



Blackboard Building Blocks® and Blackboard Transact™

A day in the life of a typical college student consists of many interactions that require the use of a campus ID card, either for accessing a campus facility or for completing a financial transaction. Understandably, the card and its associated accounts are expected to be accepted anywhere college students conduct commerce. With this in mind, Blackboard is working with many forward-thinking institutions to establish a complete business intelligence system. With this technology, any student, teacher or member of the campus community can use a universal account whether they're on campus, off campus or online. This includes not only commerce transactions, but Web services, facility access and activity access as well.

Blackboard Transact allows all of these on-campus activities to happen. But Blackboard doesn't do the job alone. To support the use of the many other systems on campus, Blackboard has created a highly adaptable integration platform, supported by the most robust certification program available to the market: Blackboard Building Blocks®.

What Are Building Blocks?

Blackboard Building Blocks are a set of integration tools that provide for third-party and client integration of transactions and/or data for use with the Blackboard system. Blackboard's Building Blocks technology allows for a rapid exchange of data between Blackboard Transact™ and multiple third-party systems such as digital imaging, Point of Sale (POS), bookstore, access control and print management, ensuring data synchronization and data integrity.

When a student accesses their student ID account at any number of campus locations, many of these access points may be third-party or external campus systems enabled by Blackboard Building Blocks. Data on these third-party systems is updated in real time, providing a simple way to manage student ID accounts and create a seamless student and administration experience.

"The Blackboard Building Blocks Manager enables us to tightly integrate data between our Student Information System and the Blackboard system, making us more efficient and improving our level of service."

– Stuart Roberts
WOLFcard System Administrator
University of Alaska Anchorage



Blackboard

The power of Blackboard's data integration capabilities can be seen when students register for classes. The appropriate records are not only added to the Student Information System, but other databases you require as well. As an additional means of supporting integration, Blackboard will test and certify your systems' ability to accept Blackboard system transactions without the need for additional hardware. This includes Bookstore POS, Dining POS, Network Printing, Parking and wireless devices.

BLACKBOARD BUILDING BLOCKS TECHNOLOGY

Building Blocks Manager

At the heart of Blackboard's Building Blocks integration technology is the Blackboard Building Blocks Manager application. It acts as a central hub that enables data mapping and translation between Blackboard and third-party systems. By combining software with universal integration standards and data formats, the Blackboard Building Blocks Manager makes it easy to link your Blackboard platform to an external service, application, database or hardware device.

Integration Agents

Campuses that run Blackboard can take advantage of integration agents that allow account portability across campus systems and hardware via their student ID account. Interfacing with Blackboard happens in two different ways:

Data Integration Agents work with the Blackboard Building Blocks Manager to facilitate the exchange of data between Blackboard Transact and other third-party systems such as Student Information, Access Control, Library and Housing Management systems. This allows often disparate systems to share the same data without unnecessary redundancy.

Transaction Integration Agents allow Blackboard to become your payment gateway for whatever you are selling by facilitating data exchange with third-party systems like POS systems (Bookstore, Food Service, etc.), Print Management and Parking Management. This can include books, meals, tickets and any financial, count or activity-type transactions that are likely to be processed by Blackboard Transact. Transaction Integration Agents permit third-party systems to authorize stored value (declining balance) and/or privilege verification transactions within the Blackboard system.

TANGIBLE BENEFITS

By deploying Blackboard Building Blocks, campuses realize many advantages, including:

- **Standardized TCP/IP Interface**

Using Blackboard's transaction integration capabilities, the interface with third-party POS systems (like Bookstore systems) is 100% IP-based. Implementation and support are made easy because communications hardware like modems and line converters are eliminated as is the need for the point-to-point wiring connections typically used for serial communications.

- **Secure Networking:**

Blackboard provides the necessary technology to insure all transaction data is protected with 128-bit AES encryption.

- **ODBC Compliance:**

The Blackboard Building Blocks Manager utilizes an Oracle database that provides integration flexibility by using ODBC database tools and open standards for data integration.

- **Leveraged Technology Investment:**

Reuse your existing institutional technology infrastructure and existing institutional data.

- **Cost-effectiveness:**

There is no large upfront expense associated with configuring the system. Operations can be streamlined by effectively interfacing with multiple campus systems to share data and exchange transactions, thereby lowering maintenance costs.

- **Bi-directional Data Exchange:**

The Blackboard Building Blocks Manager provides for real-time and/or near-real time data integration between one or multiple databases, including bilateral data exchange between Blackboard and one or more database systems.

- **Certification:**

The Blackboard Enabled Compatibility Program provides the opportunity for Building Blocks developers to have their Building Blocks examined for compatibility with the Blackboard platform.

- **Options:**

Use the power of your Blackboard platform to provide your campus with customized technology options.

- **Vendor Relationships:**

Vendor participation in the Blackboard Building Blocks program assures that the third-party developer has a vested interest in the overall success of your campus. Blackboard works closely with partner vendors, sharing up-to-date technical information to ensure ongoing support of Blackboard Building Block integrations.

BLACK HILLS STATE UNIVERSITY AND BLACKBOARD BUILDING BLOCKS

Black Hills State University (Spearfish, South Dakota):

For an excellent example of multiple transaction integrations, you need look no further than the Black Hills of South Dakota. Where there were once petty cash boxes, multiple Card Management Centers and load stations, Black Hills State University has deployed multiple POS devices as a more effective service solution. Using the Blackboard Building Blocks Manager and Transaction Interface Agents (TIAs) the Black Hills Management Team has been able to integrate efficiently with its Vending, Laundry, Bookstore, Credit Card and Retail systems, both on and off campus. For instance, as recently as three years ago, when students were allowed unrestricted printing rights, a small but costly minority were abusing the privilege. By deploying Pharos Uniprint software with the Blackboard system using a Transaction Integration Agent, students receive a printing credit each semester, which, once depleted, automatically defaults to their declining balance fund. The system paid for itself in just one year by eliminating both abuse and the manual billing processes that the previous system had necessitated.

GETTING STARTED

The first step is to contact your Blackboard Regional Account Executive. We will discuss the system or hardware you are interested in integrating with the Blackboard system. It is likely that the third-party vendor you have in mind is already one of the many that participate in the Blackboard Building Blocks Program. Or, if you are interested in integrating a home-grown system, we can help you with campus-built Building Blocks.



Nebraska Book Company

www.nebook.com



INDUSTRY LEADERS

Over 40 leading providers of Student Information, Bookstore, Library, Parking, Print Management and POS systems integrate their platforms with Blackboard through Blackboard Building Blocks, including:

- BEST Access Systems (On/Offline Access Control)
- Digital Payment Technologies (Parking)
- eSuds Inc. (Laundry)
- IDenticard (Online Access Control & Video Imaging)
- Ingersoll-Rand - Locknetics & Geoffrey systems (On/Offline Access Control)
- MICROS (Point of Sale)
- Nebraska Book Company (Bookstore Point of Sale)
- Onity (Offline Access Control)
- PERSONA (On/Offline Access Control)
- Pharos (Print Management)
- Residential Management Systems, Inc. (Residential Management)
- StarRez (Residential Management)
- Vision Database Systems (Video Imaging)

To learn more about Blackboard Building Blocks, please visit our website at:
www.blackboard.com

www.blackboard.com/transact

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