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Scaling Up a CMS Tier-3 Site with Campus Resources and a 100 Gb/s Network Connection: What Could Go Wrong?

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The University of Notre Dame (ND) CMS group operates a modest-sized Tier-3 site suitable for local, final-stage analysis of CMS data. However, through the ND Center for Research Computing (CRC), Notre Dame researchers have opportunistic access to roughly 25k CPU cores of computing and a 100 Gb/s WAN network link. To understand the limits of what might be possible in this scenario, we undertook to use these resources for a wide range of CMS computing tasks from user analysis through large-scale Monte Carlo production (including both detector simulation and data reconstruction.) We will discuss the challenges inherent in effectively utilizing CRC resources for these tasks and the solutions deployed to overcome those challenges. We will also discuss current performance and potential for future refinements as well as interactions with the broader CMS computing infrastructure.

Tertiary Keyword (Optional)

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