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## Dynamic Reporting with Star Office

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## The Challenge

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We wanted to develop our own in-house reporting system that worked for a wide variety of studies.

Ideally, the process would be:

- Efficient
- Native to UNIX
- Segmented
  - separate Data & Reporting sides
- Exportable
  - a suite of templates modified for each study

We also wanted the reports to be automatically uploaded at regular intervals to Medusa, our web portal.

## The Process - Data Side

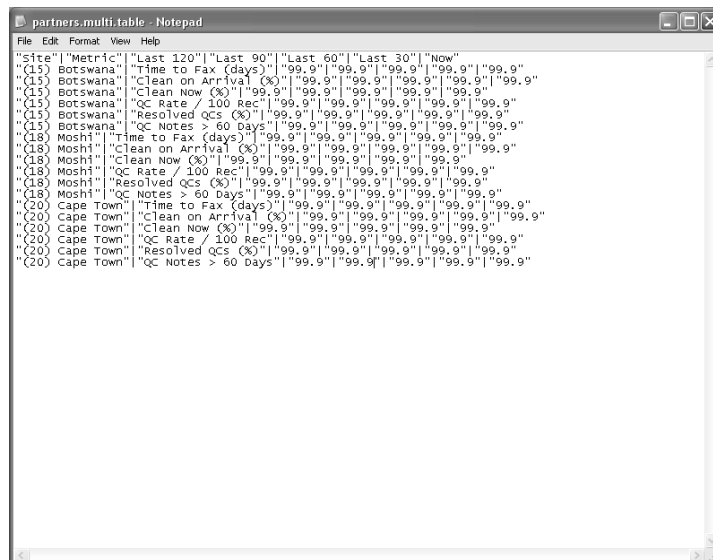
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- Our statistician writes a script in R to extract data from DataFax into pipe-delimited text files
- Data files are refreshed periodically via a cron job

R is an open-source version of S-Plus

## Note our high data accuracy rate!

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```
partners.multi.table - Notepad
File Edit Format View Help
"Site"|"Metric"|"Last 120"|"Last 90"|"Last 60"|"Last 30"|"Now"
"(15) Botswana"|"Time to Fax (days)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(15) Botswana"|"Clean on Arrival (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(15) Botswana"|"Clean Now (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(15) Botswana"|"QC Rate / 100 Rec"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(15) Botswana"|"Resolved QCs (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(15) Botswana"|"QC Notes > 60 Days"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(18) Moshi"|"Time to Fax (days)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(18) Moshi"|"Clean on Arrival (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(18) Moshi"|"Clean Now (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(18) Moshi"|"QC Rate / 100 Rec"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(18) Moshi"|"Resolved QCs (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(18) Moshi"|"QC Notes > 60 Days"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(20) Cape Town"|"Time to Fax (days)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(20) Cape Town"|"Clean on Arrival (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(20) Cape Town"|"Clean Now (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(20) Cape Town"|"QC Rate / 100 Rec"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(20) Cape Town"|"Resolved QCs (%)"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
"(20) Cape Town"|"QC Notes > 60 Days"|"99.9"|"99.9"|"99.9"|"99.9"|"99.9"
```

## The Process – Reporting side

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- Report Guy (myself) creates report in Star Office
- Two options are available here:
  - Report Wizard
    - A basic six-step wizard
  - Report Builder extension (new)
    - Snap to grid formatting



## Step 1 – Selecting Fields

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## Step 2 – Field Labels

The screenshot shows the 'Report Wizard' dialog box at Step 2, 'Labeling fields'. The 'Steps' list on the left includes: 1. Field selection, 2. Labeling fields (highlighted), 3. Grouping, 4. Sort options, 5. Choose layout, and 6. Create report. The main area is titled 'How do you want to label the fields?' and contains a table with two columns: 'Field' and 'Label'. The table lists the following fields and their corresponding labels:

Field	Label
Site	Site
PTID	PTID
Age	Age
Pg	Pg
Visit	Visit
Diagnosis	Diagnosis
SAE	SAE

At the bottom of the dialog are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

## Step 3 - Grouping

The screenshot shows the 'Report Wizard' dialog box at Step 3, 'Grouping'. The 'Steps' list on the left includes: 1. Field selection, 2. Labeling fields, 3. Grouping (highlighted), 4. Sort options, 5. Choose layout, and 6. Create report. The main area is titled 'Do you want to add grouping levels?' and is divided into two panes: 'Fields' and 'Groupings'. The 'Fields' pane lists the following fields: PTID, Age, Pg, Visit, Diagnosis, SAE, Grd, Relationship, Onset Date, Outcome, Outcome Date, Product Admin, and Treatment. The 'Groupings' pane contains the text 'Site'. There are arrows between the panes to move items back and forth. A note at the bottom states: 'Note: The dummy text will be replaced by data from the database when the report is created.' At the bottom of the dialog are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

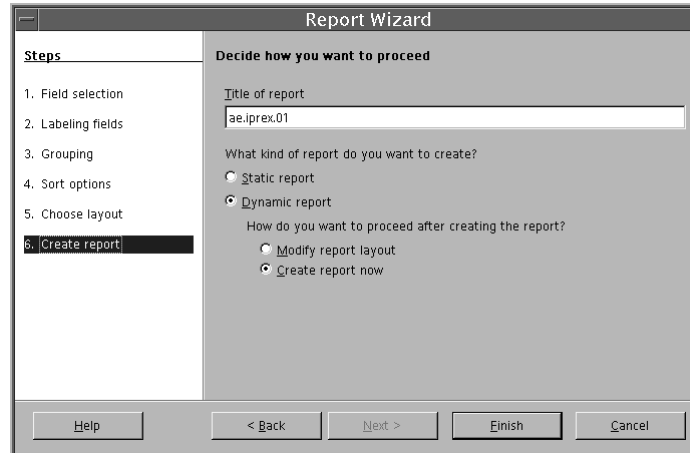
## Step 4 - Sorting

The screenshot shows the 'Report Wizard' dialog box at Step 4, 'Sort options'. The title bar reads 'Report Wizard'. On the left, a 'Steps' list shows: 1. Field selection, 2. Labeling fields, 3. Grouping, 4. Sort options (highlighted), 5. Choose layout, and 6. Create report. The main area is titled 'According to which fields do you want to sort the data?'. It contains four 'Sort by' sections. The first is 'Sort by' with a dropdown set to 'Site' and radio buttons for 'Ascending' (selected) and 'Descending'. The second is 'Then by' with a dropdown set to 'PTID' and radio buttons for 'Ascending' (selected) and 'Descending'. The third is 'Then by' with a dropdown set to '- undefined -' and radio buttons for 'Ascending' (selected) and 'Descending'. The fourth is 'Then by' with a dropdown set to '- undefined -' and radio buttons for 'Ascending' (selected) and 'Descending'. At the bottom are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

## Step 5 – Choosing Templates

The screenshot shows the 'Report Wizard' dialog box at Step 5, 'Choose layout'. The title bar reads 'Report Wizard'. On the left, a 'Steps' list shows: 1. Field selection, 2. Labeling fields, 3. Grouping, 4. Sort options, 5. Choose layout (highlighted), and 6. Create report. The main area is titled 'How do you want your report to look?'. It has two list boxes: 'Layout of data' with items 'cnt-05', 'cnt-10', 'cnt-14', 'cnt-15' (highlighted), and 'cnt-default'; and 'Layout of headers and footers' with items 'Default', 'stl-master.JPM', 'stl-master.LACTIN-V', 'stl-master.iprex' (highlighted), and 'stl-master.logo'. Below these is an 'Orientation' section with radio buttons for 'Landscape' (selected) and 'Portrait'. A small document icon is next to it. A note at the bottom right states: 'Note: The dummy text will be replaced by data from the database when the report is created.' At the bottom are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

## Step 6: Dynamic vs. Static



## Here's that data file in report format:

Partners in Prevention  
ISCT's Study

Data Quality Metrics: November 30, 2007

Summary reports of CRFs received from each site

(15) Botswana

Metric	Last 120 Days	Last 90 Days	Last 60 Days	Last 30 Days	Now
Time to Fax (days)	99.0	99.0	99.0	99.0	99.0
Cases on Approval (%)	99.0	99.0	99.0	99.0	99.0
Cases New (%)	99.0	99.0	99.0	99.0	99.0
QC Rate - 100 Fac	99.0	99.0	99.0	99.0	99.0
Resolved QC's (%)	99.0	99.0	99.0	99.0	99.0
Cases on Approval (%)	99.0	99.0	99.0	99.0	99.0
Time to Fax (days)	99.0	99.0	99.0	99.0	99.0

(18) Mochi

Metric	Last 120 Days	Last 90 Days	Last 60 Days	Last 30 Days	Now
QC Rates - 60 Days	99.0	99.0	99.0	99.0	99.0
Resolved QC's (%)	99.0	99.0	99.0	99.0	99.0
QC Rate - 100 Fac	99.0	99.0	99.0	99.0	99.0
Cases New (%)	99.0	99.0	99.0	99.0	99.0
Cases on Approval (%)	99.0	99.0	99.0	99.0	99.0
Time to Fax (days)	99.0	99.0	99.0	99.0	99.0

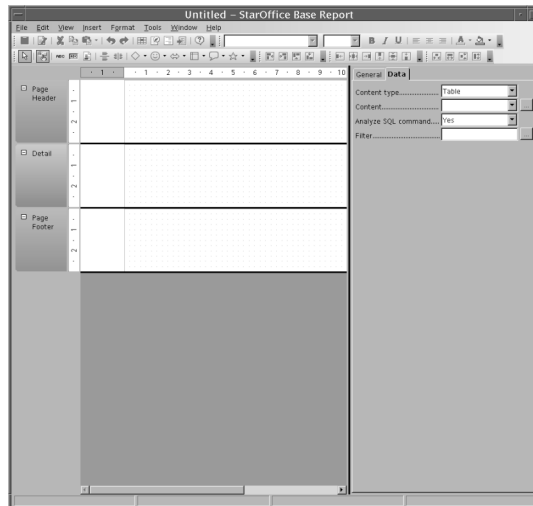
(20) Cape Town

Metric	Last 120 Days	Last 90 Days	Last 60 Days	Last 30 Days	Now
Time to Fax (days)	99.0	99.0	99.0	99.0	99.0
Cases on Approval (%)	99.0	99.0	99.0	99.0	99.0
Cases New (%)	99.0	99.0	99.0	99.0	99.0
QC Rate - 100 Fac	99.0	99.0	99.0	99.0	99.0
Resolved QC's (%)	99.0	99.0	99.0	99.0	99.0
Cases on Approval (%)	99.0	99.0	99.0	99.0	99.0
Time to Fax (days)	99.0	99.0	99.0	99.0	99.0

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## Report Builder: a new release

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## Basic Features

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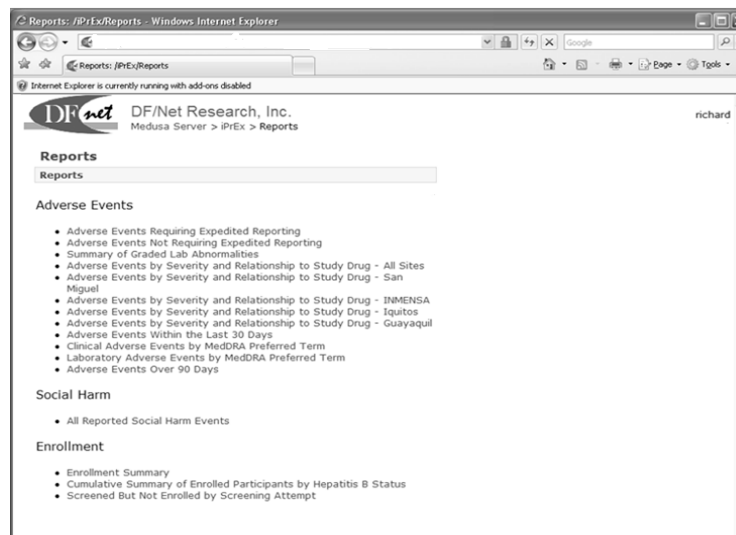
- **Sorting:**
  - up to 3 variables: A-Z, Z-A
- **Grouping:**
  - using a field to create smaller sub-tables
- **Multiple-page reports**
  - repeating columns and headers, page numbers
  - separate First Page and Default templates
- **Number formatting**
  - decimals, percentages, \$\$
- **Colors & Borders**

## The Process – Upload to Web

- A 2<sup>nd</sup> cron job runs periodically, to refresh each report with the latest data
- Each report is converted into a PDF file
- The PDF files are uploaded to Medusa, our web portal



## Each study has its own password-protected Reports page



## What we like about SO Reporting

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- It's open source
- It plays well with UNIX
- We can separate out the data and design sides of Reporting
- The learning curve is shorter than other programs
- I know how to use it



## What could be better....

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- Some formatting limitations:
  - One report per page  
(but a file can be grouped into sub-tables)
  - It's still (always?) in development
    - (e.g., to change the sort order, you must edit the command line for that report)
  - Most of the documentation is from online user groups



## What clients like about this process:

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- Reports are refreshed on a regular basis
- Easy printing and saving of files
- No need to contact us to access reports
- Control over who sees what:
  - different levels of password protection on our web portal

## For more info...

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- OpenOffice.org
  - <http://www.openoffice.org>
- Open Office Community Forum
  - <http://www.staroffice.org/forum.html>
- DF/Net Research, Inc.
  - <http://www.dfnetresearch.com>
- Richard Berman
  - [richard@dfnetresearch.com](mailto:richard@dfnetresearch.com)