

## RE: SP1 Problem SOAPException doesn't return quote and Umlaute correctly

*Source:*

<http://www.tech-archive.net/Archive/DotNet/microsoft.public.dotnet.framework.webservices/2004-12/0475.html>

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*From:* Dany (*Dany\_at\_newsgroups.com*)

*Date:* 12/17/04

Date: Fri, 17 Dec 2004 18:54:44 +0100

Hi Dan

Sorry, for being so insistant, but I think I might not have made the problem clear enough.

You are absolutely correct, that the SOAP client needs to URL decode the fault description. This is what for example a .net webservice consumer will also do and this works correctly if the web service is not running on a server with .net Framework SP1.

But the way it is now in SP1 it would have to be decoded twice, which of course a web service caller will not do normally and is not according to W3C SOAP specs.

The SOAP fault string returned in the SOAP fault contains f.e. a quote (") as:

&quot;

Now the normal decoding which is done will generate:

"

But this is still not enough the client would have to decode once again to receive a ".

The need to decode a message 2 times is just not correct. Correct would be the SOAP response containing:

"

This is then decoded on the client side correctly to a " before displaying to the user.

I've tested this with different implementations of web service clients and non of them does the conversion twice. I have also checked the SOAP and XML specs and they all state that the correct representation of a doublequote is &quot; and not &quot;.

So there is no way to see the new behavior as a bug fix, it is a bug. The client is not required to decode the message TWICE before being able to display it to the end user.

Hope the problem is more clear now. Or is there an error in the example or my reasoning?

Regards  
Dany

>>> Dan Rogers<danro@microsoft.com> 16.12.2004 22:26:11 >>>  
Hi Dany,

I do understand your desire to see the behavior change. You've explained your perspective well. I think you'll find though, that the behavior you are seeing is the bug fix. The point of view that makes that the current state stems from the belief that it is NOT unreasonable to expect a web client to UriDecode data that was passed over the wire before displaying it to the end user.

At the core of it is : Should SOAP fault description strings be intended to be end use ready?

I understand your argument for the answer being "YES".

I'm glad you've found a work around,

Dan

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Date: Thu, 16 Dec 2004 11:28:08 +0100  
References: <uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl>  
<#H865Er4EHA.3908@TK2MSFTNGP12.phx.gbl>  
<UuBAG\$s4EHA.4068@cpmsftngxa10.phx.gbl>  
X-Newsreader: Groupwise 6.5  
From: Dany <Dany@newsgroups.com>  
Subject: RE: SP1 Problem SOAPException doesn't return quote and Umlaute correcty  
Message-ID: <OaVG9n14EHA.2540@TK2MSFTNGP09.phx.gbl>  
Newsgroups: microsoft.public.dotnet.framework.webservices  
NNTP-Posting-Host: gonzo.opus.ch 213.200.237.2  
Lines: 1  
Path:  
cpmsftngxa10.phx.gbl!TK2MSFTFEED02.phx.gbl!TK2MSFTNGP08.phx.gbl!TK2MSFTNGP09.phx.gbl  
Xref: cpmsftngxa10.phx.gbl  
microsoft.public.dotnet.framework.webservices:8127  
X-Tomcat-NG: microsoft.public.dotnet.framework.webservices

Hi Dan

The problem is, that the web service provides for different clients, and I can't change them all. Also it is very difficult telling the implementers of the clients to make a hack (decoding twice instead of once) to correct a bug in the webservice on their side dependent of the server having .net framework SP1 installed or not. At the moment we've resorted to implementing a SOAP Extension to correct the error on the server side. But this is just a workaround for the moment and performance-wise not ideal.

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Also we have to check if .net Framework SP1 is installed on installation of a server and only then install the SOAP Extension. As you can imagine this is not the way I expect bugs to be handled.

What is the best approach (I'm an msdn universal subscriber) to have a chance of MS fixing the bug at least for a future service pack or version?

Regards  
Dany

>>> *Dan Rogers*<[danro@microsoft.com](mailto:danro@microsoft.com)> 15.12.2004 18:58:39 >>>  
Hi Dany,

Given your example, I expect the behavior you cite. The issue is that the unicode string is being URLEncoded as part of converting it to XML. To display it, try URLDecoding it.

Dan

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Date: Wed, 15 Dec 2004 15:20:23 +0100  
References: <[uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl](mailto:uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl)>  
<[#f4Owvd4EHA.3644@tk2msftngp13.phx.gbl](mailto:#f4Owvd4EHA.3644@tk2msftngp13.phx.gbl)>  
<[iwvrpDk4EHA.2788@cpmsftngxa10.phx.gbl](mailto:iwvrpDk4EHA.2788@cpmsftngxa10.phx.gbl)>  
X-Newsreader: Groupwise 6.5  
From: Dany <[Dany@newsgroups.com](mailto:Dany@newsgroups.com)>  
Subject: RE: SP1 Problem SOAPException doesn't return quote and Umlaute  
correcty  
Message-ID: <[#H865Er4EHA.3908@TK2MSFTNGP12.phx.gbl](mailto:#H865Er4EHA.3908@TK2MSFTNGP12.phx.gbl)>  
Newsgroups: microsoft.public.dotnet.framework.webservices  
NNTP-Posting-Host: gonzo.opus.ch 213.200.237.2  
Lines: 1  
Path:  
[cpmsftngxa10.phx.gbl!TK2MSFTNGXA01.phx.gbl!TK2MSFTNGP08.phx.gbl!TK2MSFTNGP12.phx.gbl](mailto:cpmsftngxa10.phx.gbl!TK2MSFTNGXA01.phx.gbl!TK2MSFTNGP08.phx.gbl!TK2MSFTNGP12.phx.gbl)  
Xref: [cpmsftngxa10.phx.gbl](mailto:cpmsftngxa10.phx.gbl)  
[microsoft.public.dotnet.framework.webservices:8106](mailto:microsoft.public.dotnet.framework.webservices:8106)  
X-Tomcat-NG: microsoft.public.dotnet.framework.webservices

Hi Dan

I can only supply the XML for the Fault/detail element, not for the Fault/faultstring element. The Fault/faultstring is by definition the human-readable explanation of why the Fault occurred. That is the string we need. But this is the string, that is converted incorrectly from .net Framework SP1. So I don't see where I can provide an XML Node for the faultstring (not the fault detail). Or have I not understood your explanation correctly?

I'm still absolutely sure there is a bug here in SP1 which needs to be fixed in the .net framework. And believe me I've studied this problem quite intently. Just try the example I posted, maybe then you'll see what I mean.

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Dany

>>> Dan Rogers<danro@microsoft.com> 15.12.2004 01:56:27 >>>

Hi Dany,

You can manually supply the XML for the fault node. The issue is converting a unicode string to XML. When you have unicode in strings, and then let the default system convert it to XML, the first thing it's going to do is URLEncode the string, and then include THAT in the fault node. Try creating the XML yourself (Xml.Document.CreateNode .. or something like that). And populating the fault yourself. I think you'll find that SoapException has some overrides in the constructor that let you do this.

It's been a while... but I remember doing this some time back myself.

Dan

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Date: Tue, 14 Dec 2004 13:53:37 +0100

References: <uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl>

<et\$A51P3EHA.1524@TK2MSFTNGP09.phx.gbl>

<034VKAV4EHA.768@cpmsftngxa10.phx.gbl>

X-Newsreader: Groupwise 6.5

From: Dany <Dany@newsgroups.com>

Subject: RE: SP1 Problem SOAPException doesn't return quote and Umlaute correcty

Message-ID: <#f4Owvd4EHA.3644@tk2msftngp13.phx.gbl>

Newsgroups: microsoft.public.dotnet.framework.webservices

NNTP-Posting-Host: gonzo.opus.ch 213.200.237.2

Lines: 1

Path:

cpmsftngxa10.phx.gbl!TK2MSFTFEED02.phx.gbl!TK2MSFTNGP08.phx.gbl!tk2msftngp13.phx.gbl

Xref: cpmsftngxa10.phx.gbl

microsoft.public.dotnet.framework.webservices:8068

X-Tomcat-NG: microsoft.public.dotnet.framework.webservices

Hi Dan

We are not creating any fault node data. All we do is:

```
throw new SoapException( errMsg,new XmlQualifiedName("Server.Problem"));
```

where errMsg is a normal string, which can contain characters like "", "<", ">", "ä", "ü", etc.

The way I understand, we have no influence as to how the SOAP response is created here. So I don't understand what we could do differently. Please elaborate if you have an idea.

The way we see it the SOAP subsystem serializes the SOAPException to a SOAP response and falsly converts the characters in the fault string to XML

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twice. The fact that a pure .net consumer can't even handle converting the fault string back to a correct string seems to prove, that it can't be correct.

We have done a workaround (=hack) now, assuming that MS won't be able to fix the bug quick enough. We've created a SOAP Extension that takes the SOAP response and undoes the wrongly converted characters. But this is by no means something I want to have to keep in a productive system.

I really would appreciate if you could pass this bug on to someone in MS who could take care of it.

Reproducing is very easy:

1. In VS create a new web service project.
2. Add a HelloWorld webservice method as so:

```
[WebMethod]
public string HelloWorld()
{
    string msgStr = "This is a
quote: ""
    throw new SoapException( "Now I've got a problem \"here\". ><",new
XmlQualifiedName("Server.Problem"));
}
```

3. Create a new WindowsApplication
4. Add a web reference to the web service created above (call it TestWebService)
5. Add a button and add the following code for it's click handler

```
private void button1_Click(object sender, System.EventArgs e)
{
    try
    {
        TestWebService.Service1 appserv = new TestWebService.Service1();
        string result = appserv.HelloWorld();
        MessageBox.Show( result );
    }
    catch (Exception exc)
    {
        MessageBox.Show( exc.Message );
    }
}
```

6. Now run the client and after pressing the button1 you will see a message box with the incorrectly converted error message. If you use a proxy to analyse the SOAP request and response you can see that the fault string in the SOAPFault is: This is a quote &quot; or this is a lesser than symbol &lt; or these are german Umlaute &#246;, &#228;, &#252;

This is of course the wrong XML representation and should actually be: This is a quote &quot; or this is a lesser than symbol &lt; or these are german Umlaute &#246;, &#228;, &#252;

Regards  
Dany

>>> Dan Rogers<danro@microsoft.com> 13.12.2004 21:12:11 >>>  
Hi Dany,

The SOAP subsystem doesn't actually do much when it comes to getting the fault string on the wire. What it will do is take an XML node and insert it into the proper place in a fault. It sounds like there may be the case where the code you are using to set up the XML is double converting. This could happen if you try and treat a string with embedded angle brackets in it like XML. Try creating the fault node data by using XmlElement's if this is the case.

I hope this helps

Dan

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Date: Wed, 8 Dec 2004 09:11:03 +0100  
References: <uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl>  
<eDppBzF3EHA.2316@TK2MSFTNGP15.phx.gbl>  
<#1p7txJ3EHA.4068@cpmsftngxa10.phx.gbl>  
X-Newsreader: Groupwise 6.5  
From: Dany <Dany@newsgroups.com>  
Subject: RE: SP1 Problem SOAPException doesn't return quote and Umlaute correctly  
Message-ID: <et\$A51P3EHA.1524@TK2MSFTNGP09.phx.gbl>  
Newsgroups: microsoft.public.dotnet.framework.webservices  
NNTP-Posting-Host: gonzo.opus.ch 213.200.237.2  
Lines: 1  
Path:  
cpmsftngxa10.phx.gbl!TK2MSFTNGXA01.phx.gbl!TK2MSFTNGP08.phx.gbl!TK2MSFTNGP09.phx.gbl  
Xref: cpmsftngxa10.phx.gbl  
microsoft.public.dotnet.framework.webservices:7978  
X-Tomcat-NG: microsoft.public.dotnet.framework.webservices

Hi Dan

The more I look into it the more I get the impression there is really something very wrong here in the .net Framework SP1. I've been talking to an XML specialist and he noticed that it is not correct XML generated when there is an Umlaut (ä, ö, ü) f.e. the error message for "Bitte erfassen sie ein Abreisedatum für das Dokument." is represented in the SOAP fault as

```
<faultstring>Bitte erfassen sie ein Abreisedatum f&#252;r das  
Dokument.</faultstring>
```

Only when using a proxy to log the messages on the wire did I notice this. Now when the XML Fault is read through an XML parser the & is correctly converted to a "&" and the result is "Bitte erfassen sie ein Abreisedatum

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f&#252;r das Dokument." which is of course wrong after a conversion.

So it looks like the SOAP fault string is converted twice by the .net Framework before landing on the wire. The first time everything would be Ok and the ü character is converted to a valid character reference "&#252;". But then this is replaced by character references once again which results in "&#252;" which is of course not a valid XML representation of the "ü" character.

In my view this is a serious bug in the handling of SOAPExceptions by the .net Framework. I'd be really thankful if you could check with the serialization team. Reproducing the error should be quite simple. Hope they have a solution then.

Thanks & Regards  
Dany

>>> *Dan Rogers*<danro@microsoft.com> 07.12.2004 21:36:25 >>>  
Hi Dany,

I suspect that there is an encoding issue in the way you are loading the XML. Is there an inconsistency between the XML encoding mark up and the actual encoding on the wire? UrlEncoded XML is supported by the DOM, but if someone somewhere along the way is loading what looks like the XML into a unicode string without doing an encoding conversion first, issues can happen.

As for how/why this happened – I'm not that guy. For the most part, 1.1 fixed bugs. It is possible that it introduced some as well. I'll see what I can dig up from the serialization team – can't promise they have a fix, but I'll see.

Dan

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Date: Tue, 7 Dec 2004 14:00:36 +0100  
References: <uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl>  
<hzdWUQ92EHA.3200@cpmsftngxa10.phx.gbl>  
X-Newsreader: Groupwise 6.5  
From: Dany <Dany@newsgroups.com>  
Subject: RE: SP1 Problem SOAPException doesn't return quote and Umlaute correcty  
Message-ID: <eDppBzF3EHA.2316@TK2MSFTNGP15.phx.gbl>  
Newsgroups: microsoft.public.dotnet.framework.webservices  
NNTP-Posting-Host: gonzo.opus.ch 213.200.237.2  
Lines: 1  
Path:  
cpmsftngxa10.phx.gbl!TK2MSFTFEED01.phx.gbl!TK2MSFTNGP08.phx.gbl!TK2MSFTNGP15.phx.gbl  
Xref: cpmsftngxa10.phx.gbl  
microsoft.public.dotnet.framework.webservices:7944  
X-Tomcat-NG: microsoft.public.dotnet.framework.webservices

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Found out .net web service clients are just as helpless with handling these character references.

I've built a simple web service consumer in VC#. On a button click the following code is executed:

```
try
{
    localhost.UmbrellaNTAppServer appserv = new
localhost.UmbrellaNTAppServer();
    string result = appserv.HelloWorld();
    MessageBox.Show( result );
}
catch (Exception exc)
{
    MessageBox.Show( "Error has occurred: " + exc.Message );
}
```

If an exception is raised in the web service method saying i.e. 'The method "HelloWorld" is under construction.' as the exception message. The user will be shown 'Error has occurred: The method "HelloWorld" is under construction. In a real world example the user would be sure to complain about this display.

Before SP1 everything was fine, but now handling of exception messages coming from web service calls must be handled specifically. In normal SOAP responses (not SOAP faults) strings containing special characters are correctly sent. So if 'The method "HelloWorld" is under construction.' is returned the client will also receive it unchanged and without any character references.

So I wonder why this inconsistent behaviour was built into the SP1 by MS.

Regards Dany

>>> *Dan Rogers*<danro@microsoft.com> 06.12.2004 21:42:15 >>>  
Hi,

What you are describing is the use of encoded strings. These are, to my knowledge, valid in XML and the responsibility of the parser to convert properly.

What is the source of the problem, given that these are valid representations of the data? Is the client not able to process these properly as it should?

Regards

Dan Rogers  
Microsoft Corporation

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Date: Sat, 4 Dec 2004 13:43:30 +0100  
X-Newsreader: Groupwise 6.5  
From: Dany <Dany@newsgroups.com>  
Subject: SP1 Problem SOAPException doesn't return quote and Umlaute correctly  
Message-ID: <uCfPi7f2EHA.3132@TK2MSFTNGP14.phx.gbl>  
Newsgroups: microsoft.public.dotnet.framework.webservices  
NNTP-Posting-Host: adsl-62-167-138-146.adslplus.ch 62.167.138.146  
Lines: 1  
Path:  
cpmsftngxa10.phx.gbl!TK2MSFTFEED02.phx.gbl!TK2MSFTNGP08.phx.gbl!TK2MSFTNGP14  
.phx.gbl  
Xref: cpmsftngxa10.phx.gbl  
microsoft.public.dotnet.framework.webservices:7851  
X-Tomcat-NG: microsoft.public.dotnet.framework.webservices

Our web service was working fine until we installed .net Framework 1.1 service pack 1. Uninstalling SP1 is not an option because our largest customer says service packs marked as "critical" by Microsoft must be installed on their servers.

Now german Umlaute (ä, ü, ö) and quotes are returned incorrectly in SOAP fault responses.

This can be easily verified:

Implement the following in a web service method (just raises a SOAPException with a message text containing quote characters (")):

```
string errMsg = "Here is a \"quote\".";
throw new SoapException( errMsg,new XmlQualifiedName("Server.Problem"));
```

The following SOAP response is created when calling this SOAP-Exception:

```
HTTP/1.1 500 Internal Server Error.
Server: Microsoft-IIS/5.1
Date: Fri, 03 Dec 2004 13:02:23 GMT
X-Powered-By: ASP.NET
X-AspNet-Version: 1.1.4322
Cache-Control: private
Content-Type: text/xml; charset=utf-8
Content-Length: 431
```

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <soap:Fault>
      <faultcode>Server.Problem</faultcode>
      <faultstring>Here is a &quot;quote&quot;.</faultstring>
      <detail />
    </soap:Fault>
  </soap:Body>
</soap:Envelope>
```

```
</soap:Fault>  
</soap:Body>  
</soap:Envelope>
```

All though the encoding should be utf-8 and "&quot;" is not correct.  
This worked fine in .net 1.1 without the SP1. The correct <faultstring>  
should be:

```
<faultstring>Here is a "quote".</faultstring>
```

This problem also occurs when using german Umlaute: f.e. with an exception  
message of "Fahrvergnügen". It is converted incorrectly to  
<faultstring>Fahrvergn&#252;gen</faultstring>.

This is a serious problem for us, because in german and french many error  
messages will have special characters like ö,ä, é, à in them and these are  
not correctly processed.

Thanks for any help!  
Dany