

SYSTEM

Cray X1E Configuration

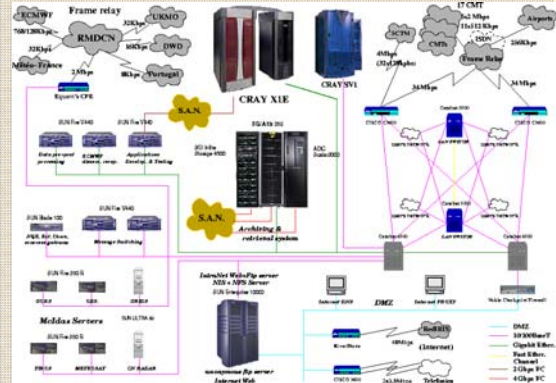
16 physical nodes X1E
8 MSP each
• 1,2 GHz, 19,2 Gflops -64 bits- by MSP
• 32 logical nodes
31 application nodes + 1 support node

128 MSP / 512 SSP
512 GB memory
2,304 Tflops theoretical peak performance for applications.
Cross-compiler based on a linux cluster

Archive Capacity
1 TB directly attached disk
20 TB SAN
24 TB cartridge Library



AEMET NETWORK



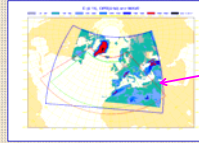
Operational runs on CrayX1

3 HIRLAM v7.2 experiments (from Oct 2009):
• ONR (0.16deg), HNR (0.05deg)
• Over Canary Islands 0.05 deg
Four runs at 00, 06, 12 & 18 UTC
40 levels in the vertical (more resolution in the PBL)
SL Dynamics
3DVAR assimilation with Statistical Jb
STRACO Convection Scheme

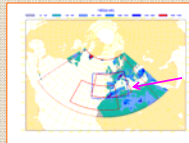
Parallel tests with KF convection scheme and new time steps

SK3 → ONR – time step = 600 secs.
HK3 & CK3 → HNR and CNN – time step = 180 secs.
Kain-Fristch convection scheme.
The total wall-clock time it's five minutes more than the operational one.
Expected operational at the end of April 2010

Integration area

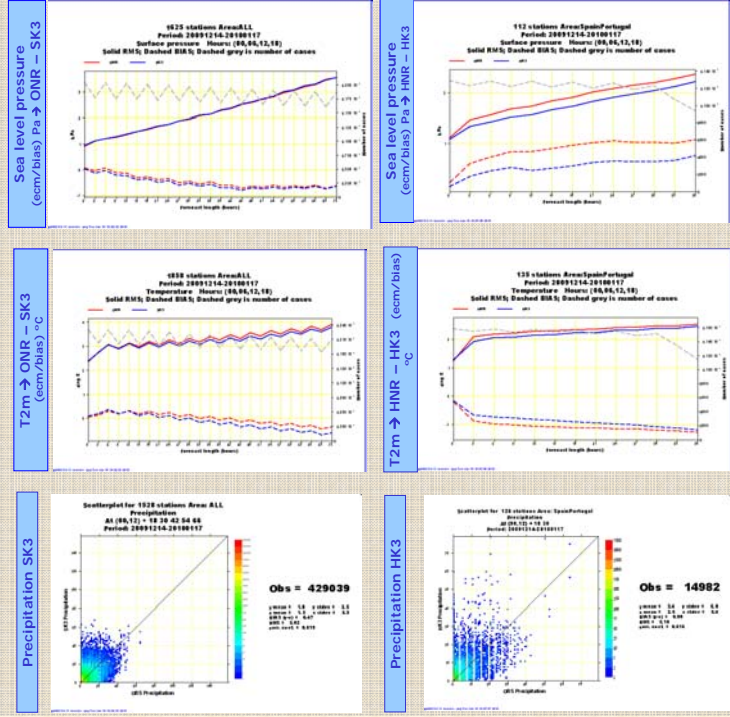


ONR (0.16 deg)
latlon (582x424)
72 hour forecasts
Dynamics time step = 240 sec



HNR (0.05 deg)
latlon (606x430)
36 hour forecasts
Dynamics time step = 120 sec

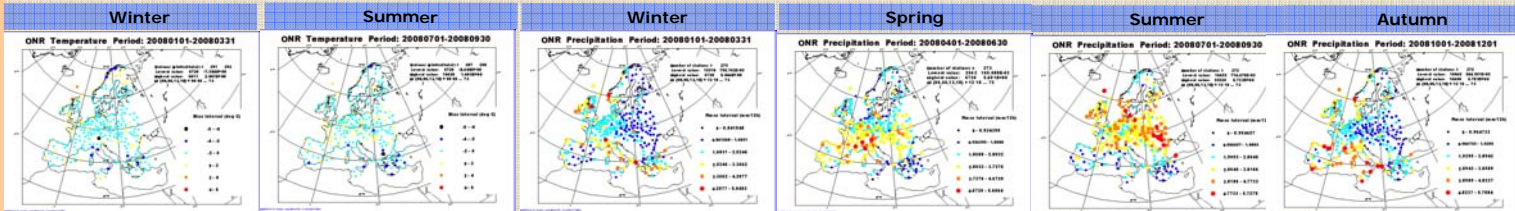
Parallel Tests - OBSERVATION VERIFICATION - December 2009 - January 2010



2008 - One year of ONR verification

2m temperature - Bias - EWGLAM

Precipitation - RMSE - EWGLAM

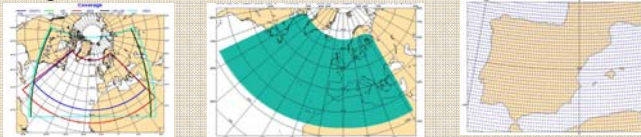


SREPS

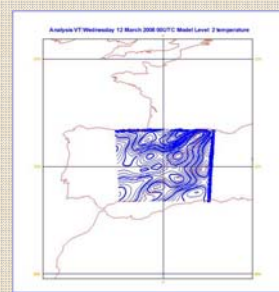
Multi-Model	Multi-boundaries	Num. EPS Members	Forecast length (daily runs)	Horizontal resolution
Hirlam HRM (DWD) MM5 UM (UKMO) Lokal Model	ECMWF GME GFS UKMO CMC	5 models X 5 boundaries = 20	72 (twice)	0,25°

Integration areas

Common grid for calibration



HARMONIE



HIRLAM ONR (0.16 deg)

HARMONIE cy35h1.2

latlon → 384x400x40
36 hours forecast twice a day
Horizontal resolution 11 km
Dynamics time step = 300 sec
Hydrostatic Dynamics
ALADIN Physics

HARMONIE cy35h1.2 (ongoing work)

latlon → 300x300x40
Horizontal resolution 2.5 km
12 hours forecasts
Dynamics time step = 60 sec
Non-hydrostatic Dynamics
AROME Physics

FUTURE

New Computer's ITT

Autumn 2010

- Hirlam v7.2 operational suite
- HIRLAM 7.3 version:
 - Parallel HIRLAM v7.3 suite
 - 0.05 deg resolution nested in ECMWF run

SREPS

- ALADIN model in SREPS
- New global model JMA (Japan Met Agency)

HARMONIE

- 2 run per day 00 & 12 UTC
- 24 hours forecasts
- Harmonie cy35h1.2
- AROME Physics

Acknowledgments

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