Microsoft Security Intelligence Report Volume 13

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Session ID: DAS-208
Session Classification: Intermediate

Who are these guys?

Company

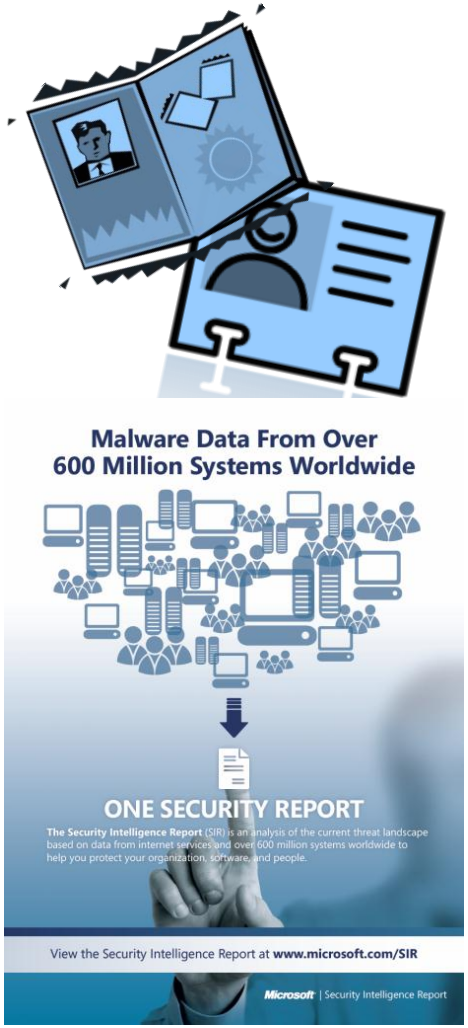
- Microsoft Corporation
- Trustworthy Computing group

Jeff Jones

- Director, Trustworthy Computing
- 25-year Security Guy : DoD, TIS, McAfee, PGP, MSFT
- Microsoft Security Blog & Trustworthy Computing Blog
- @securityjones

Tim Rains

- Director, Trustworthy Computing
- Security intelligence, MSRC, MMPC, MSEC, Cybersecurity, Cloud Security
- Reformed Engineer: Windows, IT
- Microsoft Security Blog & Trustworthy Computing Blog
- @MSFTSecurity



Session Objectives

Learn

- Come up to speed on the latest threat intelligence
- Understand threat trends to better protect

Apply

- Lessons from what is working
- Guidance to help manage threats

Have Fun!

- We are data geeks
- Our idea of fun is strange, maybe yours is as well

What You Will Hear Today

- Featured Intelligence: Deceptive Downloads
- Vulnerabilities & Exploits
- Malware Trends
- Applying it
- Q&A

About SIRv13: Contents

"Deceptive downloads"

Worldwide Threat Assessment
- Vulnerability trends
- Exploit trends
  - O/S, Browser, and applications
- Malware and potentially unwanted software

Regional Threat Assessment
- 105 countries/regions

About SIRv13: Data Sources

Product name	Main customer segment		Malicious software		Spyware and potentially unwanted software		Available at no additional charge	Main distribution methods
	Consumers	Business	Scan and remove	Real-time protection	Scan and remove	Real-time protection		
Windows Malicious Software Removal Tool	•		Prevalent Malware Families				•	WU/AU Download Center
Windows Defender	•				•	•	•	Download Center Windows Vista/ Windows 7
Windows Safety scanner	•		•		•		•	Cloud
Microsoft Security Essentials	•		•	•	•	•	•	Cloud
Forefront Online Protection for Exchange		•	•	•				Cloud
Microsoft Forefront Client Security		•	•	•	•	•		Volume licensing

- **Hotmail** – more than 280 million active users
- **Internet Explorer** – the world's most popular browser with SmartScreen, Microsoft Phishing Filter
- **Exchange Online Protection** – scans billions of e-mail messages a year
- **Windows Malicious Software Removal Tool** – has a user base of more than 600 million unique computers worldwide
- **Microsoft Security Essentials** – available in over 30 languages
- **Bing** – billions of Web-pages scanned each month

Featured Intelligence: Deceptive Downloads

Deceptive Downloads: Software, Music and Movies

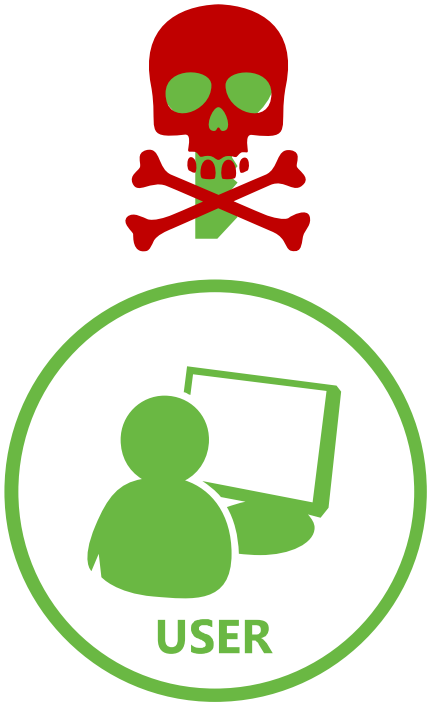
The most commonly reported threat family in 1H12 was Win32/Keygen, a detection for tools that generate keys for various software products

Keygen was found to be in the top 10 threats for 98% of the 105 countries/regions studied in SIR v13

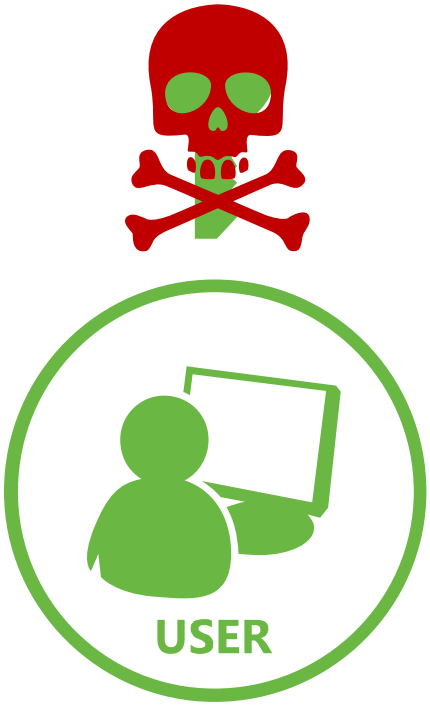
Over 76% of computers reporting Keygen detections in 1H12 also reported detections of other malware families

3 Ways

Scenario 1

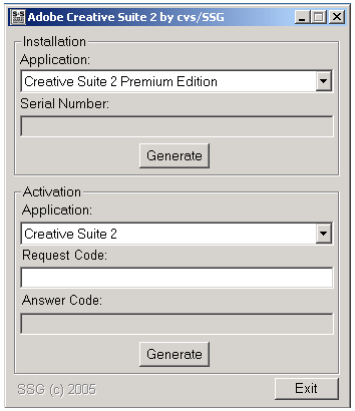


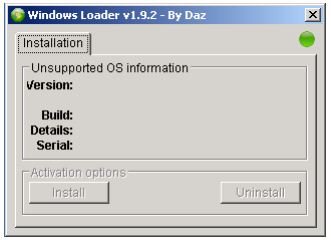
Scenario 2

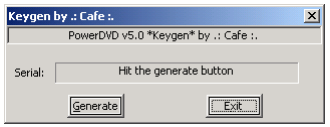


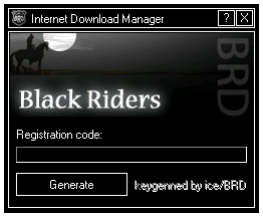
Scenario 3

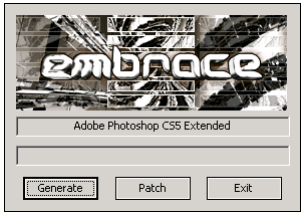
Keygen Examples

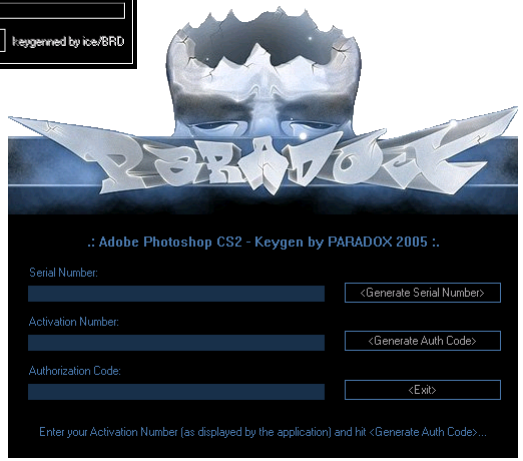












Popular Keygen Targets

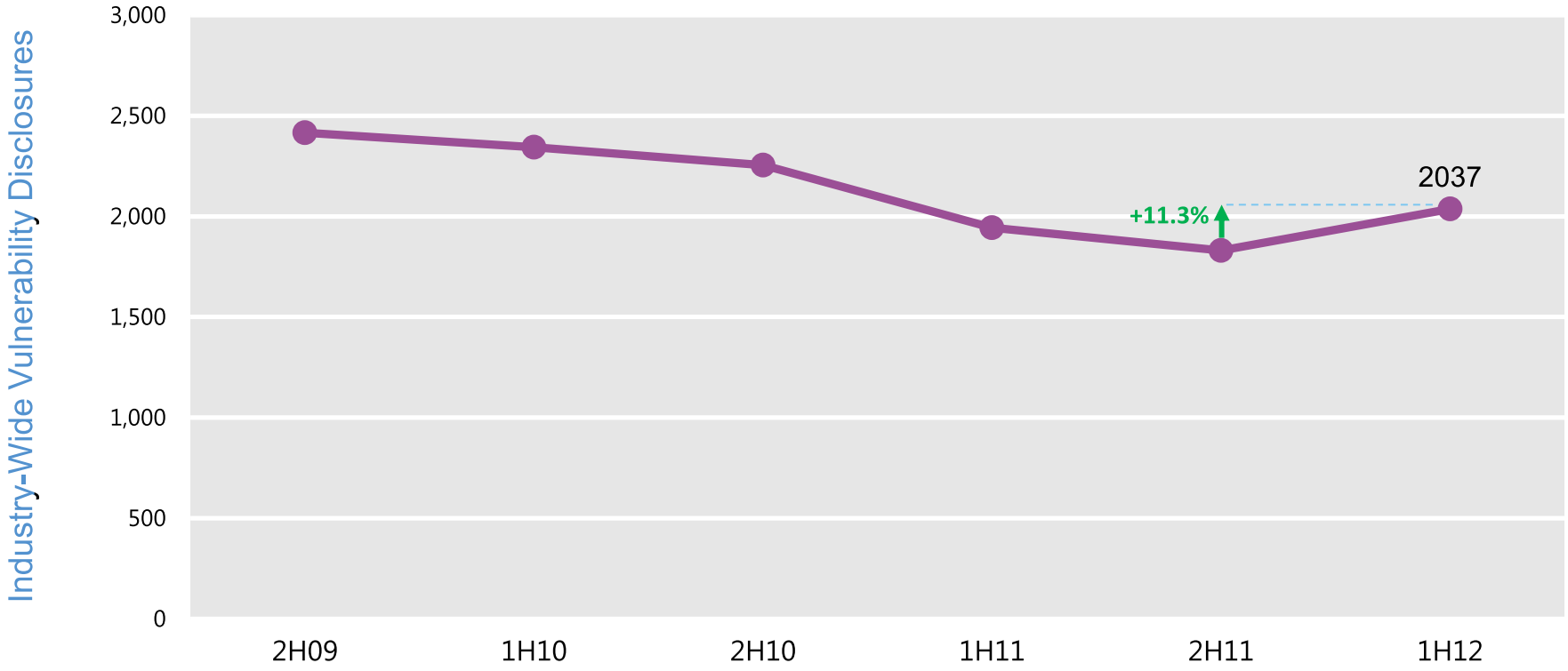
- Keygen.exe
- Windows Loader.exe
- Mini-KMS_Activator_v1.1_Office.2010.VL.ENG.exe
- AutoCAD-2008-keygen.exe
- SonyVegasPro Patch.exe
- Nero Multimedia Suite 10 – Keygen.exe
- Adobe.Photoshop.CS5.Extended.v12.0.Keymaker-EMBRACE.exe
- Call.of.Duty.4.Modern.Warfare.Full-Rip.Skullptura.7z
- Guitar Pro v6.0.7+Soundbanks+Keygen(Registered) [kk].rar
- Half Life CDkeygen.exe

Common Associated Threat Families

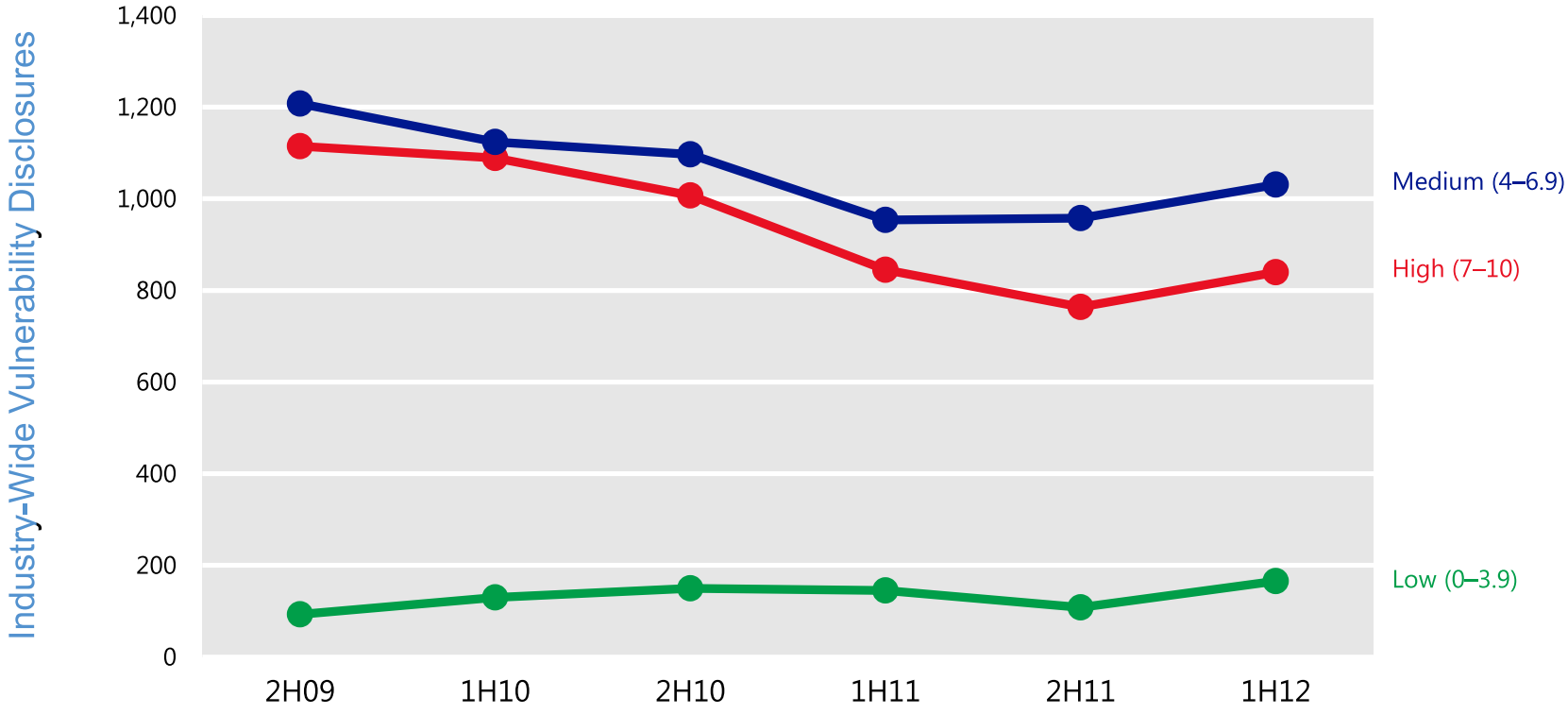
Family	Most significant category	1Q11	1Q11 %	2Q11	2Q11 %
Win32/Autorun	Worms	849,108	10.5%	937,747	11.3%
JS/Pornpop	Adware	637,966	7.9%	661,711	8.0%
Win32/Obfuscator	Misc. Potentially Unwanted Software	515,575	6.4%	606,081	7.3%
Blacole	Exploits	561,561	7.0%	512,867	6.2%
Win32/Dorkbot	Worms	492,106	6.1%	522,617	6.3%

Vulnerability Trends

Industry-Wide Vulnerability Disclosures

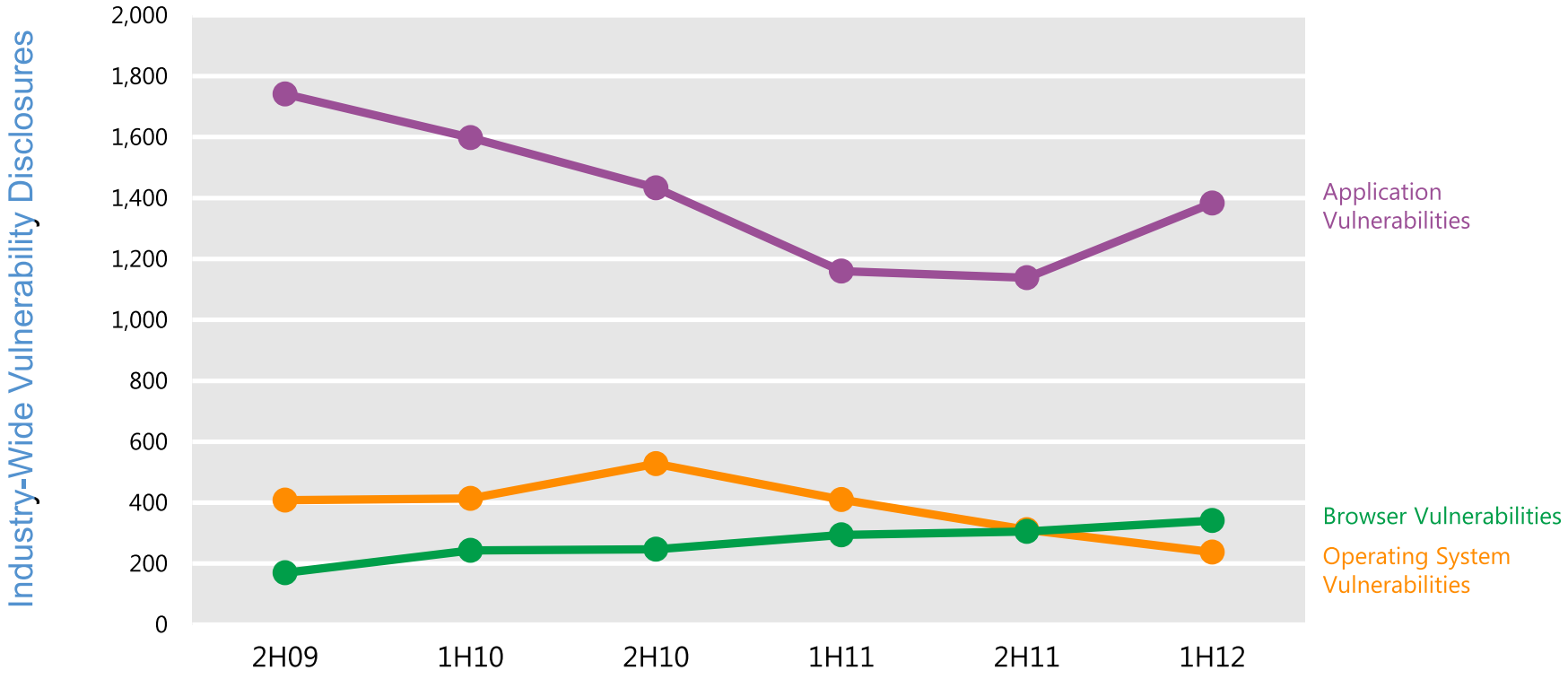


Industry-Wide Vulnerability Severity



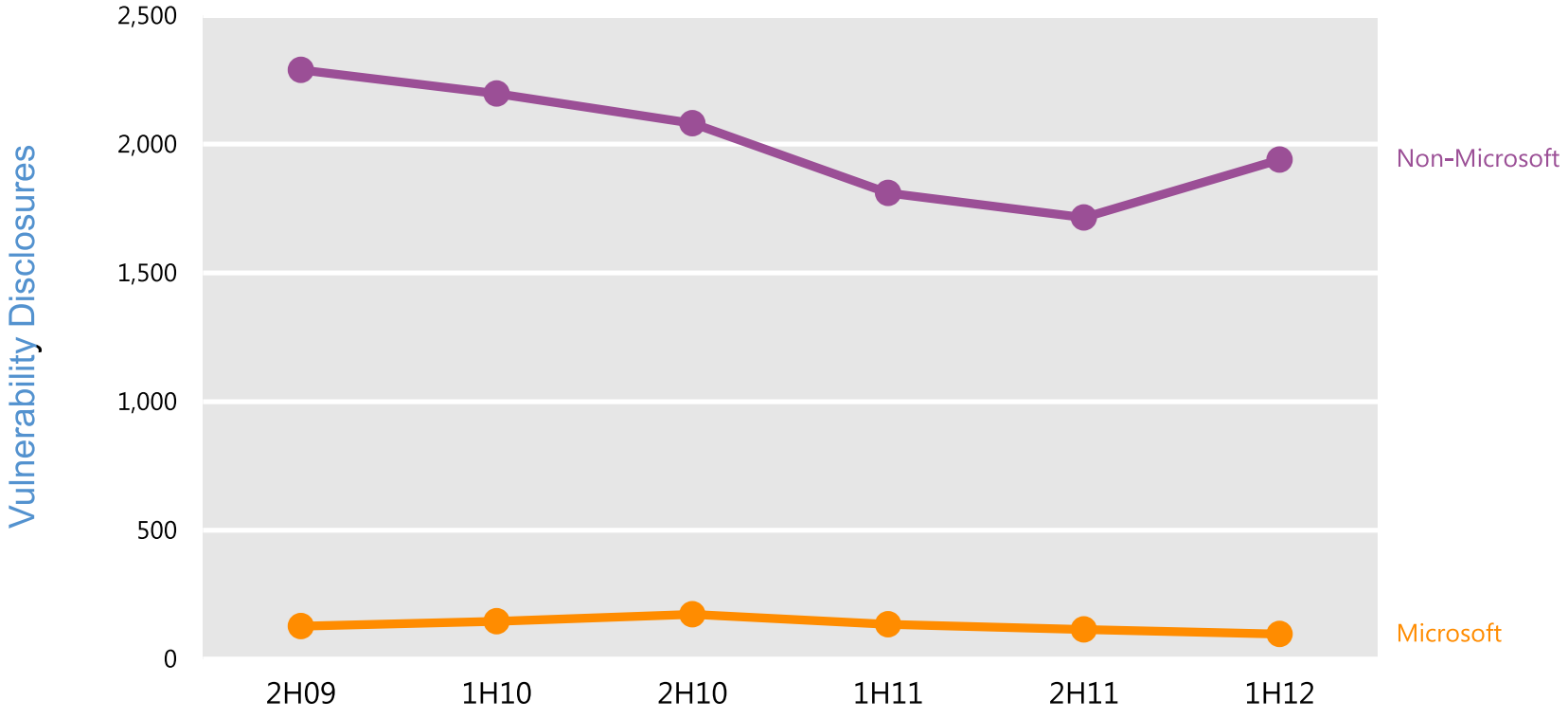
Vulnerability disclosures in each of the three CVSS severity classifications rose by a roughly similar amount.

Industry-Wide OS, Browser, App Vulns



- Application vulnerabilities accounted for 71.2% of all vulnerability disclosures
- Operating system vulnerabilities dropped to the lowest level since 2H03

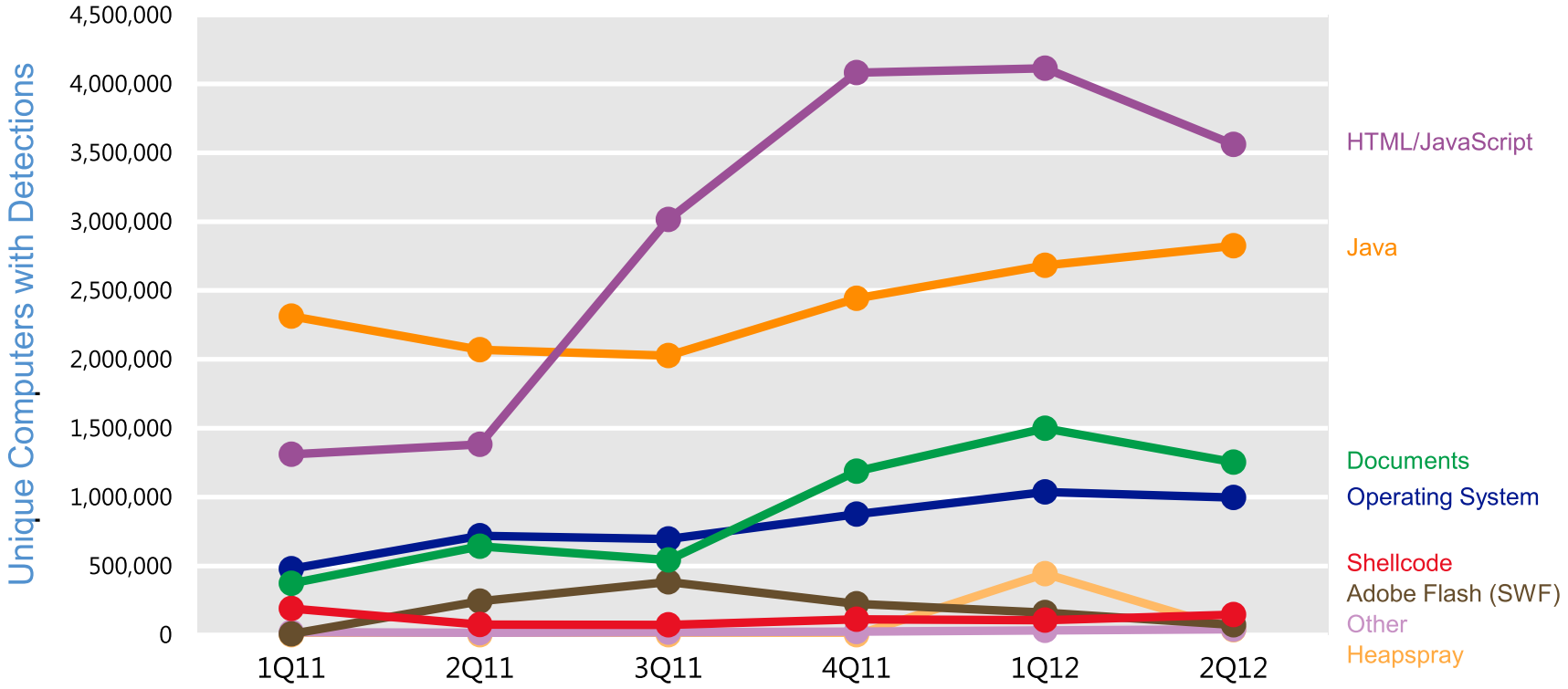
Industry-Wide Vulnerability Disclosures



- Industry-wide vulnerability disclosures increased in 1H12
- Disclosures of vulnerabilities in Microsoft products continued to decrease slightly, accounting for 4.8% of all disclosures during the period, down from 6.3% in 2H11

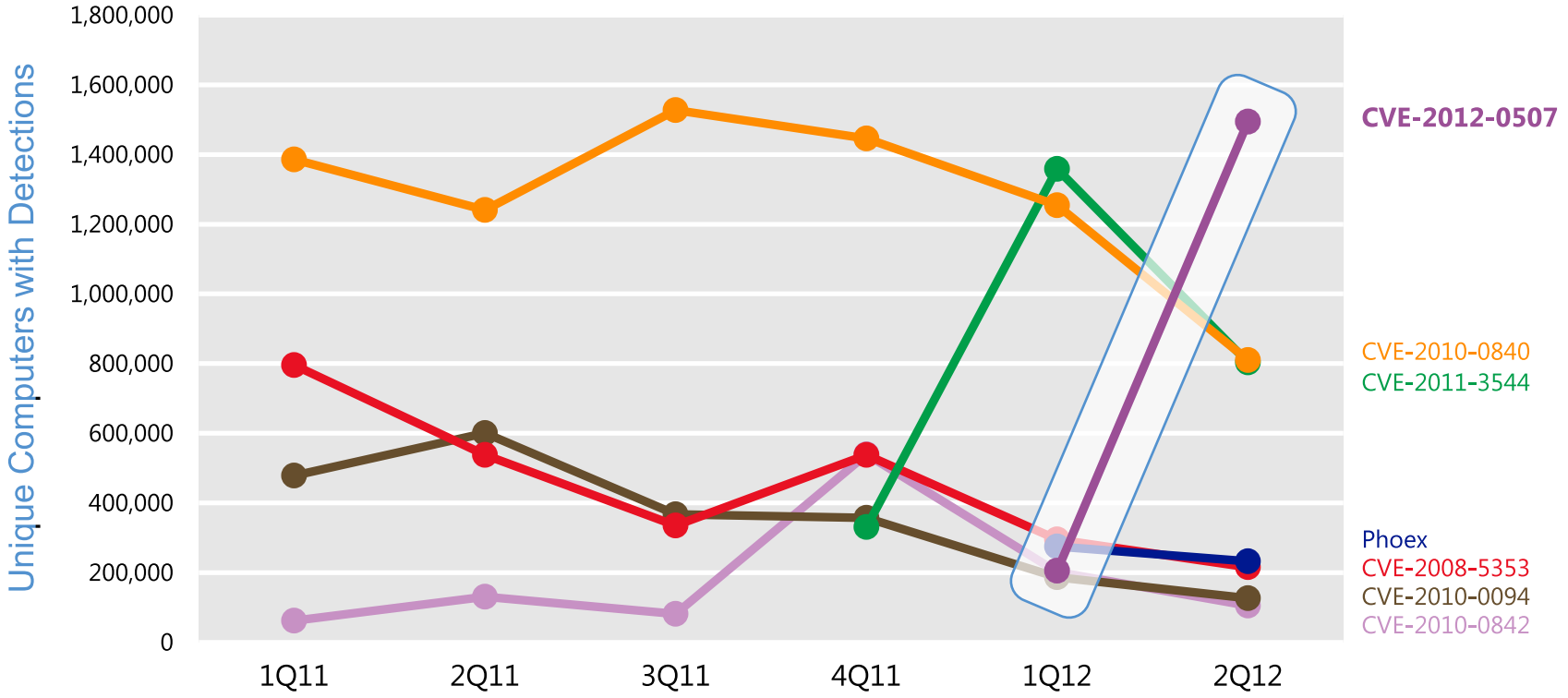
Exploit Trends

Exploit Trends



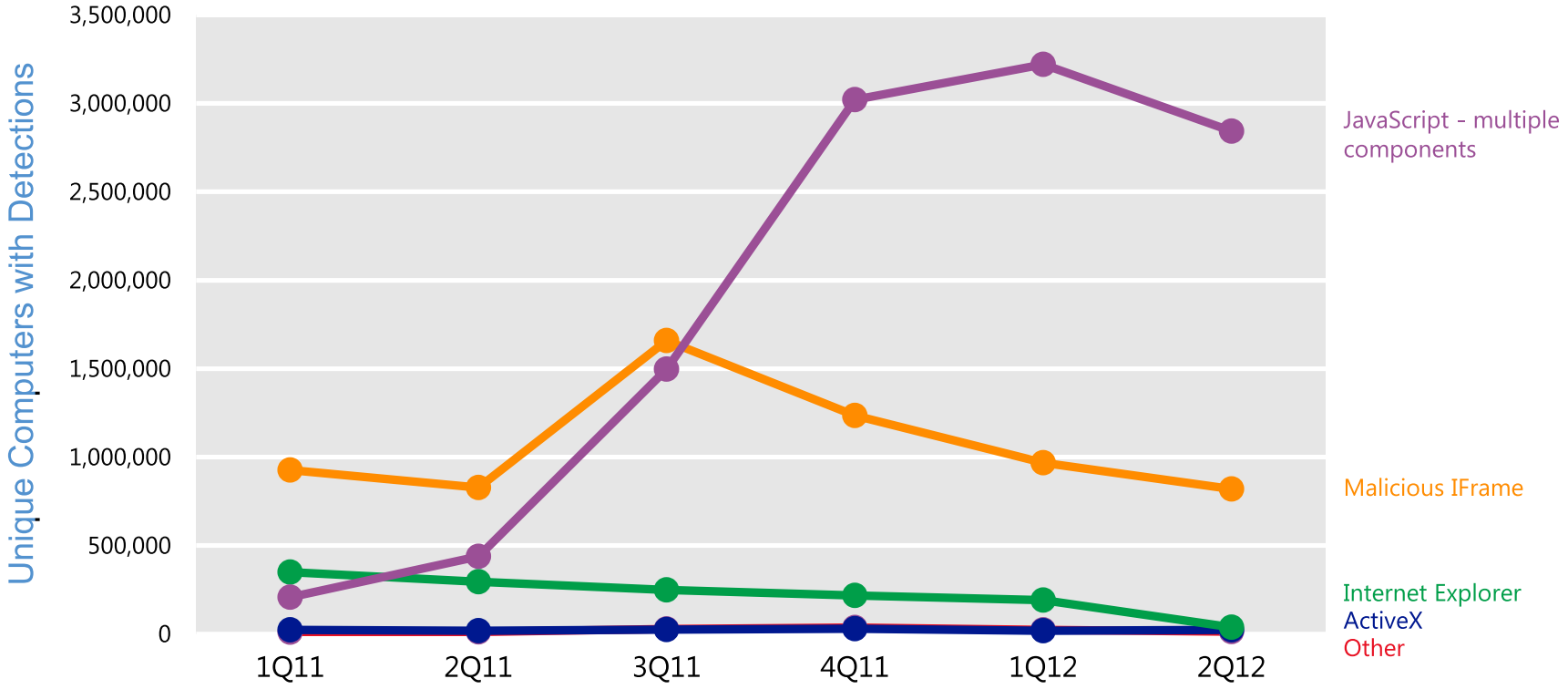
The number of systems reporting exploits delivered through HTML or JavaScript remained high during the first half of 2012, due primarily to the continued prevalence of Blacole.

Java Exploits



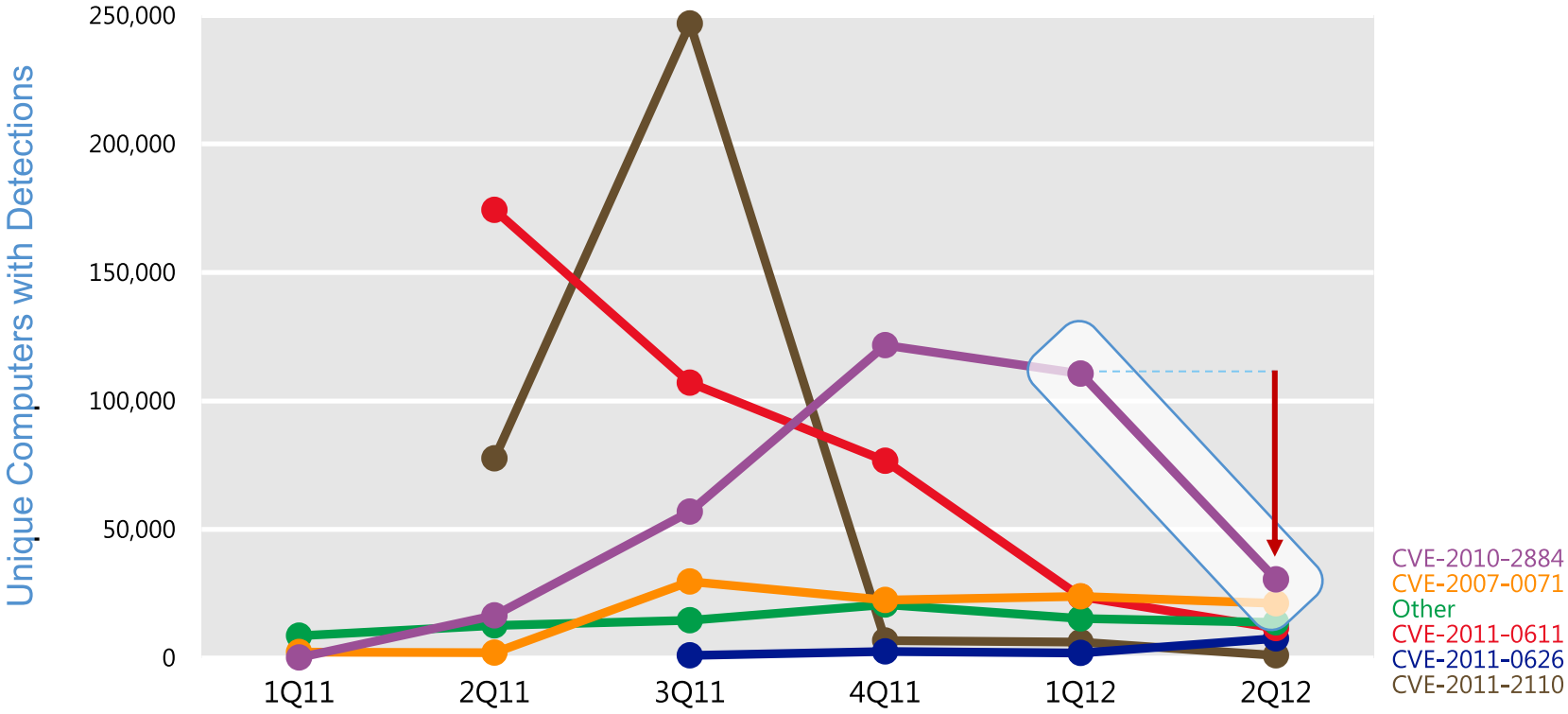
CVE-2012-0507, the multiplatform JRE vulnerability added to the Blacole exploit kit in March 2012, accounted for the largest number of Java exploits detected and blocked in 2Q12.

HTML and JavaScript Exploits



The use of malicious JavaScript code designed to exploit one or more web-enabled technologies accounted for nearly three-fourths of HTML and JavaScript exploits detected in the first half of 2012, primarily because of the Blacole exploit kit.

Adobe Flash Player Exploits



Following a surge in detections that peaked in 3Q11, detections of exploits targeting vulnerabilities in Adobe Flash Player have decreased significantly in every subsequent quarter, with no single vulnerability accounting for more than 35,000 computers with detections by 2Q12.

Top Exploit Families

Exploit Family	Platform or Technology	3Q11	4Q11	1Q12	2Q12
Blacole	HTML/JavaScript	1,054,045	2,535,171	3,154,826	2,793,451
CVE-2012-0507*	Java	—	—	205,613	1,494,074
Win32/Pdfjsc	Documents	491,036	921,325	1,430,448	1,217,348
Malicious IFrame	HTML/JavaScript	1,610,177	1,191,316	950,347	812,470
CVE-2010-0840*	Java	1,527,000	1,446,271	1,254,553	810,254
CVE-2011-3544	Java	—	331,231	1,358,266	803,053
CVE-2010-2568 (MS10-046)	Operating System	517,322	656,922	726,797	783,013
JS/Phoex	Java	—	—	274,811	232,773
CVE-2008-5353	Java	335,259	537,807	295,515	215,593
ShellCode	Shell code	71,729	112,399	105,479	145,352

* This vulnerability is also used by the Blacole kit.
The totals given here for this vulnerability exclude Blacole detections.

Security Update Adoption Rates

Using data gathered from thousands of computers that opted in to data collection, Microsoft has analyzed the distribution of missing security updates across a variety of dimensions.

Security Update Status	Microsoft Windows	Microsoft Word	Adobe Reader	Oracle Java	Adobe Flash Player
Missing latest update*	34%	39%	60%	94%	70%
Missing three latest updates	16%	35%	46%	51%	44%

* As of October 2011: At the time, the most recent updates to Adobe Flash Player, Adobe Reader, and Java had been released within one month. The most recent Windows kernel update had been released 9 months prior, and the most recent update to Word had been released one year prior.

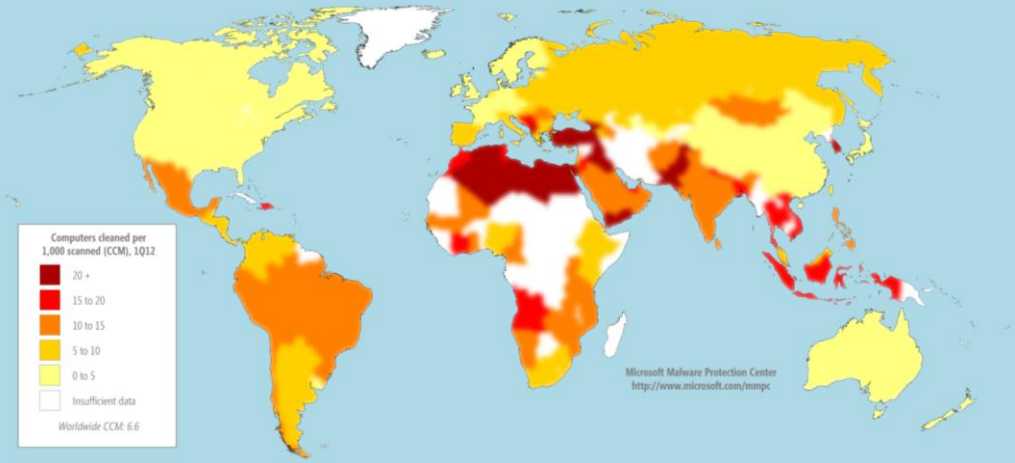
Malware and Potentially Unwanted Software

Most Computers Reporting Detections and Removals, by Location

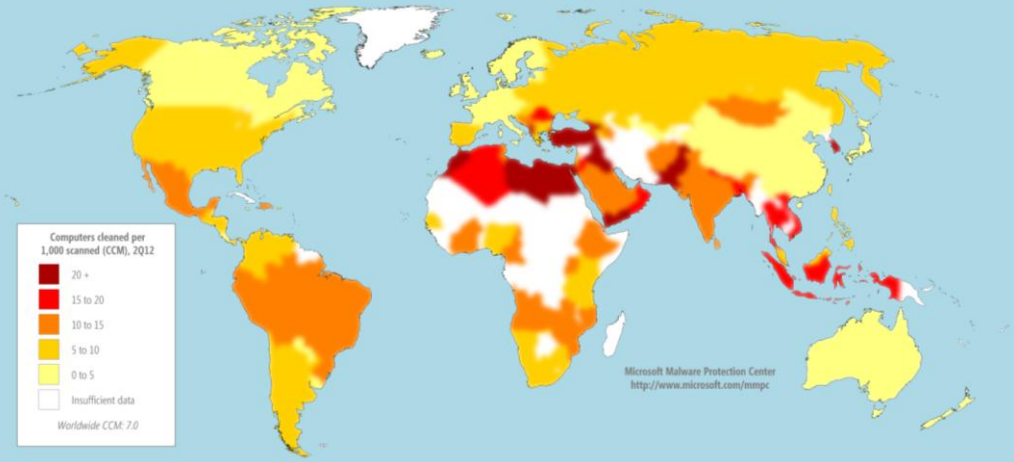
	Country/Region	1Q12	2Q12	Change 1Q to 2Q
1	United States	9,407,423	12,474,127	32.6% ▲
2	Brazil	3,715,163	3,333,429	-10.3% ▼
3	South Korea	2,137,136	2,820,641	32.0% ▲
4	Russia	2,580,673	2,510,591	-2.7% ▼
5	China	1,889,392	2,000,576	5.9% ▲
6	Turkey	1,924,387	1,911,837	-0.7% ▼
7	France	1,677,242	1,555,522	-7.3% ▼
8	United Kingdom	1,648,801	1,509,488	-8.4% ▼
9	Germany	1,544,774	1,486,309	-3.8% ▼
10	Italy	1,361,043	1,341,317	-1.4% ▼

Malware Detections by Country/Region

1Q12

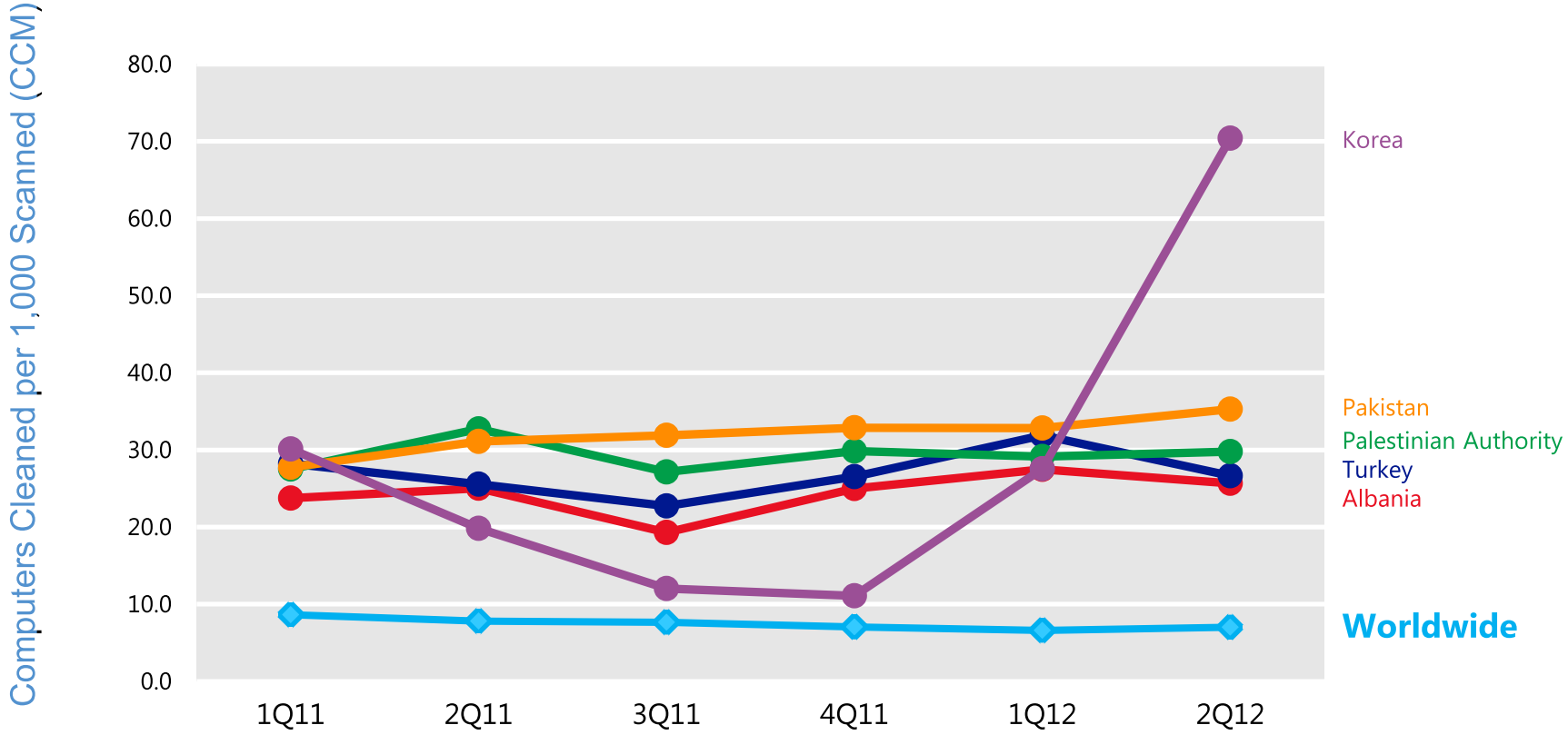


2Q12



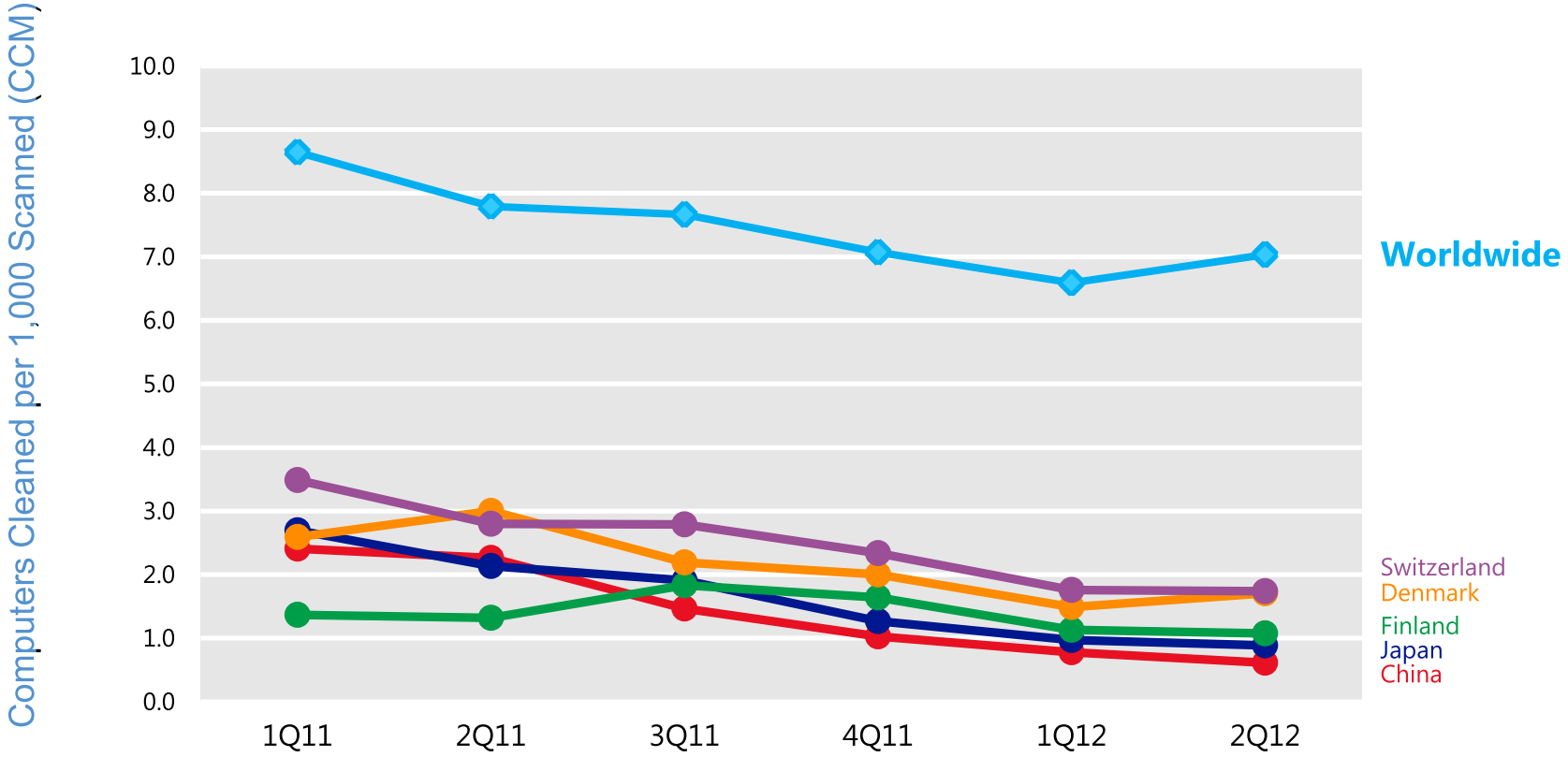
Top 5 Locations

High infection rates



Top 5 Locations

Lowest infection rates



Threat Category Prevalence by Location

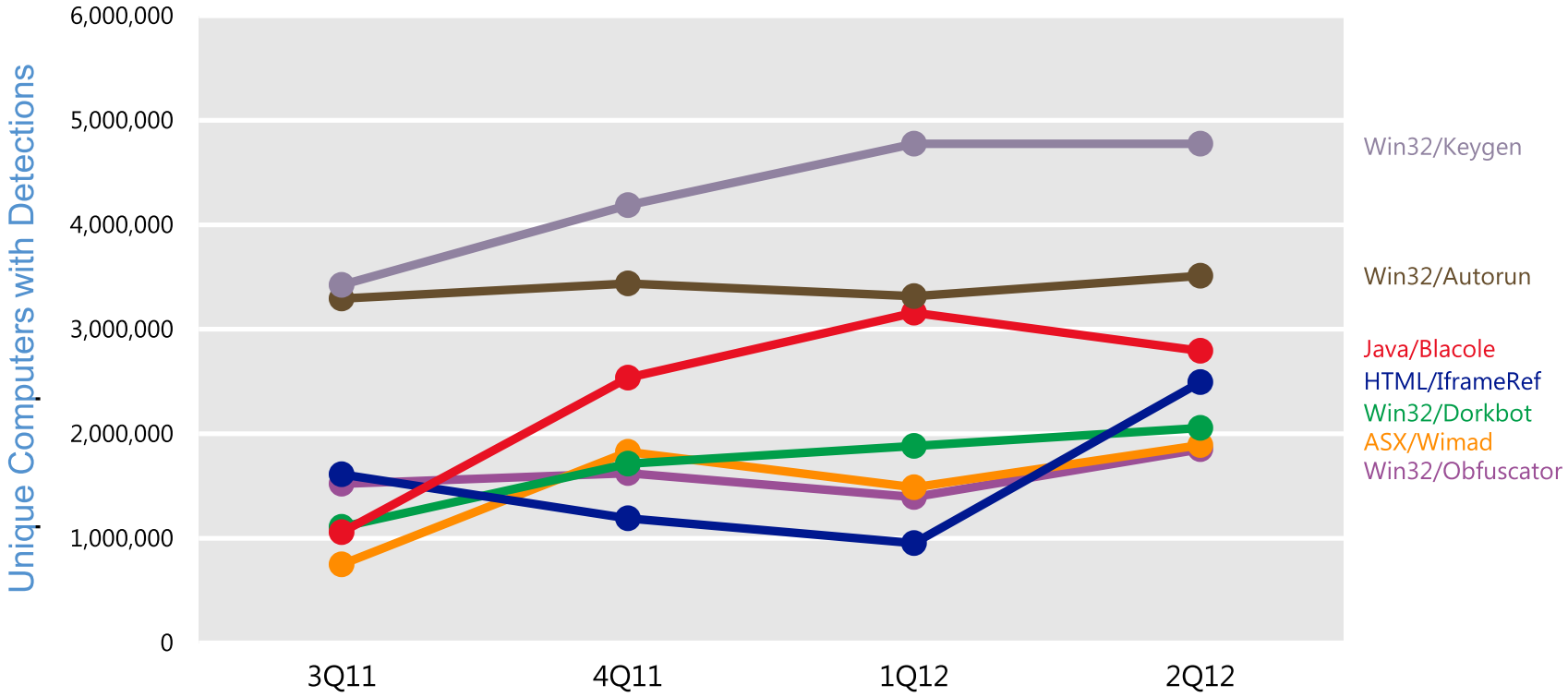
Category	World	U.S.	Brazil	Russia	France	Germany	China	Korea	Turkey	U.K.	Italy
Misc. Trojans	37.9%	43.6%	32.6%	41.8%	28.8%	35.0%	29.9%	23.6%	35.9%	43.2%	31.8%
Misc. Potentially Unwanted Software	32.2%	22.7%	38.1%	57.1%	29.3%	26.6%	45.0%	11.0%	31.2%	23.3%	29.4%
Worms	19.3%	12.3%	23.3%	16.4%	12.6%	8.8%	11.1%	4.9%	34.5%	6.6%	13.6%
Adware	18.5%	19.1%	7.5%	4.9%	31.5%	19.0%	22.4%	38.0%	24.6%	26.1%	24.1%
Trojan Downloaders and Droppers	16.4%	13.1%	22.4%	13.0%	16.1%	10.8%	12.6%	53.8%	13.0%	13.3%	23.2%
Exploits	14.8%	18.7%	5.8%	17.8%	16.2%	28.2%	10.3%	3.5%	6.4%	24.0%	19.7%
Viruses	7.8%	4.4%	9.1%	5.1%	2.2%	2.2%	10.6%	2.0%	15.0%	3.1%	2.5%
Password Stealers and Monitoring Tools	6.3%	4.6%	15.7%	4.1%	4.6%	10.7%	3.2%	2.6%	6.2%	4.8%	7.6%
Backdoors	4.2%	3.4%	3.9%	3.2%	2.8%	3.2%	5.9%	2.0%	4.2%	3.0%	2.9%
Spyware	0.2%	0.3%	0.1%	0.2%	0.1%	0.2%	1.3%	0.1%	0.0%	0.2%	0.1%

Totals for each location may exceed 100% because some computers reported threats from more than one category.

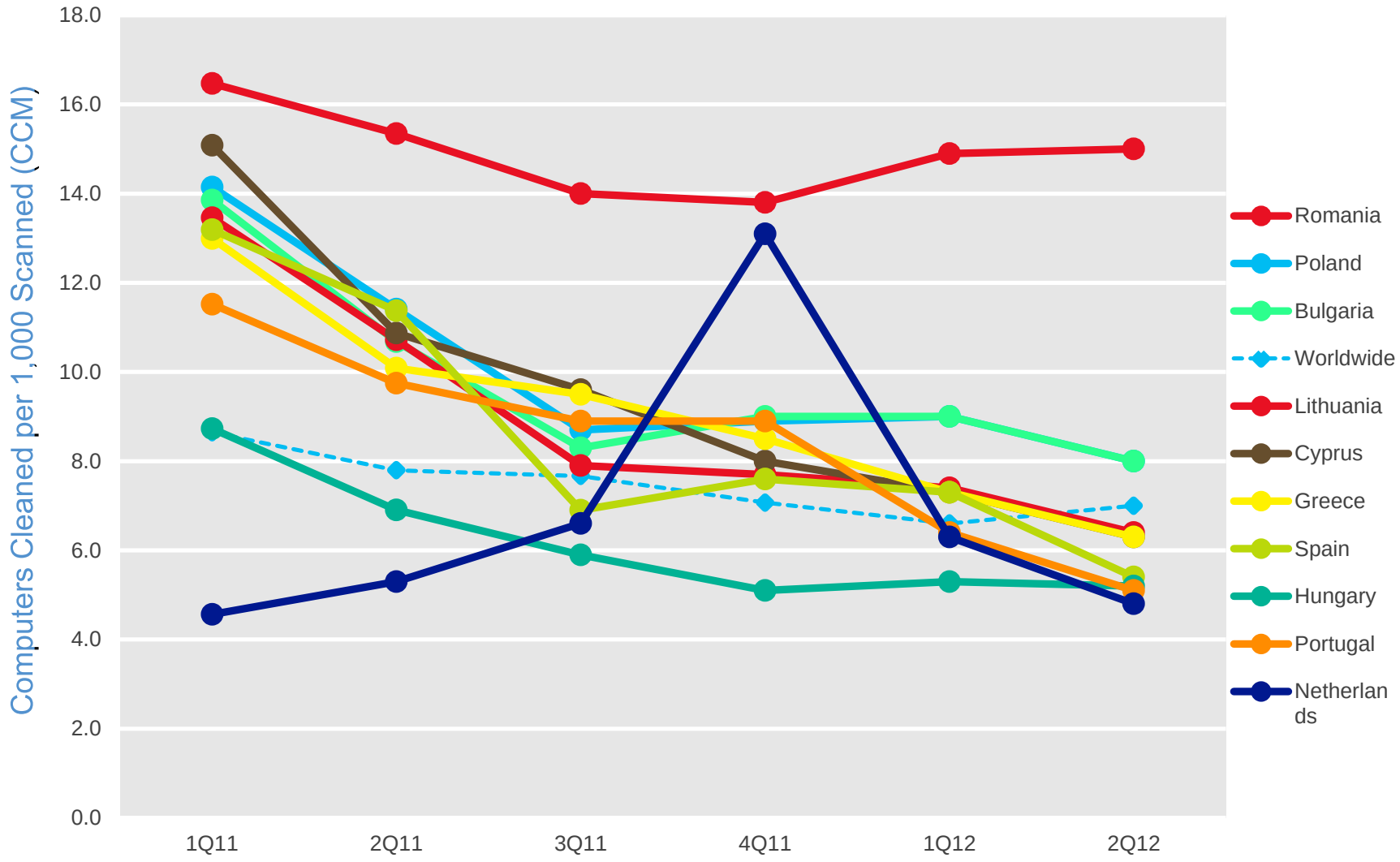
Top 10 Threat Families

Family	Most Significant Category	3Q11	4Q11	1Q12	2Q12
Win32/Keygen	Misc. Potentially Unwanted Software	3,424,213	4,187,586	4,775,464	4,775,243
Win32/Autorun	Worms	3,292,378	3,438,745	3,316,107	3,510,816
JS/Pornpop	Adware	3,944,489	3,906,625	3,994,634	2,838,713
Blacole	Exploits	1,056,595	2,535,968	3,157,580	2,794,300
HTML/IframeRef	Misc. Trojans	1,612,828	1,191,929	952,111	2,493,830
Win32/Sality	Viruses	1,728,966	1,951,118	2,101,968	2,097,663
Win32/Hotbar	Adware	2,870,465	2,226,173	3,008,677	2,073,789
Win32/Dorkbot	Worms	1,107,300	1,713,962	1,883,642	2,055,244
ASX/Wimad	Trojan Downloader	748,716	1,825,291	1,487,334	1,890,806
Win32/Obfuscator	Misc. Potentially Unwanted Software	1,521,959	1,623,137	1,393,148	1,851,304

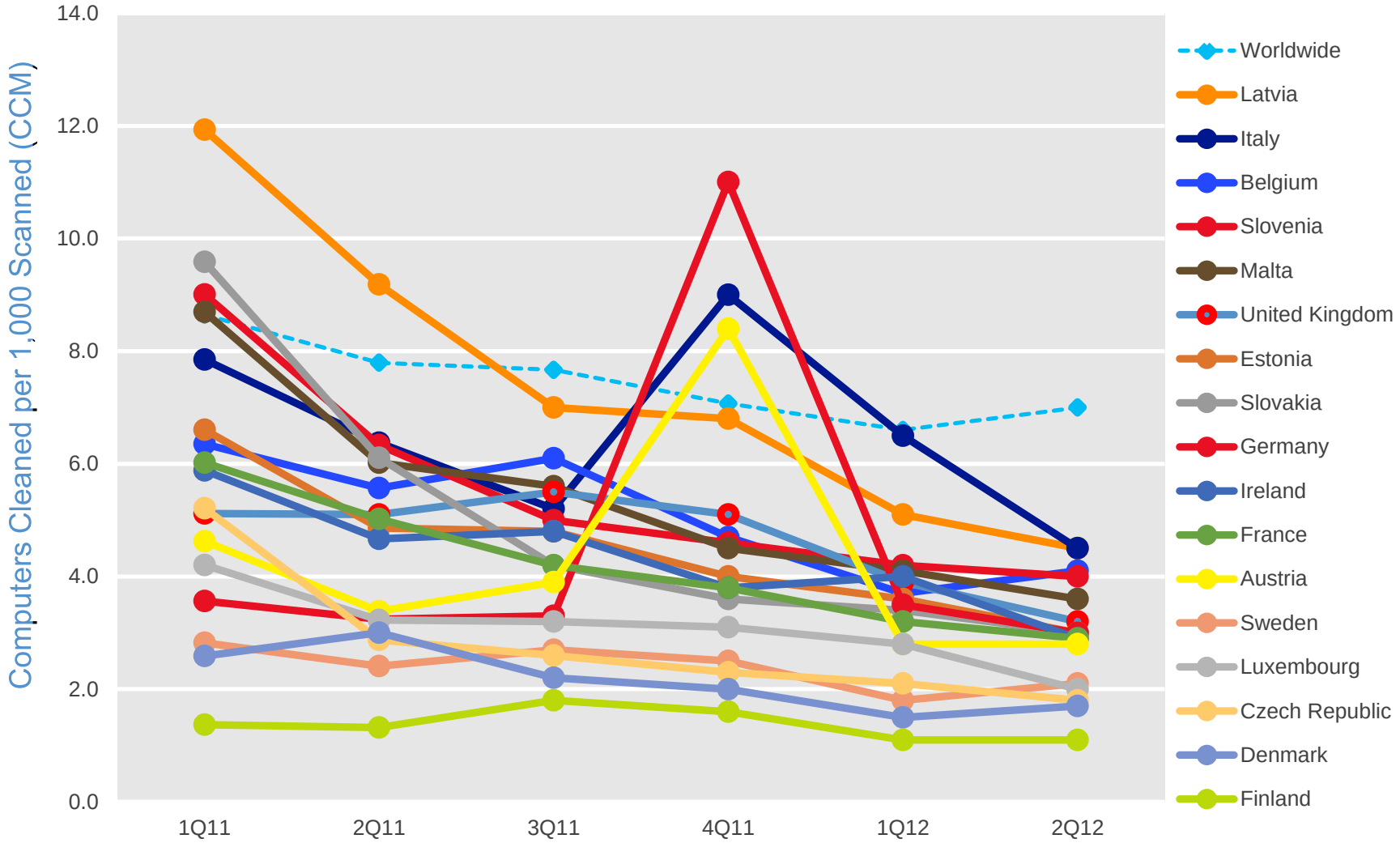
Trends for Notable Threat Families



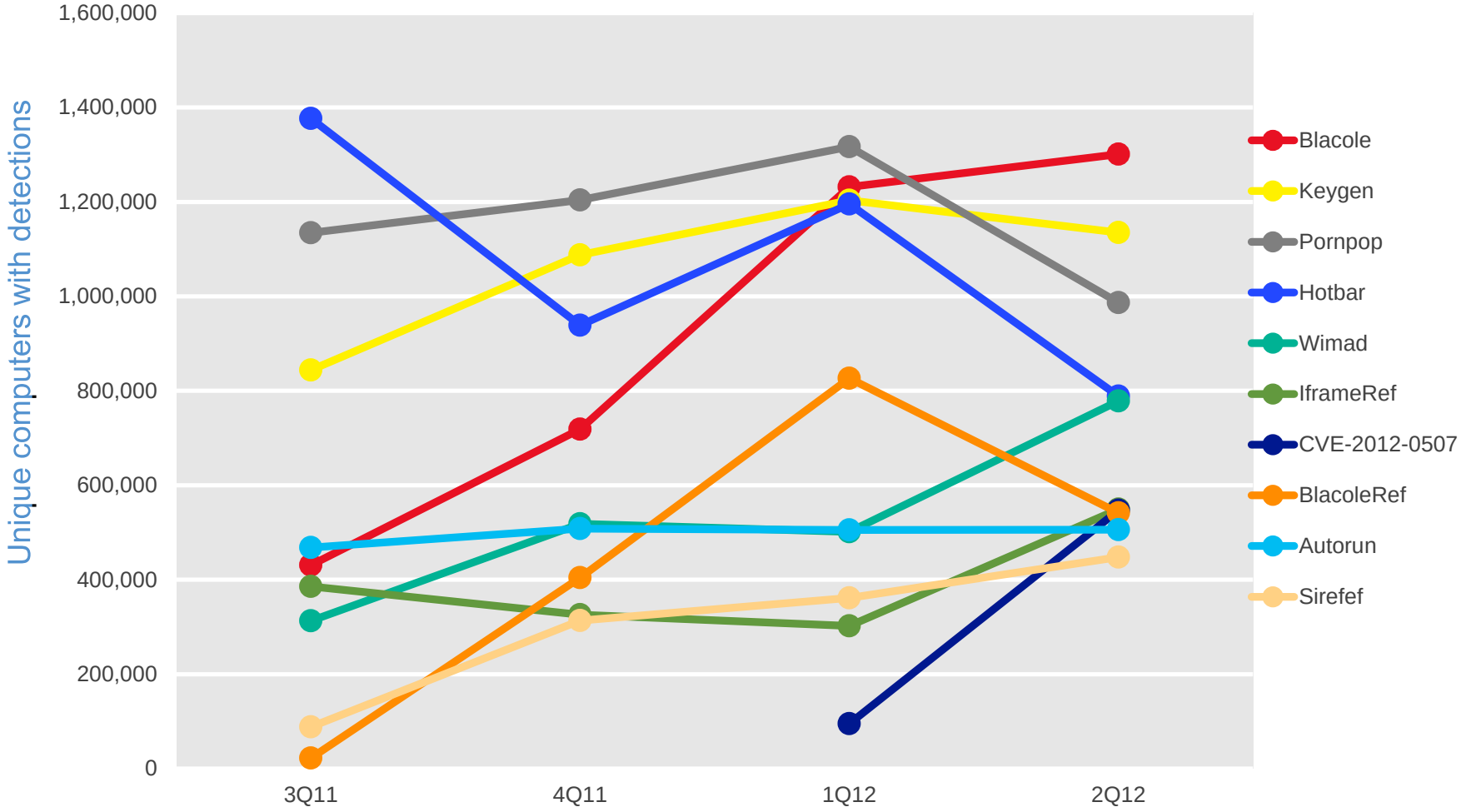
EU Infection Rate Trends



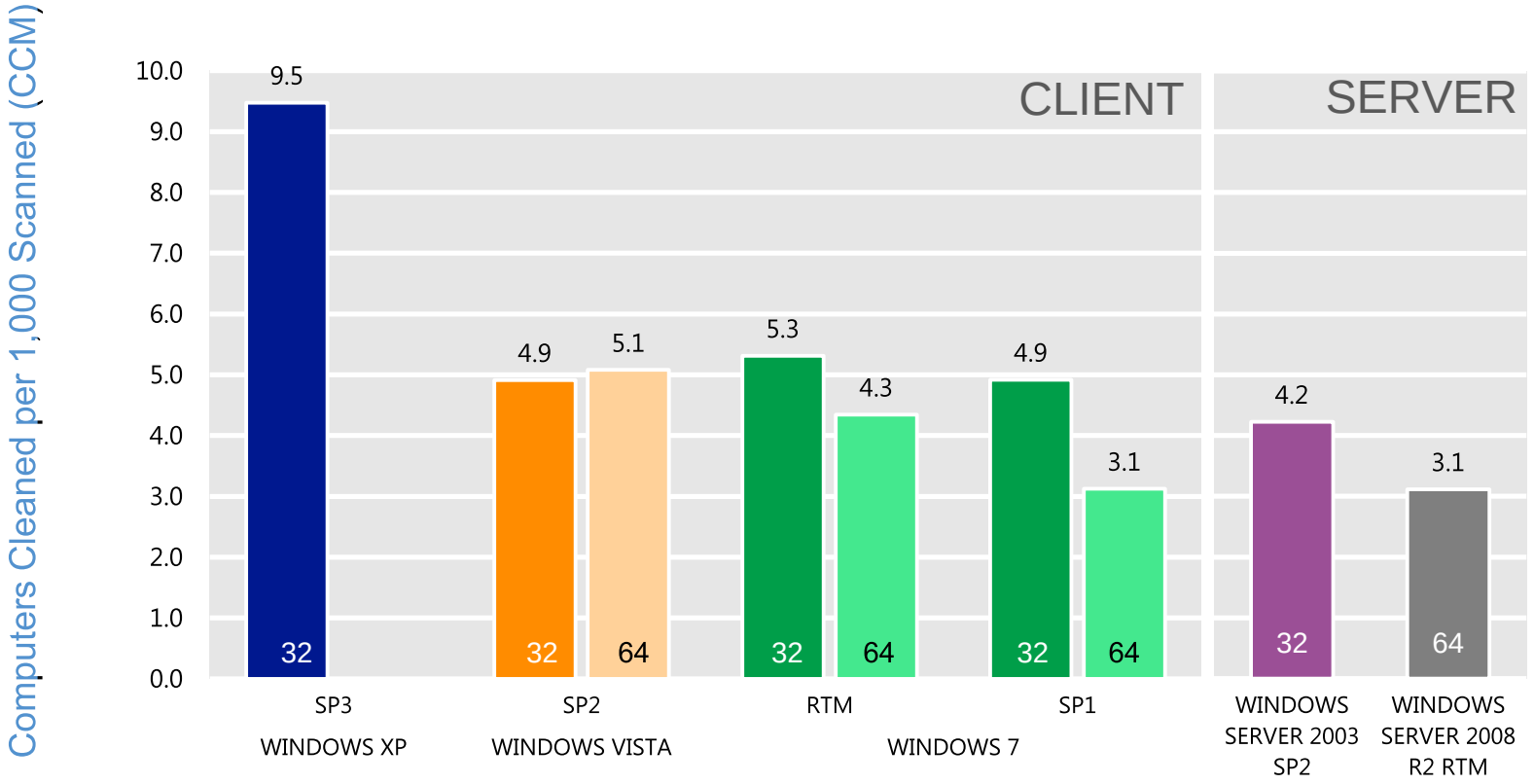
EU Infection Rate Trends



Trends for notable threat families in the EU



Infection Rates by OS and Service Pack



- Normalized numbers
- Infection rates for more recently released operating systems and service packs are consistently lower than earlier ones, for both client and server platforms

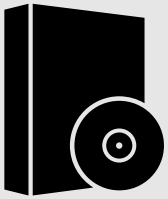
Most Commonly Detected Malware, by Platform

Family	Most Significant Category	Rank (Windows 7 SP1)	Rank (Windows 7 RTM)	Rank (Windows Vista SP2)	Rank (Windows XP SP3)
Win32/Keygen	Misc. Potentially Unwanted Software	1	1	11	6
Win32/Autorun	Worms	3	2	15	3
JS/Pornpop	Adware	2	6	2	7
Blacole	Exploits	4	11	1	5
JS/IframeRef	Misc. Trojans	10	7	10	1
Win32/Sality	Viruses	16	4	35	4
Win32/Hotbar	Adware	6	5	3	21
Win32/Dorkbot	Worms	9	3	21	9
ASX/Wimad	Trojan Downloaders and Droppers	8	9	5	13
Win32/Obfuscator	Misc. Potentially Unwanted Software	5	12	14	11
Win32/FakePAV	Misc. Trojans	7	19	4	10
Win32/Conficker	Worms	15	10	26	8
Win32/Sirefef	Misc. Trojans	12	13	7	15
Java/CVE-2012-0507	Exploits	11	34	6	12
Win32/Pluzoks	Trojan Downloaders and Droppers	40	56	56	2

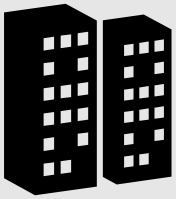
Applying It

Apply

Security Intelligence Report (SIR) helps customers protect:



Organizations
Protect your organization's network from security threats.



Software
Protect your applications and minimize malware threats.

People
Protect workers against privacy and security threats.

Keep all software on your systems updated
Third party, as well as Microsoft

Use Microsoft Update, not Windows Update
Updates all Microsoft software

Run antivirus software from a trusted vendor
Keep it updated

Use caution when clicking on links to Web pages

Use caution with attachments and file transfers

Avoid downloading pirated software

Protect yourself from social engineering attacks

In the first three months following this presentation you should:

- Determine if you are using WU or MU
- Evaluate 3rd party software patching
- Look for Keygen in your environment

Within six months you should:

Upgrade older software

Educate your people on threats & risks

Resources

- SIR volumes, special editions, videos, guidance: http://microsoft.com/sir
- Microsoft Malware Protection Center: http://microsoft.com/mmpc
- Official Microsoft Security blog: http://blogs.technet.com/b/security/
- Twitter: @MSFTSecurity

Microsoft