



“chura-Krüger (Krüger+)” matrix mod styling guide

Hello fellow OMSI player,

This styling guide is for OMSI players who would like to create and style their own destination displays for the Krüger+ matrix.

Structure of the depot file terminus section

(If you are already familiar with this, just skip to the next section.) Firstly, we need to understand how the termini are specified in an OMSI 2 depot file. Depot files can be opened with any text editor, such as the Notepad application that comes with Windows. Let’s look at the structure of the terminus section, with a snippet from the depot (.hof) file for the Projekt Szczecin map as an example:

A	B	C	0	1	2	3	4	5
[addterminus_list]								
{ALLEX}	0	Empty						
{ALLEX}	10	Zjazd do zajezdni	ZJAZD DO ZAJEZDNI	ZJAZD DO	ZAJEZDNI	DO ZAJEZDNI	Sz_SPAK.tga	Zjazd do zajezdni
	571	Kollataja 57	KOLLATAJA		KOLLATAJA	KOLLATAJA	Sz_57_Kollataja.tga	Kollataja
	572	Warszewo 57	WARSEWO		WARSEWO	WARSEWO	Sz_57_Warszewo.tga	Warszewo
...								
[end]								

(OMSI 1-format terminus lists may be used as well.) In the actual depot file, the columns above are separated by tab characters, and they may not necessarily align into columns in your text editor, which may be confusing. One way to ameliorate this is to save the section as a CSV (comma-separated values; extension .csv) file and import it into a spreadsheet program such as Microsoft Excel or LibreOffice Calc, specifying the tab character as the field delimiter, which will divide the list into columns. When editing is finished, it may be re-exported as a CSV file again.

Each row between [addterminus_list] and [end] defines one destination display, and the columns have the following meanings:[†]

- **A** {ALLEX} means no passengers will board and existing passengers will alight when this terminus is displayed.
- **B** This is the “Ziel” code (on the IBIS) for the terminus represented by this row.
- **C** This tells the passengers where the destination of the bus is (do not change this column without identical changes in the timetable files).
- **0** This is what is displayed on the old IBIS displays on buses such as the MAN SD 200.
- **1 and 2** These are the first and second lines respectively on the front destination displays.
- **3** This is the line for the one-line display on the side of some buses such as the SD 200.
- **4** This is the image path for the roller-blind image for this terminus.
- **5** This is what is displayed on the IBIS-2 displays on buses such as the NL 202.

Since in OMSI 2, the Krüger display is on the NL 202 and NG 272 buses, neither the 0th or the 3rd columns are utilized by the display. Thus, we may ignore these columns for now. On the other hand, columns 1 and 2 contain the text that will be displayed, and these columns are what will mainly concern us. Additionally, as we shall see in the following sections, the “Ziel” codes are part of our styling process as well.

[†] Two more columns may be added after the last column to specify the image paths of the windscreen destination cardboards and those of custom matrix bitmaps respectively. While outside the scope of this guide, they can be used with this mod, as in the sample Bowdenham depot file.

Specifying styled terminus lines

While modifications to the terminus list are needed to style terminus lines, this mod is designed so that the resulting modified list is still usable with other buses, so that there need not be an extra depot file. This is achieved by leaving the original list intact, and appending extra rows of styled terminus lines to the end of the list.

To specify a styled terminus line, insert a new row at the end (but before the [end] marker), with a “Ziel” code that is 20000 more than the original “Ziel” code of the terminus entry you wish to style, and with the same column C and column 5 texts as that for the original terminus entry. Thus, for example, if the original terminus entry says the following:

106	Römerberg ZOB Steig 5	RÖMERBERG ZOB ST5	GLETSCHER-XPRESS	RÖMERBERG ZOB	GLETSCHER- XPRESS	RB_Gletscher3.tga	Römerberg ZOB
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Then a new entry should be inserted after the rest of the list, but before the [end] marker, thus:

20106	Römerberg ZOB Steig 5						Römerberg ZOB
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The original line (with “Ziel” code 106) still needs to be present for the styled line (with “Ziel” code 20106) to function, so don’t delete the original! The original line is used by other buses as well.

Styling terminus lines

For the most part, terminus lines are styled by appending certain asterisked commands to the end of the text entries under columns 1 and 2 (just as in bus_fanat’s full matrix for the Mercedes O405N2). As an example, the *I command inverts a line of text, so to invert the first line of the terminus text in the preceding example, one might have the following (example from the Römerberg depot file):

20106	Römerberg ZOB Steig 5		GLETSCHER-XPRESS*I				Römerberg ZOB
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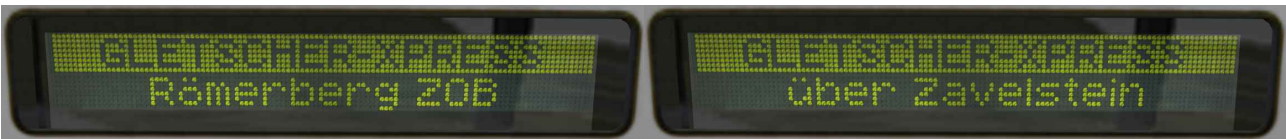
Furthermore, unlike for the default ANNAX and Krüger displays, it is possible to display lower-case letters in the terminus display. Thus, if I would like the second terminus line to have proper capitalization, I would have this:

20106	Römerberg ZOB Steig 5		GLETSCHER-XPRESS*I	Römerberg ZOB			Römerberg ZOB
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Moreover, multi-page displays may be specified by adding extra rows with 1000 added to the “Ziel” code for each new page. Thus if I wanted to have a second page that gives information on where the bus will pass through, I could do so with the following:

20106	Römerberg ZOB Steig 5		GLETSCHER-XPRESS*I	Römerberg ZOB			Römerberg ZOB
21106	Römerberg ZOB Steig 5		GLETSCHER-XPRESS*I	über Zavelstein			Römerberg ZOB

The result will be that when “Ziel” code 106 is specified in the IBIS (either directly, via specifying the “Linie” / “Route” combination, or typed in), the matrix will alternate between these two pages:



A third page, if desired, could also be created with “Ziel” code 22106, and so on.

To specify asterisked commands for all styled terminus lines in the depot file, a “terminus” entry with “Ziel” code 14990 may be used. For example, if I want the first line of every styled terminus entry to be in bold type and use Central European fonts, and the second line to use Central European fonts as well, I would add the following row to my terminus list (example from the Projekt Szczecin depot file):

14990		*B*CE	*CE				
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That is, global commands for the first line are in column 0, and those for the second line are in column 1. Additionally, styled terminus lines specifically for AI buses may be defined by adding 15000 to the original “Ziel” code.

See the appendix for a list of asterisked commands available.

Using custom fonts

There may be occasions when you wish to use different matrix fonts for realism, or when the character you wish to have displayed is not available, or when you wish to display a different script[†] altogether. These may be accomplished by using custom fonts, of the same type as other fonts in the OMSI 2\Fonts folder, and placed inside that folder. While the creation of OMSI fonts is outside the scope of this guide, custom fonts may be specified with the following special “terminus” entries, with “Ziel” codes 14991 to 14994:



14991	[1-row custom font 1]	[1-row custom font 2]	[1-row custom font 3]	[1-row custom font 4]	[1-row custom font 5]
14992	[2-row custom font 1]	[2-row custom font 2]	[2-row custom font 3]	[2-row custom font 4]	[2-row custom font 5]
14993	[route custom font 1]	[route custom font 2]	[route custom font 3]	[route custom font 4]	[route custom font 5]
14994	[icon custom font]				

The fonts should be specified by their names, as defined in the *.oft files (not by their file names!). For example, one of the default Krüger matrix fonts has the name “Krueger 7x7”. It is not necessary that every font slot be filled; unused slots may be left empty. Once custom fonts have been specified, they may be selected for the terminus lines in a particular entry with either the *CF command, which will sequentially use the specified custom fonts if the preceding font is too large for the text to fit (just as with the default OMSI 2 Krüger fonts), or the *CF1 to *CF5 commands, which will specifically select font number 1 to font number 5. Custom route number fonts may similarly be selected by the use of the commands *CN and *CN1 to *CN5. Custom icons are selected somewhat differently: they are specified with the command *CI followed by the letter that represents your desired icon in the icon font file.

Additionally, there are two vertical positioning commands, *^# and *v#, which can be appended after the font names and may be applied individually to each custom font. These commands will raise or lower the position of texts using the corresponding font by # pixels (maximum 7 pixels).

For examples of the use of custom fonts, see the included sample depot files for Gladbeck (custom logo in the route number position), Römerberg (custom icon for “Ziel” code 20172 to Waldkirche) and Omninsk (custom Cyrillic fonts).

Specifying a mixed-size terminus display

By a “mixed-size terminus display”, a display such as the example to the right is meant.



This is achieved by specifying a third line of terminus text in column 3, which is unused by the NL 202 or the NG 272, and then appending the command *IT at the end of the third line. (**IMPORTANT:** The *IT command **MUST be the last command**, due to the script currently needing to know early on whether a mixed-size terminus display is desired.) For example, the terminus list row that would define the display above (not including the route number, of course) is the following (example from the Projekt Szczecin depot file):

20072	Police Osiedle Chemik 107	Osiedle	Chemik	Police*B*F>5*IT	Police Osiedle Chemik
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For more mixed-size terminus display examples, see the included sample Bowdenham depot file.

[†] As of the time of writing, OMSI 2 only supports single-byte character encodings for horizontal and non-complex scripts. In particular, the use of Unicode and multi-byte East Asian encodings is not possible, and only single-byte encodings such as some Windows code pages and some ISO-8859 encodings, can be used.

Appendix A: List of asterisked commands

- ***^#**, ***v#** Move line up or down respectively by # pixels^{†‡}
- ***B** Use bold type font^{†‡}
- ***BR** Add British Rail logo as icon
- ***CE** Use fonts supporting Central European characters (not compatible with *K)^{†‡}
- ***CF**, ***CF#** Use custom font (font number # if specified) for the destination^{†‡}
- ***CI_** Use custom icon represented by the character_ in the icon font file
- ***CN**, ***CN#** Use custom font (font number # if specified) for the route number
- ***DB** Add Deutsche Bahn logo as icon
- ***F** Add airport icon
- ***F<#**, ***F>#** Move the front destination display left or right respectively by # pixels[†]
- ***G^#**, ***Gv#** If the large 16x8 font is used, move line up or down respectively by # pixels[†]
- ***I** Invert line, i.e. **like this**^{†‡}
- ***I<#**, ***I>#** Move icon left or right respectively by # pixels
- ***IT**, ***IT###** (Valid only if placed in line 3; **must be the final command**) Use mixed-size display, with line 3 X-coordinate limit ### if specified (must be specified with three digits)[†]
- ***K** Use small fonts (5 pixels high, upper-case only, no Central European glyph support)[†]
- ***L[]** Force route number displayed to be __ (1 to 5 characters)
- ***MX#** Allow only fonts up to standard width (i.e. *m* for an *n*×*m* font) # pixels^{†‡}
- ***N** Hide (do not display) route number
- ***NH<**, ***NH>** Display route number on the front display on the left or right side respectively
- ***NMX#** Allow only fonts for route number up to standard width # pixels
- ***N^#**, ***Nv#** Move route number up or down respectively by # pixels
- ***P** Add coffee cup (break, Pause) icon
- ***S** Add S-Bahn icon
- ***SCH** Add school icon
- ***T** Add tram icon
- ***U** Add U-Bahn icon

[†] affects the line in which the command is placed

[‡] usable in line 3 (other commands not usable in line 3)

denotes one single digit only; _ denotes one single character only; __ denotes multiple characters

Appendix B: Additional IBIS suffixes (requires enabling)

The Krüger+ matrix mod uses the same IBIS Linie code suffixes as the original Krüger matrix, but the extra suffixes tabulated below are available by changing the constant Matrix_UseExtraIBISSuffixes from 0 to 1 in the Vmatrix_const.txt file in the OMSI 2\ehicles\MAN_NL_NG\Script\churaKrueger folder.

Suffix	Display	Suffix	Display	Suffix	Display	Suffix	Display	Suffix	Display	Suffix	Display
08	0	22	0###	48	__H	60	__T	76	F__	88	R__
11	1###	37	CE__	49	__I	61	__U	77	G__	89	S__
12	2###	38	NE__	50	__J	62	__V	78	H__	90	T__
13	3###	39	SB__	51	__K	63	__W	79	I__	91	U__
14	4###	40	DB	52	__L	64	__X	80	J__	92	V__
15	5###	41	__A	53	__M	65	__Y	81	K__	93	W__
16	6###	42	__B	54	__N	66	__Z	82	L__	94	X__
17	7###	43	__C	55	__O	71	A__	83	M__	95	Y__
18	8###	44	__D	56	__P	72	B__	84	N__	96	Z__
19	9###	45	__E	57	__Q	73	C__	85	O__		
20	0#	46	__F	58	__R	74	D__	86	P__		
21	0##	47	__G	59	__S	75	E__	87	Q__		

In the table, # represents digits of the Linie code and __ represents the first three numbers of the Linie code with initial zeroes removed. Other IBIS Linie code suffixes are as in the original matrix.