

# Case Study

## Gallatin Steel Mill Keeps Production Rolling With Paragon and MasterConsole CAT Switches

Millions of tons of scrap metal pass through Gallatin Steel's production facility each year before exiting the plant as precision-manufactured coils of hot-rolled steel. Junked cars and household appliances, once destined for the scrap heap, are transformed into thin slabs of custom-tailored steel for use in products ranging from car parts to steel beams.

Turning your mother's old appliance into grist for the metal mill, however, is a highly complicated process that involves more than mere melting and molding. It requires a technologically advanced milling facility, which relies on a high level of server availability for continuous production.

"A large percentage of our servers are mission critical. If they aren't running, we stop producing," said Brian Shafer, Process Manager, Hot Rolling Process Control at the Kentucky facility. That explains why Gallatin Steel chose Raritan's Paragon® and MasterConsole® CAT KVM switches to help keep its production floor literally rolling along.

Gallatin Steel's production facility, which operates 24/7 and produces approximately 1.6 million tons of hot band coils annually, features a twin-shell DC electric arc furnace, a ladle metallurgy facility, a thin-slab continuous caster and a six-stand hot finishing mill.

### Metallurgy: Hot Steel Rolling Along

All servers supporting the hot-rolling mill production are managed by Raritan's KVM solutions — from the point when scrap metals are melted to when the molten mixture is poured and cast into slabs of steel. The finished steel strips — which can measure anywhere from 40 to 150 feet in length, 43 to 67 inches in width, and up to 65 millimeters thick — are coiled and cooled for about two days before shipment via truck, rail and barge to manufacturers worldwide.



<b>Customer</b>	Producing up to 1.6 million tons of hot band coils annually, Gallatin Steel's compact strip production facility recycles scrap steel for use in a variety of products, ranging from lawnmowers and shovels to steel beams.
<b>Challenges</b>	The company's hot-rolled steel production facility wanted to reduce clutter in its process automation control room, and streamline control and access of its mission-critical computer systems.
<b>Solution</b>	<b>Gallatin Steel chose Raritan's Paragon® and MasterConsole® CAT KVM switches.</b> The decision was based on the following criteria: <ul style="list-style-type: none"><li>▶ Simplified access and control of multiple servers via a single workstation</li><li>▶ Support multiple users</li><li>▶ Consolidated view of all connected devices</li><li>▶ Secure access</li></ul>
<b>Results</b>	Raritan's solutions helped Gallatin Steel improve its steel production flow by providing multiple users secure access to production servers, while drastically reducing clutter in the control room.

The process relies on a state-of-the-art data warehouse, as well as servers on the manufacturing floor that support a number of interdependent automated processes. Operators sit in front of a Raritan user station and use secure KVM technology to access the appropriate workstation supporting each production task.

Inside the melt shop (where temperatures can reach 130° fahrenheit), a server identifies each production batch with a unique number, and an overhead crane moves a clamshell bucket into place and releases scrap into the furnace, where it is melted using giant electrodes that form electric arcs. An automated mechanical arm takes temperatures and samples — and results are sent via a network back to the furnace operator.

After the desired mix has been achieved, the steel is poured into a mold and the resulting slabs are moved through the tunnel furnace and into the rolling mill, where six rolling stands reduce the slabs to the final thickness at a mill exit speed of about 25 mph. They are then coiled, weighed and banded for shipment to various manufacturers.

"All of our processes are computerized and they are all networked together," said Shafer. "We have connected dissimilar automation processes and equipment together to create one goal." Though the process automation servers are located within the production facility, they are far enough away from the production floor to ensure safety of both people and equipment.

With Paragon — Raritan's stackable enterprise-class Cat5 analog KVM solution — Gallatin Steel can provide multiple users with secure access and control of production-floor servers without interrupting the process. "We purchased a Paragon with a couple of user stations and I've been hooked on it, and Raritan, ever since," said Shafer. "I can connect to all our servers and have non-blocked access from any of our user stations."

Paragon — considered to have the best video quality of any KVM platform, according to independent test labs — provides fast, easy access to all connected servers up to 1,000 feet from the user, as well as security features — such as logging and audit trails.

In addition to facilitating Gallatin Steel's multiple production processes, the multi-user access proves particularly helpful when other departments within the production line need access to the servers, or when outside contractors need to come in and perform maintenance. "When other departments or our contractors do come down here, it's nice for them to be able to get on the console, without having to disrupt me or somebody else that may be working on the local console," Shafer added.

#### 'CAT and Mice'

To help streamline the process automation system and reduce clutter in the production-floor computer room, Gallatin Steel also has installed Raritan's MasterConsole CAT KVM switch. Depending on the model, two independent users can control up to eight or 16 servers and switches can be cascaded to support up to 256 connections at distances of up to 150 feet.

MasterConsole CAT, as does the Paragon, delivers BIOS-level control — even if the target server's operating system is not responding — and enhanced security through a direct KVM network. It also allows systems operators to select servers from front panel channel buttons or by name from pop-up, on-screen menus.

"We had eight computers sitting in front of an operator — with eight keyboards and mice," Shafer said. "With the MasterConsole CAT, I was able to replace all those mice and keyboards with one keyboard and one mouse. We got rid of all that extra clutter and created a more streamlined operation."

By eliminating the need for separate keyboards, monitors and mice, Raritan's KVM solutions not only free up valuable physical space, they also free up valuable time. "We don't lose valuable time looking for the right mouse and keyboard set. No more 'Which mouse is this again?' All of our computers can be located and accessed easily, using the MasterConsole CAT console," Shafer added.

#### From Car to Coil in 90 Minutes

With the proper mix of science, technology and automation, the total amount of time it takes to turn scrap metal into coiled rolls of custom-tailored steel — from one end of the mill to the other — is a mere 90 minutes.

Think about that the next time you eye that new lawnmower or shiny snow shovel in the hardware store. After all, it could have started out as your father's Oldsmobile.



*Gallatin Steel's business focuses on three principles: safety, environment and quality. As a result, it is considered one of the industry's top steel production facilities.*

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