Subject: Jsonize() Date and Time serialization [patch]
Posted by zsolt on Fri, 11 Jun 2021 17:41:58 GMT
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I'm working on a web service and my problem was, that JavaScript handles date and time in ISO format, but U++ Jsonize() in special ways.
I attached a minimal HTML file to demonstrate, how JavaScript serializes Date and DateTime and U++ should do the same if we want to be compatible.

My HTML file shows a JSON output like this:

```
{
    "my_date": "2021-06-08",
    "my_datetime": "2021-06-15T19:25"
}
```

Jsonize() outputs dates like this:

```
{
    "my_date": "20210608",
    "my_datetime": "20210615T19:25"
}
```

Is it possible to fix Jsonize()?

I propose something like this:

```
@@ -328,7 +328,7 @@ template<> void Jsonize(JsonIO& io, Date& var)
    return;
   }
   if(IsString(v)) {
-   String text = v;
+   String text = Filter(v.ToString(), CharFilterDigit);
    if(text.GetCount() > 6) {
     Date d;
     d.year = ScanInt(text.Left(4));
@@ -346,7 +346,7 @@ template<> void Jsonize(JsonIO& io, Date& var)
   if(IsNull(var))
    io.Set(Null);
   else
-   io.Set(Format("%04d%02d%02d", var.year, var.month, var.day));
+   io.Set(Format("%04d-%02d-%02d", var.year, var.month, var.day));
  }

 template<> void Jsonize(JsonIO& io, Time& var)
@@ -358,15 +358,15 @@ template<> void Jsonize(JsonIO& io, Time& var)
    return;
   }
```

```
   if(IsString(v)) {
-   String text = v;
-   if(text.GetCount() > 15) {
+   String text = Filter(v.ToString(), CharFilterDigit);
+   if(text.GetCount() > 10) {//seconds may be missing
     Time tm;
     tm.year = ScanInt(text.Left(4));
     tm.month = ScanInt(text.Mid(4, 2));
     tm.day = ScanInt(text.Mid(6, 2));
-    tm.hour = ScanInt(text.Mid(9, 2));
-    tm.minute = ScanInt(text.Mid(12, 2));
-    tm.second = ScanInt(text.Mid(15));
+    tm.hour = ScanInt(text.Mid(8, 2));
+    tm.minute = ScanInt(text.Mid(10, 2));
+    tm.second = ScanInt(text.Mid(12, 2));
     if(tm.IsValid()) {
      var = tm;
      return;
@@ -379,7 +379,7 @@ template<> void Jsonize(JsonIO& io, Time& var)
   if(IsNull(var))
    io.Set(Null);
   else
-   io.Set(Format("%04d%02d%02d`T%02d:%02d:%02d",
+   io.Set(Format("%04d-%02d-%02d`T%02d:%02d:%02d",
             var.year, var.month, var.day, var.hour, var.minute, var.second));
 }
```

File Attachments

1) upp_forum_demo.html, downloaded 317 times

Subject: Re: Jsonize() Date and Time serialization [patch]
Posted by zsolt on Fri, 11 Jun 2021 17:51:06 GMT
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Quick correction:
This one would be safer for dates:

```
@ -328,12 +328,12 @@ template<> void Jsonize(JsonIO& io, Date& var)
    return;
   }
   if(IsString(v)) {
-   String text = v;
+   String text = Filter(v.ToString(), CharFilterDigit);
    if(text.GetCount() > 6) {
     Date d;
     d.year = ScanInt(text.Left(4));
     d.month = ScanInt(text.Mid(4, 2));
```

```
-    d.day = ScanInt(text.Mid(6));
+    d.day = ScanInt(text.Mid(6,2));
     if(d.IsValid()) {
      var = d;
      return;
@@ -346,7 +346,7 @@ template<> void Jsonize(JsonIO& io, Date& var)
   if(IsNull(var))
    io.Set(Null);
   else
-   io.Set(Format("%04d%02d%02d", var.year, var.month, var.day));
+   io.Set(Format("%04d-%02d-%02d", var.year, var.month, var.day));
 }

 template<> void Jsonize(JsonIO& io, Time& var)
@@ -358,15 +358,15 @@ template<> void Jsonize(JsonIO& io, Time& var)
   }
   if(IsString(v)) {
-   String text = v;
-   if(text.GetCount() > 15) {
+   String text = Filter(v.ToString(), CharFilterDigit);
+   if(text.GetCount() > 10) {//seconds may be missing
     Time tm;
     tm.year = ScanInt(text.Left(4));
     tm.month = ScanInt(text.Mid(4, 2));
     tm.day = ScanInt(text.Mid(6, 2));
-    tm.hour = ScanInt(text.Mid(9, 2));
-    tm.minute = ScanInt(text.Mid(12, 2));
-    tm.second = ScanInt(text.Mid(15));
+    tm.hour = ScanInt(text.Mid(8, 2));
+    tm.minute = ScanInt(text.Mid(10, 2));
+    tm.second = ScanInt(text.Mid(12, 2));
     if(tm.IsValid()) {
      var = tm;
      return;
@@ -379,7 +379,7 @@ template<> void Jsonize(JsonIO& io, Time& var)
   if(IsNull(var))
    io.Set(Null);
   else
-   io.Set(Format("%04d%02d%02d`T%02d:%02d:%02d",
+   io.Set(Format("%04d-%02d-%02d`T%02d:%02d:%02d",
            var.year, var.month, var.day, var.hour, var.minute, var.second));
 }
```

Subject: Re: Jsonize() Date and Time serialization [patch]
Posted by mirek on Sat, 12 Jun 2021 06:47:55 GMT
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zsolt wrote on Fri, 11 June 2021 19:51Quick correction:
This one would be safer for dates:

```
@ -328,12 +328,12 @@ template<> void Jsonize(JsonIO& io, Date& var)
    return;
   }
   if(IsString(v)) {
-   String text = v;
+   String text = Filter(v.ToString(), CharFilterDigit);
    if(text.GetCount() > 6) {
     Date d;
     d.year = ScanInt(text.Left(4));
     d.month = ScanInt(text.Mid(4, 2));
-    d.day = ScanInt(text.Mid(6));
+    d.day = ScanInt(text.Mid(6,2));
     if(d.IsValid()) {
      var = d;
      return;
@@ -346,7 +346,7 @@ template<> void Jsonize(JsonIO& io, Date& var)
   if(IsNull(var))
    io.Set(Null);
   else
-   io.Set(Format("%04d%02d%02d", var.year, var.month, var.day));
+   io.Set(Format("%04d-%02d-%02d", var.year, var.month, var.day));
 }

 template<> void Jsonize(JsonIO& io, Time& var)
@@ -358,15 +358,15 @@ template<> void Jsonize(JsonIO& io, Time& var)
    return;
   }
   if(IsString(v)) {
-   String text = v;
-   if(text.GetCount() > 15) {
+   String text = Filter(v.ToString(), CharFilterDigit);
+   if(text.GetCount() > 10) {//seconds may be missing
     Time tm;
     tm.year = ScanInt(text.Left(4));
     tm.month = ScanInt(text.Mid(4, 2));
     tm.day = ScanInt(text.Mid(6, 2));
-    tm.hour = ScanInt(text.Mid(9, 2));
-    tm.minute = ScanInt(text.Mid(12, 2));
-    tm.second = ScanInt(text.Mid(15));
+    tm.hour = ScanInt(text.Mid(8, 2));
+    tm.minute = ScanInt(text.Mid(10, 2));
+    tm.second = ScanInt(text.Mid(12, 2));
     if(tm.IsValid()) {
```

```
      var = tm;
      return;
@@ -379,7 +379,7 @@ template<> void Jsonize(JsonIO& io, Time& var)
   if(IsNull(var))
    io.Set(Null);
   else
-   io.Set(Format("%04d%02d%02d`T%02d:%02d:%02d",
+   io.Set(Format("%04d-%02d-%02d`T%02d:%02d:%02d",
                  var.year, var.month, var.day, var.hour, var.minute, var.second));
 }
```

This is tough decision - backward incompatible change. At minimum we should make Jsonize recognize old format as well as new...

In any case, so far the Jsonize format was considered like "U++ private", it was not meant for "external" communication.

That said, I am OK with the change, as long as it able to read previous format...

Mirek

Subject: Re: Jsonize() Date and Time serialization [patch]
Posted by zsolt on Sat, 12 Jun 2021 07:41:09 GMT
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mirek wrote on Sat, 12 June 2021 08:47

That said, I am OK with the change, as long as it able to read previous format...

Mirek

Thanks. This is why I put those filters there. This way it can read the old format.

BTW, I think U++ is extremely useful and efficient in web service development.
With some helper classes and macros I was able to create a type-safe web service framework.
My endpoints are normal C++ functions now, thanks to the Jsonize() infrastructure.

Subject: Re: Jsonize() Date and Time serialization [patch]
Posted by mirek on Sun, 13 Jun 2021 08:00:24 GMT
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OK, applied, please check.

That said, the code could use a bit of optimization... (those Mids and Format are probably not the most optimal solution). Maybe in the future...

Subject: Re: Jsonize() Date and Time serialization [patch]
Posted by zsolt on Sun, 13 Jun 2021 11:47:11 GMT
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Thank you!
I tested. It works perfectly.

Yes, I tried replacing those formats with a simple code, dumping to a string with IntStr() and was much faster, but ugly.
Do you have an idea about it?

And yes, the parsing is not very optimal this way. And doesn't solve the problem of dates after year 9999.

Subject: Re: Jsonize() Date and Time serialization [patch]
Posted by mirek on Mon, 21 Jun 2021 12:05:25 GMT
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After revisiting the code, I am afraid it is not really correct: Mid is UB if there are not enough characters in the String...

Working on further checks&fixing...

Mirek
