Calendar Use Cases - Combining Frequencies in a Single Calendar

Introduction

JobScheduler Calendars allow a standard working week to be combined with dates that regularly occur and dates such as national and other holidays to form an accurate representation of a complex business year.

The use case described in this article shows how such a combination may be configured within a single Working Day Calendar:

- a basic Monday to Saturday working week is defined as an *Included Frequency* and
- National Holidays and regularly occurring days are defined as *Excluded Frequencies* and are "removed" from the basic working week.

Note that the advantages and disadvantages of using a *single Working Day Calendar* - as described here - in comparison with using *separate Working and Non-Working Day* calendars have already been described in the Calendar Use Cases - Managing Working Day Calendars article.

Article Scope

This article describes how to configure a basic calendars and builds on the first two use case articles in which the configuration procedure was described in detail:

- Calendar Use Cases - Managing Working Day Calendars
- Calendar Use Cases - Managing Working Day and Non-Working Day Calendars

Feature Availability

The Calendar feature was introduced with JobScheduler   FEATURE AVAILABILITY STARTING FROM RELEASE 1.12

Requirements

This article has been written assuming that a Job Chain and Order has already been configured in a `demo/end2end/` folder in the JobScheduler Master's `config/live/` folder and that the Calender will be assigned to the Order.

Calendar Configuration

The configuration is implemented within a single Working Day Calendar, Valid From 1st January 2017 to 31st December 2019, and is summarized in the following table:

Frequency Type	Frequency	Valid From	Valid To
Included	Basic business week: Monday to Saturday	-	-
Excluded	National Holidays 2017	-	-
Excluded	National Holidays 2018	-	-
Excluded	National Holidays 2019	-	-
Excluded	Last Saturday in Month for August to mid-November 2018	1st Aug 2018	18th Nov 2018

The following screenshots will summarize the main configuration stages required for the different components - called Frequencies - in the Calendar. Step-by-step descriptions of the individual configuration stages can be found in the two *Calendar Use Cases - Managing Working Day ...* articles that are linked in the Introduction.

Basic Calendar Configuration

Calendar configuration takes place in the JOC Cockpit's Resources/Calendars view.

The modal window for the basic Calendar configuration information is opened by clicking the add Calendar button in the Resources/Calendars view and will appear as shown in the next screenshot:

Add Business Week Included Frequency

The Monday to Saturday basic business week frequency is added with the Included Frequency tab of the Create Calendar window selected as shown in the previous screenshot. After configuration, the Frequency will appear as shown below:

Add National Holidays Excluded Frequencies

Select the Excluded Frequencies Tab in the Create Calendar window and then add the national holidays, each year forming a separate frequency. In this use case German public holidays are being configured, as shown in the next screenshot:

Add Frequencies : National Holidays

| Weekdays | Specific Weekdays | Specific Days | Days of Month | Recurring Days | National Holidays |

Country

Germany

Year

2017

Select all ☑

☑ 01.01.2017 - Neujahr
☑ 14.04.2017 - Karfreitag
☑ 17.04.2017 - Ostermontag
☑ 01.05.2017 - Maifeiertag
☑ 25.05.2017 - Christi Himmelfahrt

☑ 05.06.2017 - Pfingstmontag
☑ 03.10.2017 - Tag der Deutschen Einheit
☑ 31.10.2017 - Reformationstag
☑ 25.12.2017 - 1. Weihnachtstag
☑ 26.12.2017 - 2. Weihnachtstag

Sr. No	Frequency	Valid From	Valid To	Action
1	2017 national holidays 01.01.2017, 14.04.2017, 17.04.2017, 01.05.2017, 25.05.2017, 05.06.2017, 03.10.2017, 31.10.2017, 25.12.2017, 26.12.2017			🗓 ✎ ✖

Add Frequency

Close   Cancel

The Create Calender window will appear as shown once the three Holiday Frequencies have been added:

Create Calendar

Name	mon-sat-hols-germany
Title	Mon-Sat Holidays Germany
Path	/demo/end2end/
Type	Working days
Category	e2e
Valid From	01.01.2017
Valid To	31.12.2019

Included Frequencies | **Excluded Frequencies**   Show Preview | Add Frequency

List of Frequencies	Valid From	Valid To	Action
2017 national holidays 01.01.2017, 14.04.2017, 17.04.2017, 01.05.2017, 25.05.2017, 05.06.2017, 03.10.2017, 31.10.2017, 25.12.2017, 26.12.2017			🗓 ✏ ✖
2018 national holidays 01.01.2018, 30.03.2018, 02.04.2018, 01.05.2018, 10.05.2018, 21.05.2018, 03.10.2018, 25.12.2018, 26.12.2018			🗓 ✏ ✖
2019 national holidays 01.01.2019, 19.04.2019, 22.04.2019, 01.05.2019, 30.05.2019, 10.06.2019, 03.10.2019, 25.12.2019, 26.12.2019			🗓 ✏ ✖

Submit   Cancel

Last Saturday in Month for three Months

The Specific Weekdays tab is used to configure frequencies such as the *last Saturday* in the Month and allows a validity period to be set as shown:

Add Frequencies : Specific Weekdays

| Weekdays | Specific Weekdays | Specific Days | Days of Month | Recurring Days | National Holidays |

Number of Day — Last

Weekdays — Saturday

Valid From — 01.08.2018

Valid To — 18.11.2018

Month Range ▲

Sr. No	Frequency	Valid From	Valid To	Action
1	2017 national holidays 01.01.2017, 14.04.2017, 17.04.2017, 01.05.2017, 25.05.2017, 05.06.2017, 03.10.2017, 31.10.2017, 25.12.2017, 26.12.2017			📅 ✏ ✖
2	2018 national holidays 01.01.2018, 30.03.2018, 02.04.2018, 01.05.2018, 10.05.2018, 21.05.2018, 03.10.2018, 25.12.2018, 26.12.2018			📅 ✏ ✖
3	2019 national holidays 01.01.2019, 19.04.2019, 22.04.2019, 01.05.2019, 30.05.2019, 10.06.2019, 03.10.2019, 25.12.2019, 26.12.2019			📅 ✏ ✖
4	last saturday of month	01.08.2018	18.11.2018	📅 ✏ ✖

Add Frequency

Close   Cancel

The Excluded Frequencies tab will appear as shown in the next screenshot once the four excluded frequencies have been added:

Note that once configured, it is possible to identify National Holidays by the Year and to easily add, edit and delete individual years. However, it is not possible to note the the country which the holidays are for and to separate identify, for example, German and French Holidays for the same year.

Calendar Preview

The final Calendar can now be checked once the frequencies have been specified by clicking the Show Preview button in the Create Calendar modal window as shown above.

The Calendar itself will appear as shown in the next screenshot:

The included frequency days are shown in blue and the excluded frequency days are in orange. This allows the last Saturdays in the months of August to November to be readily identified, along with the National Holidays. The select box at the top right of the window, which is showing All Frequencies in the screenshot above, can be used to show a preview for individual frequencies if required.

Order Run-time Configuration

Assigning the Calendar to an Order

The Calendar is assigned to an Order - in this case order_cal-001 - in the Set Run-time modal window, which is opened by from the Additional Options (ellipsis symbol) menu in the Job Chains or Orders views.