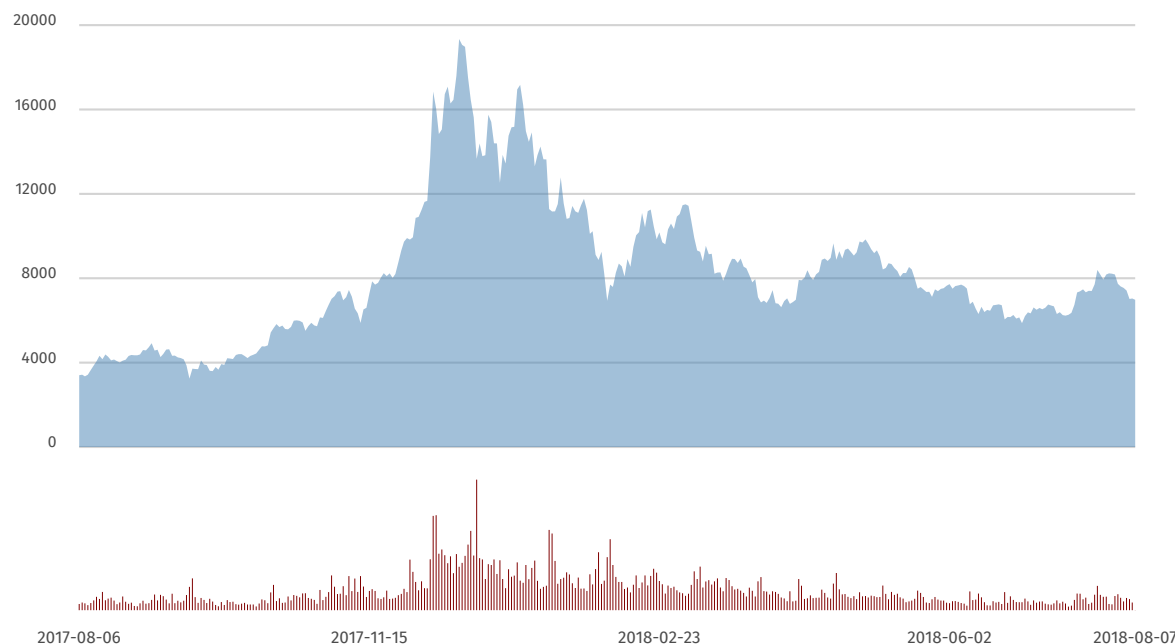
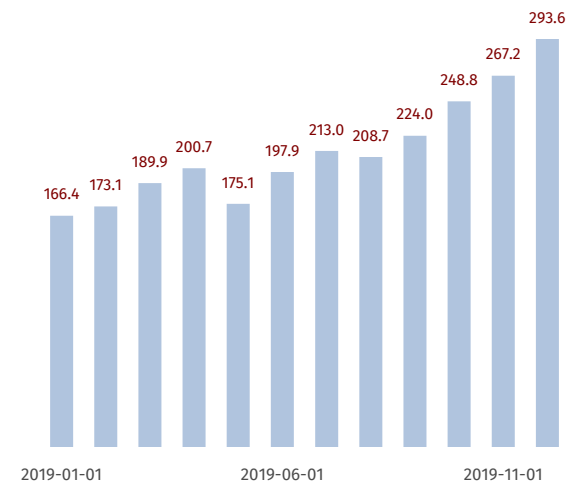


dchart: charts for deck/decksh

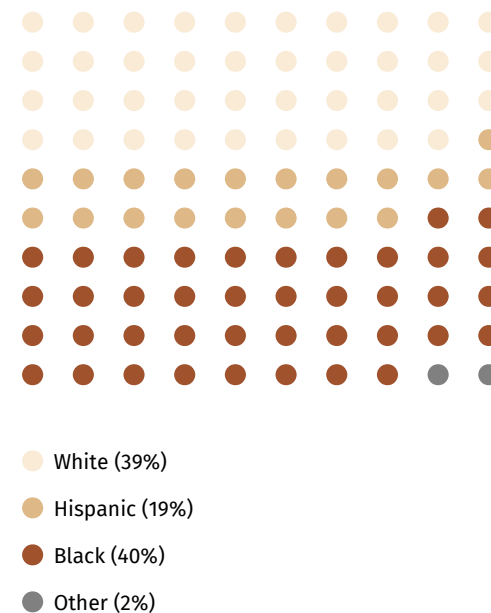
Bitcoin to USD



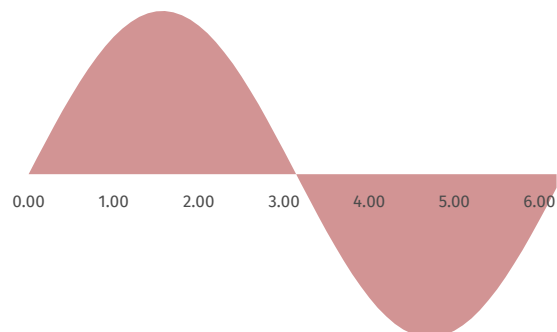
AAPL Closing Price



US Incarceration Rate



$y=\sin(x)$



Browser Market Share Dec 2016-Dec 2017

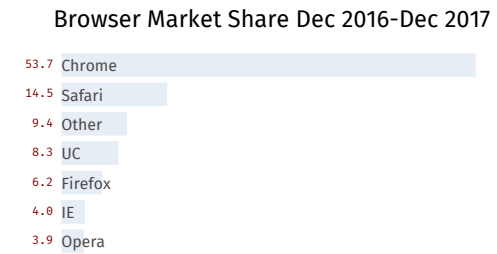




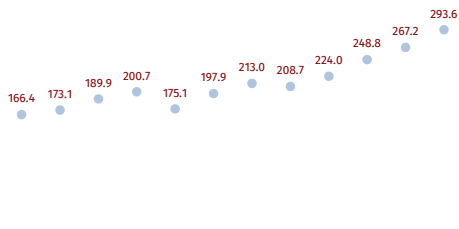
Column



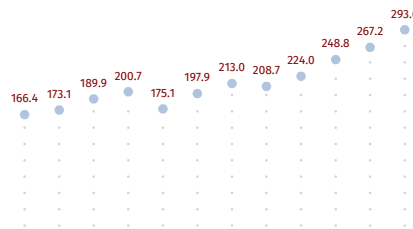
Bar



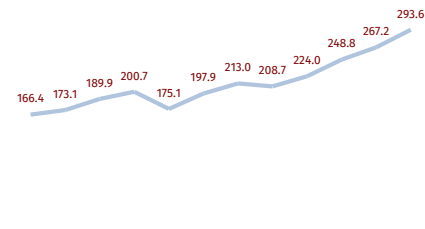
Word Bar



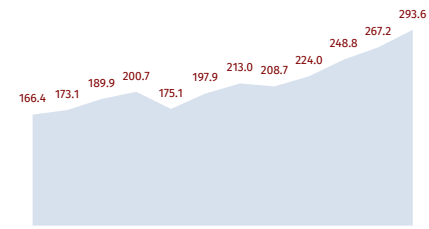
Dot



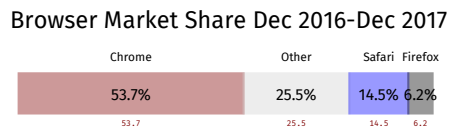
Scatter



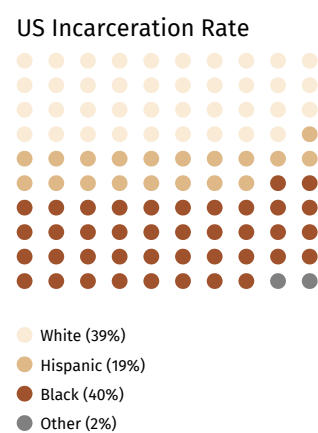
Line



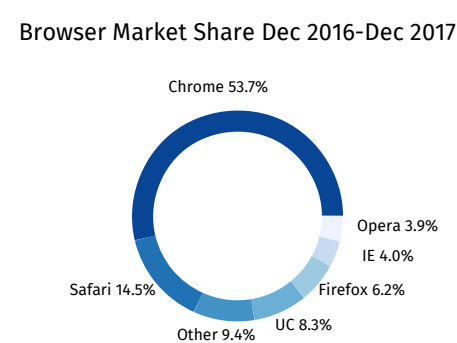
Area



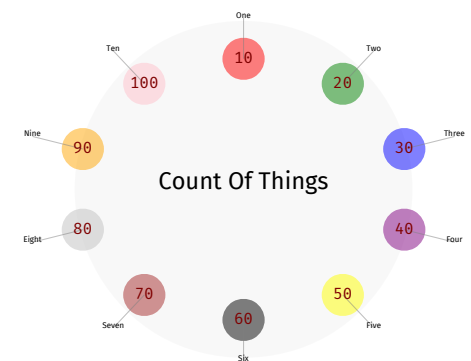
Proportional Map



Proportional Grid



Donut/Pie



Radial

Data

AAPL Closing Price

2019-01-01	166.440002
2019-02-01	173.149994
2019-03-01	189.949997
2019-04-01	200.669998
2019-05-01	175.070007
2019-06-01	197.919998
2019-07-01	213.039993
2019-08-01	208.740005
2019-09-01	223.970001
2019-10-01	248.759995
2019-11-01	267.250000
2019-12-01	293.649994

Tab-Separated

Date,Open,High,Low,Close,Adj Close,Volume

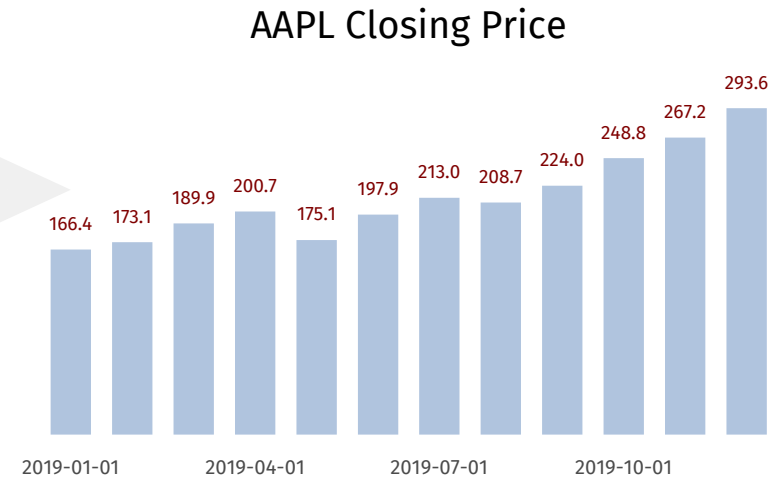
2019-01-01	154.889999	169.000000	142.000000	166.440002	163.587997	828087400
2019-02-01	166.960007	175.869995	165.929993	173.149994	170.183029	472540600
2019-03-01	174.279999	197.690002	169.500000	189.949997	187.495865	650981400
2019-04-01	191.639999	208.479996	188.380005	200.669998	198.077362	506117700
2019-05-01	209.880005	215.309998	174.990005	175.070007	172.808105	739456600
2019-06-01	175.600006	201.570007	170.270004	197.919998	196.115219	515187300
2019-07-01	203.169998	221.369995	198.410004	213.039993	211.097366	473957000
2019-08-01	213.899994	218.029999	192.580002	208.740005	206.836563	681074600
2019-09-01	206.429993	226.419998	204.220001	223.970001	222.770889	542567100
2019-10-01	225.070007	249.750000	215.130005	248.759995	247.428162	608302700
2019-11-01	249.539993	268.000000	249.160004	267.250000	265.819183	448331500
2019-12-01	267.269989	293.970001	256.290009	293.649994	292.954712	597198700

Comma-Separated (CSV)

Data to Chart

```
# AAPL Closing Price
2019-01-01 166.440002
2019-02-01 173.149994
2019-03-01 189.949997
2019-04-01 200.669998
2019-05-01 175.070007
2019-06-01 197.919998
2019-07-01 213.039993
2019-08-01 208.740005
2019-09-01 223.970001
2019-10-01 248.759995
2019-11-01 267.250000
2019-12-01 293.649994
```

```
<deck>
  <canvas width="0" height="0" />
  <slide bg="white">
    <text ...>AAPL Volume</text>
    <line ... color="lightsteelblue" />
    <text ... color="rgb(127,0,0)">563.1</text>
    <text ... color="rgb(75,75,75)">2017-01-01</text>
    .
    .
    .
  </slide>
</deck>
```



Data

Markup

PDF Rendition

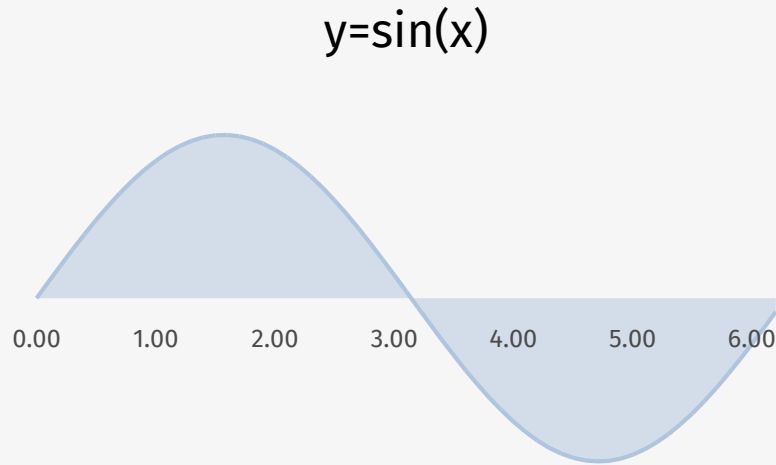
dchart AAPL.d | pdf

Generating data for charts

```
package main
```

```
import (  
    "fmt"  
    "math"  
)
```

```
func main() {  
    fmt.Println("# y=sin(x)")  
    for x := 0.0; x < math.Pi*2; x += 0.1 {  
        fmt.Printf("%.2f\t%.4f\n", x, math.Sin(x))  
    }  
}
```

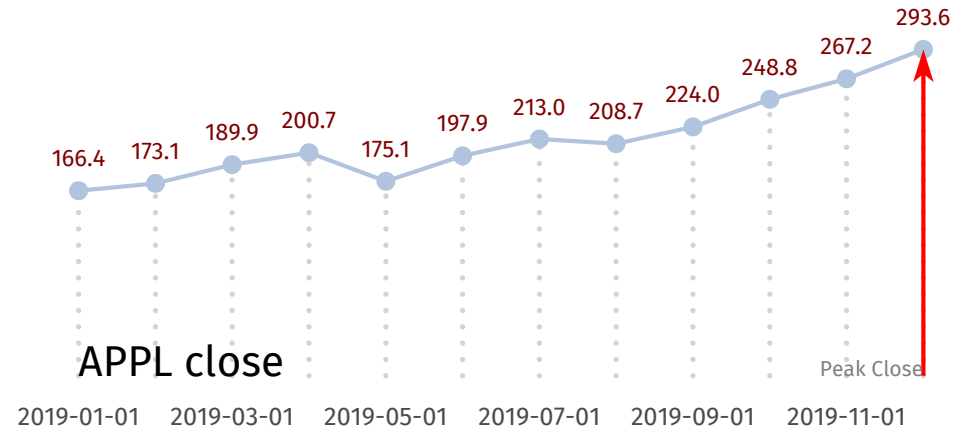
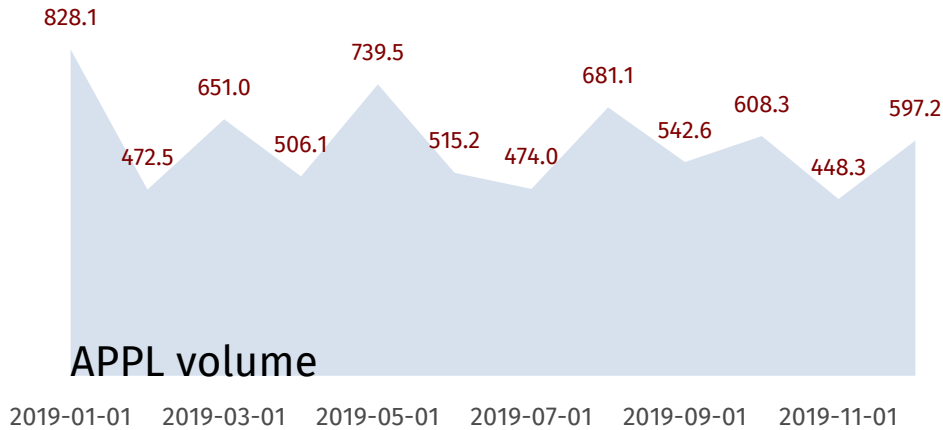


```
# y=sin(x)
```

```
0.00    0.0000  
0.10    0.0998  
0.20    0.1987  
0.30    0.2955  
0.40    0.3894  
0.50    0.4794  
0.60    0.5646  
0.70    0.6442  
0.80    0.7174  
.  
.  
5.80    -0.4646  
5.90    -0.3739  
6.00    -0.2794  
6.10    -0.1822  
6.20    -0.0831
```

```
go run sine.go |  
dchart -bar=f -val=f -xlabel=10 -line -vol -bottom=50 |  
pdfdeck -stdout - > sine.pdf
```

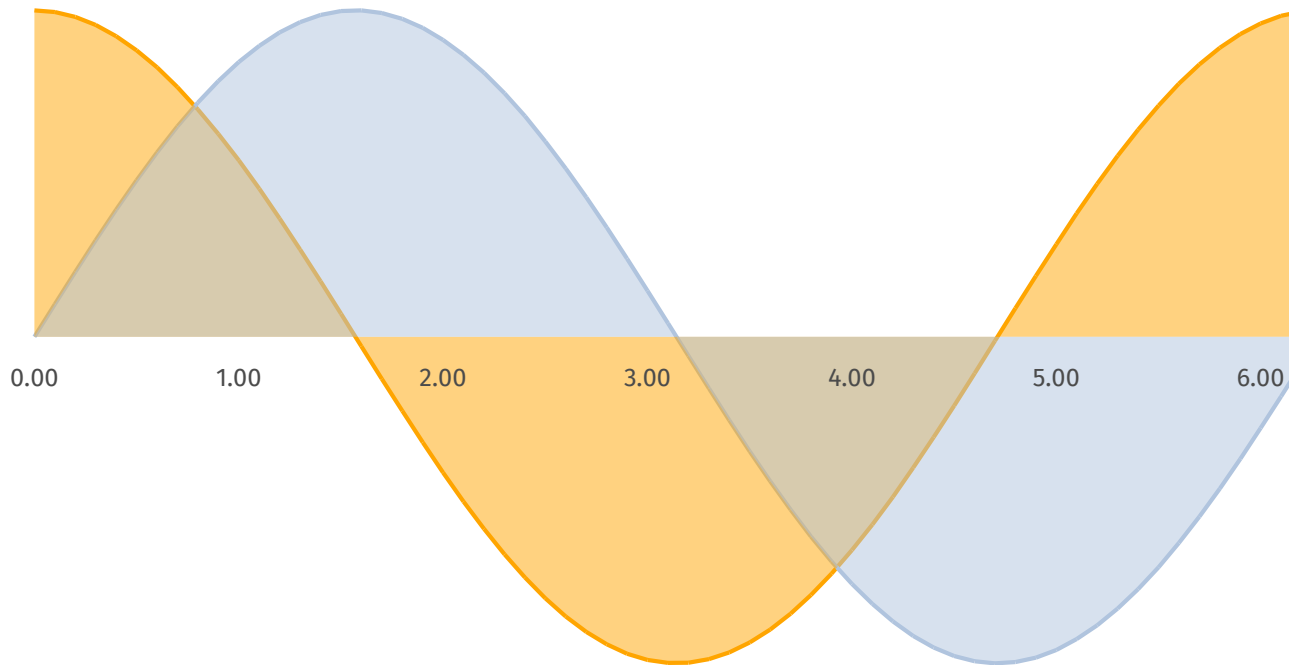
Using dchart with decksh



```
cw=40           // chart width
t=80            // top
b=t-20          // bottom
l1=5            // volume chart left
r1=l1+cw        // volume chart right
l2=r1+10        // close chart left
r2=l2+cw        // close chart right

opts="-fulldeck=f -xlabel=2 -title=f -bar=f"
copts="-dot -line -csv -csvcol Date,Close"
dchart opts -vol -top t -bottom b -left l1 -right r1 code/AAPL-vol.d
dchart opts copts -top t -bottom b -left l2 -right r2 code/AAPL.csv
text "APPL volume" l1 b 2
text "APPL close" l2 b 2
arrow r2 b r2 t 0.2 2 1 "red"
etext "Peak Close" r2 b 1 "sans" "gray"
```

Composite Charts



```
// go run mfunc.go -f cos > code/cos.d
// go run mfunc.go -f sin > code/sin.d
opts="-top=80 -bottom=60 -left=20 -right=80 -fulldeck=f -title=f -val=f -bar=f -line -vol"
dchart opts -xlabel=10 -color orange code/cos.d
dchart opts -xlabel=0          code/sin.d
```

Command Line Options

Chart Types

-bar	true	bar chart
-wbar	false	word bar chart
-hbar	false	horizontal bar chart
-donut	false	donut chart
-dot	false	dot chart
-line	false	line chart
-pgrid	false	proportional grid
-pmap	false	proportional map
-radial	false	radial chart
-scatter	false	scatter chart
-vol	false	volume (area) chart

Position and Scaling

-top	80	top of the chart
-bottom	30	bottom of the chart
-left	20	left margin
-right	80	right margin
-min	data min	set the minimum data value
-max	data max	set the maximum data value

Chart Elements

-csv	false	read CSV files
-frame	false	show a colored frame
-fulldeck	true	generate full deck markup
-grid	false	show gridlines on the y axis
-note	true	show annotations
-pct	false	show computed percentage
-rline	false	show a regression line
-solidpmap	false	show solid pmap colors
-spokes	false	show spokes in radial chart
-title	true	show the title
-val	true	show values
-xlast	false	show the last x label
-yaxis	false	show a y axis
-chartitle	override title in data	specify the title
-datacond	low,high,color	conditional data colors
-hline	value,label	label horizontal line at value
-valpos	t=top, b=bottom, m=middle	value position
-xlabel	default=1, 0 to suppress	x axis label interval
-yrange	min,max.step	specify the y axis label range

Measures and Attributes

-bgcolor	white	background color
-barwidth	computed from data size	barwidth
-color	lightsteelblue	data color
-csvcol	labe1,label2	specify csv columns
-datafmt	%.1f	data format for values
-dmin	false	use data minimum, not zero
-framecolor	rgb(127,127,127)	frame color
-lcolor	rgb(75,75,75)	label color
-linewidth	0.2	linewidth
-ls	2.4	linespacing
-noteloc	c=center, r=right, l=left	annotation location
-pmlen	20	pmap label length
-psize	30	diameter of the donut
-pwidth	3	width of the donut or pmap
-rlcolor	rgb(127,0,0)	regression line color
-textsize	1.5	text size
-xlabrot	0	xlabel rotation (deg.)
-vcolor	rgb(127,0,0)	value color
-volop	50	volume opacity %

Command Examples

AAPL Closing Price

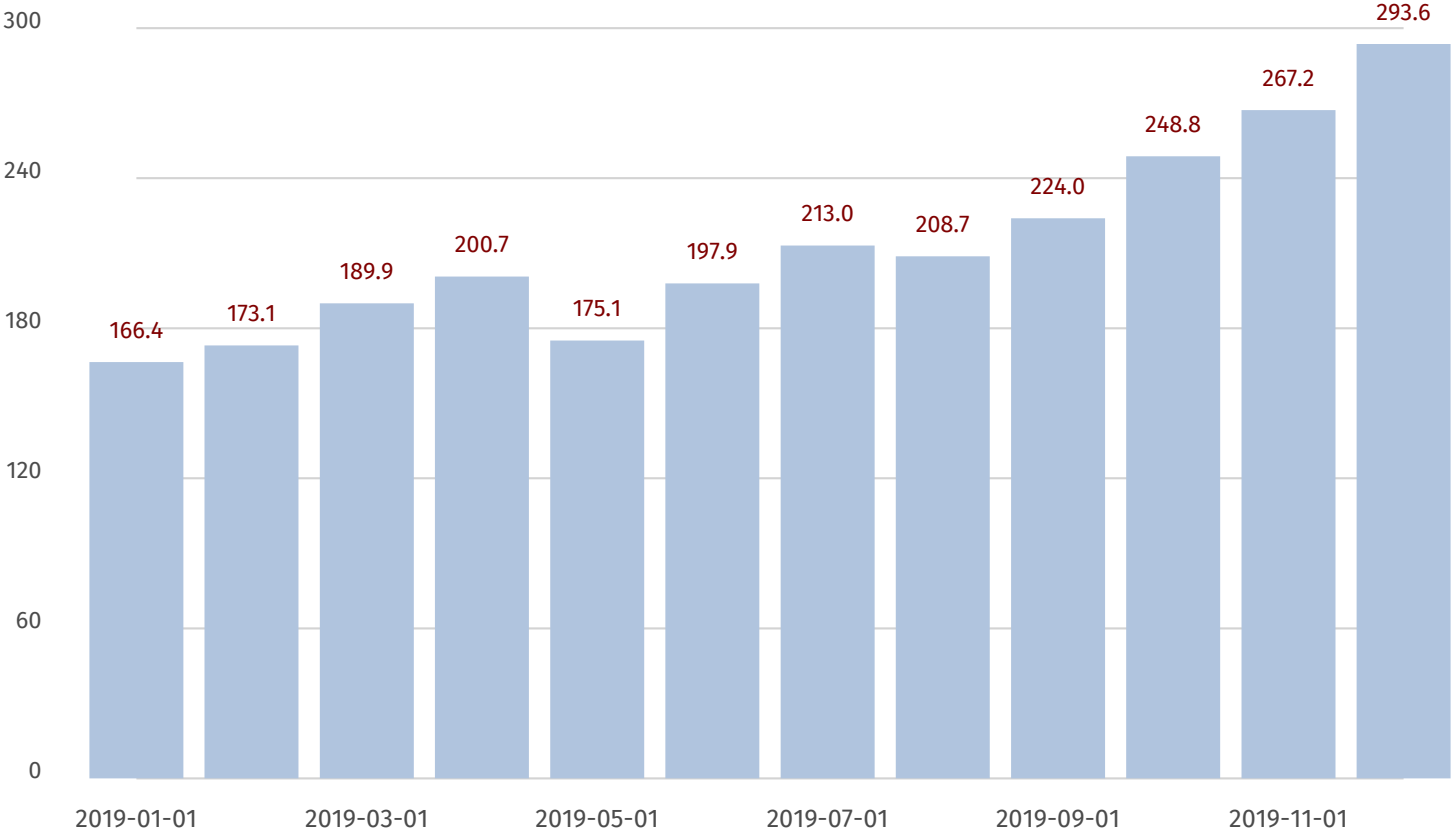
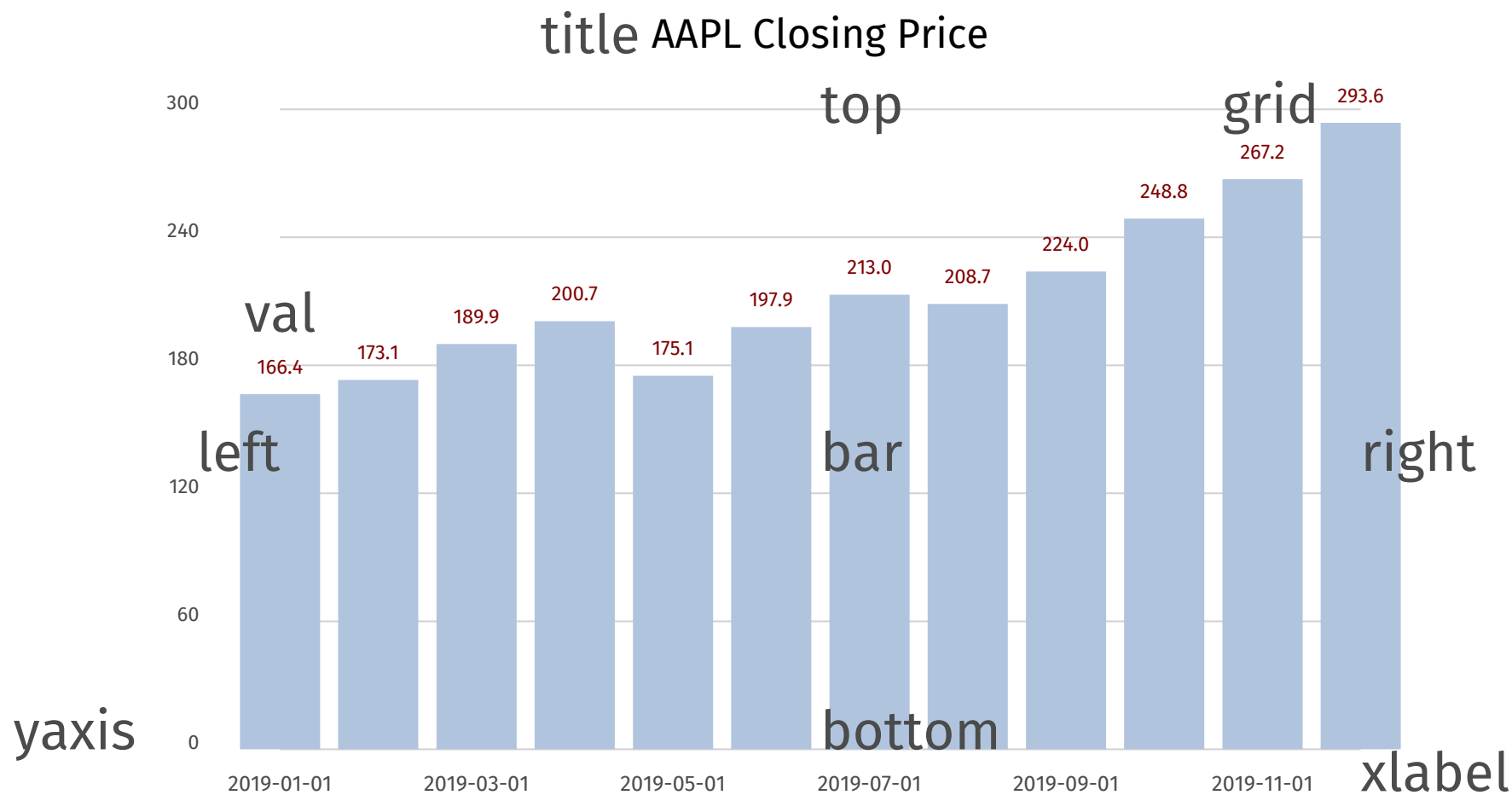
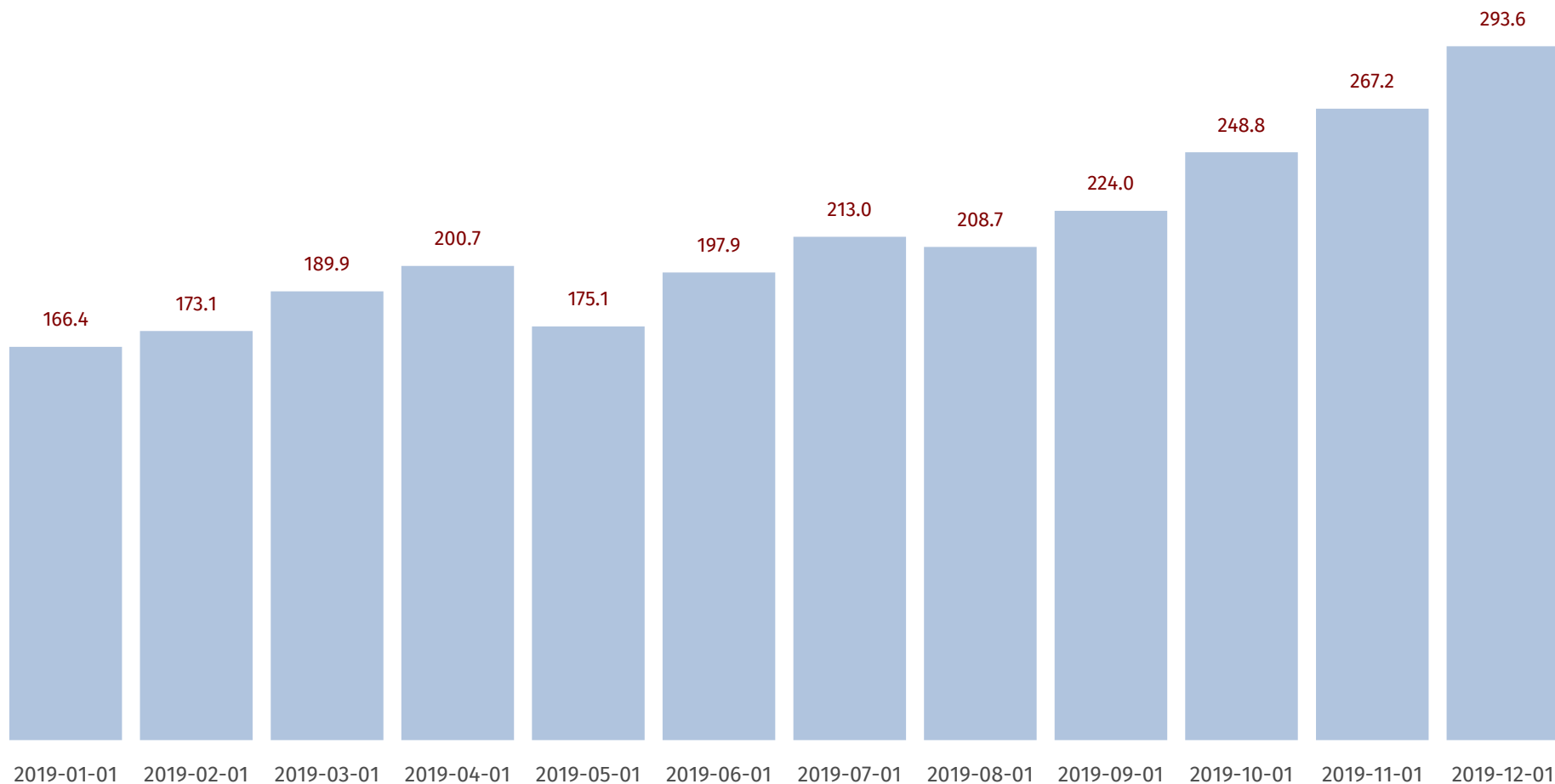


Chart Attributes



```
dchart -left=20 -right=80 -top=75 -bottom=30 -yaxis -grid -xlabel=2 -val AAPL.d
```

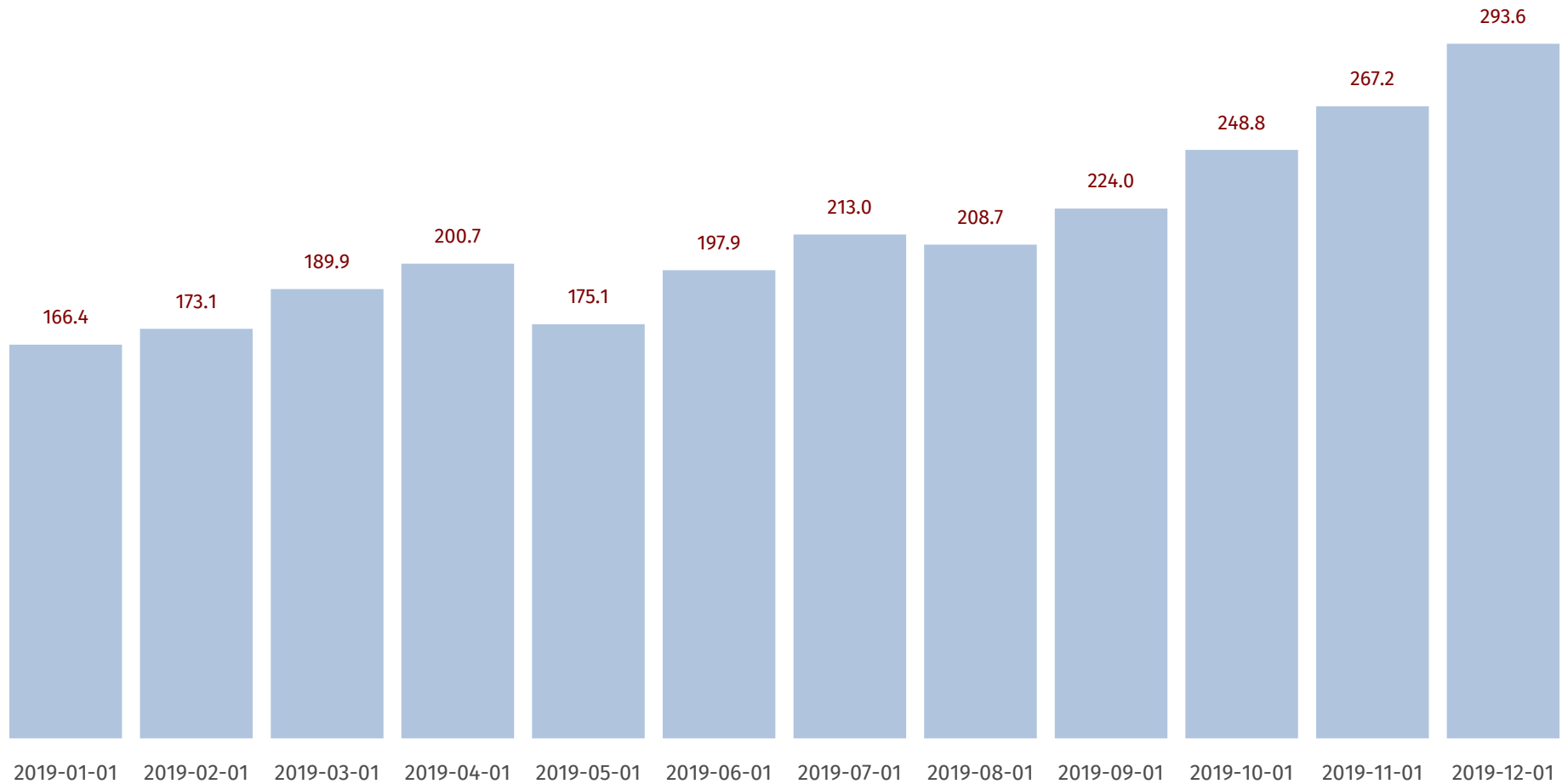
AAPL Closing Price



Default Bar Chart

dchart AAPL.d

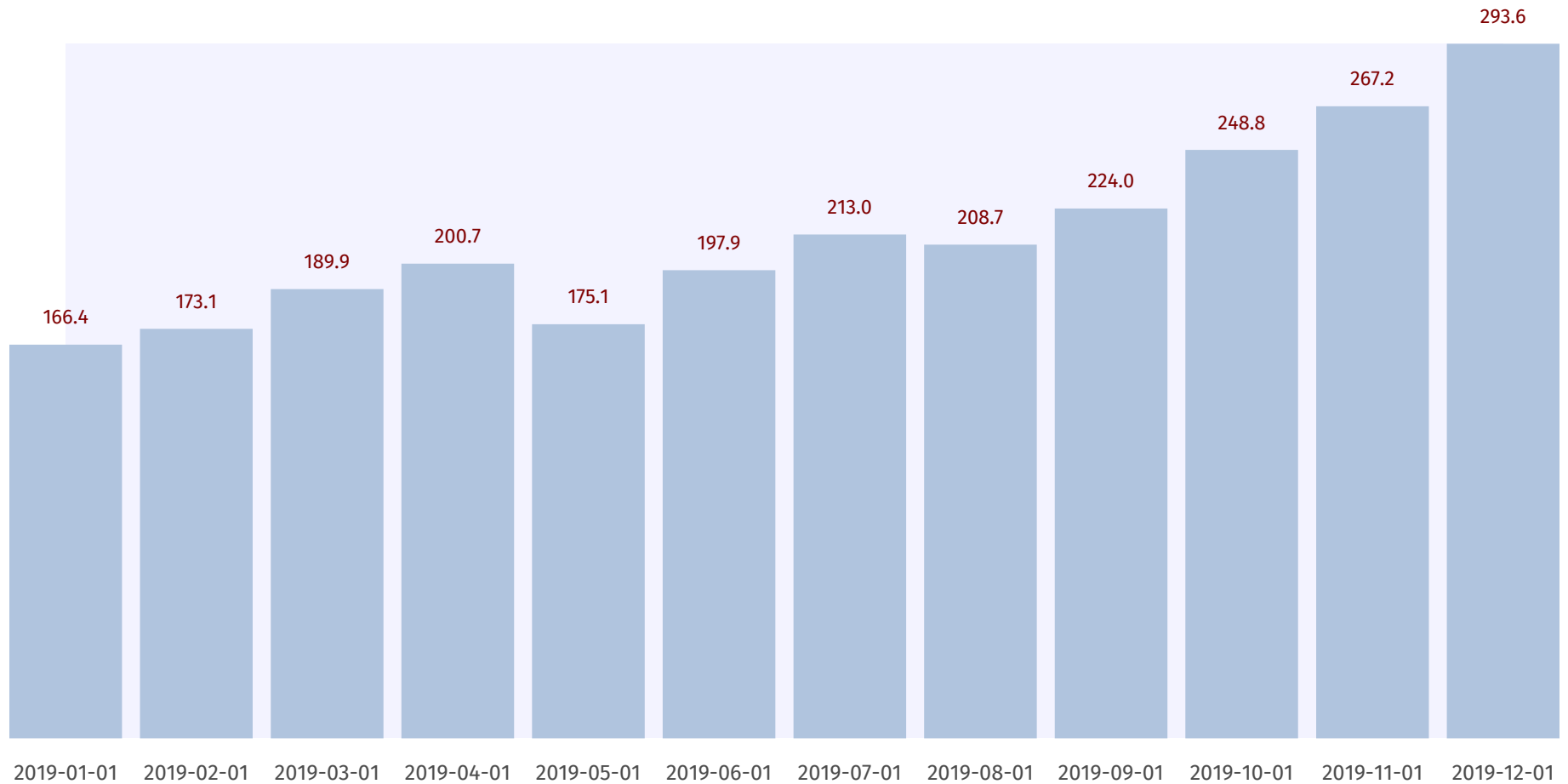
Close



Reading CSV files

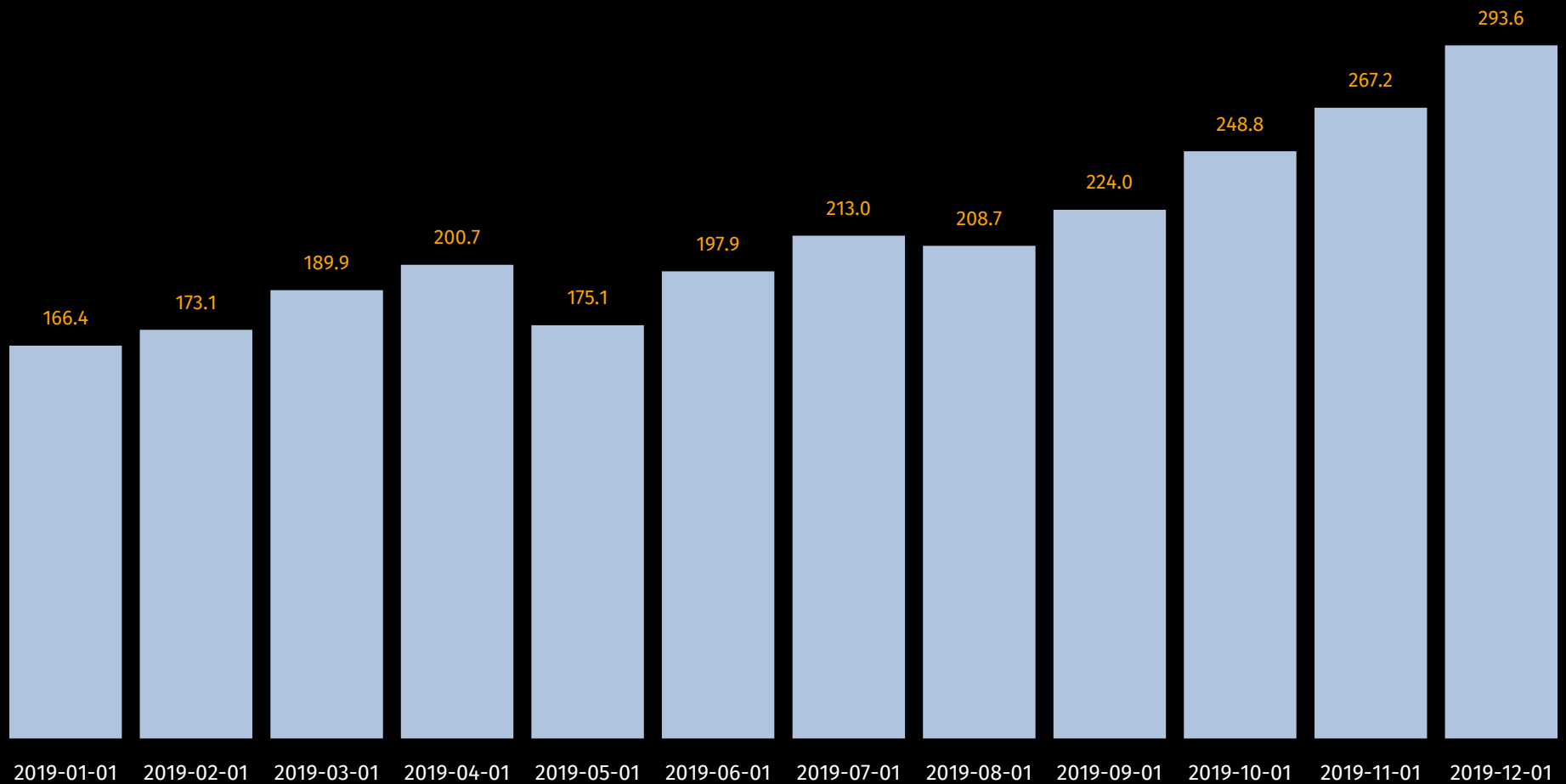
```
dchart -csv -csvcol=Date,Close AAPL.csv
```

AAPL Closing Price



Frame, Frame Color

```
dchart -frame=t -framecolor=blue AAPL.d
```



Background, Label, Value Color

```
dchart -bgcolor=black -lcolor=white -vcolor=orange AAPL.d
```

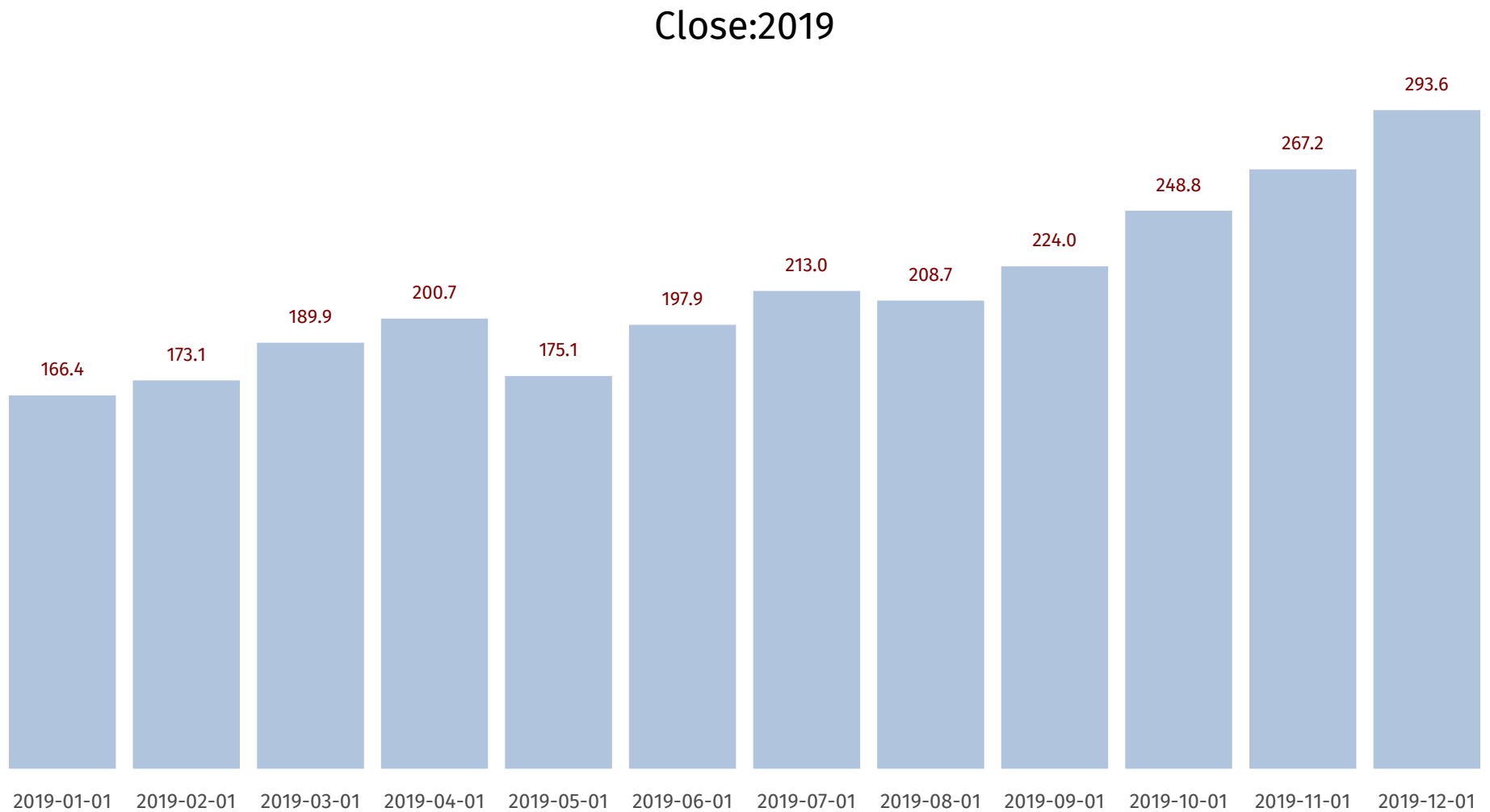
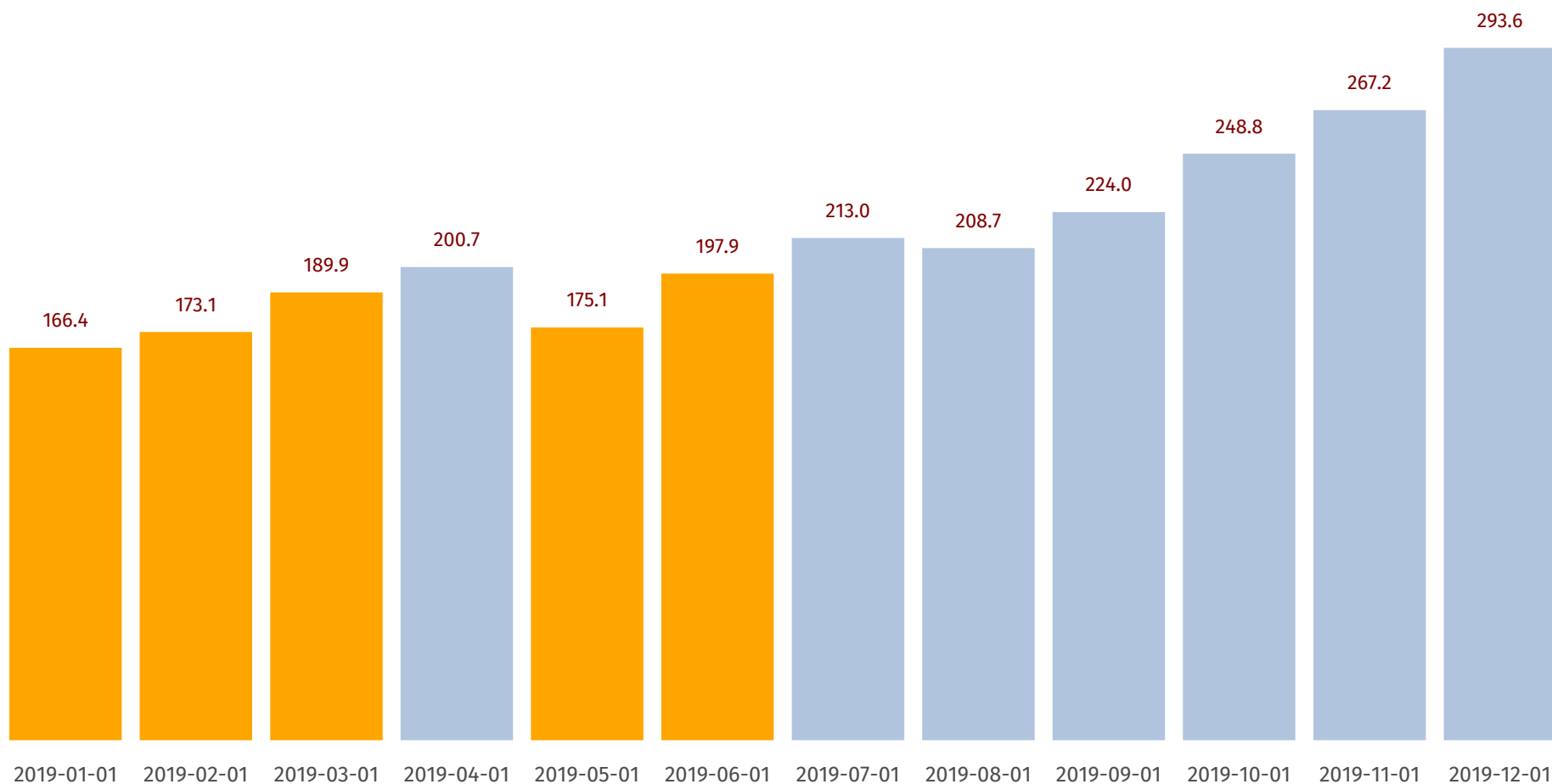



Chart Title

```
dchart -charttitle="Close:2019" AAPL.d
```

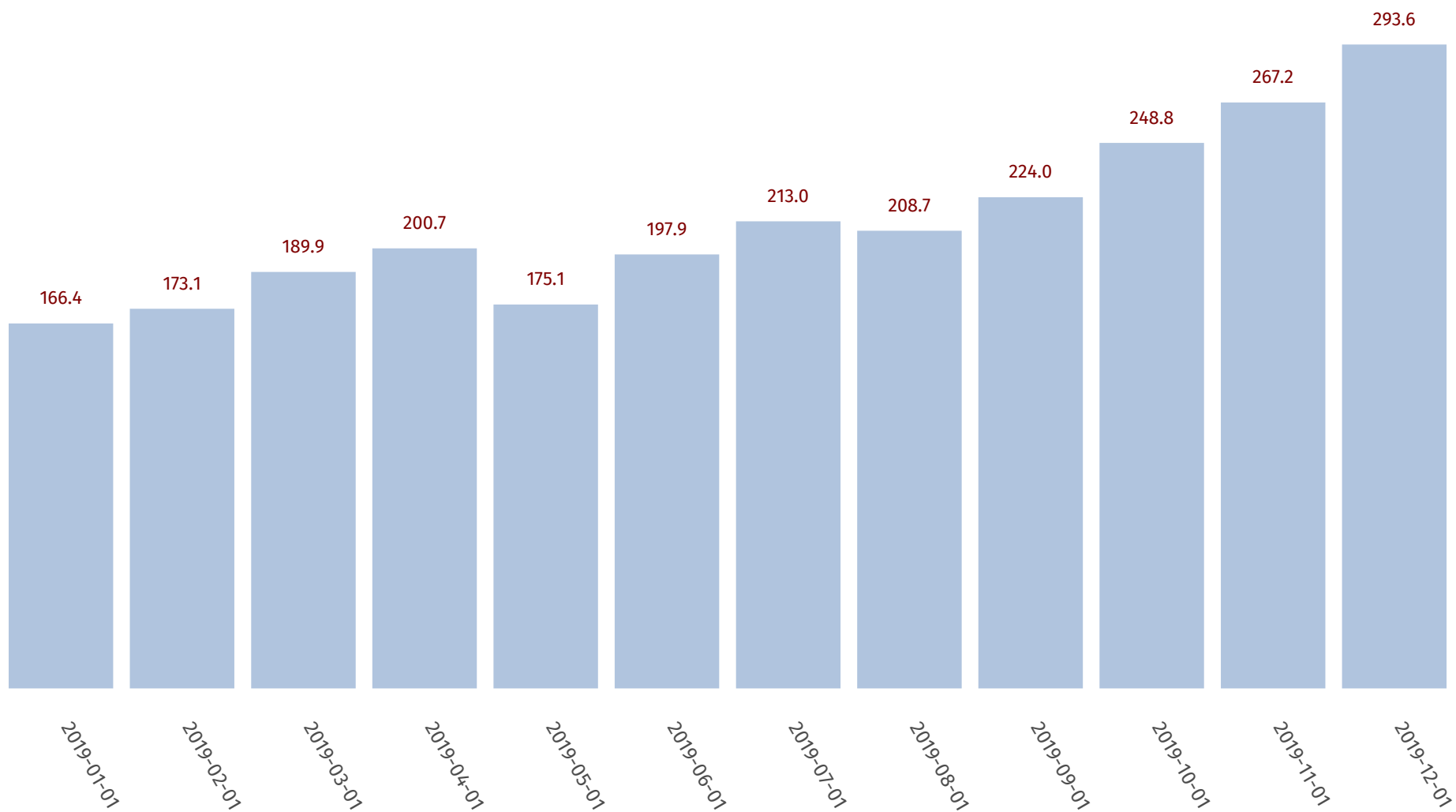
AAPL Closing Price



Data Conditions

dchart -datacond=150,200,orange AAPL.d

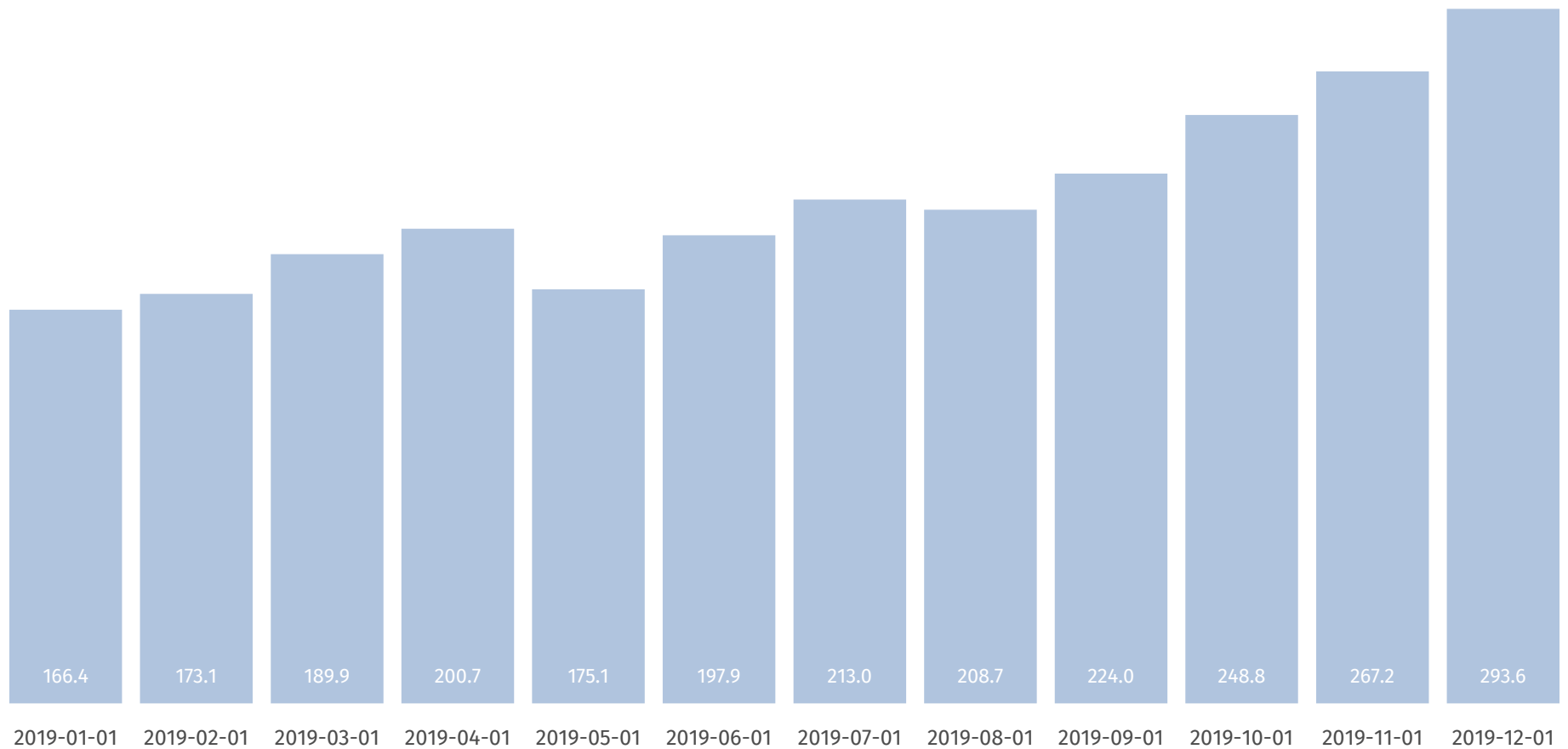
AAPL Closing Price



X-Axis Label Rotation

```
dchart -xlabrot=300 AAPL.d
```

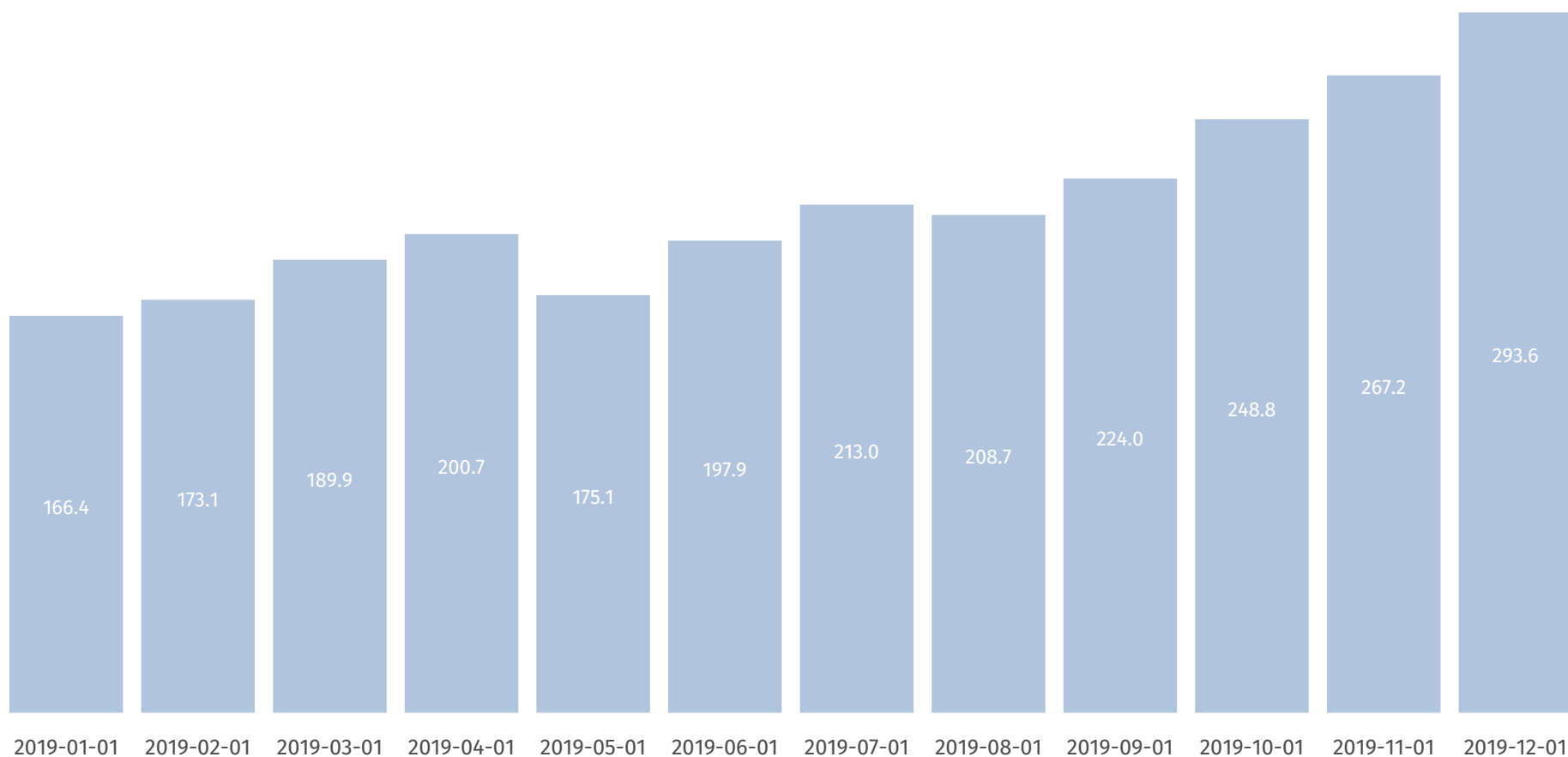
AAPL Closing Price



Value Color, Value Position Bottom

```
dchart -vcolor=white -valpos=b AAPL.d
```

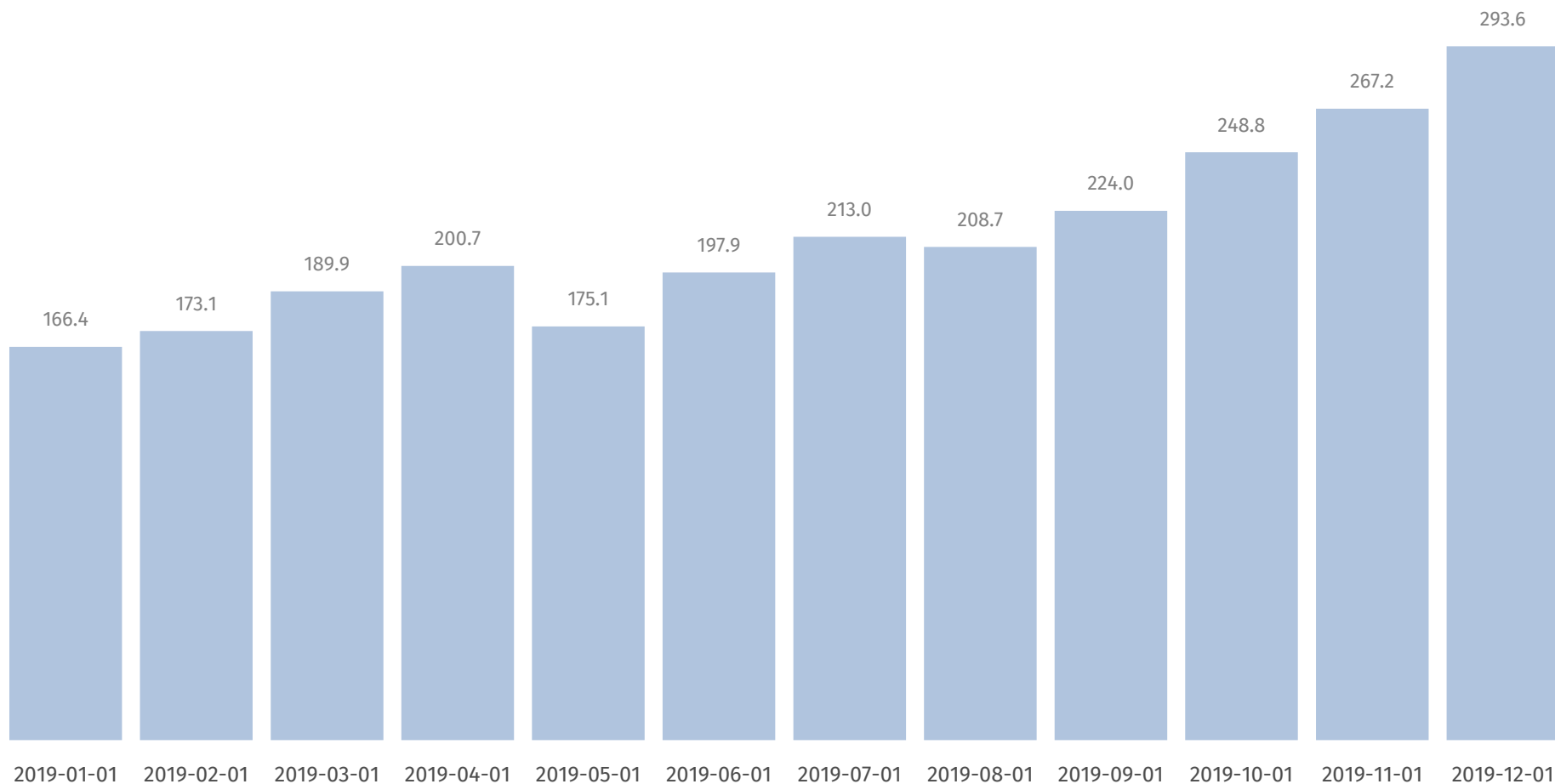
AAPL Closing Price



Value Color, Value Position Middle

```
dchart -vcolor=white -valpos=m AAPL.d
```

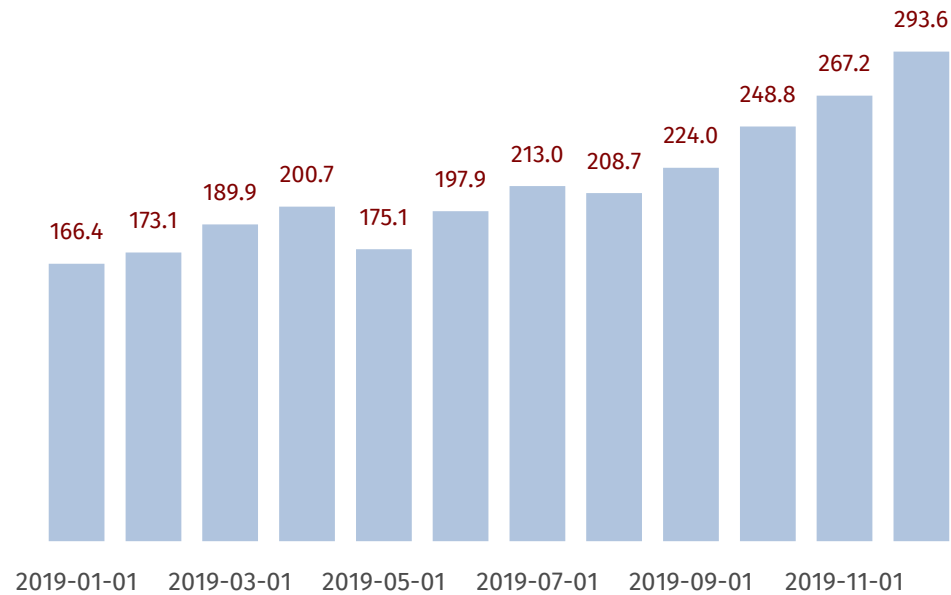
AAPL Closing Price



Value Color, Value Position Top

dchart -vcolor=gray AAPL.d

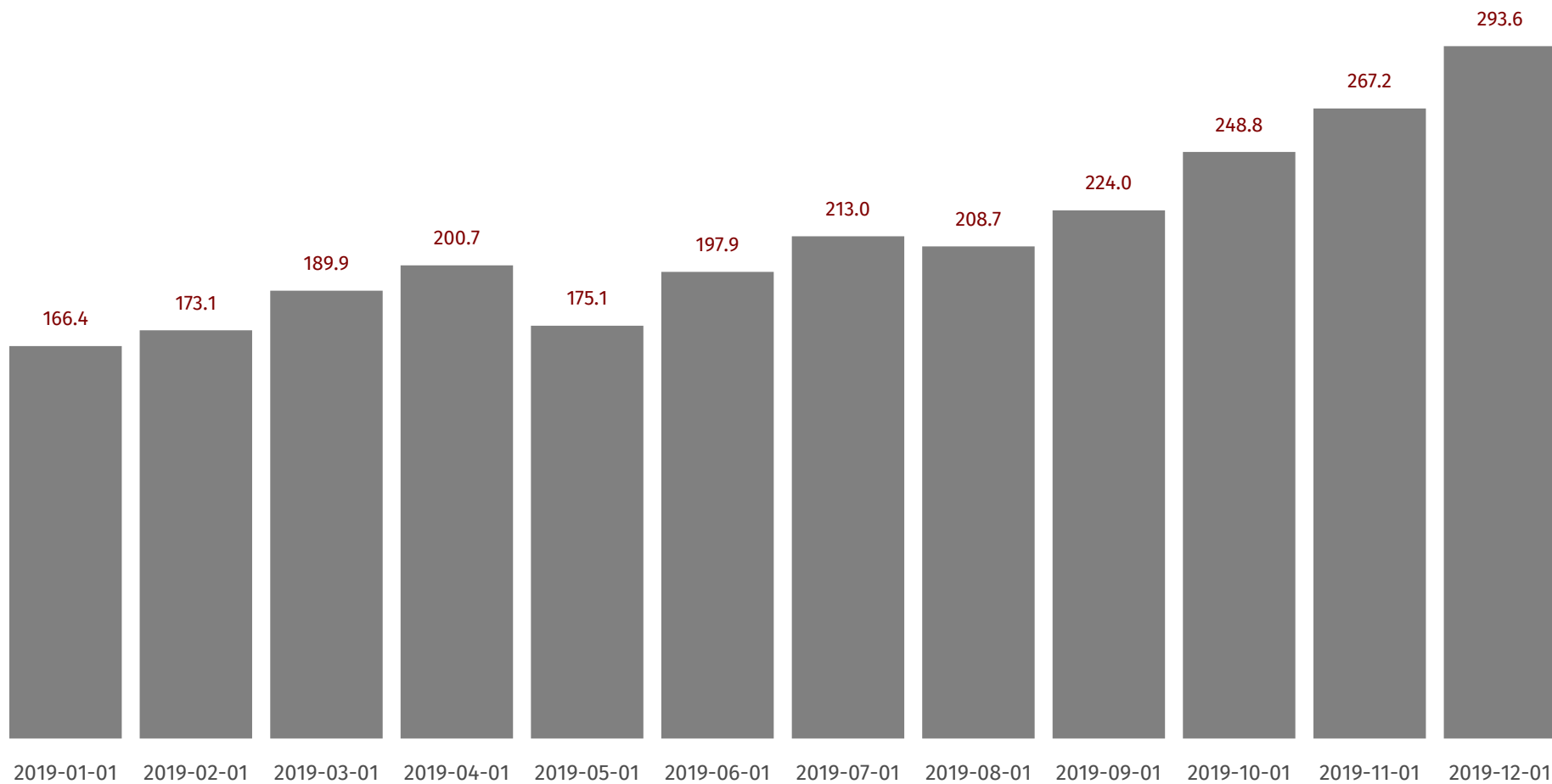
AAPL Closing Price



Scaling, X-Axis Labels

```
dchart -xlabel=2 -left 30 -right 70 -top 70 -bottom 40 AAPL.d
```

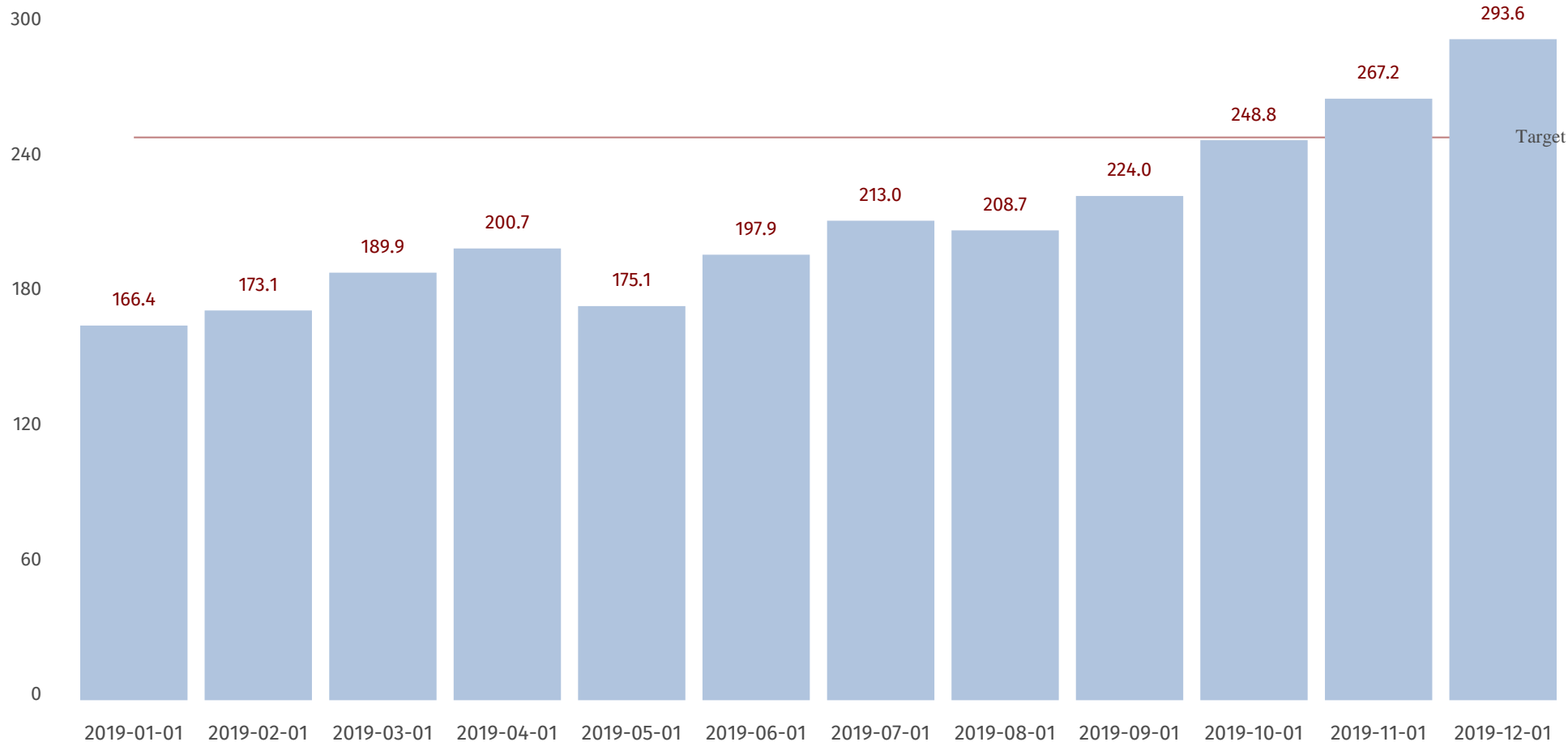
AAPL Closing Price



Color

```
dchart -color gray AAPL.d
```

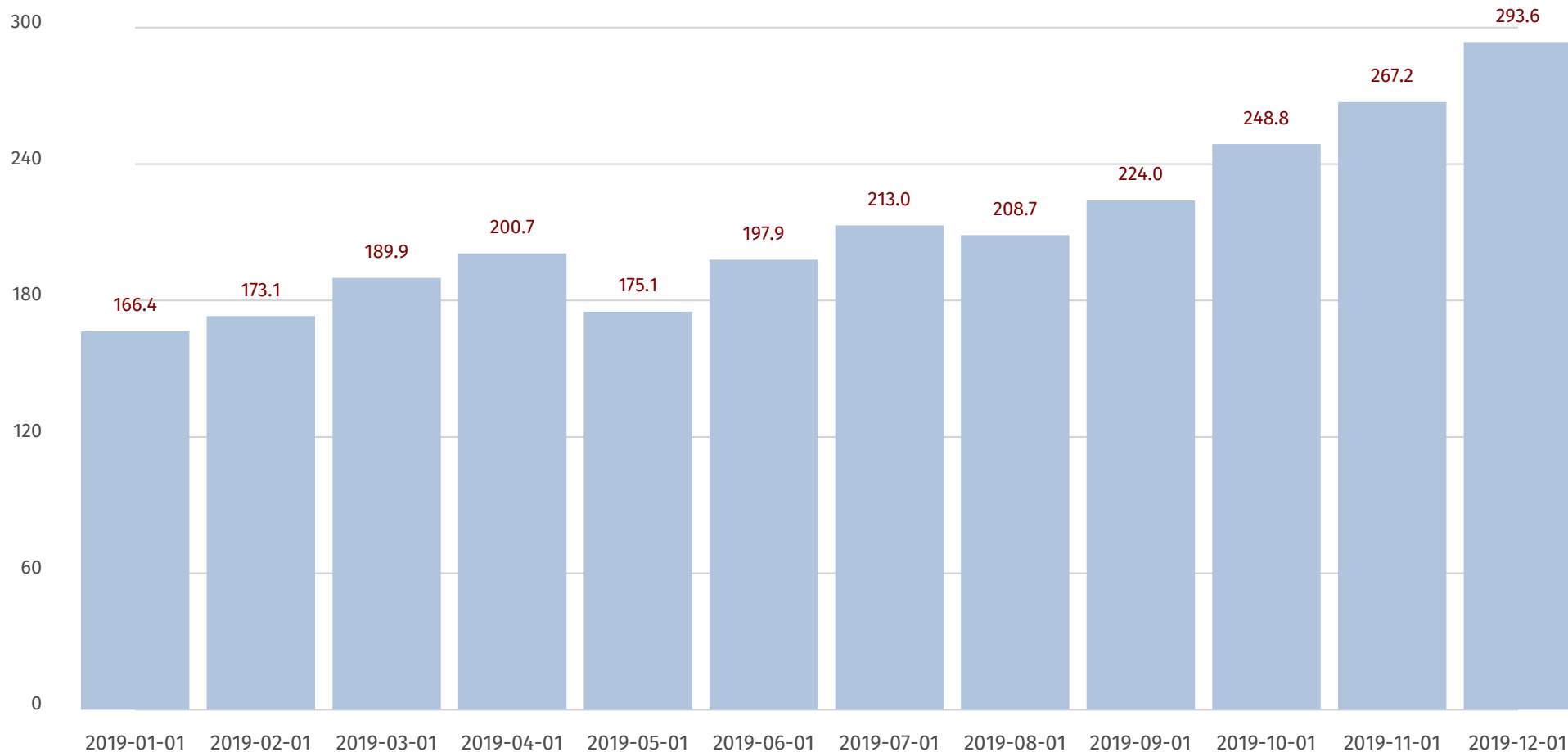

AAPL Closing Price



Target Line, Y-Axis

```
dchart -hline=250,Target -yaxis AAPL.d
```

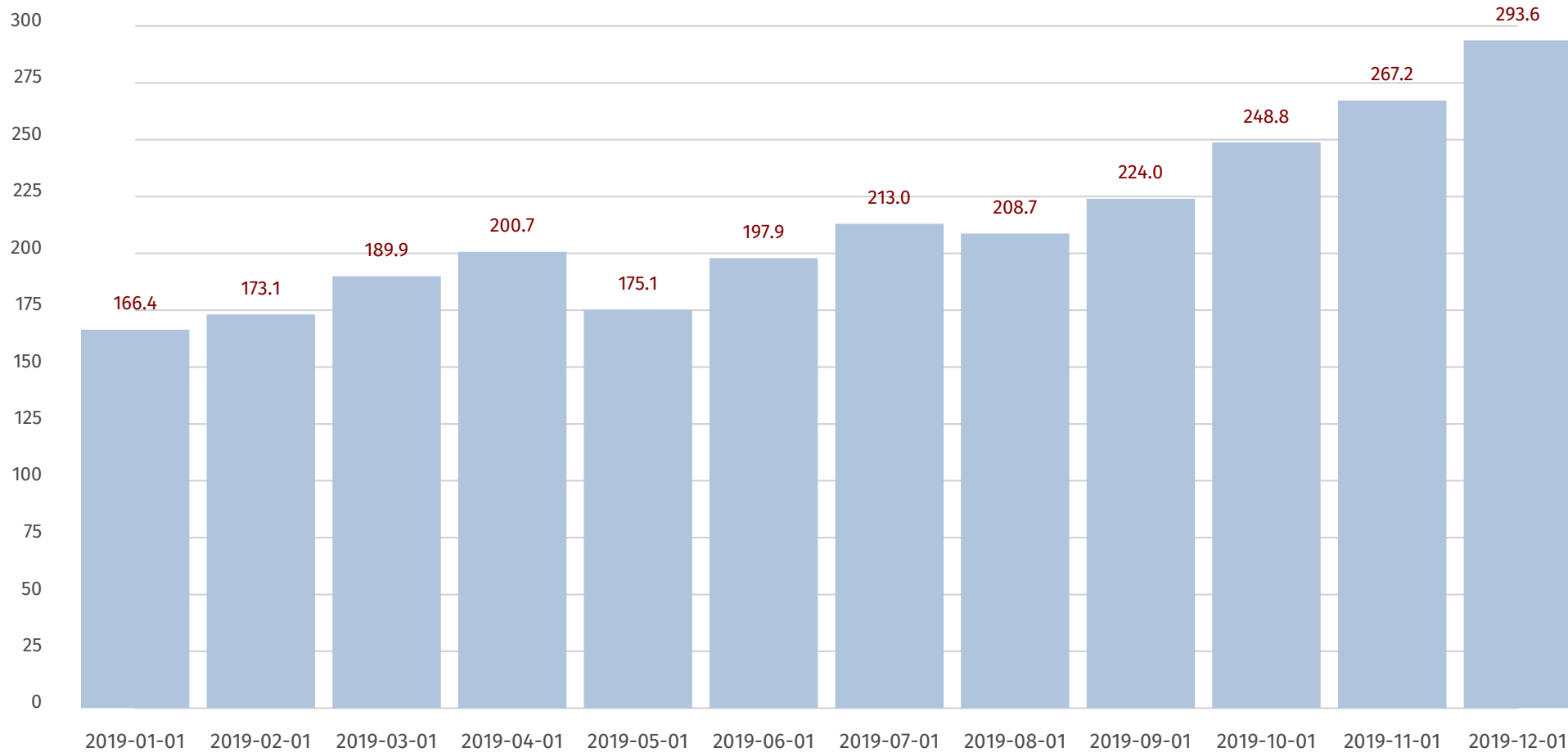
AAPL Closing Price



Y-Axis, Grid

```
dchart -grid -yaxis AAPL.d
```

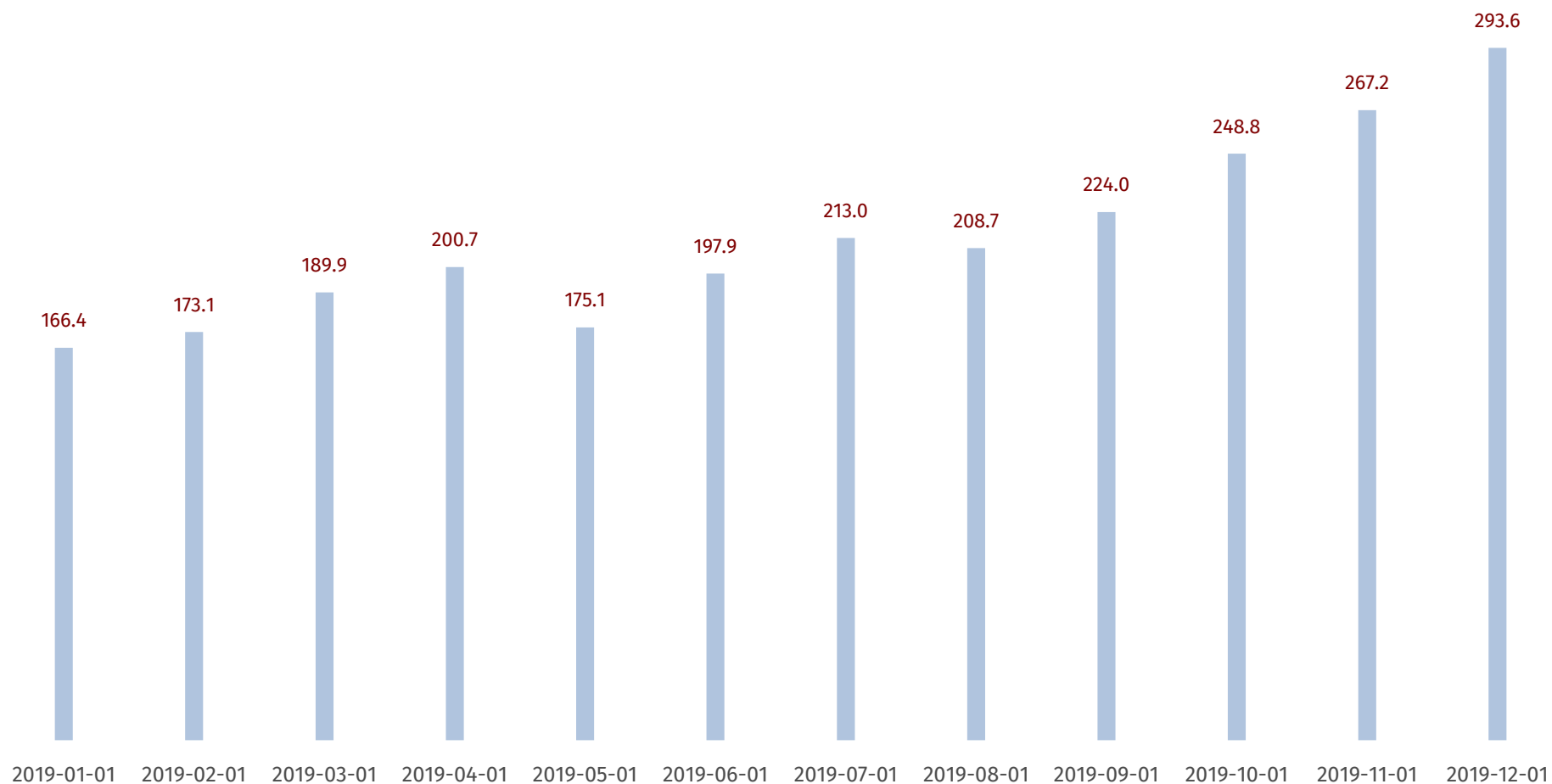
AAPL Closing Price



Y-Range

```
dchart -yrange=0,300,25 -grid -yaxis AAPL.d
```

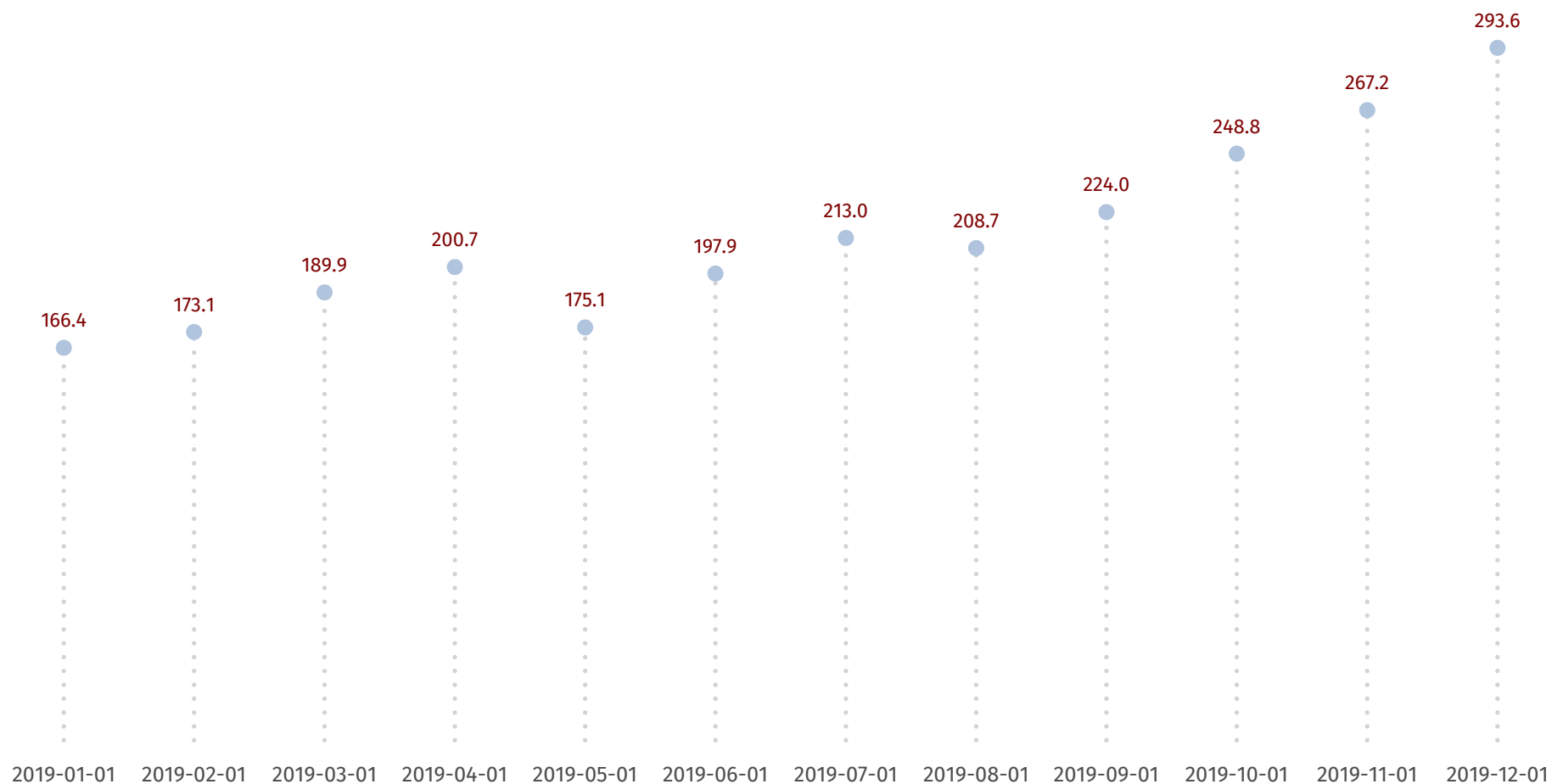
AAPL Closing Price



Adjusting Bar Width

```
dchart -barwidth=1 AAPL.d
```

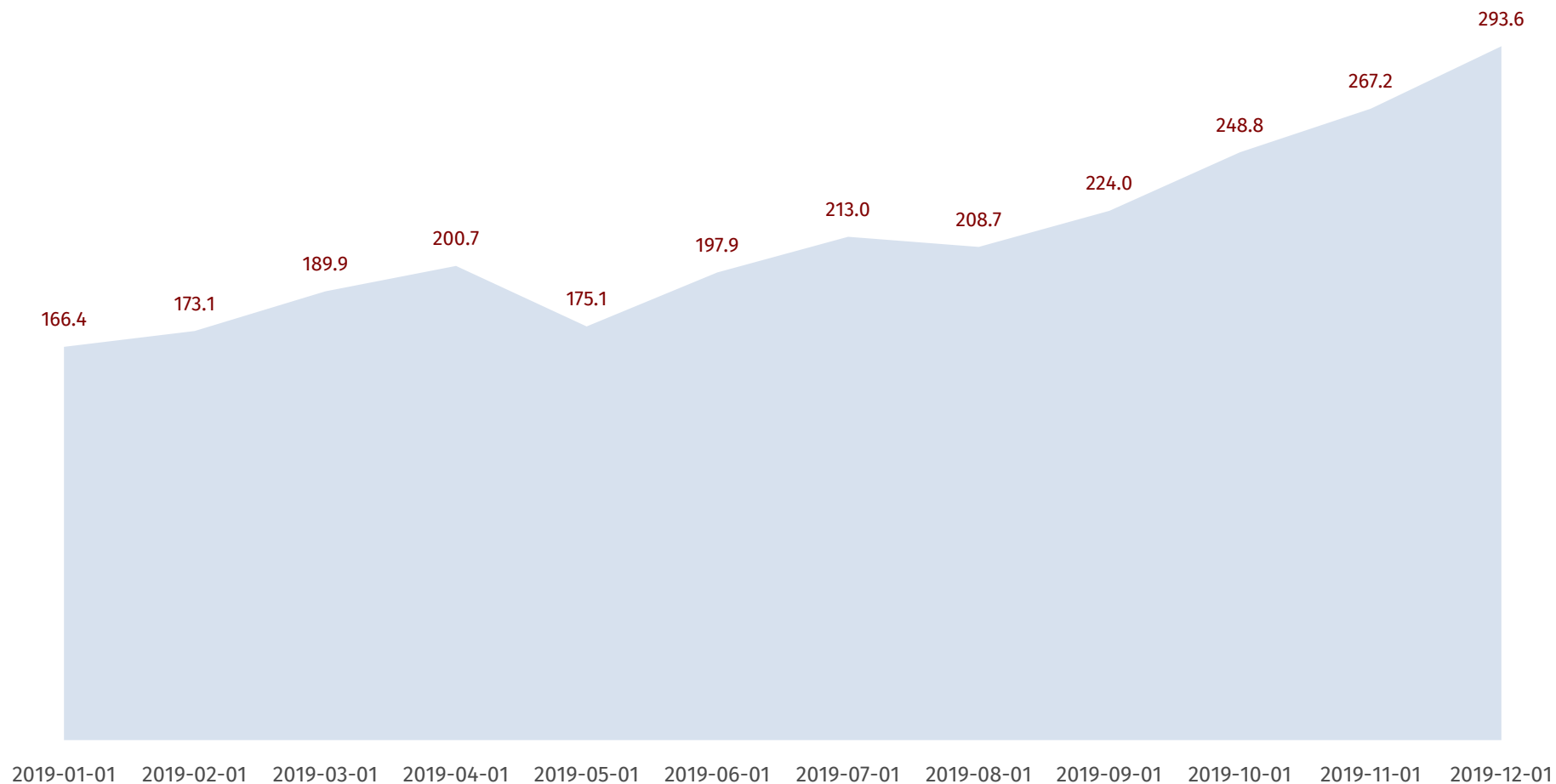
AAPL Closing Price



Dot Chart

```
dchart -bar=f -dot AAPL.d
```

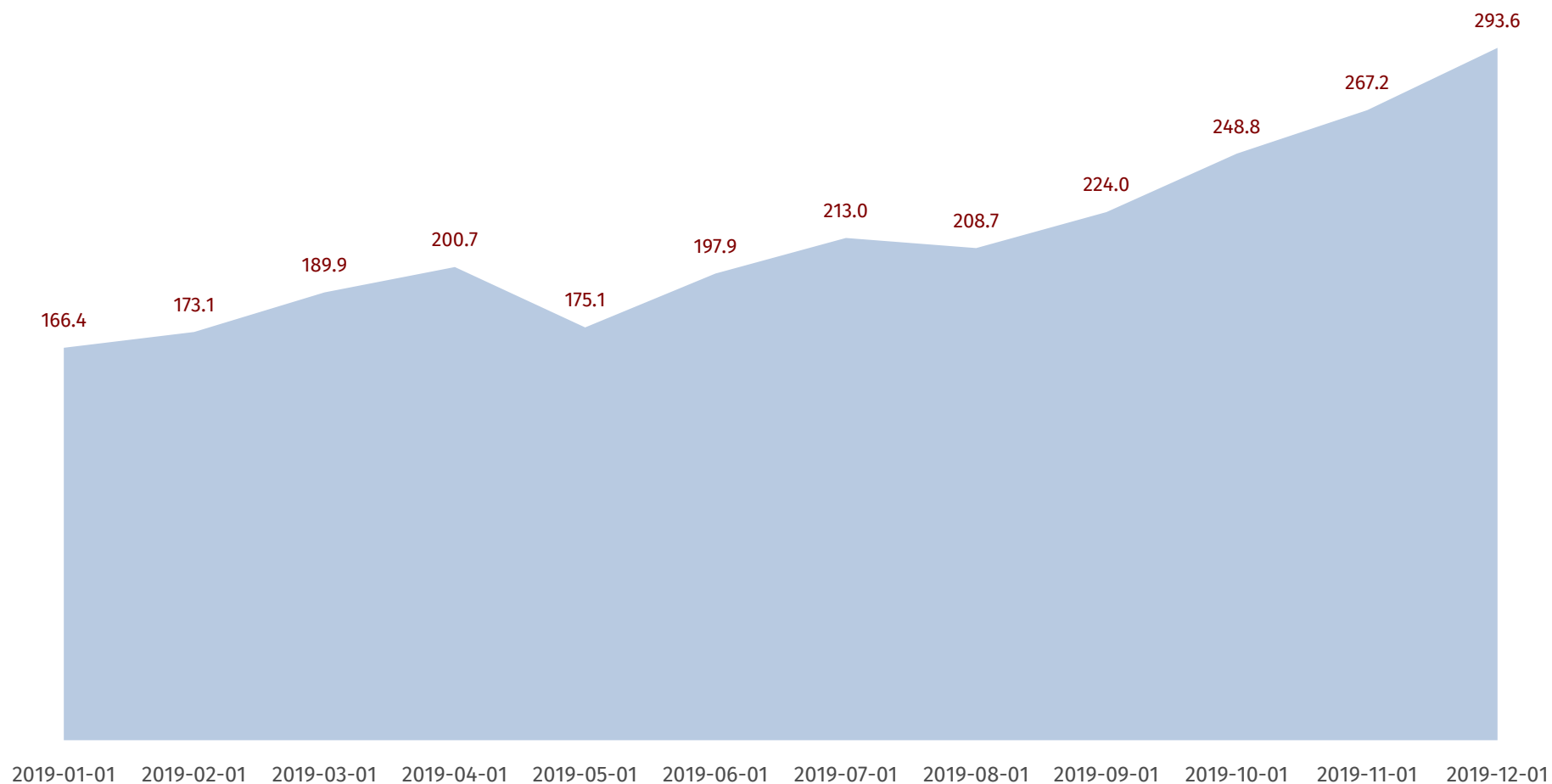
AAPL Closing Price



Area Chart

```
dchart -bar=f -vol AAPL.d
```

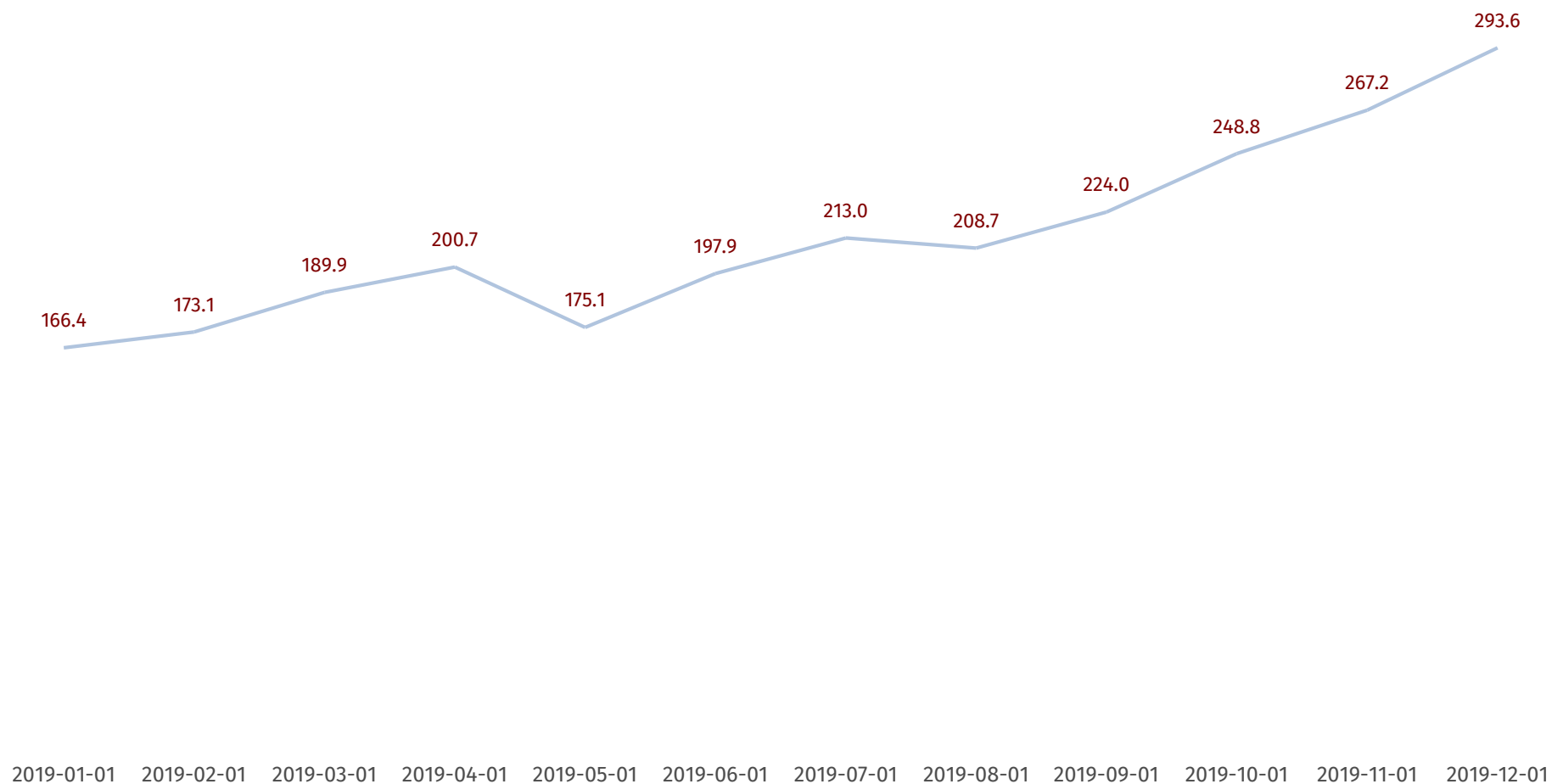
AAPL Closing Price



Area Chart, Opacity

```
dchart -bar=f -vol -volop=90 AAPL.d
```

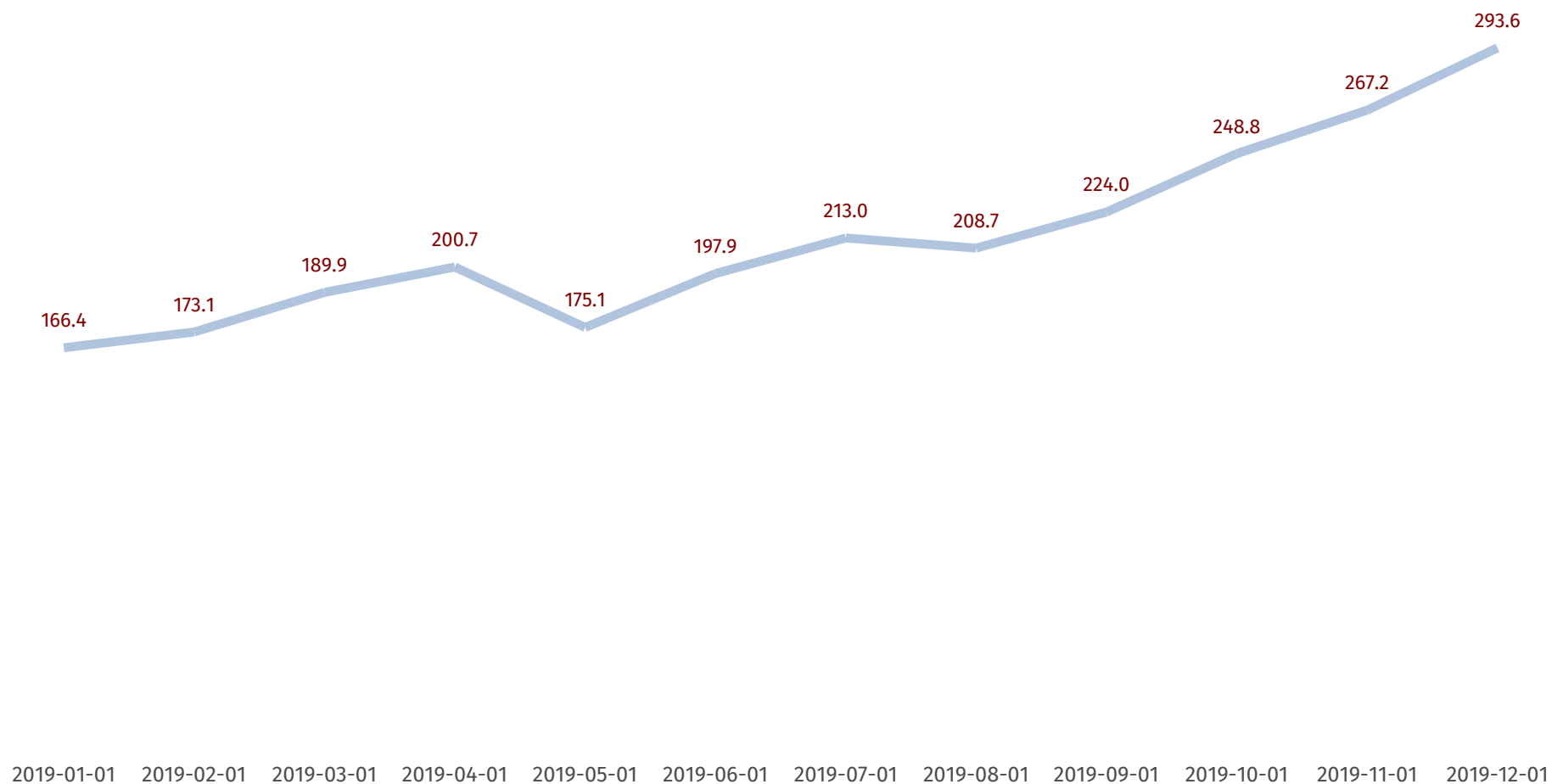
AAPL Closing Price



Line Chart

```
dchart -bar=f -line AAPL.d
```

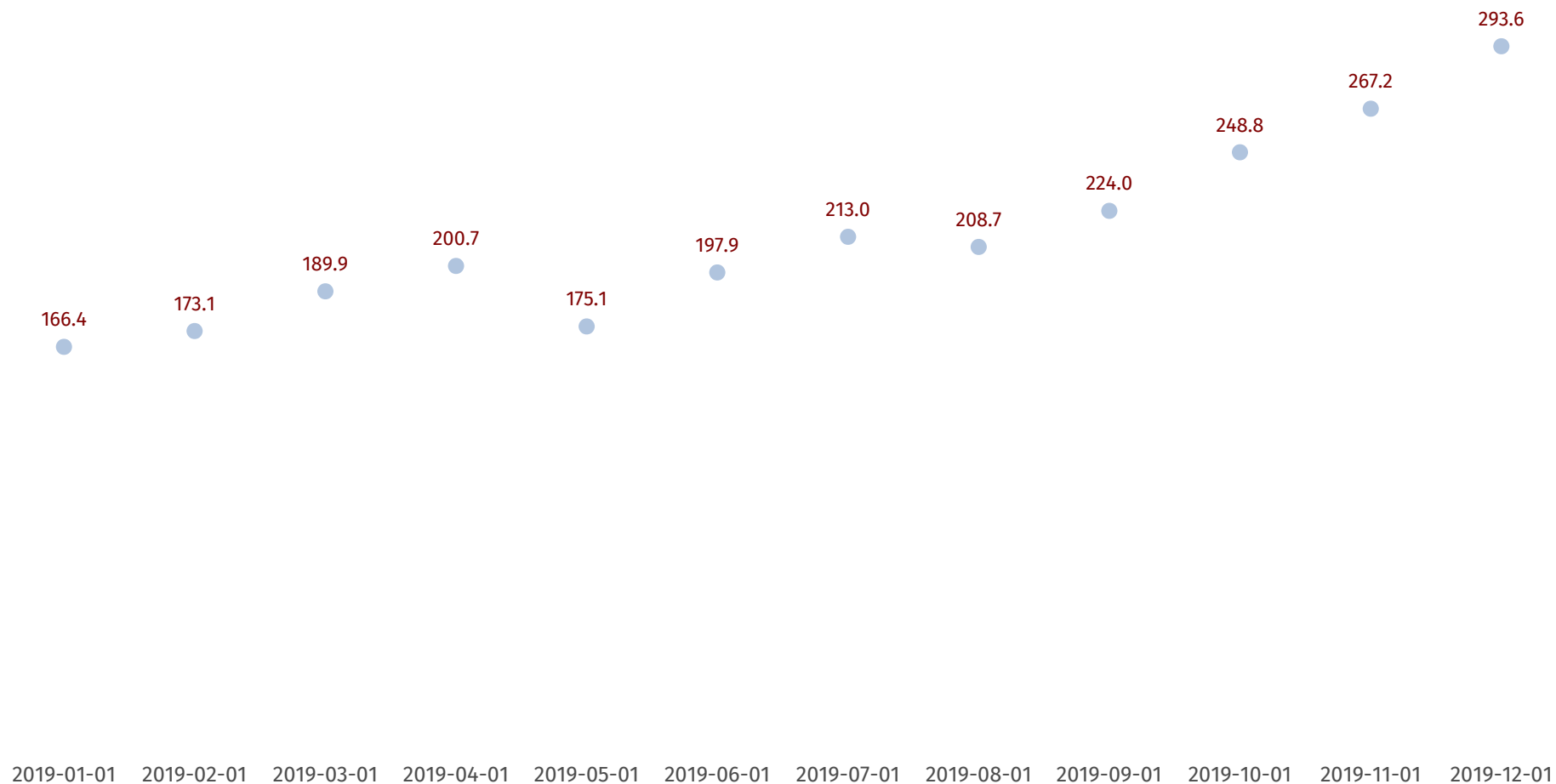

AAPL Closing Price



Line Chart, Line Width

```
dchart -bar=f -line -linewidth=0.5 AAPL.d
```

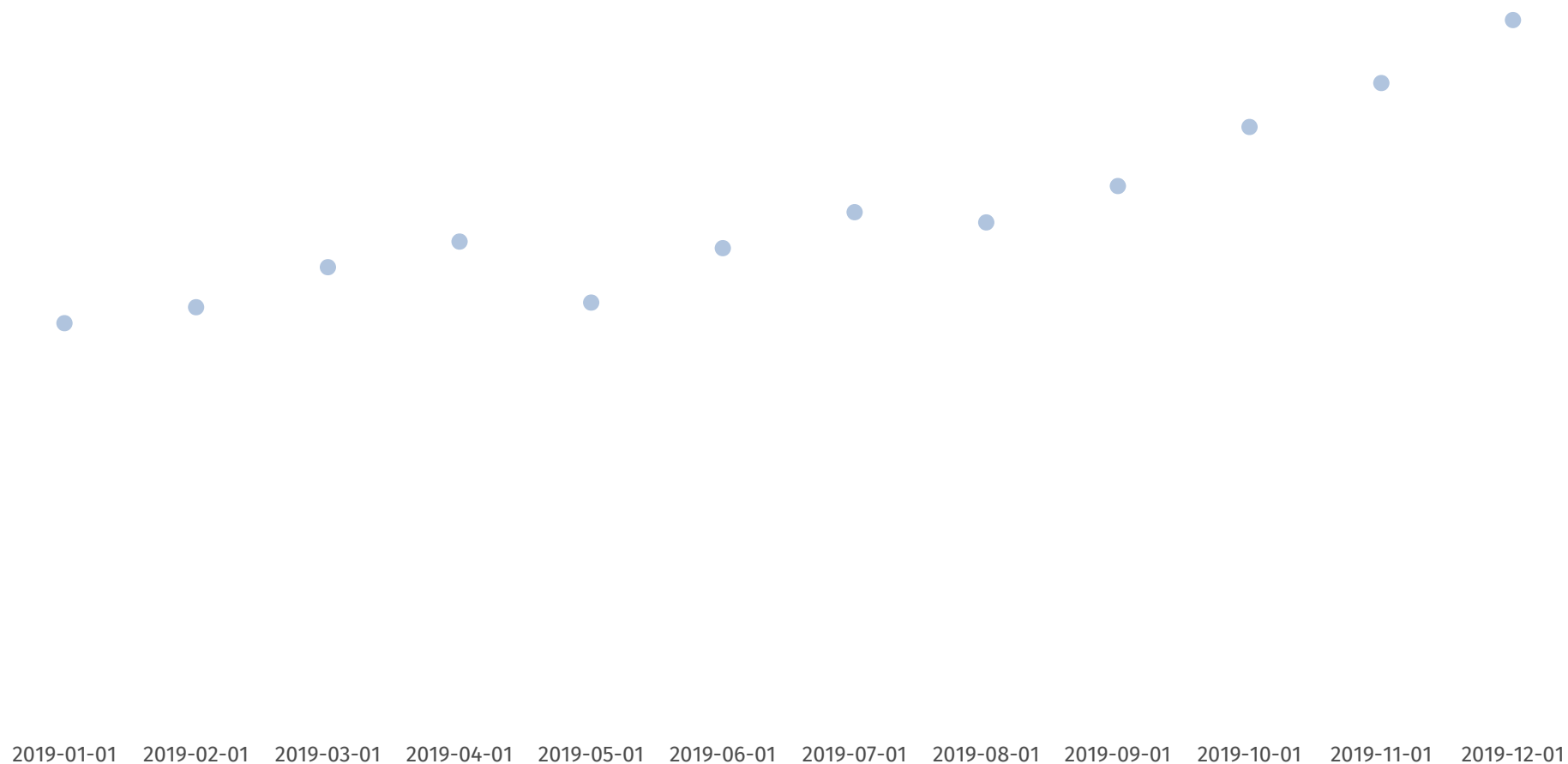
AAPL Closing Price



Scatter Chart

```
dchart -bar=f -scatter AAPL.d
```

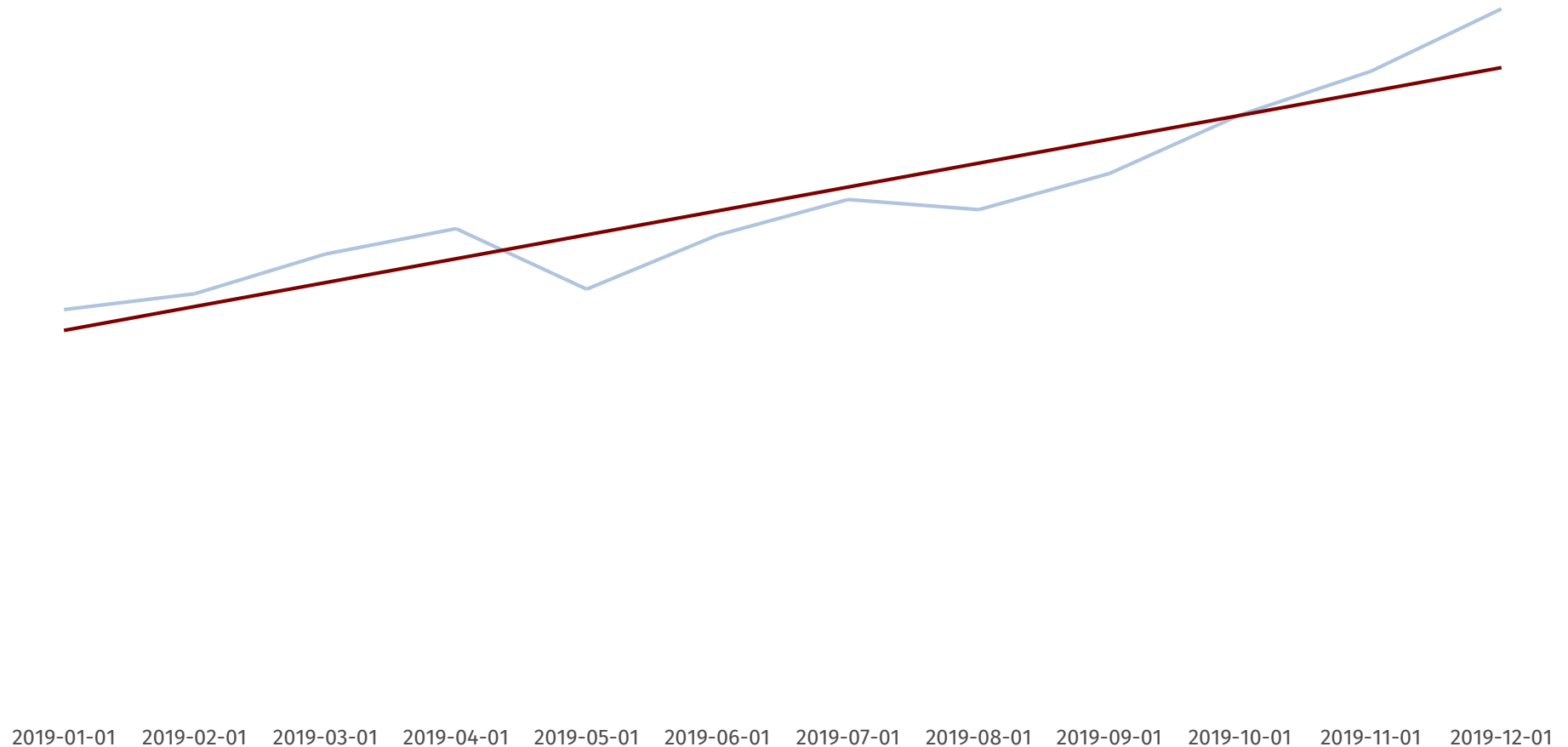
AAPL Closing Price



Scatter Chart, No Values

```
dchart -bar=f -scatter -val=f AAPL.d
```

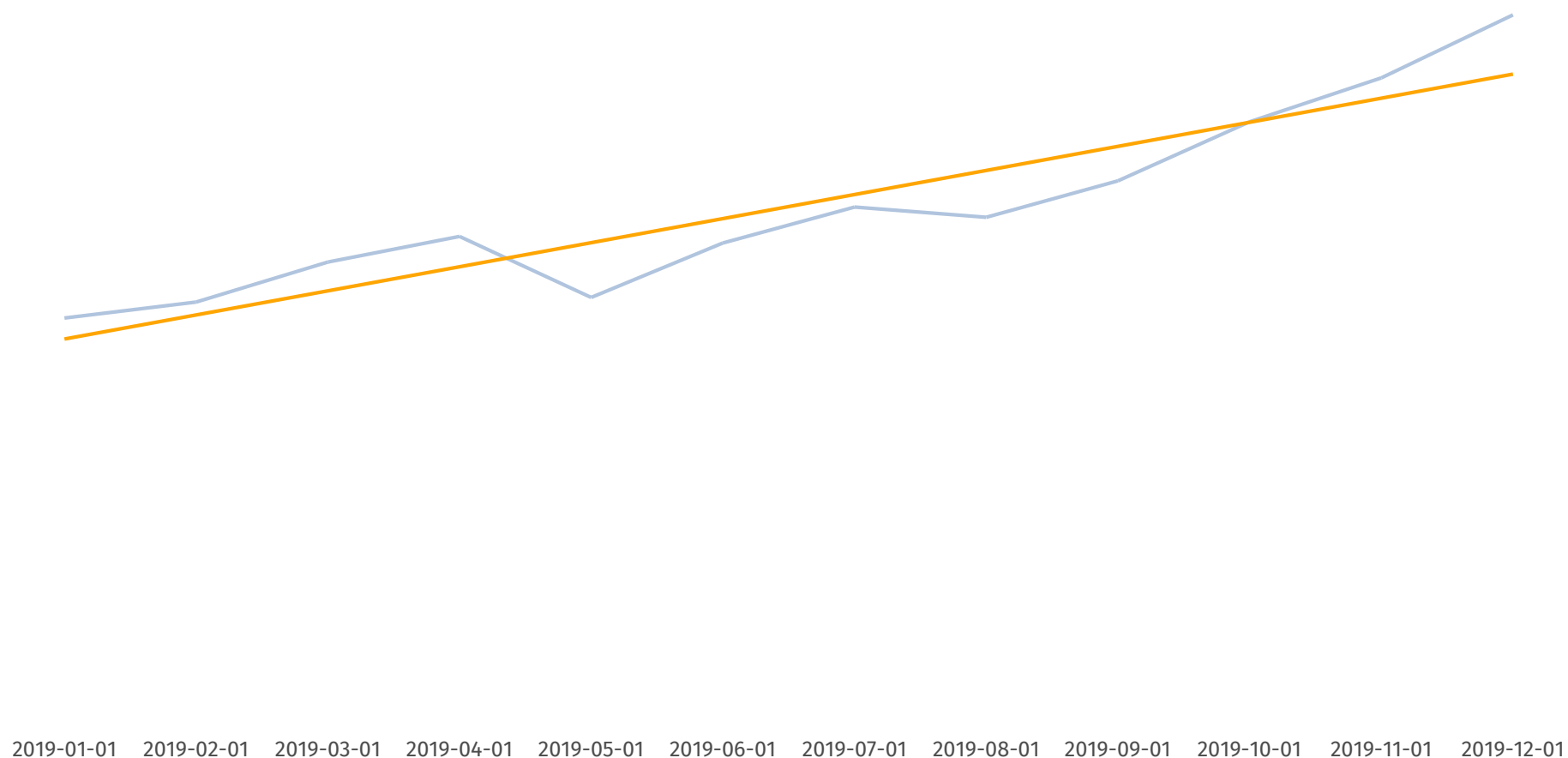
AAPL Closing Price



Line Chart, No Values, Regression Line

```
dchart -bar=f -line -val=f -rline AAPL.d
```

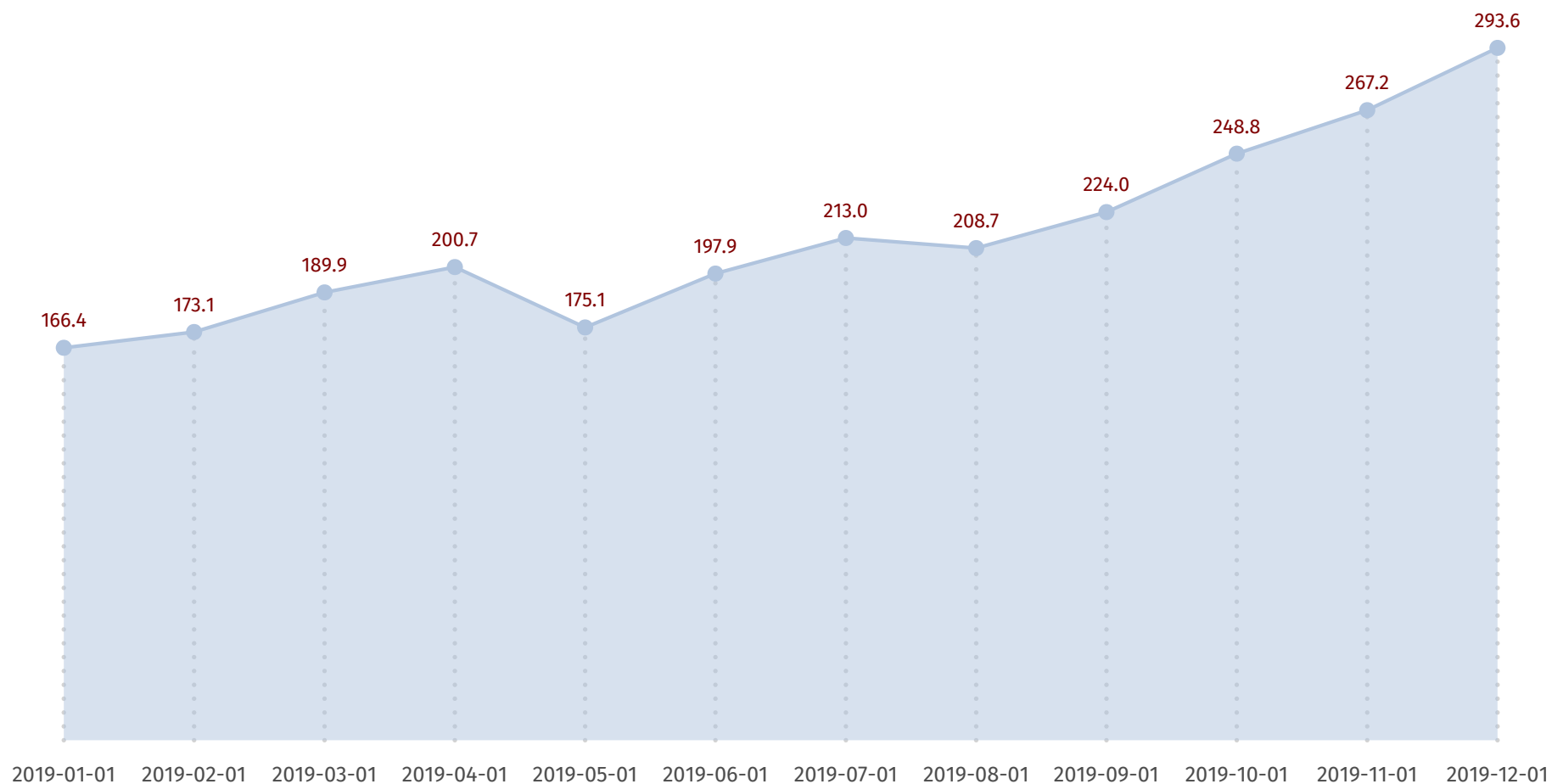
AAPL Closing Price



Line Chart, No Values, Regression Line Color

```
dchart -bar=f -line -val=f -rlcolor=orange AAPL.d
```

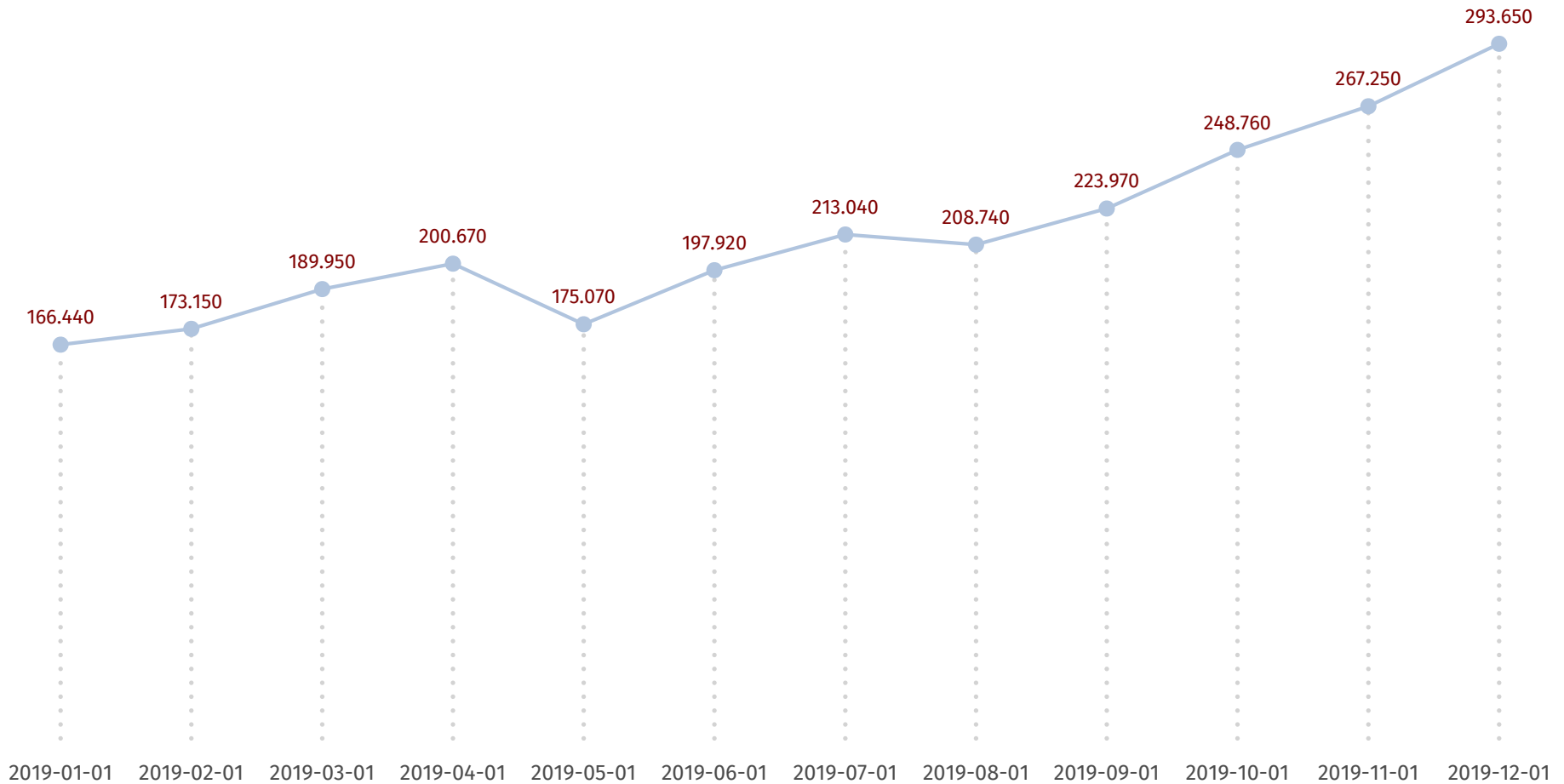
AAPL Closing Price



Volume, Line, Dot

```
dchart -bar=f -line -vol -dot AAPL.d
```

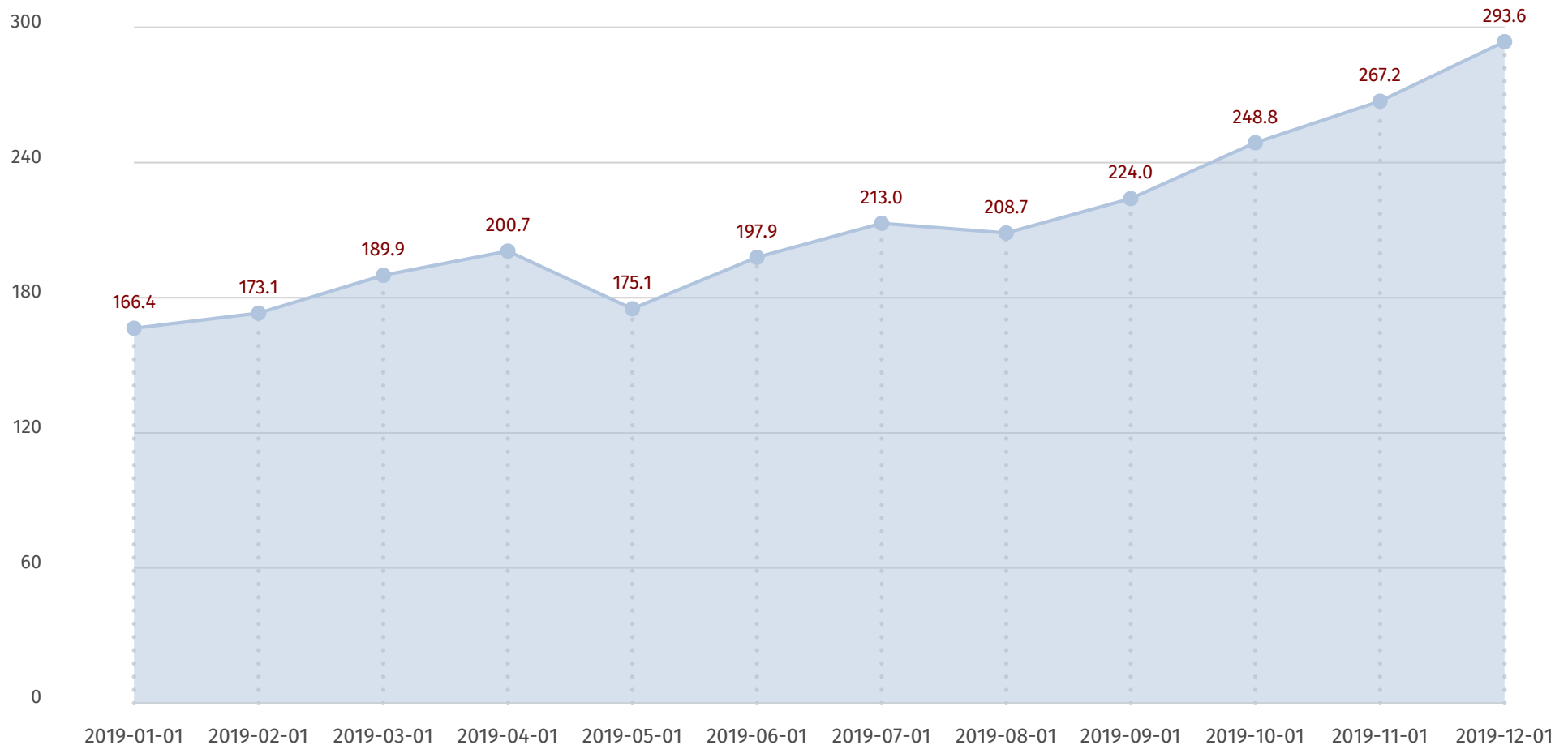
AAPL Closing Price



Dot, Line, Data Format

```
dchart -datafmt %0.3f -bar=f -dot -line AAPL.d
```

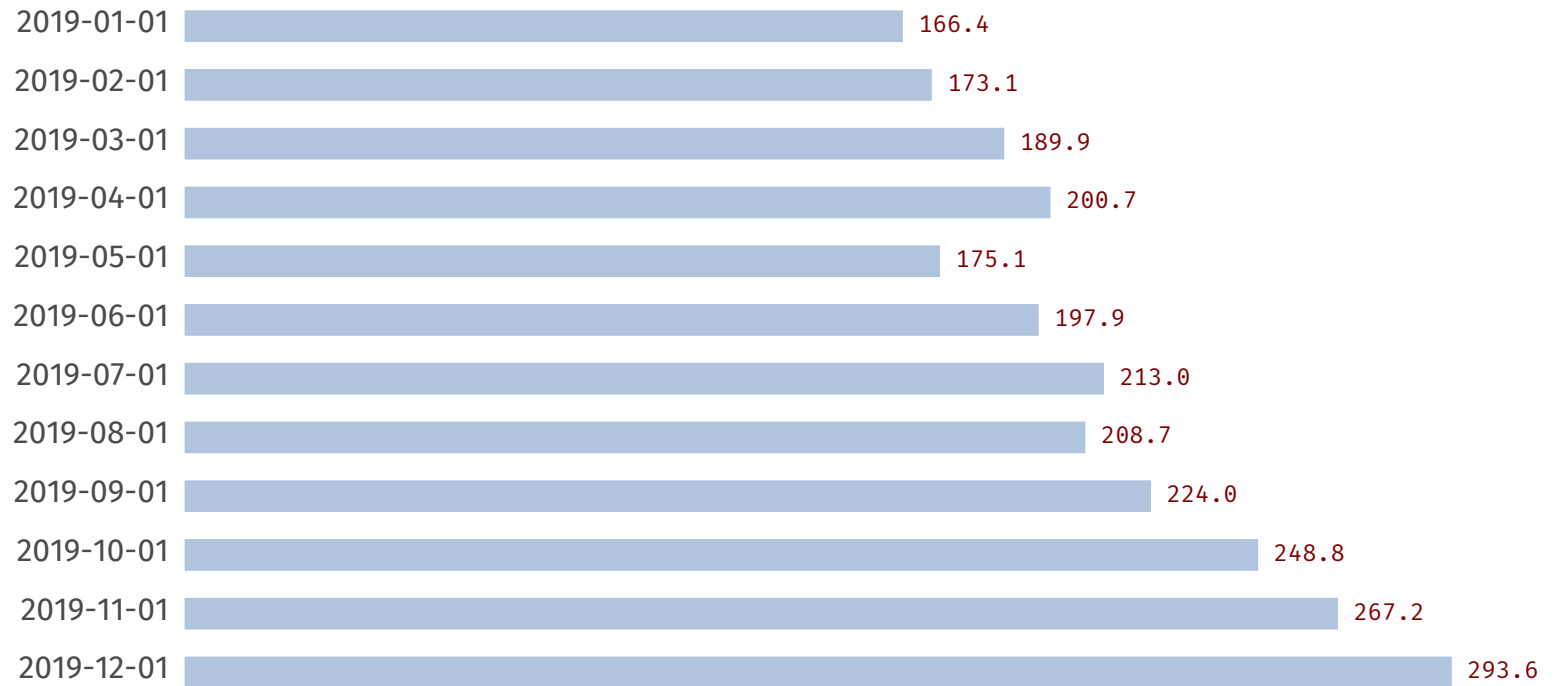
AAPL Closing Price



Line, Area, Dot, Y-Axis, Grid

```
dchart -bar=f -line -vol -dot -grid -yaxis AAPL.d
```

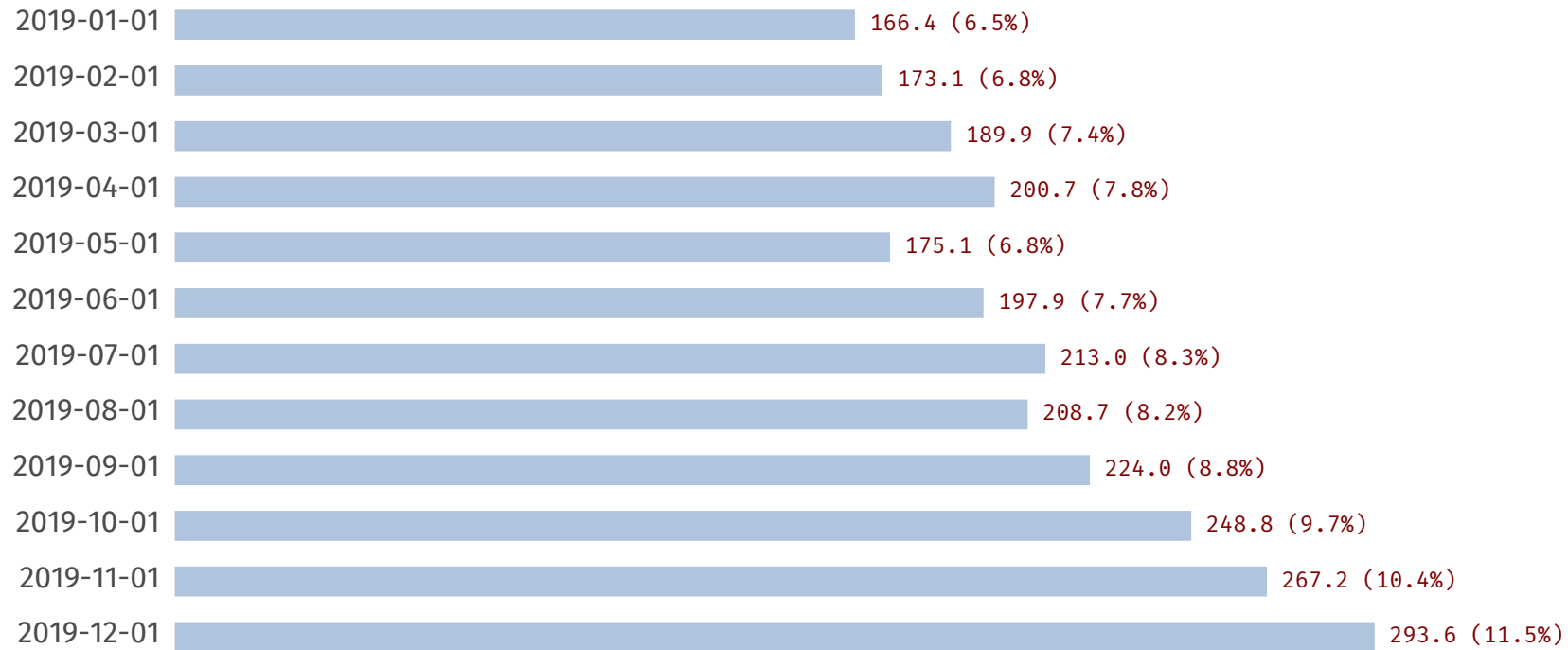

AAPL Closing Price



Horizontal Bar

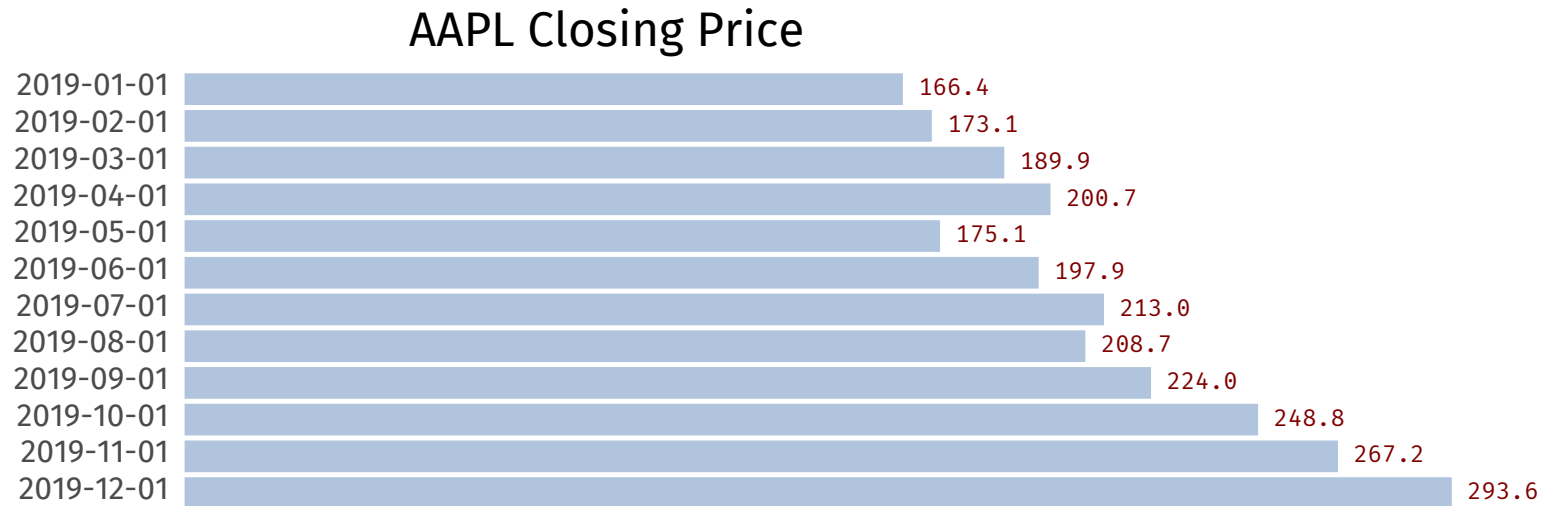
```
dchart -hbar AAPL.d
```

AAPL Closing Price



Horizontal Bar, Show Percentages

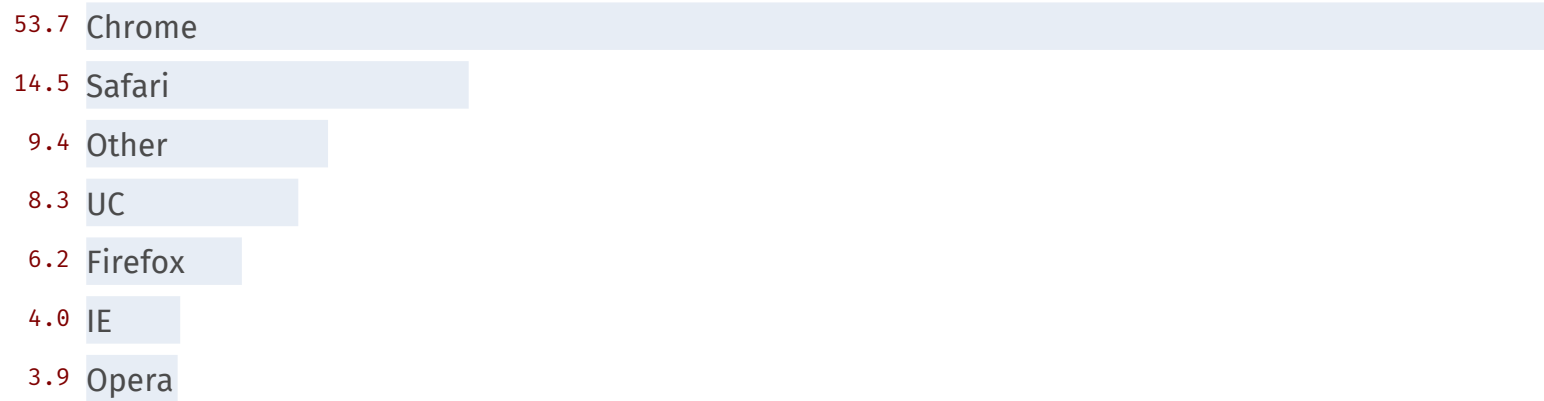
```
dchart -hbar -pct AAPL.d
```



Horizontal Bar, Line Spacing

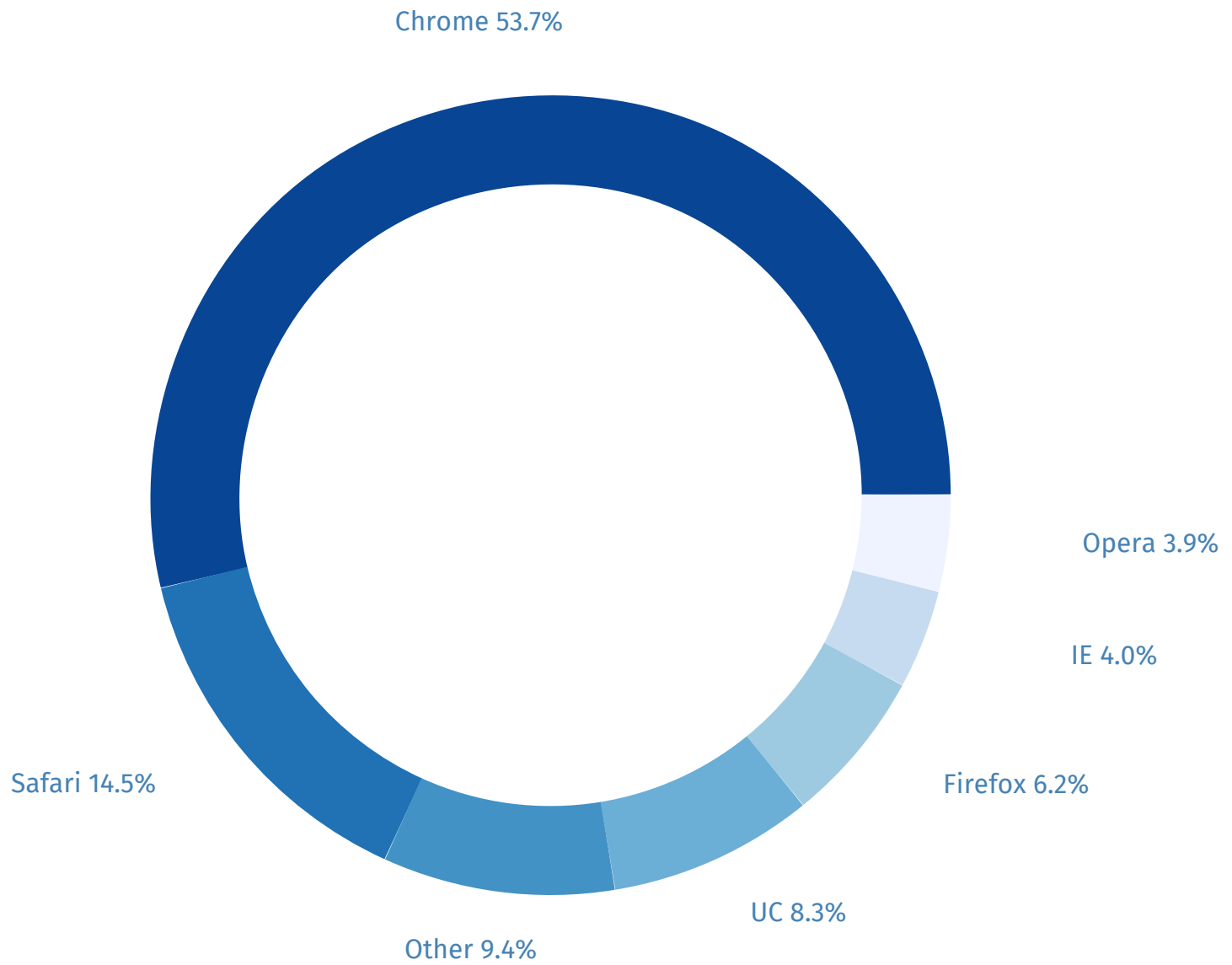
```
dchart -hbar -ls 1.5 AAPL.d
```

Browser Market Share Dec 2016-Dec 2017



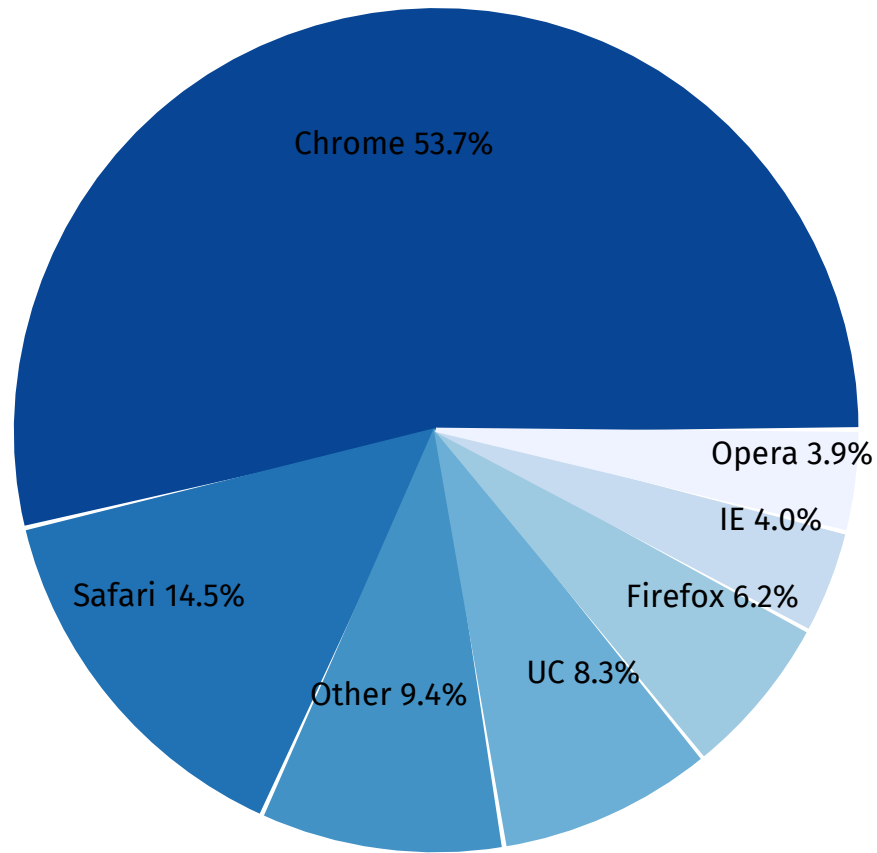
Word Bar

```
dchart -wbar AAPL.d
```



Donut

```
dchart -donut -color=std -pwidth=5 browser.d
```



Pie

```
dchart -donut -color=std -title=f -top=70 -pwidth=20 -psize=20 browser.d
```

Browser Market Share Dec 2016-Dec 2017



Pmap

```
dchart -pmap -pwidth=5 -textsize=1 browser.d
```

Browser Market Share Dec 2016-Dec 2017



Pmap with Solid Colors

```
dchart -pmap -pwidth=5 -textsize=1 -solidpmap browser.d
```

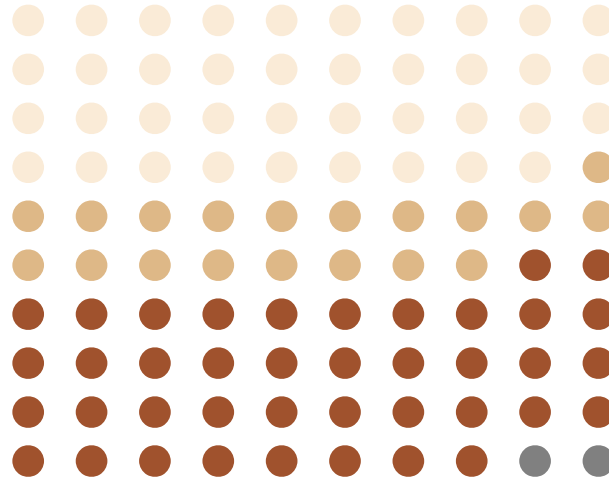

Browser Market Share Dec 2016-Dec 2017



Pmap with Solid Colors, Length Threshold

```
dchart -pmap -pwidth=5 -textsize=1 -solidpmap -pmlen=30 browser.d
```

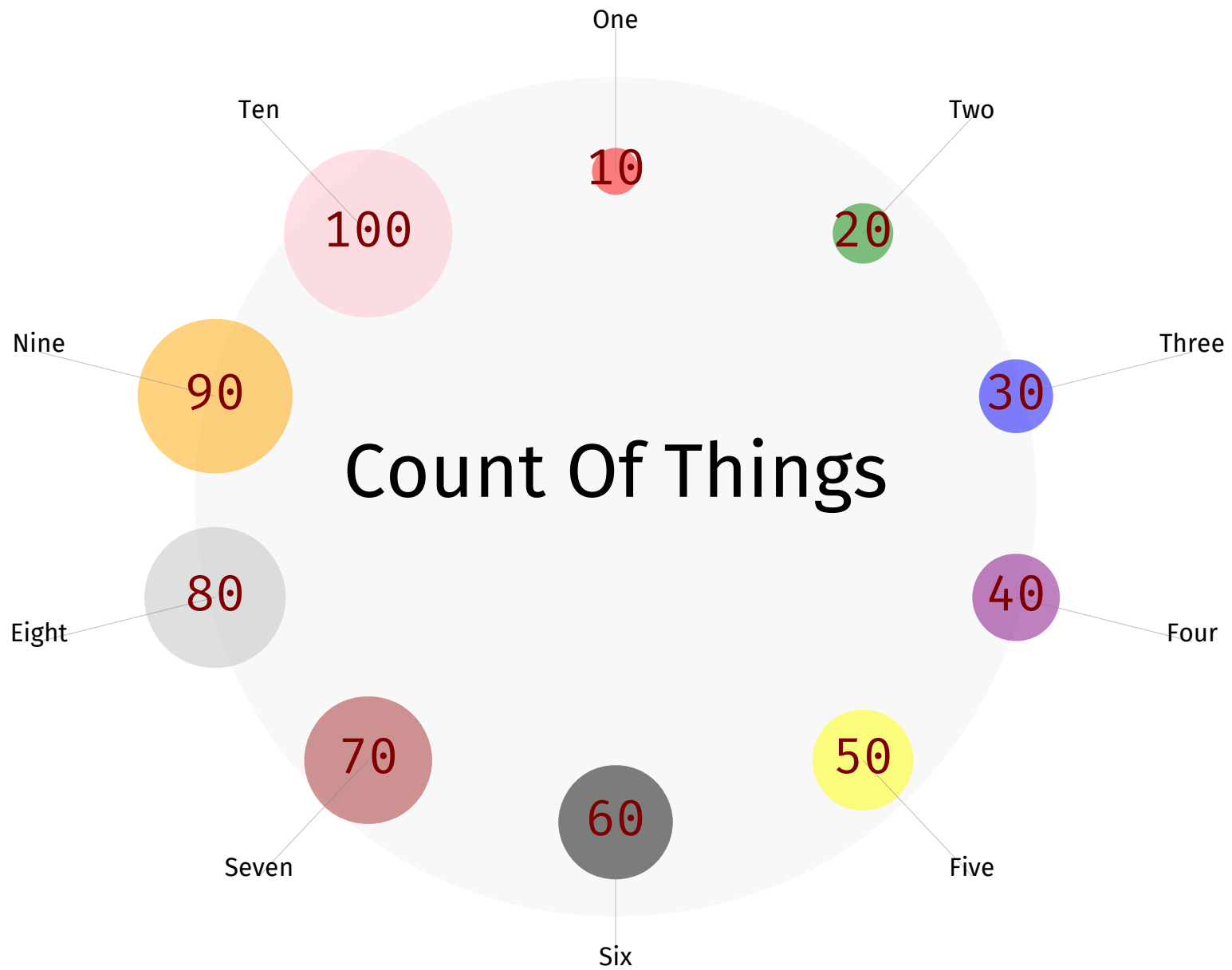
US Incarceration Rate



- White (39%)
- Hispanic (19%)
- Black (40%)
- Other (2%)

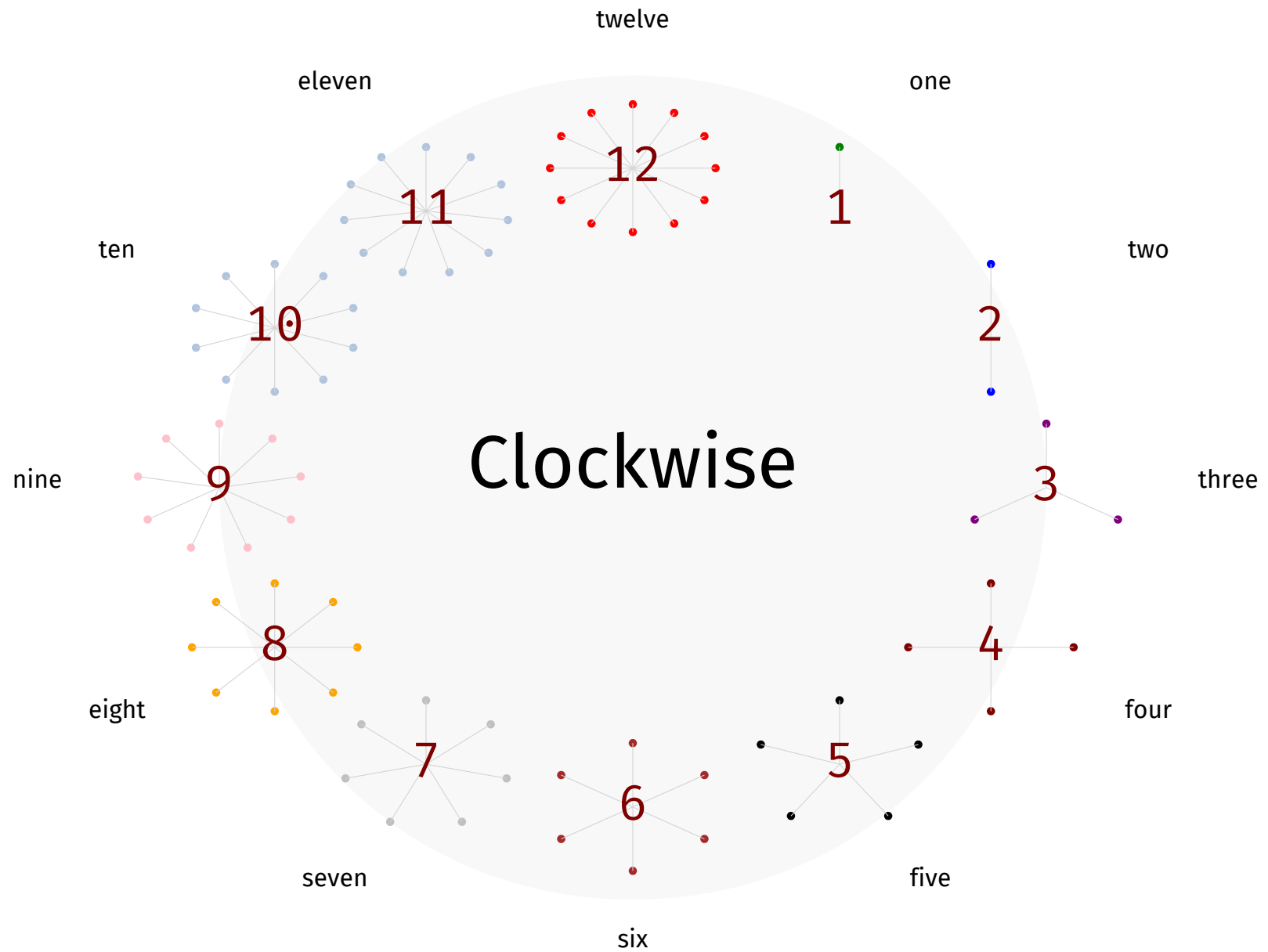
Pgrid

```
dchart -left 35 -top 80 -ls 3 -pgrid -val=f incar.d
```



Radial

```
dchart -radial -psize=10 -pwidth=25 -top=60 -textsize=3 count.d
```



Radial with Spokes

```
dchart -radial -psize=10 -pwidth=25 -top=60 -textsize=3 -spokes clock.d
```