

IMS PG-SME™ Sample Report

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Report description

Welcome to the PG-SME™ weekly report from IMS which contains information on personal computers, server(s) and the network traffic for your organisation.

Each graph or chart has helpful advice in three paragraphs:-

1. What the graph/table is showing and why
2. What to look out for on the graph/table to take action
3. Why this is important to the business i.e. productivity loss & impact cost

Each section of the report is designed to give a regular overview of your computer installation to highlight the real time impact on End User productivity; each network or computer is different so the thresholds given are baselines chosen from experience. Where computers access remote servers/services then the time taken will be longer.

TREND ANALYSIS - It is important to note the normal trend from week to week, when a noticeable change is observed this indicates either changes to the network or computer systems or identifies a gradual degradation of services or systems.

A stable well performing network, server and computer report should give PEACE OF MIND.

Where issues are observed then this can direct support to investigate and resolve. The following reports allow review of the changes made and whether this has resolved the issue.

COMPLEX ANALYSIS - Should an issue appear more complex, or help is required to interpret the reports, IMS-MCS is available for more detailed analysis – please contact us by email ims-pg@inmansys.co.uk or by phone 01277 841848.

WHY START-UP and LOGIN TIMES - These are the times from powering on to a screen prompt for user interaction and the time from hitting enter on a login password to completing the login process. These are excellent indicators of slow computers or issues with the network or login server(s) which cause loss of End User productivity. PC configuration is the first thing to review.

BUSY TIMES - You will probably experience longer login times during busy periods at the beginning of the day and after lunch but the machines that consistently take significantly longer than the average have other issues worth investigating.

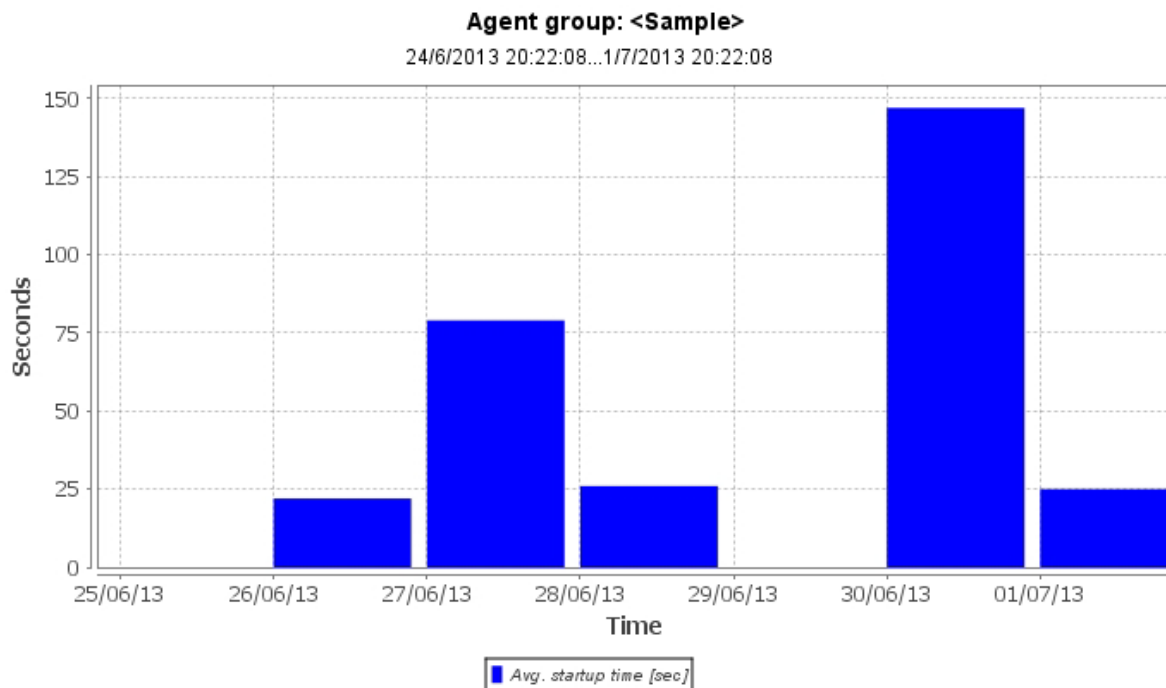
SAMPLE REPORT adjustments – the number of items within tables of start-ups, logins have been reduced in this report to 5 or 10; the live reports are set to 50 items. The names of devices, user names and network addresses have been replaced or removed for confidentiality.

Report interval: 0 - 1 week

Report period: 24/6/2013 -> 1/7/2013

Created at: 1/7/2013

1. Start-up Time - 90-percentile Daily Trend



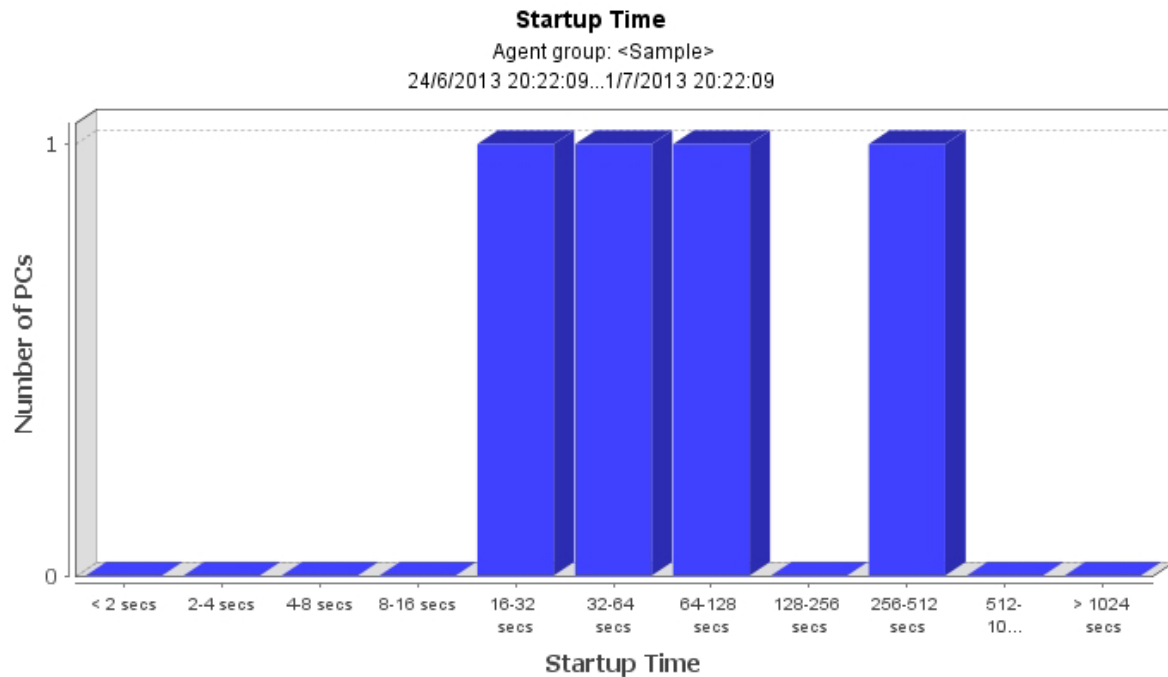
This chart shows the slowest start-up times of the 90-percentile for daily PC start-up time during the week. Using the 90-percentile ensures that incidents on a small number of PC's does not influence the overall trend. The y-value (seconds) for each date is thus the start-up time of the slowest of the 90% fastest start-ups.

Computers that exceed the typical sub 100s start-up time indicate problems that need investigating, see the next graph on Start-up Time for specific slow computers.

(Nb: Higher values on one day may be caused by other network factors)

The identification of slow start-up times quantifies what many users will often not report and just put up with, but actually represents lost productivity for the business. When this persists over a year then a significant period of work time has been lost. If this impacts more than a few computers the loss is multiplied. Just 10 minutes a day for 200 computer users equates to a £120k loss at £15.00 an hour.

2. Average PC Start-up Duration



Bottom 5

No.	Computer name	Agent Id	Agent version	IP address	Startup Time [secs]
1	PC1	1002	6-2-103-3374	confidential	303
2	PC2	1008	6-2-103-3374	confidential	110.7
3	PC3	1007	6-1-27-21652	confidential	35.8
4	LT1	1003	6-2-103-3374	confidential	27

The chart shows up to 5 PC's with the slowest start-up times, within the average graph.

On a typical network the average start-up times should be under 128 seconds. Computers over 128 seconds (> 2 minutes) are slower than they should be.

Computers over 256 seconds (>4 minutes) are causing a loss of productivity. The identification of slow start-up times quantifies what many users will often take for granted, but actually represents lost productivity for the business. Even just 20 minutes a day lost for 200 users equates to a £240k loss at £15.00 an hour.

3. Slowest 10 Start-ups

Agents: <Sample>

24/6/2013...1/7/2013

Computer Name	Operating System	Network	Current User	Boot Time	Startup Time [sec]
DC Server	Windows 2008 R2 Service Pack 1	Office	N/A	30/6/2013	259
File Server	Windows 2008 R2 Service Pack 1	Office	N/A	30/6/2013	303
Exchange Server	Windows 2008 R2 Service Pack 1	Office	N/A	30/6/2013	100
Exchange Server	Windows 2008 R2 Service Pack 1	Office	N/A	30/6/2013	111
PC1	Windows 7 SP1	Remote	N/A	27/6/2013	79
PC2	Windows 7 SP1	Remote	N/A	27/6/2013	79
LT3	Windows 8	Remote	N/A	28/6/2013	21
LT4	Windows 7 SP1	Remote	N/A	30/6/2013	28
LT5	Windows 7 SP1	Office	N/A	30/6/2013	29
PC6	Windows 7 SP1	Office	N/A	1/7/2013	25

This list shows the 10 slowest Computer start-up events ordered by duration. As PCs are started up through a week they may be listed multiple times. Variations in network and computers will result in a range of times unique to your company.

In general a start-up time under 60 seconds is acceptable. However when the start-up exceeds 3 minutes then this results in a loss of productivity as the user waits for the computer. Start-up times of over 6 minutes are not uncommon and indicate a fault with the disk, file errors or faulty network interface drivers as a slow response from the network card significantly slows the start-up time.

Reviewing the reports over a number of weeks will confirm which computers are consistently slow starters, which need investigation and what rectification is required.

Slow computers impact productivity each time they are booted, over a year this can be significant and when several company PCs are involved this represents a significant cost to the business.

4. Slowest 10 Start-up processes

Agents: <Sample>

24/6/2013...1/7/2013

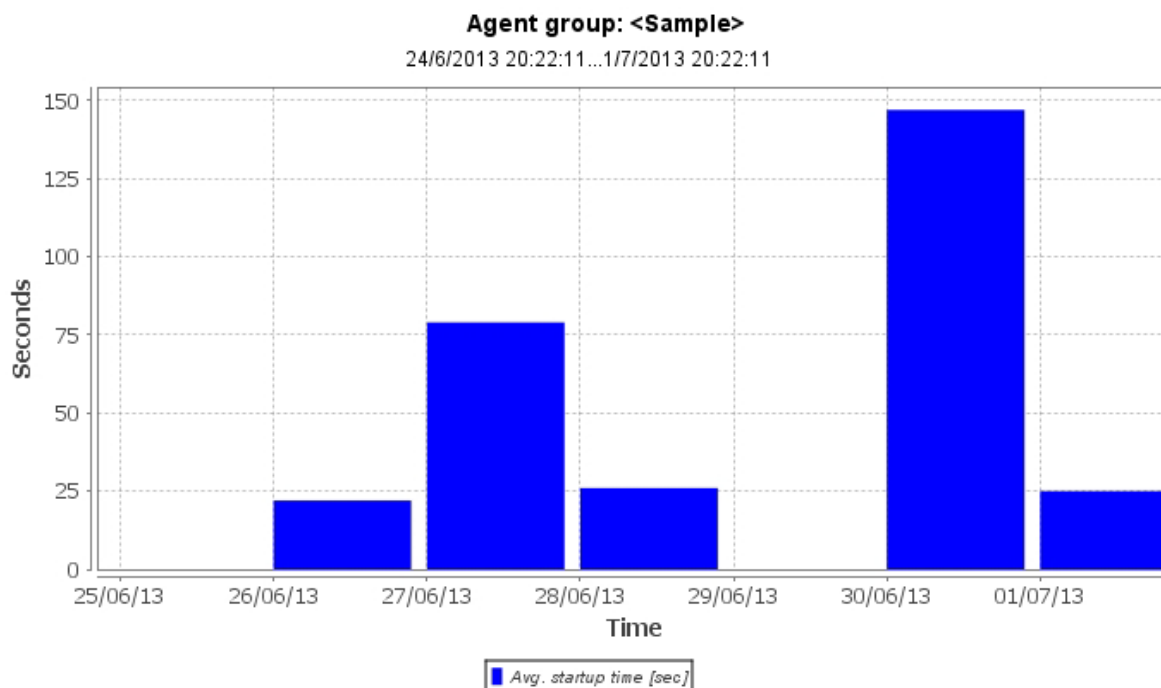
Process Name	Samples	Avg. Startup Time [sec]	Avg. CPU Time[sec]	Avg. Disk IO[ops]
SearchProtocolHost	3	172	14	14,136
wmpnetwk	8	64	0	243
OSPPSVC	2	62	1	2
TrustedInstaller	14	60	56	36,717
obexsrv	2	59	0	32
FrameworkService	2	30	0	1,006
Microsoft.Exchange.AddressBook.Service	2	29	2	260
w3wp	2	28	6	1,054
Microsoft.ActiveDirectory.WebServices	2	25	1	110
dns	2	25	0	2

At every PC start-up, the agent logs the time of all processes and resources spent. The difference in real time from the start of a process until the next process starts is assumed to be the start-up delay caused by this process. When compiling this list across all PC's you will get an indication of the top processes slowing down your PC start-up's. This list shows the 10 slowest processes during start-up ordered by descending start-up delay.

This is a more technical chart to help your IT support staff identify problematic applications; some names will be more obvious than others. Again we are looking for those that stand out much longer or take significant processor CPU time. These often indicate computers with out of date software or drivers that are incompatible with newer software.

When software/programs take unusually long times to start during the computer start-up with initial loss of productivity, they often also function slowly, impacting the performance of the computer throughout the working day further adding to the loss of productivity.

5. Login Time - 90-percentile Daily Trend



This chart shows the slowest login times of the 90-percentile for daily PC login time during the week. Using the 90-percentile ensures that incidents on a small number of PC's does not influence the overall trend. The y-value (seconds) for each date is thus the login time of the slowest of the 90% fastest logins.

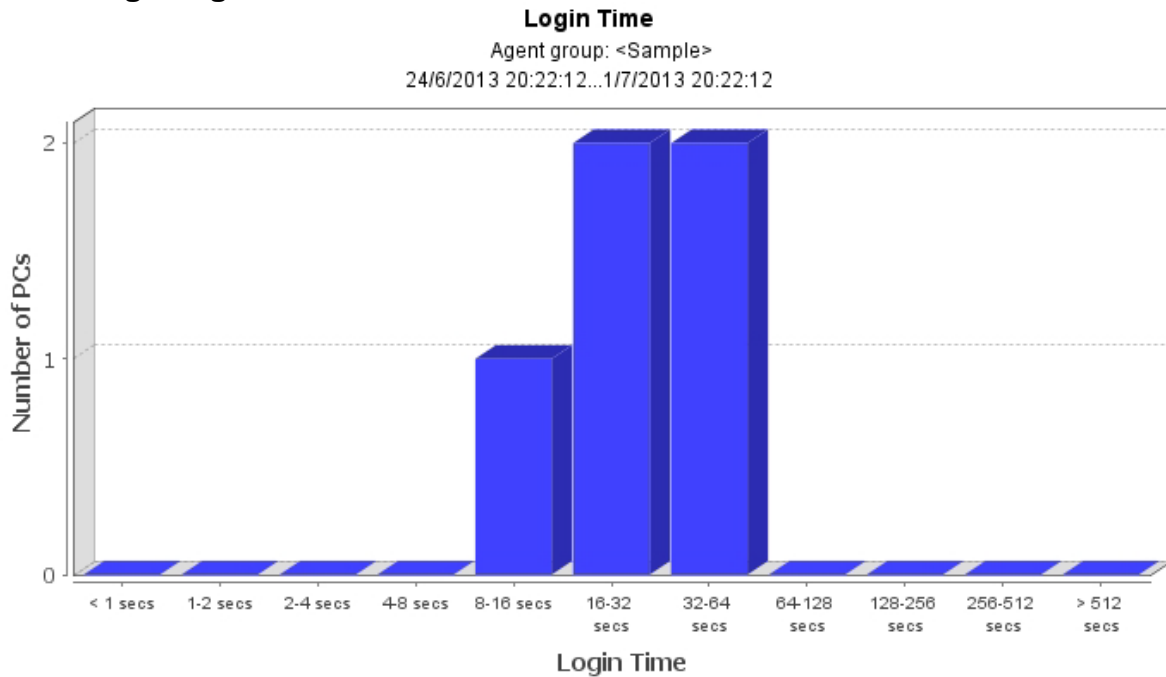
Computers that exceed the typical sub 20 second login time indicate problems that need investigating, see the next graph on Average Login Time for specific slow computers. (Nb: Higher values on one day may be caused by other network factors).

Remote users will have longer login times of between 30 – 150 seconds depending on your topology. When comparing users at each location, exceptions typically indicate issues for investigation.

The identification of slow login times quantifies what many users will just put up with, but actually represents lost productivity for the business. When this persists over a year then a significant period of work time is lost. If this impacts more than a few computers the loss is again multiplied.

Most End Users will login at least twice a day, therefore just 2 minutes extended login twice a day (4 mins) for 200 users equates to a £50k loss per year at £15.00 an hour.

6. Average Login Duration



Bottom 3

No.	Computer name	Agent Id	Agent version	IP address	Login Time[secs]
1	LT1	1003	6-2-103-3374	confidential	38.7
2	LT2	1009	6-2-103-3374	confidential	35.9
3	PC3	1011	6-2-103-3374	confidential	31

The sample chart shows the "Bottom 3" PC's with the slowest average login time. The Y-axis is the number of PC's within each time segment along the X-axis in seconds.

These issues can be complex to track to the root cause, however, our IMS-MCS (Managed Consultative Service) will assist with deeper analysis than these reports can provide.

We have experience of companies suffering huge productivity losses due to long login times that were symptomatic of deeper issues with DNS that slowed EVERY transaction across the network/internet wasting up to 30% of all computer work time.

7. Slowest 10 logins

Agents: <Sample>

24/6/2013...1/7/2013

Computer Name	Operating System	Network	Login User	Login Time	Login Time [sec]
LT1	Windows8	Remote	N/A	28/6/2013_11:09:01	45
PC2	Windows7 ServicePack1	Office	N/A	1/7/2013_15:50:21	36
PC3	Windows7 ServicePack1	Office	N/A	1/7/2013_5:50:21	36
PC4	Windows7 ServicePack1	Office	N/A	1/7/2013_15:50:21	36
LT5	Windows8	Remote	N/A	26/6/2013_09:09:36	32
App Server	Windows2008 R2 Service Pack1	Office	N/A	26/6/2013_09:12:27	31
App Server	Windows2008 R2 Service Pack1	Office	N/A	26/6/2013_09:12:27	31
File Server	Windows2008 R2 Service Pack1	Office	N/A	26/6/2013_09:11:43	18
File Server	Windows2008 R2 Service Pack1	Office	N/A	26/6/2013_09:11:43	18
PC6	Windows7 ServicePack1	Remote	N/A	26/6/2013_09:09:28	17

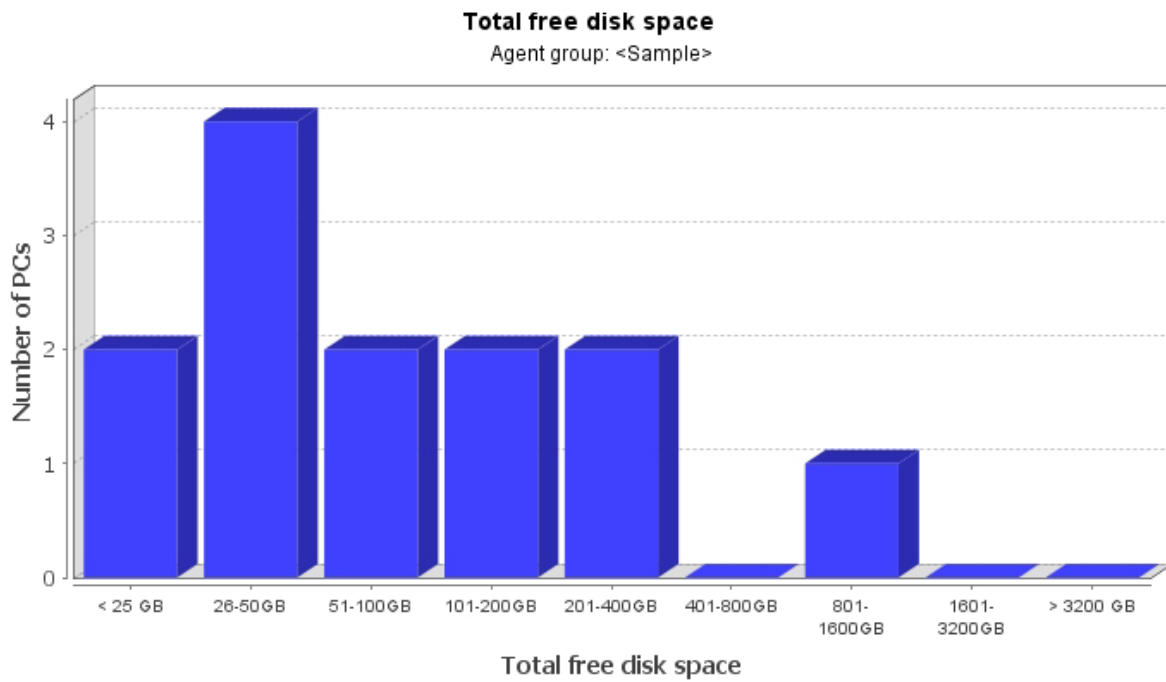
This list shows the slowest 10 login events ordered by duration. This is an events based list and the same PC may show up multiple times over the week. This report is to identify specific or groups of computers with longer login times which could be causing a loss of productivity and requires investigation.

Normal use depends on each company network and the devices used but less than 20 seconds login time is normal, variation across the week again is normal. However when the login time is higher than 60 seconds more than once it indicates a problem with the End Users computers, network, DNS or domain controllers and should be investigated. Other graphs and charts in this weekly report will assist with diagnosis. Please note remote computers can take significantly longer to login due to the latency of the wide area network or internet or VPN links.

As already highlighted slow computer login can indicate a slow computer or issues on servers or the network and should be investigated to reduce the impact on productivity. Clearly faulty configuration has been replicated across groups of computers causing significant loss of productivity which has gone unnoticed for several months or even years. Where a group of computers exhibit the same slow login times, there may be a replicated configuration problem or the link from that location is experiencing performance issues.

Although each End User computer appears to be functioning normally, there is often authentication (logon) or connection issues that can only be identified and displayed by monitoring End User interactions, a unique feature of PG-SME™.

8. Total Free Disk Space PCs & Servers (Bottom 5)

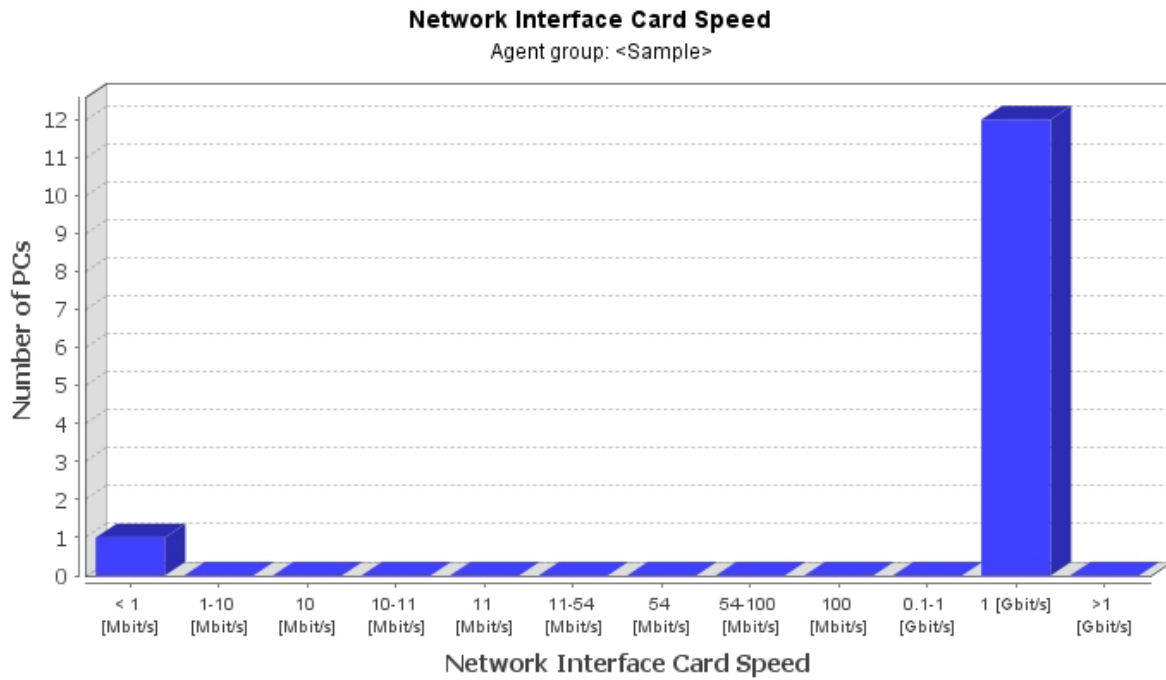


Bottom 5

No.	Computer name	Agent Id	Agent version	IP address	Total disk space [GB]	Total free disk space [GB]
1	LT6	1001	6-2-103-3374	confidential	93	8
2	LT2	1009	6-2-103-3374	confidential	39	8
3	LT3	1005	6-2-103-3374	confidential	39	25
4	App Server	1012	6-2-103-3374	confidential	76	25
5	PC2	1008	6-2-103-3374	confidential	99	26

This report displays the Bottom 5 PCs or Servers with the lowest free disk space. When free disk space drops below 5% the computer performance will be seriously impacted or crash the computer.

9. Network Connection Speed



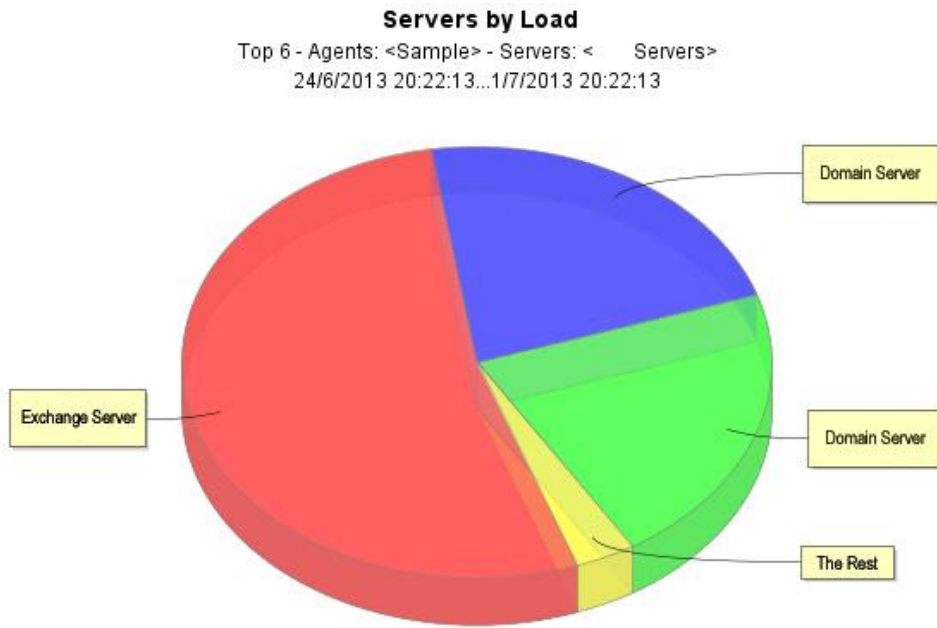
Bottom 5

No.	Computer name	Agent Id	Agent version	IP address	Network Interface Card Speed [Mbit/s]
1	LT1	1003	6-2-103-3374	confidential	0
2	LT2	1009	6-2-103-3374	confidential	1000
3	LT3	1005	6-2-103-3374	confidential	1000
4	PC4	1004	6-2-103-3374	confidential	1000
5	PC3	1007	6-1-27-21652	confidential	1000

This sample report shows the network connection speed of the slowest 5 computers. Unusual network connection speeds for wired and wireless devices indicates faults with network cards or drivers.

This chart can identify both computers with configuration issues or slow/failing NIC's, but also potential weaknesses in the wireless network within buildings that will slow response times and impact user's workflow again with losses to productivity and efficiency.

10. Servers by Load



Top 3

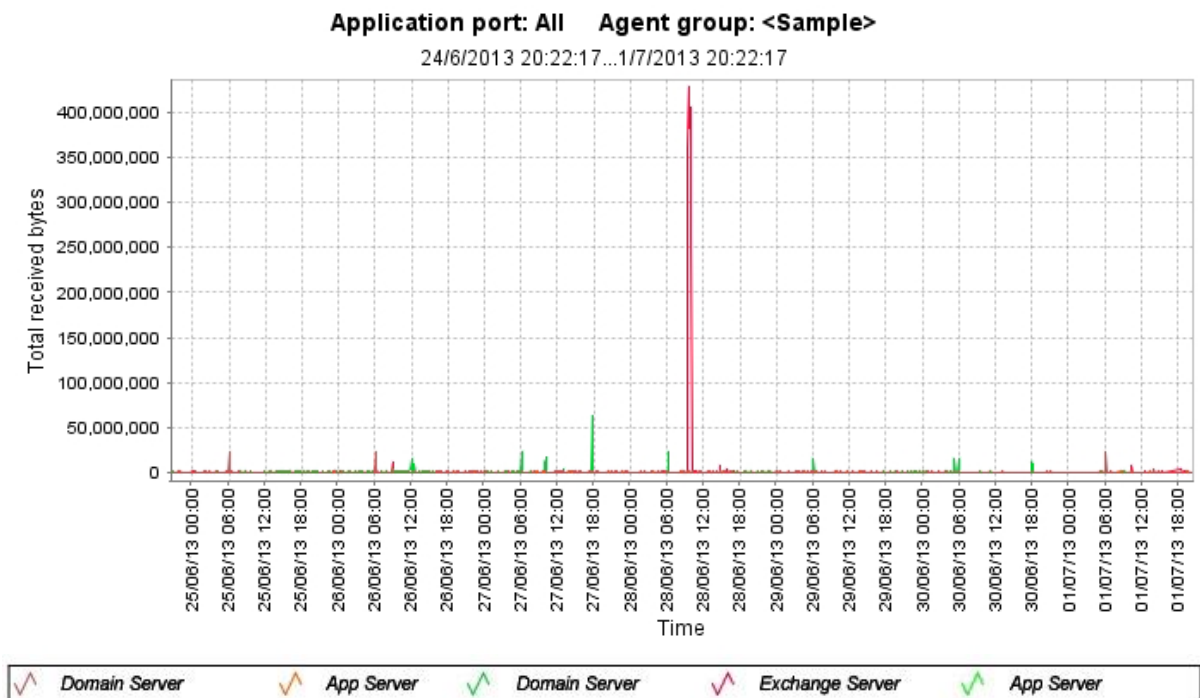
Name	Load (Sent+Received bytes)
Exchange Server	13096 MB
Domain Server	5501 MB
File Server	5254 MB
The Rest	811 MB

This sample report shows up to the top 3 Servers by the traffic load upon the network over the last week. The largest volume is usually linked to the file server(s) or heavily used database servers.

This report is for information about the volume of traffic that is unique to your network and server configuration.

Check the other server graphs for slow response times to confirm potential issues.

11.Total Download



Statistics

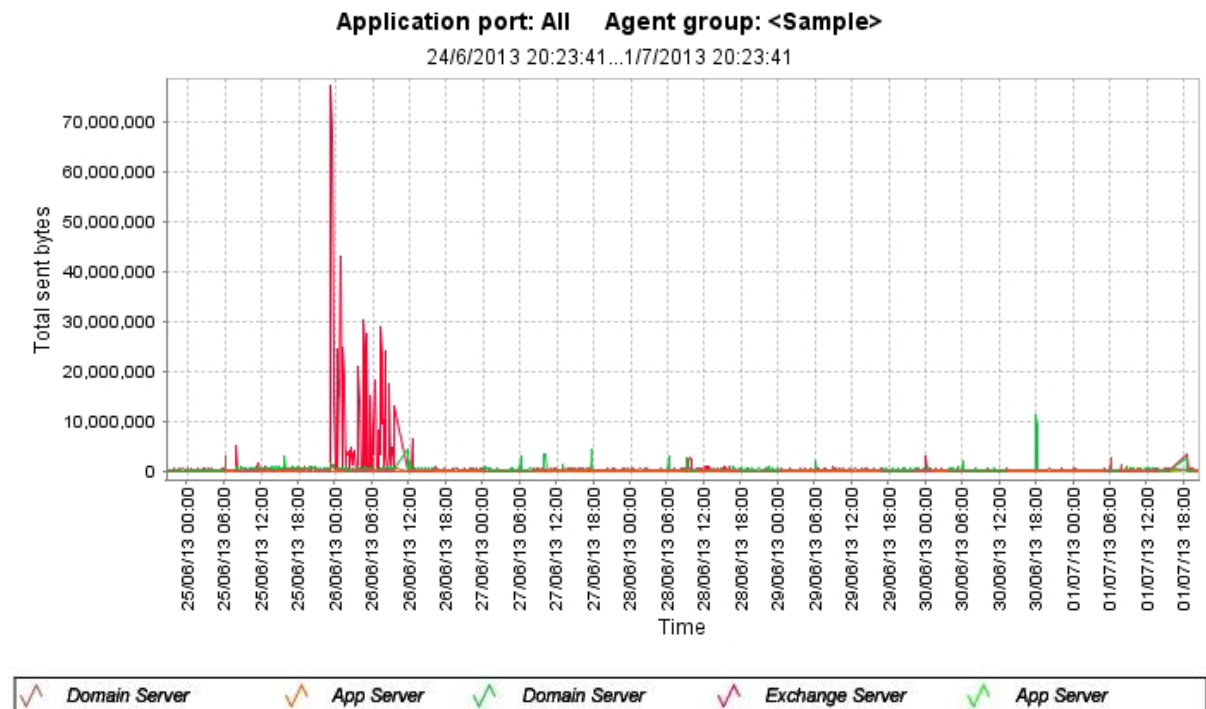
Name	Max	Min	Avg	Sum	Samples
Domain Server	23,831,422	35,570	626,658.8	764,523,745	1220
App Server	1,863,717	12,418	259,317.6	89,723,895	346
File Server	62,988,485	38,466	701,422.6	858,541,238	1224
Exchange Server	428,218,941	17,160	1,966,901.3	2,206,863,228	1122
App Server	3,006	1,026	1,434.7	1,754,600	1223

This graph shows the downloaded data or received bytes by PC agents from servers with colour coded peaks.

High peaks for file servers are expected as this is all the files being downloaded to computers to be worked upon. It is important to view the weekly graphs over a period of time that should show a similar trend of peaks.

The business impact of overloaded networks or servers results in delays in file downloads to users or retransmission of data making the impact on user productivity even higher. Detailed analysis of these issues may require the IMS-MCS (Managed Consultative Service) to pinpoint the root cause and identify the resolution.

12. Total Uploaded



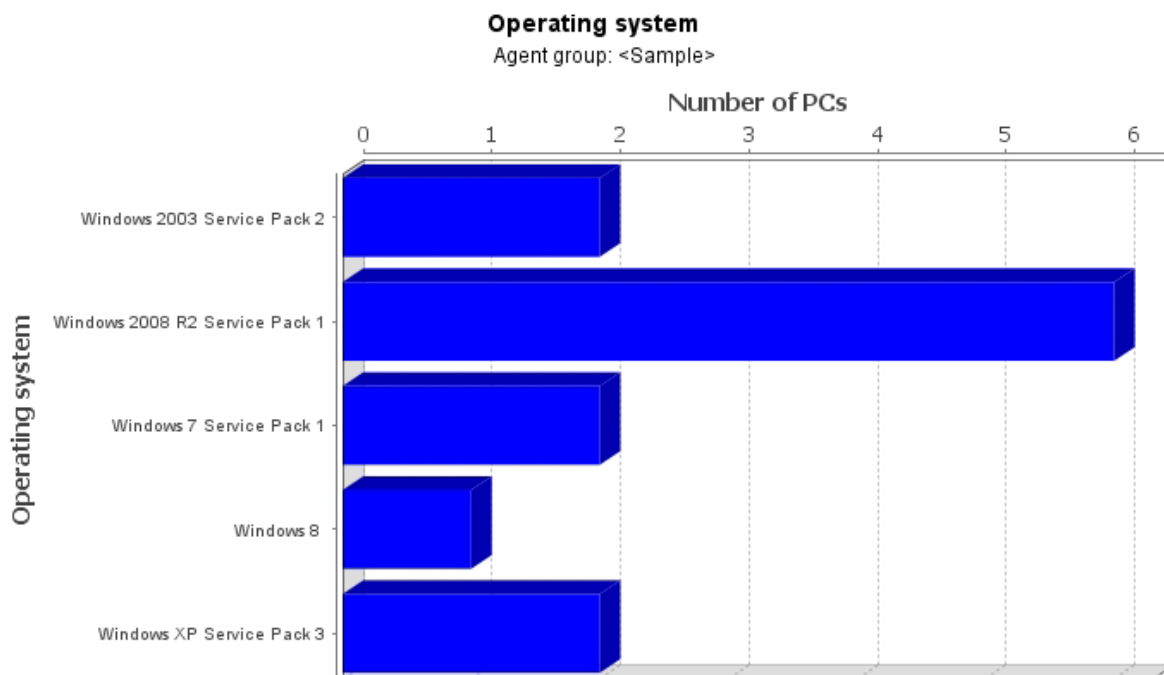
Statistics

Name	Max	Min	Avg	Sum	Samples
Domain Server	3,085,762	25,704	337,002.3	411,142,841	1220
App Server	720,735	3,124	200,194.8	69,267,391	346
File Server	11,386,725	23,718	349,306.5	427,551,149	1224
Exchange Server	77,207,870	314	1,001,980.9	1,124,222,570	1122
App Server	246,092	15,256	26,097.5	31,917,279	1223

This graph shows the uploaded data or sent bytes by PC agents to servers with colour coded peaks. The statistics under the graph provides a numerical breakdown of Maximum, Minimum, Average and the Sum total of bytes received. It is important to view the weekly graphs over a period of weeks to identify a similar or dissimilar trend of peaks.

From this comparisons can be drawn to determine degradation in service delivery. Detailed analysis of these issues may require IMS-MCS services to pinpoint the cause and identify the resolution.

13. Overview of Operating Systems (PCs & Servers)



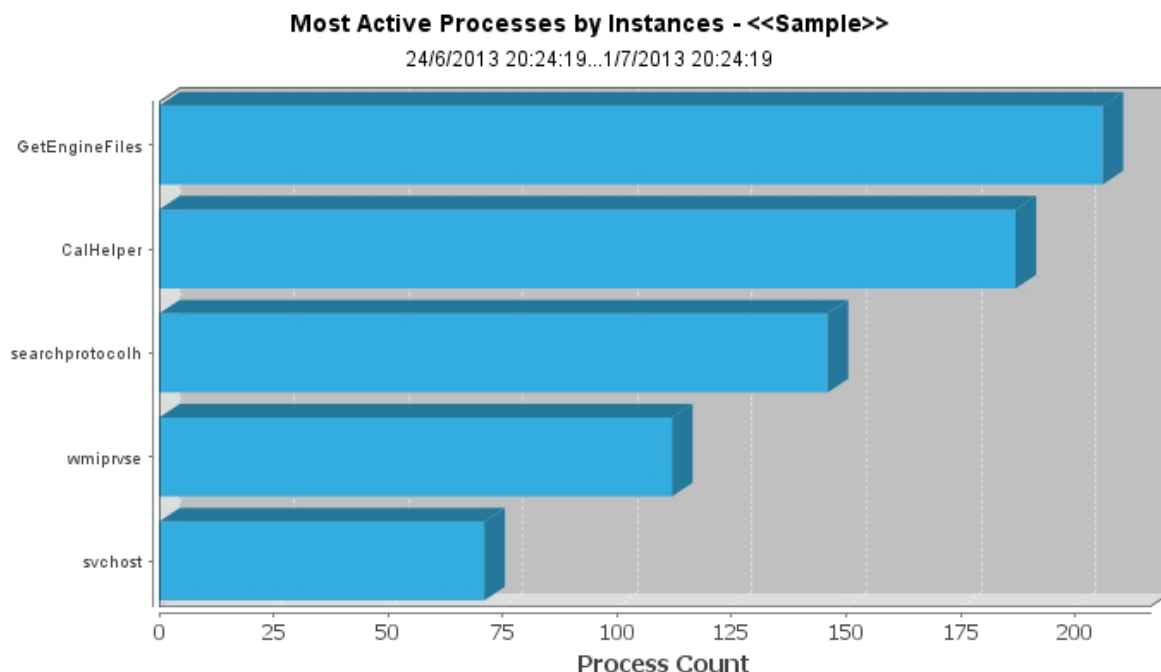
This report identifies the operating systems used on computers with installed agents. In large networks or businesses with multiple sites, the precise version of operating system may be unknown. Security and current patches are a vital part of protecting an organisation; therefore the ability to identify computers with missing service packs is vital for mitigating risks to the company.

Servers are also included in this report as the version of operating system can also identify incompatibility problems. Automatic updates to servers typically omit service packs and as we have discovered through this report systems can be left out of date for long periods without being noticed.

Identifying older operating systems or computers for potential upgrade or budgeting replacement costs and project plans is another benefit of this report.

This report identifies and enables careful planning of the upgrade process as well as verification after the updates.

14. Servers by most active applications

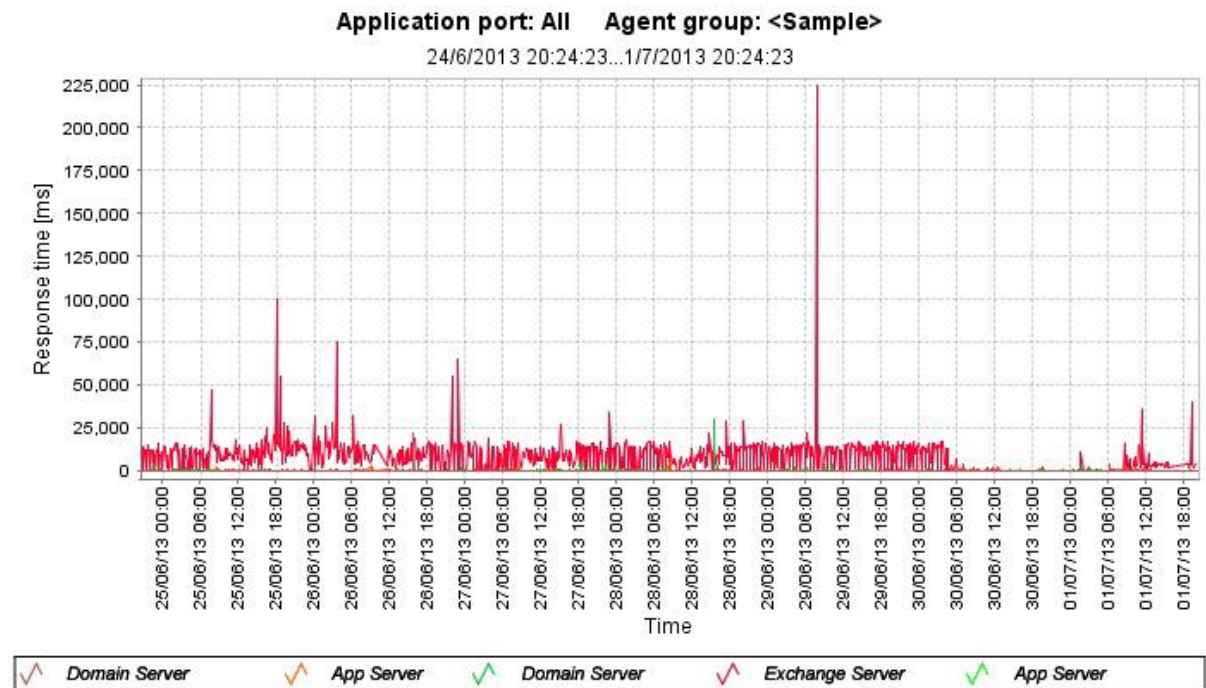


This sample chart shows the 5 most active applications across the selected servers and the number of processes accumulated and has been included as part of the set of application monitoring reports to aid / confirm / exclude diagnosis. This technical overview can help identify applications that may be overloading server resources and assist in detailed investigation when other reports show slow application response times.

Depending on the applications in use on your network this will show a combination of Microsoft server processes (ie. svchost) and installed applications / database processes installed.

This report can be utilised to identify/confirm or deny when a given application is using too many processes and overloading one or more servers, highlighting why application response times from one or more applications are slow. Identification or confirmation provides awareness of otherwise unseen issues impacting business productivity. Where the application/service is customer facing overloading could seriously impact customer service or undermine confidence in it.

15. PC to Server Application Traffic Overview



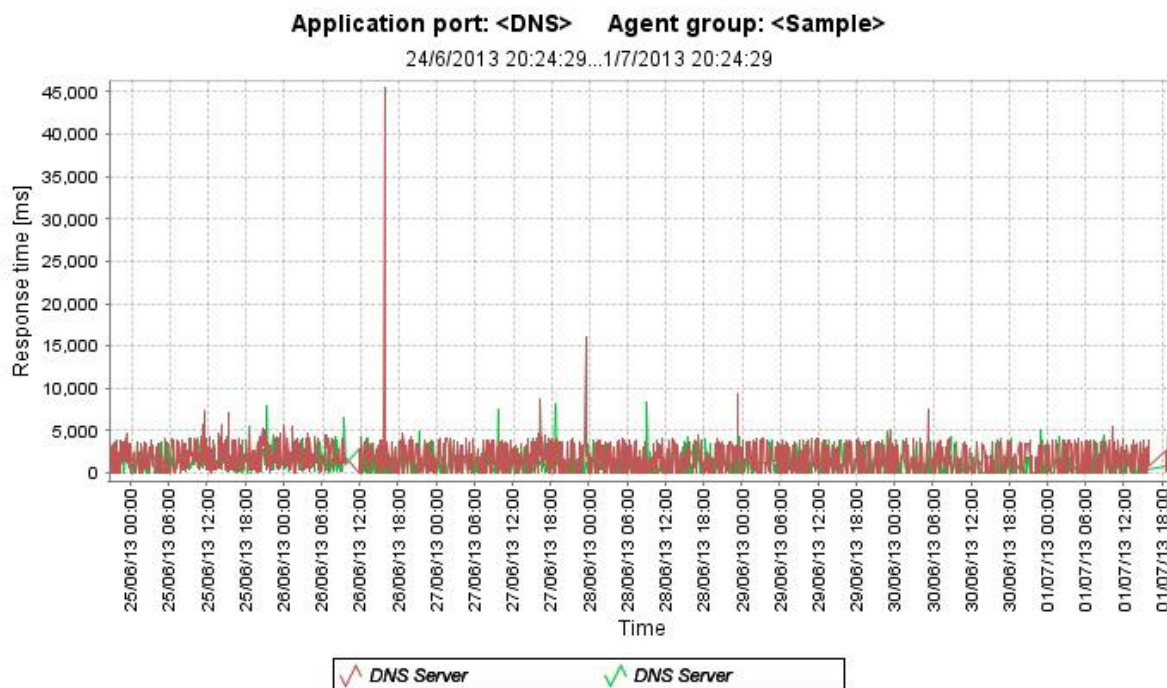
Statistics

Name	Max	Min	Avg	Sum	Samples
Domain Server	21,970.9	1.29	221	269,570.2	1220
App Server	6,061.5	3.73	90.8	31,425.3	346
File Server	29,773.5	1.33	224.6	274,639.7	1223
Exchange Server	224,543.1	2.17	8,617.1	9,659,731	1121
App Server	641.2	0.551	6.6	4,112.7	623

This sample report displays the response times of application requests between selected workstations and servers. This allows detection of servers with applications responding slowly. An average under 50ms is good, under 100ms is reasonable, but over 100ms may indicate a bottle-neck and/or resource issue on that server suggesting an investigation is required. Expect higher values for remote computers dependant on location, IMS consultants can advise on specific values.

The impact on productivity of slow or very slow applications or servers used by company-wide users will be significant. Unless addressed the cost to the business will be considerable. This can also be a valuable monitor of changes/updates to applications or servers and how they impact business productivity.

16. DNS traffic monitoring



Statistics

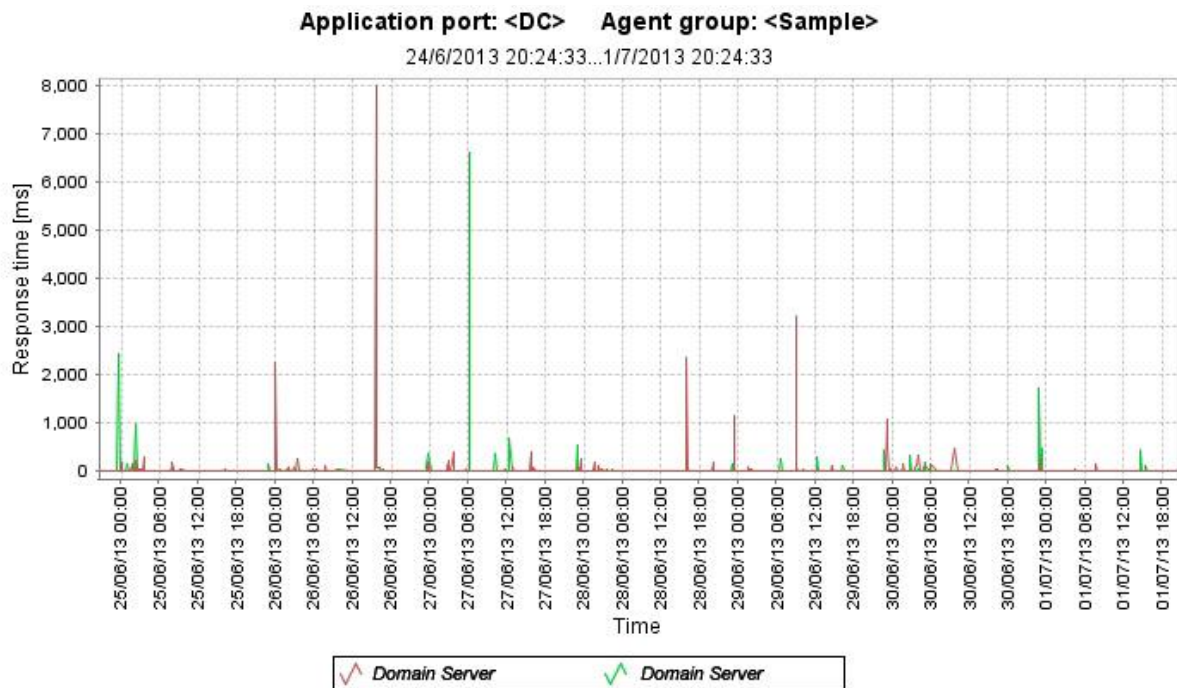
Name	Max	Min	Avg	Sum	Samples
DNS Server1	45,499.1	0.637	1,716.1	2,738,971.7	1596
DNS Server2	8,429.3	0.837	1,326.6	1,353,153.5	1020

Domain Name System (DNS) is the system of converting computer or internet names into the actual numeric address of the servers locally or on the internet. Typical response times on a well configured DNS server should average under 50ms and optimise at 10ms, slower servers may average up to 100ms anymore indicates an issue with configuration or server performance. If DNS is remote over the WAN then figures above 350ms indicates issues with the router, internet connection or DNS server configuration.

The DNS system is constantly used to establish each link between two computers on the network or internet. Issues with DNS significantly impact user and business productivity and efficiency. Every application logon, refresh or webpage refresh etc is affected by DNS performance.

This may be either a simple or a more complex issue requiring detailed analysis to resolve, IMS-MCS (Managed Consultative Services) have over 25 years' experience in efficiently tracing the root cause and providing advice on resolution.

17. Domain traffic response time graph



Statistics

Name	Max	Min	Avg	Sum	Samples
Domain Server1	7,985.4	0.93	26.9	28,528.1	1060
Domain Server2	6,605.4	0.987	19.2	19,171.2	1001

This graph of Domain network traffic displays the health of the domain controllers within a company. Performance will vary slightly for each network topology but a good network should have an average response time below 20ms. This network has the majority under 65ms (shown along the zero line) with the peaks showing the exceptions; hence a level of optimisation is required.

Most businesses are unaware of these issues and how they can influence productivity detrimentally. Interpretation and resolution can be complex, PG-SME™ assists with identifying the computers, servers and network devices involved. Further analysis of group policies and access rights were required to resolve these issues.

18. Server SLA

Passive Item: Server SLA Period: Hour

Availability (%)		Response time [ms]		Response time (%)		Timestamp
Target	Actual	Target	Actual	Target	Actual	
93.00	99.59	50.00	1.57	95.00	100.00	24/06/2013 09:00:00 PM
93.00	99.88	50.00	1.40	95.00	100.00	24/06/2013 10:00:00 PM
93.00	99.75	50.00	6.71	95.00	98.24	24/06/2013 11:00:00 PM
93.00	99.82	50.00	1.99	95.00	99.38	25/06/2013 12:00:00 AM
93.00	99.86	50.00	8.96	95.00	93.53	25/06/2013 01:00:00 AM
93.00	99.86	50.00	9.01	95.00	97.13	25/06/2013 02:00:00 AM
93.00	99.61	50.00	12.14	95.00	91.62	25/06/2013 03:00:00 AM
93.00	99.86	50.00	1.38	95.00	100.00	25/06/2013 04:00:00 AM
93.00	99.47	50.00	1.34	95.00	100.00	25/06/2013 05:00:00 AM
93.00	99.91	50.00	1.28	95.00	100.00	25/06/2013 06:00:00 AM
93.00	99.32	50.00	3.14	95.00	98.26	25/06/2013 07:00:00 AM
93.00	99.66	50.00	1.99	95.00	98.36	25/06/2013 08:00:00 AM
93.00	99.83	50.00	2.43	95.00	100.00	25/06/2013 09:00:00 AM
93.00	99.85	50.00	1.56	95.00	100.00	25/06/2013 10:00:00 AM
93.00	99.75	50.00	1.56	95.00	100.00	25/06/2013 11:00:00 AM
93.00	99.91	50.00	1.54	95.00	100.00	25/06/2013 12:00:00 PM