/
17.html#a1845</guid>
<pubDate>Sun, 17 Aug 2003 11:17:26 GMT</pubDate>

<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1845&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
17.html%23a1845</comments>
</item>
= <item>

<link>http://radio.weblogs.com/0001015/2003/08/
11.html#a1844</link>
<description><A
href="http://127.0.0.1:5335/xxx"><IMG
height=106 alt="A picture named egg.gif" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/10/egg.gif" width=90 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=79
alt="A picture named schwarzenegger.jpg"
hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/11/schwarzenegger.jpg" width=65
align=right vspace=5 border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG
height=106 alt="A picture named egg.gif" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/10/egg.gif" width=90 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=79
alt="A picture named schwarzenegger.jpg"
hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/11/schwarzenegger.jpg" width=65
align=right vspace=5 border=0></A></description>

<guid>http://radio.weblogs.com/0001015/2003/08/
11.html#a1844</guid>

```


<pubDate>Mon, 11 Aug 2003 14:10:39 GMT</pubDate>

<comments>http://blogs.law.harvard.edu/comments?u=1015&p=1844&link=http%3A%2F%2Fradio.weblogs.com%2F0001015%2F2003%2F08%2F11.html%23a1844</comments>

</item>

= <item>

<link>http://radio.weblogs.com/0001015/2003/08/10.html#a1843</link>

<description></description>

<guid>http://radio.weblogs.com/0001015/2003/08/10.html#a1843</guid>

<pubDate>Sun, 10 Aug 2003 10:39:54 GMT</pubDate>

<comments>http://blogs.law.harvard.edu/comments?u=1015&p=1843&link=http%3A%2F%2Fradio.weblogs.com%2F0001015%2F2003%2F08%2F10.html%23a1843</comments>

</item>

= <item>

<link>http://radio.weblogs.com/0001015/2003/08/09.html#a1842</link>

<description><IMG height=225 alt="A picture named grayDavis.jpg" hspace=15

```
src="http://radio.weblogs.com/0001015/images/2003/08/09/grayDavis.jpg" width=300 align=left vspace=5 border=0></A></description>
```

```
<guid>http://radio.weblogs.com/0001015/2003/08/09.html#a1842</guid>  
<pubDate>Sun, 10 Aug 2003 00:02:33 GMT</pubDate>
```

```
<comments>http://blogs.law.harvard.edu/comments?u=1015&p=1842&link=http%3A%2F%2Fradio.weblogs.com%2F0001015%2F2003%2F08%2F09.html%23a1842</comments>
```

```
</item>  
= <item>
```

```
<link>http://radio.weblogs.com/0001015/2003/08/09.html#a1841</link>  
<description><A  
href="http://127.0.0.1:5335/xxx"><IMG  
height=250 alt="A picture named gassee.jpg"  
hspace=15  
src="http://radio.weblogs.com/0001015/images/2003/08/09/gassee.jpg" width=147 align=right vspace=5 border=0></A><A  
href="http://127.0.0.1:5335/xxx"><IMG  
height=250 alt="A picture named gassee.jpg"  
hspace=15  
src="http://radio.weblogs.com/0001015/images/2003/08/09/gassee.jpg" width=147 align=right vspace=5 border=0></A><A  
href="http://127.0.0.1:5335/xxx"><IMG  
height=250 alt="A picture named gassee.jpg"  
hspace=15  
src="http://radio.weblogs.com/0001015/images/2003/08/09/gassee.jpg" width=147 align=right vspace=5 border=0></A></description>
```

```
<guid>http://radio.weblogs.com/0001015/2003/08/09.html#a1841</guid>  
<pubDate>Sat, 09 Aug 2003 21:12:15 GMT</pubDate>
```

```
<comments>http://blogs.law.harvard.edu/comments?u=1015&p=1841&link=http%3A%2F%2Fradio.weblogs.com%2F0001015%2F2003%2F08%2F09.html%23a1841</comments>
```

```
</item>  
= <item>
```

```
<link>http://radio.weblogs.com/0001015/2003/08/09.html#a1840</link>  
<description><A  
href="http://images.google.com/images?hl=en&lr=&ie=UTF-8&oe=UTF-
```

8&sa=N∓tab=wi"></description>

<guid>http://radio.weblogs.com/0001015/2003/08/09.html#a1840</guid>

<pubDate>Sat, 09 Aug 2003 16:54:51 GMT</pubDate>

<comments>http://blogs.law.harvard.edu/comments?u=1015&p=1840&link=http%3A%2F%2F

```

radio.weblogs.com%2F0001015%2F2003%2F08%2F
09.html%23a1840</comments>
</item>
= <item>

  <link>http://radio.weblogs.com/0001015/2003/08/
09.html#a1839</link>
<description><A
href="http://127.0.0.1:5335/xxx"><IMG height=56
alt="A picture named dave.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/dave.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=56
alt="A picture named dave.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/dave.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=56
alt="A picture named dave.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/dave.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=56
alt="A picture named dave.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/dave.jpg" width=45 align=right vspace=5
border=0></A></description>

  <guid>http://radio.weblogs.com/0001015/2003/08/
09.html#a1839</guid>
<pubDate>Sat, 09 Aug 2003 16:04:13 GMT</pubDate>

  <comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1839&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
09.html%23a1839</comments>
</item>
= <item>

  <link>http://radio.weblogs.com/0001015/2003/08/
09.html#a1838</link>
<description><A
href="http://127.0.0.1:5335/xxx"><IMG
height=443 alt="A picture named
edwardsalendar.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20

```

**03/08/09/edwardsalendar.jpg" width=222
align=left vspace=5 border=0></description>**

**<guid>http://radio.weblogs.com/0001015/2003/08/
09.html#a1838</guid>
<pubDate>Sat, 09 Aug 2003 13:55:18 GMT</pubDate>**

**<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1838&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
09.html%23a1838</comments>**

</item>

= <item>

**<link>http://radio.weblogs.com/0001015/2003/08/
09.html#a1837</link>**

**<description>Let's see if my copy of Radio can ping
<A
href="http://blogs.law.harvard.edu/crimson1/2003/
08/07#a392">my test site. I've deliberately
<FONT face="Courier,
Monospace">included some
markup here to
be sure it doesn't get <FONT
color=red>transmitted.</description>**

**<guid>http://radio.weblogs.com/0001015/2003/08/
09.html#a1837</guid>
<pubDate>Sat, 09 Aug 2003 12:28:10 GMT</pubDate>**

**<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1837&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
09.html%23a1837</comments>**

</item>

= <item>

**<link>http://radio.weblogs.com/0001015/2003/08/
09.html#a1836</link>**

**<description><IMG height=69
alt="A picture named kim.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/kim.jpg" width=45 align=right vspace=5
border=0><IMG height=69
alt="A picture named kim.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/kim.jpg" width=45 align=right vspace=5
border=0><IMG height=69
alt="A picture named kim.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20**

```

03/08/09/kim.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=69
alt="A picture named kim.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/kim.jpg" width=45 align=right vspace=5
border=0></A><A
href="http://127.0.0.1:5335/xxx"><IMG height=69
alt="A picture named kim.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/09/kim.jpg" width=45 align=right vspace=5
border=0></A></description>

<guid>http://radio.weblogs.com/0001015/2003/08/
09.html#a1836</guid>
<pubDate>Sat, 09 Aug 2003 12:25:05 GMT</pubDate>

<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1836&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
09.html%23a1836</comments>
</item>
= <item>

<link>http://radio.weblogs.com/0001015/2003/08/
06.html#a1835</link>
<description><A
href="http://radio.weblogs.com/0101365/2003/08/
05.html#a656"><IMG height=291 alt="A picture
named wkenforgov.jpg" hspace=15
src="http://radio.weblogs.com/0001015/images/20
03/08/06/wkenforgov.jpg" width=290 align=left
vspace=5 border=0></A></description>

<guid>http://radio.weblogs.com/0001015/2003/08/
06.html#a1835</guid>
<pubDate>Wed, 06 Aug 2003 10:03:46 GMT</pubDate>

<comments>http://blogs.law.harvard.edu/comments
?u=1015&p=1835&link=http%3A%2F%2F
radio.weblogs.com%2F0001015%2F2003%2F08%2F
06.html%23a1835</comments>
</item>
</channel>
</rss>

```

B. Payloads for RSS⁴

Thu, Jan 11, 2001; by Dave Winer.

The click-wait system

When I started talking with Adam Curry late last year, he wanted me to think about high quality video on the Internet, and I totally didn't want to hear about it. Like a lot of people, I had tried it, and found it unsatisfying and frankly, exhausting.

I thought that video on the Internet was a loser for three reasons, that build on each other:

1. When I click on a link to view some video, I have to wait.
2. The wait is longer than the video. (In other words I have to wait two minutes for ten seconds of video.)
3. The quality is horrible.

All three effects are bad, but the first is the worst. The Internet lifestyle is frenetic. There's no time to wait. The remaining two negatives only make video less attractive, but the first is the killer.

But Adam persisted and showed me that if I was willing to change my point of view, it could work, without any waiting and with very high quality.

No click-wait

What if, in the middle of the night, while I'm not using my computer, it downloads huge video and audio stuff to my local hard drive. Then when I arrive in the morning there are fresh bits, news clips, a song of the day, whatever, provided by all kinds of content providers, from big TV networks like CNN and MSNBC, to a Dutch school where kids are taking a film class using inexpensive video recorders and iMacs.

Let's see what happens with 1, 2 and 3 in this scenario.

1. When I click on a link to view some video, it starts playing immediately, because it is already on my local disk.
2. The wait is zero.

⁴ From <http://www.thetwowayweb.com/payloadsforrss>

3. The quality is limited by the size of my local disk, not by the capacity of my connection.

A different user interface

What's different about this system is that you *subscribe* to channels instead of clicking-and-waiting. I feel that nothing is lost with this approach, because video on the Internet never worked for me, and probably for many others. However, streaming news items through RSS works quite well, and it's a simple matter to teach RSS about multimedia payloads.

Of course there's a change in user interface. You never see a video or music document until it's fully downloaded. The computer does the waiting, not you. In the system that Adam envisions, a video DJ, someone like Adam at MTV in the 80s and 90s, someone whose judgment you trust, or whose tastes you like, is pushing high fidelity bits onto your hard drive, using no more hardware and network connections than you already have.

There is no central authority, no spectrum to allocate, it's open to amateurs, like the Internet itself.

A new element

So that's the philosophy, now let's put some meat on the bones.

RSS already does most of what we want. With the addition of the `<enclosure>` sub-element of `<item>` any RSS element can describe a video or audio file (actually any type of file).

`<enclosure>` has three attributes: `url` says where the file is located, `length` says how big it is, and `type` says what its type is. This way a workstation or aggregator can know in advance, without having to do any communication, what it's going to get, and apply scheduling and filtering rules.

An example

Here's an example of a RSS file that links to several Grateful Dead songs. [See the XML file that follows the text of this appendix].

Each `<item>` contains an `<enclosure>` as explained above.

```
<enclosure url="http://www.scripting.com/mp3s/touchOfGrey.mp3" length="5588242" type="audio/mpeg"/>
```

I've configured my system to download enclosures between 2AM and 4AM, a time when I don't use my computer.

When I arrive at work, I check the incoming Log and see there's a new song.

I click. It plays.

No wait.

Software

My company, UserLand, has a product in development called My.UserLand On The Desktop that supports both sides of this format. You can use it to create channels that have <item>s with <enclosure>s, and it manages downloads for these channels. So it's both an authoring and viewing tool.

It's a bootstrap, and it's open, meaning that anyone can develop software that works on either or both sides of this connection.

Adam's company is doing a graphic environment for music and video on PCs in Java. Others are welcome to join up and do software for all kinds of computers, content and people.

"This is just email"

First, everything on the Internet is just like something else. Or if it's any good it's just like *everything else*.

If you try to push video and audio through email you'll find the client user interface as daunting as the wait-click Web experience. How do I keep enclosures from downloading while I'm accessing email from a phone connection in a hotel? Sure, you could add a complex dialog to an already overly-complex email client user interface, and the result would be that no one could set it up properly and no new video would actually get to the desktop. (You'd hate the feature until you figured out how to turn it off.)

Homage

I'd like to pay special homage to the Grateful Dead, who have generously allowed their creations to be used to bootstrap new technology in non-commercial ways. To get this process going, we need a content base to get started with. So many technologists, me included, love the music of the Dead. I think they may have left a legacy for technologists that's as important as the legacy they left in music.

See also

1/5/01: SOAP meets RSS describes a publish-and-subscribe notification system based on XML-RPC and SOAP and of course RSS.

