Thin client position at Dutch government and health care institutions

Nationwide thin client survey by market research agency Conclusr Research commissioned by IGEL Technology

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Preface

For a long time, many analysts have been wondering about future perspectives of the thin client. Not really surprising, given the large-scale adoption of the varied number of (mobile) devices. Desktop PCs continue to be widely used in the world of government and care institutions. At the same time, these traditional PCs are being traded in for laptops, tablets and even smartphones in places. An understandable shift in a world that is becoming increasingly more mobile. Is this to be construed as a threat to the thin client? Or is this device looking forward to a bright future? What are the benefits and drawbacks of thin clients in multi-device environments and how is device management organised in a diversed workplace landscape?

High time to investigate matters at close quarters. First and foremost in the kind of environments that has a lot of experience using thin clients, i.e. government and health care institutions, where 73% and 74% of organisations respectively use this technology. Which makes them field experts that are eminently placed to share their views and experiences.

Below, please find the main outcomes of this survey among IT managers of over 200 government and health care institutions.

Who knows, these survey results may well provide you with fresh insights to guide your own choices on the path towards a modern workplace environment.

The facts and figures presented may also prove a valuable aid as you review your own workplace policy.

I would like to thank all respondents for participating in this survey, conducted by Conclusr Research.

Finally, I would like to wish readers a lot of wisdom and inspiration in putting these survey results to good use.

Hans Vogel
IGEL Benelux Country Manager

May 2017

Management summary

This nationwide thin client survey provides insight into the use of this workplace technology within the health care and government sectors. Over 200 respondents from institutions that have at least 10 employees took part in this survey. The respondents are officers in charge of the purchase, maintenance and/or management of the IT infrastructure. The majority of those queried serve as CIO, IT or Application managers. This telephone survey was conducted by Conclusr Research market research agency and commissioned by IGEL Technology. The survey was carried out during the first quarter of 2017. Below, we have listed the main findings:

Thin client technology widely known

A due understanding of thin client technology was held out as a requirement for the respondents to take part in the survey. Just 4% of the IT managers solicited failed to meet this yardstick. Which only serves to corroborate that the degree of familiarity with thin client technology is very considerable among government and health care institutions.

Massive use of both thin and fat clients

Over 74% of health care institutions use thin clients, with the government sector a very close runner-up with 73% of all government bodies availing themselves of thin clients. In the health care sector, 12.4% of institutions have a 'thin client only' policy in place. Among government institutions, 8.4% do not use traditional desktop PCs and/or laptops. In both sectors, 43% of the total workplace landscape are fat clients (either PC and/or laptop) and 57% of the systems used are thin clients. The average number of workplace devices is 1.25 per employee.

Thin client features

Easy to use and manage, energy-efficient, long service life and data security. Those are the main positive characteristics of thin clients according to the survey respondents. A view shared by thin client-only users and multi-client users alike. However, if the system goes down, this affects all employees. A feature singled out as a downside by all. An often heard comment that describes thin clients as not quite fancy enough is not shared by the survey respondents.

Security and management main challenges in multi-device workplace environments

The survey respondents state that ensuring security is the main challenge in managing the workplace environment, closely followed by the labour-intensive process of upgrading workplace equipment. The availability of equipment and connecting various devices in the network also rank among the top five of management challenges.

Thin clients are less susceptible to disruption

The survey shows thin client environments make for fewer workplace disruptions than fat client environments. 4.4% of the organisations that use PCs as well as thin clients report that they have not had any disruptions over the last twelve months. This rate stands at 10.5% for thin client-only environments. Disruptions in thin client environments relate to screens and/or power supply issues. The main disruptions in fat client environments are seen in the area of software or the injudicious use of devices by employees.

Thin clients are the IT response to CSR policy

The commitment of thin clients is in keeping with the CSR policies of government and/or health care institutions. Over 71% of IT managers in government organisations run an active CSR policy. In the health care sector, this figure stands at over 54%. In amongst other elements, the decision to go for thin clients is based on the CSR policy. Truncating the standby mode of workplace equipment is the principal CSR policy measure.

Use of multi-media on the rise

80% of respondents point out that the use of multi-media (video, YouTube, Skype for Business, etc.) has gone up. This looks set to continue over the years ahead. The majority report that this applies to all equipment.

Use of thin clients to continue apace over the next two years

87% of the organisations use thin as well as fat clients. 30% of the PC users report that they are planning to replace their PCs with thin clients over the next two years.

Survey format

Market research agency Conclusr Research spoke to over 200 respondents at government and health care institutions during the first quarter of 2017. The survey delivers insight into the use of thin client technology.

Most respondents were responsible for the organisation's workplace and/or infrastructure. As such, 47% of those queried serve as IT manager or CIO; 15% are Applications Manager or Infrastructure Manager; 26% are IT coordinator and 5% are General Manager. Based on the post categories, it is safe to conclude that the officers in charge of the infrastructure policy are sufficiently represented in the sample queried.

The respondents work at institutions that have at least ten employees at the site concerned.

A net number of 105 interviews were conducted at institutions that have over 250 employees.

Position of respondent within the company

Sample: all respondents
Source: Conclusr Research | January 2017
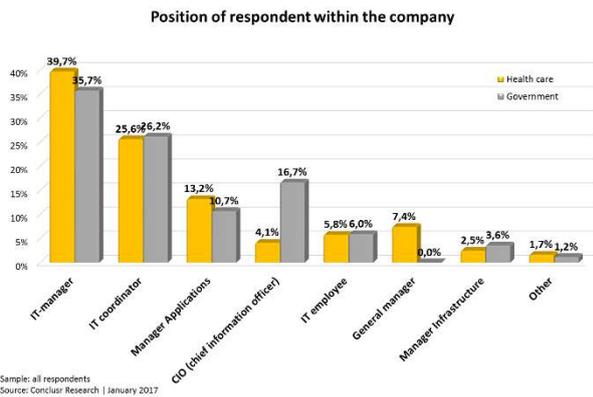
The market research agency completed a total net number of 205 full interviews by phone, of which a net 84 interviews in the amalgamated government sector and a net 121 interviews in the amalgamated health care sector.

Sector in which company is active

Sample: all respondents
Source: Conclusr Research | January 2017
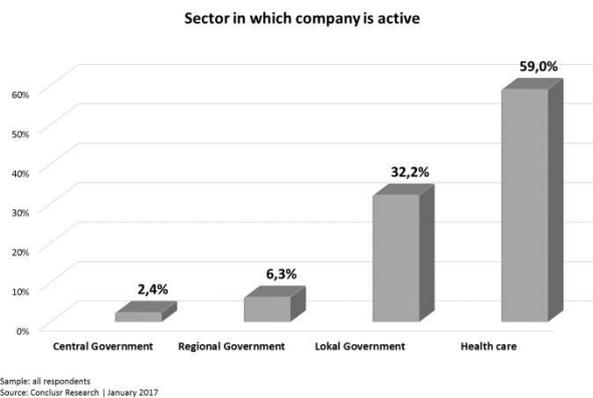
Based on organisation size, 100 interviews were conducted among institutions home to anywhere between 10 and 250 members of staff, and 105 interviews at the largest institutions with a workforce in excess of 250 employees at a given site.

Number of employees

Sample: all respondents
Source: Conclusr Research | January 2017
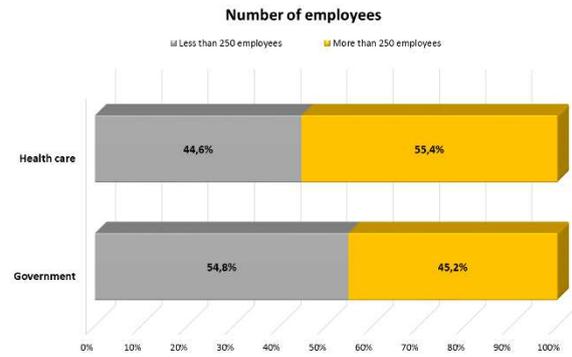
4% of the respondents solicited were barred from the survey. These people had no experience with or understanding of the use of thin clients, which was held out as a requirement to be admitted to the survey. As such, Conclusr Research's conclusion is that familiarity with thin clients is as good as 100% at government and health care institutions.

Extent to which respondent is familiar with / uses thin client technology

Sample: all respondents
Source: Conclusr Research | January 2017
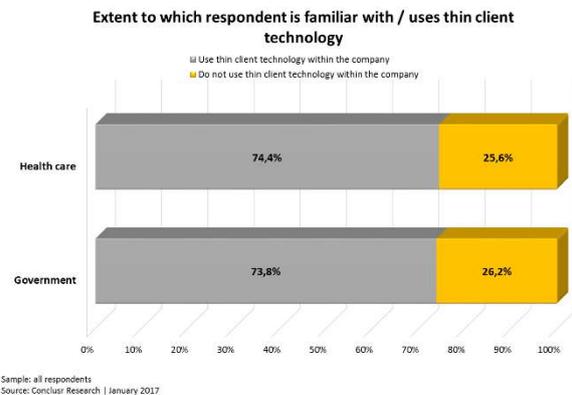
Based on the characteristics specified, a representative sample is statistically in place to deliver a reliable picture of the status of the use of thin client technology within the government and health care sectors.

"Widely familiar with thin clients at government and health care institutions."

01

Use of thin versus fat clients

Over 74% of the health care institutions use thin clients, with the government a very close runner-up with 73%. In the health care sector, as much as 12.4% do not even use any other workplace equipment such as PCs or laptops. At 8.4% of government institutions, this category is smaller among the amalgamated authorities. The latter sector uses more automated workplaces than the health care sector. With an average of 330 versus 269 automated workplaces, the ratio between thin and fat clients appears to be even-handed in both segments.

43% of the systems used are either PCs and/or laptops. 57% of the workplace equipment are thin clients.

	Health care	Government	Total
## Fat clients	116	142	126
## Thin clients	153	188	167
	269	330	293

In the government sector, just over 55% of organisations on average have over 100 thin clients in operation. The same applies to over 30% of health care institutions.

Brands of thin client solutions used within organisation
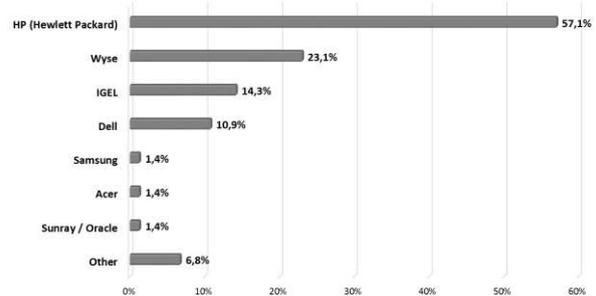
Sample: respondents with thin clients
Source: Conclusr Research | January 2017

In these sectors, 57% of the devices are HP-made, as the single biggest supplier, closely followed by Dell and Wyse (now a company). 14% of the organisations queried use IGEL. In brief, the thin client market is dominated by a limited number of technology suppliers.

On average, employees have 1.25 different workplace devices available to them.

Average number of devices per employee
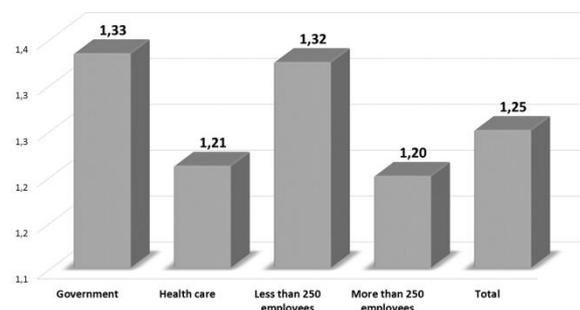
Sample: all respondents
Source: Conclusr Research | January 2017

% of employees who have particular device

	Tablet	Notebook / Laptop	PC / Desktop	Thin Client
Total	18,1%	24,3%	28,5%	55,2%
More than 250 employees	16,1%	24,0%	21,7%	58,2%
Less than 250 employees	20,2%	24,6%	35,4%	52,2%
Health care	13,5%	24,2%	29,8%	53,6%
Government	24,8%	24,4%	26,6%	57,6%

Sample: all respondents
Source: Conclusr Research | January 2017

Server infrastructures used within organisation
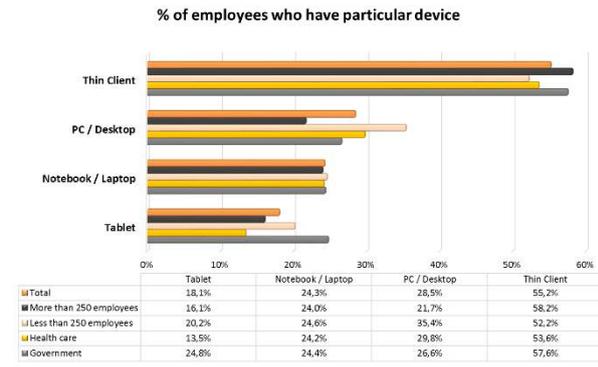
Sample: all respondents
Source: Conclusr Research | January 2017

There is no or barely any difference in the use of thin and fat clients between large and smaller organisations. Right across the board, thin clients are most widely represented. Small institutions tend to use PCs to a greater degree, with a penetration level of well over 35%. 24% of government- and health care institutions use laptops.
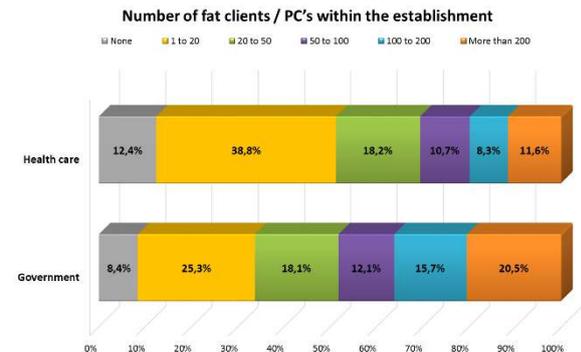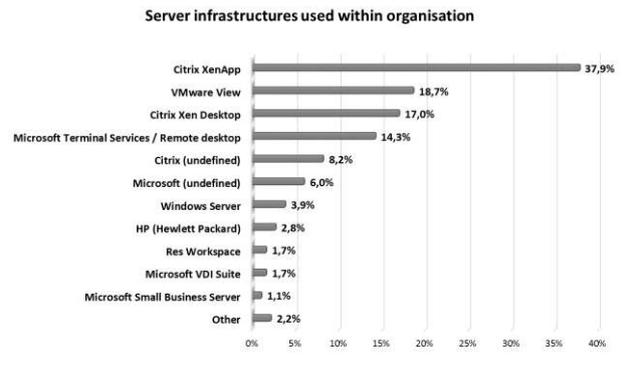
Citrix is by far the most widely used server infrastructure, with 63% of respondents availing themselves of Citrix. With almost 40% of the servers committed, Citrix XenApp assumes a strong position in this respect. Microsoft Terminal Services/Remote desktop holds down a 27% share. VMware comes in third position, with a penetration level of just under 19%. All of which makes the landscape of server infrastructures conveniently divvied up.

Number of fat clients / PC's within the establishment

Sample: all respondents
Source: Conclusr Research | January 2017

Number of thin clients within the establishment
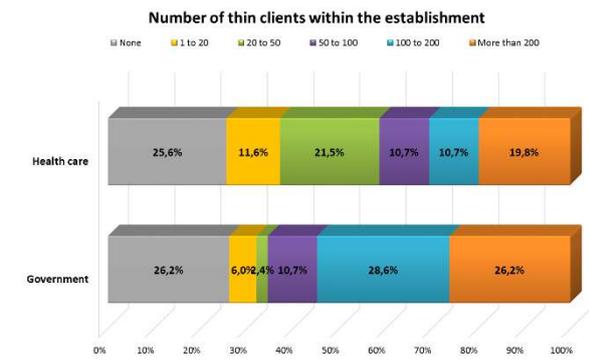
Sample: all respondents
Source: Conclusr Research | January 2017

"Thin client landscape is conveniently divvied up."

02

Thin client experiences

PC and thin client users are unanimous on the distinctive features of thin clients.

Extent to which aspect is considered a feature of thin client technology

	Easier to use	Easier to manage	Provides an easier insight into the cost structure	Is safer when it comes to company information	Energy efficient	Offers flexibility	Bigger (transmission-) speed	Long lifespan
To a (very) large extent	78,4%	83,9%	41,5%	71,4%	71,2%	44,5%	24,9%	54,5%
To a reasonable extent	12,1%	9,9%	30,1%	17,1%	18,1%	20,5%	32,6%	27,5%
To a (very) limited extent	5,5%	4,2%	19,7%	9,6%	9,6%	26,5%	29,8%	14,0%
Not at all	4,0%	2,1%	8,7%	2,0%	1,1%	8,5%	12,7%	3,9%

Sample: all respondents
Source: Conclusr Research | January 2017

Easy to use and manage, energy-efficient, long service life and data security are described by the majority of respondents as the distinctive strengths of thin clients.

Asked to single out the biggest drawback of using thin client technology, the majority of respondents mention the fact that all employees are affected if the system goes down. Over 66% of those queried flag up this element as the biggest downside. Aspects such as its incompatibility with other applications and their unsuitability to mobile duties are also listed in response to the question to specify negative characteristics of thin client technology. By the same token, these drawbacks do not outweigh the benefits, which are also recognised by organisations that do not use thin client technology.

They believe that desktop virtualisation delivers major advantages in the areas of management and expenses. System management is simple and straightforward and enables the user organisations to save on costs compared against the use of PCs and/or laptops. 26% of the organisations which exclusively use fat clients cannot see the benefit of desktop virtualisation.

Extent to which aspect is considered a negative feature of thin client technology

	When the system is down all employees are affected	Not compatible with all software / applications	Not compatible for mobile work	Insufficient connectivity	High implementation costs	Limited adoptability willingness of employees
To a (very) large extent	66,3%	32,0%	35,7%	14,3%	18,9%	8,1%
To a reasonable extent	8,0%	17,5%	19,1%	29,6%	17,8%	16,2%
To a (very) limited extent	16,1%	32,5%	22,1%	36,2%	41,7%	38,4%
Not at all	9,6%	18,0%	23,1%	19,9%	21,7%	37,4%

Sample: all respondents
Source: Conclusr Research | January 2017

An often heard comment on the market which describes thin clients as not quite fancy enough is not shared by the survey respondents. 61% of those queried report that this aspect is of no significance whatsoever.

Biggest benefits of thin client technology / desktop virtualisation compared to fat clients

Sample: respondents without thin clients
Source: Conclusr Research | January 2017
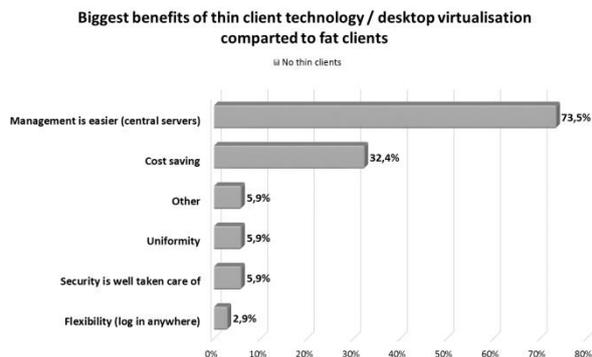
03

Workplace management challenges

Ensuring security is the main challenge in managing the workplace environment, respondents report. This applies to 39% of IT managers. This rate is seen to rise as the organisation size gets smaller. The second challenge is the upgrading of the workplace equipment, which is felt to be labour-intensive. The availability of equipment and connecting various devices in the network also rank among the top five of management challenges.

Obviously, there are differences in multi-client environments, thin client only organisations and organisations which only use PCs. Labour-intensive upgrades are of no significance in thin client environments, unlike fat client environments where 28% of respondents consider upgrades to be a major challenge.

Biggest challenges with workplace appliance management

	The ability of endusers	Connecting different devices to the network	Availability of the appliances	Labour inensive upgrades of all workplace appliances	Safety insurance of all workplace appliances
■ 100% share	6,7%	33,3%	6,7%	6,7%	40,0%
■ 90 - 100% share	0,0%	12,2%	17,1%	24,4%	36,6%
■ 75 - 90% share	2,6%	21,1%	10,5%	31,6%	34,2%
■ 1 - 75% share thin clients	3,0%	6,1%	33,3%	6,1%	48,5%
■ No thin clients	6,4%	8,5%	14,9%	27,7%	38,3%

Sample: all respondents
Source: Conclusr Research | January 2017

"Labour-intensive upgrades are of no significance in thin client environments."

04

Management and maintenance

Organisations which use only thin clients, are experiencing fewer workplace disruptions than PC users.

Percentage of desktops/laptops within the organisation that experience disruptions (measured across 1 year)

	25 % or more	15 to 25%	1 to 15%	No disruptions
No thin clients	4,4%	8,7%	82,6%	4,4%
1 - 75% share thin clients	5,3%	5,3%	89,5%	0,0%
75 - 90% share	15,4%	10,3%	69,2%	5,1%
90 - 100% share	12,5%	10,0%	70,0%	7,5%
100% share	5,3%	5,3%	79,0%	10,5%

Sample: all respondents
Source: Conclusr Research | January 2017
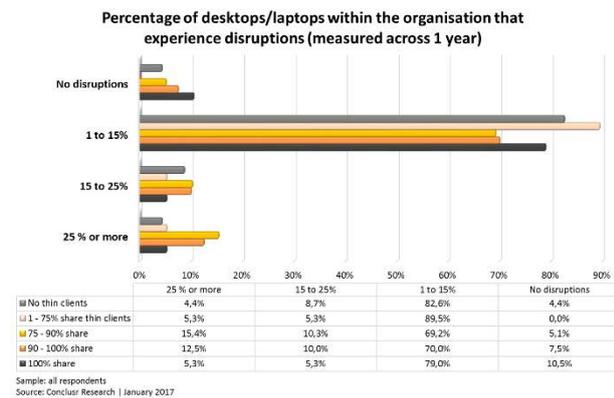
4.4% of respondents operating in PC environments report that they have had no disruptions over the last twelve months. This rate stands at 10.5% in 'thin client only' environments

% of desktops / laptops that show disruptions on a yearly basis

- Government: 6,2%
- Health care: 10,6%
- No thin clients: 8,2%
- 1 - 75% share thin clients: 7,6%
- 75 - 90% share: 9,4%
- 90 - 100% share: 11,1%
- 100% share: 7,5%
- Total: 8,9%

Sample: all respondents
Source: Conclusr Research | January 2017
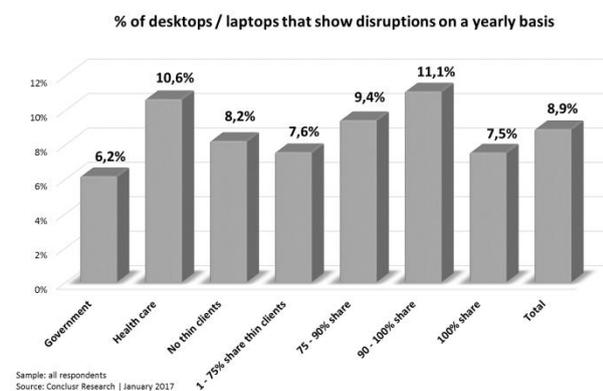
The more PCs, the more disruptions are reported. Where the number of thin clients is less than 75% of the total number of workplaces, 7.5% of respondents do not encounter any disruptions.

This rate goes up as the number of thin clients rises.

Managing a multi-client environment presents more challenges than managing a thin or fat client environment.

What the disruptions usually relate to

	Lost connections	Software	Incapacity of endusers	Hardware (o.a. power, monitor)
No thin clients	12,2%	17,1%	19,5%	63,4%
1 - 75% share thin clients	11,8%	23,5%	20,6%	58,8%
75 - 90% share	25,0%	22,2%	22,2%	50,0%
90 - 100% share	15,2%	27,3%	33,3%	48,5%
100% share	18,8%	0,0%	6,3%	87,5%

Sample: respondents who have had disruptions in the past year
Source: Conclusr Research | January 2017
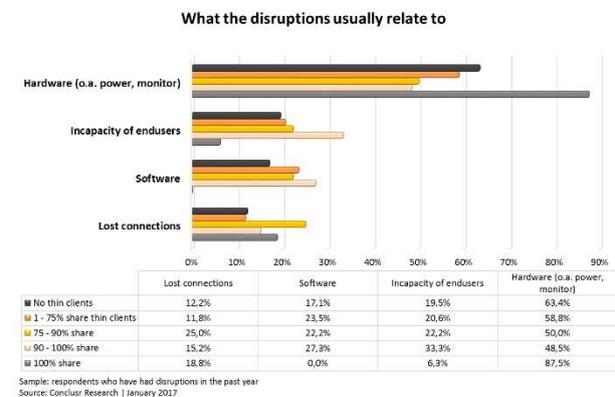
Disruptions in thin client environments most often relate to hardware failures, such as screens or power supplies (88%). 19% of disruptions in thin client environments are to be attributed to the loss of connection.

PC disruptions mostly relate to software issues or the injudicious use of devices by employees.

Given the high 'plug & play' nature of thin clients, employees are given a new device more readily than they would in PC environments. At institutions with at least 75% thin client employees, 43% of employees are given another computer whilst the disruption is being resolved.

In PC environments, this applies to just 5.7% of disruption incidents.

05

Thin client as part of CSR policy

Over 71% of IT managers in the government sector run an active CSR policy. In the health care sector, this figure stands at 54%. Out of all respondents, 69% report that 'using the standby mode' is the single most important energy-saving measure. The very use of thin clients in itself is also considered to be a CSR policy measure. 52% of IT managers view the use of thin clients as a major motivation to comply with the organisation's CSR policy. This rate increases among organisations which use thin clients to a substantial degree. Between 67% and 74% of thin client users confirm that this technology contributes to the accomplishment of the organisation's CSR goals.

Energy-saving measures taken which concern the workplace appliances

	Making the screen darker	Turning off the computer and/or screen	Shortening the time after which standy starts	Removing the screensaver	The use of thin clients	Using the standby mode
Total	17,0%	27,6%	29,2%	38,8%	52,3%	69,2%
More than 250 employees	16,5%	29,5%	30,3%	40,4%	52,4%	73,1%
Less than 250 employees	17,5%	25,5%	28,1%	37,1%	52,1%	65,0%
Health care	13,3%	28,9%	24,8%	34,2%	48,7%	63,3%
Government	22,5%	25,6%	35,9%	45,7%	57,5%	77,8%
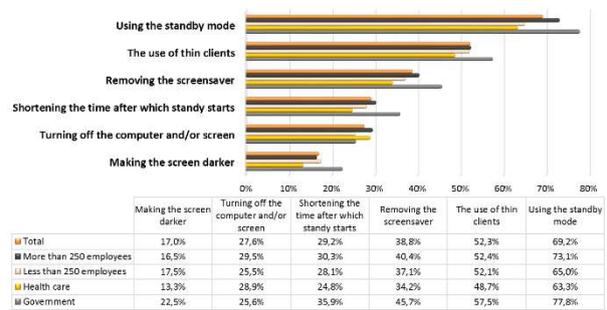
Sample: all respondents
Source: Conclusr Research | January 2017

Extent to which company runs an active CSR policy

	Not at all	To a very limited extent	To a limited extent	To a large extent	To a very large extent
Total	2,1%	2,6%	33,7%	42,1%	19,5%
More than 250 employees	1,0%	2,0%	34,3%	42,2%	20,6%
Less than 250 employees	3,4%	3,4%	33,0%	42,1%	18,2%
Health care	3,5%	3,5%	38,1%	35,4%	19,5%
Government	0,0%	1,3%	27,3%	52,0%	19,5%
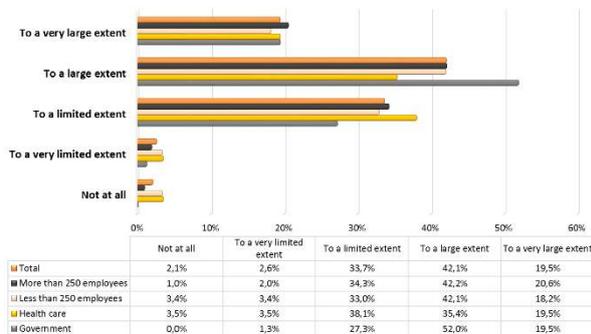
Sample: all respondents
Source: Conclusr Research | January 2017

*"Use of thin client technology contributes to the CSR policy."*

06

Use of multi-media on the rise

An increasing number of organisations are using Skype for Business, YouTube and Videoconferencing or other multi-media applications. These applications are often used on all device types. By the same token, an as good as equal number of institutions makes little to no effort to facilitate this.

% in or decrease in workstations with multi-media applications in the past 3 years

	Multi-media use has decreased	Multi-media use has not changed	Multi-media use has increased
Total	0,5%	20,1%	79,4%
More than 250 employees	0,0%	18,2%	81,8%
Less than 250 employees	1,1%	22,1%	76,8%
Health care	0,0%	20,2%	79,8%
Government	1,3%	20,0%	78,8%

Sample: all respondents
Source: Conclusr Research | January 2017

% of workstations with multi-media applications

	On a single appliance	On about a quarter of the appliances	On about half of the appliances	On about three quarters of the appliances	On most of the appliances
Total	33,7%	18,4%	5,8%	5,3%	36,8%
More than 250 employees	32,4%	16,7%	7,8%	5,9%	37,3%
Less than 250 employees	35,2%	20,5%	3,4%	4,6%	36,4%
Health care	37,3%	20,9%	5,5%	3,6%	32,7%
Government	28,8%	15,0%	6,3%	7,5%	42,5%

Sample: all respondents
Source: Conclusr Research | January 2017

Alongside the rise in the number of multi-media applications available, their actual use is also substantially increasing. The average use of multi-media applications has gone up by over 69% over the last three years.

The use of multi-media has increased exponentially in recent years in the government and health care sector alike. Over 79% of respondents confirm this major leap.

% increase in multi-media use in the past 3 years

Sample: all respondents
Source: Conclusr Research | January 2017
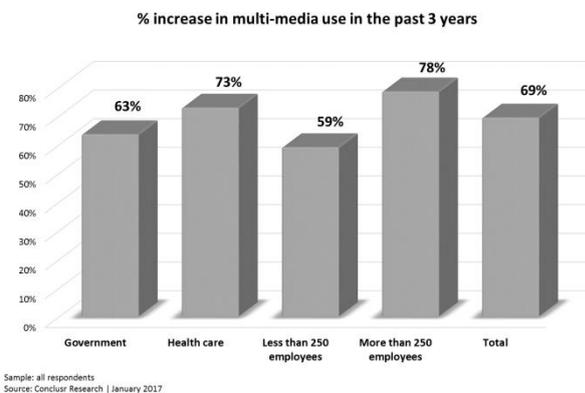
"Use of multi-media has increased significantly."

07

Future perspectives

All IT managers queried expect to see a rise in the number of automated workplaces. 30% of PC users expect they will be making the switch to thin client technology in the next two years. This is the case in the government sector, where 47% of respondents are planning to trade in PCs for thin clients over the next two years ahead. The thing that jumps out is the finding that everybody is planning to do so their own way. A substantial portion of organisations (46%) expect fewer than 30% of fat clients to be traded in for thin clients. In addition, there is a group of respondents that adds up to 30%, who indicate they are planning to swap 80% of their PCs for thin clients. In short, organisations are either opting for a gradual switch or a quick sharp shock.

'Thin client only' users too are expecting to see a further rise in the number of workplaces over the next two years.

Businesses which currently have fewer than 75% of their workplaces running on this technology, in 38% of cases expect a probable to highly probable increase in the numbers of thin client workplaces over the next two years.

Likelihood of increase in thin clients over the next 2 years

	Not at all likely	Unlikely	Likely	Very likely
No thin clients	52,9%	15,7%	21,6%	9,8%
1 - 75% share thin clients	32,4%	29,7%	16,2%	21,6%
75 - 90% share	35,7%	31,0%	21,4%	11,9%
90 - 100% share	23,9%	32,6%	26,1%	17,4%
100% share	31,8%	31,8%	27,3%	9,1%
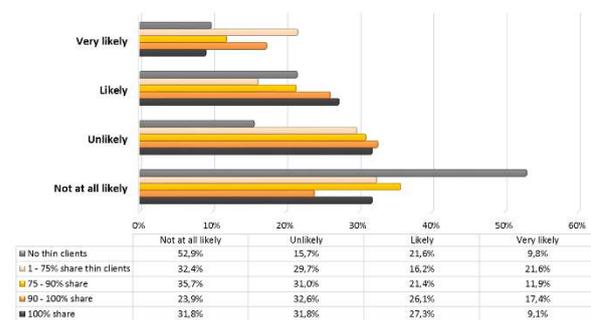
Sample: all respondents
Source: Conclusr Research | January 2017

Percentage of the current fat client/ PC-users who will move to thin client technology within the next 2 years
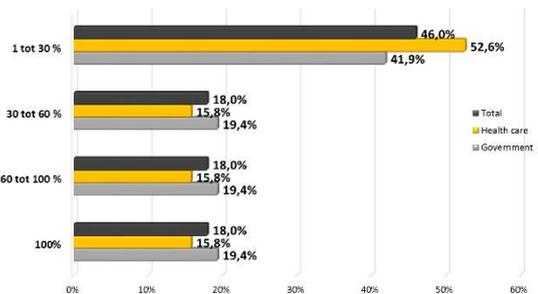
Sample: respondents with fat clients
Source: Conclusr Research | January 2017

Questions, comments or just want to exchange views on this thin client survey?

Get in touch with IGEL Technology at phone number: 085 0160 650, or by e-mail at: benelux@igel.com

About IGEL Technology

IGEL Technology started out in 1989 with the development and sale of the first multi-video graphics card for Linux environments, at a time when the company still went by the IGEL moniker. In 1992, IGEL Technology embarked on the development and sale of terminals. 1997 saw the first modern Linux-based Thin Client going into production at IGEL. Today, the company ranks as one of the fastest growing Thin Client manufacturers worldwide, with analysts recognising IGEL as a visionary pioneer on the market.

For further details, check out: www.igel.com/nl/