



SAS EG and Census 2006

Ottawa Area SAS Users Society
June 11, 2008



Census of Canada

- A very Canadian tradition since Jean Talon in 1666
- An important “national ceremony”
- Only consistent source of small area data, population trends, immigration, industry-occupation, language issues, etc.



Numbers

- 32.5 million people
- 12.7 million households
- 50,000 geographical areas
- 42 million questionnaires
- 220 Field Operations Supervisors
- 1,600 Crew Leaders
- 25,000 Enumerators



Edit and Imputation

- Key objective:
 - *Create a Census database devoid of invalid, inconsistent and missing responses*
- Uses CANCEIS (Canadian Census Edit & Imputation System) expert system
- 300 processing modules
- Oct 2006 to November 2008



Redevelopment for 2006

- Out with the old:
 - S/370 Mainframe environment, 1971 to 2001 Census
 - Custom software: RAPID, STATPAK, CANEDIT, SPIDER
 - ✗ Architecture not kept current
 - ✗ Difficult to recruit staff
- In with the new:
 - Server-based environment
 - CANCEIS and COTS Software: Sybase IQ, SAS Enterprise Guide
 - ✓ Reduced development and support costs
 - ✓ Open standards-based



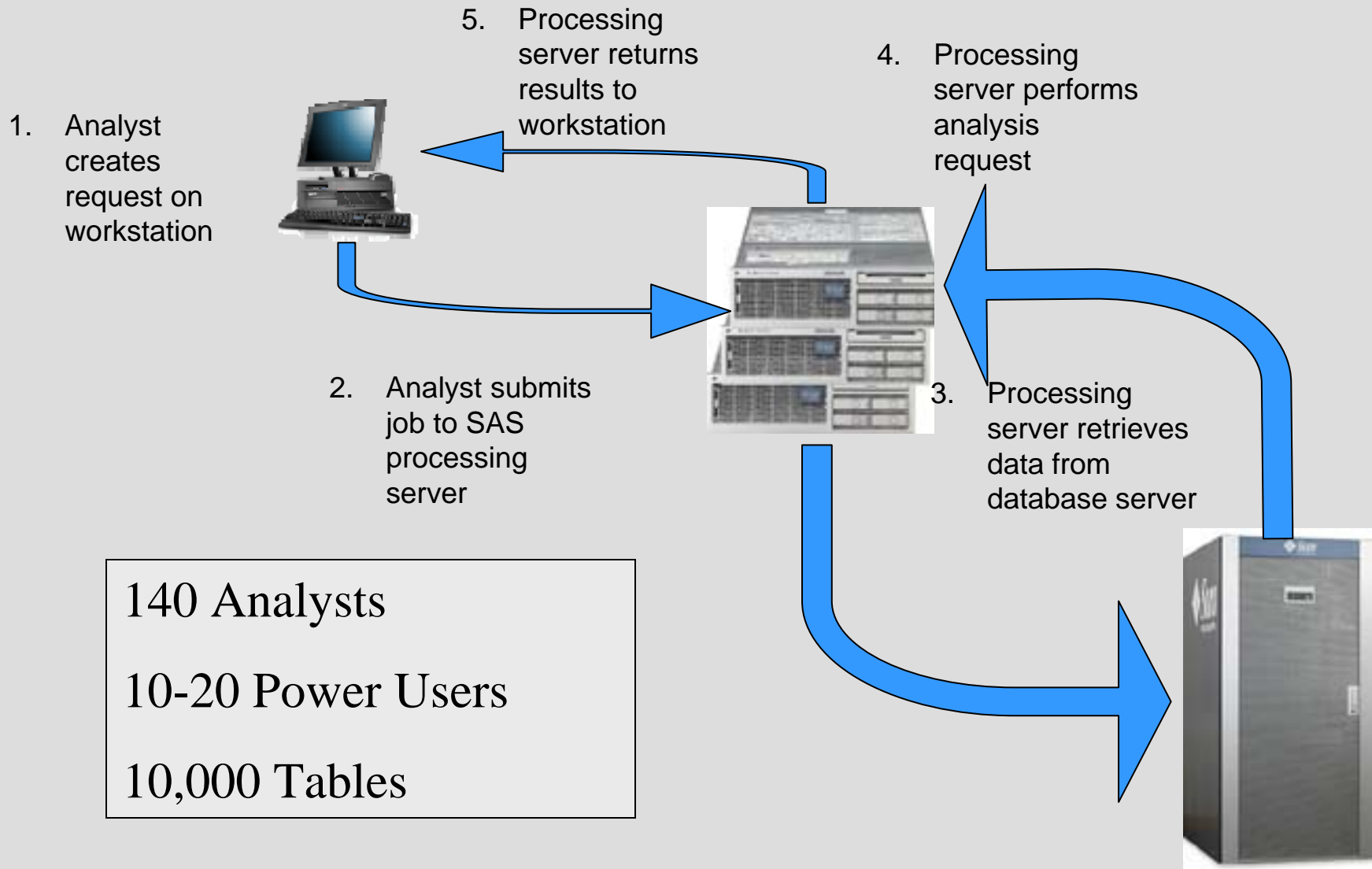
Role of Enterprise Guide

- Analytical tool
- N-way tabulations
- Derivation of variables representing complex data concepts
- Low level geography breakdowns

Used for Verification, Certification, Product development



SAS EG server Environment





The good, the bad, and the ugly

The good

- No SAS coding
- Seamless access to servers and data sources
- Extremely powerful Query Builder
- Custom Task capability

The bad (to be improved?)

- Better support for formats in Query Builder
- In-Database Processing for faster results

The ugly...


```
1      ;*';*";*/;quit;run;
2      OPTIONS PAGENO=MIN;
3      %LET _CLIENTTASKLABEL=%NRBQUOTE(Query for small_das);
4      %LET _EGTASKLABEL=%NRBQUOTE(Query for small_das);
5      %LET _CLIENTPROJECTNAME=%NRBQUOTE();
6
7      ODS _ALL_ CLOSE;
```

NOTE: Some of your options or statements may not be supported with the Activex or Java series of devices.
Graph defaults for these

drivers may be different from other SAS/GRAPH device drivers. For further information, please contact
Technical Support.

```
8      OPTIONS DEV=ACTIVEX;
9      ODS LISTING;
10
11     %gaccessible;
12     %_eg_conditional_dropds(SASUSER.Query_for_small_das);
13
14     PROC SQL INOBS=10;
15     CREATE TABLE SASUSER.Query_for_small_das AS SELECT small_das.PRCDDA
16     FROM TJK.small_das AS small_das;
```

ERROR: CLI cursor fetch error: [Sybase][ODBC Driver][Adaptive Server IQ]Not enough server threads
available for this query.

NOTE: Table SASUSER.QUERY_FOR_SMALL_DAS created, with 0 rows and 1 columns.

NOTE: PROC SQL set option NOEXEC and will continue to check the syntax of statements.

```
17     QUIT;
```

NOTE: The SAS System stopped processing this step because of errors.

NOTE: PROCEDURE SQL used (Total process time):

real time 0.06 seconds



We've only just begun...

2011 Census development well underway

Possible use of SAS tools:

- Expanded role for EG in Edit and Imputation
- DIS for data transfer, small processes
- Major redevelopment of Census Dissemination Systems



Thank You!

- Our extremely creative, motivated, and patient analytical staff
- Statistics Canada Informatics SAS Support
- SAS Ottawa Staff and Tech Support

- You, the audience!