



PUBLIC SECTOR

Website Performance Analysis



Contents

| | |
|---|----|
| Foreword | 4 |
| Key Findings | 5 |
| Site Availability | 5 |
| Download Times | 5 |
| Connection & Response Times | 5 |
| Web Page Sizes | 5 |
| Site Availability | 6 |
| Results | 6 |
| Table 1: Availability Breakdown by Percentage of Time Available | 6 |
| Table 2: Top Ten Best Site Availability | 6 |
| Table 3: Top Ten Worst Site Availability | 6 |
| Analysis | 7 |
| Chart 1: Site Availability by Sector..... | 7 |
| Download Time | 8 |
| Results | 8 |
| Table 4: Top 10 Fastest Download Times..... | 8 |
| Analysis | 8 |
| Chart 2: Average Download Times by Industry Sector..... | 9 |
| Table 5: Worst Download Times and Possible Causes..... | 9 |
| Case Study | 10 |
| Download Times for 'Organisation X' | 10 |
| Chart 3: Download Time for "Organisation X" | 10 |
| Connection & Response Times | 11 |
| Results | 11 |
| Table 6: Connection and Response Time by Fastest Response Time | 11 |
| Table 7: Connection and Response Time by Slowest Response Time | 11 |
| Analysis | 12 |
| Chart 4: Connection and Response Time by Organisation Type | 12 |
| Web Page Size | 13 |
| Results | 13 |
| Table 8: Top Ten Smallest Homepages..... | 13 |
| Table 9: Top Ten Largest Homepages | 13 |
| Analysis | 13 |
| Graph 5: Average Page Size and Download Time | 14 |
| Resolving the Problems | 15 |
| Page Size | 15 |
| Server Performance | 15 |
| Site Availability | 15 |
| Web Development | 15 |
| Appendix | 17 |

| | |
|---|-----------|
| Methodology & Analysis Criteria | 17 |
| Site Availability | 17 |
| Download Times | 17 |
| Connection & Response Times | 18 |
| Web Page Sizes | 18 |
| Diagram 1: Path Taken for Nexus Watch 'Poll' | 18 |
| Results for all Sites..... | 19 |
| Table 10: Sites Monitored, Homepage Size & Availability..... | 19 |
| Table 11: Results for Connection, Response & Redirect Time..... | 20 |
| Table 12: Results for Download Time at Multiple Speeds..... | 22 |
| Contact Us..... | 24 |

Foreword

Tim Moore, Director

Parallel is a specialist enterprise management solutions provider. We manage some of the world's largest networks including those of BT, British Council and Vivendi-Universal. Many of the UK's largest network systems integrators use Parallel to compliment their own skills, and to provide network management services to their clients.

Our web management service, Nexus Watch, monitors web-based systems from an external perspective. The service was developed after it became apparent that traditional methods of web management did not take into account external factors that could affect a site's availability and performance. Nexus Watch monitors the customer experience of a website. It does so by dynamically connecting to a website over the Internet – at regular intervals – to emulate the actions of its users.

With Nexus Watch, we undertake studies of business markets to report on how well they meet the challenge of maintaining an online presence. Since all government services must be available electronically by 2005, I thought that a current assessment of government websites and the public sector as a whole is necessary.

The public is used to increasing performance from commercial websites and will demand the same level of performance from the public sector. While the public sector is taking steps to embrace the Internet as an essential communication and transactional channel in which to reach the public, the results of this report show that websites are currently not achieving the same performance standards as commercial websites. Compared with research Parallel has conducted for the FTSE 100, retail banks and e-retailers, the public sector had the lowest website availability and largest homepage sizes.

Every service has competition, and in this case, the competition will be mail, telephone and person-to-person transactions. According to a report from Forrester Research, 58% of consumers would be unlikely to return to a site on which they encountered problems on their first visit, and 62% said they were unlikely to return to a site where a transaction had failed. With no other website as competition, customers will simply return to more traditional methods of finding out information, paying council tax, etc., and the online initiative will fail.

In order to provide a more accurate picture of public website performance, Parallel used Nexus Watch to monitor seventy public service, council and political party websites using the Web Page Test module. Nexus Watch 'pollers' emulated a customer connecting to a website every 15 minutes from 28 November to 20 January. A wealth of statistical data including website availability, download, connection and response time, and page size were recorded and analysed. The intention is not to embarrass any one organisation with these results; it is only to encourage the public sector as a whole to review its approach to web management.

From January 2007 Ardentia Ltd markets Nexus Watch.



Key Findings

Site Availability

- The mean availability of all sites was only 98.72%, equating to over 111.13 hours or nearly five days of downtime per website, per year
- Only a third of the organisations monitored achieved 99.9% availability or above, which equates to one full working day of downtime per year
- City councils had the lowest availability over the monitoring period at 97.80%, or over eight days of downtime per year
- Services were available for 99.1% of the monitoring period, or over three days of downtime per year
- Political parties had the highest availability at an average of 99.24%, being down for just over two and a half days per year

Download Times

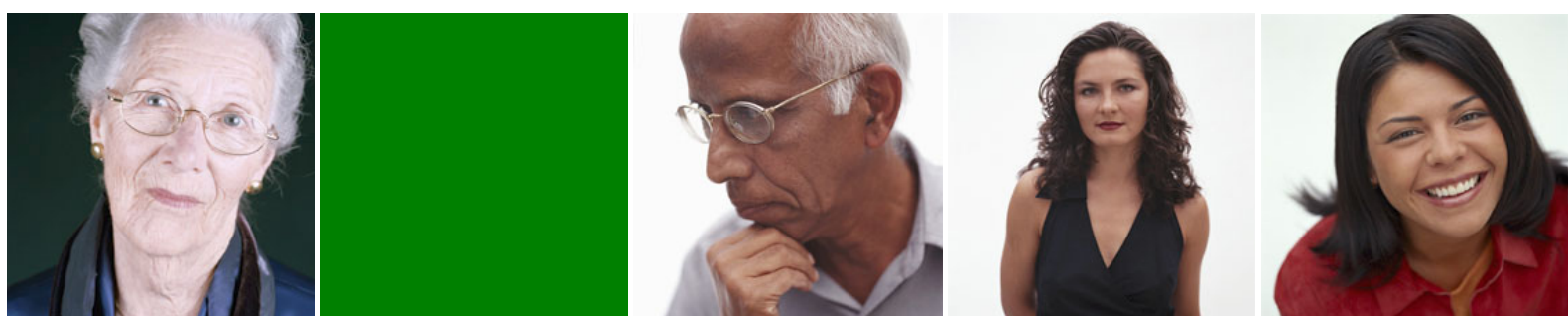
- For customers connecting to the Internet via a modem (56kbps), download times would exceed eight seconds for 95.7% of the websites in the study
- The average download time for public sector websites when accessing via a modem (56kbps) was 21.8 seconds
- All but one of the websites monitored downloaded in under eight seconds with a broadband connection (512kbps)

Connection & Response Times

- High response times for some sites leads to the conclusion that in half of the 10 worst performing sites by download time, poor equipment performance was most likely the cause

Web Page Sizes

- At 69kB, the average home page size of public sector organisations is 73% larger than the government's recommended page size of 40kB
- Due to the size of the homepage alone, customers connecting to the Internet via modem will suffer a download time of over eight seconds for at least 54% of the websites



Site Availability

Results

The mean availability of all sites over the reporting period was 98.72%. This equates to nearly five days of downtime, per website, per year. Compared to other industries and sectors analysed by Parallel, including the FTSE 100, retail banks and e-retailers, the public sector sites boast the lowest average availability.

Based on their availability during the reporting period, Dorset County Council and Belfast City Council would be unavailable for nearly forty-six days a year, and Warwickshire County Council for nearly twenty-five. Councils were not the only offender; key public sector services were also unavailable for business. Official Documents had 95.82% availability equating to a yearly downtime of fifteen days, and UK Online for Business has just over eleven days of downtime per year.

Only a third of the sites monitored achieved availability of at least 99.9%. Among the 7% of sites that remained available for the entire monitoring period are Careers Online, the Passport Service and MI5.

Table 1: Availability Breakdown by Percentage of Time Available

| Site Availability (%) | Number of Sites |
|-----------------------|-----------------|
| > 99.99 | 5 |
| 99.9 – 99.98 | 16 |
| 99 – 99.89 | 30 |
| 90 – 98.99 | 17 |
| < 90 | 2 |

Table 2: Top Ten Highest Availability

| Organisation | Uptime |
|-------------------------------|--------|
| Staffordshire County Council | 100% |
| Passport Service | 100% |
| MI5 | 100% |
| Careers Online | 100% |
| Cambridgeshire County Council | 100% |
| NHS | 99.98% |
| Lincolnshire County Council | 99.98% |
| Ministry of Defence | 99.98% |
| Inland Revenue | 99.98% |
| Public Record Office | 99.96% |

Table 3: Top Ten Lowest Availability

| Organisation | Uptime |
|--------------------------------|--------|
| Dorset County Council | 87.44% |
| Belfast City Council | 87.53% |
| Warwickshire County Council | 93.26% |
| Official Documents | 95.82% |
| Kent County Council | 96.13% |
| Scottish Parliament | 96.92% |
| UK Online for Business | 96.94% |
| Nottinghamshire County Council | 96.95% |
| West Sussex County Council | 97.01% |
| Northumberland County Council | 97.04% |

Analysis

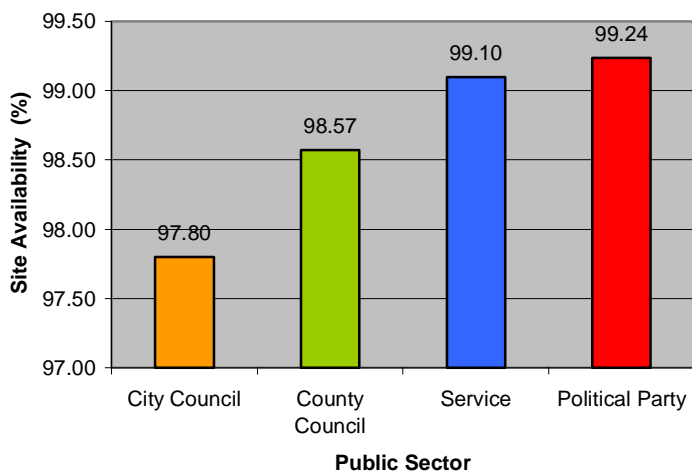
On average, city councils were the least available with only 97.8% availability. This equates to just over eight days a year of downtime. County councils followed with just over five days. Even though services and political parties were the most available, each still had approximately three days of downtime a year.

With government services such as council tax payments and voting moving online, it is becoming increasingly more important for county and city council websites to be available to constituents. It is therefore alarming to see that even without the complex scripts and coding required for online transactions, city and county councils could not maintain acceptable availability. Forrester Research recommends 99.9% availability for transactional sites. At their current state, only 29% of the public sector sites would reach this target.

The reasons for poor availability can often be down to the ISP rather than an organisation's own infrastructure. High availability will almost always be agreed upon in SLA's, but the small print often states that the ISP is only monitoring the SLA from its own network. The only way of knowing the true end-to-end customer experience is to monitor performance from multiple ISP's. This ensures that the whole network, including peering (connectivity between ISP's) can be taken into account.

An external web monitoring service such as Nexus Watch should be used alongside existing network management and system management tools to isolate specific problems in the infrastructure. Even with faultfinding systems such as these, prevention can never be foolproof. Websites will always encounter problems and the key to high availability is to know the moment an issue arises so that it can be remedied as quickly as possible.

Chart 1: Site Availability by Sector





Download Time

Results

Fourteen of the organisations monitored used an HTTP redirect (where you are forwarded onto a page different from the one you requested). The HTTP redirects are included in the download times, and are also listed separately to highlight potential bottlenecks in the download process. The times listed in the table are averages across both of the ISPs.

The average download time for the public sector was 21.8 seconds for 56kbps modem users. Edinburgh City Council had the fastest downloaded time with the homepage downloading in less than two seconds for 56kbps modem users. The longest download time was 80.35 seconds for the Job Centre Online homepage.

Table 4: Top 10 Fastest Download Times

| Organisation | Modem (56kbps) | Broadband (512kbps) |
|------------------------------|----------------|---------------------|
| Edinburgh City Council | 1.67 | 0.18 |
| Street Works | 3.28 | 0.36 |
| Gloucester County Council | 6.10 | 0.67 |
| West Sussex County Council | 6.83 | 0.75 |
| Kent County Council | 7.00 | 0.77 |
| DVLA | 7.30 | 0.80 |
| NHS | 8.19 | 0.90 |
| Isle of Wight County Council | 8.44 | 0.92 |
| Suffolk County Council | 8.57 | 0.94 |
| Lancashire County Council | 8.70 | 0.95 |

Analysis

The government has set a target to have the most extensive and competitive broadband market by 2005. With widespread broadband use, downtime bottlenecks will no longer lie with 28.8 or 56kb modem users. Fast end-user connections place greater responsibility and accountability on the website to perform well. Expectations of acceptable download times will continue to rise and there will be no patience for slow sites.

The 8-second rule, which was coined by Zona Research, states that if someone has to wait more than eight seconds for a website to download, they will become impatient. At the moment, all but one of the public sector sites surveyed falls below the 8-second rule when accessed by broadband users. However, according to an Ofcom report (Consumers' use of Internet, 27/1/03) 80% of the UK population still accesses the Internet via a modem connection. For this majority, 84% of the public sector sites monitored will not download in less than eight seconds.

Nexus Watch easily diagnoses bottlenecks that may cause long download times. More often than not, it is the organisation's own systems that are at fault - such is the case for some of the public sector sites that Nexus Watch monitored. For all of the ten sites that boast the top ten longest download times, Nexus Watch has identified a possible cause that is internal to the organisation rather than occurring on the Internet. (See Table 5: Longest Download Times and Possible Causes) Job Centre Online, which has the longest download time, also has the longest average HTTP redirect time monitored at 12.159 seconds. The Prime Minister's site, 10 Downing Street, had the second longest download time and the largest average page size monitored at 187kB.

Chart 2: Average Download Times by Industry Sector

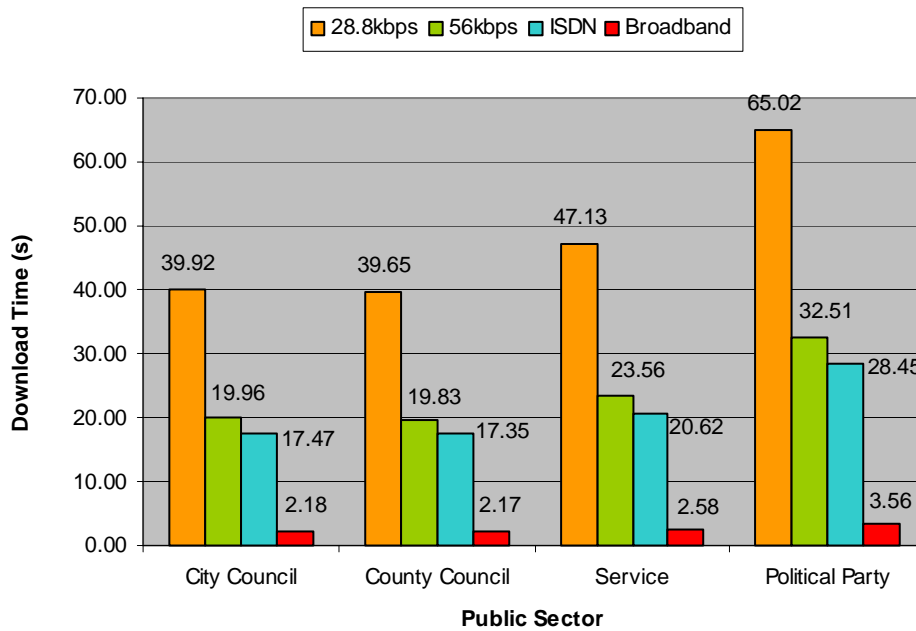
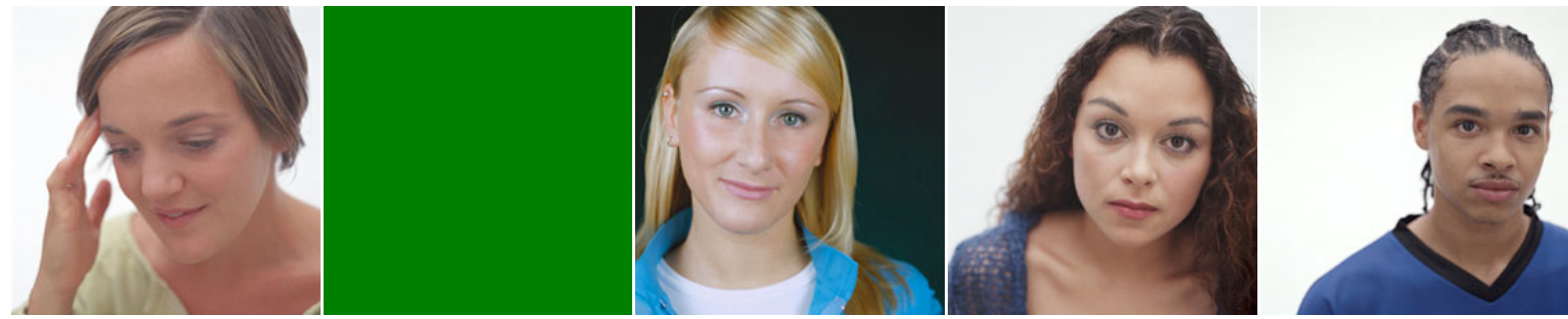


Table 5: Longest Download Times and Possible Causes

| Organisation | Download Time (512kbps) | Possible Cause* |
|--------------------------------|-------------------------|--|
| Job Centre Online | 8.79 | Long HTTP redirect time of 12.159 seconds |
| 10 Downing Street | 6.52 | Large page size of 187kB (largest monitored) |
| Norfolk County Council | 5.94 | Large page size of 149kB |
| Warwickshire County Council | 5.46 | Long server response time of 4.4 seconds (longest recorded) |
| UK Online for Business | 5.03 | Long redirect time of 1.385 seconds and long server response time of 3.765 seconds |
| Nottinghamshire County Council | 4.86 | Large page size of 152kB |
| Local Government Authority | 4.60 | Large page size of 163kB |
| MI5 | 4.38 | Large page size of 96kB |
| Devon County Council | 4.13 | Long redirect time of 1 second |
| Leeds City Council | 4.04 | Large page size of 133kB |

*All listed numbers are an average taken over the monitoring period



Case Study

Download Times for 'Organisation X'

Chart 3: Download Time for 'Organisation X' shows the average download times for 'Organisation X'. Each line on the chart represents the performance as recorded by each ISP. When both lines follow a similar trend, the performance noted is likely to be accurate. If one ISP only noted severe performance issues, the problem is more likely to be with that particular ISP.

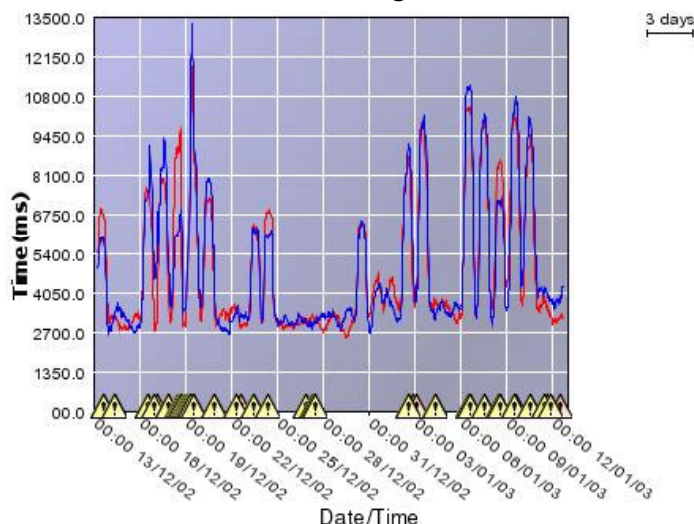
Overall performance for 'Organisation X's' homepage varied throughout the test period, showing a daily fluctuation. The homepage took longer to download during the day and this could represent a server load. Interestingly, over the Christmas period, the normal daily fluctuation was less noticeable. There are also less download timeouts during this period. Other periods where more stable performance can be seen are weekends. See Chart 3 on the 14th/15th December, 21st/22nd December, 4th/5th January.

Combined with the recorded download timeouts, it can be seen that the HTTP server performs less well during the working day than at evenings, weekends and holidays. There are several possibilities that could explain this:

- The server could be affected by the number of visitors to the homepage, which may be higher during the working hours of 9:00am to 5:00pm. This could be verified by an analysis of the server log files.
- The network connection that the server is hosted on could be very busy during the working day. It may even use the same network as the organisation's employees, and is adversely affected by normal, daily network and Internet traffic.

It was verified by 'Organisation X' that the server that hosted the website also hosted the Internet connection used by employees. However, it was not aware of the significant impact employee traffic had on the download time of the organisation's homepage.

Chart 3: Download Time for "Organisation X"





Connection & Response Times

Results

The mean connection time (time taken to open a TCP connection) was 0.120 seconds. The mean response time (time taken to get a HTTP response code) was 0.398 seconds. Seven of the websites monitored had an average response time of over one second.

Table 6: Connection and Response Time by Fastest Response Time

| Organisation | Response Time | Connection Time |
|--------------------------------|---------------|-----------------|
| Careers Online | 0.022 | 0.081 |
| Public Record Office | 0.033 | 0.103 |
| Passport Service | 0.034 | 0.085 |
| Manchester City Council | 0.040 | 0.114 |
| Home Office | 0.041 | 0.147 |
| Nottinghamshire County Council | 0.044 | 0.084 |
| Disability | 0.049 | 0.093 |
| Department of Trade & Industry | 0.050 | 0.107 |
| Essex County Council | 0.050 | 0.108 |
| Official Documents | 0.053 | 0.122 |

Table 7: Connection and Response Time by Slowest Response Time

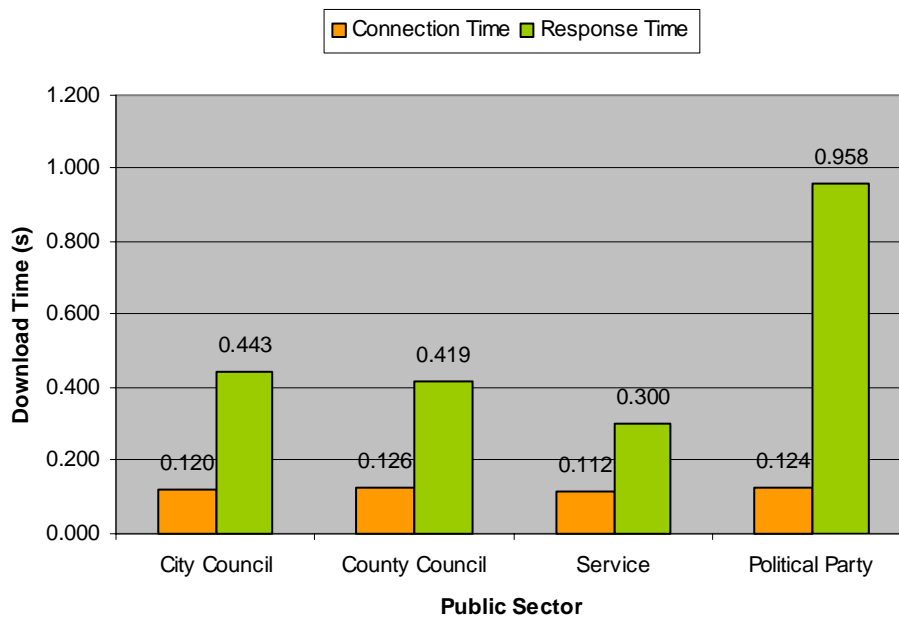
| Organisation | Response Time | Connection Time |
|---------------------------------|---------------|-----------------|
| Warwickshire County Council | 4.400 | 0.081 |
| UK Online for Business | 3.765 | 0.103 |
| Westminster City Council | 2.457 | 0.085 |
| West Sussex County Council | 1.484 | 0.114 |
| Liberal Democratic Party | 1.346 | 0.147 |
| Dorset County Council | 1.023 | 0.084 |
| Conservative Party | 1.023 | 0.093 |
| Northamptonshire County Council | 0.797 | 0.107 |
| UK Online | 0.771 | 0.108 |
| British Library | 0.759 | 0.122 |

Analysis

With information such as connection and response time, bottlenecks can be identified. If connection time is normal and response time above average, an overloaded or slow server might be the problem. For example, at Cumbria County Council the connection speed was average at 0.134 seconds, but the response time was above average at 3.765 seconds. Such a high server response time indicates the problem is internal to the organisation and could be an overloaded or slow server.

If connection time is above average, and response time is average, then a bottleneck is occurring somewhere on the network. The network problem may lie with the end user's network, on the Internet or within the site's network. When subscribing to Nexus Watch, if no response is detected from a server, an automatic traceroute is kicked off. The traceroute will follow the approximate path taken by the poller and report the time taken to reach each Internet router or hop along the connection path. With this, it can be ascertained where on the network the bottleneck could have occurred.

Chart 4: Connection and Response Time by Organisation Type





Web Page Size

Results

The listed page size is an average taken over the monitoring period. The average homepage size was 69kB. Twelve sites had homepages comprising more than 100kB of data. Of these, five also appeared in the top ten highest download times.

Table 8: Top Ten Smallest Homepages

| Organisation | Page Size (kB) |
|-------------------------------|----------------|
| Street Works | 5 |
| DVLA | 8 |
| i-UK | 16 |
| Public Record Office | 26 |
| NHS | 26 |
| Gloucester County Council | 26 |
| Disability | 26 |
| Cambridgeshire County Council | 30 |
| Edinburgh City Council | 32 |
| Isle of Wight County Council | 35 |

Table 9: Top Ten Largest Homepages

| Organisation | Page Size (kB) |
|--------------------------------|----------------|
| 10 Downing Street | 187 |
| Labour Party | 176 |
| Local Government Association | 163 |
| Nottinghamshire County Council | 152 |
| Norfolk County Council | 149 |
| Conservative Party | 136 |
| Leeds City Council | 133 |
| Durham County Council | 126 |
| Essex County Council | 118 |
| Liberal Democratic Party | 113 |

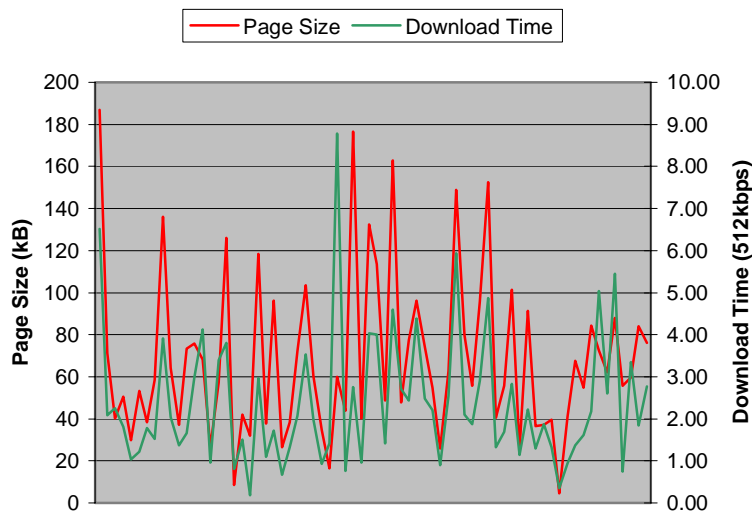
Analysis

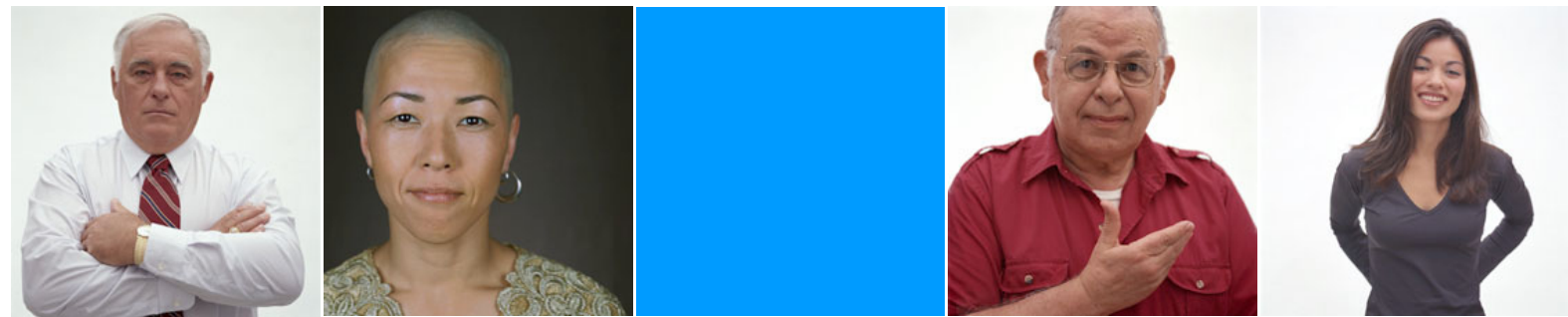
Most web designers recommend that homepages should be no more than 30kB, but the *Guidelines for UK Government Websites* states that a homepage should not exceed 40kB. Even with this higher standard, public sector homepages were much larger at an average of 69kB. The largest homepage, 10 Downing Street, was over three times greater than the recommended average at 187kB. Consequently, the site boasts an average download time of one minute for 56kbps users.

According to the Ofcom report, 80% of the public still connect to the Internet via a modem. At a maximum efficiency of 56kbps, it will take modem users over eight seconds to download a homepage that is larger than 56kB. This means that 54% of the public sector sites will take over eight seconds to download for the average home user, based on page size alone.

One advantage of an online government will be convenience. People will use public sector websites because they believe the sites will be easier, faster and less of a hassle than more traditional methods of making payments, sourcing information and voting. Keeping the 8-second rule in mind, public sector homepages will have to download in less than eight seconds in order to provide an impression of speed. Based on the results of this study, the average homepage download time was nearly triple that at 21.8 seconds. As can be seen from the Chart 5: Average Page Size and Download Time, page size has a direct effect on download time. It is therefore important for the public sector to be conscientious of its homepage sizes in order to decrease download time and meet customer expectations of convenience and speed.

Chart 5: Average Page Size and Download Time





Resolving the Problems

This report has identified four key issues that need to be addressed:

- Site availability
- Server performance
- Page size
- Web development

Page Size

Public sector websites need to pay particular attention to the amount of data stored on homepages as it has a direct affect on download time. According to Oftel's report, 80% of the UK public still connects to the Internet via a dial-up modem. It is therefore advisable to actively monitor homepage sizes and the size of objects on it to ensure a fast download time.

Server Performance

Performance should be carefully monitored, and any downward trend should be swiftly addressed before it has a negative customer impact. Systems and network management tools should be used to identify which component parts of a system are under-performing. It is vital that these tools are installed and integrated correctly, and that they are regularly updated to reflect any changes in the infrastructure being monitored. In our experience, a poorly maintained management system can go from invaluable tool to expensive doorstop in under a month.

Site Availability

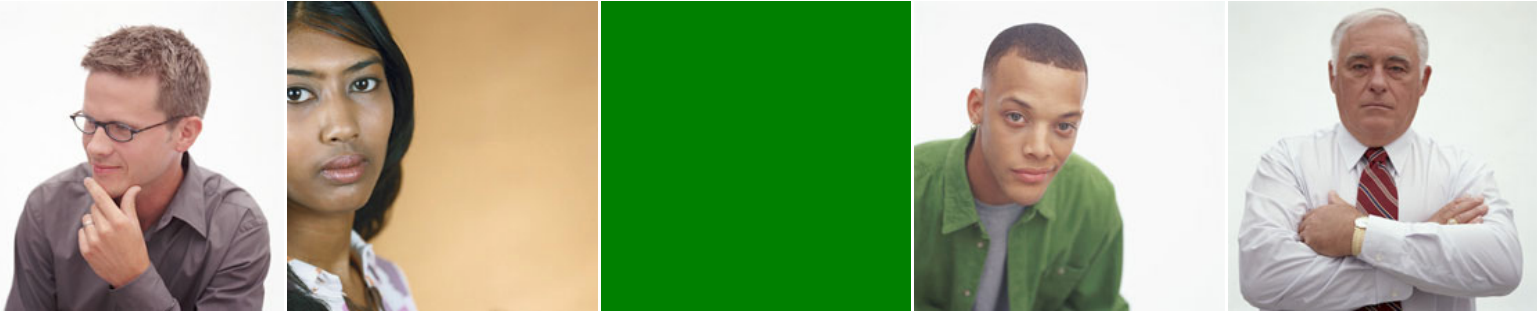
Organisations should measure compliance of their ISPs against SLA's. An external monitoring service that measures availability over the Internet should be used in conjunction with internal systems and network management tools. Where poor availability is due to the ISP, action should be taken, including changing ISPs if no improvement is seen.

Prevention is not the answer to everything. Unforeseen problems do happen. The key to achieving acceptable or above average availability is knowledge of your website experience. The sooner an organisation is aware of a problem, the sooner it can be fixed, and the less impact it will have on the business and reputation of the organisation. Web systems should be monitored, both internally and externally, and the monitoring systems should be suitably configured to instantly alert responsible authorities of any problems.

Web Development

Many public sector organisations, including councils are in the process of developing new websites to meet the 2005 initiative to have services online. External monitoring tools such as Nexus Watch are a valuable resource in the development stage, and can help in many ways. External monitoring can:

- Maximise return on investment by baselining the existing system to identify bottlenecks and other problems as points of investment
- Provide a before and after picture of a website so that an organisation can see increases or decreases in performance
- Speed up the development process when used as a diagnosis tool
- Identify performance issues when load balancing a website
- Help identify teething issues that every new site experiences



Appendix

Methodology & Analysis Criteria

Data for this research was gathered using Parallel's Nexus Watch service (www.nexuswatch.com). Nexus Watch employs a number of 'pollers' (Sun Microsystems servers running proprietary software) that act as if they were customers connecting to a website every 15 minutes. Each poller is connected to the Internet using a different tier-one ISP. The capacity of the Internet connections is high enough that it cannot affect results, and the performance of the equipment is proactively monitored to ensure that results are not affected. Consequently, the gathered data represents the monitored system and the Internet, not the monitoring system that is polling the site. This data is then stored in a central database for analysis.

Site Availability

Nexus Watch dispatched an HTTP request to all of the public sector websites from two locations, via two different tier-one ISPs) at precisely the same moment in time. When neither of the polls received a reply, or when both received an error (such as an "HTTP 500 – Internal Error"), the site was deemed unavailable. When at least one poller received a satisfactory response, the site was deemed available. This allows for differentiation between problems on the system and problems with the Internet, minimises false reports and provides more accurate results.

Download Times

After dispatching an HTTP request to the public sector websites from two locations, the time taken for the web server to open a TCP connection was recorded (excluding DNS lookup time), as was the total amount of time taken to download the web page and all of its objects (images, sound clips etc).

Nexus Watch downloads objects in a page one at a time and records total time it took the homepage to download. Some browsers will download multiple objects (typically four) at a time, which can sometimes reduce download times. However, any speed improvements are dependant upon available bandwidth and whether the web server supports this mode. Over low bandwidth links (representing 80% of UK households), benefits of simultaneous downloads are marginal. Also impacting download times is the performance of the end-users computer. Users with slow computers may need to wait even longer for a page to download.

Some of the website's homepages use embedded code to redirect the user to another site or a different place within the site, according to the users browser version and capabilities. Where this is the case, the homepage contains a relatively small amount of data, as it does not include the real content. For this research, Nexus Watch only downloaded the homepage and its contents, and did not process any code (including HTML meta tags). So as not to give misleading results, only those sites that did not have redirecting code are included in the download time results. However, sites that utilised HTTP redirects are included in the results. In these cases the content of the final destination was downloaded, along with the time taken to perform the redirect(s).

Connection & Response Times

When measuring the performance of web servers, Nexus Watch first records the time taken for a HTTP server to open a TCP connection. The TCP connection is the data stream over which the web page will be transferred to the user. The connection time is affected primarily by the quality of the network connection, the performance of the firewall and of the HTTP server itself.

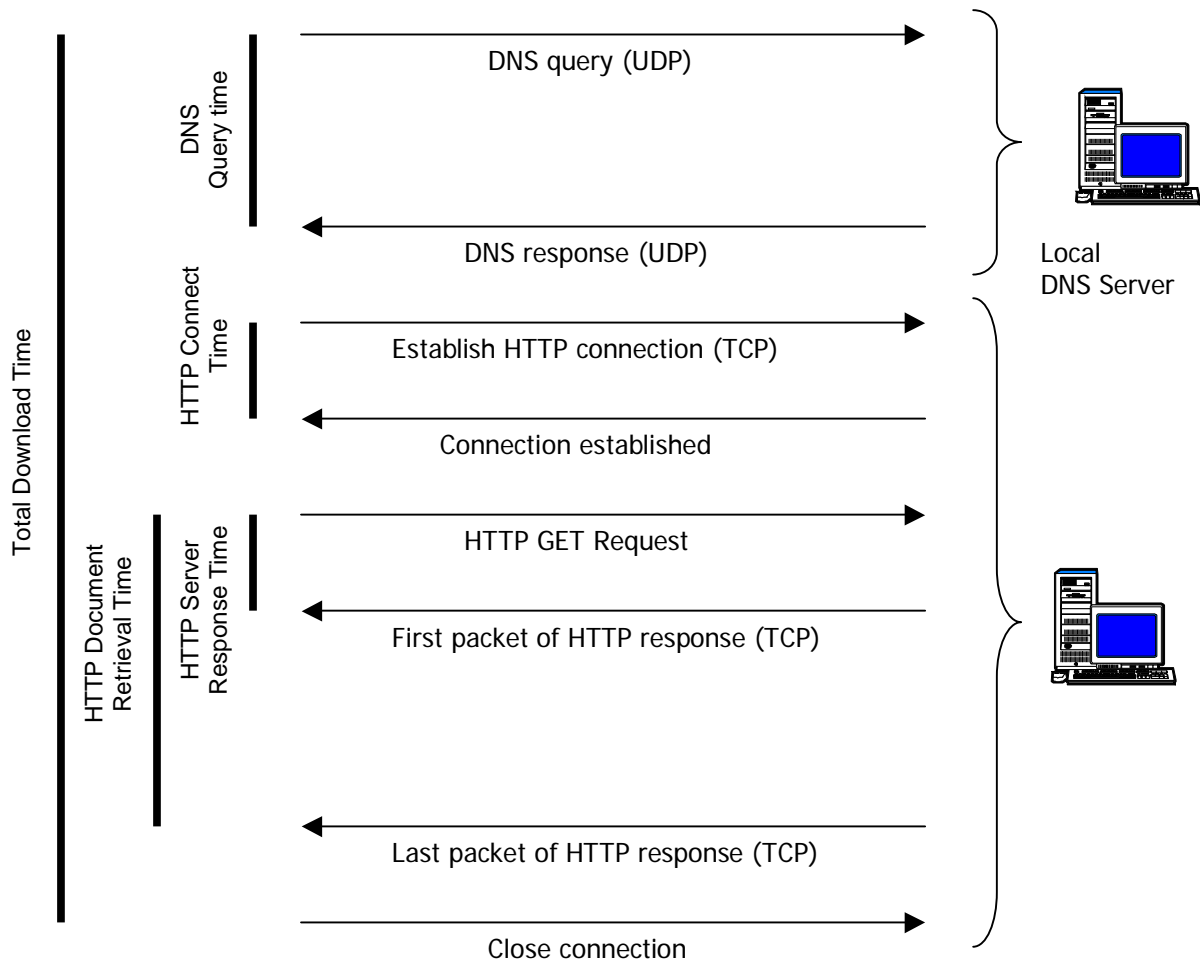
Next, the time taken for the HTTP server to reply with a HTTP response code was recorded. The response code tells the browser whether the page that it requested can be downloaded, or it will give a reason as to why not. We have all seen evidence of the familiar and unwelcome "404 – File not found" response code. The time taken for the HTTP response code to be received (the 'response time') is, like the connection time, affected by the quality of the network connection and by the performance of the HTTP server. However, unlike the connection time, it is also significantly affected by the performance of the HTTP server hardware and software.

By analysing the connection times and response times together, a better understanding can be formed of where the performance bottlenecks are.

Web Page Sizes

The sum of the data sizes of all objects (images, etc) in the home page was recorded. Where the web page utilised frames, they were recursed into so that every object that a customer's browser would download was received.

Diagram 1: Path Taken for Nexus Watch 'Poll'



Results for all Sites

Table 10: Sites Monitored, Homepage Size & Availability

| Name | Sector | Website | Homepage Size (kB) | Availability (%) |
|--------------------------------|-----------------|-------------------------------|--------------------|------------------|
| 10 Downing Street | Service | www.pm.gov.uk | 187 | 99.25 |
| Belfast City Council | City Council | www.belfastcity.gov.uk | 71 | 87.53 |
| British Library | Service | www.bl.uk | 40 | 99.77 |
| Buckinghamshire County Council | County Council | www.buckscc.gov.uk | 50 | 99.63 |
| Cambridgeshire County Council | County Council | www.camcnty.gov.uk | 30 | 100.00 |
| Cardiff City Council | City Council | www.cardiff.gov.uk | 53 | 99.75 |
| Careers Online | Service | www.carersonline.org.uk | 38 | 100.00 |
| Cheshire County Council | County Council | www.cheshire.gov.uk | 59 | 99.77 |
| Conservative Party | Political Party | www.conservative-party.org.uk | 136 | 99.90 |
| Cornwall County Council | County Council | www.cornwall.gov.uk | 64 | 99.92 |
| Cumbria County Council | County Council | www.cumbria.gov.uk | 37 | 99.36 |
| Department of Trade & Industry | Service | www.dti.gov.uk | 73 | 97.50 |
| Derbyshire County Council | County Council | www.derbyshire.gov.uk | 76 | 99.03 |
| Devon County Council | County Council | www.devon-cc.gov.uk | 68 | 99.17 |
| Disability | Service | www.disability.gov.uk | 26 | 99.96 |
| Dorset County Council | County Council | www.dorset-cc.gov.uk | 57 | 87.44 |
| Durham County Council | County Council | www.durham.gov.uk | 126 | 97.59 |
| DVLA | Service | www.dvla.gov.uk | 8 | 99.94 |
| East Sussex County Council | County Council | www.eastsussexcc.gov.uk | 42 | 99.81 |
| Edinburgh City Council | City Council | www.edinburgh.gov.uk | 32 | 99.38 |
| Essex County Council | County Council | www.essexcc.gov.uk | 118 | 99.73 |
| European Union | Service | europa.eu.int | 38 | 99.10 |
| Glasgow City Council | City Council | www.glasgow.gov.uk | 96 | 99.00 |
| Gloucester County Council | County Council | www.gloscc.gov.uk | 26 | 99.90 |
| Hampshire County Council | County Council | www.hants.gov.uk | 38 | 99.75 |
| Hertfordshire County Council | County Council | www.hertsdirect.org | 72 | 99.40 |
| Home Office | Service | www.homeoffice.gov.uk | 104 | 97.97 |
| Inland Revenue | Service | www.inlandrevenue.gov.uk | 60 | 99.98 |
| Isle of Wight County Council | County Council | www.iwight.gov.uk | 35 | 99.81 |
| i-UK | Service | www.planet-britain.org | 16 | 98.92 |
| Job Centre Online | Service | www.jobcentreonline.com | 60 | 99.61 |
| Kent County Council | County Council | www.kent.gov.uk | 44 | 96.13 |
| Labour Party | Political Party | www.labour.org.uk | 176 | 98.03 |
| Lancashire County Council | County Council | www.lancashire.gov.uk | 40 | 99.59 |
| Leeds City Council | City Council | www.leeds.gov.uk | 133 | 99.75 |
| Liberal Democratic Party | Political Party | www.libdems.org.uk | 113 | 99.79 |
| Lincolnshire County Council | County Council | www.lincolnshire.gov.uk | 49 | 99.98 |
| Local Government Association | Service | www.lga.gov.uk | 163 | 99.24 |
| Manchester City Council | City Council | www.manchester.gov.uk | 48 | 99.96 |
| Metropolitan Police | Service | www.met.police.uk | 77 | 99.92 |
| MI5 | Service | www.mi5.gov.uk | 96 | 100.00 |
| Ministry of Defence | Service | www.mod.uk | 74 | 99.98 |
| National Statistics | Service | www.statistics.gov.uk | 55 | 98.19 |
| NHS | Service | www.nhs.uk | 26 | 99.98 |
| NHS Direct | Service | www.nhsdirect.nhs.uk | 63 | 99.94 |
| Norfolk County Council | County Council | www.norfolk.gov.uk | 149 | 97.80 |
| North Yorkshire County Council | County Council | northyorks.gov.uk | 80 | 99.82 |

| Name | Sector | Website | Homepage Size (kB) | Availability (%) |
|---------------------------------|----------------|--------------------------------|--------------------|------------------|
| Northamptonshire County Council | County Council | www.northamptonshire.gov.uk | 56 | 99.51 |
| Northumberland County Council | County Council | www.northumberland.gov.uk | 96 | 97.04 |
| Nottinghamshire County Council | County Council | www.nottsc.gov.uk | 152 | 96.95 |
| Official Documents | Service | www.official-documents.co.uk | 40 | 95.82 |
| Oxfordshire County Council | County Council | www.oxfordshire.gov.uk | 56 | 99.80 |
| Passport Service | Service | www.passports.gov.uk | 101 | 100.00 |
| Public Record Office | Service | www.pro.gov.uk | 26 | 99.96 |
| Scottish Parliament | Service | www.scottish.parliament.uk | 91 | 96.92 |
| Shropshire County Council | County Council | www.shropshire-cc.gov.uk | 37 | 98.59 |
| Somerset County Council | County Council | www.somerset.gov.uk | 37 | 99.14 |
| Staffordshire County Council | County Council | www.staffordshire.gov.uk | 40 | 100.00 |
| Street Works | Service | www.street-works.dtlr.gov.uk | 5 | 99.92 |
| Suffolk County Council | County Council | www.suffolkcc.gov.uk | 41 | 99.07 |
| Surrey County Council | County Council | www.surreycc.gov.uk | 68 | 99.06 |
| London Congestion Charging | Service | www.cclondon.com | 55 | 97.83 |
| UK Online | Service | www.ukonline.gov.uk | 84 | 99.39 |
| UK Online for Business | Service | www.ukonlineforbusiness.gov.uk | 72 | 96.94 |
| UK Resilience | Service | www.co-ordination.gov.uk | 62 | 99.63 |
| Warwickshire County Council | County Council | www.warwickshire.gov.uk | 88 | 93.26 |
| West Sussex County Council | County Council | www.westsussex.gov.uk | 56 | 97.01 |
| Westminster City Council | City Council | www.westminster.gov.uk | 60 | 99.22 |
| Wiltshire County Council | County Council | www.wiltshire.gov.uk | 84 | 99.96 |
| Worcestershire County Council | County Council | www.worcestershire.gov.uk | 76 | 99.92 |

Table 11: Connection, Response & Redirect Time

| Organisation | Connection Time (s) | Response Time (s) | Redirect Time (s) |
|--------------------------------|---------------------|-------------------|-------------------|
| 10 Downing Street | 0.136 | 0.146 | 0.264 |
| Belfast City Council | 0.145 | 0.262 | |
| British Library | 0.101 | 0.759 | |
| Buckinghamshire County Council | 0.109 | 0.078 | |
| Cambridgeshire County Council | 0.130 | 0.057 | |
| Cardiff City Council | 0.175 | 0.076 | |
| Careers Online | 0.081 | 0.022 | |
| Cheshire County Council | 0.118 | 0.087 | |
| Conservative Party | 0.101 | 1.023 | |
| Cornwall County Council | 0.122 | 0.072 | |
| Cumbria County Council | 0.087 | 0.108 | |
| Department of Trade & Industry | 0.107 | 0.050 | 0.085 |
| Derbyshire County Council | 0.360 | 0.299 | 0.231 |
| Devon County Council | 0.113 | 0.507 | 0.975 |
| Disability | 0.093 | 0.049 | |
| Dorset County Council | 0.174 | 1.023 | |
| Durham County Council | 0.150 | 0.455 | |
| DVLA | 0.140 | 0.062 | |
| East Sussex County Council | 0.137 | 0.077 | |
| Edinburgh City Council | 0.098 | 0.119 | |
| Essex County Council | 0.108 | 0.050 | 0.144 |

| Organisation | Connection Time (s) | Response Time (s) | Redirect Time (s) |
|---------------------------------|---------------------|-------------------|-------------------|
| European Union | 0.140 | 0.071 | |
| Glasgow City Council | 0.108 | 0.081 | |
| Gloucester County Council | 0.081 | 0.064 | |
| Hampshire County Council | 0.161 | 0.186 | |
| Hertfordshire County Council | 0.132 | 0.120 | |
| Home Office | 0.147 | 0.041 | |
| Inland Revenue | 0.118 | 0.073 | |
| Isle of Wight County Council | 0.131 | 0.054 | |
| i-UK | 0.072 | 0.337 | |
| Job Centre Online | 0.076 | 0.054 | 12.159 |
| Kent County Council | 0.071 | 0.071 | |
| Labour Party | 0.168 | 0.506 | |
| Lancashire County Council | 0.080 | 0.096 | |
| Leeds City Council | 0.129 | 0.070 | |
| Liberal Democratic Party | 0.102 | 1.346 | |
| Lincolnshire County Council | 0.116 | 0.067 | |
| Local Government Association | 0.132 | 0.120 | |
| Manchester City Council | 0.114 | 0.040 | |
| Metropolitan Police | 0.135 | 0.434 | |
| MI5 | 0.138 | 0.069 | 0.072 |
| Ministry of Defence | 0.133 | 0.084 | 0.169 |
| National Statistics | 0.080 | 0.056 | |
| NHS | 0.109 | 0.101 | |
| NHS Direct | 0.135 | 0.072 | 0.077 |
| Norfolk County Council | 0.120 | 0.065 | |
| North Yorkshire County Council | 0.075 | 0.132 | |
| Northamptonshire County Council | 0.147 | 0.797 | 0.998 |
| Northumberland County Council | 0.134 | 0.508 | |
| Nottinghamshire County Council | 0.084 | 0.044 | |
| Official Documents | 0.122 | 0.053 | |
| Oxfordshire County Council | 0.071 | 0.320 | |
| Passport Service | 0.085 | 0.034 | |
| Public Record Office | 0.103 | 0.033 | |
| Scottish Parliament | 0.150 | 0.075 | |
| Shropshire County Council | 0.097 | 0.696 | 0.798 |
| Somerset County Council | 0.213 | 0.609 | |
| Staffordshire County Council | 0.103 | 0.246 | |
| Street Works | 0.113 | 0.126 | 0.038 |
| Suffolk County Council | 0.155 | 0.079 | |
| Surrey County Council | 0.113 | 0.252 | |
| London Congestion Charging | 0.045 | 0.451 | 0.065 |
| UK Online | 0.115 | 0.771 | 0.160 |
| UK Online for Business | 0.134 | 3.765 | 1.385 |
| UK Resilience | 0.124 | 0.184 | 0.042 |
| Warwickshire County Council | 0.095 | 4.400 | |
| West Sussex County Council | 0.098 | 1.484 | |
| Westminster City Council | 0.067 | 2.457 | 1.352 |

| Organisation | Connection Time (s) | Response Time (s) | Redirect Time (s) |
|-------------------------------|---------------------|-------------------|-------------------|
| Wiltshire County Council | 0.124 | 0.151 | |
| Worcestershire County Council | 0.139 | 0.567 | |

Table 12: Download Time at Multiple Speeds

| Organisation | Modem at 28kbps | Modem at 56kbps | ISDN at 64kbps | Broadband at 512kbps |
|---------------------------------|-----------------|-----------------|----------------|----------------------|
| 10 Downing Street | 119.19 | 59.59 | 52.14 | 6.52 |
| Belfast City Council | 38.03 | 19.01 | 16.64 | 2.08 |
| British Library | 41.17 | 20.59 | 18.01 | 2.25 |
| Buckinghamshire County Council | 33.10 | 16.55 | 14.48 | 1.81 |
| Cambridgeshire County Council | 18.77 | 9.39 | 8.21 | 1.03 |
| Cardiff City Council | 22.20 | 11.10 | 9.71 | 1.21 |
| Careers Online | 32.65 | 16.32 | 14.28 | 1.79 |
| Cheshire County Council | 27.68 | 13.84 | 12.11 | 1.51 |
| Conservative Party | 71.49 | 35.74 | 31.28 | 3.91 |
| Cornwall County Council | 37.25 | 18.62 | 16.30 | 2.04 |
| Cumbria County Council | 25.05 | 12.52 | 10.96 | 1.37 |
| Department of Trade & Industry | 30.29 | 15.14 | 13.25 | 1.66 |
| Derbyshire County Council | 54.43 | 27.21 | 23.81 | 2.98 |
| Devon County Council | 75.53 | 37.77 | 33.05 | 4.13 |
| Disability | 17.40 | 8.70 | 7.61 | 0.95 |
| Dorset County Council | 61.94 | 30.97 | 27.10 | 3.39 |
| Durham County Council | 69.45 | 34.72 | 30.38 | 3.80 |
| DVLA | 14.59 | 7.30 | 6.38 | 0.80 |
| East Sussex County Council | 27.51 | 13.76 | 12.04 | 1.50 |
| Edinburgh City Council | 3.33 | 1.67 | 1.46 | 0.18 |
| Essex County Council | 54.14 | 27.07 | 23.68 | 2.96 |
| European Union | 19.97 | 9.99 | 8.74 | 1.09 |
| Glasgow City Council | 31.49 | 15.75 | 13.78 | 1.72 |
| Gloucester County Council | 12.20 | 6.10 | 5.34 | 0.67 |
| Hampshire County Council | 24.10 | 12.05 | 10.54 | 1.32 |
| Hertfordshire County Council | 37.79 | 18.90 | 16.53 | 2.07 |
| Home Office | 64.70 | 32.35 | 28.31 | 3.54 |
| Inland Revenue | 36.13 | 18.07 | 15.81 | 1.98 |
| Isle of Wight County Council | 16.89 | 8.44 | 7.39 | 0.92 |
| i-UK | 25.95 | 12.98 | 11.36 | 1.42 |
| Job Centre Online | 160.69 | 80.35 | 70.30 | 8.79 |
| Kent County Council | 14.00 | 7.00 | 6.12 | 0.77 |
| Labour Party | 50.29 | 25.15 | 22.00 | 2.75 |
| Lancashire County Council | 17.39 | 8.70 | 7.61 | 0.95 |
| Leeds City Council | 73.87 | 36.93 | 32.32 | 4.04 |
| Liberal Democratic Party | 73.30 | 36.65 | 32.07 | 4.01 |
| Lincolnshire County Council | 25.82 | 12.91 | 11.30 | 1.41 |
| Local Government Association | 84.06 | 42.03 | 36.78 | 4.60 |
| Manchester City Council | 49.41 | 24.70 | 21.62 | 2.70 |
| Metropolitan Police | 44.44 | 22.22 | 19.44 | 2.43 |
| MI5 | 80.08 | 40.04 | 35.03 | 4.38 |
| Ministry of Defence | 45.35 | 22.68 | 19.84 | 2.48 |
| National Statistics | 40.33 | 20.16 | 17.64 | 2.21 |
| NHS | 16.37 | 8.19 | 7.16 | 0.90 |
| NHS Direct | 46.41 | 23.20 | 20.30 | 2.54 |
| Norfolk County Council | 108.55 | 54.28 | 47.49 | 5.94 |
| North Yorkshire County Council | 38.40 | 19.20 | 16.80 | 2.10 |
| Northamptonshire County Council | 34.08 | 17.04 | 14.91 | 1.86 |
| Northumberland County Council | 53.07 | 26.53 | 23.22 | 2.90 |
| Nottinghamshire County Council | 88.93 | 44.47 | 38.91 | 4.86 |

| Organisation | Modem at 28kbps | Modem at 56kbps | ISDN at 64kbps | Broadband at 512kbps |
|-------------------------------|-----------------|-----------------|----------------|----------------------|
| Official Documents | 24.19 | 12.10 | 10.58 | 1.32 |
| Oxfordshire County Council | 30.76 | 15.38 | 13.46 | 1.68 |
| Passport Service | 51.83 | 25.92 | 22.68 | 2.83 |
| Public Record Office | 20.82 | 10.41 | 9.11 | 1.14 |
| Scottish Parliament | 40.59 | 20.30 | 17.76 | 2.22 |
| Shropshire County Council | 23.61 | 11.80 | 10.33 | 1.29 |
| Somerset County Council | 34.13 | 17.06 | 14.93 | 1.87 |
| Staffordshire County Council | 24.16 | 12.08 | 10.57 | 1.32 |
| Street Works | 6.56 | 3.28 | 2.87 | 0.36 |
| Suffolk County Council | 17.13 | 8.57 | 7.49 | 0.94 |
| Surrey County Council | 25.15 | 12.57 | 11.00 | 1.38 |
| London Congestion Charging | 29.42 | 14.71 | 12.87 | 1.61 |
| UK Online | 39.76 | 19.88 | 17.39 | 2.17 |
| UK Online for Business | 92.06 | 46.03 | 40.28 | 5.03 |
| UK Resilience | 47.46 | 23.73 | 20.76 | 2.60 |
| Warwickshire County Council | 99.76 | 49.88 | 43.65 | 5.46 |
| West Sussex County Council | 13.67 | 6.83 | 5.98 | 0.75 |
| Westminster City Council | 61.14 | 30.57 | 26.75 | 3.34 |
| Wiltshire County Council | 33.56 | 16.78 | 14.68 | 1.84 |
| Worcestershire County Council | 50.59 | 25.30 | 22.13 | 2.77 |

Contact Us

For more information on this report or to find out how Nexus Watch can help improve your website's performance, please contact us.

Ardenta Ltd
Sunbury International Business Centre
Brooklands Close
Sunbury on Thames
TW16 7DX

Tel: 0870 765 7560
Fax: 08700 549829

Email: info@nexuswatch.com
PR: pr@nexuswatch.com

www.nexuswatch.com