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# Benchmarking U.S. Government Websites

Alan McQuinn and Daniel Castro

March 2017

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**One of the most important ways that the U.S. government provides Americans access to government services and information is through more than 6,000 websites on more than 400 domains.<sup>1</sup> Unfortunately, many of these websites are not fast, mobile friendly, secure, or accessible. In the Information Technology and Innovation Foundation's (ITIF's) review of almost 300 of the most popular federal websites, approximately 92 percent failed to perform well on at least one of these benchmarks. It is incumbent on the Trump administration to address these failures and ensure the federal government can provide all Americans with secure and convenient access to online government services and information.**

This report provides a detailed analysis of how U.S. federal websites are performing overall in terms of page load speed, mobile friendliness, security, and accessibility. To gather this information, ITIF analyzed 297 of the most popular federal websites using publicly available tools. This report shows that many federal websites fall short of requirements set by the federal government, as well as basic industry standards for web development.

This report uses two metrics for page load speed: desktop page load speed and mobile page load speed. While 78 percent of websites passed the desktop page load speed test, most websites failed the mobile page load speed test. Only 36 percent of the reviewed websites passed the speed test for mobile devices. Websites often failed this test because they failed to implement common optimization techniques, such as compressing images and prioritizing loading the part of the website visible without scrolling first.

Many federal websites also did not fare well on mobile friendliness. Just 59 percent of the reviewed websites were mobile friendly. Common problems included not using metatags to properly configure the site for mobile devices, illegible font sizes, and buttons and links that were too small for easy use on mobile devices.

Federal websites generally scored high on security. We reviewed two security features: Hypertext Transfer Protocol Secure (HTTPS)—a common standard for encrypted Internet communications, and Domain Name System Security (DNSSEC)—a set of protocols that add security to domain name system (DNS) lookup and exchange processes. To test for HTTPS, we used a tool that analyzed websites' Secure Sockets Layer (SSL) certificates (which underpin most HTTPS connections). Two-thirds of the reviewed websites passed the SSL test. To test for DNSSEC, we used a tool to determine whether reviewed websites enabled this security feature. We found that 90 percent of federal websites enabled DNSSEC, and 61 percent of websites passed both the SSL and DNSSEC tests.

Finally, only 58 percent of the reviewed websites were accessible for users with disabilities. Issues with accessibility ranged from poor contrast on websites to a lack of labels, which may prevent the website from being easily navigated by someone using a screen reader, assistive technology commonly used by individuals who are blind.

The federal government should build fast, convenient, secure, and accessible websites, so that anyone can access government services and information online. Unfortunately, this report finds that the federal government must make substantial improvements to meet this goal. There are a number of steps policymakers should take to ensure the federal government can improve its websites:

1. The White House should launch a series of website modernization “sprints” to fix known problems with the most popular government websites.
2. The White House should mandate that federal websites meet page load speed requirements.
3. The White House should require all agencies to monitor and share detailed website analytics.
4. The Office of Management and Budget (OMB) should launch a website consolidation initiative.
5. Congress should encourage nonexecutive agencies and other branches of government to adopt federal government website standards and best practices.
6. The White House and Congress should establish a capital fund for federal agencies to upgrade their IT.

## **METRICS FOR MEASURING FEDERAL WEBSITES**

The report uses four criteria to evaluate federal websites: page load speed, mobile friendliness, security, and accessibility.

Federal websites are not required to meet all the standards and practices described below. Because this report pulls from the full list of popular federal websites, certain independent agencies or congressional office websites may not be subject to various federal requirements. We included these websites not only to compare them with other federal websites, but to see how they fare with overall federal requirements and best practices. In addition, federal websites are not required to meet private-sector best practices in mobile friendliness or page load speed.

## **Legislative Requirements for Federal Websites**

Federal websites are subject to numerous legislative requirements.<sup>2</sup> This report will focus on three of these laws and federal agency guidance that resulted from them.

First, the E-Government Act of 2002 establishes requirements for federal websites.<sup>3</sup> This law requires federal agencies to create websites featuring descriptions of the agency's mission, strategic plan and statutory authority of the agency, information about its organization structure, and basic search functionality.<sup>4</sup> The law required the Office of Management and Budget (OMB) to create and implement rules for public federal websites, which it did in 2004.<sup>5</sup>

Second, the Rehabilitation Act of 1973 requires that the General Services Administration (GSA) ensure individuals with disabilities have access to and use of information technology.<sup>6</sup> In 1998, another law amended Section 508 of the Rehabilitation Act and directed the U.S. Access Board to publish standards for developing, procuring, maintaining, or using electronic and information technology.<sup>7</sup> In 2001 this change went into effect, and these rules underpin the federal website accessibility requirements.<sup>8</sup>

Third, the Federal Information Security Management Act (FISMA) of 2002 provides a framework for securing federal information technology to prevent the inappropriate disclosure of sensitive information.<sup>9</sup> The federal government has used FISMA to periodically update its security practices related to all federal IT, including websites. For example, in 2007, the National Institute of Standards and Technology issued guidance about how to secure public web servers.<sup>10</sup>

## Non-Legislative Requirements for Federal Websites

The White House has also played a role in creating standards for federal websites.<sup>11</sup>

In 2009, the Obama administration outlined plans to create a roadmap that would help agencies improve digital services. The result was the Digital Government Strategy in 2012, which operationalized four strategic principles for federal websites.<sup>12</sup> First, federal websites must be “information centric,” meaning that information should be structured in an open way that enables meaningful use beyond its original purpose, be that internal to the government or external to the public.<sup>13</sup> This strategy includes making open data and application program interfaces (APIs)—where developers create customized software solutions—the new default policy for the federal government.<sup>14</sup> Second, the federal government has pushed for a “shared platform” approach to share capabilities throughout the government. The benefits of this approach are mostly internal facing (e.g., reducing costs by reducing the number of websites with duplicative services across different agencies). Third, federal websites should focus on the needs of their users and be “customer centric.”<sup>15</sup> For example, agencies should use modern tools and best practices for web development to deliver content and services; offer mobile alternatives for consumer-facing services; and measure performance with consumer-satisfaction surveys.<sup>16</sup> Fourth, federal websites should be secure, such as by only using approved domains, only providing online services via an encrypted connection, and securing the federal domain name system infrastructure.<sup>17</sup> Using the Digital Government Strategy as a roadmap, in 2016 OMB released new guidance for federal agency public websites and digital services, updating this policy for the first time since 2004.<sup>18</sup>

In addition, the executive branch has required agencies to adhere to certain website security features. In 2008, OMB required all federal websites to deploy Domain Name System Security (DNSSEC)—a set of protocols that add security to domain name system (DNS) lookup and exchange processes—to ensure basic security for federal domains.<sup>19</sup> Similarly, the Obama administration issued a memorandum in 2015 requiring all federal websites to use HTTPS to provide a secure connection.<sup>20</sup> Using HTTPS ensures that interactions between federal websites and their users are secure and private.

Furthermore, the executive branch has offered guidance for how federal websites can be accessible. Both the Bush and Obama administrations created rules to enable accessibility. In 2001, the Bush administration offered the New Freedom Initiative to push for accessibility in federal government information technology.<sup>21</sup> Similarly, in 2013 the Obama administration created a strategic plan for federal websites, including planning accessibility in the early stage of the design or redesign of websites, and using automated website accessibility scanning tools to test if federal website are accessible.<sup>22</sup>

Executive orders have also focused on consolidating and modernizing federal domains. In 2011, an executive order—designed to eliminate duplicative websites—issued a temporary freeze on all new government websites.<sup>23</sup> The executive order also delegated to GSA the authority to assign federal domains, requiring it to help agencies consolidate federal domains and review all new domains to ensure adherence to existing regulations and OMB guidance (e.g., accessibility and security requirements). In response to this guidance, many agencies consolidated their various websites into a single domain. For example, in 2011, the Department of Energy rolled Energy Empowers (energyempowers.gov) into its flagship website (energy.gov).<sup>24</sup> Furthermore, the Obama administration issued guidance in 2014 to modernize federal websites with the U.S. Digital Services Playbook, which contained 13 successful practices from both the public and private sector that agencies should implement in their websites, such as understanding what people need and making websites simple and intuitive.<sup>25</sup>

## Private Sector Best Practices for Websites

The private sector offers numerous best practices for websites, including for page load speed, mobile friendliness, security, and accessibility. The public sector should incorporate these lessons. This report will explore federal website best practices and common mistakes in further detail in each corresponding section of the report.

First, page load speed is important, because people are more likely to visit websites that load quickly in a browser, and these sites will be ranked better by search engine algorithms. While there are no set industry standards for page load speed, there are best practices to optimize site speed.<sup>26</sup> Best practices include enabling file compression, reducing the number of embedded components on a webpage, reducing redirects, leveraging browser caching, optimizing images, and others. For example, developers can use tools to reduce the total size of the website’s code (e.g., CSS, JavaScript, and HTML) by removing spaces, commas, unnecessary characters, code comments, and unused code to improve the speed of a website.

Second, mobile friendliness has grown more important to private-sector web development because consumers increasingly use mobile devices for online commerce and finding important information. Google also ranks sites higher in its search algorithm if they are mobile friendly, and the company has released guidelines and a free test to allow developers to optimize for mobile devices.<sup>27</sup> These best practices include configuring websites so that people can easily read them from a mobile device and making buttons big enough to be easily tapped with a finger.

Third, while there are no set industry standards for website security, various organizations and companies have created basic security guidelines. For example, the Open Web Application Security Project—which is a nonprofit organization dedicated to enabling organizations to develop applications that are secure—has put out a number of resources and guidelines for businesses to develop secure websites.<sup>28</sup> Similarly, companies such as Microsoft have provided minimum-security guidelines for web applications.<sup>29</sup> These guidelines include using Secure Sockets Layer (SSL) certificates, which underpin most HTTPS connections, to transmit sensitive information between the browser and server, and using strong passwords.

Finally, there are best practices for web accessibility published by the Web Accessibility Initiative and the World Wide Web Consortium (W3C), an international standards organization for the Internet. The Web Content Accessibility Guidelines (WCAG) specify how web developers should make content accessible, primarily for people with disabilities, across all devices and platforms.<sup>30</sup> In 2008, W3C published the most updated version, called WCAG 2.0. WCAG 2.0 guidelines have four principles—that online content is perceivable, operable, understandable, and robust—and outlines specific techniques that web developers can use to optimize their content for users with disabilities.<sup>31</sup> WCAG 2.0 has three levels of conformance (A, AA, and AAA). Higher levels of conformance make sites more accessible but impose more restrictions on website design. In January 2017, the U.S. Architectural and Transportation Barriers Compliance Board adopted final rules to make WCAG 2.0 AA the accessibility standards that the federal government uses to provide accessible web services to its users.<sup>32</sup>

## METHODOLOGY

While federal websites must adhere to multiple standards and guidelines, this report benchmarks the most popular federal websites based on four factors: page load speed, mobile friendliness, security, and accessibility. First, we identified the most popular federal websites by using “Alexa Traffic Rankings”—web traffic data provided by Alexa Internet Inc., a subsidiary of Amazon.com. Alexa ranks websites based on the amount of traffic recorded from users who visit a webpage (both in terms of unique visitors and the number of pages those users visit) over a rolling three-month period.<sup>33</sup> However, if the same user makes multiple requests for a single webpage on the same day, it is counted as a single pageview. These rankings measure top-level domains only (e.g., [gsa.gov](http://gsa.gov)), combining all subdomains (e.g., [18f.gsa.gov](http://18f.gsa.gov)) into a single score.

For this report, we used Alexa data gathered in November 2016. Out of the 1 million most popular websites globally, we identified a total of 297 U.S. government websites (i.e., those with a .gov domain, plus [fs.fed.us](http://fs.fed.us) and [usps.com](http://usps.com)).<sup>34</sup> In addition, we report results for 126 federal websites in the top 100,000 websites globally. We also included the newest version of the White House’s website ([whitehouse.gov](http://whitehouse.gov)) to compare the Trump administration’s website with that of its predecessor.

Using publicly available testing tools, we assessed these 297 federal websites on each of the four metrics.<sup>35</sup> First, the report uses Google’s “PageSpeed Insights” to gauge the speed of each website, based on both mobile and desktop page load speed scores provided by the tool.<sup>36</sup> Second, the report uses Google’s “Mobile Friendliness Test”—which is part of its “Test My Website” tool—to score whether a federal website offered a convenient mobile solution.<sup>37</sup> Third, the report uses two different publicly available tools to measure security: Qualys SSL Labs’ “SSL Server Test” tool, which inspects public SSL web servers for security, and Verisign Labs’ “DNSSEC Debugger” tool, which measures the security of DNS servers.<sup>38</sup> Finally, the report uses AChecker’s “Web Accessibility Checker” to score websites on their level of accessibility based on WCAG 2.0.<sup>39</sup> We elaborate on what each tool does, why these factors are important, and how this report calculates scores in each corresponding section.

To ensure the scoring for each of these four tests was reasonable, we also ran these tools on the top 20 nongovernment websites. Details on how we established a passing score for each criterion is explained in the corresponding sections below.

## FINDINGS

The following sections describe our findings for the four categories: page load speed, mobile friendliness, security, and accessibility. We also present an overall ranking determined from each of these variables.

There are limitations to our findings. The data presented below is not a complete analysis of all federal websites, and all of the website testing tools have some limitations. It was gathered in November 2016, and because of the shifting nature of online traffic, some of these federal websites may have dropped from the top million popular websites, and others that are not considered in this report will have moved up into the top million. There are more than 5,000 federal websites, and this report only covers a small fraction. Furthermore, with the change to a new administration, the popularity and existence of several federal websites are in flux. Tests were conducted over a two-month period between November and December 2016, and if we encountered any errors in the tests, we repeated them in January 2017.<sup>40</sup> During that time, various agencies updated their websites. For example, [fitness.gov](http://fitness.gov) has since updated its website to a version that scores significantly better for both desktop and mobile page load speed.<sup>41</sup>

To calculate an overall ranking, we converted each of the metrics (desktop page load speed, mobile page load speed, mobile friendliness, accessibility, SSL, and DNSSEC) into z-scores, which indicate how many standard deviations a value is from the mean. Using z-scores allows for comparison across metrics with different distributions. We created a single score for page load speed by averaging the z-scores of the desktop and mobile page load speed metrics, and a single score for security based on the average of the SSL and DNSSEC z-scores. We then created an overall score by averaging each of the main categories (page load speed, mobile friendliness, accessibility, and security). For the four sites missing accessibility scores, we used the average of the three remaining categories. To make the overall scores more intuitive, we converted them to a scale ranging between the minimum and maximum percentage of points earned by the websites we reviewed.

**TABLE 1**  
**Popular federal websites ranked by overall score.**

Domain	Score	Domain	Score	Domain	Score
healthdata.gov	90.5	childwelfare.gov	82.4	socialsecurity.gov <sup>^</sup>	78.6
healthfinder.gov	89.6	tsa.gov	82.3	digitalgov.gov	78.5
consumerfinance.gov	89.5	onguardonline.gov	82.2	identitytheft.gov	78.5
whitehouse.gov (Trump)	88.8	medicare.gov	82.1	ftccomplaintassistant.gov	78.4
usembassy.gov	88.5	ncjrs.gov	82.1	ibb.gov	78.4
serve.gov	88.0	hhs.gov	82.0	wrp.gov	78.3
fema.gov	87.5	girlshealth.gov	81.6	nps.gov	78.2
donotcall.gov	87.4	dhhs.gov	81.6	arts.gov	78.1
investor.gov	87.3	nga.gov	81.5	ready.gov	78.0
guideline.gov	87.1	econsumer.gov	81.5	cancer.gov	77.7
fnal.gov	86.7	hrsa.gov	81.1	doleta.gov	77.7
fbi.gov	86.2	doi.gov	81.0	science.gov	77.7
nationalgangcenter.gov	85.8	ahrq.gov	80.9	cbp.gov	77.6
nih.gov	85.6	usconsulate.gov	80.9	irsvideos.gov	77.6
hudoig.gov	85.6	whitehouse.gov (Obama)	80.8	bsee.gov	77.4
usa.gov	85.5	nano.gov	80.7	fletc.gov	77.3
harp.gov	85.4	archives.gov	80.5	ed.gov	77.0
usastaffing.gov	85.3	sba.gov	80.5	epa.gov	77.0
globalchange.gov	85.2	dhs.gov	80.4	clinicaltrials.gov	77.0
nnlm.gov	85.2	congress.gov	80.3	insurekidsnow.gov	76.8
greatagain.gov	84.7	medicaid.gov	80.3	admongo.gov	76.8
applicationmanager.gov	84.6	fcc.gov	80.1	helpwithmybank.gov	76.5
uspto.gov	84.3	bls.gov	80.0	recalls.gov	76.4
blm.gov	84.2	usaid.gov	79.8	bjagov	76.3
truman.gov	84.1	section508.gov	79.8	orau.gov	76.2
sandia.gov	84.0	godirect.gov	79.8	nrel.gov	76.1
medlineplus.gov	83.8	pbgc.gov	79.7	uscirf.gov	76.1
nist.gov	83.7	vistacampus.gov	79.7	us-cert.gov	76.0
financialresearch.gov	83.7	drugabuse.gov	79.6	doc.gov	75.9
ttbonline.gov	83.6	iaf.gov	79.6	commerce.gov	75.9
humanrights.gov	83.4	disasterassistance.gov	79.5	solardecathlon.gov	75.9
nara.gov	83.2	usdoj.gov	79.2	usbg.gov	75.7
bbg.gov	83.2	fordlibrarymuseum.gov	79.2	energystar.gov	75.6
cbo.gov	83.1	usajobs.gov	79.1	floodsmart.gov	75.6
uslearning.gov	83.1	wdol.gov	79.0	whistleblowers.gov	75.5
mycreditunion.gov	82.8	senate.gov	78.9	abmc.gov	75.5
pay.gov	82.7	ssa.gov	78.6	ncua.gov	75.3
america.gov	82.6	studentloans.gov	78.6	lanl.gov	75.2
ftc.gov	82.4	cms.gov	78.6	usitc.gov	75.2
genome.gov	82.4	peacecorps.gov	78.6	imls.gov	75.2



**TABLE 1 CONTINUED****Popular federal websites ranked by overall score.**

<b>Domain</b>	<b>Score</b>	<b>Domain</b>	<b>Score</b>	<b>Domain</b>	<b>Score</b>
selectusa.gov	75.2	smartgrid.gov	72.1	treasuryhunt.gov	68.3
opensource.gov	75.1	g5.gov	72.0	climate.gov	68.2
tsp.gov	74.9	nsopw.gov	71.8	bia.gov	68.2
aids.gov	74.9	nctc.gov	71.8	ustaxcourt.gov	68.1
aoa.gov	74.9	llnl.gov	71.7	weather.gov	68.0
nsf.gov	74.7	ourdocuments.gov	71.7	nutrition.gov	68.0
fdic.gov	74.7	acl.gov	71.6	indianaffairs.gov	67.8
cpsc.gov	74.6	sciencebase.gov	71.6	occ.gov	67.7
lsc.gov	74.6	usgs.gov	71.5	mymoney.gov	67.7
iarpa.gov	74.6	loc.gov	71.4	eeoc.gov	67.6
benefits.gov	74.5	house.gov	71.4	foodsafety.gov	67.5
research.gov	74.5	ems.gov	71.4	digitalpreservation.gov	67.5
healthcare.gov	74.4	usps.com	71.2	usda.gov	67.3
science360.gov	74.4	sbir.gov	71.2	safercar.gov	67.3
drought.gov	74.2	access-board.gov	71.0	distraction.gov	67.0
fedramp.gov	74.1	flu.gov	71.0	amberalert.gov	66.6
fbo.gov	73.9	fvap.gov	70.9	acquisition.gov	66.5
reginfo.gov	73.9	energy.gov	70.6	bpa.gov	65.7
osc.gov	73.9	nlm.gov	70.5	letsmove.gov	65.6
womenshealth.gov	73.7	dol.gov	70.4	invasivespeciesinfo.gov	65.6
ice.gov	73.6	americaslibrary.gov	70.4	fs.fed.us	65.3
uspsaig.gov	73.6	visitthecapitol.gov	70.4	gpo.gov	65.1
hispanicheritagemonth.gov	73.6	recreation.gov	70.3	grants.gov	64.9
opic.gov	73.5	fafsa.gov	70.3	biometrics.gov	64.9
organdonor.gov	73.4	defense.gov	70.2	noaa.gov	64.8
cuidadodesalud.gov	73.3	americorps.gov	70.2	nationalmap.gov	64.6
feedthefuture.gov	73.2	vehiclehistory.gov	70.2	goes-r.gov	64.6
smokefree.gov	72.8	hud.gov	70.1	airnow.gov	64.3
cfda.gov	72.8	bea.gov	70.1	surgeongeneral.gov	64.2
uscis.gov	72.6	treasury.gov	69.9	boem.gov	64.1
data.gov	72.5	ucrdatatool.gov	69.8	usmint.gov	63.8
osha.gov	72.4	supremecourt.gov	69.6	nhtsa.gov	63.8
fincen.gov	72.4	healthit.gov	69.6	treasurydirect.gov	63.6
healthypeople.gov	72.3	ferc.gov	68.9	buyusa.gov	63.5
energycodes.gov	72.2	pepfar.gov	68.9	thecoolspot.gov	63.5
va.gov	72.1	federalreserve.gov	68.8	mymedicare.gov	63.4
sec.gov	72.1	pnnl.gov	68.6	stopbullying.gov	63.3
lbl.gov	72.1	pnl.gov	68.4	itis.gov	63.1
usaspending.gov	72.1	foia.gov	68.4	ojp.gov	62.9
makinghomeaffordable.gov	72.1	read.gov	68.3	volunteer.gov	62.5



**TABLE 1 CONTINUED**  
**Popular federal websites ranked by overall score.**

<b>Domain</b>	<b>Score</b>	<b>Domain</b>	<b>Score</b>
time.gov	62.3	longtermcare.gov	56.9
tva.gov	62.2	cftc.gov	56.7
adlnet.gov	62.0	csb.gov	55.8
poolsafely.gov	61.9	federalregister.gov	54.5
gsa.gov	61.8	nixonlibrary.gov	54.4
fara.gov	61.8	challenge.gov	53.7
nij.gov	61.7	moneyfactory.gov	52.6
samhsa.gov	61.6	bjs.gov	52.2
speaker.gov	61.5	fec.gov	52.1
presidio.gov	61.4	cecc.gov	52.1
nihseniorhealth.gov	61.3	ojjdp.gov	50.9
fgdc.gov	61.1	dni.gov	50.4
usap.gov	60.8	gop.gov	50.2
eia.gov	60.5	choosemyplate.gov	49.7
eda.gov	60.5	aviationweather.gov	49.6
eac.gov	60.3	tsunami.gov	49.1
inl.gov	60.3	mspb.gov	48.7
ttb.gov	60.1	nicic.gov	48.5
bnl.gov	59.9	fitness.gov	48.5
uscourts.gov	59.8	fsd.gov	47.6
moneyfactorystore.gov	59.5	bep.gov	46.3
nationalservice.gov	58.6	rrb.gov	46.1
pacer.gov	58.3	irs.gov	45.8
globe.gov	58.3	usphs.gov	44.0
neh.gov	58.0	fmc.gov	42.2
hanford.gov	57.9	osti.gov	39.9
ustr.gov	57.8	trade.gov	38.1
saferproducts.gov	57.6	ipcc-wg2.gov	37.3
arm.gov	57.2		

^ socialsecurity.gov redirects to ssa.gov.

## PAGE LOAD SPEED

How fast a webpage loads is important to Internet users. A 2009 study found that almost half of online shoppers expected a webpage to load in two seconds or less, and that 40 percent of them would abandon a site if it took more than three seconds to load.<sup>42</sup> Even small decreases in performance impact users. In experiments Google ran in 2009, it found that adding even small delays of 100 to 400 milliseconds had a measurable impact on the number of searches per user, even after the delays disappeared, suggesting that users who experience slow page load speeds will make less use of those websites.<sup>43</sup> These findings have been replicated in multiple studies.<sup>44</sup>

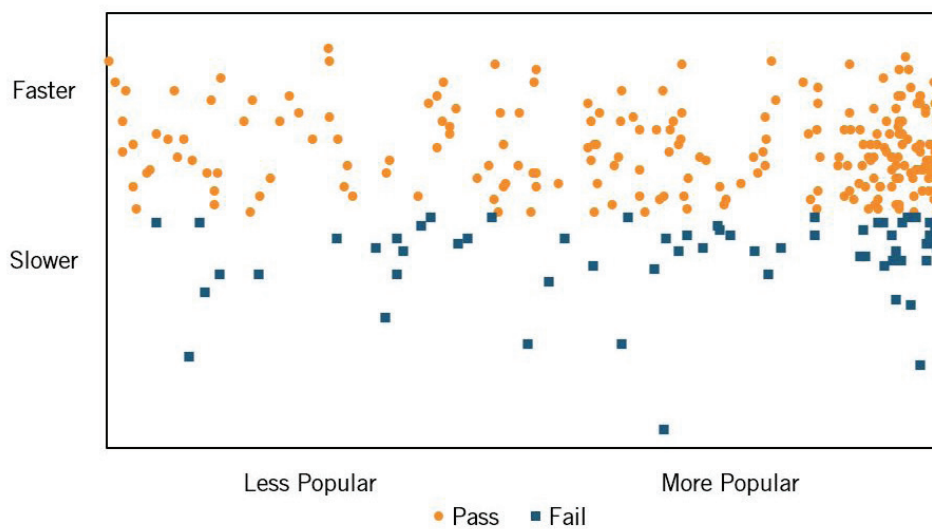
This report uses two different measurements of page load speed: one for desktops and one for mobile devices. The same website may perform differently on desktops and mobile devices. For example, if a website has both mobile and desktop versions of its websites and uses page redirects to send mobile users to the mobile landing page, it will cause them more delay than desktop users if the website is not configured to send them to the correct URL.

We used Google's "PageSpeed Insights" tool to assess the speed of a webpage on both a desktop and mobile device. The tool also offers suggestions to make the webpage load faster. For all tests, we measured page load speed of the homepage of the domain. This tool offers a score for both mobile and desktop devices, measuring its performance based on the time it takes a website to load content above the fold (i.e., the portion of the website visible without scrolling) and the time it takes to load the full webpage. It uses 16 different rules to determine scores, assigning a score to each website from 0 to 100 points.<sup>45</sup> This tool only measures network-independent aspects of page performance. Delays can also be caused by insufficient bandwidth.<sup>46</sup>

We consider a site to have failed the desktop page load speed test if it scores 54 or below, and we consider a failing score for the mobile page load speed test to be 56 or below. We chose these thresholds based on our review of the page load speed of the 20 most popular nongovernment domains from Alexa Traffic Rankings.<sup>47</sup> Each of these cutoffs is one standard deviation below the mean for the nongovernment websites. In addition to performing poorly relative to nongovernment websites, these sites also perform poorly in absolute terms, as the testing tool suggests a score of 85 or greater signals that a site is performing well.<sup>48</sup>

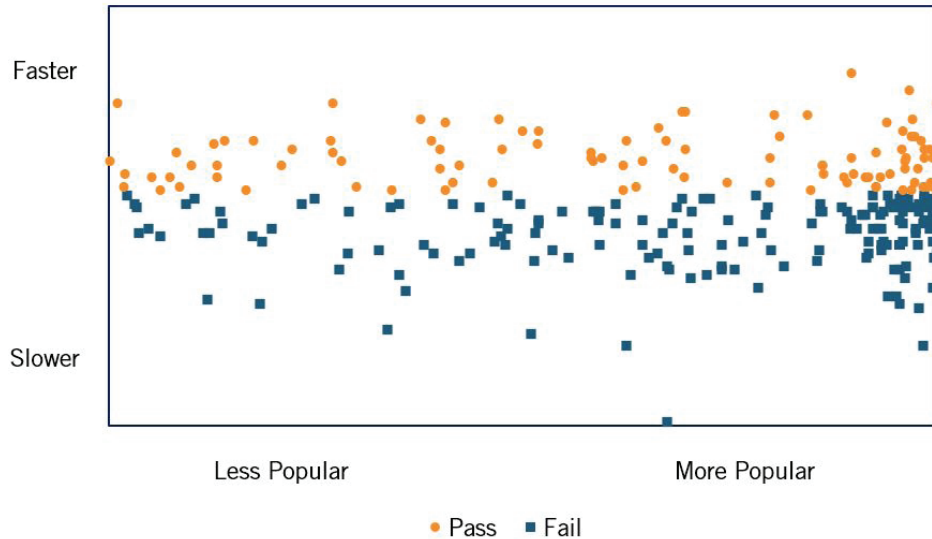
This report finds that federal websites generally performed adequately on desktop page load speed, but failed for mobile page load speed. Regarding desktop page load speed scores, out of the 296 reviewed websites (we omitted the Office of Information and Regulatory Affairs (reginfo.gov) because the tool could not successfully test the site), 78 percent passed the desktop test with a score over 54. Similarly, 74 percent of the federal websites in the global top 100,000 passed the test. Figure 1 shows the overall distribution of desktop page load speed scores for reviewed federal websites. The blue squares in figure 1 indicates which websites failed to get the minimum passing score of 54.

**Figure 1: Desktop page load speed of federal websites by popularity.**



Unfortunately, this trend did not continue for mobile page load speed. Out of the full 297 reviewed websites, only 36 percent passed the mobile page load speed test with a score over 56. In addition, only 31 percent of the federal websites in the global top 100,000 passed the test. Figure 2 shows the overall distribution of mobile page load speed scores for reviewed federal websites. The blue squares in figure 2 indicate which websites failed to get the minimum passing score of 56.

**Figure 2: Mobile page load speed of federal websites by popularity.**



Despite having a goal of improving convenience for users of digital services, federal agencies are not delivering fast websites. Notably, several of the federal websites in the global top 100,000—such as the General Services Administration ([gsa.gov](http://gsa.gov)), IdentityTheft.gov ([identitytheft.gov](http://identitytheft.gov)), and the National Cancer Institute ([cancer.gov](http://cancer.gov))—failed both mobile and desktop page load speed tests.

Federal websites failed this test due to four big issues: using render-blocking CSS and JavaScript, not optimizing images, not prioritizing visible content, and using landing page redirects. Fortunately, a number of solutions exist to address these issues.

First, many federal websites do not optimize their use of JavaScript—a programming language for websites, or Cascading Style Sheets (CSS)—a markup language used to format webpages.<sup>49</sup> When not properly optimized, using JavaScript and CSS can introduce unnecessary delays. When a web browser tries to render a webpage, it has to parse through the page's HyperText Markup Language (HTML) code, the basic markup language for webpages.<sup>50</sup> During the process, if the browser encounters an externally linked script, it must download it and execute it, introducing a delay. To fix this, websites can optimize their JavaScript and CSS code, so that scripts necessary to render page content that is “above-the-fold” (i.e., immediately visible to users without scrolling) can be placed within the HTML webpage instead of linked as a separate file, thereby eliminating the need for browsers to make extra network requests.

Second, federal websites often fail to compress images. Compressing images reduces their file size and allows users to download webpages faster. Federal websites can optimize images on their pages using a variety of different strategies, such as reducing unnecessary images, using web fonts rather than encoding text in images, and using vector images—which use lines, points, and polygons to represent an image, instead of raster images—which use pixels to represent images.<sup>51</sup>

Third, federal websites had issues with reducing the size of above-the-fold content to make it download more quickly. Because the Internet's Transmission Control Protocol (TCP) controls congestion by limiting the amount of data a sender can transmit over a network before receiving a response, a browser may need to make additional requests (often called network round-trips) if a website's content is too large.<sup>52</sup> This slows a browser's ability to download initial content from the website.<sup>53</sup> These issues can be addressed by restructuring a webpage's HTML to prioritize above-the-fold content. In addition, a website can load above-the-fold content quicker by reducing the amount of data on the website, such as by reducing the size of embedded components (e.g., removing unnecessary characters and comments from source code) or enabling compression.<sup>54</sup>

Finally, federal websites often use too many landing-page redirects, where one URL redirects to another. A redirect can delay page load time by creating the need for additional network activity prior to loading a webpage.<sup>55</sup> To address this issue, websites should try to minimize redirects as much as possible, such as by performing the redirection on the server side rather than client side.<sup>56</sup>

**TABLE 2**  
**Popular federal websites ranked by desktop page load speed.**

Domain	Alexa Rank	Desktop Speed	Domain	Alexa Rank	Desktop Speed
healthdata.gov	733,875	92	blm.gov	51,455	78
sandia.gov	40,709	90	bea.gov	78,878	78
arts.gov	202,776	89	buyusa.gov	580,087	78
truman.gov	732,225	89	fema.gov	17,791	77
usbg.gov	997,303	89	childwelfare.gov	109,369	77
americaslibrary.gov	108,794	88	globalchange.gov	309,131	77
research.gov	308,738	88	harp.gov	408,626	77
serve.gov	532,813	88	mycreditunion.gov	504,679	77
consumerfinance.gov	37,014	87	recalls.gov	527,429	77
fnal.gov	48,694	87	bpa.gov	768,299	77
ttbonline.gov	483,691	87	nih.gov	239	76
usitc.gov	68,023	85	orau.gov	208,869	76
uslearning.gov	861,615	85	vehiclehistory.gov	368,294	76
nist.gov	6,938	84	mymoney.gov	731,417	76
healthfinder.gov	163,067	84	whitehouse.gov (Trump)	*	76
biometrics.gov	486,457	84	medlineplus.gov	2,444	75
ucrdatatool.gov	596,569	84	usembassy.gov	2,863	75
wdol.gov	989,960	84	donotcall.gov	43,405	75
greatagain.gov	34,131	83	usconsulate.gov	48,636	75
itis.gov	144,799	83	nga.gov	63,094	75
digitalpreservation.gov	331,992	82	nutrition.gov	318,717	75
nnlm.gov	380,580	82	girlshealth.gov	383,679	75
admongo.gov	919,734	82	energycodes.gov	418,622	75
hudoig.gov	977,416	82	thecoolspot.gov	597,603	75
lbl.gov	21,884	81	moneyfactorystore.gov	791,853	75
clinicaltrials.gov	22,362	81	nationalgangcenter.gov	836,060	75
llnl.gov	46,702	81	ems.gov	980,506	75
fbo.gov	49,498	81	grants.gov	49,646	74
cfda.gov	602,543	81	whistleblowers.gov	588,166	74
wrp.gov	781,438	81	ustr.gov	94,076	73
cbo.gov	196,362	80	ourdocuments.gov	106,434	73
pepfar.gov	826,446	80	healthypeople.gov	114,725	73
osc.gov	873,833	80	investor.gov	147,324	73
usajobs.gov	4,980	79	usastaffing.gov	322,168	73
drugabuse.gov	23,491	79	section508.gov	340,066	73
congress.gov	26,920	79	irsvideos.gov	359,848	73
guideline.gov	145,433	79	eeoc.gov	45,154	72
ustaxcourt.gov	421,450	79	data.gov	47,161	72
lsc.gov	613,595	79	applicationmanager.gov	59,290	72
senate.gov	16,394	78	fdic.gov	74,695	72

**TABLE 2 CONTINUED**  
**Popular federal websites ranked by desktop page load speed.**

Domain	Alexa Rank	Desktop Speed	Domain	Alexa Rank	Desktop Speed
nij.gov	158,018	72	nationalmap.gov	119,866	67
nctc.gov	587,217	72	uspsaig.gov	143,326	67
iaf.gov	939,679	72	ferc.gov	224,029	67
ahrq.gov	38,508	71	globe.gov	287,464	67
read.gov	208,162	71	fletc.gov	384,320	67
letsmove.gov	311,051	71	godirect.gov	914,542	67
amberalert.gov	721,835	71	uspto.gov	4,543	66
fara.gov	753,610	71	house.gov	8,877	66
onguardonline.gov	907,289	71	studentloans.gov	12,533	66
cecc.gov	926,405	71	fcc.gov	15,361	66
ssa.gov	2,986	70	science.gov	83,640	66
uscourts.gov	7,395	70	nihseniorhealth.gov	279,046	66
archives.gov	11,620	70	flu.gov	418,695	66
fbi.gov	11,847	70	bj.gov	660,133	66
treasury.gov	22,235	70	ibb.gov	898,258	66
mymedicare.gov	43,993	70	sba.gov	11,973	65
medicaid.gov	75,534	70	osha.gov	16,301	65
us-cert.gov	83,492	70	fafsa.gov	41,284	65
cftc.gov	90,085	70	treasurydirect.gov	52,723	65
science360.gov	313,520	70	disasterassistance.gov	92,909	65
nara.gov	411,692	70	foodsafety.gov	111,015	65
socialsecurity.gov <sup>^</sup>	415,198	70	climate.gov	121,380	65
helpwithmybank.gov	522,564	70	speaker.gov	209,096	65
treasuryhunt.gov	968,527	70	bia.gov	391,835	65
gpo.gov	28,599	69	indianaffairs.gov	506,763	65
supremecourt.gov	64,832	69	opensource.gov	540,272	65
nano.gov	421,613	69	smartgrid.gov	711,214	65
feedthefuture.gov	603,875	69	uscis.gov	2,257	64
usgs.gov	3,930	68	ftc.gov	10,679	64
sec.gov	5,743	68	eia.gov	18,041	64
usaid.gov	22,576	68	tsa.gov	23,334	64
safercar.gov	63,752	68	federalreserve.gov	27,959	64
floodsmart.gov	211,041	68	defense.gov	29,461	64
access-board.gov	323,891	68	energystar.gov	57,877	64
volunteer.gov	982,254	68	acl.gov	359,519	64
pacer.gov	49,477	67	financialresearch.gov	949,009	64
hrsa.gov	57,430	67	usa.gov	5,893	63
neh.gov	58,243	67	hhs.gov	9,614	63
genome.gov	78,789	67	fs.fed.us	34,012	63
healthit.gov	84,221	67	digitalgov.gov	218,488	63

**TABLE 2 CONTINUED**

Popular federal websites ranked by desktop page load speed.

Domain	Alexa Rank	Desktop Speed	Domain	Alexa Rank	Desktop Speed
bbg.gov	483,900	63	cuidadodesalud.gov	330,062	58
foia.gov	488,000	63	presidio.gov	359,079	58
hispanicheritagemonth.gov	663,101	63	uscirf.gov	627,729	58
vistacampus.gov	866,345	63	humanrights.gov	703,970	58
mspb.gov	879,797	63	eda.gov	816,471	58
dhhs.gov	952,345	63	noaa.gov	675	57
nps.gov	4,562	62	epa.gov	6,465	57
cms.gov	13,289	62	usmint.gov	74,379	57
pay.gov	32,046	62	trade.gov	102,839	57
america.gov	48,630	62	ftccomplaintassistant.gov	156,045	57
peacecorps.gov	51,862	62	fincen.gov	256,631	57
time.gov	79,648	62	visitthecapitol.gov	336,471	57
ojdp.gov	301,185	62	ojp.gov	534,625	57
arm.gov	554,817	62	lanl.gov	47,332	56
insurekidsnow.gov	804,421	62	ready.gov	51,095	56
nhtsa.gov	97,202	61	americorps.gov	77,653	56
usaspending.gov	238,694	61	ttb.gov	258,912	56
invasivespeciesinfo.gov	410,495	61	imls.gov	392,182	56
organdonor.gov	457,542	61	solardecathlon.gov	869,981	56
saferproducts.gov	522,288	61	irs.gov	1,182	55
doleta.gov	58,663	60	fec.gov	47,432	55
ncjrs.gov	70,859	60	stopbullying.gov	73,376	55
doc.gov	70,883	60	womenshealth.gov	84,173	55
commerce.gov	89,674	60	doi.gov	147,360	55
makinghomeaffordable.gov	264,744	60	dni.gov	303,790	55
distraction.gov	485,160	60	poolsafely.gov	963,606	55
econsumer.gov	524,204	60	reginfo.gov	353,024	54***
fedramp.gov	714,374	60	dhs.gov	3,540	54
fordlibrarymuseum.gov	966,899	60	fvap.gov	31,107	54
ed.gov	1,138	59	csb.gov	414,161	54
healthcare.gov	6,485	59	sciencebase.gov	491,314	54
energy.gov	12,599	59	moneyfactory.gov	529,527	54
hud.gov	21,475	59	bep.gov	827,365	54
nsopw.gov	109,444	59	weather.gov	1,313	53
pnnl.gov	144,847	59	aviationweather.gov	27,867	53
aoa.gov	870,064	59	nrel.gov	37,980	53
usps.com	376	58	eac.gov	149,843	53
recreation.gov	31,505	58	g5.gov	374,077	53
pnl.gov	114,992	58	longtermcare.gov	537,668	53
opic.gov	307,246	58	rrb.gov	611,359	53

**TABLE 2 CONTINUED**

**Popular federal websites ranked by desktop page load speed.**

Domain	Alexa Rank	Desktop Speed	Domain	Alexa Rank	Desktop Speed
whitehouse.gov (Obama)	3,071	52	identitytheft.gov	283,402	46
va.gov	4,405	52	goes-r.gov	676,590	46
medicare.gov	10,973	52	federalregister.gov	51,658	45
choosemyplate.gov	44,552	52	smokefree.gov	221,470	45
usdoj.gov	67,567	52	pbgc.gov	313,513	45
benefits.gov	73,794	52	tsunami.gov	643,945	45
ipcc-wg2.gov	887,360	52	aids.gov	89,351	44
hanford.gov	939,723	52	nationalservice.gov	95,036	44
loc.gov	4,858	51	dol.gov	15,422	43
acquisition.gov	265,637	51	samhsa.gov	46,375	43
abmc.gov	622,489	51	bnl.gov	55,455	43
bjs.gov	91,927	50	osti.gov	65,151	42
ncua.gov	264,339	50	usap.gov	415,432	42
cbp.gov	10,714	49	tva.gov	342,362	41
cpsc.gov	56,861	49	occ.gov	205,628	40
sbir.gov	149,285	49	iarpa.gov	651,810	40
nicic.gov	249,762	49	nlm.gov	817,711	40
boem.gov	302,580	49	drought.gov	864,227	40
bls.gov	6,895	48	usphs.gov	468,853	38
inl.gov	329,230	48	fgdc.gov	882,129	36
surgeongeneral.gov	449,375	48	ice.gov	51,655	34
selectusa.gov	566,863	48	tsp.gov	33,883	33
bsee.gov	651,973	48	challenge.gov	666,713	30
adlnet.gov	724,112	48	fsd.gov	380,738	24
cancer.gov	12,747	47	gop.gov	495,177	24
nsf.gov	15,284	47	fmc.gov	901,824	21
nixonlibrary.gov	578,798	47	gsa.gov	23,383	19
usda.gov	3,793	46	fitness.gov	331,251	4
airnow.gov	190,818	46			

^ socialsecurity.gov redirects to ssa.gov.

\* No rank provided since this website did not exist in November 2016.

\*\*\* Portions of this website caused an error on the test. To account for these errors, we assigned the lowest passing score for this test.



**TABLE 3**  
**Popular federal websites ranked by mobile page load speed.**

Domain	Alexa Rank	Mobile Speed	Domain	Alexa Rank	Mobile Speed
americaslibrary.gov	108,794	84	mymoney.gov	731,417	65
sandia.gov	40,709	80	admongo.gov	919,734	65
bls.gov	6,895	77	usda.gov	3,793	64
truman.gov	732,225	77	nist.gov	6,938	64
wdol.gov	989,960	77	sba.gov	11,973	64
research.gov	308,738	75	lbl.gov	21,884	64
pbgc.gov	313,513	75	donotcall.gov	43,405	64
healthfinder.gov	163,067	74	childwelfare.gov	109,369	64
arts.gov	202,776	74	orau.gov	208,869	64
consumerfinance.gov	37,014	73	harp.gov	408,626	64
serve.gov	532,813	73	ustaxcourt.gov	421,450	64
uscirf.gov	627,729	73	llnl.gov	46,702	63
usitc.gov	68,023	72	irsvideos.gov	359,848	63
ucrdatatool.gov	596,569	72	energycodes.gov	418,622	63
section508.gov	340,066	71	amberalert.gov	721,835	63
fnal.gov	48,694	70	usb.gov	997,303	63
ttbonline.gov	483,691	70	itis.gov	144,799	62
mycreditunion.gov	504,679	70	guideline.gov	145,433	62
greatagain.gov	34,131	69	girlshealth.gov	383,679	62
nrel.gov	37,980	69	buyusa.gov	580,087	62
cbo.gov	196,362	69	moneyfactorystore.gov	791,853	62
congress.gov	26,920	68	aoa.gov	870,064	62
digitalpreservation.gov	331,992	68	fmc.gov	901,824	62
nnlm.gov	380,580	68	defense.gov	29,461	61
lsc.gov	613,595	68	eeoc.gov	45,154	61
healthdata.gov	733,875	68	usastaffing.gov	322,168	61
pepfar.gov	826,446	68	feedthefuture.gov	603,875	61
usalearning.gov	861,615	68	medlineplus.gov	2,444	60
biometrics.gov	486,457	67	nga.gov	63,094	60
osc.gov	873,833	67	ourdocuments.gov	106,434	60
uscourts.gov	7,395	66	uspsaig.gov	143,326	60
senate.gov	16,394	66	ems.gov	980,506	60
clinicaltrials.gov	22,362	66	whitehouse.gov (Trump)	*	60
fbo.gov	49,498	66	fdic.gov	74,695	59
globalchange.gov	309,131	66	cftc.gov	90,085	59
recalls.gov	527,429	66	ustr.gov	94,076	59
cfda.gov	602,543	66	nationalmap.gov	119,866	59
wrp.gov	781,438	66	letsmove.gov	311,051	59
bea.gov	78,878	65	solardecathlon.gov	869,981	59
nano.gov	421,613	65	cecc.gov	926,405	59

**TABLE 3 CONTINUED**

Popular federal websites ranked by mobile page load speed.

Domain	Alexa Rank	Mobile Speed	Domain	Alexa Rank	Mobile Speed
financialresearch.gov	949,009	59	nihseniorhealth.gov	279,046	54
nsf.gov	15,284	58	globe.gov	287,464	54
tsp.gov	33,883	58	science360.gov	313,520	54
healthypeople.gov	114,725	58	fara.gov	753,610	54
read.gov	208,162	58	ibb.gov	898,258	54
ttb.gov	258,912	58	nih.gov	239	53
opensource.gov	540,272	58	loc.gov	4,858	53
nctc.gov	587,217	58	usa.gov	5,893	53
usajobs.gov	4,980	57	medicare.gov	10,973	53
ftc.gov	10,679	57	federalreserve.gov	27,959	53
fema.gov	17,791	57	data.gov	47,161	53
drugabuse.gov	23,491	57	peacecorps.gov	51,862	53
genome.gov	78,789	57	hrsa.gov	57,430	53
time.gov	79,648	57	energystar.gov	57,877	53
vehiclehistory.gov	368,294	57	doleta.gov	58,663	53
humanrights.gov	703,970	57	safercar.gov	63,752	53
godirect.gov	914,542	57	investor.gov	147,324	53
volunteer.gov	982,254	57	bia.gov	391,835	53
usembassy.gov	2,863	56	indianaffairs.gov	506,763	53
house.gov	8,877	56	whistleblowers.gov	588,166	53
ahrq.gov	38,508	56	bsee.gov	651,973	53
usconsulate.gov	48,636	56	bpa.gov	768,299	53
nij.gov	158,018	56	onguardonline.gov	907,289	53
fletc.gov	384,320	56	treasuryhunt.gov	968,527	53
thecoolspot.gov	597,603	56	fbi.gov	11,847	52
bjagov	660,133	56	eia.gov	18,041	52
nationalgangcenter.gov	836,060	56	fs.fed.us	34,012	52
iaf.gov	939,679	56	mymedicare.gov	43,993	52
usaid.gov	22,576	55	neh.gov	58,243	52
pacer.gov	49,477	55	applicationmanager.gov	59,290	52
grants.gov	49,646	55	us-cert.gov	83,492	52
supremecourt.gov	64,832	55	womenshealth.gov	84,173	52
science.gov	83,640	55	climate.gov	121,380	52
ferc.gov	224,029	55	speaker.gov	209,096	52
helpwithmybank.gov	522,564	55	nutrition.gov	318,717	52
hudoig.gov	977,416	55	arm.gov	554,817	52
dol.gov	15,422	54	hispanicheritagemonth.gov	663,101	52
treasury.gov	22,235	54	fordlibrarymuseum.gov	966,899	52
fafsa.gov	41,284	54	usps.com	376	51
blm.gov	51,455	54	ed.gov	1,138	51

**TABLE 3 CONTINUED**  
**Popular federal websites ranked by mobile page load speed.**

Domain	Alexa Rank	Mobile Speed	Domain	Alexa Rank	Mobile Speed
ssa.gov	2,986	51	bbg.gov	483,900	48
archives.gov	11,620	51	ojp.gov	534,625	48
gpo.gov	28,599	51	drought.gov	864,227	48
fec.gov	47,432	51	uspto.gov	4,543	47
ncjrs.gov	70,859	51	sec.gov	5,743	47
pnl.gov	114,992	51	osha.gov	16,301	47
pnnl.gov	144,847	51	recreation.gov	31,505	47
doi.gov	147,360	51	benefits.gov	73,794	47
ojjdp.gov	301,185	51	americorps.gov	77,653	47
nara.gov	411,692	51	healthit.gov	84,221	47
socialsecurity.gov <sup>^</sup>	415,198	51	trade.gov	102,839	47
usap.gov	415,432	51	foodsafety.gov	111,015	47
flu.gov	418,695	51	saferproducts.gov	522,288	47
organdonor.gov	457,542	51	insurekidsnow.gov	804,421	47
smartgrid.gov	711,214	51	dhhs.gov	952,345	47
vistacampus.gov	866,345	51	pay.gov	32,046	46
uscis.gov	2,257	50	digitalgov.gov	218,488	46
usgs.gov	3,930	50	opic.gov	307,246	46
studentloans.gov	12,533	50	visitthecapitol.gov	336,471	46
medicaid.gov	75,534	50	foia.gov	488,000	46
disasterassistance.gov	92,909	50	mspb.gov	879,797	46
nationalservice.gov	95,036	50	ipcc-wg2.gov	887,360	46
nhtsa.gov	97,202	50	poolsafely.gov	963,606	46
floodsmart.gov	211,041	50	nps.gov	4,562	45
hhs.gov	9,614	49	moneyfactory.gov	529,527	45
hud.gov	21,475	49	bep.gov	827,365	45
treasurydirect.gov	52,723	49	hanford.gov	939,723	45
nsopw.gov	109,444	49	weather.gov	1,313	44
fincen.gov	256,631	49	whitehouse.gov (Obama)	3,071	44
acl.gov	359,519	49	cms.gov	13,289	44
csb.gov	414,161	49	america.gov	48,630	44
distraction.gov	485,160	49	doc.gov	70,883	44
noaa.gov	675	48	commerce.gov	89,674	44
energy.gov	12,599	48	usaspending.gov	238,694	44
fcc.gov	15,361	48	longtermcare.gov	537,668	44
tsa.gov	23,334	48	eda.gov	816,471	44
lanl.gov	47,332	48	va.gov	4,405	43
ftccomplaintassistant.gov	156,045	48	fvap.gov	31,107	43
access-board.gov	323,891	48	ready.gov	51,095	43
imls.gov	392,182	48	usdoj.gov	67,567	43

**TABLE 3 CONTINUED**  
**Popular federal websites ranked by mobile page load speed.**

Domain	Alexa Rank	Mobile Speed	Domain	Alexa Rank	Mobile Speed
usmint.gov	74,379	43	airnow.gov	190,818	38
acquisition.gov	265,637	43	makinghomeaffordable.gov	264,744	38
presidio.gov	359,079	43	cuidadodesalud.gov	330,062	38
invasivespeciesinfo.gov	410,495	43	federalregister.gov	51,658	37
econsumer.gov	524,204	43	cpsc.gov	56,861	37
abmc.gov	622,489	43	nicic.gov	249,762	37
irs.gov	1,182	42	ncua.gov	264,339	37
stopbullying.gov	73,376	42	inl.gov	329,230	37
sbir.gov	149,285	42	adlnet.gov	724,112	37
occ.gov	205,628	42	identitytheft.gov	283,402	36
dni.gov	303,790	42	g5.gov	374,077	36
usphs.gov	468,853	42	iarpa.gov	651,810	36
goes-r.gov	676,590	42	samhsa.gov	46,375	35
epa.gov	6,465	41	boem.gov	302,580	35
aids.gov	89,351	41	cancer.gov	12,747	33
tva.gov	342,362	41	smokefree.gov	221,470	33
selectusa.gov	566,863	41	tsunami.gov	643,945	32
rrb.gov	611,359	41	bnl.gov	55,455	31
fedramp.gov	714,374	41	osti.gov	65,151	31
healthcare.gov	6,485	40	fgdc.gov	882,129	30
cbp.gov	10,714	40	ice.gov	51,655	29
bjs.gov	91,927	40	nlm.gov	817,711	29
reginfo.gov	353,024	40	aviationweather.gov	27,867	28
surgeongeneral.gov	449,375	40	challenge.gov	666,713	23
dhs.gov	3,540	39	gop.gov	495,177	22
eac.gov	149,843	39	gsa.gov	23,383	19
sciencebase.gov	491,314	39	fsd.gov	380,738	19
nixonlibrary.gov	578,798	39	fitness.gov	331,251	1
choosemyplate.gov	44,552	38			

^ socialsecurity.gov redirects to ssa.gov.

\* No rank provided since this website did not exist in November 2016.

## MOBILE FRIENDLINESS

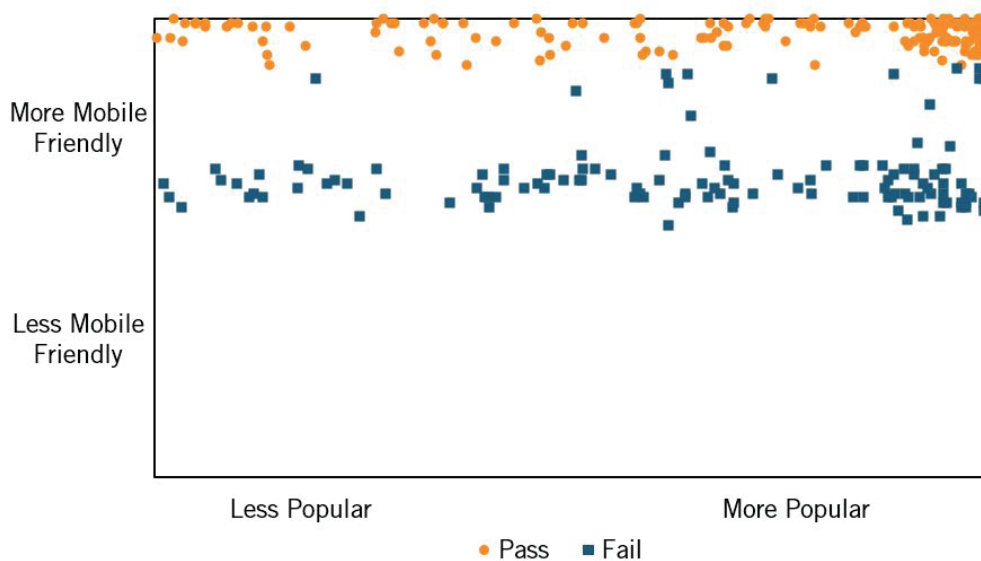
The federal government requires its websites to be mobile friendly. The OMB's policy for federal websites states that agencies "must, to the extent practicable, ensure that their public websites and digital services perform equally well on non-desktop devices such as mobile devices and tablets."<sup>57</sup> This requirement is important because Americans are using their mobile phones to find information more than ever before. In 2015, roughly 56 percent of overall search volume in the United States came from mobile devices.<sup>58</sup> To be mobile friendly, a website should offer easy-to-use buttons, the ability to navigate from a small screen, and legibility, featuring its most important information at the forefront of the page for its users.

To measure mobile friendliness, this report uses Google's "Mobile Friendly Test" on its "Test My Site" tool.<sup>59</sup> This tool offers a score between 0 and 100 points, based on five criteria. First, the tool tests whether a website's touch elements are too close together, which causes difficulty for mobile users who cannot easily tap a desired button with their finger without also tapping another button.<sup>60</sup> Second, the tool tests whether a website's viewport is configured with meta tags—web elements that provide information about a webpage such as its height, width, and initial scale for a mobile device—so that websites can easily work on a variety of devices with varying screen sizes.<sup>61</sup> Third, the tools test whether a website sizes content to the viewport.<sup>62</sup> If content is not sized properly to fit a mobile-device screen, a user may have to scroll through websites horizontally, leading to a poor user experience. Fourth, the tool tests whether the website uses plugins, which are not supported on most mobile devices. If left unaddressed, plugins can disrupt users' experiences through hangs (i.e., when a phone freezes and stops responding to commands), crashes, and security vulnerabilities.<sup>63</sup> Fifth, the tool measures whether a website is properly configured so that text on the page is large enough for a user to read.

We determined that a reasonable benchmark for passing the mobile-friendliness test was a score of 90 or above. Websites scoring in this range can often still be further optimized for mobile devices, but they generally provide users a good mobile experience. To verify that this was a reasonable cutoff point, we tested the top 20 nongovernment domains from Alexa Traffic Rankings.<sup>64</sup> These sites had an average mobile-friendliness score of 99, which suggests that users are accustomed to visiting sites fully optimized for mobile devices.

This report finds mixed results for the mobile friendliness of federal websites. Overall, 59 percent of websites reviewed scored over 90 on the test. Among the federal websites in the global top 100,000, 70 percent of websites reviewed performed well on the test. The distribution of the data shows a significant dichotomy between passing and failing websites. Most websites either passed the test with a score of 90 or above or failed the test with a score below 70, with few scoring in the middle. Indeed, 31 percent of the reviewed websites failed the test with a score between 60 and 70. Figure 3 shows the overall distribution of mobile-friendliness data. The blue squares in figure 3 indicate which websites failed to get the minimum passing score of 90.

**Figure 3: Mobile friendliness of federal websites by popularity.**



The three most common reasons a website failed this test were: The website was not configured properly, and thus did not scale appropriately to mobile devices; it used illegible font sizes; or it used buttons that were too small to be easily tapped with a finger. As a result, several of the federal websites in the global top 100,000 failed their mobile-friendliness test, including the National Weather Service ([weather.gov](http://weather.gov)), the Department of Treasury ([treasury.gov](http://treasury.gov)), and the International Trade Administration ([trade.gov](http://trade.gov)).

Each of these common mobile-friendliness problems has an easy solution. First, a webpage should be configured to scale to different screen sizes across different devices.<sup>65</sup> A website can instruct a mobile device to match the page's width with that of the device's, allowing content to match different screen sizes. Second, text should be sized appropriately, so it is easy for users to read. Websites can ensure their font sizes are legible by configuring their viewport to ensure fonts are scaled across all devices.<sup>66</sup> Google, a company at the forefront of pushing for mobile friendliness, suggests a best practice for font size is 16 CSS pixels.<sup>67</sup> Finally, to ensure that buttons, links, and form fields are not too small, these targets should be sized appropriately. As an easy rule to follow, users should not need to enlarge a screen to easily press a button or link. Google suggests these buttons should have a base font size of 48 CSS pixels tall and wide.<sup>68</sup> Links that are used less frequently can be smaller than 48 CSS pixels, but should include a small space between them, so users do not touch two links at once.

**TABLE 4**  
**Popular federal websites ranked by mobile friendliness.**

Domain	Alexa Rank	Mobile Friendliness	Domain	Alexa Rank	Mobile Friendliness
usps.com	376	100	bnl.gov	55,455	99
noaa.gov	675	100	applicationmanager.gov	59,290	99
usembassy.gov	2,863	100	genome.gov	78,789	99
usa.gov	5,893	100	aids.gov	89,351	99
bls.gov	6,895	100	disasterassistance.gov	92,909	99
gsa.gov	23,383	100	investor.gov	147,324	99
donotcall.gov	43,405	100	doi.gov	147,360	99
usconsulate.gov	48,636	100	healthfinder.gov	163,067	99
nga.gov	63,094	100	floodsmart.gov	211,041	99
occ.gov	205,628	100	digitalgov.gov	218,488	99
ttb.gov	258,912	100	smokefree.gov	221,470	99
makinghomeaffordable.gov	264,744	100	acquisition.gov	265,637	99
identitytheft.gov	283,402	100	globe.gov	287,464	99
csb.gov	414,161	100	pbgc.gov	313,513	99
opensource.gov	540,272	100	cuidadodesalud.gov	330,062	99
hispanicheritagemonth.gov	663,101	100	flu.gov	418,695	99
adlnet.gov	724,112	100	nano.gov	421,613	99
hudoig.gov	977,416	100	bbg.gov	483,900	99
nih.gov	239	99	gop.gov	495,177	99
uscis.gov	2,257	99	selectusa.gov	566,863	99
dhs.gov	3,540	99	uscirf.gov	627,729	99
uspto.gov	4,543	99	iarpa.gov	651,810	99
nps.gov	4,562	99	bsee.gov	651,973	99
loc.gov	4,858	99	goes-r.gov	676,590	99
usajobs.gov	4,980	99	smartgrid.gov	711,214	99
healthcare.gov	6,485	99	fedramp.gov	714,374	99
uscourts.gov	7,395	99	truman.gov	732,225	99
hhs.gov	9,614	99	ibb.gov	898,258	99
ftc.gov	10,679	99	onguardonline.gov	907,289	99
sba.gov	11,973	99	hanford.gov	939,723	99
cancer.gov	12,747	99	financialresearch.gov	949,009	99
cms.gov	13,289	99	dhhs.gov	952,345	99
fcc.gov	15,361	99	poofsafely.gov	963,606	99
defense.gov	29,461	99	whitehouse.gov (Obama)	3,071	98
pay.gov	32,046	99	fbi.gov	11,847	98
tsp.gov	33,883	99	studentloans.gov	12,533	98
consumerfinance.gov	37,014	99	nsf.gov	15,284	98
sandia.gov	40,709	99	osha.gov	16,301	98
llnl.gov	46,702	99	drugabuse.gov	23,491	98
data.gov	47,161	99	recreation.gov	31,505	98

**TABLE 4 CONTINUED**  
**Popular federal websites ranked by mobile friendliness.**

Domain	Alexa Rank	Mobile Friendliness	Domain	Alexa Rank	Mobile Friendliness
america.gov	48,630	98	tva.gov	342,362	96
fnal.gov	48,694	98	socialsecurity.gov <sup>^</sup>	415,198	96
blm.gov	51,455	98	organdonor.gov	457,542	96
cpsc.gov	56,861	98	econsumer.gov	524,204	96
medicaid.gov	75,534	98	lsc.gov	613,595	96
womenshealth.gov	84,173	98	ems.gov	980,506	96
nsopw.gov	109,444	98	usbg.gov	997,303	96
uspsaig.gov	143,326	98	fema.gov	17,791	95
guideline.gov	145,433	98	usaid.gov	22,576	95
sbir.gov	149,285	98	fs.fed.us	34,012	95
cbo.gov	196,362	98	greatagain.gov	34,131	95
speaker.gov	209,096	98	nrel.gov	37,980	95
ncua.gov	264,339	98	ahrq.gov	38,508	95
opic.gov	307,246	98	choosemyplate.gov	44,552	95
nationalgangcenter.gov	836,060	98	samhsa.gov	46,375	95
vistacampus.gov	866,345	98	ready.gov	51,095	95
fgdc.gov	882,129	98	usdoj.gov	67,567	95
godirect.gov	914,542	98	science.gov	83,640	95
iaf.gov	939,679	98	nationalservice.gov	95,036	95
energy.gov	12,599	97	usaspending.gov	238,694	95
ice.gov	51,655	97	whistleblowers.gov	588,166	95
hrsa.gov	57,430	97	challenge.gov	666,713	95
energystar.gov	57,877	97	solardecathlon.gov	869,981	95
ftccomplaintassistant.gov	156,045	97	fordlibrarymuseum.gov	966,899	95
usastaffing.gov	322,168	97	va.gov	4,405	94
serve.gov	532,813	97	lbl.gov	21,884	94
healthdata.gov	733,875	97	doc.gov	70,883	94
whitehouse.gov (Trump)	*	97	commerce.gov	89,674	94
medlineplus.gov	2,444	96	globalchange.gov	309,131	94
ssa.gov	2,986	96	science360.gov	313,520	94
house.gov	8,877	96	mycreditunion.gov	504,679	94
medicare.gov	10,973	96	nlm.gov	817,711	94
mymedicare.gov	43,993	96	usda.gov	3,793	93
lanl.gov	47,332	96	cbp.gov	10,714	93
supremecourt.gov	64,832	96	tsa.gov	23,334	93
benefits.gov	73,794	96	doleta.gov	58,663	93
fdic.gov	74,695	96	ncjrs.gov	70,859	93
americorps.gov	77,653	96	imls.gov	392,182	93
inl.gov	329,230	96	harp.gov	408,626	93
visitthecapitol.gov	336,471	96	humanrights.gov	703,970	93



**TABLE 4 CONTINUED**

**Popular federal websites ranked by mobile friendliness.**

<b>Domain</b>	<b>Alexa Rank</b>	<b>Mobile Friendliness</b>	<b>Domain</b>	<b>Alexa Rank</b>	<b>Mobile Friendliness</b>
epa.gov	6,465	92	federalregister.gov	51,658	67
nist.gov	6,938	92	us-cert.gov	83,492	67
archives.gov	11,620	92	nhtsa.gov	97,202	67
dol.gov	15,422	92	usphs.gov	468,853	67
g5.gov	374,077	92	ttbonline.gov	483,691	67
nara.gov	411,692	92	nixonlibrary.gov	578,798	67
helpwithmybank.gov	522,564	92	mymoney.gov	731,417	67
bjac.gov	660,133	92	eda.gov	816,471	67
drought.gov	864,227	92	cecc.gov	926,405	67
peacecorps.gov	51,862	91	neh.gov	58,243	66
ojp.gov	534,625	91	healthit.gov	84,221	66
congress.gov	26,920	90	americaslibrary.gov	108,794	66
arts.gov	202,776	90	nicic.gov	249,762	66
abmc.gov	622,489	90	surgeongeneral.gov	449,375	66
uslearning.gov	861,615	90	saferproducts.gov	522,288	66
usgs.gov	3,930	89	recalls.gov	527,429	66
fvap.gov	31,107	89	feedthefuture.gov	603,875	66
childwelfare.gov	109,369	88	osc.gov	873,833	66
presidio.gov	359,079	88	healthypeople.gov	114,725	65
girlshealth.gov	383,679	88	orau.gov	208,869	65
ed.gov	1,138	87	research.gov	308,738	65
sec.gov	5,743	87	bia.gov	391,835	65
fincen.gov	256,631	87	biometrics.gov	486,457	65
insurekidsnow.gov	804,421	87	foia.gov	488,000	65
nnlm.gov	380,580	86	indianaffairs.gov	506,763	65
sciencebase.gov	491,314	84	buyusa.gov	580,087	65
osti.gov	65,151	81	wrp.gov	781,438	65
reginfo.gov	353,024	79	admongo.gov	919,734	65
time.gov	79,648	73	federalreserve.gov	27,959	64
fafsa.gov	41,284	72	grants.gov	49,646	64
fitness.gov	331,251	71	stopbullying.gov	73,376	64
fletc.gov	384,320	70	boem.gov	302,580	64
distraction.gov	485,160	70	section508.gov	340,066	64
climate.gov	121,380	68	longtermcare.gov	537,668	64
itis.gov	144,799	68	bpa.gov	768,299	64
eac.gov	149,843	68	moneyfactorystore.gov	791,853	64
airnow.gov	190,818	68	fmc.gov	901,824	64
letsmove.gov	311,051	68	wdol.gov	989,960	64
pepfar.gov	826,446	68	usitc.gov	68,023	63
fec.gov	47,432	67	nationalmap.gov	119,866	63

**TABLE 4 CONTINUED**

Popular federal websites ranked by mobile friendliness.

Domain	Alexa Rank	Mobile Friendliness	Domain	Alexa Rank	Mobile Friendliness
ferc.gov	224,029	63	invasivespeciesinfo.gov	410,495	61
access-board.gov	323,891	63	ustaxcourt.gov	421,450	61
energycodes.gov	418,622	63	nctc.gov	587,217	61
moneyfactory.gov	529,527	63	thecoolspot.gov	597,603	61
arm.gov	554,817	63	cfda.gov	602,543	61
rrb.gov	611,359	63	aoa.gov	870,064	61
bep.gov	827,365	63	ipcc-wg2.gov	887,360	61
eia.gov	18,041	62	volunteer.gov	982,254	61
hud.gov	21,475	62	irs.gov	1,182	60
pacer.gov	49,477	62	clinicaltrials.gov	22,362	60
safercar.gov	63,752	62	gpo.gov	28,599	60
ustr.gov	94,076	62	eeoc.gov	45,154	60
ourdocuments.gov	106,434	62	fbo.gov	49,498	60
read.gov	208,162	62	ojjdp.gov	301,185	60
nihseniorhealth.gov	279,046	62	vehiclehistory.gov	368,294	60
nutrition.gov	318,717	62	tsunami.gov	643,945	60
irsvideos.gov	359,848	62	treasury.gov	22,235	59
usap.gov	415,432	62	aviationweather.gov	27,867	59
amberalert.gov	721,835	62	dni.gov	303,790	59
mspb.gov	879,797	62	ucrdatatool.gov	596,569	59
senate.gov	16,394	61	treasuryhunt.gov	968,527	59
bea.gov	78,878	61	weather.gov	1,313	58
cftc.gov	90,085	61	trade.gov	102,839	58
foodsafety.gov	111,015	61	treasurydirect.gov	52,723	57
pnl.gov	114,992	61	usmint.gov	74,379	57
pnnl.gov	144,847	61	fara.gov	753,610	57
nij.gov	158,018	61	bjs.gov	91,927	56
digitalpreservation.gov	331,992	61	fsd.gov	380,738	55
acl.gov	359,519	61			

^ socialsecurity.gov redirects to ssa.gov.

\* No rank provided since this website did not exist in November 2016.

## SECURITY

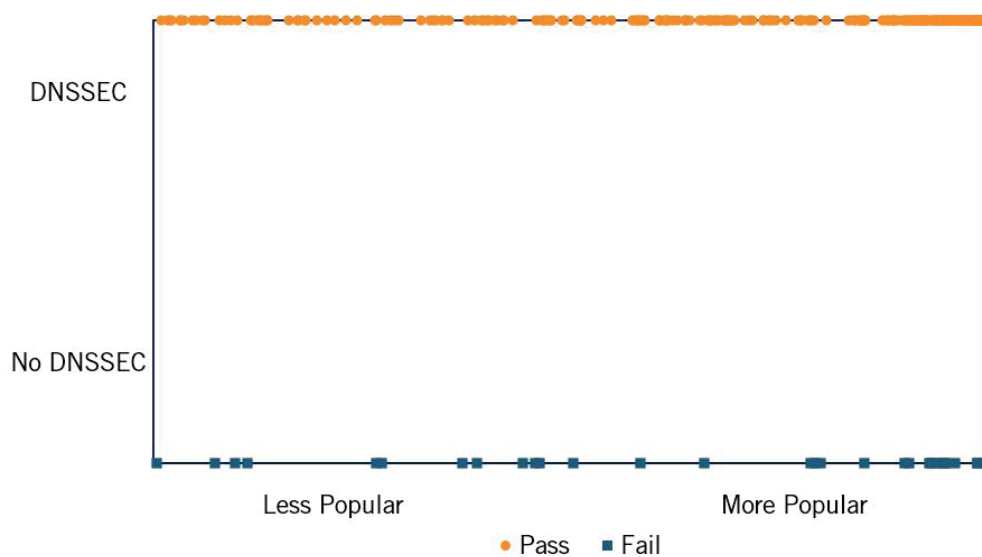
U.S. citizens expect digital services to be secure, so that their interactions with government websites are private and protected. To ensure this, the federal government has put in place several security requirements for federal websites. This report focuses on two of these security requirements: HTTPS and DNSSEC. We also test each federal website for major known security vulnerabilities.

To measure federal websites' compliance with these standards, the report uses two different publicly available tools. First, we used the Verisign Labs' "DNSSEC Debugger," a web-based tool that inspects websites for DNSSEC, testing that digital certificates are verified in a "chain of trust" for each federal website's domain.<sup>69</sup> The tool shows a step-by-step validation for a specific domain, highlighting any problems it discovers. The tool then grades each step in this process with a "good," "warning," or "error." Given the binary outcome of whether a website uses DNSSEC, if a website showed an "error" for any step, it does not have DNSSEC and scored 0 on this test. If the tool found that each step in the process was either "good" or only elicited "warnings," then the website scored 100.

Second, to identify whether websites enable HTTPS, we used a tool that checks Secure Sockets Layer (SSL) certificates, which underpin most HTTPS connections. Qualys SSL Labs' "SSL Server Test" inspects public SSL web servers based on four criteria: certificate, protocol support, key strength, and cipher strength.<sup>70</sup> The tool also analyzes websites for several other factors that would be detrimental to its security, such as outdated protocols or security vulnerabilities. Using the numerical value of the tool's four criteria and weighting these scores based on whether the tool detected major issues with a website's security (e.g., a known security vulnerability), we produced final SSL scores for each website between 0 and 100 points. If "SSL Server Test" failed to detect an SSL certificate or resulted in an error for a specific website, we used the Chrome web browser to determine whether the website used HTTPS, adjusting the website's SSL score to reflect whether it used HTTPS.<sup>71</sup>

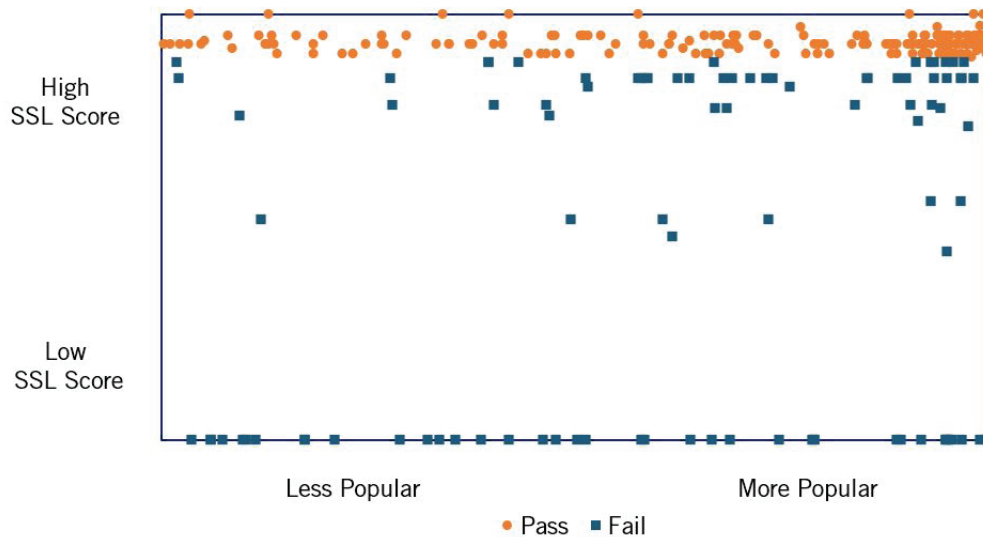
To determine a benchmark that we could use to rate the performance of federal websites for SSL security, this report tested the top 20 domains from "Alexa Traffic Rankings" for the SSL test.<sup>72</sup> Using the average of these scores and factoring in the importance of security standards for federal websites, we determined that a reasonable benchmark for passing the SSL test was a score of 90. To pass the test, a website must use HTTPS, have few issues with its SSL protocols (e.g., not use outdated certificates), and not have any major security vulnerabilities.

**Figure 4: DNSSEC scores of federal websites by popularity.**



Regarding federal websites, this report finds mixed results for these two security tests. First, roughly 90 percent of websites reviewed enabled DNSSEC. Ninety percent of the federal websites in the global top 100,000 also passed this test. Figure 4 shows the distribution of DNSSEC scores, where blue squares indicate failing websites. However, only 67 percent of the reviewed websites passed the SSL test. The more popular websites performed better on the test. Indeed, 78 percent of the federal websites in the global top 100,000 passed the SSL test. Figure 5 shows the overall distribution of SSL scores. The blue squares in figure 5 indicate which websites failed to get the minimum passing score of 90.

Figure 5: SSL scores of federal websites by popularity.



Interestingly, the federal government websites did better on the security tests than the top 20 nongovernment sector websites. Several of the private-sector websites failed the SSL tests, and none of the private sector websites enabled DNSSEC. This suggests that private-sector firms also have much room to improve when it comes to website security, although it does not excuse the federal websites that failed to meet government security standards.

A number of federal websites failed to implement HTTPS or DNSSEC. Of reviewed websites, 10 percent lacked DNSSEC, including the House of Representatives ([house.gov](http://house.gov)), the Speaker of the House of Representatives ([speaker.gov](http://speaker.gov)), and the U.S. Forest Service ([fs.fed.us](http://fs.fed.us)). Of reviewed websites, 14 percent lacked HTTPS, including the Department of Defense ([defense.gov](http://defense.gov)), the International Trade Administration ([trade.gov](http://trade.gov)), and Grants.gov ([grants.gov](http://grants.gov)). Three percent of websites failed to implement both HTTPS and DNSSEC. Virtually all of these websites are nonexecutive branch agencies. These are the Congressional-Executive Commission on China ([cecc.gov](http://cecc.gov)), the Federal Maritime Commission ([fmc.gov](http://fmc.gov)), the (now removed) Intergovernmental Panel on Climate Change–Working Group II ([ipcc-wg2.gov](http://ipcc-wg2.gov)), House Republicans ([gop.gov](http://gop.gov)), U.S. Chemical Safety Board ([csb.gov](http://csb.gov)), the Speaker of the House of Representatives ([speaker.gov](http://speaker.gov)), the Federal Election Commission ([fec.gov](http://fec.gov)), and the Administrative Office of the U.S. Courts ([uscourts.gov](http://uscourts.gov)). Although nonexecutive branch agencies may not always be bound by the same requirements, they should be expected to follow government best practices on cybersecurity.

In addition, some websites failed because the SSL test found major security vulnerabilities. For example, both LongTermCare.gov ([longtermcare.gov](http://longtermcare.gov)) and Let's Move! ([letsmove.gov](http://letsmove.gov)) are vulnerable to the POODLE attack, a weakness in certain systems that support SSL 3.0 that allows attackers to gain access to sensitive data passed within the encrypted traffic.<sup>73</sup> Similarly, SaferProducts.gov ([saferproducts.gov](http://saferproducts.gov)) is vulnerable to a “man in the middle” attack, where an attacker can intercept communication between two systems.<sup>74</sup> And some federal websites, such as U.S. Tsunami Warning Centers ([tsunami.gov](http://tsunami.gov)), are vulnerable to the DROWN attack, a problem affecting HTTPS that allows attackers to break into certain HTTPS servers and steal sensitive communications.<sup>75</sup> As a result of these issues, several of the federal websites in the global top 100,000 were among the lowest-ranked websites in this test, such as the Federal Election Commission ([fec.gov](http://fec.gov)), the U.S. Postal Service ([usps.com](http://usps.com)), and House Republicans ([gop.gov](http://gop.gov)).

In addition to major security flaws, many federal websites failed the SSL test due to other security issues, such as lack of perfect forward secrecy and outdated cryptographic algorithms. Perfect forward secrecy is the security practice where each encrypted session uses different encryption keys.<sup>76</sup> Changing the keys with each new session minimizes the impact that an adversary can have if a key used to encrypt information is ever compromised. Some federal websites also use cryptography that has not been updated to eliminate vulnerabilities, such as Rivest Cipher 4 (RC4)—which has known vulnerabilities, and many private companies recommend should never be used, or weak Diffie-Hellman key exchange parameters—a popular cryptographic algorithm that allows a web browser and server to negotiate secure connections.<sup>77</sup> These issues alone were not enough for a federal website to fail this security test, but are important to improving the security of federal websites.

All these problems with website security can be addressed by having federal web servers enable HTTPS and DNSSEC, as well as following modern information-security principles. Federal agencies should also monitor and update their websites to mitigate against known vulnerabilities.

**TABLE 5**  
**Popular federal websites that enable DNSSEC.**

Domain	Alexa Rank	DNSSEC	Domain	Alexa Rank	DNSSEC
nih.gov	239	100	senate.gov	16,394	100
noaa.gov	675	100	fema.gov	17,791	100
ed.gov	1,138	100	eia.gov	18,041	100
irs.gov	1,182	100	hud.gov	21,475	100
weather.gov	1,313	100	lbl.gov	21,884	100
uscis.gov	2,257	100	treasury.gov	22,235	100
medlineplus.gov	2,444	100	clinicaltrials.gov	22,362	100
usembassy.gov	2,863	100	usaid.gov	22,576	100
ssa.gov	2,986	100	tsa.gov	23,334	100
whitehouse.gov (Obama)	3,071	100	gsa.gov	23,383	100
whitehouse.gov (Trump)	*	100	drugabuse.gov	23,491	100
dhs.gov	3,540	100	congress.gov	26,920	100
usda.gov	3,793	100	aviationweather.gov	27,867	100
usgs.gov	3,930	100	federalreserve.gov	27,959	100
va.gov	4,405	100	gpo.gov	28,599	100
uspto.gov	4,543	100	defense.gov	29,461	100
nps.gov	4,562	100	fvap.gov	31,107	100
loc.gov	4,858	100	recreation.gov	31,505	100
usajobs.gov	4,980	100	pay.gov	32,046	100
sec.gov	5,743	100	tsp.gov	33,883	100
usa.gov	5,893	100	greatagain.gov	34,131	100
epa.gov	6,465	100	consumerfinance.gov	37,014	100
healthcare.gov	6,485	100	nrel.gov	37,980	100
bls.gov	6,895	100	ahrq.gov	38,508	100
nist.gov	6,938	100	sandia.gov	40,709	100
hhs.gov	9,614	100	fafsa.gov	41,284	100
ftc.gov	10,679	100	donotcall.gov	43,405	100
cbp.gov	10,714	100	mymedicare.gov	43,993	100
medicare.gov	10,973	100	choosemyplate.gov	44,552	100
archives.gov	11,620	100	eeoc.gov	45,154	100
fbi.gov	11,847	100	samhsa.gov	46,375	100
sba.gov	11,973	100	data.gov	47,161	100
studentloans.gov	12,533	100	lanl.gov	47,332	100
energy.gov	12,599	100	america.gov	48,630	100
cancer.gov	12,747	100	usconsulate.gov	48,636	100
cms.gov	13,289	100	fnal.gov	48,694	100
nsf.gov	15,284	100	fbo.gov	49,498	100
fcc.gov	15,361	100	grants.gov	49,646	100
dol.gov	15,422	100	ready.gov	51,095	100
osha.gov	16,301	100	blm.gov	51,455	100

**TABLE 5 CONTINUED**  
**Popular federal websites that enable DNSSEC.**

Domain	Alexa Rank	DNSSEC	Domain	Alexa Rank	DNSSEC
ice.gov	51,655	100	foodsafety.gov	111,015	100
federalregister.gov	51,658	100	healthypeople.gov	114,725	100
peacecorps.gov	51,862	100	pnl.gov	114,992	100
treasurydirect.gov	52,723	100	nationalmap.gov	119,866	100
bnl.gov	55,455	100	climate.gov	121,380	100
cpsc.gov	56,861	100	uspsaig.gov	143,326	100
hrsa.gov	57,430	100	pnnl.gov	144,847	100
energystar.gov	57,877	100	guideline.gov	145,433	100
doleta.gov	58,663	100	investor.gov	147,324	100
applicationmanager.gov	59,290	100	doi.gov	147,360	100
nga.gov	63,094	100	sbir.gov	149,285	100
safercar.gov	63,752	100	eac.gov	149,843	100
usdoj.gov	67,567	100	ftccomplaintassistant.gov	156,045	100
usitc.gov	68,023	100	nij.gov	158,018	100
ncjrs.gov	70,859	100	healthfinder.gov	163,067	100
doc.gov	70,883	100	airnow.gov	190,818	100
stopbullying.gov	73,376	100	occ.gov	205,628	100
benefits.gov	73,794	100	read.gov	208,162	100
usmint.gov	74,379	100	orau.gov	208,869	100
fdic.gov	74,695	100	floodsmart.gov	211,041	100
medicaid.gov	75,534	100	digitalgov.gov	218,488	100
americorps.gov	77,653	100	smokefree.gov	221,470	100
genome.gov	78,789	100	ferc.gov	224,029	100
bea.gov	78,878	100	usaspending.gov	238,694	100
time.gov	79,648	100	nicic.gov	249,762	100
us-cert.gov	83,492	100	fincen.gov	256,631	100
science.gov	83,640	100	ttb.gov	258,912	100
womenshealth.gov	84,173	100	ncua.gov	264,339	100
healthit.gov	84,221	100	makinghomeaffordable.gov	264,744	100
aids.gov	89,351	100	acquisition.gov	265,637	100
commerce.gov	89,674	100	nihseniorhealth.gov	279,046	100
bjs.gov	91,927	100	identitytheft.gov	283,402	100
disasterassistance.gov	92,909	100	globe.gov	287,464	100
nationalservice.gov	95,036	100	ojjdp.gov	301,185	100
nhtsa.gov	97,202	100	boem.gov	302,580	100
trade.gov	102,839	100	dni.gov	303,790	100
ourdocuments.gov	106,434	100	opic.gov	307,246	100
americaslibrary.gov	108,794	100	research.gov	308,738	100
childwelfare.gov	109,369	100	globalchange.gov	309,131	100
nsopw.gov	109,444	100	letsmove.gov	311,051	100

**TABLE 5 CONTINUED**  
**Popular federal websites that enable DNSSEC.**

Domain	Alexa Rank	DNSSEC	Domain	Alexa Rank	DNSSEC
pbgc.gov	313,513	100	sciencebase.gov	491,314	100
science360.gov	313,520	100	mycreditunion.gov	504,679	100
nutrition.gov	318,717	100	indianaffairs.gov	506,763	100
usastaffing.gov	322,168	100	saferproducts.gov	522,288	100
access-board.gov	323,891	100	helpwithmybank.gov	522,564	100
inl.gov	329,230	100	econsumer.gov	524,204	100
cuidadodesalud.gov	330,062	100	recalls.gov	527,429	100
fitness.gov	331,251	100	moneyfactory.gov	529,527	100
digitalpreservation.gov	331,992	100	serve.gov	532,813	100
section508.gov	340,066	100	longtermcare.gov	537,668	100
tva.gov	342,362	100	selectusa.gov	566,863	100
reginfo.gov	353,024	100	nixonlibrary.gov	578,798	100
presidio.gov	359,079	100	buyusa.gov	580,087	100
acl.gov	359,519	100	nctc.gov	587,217	100
irsvideos.gov	359,848	100	whistleblowers.gov	588,166	100
vehiclehistory.gov	368,294	100	ucrdatatool.gov	596,569	100
g5.gov	374,077	100	thecoolspot.gov	597,603	100
nnlm.gov	380,580	100	cfda.gov	602,543	100
fsd.gov	380,738	100	feedthefuture.gov	603,875	100
girlshealth.gov	383,679	100	lsc.gov	613,595	100
fletc.gov	384,320	100	abmc.gov	622,489	100
bia.gov	391,835	100	tsunami.gov	643,945	100
imls.gov	392,182	100	iarpa.gov	651,810	100
harp.gov	408,626	100	bsee.gov	651,973	100
invasivespeciesinfo.gov	410,495	100	bjja.gov	660,133	100
nara.gov	411,692	100	hispanicheritagemonth.gov	663,101	100
socialsecurity.gov^	415,198	100	challenge.gov	666,713	100
usap.gov	415,432	100	goes-r.gov	676,590	100
energycodes.gov	418,622	100	humanrights.gov	703,970	100
flu.gov	418,695	100	smartgrid.gov	711,214	100
ustaxcourt.gov	421,450	100	fedramp.gov	714,374	100
nano.gov	421,613	100	amberalert.gov	721,835	100
surgeongeneral.gov	449,375	100	mymoney.gov	731,417	100
organdonor.gov	457,542	100	healthdata.gov	733,875	100
usphs.gov	468,853	100	fara.gov	753,610	100
ttbonline.gov	483,691	100	bpa.gov	768,299	100
bbg.gov	483,900	100	wrp.gov	781,438	100
distraction.gov	485,160	100	moneyfactorystore.gov	791,853	100
biometrics.gov	486,457	100	insurekidsnow.gov	804,421	100
foia.gov	488,000	100	eda.gov	816,471	100



**TABLE 5 CONTINUED**  
**Popular federal websites that enable DNSSEC.**

Domain	Alexa Rank	DNSSEC	Domain	Alexa Rank	DNSSEC
nlm.gov	817,711	100	house.gov	8,877	0
pepfar.gov	826,446	100	fs.fed.us	34,012	0
bep.gov	827,365	100	llnl.gov	46,702	0
nationalgangcenter.gov	836,060	100	fec.gov	47,432	0
usalearning.gov	861,615	100	pacer.gov	49,477	0
drought.gov	864,227	100	neh.gov	58,243	0
vistacampus.gov	866,345	100	supremecourt.gov	64,832	0
solardecathlon.gov	869,981	100	osti.gov	65,151	0
aoa.gov	870,064	100	cftc.gov	90,085	0
osc.gov	873,833	100	ustr.gov	94,076	0
mspb.gov	879,797	100	itis.gov	144,799	0
fgdc.gov	882,129	100	cbo.gov	196,362	0
ibb.gov	898,258	100	arts.gov	202,776	0
onguardonline.gov	907,289	100	speaker.gov	209,096	0
godirect.gov	914,542	100	visitthecapitol.gov	336,471	0
admongo.gov	919,734	100	csb.gov	414,161	0
iaf.gov	939,679	100	gop.gov	495,177	0
hanford.gov	939,723	100	ojp.gov	534,625	0
financialresearch.gov	949,009	100	opensource.gov	540,272	0
dhhs.gov	952,345	100	arm.gov	554,817	0
poofsafely.gov	963,606	100	rrb.gov	611,359	0
fordlibrarymuseum.gov	966,899	100	uscirf.gov	627,729	0
treasuryhunt.gov	968,527	100	adlnet.gov	724,112	0
hudoig.gov	977,416	100	truman.gov	732,225	0
ems.gov	980,506	100	ipcc-wg2.gov	887,360	0
volunteer.gov	982,254	100	fmc.gov	901,824	0
wdol.gov	989,960	100	cecc.gov	926,405	0
usps.com	376	0	usb.gov	997,303	0
uscourts.gov	7,395	0			

^ socialsecurity.gov redirects to ssa.gov.

\* No rank provided since this website did not exist in November 2016.

**TABLE 6**  
**Popular federal websites ranked by SSL scores.**

Domain	Alexa Rank	SSL	Domain	Alexa Rank	SSL
va.gov	4,405	100	aids.gov	89,351	95
osha.gov	16,301	100	investor.gov	147,324	95
ustr.gov	94,076	100	ftccomplaintassistant.gov	156,045	95
nano.gov	421,613	100	smokefree.gov	221,470	95
nixonlibrary.gov	578,798	100	nihseniorhealth.gov	279,046	95
bj.a.gov	660,133	100	identitytheft.gov	283,402	95
aoa.gov	870,064	100	boem.gov	302,580	95
fordlibrarymuseum.gov	966,899	100	opic.gov	307,246	95
bls.gov	6,895	97	usastaffing.gov	322,168	95
doleta.gov	58,663	97	cuidadodesalud.gov	330,062	95
ferc.gov	224,029	97	tva.gov	342,362	95
nih.gov	239	95	nnlm.gov	380,580	95
medlineplus.gov	2,444	95	socialsecurity.gov^	415,198	95
ssa.gov	2,986	95	usphs.gov	468,853	95
whitehouse.gov (Obama)	3,071	95	ttbonline.gov	483,691	95
whitehouse.gov (Trump)	*	95	foia.gov	488,000	95
dhs.gov	3,540	95	sciencebase.gov	491,314	95
loc.gov	4,858	95	econsumer.gov	524,204	95
usajobs.gov	4,980	95	recalls.gov	527,429	95
sec.gov	5,743	95	whistleblowers.gov	588,166	95
epa.gov	6,465	95	rrb.gov	611,359	95
healthcare.gov	6,485	95	humanrights.gov	703,970	95
ftc.gov	10,679	95	truman.gov	732,225	95
fbi.gov	11,847	95	insurekidsnow.gov	804,421	95
cancer.gov	12,747	95	nationalgangcenter.gov	836,060	95
cms.gov	13,289	95	vistacampus.gov	866,345	95
clinicaltrials.gov	22,362	95	fgdc.gov	882,129	95
gsa.gov	23,383	95	admongo.gov	919,734	95
drugabuse.gov	23,491	95	studentloans.gov	12,533	94
tsp.gov	33,883	95	doi.gov	147,360	94
fs.fed.us	34,012	95	irsvideos.gov	359,848	94
donotcall.gov	43,405	95	financialresearch.gov	949,009	94
llnl.gov	46,702	95	ed.gov	1,138	93
ice.gov	51,655	95	irs.gov	1,182	93
federalregister.gov	51,658	95	weather.gov	1,313	93
peacecorps.gov	51,862	95	uscis.gov	2,257	93
cpsc.gov	56,861	95	usembassy.gov	2,863	93
applicationmanager.gov	59,290	95	usda.gov	3,793	93
stopbullying.gov	73,376	95	usgs.gov	3,930	93
medicaid.gov	75,534	95	nps.gov	4,562	93

**TABLE 6 CONTINUED**  
**Popular federal websites ranked by SSL scores.**

Domain	Alexa Rank	SSL	Domain	Alexa Rank	SSL
usa.gov	5,893	93	itis.gov	144,799	93
nist.gov	6,938	93	pnnl.gov	144,847	93
hhs.gov	9,614	93	sbir.gov	149,285	93
cbp.gov	10,714	93	eac.gov	149,843	93
medicare.gov	10,973	93	healthfinder.gov	163,067	93
sba.gov	11,973	93	cbo.gov	196,362	93
energy.gov	12,599	93	arts.gov	202,776	93
fcc.gov	15,361	93	orau.gov	208,869	93
dol.gov	15,422	93	makinghomeaffordable.gov	264,744	93
senate.gov	16,394	93	dni.gov	303,790	93
fema.gov	17,791	93	globalchange.gov	309,131	93
lbl.gov	21,884	93	science360.gov	313,520	93
treasury.gov	22,235	93	girlshealth.gov	383,679	93
tsa.gov	23,334	93	fletc.gov	384,320	93
congress.gov	26,920	93	harp.gov	408,626	93
federalreserve.gov	27,959	93	usap.gov	415,432	93
greatagain.gov	34,131	93	surgeongeneral.gov	449,375	93
consumerfinance.gov	37,014	93	nctc.gov	587,217	93
mymedicare.gov	43,993	93	thecoolspot.gov	597,603	93
america.gov	48,630	93	abmc.gov	622,489	93
fnal.gov	48,694	93	uscirf.gov	627,729	93
pacer.gov	49,477	93	iarpa.gov	651,810	93
ready.gov	51,095	93	bsee.gov	651,973	93
treasurydirect.gov	52,723	93	challenge.gov	666,713	93
neh.gov	58,243	93	mymoney.gov	731,417	93
supremecourt.gov	64,832	93	healthdata.gov	733,875	93
benefits.gov	73,794	93	fara.gov	753,610	93
usmint.gov	74,379	93	nlm.gov	817,711	93
genome.gov	78,789	93	drought.gov	864,227	93
bea.gov	78,878	93	solardecathlon.gov	869,981	93
us-cert.gov	83,492	93	osc.gov	873,833	93
womenshealth.gov	84,173	93	dhhs.gov	952,345	93
cftc.gov	90,085	93	treasuryhunt.gov	968,527	93
disasterassistance.gov	92,909	93	hudoig.gov	977,416	93
nationalservice.gov	95,036	93	wdol.gov	989,960	93
childwelfare.gov	109,369	93	usb.gov	997,303	93
foodsafety.gov	111,015	93	uspto.gov	4,543	92
pnl.gov	114,992	93	house.gov	8,877	92
nationalmap.gov	119,866	93	data.gov	47,161	92
climate.gov	121,380	93	ojjdp.gov	301,185	92

**TABLE 6 CONTINUED**  
**Popular federal websites ranked by SSL scores.**

Domain	Alexa Rank	SSL	Domain	Alexa Rank	SSL
vehiclehistory.gov	368,294	92	aviationweather.gov	27,867	89
godirect.gov	914,542	92	ahrq.gov	38,508	89
usps.com	376	91	fbo.gov	49,498	89
archives.gov	11,620	91	nga.gov	63,094	89
usaid.gov	22,576	91	usdoj.gov	67,567	89
recreation.gov	31,505	91	healthit.gov	84,221	89
nrel.gov	37,980	91	fitness.gov	331,251	89
fafsa.gov	41,284	91	selectusa.gov	566,863	89
eeoc.gov	45,154	91	cfda.gov	602,543	89
blm.gov	51,455	91	feedthefuture.gov	603,875	89
hrsa.gov	57,430	91	volunteer.gov	982,254	89
energystar.gov	57,877	91	nsf.gov	15,284	85
ncjrs.gov	70,859	91	gpo.gov	28,599	85
doc.gov	70,883	91	pay.gov	32,046	85
fdic.gov	74,695	91	lanl.gov	47,332	85
americorps.gov	77,653	91	safercar.gov	63,752	85
commerce.gov	89,674	91	nhtsa.gov	97,202	85
nsopw.gov	109,444	91	ourdocuments.gov	106,434	85
healthypeople.gov	114,725	91	uspsoid.gov	143,326	85
airnow.gov	190,818	91	guideline.gov	145,433	85
occ.gov	205,628	91	ttb.gov	258,912	85
digitalgov.gov	218,488	91	acquisition.gov	265,637	85
fincen.gov	256,631	91	globe.gov	287,464	85
access-board.gov	323,891	91	research.gov	308,738	85
visitthecapitol.gov	336,471	91	nutrition.gov	318,717	85
section508.gov	340,066	91	acl.gov	359,519	85
reginfo.gov	353,024	91	g5.gov	374,077	85
bia.gov	391,835	91	invasivespeciesinfo.gov	410,495	85
organdonor.gov	457,542	91	nara.gov	411,692	85
indianaffairs.gov	506,763	91	energycodes.gov	418,622	85
helpwithmybank.gov	522,564	91	ustaxcourt.gov	421,450	85
serve.gov	532,813	91	distraction.gov	485,160	85
opensource.gov	540,272	91	adlnet.gov	724,112	85
arm.gov	554,817	91	ems.gov	980,506	85
fedramp.gov	714,374	91	usaspending.gov	238,694	83
bpa.gov	768,299	91	bbg.gov	483,900	83
wrp.gov	781,438	91	osti.gov	65,151	79
eda.gov	816,471	91	bjs.gov	91,927	79
usalearning.gov	861,615	91	nij.gov	158,018	79
eia.gov	18,041	90	ojp.gov	534,625	79

**TABLE 6 CONTINUED**

**Popular federal websites ranked by SSL scores.**

Domain	Alexa Rank	SSL	Domain	Alexa Rank	SSL
ucrdatatool.gov	596,569	79	speaker.gov	209,096	0
amberalert.gov	721,835	79	floodsmart.gov	211,041	0
bnl.gov	55,455	78	nicic.gov	249,762	0
pbgc.gov	313,513	78	letsmove.gov	311,051	0
inl.gov	329,230	78	digitalpreservation.gov	331,992	0
moneyfactory.gov	529,527	76	presidio.gov	359,079	0
onguardonline.gov	907,289	76	csb.gov	414,161	0
science.gov	83,640	75	flu.gov	418,695	0
hud.gov	21,475	74	biometrics.gov	486,457	0
fvap.gov	31,107	56	gop.gov	495,177	0
usitc.gov	68,023	56	saferproducts.gov	522,288	0
ncua.gov	264,339	52	longtermcare.gov	537,668	0
imls.gov	392,182	52	buyusa.gov	580,087	0
mycreditunion.gov	504,679	52	lsc.gov	613,595	0
mspb.gov	879,797	52	tsunami.gov	643,945	0
fsd.gov	380,738	48	hispanicheritagemonth.gov	663,101	0
samhsa.gov	46,375	44	goes-r.gov	676,590	0
noaa.gov	675	0	smartgrid.gov	711,214	0
uscourts.gov	7,395	0	moneyfactorystore.gov	791,853	0
defense.gov	29,461	0	pepfar.gov	826,446	0
sandia.gov	40,709	0	bep.gov	827,365	0
choosemyplate.gov	44,552	0	ipcc-wg2.gov	887,360	0
fec.gov	47,432	0	ibb.gov	898,258	0
usconsulate.gov	48,636	0	fmc.gov	901,824	0
grants.gov	49,646	0	cecc.gov	926,405	0
time.gov	79,648	0	iaf.gov	939,679	0
trade.gov	102,839	0	hanford.gov	939,723	0
americaslibrary.gov	108,794	0	poolsafely.gov	963,606	0
read.gov	208,162	0			

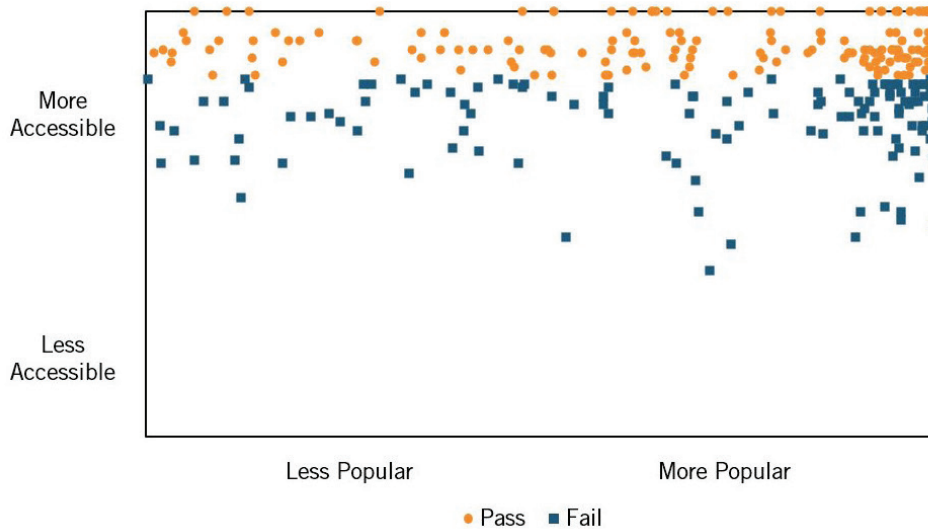
^ socialsecurity.gov redirects to ssa.gov.

\* No rank provided since this website did not exist in November 2016.

## ACCESSIBILITY

Accessible websites are designed to eliminate barriers that might prevent people with disabilities from using them. Web developers often assume users can see content or that they use a keyboard and a mouse to navigate the webpage, and building a website that relies on only those tools can create issues for users with disabilities. Building accessible websites entails adhering to accessible-design principles, such as using high-contrast text, providing alternative text for all images, and using labels for buttons so that people using a screen reader can navigate the site. To measure accessibility, this report uses AChecker’s “Web Accessibility Checker,” an online tool that analyzes URLs to identify accessibility issues based on the Web Content Accessibility Guidelines (WCAG) 2.0 AA Guidelines.<sup>78</sup> Using these guidelines, the “Web Accessibility Checker” evaluates online content for three types of problems: known problems (i.e., issues that are identified with certainty as barriers to accessibility), likely problems (i.e., identified issues that require a human to verify), and potential problems (i.e., issues that the checker cannot specifically identify, but may indicate problems exist).<sup>79</sup> To avoid unfairly penalizing sites, this report only scores sites based on known problems the tool identifies. When the tool detected a known problem with a site, we reduced its accessibility score to produce a final score between 0 and 100. We determined that a reasonable benchmark for passing the accessibility test was a score of 85. Sites with this score may have up to 10 known problems—problems that should be fixed—but generally these sites are in close compliance with the WCAG 2.0 AA guidelines. We were unable to successfully run the tool on four websites, so we omitted these sites from the accessibility test.<sup>80</sup> This report tested the top 20 domains from “Alexa Traffic Rankings” for the accessibility test to see how federal websites compared to private-sector sites.<sup>81</sup> Interestingly, while most U.S. websites in the top 20 passed the accessibility test with a score over 85, several non-U.S. websites—such as QQ (qq.com) and 360 (360.cn)—failed the test. This is likely because non-U.S. sites are less likely to adhere to U.S. laws that require accessibility.<sup>82</sup> This report finds that over half of the federal websites surveyed scored high in accessibility. Roughly 58 percent of websites reviewed scored within the 85 to 100 range. This trend was for both the federal websites in the global top 100,000 and the top 1 million. Figure 6 shows the overall distribution of accessibility data. The blue squares in figure 6 indicate which websites failed to get the minimum passing score of 85.

**Figure 6: Accessibility of federal websites by popularity.**



Unfortunately, several of the federal websites in the global top 100,000, including the International Trade Administration ([trade.gov](http://trade.gov)) and the Internal Revenue Service ([irs.gov](http://irs.gov)), scored very poorly on WCAG 2.0 AA guidelines for accessibility, possibly violating the Rehabilitation Act of 1973. In addition, some federal websites that are supposed to cater to users who are more likely to have a disability, such as [Medicare.gov](http://Medicare.gov), also failed this test. While the WCAG 2.0 guidelines have dozens of criteria that federal websites are required to meet, federal websites failed most often in several specific areas. First, some federal websites failed to add text labels to images or buttons, which are necessary for individuals using screen readers. These federal websites did not add a descriptive label to all forms on a website to instruct users when to provide input. Similarly, federal websites failed to label inputs and controls in ways that describe the purpose of those inputs. For example, a website may have a search function, but unless the field is labeled as “search” and describes the meaning of “search,” the search function itself may be difficult for some users to find and use.

Second, several federal websites were not easily navigable for users with an impairment or disability because information or interactive elements on a webpage were not in a sequential order.<sup>83</sup> Websites should be set up so that a user can focus on content in an order that preserves meaning and operability. For example, users can more easily navigate webpages with sequentially ordered headings. Furthermore, all headings, labels, and links should describe their topic or purpose to improve navigation.

Third, some federal websites do not make it easy for users to discern content. For example, websites should have a foreground that users can easily distinguish from the background. To fix this problem, federal agencies can use a stronger contrast between the text color and the background color on their websites.

Finally, some federal websites failed to make text sufficiently readable and understandable. One common problem on federal websites was that they did not properly identify the language being used on a page. Specifying the language of text on a webpage programmatically is necessary so that assistive technology can properly present the content to users. For example, screen readers may change the pronunciation rules these use to translate text to speech for different languages. There are many online resources for federal agencies to follow to meet these recommendations for WCAG 2.0 compliance.<sup>84</sup>

**TABLE 7**  
**Popular federal websites ranked by accessibility.**

Domain	Alexa Rank	Accessibility	Domain	Alexa Rank	Accessibility
weather.gov	1,313	100	nih.gov	239	95
usembassy.gov	2,863	100	epa.gov	6,465	95
whitehouse.gov (Obama)	3,071	100	hhs.gov	9,614	95
whitehouse.gov (Trump)	*	100	clinicaltrials.gov	22,362	95
dhs.gov	3,540	100	ready.gov	51,095	95
uspto.gov	4,543	100	applicationmanager.gov	59,290	95
usa.gov	5,893	100	guideline.gov	145,433	95
cbp.gov	10,714	100	doi.gov	147,360	95
medicare.gov	10,973	100	floodsmart.gov	211,041	95
fbi.gov	11,847	100	access-board.gov	323,891	95
cancer.gov	12,747	100	visithecapitol.gov	336,471	95
senate.gov	16,394	100	imls.gov	392,182	95
fema.gov	17,791	100	abmc.gov	622,489	95
hud.gov	21,475	100	iarpa.gov	651,810	95
tsa.gov	23,334	100	wrp.gov	781,438	95
pay.gov	32,046	100	nationalgangcenter.gov	836,060	95
america.gov	48,630	100	dhhs.gov	952,345	95
usconsulate.gov	48,636	100	ed.gov	1,138	93
ice.gov	51,655	100	archives.gov	11,620	93
usdoj.gov	67,567	100	donotcall.gov	43,405	93
ncjrs.gov	70,859	100	pnl.gov	114,992	93
us-cert.gov	83,492	100	pnnl.gov	144,847	93
investor.gov	147,324	100	orau.gov	208,869	93
cbo.gov	196,362	100	boem.gov	302,580	93
read.gov	208,162	100	usastaffing.gov	322,168	93
ncua.gov	264,339	100	nnlm.gov	380,580	93
identitytheft.gov	283,402	100	harp.gov	408,626	93
section508.gov	340,066	100	opensource.gov	540,272	93
reginfo.gov	353,024	100	truman.gov	732,225	93
acl.gov	359,519	100	healthdata.gov	733,875	93
irsvideos.gov	359,848	100	insurekidsnow.gov	804,421	93
fletc.gov	384,320	100	nlm.gov	817,711	93
nara.gov	411,692	100	drought.gov	864,227	93
ttbonline.gov	483,691	100	onguardonline.gov	907,289	93
bbg.gov	483,900	100	financialresearch.gov	949,009	93
econsumer.gov	524,204	100	usps.com	376	91
humanrights.gov	703,970	100	ftc.gov	10,679	91
aoa.gov	870,064	100	treasury.gov	22,235	91
ibb.gov	898,258	100	fvap.gov	31,107	91
iaf.gov	939,679	100	grants.gov	49,646	91



**TABLE 7**  
**Popular federal websites ranked by accessibility.**

Domain	Alexa Rank	Accessibility	Domain	Alexa Rank	Accessibility
peacecorps.gov	51,862	91	consumerfinance.gov	37,014	89
cpsc.gov	56,861	91	ahrq.gov	38,508	89
hrsa.gov	57,430	91	sandia.gov	40,709	89
usitc.gov	68,023	91	fbo.gov	49,498	89
healthit.gov	84,221	91	doc.gov	70,883	89
aids.gov	89,351	91	commerce.gov	89,674	89
ftccomplaintassistant.gov	156,045	91	healthypeople.gov	114,725	89
airnow.gov	190,818	91	digitalgov.gov	218,488	89
globalchange.gov	309,131	91	letsmove.gov	311,051	89
fitness.gov	331,251	91	digitalpreservation.gov	331,992	89
invasivespeciesinfo.gov	410,495	91	bsee.gov	651,973	89
sciencebase.gov	491,314	91	vistacampus.gov	866,345	89
gop.gov	495,177	91	house.gov	8,877	88
recalls.gov	527,429	91	usaid.gov	22,576	88
selectusa.gov	566,863	91	federalreserve.gov	27,959	88
nctc.gov	587,217	91	doleta.gov	58,663	88
feedthefuture.gov	603,875	91	medicaid.gov	75,534	88
uscirf.gov	627,729	91	disasterassistance.gov	92,909	88
hispanicheritagemonth.gov	663,101	91	arts.gov	202,776	88
admongo.gov	919,734	91	energycodes.gov	418,622	88
hudoig.gov	977,416	91	longtermcare.gov	537,668	88
medlineplus.gov	2,444	90	smartgrid.gov	711,214	88
cms.gov	13,289	90	pepfar.gov	826,446	88
fcc.gov	15,361	90	treasuryhunt.gov	968,527	88
fec.gov	47,432	90	nist.gov	6,938	87
usmint.gov	74,379	90	tsp.gov	33,883	87
genome.gov	78,789	90	science.gov	83,640	87
ourdocuments.gov	106,434	90	pbgc.gov	313,513	87
childwelfare.gov	109,369	90	vehiclehistory.gov	368,294	87
foodsafety.gov	111,015	90	serve.gov	532,813	87
healthfinder.gov	163,067	90	studentloans.gov	12,533	86
smokefree.gov	221,470	90	safercar.gov	63,752	86
g5.gov	374,077	90	benefits.gov	73,794	86
fsd.gov	380,738	90	ferc.gov	224,029	86
girlshealth.gov	383,679	90	bia.gov	391,835	86
surgeongeneral.gov	449,375	90	cfda.gov	602,543	86
foia.gov	488,000	90	ssa.gov	2,986	85
fordlibrarymuseum.gov	966,899	90	greatagain.gov	34,131	85
wdol.gov	989,960	90	fafsa.gov	41,284	85
nps.gov	4,562	89	fnal.gov	48,694	85

**TABLE 7 CONTINUED**

**Popular federal websites ranked by accessibility.**

<b>Domain</b>	<b>Alexa Rank</b>	<b>Accessibility</b>	<b>Domain</b>	<b>Alexa Rank</b>	<b>Accessibility</b>
stopbullying.gov	73,376	85	bea.gov	78,878	81
fincen.gov	256,631	85	americaslibrary.gov	108,794	81
nutrition.gov	318,717	85	sbir.gov	149,285	81
socialsecurity.gov <sup>^</sup>	415,198	85	usaspending.gov	238,694	81
flu.gov	418,695	85	lsc.gov	613,595	81
distraction.gov	485,160	85	bjagov.gov	660,133	81
indianaffairs.gov	506,763	85	sec.gov	5,743	80
usalearning.gov	861,615	85	dol.gov	15,422	80
godirect.gov	914,542	85	energystar.gov	57,877	80
healthcare.gov	6,485	84	opic.gov	307,246	80
climate.gov	121,380	84	research.gov	308,738	80
speaker.gov	209,096	84	nano.gov	421,613	80
arm.gov	554,817	84	biometrics.gov	486,457	80
goes-r.gov	676,590	84	drugabuse.gov	23,491	79
osc.gov	873,833	84	defense.gov	29,461	79
usbg.gov	997,303	84	nrel.gov	37,980	79
va.gov	4,405	83	womenshealth.gov	84,173	79
sba.gov	11,973	83	nhtsa.gov	97,202	79
nsf.gov	15,284	83	itis.gov	144,799	79
gsa.gov	23,383	83	makinghomeaffordable.gov	264,744	79
gpo.gov	28,599	83	amberalert.gov	721,835	79
pacer.gov	49,477	83	fmc.gov	901,824	79
treasurydirect.gov	52,723	83	cecc.gov	926,405	79
nga.gov	63,094	83	fs.fed.us	34,012	78
supremecourt.gov	64,832	83	eac.gov	149,843	78
time.gov	79,648	83	ustaxcourt.gov	421,450	78
cuidadodesalud.gov	330,062	83	organdonor.gov	457,542	78
saferproducts.gov	522,288	83	ucrdatatool.gov	596,569	78
ojp.gov	534,625	83	usajobs.gov	4,980	77
tsunami.gov	643,945	83	samhsa.gov	46,375	77
fedramp.gov	714,374	83	cftc.gov	90,085	77
adlnet.gov	724,112	83	noaa.gov	675	76
usap.gov	415,432	82	usgs.gov	3,930	76
helpwithmybank.gov	522,564	82	llnl.gov	46,702	76
buyusa.gov	580,087	82	ustr.gov	94,076	76
solardecathlon.gov	869,981	82	occ.gov	205,628	76
bls.gov	6,895	81	science360.gov	313,520	76
congress.gov	26,920	81	csb.gov	414,161	76
eeoc.gov	45,154	81	whistleblowers.gov	588,166	76
neh.gov	58,243	81	bpa.gov	768,299	76

**TABLE 7 CONTINUED**  
**Popular federal websites ranked by accessibility.**

Domain	Alexa Rank	Accessibility	Domain	Alexa Rank	Accessibility
americorps.gov	77,653	75	nixonlibrary.gov	578,798	67
nsopw.gov	109,444	75	usda.gov	3,793	66
nationalmap.gov	119,866	75	bnl.gov	55,455	66
moneyfactorystore.gov	791,853	75	tva.gov	342,362	66
eda.gov	816,471	75	ipcc-wg2.gov	887,360	65
loc.gov	4,858	74	hanford.gov	939,723	65
fara.gov	753,610	74	inl.gov	329,230	64
uscis.gov	2,257	73	moneyfactory.gov	529,527	64
energy.gov	12,599	73	bep.gov	827,365	64
osha.gov	16,301	73	ems.gov	980,506	64
recreation.gov	31,505	73	challenge.gov	666,713	62
nicic.gov	249,762	73	lbl.gov	21,884	61
volunteer.gov	982,254	73	dni.gov	303,790	60
eia.gov	18,041	72	mspb.gov	879,797	56
fdic.gov	74,695	72	osti.gov	65,151	54
bjs.gov	91,927	72	choosemyplate.gov	44,552	53
nij.gov	158,018	72	nationalservice.gov	95,036	53
thecoolspot.gov	597,603	72	ojjdp.gov	301,185	53
mymoney.gov	731,417	72	mymedicare.gov	43,993	51
poolsafely.gov	963,606	72	irs.gov	1,182	49
uspsaig.gov	143,326	71	trade.gov	102,839	47
nihseniorhealth.gov	279,046	71	usphs.gov	468,853	47
uscourts.gov	7,395	70	ttb.gov	258,912	45
federalregister.gov	51,658	70	globe.gov	287,464	39
acquisition.gov	265,637	70	lanl.gov	47,332	**
fgdc.gov	882,129	70	blm.gov	51,455	**
data.gov	47,161	68	presidio.gov	359,079	**
rrb.gov	611,359	68	mycreditunion.gov	504,679	**
aviationweather.gov	27,867	67			

^ socialsecurity.gov redirects to ssa.gov.  
\* No rank provided since this website did not exist in November 2016.  
\*\* Accessibility testing tool could not run successfully on this website.

## RECOMMENDATIONS

As this report has shown, most federal websites failed to perform well in at least one of this report's benchmarks. There are a number of steps the federal government should take to ensure it can continue to improve and optimize its websites. These include:

- Launch a website modernization “sprint” to fix known problems;
- Require federal websites to meet basic page load speed guidelines;
- Create a dashboard to track website compliance against key website metrics;
- Launch a website consolidation initiative;
- Encourage nonexecutive agencies and branches of government to adopt federal government website standards and best practices; and
- Create a capital fund for IT modernization to help agencies pay for needed IT upgrades.

### The White House should launch a series of website modernization “sprints” to fix known problems with the most popular government websites.

The White House should immediately launch a website modernization “sprint” to address known problems, particularly those impacting security and accessibility. After a major data breach in 2015 to the U.S. Office of Personnel Management (OPM) that compromised the personnel records of more than 21 million people from both inside and outside the government, the Obama administration announced a “30-day cybersecurity sprint,” an initiative for federal agencies to take specific steps to secure sensitive information within 30 days.<sup>85</sup> The White House should launch another series of sprints to address known problems on its most popular websites, especially those where federal agencies fall short on requirements to meet security and accessibility standards. Federal agencies should also develop and implement a plan to address any issues identified during the sprint that are not resolved by its conclusion.

### The White House should mandate federal websites meet page load speed requirements.

As this report has shown, many federal agencies do not optimize their websites for speed. Past administrations have set standards and best practices on consumer convenience, accessibility, and security for federal websites. To address this issue, the White House should direct the federal chief information officer (CIO) to work with the Office of Management and Budget (OMB) to develop federal guidelines for page load speed across various devices. This policy should incorporate private-sector best practices.

### The White House should require all agencies to monitor and share detailed website analytics.

The federal government should better track metrics about its websites to promote accountability. First, it should establish a deadline for all agencies to participate in the federal government's website analytics program. In 2016, OMB updated its policies on federal agency public websites. This policy requires agencies to participate in the Digital Analytics Program (DAP), a website analytics program hosted by the General Services Administration (GSA).<sup>86</sup> However, as of February 2017, only 52 percent of federal government domains are participating in DAP.<sup>87</sup> The program should include all federal government websites, including those on subdomains (e.g., travel.state.gov).

Second, the federal government should expand the DAP to include additional metrics, including DNSSEC, page load speed, accessibility, and mobile friendliness. The DAP currently publishes web-traffic data on federal websites through Analytics.USA.gov (analytics.usa.gov).<sup>88</sup> 18F—a digital services agency within GSA—has also created Pulse (pulse.cio.gov) to track which domains are using HTTPS and participating in DAP.<sup>89</sup> (18F states that Pulse will also measure accessibility, but this information is not currently available.)<sup>90</sup>

Many federal government agencies also measure website user satisfaction via online surveys. ForeSee, a private-sector company, measures consumer satisfaction for more than 100 federal government websites each quarter.<sup>91</sup> While the company published a quarterly E-Government Satisfaction Index, government agencies should make summary data from these surveys publicly available, and integrate any user-satisfaction data into the DAP. Third, the federal government should consolidate its website data into a single public dashboard. This public dashboard should include data on all key website metrics, including performance, mobile friendliness, security, accessibility, and user satisfaction. Currently the federal government has published data about its websites through multiple websites and reports, such as those mentioned above. By creating a single dashboard for benchmarking federal websites, the administration can ensure federal agencies are held accountable for the state of their websites.

Finally, the White House should require that agencies with websites that fail to meet minimum requirements develop a remediation plan. The White House and Congress should hold senior agency officials responsible for successfully executing these remediation plans.

By developing a single set of metrics for agency websites, ensuring that all agencies participate, and holding agencies accountable for how their websites score, the White House can create a better and more consistent experience across federal government websites.

### The Office of Management and Budget should launch a website consolidation initiative.

In 2011, the Obama White House and OMB started an initiative to cut down on the number of federal top-level domains and websites.<sup>92</sup> At the time, there were 2,000 domains and 24,000 federal websites.<sup>93</sup> To consolidate these websites, the administration put together a task force of 17 CIOs to help reduce the number of government websites. This process, which was part of a larger “Campaign to Cut Waste,” reduced the number of federal websites and domains by a third by 2013, less than its goal of reducing the number by half within one year.<sup>94</sup> The Trump administration should launch a new website consolidation initiative with OMB and the Federal CIO Council that eliminates duplicative or unnecessary websites. Furthermore, each newly created federal website should have a planned life cycle, which should include a specific date when that website should be taken down (and archived) or renewed and refreshed.

### Congress should encourage nonexecutive agencies and other branches of government to adopt federal government website standards and best practices.

Many of the worst-performing websites are not part of the executive branch, but belong to independent agencies, congressional websites, or part of the federal judiciary, and thus are not bound by the same rules. However, these websites are important resources for individuals and businesses, and they should be held to the same standard as other federal government websites. The various branches of the federal government should consider establishing a working group to share best practices, guidelines, and source code to create better and more secure websites for users. In addition, the House and Senate Administration Committees should require individual members and committee websites to follow federal-government standards for websites. This policy should include partnering and reporting metrics on each legislative branch website to the federal data analytics program. If congressional offices or independent agencies continue to produce low-performing websites, Congress should make their IT funding contingent on adhering to executive branch website guidelines. Furthermore, the Administrative Office of the U.S. Courts should require all domains managed by the judicial branch to follow federal-government standards for websites.

### The White House and Congress should establish a capital fund for federal agencies to upgrade their IT.

Federal agencies have limited funding for modernizing their information technology (IT). Additional funding and budget flexibility would allow CIOs to adopt more cloud-based website hosting, which will allow for more scalability and better performance at a lower cost. These changes would also allow CIOs to reallocate resources from maintaining websites to improving them. The 114th Congress took initial steps to address this issue by introducing and marking up the Modernizing Outdated and Vulnerable Equipment and Information Technology (MOVE IT) Act of 2016.<sup>95</sup> The bill, introduced by Rep. Will Hurd (R-TX), would have authorized an IT Innovation Fund that would establish working capital funds for every federal agency to upgrade and modernize its information-technology systems.<sup>96</sup> Unfortunately, the MOVE IT Act failed to become law.

The White House should work with Congress on similar legislation to produce an IT innovation fund, which would allow agencies to repurpose funds that would have been spent on operations and invest them in more efficient technology, keeping some of the savings. An IT Innovation Fund would help encourage federal agencies to seek out cost savings and increased productivity while also modernizing outdated IT systems, including websites, while holding federal chief information officers accountable for spending.

## CONCLUSION

Federal websites still have a long way to go to comply with the requirements that past administrations have set for them and to match the performance of the best-in-class private-sector websites. Indeed, the federal government often moves slowly when it comes to improving and modernizing its IT. It is incumbent upon the new administration, supported by Congress, to build upon previous efforts to modernize federal websites, pushing them to be more convenient, accessible, and secure. These efforts will only come to fruition by identifying problems, creating a plan to address them, and promoting a transparent system for website metrics that pushes the government to constantly improve itself. Only by taking stock of the gaps in federal-website compliance can the White House push federal agencies to make their websites great again.

## APPENDIX

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
healthdata.gov	90.5	733,875	92	68	97	100	93	93
healthfinder.gov	89.6	163,067	84	74	99	100	93	90
consumerfinance.gov	89.5	37,014	87	73	99	100	93	89
whitehouse.gov (Trump)	88.8	*	76	60	97	100	95	100
usembassy.gov	88.5	2,863	75	56	100	100	93	100
serve.gov	88.0	532,813	88	73	97	100	91	87
fema.gov	87.5	17,791	77	57	95	100	93	100
donotcall.gov	87.4	43,405	75	64	100	100	95	93
investor.gov	87.3	147,324	73	53	99	100	95	100
guideline.gov	87.1	145,433	79	62	98	100	85	95
fnal.gov	86.7	48,694	87	70	98	100	93	85
fbi.gov	86.2	11,847	70	52	98	100	95	100
nationalgangcenter.gov	85.8	836,060	75	56	98	100	95	95
nih.gov	85.6	239	76	53	99	100	95	95
hudoig.gov	85.6	977,416	82	55	100	100	93	91
usa.gov	85.5	5,893	63	53	100	100	93	100
harp.gov	85.4	408,626	77	64	93	100	93	93
usastaffing.gov	85.3	322,168	73	61	97	100	95	93
globalchange.gov	85.2	309,131	77	66	94	100	93	91
nnlm.gov	85.2	380,580	82	68	86	100	95	93
greatagain.gov	84.7	34,131	83	69	95	100	93	85
applicationmanager.gov	84.6	59,290	72	52	99	100	95	95
uspto.gov	84.3	4,543	66	47	99	100	92	100
blm.gov	84.2	51,455	78	54	98	100	91	**
truman.gov	84.1	732,225	89	77	99	0	95	93
sandia.gov	84.0	40,709	90	80	99	100	0	89
medlineplus.gov	83.8	2,444	75	60	96	100	95	90
nist.gov	83.7	6,938	84	64	92	100	93	87
financialresearch.gov	83.7	949,009	64	59	99	100	94	93
ttbonline.gov	83.6	483,691	87	70	67	100	95	100
humanrights.gov	83.4	703,970	58	57	93	100	95	100
nara.gov	83.2	411,692	70	51	92	100	85	100
bbg.gov	83.2	483,900	63	48	99	100	83	100
cbo.gov	83.1	196,362	80	69	98	0	93	100
uslearning.gov	83.1	861,615	85	68	90	100	91	85
mycreditunion.gov	82.8	504,679	77	70	94	100	52	**
pay.gov	82.7	32,046	62	46	99	100	85	100
america.gov	82.6	48,630	62	44	98	100	93	100
ftc.gov	82.4	10,679	64	57	99	100	95	91
genome.gov	82.4	78,789	67	57	99	100	93	90

## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
childwelfare.gov	82.4	109,369	77	64	88	100	93	90
tsa.gov	82.3	23,334	64	48	93	100	93	100
onguardonline.gov	82.2	907,289	71	53	99	100	76	93
medicare.gov	82.1	10,973	52	53	96	100	93	100
ncjrs.gov	82.1	70,859	60	51	93	100	91	100
hhs.gov	82.0	9,614	63	49	99	100	93	95
girlshealth.gov	81.6	383,679	75	62	88	100	93	90
dhhs.gov	81.6	952,345	63	47	99	100	93	95
nga.gov	81.5	63,094	75	60	100	100	89	83
econsumer.gov	81.5	524,204	60	43	96	100	95	100
hrsa.gov	81.1	57,430	67	53	97	100	91	91
doi.gov	81.0	147,360	55	51	99	100	94	95
ahrq.gov	80.9	38,508	71	56	95	100	89	89
usconsulate.gov	80.9	48,636	75	56	100	100	0	100
whitehouse.gov (Obama)	80.8	3,071	52	44	98	100	95	100
nano.gov	80.7	421,613	69	65	99	100	100	80
archives.gov	80.5	11,620	70	51	92	100	91	93
sba.gov	80.5	11,973	65	64	99	100	93	83
dhs.gov	80.4	3,540	54	39	99	100	95	100
congress.gov	80.3	26,920	79	68	90	100	93	81
medicaid.gov	80.3	75,534	70	50	98	100	95	88
fcc.gov	80.1	15,361	66	48	99	100	93	90
bls.gov	80.0	6,895	48	77	100	100	97	81
usaid.gov	79.8	22,576	68	55	95	100	91	88
section508.gov	79.8	340,066	73	71	64	100	91	100
godirect.gov	79.8	914,542	67	57	98	100	92	85
pbgc.gov	79.7	313,513	45	75	99	100	78	87
vistacampus.gov	79.7	866,345	63	51	98	100	95	89
drugabuse.gov	79.6	23,491	79	57	98	100	95	79
iaf.gov	79.6	939,679	72	56	98	100	0	100
disasterassistance.gov	79.5	92,909	65	50	99	100	93	88
usdoj.gov	79.2	67,567	52	43	95	100	89	100
fordlibrarymuseum.gov	79.2	966,899	60	52	95	100	100	90
usajobs.gov	79.1	4,980	79	57	99	100	95	77
wdol.gov	79.0	989,960	84	77	64	100	93	90
senate.gov	78.9	16,394	78	66	61	100	93	100
ssa.gov	78.6	2,986	70	51	96	100	95	85
studentloans.gov	78.6	12,533	66	50	98	100	94	86
cms.gov	78.6	13,289	62	44	99	100	95	90
peacecorps.gov	78.6	51,862	62	53	91	100	95	91

## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
socialsecurity.gov <sup>^</sup>	78.6	415,198	70	51	96	100	95	85
digitalgov.gov	78.5	218,488	63	46	99	100	91	89
identitytheft.gov	78.5	283,402	46	36	100	100	95	100
ftccomplaintassistant.gov	78.4	156,045	57	48	97	100	95	91
ibb.gov	78.4	898,258	66	54	99	100	0	100
wrp.gov	78.3	781,438	81	66	65	100	91	95
nps.gov	78.2	4,562	62	45	99	100	93	89
arts.gov	78.1	202,776	89	74	90	0	93	88
ready.gov	78.0	51,095	56	43	95	100	93	95
cancer.gov	77.7	12,747	47	33	99	100	95	100
doleta.gov	77.7	58,663	60	53	93	100	97	88
science.gov	77.7	83,640	66	55	95	100	75	87
cbp.gov	77.6	10,714	49	40	93	100	93	100
irsvideos.gov	77.6	359,848	73	63	62	100	94	100
bsee.gov	77.4	651,973	48	53	99	100	93	89
fletc.gov	77.3	384,320	67	56	70	100	93	100
ed.gov	77.0	1,138	59	51	87	100	93	93
epa.gov	77.0	6,465	57	41	92	100	95	95
clinicaltrials.gov	77.0	22,362	81	66	60	100	95	95
insurekidsnow.gov	76.8	804,421	62	47	87	100	95	93
admongo.gov	76.8	919,734	82	65	65	100	95	91
helpwithmybank.gov	76.5	522,564	70	55	92	100	91	82
recalls.gov	76.4	527,429	77	66	66	100	95	91
bj.gov	76.3	660,133	66	56	92	100	100	81
orau.gov	76.2	208,869	76	64	65	100	93	93
nrel.gov	76.1	37,980	53	69	95	100	91	79
uscirf.gov	76.1	627,729	58	73	99	0	93	91
us-cert.gov	76.0	83,492	70	52	67	100	93	100
doc.gov	75.9	70,883	60	44	94	100	91	89
commerce.gov	75.9	89,674	60	44	94	100	91	89
solardecathlon.gov	75.9	869,981	56	59	95	100	93	82
usbg.gov	75.7	997,303	89	63	96	0	93	84
energystar.gov	75.6	57,877	64	53	97	100	91	80
floodsmart.gov	75.6	211,041	68	50	99	100	0	95
whistleblowers.gov	75.5	588,166	74	53	95	100	95	76
abmc.gov	75.5	622,489	51	43	90	100	93	95
ncua.gov	75.3	264,339	50	37	98	100	52	100
lanl.gov	75.2	47,332	56	48	96	100	85	**
usitc.gov	75.2	68,023	85	72	63	100	56	91
imls.gov	75.2	392,182	56	48	93	100	52	95



## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
selectusa.gov	75.2	566,863	48	41	99	100	89	91
opensource.gov	75.1	540,272	65	58	100	0	91	93
tsp.gov	74.9	33,883	33	58	99	100	95	87
aids.gov	74.9	89,351	44	41	99	100	95	91
aoa.gov	74.9	870,064	59	62	61	100	100	100
nsf.gov	74.7	15,284	47	58	98	100	85	83
fdic.gov	74.7	74,695	72	59	96	100	91	72
cpsc.gov	74.6	56,861	49	37	98	100	95	91
lsc.gov	74.6	613,595	79	68	96	100	0	81
iarpa.gov	74.6	651,810	40	36	99	100	93	95
benefits.gov	74.5	73,794	52	47	96	100	93	86
research.gov	74.5	308,738	88	75	65	100	85	80
healthcare.gov	74.4	6,485	59	40	99	100	95	84
science360.gov	74.4	313,520	70	54	94	100	93	76
drought.gov	74.2	864,227	40	48	92	100	93	93
fedramp.gov	74.1	714,374	60	41	99	100	91	83
fbo.gov	73.9	49,498	81	66	60	100	89	89
reginfo.gov	73.9	353,024	54***	40	79	100	91	100
osc.gov	73.9	873,833	80	67	66	100	93	84
womenshealth.gov	73.7	84,173	55	52	98	100	93	79
ice.gov	73.6	51,655	34	29	97	100	95	100
uspsaig.gov	73.6	143,326	67	60	98	100	85	71
hispanicheritagemonth.gov	73.6	663,101	63	52	100	100	0	91
opic.gov	73.5	307,246	58	46	98	100	95	80
organdonor.gov	73.4	457,542	61	51	96	100	91	78
cuidadodesalud.gov	73.3	330,062	58	38	99	100	95	83
feedthefuture.gov	73.2	603,875	69	61	66	100	89	91
smokefree.gov	72.8	221,470	45	33	99	100	95	90
cfda.gov	72.8	602,543	81	66	61	100	89	86
uscis.gov	72.6	2,257	64	50	99	100	93	73
data.gov	72.5	47,161	72	53	99	100	92	68
osha.gov	72.4	16,301	65	47	98	100	100	73
fincen.gov	72.4	256,631	57	49	87	100	91	85
healthypeople.gov	72.3	114,725	73	58	65	100	91	89
energycodes.gov	72.2	418,622	75	63	63	100	85	88
va.gov	72.1	4,405	52	43	94	100	100	83
sec.gov	72.1	5,743	68	47	87	100	95	80
lbl.gov	72.1	21,884	81	64	94	100	93	61
usaspending.gov	72.1	238,694	61	44	95	100	83	81
makinghomeaffordable.gov	72.1	264,744	60	38	100	100	93	79

## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
smartgrid.gov	72.1	711,214	65	51	99	100	0	88
g5.gov	72.0	374,077	53	36	92	100	85	90
nsopw.gov	71.8	109,444	59	49	98	100	91	75
nctc.gov	71.8	587,217	72	58	61	100	93	91
lInI.gov	71.7	46,702	81	63	99	0	95	76
ourdocuments.gov	71.7	106,434	73	60	62	100	85	90
acl.gov	71.6	359,519	64	49	61	100	85	100
sciencebase.gov	71.6	491,314	54	39	84	100	95	91
usgs.gov	71.5	3,930	68	50	89	100	93	76
loc.gov	71.4	4,858	51	53	99	100	95	74
house.gov	71.4	8,877	66	56	96	0	92	88
ems.gov	71.4	980,506	75	60	96	100	85	64
usps.com	71.2	376	58	51	100	0	91	91
sbir.gov	71.2	149,285	49	42	98	100	93	81
access-board.gov	71.0	323,891	68	48	63	100	91	95
flu.gov	71.0	418,695	66	51	99	100	0	85
fvap.gov	70.9	31,107	54	43	89	100	56	91
energy.gov	70.6	12,599	59	48	97	100	93	73
nIm.gov	70.5	817,711	40	29	94	100	93	93
dol.gov	70.4	15,422	43	54	92	100	93	80
americaslibrary.gov	70.4	108,794	88	84	66	100	0	81
visitthecapitol.gov	70.4	336,471	57	46	96	0	91	95
recreation.gov	70.3	31,505	58	47	98	100	91	73
fafsa.gov	70.3	41,284	65	54	72	100	91	85
defense.gov	70.2	29,461	64	61	99	100	0	79
americorps.gov	70.2	77,653	56	47	96	100	91	75
vehiclehistory.gov	70.2	368,294	76	57	60	100	92	87
hud.gov	70.1	21,475	59	49	62	100	74	100
bea.gov	70.1	78,878	78	65	61	100	93	81
treasury.gov	69.9	22,235	70	54	59	100	93	91
ucrdatatool.gov	69.8	596,569	84	72	59	100	79	78
supremecourt.gov	69.6	64,832	69	55	96	0	93	83
healthit.gov	69.6	84,221	67	47	66	100	89	91
ferc.gov	68.9	224,029	67	55	63	100	97	86
pepfar.gov	68.9	826,446	80	68	68	100	0	88
federalreserve.gov	68.8	27,959	64	53	64	100	93	88
pnnl.gov	68.6	144,847	59	51	61	100	93	93
pnl.gov	68.4	114,992	58	51	61	100	93	93
foia.gov	68.4	488,000	63	46	65	100	95	90
read.gov	68.3	208,162	71	58	62	100	0	100

## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
treasuryhunt.gov	68.3	968,527	70	53	59	100	93	88
climate.gov	68.2	121,380	65	52	68	100	93	84
bia.gov	68.2	391,835	65	53	65	100	91	86
ustaxcourt.gov	68.1	421,450	79	64	61	100	85	78
weather.gov	68.0	1,313	53	44	58	100	93	100
nutrition.gov	68.0	318,717	75	52	62	100	85	85
indianaffairs.gov	67.8	506,763	65	53	65	100	91	85
occ.gov	67.7	205,628	40	42	100	100	91	76
mymoney.gov	67.7	731,417	76	65	67	100	93	72
eeoc.gov	67.6	45,154	72	61	60	100	91	81
foodsafety.gov	67.5	111,015	65	47	61	100	93	90
digitalpreservation.gov	67.5	331,992	82	68	61	100	0	89
usda.gov	67.3	3,793	46	64	93	100	93	66
safercar.gov	67.3	63,752	68	53	62	100	85	86
distraction.gov	67.0	485,160	60	49	70	100	85	85
amberalert.gov	66.6	721,835	71	63	62	100	79	79
acquisition.gov	66.5	265,637	51	43	99	100	85	70
bpa.gov	65.7	768,299	77	53	64	100	91	76
letsmove.gov	65.6	311,051	71	59	68	100	0	89
invasivespeciesinfo.gov	65.6	410,495	61	43	61	100	85	91
fs.fed.us	65.3	34,012	63	52	95	0	95	78
gpo.gov	65.1	28,599	69	51	60	100	85	83
grants.gov	64.9	49,646	74	55	64	100	0	91
biometrics.gov	64.9	486,457	84	67	65	100	0	80
noaa.gov	64.8	675	57	48	100	100	0	76
nationalmap.gov	64.6	119,866	67	59	63	100	93	75
goes-r.gov	64.6	676,590	46	42	99	100	0	84
airnow.gov	64.3	190,818	46	38	68	100	91	91
surgeongeneral.gov	64.2	449,375	48	40	66	100	93	90
boem.gov	64.1	302,580	49	35	64	100	95	93
usmint.gov	63.8	74,379	57	43	57	100	93	90
nhtsa.gov	63.8	97,202	61	50	67	100	85	79
treasurydirect.gov	63.6	52,723	65	49	57	100	93	83
buyusa.gov	63.5	580,087	78	62	65	100	0	82
thecoolspot.gov	63.5	597,603	75	56	61	100	93	72
mymedicare.gov	63.4	43,993	70	52	96	100	93	51
stopbullying.gov	63.3	73,376	55	42	64	100	95	85
itis.gov	63.1	144,799	83	62	68	0	93	79
ojp.gov	62.9	534,625	57	48	91	0	79	83
volunteer.gov	62.5	982,254	68	57	61	100	89	73

## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
time.gov	62.3	79,648	62	57	73	100	0	83
tva.gov	62.2	342,362	41	41	96	100	95	66
adlnet.gov	62.0	724,112	48	37	100	0	85	83
poolsafely.gov	61.9	963,606	55	46	99	100	0	72
gsa.gov	61.8	23,383	19	19	100	100	95	83
fara.gov	61.8	753,610	71	54	57	100	93	74
nij.gov	61.7	158,018	72	56	61	100	79	72
samhsa.gov	61.6	46,375	43	35	95	100	44	77
speaker.gov	61.5	209,096	65	52	98	0	0	84
presidio.gov	61.4	359,079	58	43	88	100	0	**
nihseniorhealth.gov	61.3	279,046	66	54	62	100	95	71
fgdc.gov	61.1	882,129	36	30	98	100	95	70
usap.gov	60.8	415,432	42	51	62	100	93	82
eia.gov	60.5	18,041	64	52	62	100	90	72
eda.gov	60.5	816,471	58	44	67	100	91	75
eac.gov	60.3	149,843	53	39	68	100	93	78
inl.gov	60.3	329,230	48	37	96	100	78	64
ttb.gov	60.1	258,912	56	58	100	100	85	45
bnl.gov	59.9	55,455	43	31	99	100	78	66
uscourts.gov	59.8	7,395	70	66	99	0	0	70
moneyfactorystore.gov	59.5	791,853	75	62	64	100	0	75
nationalservice.gov	58.6	95,036	44	50	95	100	93	53
pacer.gov	58.3	49,477	67	55	62	0	93	83
globe.gov	58.3	287,464	67	54	99	100	85	39
neh.gov	58.0	58,243	67	52	66	0	93	81
hanford.gov	57.9	939,723	52	45	99	100	0	65
ustr.gov	57.8	94,076	73	59	62	0	100	76
saferproducts.gov	57.6	522,288	61	47	66	100	0	83
arm.gov	57.2	554,817	62	52	63	0	91	84
longtermcare.gov	56.9	537,668	53	44	64	100	0	88
cftc.gov	56.7	90,085	70	59	61	0	93	77
csb.gov	55.8	414,161	54	49	100	0	0	76
federalregister.gov	54.5	51,658	45	37	67	100	95	70
nixonlibrary.gov	54.4	578,798	47	39	67	100	100	67
challenge.gov	53.7	666,713	30	23	95	100	93	62
moneyfactory.gov	52.6	529,527	54	45	63	100	76	64
bjs.gov	52.2	91,927	50	40	56	100	79	72
fec.gov	52.1	47,432	55	51	67	0	0	90
cecc.gov	52.1	926,405	71	59	67	0	0	79
ojjdp.gov	50.9	301,185	62	51	60	100	92	53

## APPENDIX CONTINUED

Popular federal websites ranked across all metrics, including desktop page load speed, mobile page load speed, mobile friendliness, DNSSEC, SSL, and accessibility.

Domain	Overall Score	Alexa Rank	Desktop Speed	Mobile Speed	Mobile Friendliness	DNSSEC	SSL	Accessibility
dni.gov	50.4	303,790	55	42	59	100	93	60
gop.gov	50.2	495,177	24	22	99	0	0	91
choosemyplate.gov	49.7	44,552	52	38	95	100	0	53
aviationweather.gov	49.6	27,867	53	28	59	100	89	67
tsunami.gov	49.1	643,945	45	32	60	100	0	83
mspb.gov	48.7	879,797	63	46	62	100	52	56
nicic.gov	48.5	249,762	49	37	66	100	0	73
fitness.gov	48.5	331,251	4	1	71	100	89	91
fsd.gov	47.6	380,738	24	19	55	100	48	90
bep.gov	46.3	827,365	54	45	63	100	0	64
rrb.gov	46.1	611,359	53	41	63	0	95	68
irs.gov	45.8	1,182	55	42	60	100	93	49
usphs.gov	44.0	468,853	38	42	67	100	95	47
fmc.gov	42.2	901,824	21	62	64	0	0	79
osti.gov	39.9	65,151	42	31	81	0	79	54
trade.gov	38.1	102,839	57	47	58	100	0	47
ipcc-wg2.gov	37.3	887,360	52	46	61	0	0	65

^ socialsecurity.gov redirects to ssa.gov.

\* No rank provided since this website did not exist in November 2016.

\*\* Accessibility testing tool could not run successfully on this website.

\*\*\* Portions of this website caused an error on the test. To account for these errors, we assigned the lowest passing score for this test.

## ENDNOTES

1. These numbers are taken from those websites signed up for the U.S. Digital Analytics Program, which does not represent all federal websites or domains. Home page of [analytics.usa.gov](https://analytics.usa.gov), accessed February 24, 2017, <https://analytics.usa.gov/>.
2. Legislative requirements include the E-Government Act of 2002, the Children's Online Privacy Protection Act of 1998, the Privacy Act of 1974, the Paperwork Reduction Act, the Freedom of Information Act, the Rehabilitation Act of 1973, the Federal Information Security Management Act (FISMA), and many more. For legislative requirements, please see "Checklist of Requirements for Federal Websites and Digital Services," DigitalGov, accessed February 22, 2017, <https://www.digitalgov.gov/resources/checklist-of-requirements-for-federal-digital-services/>.
3. "E-Government Act of 2002," U.S. National Archives, last updated August 15, 2016, <https://www.archives.gov/about/laws/egov-act-section-207.html>.
4. Ibid.
5. The Interagency Committee on Government Information, "Recommended Policies and Guidelines for Federal Public Websites" (Washington, DC: final report to the Office of Management and Budget, June 9, 2004), <https://www.digitalgov.gov/files/2014/07/Recommended-Policies-and-Guidelines-for-Federal-Public-Websites-2004.pdf>.
6. The requirement comes from Section 508 of the Rehabilitation Act of 1973. "About the Section 508 Standards," United States Access Board, accessed February 22, 2017, <https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards>.
7. "Frequently Asked Questions," [section508.gov](http://www.section508.gov), accessed February 24, 2017, [https://www.section508.gov/section508\\_faqs#\\_Toc246911614](https://www.section508.gov/section508_faqs#_Toc246911614).
8. "About Us," [section508.gov](http://www.section508.gov), accessed February 22, 2017, <https://www.section508.gov/content/about-us>.
9. The Federal Information Security Management Act of 2002, Public Law 107-347 (2002) 116 STAT. 2903, <https://www.gpo.gov/fdsys/pkg/PLAW-107publ347/pdf/PLAW-107publ347.pdf>; Joshua Bolten, "FY 2004 Reporting Instructions for the Federal Information Security Management Act" (memorandum, Office of Management and Budget, Washington, DC, August 23, 2004), <https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/omb/memoranda/fy04/m04-25.pdf>.
10. Miles Tracy, Wayne Jansen, Karen Scarfone, and Theodore Winograd, *Guidelines on Securing Public Web Servers* (Gaithersburg, MD: National Institute of Standards and Technology, September 2007), <http://csrc.nist.gov/publications/nistpubs/800-44-ver2/SP800-44v2.pdf>.
11. Full list of memorandums on e-government and information technology can be found here: "Office of E-Government & Information Technology: Memoranda," Office of Management and Budget, accessed February 22, 2017, <https://obamawhitehouse.archives.gov/omb/e-gov/memoranda>.
12. "Digital Government," Obama White House, accessed February 24, 2017, <https://obamawhitehouse.archives.gov/sites/default/files/omb/egov/digital-government/digital-government.html>.
13. The "information centric" standard builds upon the definition of "openness" in OMB Memorandum M-10-06 (Open Government Directive), which specifically addresses the release of information to the public: "Agencies shall respect the presumption of openness by publishing information online. ... To the extent practicable and subject to valid restrictions, agencies should publish information online in an open format that can be retrieved, downloaded, indexed, and searched by commonly used web search applications. An open format is one that is platform independent, machine readable, and made available to the public without restrictions that would impede the re-use of that information." See Peter R. Orszag, "Open Government Directive" (memorandum, Obama White House, Washington, DC, December 8, 2009, <https://obamawhitehouse.archives.gov/open/documents/open-government-directive>.
14. "Digital Government."
15. Ibid.
16. Ibid.

17. Ibid.; Shaun Donovan, Howard Shelanski, and Tony Scott, "Policies for Federal Agency Public Websites and Digital Services" (memorandum, Office of Management and Budget, Washington, DC, November 8, 2016), <https://obamawhitehouse.archives.gov/sites/default/files/omb/memoranda/2017/m-17-06.pdf>.
18. Clay Johnson III, "Policies for Federal Agency Public Websites" (memorandum, Office of Management and Budget, Washington, DC, December 17, 2004), <https://www.obamawhitehouse.gov/sites/default/files/omb/memoranda/fy2005/m05-04.pdf>; Donovan, Shelanski, and Scott, "Policies for Federal Agency Public Websites and Digital Services."
19. Karen Evans, "Securing the Federal Government's Domain Name System Infrastructure (memorandum, submission of draft agency plans due by September 5, 2008, Office of Management and Budget, Washington, DC, August 22, 2008)," <https://georgewbush-whitehouse.archives.gov/omb/memoranda/fy2008/m08-23.pdf>.
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21. "President's New Freedom Initiative," George W. Bush White House, February 1, 2001, <https://georgewbush-whitehouse.archives.gov/infocus/newfreedom/>.
22. "Improving Website Accessibility," section508.gov, accessed February 23, 2017, <https://www.section508.gov/content/build/website-accessibility-improvement>.
23. Jeffrey D. Zients, "Implementing Executive Order 13571 on Streamlining Service Delivery and Improving Customer Service" (memorandum, Executive Office of the President, Washington, DC, June 13, 2011), <https://obamawhitehouse.archives.gov/sites/default/files/omb/memoranda/2011/m11-24.pdf>; Lisa Schlosser, "Policies for Dot Gov Domain Issuance for Federal Agency Public Websites," Office of Management and Budget, Washington, DC, January 2015), <https://obamawhitehouse.archives.gov/sites/default/files/omb/egov/memo/policies-for-dot-gov-domain-issuance-for-federal-agency-public-websites.pdf>. The policy was further updated.
24. Joseph Marks, "Energy Shuttles First Website in Governmentwide Campaign," *Nextgov*, August 15, 2011, accessed February 24, 2017, <http://www.nextgov.com/cloud-computing/2011/08/energy-shuttles-first-website-in-governmentwide-campaign/49598/>.
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27. "Mobile Friendly Websites," *Moz*, accessed February 24, 2017, <https://developers.google.com/webmasters/mobile-sites/>; Jill Kocher, "SEO: Google to Make 'Mobile-Friendly' a Ranking Signal," *Practical Ecommerce*, March 15, 2015, <http://www.practicalecommerce.com/articles/83483-SEO-Google-to-Make-Mobile-friendly-a-Ranking-Signal>.
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29. "Basic Security Practices for Web Applications," Microsoft, accessed February 24, 2017, <https://msdn.microsoft.com/en-us/library/zdh19h94.aspx>.
30. Ben Caldwell et al., eds., "Web Content Accessibility Guidelines (WCAG) 2.0" (W3C, December 11, 2008), <https://www.w3.org/TR/WCAG20/>.
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## ERRATA

ITIF has received a great deal feedback on this report, and we have been encouraged that it has sparked a constructive dialogue about the need to improve the performance of federal websites. In the course of discussing the issue with federal stakeholders, it has come to our attention that our analysis omitted approximately one-quarter of the federal websites that we intended to include as part of the methodology described herein. These omissions do not change our overall finding that nine out of 10 of the most popular federal websites fail to meet basic standards for security, speed, mobile friendliness, or accessibility, because the data we used for those tests still represent an appropriately robust, random sample of these websites. Nevertheless, we intend to include all of the excluded websites in the next edition of this report.

## **ACKNOWLEDGMENTS**

The authors wish to thank the following individuals for providing input to this report: Rob Atkinson, Randolph Court, and Alex Key. Any errors or omissions are the authors' alone.

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## **ABOUT ITIF**

The Information Technology and Innovation Foundation (ITIF) is a nonprofit, nonpartisan research and educational institute focusing on the intersection of technological innovation and public policy. Recognized as one of the world's leading science and technology think tanks, ITIF's mission is to formulate and promote policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress.

