

# CMS plans for IPv6

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# Introduction

- What follows is a summary of the CMS plans and needs with respect to IPv6 deployment in WLCG
- The plan is not yet final but it is expected to be by the June GDB
- Hence, for the time being, all statements should be considered preliminary

# CMS goals for IPv6

- To allow the exploitation of IPv6-only opportunistic resources
  - Not yet the case, but it could be soon
- To allow sites to use IPv6 addresses in addition to IPv4 addresses already during Run2, for example if this gives performance improvements

# CMS IPv6 readiness

- Some CMS sites (~11) have IPv6 addresses without creating any issue to CMS computing operations
- Some but not all xrootd redirectors are dual-stacked
- cmsweb is dual-stack
- glideinWMS is (almost) fully validated for IPv6 and the pilot factories are dual-stack or in the process to be dual-stacked
- Frontier is not yet fully compatible with IPv6
  - Issues with squid
  - A new version can only be used by future CMSSW releases

# CMS message to WLCG sites

- Sites are free to upgrade WNs and services to dual-stack according to their internal plans, provided that they continue to pass SAM tests
- Sites are encouraged to upgrade to dual-stack if this improves their networking connectivity
- Sites should retain their IPv4 connectivity until the end of Run2, even in a degraded form
- **Priority should be given to dual-stack xrootd, as this allows data access from IPv6-only resources. This process should start immediately and be completed by the end of Run2**

# CMS message to CMS-run service maintainers

- Services should upgrade to dual-stack according to what makes sense for their operations team
- **Services that are contacted by WNs are strongly encouraged to dual-stack, starting from now. This must be completed by the end of Run2**
- **The most important service to dual-stack is HTCondor**
  - Currently HTCondor maintains 11 TCP connections per single-core glidein, which causes significant pressure on NATs. A performance improvement is therefore expected from dual-stacking

# CMS message to WLCG

- **CMS is close to be IPv6 ready**
- CMS encourages WLCG-run services to discuss with CMS when to enable IPv6 support
- WLCG should encourage its constituent grids (OSG, EGI, NorduGRID) to enable IPv6 on their services
- The most important services yet to dual-stack are (in order of importance):
  - FTS
  - CVMFS
  - VOMS
  - PhEDEx Oracle database