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Countdown to 2027: Where to Start Implementing the Zero Trust Strategy for the Department of Defense

Defense Department organizations have four years to deploy seven pillars, including 45 core capabilities of zero trust.

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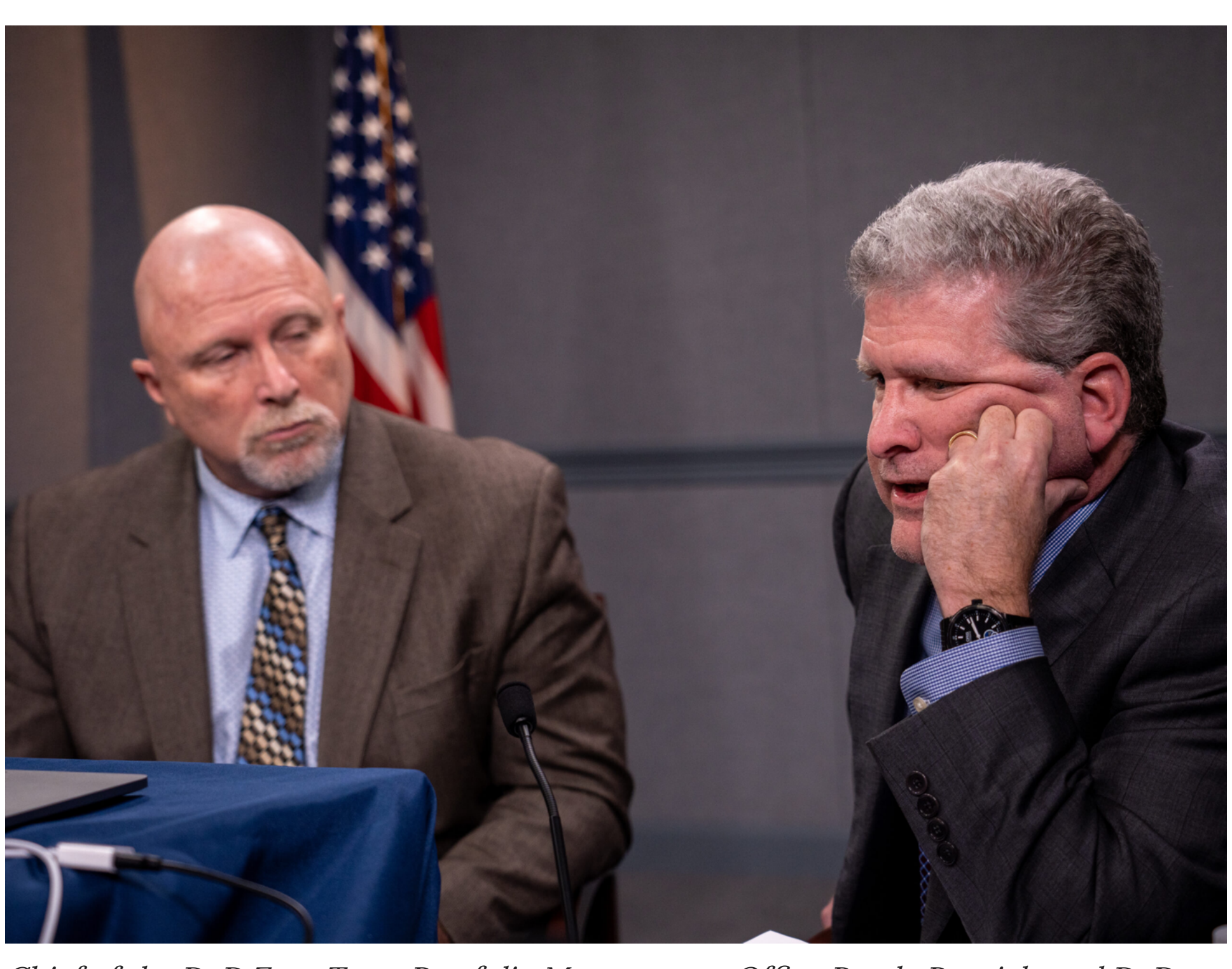

Chief of the DoD Zero Trust Portfolio Management Office Randy Resnick, and DoD Senior Information Security Officer David McKeown, discuss the DoD Zero Trust Strategy and Roadmap at its launch in late 2022. Photo courtesy of DoD.

With the release of its Zero Trust Strategy and Roadmap in late 2022, the Defense Department (DoD) has brought clarity to a methodology that strives to ensure the perpetual security of networks, applications and data. In one use case, zero trust addresses the vexing problem of preventing attackers or malicious insiders from moving laterally through the enterprise after they've breached endpoints and networks. Often, these hackers operate unfettered for months before they're discovered.

A well-conceived zero trust methodology minimizes the impact of the breach by isolating the resources available to the attacker. Overall, it ensures that legitimate users gain access to authorized resources based on recognized devices and appropriate circumstances. Zero trust updates the traditional idea of access through perimeter security to one of continuous security throughout the enterprise.

With its new zero trust strategy, DoD provides a blueprint to bring this cybersecurity capability to the DoD Information Network, including NIPRNet and SIPRNet, by fiscal year 2027. This will affect nearly 3.4 million DoD personnel who have unique identifiers, varying degrees of network and data access, and always-changing roles with rotating commands. For technical and program level leadership in the DoD, this presents the challenge of quickly developing roadmaps, modernizing technology, and updating processes, all while the department continues to execute its mission.

The successful rollout of a program of this scale will encompass all cloud, multi-cloud, and on-prem enterprises, which can only occur when systems have the flexibility to accommodate change. The seven definitive pillars and 45 core capabilities identified in DoD's strategy will lead to robust cybersecurity because they push agencies to think differently as they deploy new technologies. Bring-your-own device (BYOD) and the Internet of Things (IoT) connectivity are possible because well-crafted policies establish access controls with context. Moreover, enhanced speed and scale occur because of automated identity validation throughout the enterprise.

DoD's deadline and a strong zero trust strategy are a good start. Where to begin has become the first question that many mission leaders ask.

Zero Trust 2027: Start with the User Pillar

After reviewing the details of DoD's strategy and understanding what's required with zero trust implementations, Maximus recommends that DoD program offices begin or continue their zero trust journey by building out the user pillar. This element controls network and data access through privileges and policies, so it's central to the entire strategy framework.

Kynan Carver, DoD Cyber Lead at Maximus.

"The other six pillars of the strategy all refer back to the user pillar for validation, so identity is essential to verification of everything," said Kynan Carver, DoD Cyber Lead at Maximus. "That means verification of what data you're accessing, the resources being requested, and confirmation of network segments requiring access. The system must know who signed in and what access is authorized under predefined conditions."

Follow a Proven Methodology

As DoD agencies embrace the zero trust strategy, they will need a structured approach to meet overall objectives and especially to understand the details in the user pillar. Four years is a short time for agencies to implement a plan with multiple pillars in an environment where some agencies have more funding to dedicate to zero trust. Maximus, with its history of modernizing large enterprise programs and security, employs a methodology with multiple assessments to determine the maturity level of the enterprise and its vulnerabilities.

"Implementation of a zero trust architecture begins with a clear understanding of what exists in your organization," said Carver. "It's fundamental but very labor intensive to go through Active Directory, for example, and identify every user and non-person account, then figure out why they exist, whether they are redundant, and finally determine the permissions they have versus the ones they actually need."

In the DoD strategy, the user pillar lists several capabilities that every agency and program office must take into account as they develop their own roadmap. From its engagements with DoD agencies, Maximus offers the following recommendations for each of the core capabilities in the user pillar:

1. Inventory. Know the assets that connect to the enterprise as well as user identifications and non-person identifications, such as those authorized to perform administrative functions. These will inform the gap analysis of what's needed vs what is currently operating.
2. Conditional user access. Define how users will connect to network resources. Even a role-based structure should have tiered levels so that individuals can access data and applications based on who they are, not by a group they belong to.
3. Multi-factor authentication. Specify any token-based processes or other requirements to ensure policy compliance.
4. Privileged access management. Establish just-in-time access that limits administrators' authority. Their access would be removed when they are finished with the task and resource, until they need to request new access.
5. Identity federation and user credentialing. Expect context-based security policy across all of government. When this happens, DoD will publish user and non-user identities across agencies. But before zero trust matures to that level, the other agencies will need similar policies and processes when it comes to user authentication.
6. Continuous authentication. Enhance the ability to deploy behavioral and contextual identity verification using artificial intelligence and machine learning. If users drastically change their patterns of activity on the network, the technology can raise a caution to see if the account has been compromised.
7. Integration of Identity, Credential and Access Management (ICAM). Plan on ICAM to evolve so there is a central organization controlling processes and identities. The Common Access Card (CAC) has been a positive step in this direction, but the next generation ICAM will make it easier for agencies to manage identities, focus on users, and limit exposure to critical data.

The Maximus methodology was developed to reveal the many combinations and outcomes of activity that can lead to security gaps across an enterprise. This approach extends to other pillars of the zero trust architecture such as data, applications, devices, and networks. Taken together, the results of the assessments inform agencies about their place on the zero trust journey and what to prioritize.

DoD has had the benefit of the Maximus methodology for before. For the Compartmented Enterprise Service Office (CESO) of the Defense Information Systems Agency (DISA), the company strengthened the agency's cyber defenses and increased security operations center effectiveness by 50 percent. Maximus's systems experts also supported DISA with analysis, roadmap development, an agile framework, as well as program execution during a migration to the cloud.

"We have a cadre of solution architects who provide secure solutions with emerging technologies across DoD," said Harsha Rao, senior manager of service delivery management. "Our ability to implement a zero trust architecture within FedRAMP boundaries and offer FedRAMP-compliant solutions presents a compelling way to protect assets and mitigate evolving cyber threats."

Hanscom team supports 'revolutionary' zero trust effort

Raju Ranjan, an engineer from the AFNet Sustainment and Operations Branch, discusses plans for zero trust architecture with Capt. Christopher Kodama, a branch engineer, at Hanscom AFB. Photo courtesy of US Air Force.

Enhance the User Pillar with Customer Experience

The foundational user pillar and overall zero trust strategy offers a refreshing perspective of how DoD agencies will address cybersecurity. The endorsement of leadership, the availability of technology and expertise to implement zero trust are a precursor to impactful mission outcomes. However, the best path to mission success would be to add another core capability to the user pillar: customer experience (CX). Working everyday with systems infused with zero trust checks and balances will be an adjustment for users, which DoD recognizes.

According to David McKeown, DoD's deputy chief information officer, the strategy includes efforts to build "a culture of zero trust at DOD and an integrated approach at the department and the component levels."

Far from being mutually exclusive, zero trust and CX work together to build that culture of security in three ways. First, a well-designed experience offers simplicity within a complex program that needs clear language and navigation based on human-centered design principles. Second, intentional CX includes automation for seamless transitions across the enterprise as long as they fall within the requirements of the zero trust policies. Finally, an effective program implementing CX has the necessary checkpoints to create trust among users who must have confidence that the systems and data they access are secure.
When users are included in the experience design, development and optimization processes, a CX approach accelerates their embrace of new processes and policies.

"The user pillar offers the greatest benefit to zero trust," concludes Carver, "because it helps define the requirements for the other six pillars. This ultimately results in a reduction in attack surface, a more manageable enterprise, and a new era of cybersecurity with strong user experience embedded into the systems and processes that will last for generations."

Topics: cyber, cybersecurity, Defense Information Systems Agency, DISA, DOD, networks, Presented by Maximus, sponsored content, technology, Vantage Maximus, zero trust, zero trust model