ICPSR Virtual Data Enclave as a Collaboratory for Team Science

Sarah Rush, Sara Britt, John Marcotte
ICPSR/Institute for Social Research
University of Michigan

Introduction

A challenge of managing access to restricted-use data is to ensure adequate protections and, at the same time, break down barriers to team science.

Deductive disclosure risk necessitates extra security for restricted-use data, which often impedes team science (e.g., requiring use of a non-networked computer prevents file sharing and collaboration).

The trend in security for restricted-use data is moving towards providing access through computing enclaves.

Computing Enclaves

- Accessible through encrypted network connections.
- Prevent researchers from downloading or uploading restricted-use data and derivatives.
- Offer security enhancements over non-networked computers:
  - prohibit the download of restricted-use data; and
  - enable third party review of output for compliance with disclosure protection rules.

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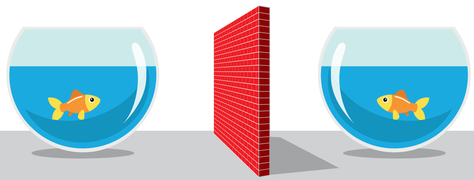
The Problem

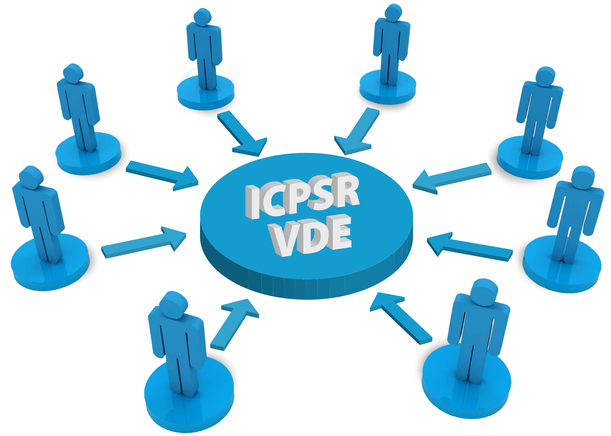
Breaking down barriers to team science while ensuring security of restricted-use data is difficult.



The Solution

The ICPSR Virtual Data Enclave (VDE) is:

- Based on VMware to create unique virtual machines;
- Configured to prevent files from being copied on and off the virtual machine and prevent access to the Internet; and
- Accessed through encrypted network connections and two-factor authentication.



The Result

ICPSR VDE promotes team science by facilitating collaboration on research involving restricted-use data.

ICPSR VDE Facilitates Team Science

- Secure collaboration space for research teams analyzing restricted-use data.
- Shared disk space for research teams meets security requirements for restricted-use data.
- Researchers access the restricted-use data virtually thereby removing physical proximity as a barrier to collaboration.
- Enables researchers in different disciplines and at different organizations to work together.

Key Stats

376 Active ICPSR project teams

612 Active users

1.63 Average user/project team

VDE USAGE BY REGION