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# (Research Highlight) Red Team Redemption: A Structured Comparison of Open-Source Tools for Adversary Emulation



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*Authors: Michael Kouremetis*

The MITRE Caldera™ team just wanted to highlight what is, at least in our view, a well done survey of adversary emulation tools recently conducted by cyber security researchers out of the *Center for Digital Safety & Security, of the Austrian Institute of Technology*. We found the survey to be of high quality, arguably the best methodical evaluation of adversary emulation tools (that we have seen), and most importantly useful. We can now just send back this survey when asked about a comparison of open source adversary emulation tooling , which happens a lot around here :). So a big thank you to the authors from the Caldera team.

Kudos to the authors *Max Landauer, Klaus Mayer, Florian Skopik, Markus Wurzenberger, and Manuel Kern.*

Paper link: <https://arxiv.org/abs/2408.15645>

\*Note on survey evaluation results:

Yes, MITRE Caldera was ranked highly by the authors in their independent survey but that's not why we are sharing the survey. We are sharing the survey because it is a very good survey, period. Additionally, the Caldera team believes in having many tool suites, and always using the best tool for the job. Not to mention that our team uses at least half of the other tools surveyed, and that Caldera makes significant use of one of the other evaluated tools (i.e. Atomic Red Team).

## *Resources*

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Authors: Kate Esprit

Sep 13, 2022

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**CALDERA**

4.2.0

CAMPAIGNS

- agents
- abilities
- adversaries
- operations

PLUGINS

- access
- atomic
- compass
- debrief
- emu
- fieldmanual
- gameboard
- human
- manx
- sandcat
- ssl
- stockpile
- training

CONFIGURATION

- settings
- fact sources
- objectives
- contacts
- exfiltrated files

**Operations**

Azorian | 2 decisions | 3s seconds ago | + New Operation

Download Report | Delete Operation

**Azorian** | Download Graph SVG

Host Name: CASE  
Platform: linux  
IP Addresses: 192.168.0.243  
Agents (1): q8kkjk

Recent Actions

Status	Ability
collect	Find files
success	Find files

running

+ Manual Command | + Potential Link | Operation Details | Filters

Time Ran | Status | Ability Name | Tactic | Agent | Host | pid | Link Command | Link Output



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Authors: Kate Esprit, Daniel Matthews & Turquoise Richardson

Aug 23, 2022

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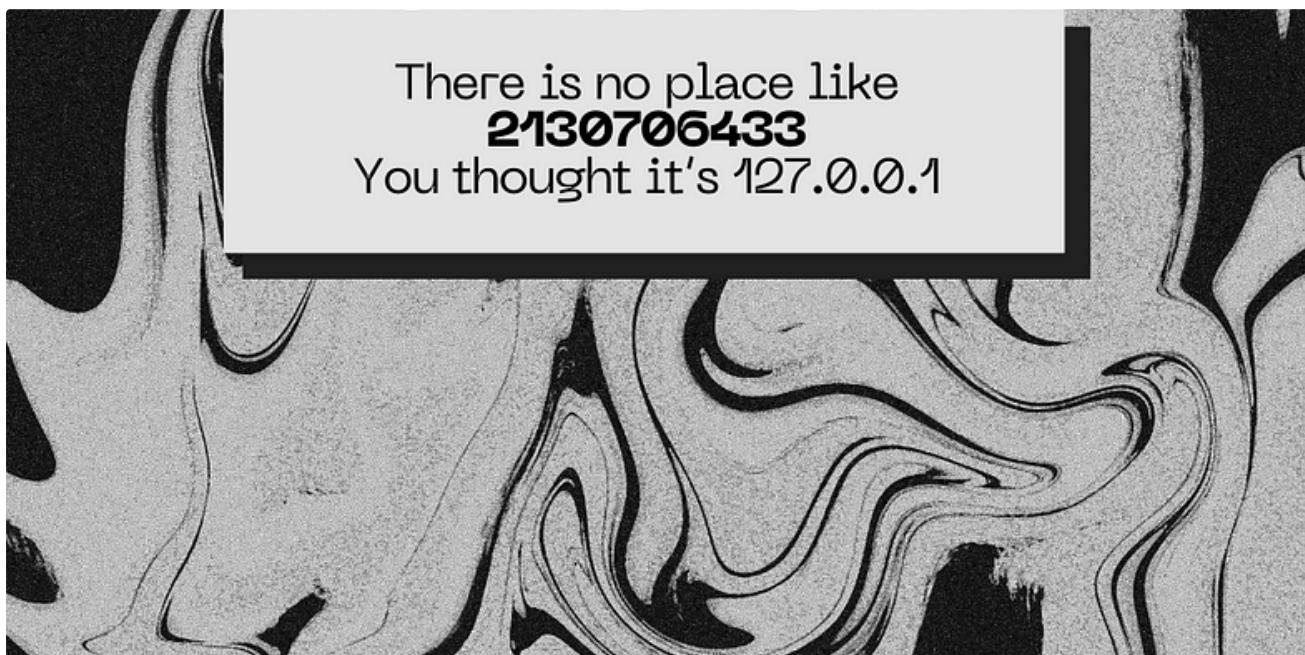
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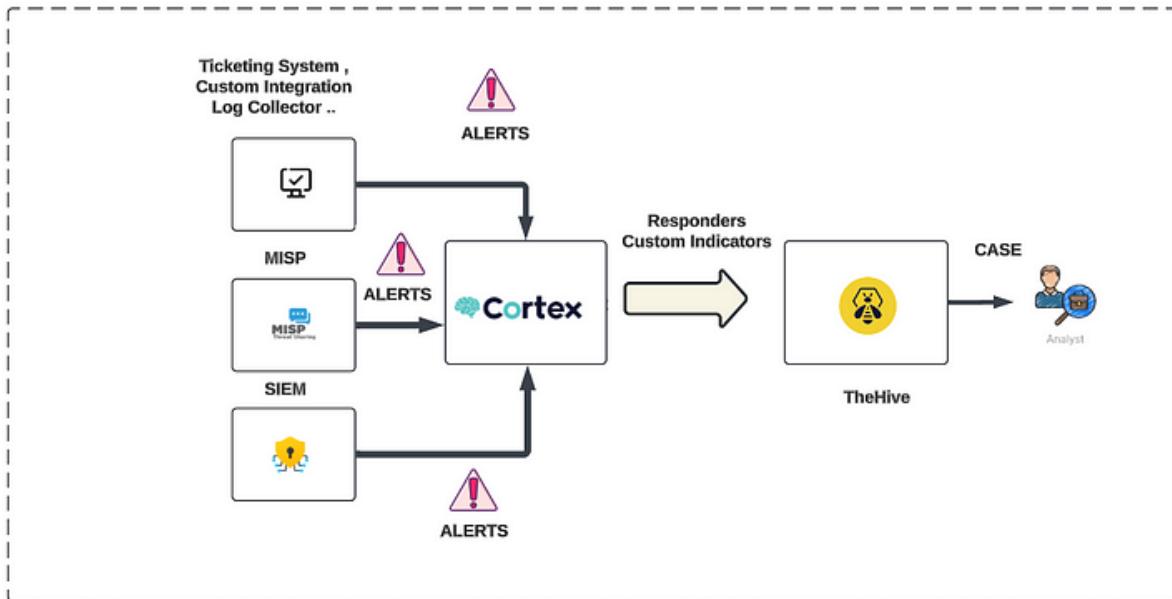
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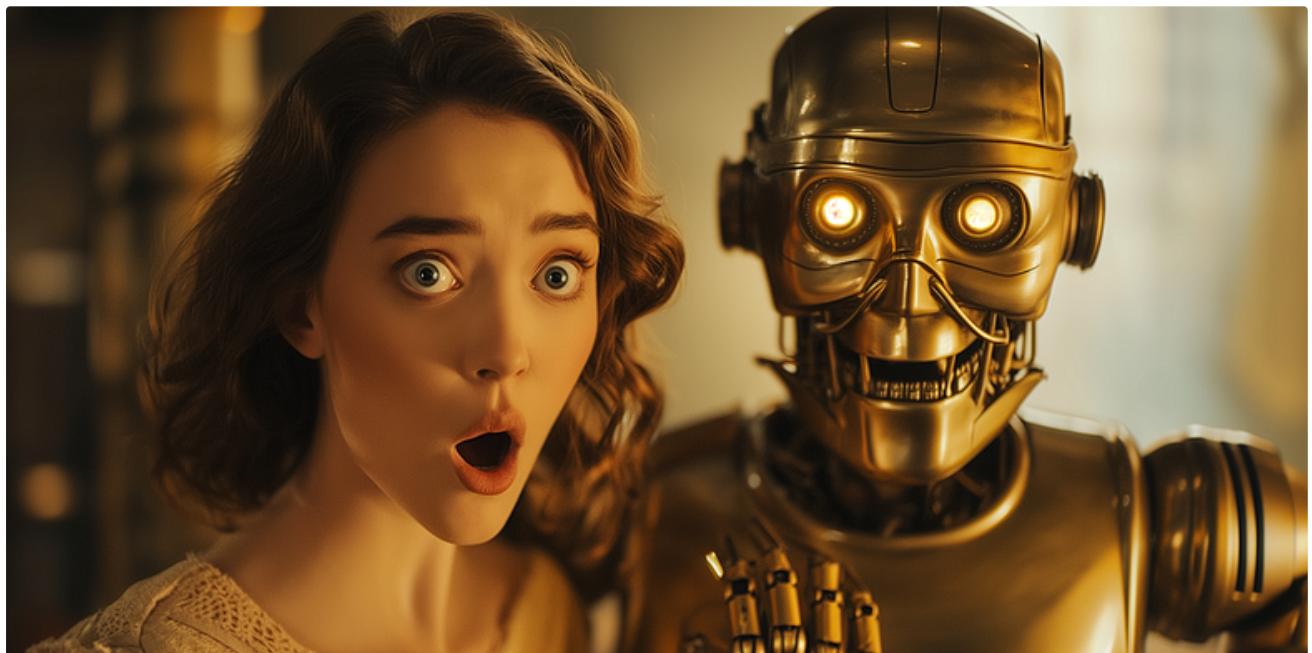


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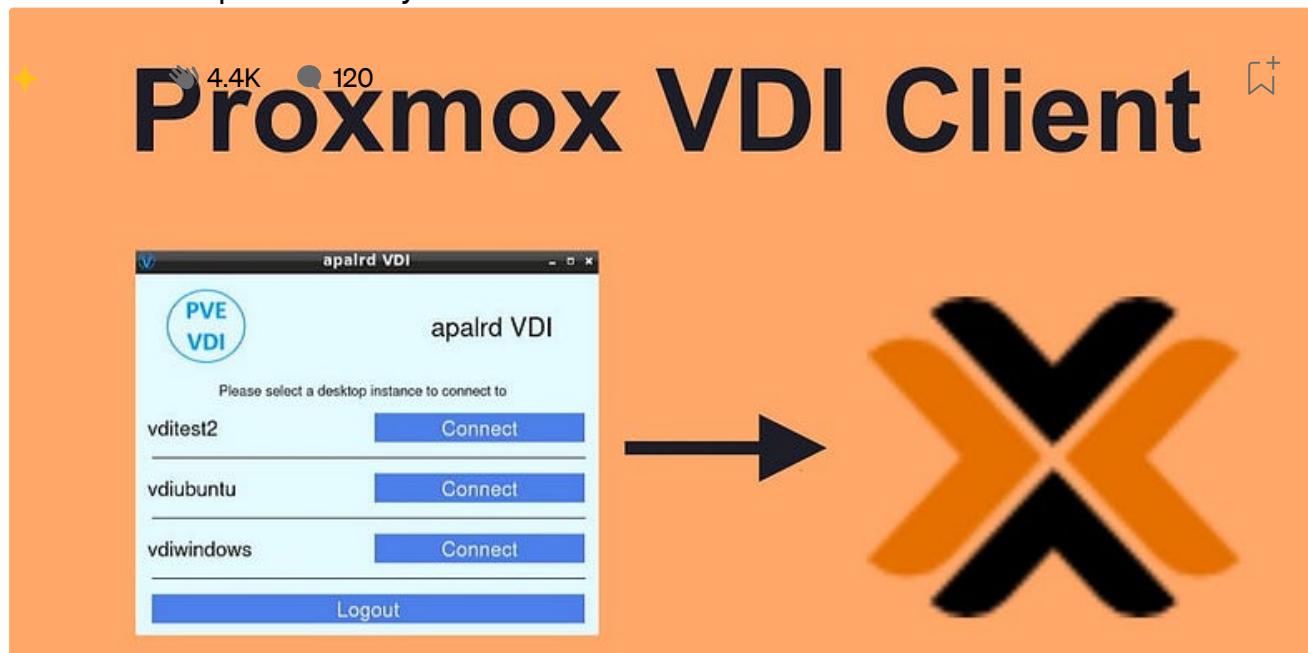
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