The Old New Crash

Cloud Memory Dump Analysis

Presenter: Dmitry Vostokov
Memory Dump Analysis Services

MDA Services

- Memory Dump Analysis Audit
- Software Trace Analysis Audit
- Software Error Reporting Audit
- Remote Training
- Debugging Bureau
- Tool Objects and EasyDbg
- iMemoryDump (New)

Powered by DA+TA

DumpAnalysis.org + TraceAnaysis.org

© 2011 Memory Dump Analysis Services

Prerequisites

Experience in software troubleshooting, memory dump analysis or live debugging on non-cloud platforms

© 2011 Memory Dump Analysis Services

Agenda (Summary)

- Cloud for Memory Dump Analysis
- Memory Dump Analysis for Cloud
- What's Old / What's New
- Live Memory Dump Analysis

© 2011 Memory Dump Analysis Services

What's a Cloud

- Deployment Architecture
- IaaS (Infrastructure as a Service)
- PaaS (Platform as a Service)
- PaaS example: Windows Azure

© 2011 Memory Dump Analysis Services

Cloud for MDA

- Elastic storage (BLOBS, Tables)
- Centralized security
- Worker roles to generate textual logs
- Tables for checklists (extensibility)
- RESTful dump analysis
- iMemoryDump on Windows Azure

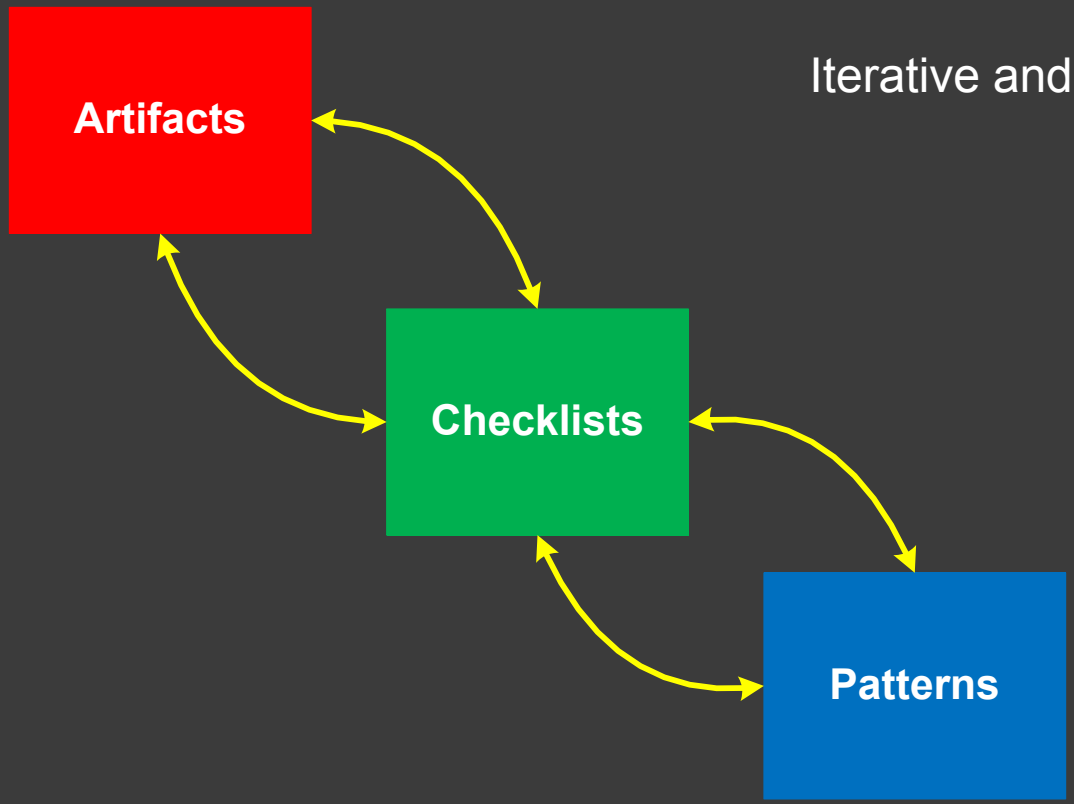
© 2011 Memory Dump Analysis Services

What's Old

- IaaS – memory dumps
- Pattern-driven analysis
- Virtualized System
- Wait Chains (ALPC / RPC)
- Stack Trace Collection
- Azure PaaS – .NET / CLR / Managed Space patterns

© 2011 Memory Dump Analysis Services

A.C.P. Root Cause Analysis



Iterative and Incremental

Checklists and patterns
as best practices

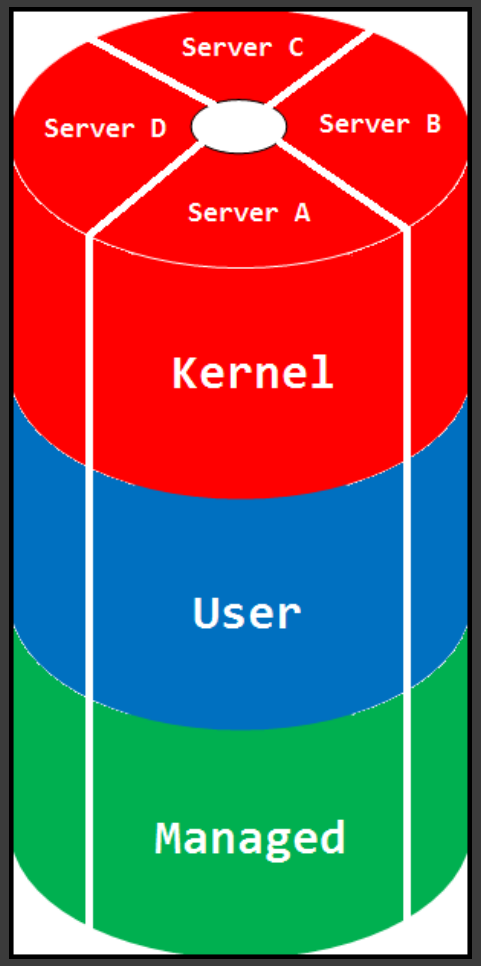
© 2011 Memory Dump Analysis Services

What's New

- PaaS – IaaS might be hidden (currently Azure has a beta-program for using customer's W2K8 R2 VMs)
- Reduced variability of hardware (identical hardware, everything is virtualized)
- Cloud Environment pattern
- Possible private modifications

© 2011 Memory Dump Analysis Services

Orbifold Memory Space



The space name comes from a mathematical orbifold (a generalization of manifold).

Note: in WinDbg you can load multiple dumps and switch between them (.opendump and || commands)

Might be affected by ASLR

© 2011 Memory Dump Analysis Services

Example: Development

Now I switch to a WinDbg session...

© 2011 Memory Dump Analysis Services

Example: Deployment

Now I switch to a WinDbg session...

© 2011 Memory Dump Analysis Services

Resources (Cloud)

- The Cloud at Your Service by J. Rosenberg* and A. Mateos (ISBN: 978-1935182528)

  Platform independent general cloud overview with examples from Amazon and Google

- Azure in Action by C. Hay and B. Prince
  (ISBN: 978-1935182481)

  Excellent general Windows Azure platform overview to prepare you for further hands-on exploration

* The author of a book “How Debuggers Work: Algorithms, Data Structures, and Architecture” (ISBN: 978-0471149668)

© 2011 Memory Dump Analysis Services

Resources (MDA)

- DumpAnalysis.org
- Pattern-Driven Memory Dump Analysis
- Memory Dump and Trace Analysis: A Unified Pattern Approach
- Introduction to Pattern-Driven Software Problem Solving
- Software Trace and Memory Dump Analysis
- Advanced Software Debugging Reference:

- OpenTask publishes this presentation transcript with case studies (ISBN: 978-1908043283)

© 2011 Memory Dump Analysis Services

Resources (Training)

August remote training season:

Accelerated Windows Memory Dump Analysis

Visit Memory Dump Analysis Services for registration details:

www.DumpAnalysis.com

© 2011 Memory Dump Analysis Services

Resources (Free Webinars)

Cloud Software Trace Analysis (August)

Visit Memory Dump Analysis Services for registration details:

www.DumpAnalysis.com

© 2011 Memory Dump Analysis Services

Q&A

Please send your feedback using the contact form on DumpAnalysis.com

© 2011 Memory Dump Analysis Services

Thank you for attendance!

Memory Dump Analysis Service on Facebook

Join DA+TA Facebook Group

© 2011 Memory Dump Analysis Services