Paris Observatory (OPAR) Data Center

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Abstract

This report summarizes the OPAR Data Center activities in 2011. Included is information about functions, architecture, status, future plans, and staff members of OPAR Data Center.

1. OPAR Data Center Functions

The Paris Observatory (OPAR) has provided a Data Center for the International VLBI Service for Geodesy and Astrometry (IVS) since 1999. The OPAR, as well as CDDIS and BKG, is one of the three IVS Primary Data Centers. Their activities are done in close collaboration for collecting files (data and analysis files) and making them available to the community as soon as they are submitted.

The three data centers have a common protocol and each of them:

- has the same directory structure (with the same control file),

- has the same script,

- is able to receive all IVS files (auxilliary, database, products, documents),

- mirrors the other ones every three hours,
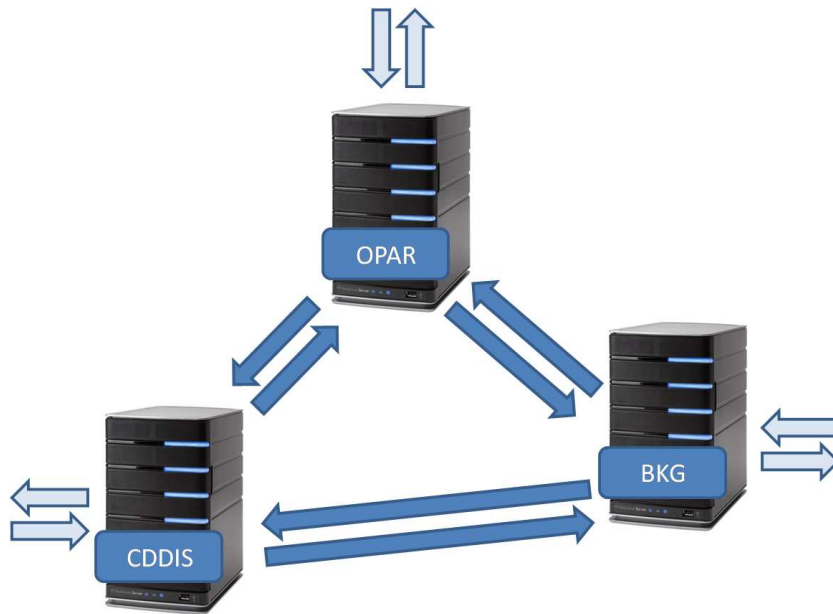
- gives free FTP access to the files.

Figure 1. Mirroring among the primary IVS Data Centers.

This protocol gives the IVS community transparent access to a data center through the same directory structure and permanent access to files in case of a data center breakdown.

2. Architecture

To be able to put a file into a data center, operational and analysis centers have to be registered by the IVS Coordinating Center. The file names have to conform to the naming convention. A script checks the file and puts it into the right directory. The script undergoes permanent improvement and takes into account the IVS components' requests.

The structure of IVS Data Centers is:

```
ivscontrol/         : provides the control files needed by the data center
                      (session code, station code, solution code...)
ivscontrol_new/     : temporary test directory
ivscontrol_old/     : temporary test directory
ivsdocuments/       : provides documents and descriptions about IVS products
ivsdata/            : provides files related to the observations:
    aux/            :    auxilliary files (schedule, log...)
    db/             :    observation files in data-base CALC format
    ngs/            :    observation files in NGS format
    sinex/          :    observation files in SINEX format
ivsproducts/        : provides results from Analysis Center:
  eopi/             :    Earth Orientation Parameters, Intensive sessions
  eops/             :    Earth Orientation Parameters, 24-hour sessions
  crf/              :    Celestial Reference Frame
  trf/              :    Terrestrial Reference Frame
  daily_sinex/      :    Time series solutions in SINEX format of Earth
                         orientation and site positions
  int_sinex/        :    Daily Intensive solution in SINEX format, mainly
                         designed for combination
  trop/             :    Tropospheric time series (starting July 2003)
 ivs-iers/          : provides products for IERS Annual Report
 ivs-pilot2000/     : provides products of 2000 for special investigations
 ivs-pilot2001/     : provides products of 2001 for special investigations
 ivs-pilottro/      : provides tropospheric time series for Pilot Project
                         (until June 2003)
 ivs-pilotbl/       : provides baseline files
 ivs-special/       : specific studies
 raw/               : original data (not writable at OPAR Data Center)
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3. Current Status

The OPAR Data Center is operated currently on a PC Server (PowerEdge 2800 - Xeron 3.0 GHz) located at Paris Observatory running the Fedora Linux operating system.

To make all IVS products available on-line, the disk storage capacity was significantly increased. The server is now equipped with a RAID 3-TB disk extensible up to 4.7 TB.

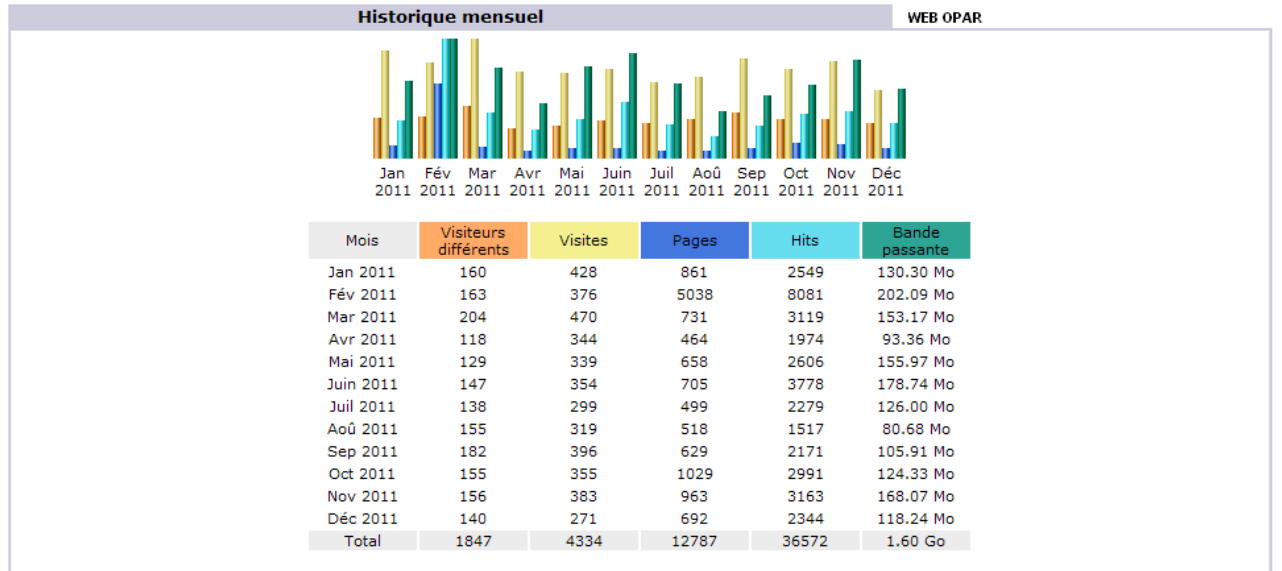| Mois	Visiteurs différents	Visites	Pages	Hits	Bande passante
Jan 2011	160	428	861	2549	130.30 Mo
Fév 2011	163	376	5038	8081	202.09 Mo
Mar 2011	204	470	731	3119	153.17 Mo
Avr 2011	118	344	464	1974	93.36 Mo
Mai 2011	129	339	658	2606	155.97 Mo
Juin 2011	147	354	705	3778	178.74 Mo
Juil 2011	138	299	499	2279	126.00 Mo
Aoû 2011	155	319	518	1517	80.68 Mo
Sep 2011	182	396	629	2171	105.91 Mo
Oct 2011	155	355	1029	2991	124.33 Mo
Nov 2011	156	383	963	3163	168.07 Mo
Déc 2011	140	271	692	2344	118.24 Mo
Total	1847	4334	12787	36572	1.60 Go

Figure 2. Monthly access of the OPAR Data Center during 2011. For each month listed in column 1, columns 2 through 6 show the number of different visitors, the total number of visits, the number of pages viewed, the number of hits, and the downloaded bandwidth in Megabytes (Mo) or Gigabytes (Go).

The OPAR server is accessible 24 hours per day, seven days per week through Internet connection with 2Mbit/s rate. Users can get the IVS products by using the FTP protocol. Access to this server is free for users.

FTP access:

> ivsopar.obspm.fr
> username: anonymous
> password: your e-mail
> cd vlbi (IVS directory)

In 2011, 25 different users regularly put and got data on the FTP OPAR ivsincoming. There were also 3273 distinct users of the Web OPAR server.

4. Future Plans

The OPAR staff will continue to work with the IVS community and closely collaborate with the two other Primary Data Centers in order to provide public access to all VLBI-related data.

To obtain information about the OPAR Data Center please contact: ivs.opa@obspm.fr