

File created: 7-Oct-2025 14:52:20 {WMEDLEY}<internal>FONT-DEBUG.;68

edit by: rmk

changes to: (FNS LEGACYFONTCREATE)

previous date: 7-Oct-2025 08:58:03 {WMEDLEY}<internal>FONT-DEBUG.;67

Read Table: INTERLISP

Package: INTERLISP

Format: MCCS

(RPAQQ FONT-DEBUGCOMS

;; Little tools to help in debugging display fonts

(FNS DEBUGCHARSET IBM ICS SHOWCACHE SHOWCSBITMAP EQCSBM EQCHARBM CHARSETCHARS CHARBMDIFFS
SHOWCSCHAR CSCOMPARE SHOWBMS SHOWCHARBITMAPS CANDS LEGACYFONTCREATE)

(FNS FONTSIZE CSSIZE CSBMSIZE)

(FNS FONTCOMPARE)

(MACROS TRUEFONT)))

;; Little tools to help in debugging display fonts

(DEFINEQ

DEBUGCHARSET

[LAMBDA (FONTSPEC CHARSET INCLUDEDMEDLEYFONT)

; Edited 27-Aug-2025 17:19 by rmk

; Edited 9-Jul-2025 16:26 by rmk

; Edited 6-Jul-2025 22:33 by rmk

; Edited 2-Jul-2025 16:50 by rmk

; Edited 30-Jun-2025 09:27 by rmk

; Edited 25-Jun-2025 19:25 by rmk

; Edited 20-Jun-2025 16:37 by rmk

;; Reads the CHARSETINFO for FONTSPEC and CHARSET, where FONTSPEC can be a (family size...) specification or the name of a fontfile (ac,
;; strike, medleyfont format). Avoids the MEDLEYFONT files if NOTMEDLEYFONT.

(if (type? CHARSETINFO FONTSPEC)

then FONTSPEC

elseif (type? FONTDESCRIPTOR FONTSPEC)

then (\XGETCHARSETINFO FONTSPEC (OR CHARSET 0))

else (RESETLST

(CL:UNLESS INCLUDEDMEDLEYFONT

(RESETSAVE DISPLAYFONTEXTENSIONS (REMOVE 'MEDLEYDISPLAYFONT
DISPLAYFONTEXTENSIONS)))

(if (OR (LITATOM FONTSPEC)

(STRINGP FONTSPEC))

then (CL:UNLESS CHARSET (SETQ CHARSET 0))

(LET (STRM)

[RESETSAVE (SETQ STRM (OPENSTREAM FONTSPEC 'INPUT))

'(PROGN (CLOSEF? OLDVALUE]

(for FNS CSINFO (FI ← (FONTSPECFROMFILENAME FONTSPEC 'DISPLAY)) in
DISPLAYCHARSETFNS

do (CL:WHEN (CAR (NLSETQ (APPLY* (CADR FNS)
STRM)))

(SETQ CSINFO (APPLY* (CADDR FNS)
STRM CHARSET))

(PUTMULTI (fetch (CHARSETINFO CSINFOPROPS) of CSINFO)
'FILE

(PSEUDOFILNAME FONTSPEC))

(RETURN CSINFO))

(CLOSEF? STRM)))

else (\READCHARSET (\FONT.CHECKARGS FONTSPEC)
CHARSET))))]

(IBM

[LAMBDA (FONT CHARSET)

; Edited 27-Aug-2025 17:29 by rmk

; Edited 25-Aug-2025 08:58 by rmk

; Edited 29-Jun-2025 17:05 by rmk

; Edited 20-Jun-2025 16:35 by rmk

; Edited 18-Jun-2025 14:09 by rmk

;; Inspects the character set bitmap for CHARSET in FONT, which may also be a charset info. If necessary, builds the font (unlike ICS).

(SETQ CHARSET (CHARSET.DECODE CHARSET))

```
(SHOWCSBITMAP (if (type? CHARSETINFO FONT)
  then FONT
  elseif FONT
  then (\XGETCHARSETINFO (FONTCREATE FONT)
    (OR CHARSET 0))
```

```
(ICS
[LAMBDA (FONT CHARSET INCLUDEDMEDLEYFONT)
```

```
; Edited 7-Jul-2025 23:12 by rmk
; Edited 6-Jul-2025 22:04 by rmk
; Edited 2-Jul-2025 16:11 by rmk
; Edited 29-Jun-2025 17:07 by rmk
; Edited 21-Jun-2025 22:00 by rmk
; Edited 20-Jun-2025 17:10 by rmk
; Edited 18-Jun-2025 14:23 by rmk
```

:: Inspects the charset bitmap for CHARSET in FONT. If FONT is a filename, gets the csinfo directly from the file, doesn't build the font.

```
(LET ((CSINFO (DEBUGCHARSET FONT CHARSET INCLUDEDMEDLEYFONT)))
  (if CSINFO
    then (INSPECT CSINFO)
      (SHOWCSBITMAP CSINFO)
      (LIST (GETMULTI (fetch (CHARSETINFO CSINFOPROPS) of CSINFO)
        'FILE)
        CSINFO)
    else "NO CSINFO"))
```

```
(SHOWCACHE
[LAMBDA NIL
```

```
; Edited 29-Jun-2025 17:19 by rmk
; Edited 18-Jun-2025 22:50 by rmk
```

:: Keyboard shortcut to show the current caches

```
(DV \FONTSINCORE)
(DV \FONTEXISTS?-CACHE])
```

```
(SHOWCSBITMAP
[LAMBDA (CSINFO)
```

```
; Edited 17-Aug-2025 12:36 by rmk
; Edited 29-Jun-2025 17:07 by rmk
; Edited 20-Jun-2025 16:38 by rmk
```

:: Given a charsetinfo, shows the whole bitmap using EDITBM. Unfortunately, that runs in a separate process, so we can't directly get the window to put something useful in the title. If EDITBM is called directly, it doesn't return until you quit...in which case it's gone. We'd really like just the display.

:: If we call the inspector, it asks for contents vs. fields, also a pain, and we still don't get the window.

```
(LET (BM)
  (if (NOT CSINFO)
    then (PRINTOUT T "NO CSINFO" T)
    elseif (AND (IGREATERP (BITMAPWIDTH (SETQ BM (fetch CHARSETBITMAP of CSINFO)))
      0)
      (IGREATERP (BITMAPHEIGHT BM)
        0))
    then (EVAL.AS.PROCESS (LIST 'EDITBM BM))
    else (PRINTOUT T "EMPTY BITMAP" T))
  CSINFO])
```

```
(EQCSBM
[LAMBDA (CS1 CS2 CHARSET INCLUDEDMEDLEYFONT)
```

```
; Edited 6-Jul-2025 22:04 by rmk
; Edited 2-Jul-2025 16:12 by rmk
; Edited 29-Jun-2025 17:52 by rmk
; Edited 21-Jun-2025 21:20 by rmk
```

:: True if the two charsetinfos are equivalent in all respects. If either of CS1 or CS2 is a fontdescriptor (not a charsetinfo), then coerces to CHARSET in that font.

```
(SETQ CS1 (DEBUGCHARSET CS1 CHARSET INCLUDEDMEDLEYFONT))
(SETQ CS2 (DEBUGCHARSET CS2 CHARSET INCLUDEDMEDLEYFONT))
(EQUALALL (fetch (CHARSETINFO CHARSETBITMAP) of CS1)
  (fetch (CHARSETINFO CHARSETBITMAP) of CS2])
```

(EQCHARBM**[LAMBDA (CHAR1 CHAR2 CS1 CS2 EXCLUDEMEDLEYFONT)** ; Edited 19-Jul-2025 12:46 by rmk

;; True if the character bitmap for CHAR1 in CS1 is equivalent to the bitmap for CHAR2 in CS2.

```

(CL:UNLESS (CHARCODEP CHAR1)
  (SETQ CHAR1 (CHARCODE.DECODE CHAR1)))
(CL:UNLESS (CHARCODEP CHAR2)
  (SETQ CHAR2 (CHARCODE.DECODE CHAR2)))
(SETQ CS1 (DEBUGCHARSET CS1 (\CHARSET CHAR1)
  (NOT EXCLUDEMEDLEYFONT)))
(SETQ CS2 (DEBUGCHARSET CS2 (\CHARSET CHAR2)
  (NOT EXCLUDEMEDLEYFONT)))
(EQUALALL (\GETCHARBITMAP.CSINFO (\CHAR8CODE CHAR1)
  CS1)
  (\GETCHARBITMAP.CSINFO (\CHAR8CODE CHAR2)
  CS2))

```

(CHARSETCHARS**[LAMBDA (CSINFO CHARSET INLUDEMEDLEYFONT)**

; Edited 6-Jul-2025 22:04 by rmk

; Edited 2-Jul-2025 16:12 by rmk

; Edited 29-Jun-2025 17:52 by rmk

;; Returns a list of character codes that are instantiated in CSINFO (which may be specified as a font/charset combination).

```

(SETQ CSINFO (DEBUGCHARSET CSINFO CHARSET INLUDEMEDLEYFONT))
(for CODE from 0 to \MAXTHINCHAR unless (SLUGCHARP.DISPLAY CODE CSINFO) collect CODE])

```

(CHARBMDIFFS**[LAMBDA (CS1 CS2 CHARSET INLUDEMEDLEYFONT)**

; Edited 6-Jul-2025 22:04 by rmk

; Edited 2-Jul-2025 16:12 by rmk

; Edited 29-Jun-2025 17:51 by rmk

;; Returns the codes whose bitmaps in CS1 and CS2 differ in some way. Use EDITCHAR to view them.

```

(SETQ CS1 (DEBUGCHARSET CS1 CHARSET INLUDEMEDLEYFONT))
(SETQ CS2 (DEBUGCHARSET CS2 CHARSET INLUDEMEDLEYFONT))
(for CODE in (INTERSECTION (CHARSETCHARS CS1)
  (CHARSETCHARS CS2))
  unless (EQUALALL (\GETCHARBITMAP.CSINFO CODE CS1)
    (\GETCHARBITMAP.CSINFO CODE CS2))
  collect CODE])

```

(SHOWCSCHAR**[LAMBDA (CODE CSINFO CHARSET INLUDEMEDLEYFONT)**

; Edited 6-Jul-2025 22:04 by rmk

; Edited 2-Jul-2025 16:12 by rmk

; Edited 29-Jun-2025 18:01 by rmk

(EDITBM (\GETCHARBITMAP.CSINFO CODE (DEBUGCHARSET CSINFO CHARSET INLUDEMEDLEYFONT))

(CSCOMPARE**[LAMBDA (CS1 CS2 CHARSET INLUDEMEDLEYFONT)**

; Edited 6-Jul-2025 22:04 by rmk

; Edited 2-Jul-2025 16:13 by rmk

; Edited 30-Jun-2025 14:02 by rmk

```

(CL:UNLESS CS2
  (CL:WHEN (OR (LITATOM CS1)
    (STRINGP CS1))
    (SETQ CS2 (\FONTINFOFROMFILENAME CS1 'DISPLAY))
    [if CHARSET
      then (CL:UNLESS (EQ CHARSET (CAR (LAST CS2)))
        (ERROR "MISMATCHING CHARSETS"))
      else (SETQ CHARSET (CAR (LAST CS2)))
    (SETQ CS1 (OR (DEBUGCHARSET CS1 CHARSET INLUDEMEDLEYFONT)
      (ERROR CS1 "not found")))
    (SETQ CS2 (OR (DEBUGCHARSET CS2 CHARSET INLUDEMEDLEYFONT)
      (ERROR CS2 "not found")))
    (LET ((CS1CHARS (CHARSETCHARS CS1))
      (CS2CHARS (CHARSETCHARS CS2))
      (ASCENT1 (fetch (CHARSETINFO CHARSETASCENT) of CS1))

```

```

(ASCENT2 (fetch (CHARSETINFO CHARSETASCENT) of CS2))
(DESCENT1 (fetch (CHARSETINFO CHARSETDESCENT) of CS1))
(DESCENT2 (fetch (CHARSETINFO CHARSETDESCENT) of CS2))
DIFF
(if (EQ ASCENT1 ASCENT2)
  then (PRINTOUT T "Same ascent = " .I2 ASCENT1 T)
  else (PRINTOUT T " Ascent1 = " .I2 ASCENT1 " Ascent2 = " .I2 ASCENT2 T))
(if (EQ DESCENT1 DESCENT2)
  then (PRINTOUT T "Same descent = " .I2 DESCENT1 T)
  else (PRINTOUT T "Descent1 = " .I2 DESCENT1 " Descent2 = " .I2 DESCENT2 T))
(PRINTOUT T "Common chars:" 14 .PPV (SORT (INTERSECTION CS1CHARS CS2CHARS))
T)
(SETQ DIFF (SORT (CHARBMDIFFS CS1 CS2)))
(if (NULL DIFF)
  then (PRINTOUT T 5 "All common chars have the SAME bitmaps" T)
  elseif (EQUAL DIFF (SORT (INTERSECTION CS1CHARS CS2CHARS)))
  then (PRINTOUT T 5 "All common chars have DIFFERENT bitmaps" T)
  else (PRINTOUT T 5 "Common chars with different bitmaps: " .PPV DIFF T))
(CL:WHEN (SETQ DIFF (LDIFFERENCE CS1CHARS CS2CHARS))
  (PRINTOUT T "1 but not 2:" 14 .PPV (SORT (LDIFFERENCE CS1CHARS CS2CHARS))
  T))
(CL:WHEN (SETQ DIFF (LDIFFERENCE CS2CHARS CS1CHARS))
  (PRINTOUT T "2 but not 1:" 14 .PPV (SORT (LDIFFERENCE CS2CHARS CS1CHARS))
  T))
(LIST CS1 CS2])

```

(SHOWBMS**[LAMBDA (CHARSETINFOS)****(for CS in CHARSETINFOS do (ICS CS))**

; Edited 30-Jun-2025 08:47 by rmk

(SHOWCHARBITMAPS**[LAMBDA (CODE CSINFOS CHARSET INCLUDED MEDLEYFONT CLOSEPREVIOUS)**

; Edited 6-Jul-2025 22:04 by rmk

; Edited 2-Jul-2025 11:48 by rmk

; Edited 20-Jun-2025 16:38 by rmk

;; Shows the bitmap for CODE in each of the CSINFOS

;; If we call the inspector directly, it asks for contents vs. fields, also a pain, and we still don't get our hands on the window.

```

[SETQ CSINFOS (for CS inside CSINFOS collect (OR (DEBUGCHARSET CS CHARSET INCLUDED MEDLEYFONT)
  (ERROR CS "not found"))

```

(CL:WHEN CLOSEPREVIOUS**(for W in (OPENWINDOWS) when (EQ 'EDITBMREPAINTFN (WINDOWPROP W 'REPAINTFN)) do (CLOSEW W)))****(if (CHARCODEP CODE)****then (for CS BM in CSINFOS do (SETQ BM (GETCHARBITMAP.CSINFO CODE CS))****(if (AND (IGREATERP (BITMAPWIDTH BM)****0)****(IGREATERP (BITMAPHEIGHT BM)****0))****then (EVAL.AS.PROCESS (LIST 'EDITBM BM))****else "EMPTY BITMAP"))****else (for CS in CSINFOS do (SHOWCSBITMAP CS))****(CANDS****[LAMBDA (CS1 CS2 CHARSET INCLUDED MEDLEYFONT)**

; Edited 2-Jul-2025 11:47 by rmk

;; Wraps comparing and showing, closes previous bitmap windows

(LET ((CINFOS (CSCOMPARE CS1 CS2 CHARSET INCLUDED MEDLEYFONT)))**(SHOWCHARBITMAPS NIL CINFOS CHARSET INCLUDED MEDLEYFONT T)****CINFOS])****(LEGACYFONTCREATE****[LAMBDA (FAMILY SIZE FACE ROTATION DEVICE NOERRORFLG CHARSET)**

; Edited 7-Oct-2025 14:50 by rmk

; Edited 2-Sep-2025 13:46 by rmk

; Edited 29-Aug-2025 22:38 by rmk

; Edited 17-Aug-2025 15:47 by rmk
 ; Edited 31-Jul-2025 10:10 by rmk
 ; Edited 25-Jul-2025 13:43 by rmk

:: New font, no coercions, no MEDLEYFORMAT

(LEGACYFONTS (FONTCREATE FAMILY SIZE FACE ROTATION DEVICE NOERRORFLG CHARSET])

)

(DEFINEQ

(FONTSIZE

[LAMBDA (FONT CHARSETS FILETOO NOERROR)

; Edited 16-Aug-2025 23:34 by rmk
 ; Edited 19-Jul-2025 16:42 by rmk

:: Estimates the amount of storage occupied by FONT

(SETQ FONT (FONTCREATE FONT NIL NIL NIL 'DISPLAY NOERROR))

(CL:UNLESS CHARSETS

(SETQ CHARSETS (for CS CSINFO BM from 0 to 255 when (SETQ CSINFO (\XGETCHARSETINFO FONT CS))
 unless (fetch (CHARSETINFO CSSLUGP) of CSINFO) collect CS)))

(PRINTOUT T "Charsets: ")

(for CS CSINFO inside CHARSETS sum (PRINTOUT T CS " "
 (CSSIZE (\XGETCHARSETINFO FONT CS)
 T))

finally (PRINTOUT T T))

(CSSIZE

[LAMBDA (CSINFO INCLUDEBM)

; Edited 19-Jul-2025 16:37 by rmk

:: Returns

(LET ((BLOCKSIZE (UNFOLD (IPLUS \MAXCHARSET 3)
 2))

BM)

(IPLUS (CL:IF (fetch (CHARSETINFO OFFSETS) of CSINFO)
 BLOCKSIZE
 0)

(CL:IF (fetch (CHARSETINFO WIDTHS) of CSINFO)
 BLOCKSIZE
 0)

(CL:IF (AND (NEQ (fetch (CHARSETINFO WIDTHS) of CSINFO)
 (fetch (CHARSETINFO IMAGEWIDTHS) of CSINFO)))
 (fetch (CHARSETINFO IMAGEWIDTHS) of CSINFO))
 BLOCKSIZE
 0)

(CL:IF (fetch (CHARSETINFO YWIDTHS) of CSINFO)
 BLOCKSIZE
 0)

(CL:IF (ARRAYP (fetch (CHARSETINFO LEFTKERN) of CSINFO))
 (UNFOLD (ARRAYSIZE (fetch (CHARSETINFO LEFTKERN) of CSINFO))
 4)
 0)

(CL:IF (AND INCLUDEBM (SETQ BM (fetch (CHARSETINFO CHARSETBITMAP) of CSINFO)))
 (IQUOTIENT (ITIMES (BITMAPWIDTH BM)
 (BITMAPHEIGHT BM))
 8)
 0))

(CSBMSIZE

[LAMBDA (FONT CHARSETS FILETOO NOERROR)

; Edited 19-Jul-2025 16:14 by rmk
 ; Edited 17-Jul-2025 13:23 by rmk

:: Returns the number of bytes in the CHARSET bitmap for FONT, what's in core unless FILETOO

(if (SETQ FONT (FONTCREATE FONT NIL NIL NIL 'DISPLAY NOERROR))

then (CL:UNLESS CHARSETS

(SETQ CHARSETS (for CS CSINFO BM from 0 to 255 when (SETQ CSINFO (\XGETCHARSETINFO
 FONT CS))

unless (fetch (CHARSETINFO CSSLUGP) of CSINFO) collect CS)))
 (PRINTOUT T "Charsets: ")

```

      (for CS CSINFO BM inside CHARSETS sum (PRINTOUT T CS " ")
        (SETQ BM (fetch (CHARSETINFO CHARSETBITMAP)
                        of (\XGETCHARSETINFO FONT CS)))
        (IQUOTIENT (ITIMES (BITMAPWIDTH BM)
                          (BITMAPHEIGHT BM))
          8)
      finally (PRINTOUT T T))
    else 0])
  )

```

(DEFINEQ

(FONTCOMPARE

[LAMBDA (ARGS VIRGIN SHOWFONT)

; Edited 5-Aug-2025 13:14 by rmk

;; Prints a line of characters in different fonts, for shape/size comparison. Each argument is a list of the form (FONT CHAR1 CHAR2...) or (FONT
;; CHAR1 - CHARN) (hyphen). Characters can be codes or names.

;; If CHARS are not specified, uses the chars from the previous arg.

(RESETLST

(RESETSAVE (DSPFONT NIL T))

(CL:WHEN VIRGIN

(RESETSAVE \FONTSINCORE NIL)

(RESETSAVE \DISPLAYCHARSETCOERCIONS NIL)

(RESETSAVE \DISPLAYFONTCOERCIONS NIL)

(RESETSAVE \FONTEXISTS?-CACHE NIL)

(RESETSAVE DISPLAYFONTEXTENSIONS '(DISPLAYFONT)))

(TERPRI T)

(for A CHARS FONT SIZEPOS in ARGS do (CL:WHEN (CADR A)

(SETQ CHARS (CDR A))

[SETQ CHARS (if (EQ '- (CADR CHARS))

then (for C from (CL:IF (CHARCODEP (CAR
CHARS
))

(CAR CHARS)

(CHARCODE.DECODE

(CAR CHARS)))

to (CL:IF (CHARCODEP (CADDR

CHARS
))

(CADDR CHARS)

(CHARCODE.DECODE (CADDR
CHARS
)))

collect C)

else (for C in CHARS collect (CL:IF (CHARCODEP

C)

C

(CHARCODE.DECODE
C)))

(SETQ FONT (FONTCREATE (CAR A)))

(if SHOWFONT

then (SETQ SIZEPOS (IDIFFERENCE (STRPOS "-" FONT)
2))

(PRINTOUT T .FONT '(GACHA 8)

"["

(SUBSTRING FONT 2 3)

(SUBSTRING FONT SIZEPOS (ADD1 SIZEPOS))

"]")

else (PRINTOUT T .FONT '(GACHA 8)

"/")

(DSPFONT FONT T)

(for C in CHARS do (PRIN1 (CHARACTER C)
T)))

(TERPRI T)))

)

(DECLARE%: EVAL@COMPILE

```
(PUTPROPS TRUEFONT MACRO ((FORM) ; Execute FORM in a non-medleyfont displayfont environment
  (RESETVARS (\FONTSINCORE \FONTEXISTS?-CACHE DISPLAYFONTCOERCIONS
    DISPLAYCHARCOERCIONS (DISPLAYFONTEXTENSIONS '(DISPLAYFONT))
    (DISPLAYFONTDIRECTORIES (MEDLEYDIR "fonts>displayfonts>"))
    (DISPLAYCHARSETFNS (REMOVE (ASSOC 'MEDLEYFONT DISPLAYCHARSETFNS)
      DISPLAYCHARSETFNS)))
  (RETURN FORM))))
)
```

FUNCTION INDEX

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