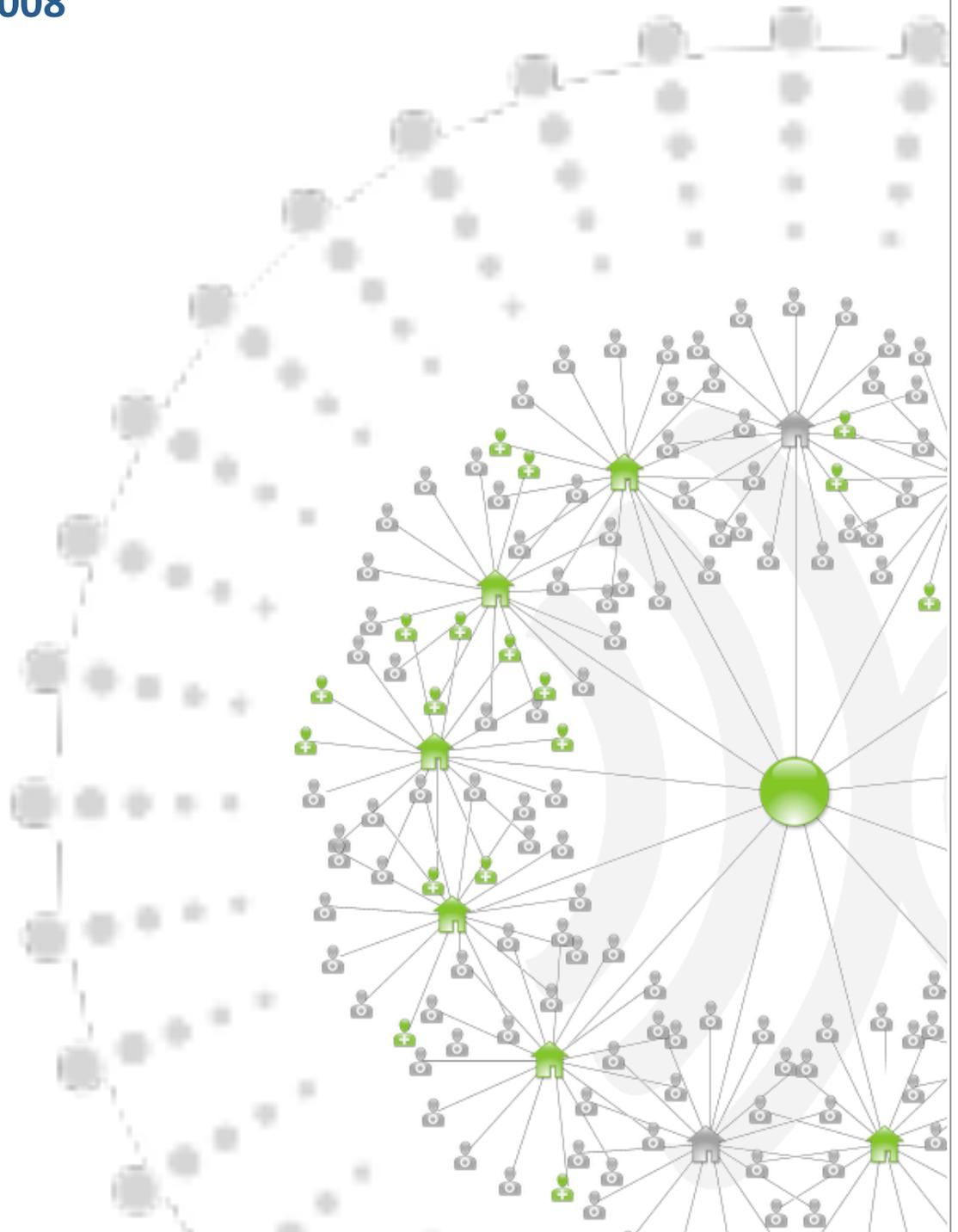




Hello Secure World

Baseline Benchmark Report

27 June 2008



Contact Information

David Burcham
Executive Vice President
Phone 206.838.1188
Email
david@visibletechnologies.com

Miles Ward
Director, Community Intelligence
Phone 206.838.1188
Email
miles@visibletechnologies.com

Carly Wilcox
Account Manager
Phone 206.838.1188
Email
cwilcox@visibletechnologies.com

Seattle (Headquarters)
Court in the Square
401 2nd Ave South
Suite 101
Seattle, WA 98104

New York
1185 Avenue of the Americas
Suite 2250
New York, NY 10036

Phone 206.838.1188
Fax 206.624.1827
Web visibletechnologies.com
Blog visinsights.com

Executive Summary

This report is an update to the initial Hello Secure Benchmark Report (March 20, 2008). This report characterizes influential participants in the online conversation about writing secure software code, establishing effective countermeasures, preventing Web attacks, and the perception of the Microsoft brand and Microsoft server software in relation to security. The report notes heavily trafficked web sites containing posts expressing sentiment about these topics and delivers actionable insight.

We analyzed 70 million posts and collected 25,095 posts written by 17,647 authors from March 14th, 2008 to June 8th. We identified the top-100 authors and web sites with detailed profiles of the top 10 in each category.

We found that:

Volume of Conversations and Sentiment

- Microsoft related news drove conversation for all five topics. These events included the release of Windows XP SP3 and events related to the release of Windows Server 2008.
- 95 percent of all posts that discussed writing code, developing secure software code, and preventing attacks that exploit software vulnerabilities were neutral in tone.
- General sentiment was negative among the posts that did express an opinion.
- Microsoft Brand Security was negative (67 percent) where sentiment was expressed. The relative volume of the posts increased by 200 percent from the first report. The sentiment changed from predominantly mixed (47 percent positive and negative) in the first report to negative.
- Windows Server Security was positive (44 percent). The relative volume of posts increased by 300 percent from the first report.

Where the Conversations Took Place

- The top authors and sites continued to be technology-centric web sites. Conversations generally occurred in web forums where users exchanged technical information. These conversations contained a very low volume of opinion.
- Web sites within the Microsoft domain were well represented in the top-100 sites. Microsoft

Communities and Forums were central to the discussion placing in the top 10 sites for all five topics.

- Other top sites included web communities such as Slashdot and the Dell Community Forums.

Engagement

- The campaign resulted in 197 posts that generated 422 click-thrus.
- 25 percent of successful posts generated positive outcomes.
- No posts generated a negative outcome.

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The TruCast® system enables clients to track, analyze, and participate in blogs, forums, social networks, and online communities. TruCast® monitors social media sites for relevant posts and comments with in-depth information about sites, authors, date, and links. Dashboard reports provide analysis for each topic by subject and sentiment. This information can be tracked over time using dynamic charts and statistical reports to identify influencers, hot spots, and trends. Engage with influential consumers and publish real-time unique responses via the TruCast® interface.

What We Studied

This benchmark report contains analysis of consumer-generated media (CGM) content around five topics related to software security. These are: Countermeasure, Coding, Web Attack, Windows Server Security, and Microsoft Brand Security. In addition, the report contains analysis of the engagement efforts during the spring of 2008.

We studied five topics:

- **Countermeasure**

We collected and analyzed discussions around preventing security flaws and security attacks.

- **Coding**

We collected and analyzed discussions around writing secure code. We included conversations that mentioned specific discussions such as C# and Visual Basic as well as technologies such as AJAX and ASP.NET.

- **Web Attack**

We collected and analyzed discussions around web-based and network-based security issues and attacks. We focused on conversations that included mentions of DNS, stack overflow, SQL injection, session hijacking, and forgery.

- **Windows Server Security**

We collected and analyzed discussions about the security of Windows Server. We focused on conversations that discussed Windows Server as a secure environment for applications and developer tools, including mentions of Windows Card Space, Active Directory, virtualization, and remote office infrastructure.

- **Microsoft Brand Security**

We collected and analyzed discussions around Microsoft's brand and image in relation to security. We focused on perceptions of the company's commitment to making it easier for software developers to write secure code.

Evaluating consumer sentiment about these subjects is difficult and expensive given polling bias, sample inaccuracy, and the sparse data available from focus groups. The CGM space is a new environment which contains unsolicited (and therefore incredibly valuable) feedback and opinions of potential customers, amateur journalists and other authors.

We first examined content from our coverage set of more than 70 million blog, forum, message board, review and media-sharing sites to uncover the most relevant discussions. We then leveraged our sentiment analysis system to ensure an accurate determination of the content and tone of discussions. Finally, our analyst teams reviewed the content and evaluated the most relevant authors, sites, and subjects of concern to developers of secure code. This report contains the results of that comprehensive research and analysis.

In the Spring of 2008, five Microsoft subject matter experts and two additional responders from M80, a social-media marketing agency, used TruCast® engagement to interact with key blogs identified in the first benchmark report. We examined the number of posts, outcome of the conversation, positioning of the posts in terms of page views, and number of click-thrus from engagement posts.

What We Learned

We collected data for twice the period of time (March 14th, 2008 to June 8th) than in the initial benchmark report (January 22 to March 9th).

Volume of Conversations and Sentiment

The volumes of the five topics remained in the same order. The topics Countermeasures, Coding, and Web Attacks gathered many more posts than the topics Windows Server Security and Microsoft Brand Security. These Microsoft-specific topics saw an increase of more than 100 percent from the first benchmark relative to the highest volume topic, Countermeasures.

Three events made significant contributions to the conversation during this period of an analysis. On May 7th, Microsoft released Windows XP Service Pack 3. This caused an increase in post volume of more than 50 percent across all of the topics. During the spring Microsoft hosted a series of webcasts to support the launch of Windows Server 2008, "24 Hours of Windows Server 2008." The May 12th, Microsoft webcast

<http://www.microsoft.com/events/series/windowsserver2008.aspx?tab=webcasts> featured the management of the Hyper-V server and virtual machines. May 13th, saw a 200-percent increase in the Windows Server Security topic. Finally, a series of SQL Injection news items generated a great deal of commentary.

Sentiment remained largely the same during the period covered in this report when compared to the period covered in the first report. We found fewer posts overall containing any sentiment. The general topics had percentages of expressed opinions ranging from 2 to 5. Typically CGM sees an average of 20 percent of posts express an opinion. Among the five topics, only Microsoft Brand Security saw a more typical average with 22 percent of posts expressing an opinion. In this case, though, Microsoft's Brand Security saw a stark decline from mixed sentiment (47 percent) in the initial Benchmark report to a largely negative sentiment (67 percent).

Countermeasures

Countermeasure topic saw the largest post volume (17,181 posts). Users shared information, troubleshooting security issues on web forums and message boards. These conversations focused on exchanging technical information rather than evaluating products or experiences. The percentage of neutral comments was very high, with 97 percent of posts expressing no opinion. When opinion was expressed it tended to be negative (55 percent). These negative comments were not directed explicitly at Microsoft products or the Microsoft brand, but rather their negative experience resulting from malicious users. Of the posts relevant to the Countermeasure topic, only 21 negative posts overlapped with the Microsoft Brand Security topic.

Negative posts triaged security breaches and the possible motives of attackers. For instance, a bulletin board system running on Linux machine was exploited:

“This was found last night. My very out-of-date installation of phpBB got exploited (first time any of my software gets exploited in 7 years of running sites on BSD and Linux). I've cleaned most stuff up, but I'm still working with the Web host to get rid of what's left.” — Duncan Myer, 3/14, Forums.speedguide.net

The following thread discussed the possible perpetrator and motive for the exploit. Moshe Goldfarb wrote on March 14th, “Roy Schestowitz is just another example of a Linux advocate gone loony.”

Posts with a positive score discussed countermeasure programs and services that were useful for creating a secure computing environment. In a few cases, authors posted comments regarding the effectiveness of services or systems. For example, Kutjara posted on March 31st on the UbuntuForum:

“That's where the official repository system works very well. Patches are propagated quickly and (using Ubuntu as an example) the update manager on users' computers installs them just as quickly. Typically, Ubuntu will send me updates every few days, far more frequently than the monthly "patch Tuesday" offered by Microsoft.”—Kutjara, 3/31, UbuntuForum

The Countermeasure topic saw almost 200 posts regarding Windows XP Security Patch 3. On the Microsoft Communities Forum, user name “pheasant” posted a question, on 4/17, “Other than just to be up to date, is there any compelling reason that a casual user would even want to update for?” And initiated a thread with users noting, such as Philo on April 27th:

“Although I always believe one should apply all critical updates...SP3 has an added benefit other than security alone. I have definitely noticed a nice performance boost since I have applied it!”—philo , 4/27, Microsoft.com/Communities

Despite the opinion expressed in these two examples, the vast majority of posts in the Countermeasure topic (97 percent) didn't express an opinion. Even in the thread responding to Philo's post at the Microsoft Community (above), authors' offered few evaluative comments regarding Windows, the Microsoft Brand or security aside from confusion over the reputed performance speeds of the various security patches for Windows XP.

Coding

While Coding saw the second largest volume (8,639 posts), the topic experienced a 50-percent decrease in proportion to the highest volume topic when compared to the previous benchmark report.

Authors shared information, best practices, and troubleshooting information. The percentage of neutral comments was also very high with only 1 percent of the posts expressing an opinion. Of these posts, 66 percent expressed a negative opinion and 23 percent expressed a positive opinion. Again, these negative comments were not directed explicitly at Microsoft products or the Microsoft brand, but rather their negative experience resulting from malicious users. Of the posts relevant to the Coding topic, only 16 negative posts overlapped with the Microsoft Brand Security topic.

In general, these conversations occurred on forums and were very matter of fact as they exchanged information and procedures. A user named “Guest” posted on the MS-OS.com board on March 6th, “Thanks David that worked like a charm!!! Stupid viruses anyway!!” in an exchange where users walked through the code required to fix malware damage to the Windows registry. Bruce Schneier is a well-known security technologist, author, and blogger. A user posted to Schneier’s blog detailing the positive security features of a Linux component:

As others have mentioned, this is a Mandatory Access Control add-on subsystem for Linux, not a distribution of Linux. I’ve been using this with Fedora since it was introduced (2004). The Fedora and Redhat folks have developed an extensive targeted policy that makes the use of SE Linux almost completely transparent. SE Linux also provides extensive auditing, necessary for almost any environment that takes security seriously. Creating local policy to authorize non-standard software access is really trivial. There are many tutorials online (including at the Fedora Wiki). I think I spent a total of 30 minutes learning it. —Mace Moneta, 4/8, schneier.com

In contrast, the negative comments tended to focus on the difficulty of anticipating how a malicious user may compromise a system. For example, one user wrote about the various methods of attack on web applications using Microsoft Access:

The remote web application may be running an MS Access database. The remote web application is vulnerable to database information disclosure. An attacker can generate output errors that provide database version information and allows data extraction. The information gathered from the specific error responses generated using various input validation techniques. The damage caused by this vulnerability depends on environment and configuration. While the web application may check input validation and generate a database error, the database configuration determines how much it can be altered. A remote attacker may be able to obtain sensitive information or administrative access. Certain MS SQL server configurations will allow user account creation with the ability to take control of the Windows server that hosts the database. This is not an exhaustive test and has not identified all of the forms and variables that may be affected by this vulnerability any solution. —ahlimosa, 4/6, ecommerce templates.com

These conversations also occurred on forums and for the most part authors were dispassionate — a low percentage of expressed sentiment — about writing secure code.

Web Attack

While Web Attack saw the third largest volume (6,055 posts), the topic fell by a quarter in proportion to the highest volume topic when compared to the previous Benchmark report. The percentage of these posts expressing an opinion was very low at only 4 percent. Of those posts that did express an opinion, however they were overwhelmingly negative. Eighty-four percent of the posts containing sentiment expressed a negative sentiment toward Web Attack. Only 10 percent of the posts were positive. These negative comments were not directed explicitly at Microsoft products or the Microsoft brand, but rather their negative experience resulting from malicious users. Of the posts relevant to the Web Attack topic, only 21 negative posts overlapped with the Microsoft Brand Security topic.

These topics contained titles such as “Zombies and bot nets,” “Various Problems including disabled AV!,” “Vicious, Insidious Spyware/Virus ... Please Help!” By and large the Web Attack topic uncovered system administrators and computer users confronting malicious intrusions into their computer systems. For example, a user posted a log file to figure out what was going on with his machine:

“I apparently downloaded an insane mix of spyware/virus including win32/vundo.zo, win32/vmalum.czhw, virtumonde.dll and zlob.downloaddeer, among others. I seem to have gotten rid of most of it w/ Spyware Doctor and CA anti-virus, but I believe I still have some problems in there. Please Help!”— Joe92074, 5/20, Spyware Warrior

A few authors posted bittersweet notes of successfully cleaning their machines. For example in a post titled, “Ahhhh Contentment...”

“... is a PC that works.
After spending a day tidying up the workspace, cleansing of viruses, updating the latest drivers and implementing the 3GB switch my PC (yes a dell) now works like a dream.”
— Uncle Peter, 5/31, SoundOnSound.com

These conversations also occurred on forums and were very matter-of-fact as authors used collective input from the web to figure out how to repair compromised systems.

Windows Server Security

While Windows Server Security saw a much smaller volume (685 posts), the topic experienced the greatest increase in volume, 300 percent, in proportion to the highest volume topic, compared to the previous Benchmark report. The increase was largely due to the recent launch of Windows Server 2008. This event, along with promotional events such as a May 12 webcast, drove conversation across all of the topics, but rightly affected Windows Server Security most significantly. During the last week of April, post volume fluctuated between five and 10 posts a day. The day of the Windows

Server 2008 webcast saw the greatest increase for this topic with more than 35 posts.

The percentage of posts expressing an opinion was very low. Only 5 percent of the posts expressed any opinion. Of the posts that did express an opinion, they were most often positive. For every negative post, there were two posts that expressed a positive sentiment. For example, in a thread responding to an article about an outbreak of SQL injection attacks on Windows servers and a possible vulnerability in IIS, a reader responded:

“Microsoft is right on this one. SQL Injection has nothing to do with IIS at all. It targets poor development practices, and has happened on basically every platform. People who try to pin this on Microsoft are probably going to spend next week blaming Ford for potholes.”—
Tridus, 4/29, www.betanews.com

Microsoft Brand Security

While Microsoft Brand Security saw the smallest post volume (381 posts), the topic experienced a 200 percent increase in proportion to the highest volume topic, compared to the previous Benchmark report. This increase was due to the release of Windows XP Service Pack 3 and an increase in the discussion about the relative security of Vista and XP. The percentage of posts expressing an opinion was in line with typical CGM content. However, the share of negative posts among those expressing an opinion was overwhelming, with seventy percent containing negative sentiment. Please note that this was about 50 posts. This was still a stark change from the previous benchmark report, which saw a sentiment of 47 percent positive and 47 percent negative posts.

Negative comments had few common themes, although a number of posts mentioned Windows XP Service Pack 3, Internet Explorer 7.0, and issues with Microsoft’s digital rights management strategies as security issues (i.e., sharing user information with third parties). For example, an article posted on 4/1 at Techrepublic on DRM generated a number of comments (both on the site and on Digg) on Microsoft’s handling of DRM:

“Microsoft’s DRM/DRE, more commonly called WGA/MGA. We all know I’m not a fan of Microsoft, but these digital rights management implementations go far beyond what is commonly seen. Remember those law suits Microsoft filed against several Chinese companies for distributing pirated versions of Microsoft’s software? Those lawsuits are legal proof that Microsoft is distributing SPYWARE with their products. [There has to be personally identifiable information being transmitted, or else Microsoft could not have file the lawsuits.]” —Jaqui, 4/01, Techrepublic.com

However, there were also authors who felt that Microsoft was doing a good job with security and had made many improvements. For example, a retired digital imaging engineer from Hewlett-Packard wrote on his blog:

“Those of us who’ve used Vista regularly (and especially those who’ve tweaked it up), recognize the solid improvements and will never go back to XP. As Paul’s recent review

indicates, Vista is Microsoft's most solid and secure operating system to date. Those who pan it have not truly experienced it."—Douglas Gennetten, 6/7, Foolsap.gennetten.com

These conversations also occurred on a mix of blogs and forums and contained more impassioned discussion than Countermeasures, Coding, and Web Attacks. Blogs tended to include more opinionated posts than forums. Forums generally featured the dispassionate exchange of information. The increase in negative sentiment may have been due to the release of the last service pack update for XP and several contentious conversations such as the Digital Rights Management thread on TechRepublic and Digg.

Where the Conversations Took Place

The conversations took place in technology news and community forums for software developers. More than half of the top hundred sites were web forums, and almost all of the top 20 sites during the period of analysis were forums. The top blog, ZDNET, ranked at number 20. Forums contained a much greater number of relevant posts compared to the blogs. The top forum, the community forums at Microsoft.com, contained 13 times the number of posts as the top blog.

In contrast to a blog that features regular posts from a single author, or a regular group of contributors, forums contain posts on a variety of topics by users either looking for answers to their problems or sharing information. Forums are generally organized by topic, such as Visual Basic Development, Ubuntu, or Dell computers. Editorial functions are performed by moderators who approve content, remove spam, and enforce community standards among users. Forums generally contain subject specific topics and are frequented by users willing to share in depth information. These sites contain rich information, directions, and solutions to problems.

The commentaries on blogs tend to contain less information and more opinion. Blogs carry news based on the site's editorial focus. Most blogs post on a continuous publication cycle. When readers of blogs comment, they post in the context of the content posted by the blog author. Most of the top blogs focused on technical conversation in relation to software development. For instance the blogs at Microsoft at MSDN ranked 37 overall and was in the top 10 overall blogs. These sites contained assessments of software news, evaluations of new products, and reactions to ongoing events such as Microsoft's release of Windows XP Service Pack 3.

A few content-sharing sites and social-networking sites also placed among the top sites. For instance the content sharing and rating network, Digg, placed at spot 34. Digg played an important role in propagating content from blogs, forums, and news sites. When users find content on the web that they find useful, they vote through Digg. For instance, a post at TechRepublic on 4/1 attracted comments on the site as well as on Digg. The social networking site, LinkedIn.com, placed at spot 18. Users of LinkedIn share professional contacts. They can also ask their network work-related questions.

Among the top 10 sites for each of the five topics, only Microsoft.com contained relevant discussion for all topics. Jlaforums, MCSE, and Dell Community were relevant to four of the five. The diagram

driven prior to that date is not attributable to this program.

Of the posts successfully placed on sites, nearly a quarter had markedly positive outcomes. Positive outcomes were determined by the reception of the posts in the thread. For instance, other users positively acknowledged a helpful post. Furthermore, none of the posts generated any negative feedback on the sites. Additionally, the posts generated 422 click-thrus to Hello Secure World.

A large number (39 percent) of posts failed to post to web sites. About half of these posts were lost due to various technical problems. User accounts either had difficulty verifying registration or new users had insufficient privileges to post to certain accounts; these post inc A few threads became closed for commentary. A few other threads were removed or archived. Moderators of the sites did not accept the other half of the posts.

Technical problems included:

- Site error (8)
- New registrations disabled (5)
- No comment section (12)
- Expired URL or thread removed (16)
- New user didn't have permission to reply to thread (5)
- New comments to thread are disabled (1)

As technology and security-minded web forums focused on exchanging solutions, the forums featured markedly dispassionate, information rich conversations. Posts from new members were less likely to be added to a forum. This in addition to containing an off-site link, most likely contributed to these posts' failure to pass the editorial check by the forum moderators.

Even so, most of the comments were successfully posted. The Microsoft subject matter experts, such as Anil Revuru, a Senior Security Consultant, posted substantial comments, and participated in the ongoing conversation:

"Hi,
There are two possible reasons for which this could happen.
1. If the application is not closing/releasing connections to the database, you might receive this error. Review your code and close connections in the c# code.
2. This could also be related to NTFS access control problem. Make sure that the specific user account has Read/Write permissions on the folder. Additionally try giving access to ASPNET account and IUSR_MACHINENAME account the same access. "
—Anil_Revuru, 5/29, forums.asp.net

Revuru didn't have a long-standing membership or participating score for the forum, and he had responded to a member who had belonged to the community since 2002. The initial problem that initiated the thread posted by Gamuk was answered by Bo Chen (MSFT), an All Star Member.

Revuru's response was acknowledged in the thread and contributed to the ongoing conversation.

Fred Reckling, part of the Security Outreach Team posted on one of the web sites central to the security conversation, SpywareInfo.com:

"The best advice I've found in protecting against SQL injection attacks is to always check and validate input. This includes automatically removing bad characters from input and parameterizing your input statements. There's a very good tutorial on basic security against SQL injections on <http://www.microsoft.com/hellosecureworld7>"
— Fred Reckling, 5/12, 2008, spywareinfoforum.com

During the period of the study, the issue of SQL injection was widely discussed. Most of the posts during the outreach campaign were in the context of ongoing discussion about identifying and preventing these attacks. This thread on SpywareInfo.com was placed within the context of a thread created by APLUSWebmaster collecting news posts related to the origin of the SQL Injection Attacks. Many of the posts speculated about the characteristics of sites that might be the origin of the attacks. Throughout the thread, users posted a warning: "We strongly suggest that readers NOT visit websites mentioned as being behind the attacks discussed. They should be considered dangerous and capable of infecting your system." Many of the URLs in the thread actually lead to dangerous sites. AplusWebMaster was a full forum member with three years of membership history and 3,792 posts. Reckling's post mentioned SQL injection generally rather responding directly to other forum member's posts. The tracking URL linked to general information rather than directly to information regarding SQL Injections. Furthermore his persona, Freckling, had only a single post and his membership date was the day of the post. Thus his post became ancillary, rather than central, to the thread.

Even with the difficulty of engagement, a large number of posts generated positive outcomes. None of the posts generated any negative feedback on the sites. Overall more than 400 click-thrus resulted from the campaign.

Next Steps

Based on our findings, we recommend that Microsoft expand the engagement effort to target key sites and leverage its access to security experts. This effort would have three components. One, continue to monitor the conversation regarding security in order to identify topics and patterns in the space. Two, use this information to refine the Hello Secure World web presence, refine the monitoring effort to track the planned engagement effort and participate in engagement with CGM media. Third, measure the effect of their efforts.

- **Continue Monitoring the Conversation**

Continue to gather information and understand the areas of interest and patterns of conversation among users in the software security space.

- **Refine Engagement in Consumer Generated Media**

Anticipate the engagement effort by changing the monitoring program to align with outreach plans. Use the understanding gained from the first phase to refine the TruCast® Engagement Campaign to bring Hello Secure World's message to key participants in social media.

- **Measure Progress**

Measure changes in the environment following engagement. Future monitoring will continue to increase our understanding of the relevant social media space.

Continue Monitoring the Conversation

Expand on the information gathered during the first two benchmarks in order to understand the topics of interest and the patterns of conversation among bloggers and CGM community members in the software security space. A benchmark report would identify these topics and patterns. This information would contribute to an understanding of the requirements and features that would be appealing and useful to coders and bloggers interested in security. This report would provide insight into refining the Hello Secure World web presence and the follow up engagement campaign.

Refine Engagement in Consumer Generated Media

After the site presence has been modified, redesign the monitoring program to align with the engagement program. During the initial phase of engagement, many insights were gathered that can be used to improve the effectiveness of the program. The redesign would have two components. The first would be to anticipate the engagement program while preparing the monitoring program and to begin collecting information. The second would be to engage with the space defined in the benchmark reports.

The authors in this space respond well to personalized, credible, and consistent conversation and

interaction with Microsoft Subject Matter Experts. Nearly all of the successful posts from Microsoft experts resulted in positive outcomes. Engagement not only provides access to information and expertise about Microsoft products, but also serves to leverage the impact of doing so in an open, highly-visible environment. Consistent and transparent engagement with key bloggers would go a long way toward shaping the brand image of Microsoft in the CGM space, creating desirable associations, and enlisting already sympathetic bloggers, such as PA Bear, as brand loyalists and advocates.

This campaign would require a future report to assess changes in the overall environment and to measure the effectiveness of the outreach efforts. The next report would provide a snapshot after the refined engagement campaign to measure its effects.

Possible campaigns may include:

- Microsoft Subject Matter Experts could conduct blog tours, guest blog, or host guests identified as influencers.
- Microsoft Subject Matter Experts frequent key forums (identified in this report) to provide tips, insight, and leadership in security.
- Microsoft Subject Matter Experts could interact with influencers in specific areas. We've identified a list of one-hundred key authors, and top 10 authors in each site. Many of these authors participate in forums where Microsoft Subject Matter Experts can directly interact with them.
- Microsoft Subject Matter Experts can use TruCast® Engagement Manager to interact with the CGM space, and track topics and developments in the online conversation. They have been successful in bringing their expertise into CGM. Expanding this effort would have greater results.

Measure Current State and Progress of Efforts

Perhaps the most crucial observation that comes out of our analysis is the need for Microsoft to leverage the existing data to provide solid measures of performance for its social-media engagement campaign and monitor the impact of brand advertising and promotions. Continuing systematic and ongoing performance tracking would continue to provide a clear picture of the impact of the engagement in the space as well as the effects of other forms of advertising and promotions. This procedure will improve the efficiency and effectiveness of Hello Secure World in social media efforts overall. For this reason, the information contained in this report is strongly complemented by use of Visible Technologies' TruCast® application. TruCast's® dashboard and reporting functions can be utilized to monitor and measure near real-time consumer generated discussion allowing for the most efficient and effective engagement within this vital space.

Benchmark Report Appendix

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Contact Information

David Burcham
Executive Vice President
Phone 206.838.1188
Email
david@visibletechnologies.com

Miles Ward
Director, Community Intelligence
Phone 206.838.1188
Email
miles@visibletechnologies.com

Carly Wilcox
Account Manager
Phone 206.838.1188
Email
cwilcox@visibletechnologies.com

Seattle (Headquarters)
Court in the Square
401 2nd Ave South
Suite 101
Seattle, WA 98104

New York
1185 Avenue of the Americas
Suite 2250
New York, NY 10036

Phone 206.838.1188
Fax 206.624.1827
Web visibletechnologies.com
Blog visinsights.com

Visible Technologies Quick Facts

Visible Technologies is a leading provider of online brand management products, services, and technologies in today's rapidly changing new media environment. Visible Technologies provides its clients with high-value strategic solutions supported by proprietary world-class technology and brand analytics. Whether it is protecting or promoting reputations across popular search engines or helping companies track and participate in influential consumer created content channels, Visible Technologies empowers brands to do more online to build their businesses and bottom lines.

Visible Technologies has grown rapidly since it was founded in 2003. With offices in Seattle and New York City, the company employs a diverse group of over 70 professionals with decades of online management and marketing skills. Visible Technologies' collaborative client approach and focus on customer service guarantees satisfaction and results.

Top 10 Topics

1. Countermeasure (17,181)
2. Coding (8,639)
3. Web Attack (6055)
4. Windows Security (685)
5. Microsoft Brand Security (381)

Top 10 Authors

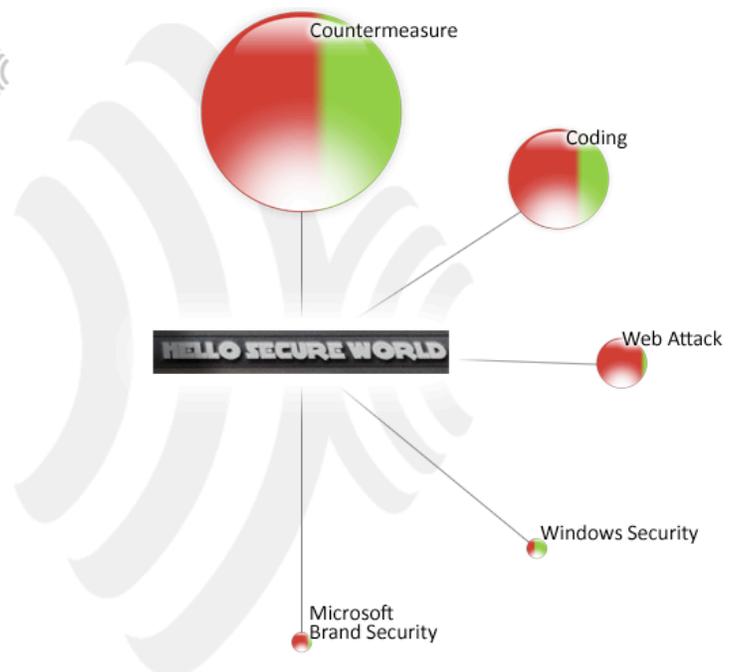
1. PA Bear [MS MVP] (389)
2. Bugbatter (307)
3. Blade81 (220)
4. Shaba (149)
5. unknown@quickonlinetip (99)
6. pskelley (94)
7. Rorschach112 (80)
8. Bob (74)
9. Juliet (65)
10. Bill Castner (63)

Top 10 Sites

1. microsoft.com (2342)
2. forums.spybot.info (1,349)
3. ms-os.com (847)
4. dellcommunity.com (807)
5. forums.microsoft.com (531)
6. mcse.ms (480)
7. jlaforums.com (454)
8. techsupportforum.com (447)
9. pcbanter.net (353)
10. forums.techguy.org (349)

Topic Ecosystem

Visible Technologies gathered CGM data relative to the following five topics in order to identify influential participants in the online conversation about writing secure software code. The Topic Ecosystem is a summary of our analysis of volume and sentiment in this space. The diameter of the spheres shows relative volume and the color indicates the dominant sentiment of the discussion.



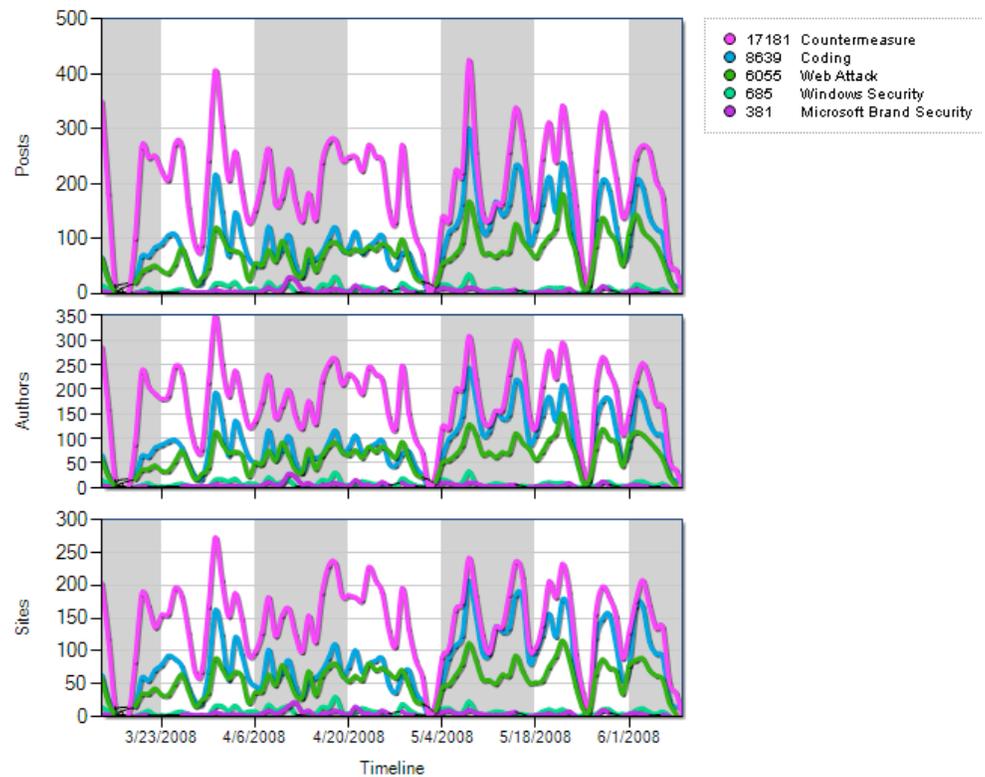
We gathered data relative to these topics over a two-month period. During this time, we discovered a total of **32,941** individual topical statements, contained **within 25,095** posts, across **20,875** threads, written by **17,647** authors. Each unique post can be counted as one or more relevant topical statements depending on the post's relevancy to the topics. For example, a post on relevant to Web Attacks may also be relevant to Windows Server Security, and then count as two topical statements. A thread is a series of post responding to each other.

Out of the 32,941 statements, 31,944 (97%) were neutral and 997 (3.0%) contained sentiment. Of the 997 statements that contained sentiment; 256 (26%) were characterized as **positive**, 637 (64%) were characterized as **negative**, and 104 (10%) were characterized as **mixed**.

Impact Analysis

The charts below show post-volume, author-volume and site-volume relating to the Hello Secure World topics over the course of our study. In general, tight tracking among these views indicates a largely news-driven environment. On the other hand, a high ratio of posts to authors and sites can indicate that authors are engaging in more independent and dynamic dialogue. Here, the metrics are tightly tracked with a gradual increase in the number of posts per author and sites indicating an active conversation. For instance on May 6th, 2008, 250 sites counted for Countermeasures with more than 400 corresponding posts. Events related to the release of Microsoft Windows XP Service Pack 3, Windows Server 2008, and a series of discussion about SQL Injections also drove conversation.

Impact dashboard

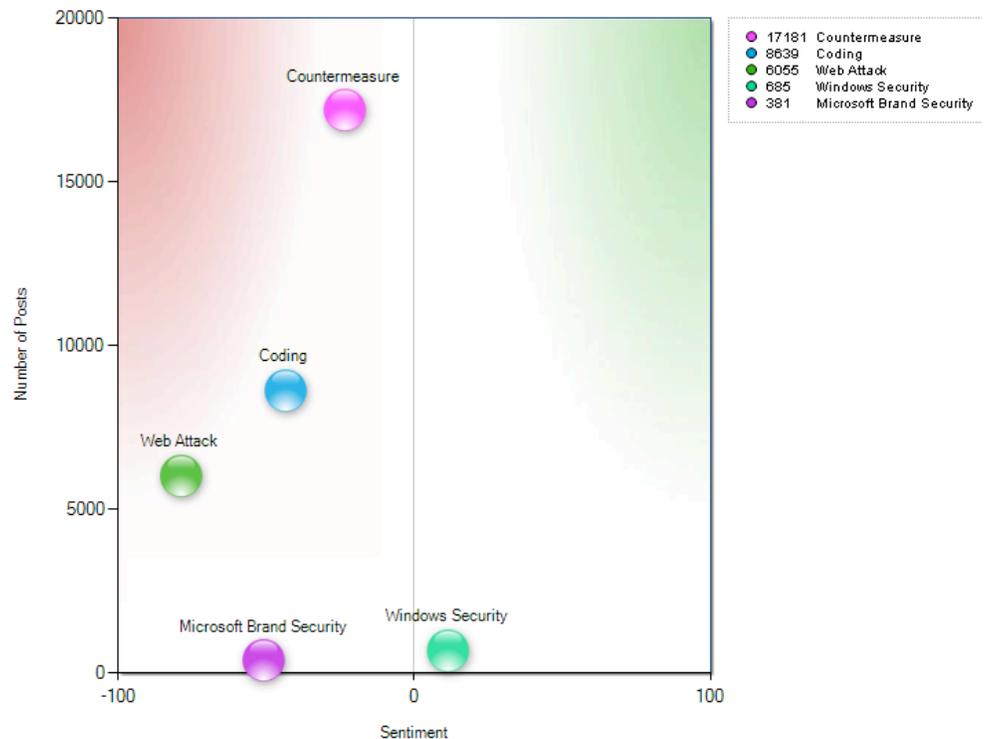


Sentiment Analysis

The Sentiment Dashboard, below, shows the relative post volume and sentiment values for each of the five topics covered. Typically, less than 20 percent of statements made about any given topic within the CGM space contain sentiment. All of the general topics, Coding, Countermeasures, and Web Attacks, had ratios that were under five percent. Given the overall dynamic conversation, indicated in the Impact Chart, this indicates the dry, informative nature of the conversation as web developers traded best practices, tips, and procedures for security. In sharp contrast to this, 22 percent of the statements for the Microsoft Brand Security topic contained sentiment.

While the conversation tended to be negative when any sentiment was expressed, this sentiment had to do with the problems associated with Web Attacks and taking countermeasures to create a secure computing environment. For example, Web Attack's topics included titles such as "Zombies and botnets," "Various Problems including disabled AV!," "Vicious, Insidious Spyware/Virus ... Please Help!" By and large the Web Attack topic uncovered system administrators and computer users confronting malicious intrusions into their computer systems.

Sentiment Dashboard

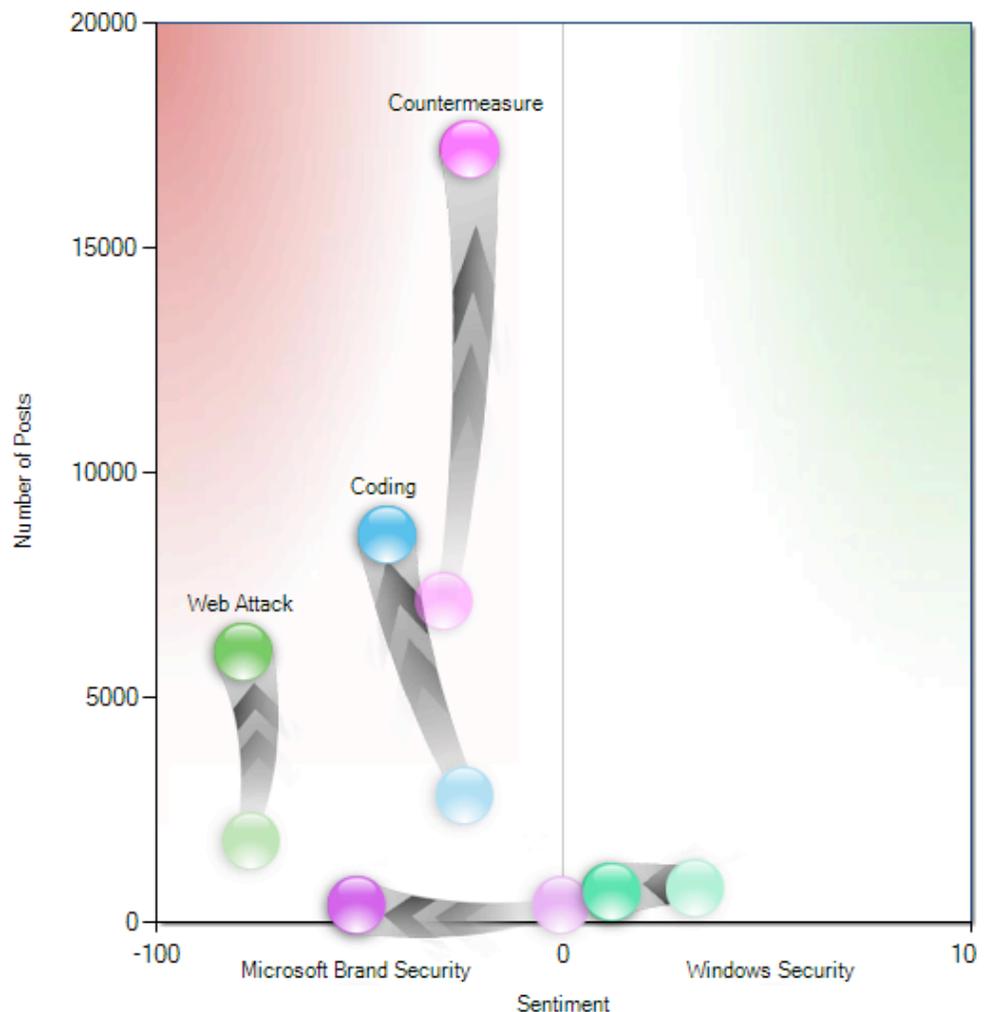


Sentiment Comparison Dashboard

This dashboard shows the change in sentiment from the first benchmark report to this benchmark report.

Although the overall volume of posts changed from the first benchmark to the second, sentiment remained largely the same. We found fewer posts overall containing any sentiment. The general topics had percentages of expressed opinions ranging from 2 to 5. Typically CGM sees an average of 20 percent of posts express an opinion.

Among the five topics, only Microsoft Brand Security (purple) saw a more typical percentage with just 22 percent of posts expressing an opinion. Furthermore Microsoft's Brand Security had a decline from mixed sentiment (47 percent) in the initial Benchmark report to a largely negative sentiment (67 percent).



Lists

From a ranking perspective, we want to understand who the key authors are, where they are having their discussions, and the nature of those discussions. Below we include aggregated lists showing authors and sites impacting the space. The numbers in parentheses denote the number of posts for that author/site. To ensure disambiguation of authors, we've included a snippet of the site domain after the "@" for common names.

Top 100 Authors

1. PA Bear [MS MVP] (529)
2. Bugbatter (390)
3. Blade81 (388)
4. Shaba (196)
5. unknown@quiconlinetip (140)
6. pskelley (119)
7. Bob (101)
8. Juliet (101)
9. Rorschach112 (94)
10. nass (89)
11. Bill Castner (83)
12. MowGreen [MVP] (69)
13. AplusWebMaster (66)
14. TaurArian (65)
15. Robert McMillan (59)
16. blender (58)
17. Neal (57)
18. Shenan Stanley (55)
19. Hack (52)
20. Mark L. Ferguson (48)
21. unknown@computerworld. (47)
22. NewsDesk (45)
23. Bruce Chambers (44)
24. Mick Murphy (44)
25. Malke (42)
26. Marianna Schmuldach (41)
27. Gregg Keizer (40)
28. tetonbob (39)
29. EFY NEWS Network Team(39)
30. Gerry (37)
31. unknown@sharemulek.pl (37)
32. Lanwench [MVP - Exchange] (35)
33. unknown@simplyhired.co (35)
34. manunkind (34)
35. Jim C (34)
36. Tom (33)
37. Terence Liu [MSFT] (33)
38. PudgyOne (33)
39. Pancake (32)
40. KP (29)
41. crunchie (29)
42. Meinolf Weber (29)
43. Gary S. Terhune (29)
44. Chris, at 411 Spyware (27)
45. spycrasher (27)
46. artkolkovk (26)
47. APK (26)
48. Dima (26)
49. David H. Lipman (26)
50. ken545 (25)
51. unknown@msdnrss.thecod (25)
52. aaron.kempf@gmail.com (25)
53. Ted Hastings (24)
54. Liam Tung (23)
55. Ken Blake, MVP (23)
56. Dan Morrill (23)
57. l33tdawg (23)
58. Ried (23)
59. MEB (23)
60. Press Guy (22)
61. Jeremy Kirk (22)
62. Paul Bergson [MVP-DS] (21)
63. unknown@informationwee (21)
64. Ray & Fran (21)
65. Virtualization News Desk (21)
66. Kayman (21)
67. cybertech (21)
68. Frank Saunders MS-MVP IE,OE/WM (21)
69. jamtomorrow (21)
70. PudgyOne (21)
71. Nerdie (21)
72. KathiMR (20)
73. unknown@net-security.o (20)
74. unknown@yourdepo.com/d (20)
75. Brian Krebs (20)
76. George Hulme (20)
77. coolmanhiphop (19)
78. kemouse (19)
79. unknown@whitepapers.zd (19)
80. Zoejoe (18)
81. Stefanie Hoffman (18)
82. Blind Dragon (18)
83. Stephen Boots (18)
84. unknown@businesswire.c (18)
85. MixedSoup (18)
86. amateur (17)
87. RobDog888 (17)
88. Newsletter (17)
89. kritius (17)
90. Jeff Ingman (17)
91. DL (17)
92. unknown@ddj.com/blog (17)
93. teacup61 (17)
94. Osiris (17)
95. Blake (17)
96. Rick Brandt (17)
97. MauriceN (17)
98. Larry Struckmeyer (16)
99. Paul (16)
100. Robert Vamosi (16)

Top 100 Sites

1. microsoft.com (2342)
2. forums.spybot.info (1349)
3. ms-os.com (847)
4. dellcommunity.com (807)
5. forums.microsoft.com (531)
6. mcse.ms (480)
7. jlaforums.com (454)
8. techsupportforum.com (447)
9. pcbanter.net (353)
10. forums.techguy.org (349)
11. forums.techarena.in (327)
12. ubuntuforums.org (290)
13. answers.yahoo.com (279)
14. episteme.arstechnica.com (260)
15. discussions.apple.com (244)
16. forums.asp.net (232)
17. forums.oracle.com (202)
18. linkedin.com (193)
19. vbforums.com (192)
20. blogs.zdnet.com (175)
21. forums.pcpitstop.com (171)
22. infoworld.com (168)
23. forum.kaspersky.com (162)
24. gaiaonline.com (161)
25. cybertechhelp.com (156)
26. quickonlinetips.com (151)
27. lavasoftsupport.com (145)
28. forum.aumha.org (143)
29. blogs.techrepublic.com (141)
30. computerworld.com (128)
31. daniweb.com (127)
32. forums.macrumors.com (124)
33. forums.majorgeeks.com (121)
34. digg.com (119)
35. castlecops.com (117)
36. ipmart-forum.com (113)
37. blogs.msdn.com (111)
38. spywarewarrior.com (106)
39. forum.notebookreview.com (101)
40. digitalspy.co.uk (101)
41. officefrustration.com (99)
42. investorshub.advfn.com (97)
43. tek-tips.com (95)
44. forums.mozillazine.org (95)
45. informationweek.com (94)
46. forum.java.sun.com (89)
47. windowsbbs.com (87)
48. it.slashdot.org (81)
49. d-a-l.com (81)
50. codecomments.com (81)
51. newwin.net (80)
52. futurehardware.in (79)
53. forums.cnet.com (78)
54. lifehacker.com (75)
55. forums.digitalpoint.com (73)
56. linuxquestions.org (72)
57. messages.finance.yahoo.com (71)
58. betanews.com (70)
59. networkworld.com (70)
60. techspot.com (69)
61. infoq.com (68)
62. blog.wired.com (67)
63. security-forums.com (64)
64. forums.overclockers.co.uk (62)
65. boards.ie (62)
66. blogs.technet.com (61)
67. thinkdigit.com (61)
68. vistax64.com (60)
69. forums.spywareinfo.com (60)
70. crn.com (56)
71. blogs.computerworld.com (56)
72. forums.dpreview.com (54)
73. tech.slashdot.org (53)
74. office-outlook.com (53)
75. schneier.com (52)
76. pcpro.co.uk (51)
77. gmc.yoyogames.com (51)
78. tech-forums.net (50)
79. forums.vnunet.com (50)
80. webdeveloper.com (50)
81. gladiator-antivirus.com (50)
82. blog.washingtonpost.com (50)
83. forum.worldstart.com (49)
84. forums.devshed.com (48)
85. forums.moneysavingexpert.com (47)
86. forums.aspfree.com (47)
87. dcssec.blogspot.com (46)
88. blogs.ittoolbox.com (45)
89. ehmac.ca (45)
90. developers.slashdot.org (44)
91. forums.ebay.com (44)
92. forum.utorrent.com (43)
93. investorvillage.com (42)
94. forums.thatcomputerguy.us (41)
95. webuser.co.uk (41)
96. pcsympathy.com (41)
97. sitepoint.com (41)
98. spywareinfoforum.com (41)
99. messageboards.aol.com (40)
100. eftytimes.com (39)

Top Authors

PA Bear [MS MVP],

	Actual Name	PA Bear [MS MVP]	Topic Involvement	Per-Topic Sentiment
	Posts As	PA Bear [MS MVP]	Countermeasure	Neutral
	Site	microsoft.com	Web Attack	Neutral
	Total Posts	389	Coding	Neutral
	Average Sentiment	Neutral	Windows Security	Neutral
			Microsoft Brand Secur	Neutral

PA Bear [MS MVP], an author who participates in multiple forums has authored comments in the following CGM sites: forums.techarena.in, jlaforums.com, mcse.ms, Microsoft.com, ms-os.com, officefrustration.com, officehelp.com, pcbanter.net, and vistaheads.com. This author serves as a resource on these sites, answering other users' questions, such as in an instance in which a user was trying to update Windows Vista after an install of Windows Defender update (see thread: Update for Windows Vista (KB938371) error code 80070057). This author is highly prolific across multiple sites, indicating that he has a lot of value to add regarding this topic and reaches out to multiple communities instead of interacting with just one.

Bugbatter

	Actual Name	Bugbatter	Topic Involvement	Per-Topic Sentiment
	Posts As	Bugbatter	Countermeasure	Neutral
	Site	dellcommunity.com	Web Attack	Neutral
	Total Posts	307	Coding	Neutral
	Average Sentiment	Neutral	Windows Security	Neutral

Bugbatter, a Platinum status author in the forums of dellcommunity.com, joined these forums in February 2006. Since then, Bugbatter authored 10,578 posts. According to this author's post signature, s/he is also a Microsoft MVP – Consumer Security, affiliated with the Alliance of Security Analysis Professionals, and an Instructor at CastleCops Academy. This author serves as a resource to others who have computing security issues (see thread: pop-ups warning of possible infection).

Blade81

	Actual Name	Blade81	Topic Involvement	Per-Topic Sentiment
	Posts As	Blade81	Countermeasure	Neutral
	Site	forums.spybot.info	Coding	Neutral
	Total Posts	220	Web Attack	Neutral
	Average Sentiment	Neutral	Microsoft Brand Secur	Neutral

Blade81, a Security Expert in forums.spybot.info, joined this forum site in October 2006 and since then, has authored 5,469 posts. According to Blade81's forums.spybot.info profile, this author is currently

located Finland, has interests in floorball; football, music, and computers; and works as a software analyst. His signature clearly states: "I don't help with logs thru PM. If you have problems create a thread in the forum, please." One such author created a thread, and Blade81 responded to his aid, and followed up, requesting a ComboFix log and a fresh hjt log as well (see thread: virtumonde). Blade81 provides his knowledge to those with security questions.

Shaba

	Actual Name	Shaba	Topic Involvement	Per-Topic Sentiment
	Posts As	Shaba	Countermeasure	Neutral
	Site	forums.spybot.info	Coding	Neutral
	Total Posts	149	Web Attack	Neutral
	Average Sentiment	Neutral		

Shaba, a Security Expert in forums.spybot.info, joined this forum site in October 2006 and since then, has authored 14,428 posts. According to this author's forums.spybot.info profile, Shaba is currently located in Finland; has interests in computers, music, movies, and reading; and works as a chemist/researcher. According to this author's post signature, s/he is also a Microsoft MVP in Consumer Security 2008, a member of ASAP and UNITE since 2006, and states: "Please don't use PMs for requesting help. The Forums are there for a reason." Another author requested help in a forum, and Shaba responded with a step-by-step problem solving process, with a request for a fresh HijackThis log and combofix report (see thread: <http://forums.spybot.info/showthread.php?t=28995>). This demonstrates Shaba's function as a security expert and resource.

unknown@quickonlinetips.com

	Actual Name	unknown@quickonlinetips.com	Topic Involvement	Per-Topic Sentiment
	Posts As	unknown@quickonlinetips.com	Countermeasure	Neutral
	Site	quickonlinetips.com	Coding	Neutral
	Total Posts	141	Web Attack	Neutral
	Average Sentiment	Neutral	Windows Security	Neutral
			Microsoft Brand Security	Neutral

unknown@quickonlinetips.com is a blog that covers technology, blogging, web 2.0, new media, computers, and tools. The blog itself, Quick Online Tips is part of the 9rules blogging network, averages 300,000 unique visitors/month, 450,000+ pageviews/month, and has 15,200+ RSS feed readers. An example post from Quick Online Tips found to be relevant to this study informed readers of a virus that disguised itself as a Mozilla Firefox extension (see thread: FormSpy Trojan Horse Installed as NumberedLinksFirefox Extension).

Pskelley

	Actual Name	pskelley	Topic Involvement	Per-Topic Sentiment
	Posts As	pskelley	Countermeasure	Neutral
	Site	forums.spybot.info	Web Attack	Neutral
	Total Posts	94	Coding	Neutral
	Average Sentiment	Neutral		

Pskelley, a Security Expert in forums.spybot.info, joined this forum site in October 2006 and since then, has authored 11,660 posts. According to pskelley's profile on forums.spybot.info, this author is currently located in Clearwater, Florida, has interests in computers, biking, movies, and beaches; and is semi-retired/works in malware removal. According to this author's post signature, he is a MS-MVP Consumer Security 2007-08, Proud Member ASAP, and UNITE Member 2006. Pskelley offered advice and help with another author's OS load time issues which could possibly be related to cookies (see thread: COMPUTER RUNNING SLOW: trackingcookie.doubleclick - trackingcookie.real). The author pskelley helped found the advice helpful: "Excellent advice, My machine has loaded up a lot quicker. I have an uninstalled Zone Alarm and AVG 7.5 But sadly AVG 8 doesn't seem to have a firewall built in so im currently using the windows firewall, is that good enough? Thank Q for your help."

Rorschach112

	Actual Name	Rorschach112	Topic Involvement	Per-Topic Sentiment
	Posts As	Rorschach112	Countermeasure	Neutral
	Site	forums.spybot.info	Coding	Neutral
	Total Posts	80	Web Attack	Neutral
	Average Sentiment	Neutral	Windows Security	Neutral

Rorschach112, a Security Warrior, a forum membership ranking, in forums.spybot.info, joined this forum site in September 2007 and since then, has authored 1,624 posts. According to this author's online profile, Rorschach112 is located in Ireland at this time. Rorschach112 provided advice/next steps to another author who had previously used forums.spybot.info for a malware issue ("hi i had a malware problem a few months ago and you guys helped me out then, so i was hoping someone could help me out again...") and asked for the log from ComboFix and new HijackThis log once the other author implemented his steps (see thread: Virtumonde problem?). The nature of the interaction demonstrates the value that Rorschach112 and other security experts provide to those with computer security problems.

Bob

	Actual Name	Bob	Topic Involvement	Per-Topic Sentiment
	Posts As	Bob	Countermeasure	Neutral
	Site	microsoft.com	Web Attack	Neutral
	Total Posts	74	Coding	Neutral
	Average Sentiment	Neutral		

Bob, an author who participates in multiple forums has authored comments in the following CGM sites: forums.techarena.in, ms-os.com, jlaforums.com, and Microsoft.com. This author serves as a resource on these sites, answering other users' questions, such as in an instance in which a user received the following error message: "Windows Media Center Receiver Service stopped working and was closed. A problem caused the application to stop working correctly. Windows will notify you if a solution is available" (see thread: Windows Media Center Reciever Service stopped working and was clos). This author's participation across multiple sites indicates that he reaches out to multiple communities instead of interacting with just one.

Juliet

	Actual Name	Juliet	Topic Involvement	Per-Topic Sentiment
	Posts As	Juliet	Countermeasure	Neutral
	Site	forums.pcpitstop.com	Web Attack	Neutral
	Total Posts	65	Coding	Neutral
	Average Sentiment	Neutral	Microsoft Brand Secur	Neutral

Juliet, an Advanced Member and Trusted HJT Advisor, joined forums.pcpitstop.com in June 2005 and since then, has authored 11,976 posts. This author's post signature states: "Please do not Email or PM me for 'personal' HJT help. We all benefit when a problem is discussed on the open forum (emphasis author's). Juliet responded to another author's request for prevention tips: "...Microsoft critical windows updates should be on your monthly list of checks. Why Security Is Important. It's not to tell you, you have to have all of the items listed, but to give you choices and an understanding of what you can do and use" (see thread: Virus and spyware problem). Juliet positions herself as a security resource to help others with their computing vulnerabilities.

Bill Castner

	Actual Name	Bill Castner	Topic Involvement	Per-Topic Sentiment
	Posts As	Bill Castner	Countermeasure	Neutral
	Site	forum.aumha.org	Web Attack	Neutral
	Total Posts	63	Coding	Neutral
	Average Sentiment	Neutral	Microsoft Brand Secur	Neutral

Bill Castner, an author on forum.aumha.org, joined this site in September 2006, and since then, has authored 11,513 posts. This author is currently located in Chevy Chase, Maryland, and is a AH-VSOP and MS-MVP. Bill Castner and another author, Fitz, engage in a discussion about the security issues surrounding the use of pen drives and other memory storage devices (see thread: Portable device vanishing window). This type of rich discussion reveals the deep level of expertise and engagement with others that online authors share.

Top Sites

microsoft.com

	Site	microsoft.com	Topic Involvement	Per-Topic Sentiment
	Total Posts	2873	Countermeasure	Neutral
	Average Sentiment	Neutral	Coding	Neutral
			Web Attack	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Neutral

microsoft.com is the "main site for product information, support, and news." Users will find communities that enable them to interact with each other, Microsoft employees, and experts to share information about Microsoft products and related technologies. One such conversation started because a user was having difficulty with Outlook automation and getting a warning about the address book (see thread: [Dont want to access Address book during Outlook automation in microsoft.public.access.modulescoding](#)). Other members of this community explained to the original author various solutions or workarounds for his problem. Microsoft.com is an important site because users will find others who could potentially help them with their technology troubles.

Google Page Rank: 9/10

Inbound Links: 21,619

Alexa Traffic Rank: 14

Forums.spybot.info

	Site	forums.spybot.info	Topic Involvement	Per-Topic Sentiment
	Total Posts	1349	Countermeasure	Neutral
	Average Sentiment	Neutral	Web Attack	Neutral
			Coding	Neutral
			Microsoft Brand Security	Neutral
			Windows Security	Neutral

Forums.spybot.info provides forums that enable users to "detect and remove malicious software of different kinds from the computer" Users can find product specifications, screenshots, FAQs, and downloads. Our study surfaced a relevant conversation, in which users of this forum discussed the removal of malware (see thread: [Virtumonde Infection](#)). This conversation demonstrates the function of forums to serve as a hub to connect those with computer and network security problems with others who can address those problems.

Google Page Rank: 7/10

Inbound Links: 44

Alexa Traffic Rank: 21,633

Ms-os.com

	Site	ms-os.com	Topic Involvement	Per-Topic Sentiment
	Total Posts	847	Countermeasure	Neutral
	Average Sentiment	Neutral	Coding	Neutral
			Web Attack	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Neutral

Ms-os.com is characterized as "a gateway to msnews.microsoft.com usenet newsgroups. Topics include Windows OS, Internet Explorer, and any Microsoft related hardware or software." Users will also find an onsite area, which are forums for MS-OS members to interact on site, and is separate from

the Usenet Gateway. One conversation, relevant to our study, demonstrates the information exchange facilitated by forums. This conversation addressed the original author's issue with his/her current security software and "rogue antispyware" programs with information on how to clean them off the computer (see thread: [Somethings got ahold of my Computer](#)).

Google Page Rank: 4/10 Inbound Links: 25 Alexa Traffic Rank: 375,524
 Threads: 84,644 Posts: 428,535 Members: 1,072

Dellcommunity.com

	Site	dellcommunity.com	Topic Involvement	Per-Topic Sentiment
	Total Posts	807	Countermeasure	Neutral
	Average Sentiment	Neutral	Web Attack	Neutral
			Coding	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Neutral

Dellcommunity.com provides its users with two types of forums: support and discussion forums. Support forum topics include: desktops, laptops, servers & storage, and software & peripherals. Discussion forum topics include: small business, photo/video, TV and home theater, digital music, and gaming. An example of conversation found to be relevant to our study began with an author needing help determining what is infecting his/her computer and causing issues (see thread: [Getting "Your Computer Is Infected With A Trojan" Popups](#)). The Dell Community's value is in its other members, and their ability to address problems and provide solutions in a way that persists for others with similar problems.

Google Page Rank: 7/10 Inbound Links: 3,400 Alexa Traffic Rank: 15,661

Mcse.ms

	Site	mcse.ms	Topic Involvement	Per-Topic Sentiment
	Total Posts	480	Countermeasure	Neutral
	Average Sentiment	Neutral	Coding	Neutral
			Web Attack	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Neutral

Mcse.ms characterizes itself as "Convenient web based access to our favorite computer related usenetgroups." MCSE.MS is not affiliated with Microsoft, Cisco, Oracle, CompTIA or any other vendor. Users find discussion about Microsoft Certifications, Microsoft software reviews, CompTIA certifications, Cisco, Novell, Oracle, Microsoft Office, and other similar topics. This study surfaced conversations, including one in which the original author was having issues with virtual workstation environments and connectivity to the server, and another author engaged with this author to address the issue (see thread: [Checked-out Enterprise Resources not closing](#)). This demonstrates the value of forums to connect online authors to address specific needs.

Google Page Rank: 7/10 Inbound Links: 245 Alexa Traffic Rank: 14

Jlaforums.com

	Site	jlaforums.com	Topic Involvement	Per-Topic Sentiment
	Total Posts	454	Countermeasure	Neutral
	Average Sentiment	Neutral	Coding	Neutral
			Web Attack	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Negative

Jlaforums.com characterizes itself as “your source for the information you want.” Users find discussion about a variety of topics such as Celebrities, Classifieds, Current Events, Music, Gossip, and other similar topics. The breadth of interests and discussions on jlaforums also includes discussions about security, such as the conversation about installation and syncing of small business server (see thread: [SBS & WSUS 3.0](#)). Even nontechnical forums can serve as a resource for highly technical topics.

Google Page Rank: 2/10 Inbound Links: Not available Alexa Traffic Rank: 183187

Techsupportforum.com

	Site	techsupportforum.com	Topic Involvement	Per-Topic Sentiment
	Total Posts	447	Countermeasure	Neutral
	Average Sentiment	Neutral	Web Attack	Neutral
			Coding	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Negative

techsupportforum.com is characterized as "Offers a place for novices and expert users to discuss and share fixes for problems relating to MacOS and Windows OSs, as well as networking, DSL, drivers and utilities." Users find techsupportforum organized into the following categories: Security Center, Microsoft Support, Alternative Computing, Hardware Support, Networking Forum, Gaming Forum, Design Forum, Automotive Center, Home Support, The Relaxation Room, The Conversation Pit, and Comments And More. A discussion that surfaced on this forum in the laptop support forum addressed the original author’s issues with internet connectivity, possibly related to malware (see thread: [Viruses](#)). Forums provide a space for community building and author interactions/conversations.

Google Page Rank: 5/10 Alexa Traffic Rank: 4009 Inbound Links: 193

Pcbanter.net

	Site	pcbanter.net	Topic Involvement	Per-Topic Sentiment
	Total Posts	353	Countermeasure	Neutral
	Average Sentiment	Neutral	Coding	Neutral
			Web Attack	Neutral
			Windows Security	positive
			Microsoft Brand Security	Neutral

Pcbanter.net characterizes itself as “a Windows XP help forum acting as a gateway to the Microsoft community newsgroups.” Users find discussions about Windows XP hardware, drivers, use, Service Pack 2, and other similar topics. An example of these discussions include an author seeking information about password protecting a folder in a very specific way, such that his children can’t access them (see thread: [Password](#)). This particular discussion surfaces others who also have the same problem, and identify themselves this way. Forums serve as an information exchange.

Google Page Rank: 4/10 Alexa Traffic Rank: 360921

Threads: 734,973 Posts: 2,520,714 Authors: 92,427

Forums.techguy.org

	Site	forums.techguy.org	Topic Involvement	Per-Topic Sentiment
	Total Posts	349	Countermeasure	Neutral
	Average Sentiment	Neutral	Web Attack	Neutral
			Coding	Neutral
			Microsoft Brand Security	Neutral
			Windows Security	Neutral

Forums.techguy.org is characterized as a "community helping with operating systems, Internet and networking, community, and miscellaneous tech problems." Users find free technical support, run by volunteers, and forums.techguy.org is paid for by donations and sponsors. An example of such help relevant to this study includes a discussion about handling popups and slow load times (see thread: [Pop ups galore and slow browsing :\(](#)). This forum is intended to be a resource and is used as such by members of the community.

Google Page Rank: 3/10

Inbound Links: 50

Alexa Traffic Rank: 3471

Forums.Techarena.In

	Site	forums.techarena.in	Topic Involvement	Per-Topic Sentiment
	Total Posts	327	Countermeasure	Neutral
	Average Sentiment	Neutral	Web Attack	Neutral
			Coding	Neutral
			Windows Security	Neutral
			Microsoft Brand Security	Neutral

Forums.Techarena.In characterizes itself as a "computer hardware forum of India" and an "India community to get help and support." Users find information and discussion regarding IT support, hardware, software, programming, web development, guides and reviews, and other similar topics.

Google Page Rank: 5/10

Google Page Rank: 5/10

Google Page Rank: 5/10

Threads: 90,581

Threads: 90,581

Threads: 90,581

Topic Reports

The following reports review the information used to gather and evaluate a post's relevance to a topic, the key phrases used to discover preliminary potentially relevant content, the rules used to evaluate that discussion for relevance and sentiment, and the analysis of the results. Each report includes a pair of sentiment charts (showing results with and without neutral content) as well as a full ecosystem map showing the top ten sites and the associated authors per site for each topic.

Note that Authors in **Red** have been evaluated as dominantly negative for the topic in question, while Authors in **Green** are dominantly positive. Authors in Black are mostly neutral and Authors in **Orange** wrote mostly internally mixed content.

Countermeasure

Topic Definition: This topic will collect discussions around preventing security flaws. These discussions will focus on preventing security failures or security attacks. Posts may specifically mention topics such as encryption, secure copy, and password information.

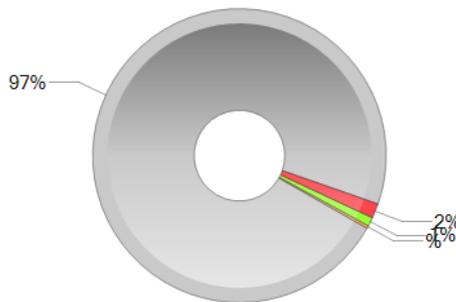
Top 10 Authors

1. PA Bear [MS MVP] (323)
2. Blade81 (210)
3. Bugbatter (190)
4. Shaba (133)
5. pskelley (83)
6. unknown@quickonlinetip (74)
7. Bob (71)
8. Juliet (59)
9. nass (56)
10. Rorschach112 (53)

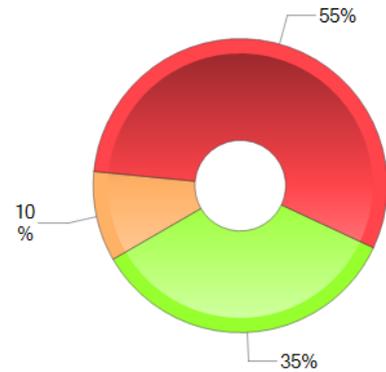
Top 10 Sites

1. microsoft.com (1371)
2. forums.spybot.info (754)
3. ms-os.com (505)
4. dellcommunity.com (461)
5. mcse.ms (289)
6. jlaforums.com (280)
7. forums.techarena.in (248)
8. forums.techguy.org (230)
9. pcbanter.net (227)
10. techsupportforum.com (225)

Sentiment with Neutral



Sentiment without Neutral



Legend: Positive (Green), Negative (Red), Mixed (Orange), Neutral (Grey)

Scoring Rules

Positive

“Our vulnerability management team has made huge progress this month. We might be ready for the onslaught!”

Neutral

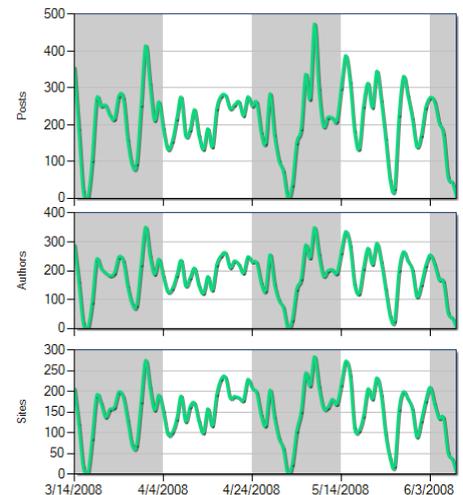
“A way to take countermeasures is to see that security flaws are kept to a minimum in the programming.”

Negative

“Our input validation interface is already so complicated, I can’t imagine adding to it or making it more robust, but we just have to.”

Mixed

“There are lots of easy ways to minimize flaws in the security of your site, but then there are so many complicated ones too!”



Coding

Topic Definition: This topic will track conversations related to improving program code for security. Authors may mention programming languages such as C#, Ajax, Visual Basic (and other .NET languages), and ASP.NET (and other web languages). These posts may also include discussions on basic Internet and application security. Discussions of server security will not fall into this topic.

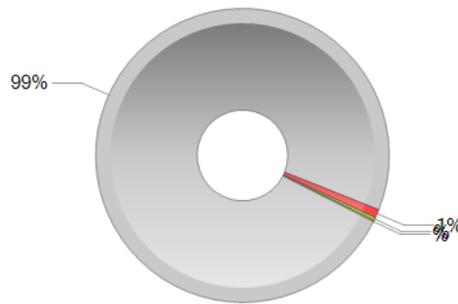
Top 10 Authors

1. Blade81 (94)
2. PA Bear [MS MVP] (77)
3. Bugbatter (57)
4. Hack (51)
5. unknown@quickonlinetip (38)
6. Shaba (37)
7. Rorschach112 (32)
8. unknown@simplyhired.co (23)
9. Juliet (18)
10. Nerdie (17)

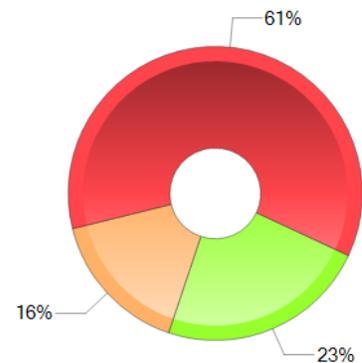
Top 10 Sites

1. microsoft.com (552)
2. forums.microsoft.com (240)
3. forums.spybot.info (230)
4. ms-os.com (151)
5. forums.asp.net (146)
6. vbforums.com (143)
7. forums.oracle.com (137)
8. mcse.ms (125)
9. dellcommunity.com (96)
10. jlaforums.com (89)

Sentiment with Neutral



Sentiment without Neutral



Scoring Rules

Positive

“I couldn’t be happier with the way that AJAX has increased responsiveness and security on our site.”

Neutral

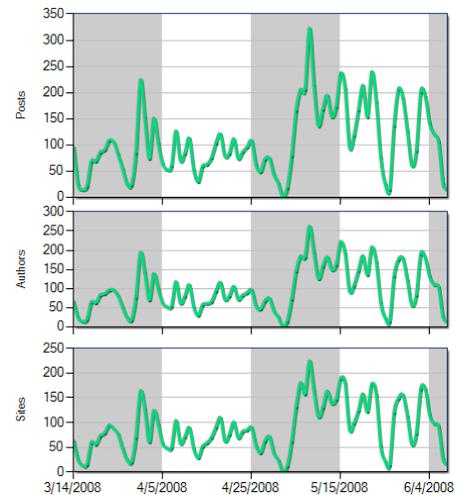
“In algorithm coding and web applications, it is essential to thoroughly test the code to ensure that it is secure.”

Negative

“We have such poor access control on this computer that it will most likely be hacked by tomorrow.”

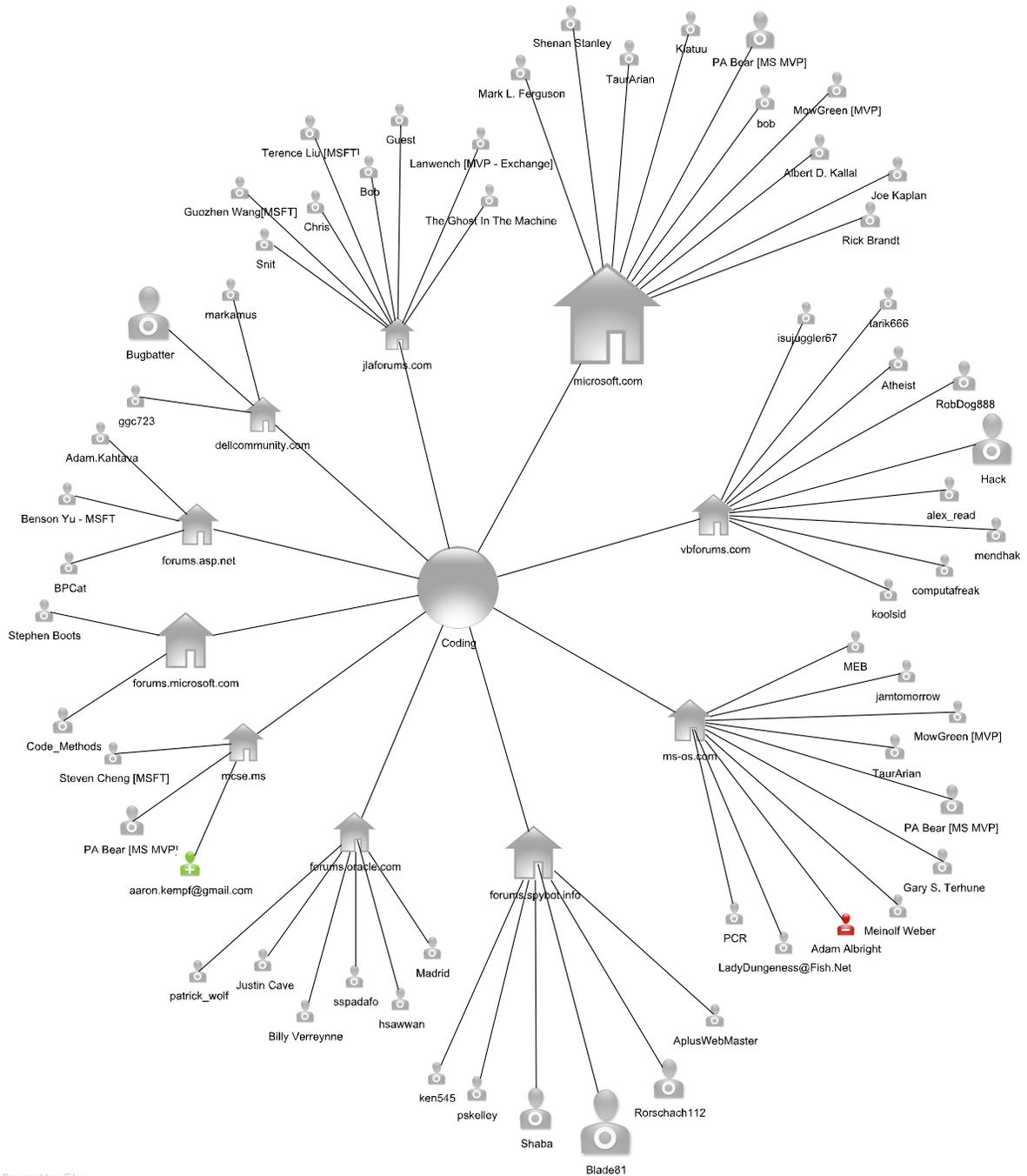
Mixed

“My company hasn’t had many problems with hackers, but our code is pretty insecure so, in my opinion, it’s just a matter of time.”



Ecosystem

Coding



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Legend	Sentiment/Color
Topic	Positive
Site	Mixed
Author	Negative
Comment	Neutral

Web Attack

Topic Definition: This topic will capture conversation about web or network-based security issues and attacks. Conversations may include mentions of DNS, stack overflow, SQL injection, session hijacking, forgery, as well as more general conversation about new or emerging threats, etc.

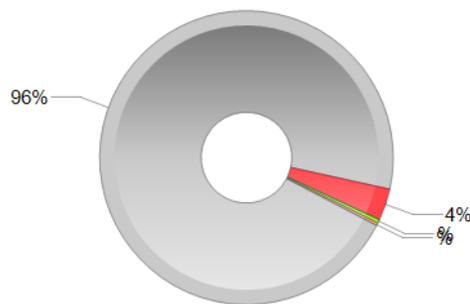
Top 10 Authors

1. Bugbatter (139)
2. PA Bear [MS MVP] (114)
3. Blade81 (83)
4. AplusWebMaster (38)
5. pskelley (30)
6. unknown@quickonlinetip (26)
7. Shaba (26)
8. Robert McMillan (25)
9. nass (25)
10. Juliet (23)

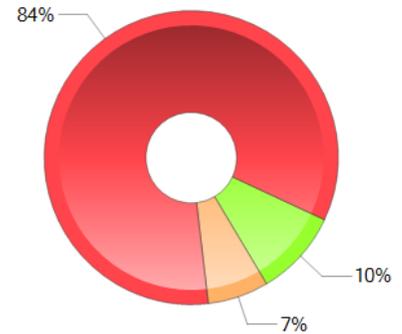
Top 10 Sites

1. forums.spybot.info (348)
2. microsoft.com (323)
3. dellcommunity.com (237)
4. ms-os.com (146)
5. techsupportforum.com (139)
6. answers.yahoo.com (80)
7. forums.techguy.org (80)
8. blogs.zdnet.com (59)
9. pcbanter.net (58)
10. mcse.ms (54)

Sentiment with Neutral



Sentiment without Neutral



Legend: Positive (Green), Negative (Red), Mixed (Orange), Neutral (Grey)

Scoring Rules

Positive

"Luckily, there are a variety of steps that can be taking to reduce the risk of session hijacking."

Neutral

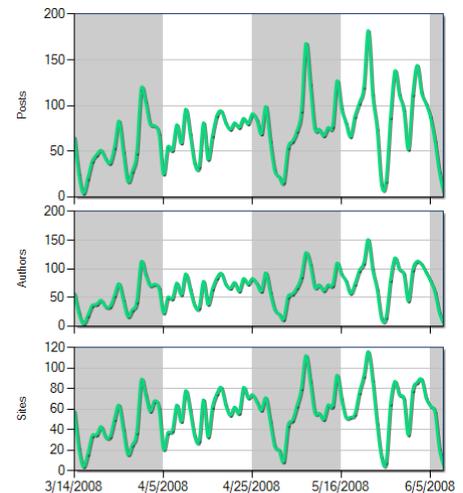
"Avoiding SQL injection can be relatively simple if the appropriate steps are taken."

Negative

"The reason we have so many SQL injections is because we have legions of web programmers who were never taught how to write code in a hostile environment."

Mixed

"My credit card information got stolen because of a cross-site scripting vulnerability on PayPal's web site. Apparently they've fixed the problem now, though, so I'm glad it at least won't happen again..."



Windows Server Security

Topic Definition: This topic will capture conversation about and perception of the security of Windows Server. Topics of conversation will include whether Windows Server is a secure environment for the installation of applications and developer tools. Specific features of Windows Server that may be mentioned include Windows Cardspace, Active Directory Service, virtualization, and remote office infrastructure.

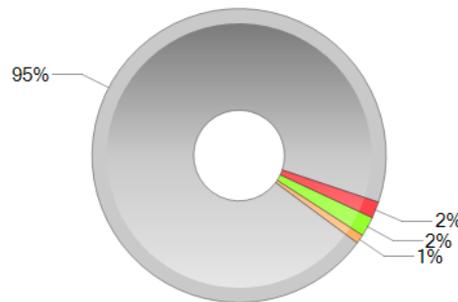
Top 10 Authors

1. PA Bear [MS MVP] (11)
2. Lanwench [MVP - Exchange] (6)
3. Terence Liu [MSFT] (5)
4. Ekrem ??nsoy (5)
5. Dave Onex (4)
6. Jonathan Hassell (4)
7. [Dedicated Servers](#) (4)
8. Bugbatter (4)
9. guest@chicagotech.net (4)
10. Helen (4)

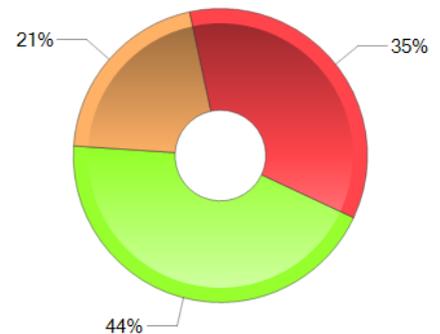
Top 10 Sites

1. microsoft.com (83)
2. ms-os.com (32)
3. jlaforums.com (31)
4. forums.microsoft.com (25)
5. forums.techarena.in (14)
6. dellcommunity.com (12)
7. mcse.ms (10)
8. blogs.technet.com (9)
9. forums.spybot.info (6)
10. [episteme.arstechnica.com](#) (5)

Sentiment with Neutral



Sentiment without Neutral



Scoring Rules

Positive

"As long as the appropriate measures are taken, Windows Server is as secure as or more secure than any competing operating system."

Neutral

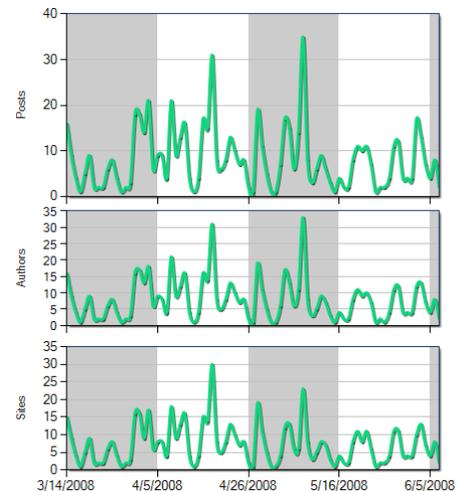
"The launch of Windows Server 2008 is intended to lure corporate IT managers focused on security and manageability." "

Negative

"Microsoft said Longhorn was the most secure version of Server ever... Then about 10 minutes later there about 30 pieces of malware, and 120 holes in the system."

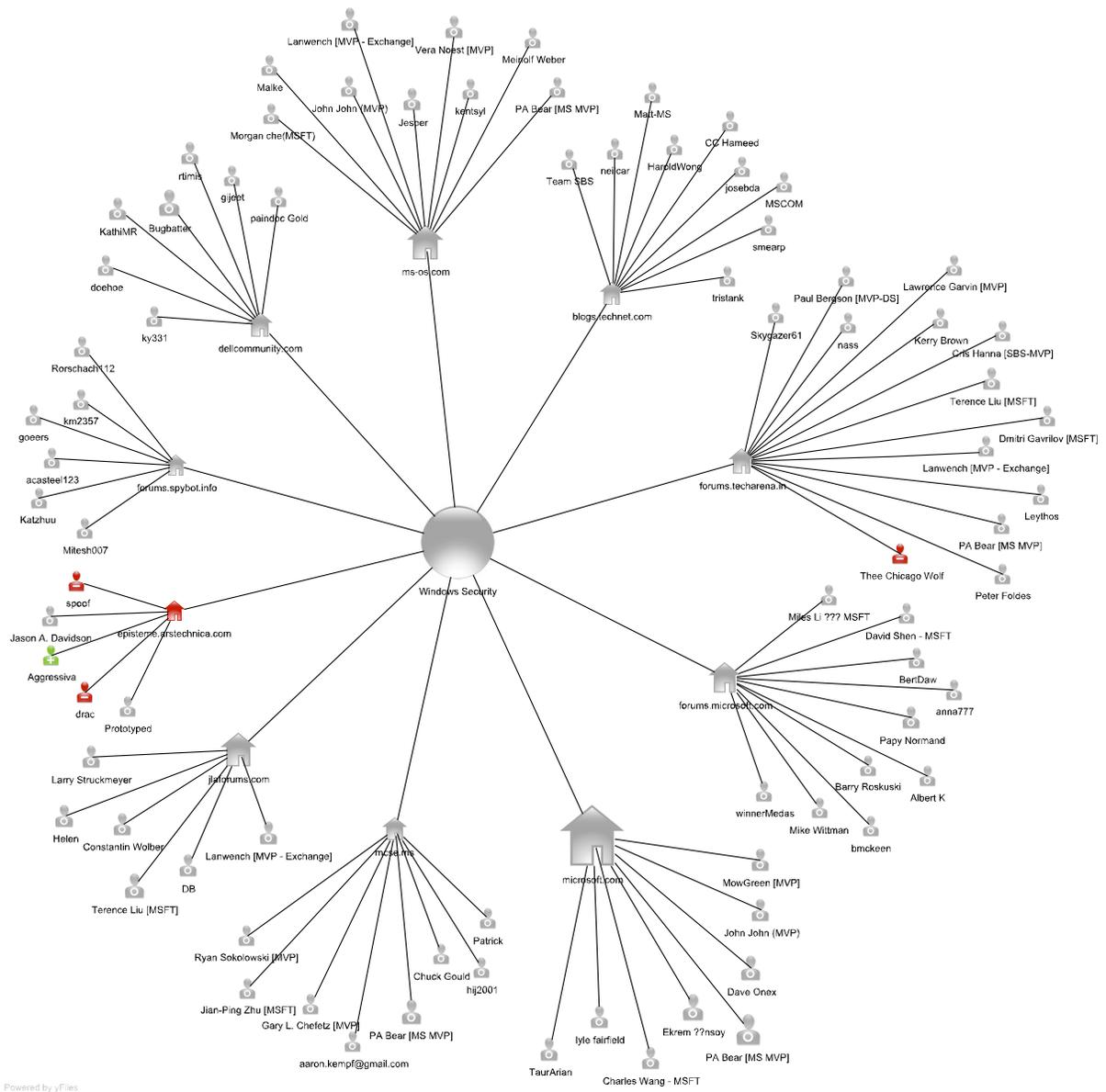
Mixed

"Microsoft has promised improved security features in Windows Server 2008. It'll be great if it works as well as they've said it will, but I have my doubts."



Ecosystem

Windows Server Security



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Legend				Sentiment/Color			
Topic	Site	Author	Comment	Positive	Mixed	Negative	Neutral

Microsoft Brand Security

Topic Definition: This topic will track opinions of Microsoft in general as it relates to security. Posts scored for this topic must relate to Microsoft as a company or as a whole, and will always be scored in one of the other topics as well. This information will include comments on Microsoft and perceptions of whether the company is doing the right or wrong things to make it easier for developers to write secure code.

Top 10 Authors

1. Elizabeth Montalbano (4)
2. PA Bear [MS MVP] (4)
3. unknown@computerworld. (4)
4. AplusWebMaster (3)
5. SAM (3)
6. SSLGURU (3)
7. xfile (2)
8. bruceb (2)
9. Microsoft Subnet (2)
10. Dave Methvin (2)

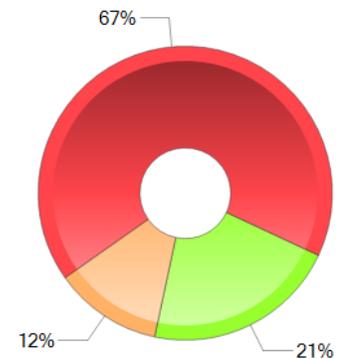
Top 10 Sites

1. episteme.arstechnica.com (15)
2. microsoft.com (13)
3. ms-os.com (13)
4. forums.spybot.info (11)
5. tech.slashdot.org (8)
6. forum.notebookreview.com (8)
7. infoworld.com (7)
8. jlaforums.com (7)
9. computerworld.com (6)
10. forums.microsoft.com (6)

Sentiment with Neutral



Sentiment without Neutral



Scoring Rules

Positive

"Microsoft's new focus on helping programmers create secure software really shows that they're taking security more seriously."

Neutral

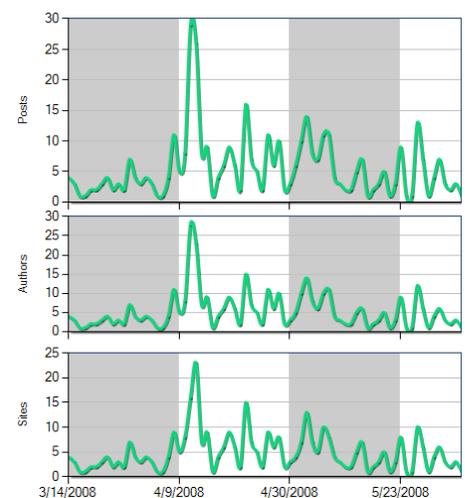
"The web site, Hello Secure World, features videos, blog entries, etc., designed to help programmers write more secure code."

Negative

"Microsoft paying lip service to writing secure code doesn't change the fact that their OS and apps are security nightmares."

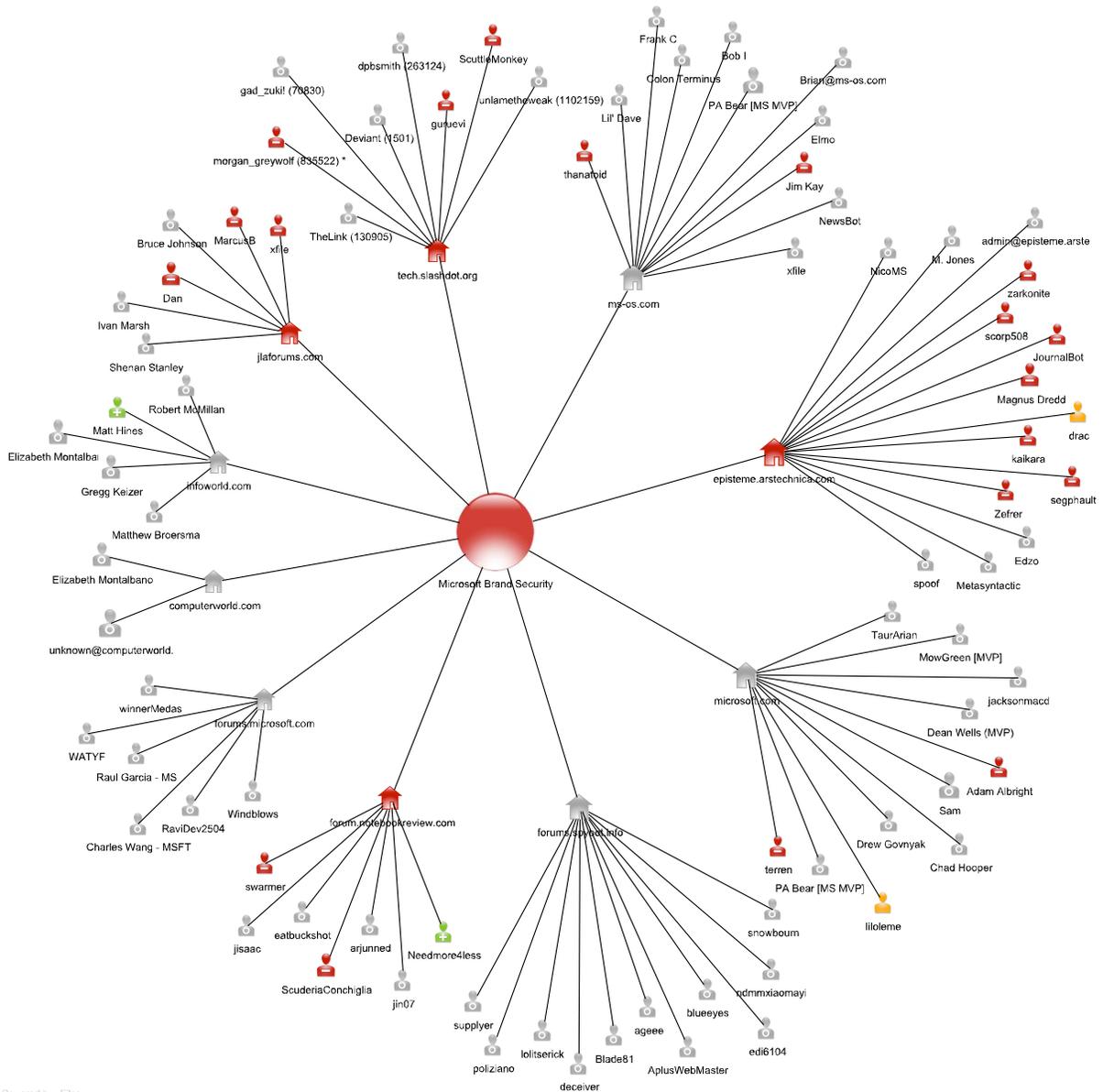
Mixed

"I still think there are a lot of glaring security problems with most Microsoft products, but at least they're trying to make programmers aware of them."



Ecosystem

Microsoft Brand Security



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Legend Topic Site Author Comment	Sentiment/Color Positive Mixed Negative Neutral
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