

Production Clustering at Pratt & Whitney: Desktop Supercomputing for Engineering Design

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Abstract

Production Clustering refers to large-scale, high reliability clustering used as a tool for use by engineers or other users who are not necessarily experts in computer science. The combination of Production Clustering with cycle stealing on desktops presents unique technical challenges in ease of use, automation of tasks, and fault tolerance. Pratt and Whitney's PROWESS system utilizes the idle capacity of thousands of Unix and Windows desktops for aerodynamic design analysis of aircraft propulsion systems. Pratt & Whitney's experiences on Sun Solaris, Linux, and Windows will be used to highlight some of the challenges, successes, and potential of production clustering.