Updates of MARS
at CPTEC

Eduardo B. M. Barbosa & Luciana S. M. Carvalho

Brazilian National Institute for Space Research (INPE)

Weather Forecasting and Climate Studies Center (CPTEC)

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Summary

- Introduction

- Hardware characteristics

- Software installation

- Highlights

- Future needs

INPE-CPTEC

- INPE

  Government agency in Brazil for space research

  - http://www.inpe.br

- CPTEC

  Weather Forecasting and Climate Studies Center

  - http://www.cptec.inpe.br
  - Works with several models (regional and global scales)

CPTEC

- CPTEC data content
    - Observations, models output, satellite, etc.
    - Amount of data formats → *in-house* solutions have been used to the convertions
        - ASCII, *BUFR*, *GRIB*, HDF, ODS, etc.

The use of MARS at CPTEC aims to improve the organization, archival and access of data with direct impact in the production and research

CPTEC (cont.)

- Experimental environment
  - Limited interface to our production environment

Features
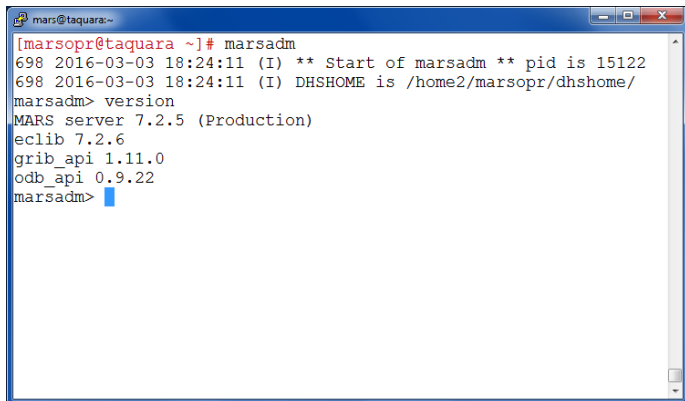
- Three models (about 2 TB)
  - Regional (SA) - BRAMS and Eta
  - Global - T213L42

- Observations from GTS (about 400 GB)

- Data is stored in a local disk
  - No access to the HSM

- Server/client are in the same host

Characteristics

- Processor
    - Model: AMD Opteron^{tm} Processor 6136
    - Clock: 2.4GHz

- Memory: 74GB

- Hard-disk: 3.5TB

- Operating System
    - Type: Linux
    - Flavor: openSUSE (12.1)

Installation
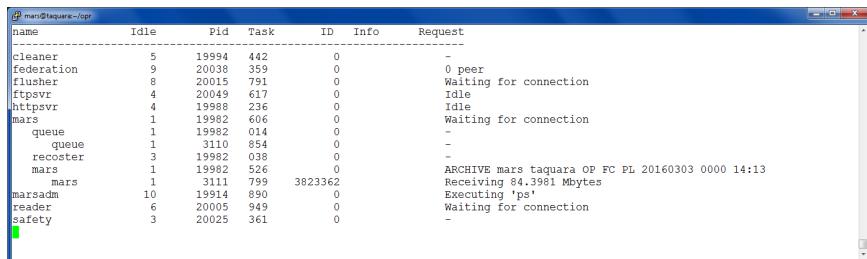
- MARS Server
  - From 7.0.1 to 7.2.5

Fig. 1: Server version

Data

- Models

  - Different scales (regional and global)
  - Regional (BRAMS and Eta) and Global (T213L42)

Fig. 2: Archiving a model output (T213L42)

Data (cont.)

- Observations and satellite

  - Conversions with BUFRDC API

Fig. 3: Preparing a data file (BUFR) to MARS

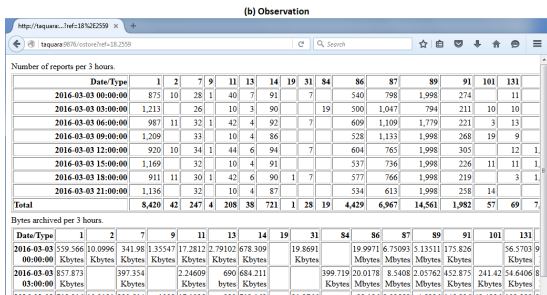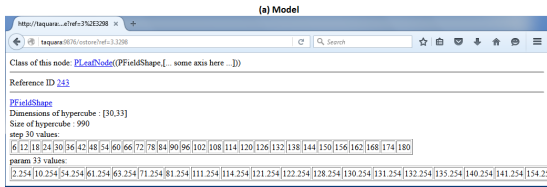# Data (cont.)

Fig. 4: Data layout. (a) Model; (b) Observation.

Highlights

- Installation
  - One week training at ECMWF (March, 2012)
  - Support of ECMWF specialists
  - Server and client are working well
  - On-line data access has not been explored (yet!)

- Archive/retrieve
  - BUFR and GRIB data got success!

- Works
  - Beginning the use of MARS at CPTEC

Future Work

- Install
  - Production (and research) environment
- Archive
  - HSM system
- Implement
  - Access data stored in HSM
  - Data requests using Web interfaces
  - Products derived