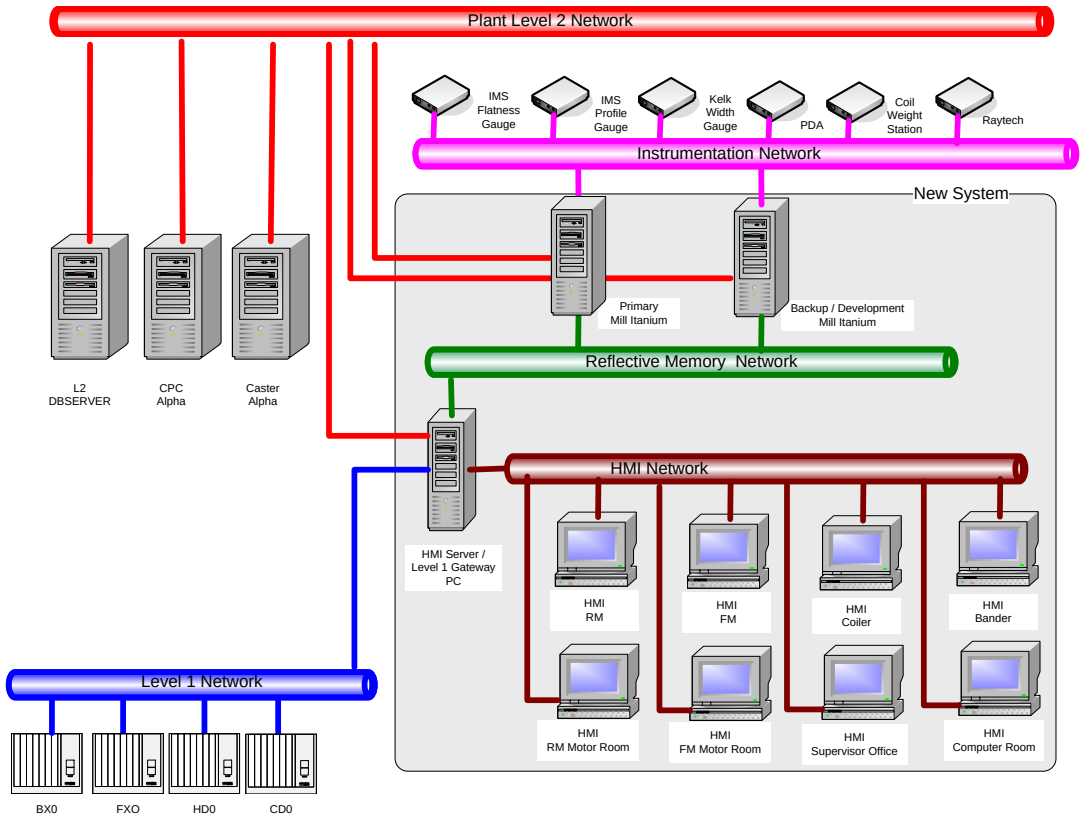
Project Description: Level 2 & Process Models Upgrade Nucor Strip Mill - Alabama

Project Background:

This project delivered a new Level 2 process computer system to an existing, operating mill in Alabama. The mill has a capacity of 2.5 megatons/year and has 5 finishing stands and 2 roughing stands and can roll to 66" wide. In this project the process computer and setup models were upgraded as was the HMI and historical database.



Project Deliverables:

IPSS was selected to provide the rolling mill models server with functions of roughing mill setup, finishing mill setup and strip cooling control. The IPSS models server is based on the HP Itanium platform with OpenVMS and both a primary and backup system were included. The upgrade required connecting to existing Siemens L1 control systems. We employed the IPSS 3D Process for development and testing, and field commissioning services were included to tune the models optimally to this mill.

Benefits:

The customer required performance guarantees on the final product and these were achieved. The conversion began with infrastructure and computer replacement and the commissioning of the strip cooling control. This provided an immediate benefit in the strip cooling area while the RM and FM areas were being implemented. The final phase was to address the mill setups and integrate the mills finishing temperature control with the new strip cooling model. Both phases were tested in parallel with the existing system and only a single switchover per phase was needed in order to run on the new platform.

Key Learning and Technology Developments:

The model server used a primary and backup server arrangement to maximize mill uptime and support software development activities. The HP 2620 product was used with a storage shelf and hot swappable disks to facilitate disk management activities. OpenVMS being a true multi-user multi-tasking operating system provides a very robust development environment to facilitate providing remote support for troubleshooting and performance improvement.

IPSS provided its most modern models completely integrated so that RM, FM (including strip profile and flatness), and coiling temperature functions were optimized. This included the optimization of finishing mill temperature control with strip cooling. Looper and roll bending setups were calculated and transferred to the L1 system for control.