

Product Overview

**AXP BASIC
INTEGRATED PLATFORM**

**APPLICATION-ENABLING
PLATFORM**



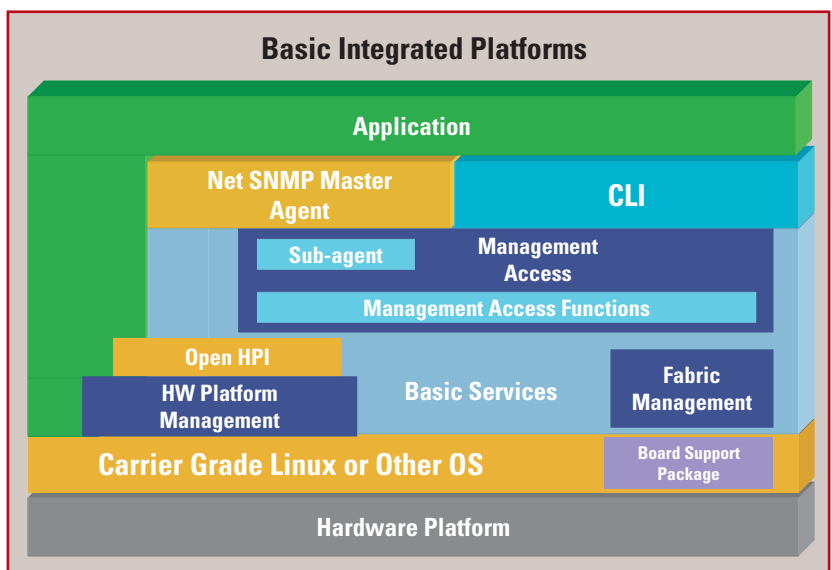
- Pre-integrated and validated out-of-the-box platforms accelerate your product deployment
- Operating system and comprehensive platform hardware management
- Standards-based software foundation – OSDL Carrier Grade Linux and SAF Open HPI
- Uniform management access through CLI and SNMP
- Basic Blades Services integrates management access, fabric management, boot firmware upgrades and other essential features
- AXP AdvancedTCA based Basic Integrated Platform supports PICMG 3.0 and 3.1 fabrics and supports multi-shelf systems
- Supports reuse of existing applications including high availability middleware
- Can help reduce your product development time by up to 50%

Basic Integrated Platforms from Motorola are Application-Enabling Platforms with an operating environment that includes an operating system, comprehensive platform hardware management and fabric management in conjunction with verified thermals, power and mechanicals. These out-of-the-box solutions give you competitive advantage by substantially improving your time-to-market. They also reduce costs by enabling you to focus resources on to differentiating development, while protecting your investment by leveraging standards.

An Application-Enabling Platform is a pre-integrated and validated computer platform, built on open industry standards. In this approach, integrated hardware and software elements combine to provide a platform on which you can build an application and deploy your product much faster than using the traditional building block approach. Using these platforms enables you to focus development efforts on critical features that differentiate your products from those of competitors. Motorola platforms offer a choice of integration levels to support reuse of diverse existing applications, significantly reducing costs while still enabling new developments to speed ahead.

Basic Integrated Platforms Architecture

All Basic Integrated Platforms adopt a common architectural model required by distributed systems. This includes a shelf and its associated hardware and software environment, together with blades that provide fabric support, platform control processing and hosting of revenue generating payload applications. The software elements of this architecture include the basic operating environment, plus a set of mechanisms to manage the platform in a consistent standards-based manner.



Platforms based on specific technology standards such as AdvancedTCA® or CompactPCI® may include additional functionality.

The operating environment incorporates a centralized mechanism to obtain platform wide management information. This key system requirement is supported through the Service Availability Forum (SAF) Open Hardware Platform Interface (OpenHPI) specification. The Management Information Bases (MIBs) that hold this information can be accessed through an industry standard Simple Network Management Interface (SNMP) agent, or through a Command Line Interpreter (CLI) interface.

Another key aspect of centralized control is fabric management. Although a generic requirement, this is a platform specific feature dictated by the backplane technology of a particular standards-based platform.

Each payload blade in a Basic Integrated Platform also offers a set of specific local management functions. These include access to the blade specific hardware management information through an SNMP agent or a CLI. This approach offers complete flexibility in the way that products are implemented on top of a Basic Integrated Platform.

Benefits of Basic Integrated Platforms

The Basic Integrated Platforms approach provides several key advantages over traditional methods of product development. By using an off-the-shelf pre-integrated and validated platform, R&D organizations can largely eliminate the extensive time spent in reaching a point where application development can begin. The time traditionally spent verifying inter-operation of boards from multiple suppliers is effectively cut to zero and the work and timescales associated with regulatory compliance are substantially reduced. This can help reduce your time-to-market by up to 50% and maximizes your available market window.

The common, standards-based software environment of a Basic Integrated Platform enables rapid development with a choice of integration points that can be tailored to application needs. This choice can be extended to include internally developed, or third-party sourced blades. Motorola can pre-integrate these components into a Basic Integrated Platform, allowing you to take advantage of Motorola's worldwide supply chain and support services. Alternatively you can perform this task and still gain the time-to-market benefits offered by the Basic Integrated Platform.

Basic Integrated Platforms also provide investment protection by leveraging hardware and software standards. The common operating environment enables your applications, including your high availability middleware, to migrate to successive generations of Application-Enabling Platforms, while minimizing the associated time and cost.

A combination of standards-based features, accelerated development, choice of integration points and flexible supply chain models provide compelling reasons to adopt Motorola's Basic Integrated Platforms.

Basic Integrated Platforms Operating Environment

Basic Integrated Platforms pre-integrate and validate the essential elements of a system. This includes ensuring that the hardware aspects of a system conform to industry specifications, such as the PICMG® standards. Additionally, common configurations of Basic Integrated Platforms are tested to meet regulatory requirements such as NEBS compliance in the USA and ETSI compliance in Europe.

The software environment of a Basic Integrated Platform provides the necessary software elements to create a foundational operating environment, ready for application development. This comprises the operating system and a set of Basic Blade Services (BBS). BBS includes platform-independent features, such as standards-based management mechanisms, together with the platform-specific features required to implement the architecture of a particular standards-based platform.

Carrier-grade Linux and Linux Support Package

The first generation of Basic Integrated Platforms is developed on MontaVista's Carrier Grade Environment (CGE). This Open Source Development Laboratories (OSDL) Carrier Grade Linux (CGL) distribution represents an industry standard. Future Basic Integrated Platforms may include support for other Linux distributions and additional operating systems.

Each element of a Basic Integrated Platform includes a Linux Support Package (LSP) to integrate the CGL with the underlying hardware environment. This includes support for relevant silicon and provides the basis for supporting the application software environment.

Basic Blade Services

Basic Blade Services is a set of software features, developed by Motorola, that are implemented alongside the operating system to create the operating environment. The Basic Blade Services fall into two areas:

Generic functions across all platforms, offering investment protection through ease of application migration.

Platform-specific, non-differentiating functions that are pre-integrated and validated to provide competitive advantage through reduced development time and costs.

The Basic Blade Services operating environment includes:

- Boot firmware
- Operating system initialization scripts
- SNMP MIB support for local information
- Intelligent Platform Management Control (IPMI) interface software
- OpenHPI support
- Firmware upgrade utility

Platform Independent Features

Basic Blade Services supports a standards-based set of features required by every platform. This provides common mechanisms to access information across a system. Distributed systems require centralized control functions to offer a single management portal. The Service Availability Forum (SAF) Open HPI specification is implemented on Basic Integrated Platforms to support this requirement. This provides a standards-based mechanism to access platform-wide hardware specific information about shelves, shelf controllers and blades. As new Basic Integrated Platform compliant blades become available, minimal upgrades are required to the centralized function to access this information. This largely consists of support for the associated MIBs.

To access MIB information, Basic Blade Services provides two mechanisms. SNMP management provides standards based mechanisms to access system-wide and blade-level information from an element management system, or an Operation Support System (OSS). Alternatively, information can be accessed through a local console using an extensible Command Line Interpreter (CLI) interface.

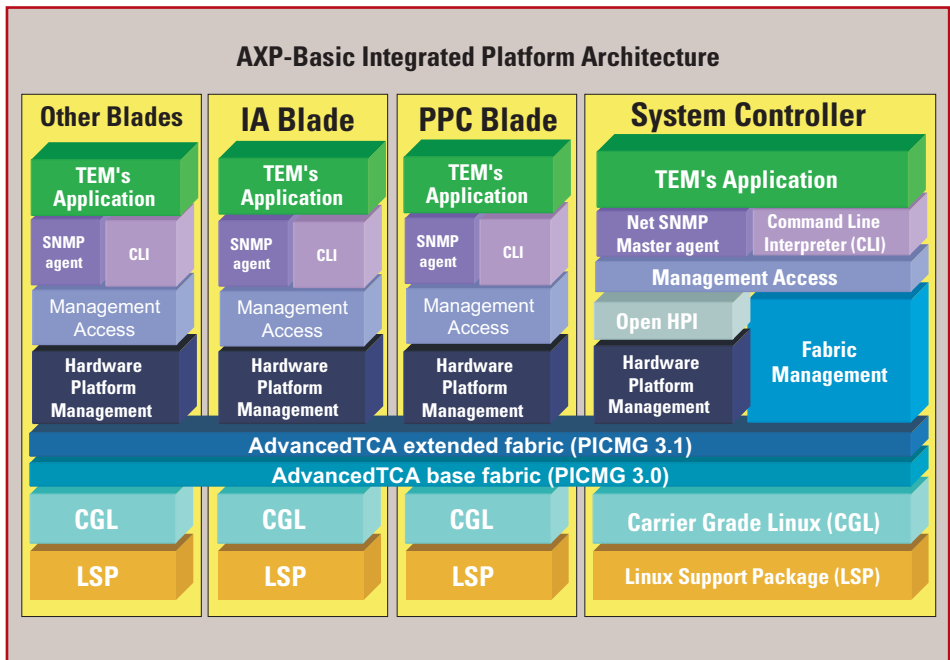
Platform Dependent Features

Every Application-Enabling Platform is defined by its specific hardware. This includes the backplane, switch fabric and blades. The Basic Blades Services of every Basic Integrated Platform provides pre-integrated and validated capabilities to access and control these platform specific functions. This includes fabric management to enable the development of high availability systems by controlling and periodically testing fabric capabilities. It also includes hardware specific drivers that have been integrated and pre-verified with the operating system and support package. The final element is access to hardware platform management capabilities, such as IPMI, which is then integrated with the platform independent features of management access.

AXP Basic Integrated Platform

The AXP Basic Integrated Platform is Motorola’s first AdvancedTCA based Application-Enabling Platform. This platform makes innovative use of standards to deliver real benefits. For example, combining switching and control functions on a single blade maximizes revenue generating payload capacity within each AXP shelf. The AXP supports both the PICMG 3.0 (Gigabit Ethernet) base fabric specification and the PICMG 3.1 Gigabit Ethernet extended fabric option. By supporting both fabrics, the AXP delivers maximum throughput and allows control plane and data/bearer plane traffic to be separated. In addition, the AXP Basic Integrated Platform allows the interconnection of three shelves that can be managed as a single homogeneous system. This includes support for fabric management and a single, centralized management access portal for multi-shelf systems.

In addition to the combined switching and system control blade, the first release of the AXP Basic Integrated Platform includes a high end dual IBM 970 PowerPC® compute blade and a high end dual Intel Xeon blade. All blades are fully pre-integrated and validated within the AXP Basic Integrated Platform.



SPECIFICATIONS

Software**Operating Environment****Relevant Standards**

Operating System: Standard MontaVista CGE 3.1
 BSP/LSP: LSP for MontaVista CGE 3.1, specific for each AXP blade,
 included with MontaVista CGE 3.1

Service Availability Forum Hardware Platform Interface
 Specification, Release B.01.01
 OSDL Carrier Grade Linux, Release 1.1

Solution Services

Solution Services provides support services that meet your needs during the design, deployment and renewal phases of your product lifecycle. The comprehensive range of services we offer means that you can select a package of services optimized for your specific market and applications. Examples include our WarrantyPLUS extended warranty, FastSpares dedicated spares and Mission Critical 24x7 support services.

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