Timetable integration on your website

Contents.

List of figures

1. General information.

- Deep linking means calling up the SBB.ch webshop with a URL and using the path and parameters of the URL to pass data to the SBB.ch application. Deep linking is available for the timetable and the webshop.

- If you want to "generate" a deep link in the new timetable, you simply make the relevant timetable enquiry and copy the resulting URL from the browser window. It is no longer necessary to compile this manually, but it is of course still possible (see section 2.2 for details).

- As far as possible, routing was implemented for the parameters of the old timetable, meaning the old logic is still supported.

- All string type parameters must be encoded in UTF-8 with "URL encoding" (RFC-3986), unless otherwise specified (e.g. Base64).

- All parameters are case-sensitive.

- Empty or unspecified parameters are ignored.

- Only https is used to call the interface in question; http redirects are not followed.

- Depending on the browser used by the customer, different levels of URL encoding are needed. We found that curly brackets and quotation marks require URL encoding in most browsers.

- Parameters and strings in data arrays must be put between quotation marks.
Example: "label":"Basel"

(as per the JSON notation (https://www.w3schools.com/js/js_json_syntax.asp).

2. URL structure and parameters.

https://www.sbb.ch/de
https://www.sbb.ch/fr
https://www.sbb.ch/it
https://www.sbb.ch/en

To add parameters, you can use the URL provided above and add a question mark. This then looks as follows: https://www.sbb.ch/en?date="2023-11-02". In section 2.2 you can find specific examples for each parameter.

2.1.   General information.

Parameter combinations

Any number of parameters can be combined using the "&" character.

Example: combination of "stops", "date" and "time"

https://www.sbb.ch/en?stops=[{"value":"8507000","type":"ID","label":"Bern"},{"value":"22","type":"ID","label":"Basel"}]&date="2023-11-02"&time="12:00"

Character encoding in URL

The following characters should be encoded in the URL to make sure that all browsers can open the URL:
«test» = %22test%22
[test] = %5Btest%5D
{test} = %7Btest%7D

2.2. Parameters.

If you want to "generate" a deep link in the new timetable, you simply make the relevant timetable enquiry and copy the resulting URL from the browser window. It is no longer necessary to compile this manually, but it is of course still possible. All parameters are explained in detail in the following table.

What	Parameter	Type	Description	Example	Example URL
From and to	stops	Data Array	To generate the array, simply enter the location of departure or arrival in the timetable and copy the URL.	stops=[{"value":"8507000","type":"ID","label":"Bern"},{"value":"22","type":"ID","label":"Basel"}]	https://www.sbb.ch/en?stops=[{"value":"8507000","type":"ID","label":"Bern"},{"value":"22","type":"ID","label":"Basel"}]
	von / nach	String	For manual input you can also use the parameters "von" and "nach".	von=Zürich+HB nach=3014+Bern+Wylerstrasse+123 von=Bern&nach=Basel	https://www.sbb.ch/en?von=Zürich+HB https://www.sbb.ch/en?nach=3014+Bern+Wylerstrasse+123 https://www.sbb.ch/en?von=Bern&nach=Basel
Date	date	yyyy-mm-dd	Insert the desired departure or arrival date. If this parameter is not included, the current day on which the link was loaded is automatically used.	date="2023-11-02"	https://www.sbb.ch/en?date="2023-11-02"
Time	time	hh:mm	Insert the desired departure or arrival time. If this parameter is not included, the current time at which the link was loaded is automatically used.	time="12:00"	https://www.sbb.ch/en?time="12:00"
Dep/arr	moment	DEPARTURE	Indicates that the time specified refers to the departure time.	moment="DEPARTURE"	https://www.sbb.ch/en?moment="DEPARTURE"
		ARRIVAL	Indicates that the time specified refers to the arrival time.	moment="ARRIVAL"	https://www.sbb.ch/en?moment="ARRIVAL"

Setting	Parameter	Value/Type	Description	Example	URL
Hide prices setting	hidePrices	Boolean	To hide the prices in the timetable results, enter "true".	hidePrices=true	https://www.sbb.ch/en?hidePrices=true
Bicycle-friendly connections setting	attributes	BIKE_TRANSPORT	Show only bicycle-friendly connections.	attributes=["BIKE_TRANSPORT"]	https://www.sbb.ch/en?attributes=["BIKE_TRANSPORT"]
Travel comfort setting	directConnection	Boolean	Only show direct connections.	directConnection=true	https://www.sbb.ch/en?directConnection=true
	attributes	SLEEPING CAR, COUCHETTE, EXCLUDE_TILTING_TRAIN	Show specific train types (excludes unlisted trains).	attributes=["X","Y"]	https://www.sbb.ch/en?attributes=["SLEEPING_CAR","COUCHETTE","EXCLUDE_TILTING_TRAIN"]
Accessibility setting	showAccessibility	Boolean	To specify accessibility-related information, "true" must be entered.	showAccessibility=true	https://www.sbb.ch/en?showAccessibility=true
	filterAccessibility	BOARDING_ALIGHTING_SELF	Independent boarding/alighting possible.	filterAccessibility="BOARDING_ALIGHTING_SELF"	https://www.sbb.ch/en?showAccessibility=true&filterAccessibility="BOARDING_ALIGHTING_SELF"
		BOARDING_ALIGHTING_BY_CREW	Boarding/alighting with staff assistance.	filterAccessibility="BOARDING_ALIGHTING_BY_CREW"	https://www.sbb.ch/en?showAccessibility=true&filterAccessibility="BOARDING_ALIGHTING_BY_CREW"
		BOARDING_ALIGHTING_BY_NOTIFICATION	Boardng/alighting only possible with advance booking.	filterAccessibility="BOARDING_ALIGHTING_BY_NOTIFICATION"	https://www.sbb.ch/en?showAccessibility=true&filterAccessibility="BOARDING_ALIGHTING_BY_NOTIFICATION"
Occupancy setting	occupancy	FIRST_LOW	Show only connections with a low occupancy rate in 1st class.	occupancy="FIRST_LOW"	https://www.sbb.ch/en?occupancy="FIRST_LOW"
		SECOND_LOW	Show only connections with a low occupancy rate in 2nd class.	occupancy="SECOND_LOW"	https://www.sbb.ch/en?occupancy="SECOND_LOW"
Via setting	via	Boolean	To display the via field, enter "true". The via fields can be filled just as the departure or arrival locations are. The via list can simply be omitted to show only the empty via field in the form.	via=true	https://www.sbb.ch/en?stops=[{"label":"","type":"ID","value":""},{"label":"","value":"","type":"ID"},{"label":"","type":"ID","value":""}]&via=true

Mode of transport setting	transportModes	SHIP, BUS, TRAMWAY, HIGH_SPEED_TRAIN, INTERCITY, INTERREGIO, REGIO, URBAN_TRAIN, SPECIAL_TRAIN, CABLEWAY_GONDOLA_CHAIRLIFT_ FUNICULAR	List the desired mode(s) of transport and omit undesired ones.	transportModes=["SHIP","BUS"]	https://www.sbb.ch/en?transportModes= ["SHIP","BUS"]
Alternative connections setting	includeEconomic	Boolean	Show alternative connections.	includeEconomic=true	https://www.sbb.ch/en?includeEconomic= true
	includeUnsharp	Boolean	Also include nearby starting points and destinations.	includeUnsharp=true	https://www.sbb.ch/en?includeEconomic= true&includeUnsharp=true
Transfer time settings	walkSpeed	Integer (150 or 200)	50% more transfer time: walkSpeed=150 Double transfer time: walkSpeed=200 (Recommended transfer time = simply omit)	walkSpeed=150	https://www.sbb.ch/en?walkSpeed=150
Show train number setting	trainNumber	Boolean	Show the train number in the timetable.	trainNumber=true	https://www.sbb.ch/en?trainNumber=true
Open level 2	selected_trip	Integer	To open a specific connection at level 2, you must enter its position in the sequence. It starts at 0, i.e. to open the 1st connection immediately, enter selected_trip=0.	selected_trip=2	https://www.sbb.ch/en?date="2023-06-14"&moment="DEPARTURE"&selected_trip= 2&stops=[{"value":"8507000","type":"ID","label":"Bern"},{"value":"8500010","type":"ID","label":"Basel"}]&time="09:23"
Open level 3	selected_leg	Integer	To immediately open the map on level 3, you have to enter the number of the journey section. It starts at 0, i.e. to open section 1 directly: selected_leg=0. For 2 it is: selected_leg=1 etc.	selected_leg=0	https://www.sbb.ch/en?date="2023-06-14"&moment="DEPARTURE"&selected_leg=0 &selected_trip=0&stops=[{"value":"8507000", "type":"ID","label":"Bern"},{"value":"22","type": "ID","label":"Basel"}]&time="08:37"

3. Examples.

The following section provides some examples of possible URLs and the expected results.

3.1.   Single parameter URL.

Connection to Basel

Parameter: stops=[{"value":"","type":"","label":""},{"value":"22","type":"ID","label":"Basel"}]

URL: https://www.sbb.ch/en?stops=[{"value":"","type":"","label":""},{"value":"22","type":"ID", "label":"Basel"}]
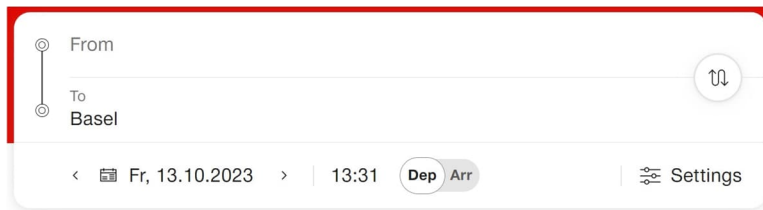

Figure 1: Complete profile of URL with a single parameter

3.2.   URL with several parameters.

Connection from Bern to Basel on a specific date at a specific time

-         Parameter 1: stops=[{"value":"8507000","type":"ID","label":"Bern"},{"value":"22","type": "ID","label":"Basel"}]

-         Parameter 2: date="2023-11-02" (omit for default value: current date)

-         Parameter 3: time="12:00" (omit for default value: current time)

URL: https://www.sbb.ch/en?stops=[{"value":"8507000","type":"ID","label":"Bern"},{"value":"22", "type":"ID","label":"Basel"}]&date="2023-11-02"&time="12:00"
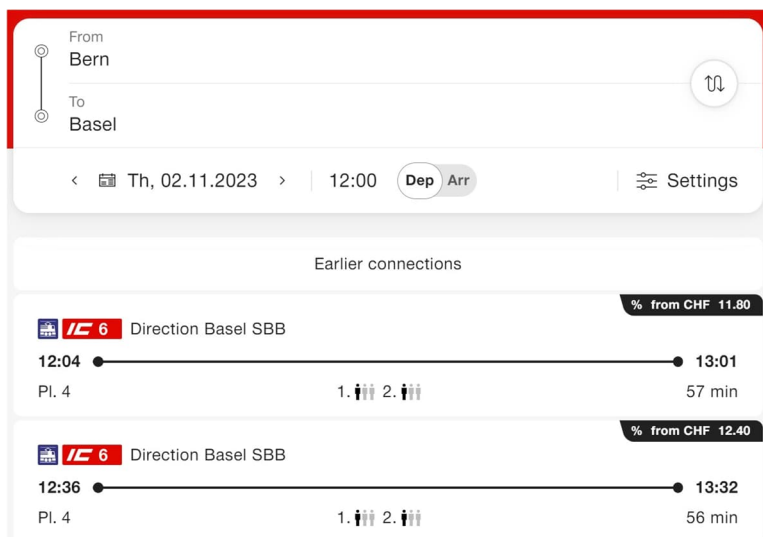

Figure 2: Search results for a URL with several parameters

6

Bicycle-friendly connection from Bern to Zürich HB via Olten

- Parameter 1 (Via): stops=[{"label":"Bern","type":"ID","value":"8507000"},{"label":"Olten", "value":"8500218","type":"ID"},{"label":"Zürich","type":"ID","value":"8503000"}]&via=true
- Parameter 2: attributes=["BIKE_TRANSPORT"]

URL: https://www.sbb.ch/en?stops=[{"label":"Bern","type":"ID","value":"8507000"},{"label":"Olten", "value":"8500218","type":"ID"},{"label":"Zürich","type":"ID","value":"8503000"}]&via=true&attributes =["BIKE_TRANSPORT"]
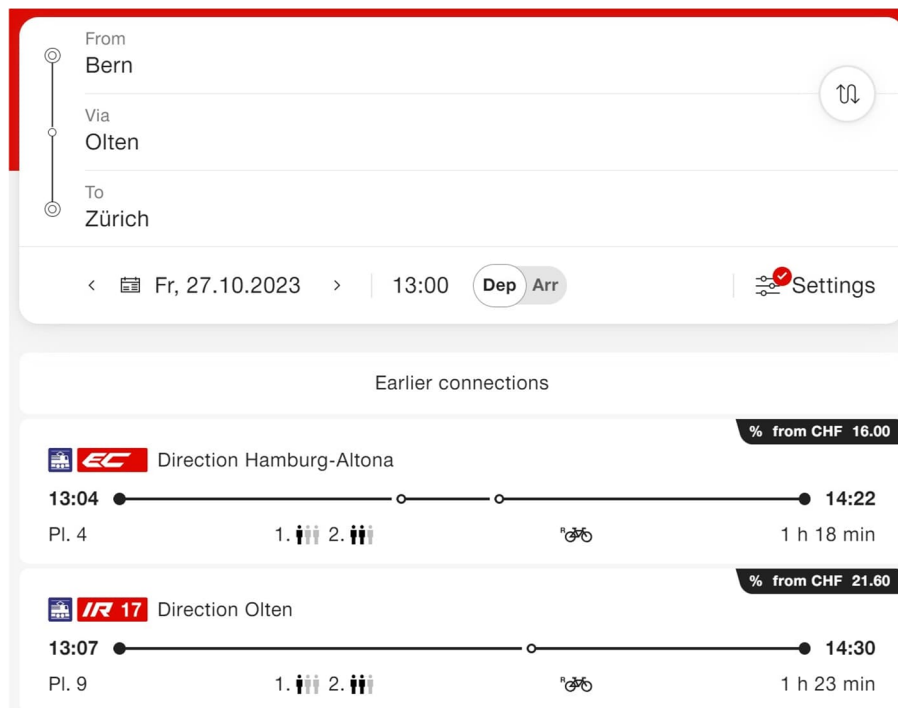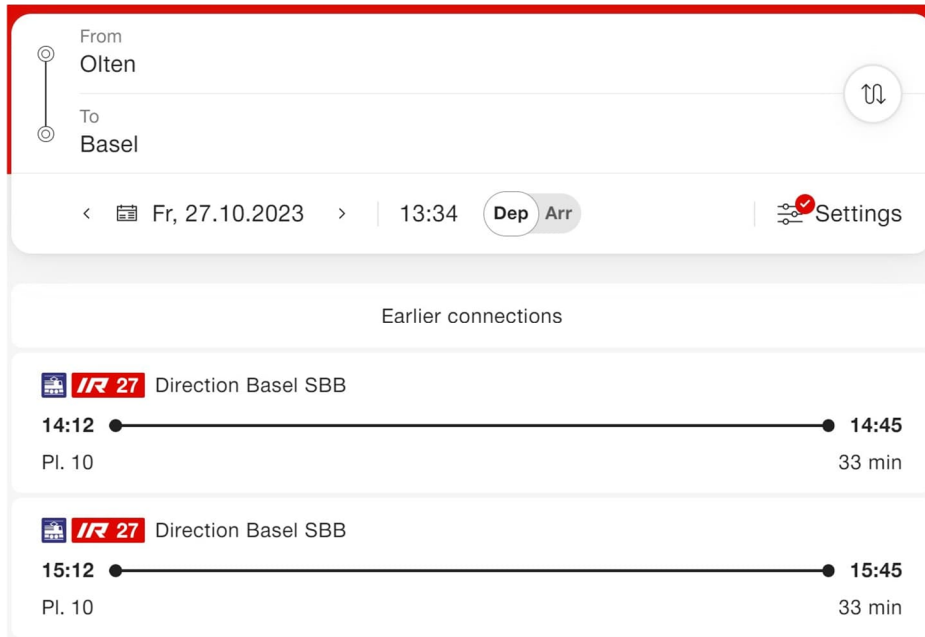

Figure 3: Search results for a URL with several parameters

Connections from Olten to Basel on InterRegio or Regio trains without displaying prices

- Parameter 1: stops=[{"value":"8500218","type":"ID","label":"Olten"},{"value":"22","type":"ID","label":"Basel"}]
- Parameter 2: transportModes=["INTERREGIO","REGIO"]
- Parameter 3: hidePrices=true

URL: https://www.sbb.ch/en?stops=[{"value":"8500218","type":"ID","label":"Olten"},{"value":"22","type":"ID","label":"Basel"}]&transportModes=["INTERREGIO","REGIO"]&hidePrices=true

Figure 4: Search results for a URL with several parameters
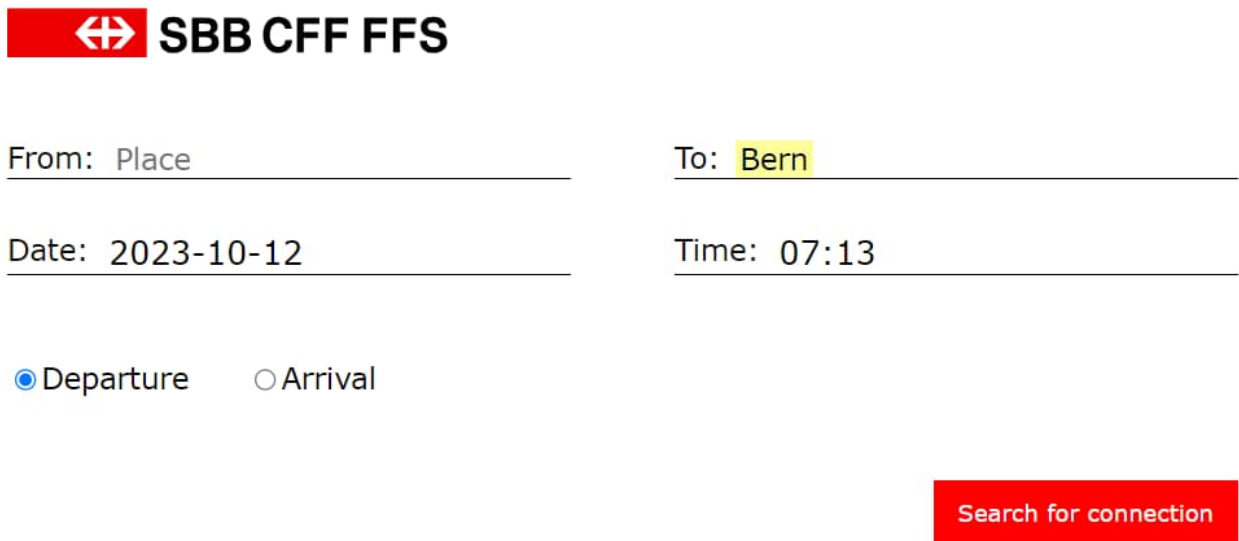
4. Code template.

The files **"index.html"** and **"Extensions.svg"** serve as code templates for the implementation of the deep links. **Both documents must be** stored **in the same folder.**

"index.html" = HTML and JS code
"Extensions.svg" = SBB logo

When **"index.html" is opened** the following window appears:

Figure 5: Deep link code template

Important

In the template in the following section, the value "to: Bern" is set, for example. It can be modi-fied as required:

```
<input id="to" type="text" name="to" style="border:none; background:none; font-size:18px; font-family:'Verdana';" value="Bern">
```

4.1. Code.

4.1.1. Javascript.

```
<script>
window.onload = function() {
var month = new Array("01", "02", "03", "04", "05", "06", "07", "08", "09", "10", "11", "12");
var today = new Date();
var dd = today.getDate();          1
var mm = today.getMonth();
var currentMonth = month[mm];
var yyyy = today.getFullYear();
var hh = String(today.getHours()).padStart(2, '0');
var min = String(today.getMinutes()).padStart(2, '0');
today = yyyy + '-' + currentMonth + '-' + dd;
time = hh + ':' + min;
document.getElementById('date').value = today;
document.getElementById('time').value = time;
}

function callSBB() {     2
    let sbbfrom = document.getElementById('from').value;
    let sbbto = document.getElementById('to').value;
    let sbbdate = document.getElementById('date').value;
    let sbbtime = document.getElementById('time').value;
    let arrival = "";

    if(document.getElementById('departure').checked) {
      arrival = "DEPARTURE";
    }else if(document.getElementById('arrival').checked) {
      arrival = "ARRIVAL";
    }
    let url = `https://sbb.ch/de?von=${sbbfrom}&nach=${sbbto}&date="${sbbdate}"&time="${sbbtime}"&moment="${arrival}"`;
    window.open(encodeURI(url), '_blank');
}
</script>
```

Figure 6: JavaScript Code (template)

1 = Define current date and time
2 = Function "callSBB()": Open deep link with specified values

4.1.2. HTML.

```
<body>
<img alt="sbb logo" src="Extension.svg" width="272" height="50" style="padding-bottom: 40px;">      1
<form onsubmit="callSBB()" action="" id="sbbapp">      2
  <div style="display:flex; width:50%; margin-bottom: 2rem; align-itmes:stretch">
    <div style="width:50%; display:flex; border-bottom: 1px solid #000000; margin-right: 4rem;">
      <label style="padding-left:0px; color:#0a0a0a; padding-right:10px;">Von:</label>
      <input id="from" type="text" name="from" placeholder="Ort" style="border:none; background:none; font-size:18px; font-family:'Verdana';">
    </div>
    <div style="width:50%; display:flex; border-bottom: 1px solid #000000;">
      <label style="padding-left:0px; color:#0a0a0a; padding-right:10px;">Nach:</label>
      <input id="to" type="text" name="to" placeholder="Ort" style="border:none; background:none; font-size:18px; font-family:'Verdana';" value="Bern">
    </div>
  </div>
  <div style="display:flex; width:50%; margin-bottom: 1rem; align-itmes:stretch">
    <div style="width:50%; display:flex; border-bottom: 1px solid #000000; margin-right: 4rem;">
      <label style="padding-left:0px; color:#0a0a0a; padding-right:10px;">Datum:</label>
      <input id="date" type="text" name="date" value="2023-09-01" style="border:none; background:none; font-size:20px; font-family:'Verdana';">
    </div>
    <div style="width:50%; display:flex; border-bottom: 1px solid #000000;">
      <label style="padding-left:0px; color:#0a0a0a; padding-right:10px;">Zeit:</label>
      <input id="time" type="text" name="time" value="13:05" style="border:none; background:none; font-size:20px; font-family:'Verdana';">
    </div>
  </div>
  <div style="display:flex; width:50%; margin-bottom: 1rem; align-itmes:stretch">
    <div style="width:50%; display:flex; margin-right: 4rem; padding-top:2em;">
      <input type="radio" value="false" name="isArrival" checked="checked" id="departure">
      <label for="departure" style="padding-right:2em;">Abfahrt</label>
      <input type="radio" value="true" name="isArrival" id="arrival" class="is_arrival">
      <label for="arrival">Ankunft</label>
    </div>
  </div>
  <div style="display:flex; width:100%; margin-bottom: 1rem; align-itmes:stretch">
    <div style="width:50%; display:flex; margin-right: 4rem; padding-top:2em; justify-content:flex-end">
      <input type="submit" value="Verbindung suchen" id="search--sbb" class="button" style="background:red; display:inline-block; color:#fefefe; margin:0 0 1rem; padding: .85em 1e
    </div>
  </div>
</form>
</body>
```

Figure 7 : HTML code (template)

1 = Include logo (Extension.svg)
2 = Call the function "callSBB()"