State Of Security

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Microsoft

Intro

- Joined Microsoft in 1991
- Assigned to Security in 1997

MSRC Role

- Microsoft Security Response Center - MSRC
  - Protect our customers
  - Understand the security ecosystem
  - Analyzing threats and respond to them
  - Work with partners as part of distributed defense network
  - Root cause analysis and provide feedback and guidance to product groups

Focusing minds of the Execs

- “3vil day”
- “g00d day”

Understanding The Security Ecosystem

- Actors
- Technology impact
- Business model

Security Ecosystem

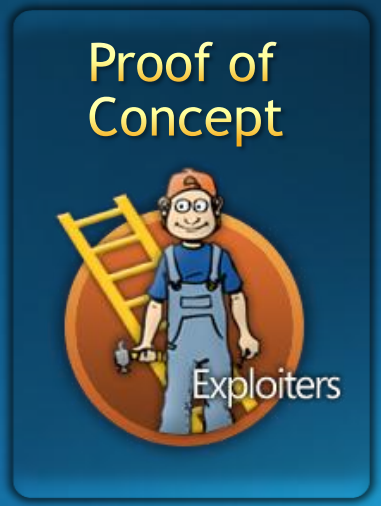
Vulnerability	Proof of Concept	Payload	Botnet	???
				
Finders	Exploiters	Malware houses	Attacker	Organized

Security Ecosystem

Finders (Security Researchers)

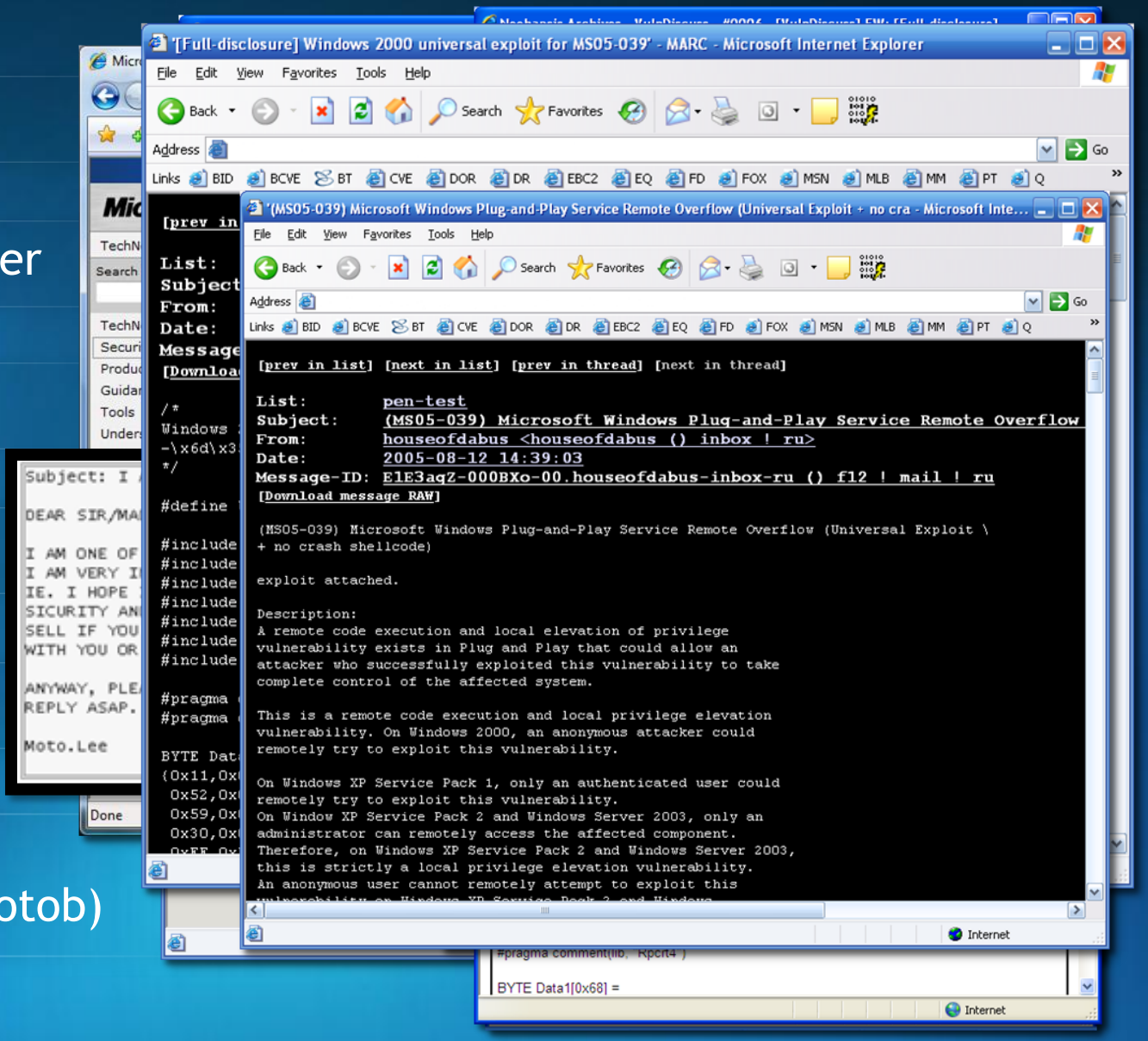
- Diverse community
- Working across
  - Technologies
  - Geographies
  - Time zones
- Big headache and best friend
- Blackhat -> Bluehat

Security Ecosystem



Tracing Our Advisory To An Exploit

1. Original Advisory
2. Newsgroup chatter
3. Private offers
4. 1st Exploit
5. 2nd exploit
6. 3rd exploit
   (which became Zotob)



Security Ecosystem

Security Intelligence Reports

Security Ecosystem

Malicious Attacks!

- Changes theory to reality
- Were the hard lessons are learned
- Attack meets the defence
- A journey that is constantly evolving

The Vandals

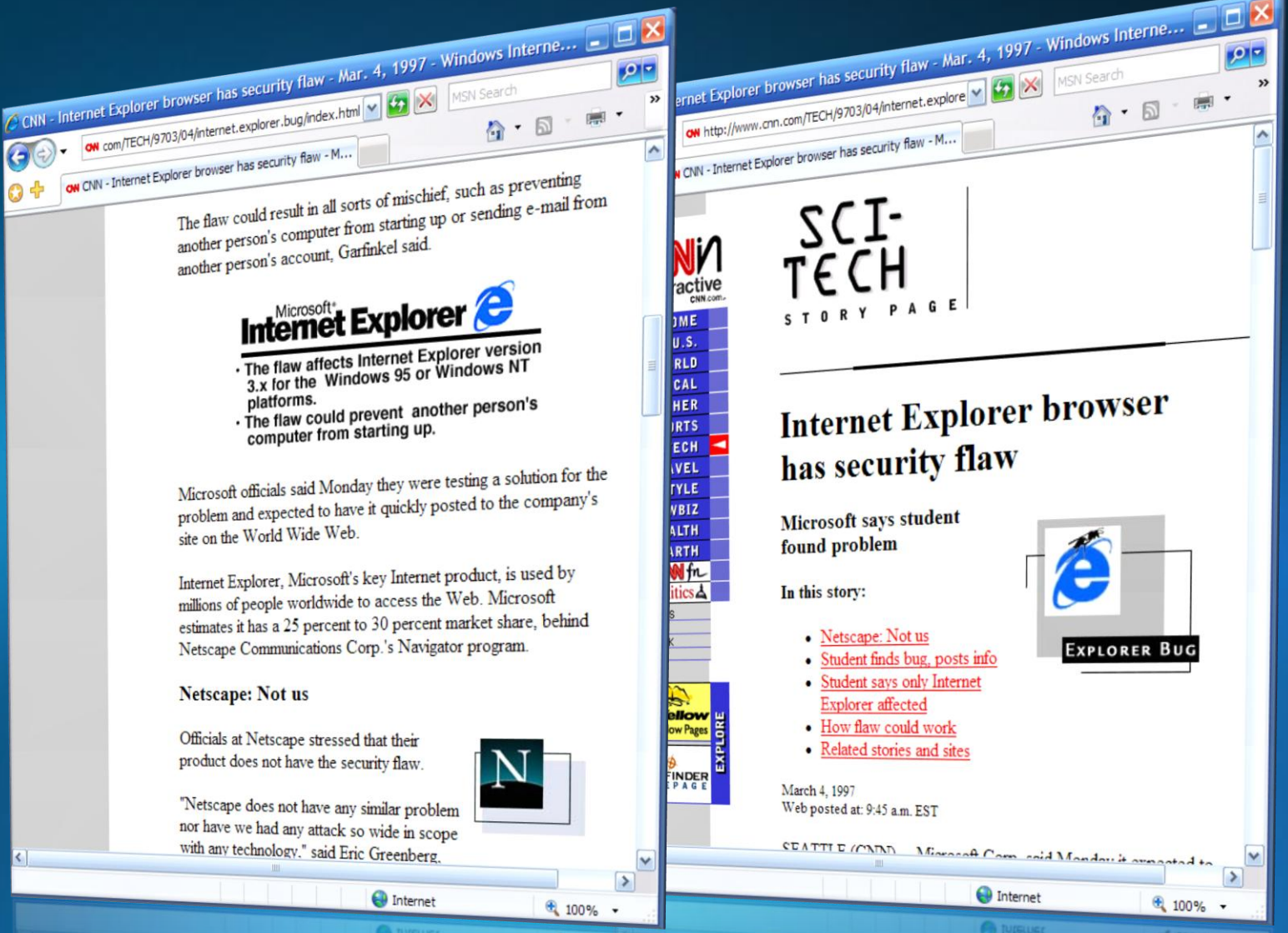
1998-2001

Defacements

Web Site Defacements

- 1998 – 1999 Several countries are reported involved in patriotic hacking: United States, Pakistan, China, Brazil
- December 28, 1999 – a hacking group declares cyberwar against Iraq and China
- January 7, 1999 – Several other hacking groups make successful plea for restraint
- March 31, 2001– U.S. and Chinese planes collide
- April / May 2001 – Cyberwar breaks out again.

March ’97


CNN - Internet Explorer browser has security flaw - Mar. 4, 1997 - Windows Interne...
http://www.cnn.com/TECH/9703/04/internet.explorer.bug/index.html
The flaw could result in all sorts of mischief, such as preventing another person's computer from starting up or sending e-mail from another person's account, Garfinkel said.
Microsoft Internet Explorer
• The flaw affects Internet Explorer version 3.x for the Windows 95 or Windows NT platforms.
• The flaw could prevent another person's computer from starting up.
Microsoft officials said Monday they were testing a solution for the problem and expected to have it quickly posted to the company's site on the World Wide Web.
Internet Explorer, Microsoft's key Internet product, is used by millions of people worldwide to access the Web. Microsoft estimates it has a 25 percent to 30 percent market share, behind Netscape Communications Corp.'s Navigator program.
Netscape: Not us
Officials at Netscape stressed that their product does not have the security flaw.
"Netscape does not have any similar problem nor have we had any attack so wide in scope with any technology," said Eric Greenberg,
Internet
100%
CNN - Internet Explorer browser has security flaw - Mar. 4, 1997 - Windows Interne...
http://www.cnn.com/TECH/9703/04/internet.explore
CNN - Internet Explorer browser has security flaw - M...
SCI-TECH
STORY PAGE
Internet Explorer browser has security flaw
Microsoft says student found problem
In this story:
Netscape: Not us
Student finds bug, posts info
Student says only Internet Explorer affected
How flaw could work
Related stories and sites
EXPLORER BUG
March 4, 1997
Web posted at: 9:45 a.m. EST
Internet
100%

…After The Dust Settled

- Created secure@microsoft.com
- Internet Explorer Security Team
- Security Windows Initiative
- Microsoft Security Response Center
- Understood the influence of Security Research Community

Series of unfortunate events

Name	First date seen in wild
Melissa	Friday July 23, 1999
Bubbleboy	Wednesday November 10, 1999
Loveletter	Thursday May 4, 2000
Transition to weaponized vulnerabilities	
Code Red I	Thursday July 12, 2001
Code Red II	Saturday August 4, 2001
Nimda	Tuesday September 18, 2001

The Era of the Big Worms

Slammer
(SQL resolution service issue)

Fixed	**July 24, 2002**	**MS02-39**
Exploited	January 2003	

Security Response Process

Security Bulletin Release Process

- Repeatable, Consistent, Process
- High Quality Product Updates
- Authoritative Accurate Guidance

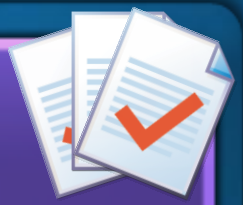
Security Incident Response Process

- Timely and Relevant Information
- Mitigations and Protection
- Solution and Guidance

Microsoft Security Response Center

Managing and resolving security vulnerabilities and security incidents

Security Bulletins



- Published for each Microsoft security update
- Mitigations and workarounds for fixed vulnerabilities
- Distribution and deployment guidance
- Bulletin ratings
  - Critical
  - Important
  - Moderate
  - Low

Security Advisories

- Supplement Microsoft Security Bulletins
- Provide early information about vulnerabilities, mitigations and workarounds
- Updated throughout incident with new information

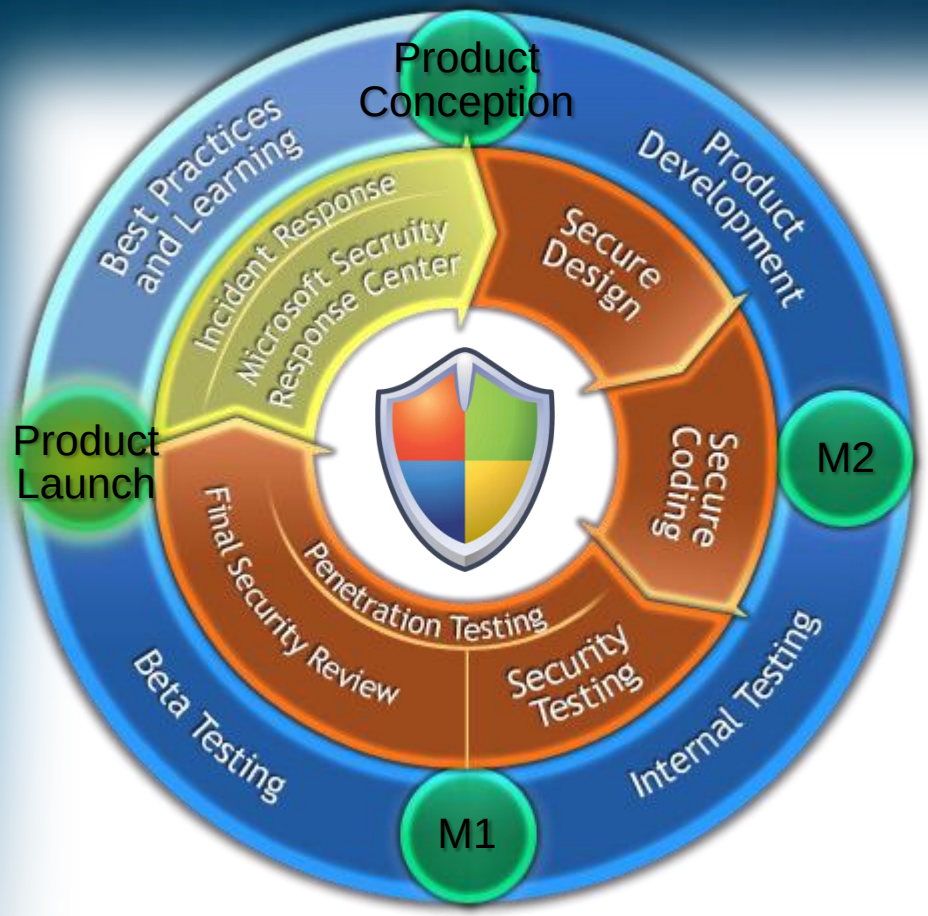
MSRC Blog

- Insights directly from the MSRC team
- Updates on recent security related news, activities, announcements, and threat issues
- http://blogs.technet.com/msrc/

Blaster
(RPC/DCOM Buffer overrun)

Fixed	**July 16, 2003**	**MS03-26, MS03-03**
Exploited	August 11, 2003	

Security Development Lifecycle



Process

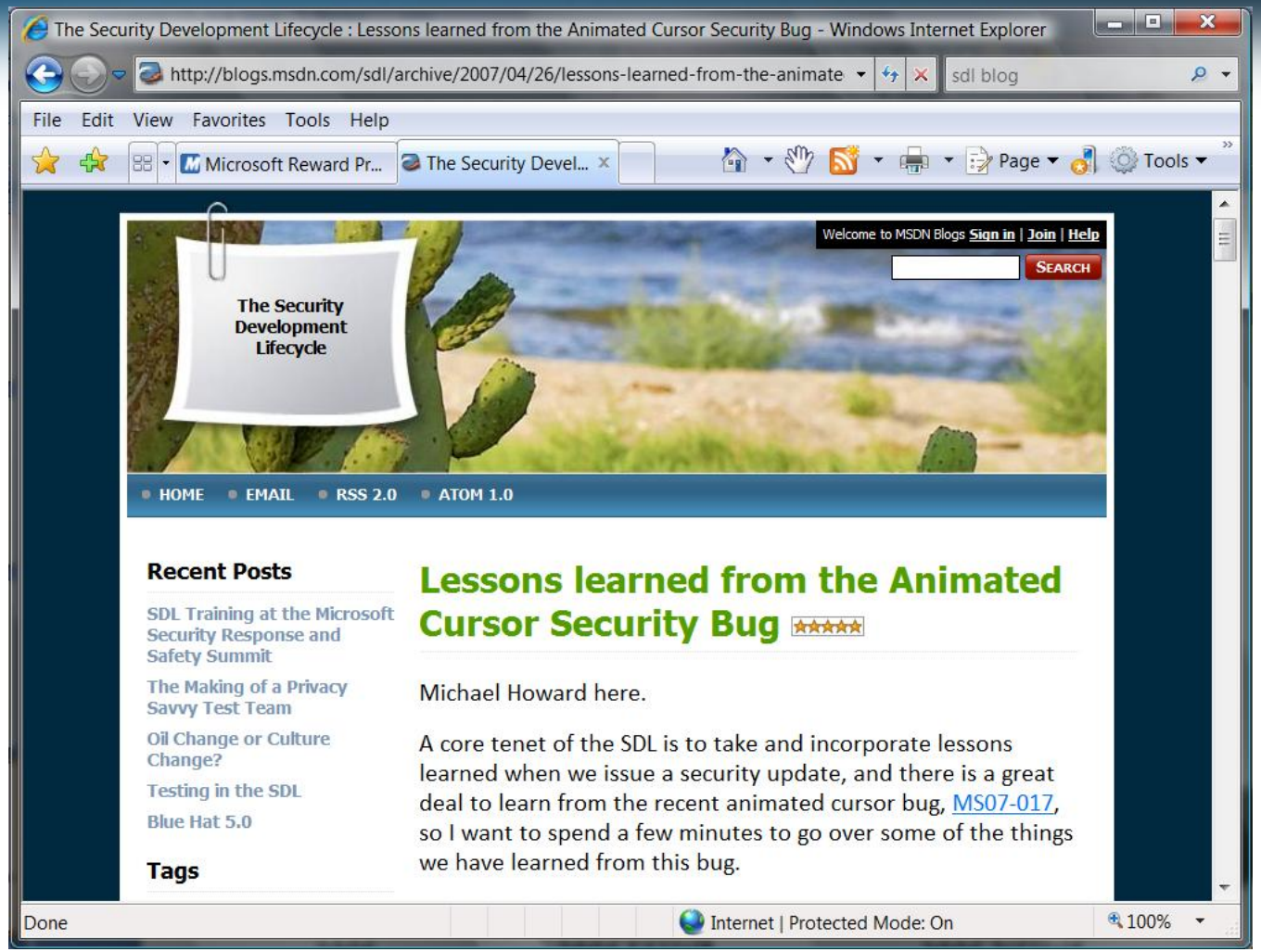
Education

Accountability

Microsoft Product Development Lifecycle

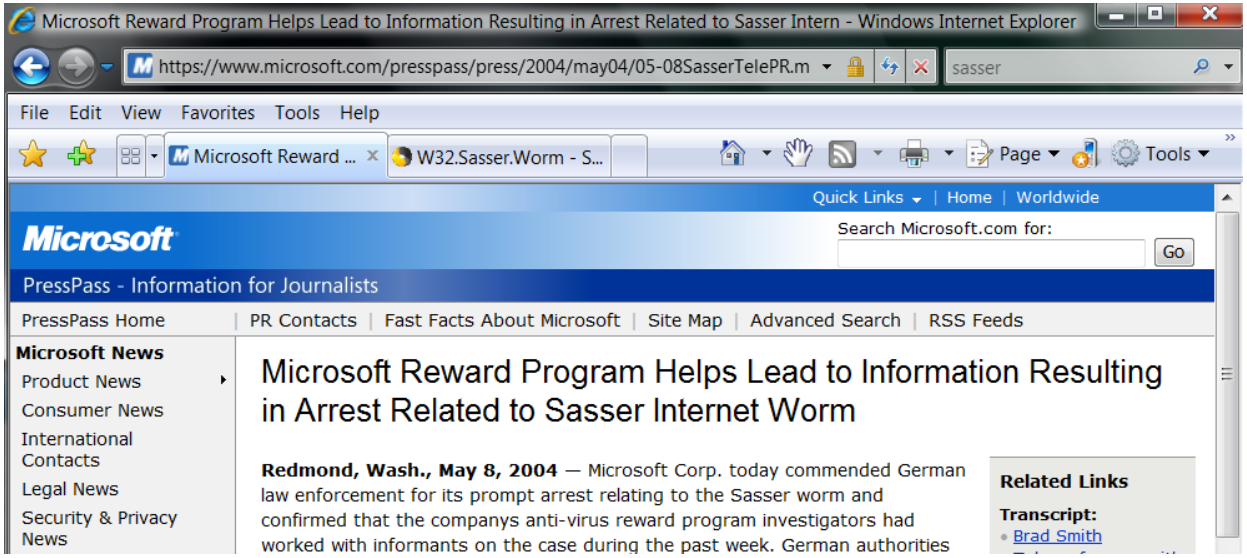
Microsoft Security Development Lifecycle

SDL Blog


The Security Development Lifecycle : Lessons learned from the Animated Cursor Security Bug - Windows Internet Explorer
http://blogs.msdn.com/sdl/archive/2007/04/26/lessons-learned-from-the-animate
sdl blog
File Edit View Favorites Tools Help
Microsoft Reward Pr...
The Security Devel...
Page
Tools
Welcome to MSDN Blogs Sign in | Join | Help
SEARCH
The Security Development Lifecycle
HOME
EMAIL
RSS 2.0
ATOM 1.0
Recent Posts
SDL Training at the Microsoft Security Response and Safety Summit
The Making of a Privacy Savvy Test Team
Oil Change or Culture Change?
Testing in the SDL
Blue Hat 5.0
Tags
Lessons learned from the Animated Cursor Security Bug
Michael Howard here.
A core tenet of the SDL is to take and incorporate lessons learned when we issue a security update, and there is a great deal to learn from the recent animated cursor bug, MS07-017, so I want to spend a few minutes to go over some of the things we have learned from this bug.
Done
Internet | Protected Mode: On
100%

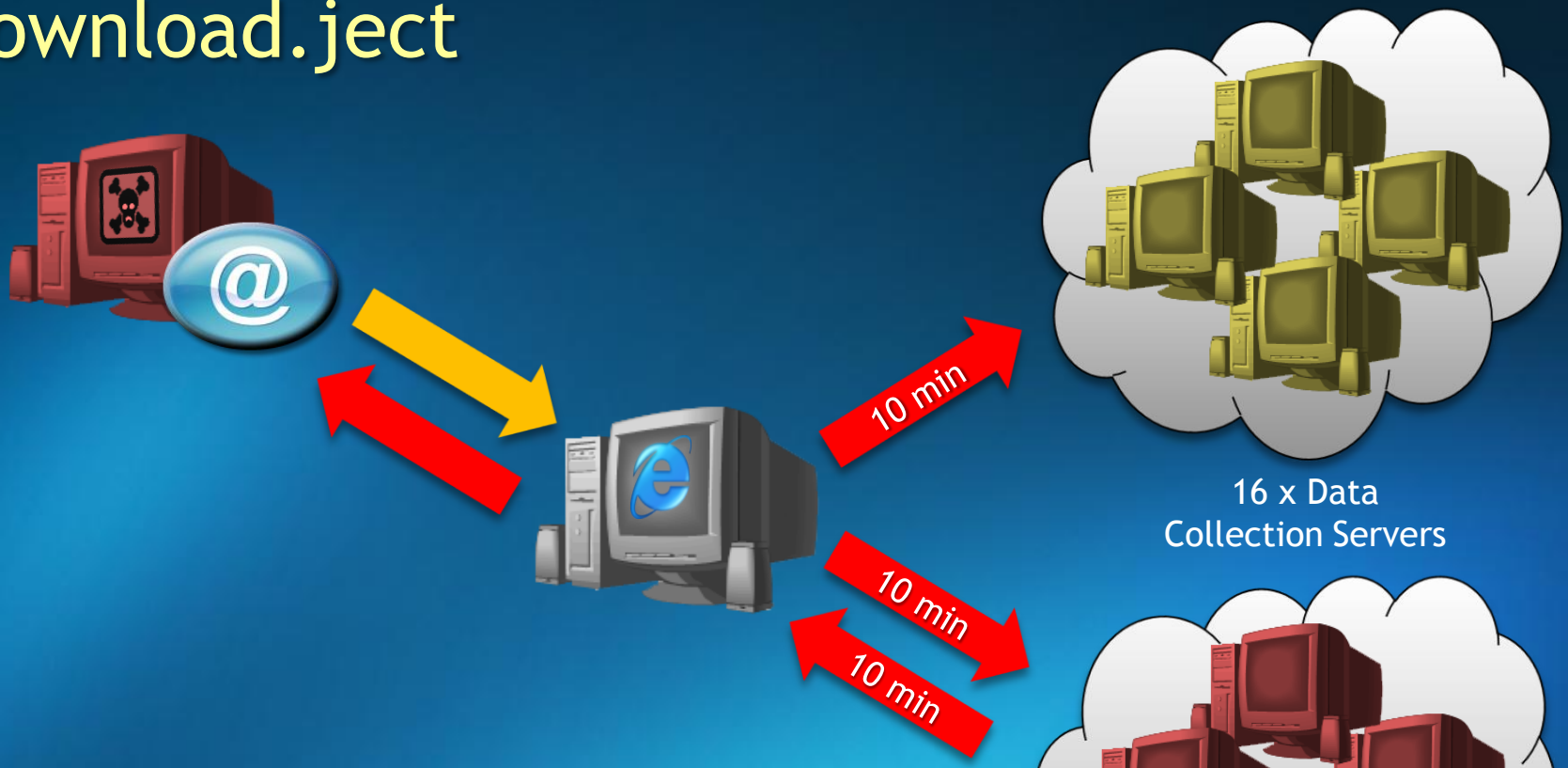
Sasser
(LSASS logging issue)

Fixed	April 13, 2004	MS04-011
Exploited	April 30, 2004	



Transitional Event: C&C

Download.ject



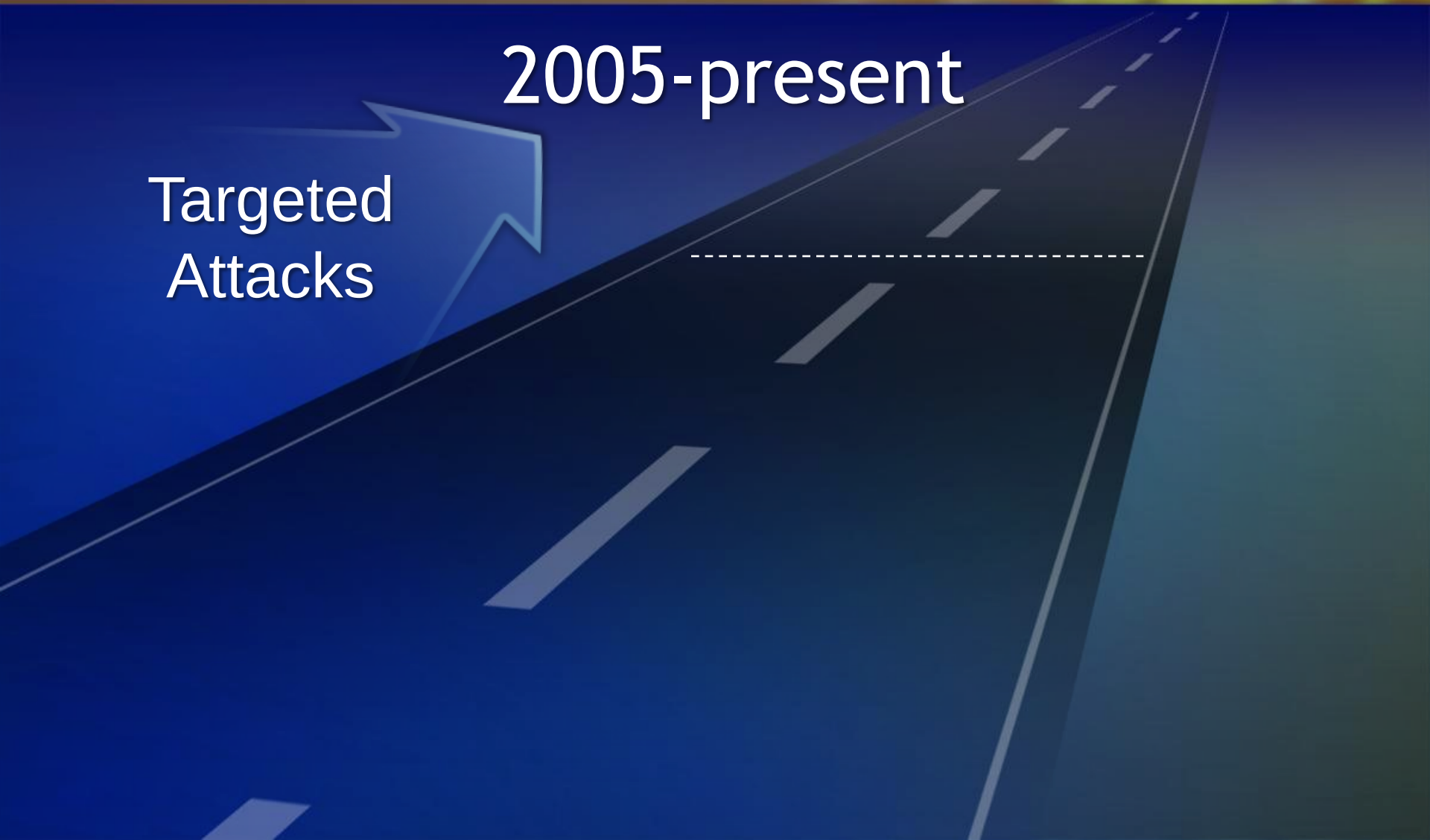
Fixed	July 2, 2004	MS05-039
Exploited	June 2004	

The Rise of the Botnets

Zotob
(Plug and play issue in Win2000)

Fixed	**August 9, 2005**	**MS05-039**
Exploited	August 15,2005	

The Era of Purpose



Security Market Forces

- New cases appearing with Organized elements
  - Command and Control
  - Distraction tactics
  - Hiding in plain sight
  - Careful target selection

Escalation and Focus

- What if the organization had
  - Significant resources
  - Intuitional Support
  - Time horizon
  - Focus on specifics…right down to the individual
- The intensity of the threat increases
- Our products will face increased scrutiny
- Securing our customers becomes more complex

Call To Action

Community-based defense

Rapid response communications

Investment in defensive security knowledge

Denying opportunities to malicious software

Support of worldwide law enforcement and legislatures

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