Next Generation Adaptable Cross-Domain Information Sharing

COTS-Based, fast, secure, optimized implementation of a trusted domain solution

Information sharing is vital to your agency but becomes very challenging when it involves people or organizations with different security levels, classifications, and operating requirements. However, the rapid pace of modern application and protocol changes, combined with the long and tedious certification process for guards, makes it extremely difficult to obtain the necessary level of information sharing and communication in today's high-speed digital environment. What is needed is a low-cost approach that expedites the certification process, combining the security and certification of high-assurance guards with the flexibility of a universal translator.

TVAR Solutions and CA Technologies have joined forces to deliver the preferred commercial off-the-shelf (COTS) based, adaptable, secure, and optimized cross-domain solutions to government agencies and commercial vendors that demand this functionality. This next generation solution reduces complexity and allows certified guards to be implemented at a fraction of the time and cost of traditional custom solutions.

Cross-domain solutions then and now

Traditionally, cross-domain solutions are custom-made automated border guards developed to support the secure movement of data between domains of varying security levels, enabling more complete information and better decision making. Moving information securely from one area or level to another means dealing with data confidentiality, integrity, and availability, based on a range of policies and characteristics.

To work effectively, these systems need to be custom integrated with the appropriate applications and protocols on both sides of the exchange. Getting information to flow consistently but securely requires changes to applications and protocols that were not designed to support cross-domain communications. They must be flexible enough to adapt to new rules, policies, and roles. Technologies used must be able to quickly respond to the relentless changes in adversary behavior and techniques. Finally, they should not be too

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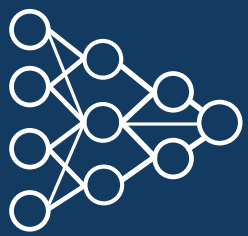
Customer call out:

A DOD customer was paying millions of dollars to have a 3rd party write and maintain a custom solution to meet both ongoing and new customer requirements. This approach was expensive and took significant time to develop, negatively affecting the mission. The CA API gateway provided "out of the box" capabilities at a fraction of the cost, eliminating the need for both custom development and the time-consuming certification and accreditation process. Additionally, the solution provided the flexibility to meet new customer requirements at the speed needed to meet mission objectives.



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strongly linked to particular hardware or operating systems configurations, so that they can benefit from advances in the underlying infrastructure.

Because cross-domain solutions have to be customized due to legacy protocols and risk management concerns, they have been slow to adapt and expensive to modify. Mandatory access control mechanisms are too strict for dynamic scenarios. As agencies and government vendors look to increase efficiency, collaboration, and information sharing, this rigidity and slow rate of change has become a significant impediment. Capitalizing on the benefits of rapid application development, increasingly diverse systems, and the large and growing amounts of valuable data means moving faster without losing the necessary security. Agencies need to be able to move and adapt quickly as mission requirements change without losing their secure information sharing capability.

CA Technologies, brought to you by TVAR Solutions

To deliver the next generation of cross-domain solutions, TVAR Solutions has partnered with CA Technologies to enhance and extend the functionality of high-assurance guards. The resulting solution enables agencies and vendors to more effectively and efficiently communicate, access data, and utilize applications across domains. The objective is secure agility, lower cost, and quicker time to deployment – the ability to grow, adapt, and change in response to dynamic technical capabilities and policy requirements, and easily integrate with shifting technologies, protocols, and applications.

Because the cross-domain solutions are COTS-based, they are low cost, highly configurable, and quickly updated or modified to enforce new roles, rules, and policies. Agencies and vendors can react more quickly to events and unanticipated changes, keeping pace with both allies and adversaries. As processes mature, repetitive tasks and filters can be automated, based on dictionaries, white or black lists, and mandatory access control. Discretionary access control keeps humans in the loop to accommodate new scenarios and make flexible decisions, balancing the need to protect with the benefits of sharing. Communications are optimized to the agency's risk and trust profile, adjusting the level of human interaction as needed and freeing analysts for higher-level and higher-value activities.

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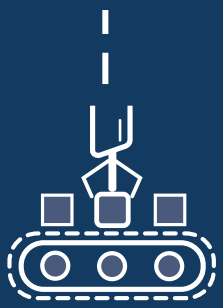

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Benefits of CA Technologies software

CA Technologies COTS software aids and simplifies the way organizations communicate across multiple environments and domains. The CA API Gateway (formerly known as Layer 7 Secure Span gateway) is an innovative approach that makes guards better without requiring the costly and time-consuming customization that frequently triggers a lengthy re-certification process and increased expense.

Instead of adding or modifying protocols in the guard, which would restart the multi-year certification process, CA has developed and certified the bi-directional CA API Gateway. This software acts as a universal translator between the new or modified application and the legacy protocols supported by the guard. With a gateway supporting the guards on both sides of an exchange, messages are quickly transformed from the new application or protocol into a format supported and certified for use by the guard. The guard then executes the security evaluation and policy enforcement and transmits the resulting content to the other domain. After being accepted and processed by the receiving guard, the message is forwarded to the gateway where it is transformed back into its original form (appropriately filtered or redacted) and sent on to the application. All of this happens in real-time, with advanced stream processor logic and hardware-based acceleration, on a physical or virtual system employing the same trusted operating system as those used in high-assurance guards.

CA API Gateway is Common Criteria certified (2014, 2017) to complement the services provided by high-assurance guards. The certification confirms that the gateway supports and enforces security policies on a wide-range of modern web-centric protocols, including SOAP, XML, SAML, AJAX, REST, JSON, XMPP, and TADIL, among numerous others. Protocol controls ensure compliance with published standards and prevent buffer-overflow errors and other types of network-based cyber attack. Access control services proxy and inspect every message that is intended for a protected service, and enforce polices based on any combination of user, device, IP address, time-of-day, content, and routing details.

Benefits of TVAR Solutions integration

Since the advent of broader information-sharing mandates after 9/11, cross-domain solutions have typically been used for military, intelligence, and law enforcement objectives. However, many systems and processes are, or should be, in separate domains, according to current security best practices, such as medical records and other PII, or in other words the leaking of data that would result in headlines or situation reports and lead to significant repercussions. Spilling this information shared between these systems would severely hamper

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an agency's operations and mission, necessitating broader deployment of guards and controls. Integrating applications and data protocols into these systems can be challenging and cost-prohibitive, requiring a significant investment of time and people.

TVAR Solutions leverages the CA API Gateway to simplify and expedite the necessary integration. Their decade of experience results in faster time to value and reduced cost of operations. Data confidentiality is preserved in one-way domain transfers, secured by hardware-enforced access control systems. For two-way transfers, data integrity is safeguarded by content management mechanisms that filter for viruses and malware, examine content for redaction or restriction, and have humans review and audit transfers as desired. Data availability is ensured with security-hardened operating systems, redundant hardware, and secure role-based administrative controls.

The resulting solution is repeatable and sustainable, increasing the organization's agility and making it easier to maintain and extend their services. Selective automation, based on the specific needs of the organization's mission and the selected process, significantly reduces the cost and the repetitive and tedious tasks while ensuring that humans are consulted on critical and anomalous activities. Need-to-know becomes more meaningful, as the right information is delivered to the right system with end-to-end security and authentication, and restricted information is appropriately rejected, filtered, or redacted.

Conclusion

There are only a limited number of high-assurance custom guards approved for one-way information flow, and even fewer approved for two-way flow. Given the time and cost of the certification process, waiting for new protocols and services to be added to guards is impractical. TVAR Solutions and CA Technologies deliver what agencies need now, a COTS-based guard enabling organizations to efficiently and effectively implement and extend trusted domain solutions. TVAR's cross-domain solutions are certified for and accepted by federal government agencies, using the best available components and the exceptional capabilities of the CA API Gateway. Their knowledge, domain expertise, and cross-domain experience have earned them the government's trust to get communications flowing. The result is faster, better cross-domain information sharing, so that analysts can focus on problem solving for the mission at hand.

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TVAR Solutions and CA Technologies deliver what agencies need now – faster cross-domain information sharing so that analysts can focus on the mission.