



United States Steel Corporation

# Dashboards With PROC GKPI

**September 25, 2009**

**Barry Hong**

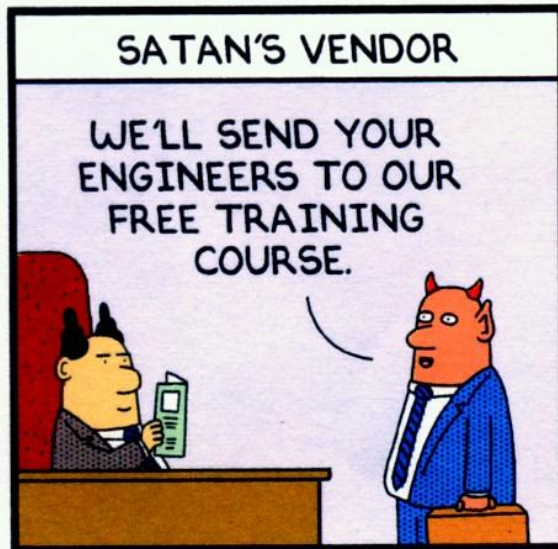
© 2009 United States Steel Corporation





# Dashboards With PROC GKPI

## Free Training



www.dilbert.com  
scottadams@aol.com

6-14-06 © 2006 Scott Adams, Inc./Dist. by UFS, Inc.



# Dashboards With PROC GKPI

## Introduction

- Dashboard objects introduced in SAS 8 with BI Server
- Now available in SAS 9.2 with SAS/Graph
- Used to graphically represent Key Performance Indicators
- Only supported output is PNG
- PNG files can be converted to GRSEG



# Dashboards with PROC GKPI

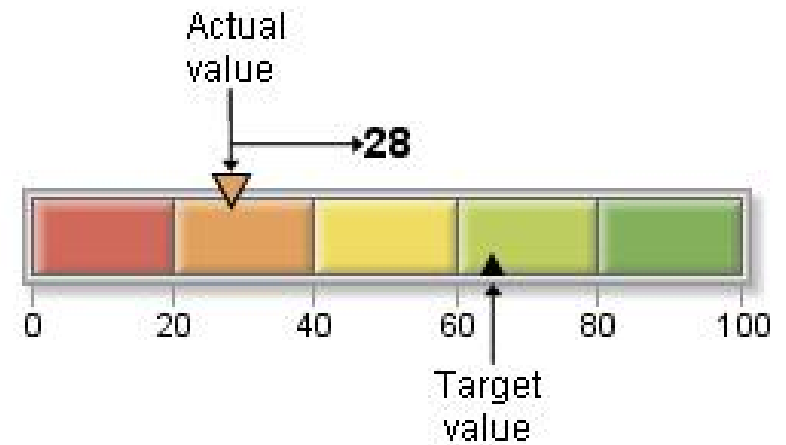
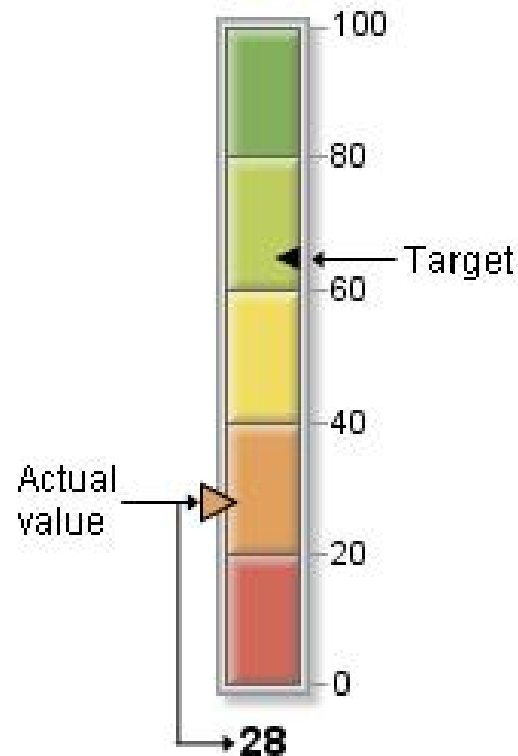
## VSLIDER

## HSLIDER

**A bar is divided into segments according to boundary values that you specify.**

**Value indicator is the same color as the segment.**

## Slider KPI Charts





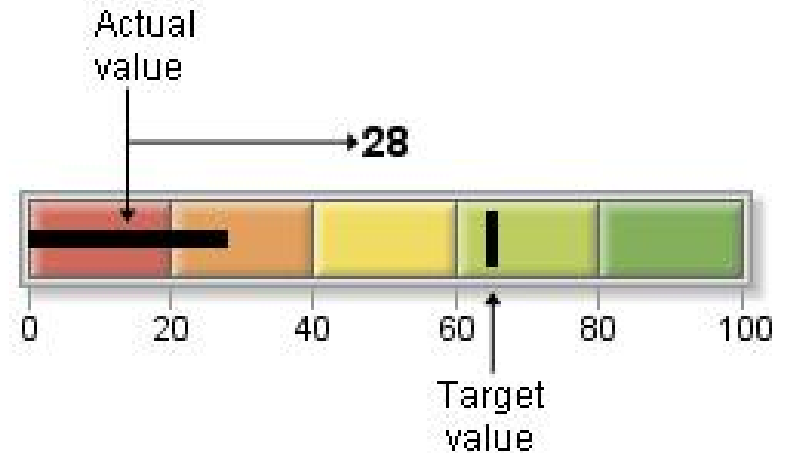
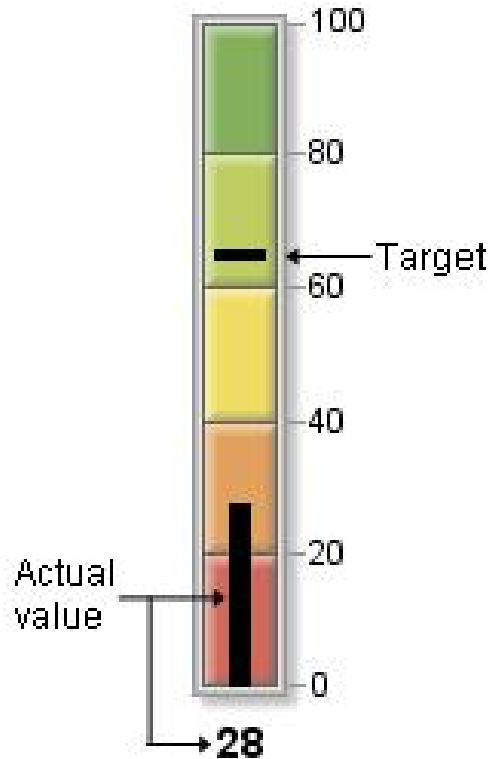
# Dashboards with PROC GKPI

**VBULLET**

**HBULLET**

**A variation on the slider chart with bars instead of pointers**

## Bullet Graph KPI Charts





# Dashboards with PROC GKPI

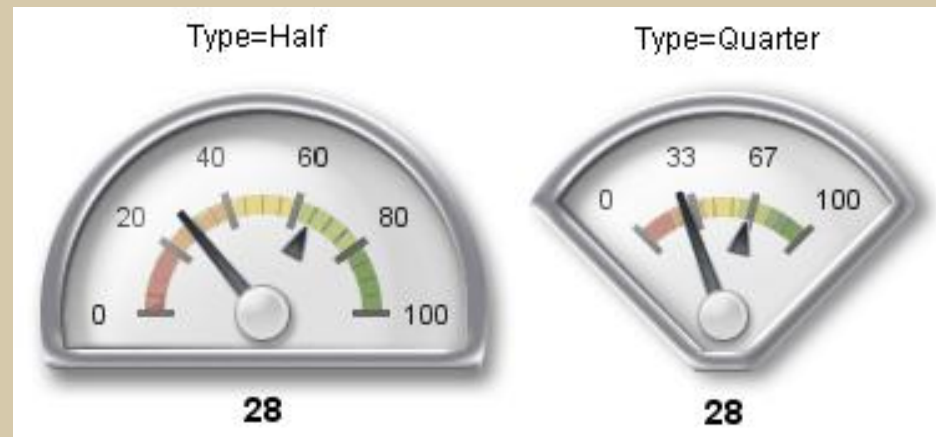
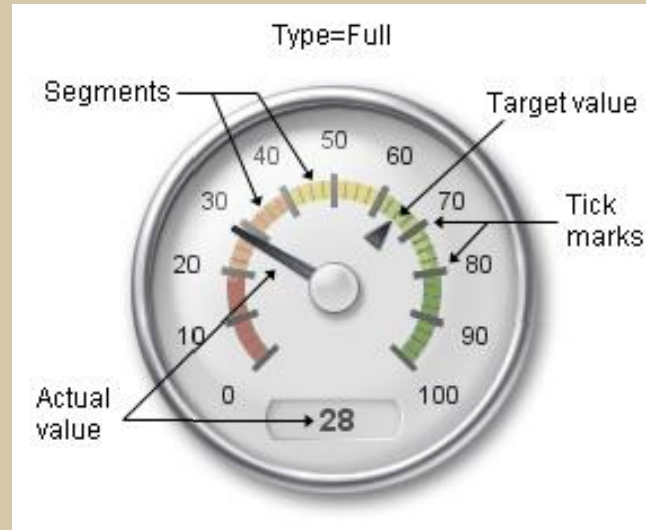
## SPEEDOMETER

**Tick marks are evenly spaced but do not correspond to colored segment boundaries**

**Speedometer sections fixed as follows:**

- **Full = 10**
- **Half = 5**
- **Quarter = 3**

## Speedometer KPI Charts





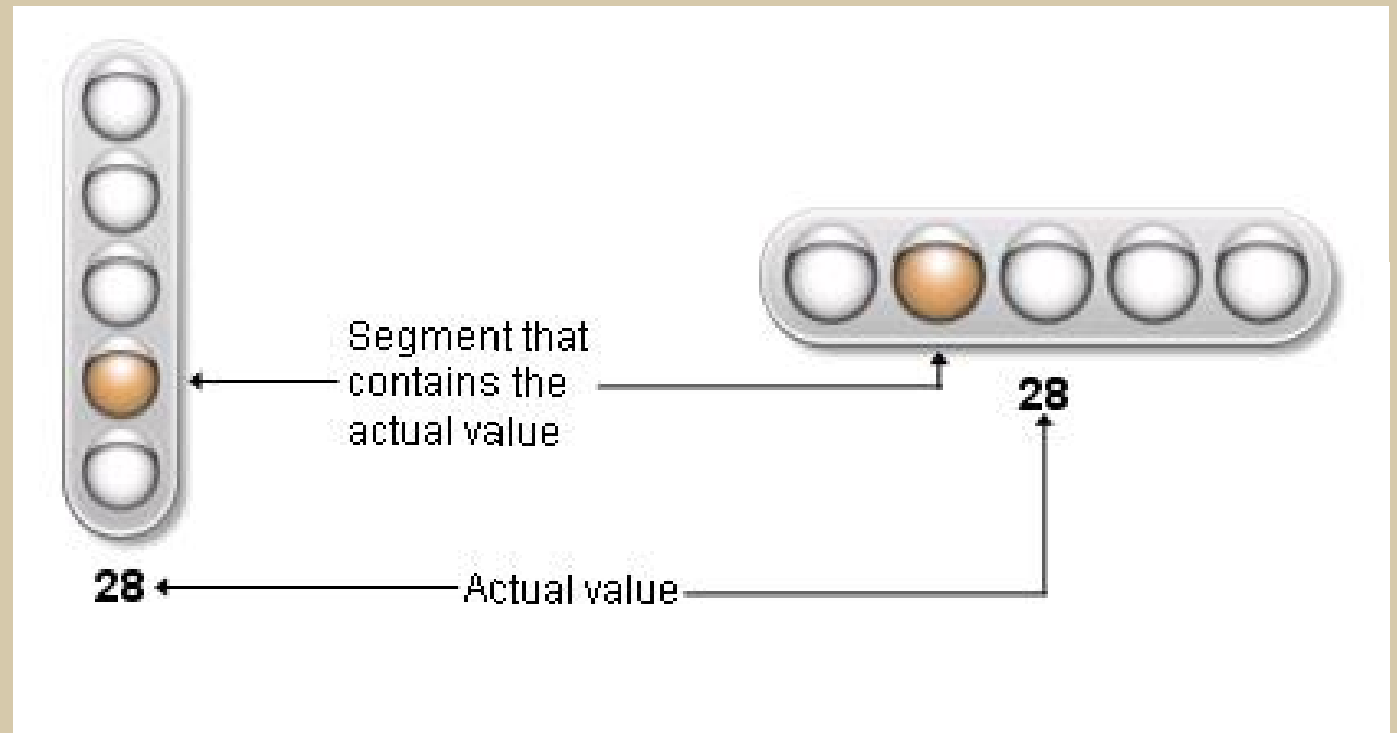
# Dashboards with PROC GKPI

**VTRAFFICLIGHT**  
**HTRAFFICLIGHT**

**Contains one light for each segment. Only the segment containing the actual value is displayed in color.**

**Traffic lights do not display target or boundary values.**

## Traffic Light KPI charts



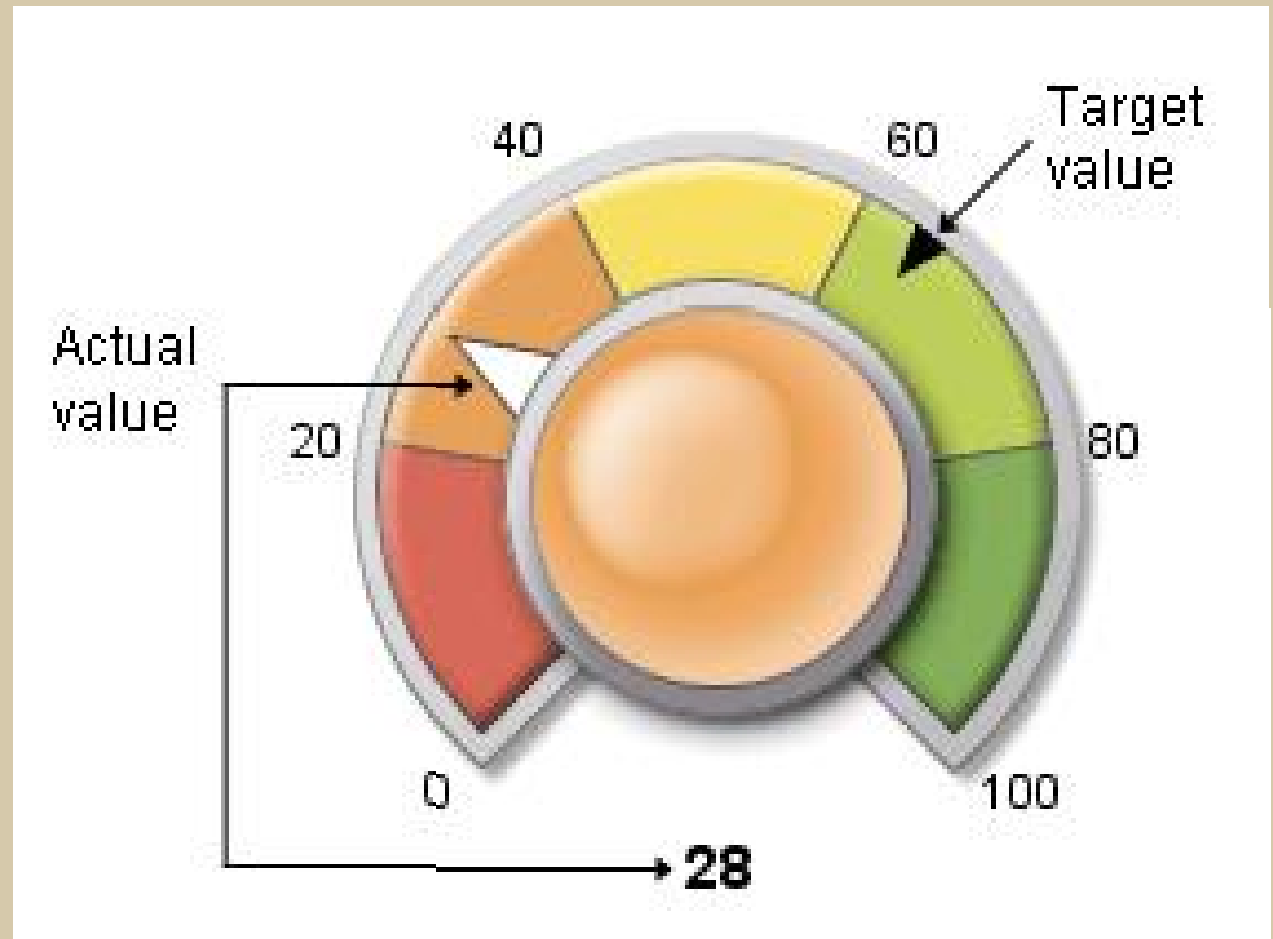


# Dashboards with PROC GKPI

## DIAL

**Centre of the dial is the same color as the segment that contains the actual value.**

## Dial KPI Charts







# Dashboards with PROC GKPI

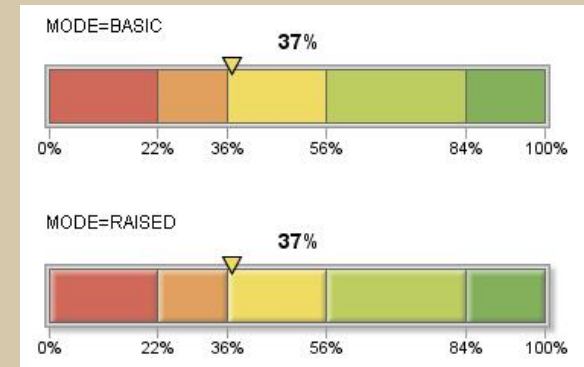
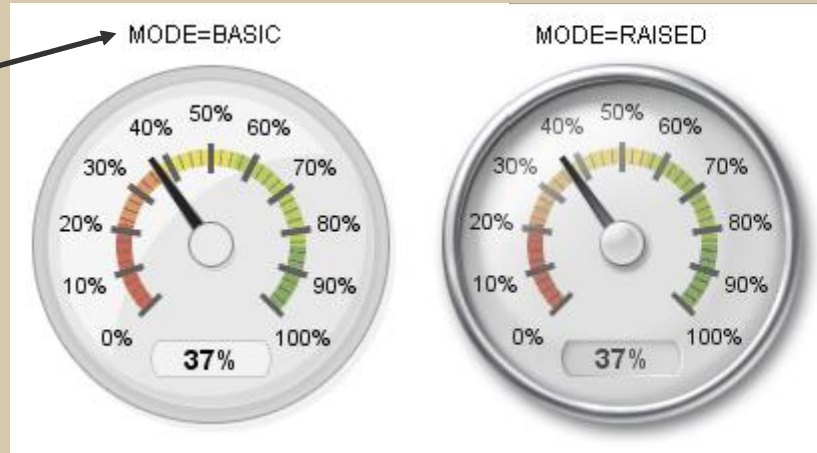
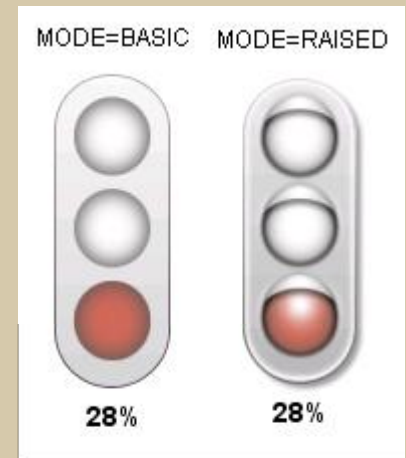
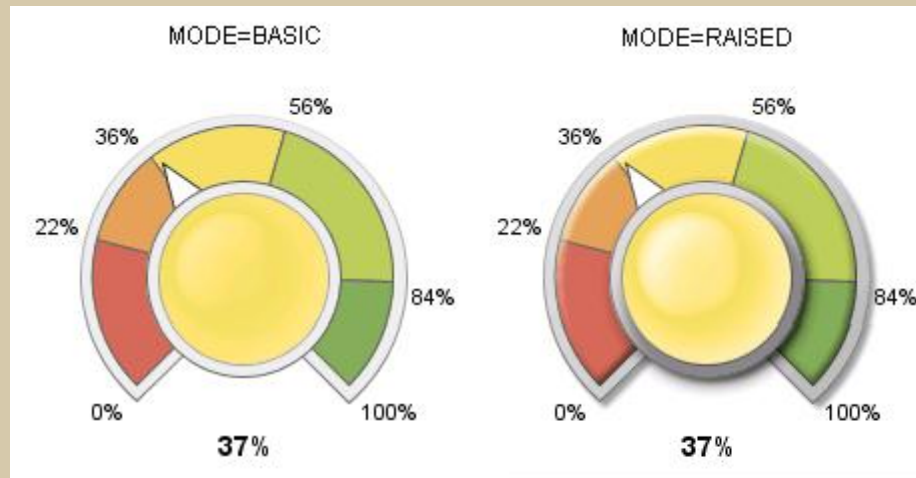
## Concepts: MODE Option

**Default mode is basic.**

**Why go for flat when you can go three dimensional?**

**Proc GKPI mode=raised**

**MODE=BASIC can be a label and not a title. Labels are located below titles.**





# Dashboards with PROC GKPI

**Bounds=( )**

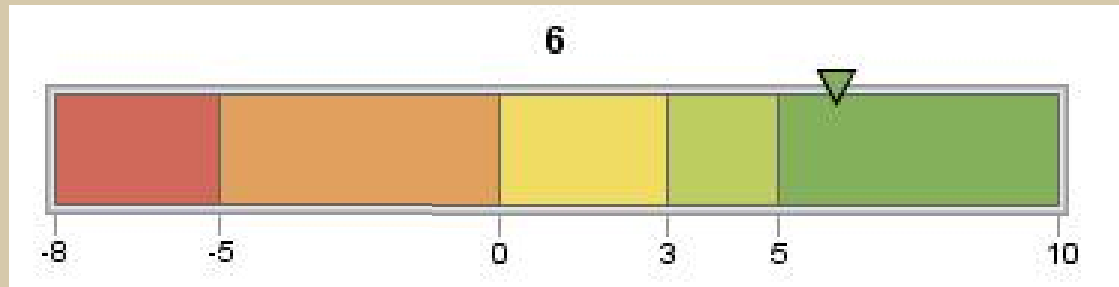
**Boundaries can be listed in either ascending or descending order**

**Actual values outside the bounds list will be displayed at the highest or lowest boundary.**

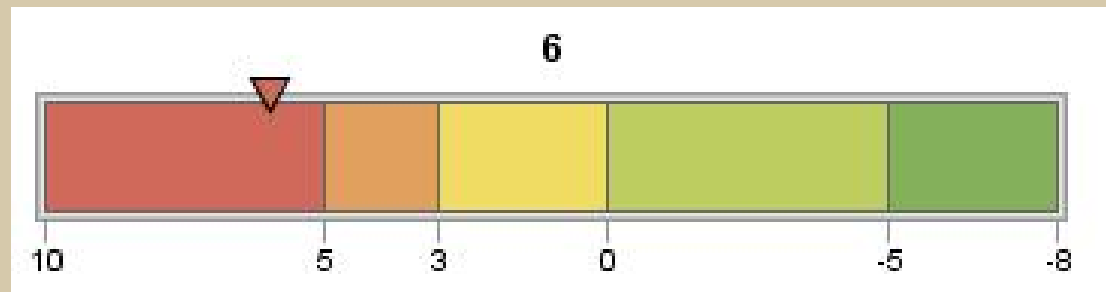
**Actual and bounds are required arguments!**

## Concepts: Segment Boundaries

hslider actual=6 bounds=(-8 -5 0 3 5 10)



hslider actual=6 bounds=(10 5 3 0 -5 -8)

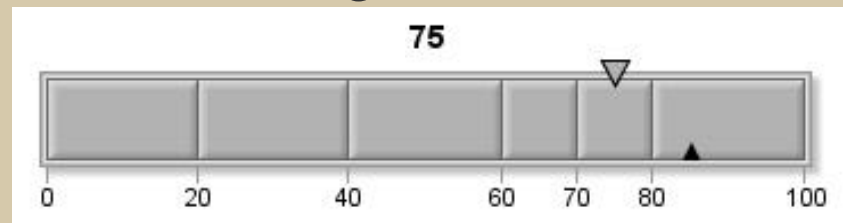




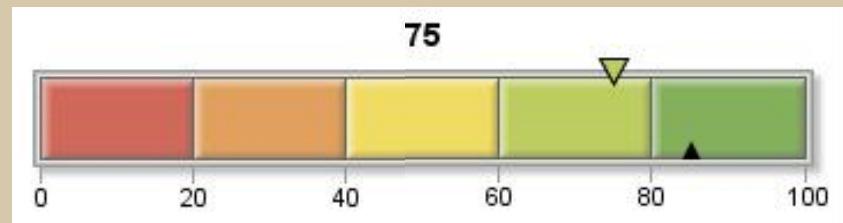
# Dashboards with PROC GKPI

## Concepts: Controlling Segment Colors

One or >5 segments defaults to gray



2-5 segments use default colours



**Default colors are:**

**Red**

**Orange**

**Yellow**

**Yellow-Green**

**Green**

**If only four segments are specified, yellow is dropped.**



# Dash Boarding with PROC GKPI

**Color lists are options of the selected KPI chart.**

**Colors** specifies the inactive color for the segments.

**Activecolors** overrides the color for the segment containing the actual value.

## Concepts: User Defined Colors

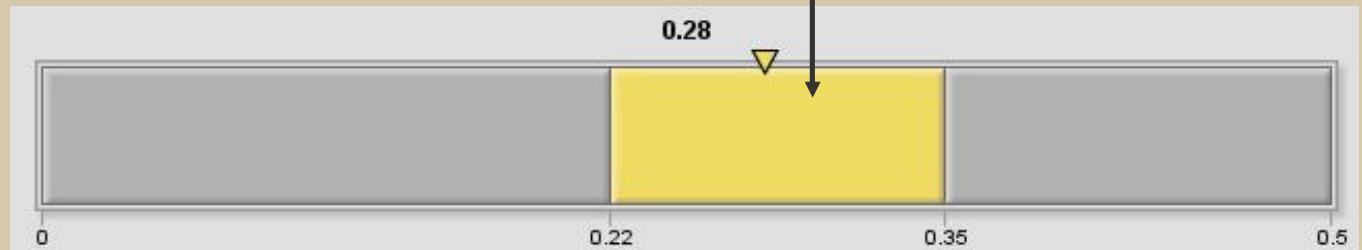
- You can define two different color lists
- Can use any color naming scheme supported by SAS/GRAPH
- **COLORS=(list)** List must be one less than the number of entries in the **BOUNDS=list**. One color for each segment.
- **ACTIVECOLORS=(list)**



# Dash Boarding with PROC GKPI

## Example: Specifying an Active Color List

```
Proc gkpi mode=raised;  
  hslider actual=0.28  
  bounds=(0 .22 .35 .50) /  
  colors=(cxb2b2b2 cxb2b2b2 cxb2b2b2)  
  activecolors=(cxd06959 cxf1dc63 cx84af5b);  
run; quit;
```



**Inactive colors are gray for all segments.**

**Actual value is in the second segment so the second activecolor is used.**



# Dashboards with PROC GKPI

**Control the fonts used to display the actual KPI value, boundary and tick mark values and labels.**

## Other Options

**AFONT=** Font for the actual KPI value

**AVALUE | NOAValue** Display actual value

**BFONT=** Font for the boundary values

**BVALUE | NOBVALUE** Display boundary values

**LABEL=** String displayed at top of graph

**LFONT=** Font for the label



# Dashboards with PROC GKPI

**LOWBOUND** determines how the actual value indicator is displayed when it coincides with a boundary.

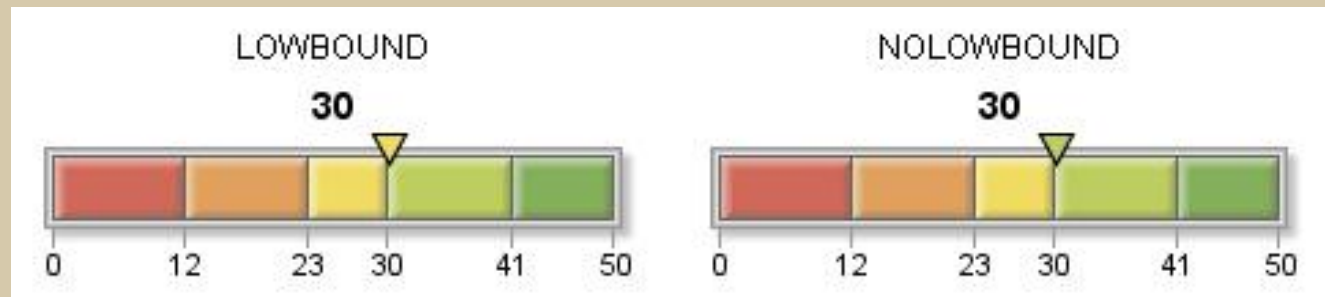
Default is **lowboundary**

Default name is **graph.png**

## Other Options

**FORMAT=** Format for boundary & actual values

**LOWBOUND | NOLOWBOUND**



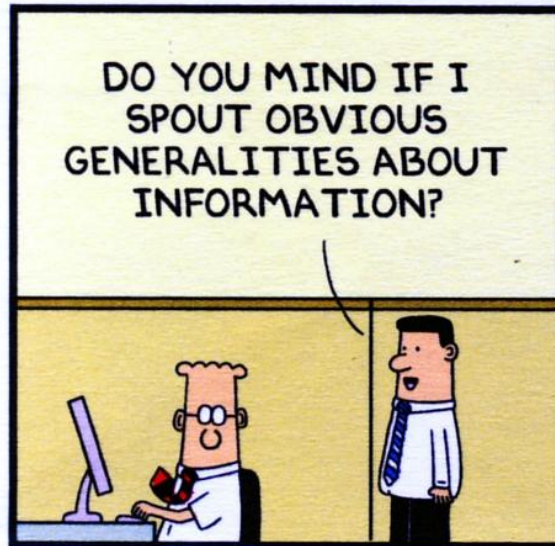
**NAME=** Name of graphic output file

**TARGET=** Numeric value of target KPI

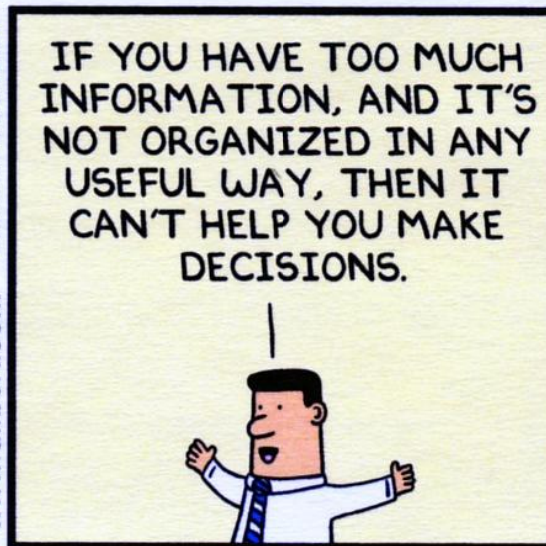


# Dashboards With PROC GKPI

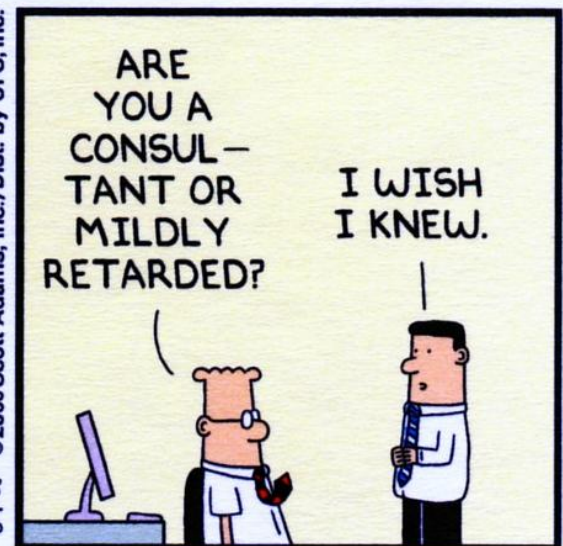
## Dashboards Organize Information



www.dilbert.com  
scottadams@aol.com



8-9-06 © 2006 Scott Adams, Inc./Dist. by UFS, Inc.







# Dashboards with PROC GKPI

**Only device supported is JAVAIMG**

**Specify a path to store the PNG files for retrieval.**

**Sastest.html is a temporary file containing the HTML output**

**PNG file will be written to the e:\temp folder.**

**MYKPI.PNG**

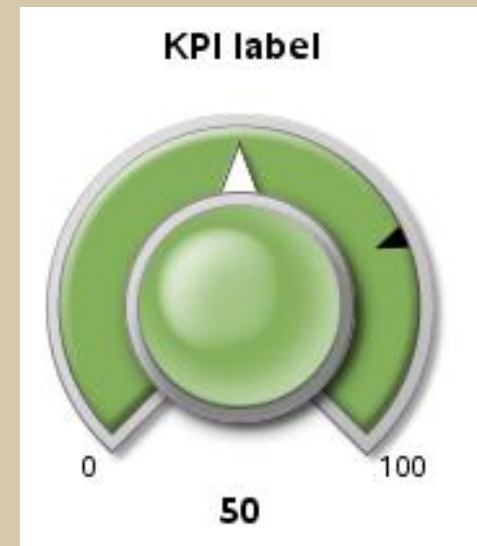
## Creating Graphics

Output is PNG using the JAVAIMG driver

```
goptions reset=all rotate=landscape device=javaimg xpixels=240 ypixels=200;  
title;  
ods html path="e:\temp" (url=none) file='sastest.html' style=listing;
```

```
proc gkpi mode=raised;  
dial actual=50 bounds=(0 100) /  
name="mykpi"  
target=75 nolowbound format="comma7."  
colors=(cx84af5b)  
afont=(f="Albany AMT" height=.5cm)  
bfont=(f="Albany AMT" height=.4cm)  
lfont=(f="Albany AMT/bold" height=.5cm)  
label="KPI label";  
run; quit;
```

```
ods html close;
```





# Dashboards with PROC GKPI

**PNG files can be converted back to GRSEG files to create a dashboard created with PROC GREPLAY**

## Convert PNG to GRSEG

```
goptions reset=all
      iback="e:\temp\mykpi.png"
      imagestyle=fit
      device=sasprtc
      nodisplay;
```

```
proc gslide gout=work.charts
      name="mykpi";
run; quit;
```

```
goptions reset=all display;
```



# Dashboards with PROC GKPI

## Issues When Creating PNG Files

**If path= is not specified the PNG and HTML files are dumped in**

**Program Files\  
SAS\SAS  
Foundation\9.2**

If a PNG file was created during a previous session, it will be replaced.

If a name has been used during the SAS session it will be changed with a number added. Example MYKPI > MYKPI1

There is no check to see if the actual PNG file actually exists. Deleting the PNG file on the output folder has no effect during a session.



# Dashboards with PROC GKPI

## Implementation

Recommend developing a macro that creates the KPI chart as a PNG and then creates a GRSEG file .

Standardize boundaries as a percentage of the target value.

Create a graphic template to organize a number of KPI charts on a single page.

**Advantage is that all the charts have the target and color bands in the same location.**



# Dashboards with PROC GKPI

**Requires a custom Add-In Task described in the reference.**

**After creation select File > New > Report**

**Drag the charts into the Report Layout window**

## Enterprise Guide 4.2

Reference: [support.sas.com/kb/36/180.html](http://support.sas.com/kb/36/180.html)

The screenshot shows the KPI configuration dialog box in SAS Enterprise Guide 4.2. It is divided into several sections:

- Variables to assign:** A list of variables including South Sales, South Target, East Sales, East Target, West Sales, and West Target.
- Task roles:** A list of task roles including Actual (Limit: 1), North Sales, Target (Limit: 1), and North Target.
- KPI:** Configuration for the KPI type (speedometer full), mode (raised), and size (2.50 in).
- Actual value:** Configuration for the actual value height, color, and font.
- Bounds:** Configuration for the chart's vertical axis bounds.
- Label:** Configuration for the label text (North Sales), height (20 PT), color, and font.
- Footnote:** Configuration for the footnote font, height, color, and text.
- Kpi values:** Configuration for the KPI values height, color, font, format, width, and decimal.

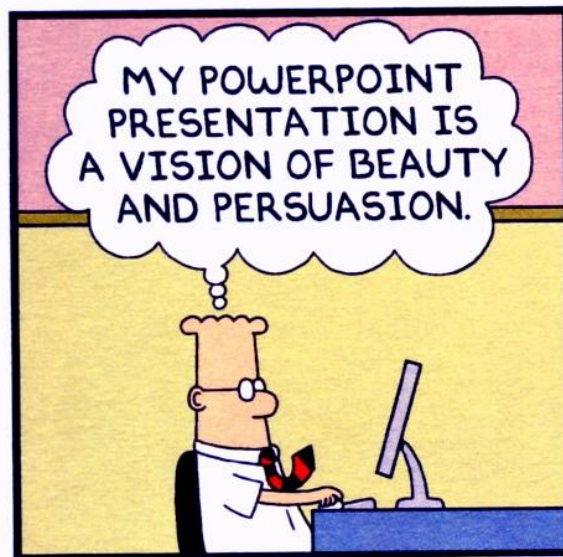
Buttons for Run and Cancel are located at the bottom right of the dialog.



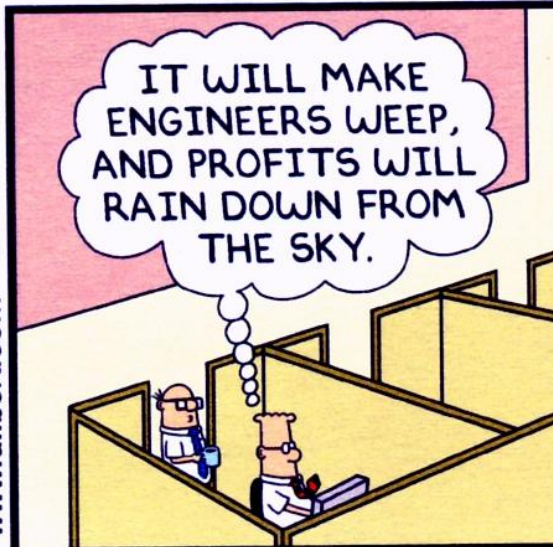
# Dashboards With PROC GKPI

## References and Contact Information

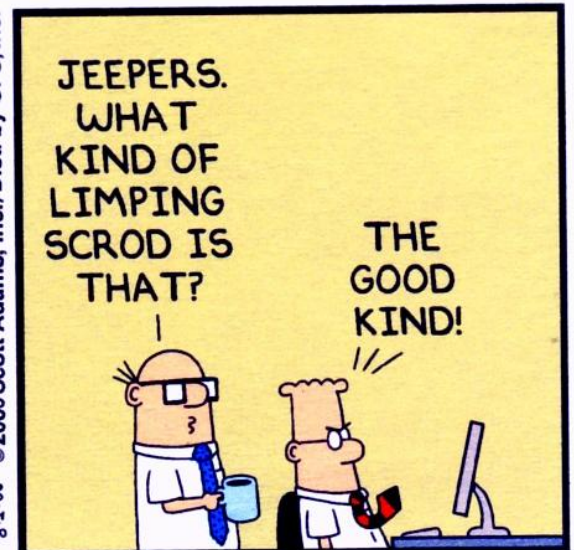
PROC GKPI online documentation at [support.sas.com](http://support.sas.com)



www.dilbert.com  
scottadams@aol.com



8-3-06 © 2006 Scott Adams, Inc./Dist. by UFS, Inc.



BYHong@uss.com