

## HOW TO MAKE AN AGGREGATE GRAPH WITH LINES THE EASY WAY.

There is only three requirements for this to work that I know of. The Aggregate Plugin, MAX values are a must and all the graphs you need must have data sources with the same names. To elaborate, each graph can have multiple data sources but collectively all the graphs must share the same named data sources. Easy if you use data source templates.

Firstly I need to reiterate why we use **MAX** values. I have seen instances of rrd graphs being shown anecdotally that suggest the throughput of an interface is acceptable while people scratch their heads at a loss to understand why there is traffic getting dropped. The reason is often that at certain periods the interface is overloading causing errors while at other times relatively quiet. Frankly you should be graphing **MAX** values anyway for any traffic related services. **AVERAGE** values show a decline over time as the peaks merge with the troughs. For traffic management purposes the maximum throughput is important. You should look to augment when something is starting to hit the maximum not when it is always there.

**Step 1.** Cacti comes with the ability to have a CDEF that totals all similar data sources but its not a standard CDEF by default. To create it

**Graph Management >CDEF's >Add** where you will be asked for a new name  
Name the new CDEF something useful like **"Total All Similar Data Sources"**

In the **CDEF Items> Add**

Chose the options as shown the create it.

CDEF Items [edit: Total All Similar Data Sources]

CDEF Item Type  
Choose what type of CDEF item this is. Special Data Source

CDEF Item Value  
Enter a value for this CDEF item. All Similar Data Sources (Don't Include Duplicates)

cancel create

Save it

**Step 2.** Edit the **Color Templates** from the **Templates** Menu provided by the Aggregate Plugin.

Add a new Template. Label it **"All White"** or something similar. Create as many items as you want and make them all white.

Color Template [edit: All White]

Name  
A useful name for this Template. All White

Color Item	Seq	Item Color	Add
Item # 1	1	FFFFFF	x
Item # 2	2	FFFFFF	x
Item # 3	3	FFFFFF	x
Item # 4	4	FFFFFF	x
Item # 5	5	FFFFFF	x
Item # 6	6	FFFFFF	x
Item # 7	7	FFFFFF	x
Item # 8	8	FFFFFF	x



Change each of the last of each type of Data Source's in the list.  
 The Color must be changed to something visible  
 The Consolidation Function has to be **MAX** for this to work  
 The CDEF Function must be made to **Total All Similar Data Sources**

**Graph Items** [edit graph: Aggregate How To]

**Data Source**  
 The data source to use for this graph item.

**Color**  
 The color to use for the legend.

**Graph Item Type**  
 How data for this item is represented visually on the graph.

**Consolidation Function**  
 How data for this item is represented statistically on the graph.

**CDEF Function**  
 A CDEF (math) function to apply to this item on the graph.

**Value**  
 The value of an HRULE or VRULE graph item.

**GPRINT Type**  
 If this graph item is a GPRINT, you can optionally choose another format here. You can define additional types under "GPRINT Presets".

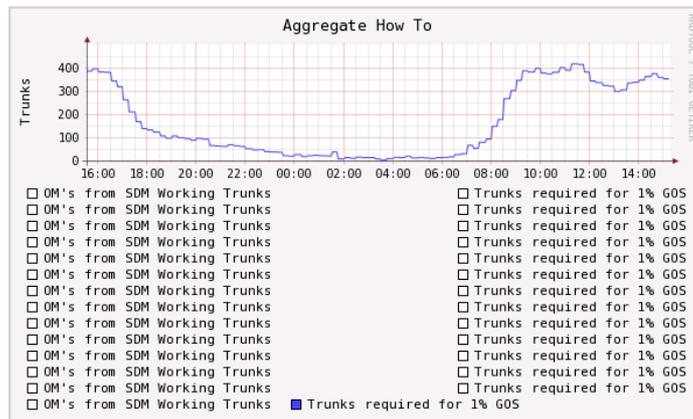
**Text Format**  
 Text that will be displayed on the legend for this graph item.

**Insert Hard Return**  
 Insert Hard Return

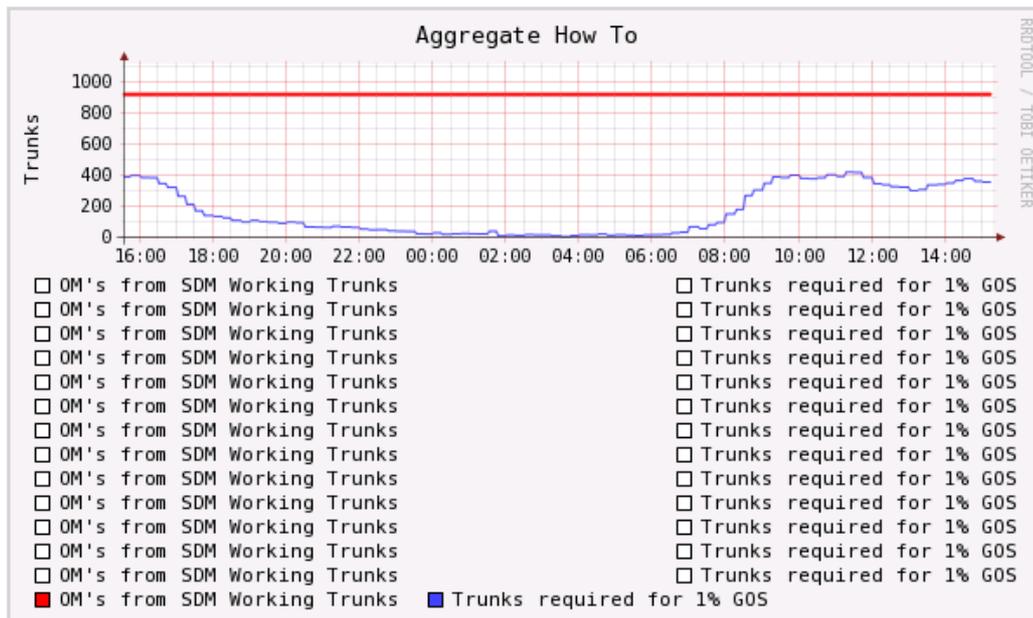
**Sequence** 28

You graph should have one visible line.

Item # 26	(gos): Trunks required for 1% GOS	LINE1	MAX	FFFFFF	↕	×
Item # 27	(wrkg): DM's from SDM Working Trunks	LINE2	MAX	FFFFFF	↕	×
Item # 28	(gos): Trunks required for 1% GOS	LINE1	MAX	4444FF	↕	×

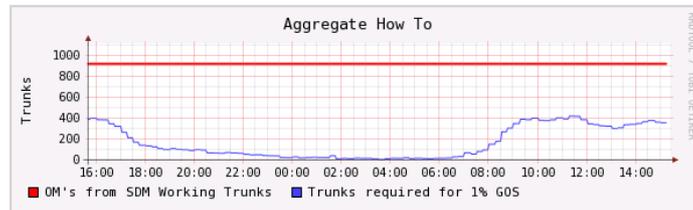


Do the same for all Data Sources that you wish to graph.



Now remove anything in the Text Format of all the other data sources and they will disappear.

Item # 23	(wrkg):	LINE2	MAX	FFFFFF	↕	↕	✖
Item # 24	(gos):	LINE1	MAX	FFFFFF	↕	↕	✖
Item # 25	(wrkg):	LINE2	MAX	FFFFFF	↕	↕	✖
Item # 26	(gos):	LINE1	MAX	FFFFFF	↕	↕	✖
Item # 27	(wrkg): OM's from SDM Working Trunks	LINE2	MAX	FF0000	↕	↕	✖
Item # 28	(gos): Trunks required for 1% GOS	LINE1	MAX	4444FF	↕	↕	✖



At this point I put in a GPRINT of each data source so we can see the actual values. Conveniently when you add another data source the last data source in the list is already there. That means the one you want will not be that particular one or not far away in the drop down list.

You need to make sure the CDEF is Total All Data Sources and the Consolidation Function as to be MAX.

**Graph Items** [edit graph: Aggregate How To]

**Data Source**  
The data source to use for this graph item. (gos)

**Color**  
The color to use for the legend. None

**Graph Item Type**  
How data for this item is represented visually on the graph. GPRINT

**Consolidation Function**  
How data for this item is represented statistically on the graph. MAX

**CDEF Function**  
A CDEF (math) function to apply to this item on the graph. Total All Similar Data Sources

**Value**  
The value of an HRULE or VRULE graph item. [ ]

**GPRINT Type**  
If this graph item is a GPRINT, you can optionally choose another format here. You can define additional types under "GPRINT Presets". Normal

**Text Format**  
Text that will be displayed on the legend for this graph item. Peak

**Insert Hard Return**  
Forces the legend to the next line after this item.

**Sequence**

Do the same for the other data sources you require

Item # 26	(gos):	LINE1	MAX	FFFFFF	↕	↕	✖
Item # 27	(wrkg): OM's from SDM Working Trunks	LINE2	MAX	FF0000	↕	↕	✖
Item # 28	(wrkg): Total<HR>	GPRINT	MAX		↕	↕	✖
Item # 29	(gos): Trunks required for 1% GOS	LINE1	MAX	4444FF	↕	↕	✖
Item # 30	(gos): Peak	GPRINT	MAX		↕	↕	✖

And there you have it.

