Port Engine Ahead Flank, Starboard Engine Ahead One-Third!: The Navy's Transition to Flank Speed

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The conning officer orders, "Port Engine Ahead Flank, Starboard Engine Ahead One-Third!" The lee helmsman responds by ordering one engine to its maximum speed, while keeping the other at a nominal speed. With the rudder amidships, the mismatch of forward force drives the ship in a large, clockwise circle instead of to her destination beyond the horizon. The helmsman must compensate with a lot of left rudder to maintain a steady heading and keep the ship on course, a highly inefficient configuration.

The [in-]port engine represents the Navy's ashore enterprise networks quickly transitioning to Flank Speed, a military-specific instance of Microsoft's 365 cloud software-as-a-service (SaaS) suite of collaboration and productivity software. The starboard engine represents the fleet that does not yet have access to Flank Speed. The Navy is having to use a lot of rudder (user burden, frustration, and lost time) to maintain a steady heading. While the Navy's flank speed transition to Flank Speed has been largely successful, this dichotomy is driving a wedge between Sailors' capabilities ashore and afloat. It has induced barriers to Sailors between afloat and ashore commands who need to share information and collaborate with each other. At times, the Navy has even risked the security of sensitive information as afloat Sailors adapt to overcome information management challenges with inadequate or unsanctioned information sharing tools. We must quickly expand Flank Speed access to all Sailors.

The Navy's monumental transition to Flank Speed has realized great achievements and overcome many challenges in transitioning shore enterprise users in the U.S. on the Navy and Marine Corps Intranet (NMCI) and Outside the Continental United States (OCONUS) Navy Enterprise Network (ONE-Net) to Flank Speed. Flank Speed now boasts nearly a half-million users [1] who benefit from exciting new workflow capabilities supporting data processing for controlled unclassified information (CUI) from flexible locations on both government and many personal electronic devices [2]. Furthermore, Flank Speed is born from conception to deployment out of the security principles espoused

in the Department of Defense (DoD) Zero Trust Reference Architecture [3] and stands as an exemplary paradigm for secure procurement and deployment of Microsoft enterprise cloud capabilities for the other military services.

However, as we continue to implement Flank Speed, we must not forget our fleet units and Sailors at the leading tactical edge. Let's get real: At time of publishing, Sailors at tactical-level fleet commands, including those on ships and submarines, do not have access to Flank Speed. Furthermore, Sailors stationed at other non-NMCI/ONE-Net commands, like Naval Postgraduate School (NPS), also are not provisioned Flank Speed accounts. Those coming from a shore command with Flank Speed will lose their Flank Speed accounts over time due to administrative account expiration policies. We should not continue to partition our force between ship and shore using bandwidth and afloat network limitations as reasons to deny access outright to what should be common enterprise capabilities.

Rear Admiral Tracy Hines, Navy Cyber Security Division Director, shared in a recent *CHIPS* interview that her office and program executive office (PEO) Digital (responsible for Flank Speed) are "working aggressively" to bring Flank Speed to ships [4]. The benefits of this effort will be transcendent in the evolution of Navy networks, especially considering that about 57% of active duty Sailors are serving afloat (approximately 145K afloat billets [5], 342,665 active duty Sailors [6]). Getting Flank Speed accounts to all Sailors is a straightforward first step. Getting Flank Speed services to work organically aboard ships (in contrast with remotely accessing Flank Speed services hosted ashore) with limited or no connectivity ashore is a much greater challenge. No doubt, the engineering minds at PEO Digital and PEO command, control, communications, computers, and intelligence (C4I) working together across their organizational boundaries will devise the right solution with Microsoft engineers.

Let's get better by establishing and sustaining permanent Flank Speed accounts for the entire force. There are substantial benefits to maintaining continuous Flank Speed access for all Navy service members. With Flank Speed deployed across the Navy, Sailors will have one consistent, coherent identity. This will provide access to an email account, file storage, and collaboration tools that spans permanent changes of station and temporarily assigned duties and last from accession to retirement for all active and reserve personnel (and beyond, if returning as a Navy civilian employee). Furthermore, once all Microsoft 365 DoD tenants have been synchronized, joint commands will not need to take Sailors away from the Navy enterprise as they do now. Other benefits include the following:

- The elimination of wasted time, lost labor hours, and an unacceptable break in administrative and operational communication while Sailors wait for new accounts during the onboarding process at each new command.
- Continued mission accomplishment for all hands aboard ships when their networks are offline for upgrades in the shipyards. Leveraging the Azure Virtual Desktop [7] capability will enable the Navy [2] to repeatedly avoid months of network transition planning to:

  - Acquire, operate, and secure temporary network infrastructure to store both operational and administrative data securely and reliably.
  - Create accounts on NMCI or ONE-Net, including both the administrative overhead of establishing access and accounts and the technical challenges of transitioning data, applications, and capabilities between enclaves.
  - Avoid risking sensitive data exposure from Sailors using unapproved commercial solutions for email and chat/texting services to overcome breaks in communications capabilities inherent in any transition.

- Having common afloat and ashore networks will:
  - Increase network sensing and defensive cyberspace operations capabilities Navy-wide with tools like Microsoft Defender for Endpoint [8] and Sentinel [9], supporting the continuous monitoring requirements of DoD Instruction 8530.01 [10].
  - Reduce the number of unique environments for which Sailors need specialized training.

- Immediate, ad hoc voice and video teleconference calling capability including voicemail for all Navy personnel.

- Streamlined continuity of operations for embarking staffs, moving between shore and afloat.

Although provisioning Flank Speed accounts across the Navy will cost more in that it increases the monthly Microsoft cloud services bill, it may actually cost less in the sense that it saves labor hours and planning of the sort listed above. We recommend that the Navy conduct or sponsor an analysis of the potential for cost savings, including administrative and technical aspects, by transitioning completely to Flank Speed.

In the meantime, until the fleet can access Flank Speed, we need to embrace the gap and understand limitations: When transitioning to Flank Speed, shore commands and Flank Speed users need to be cognizant of whether the fleet needs to access their data. Specifically, migrating content from "legacy" portals, like the United States Fleet Forces portal, into Flank Speed's SharePoint cuts off a substantial number of users serving afloat. If the fleet needs to access a site's content, such data movement creates silos of information, which is just the opposite of a foundational goal of Flank Speed [11]. For example, the recent NAVADMIN 268/22 announced moving the Standard Navy Distribution List (SNDL) references from the publicly accessible Department of the Navy (DoN) Issuances website to a Flank Speed SharePoint site [12]. Transition of any information capability from one platform to another should be done with careful consideration such that all users, afloat and ashore, retain both access and availability. Loss of either for any period should be considered an unacceptable failure of information and data management. As the Navy disestablishes its pre-existing SharePoint servers, site managers ought to consider

alternative solutions accessible to all pertinent users, like Intelink's SharePoint Online solution, IntelShare.

Flank Speed is a key opportunity to establish a central communications and collaboration platform for the Navy and finally build a bridge between shipboard networks and enterprise networks ashore. We should not leave our shipboard users behind as we continue to accelerate our enterprise capabilities ashore. We can get better by provisioning career-long Flank Speed accounts to all Sailors, active and reserve. Our Sailors and their mission effectiveness are worth the investment for all the reasons described above. It is time for the Navy's conning officer to order, "All engines ahead flank!"

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