
FACTS AGAINST USING JAVA-BASED CALCULATORS

- ▶ **FACT: Java Applets require the Java Virtual Machine to be installed on the computer.** Not all computers have the Java Virtual Machine installed. Windows XP, for example, does not ship with the Java Virtual Machine installed. Thus, a growing user base cannot use Java-based calculators.
- <http://www.microsoft.com/java/xp.htm> - Microsoft FAQ "I'm running Windows XP and visited a Web site with a Java applet and Internet Explorer told me I couldn't run it; what is going on?" - indicates you have to download the JVM or XP SP1 (30Mb download) to get applets to run.
 - <http://www.cnet.com/software/0-3227883-8-8580844-3.html> - "Unfortunately, there are dozens--if not hundreds--of potential reasons you might have problems running Java applets."
 - http://www.netmechanic.com/news/vol4/usability_no22.htm - "Even a visitor who just plugged in their new PC or upgraded their PC to run Windows XP may have problems accessing Java applets on your site."
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- ▶ **FACT: Java Applets can be slow to load.** This causes visitors to bail out and move onto something else without trying your calculators.
- http://www.netmechanic.com/news/vol4/usability_no22.htm - "Older JVM versions can slow page load time considerably and a delay can cost you up to 1/3 or your visitors! Ever wonder how many visitors get spooked and leave at the first sight of the status bar message that notes "loading Java applet?""
 - <http://www.infograph.com/whitepapers/PluginsJavaActiveX.htm> - "Slow internet connections can make Java applets incredibly sluggish because of bandwidth problems. And Java generally uses a large amount of conventional and virtual memory."
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- ▶ **FACT: Java Applets can crash your visitor's browser or their computer.**
HTML pages loading in a browser do not. Our own testing of Java-based calculators show that crashes can and do occur. By placing Java-based calculators on your web site you guarantee that you will crash some of your visitors browsers and worse some of your visitors computers. How do you know its won't be the CEO of a major client? Or a major shareholder?
- <http://www.javacoffeebreak.com/articles/greyboxapplets/> - "What causes applets to fail" - They occur when an error in the loading or execution of an applet has occurred, causing an applet crash.
 - <http://questy.com/zen/imho0199.htm> - "Java [applets]... can slow down your CPU, and cause your PC to crawl or crash even when it is working properly."
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- ▶ **FACT: Java applets can be blocked by corporate firewalls** due to security concerns by the IT group with respect to hostile applets. Once this action is taken, all applets are blocked not just hostile ones. Thus, your Java-based calculators will not be seen or used by these website visitors.
- <http://www.fitwise.com/testjava.asp> - "System administrators often block Java applets as a security precaution..."; "[blocking Java applets with a firewall or proxy]... is very common if you access the Internet from your office network"
 - <http://www.microsoft.com/technet/treeview/default.asp?url=/technet/security/bulletin/MS02-052.asp> - One of the latest security holes in the Microsoft JVM allows execution of code on client computer; this type of hole is what causes IT administrators to block access to applets.
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▶ **FACT: Java applets can fail to load and run for many reasons.** There are a lot of compatibility problems with Java-based applet calculators that do not exist with HTML based calculators. Here is a small sampling of web sites that illustrate the many nuances and problems associated with applets:

- <http://www.javacoffeebreak.com/articles/greyboxapplets/> - "What causes applets to fail" - It can be frustrating for users to see the Ugly Gray Box of Java - they think that they're somehow at fault.
- <http://www.infograph.com/whitepapers/PluginsJavaActiveX.htm> - "Java applets ... are far from perfect, however, because of incompatibility between different browser, applet, and virtual machine versions. There are generally no error messages informing you that you have the wrong version browser or virtual machine for that particular applet, which can get frustrating for users who are wondering why their new applet is not working as they expected, if at all."
- <http://www.lightandmatter.com/area4java.html>
- <http://www.cigital.com/hostile-applets/> <http://www.internetweather.com/iwrabout/javaprob.html>

▶ **FACT: Java can create and introduce security problems** which causes people to disable Java through fear of security. Sure the Java calculators on your site may not be hostile but if doesn't matter because the web site visitor who disables Java in their browser will never see them or use them.

- <http://www.slac.stanford.edu/comp/security/websec.html> - "Because of these [sic] problems, we recommend that you disable both Java and JavaScript in your Netscape browsers."
- http://www.netmechanic.com/news/vol4/usability_no22.htm - "In addition, if users set up Windows to run at high security level settings, Java applets will be disabled."
- <http://www.microsoft.com/technet/treeview/default.asp?url=/technet/security/bulletin/MS02-052.asp> - One of the latest security holes in the Microsoft JVM allows execution of code on client computer; this type of hole is what causes IT administrators to block access to applets.
- <http://www.cs.princeton.edu/sip/faq/java-faq.php3>
- <http://www.cigital.com/javasecurity/preface.html> - "Serious Holes in the Java Security Model"
- http://www.info-sec.com/viruses/99/viruses_010599b_j.shtml - an older example but illustrates that JVM security holes have occurred for a long time and frequently

▶ **FACT: Java Applets can be disabled in the browser and then are not useable by those visitors.** Many users disable Java for fear of security issues. Many corporate IT departments have installed browser software with Java disabled for security reasons. When these people try to use a Java-based calculator on your site, they will see nothing and think less of your company.

- http://www.netmechanic.com/news/vol4/usability_no22.htm - "In addition, if users set up Windows to run at high security level settings, Java applets will be disabled."

▶ **FACT: Java applets cannot print reports.** Is it important to have users print out a report from a calculator? Is it important to have the potential of having your name and logo printed on paper for persistence beyond their visit to your website? If so then using Java applets are ineffective compared to the technologies used by WebCalcs®.

- http://www.java4less.com/faqs_rreport.htm - "Applets are not allowed to print, this is a java security restriction."
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▶ **OTHER WHITE PAPERS:** The following are additional white papers and resources from other companies explaining problems and pitfalls with Java applets.

- <http://www.claripoint.com/public/nojavawp.html> - "Why Claripoint doesn't use Java for clients" - gives reasons and research references

The above resources and links are just a few that we have highlighted based on our research. There are numerous other resources that discuss the same issues.

CONCLUSION:

Would you hang up the phone if a potential client called you? Would you slam the door in their face if they tried to visit your office? Of course not. Then why would you put something on your website that has the same effect?