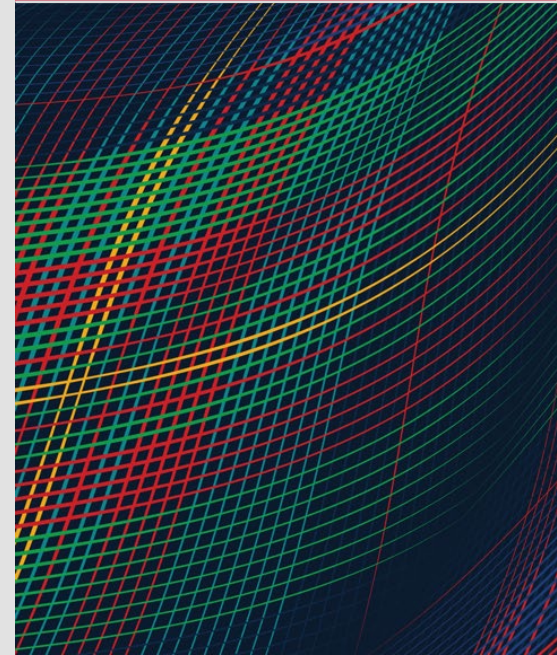


A Peek Behind the Curtain: Securely Maintaining a Development Platform

JUNE 13, 2023

Lyndsi Hughes
David Sweeney



Document Markings

Copyright 2023 Carnegie Mellon University.

This material is based upon work funded and supported by the Department of Defense under Contract No. FA8702-15-D-0002 with Carnegie Mellon University for the operation of the Software Engineering Institute, a federally funded research and development center.

The view, opinions, and/or findings contained in this material are those of the author(s) and should not be construed as an official Government position, policy, or decision, unless designated by other documentation.

References herein to any specific commercial product, process, or service by trade name, trade mark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by Carnegie Mellon University or its Software Engineering Institute.

NO WARRANTY. THIS CARNEGIE MELLON UNIVERSITY AND SOFTWARE ENGINEERING INSTITUTE MATERIAL IS FURNISHED ON AN "AS-IS" BASIS. CARNEGIE MELLON UNIVERSITY MAKES NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, AS TO ANY MATTER INCLUDING, BUT NOT LIMITED TO, WARRANTY OF FITNESS FOR PURPOSE OR MERCHANTABILITY, EXCLUSIVITY, OR RESULTS OBTAINED FROM USE OF THE MATERIAL. CARNEGIE MELLON UNIVERSITY DOES NOT MAKE ANY WARRANTY OF ANY KIND WITH RESPECT TO FREEDOM FROM PATENT, TRADEMARK, OR COPYRIGHT INFRINGEMENT.

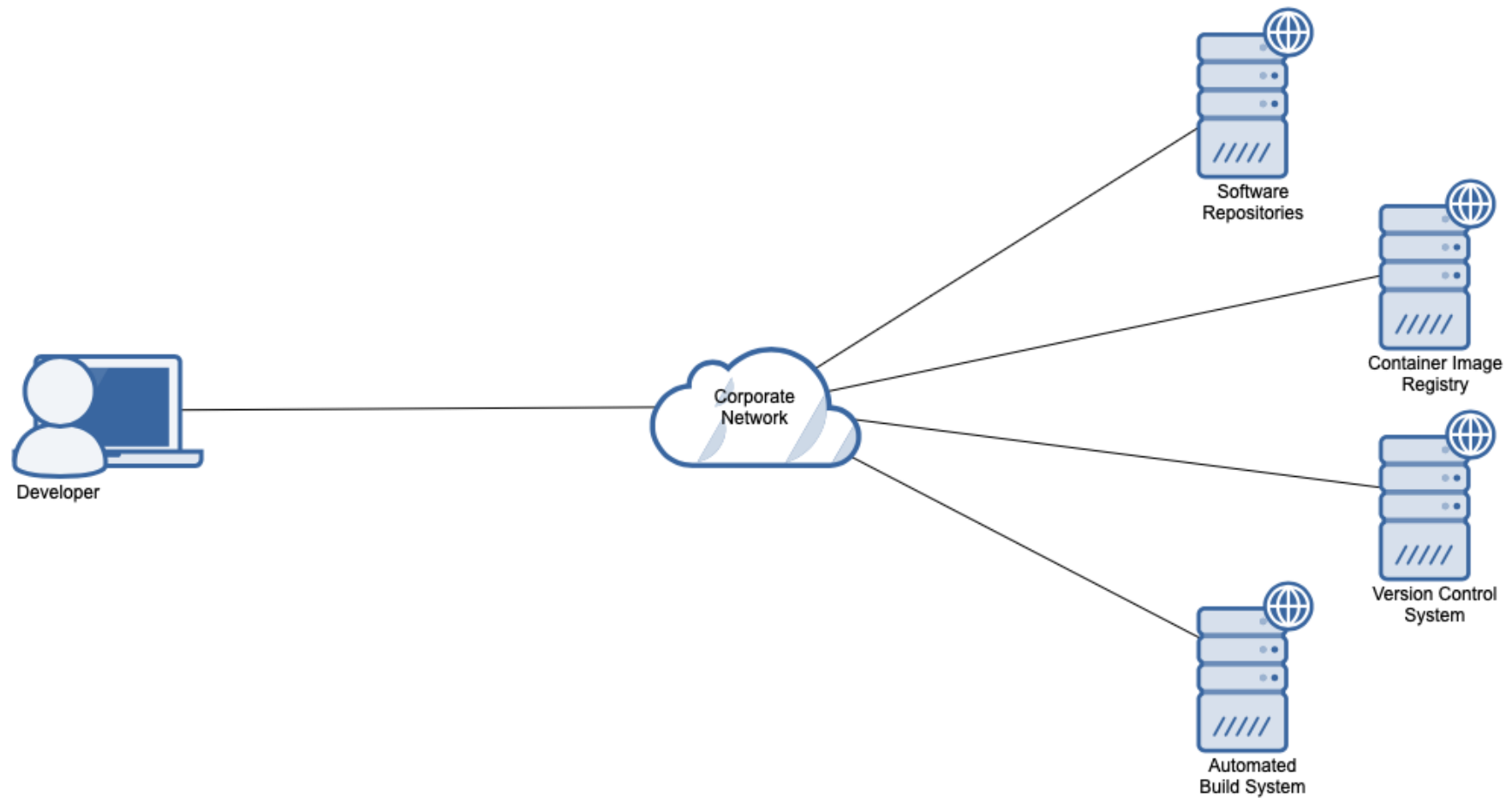
[DISTRIBUTION STATEMENT A] This material has been approved for public release and unlimited distribution. Please see Copyright notice for non-US Government use and distribution.

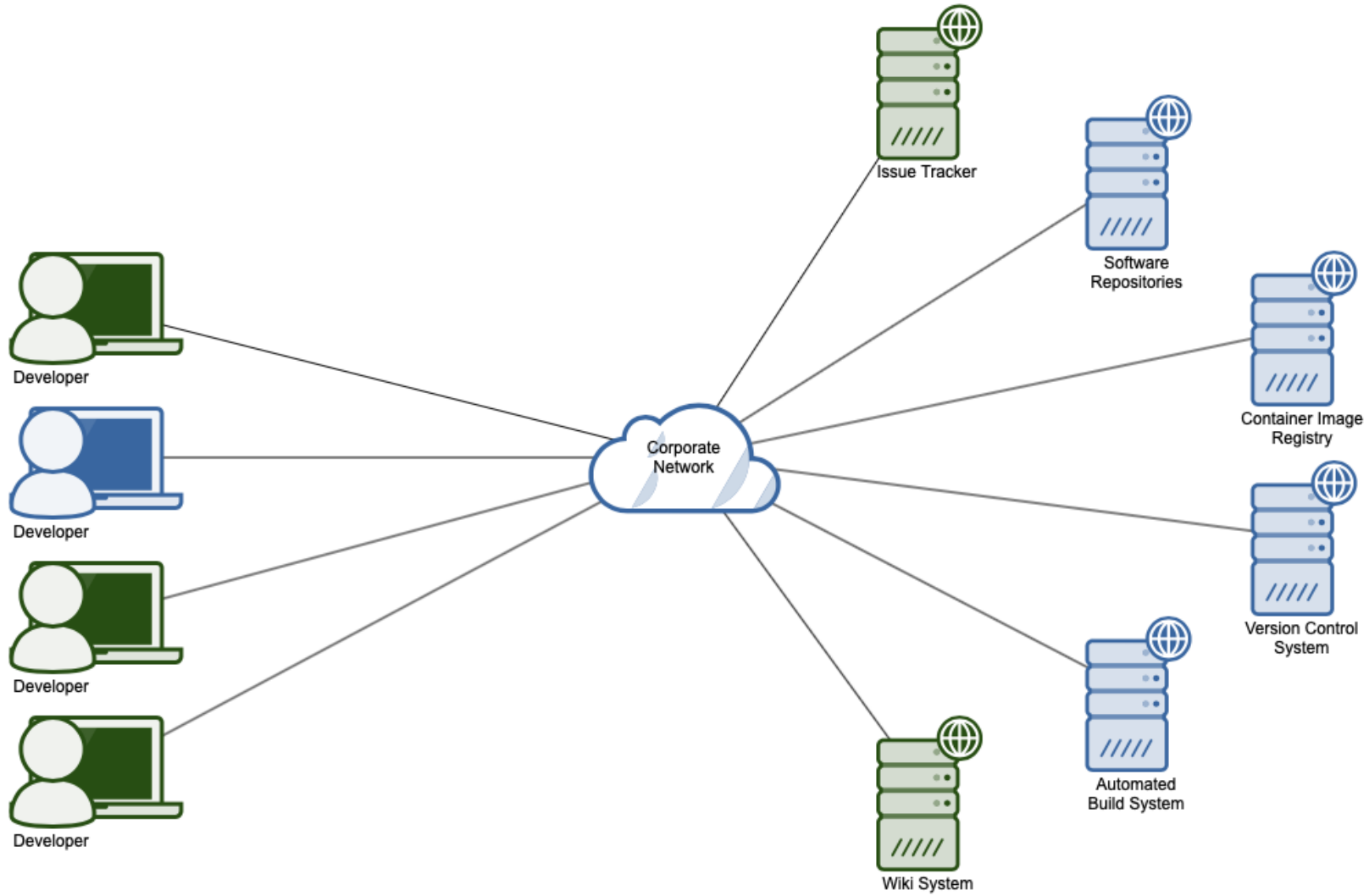
This material may be reproduced in its entirety, without modification, and freely distributed in written or electronic form without requesting formal permission. Permission is required for any other use. Requests for permission should be directed to the Software Engineering Institute at permission@sei.cmu.edu.

DM23-0569

A Peek Behind the Curtain: Securely Maintaining a Development Platform

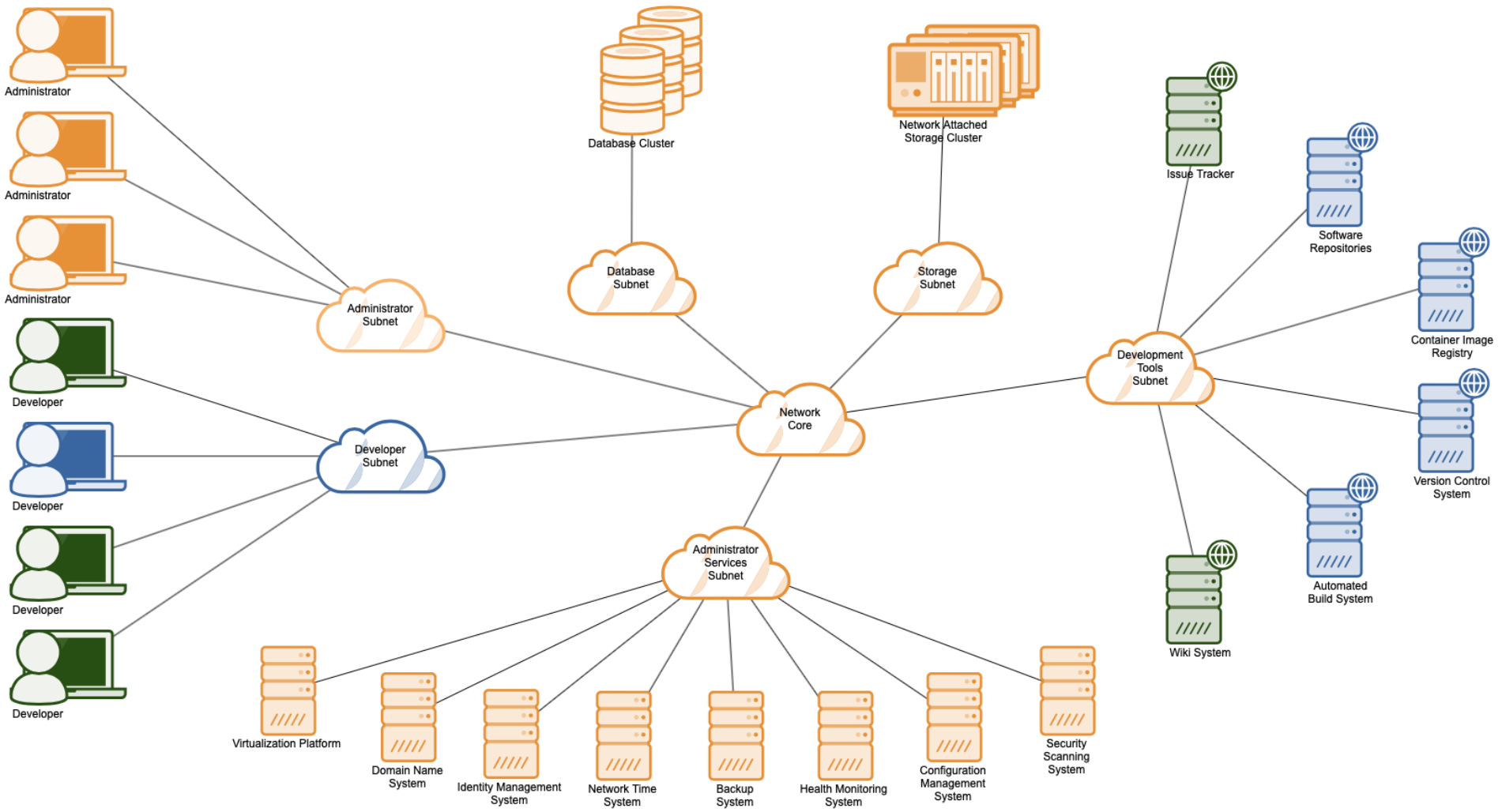
Developers' Perspectives

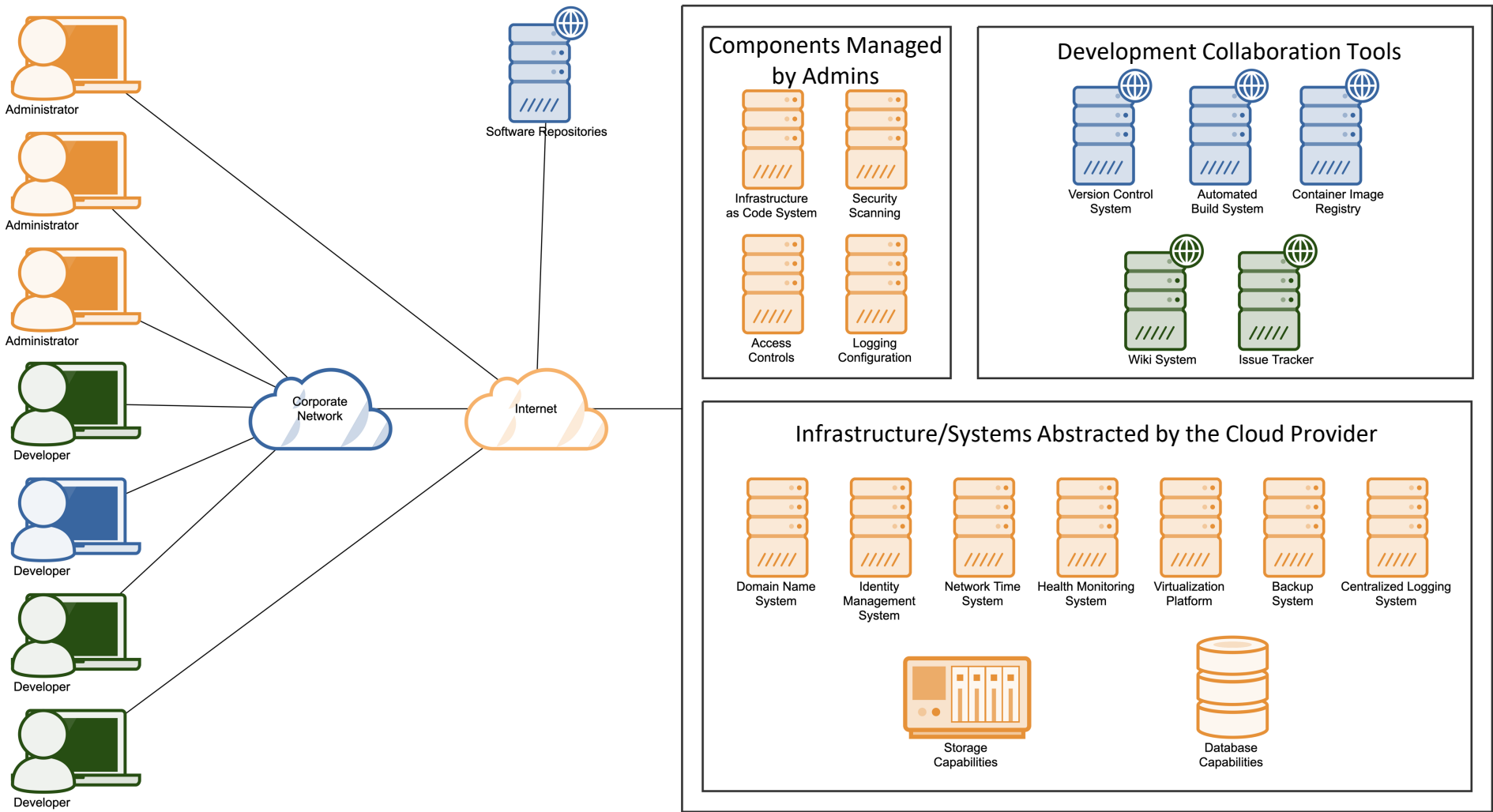




A Peek Behind the Curtain: Securely Maintaining a Development Platform

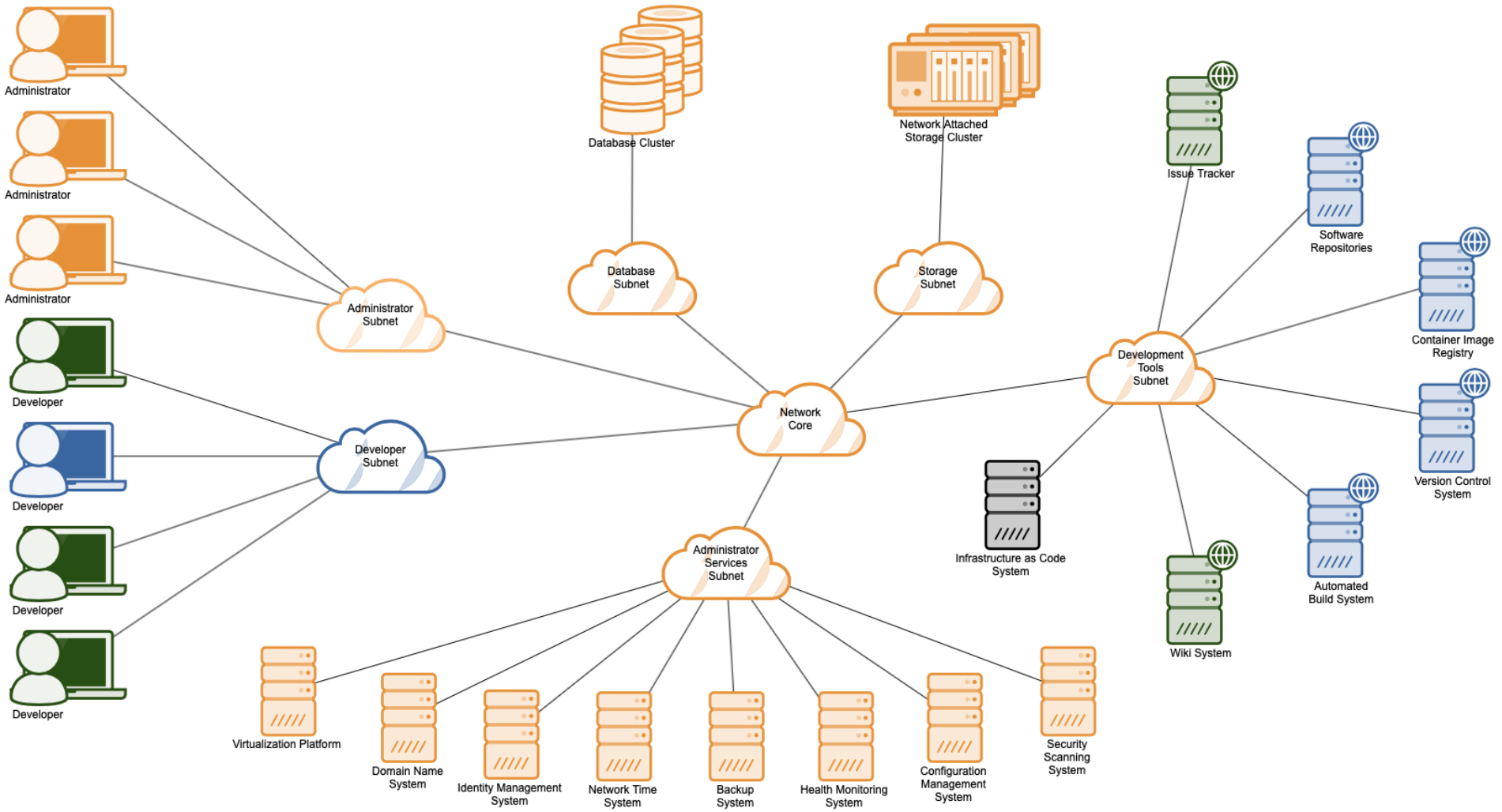
Infrastructure Administrators' Perspectives





A Peek Behind the Curtain: Securely Maintaining a Development Platform

Secure Platform Design



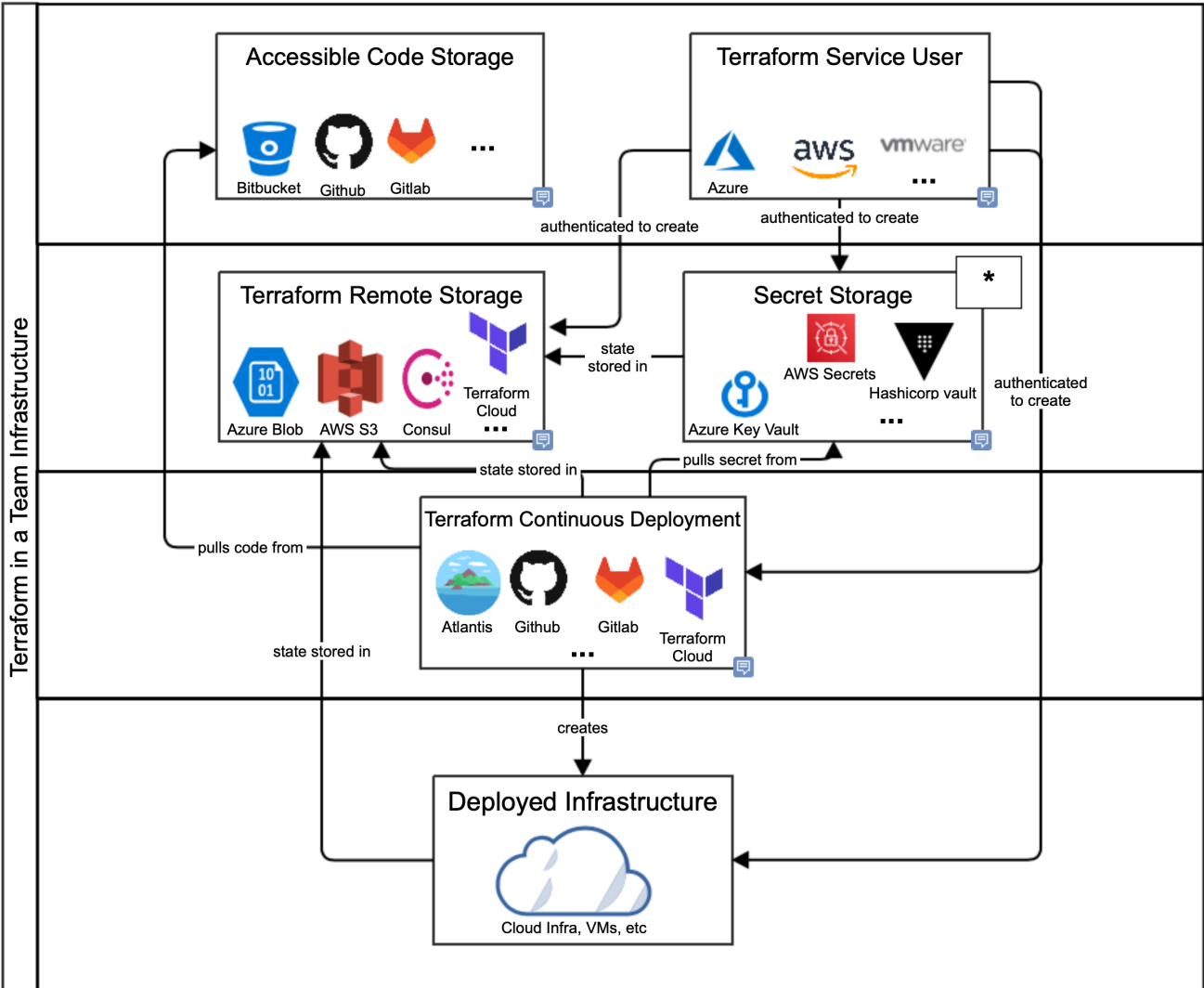


Diagram courtesy of Matt Heckathorn

Secure Component Operation

for each component do:

- plan deployment of component

- perform secure initial configuration of component

- write documentation for component

while component in service:

 - patch/update/upgrade component periodically

 - scan component for vulnerabilities periodically

 - audit component logs periodically

 - monitor component health

 - maintain and update component documentation

decommission component

Secure Environment Operation

- Understand your sphere of influence
 - what systems exist within your sphere?
 - how do your systems interact with things outside of your sphere?
 - what documents should exist in your library of knowledge?

- Understand the impact of changes within your sphere
 - adding/removing components
 - reconfiguring components
 - adding automation

Contact Us



Lyndsi Hughes
Senior Systems Engineer



David Sweeney
Associate Software Developer



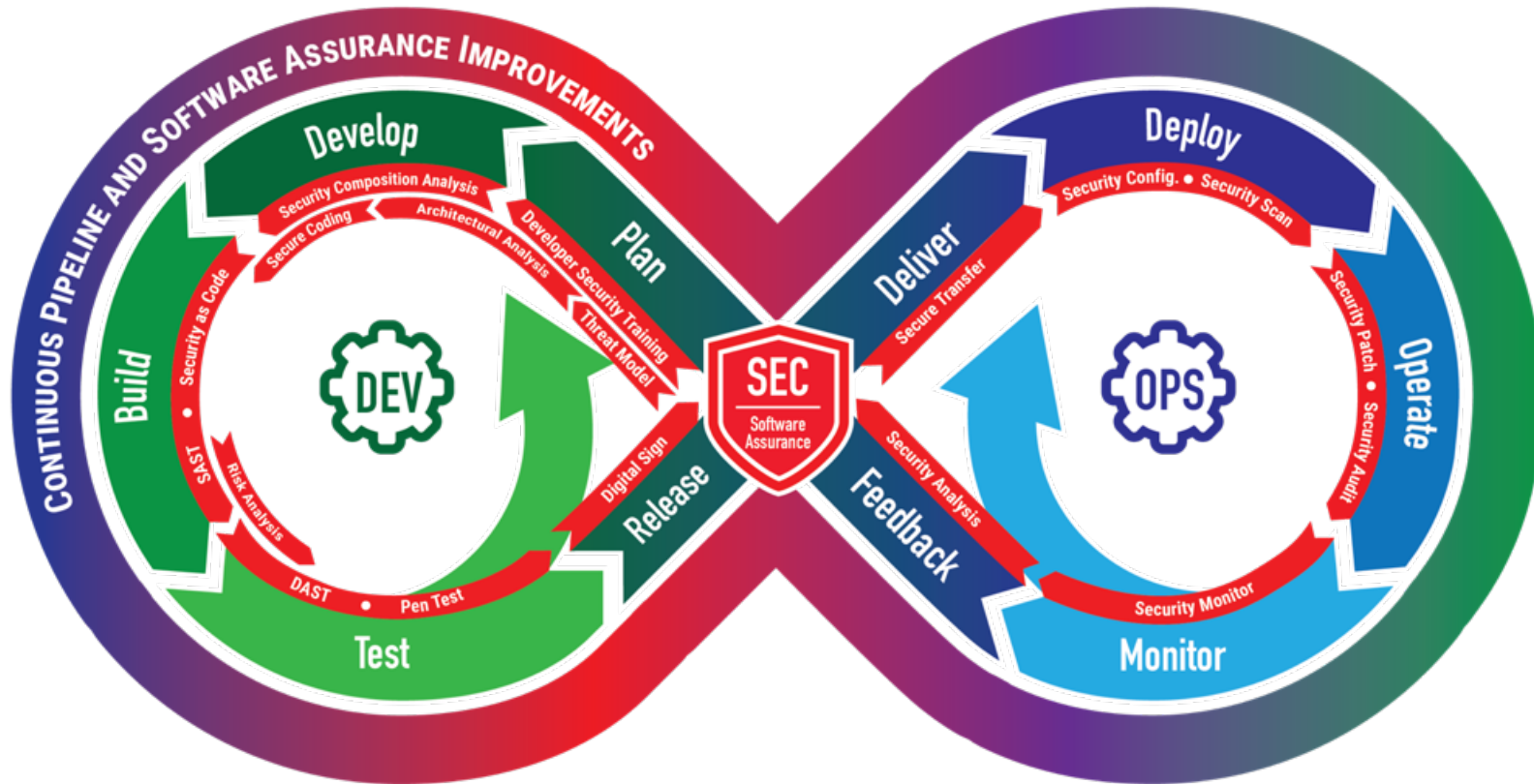
Vanessa Jackson
Senior Engineer



Matt Heckathorn
Integration Engineer

info@sei.cmu.edu

DevSecOps Infinity Diagram



DevSecOps Pipeline

