

SalesForce.com reports can be created with fairly complex criteria. Some standard criteria include the time period ('current fiscal quarter', 'current and next fiscal year'), and the user's relationship to the object ('my opportunities', 'my team's opportunities'). In creating or customizing the report, you also have the opportunity to specify up to 10 'advanced filters':

Each filter allows you to specify

- A field on which to filter
- An operator (equals, not equal to, starts with, ...)
- A value (or values, separated by commas)

Five filters are shown. You'd click 'Add Row' to show up to five more.

I could define a report for each combination of filters someone might need. For example, my auto dealership sells four makes, and I have managers for each. So I could create four nearly identical reports.

But what happens when I need to update the report? Suppose that I've decided to add the customer's phone number so I can follow up to ensure their satisfaction. I've now got four reports to update. This issue of proliferating reports could be far worse... I might need views for each model sold, reports by lead source, etc.

Instead of creating a bunch of nearly identical reports, I could instead maintain this single 'master' report that shows all opportunities, and apply dynamic filters just by changing the URL. The report I'm looking at right now has a URL of <https://na5.salesforce.com/00070000001tMH5> (sorry; you can't click the links to see the results. Salesforce security won't allow you to log in to my Salesforce account). Suppose that I want that report for my Ford manager. I can achieve that by changing the URL to apply an additional filter.

My new URL:

<https://na5.salesforce.com/00070000001tMH5?pc9=00N700000026joT&pn9=eq&pv9=Ford>. When I enter that, I only get back the 67 opportunities for Ford sales even though the report is designed to show all opportunities. The dynamic filter comes from the part of the URL beginning with '?'; but how did I compose that extension?

Let's consider it in pieces. First, I have to decide what filter number to add. The existing report has a single advanced filter ('Probability not equal to 0'). When you review the report definition (see the image above), you see the existing filter is labeled '1'. Salesforce actually treats it as number 0. (The

labels 1 through 10 correspond to filters 0 through 9.) So filter 0 is already taken, and I've chosen to add my dynamic filter as number 9. To minimize overlap with existing filters, I tend to add dynamic filters beginning with number 9 and working down. (An important side note: this approach is feasible, but more complicated, if 'Advanced Options' are used to apply AND/OR logic to the advanced filters.)

So I've chosen to add filter number 9. And we know the objective is to specify 'Make equals Ford'. In terms of defining an advanced filter, that means the Field will be 'Make', the Operator will be 'equals' and the Value will be 'Ford.'

The field, operator and value are introduced by pc, pn and pv, respectively. Each is followed by the filter number, an equal sign and the value. So to specify the filter value Ford, we add pv9=Ford.

Let's look at the filter's operator. We know it will start with pn9=. After that we use eq for equals, so we specify the operator with pn9=eq. Other operators are not equal (ne), starts with (sw), less than (lt), greater than (gt), less than or equal (le), greater than or equal (ge), contains (co), and does not contain (nc).

Most difficult is specifying the filter field, Make. We need to find the definition of this custom product field. Under Setup, I select Customize, then Products and Fields, click on the field name and note the URL. Mine is <https://na5.salesforce.com/00N700000026joT>, so I use 00N700000026joT as the field name in my dynamic filter: pc9=00N700000026joT (to filter on a standard field, look for ?id=xxxxxxx in the field's URL; xxxxxxx is the field name. For example, the Opportunity Owner field name is Owner.)

That's everything I need to construct my URL. The three pieces -- field, operator and value -- and any additional dynamic filters are separated by ampersands ('&'), and a question mark ('?') separates the report id from the first dynamic filter.

That's how I get from <https://na5.salesforce.com/00O70000001tMH5> to <https://na5.salesforce.com/00O70000001tMH5?pc9=00N700000026joT&pn9=eq&pv9=Ford>

Likewise I can create the report for my Acura manager by just changing the dynamic filter's value: <https://na5.salesforce.com/00O70000001tMH5?pc9=00N700000026joT&pn9=eq&pv9=Acura>

In this example, I applied a filter to a field that wasn't already filtered in the underlying Salesforce.com report. I could also change just one component of an existing filter. In my existing report, there's one existing filter, 'Probability not equal to 0'. To change that to 'Probability equal to 0', I just change the operator of filter number 0 to equals ('eq'): <https://na5.salesforce.com/00O70000001tMH5?pn0=eq>. What's returned is the single opportunity that was lost that quarter.

There are two primary benefits to this approach of dynamically filtering a common report rather than creating a multitude of similar reports, each differing only by the filters applied. First, if there's a change required in the report, I can now make the change in the common underlying report, rather than updating each different version. Second, I can use this approach to edit the URLs via software. In subsequent papers, we'll look at doing that via cookies in Javascript and by editing a connection string in an Excel macro.