Intel (R) Regimented Potential Incident Examination Report: An information gathering windows framework

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R.P.I.E.R. ?

Regimented

Potential

Incident

Examination

Report

What's in a Name?

RAPIER vs RPIER

Intel (R) RPIER is the name of the official GPL release of the tool.

So please erase the A from all your presentations when you get home so we don't get fired. ☺

Introduction to RPIER

RPIER is..

RPIER is a modular incident response framework designed to acquire commonly requested information during an internal event, incident, or investigation in an easy, consistent manner.

RPIER is not..

RPIER is not a forensics tool.

It does not honor most industry guidelines for a proper forensics examination with regard to not affecting the image or files upon the system

RPIER was a way for a unix guy (Steve) to gather windows data in the environment.

Attribution

Jesse Kornblum

FRED

First Responders Evidence Disk

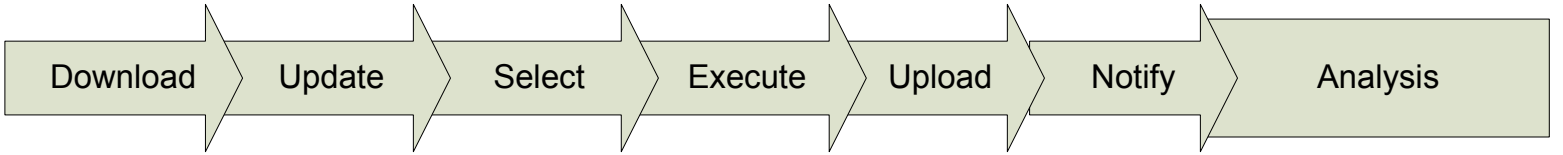
Purpose for RPIER

- The worst time to learn how to acquire information from a system is *during the incident.*
- Common reaction to an event is to patch, run AV scanners, spyware scanners, automatic OS updater, etc to get it working condition as soon as possible.
- Not everyone
  - (1) knows how to acquire the requested information nor
  - (2) do they acquire it in the same fashion

Incident Handling BKMs

- Introduce a limited number of decisions by the 1st responder that could result in differing results
- Automate where possible to free up incident handler's focus for bigger event issues
- Provide a complete lifecycle for information gathering from start to delivery of data
- Expedite the acquisition of information since time is of the essence
- Comprehend all data that could be requested by analysts and gathers it during 1st execution of the tool

RPIER: Work Flow



RPIER Features

- Stand Alone
- Modular Design
- Fully configurable GUI
- SHA1 verification checksums
- Auto-update functionality
- Results can be auto-zipped
- Auto-uploaded to central repository
- Email Notification when results are received
- 2 Quick Scan Modes – Fast/Slow
- Separated output for faster analysis
- Pre/Post run changes report
- Fully automatable via command line and conf file
- Process affinity throttling

Command Line Arguments

- Data Bundling Options
- Program Execution Priority
- Email Header Information
- Path Definitions
- Webservice URLs
- Integrity Check options
- And a whole lot more...

Under the Hood:

RPIER Architecture

RPIER Requirements

- Windows NT* based Operating System
- Microsoft .NET* Framework 1.1+
- Microsoft WSH* (Windows Scripting Host) 5.6+
- Microsoft WMI* (Windows Management Interface) 1.5+

Engine Operational Flow - Launch

- Load RPIER.Conf file
- Interpret command line options
- Auto Update check (Optional)
- Auto Update if necessary (Optional)
- Restart EXE (if updated)
- Load Modules
- Display GUI (Optional)

Engine Operational Flow - Execute

- Pre-Run Forensics Checkpoint (Optional)
- Run Each Selected Module
- Compress results (Optional)
- Upload results (Optional)
- Post-Run Forensics Checkpoint and Differential Analysis (Optional)
- Send Email Notification (Optional)

RPIER Networking

- Uses the http (optionally https) protocol for all communication
- Port is configurable (non-port 80 is recommended)
- Webserver can be IIS or Apache on Windows
- Multiple servers can be setup for redundancy/load balancing
- Enables the following features:
  - RPIER distribution
  - Auto-update functionality
  - Auto-upload functionality
  - Central Results Repository
  - Central Documentation Resource (Manual/Training/FAQ)
  - Manual RPIER upload and non-RPIER upload

Gathering Information

RPIER Modules

RPIER Module Architecture

- Based on VBScript
- RPIER.vbi is a large library of VBScript functions to reference
- Modules can have individual conf files to allow for end user configuration
- Modules are stand alone
  - Can be added/removed at will
  - Allows for independent development/testing

Feature Module Output

Volatile Information

- complete list of running processes
- locations of those processes on disk
- ports those processes are using
- Net (start/share/user/file/session)
- *Layer3 traffic samples*
- Output from nbtstat and netstat
- *Dump memory for all running processes*
- *Checksums for all running processes*
- Capture last Modify/Access/Create times for designated areas
- Document all open shares/exports on system
- All files that are currently open
- Capture current routing tables
- *All DLLS currently loaded and their checksum*
- capture logged in users
- list of all network connections

Static Information

- System Name
- System Startup Commands
- Copies of application cache (temporary internet files)
- Uptime
- Local account and policy information
- List of all files with alternate data streams
- Capture list of services installed on the system
- Discover files marked as hidden
- Export entire registry
- Current patches installed on system
- Current AV versions
- *List of all installed software on system (known to registry)*
- Capture all logs (system + application specific)
- MAC address
- *Search/retrieve files based on search criteria.*

Output

- Output is stored in directory path: SystemName\DATE\TIME\
- Format: ASCII text

How to Interpret the Results

To teach you this would require several months (years?) of training and education in operating systems internals, hacking techniques, malware behavior, etc.

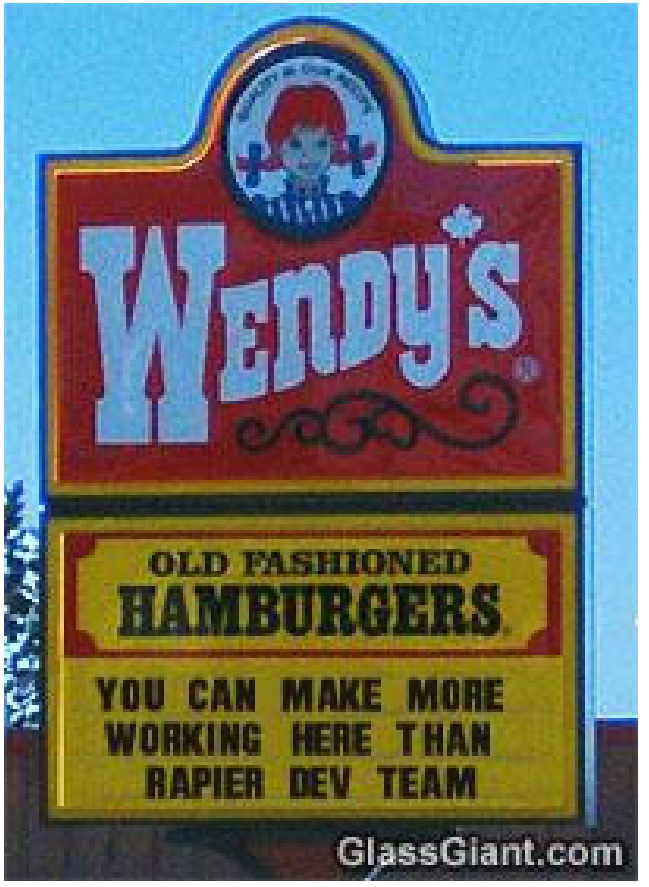
Ultimately, the results must be reviewed by people with sufficient knowledge of your environment to be able to discern the odd from the routine.

Start Demo Here

Over the Horizon

Where do we go from here?

- Validate on VISTA
- *NIX. Ask us after the talk...
- More Modules! (of course)
- Alternate output formats
- Program to parse output for interesting results



Release of the Tool

https://sourceforge.net/projects/rpier/

Build Notes:

- Certain modules rely upon licensed software, or on tools we could not get permission to bundle with a GPL license.
- We've made it as easy as possible – acquire these on your own and drop into Module folders to get them working.

Contributions & Feedback

Have an idea for module?

Have code ready to drop into a module we don't already have?

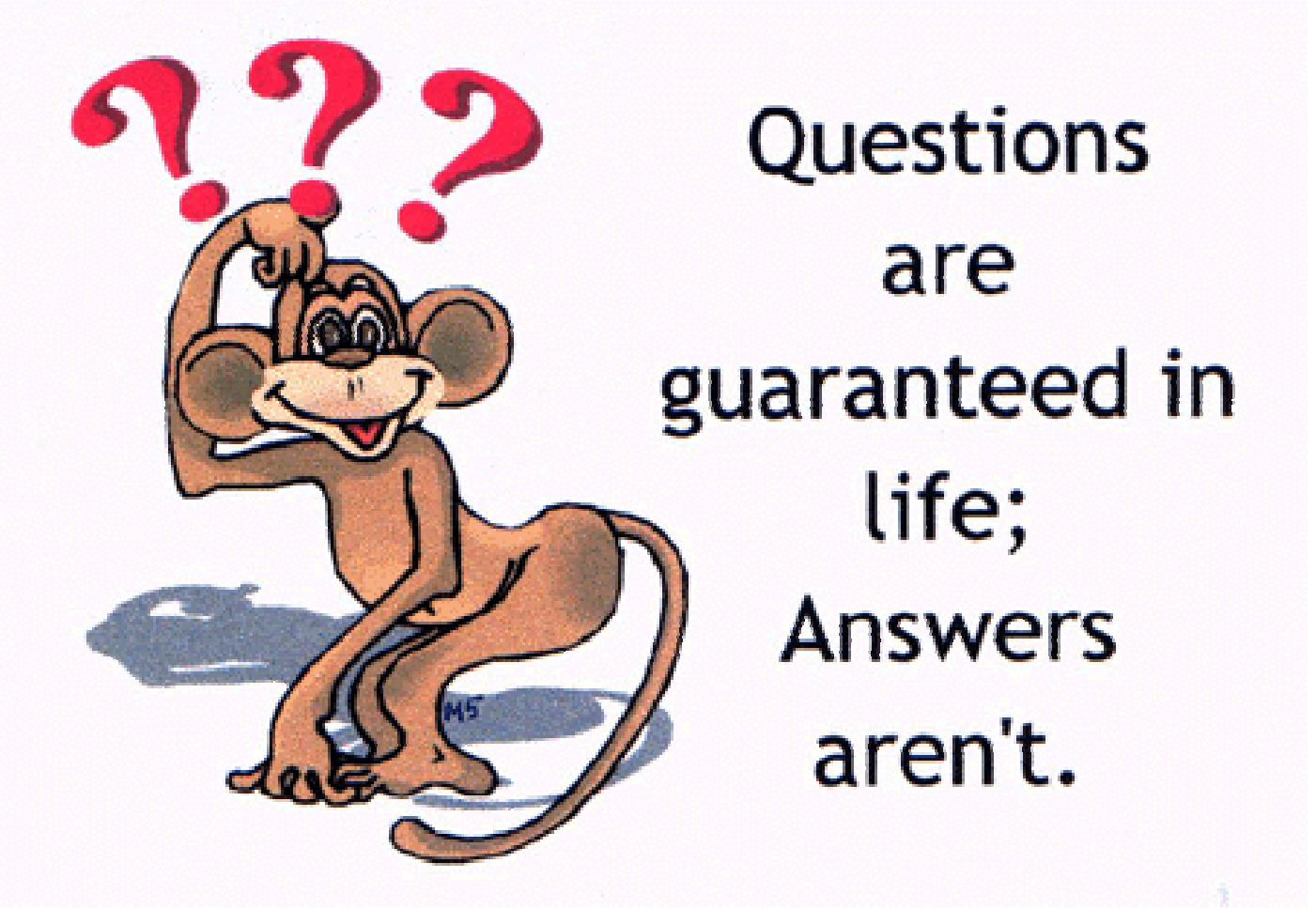
Have ideas how to improve it?

Contact us:

RPIER.securitytool@gmail.com

http://groups.google.com/group/rpier

Questions?



Caveat

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