```
    Printf "Valid UTF-8 text: U+%04X\r", char2num(str)              // Prints U+2022
    Printf "First byte value: %02X\r", char2num(str[0]) & 0xFF      // Prints E2
    Printf "Second byte value: %02X\r", char2num(str[1]) & 0xFF     // Prints 80

    str = num2char(0xE2, 0) + num2char(0x41, 0)                     // Invalid UTF-8 text
    Printf "Invalid UTF-8 text: U+%04X\r", char2num(str)            // Prints NaN

    str = ""
    Printf "Empty string: %g\r", char2num(str)                      // Prints NaN
End
```

See Also

The **num2char**, **str2num** and **num2str** functions.

Text Encodings on page III-459.

Chart

Chart [**/Z**] ***ctrlName*** [***keyword = value*** [, ***keyword = value*** …]]

The Chart operation creates or modifies a chart control. Charts are generally used in conjunction with data acquisition. Charts do not have to be connected to a FIFO, but they are not useful until they are.

For information about the state or status of the control, use the **ControlInfo** operation.

Parameters

ctrlName is the name of the Chart control to be created or changed.

The following keyword=value parameters are supported:

align=*alignment*
: Sets the alignment mode of the control. The alignment mode controls the interpretation of the *leftOrRight* parameter to the pos keyword. The align keyword was added in Igor Pro 8.00.

  If *alignment*=0 (default), *leftOrRight* specifies the position of the left end of the control and the left end position remains fixed if the control size is changed.

  If *alignment*=1, *leftOrRight* specifies the position of the right end of the control and the right end position remains fixed if the control size is changed.

chans={*ch#*, *ch#*,…}
: List of FIFO channel numbers that Chart is to monitor.

color(*ch#*)=(*r*,*g*,*b*[,*a*])
: Sets the color of the specified trace. *r*, *g*, *b*, and *a* specify the color and optional opacity as **RGBA Values**.

ctab=*colortableName*
: When a channel is connected to an image strip FIFO channel, the data is displayed as an image using this built-in color table. Valid names are the same as used in images. Invalid name will result in the default Grays color table being used.

disable=*d*
: Sets user editability of the control.

  d=0: Normal.

  d=1: Hide.

  d=2: Disable user input.

  Charts do not change appearance because they are read-only. When disabled, the hand cursor is not shown.

fbkRGB=(*r*,*g*,*b*[,*a*])
: Sets frame background color. *r*, *g*, *b*, and *a* specify the color and optional opacity as **RGBA Values**.

fgRGB=(*r*,*g*,*b*[,*a*])
: Sets foreground color (text, etc.). *r*, *g*, *b*, and *a* specify the color and optional opacity as **RGBA Values**.

fifo=*FIFOName*
: Sets which named FIFO the chart will monitor. See the **NewFIFO** operation.

font="*fontName*"
: Sets the font used in the chart, e.g., `font="Helvetica"`.

fsize=*s*
: Sets font size for chart.

fstyle=*fs*

Specifies the font style. *fs* is a bitwise parameter with each bit controlling one aspect of the font style:

Bit 0:	Bold
Bit 1:	Italic
Bit 2:	Underline
Bit 4:	Strikethrough

See **Setting Bit Parameters** on page IV-12 for details about bit settings.

gain(*ch#*)=*g*

Sets the display gain *g* of the specified channel relative to nominal. Values greater than unity expand the display.

gridRGB=(*r*,*g*,*b*[,*a*])

Sets grid color. *r*, *g*, *b*, and *a* specify the color and optional opacity as **RGBA Values**.

help={*helpStr*}

Specifies help for the control.

helpStr is limited to 1970 bytes (255 in Igor Pro 8 and before).

You can insert a line break by putting "`\r`" in a quoted string.

jumpTo=*p*

Jumps to point number *p*. This works in review mode only.

lineMode(*ch#*)=*lm*

Sets the display line mode for the given channel.

lm=0:	Dots mode. Draws values as dots. However, if the number of dots in a strip exceeds maxDots then Igor draws a vertical line from the min to the max of the values packed into the strip.
lm=1:	Lines mode. Draws a vertical line encompassing the min and the max of the points in a given strip along with the last point of the preceding strip. Since which strip is the preceding strip depends on the direction of motion then the appearance may slightly shift depending on which direction the chart is moving.
lm=2:	Dots mode. Draws values as dots. However, if the number of dots in a strip exceeds maxDots then Igor draws a vertical line from the min to the max of the values packed into the strip.

mass=*m*

Sets the "feel" of the chart paper when you move it with the mouse. The larger the mass *m*, the slower the chart responds. Odd values cause the movement of the paper to stop the instant the mouse is clicked while even values continue with the illusion of mass.

maxDots=*md*

Controls whether points in a given vertical strip of the chart are displayed as dots or as a solid line. See lineMode above. Default is 20.

offset(*ch#*)=*o*

Sets the display offset of the specified channel. The offset value *o* is subtracted from the data before the gain is applied.

oMode=*om*

Chart operation mode.

om=0:	Live mode.
om=1:	Review mode.

pbkRGB=(*r*,*g*,*b*[,*a*])

Sets plot area background color. *r*, *g*, *b*, and *a* specify the color and optional opacity as **RGBA Values**.

pos={*leftOrRight*,*top*}

Sets the position in **Control Panel Units** of the top/left corner of the control if its alignment mode is 0 or the top/right corner of the control if its alignment mode is 1. See the align keyword above for details.

ppStrip=*pps*

Number of data points packed into each vertical strip of the chart.

rSize(*ch#*)=*rs*

Sets the relative vertical size allocated to the given channel. Nominal is unity. If the value of *rs* is zero then this channel shares space with the previous channel.