

Hi,

I've found some issues in **JSF 2.3-m04** regarding to `<f:convertDateTime />`:

1. The converter won't work with `type="localTime"` and `timeStyle`. This seems to be a typo in source code, the `dateStyle` is used instead of `timeStyle`:

```
// Mojarra 2.3-m04 source code
public class DateTimeConverter implements Converter, PartialStateHolder {

    ...
    private String dateStyle = "default";
    private String timeStyle = "default";
    ...

    private FormatWrapper getDateFormat(Locale locale) {
        ...
    } else if (type.equals("localTime")) {
        dtf = (null != pattern) ? DateTimeFormatter.ofPattern(pattern, locale) :
            DateTimeFormatter.ofLocalizedTime(getFormatStyle(dateStyle));
        from = LocalTime::from;
        ...
    }
    ...
}
```

As a consequence, you can write `<f:convertDateTime type="localTime" dateStyle="short" />` and it will work.

2. You can't format only time when `type="localDateTime"`:

Consider the following example:

```
<h:outputText value="#{myBean.localDateTime}">
  <f:convertDateTime type="localDateTime" timeStyle="short" />
</h:outputText>
```

Similar to first issue, the value of the `dateStyle` attribute will be used instead of `timeStyle`.

As a consequence, you can't "combine" `timeStyle` and `dateStyle` when `type="localDateTime"`. A `LocalDateTime` object holds both date and time. So we should be able to format the date part with one style and the time part with another style. For example:

```
<h:outputText value="#{myBean.localDateTime}">
  <f:convertDateTime type="localDateTime" dateStyle="medium" timeStyle="short" />
</h:outputText>
```

This will not work as expected. During the parsing and formatting process, the `timeStyle` attribute will be ignored. Only `dateStyle` will be used:

```
// Mojarra 2.3-m04 source code
public class DateTimeConverter implements Converter, PartialStateHolder {

    ...
    private String dateStyle = "default";
    private String timeStyle = "default";
    ...

    private FormatWrapper getDateFormat(Locale locale) {
        ...
    }
}
```

```
} else if (type.equals("localDateTime")) {  
    dtf = (null != pattern) ? DateTimeFormatter.ofPattern(pattern, locale) :  
        DateTimeFormatter.ofLocalizedDateTime(getFormatStyle(dateStyle));  
    from = LocalDateTime::from;  
}  
...  
}
```

The fix may consist in calling the `DateTimeFormatter.ofLocalizedDateTime()` method with two parameters, something like `DateTimeFormatter.ofLocalizedDateTime(getFormatStyle(dateStyle), getFormatStyle(timeStyle))`.

3. You can't use the converter with `type="localTime"` or `type="localDateTime"` and `dateStyle` or `timeStyle` with a value of `long` or `full`. This will cause an `javax.faces.convert.ConverterException` exception which "hides" the "original" exception caused by the [JDK-8085887](#) bug. Although the bug only mentions `LocalDateTime`, the same happens when using `LocalTime`.