Major Enhancements to the Next Generation of the eMerge Platform

Highlights

Version 3 of eMerge, the network appliance for managing physical security, includes major enhancements, which taken together help to make this the most robust product IEI has delivered to date. The enhancements in this version of the eMerge platform are based on feedback from our user base and represent our commitment to respond to requests from users in the field. The enhancements to the system internals are also part of the long term product evolution roadmap. A conversion path is available for all Version 2 series of eMerge.

Version 3 contains major new enhancements, which include: the addition of a CompactFlash for database backups, the use of PostgreSQL database, custom report development, regional anti-passback with occupancy counting, a region-by-region roll call report, LDAP user authentication, time zone offsets for remote network nodes, log annotations, support for the Panasonic HD300 series DVRs, event acknowledgement commentary, and more.

Numerous modifications have been made to existing features and miscellaneous new features added, including additional user-defined fields, threat level enhancements, built-in card formats, network node setup enhancements, and other improvements.

Additionally, scalability has been enhanced with the capability to integrate large numbers of cameras across multiple connected video servers.

CompactFlash

Version 3 includes the use of a 2 GB CompactFlash card for full database backups rather than partial backups. Because CompactFlash is a nonvolatile solution that does not require a battery to retain data indefinitely, it is a faster, more robust and more scalable method of database backup. CompactFlash also offers the advantage of being solid state, with no moving parts and consumes only five percent of the power typically required by small disk drives. It provides users with much greater protection of the data, allows for faster recovery of data and is more rugged and reliable than other methods of storage.

PostgreSQL

PostgreSQL is the database used in eMerge Version 3. It is a powerful, open source object-relational database system with a proven architecture that has earned a strong reputation for reliability and data integrity. It is designed and created to have much lower maintenance and tuning requirements than leading proprietary databases, yet still retain all of the features, stability, and performance. PostgreSQL has sophisticated features such as Multi-Version Concurrency Control (MVCC), point in time recovery, tablespaces, asynchronous replication, nested transactions (savepoints), online/hot backups, a sophisticated query planner/optimizer, and write ahead logging for fault tolerance. It is highly scalable both in the sheer quantity of data it can manage and in the number of concurrent users it can accommodate.

Custom Reports

More so than previous versions of eMerge, Version 3 supports the creation of custom reports. Unlike before, users can customize a variety of reports by simply selecting data from a number of fields such as: date, time, event, user, location, and more. You can assign specific reports to different users such as a security guard or other personnel, name the various reports and easily edit or modify the selection of fields or range of data. Prompts can also be defined in a report so that the user has to input a value (for instance a name) to generate the entire report. The use of custom reports greatly improves the productivity and value of the eMerge system to users.

Regional Management with Anti-Passback

This version of the software includes region management functions. Region management includes a set of features that enhance facility evacuation management. Regions are areas with controlled access into and out of the space. Users define these regions and specify policies about how anti-passback violations and tailgate violations are handled. Regions can stand alone or they can be nested within other regions. The anti-passback rules can be persistent or can be time-limited (timed anti-passback).

Roll Call Reporting

With region management deployed, users can immediately obtain roll call reports that list occupants of a given region. Users can also set limits as to how many people can occupy a region. An event can be triggered when the region becomes empty. These features, together with mustering functionality, can be valuable in managing evacuation scenarios.

LDAP Authentication

Systems deployed in environments that are part of a larger IT infrastructure will benefit from support for user authentication through LDAP. Version 3 introduces the ability to require that selected user login credentials be validated against the user's LDAP database. This is a common practice where it is desirable to control passwords centrally. (Active Directory is the Microsoft operating system-specific product that supports the LDAP protocol.)

Node Time Zone Specification

This software release has added the ability to associate individual time zones with eMerge Network Nodes. This feature makes it easier to create time specifications that operate in multiple locations. It is now possible to create one time specification that operates identically in New York and Los Angeles.

Log Annotations

This new version of the software also introduces operator commentary into the permanent history maintained by the system. Using log annotations, operators can enter freeform text comments that stand alone or are associated with a particular item in the log. Entries can be made at any time, and can be expanded to include additional commentary (although not deleted) at a later time.

Panasonic HD300 Series Support

Support for the popular Panasonic HD300 series DVRs has been added as an option. Because not all DVR and NVR products have identical capabilities, integrators should check with IEI to assure that the functionality they need is available in the video product they have selected.

Event Acknowledgement

Operator commentary can be required when events are acknowledged. To facilitate the process of adding event comments, frequently used text can be saved ahead of time and quickly recalled when needed.

Video Browser Enhancements

An improvement to the Video Browser adds a powerful looping control to event-related recorded video. With the new loop button, users can easily replay recorded events, pausing and stepping frame by frame where required. The loop button also functions on live video by allowing the user to step backward from the time he sees by 15 seconds per mouse click, making it simple to review video that may have just been recorded.

Embedded Documentation

Both users and installers will appreciate the embedded documentation library available in this version of the software. In addition to complete product documentation, eMerge systems now host all relevant technical notes, installation manuals, and other user guides. This documentation requires nothing more than a PDF reader and a web browser; no Internet connection is necessary.

Data Management Tool

The Person Import Tool has been replaced with an updated and more functional Data Management Tool. This new stand-alone Windows program accepts common CSV and TSV files that contain person recorded data as well as a text tag that allows users to specify add, change, or delete of matching records. Record export is also supported in the new tool. These features collectively make the Data Management Tool invaluable for applications here mass update of the access control population is required.

Database Migration

Users who have version 2.5 systems can run the supplied data migration utility in order to convert directly to the version 3 generation database. This migration utility performs all lengthy and complex conversion operations, simplifying the update process.

Internal Enhancements

There are also numerous internal enhancements to the software, making Version 3 the most robust and scalable software we have issued to the field to date. Some of these internal improvements are described in the tables that follow.

FUNCTIONAL AREA	CAPABILITY	DESCRIPTION
Major Functionality and New Features	PostgreSQL	An object-relational database designed to have much lower maintenance and tuning requirements than proprietary databases. Has outstanding scalability and performance. Its SQL implementation strongly conforms to the ANSI-SQL 92/99 standards. It has full support for subqueries (including subselects in the FROM clause), read-committed and serializable transaction isolation levels.
	Custom Reports	Version 3 supports the creation of a variety of custom reports, allowing users to specify, add, change, or delete reports and choose a number of fields and range of events to create reports. Prompts can be added to any report, requiring the user to input data, such as a name. Reports can be automatically generated for designed users.
	Regional anti-passback with occupancy counting	eMerge now allows users to define access controlled regions that enforce either conventional timed anti-passback or hierarchical regional anti-passback with software tailgate detection. Occupancy counts are kept for each region, and users can program alerts when a region becomes empty or exceeds capacity.
	Roll call reporting and mustering function	To aid in evacuation management, Version 3 includes a region-by-region roll call report. Any card reader or user with a web browser can be used as a mustering station and multiple mustering stations can be used.
	LDAP authentication	Version 3 supports authentication of system users via LDAP (Active Directory on Microsoft systems). Users may be selected on a person-by-person basis to be authenticated through LDAP or through the system's own password authentication method.
	Node time zone specification	It is now possible to specify a time zone for each eMerge Node in the node definition display. Using this feature, time specifications are interpreted by each node in the context of its own time zone.
	Log annotations	System operators may now insert text annotations into the activity log as well as tag individual specific log entries with commentary.
	Panasonic HD300 series DVR support	Support for the Panasonic HD300 series DVTs is available as an option for systems beginning with this software release.
	Event acknowledgement commentary	Events can now be defined as requiring operator commentary when they are acknowledged. System standard comments can be defined during setup to facilitate entry by monitoring operators.
Scalability	Node and MicroNode performance enhanced	The eMerge solid state system is certified to 32 live nodes. Version 3 dramatically improves system performance when large numbers of nodes are deployed.
	Elevators	Numerous limits related to elevator control have been raised. See system documentation for details.
	Video event handling	Version 3 significantly improves performance when large numbers of cameras are present on integrated video systems from Milestone Systems and ONSSI.

FUNCTIONAL AREA	CAPABILITY	DESCRIPTION
Internal Enhancements	CompactFlash	Allows for full database backups rather than partial backups. Because a nonvolatile solution that does not require a battery to retain data indefinitely, and a faster, more robust and more scalable method of database backup.
	Data archiving	A new and more advanced method of storing historical data on eMerge systems is part of this software release. The changes, which are transparent to the user, can be stored remotely and are digitally signed to ensure forensic integrity. Archives can also be read using ODBC.
	Intelligent card downloading	Card data downloading has been streamlined to make node loading faster and to make it easier to support larger card populations
	Database throughput enhancements	The overall performance of database transactions has been significantly improved, especially for systems that support large numbers of network nodes.
Miscellaneous New Features and Enhancements	Video Browser enhancements	A new control in the video browser lets users loop over a recorded event with a single mouse click. The control also allows stepping backwards from live video in 15 second increments
	Online documentation library	The system setup guide and technical bulletin library are now embedded in and available directly from all eMerge systems (Internet not required). Files are delivered as PDF.
	Data management tool	The Data Management Tool is introduced with version 3. In addition to the functions of the original Person Import Tool, now obsolete, the Data Management Tool supports CSV file exports, mass data modification and deletion, and numerous other enhancements.
	Additional User-defined fields	In Version 3 it is possible to designate 20 user-defined data fields for person records. These fields can be used in data import, reporting, and queries.
	Built in card formats	Data formats for well-known access control systems have been built into Version 3 and can be selected by or deleted by the system administrator.
	Threat Level enhancements	In Version 3, threat levels can be associated with input groups to affect automatic arming, output groups to affect automatic activation, and elevator floor groups to affect entry into free access mode.
	Network node setup enhancements	Numerous enhancements to the setup functionality for eMerge Network Nodes and MicroNodes have been made in version 3. These enhancements help assure that it is not possible to accidentally misconfigure node network settings.
	Event system enhancements	It is now possible to arm or disarm input groups as an action of an event. Also, the event management subsystem internals are significantly upgraded in Version 3.

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