Primary Recommendation B1
Digital Infrastructure

Line of Effort	Create and maintain cross-program/cross-service digital infrastructure.
Recommendation	**Establish and maintain digital infrastructure within each Service or Agency that enables rapid deployment of secure software to the field, and incentivize its use by contractors.**
Stakeholders	A&S, CIO, SAE, USD(C)
Background	Currently, DoD programs each develop their own development and test environments, which requires redundant definition and provisioning, replicated assurance (including cyber), and extended lead times to deploy capability. Small companies and other new entrants have difficulties providing software solutions to DoD because those environments are not available outside the incumbent contractor or because they have to build (and certify) unique infrastructure from scratch.
Desired State	Programs will have access to, and be stakeholders in, a cross-program, modern digital infrastructure that can benefit from centralized support and provisioning to lower overall costs and the burden for each program. Development infrastructure supporting CI/CD and DevSecOps is available as best of breed and GOTS provided so that contractors want to use it, though DoD programs or organizations that want or need to go outside of that existing infrastructure can still do so.
Role of Congress	Congress should track the availability, scale, use, and cost effectiveness of digital infrastructure, with the expectation that overall capacity will expand while unit costs decrease over time. Sufficient funding should be provided on an ongoing basis to maintain and upgrade digital infrastructure and to maintain best-of-breed capability that accelerates software development.

	Draft Implementation Plan	Lead Stakeholder	Target Date
B1.1	Designate organization(s) responsible for creating and maintaining the digital infrastructure for each Service's digital infrastructure. Explore the use of tiered approaches with infrastructure at Service or Program level, as appropriate.	DoD CIO, USD(C) and Services (SAE and Service CIO)	Q3 FY19
B1.2	Designate organization(s) responsible for creating and maintaining digital infrastructure(s) for DoD agencies and organizations, including joint digital infrastructure available to the Services.	USD(A&S), with CIO, CMO	Q3 FY19
B1.3	Provide resources for digital infrastructure, including cloud solutions, pre-approved "drop-ship" local compute capability, approved development environments (see DIB Compute Environment concept paper, Appendix I [Glossary]).	USD(A&S), SAE with CAPE, USD(C)	FY20 budget
B1.4	Define baseline digital infrastructure systems and implement procurement and deployment processes and capability.	Responsible organizations from B1.1, B1.2	Q2 FY20

B1.5	Implement digital infrastructure and provide access to ongoing and new programs.	Responsible organizations from B1.1, B1.2	Q3 FY20
B1.6	Identify acquisition programs to transition to digital infrastructure.	SAE	Q2 FY20
B1.7	Transition programs to digital infrastructure.	SAE, CIO, PEO, PM	Q4 FY20

SWAP concept paper recommendations related to this recommendation

10C	Make computing, storage, and bandwidth, and programmers abundant to DoD developers and users.
D&D	Use validated software development platforms that permit continuous integration & delivery evaluation (DevSecOps platform).
Visits	Separate development of mission-level software from development of IA-accredited platforms.

SWAP working group inputs (reflected in Appendix F) related to this recommendation

T&E	Build the enterprise-level digital infrastructure needed to streamline software development and testing across the full DoD software portfolio.

Related recommendations from previous studies

DSB87	Rec 16: All methodological efforts, especially STARS, should look to see how commercially available software tools can be selected and standardized for DoD needs.
SEI01	Infrastructure: In distributed development activities, get high-quality, secure broadband communications between sites. It is an enabler, not a cost.