

intelligent Bridging Architecture™

ATTO designs and manufactures devices that allow different protocols to interact. Examples of protocol interaction include FC to SCSI, FC to ATA, FC to iSCSI, FC to InfiniBand. This interaction is primarily the movement of data and metadata (information about the data). This movement of data/metadata is affected by hardware and software components that are designed into the bridge. The design and relationship of these components is the heart of *intelligent Bridging Architecture™*.

intelligent Bridging Architecture is a key differentiating factor designed into ATTO bridge products because:

- 1) Its flexibility allows us to match price and performance requirements to each level of the market. This means our customers can incorporate the value add features of our product into their product while maintaining their market-level price strategy.
- 2) It provides a common software platform throughout the family. This means our customers can begin using ATTO bridges where the fit is most critical and extend throughout their range of products with minimal interruption or qualification obstacles.
- 3) It is the platform for adding value into the bridge. This means our customers have a path for adding value into their products. The initial value add is the physical connectivity of the bridge; in other words, the hardware interfaces and software translations that allow two different protocols to communicate. The next value add comes from additional functionality by offering industry-required applications like extended copy or device virtualization. The third level of value add comes from additional functionality by offering customer-specific applications such as diagnostic functions specific to their product.

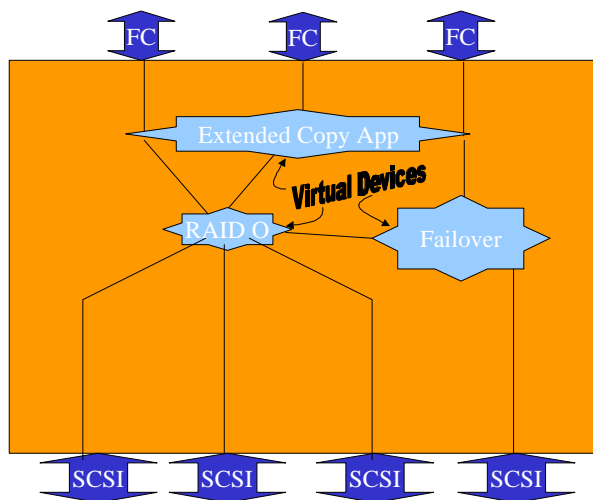
There are two primary components in *intelligent Bridging Architecture*: Virtual Device Manager and Direct Routing Fabric.

Virtual Device Manager

ATTO Virtual Device Manager is a unique O/S solution designed by ATTO engineers utilizing industry-standard software languages. Virtual Device Manager performs three critical activities:

- 1) It acts as the “translator” from one protocol to another (anything-to-anything)
- 2) It is the source for industry-critical and customer-specific applications
- 3) It is the interface for managing the bridge interaction with the SAN

Virtual Device Manager works by allowing ATTO engineers to create virtual devices specific to accomplishing the individual tasks and applications within the bridge. These devices are called *virtual* because they only exist in the firmware. The variety of devices is limited by imagination and programming capabilities. The collection of devices in a bridge make up the Virtual Device Manager.



The ability to provide “anything-to-anything” connectivity is a key aspect of the Virtual Device Manager. By designing connectivity interfaces as a virtual device, ATTO can tailor a solution by changing only the interface virtual device, leaving all other aspects of the bridge intelligence common. This also allows newly developed connectivity interfaces to be ported between product family members. In addition, a stable code base means minimal qualification requirements as product adoption across a customer’s line increases.

The significance of this stable code base across the product family means customers can choose a product to fit immediate requirements while offering the flexibility to design OEM value added features in the longer term. Taken a step further, this allows ATTO and our OEM customers the ability to differentiate our products from the competition as well as between segments of our own product lines.

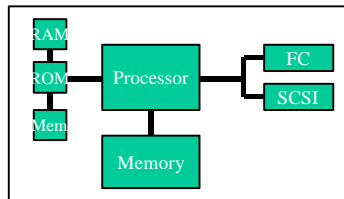
In addition to offering anything-to-anything connectivity and flexible customization, *intelligent Bridging Architecture* acts as a portal to the SAN by providing SAN-management configuration tools and information. This means that the customer can optimize the bridge functionality within his SAN.

Data Routing Fabric

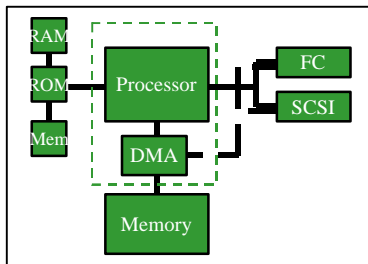
intelligent Bridging Architecture contains a topology consisting of custom ASICs, circuitry, components, memory devices and physical interface connections. This topology houses the Virtual Device Manager and provides the physical pathways for the data to move through.

This topology follows a common design basis across the product family. This allows for commonality of components, as well as advances in technology and/or new applications to be ported between series (i.e. 1000, 2000, 3000, 4000). Within each series, the topology is refined into a specific Series Architecture. The specifications of each Series Architecture are defined by:

- Custom ASICs and processors
- Programmable and fixed memory
- Board componentry
- Power supplies
- Circuit board routing

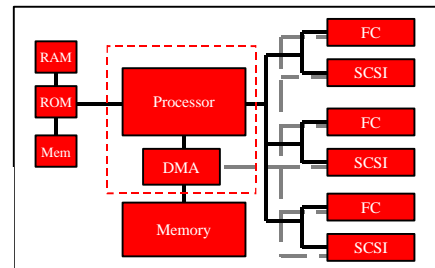


Standard Architecture
1000 Series



Mid-range Architecture
2000 & 3000
Series

High-performance
Architecture
4000 Series



The Series Architecture performs critical activities:

- It provides direct interface via the bridge between the SAN and edge components (i.e., storage media)
- It routes the data and the metadata to the appropriate internal and external interfaces
- It defines the performance capabilities, features/benefits and cost of each series

These Series Architectures are designed to offer OEMs a level of price and performance in concert with the OEMs' targeted market pricing. This allows OEMs to incorporate the multiple value add features provided by *intelligent Bridging Architecture* at justifiable price points.

Benefits of *intelligent* Bridging Architecture

Storage OEMs and integrators require robust connectivity solutions that add value with limited additional overhead. The breadth of solutions available via the Series Architectures found in the Data Routing Fabric and the depth of applications via the flexibility found in the Virtual Device Manager allow ATTO's *intelligent* Bridging Architecture to exceed OEM and integrator needs far into the future.

Feature	Benefit
Anything-to-anything connectivity - Same solution installs in wide variety of protocols	<ul style="list-style-type: none"> • Lower integration cost due to reduced number of qualifications. • Improved integration productivity due to familiarity with product • Improved selling efficiency as one solution fits many applications
Platform for industry critical applications – serverless back up, failover	<ul style="list-style-type: none"> • Increased sales volume by offering in-demand customer requirements • Increased ROI on original OEM product design by embedding value added features into OEM product • Extended life cycle of original OEM product
SAN interface	<ul style="list-style-type: none"> • Improved integration productivity due to interoperability in heterogeneous SAN environments
Common software base and series architectures	<ul style="list-style-type: none"> • Lower integration costs due to reduced qualification testing • Improved integration productivity
Price/Performance feature sets to match OEM/Integrator pricing methods	<ul style="list-style-type: none"> • Improved sales volume by extending features throughout OEM product selection • Easy integration over time • Improved ROI due to pathway for OEM value add

ATTO's *intelligent* Bridging Architecture is a key component in the success of storage OEMs and integrators. Flexibility, power, adaptability, provide for improved ROI, increased sales volumes and efficient integration.

***intelligent* Bridging Architecture – the Engine that Powers the Platform for adding value.**