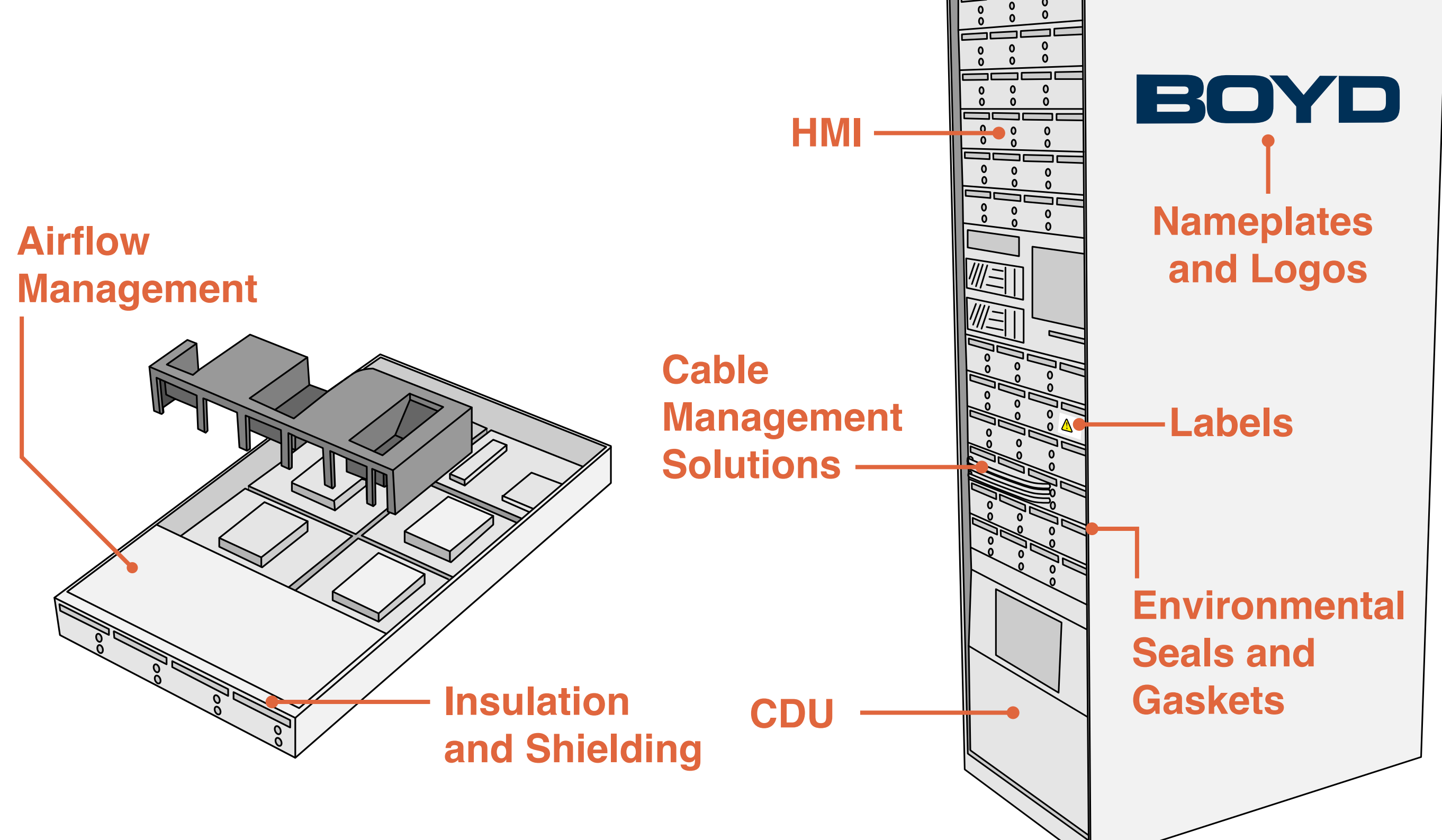# Selecting materials for
servers, accelerators and data storage

Boyd has a proven track record of success developing innovative solutions for servers, accelerators, and other data storage applications. We use our design, engineering, and material science expertise to guide materials selection and create solutions that improve the performance, quality, safety, and durability of server components.

Servers

BOYD

- HMI
- Nameplates and Logos
- Airflow Management
- Cable Management Solutions
- Labels
- Environmental Seals and Gaskets
- Insulation and Shielding
- CDU

Airflow management

Proper airflow management is critical to ensure sensitive components don't overheat and compromise system performance. We optimize cooled air use and hot air exhaust using a variety of solutions. FR V-0 air blockers made of SOLIMIDE® polyimide foam block air and insulate noise, while air baffle assemblies commonly feature FR V-0 electrically insulating materials. We also develop air filters using woven mesh or reticulated foam, custom molded rubber products that feature fluoroelastomers or fluoro rubber materials, and many other airflow management solutions.

Solutions we offer:
- Custom thermoformed baffles
- Air ducts, air filters, fan shrouds, custom molded rubber products

HMI

Human-machine interface (HMI) solutions often involve graphic printing on durable materials to create a functional, user-friendly interface that will last through consistent usage. Boyd develops a variety of user interface solutions for HMI panel integration, including graphic overlays, membrane switches, backlit HMIs, and more. Common materials we use to develop these solutions include FR V-0 rated substrates, UL 969 compliant materials, adhesives, light control films, brightness enhancing films, reflective films, and light diffusing films. We also use LEDs and carbon, silver, or light transmissive inks to make capacitive switches and backlit displays.

Solutions we offer:
- Graphic overlays
- Membrane switches
- Backlit HMIs

Cable management solutions

Database servers inevitably require a lot of cables and cords to function properly. Organize and identify cables, cords, hoses, and more with labeled wraps for easier maintenance and upkeep of complex systems. Boyd also develops solutions featuring hook and loop straps to fasten cables.

Solutions we offer:
- Branded cable wraps
- System information cable wraps
- Hook and loop cable wraps

Nameplates and logos

Clear component branding helps data center employees quickly identify equipment, speeding maintenance time and helping control costs. Manufacturers need to ensure nameplates, badges, and other branding elements not only look good, but the material needs to be durable enough to withstand any thermal output from the equipment itself. Boyd offers nameplates and branding solutions made from a range of plastics and metals including aluminum, stainless steel, acrylic, polyester, and polycarbonate in a variety of finishes.

Solutions we offer:
- Custom nameplates and badging
- Custom branding solutions

Labels

System information labels, serialized, barcoded and QR labels, cable wrap labels, part markings, warranty labels, and more convey important information in the data center environment. Boyd can integrate pantone color matching on thin films for durable long-term label graphics that use high-performance adhesives, electrical insulation materials, and UL 94 flame rated solutions. We offer an extensive array of printing and finishing capabilities, including custom inks and specialized textures. Labels can be delivered in roll or sheet format to improve manufacturing and application efficiency.

Solutions we offer:
- System information labels, serialized and barcoded labels, cable wrap labels, part markings, warranty management labels

Insulation and shielding

Proper electrical insulation and EMI shielding is critical to protect servers and other sensitive equipment. Boyd works with a wide range of EMI shielding materials, including foil tapes, fabric over foam, and conductive tapes, foams, and elastomers. In particular, UL94 V-0 rated electrically insulating thin film plastics help prevent spark voltage and block fire as well as protect signal integrity by preventing signal cross talk. Thermal interface materials and insulator products like SOLIMIDE®, polyimide plastic films, conductive epoxies, mica and ceramics help maintain ideal thermal operating range. For complete system-level thermal management, we also offer custom liquid cold plates, coolant distribution units, and in-rack liquid cooling systems.

Solutions we offer:
- EMI/RFI shielding foams
- Electrical insulators and isolators
- Thermal insulators
- Thermal interface materials
- SOLIMIDE® insulating foam

Environmental seals and gaskets

Protect sensitive data center equipment from dust and moisture damage to ensure reliable high performance with environmental seals and vibration damping gaskets. Boyd can create environmental seals and other protection solutions using silicone foams, closed cell silicone sponge, polyurethane foam, EVA, vinyl, neoprene, and thermoplastics. We work with flexible adhesives such as 3M VHB tape, double-coated tapes, transfer tapes and other materials to develop durable bonding, sealing, and gasketing solutions.

Solutions we offer:
- Extruded rubber seals and gaskets
- Custom molded O-rings
- Tapes and adhesives
- Ingress protection
- Injection molded bezel and housing
- NVH dampers

3M Preferred Converter Preferred

BOYD

Boyd engineers have the expertise to guide materials selection and enhance servers, accelerators, and other enterprise computing products.

Contact us to start your next project today.

www.boydcorp.com