Application Delivery Controller Study

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Principal Analyst

Key Findings:

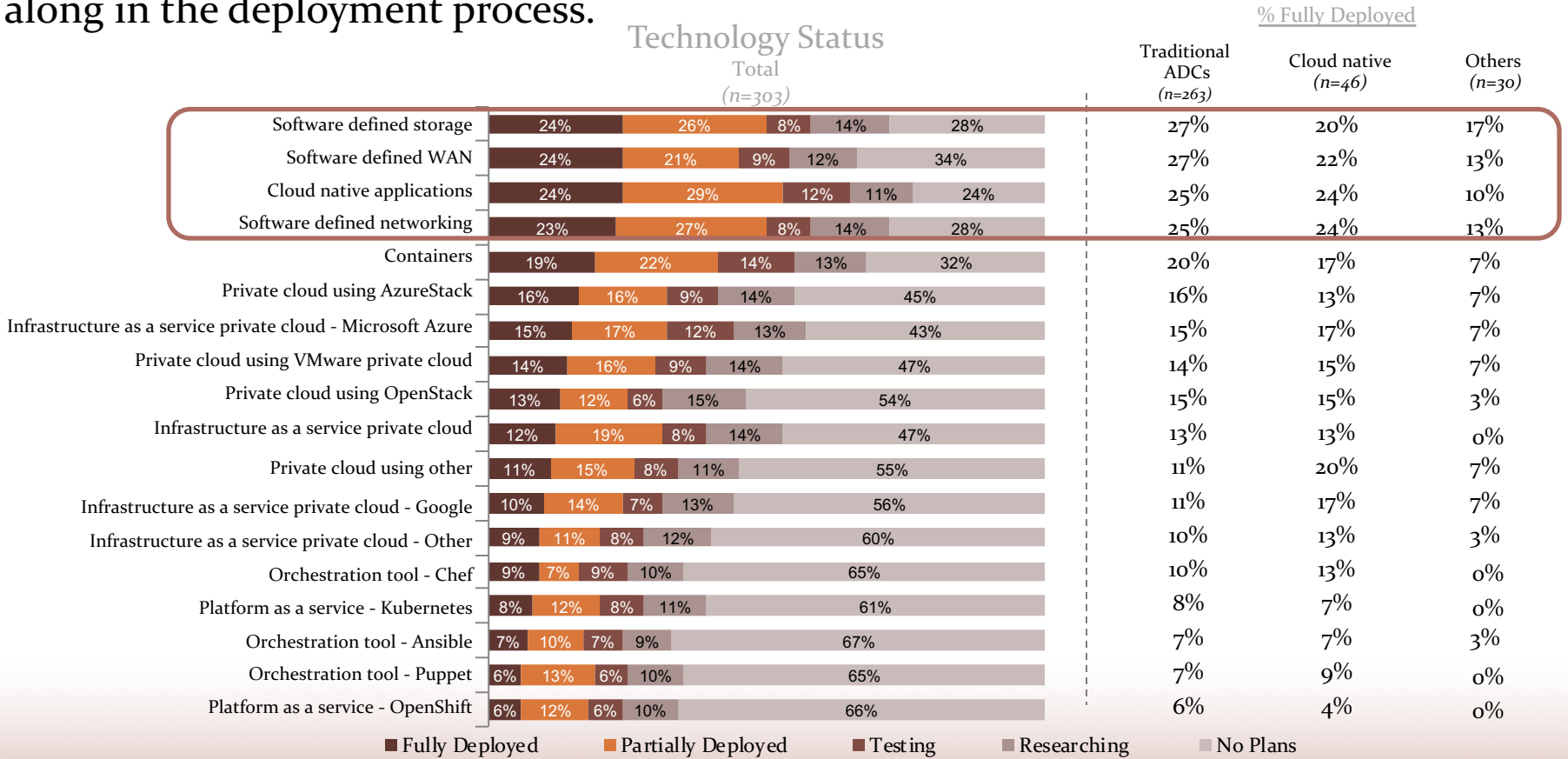
- Similar to what was noted in last year's study, "software defined technologies" and cloud native applications continue to be the areas furthest along in the deployment process.
- When drawing comparisons between the US and UK markets, it is noted that pushing applications to the cloud is greater among those in the UK, with close to 50% expecting to have half of applications in the cloud within 12 months, compared to only 29% in the US.
- Within a public cloud infrastructure, F5 is most often identified as the LB of choice.
  - F5 and Citrix are most commonly used ADCs
  - Cloud native ADCs showing strength in future purposes
- Regardless of market/segment, 'security related issues' are most commonly recognized as the greatest concern when utilizing cloud native ADC.

Key Findings:

- Although current satisfaction levels with providers are neutral to positive, a majority of respondents acknowledge they would be open to considering a change from their incumbent ADC vendor.
  - Respondents in the UK are more satisfied across all attributes tested than their respective US counterparts.
- For both the US and UK markets, many lack the ability to automate configuration changes to the ADC.
  - For those that do, Vendor Scripting and Cisco NSO continue to be the most commonly utilized tools.
- Within the US, the greatest barrier preventing further automation on ADC operations is most commonly related to internal processes. While in the UK, lack of skill and overall complexity are identified as the most common hurdles.
- Of the tasks performed on ADC, most can be addressed in minutes or days.
  - ADC changes have limited or no impact on application roll out and only account for minor delays regardless of market.
- As noted in the previous wave of research, automation and application analytics are the features that are most appealing to support their digital initiatives.
- For many, downtime is varied with a large number of respondents unsure of how much time was truly experienced in the previous year.
  - Although unsure, a majority indicated that downtime aligned with current SLA's for both the US and UK markets.

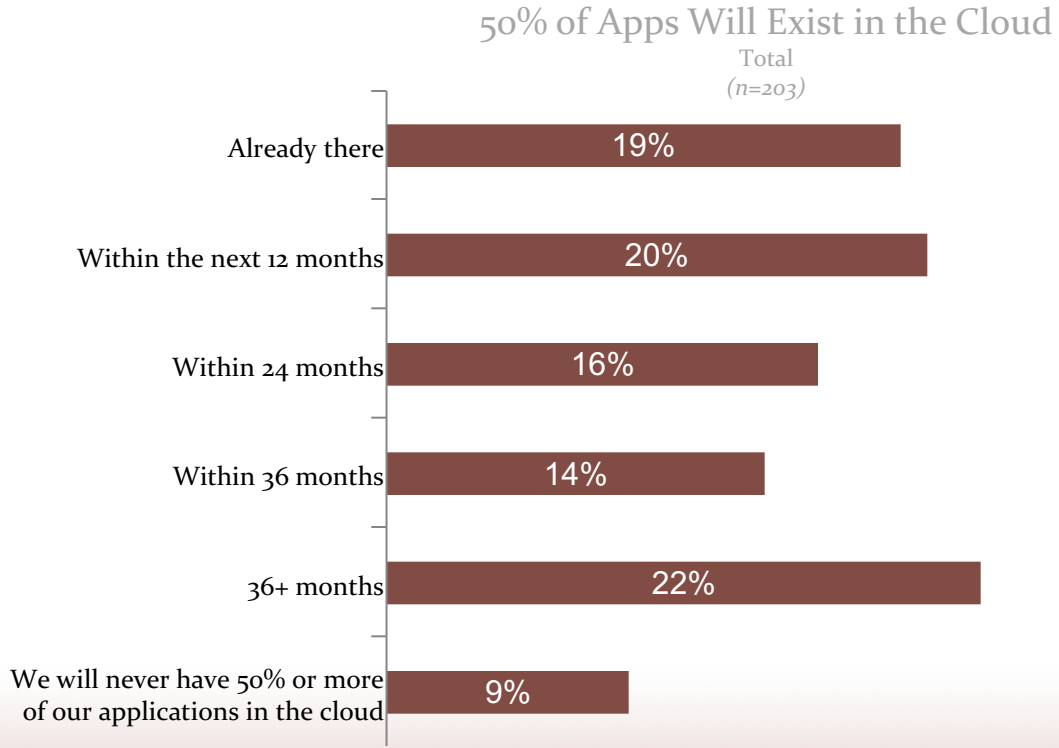
Global Total – US and UK Markets Combined

Areas like “software defined technologies” and cloud native applications are furthest along in the deployment process.



Q1. What is the status of the following technologies in your company?

This audience is very diverse with regards to the time anticipated to get apps in the cloud. Roughly 20% don't even anticipate ever getting more than 50% in a cloud environment.

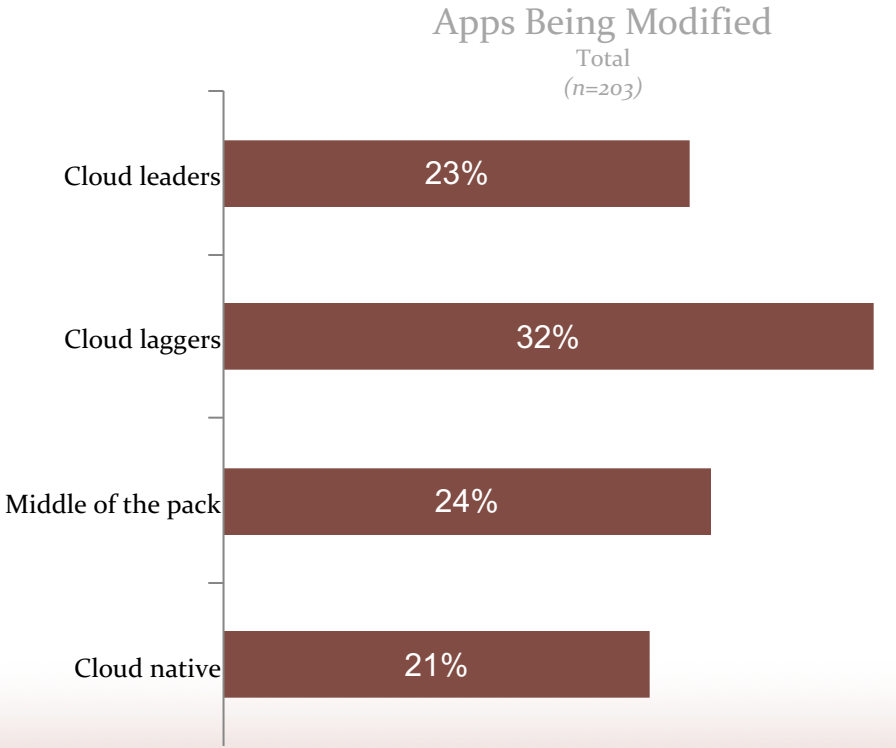


	Traditional ADCs *(n=177)*	Cloud native *(n=36)*	Others *(n=18)**
Already there	20%	22%	11%
Within the next 12 months	19%	22%	17%
Within 24 months	17%	11%	0%
Within 36 months	15%	14%	11%
36+ months	20%	17%	61%
We will never have 50% or more of our applications in the cloud	9%	14%	0%

Q17. At what point will you have 50% of your applications in the cloud?

** Caution: Small sample size*

Although ‘cloud laggers’ are identified with a slightly greater frequency, the applications that are being lifted and shifted, modified and replaced is scattered with no “clear” area of focus.

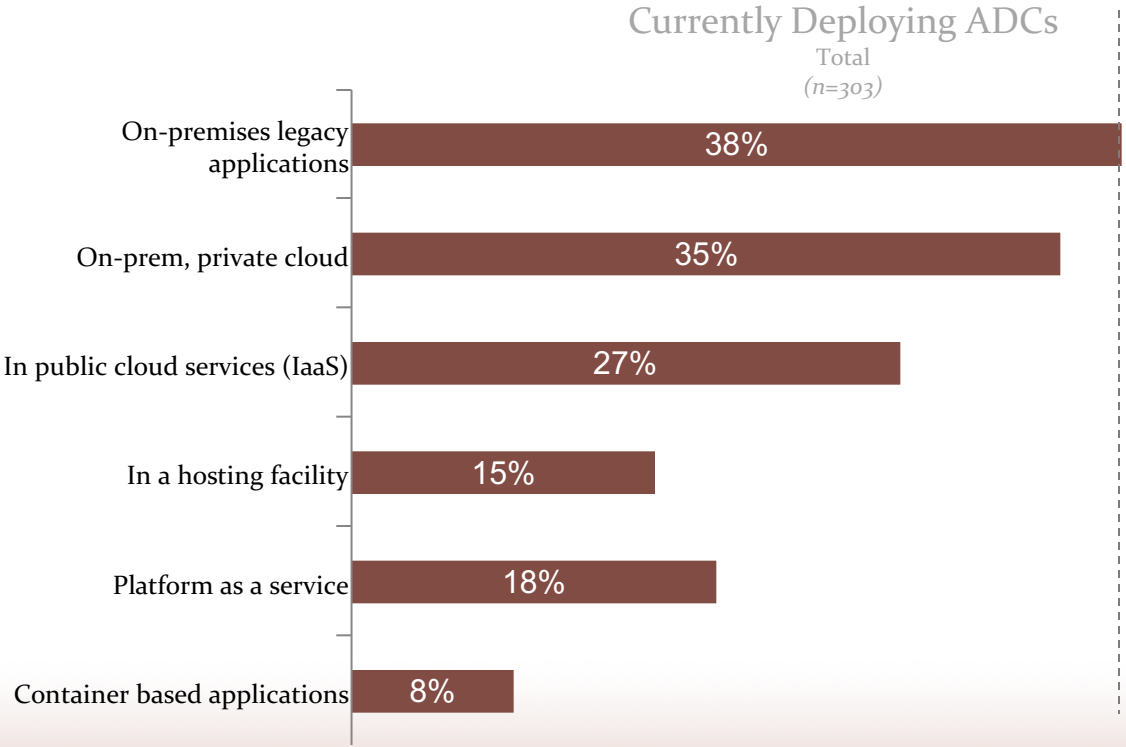


	Traditional ADCs *(n=177)*	Cloud native *(n=36)*	Others *(n=18)**
Cloud leaders	24%	28%	11%
Cloud laggers	33%	28%	11%
Middle of the pack	23%	33%	33%
Cloud native	20%	11%	44%

** Caution: Small sample size*

Q18. Which of these most closely reflects the percentage of applications you are lifting and shifting, modifying and replacing?

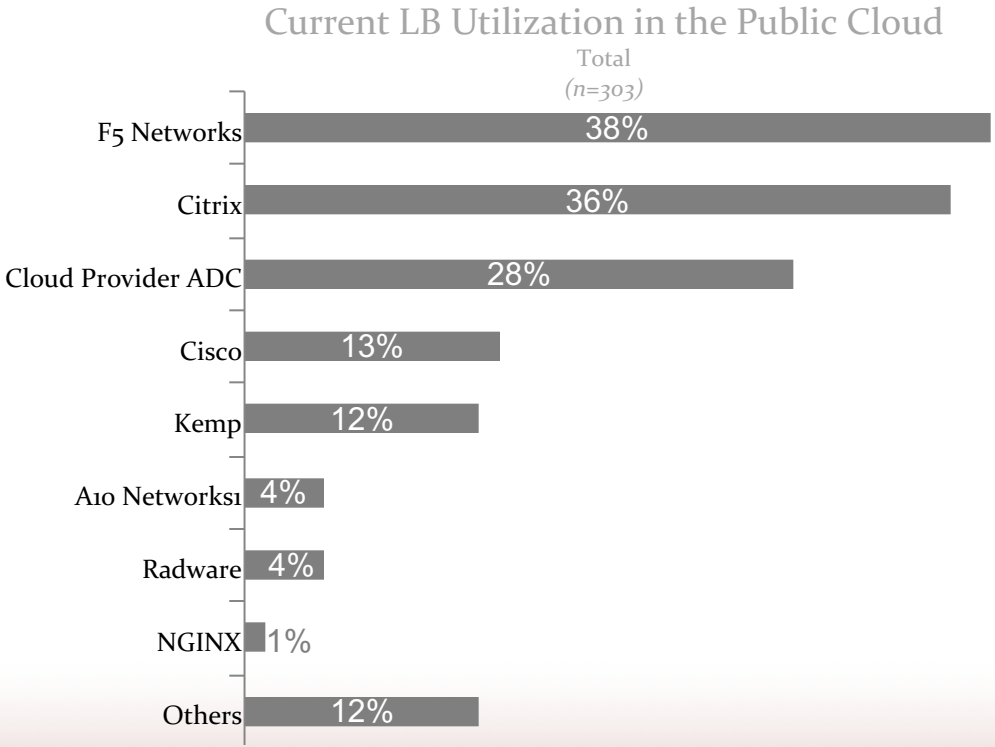
Most ADC deployment resides with on-premise legacy applications or on-premise private clouds.



	Traditional ADCs (n=263)	Cloud native (n=46)	Others (n=30)
On-premises legacy applications	38%	43%	57%
On-prem, private cloud	36%	33%	17%
In public cloud services (IaaS)	27%	37%	20%
In a hosting facility	16%	13%	17%
Platform as a service	19%	17%	20%
Container based applications	8%	13%	7%

Q2. Where are you currently deploying application delivery controllers (ADCs)?

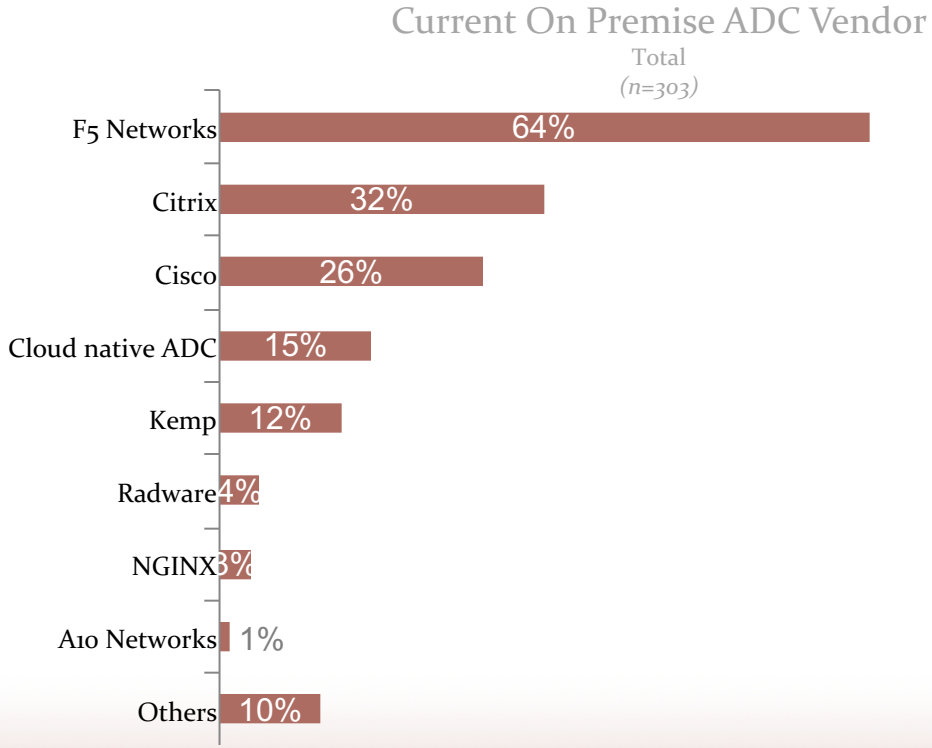
Among those currently utilizing a public cloud infrastructure, F5 Networks and Citrix are most often identified as the LBs of choice.



	Traditional ADCs *(n=263)*	Cloud native *(n=46)*	Others *(n=30)*
F5 Networks	44%	10%	8%
Citrix	41%	30%	10%
Cloud Provider ADC	22%	82%	3%
Cisco	14%	9%	10%
Kemp	12%	13%	0%
A10 Networks1	5%	0%	0%
Radware	5%	2%	0%
NGINX	0%	10%	0%
Others	6%	7%	77%

Q2a If your company is using any public cloud infrastructure, what LBs are being used in the public cloud?

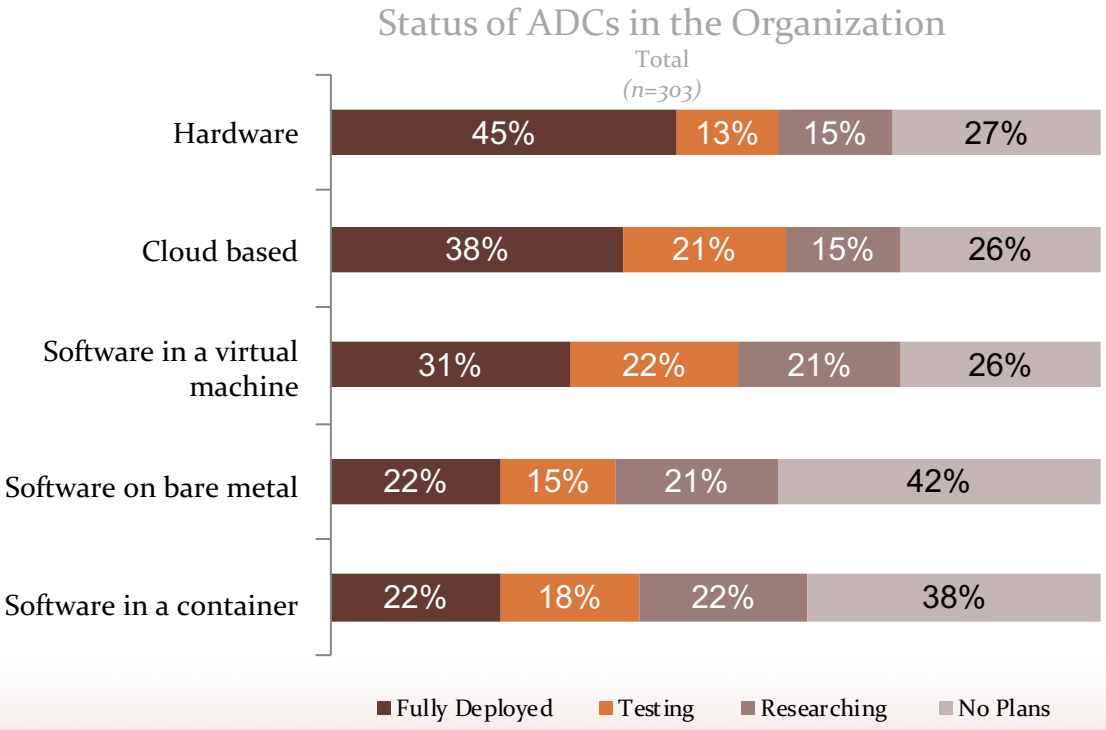
A majority of respondents identify F5 Networks and Citrix as the current vendors for on premise/ private cloud ADC.



	Traditional ADCs (n=263)	Cloud native (n=46)	Others (n=30)
F5 Networks	70%	26%	0%
Citrix	35%	13%	3%
Cisco	30%	9%	3%
Cloud native ADC	13%	100%	0%
Kemp	12%	6%	0%
Radware	4%	2%	0%
NGINX	3%	0%	0%
A10 Networks	1%	0%	0%
Others	4%	0%	100%

Q3. Which vendor is your current on premises / private cloud ADC Vendor?

Hardware ADCs are furthest along in the deployment process when compared to other areas in the organization.

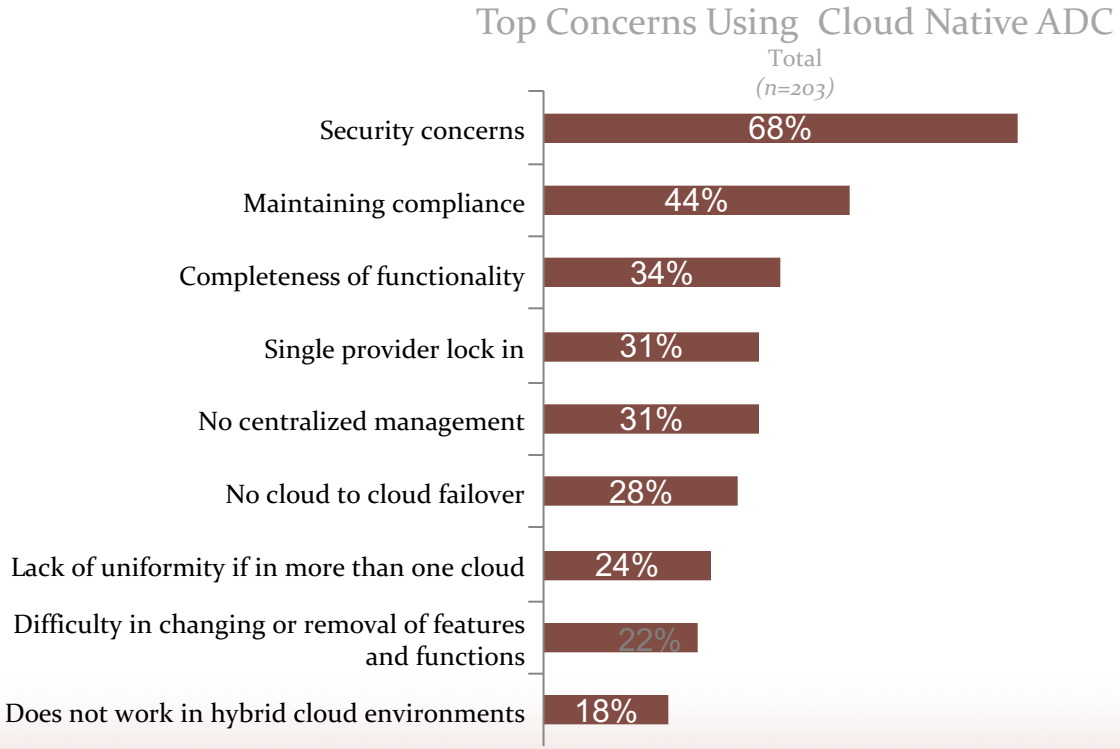


% Fully Deployed

	Traditional ADCs (n=263)	Cloud native (n=46)	Others (n=30)
Hardware	48%	59%	27%
Cloud based	33%	39%	20%
Software in a virtual machine	24%	26%	13%
Software on bare metal	24%	30%	7%
Software in a container	40%	48%	10%

Q4. What is state of the following types of ADCs in your organization?

While many concerns are identified, security related issues are the most frequently mentioned among this audience.

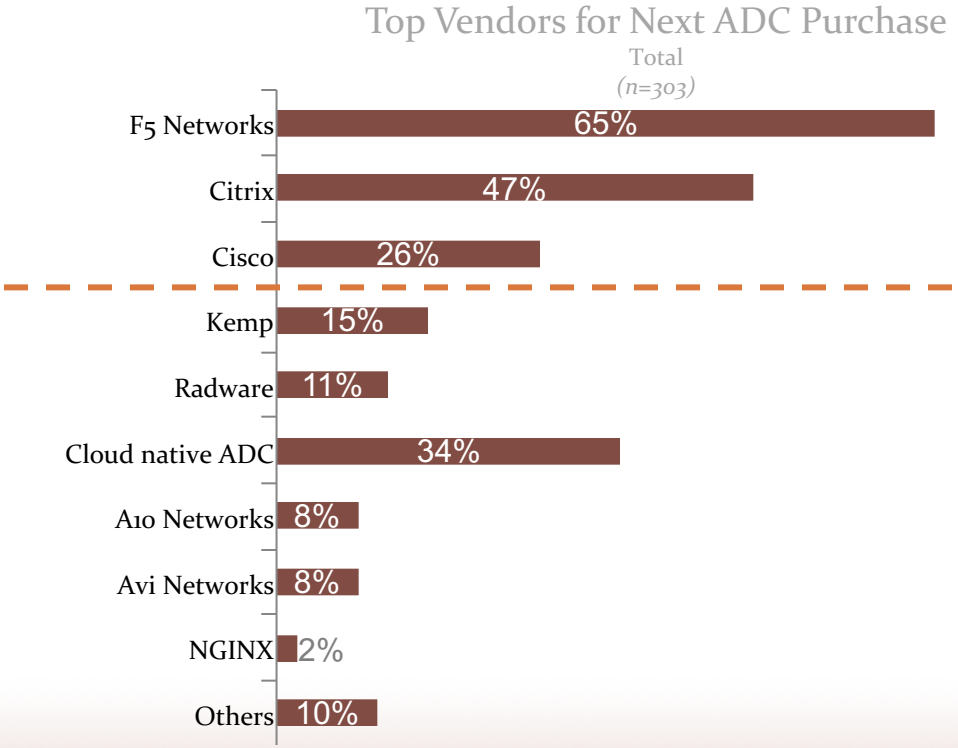


	Traditional ADCs *(n=177)*	Cloud native *(n=36)*	Others *(n=18)**
Security concerns	67%	75%	72%
Maintaining compliance	45%	56%	39%
Completeness of functionality	36%	25%	28%
Single provider lock in	32%	22%	28%
No centralized management	28%	22%	33%
No cloud to cloud failover	28%	33%	17%
Lack of uniformity if in more than one cloud	25%	17%	17%
Difficulty in changing or removal of features and functions	22%	28%	33%
Does not work in hybrid cloud environments	18%	22%	33%

** Caution: Small sample size*

Q19. What are your biggest concerns regarding using cloud native ADCs/Load balancers?

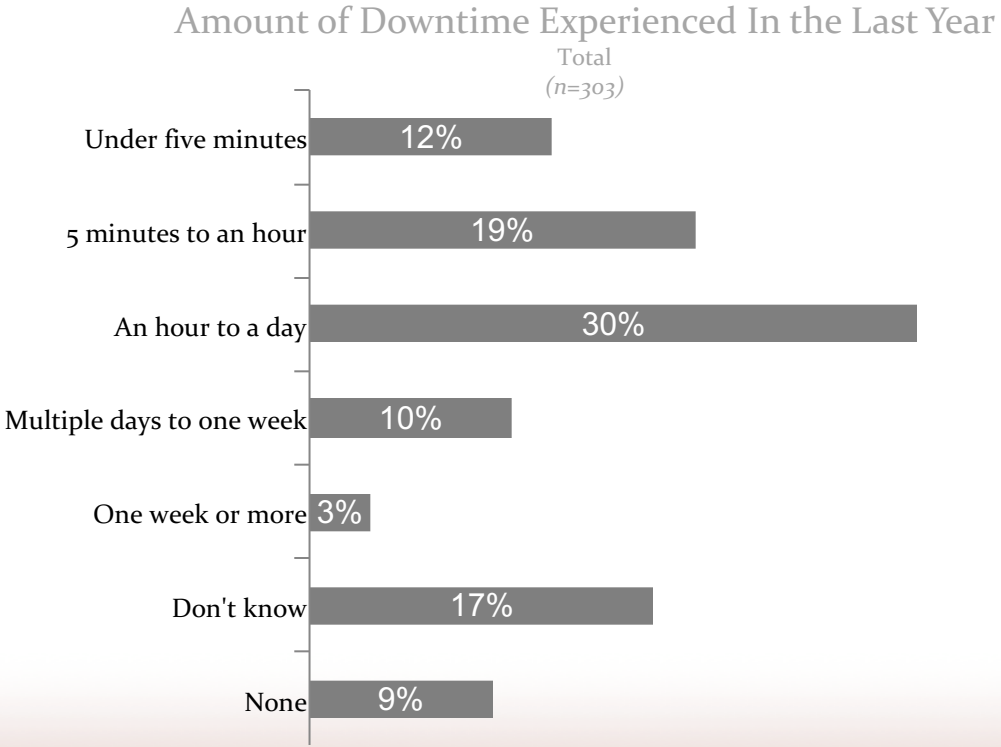
When considering vendors for future ADC purchases, Cisco, F5 Networks, and Citrix clearly stand above others when asked for "top vendor consideration".



	Traditional ADCs *(n=263)*	Cloud native *(n=46)*	Others *(n=30)*
F5 Networks	76%	60%	17%
Citrix	54%	38%	20%
Cisco	29%	17%	11%
Kemp	17%	13%	3%
Radware	13%	7%	3%
Cloud native ADC	35%	74%	17%
A10 Networks	9%	6%	0%
Avi Networks	8%	13%	3%
NGINX	2%	0%	0%
Others	2%	2%	73%

Q5. Who will be your top 3 vendors for your next ADC purchase?

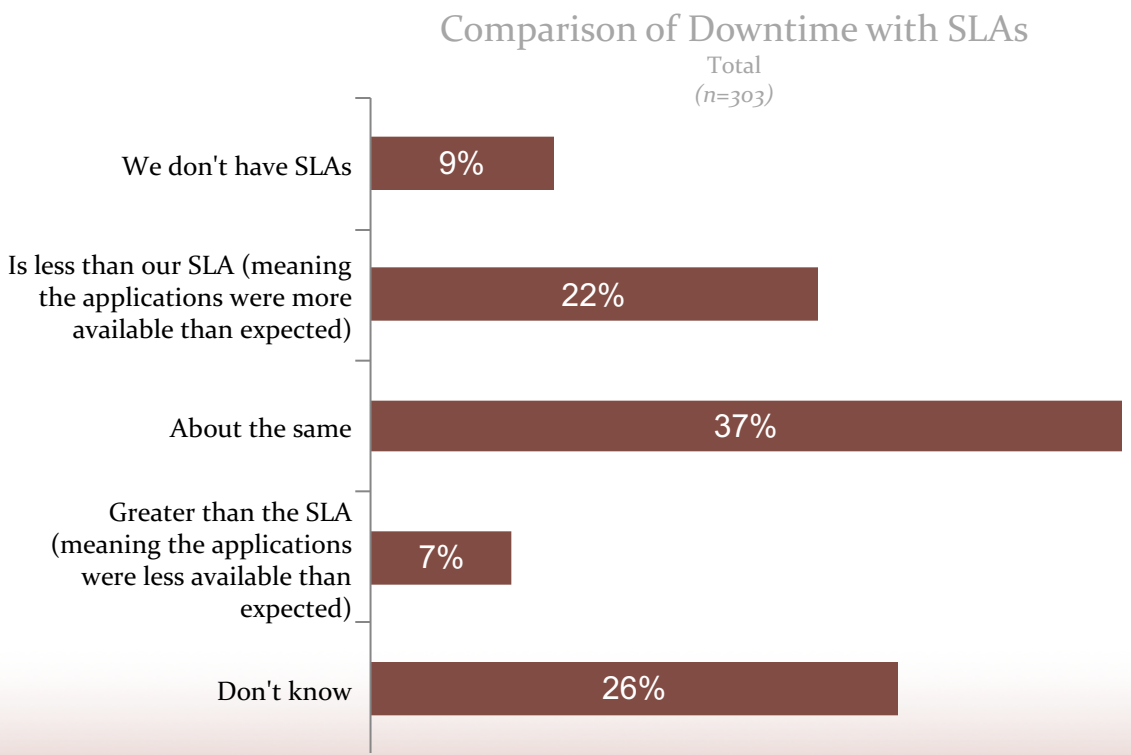
Downtime varies across this audience, with close to one-third unsure of how much time was truly experienced in the previous year.



	Traditional ADCs (n=263)	Cloud native (n=46)	Others (n=30)
Under five minutes	12%	13%	0%
5 minutes to an hour	21%	15%	0%
An hour to a day	25%	35%	70%
Multiple days to one week	10%	8%	14%
One week or more	3%	0%	0%
Don't know	17%	22%	3%
None	10%	7%	13%

Q5a How much total downtime did your mission critical applications have in the past year because of ADC related issues?

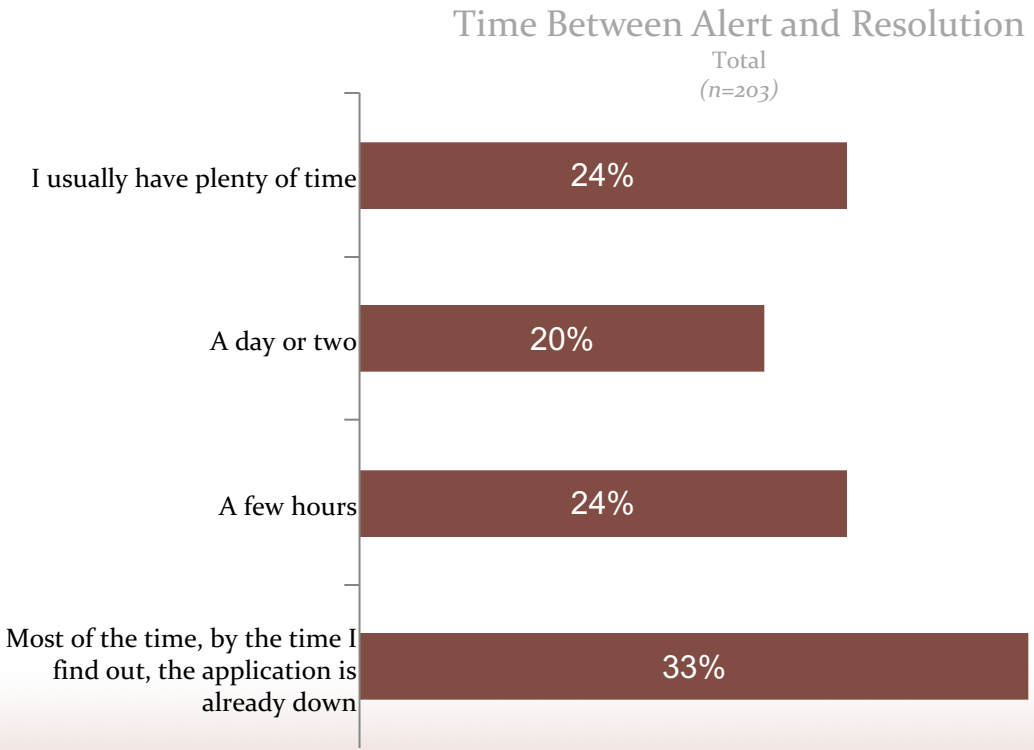
When comparing downtime with SLAs, responses varied with close to one-quarter unsure of how the two truly compared.



	Traditional ADCs (n=263)	Cloud native (n=46)	Others (n=30)
We don't have SLAs	9%	2%	10%
Is less than our SLA (meaning the applications were more available than expected)	23%	26%	7%
About the same	40%	39%	10%
Greater than the SLA (meaning the applications were less available than expected)	7%	11%	3%
Don't know	21%	22%	70%

Q5b How did this downtime compare to the internal SLAs for application uptime that you have with your company?

Time between alert and resolution is varied across this market, suggesting that each situation is unique and varied depending on the circumstances.

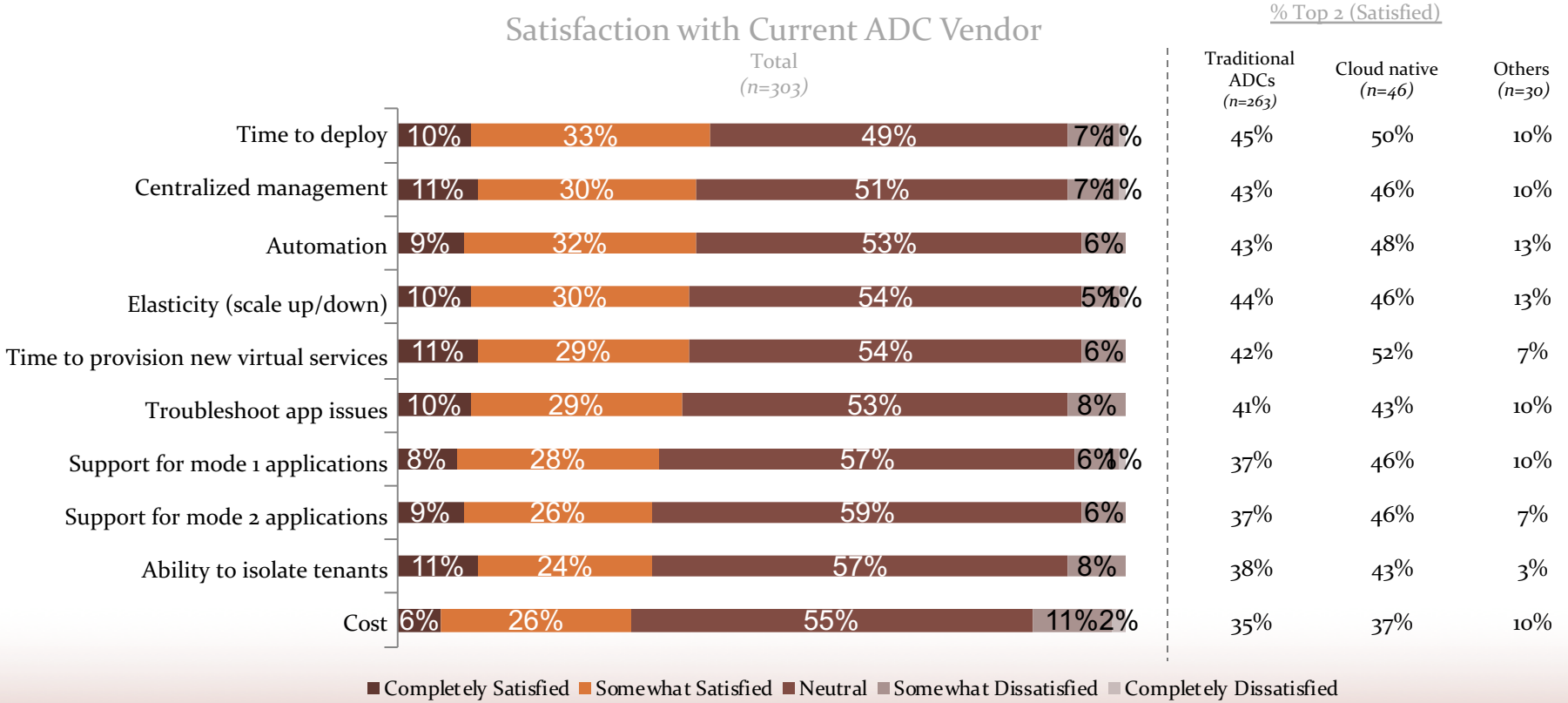


	Traditional ADCs (n=177)	Cloud native (n=36)	Others (n=18)*
I usually have plenty of time	25%	19%	17%
A day or two	20%	17%	0%
A few hours	25%	33%	17%
Most of the time, by the time I find out, the application is already down	31%	31%	67%

** Caution: Small sample size*

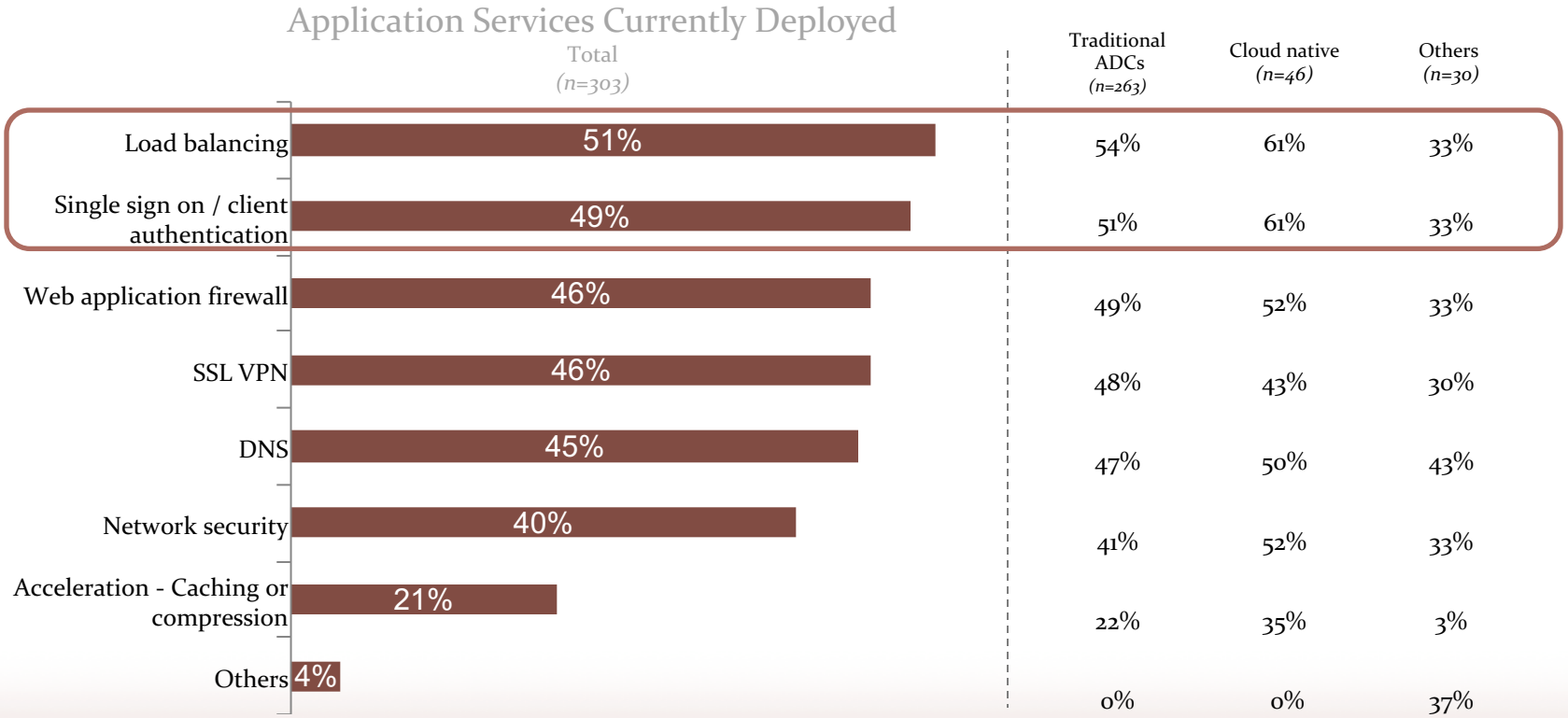
Q20. How much time do you have between the alert that an app is down and resolving the issues before downtime occurs?

Across the various attributes tested, satisfaction with current ADC vendors is generally satisfied with the majority stating "neutral" responses.



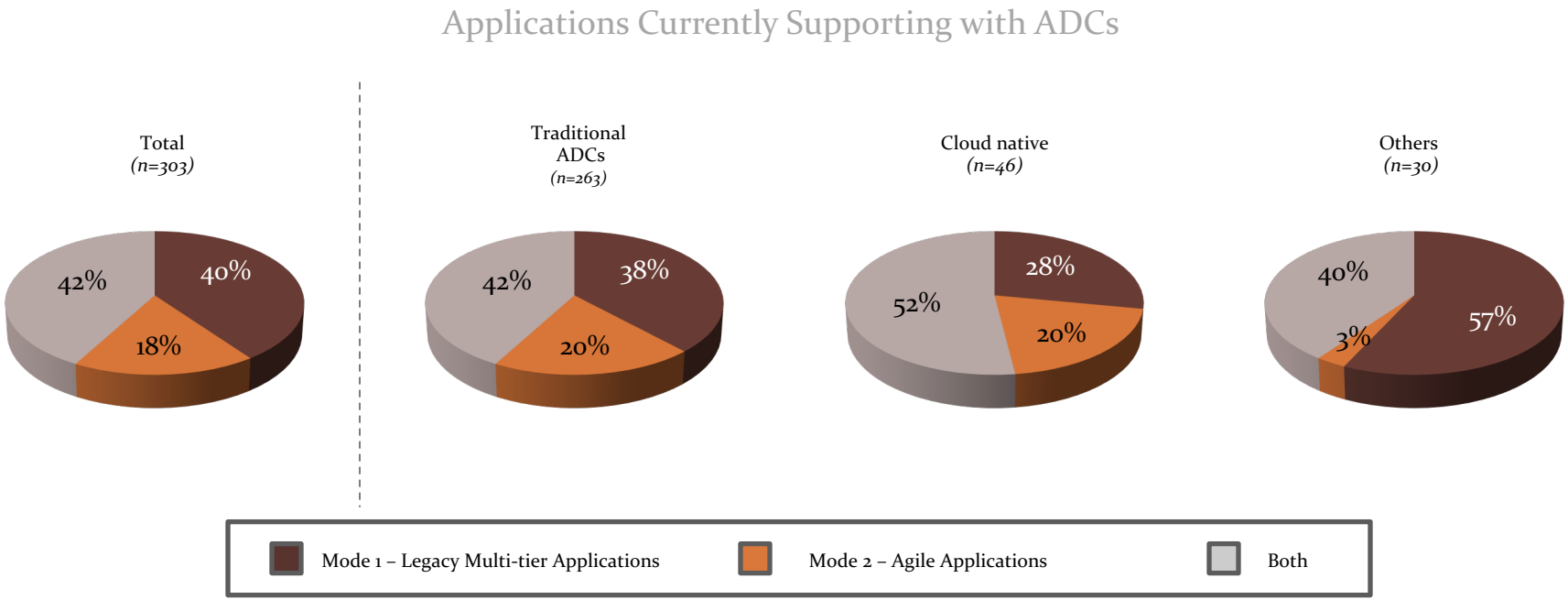
Q6. What is your satisfaction level with your current ADC vendor in the following areas?

‘Load balancing’ and ‘single sign on/client authentication’ are the most commonly identified application services currently being deployed.



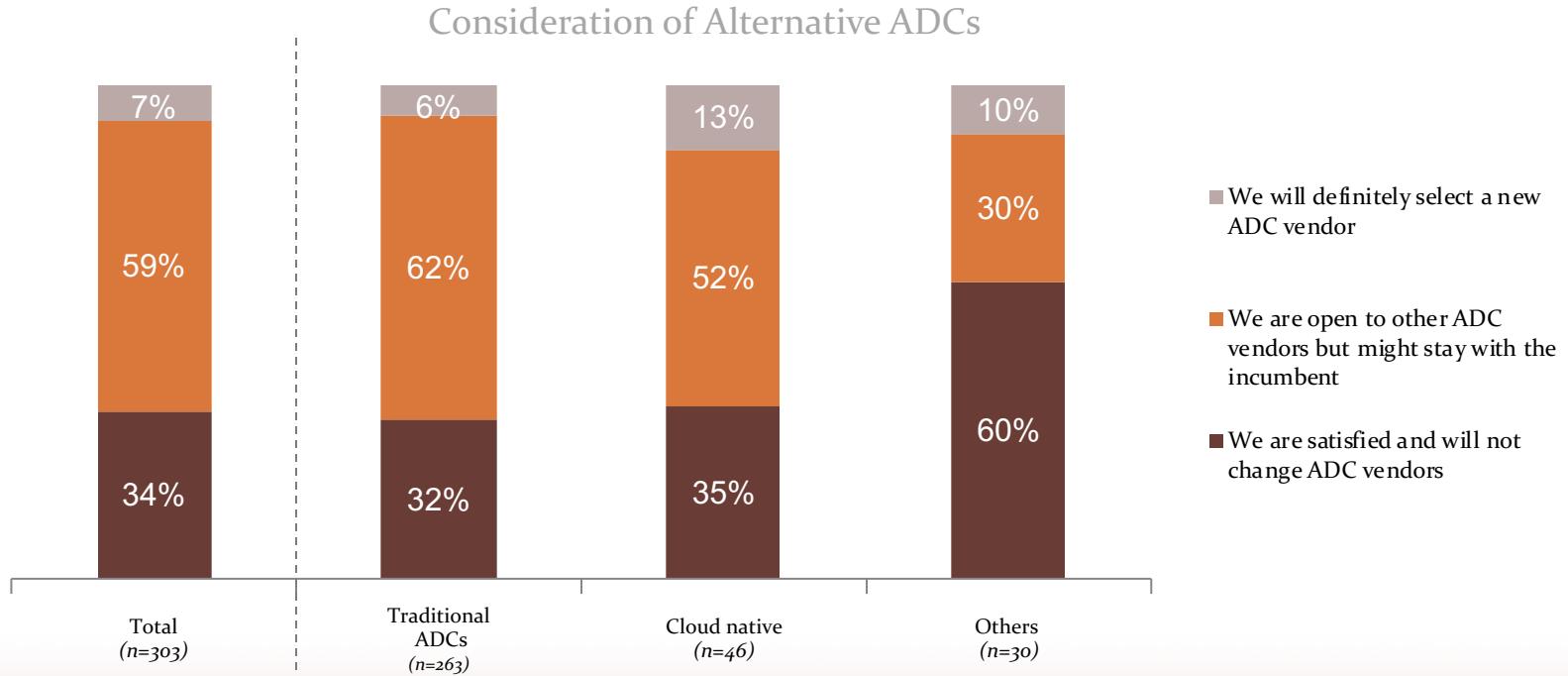
Q7. Which Application Services do you currently have deployed?

Both legacy multi-tier and agile applications are identified as being supported equally with ADCs.



Q8. Which types of applications are you supporting with the ADCs?

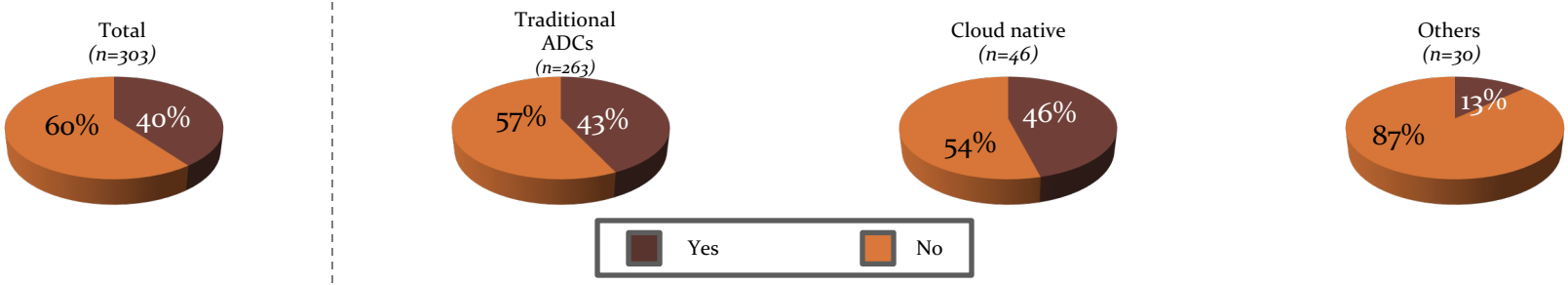
While some indicated being satisfied and will not consider changing ADC vendors, over half acknowledge they would be at least open to considering a change from the incumbent.



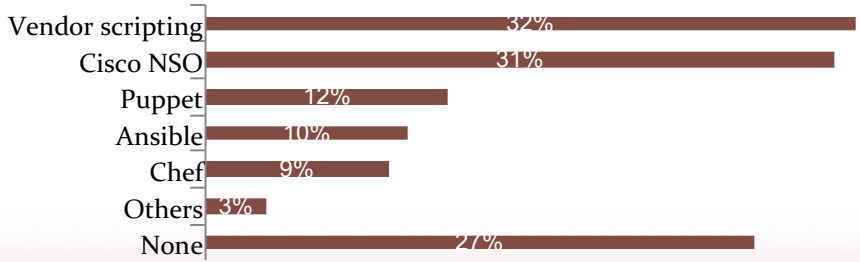
Q9. As you plan to migrate from mode 1 to mode 2 applications will you consider alternative ADCs?

Most state they do not have the ability to automate configuration changes to the ADC. Among those that do, Vendor Scripting and Cisco NSO are the most commonly utilized tools.

Ability to Automate Configuration Changes to an ADC



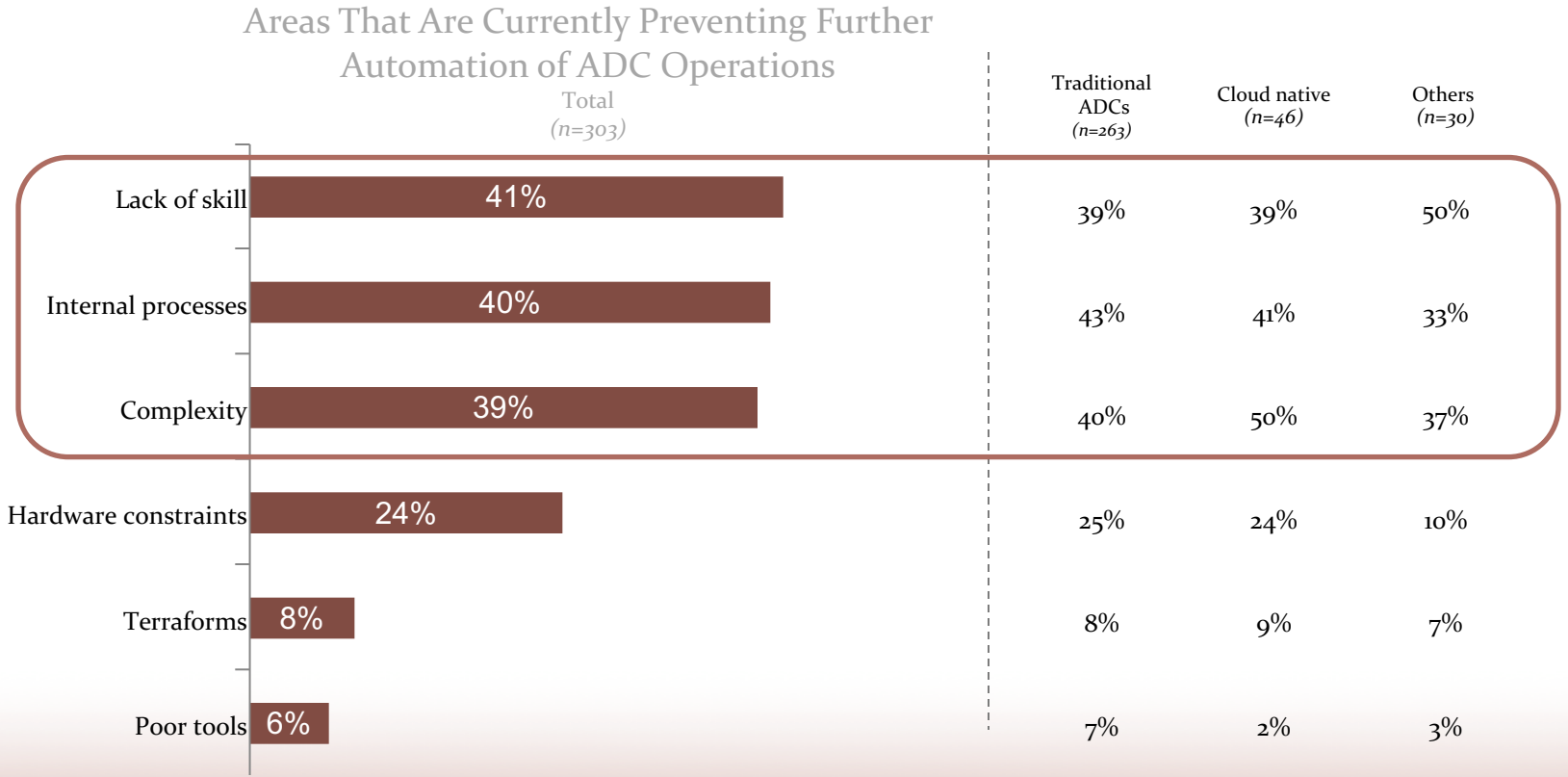
Automation Tools Utilized



Traditional ADCs (n=263)	Cloud native (n=46)	Others (n=30)
34%	43%	13%
35%	22%	3%
13%	20%	3%
11%	11%	10%
10%	15%	3%
2%	2%	13%
22%	17%	67%

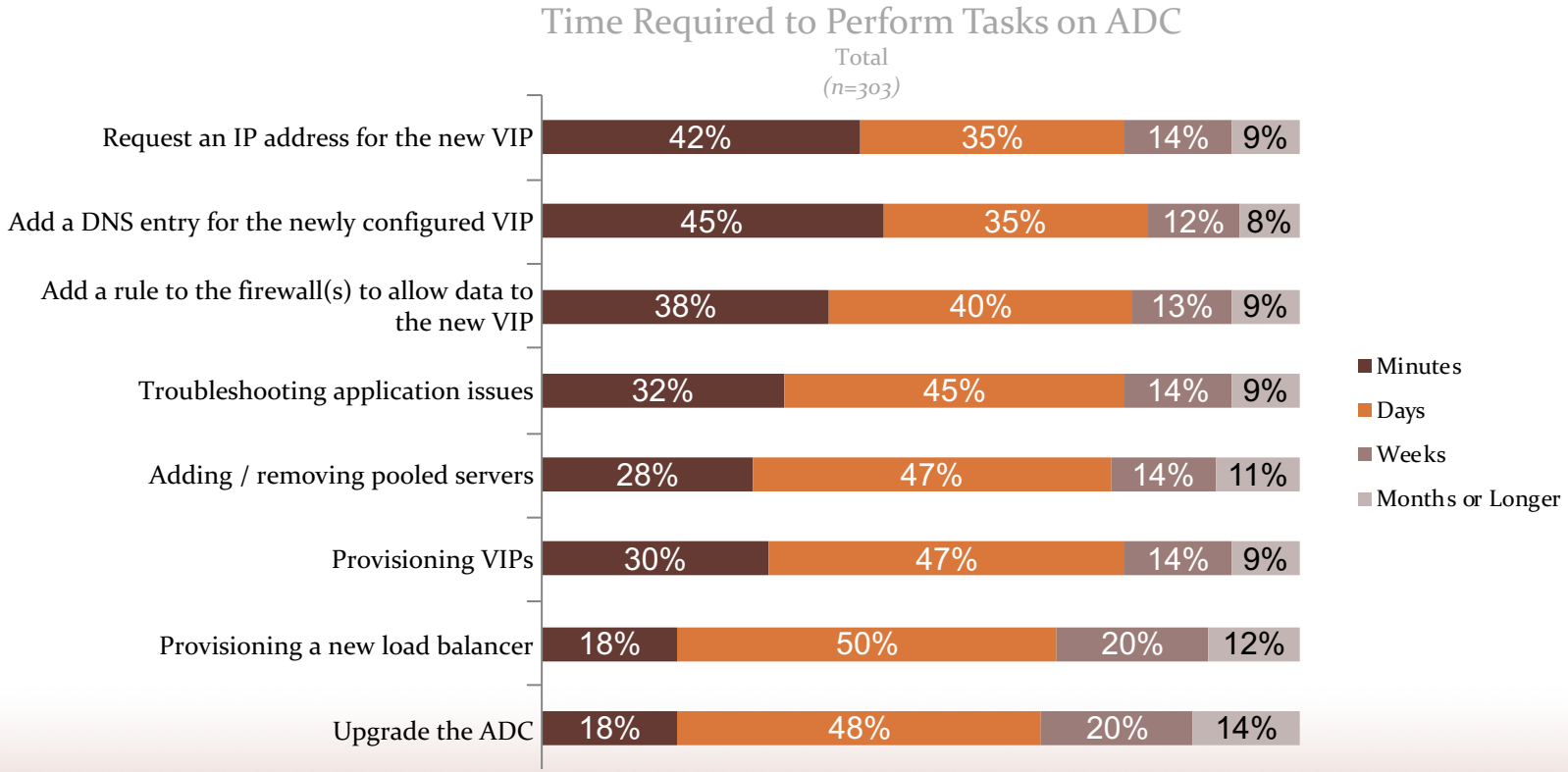
Q10. Do you have the ability to automate configuration changes to an ADC?
Q11. What automation tools / frameworks do you use?

Lack of skill, internal processes, and complexity are most often identified as the greatest barriers preventing further automation on ADC operations.



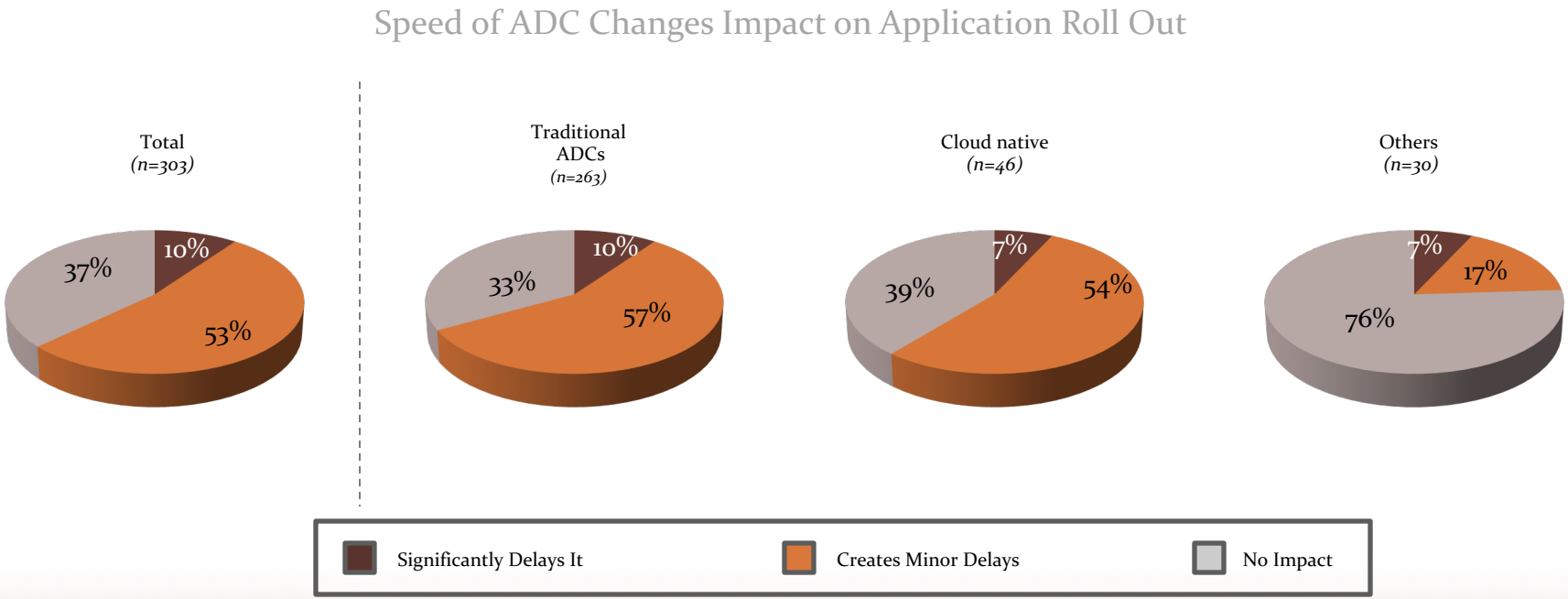
Q12. Please pick up to 3 things that prevents you from automating more ADC operations.

For many of the tasks performed on ADC, most can be addressed in minutes or days – Adding DNS entries and requests for IP addresses require the least amount of time.



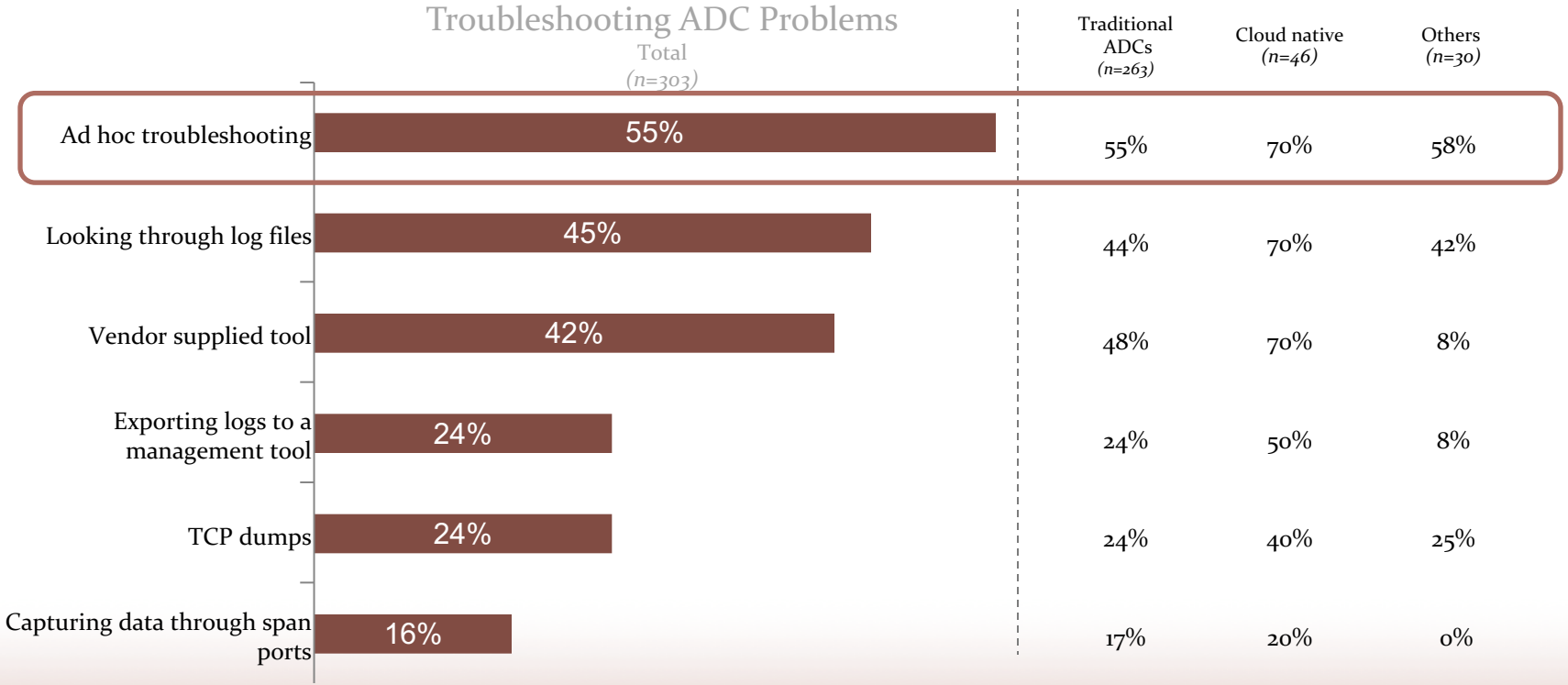
Q13 How long does it take you to perform the following tasks on your ADC?

For most, ADC changes have limited or no impact on application roll out and only account for minor delays.



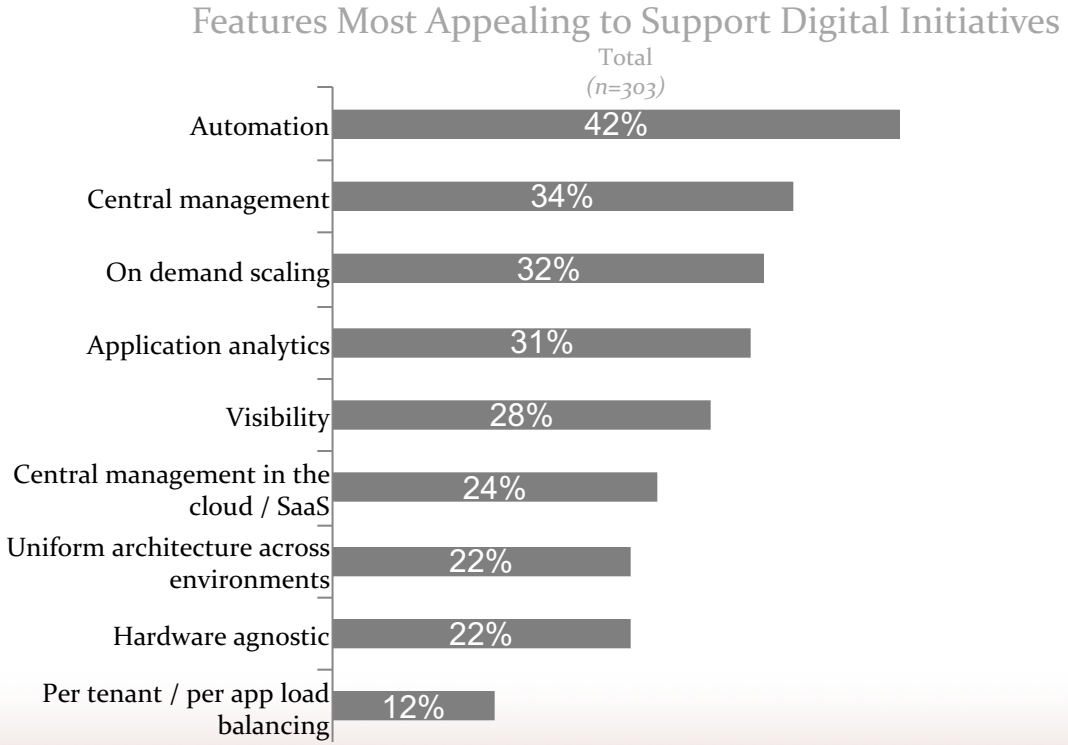
Q14. How does the speed at which you can make ADC changes impact the speed at which apps are rolled out?

For more than half of this respondent base, ad hoc troubleshooting is the most common problem being addressed.



Q15. How do you troubleshoot ADC problems?

Automation and central management are commonly identified as the features that are most appealing to support digital initiatives.

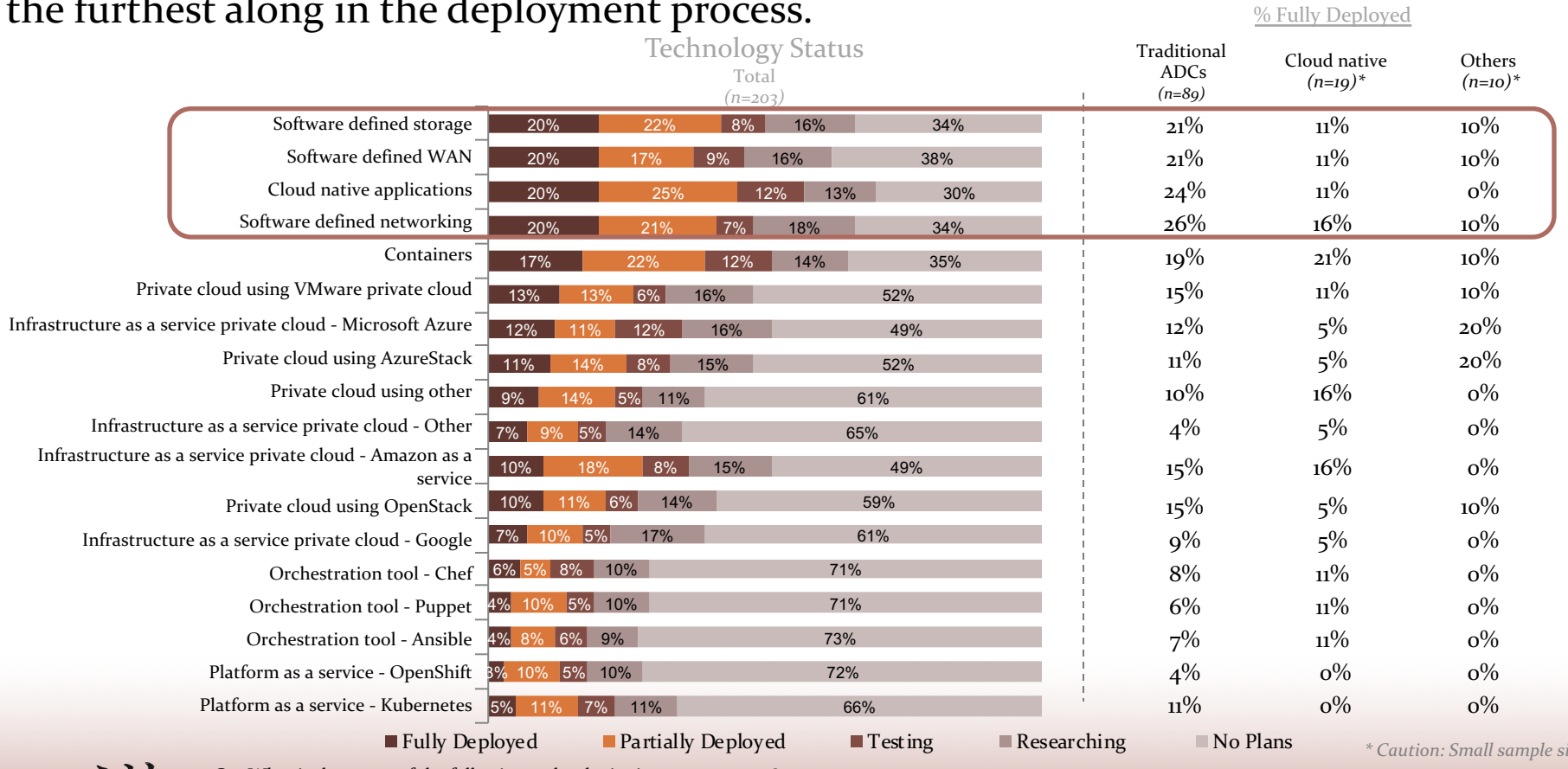


	Traditional ADCs *(n=263)*	Cloud native *(n=46)*	Others *(n=30)*
Automation	44%	43%	33%
Central management	35%	28%	33%
On demand scaling	32%	28%	23%
Application analytics	32%	35%	27%
Visibility	29%	35%	37%
Central management in the cloud / SaaS	25%	35%	17%
Uniform architecture across environments	21%	15%	30%
Hardware agnostic	23%	26%	17%
Per tenant / per app load balancing	11%	13%	10%

Q16. Please select up to 3 features that would be most appealing in your ability to support your digital initiatives.

US Market Segment

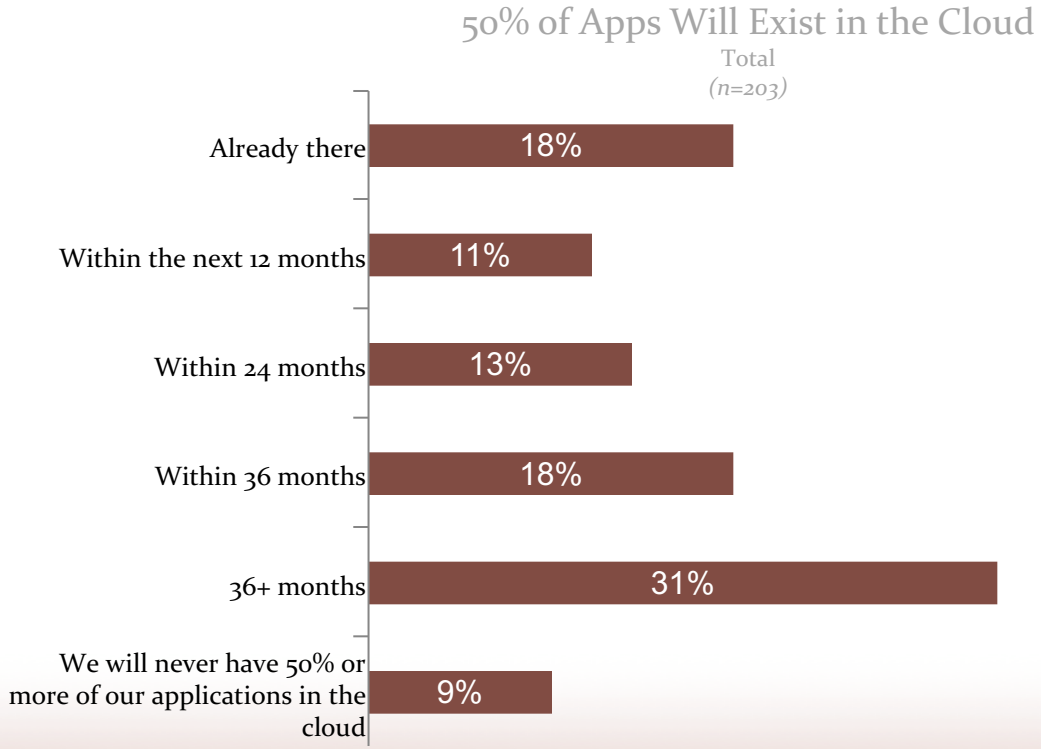
Areas like “software defined technologies” and cloud native applications continue to be the furthest along in the deployment process.



* *Caution: Small sample size*

Q1. What is the status of the following technologies in your company?

The majority of this market does NOT expect to ever have 50% or more of their applications residing in the cloud.



	Traditional ADCs *(n=89)*	Cloud native *(n=19)**	Others *(n=10)**
Already there	20%	11%	10%
Within the next 12 months	8%	21%	10%
Within 24 months	15%	11%	0%
Within 36 months	20%	21%	10%
36+ months	29%	21%	70%
We will never have 50% or more of our applications in the cloud	8%	16%	0%

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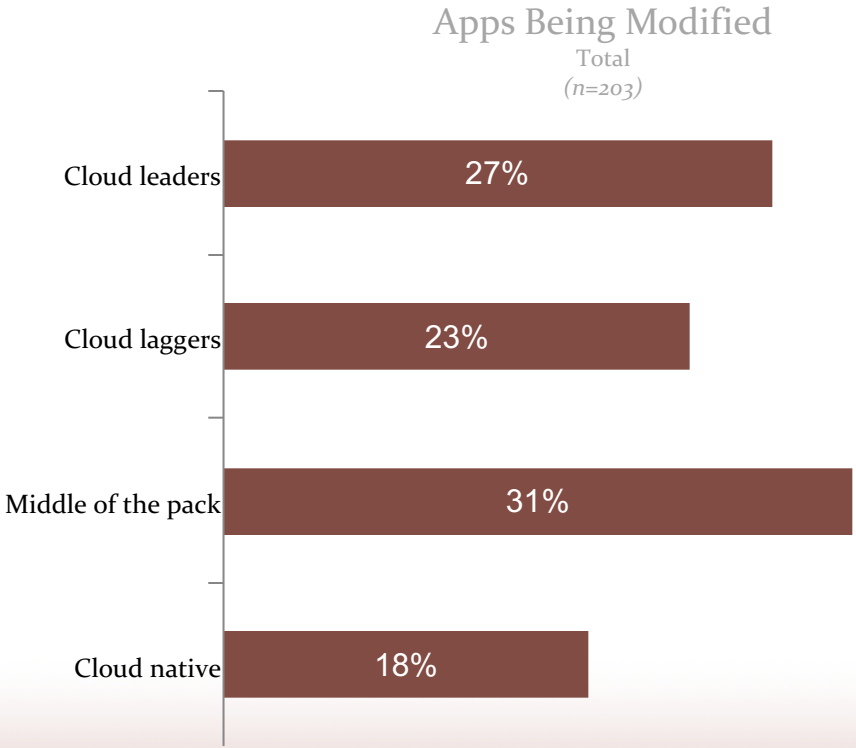
Q17. At what point will you have 50% of your applications in the cloud?

Within this market, the applications that are being lifted and shifted, modified and replaced is scattered with no clear area of focus.



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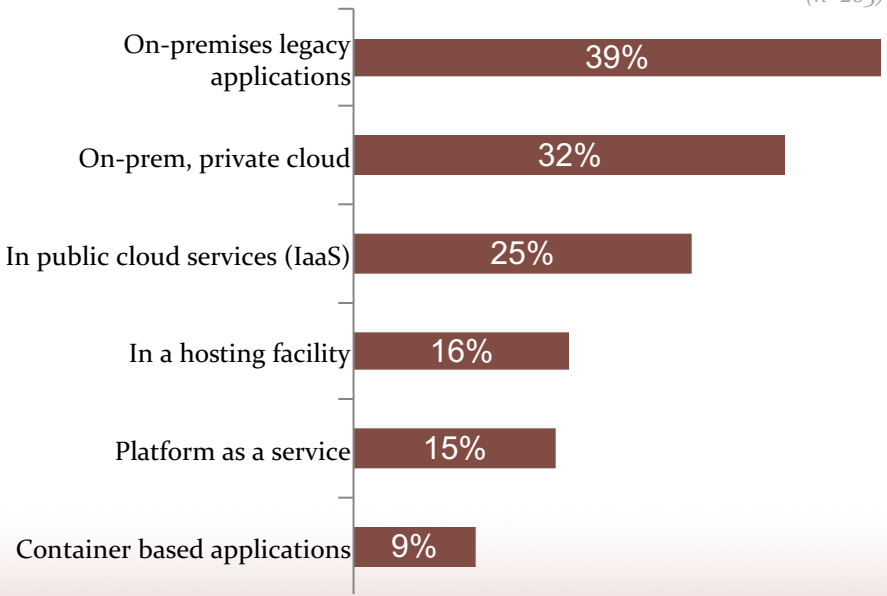
Cloud leaders	20%	26%	10%
Cloud laggers	33%	21%	10%
Middle of the pack	22%	32%	30%
Cloud native	25%	21%	50%

** Caution: Small sample size*

Q18. Which of these most closely reflects the percentage of applications you are lifting and shifting, modifying and replacing?

The majority of respondents in this market indicate ADC deployment resides with on-premise legacy applications. For those with traditional ADCs, on-premise legacy apps are significantly lower when compared to last year's research.



	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
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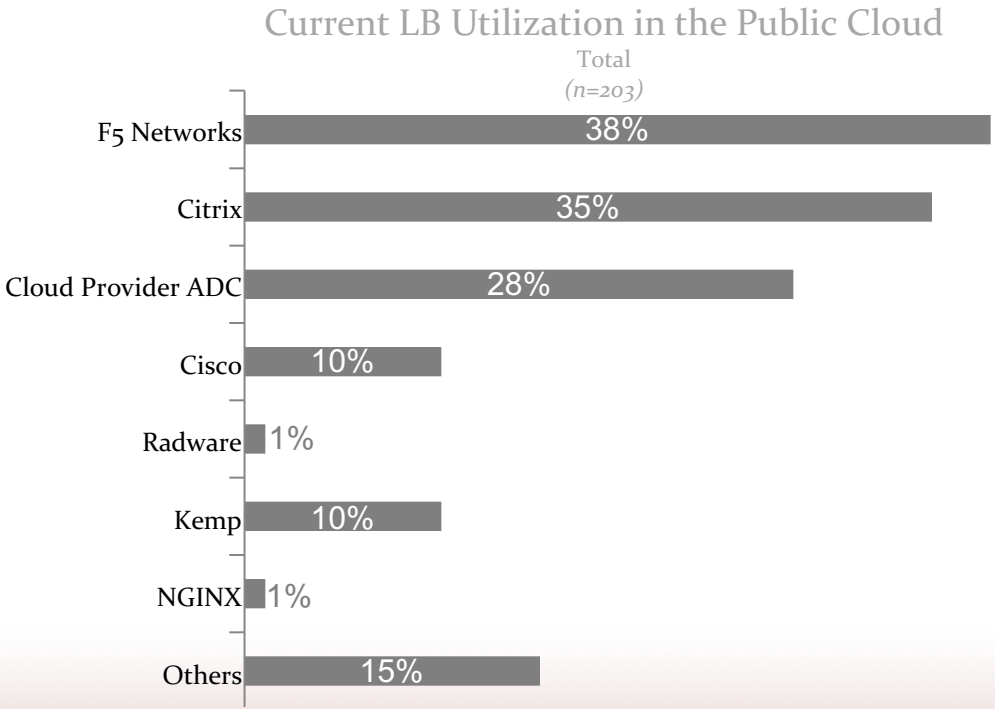
On-prem, private cloud	29%	16%	10%
In public cloud services (IaaS)	28%	42%	10%
In a hosting facility	21%	26%	10%
Platform as a service	19%	21%	10%
Container based applications	9%	16%	0%

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q2. Where are you currently deploying application delivery controllers (ADCs)?

* Caution: Small sample size

Among those currently utilizing a public cloud infrastructure, F5 is most often identified as the LB of choice.



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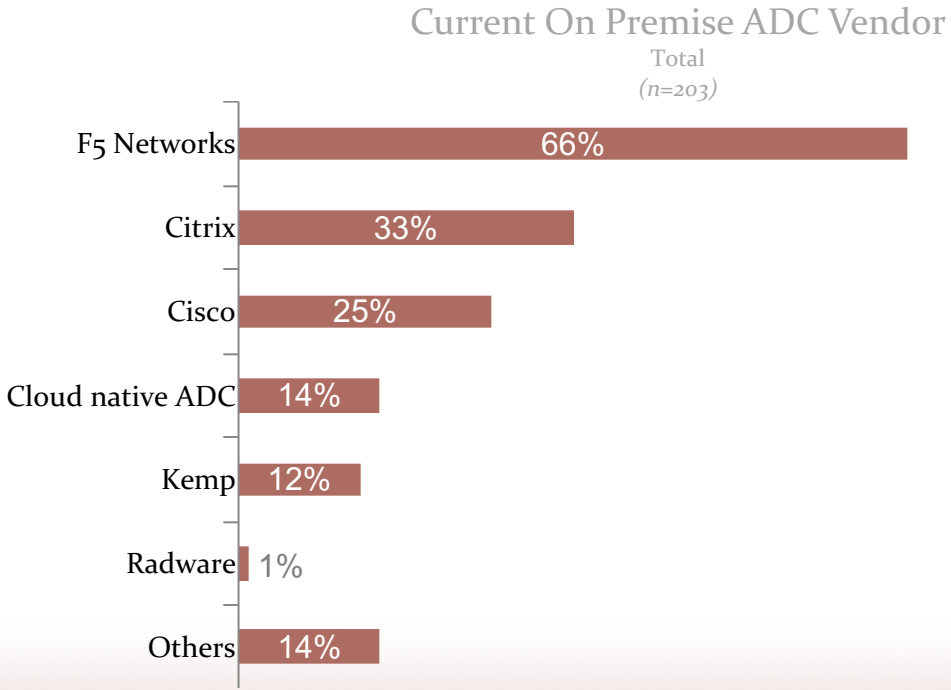
F5 Networks	45%	31%	0%
Citrix	47%	26%	10%
Cloud Provider ADC	24%	76%	0%
Cisco	24%	68%	10%
Radware	1%	0%	0%
Kemp	15%	10%	0%
NGINX	0%	0%	0%
Others	7%	11%	80%

Q2a If your company is using any public cloud infrastructure, what LBs are being used in the public cloud?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

** Caution: Small sample size*

A majority of respondents identify Citrix and F5 Networks as the vendors for on premise/ private cloud ADC. However, those using traditional ADCs, indicate a significant decrease in Cisco utilization in this space when compared to the previous wave.



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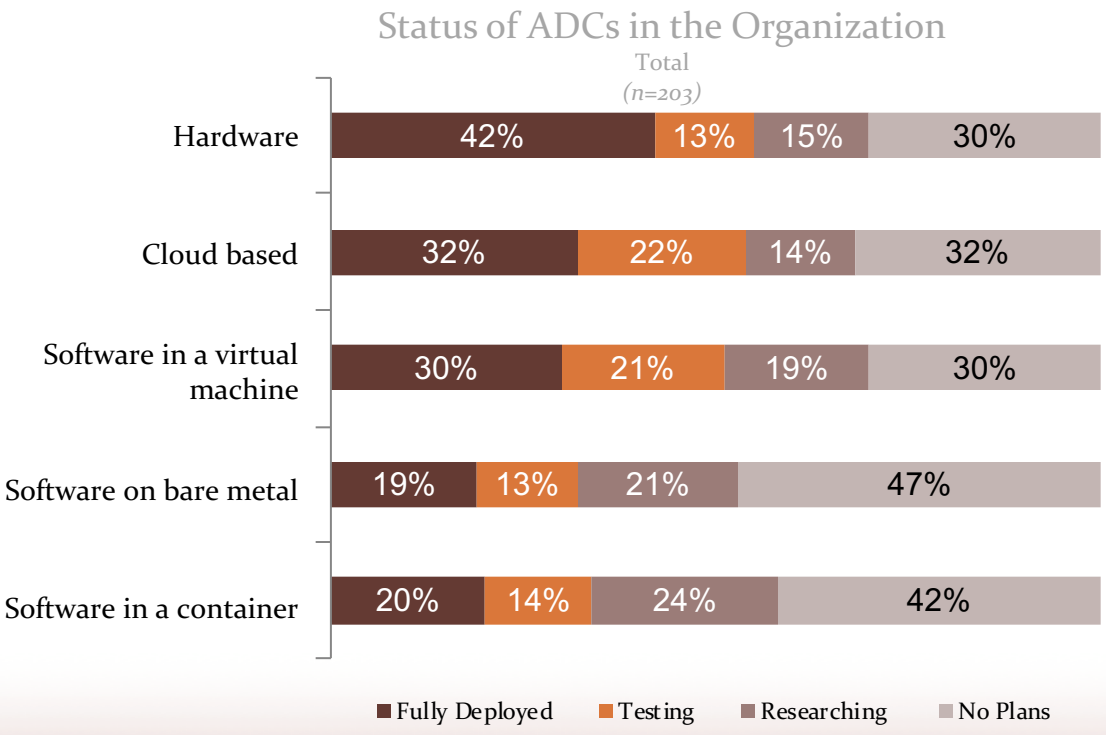
Citrix	38%	11%	0%
Cisco	29%	5%	0%
Cloud native ADC	17%	100%	0%
Kemp	13%	10%	0%
Radware	1%	1%	1%
Others	10%	0%	100%

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q3. Which vendor is your current on premises / private cloud ADC Vendor?

* Caution: Small sample size

Hardware ADCs are furthest along in the deployment process when compared to other ADCs in the organization.



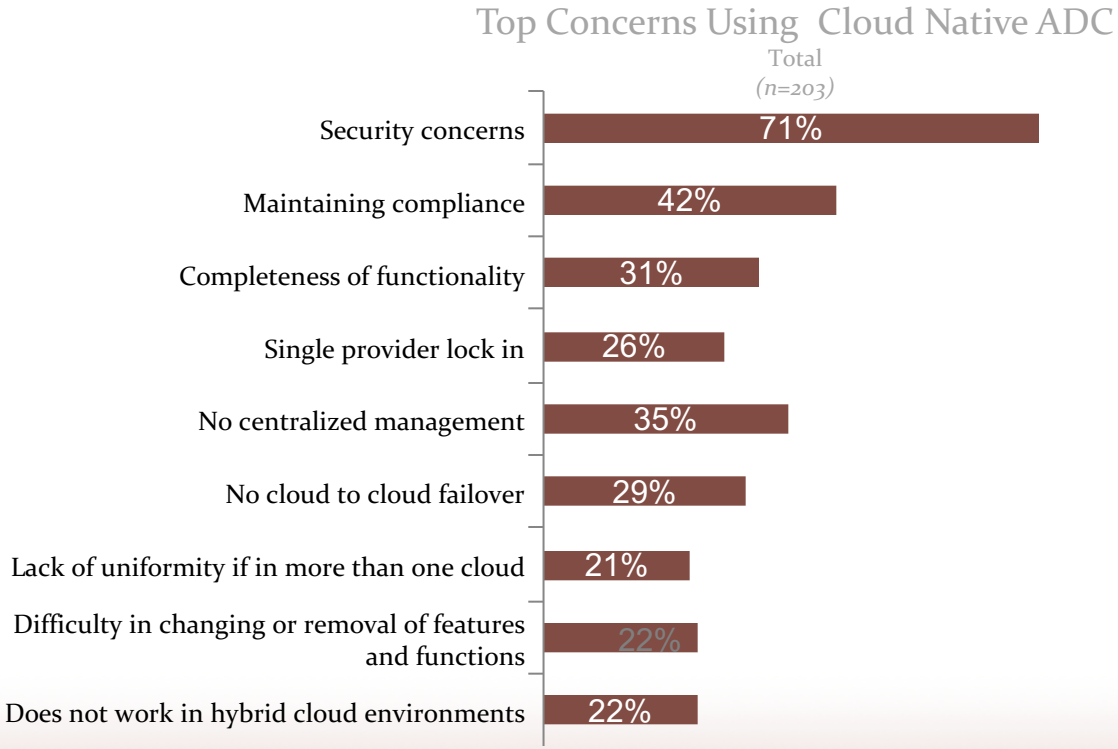
	% Fully Deployed		
	Traditional ADCs *(n=89)*	Cloud native *(n=19)**	Others *(n=10)**
Hardware	42%	47%	20%
Cloud based	40%	42%	0%
Software in a virtual machine	37%	26%	10%
Software on bare metal	24%	21%	10%
Software in a container	**31%**	26%	0%

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q4. What is state of the following types of ADCs in your organization?

** Caution: Small sample size*

Security related issues were most commonly identified as the top concern with regards to utilizing cloud native ADC.



	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
Security concerns	72%	84%	70%
Maintaining compliance	44%	47%	20%
Completeness of functionality	34%	5%	20%
Single provider lock in	28%	21%	30%
No centralized management	30%	26%	50%
No cloud to cloud failover	27%	37%	30%
Lack of uniformity if in more than one cloud	22%	21%	10%
Difficulty in changing or removal of features and functions	22%	21%	30%
Does not work in hybrid cloud environments	20%	37%	40%

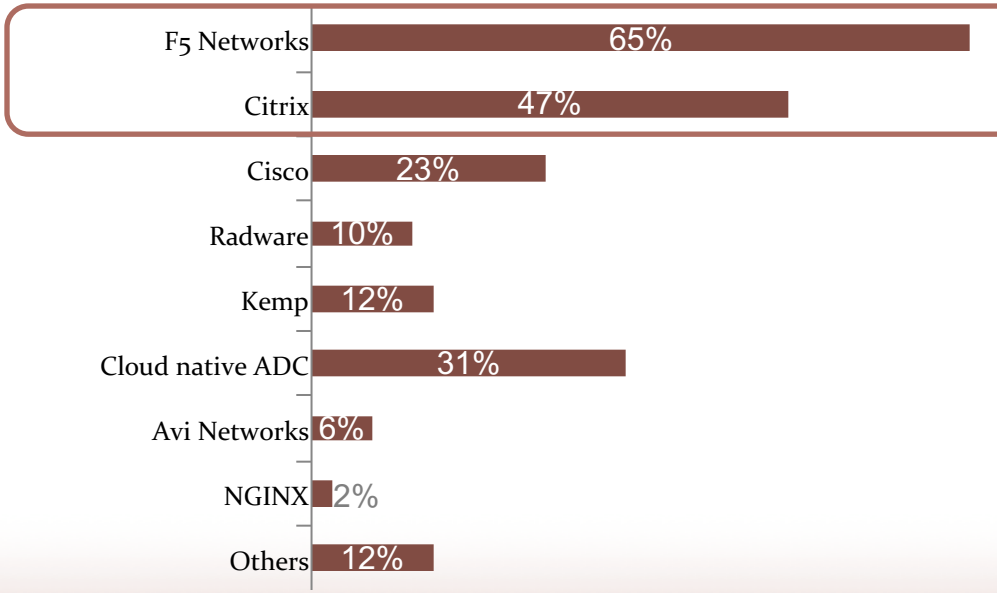
Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q19. What are your biggest concerns regarding using cloud native ADCs/Load balancers?

** Caution: Small sample size*

When considering vendors for future ADC purchases, Cisco and F5 Networks are most commonly identified as the vendors of choice. Those with traditional ADCs indicated significant increases among F5 and A10 Networks when compared to last year's research.

Top Vendors for Next ADC Purchase



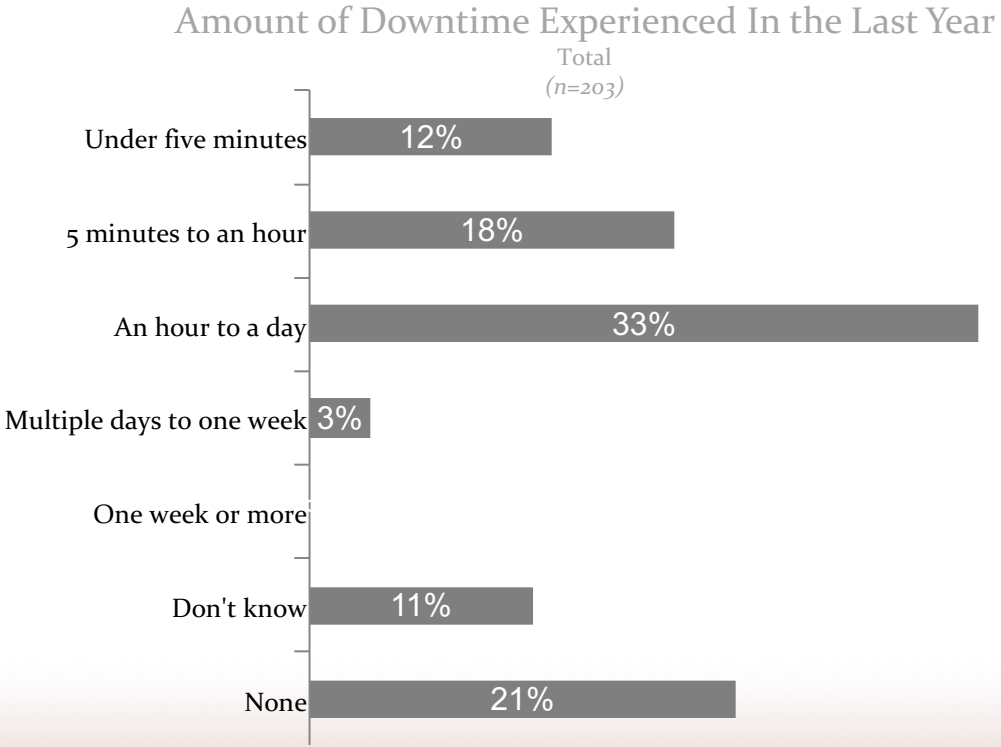
	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
F5 Networks	80%	74%	40%
Citrix	60%	32%	30%
Cisco	28%	13%	15%
Radware	15%	16%	10%
Kemp	**22%**	26%	10%
Cloud native ADC	37%	63%	30%
Avi Networks	7%	21%	0%
NGINX	0%	0%	0%
Others	2%	0%	60%

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q5. Who will be your top 3 vendors for your next ADC purchase?

* Caution: Small sample size

Downtime is varied across this base, with the majority (one-third) unsure of how much time was truly experienced in the previous year.



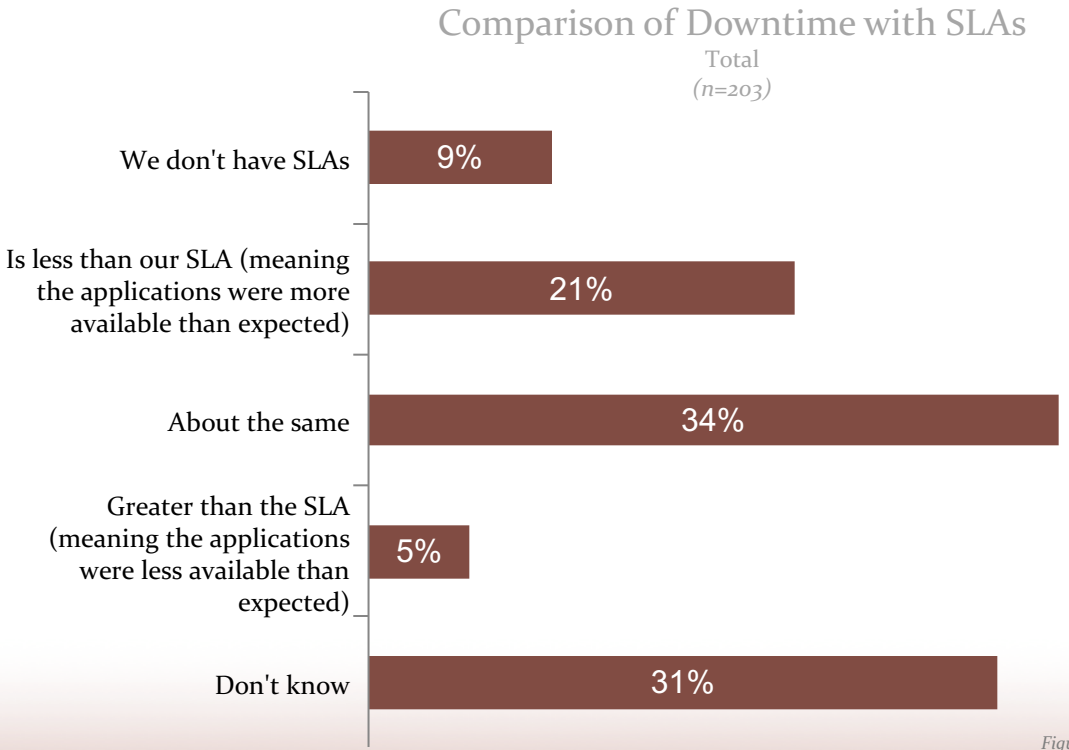
	Traditional ADCs *(n=89)*	Cloud native *(n=19)**	Others *(n=10)**
Under five minutes	13%	21%	0%
5 minutes to an hour	19%	11%	0%
An hour to a day	29%	37%	60%
Multiple days to one week	3%	0%	0%
One week or more	1%	0%	0%
Don't know	10%	11%	60%
None	24%	21%	40%

Q5a How much total downtime did your mission critical applications have in the past year because of ADC related issues?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

** Caution: Small sample size*

When comparing downtime with SLAs, one third identify that the two are 'about the same'.



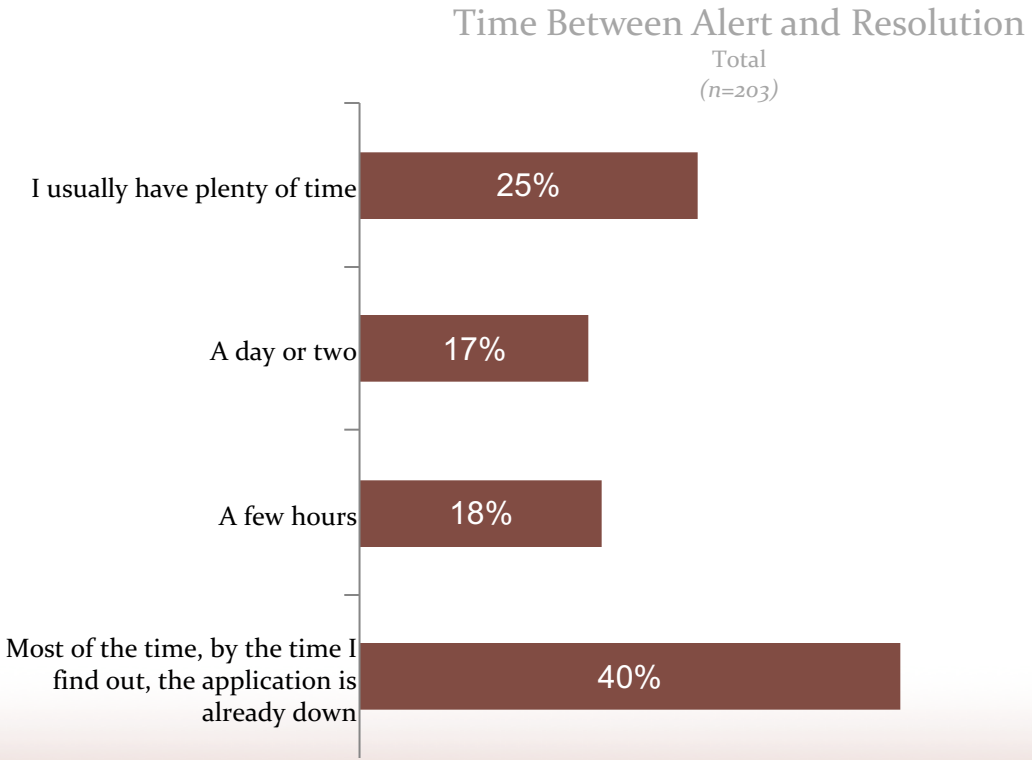
	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
We don't have SLAs	10%	5%	10%
Is less than our SLA (meaning the applications were more available than expected)	16%	11%	10%
About the same	40%	47%	0%
Greater than the SLA (meaning the applications were less available than expected)	4%	5%	0%
Don't know	29%	32%	80%

Q5b How did this downtime compare to the internal SLAs for application uptime that you have with your company?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

** Caution: Small sample size*

Those who are in traditional ADC environments, are more likely to 'have plenty of time' for resolution when compared to their cloud native counterparts.



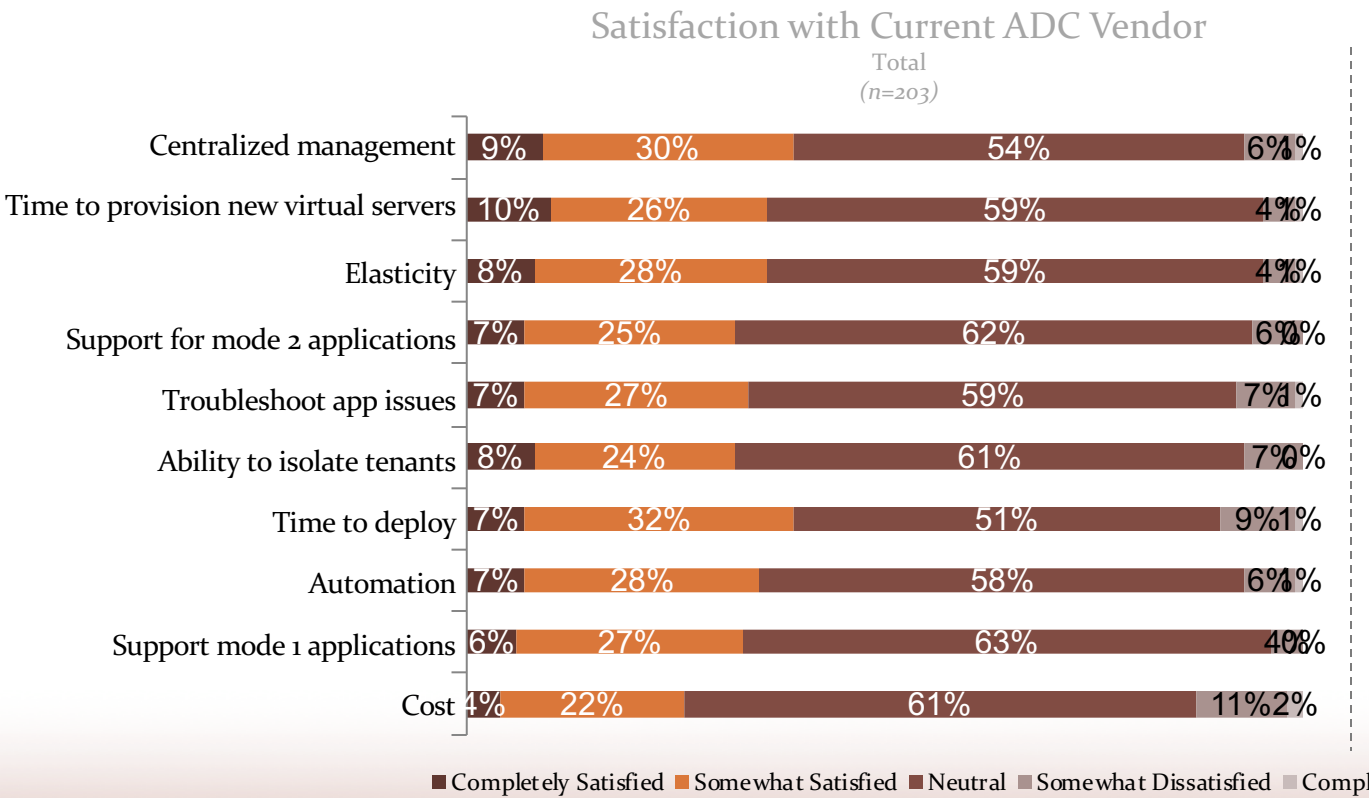
	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
I usually have plenty of time	28%	11%	20%
A day or two	16%	16%	0%
A few hours	20%	37%	10%
Most of the time, by the time I find out, the application is already down	36%	37%	70%

Q20. How much time do you have between the alert that an app is down and resolving the issues before downtime occurs?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

** Caution: Small sample size*

Satisfaction levels across the various attributes tested remains generally neutral, a similar pattern to the prior wave of research.



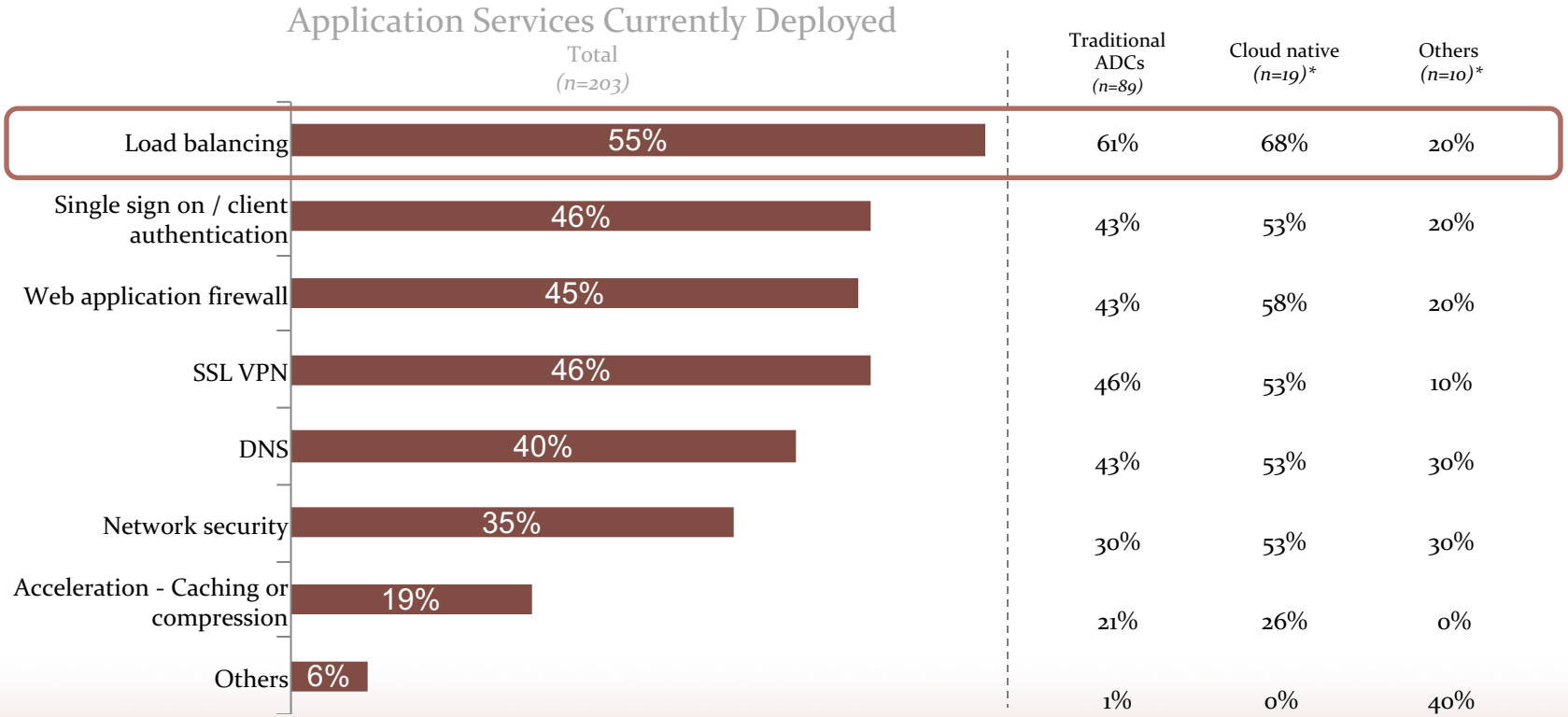
	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
	% Top 2 (Satisfied)		
Centralized management	33%	26%	0%
Time to provision new virtual servers	33%	37%	0%
Elasticity	36%	42%	0%
Support for mode 2 applications	30%	32%	0%
Troubleshoot app issues	33%	32%	10%
Ability to isolate tenants	34%	32%	0%
Time to deploy	40%	32%	0%
Automation	31%	37%	0%
Support mode 1 applications	34%	32%	10%
Cost	26%	21%	0%

Q6. What is your satisfaction level with your current ADC vendor in the following areas?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

* Caution: Small sample size

Load balancing is the most commonly identified application service deployed among this market.

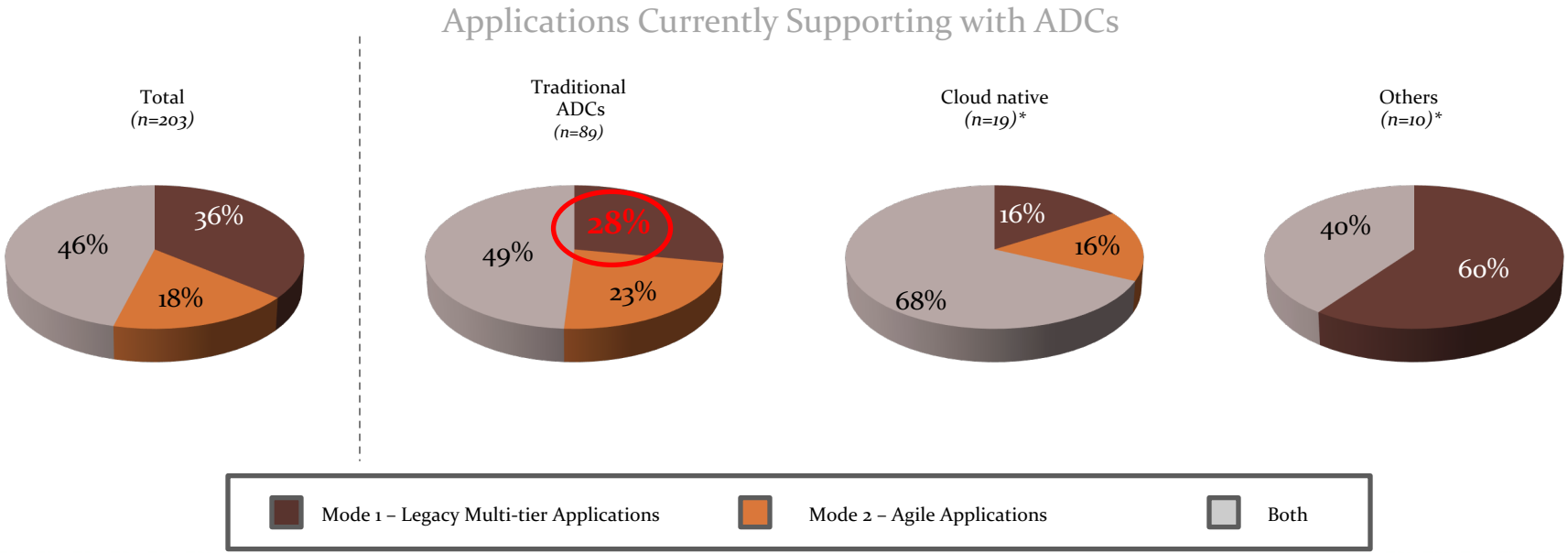


Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q7. Which Application Services do you currently have deployed?

** Caution: Small sample size*

Both legacy multi-tier and agile applications are identified as being supported equally with ADCs. However, those in the 'traditional ADC' group showed significant decreases for support among legacy multi-tier applications when compared to the previous year.

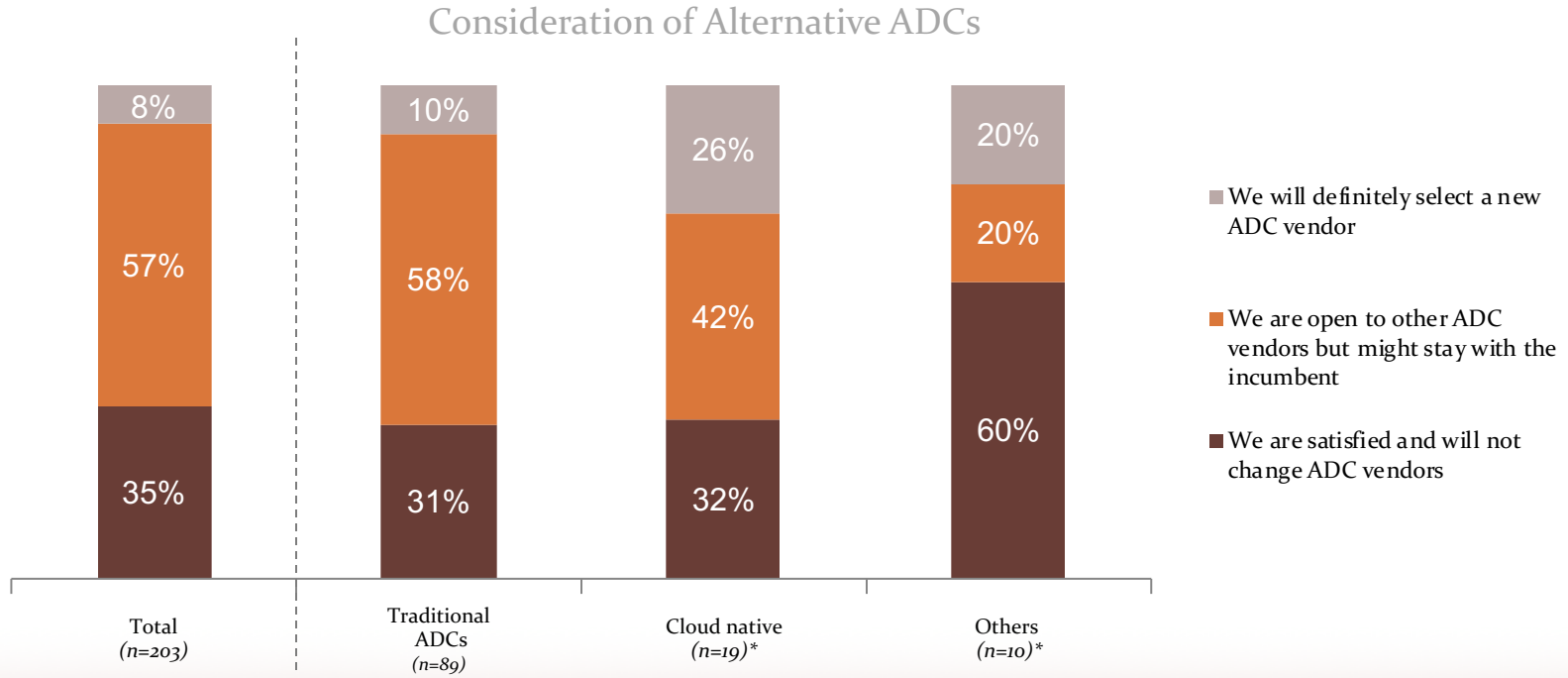


Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q8. Which types of applications are you supporting with the ADCs?

* Caution: Small sample size

Although one-third indicated being satisfied and will not consider changing ADC vendors, over half acknowledge they would be open to considering a change from the incumbent.



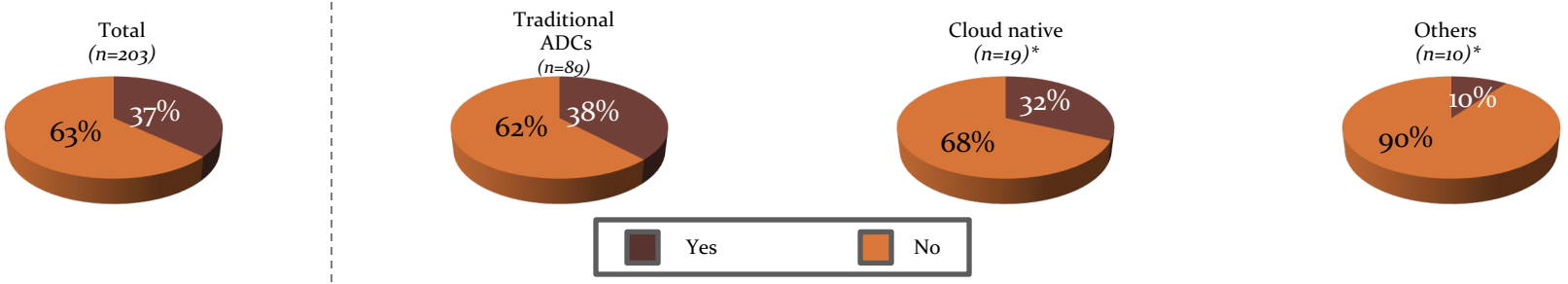
Q9. As you plan to migrate from mode 1 to mode 2 applications will you consider alternative ADCs?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

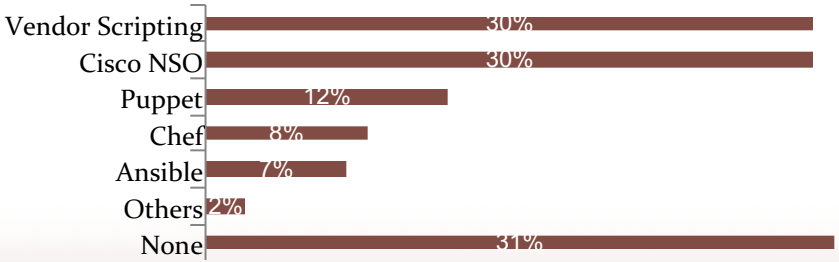
** Caution: Small sample size*

Many indicate they do not have the ability to automate configuration changes to the ADC. For those that do, Vendor Scripting and Cisco NSO are the most commonly utilized tools.

Ability to Automate Configuration Changes to an ADC



Automation Tools Utilized



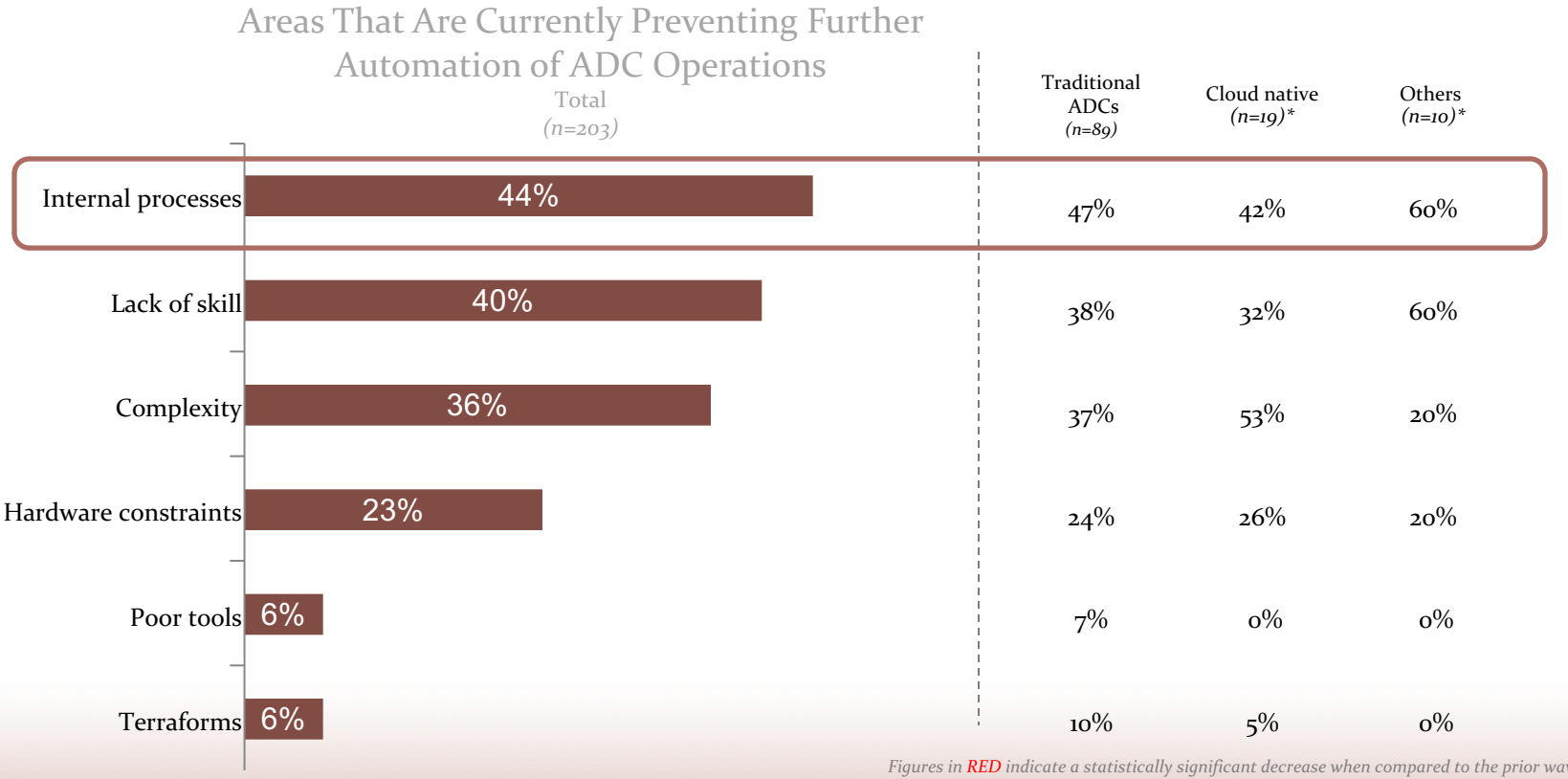
	Traditional ADCs (n=89)	Cloud native (n=19)*	Others (n=10)*
Vendor Scripting	28%	21%	0%
Cisco NSO	28%	21%	0%
Puppet	17%	26%	0%
Chef	9%	5%	0%
Ansible	11%	11%	0%
Others	2%	5%	10%
None	25%	21%	90%

Q10. Do you have the ability to automate configuration changes to an ADC?
Q11. What automation tools / frameworks do you use?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

** Caution: Small sample size*

The greatest barrier preventing further automation on ADC operations is most often related to internal processes.

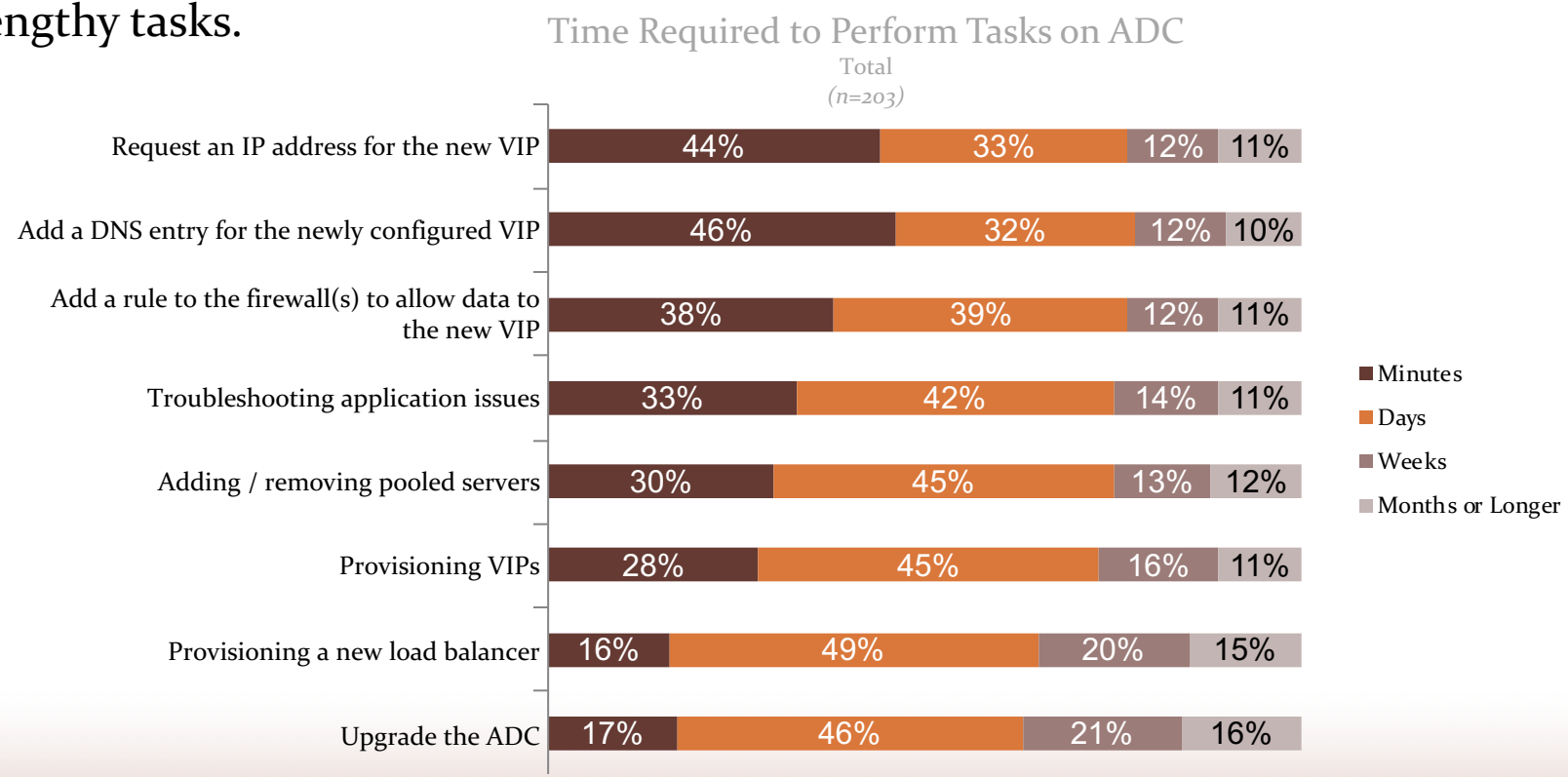


Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q12. Please pick up to 3 things that prevents you from automating more ADC operations.

** Caution: Small sample size*

The majority of the tasks performed on ADC can be addressed in days or even minutes – upgrades to the ADC and provisioning of load balancers are identified as the most lengthy tasks.

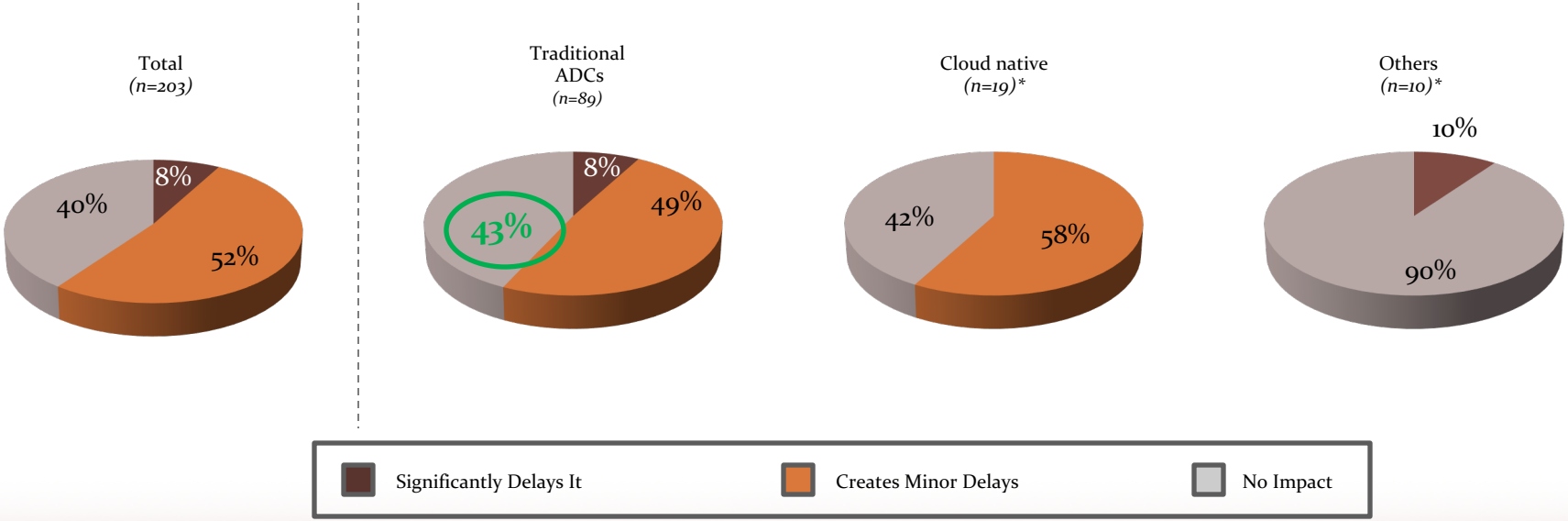


Q13 How long does it take you to perform the following tasks on your ADC?

* *Caution: Small sample size*

For roughly half, ADC changes have limited impact on application roll out and only account for minor delays. Those in the 'Traditional ADC' group, saw significant increase from the prior wave with regards to having "no impact" on roll out.

Speed of ADC Changes Impact on Application Roll Out

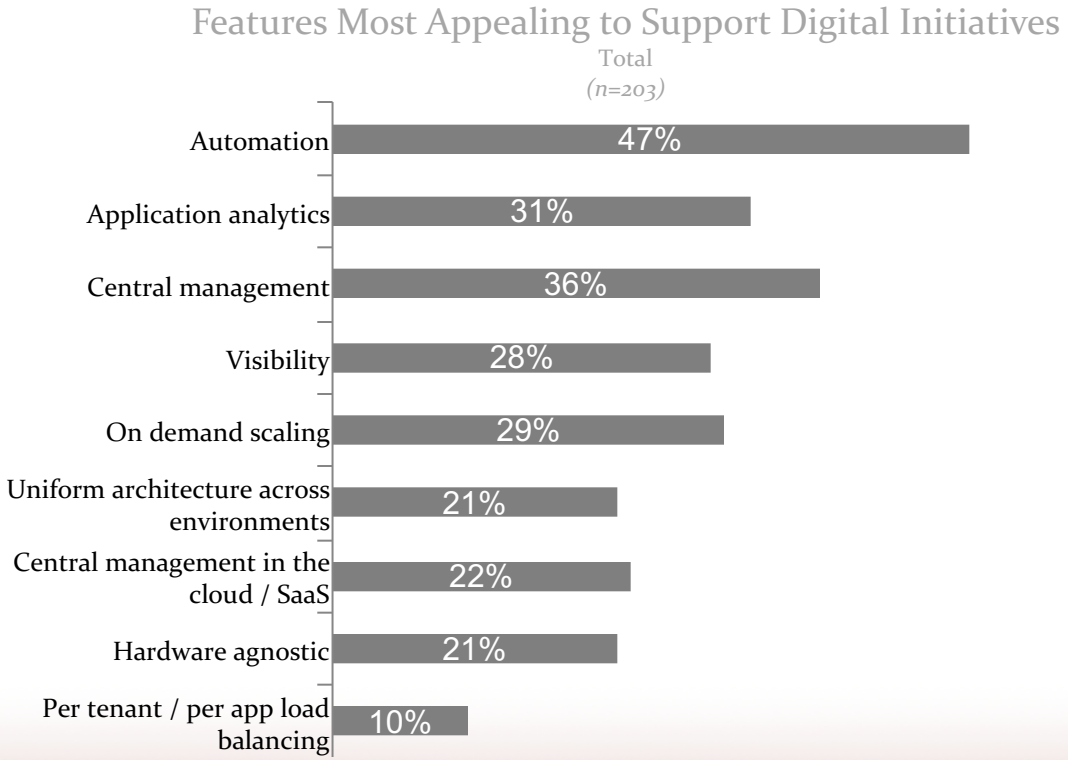


Q14. How does the speed at which you can make ADC changes impact the speed at which apps are rolled out?

Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

** Caution: Small sample size*

Automation and central management are most commonly identified as the features that are most appealing to support digital initiatives.



	Traditional ADCs *(n=89)*	Cloud native *(n=19)**	Others *(n=10)**
Automation	48%	58%	60%
Application analytics	28%	26%	30%
Central management	39%	37%	50%
Visibility	28%	47%	20%
On demand scaling	34%	21%	30%
Uniform architecture across environments	17%	0%	20%
Central management in the cloud / SaaS	21%	21%	20%
Hardware agnostic	22%	16%	20%
Per tenant / per app load balancing	10%	5%	10%

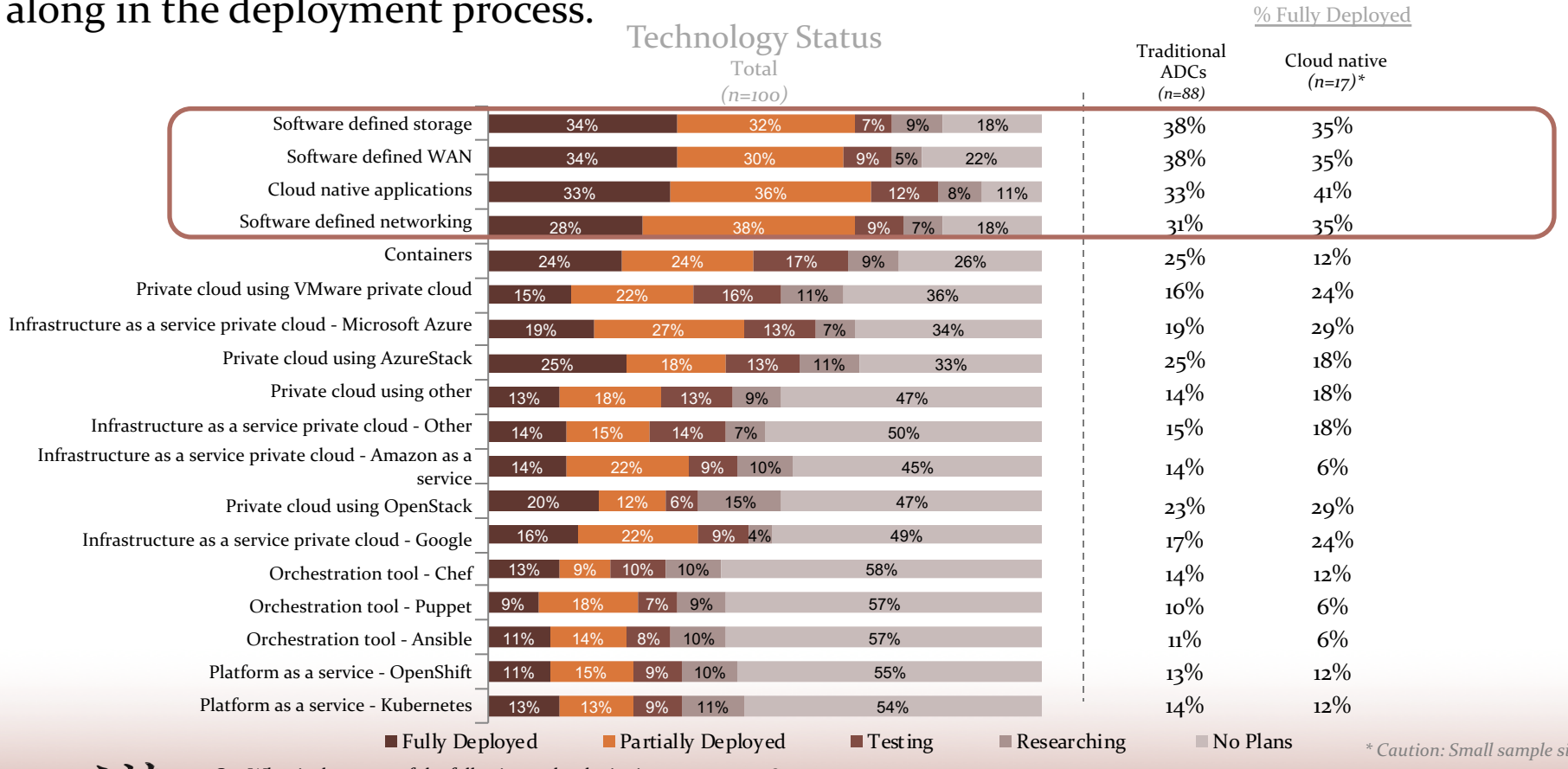
Figures in RED indicate a statistically significant decrease when compared to the prior wave.
Figures in GREEN indicate a statistically significant increase when compared to the prior wave.

Q16. Please select up to 3 features that would be most appealing in your ability to support your digital initiatives.

** Caution: Small sample size*

UK Market Segment

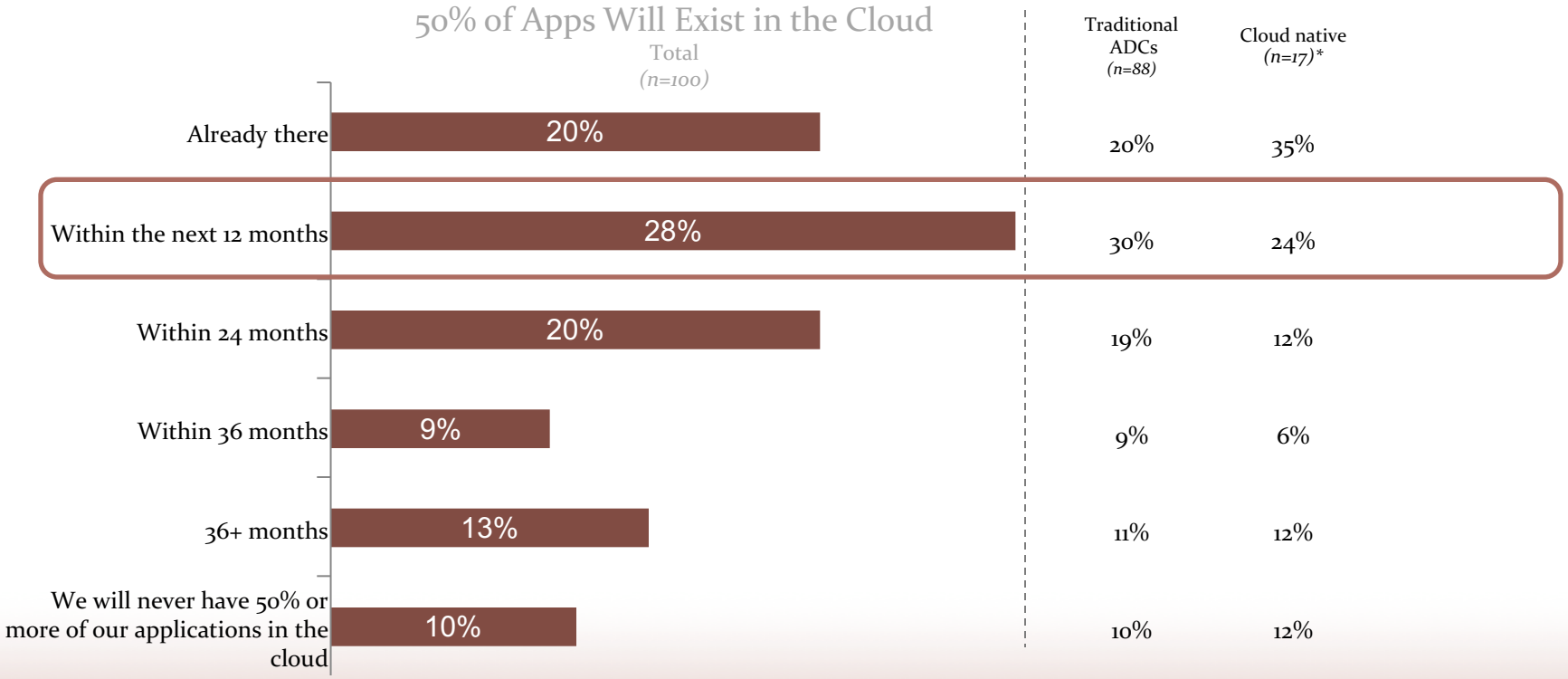
Areas like “software defined technologies” and cloud native applications are furthest along in the deployment process.



* *Caution: Small sample size*

Q1. What is the status of the following technologies in your company?

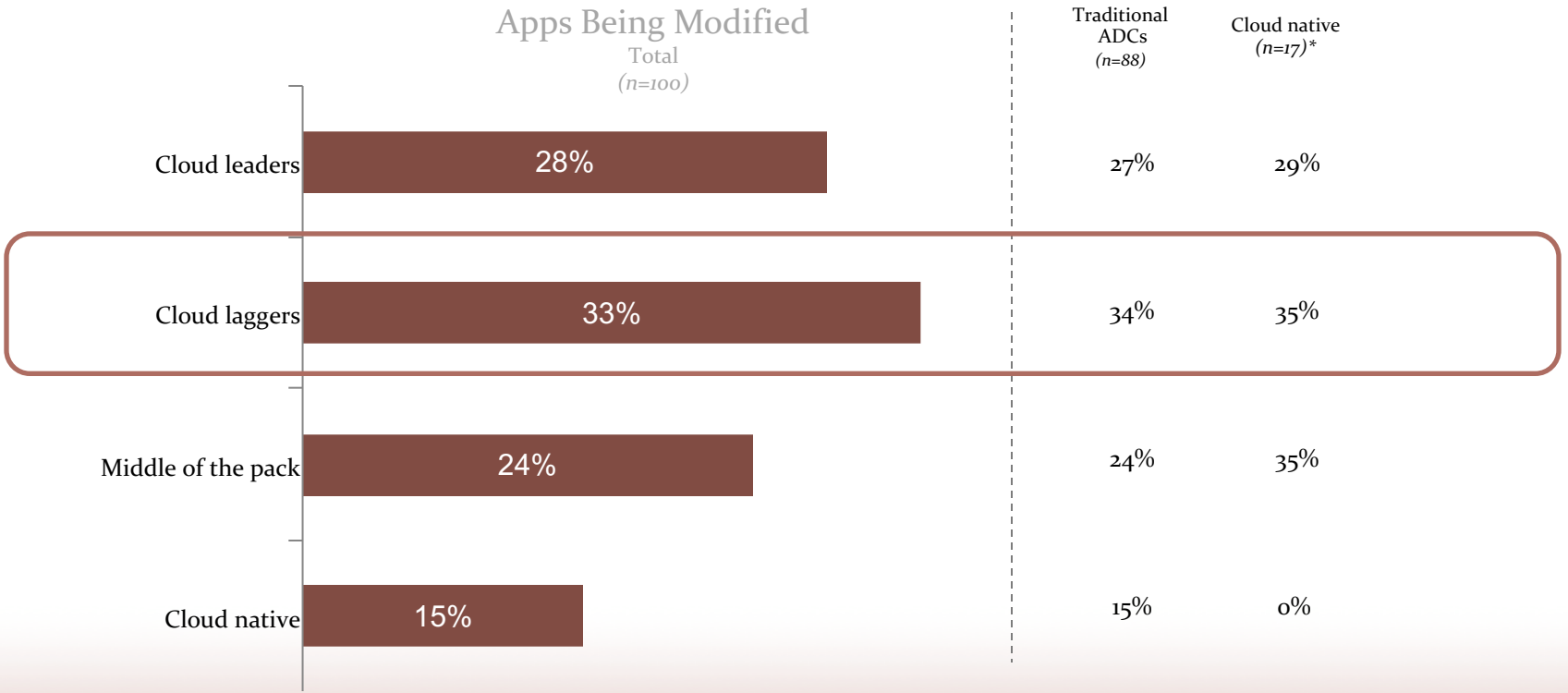
Within this market, two thirds expect to have at least 50% of apps in the cloud in two years or less.



* *Caution: Small sample size*

Q17. At what point will you have 50% of your applications in the cloud?

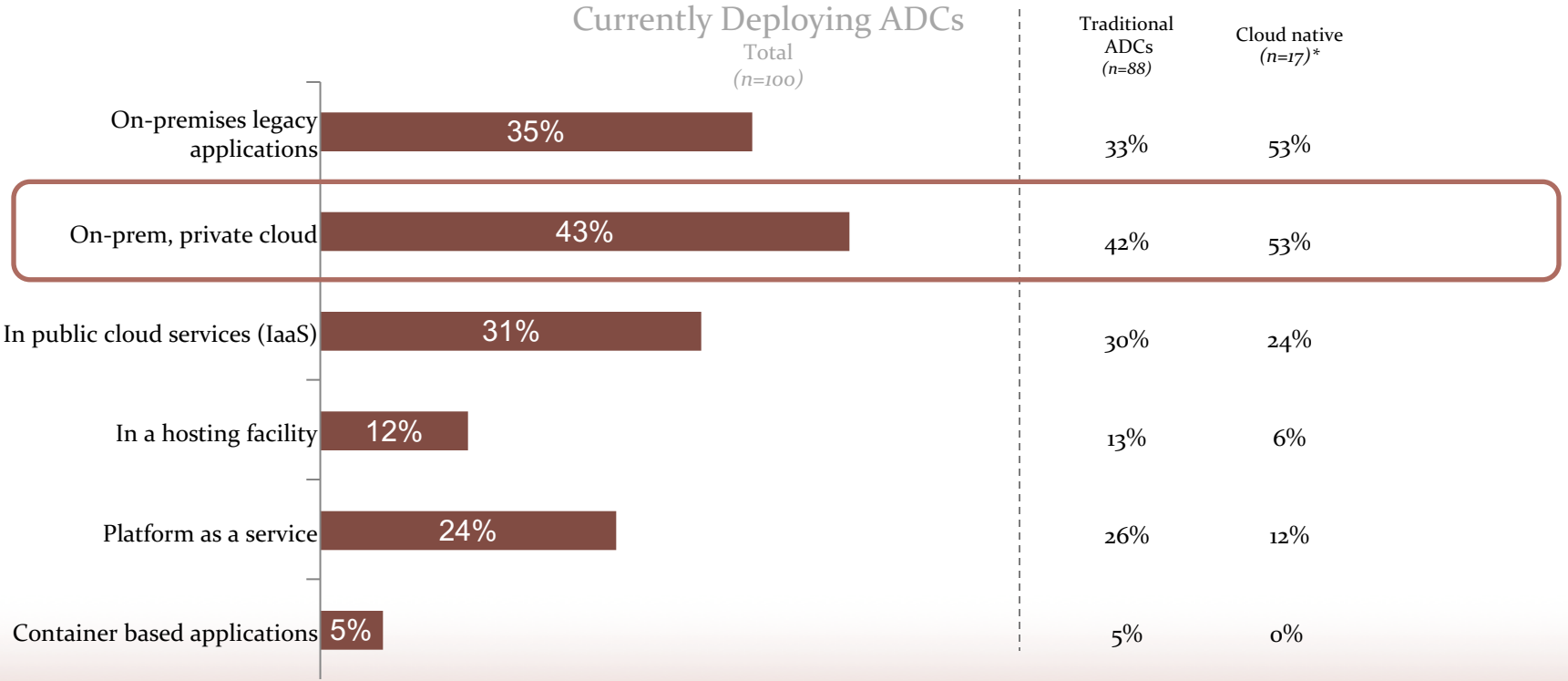
Cloud laggers are most commonly identified as the applications that are being lifted and shifted, modified and replaced.



* *Caution: Small sample size*

Q18. Which of these most closely reflects the percentage of applications you are lifting and shifting, modifying and replacing?

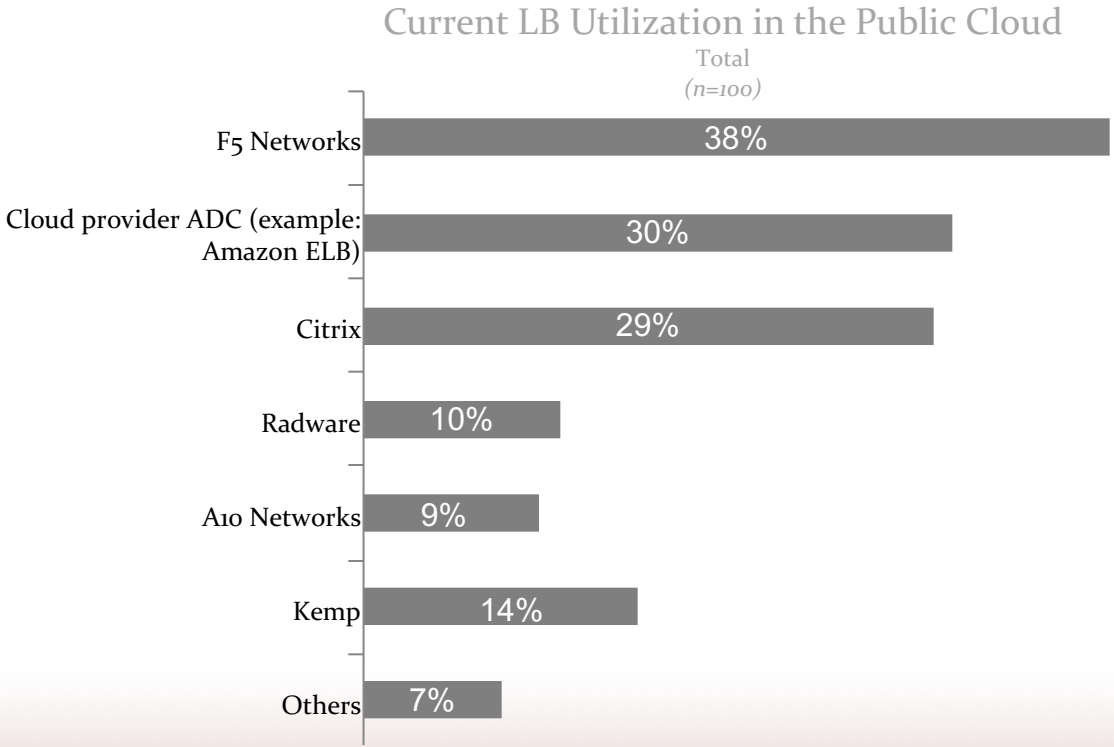
For 4 out 10 of the respondents in this market, most ADC deployment resides with on-premise private cloud applications.



* *Caution: Small sample size*

Q2. Where are you currently deploying application delivery controllers (ADCs)?

Among those currently utilizing a public cloud infrastructure, F5 Networks is most often identified as the LB of choice.

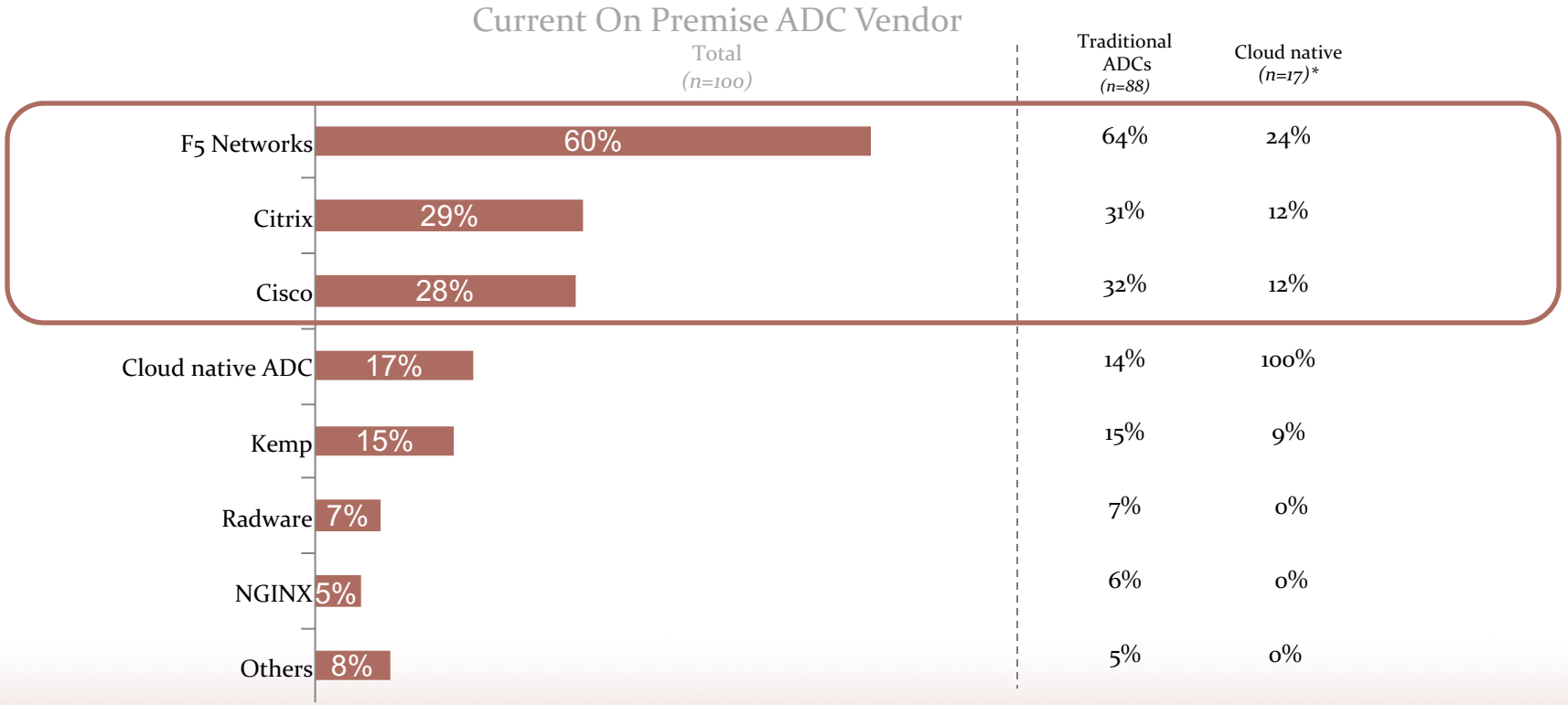


	Traditional ADCs *(n=88)*	Cloud native *(n=17)**
F5 Networks	43%	35%
Cloud provider ADC (example: Amazon ELB)	28%	71%
Citrix	32%	18%
Radware	10%	6%
A10 Networks	9%	0%
Kemp	12%	24%
Others	3%	6%

** Caution: Small sample size*

Q2a If your company is using any public cloud infrastructure, what LBs are being used in the public cloud?

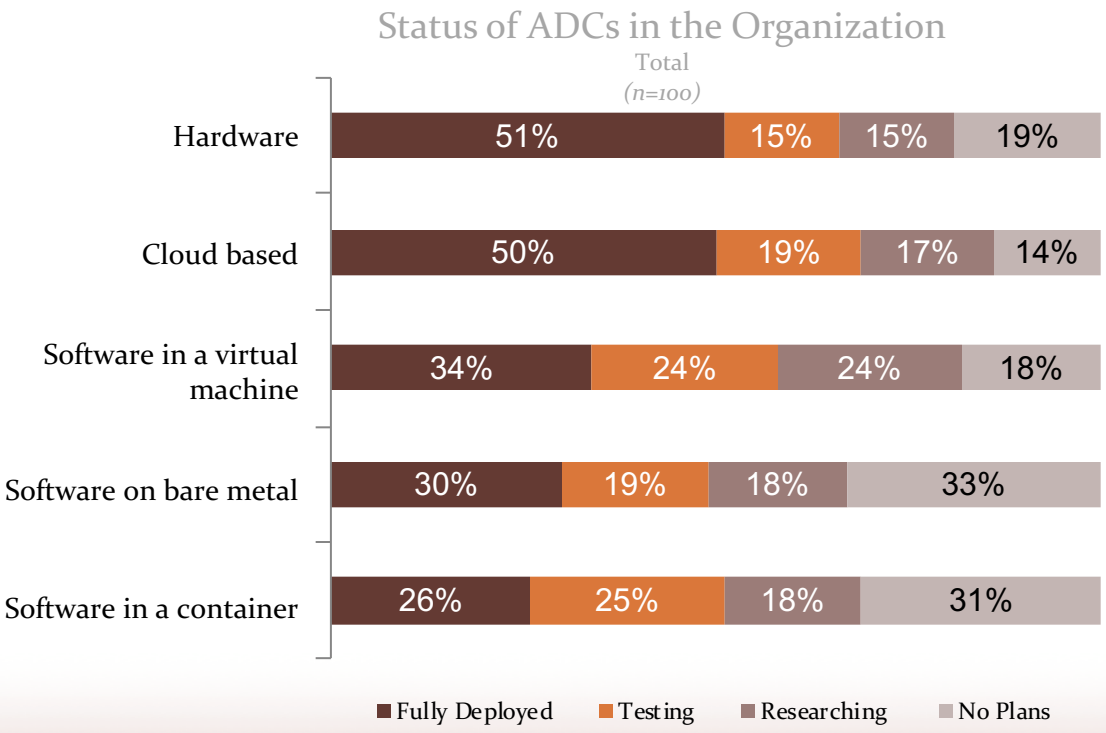
F5 Networks, Cisco and Citrix account for the majority of the current vendors for on premise/ private cloud ADC within this market.



* *Caution: Small sample size*

Q3. Which vendor is your current on premises / private cloud ADC Vendor?

Hardware and cloud based ADCs are furthest along in the deployment process when compared to other areas in the organization.



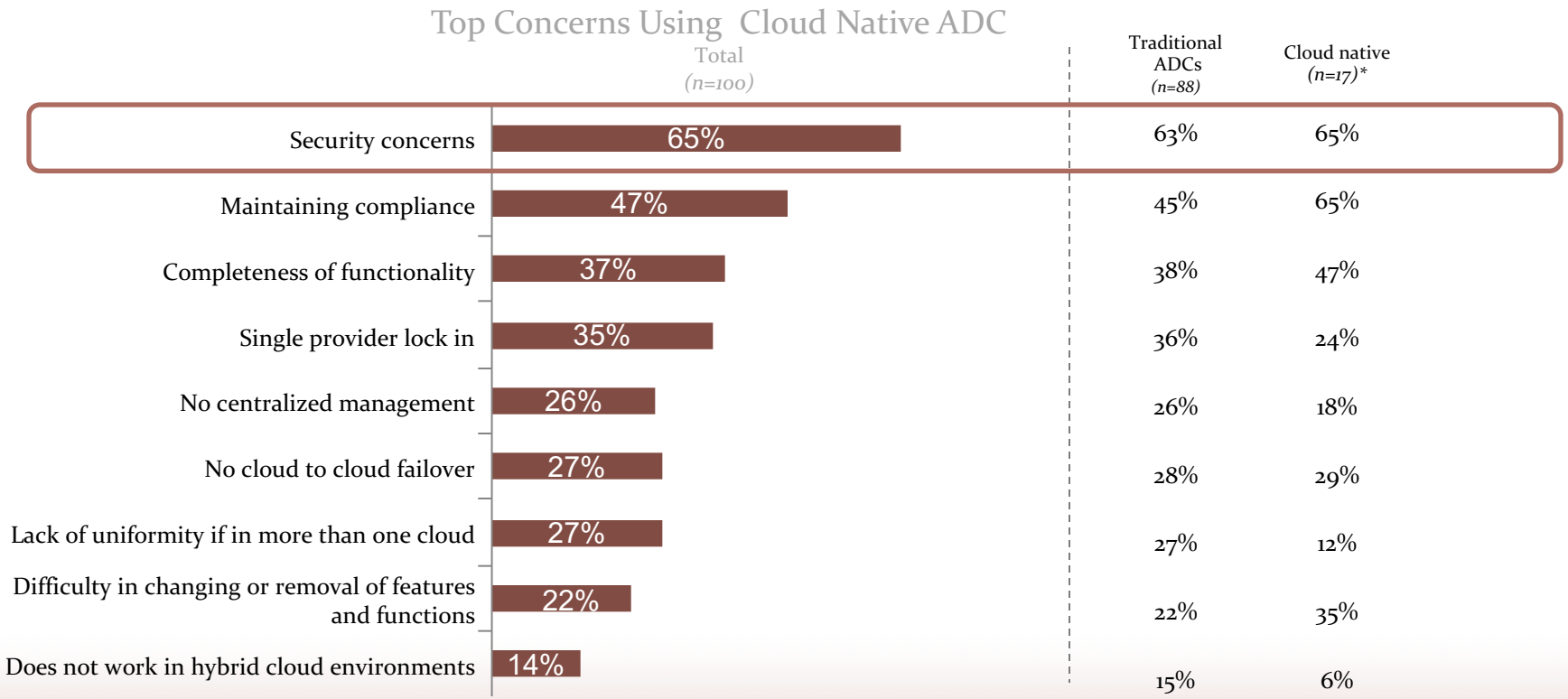
% Fully Deployed

	Traditional ADCs *(n=88)*	Cloud native *(n=17)**
Hardware	55%	59%
Cloud based	52%	53%
Software in a virtual machine	36%	47%
Software on bare metal	30%	29%
Software in a container	28%	29%

** Caution: Small sample size*

Q4. What is state of the following types of ADCs in your organization?

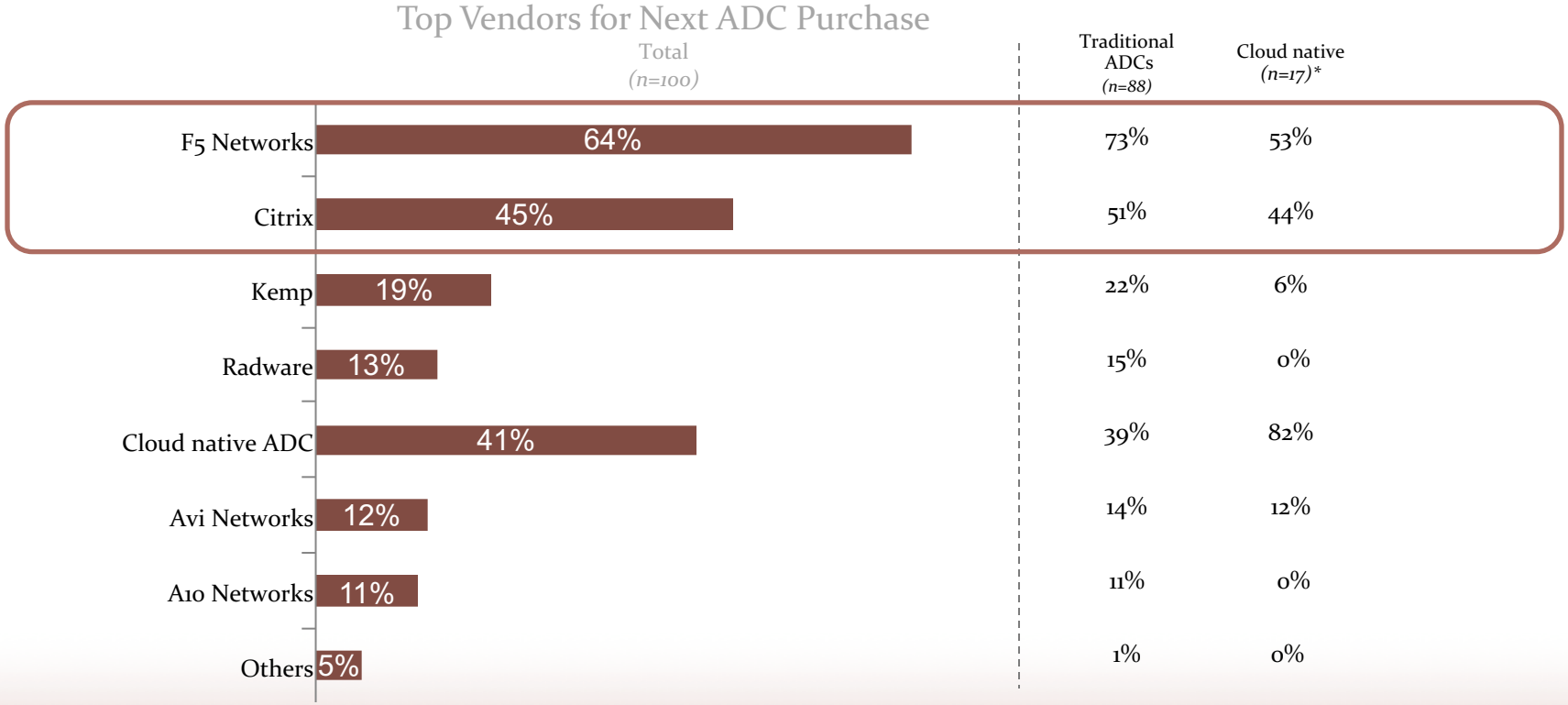
When asked about concerns with utilizing Cloud Native ADC, security related issues were identified by two-thirds of this segment.



* *Caution: Small sample size*

Q19. What are your biggest concerns regarding using cloud native ADCs/Load balancers?

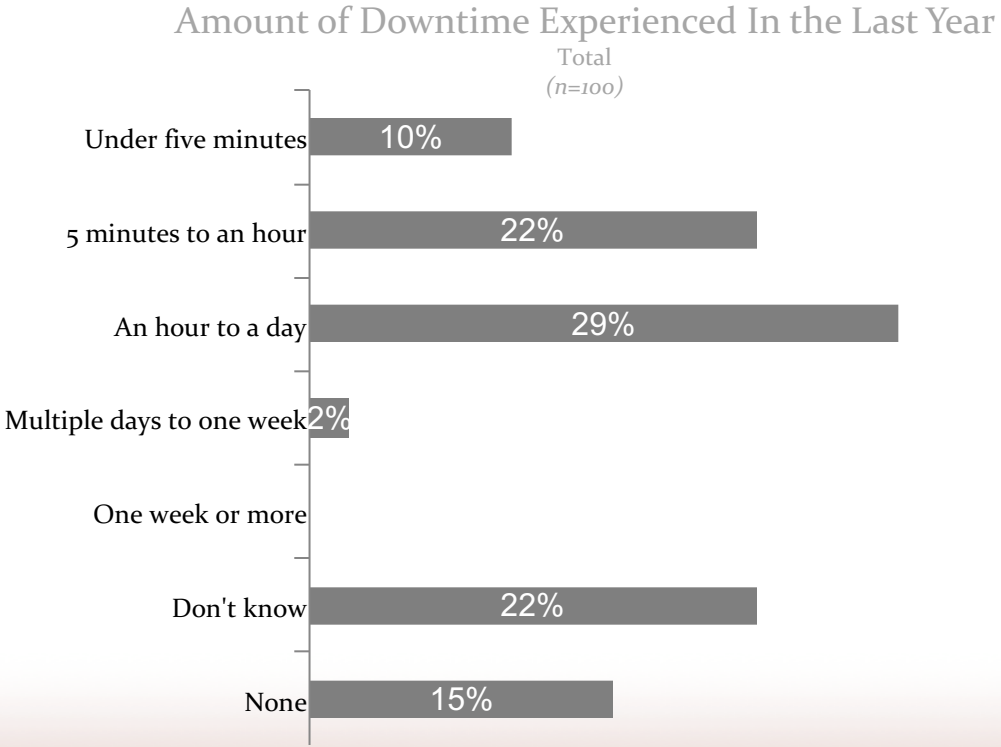
When considering vendors for future ADC purchases, F5 Networks and Citrix are most commonly identified as the vendors of choice among this audience.



* *Caution: Small sample size*

Q5. Who will be your top 3 vendors for your next ADC purchase?

For most, downtime is limited to less than an hour per day. Surprisingly, close to one-quarter are unaware of how much downtime was even experienced.

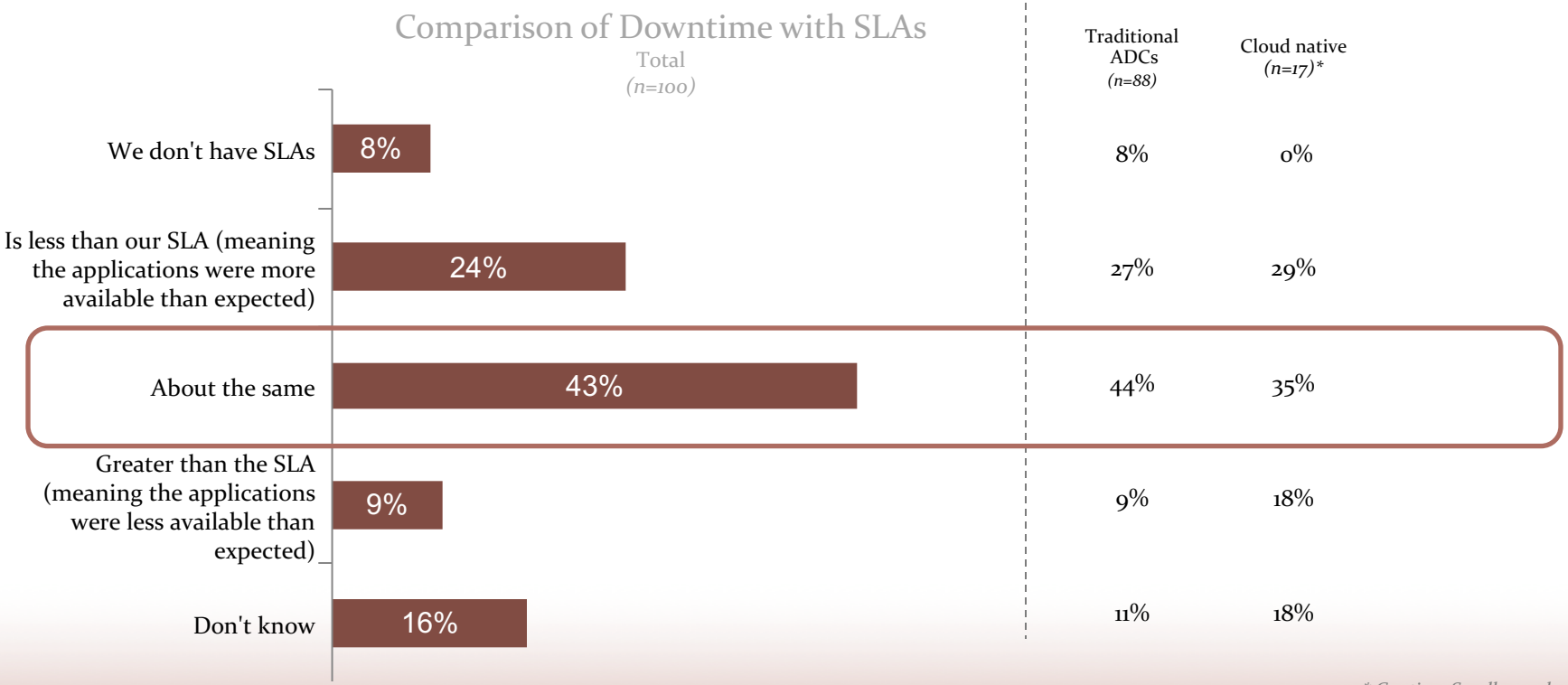


	Traditional ADCs *(n=88)*	Cloud native *(n=17)**
Under five minutes	10%	6%
5 minutes to an hour	24%	24%
An hour to a day	28%	35%
Multiple days to one week	2%	0%
One week or more	0%	0%
Don't know	19%	29%
None	16%	6%

** Caution: Small sample size*

Q5a How much total downtime did your mission critical applications have in the past year because of ADC related issues?

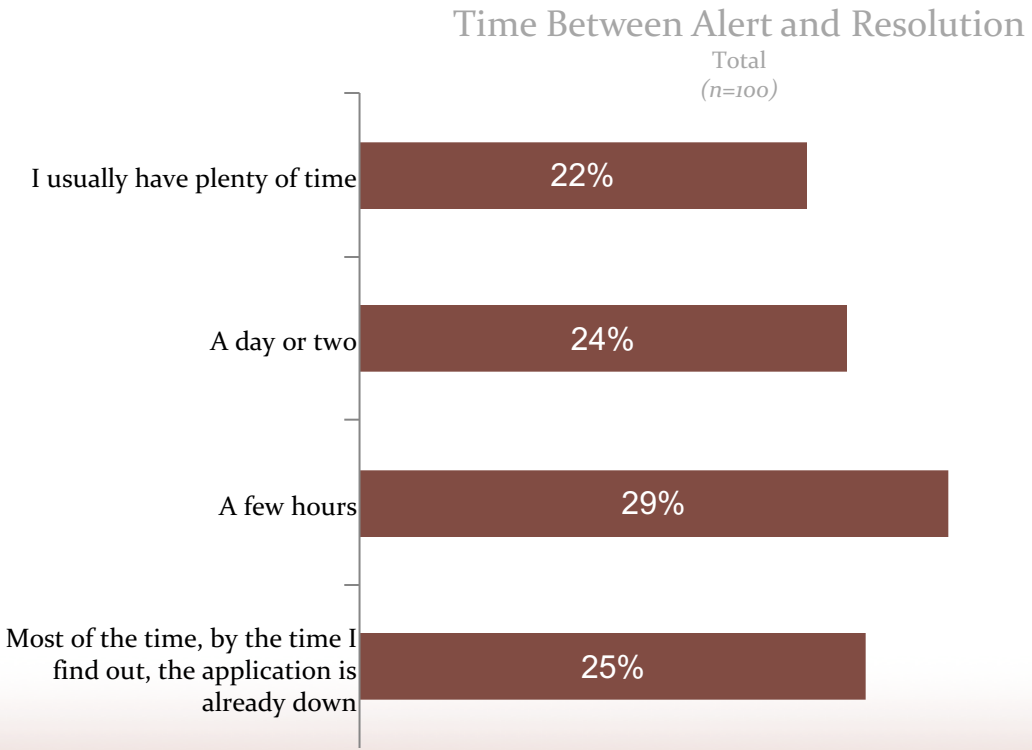
When comparing downtime with SLAs, most recognize that the two align and are 'about the same'.



* *Caution: Small sample size*

Q5b How did this downtime compare to the internal SLAs for application uptime that you have with your company?

Time between alert and resolution is varied across this market, suggesting that each situation is unique and varied depending on the circumstances.

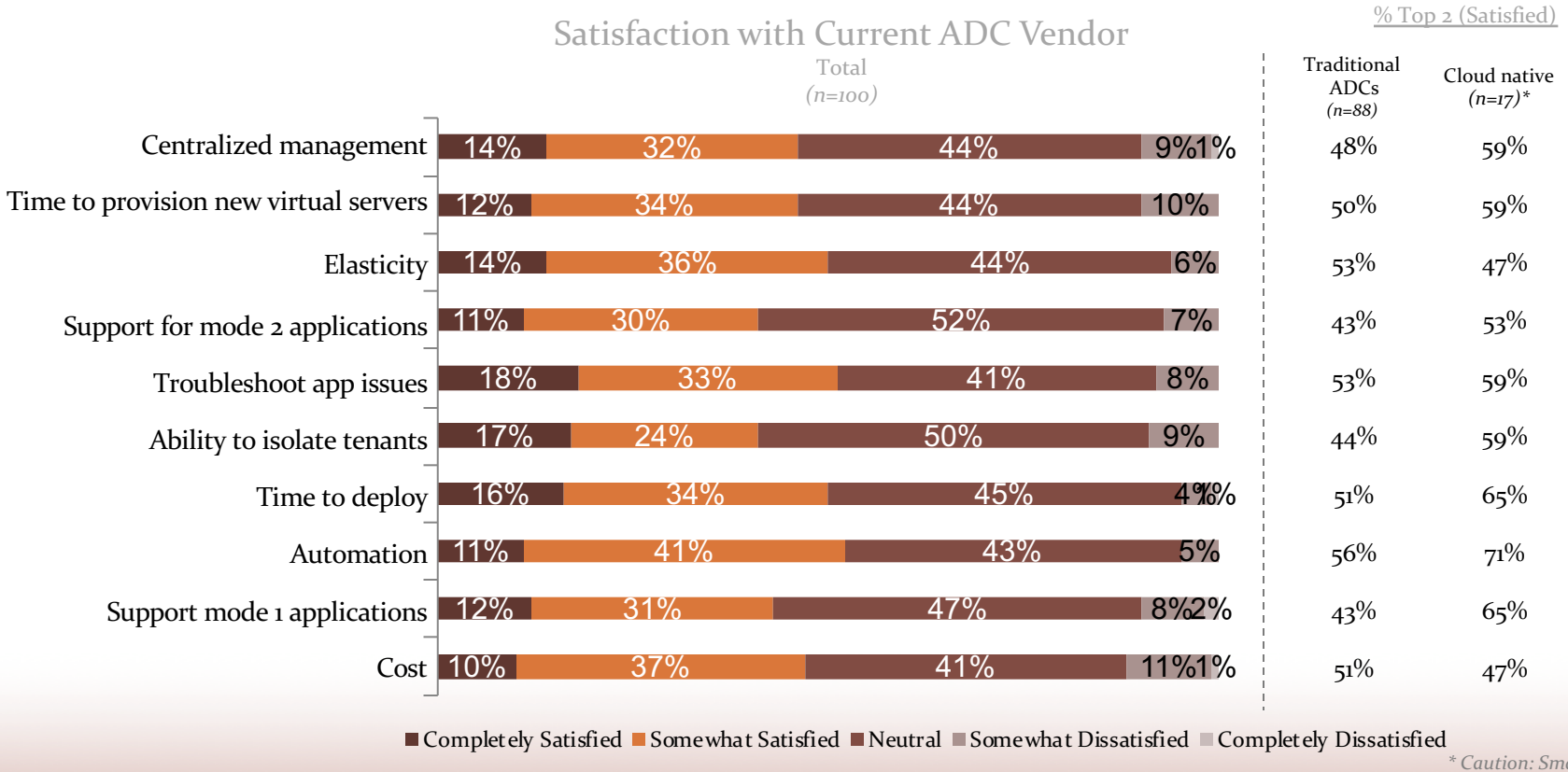


	Traditional ADCs (n=88)	Cloud native (n=17)*
I usually have plenty of time	22%	29%
A day or two	24%	18%
A few hours	30%	29%
Most of the time, by the time I find out, the application is already down	25%	24%

* *Caution: Small sample size*

Q20. How much time do you have between the alert that an app is down and resolving the issues before downtime occurs?

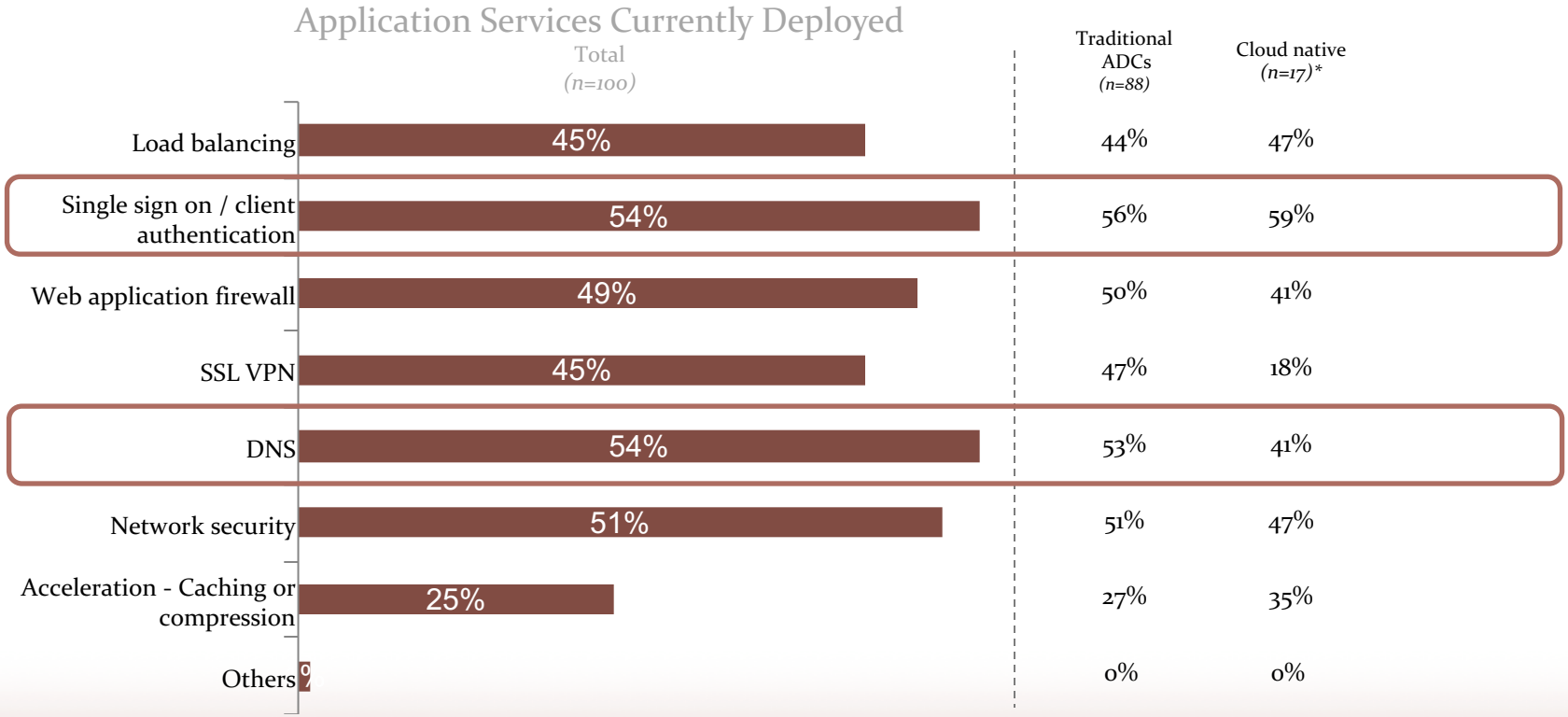
Regardless of the attribute tested, most are at least somewhat satisfied with their current ADC vendor.



* *Caution: Small sample size*

Q6. What is your satisfaction level with your current ADC vendor in the following areas?

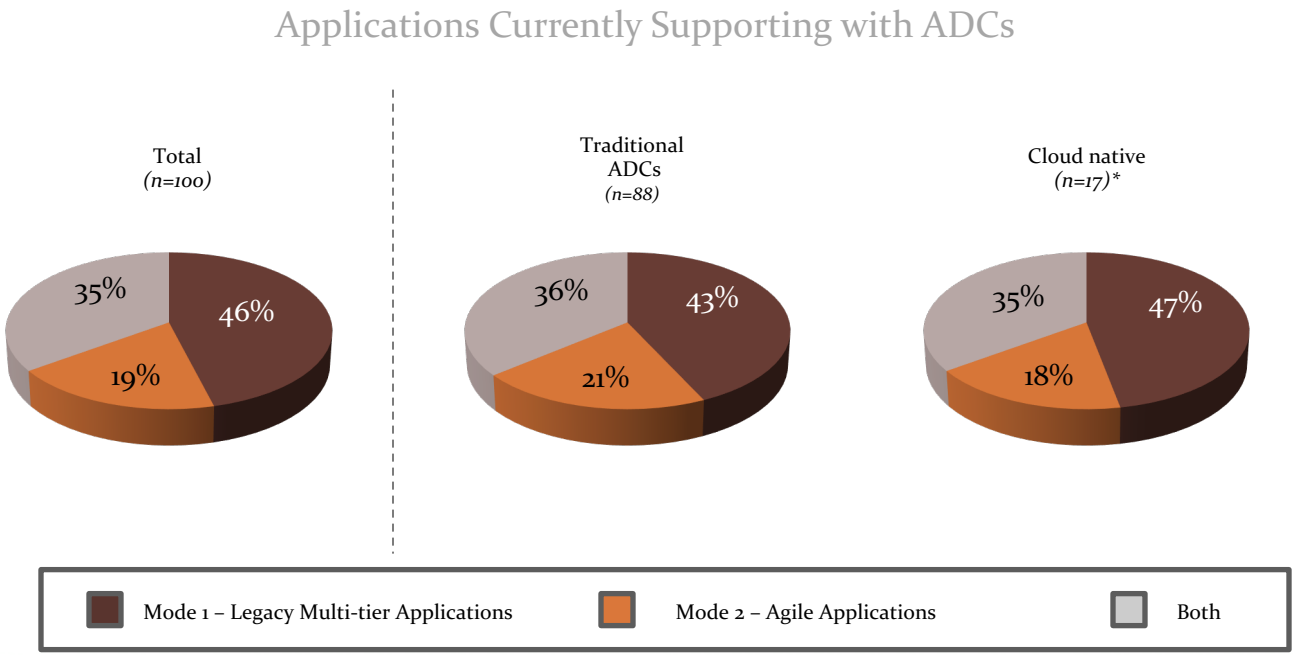
‘Single sign on/client authentication’ and ‘DNS’ are the most commonly identified application services being deployed in the UK market.



* *Caution: Small sample size*

Q7. Which Application Services do you currently have deployed?

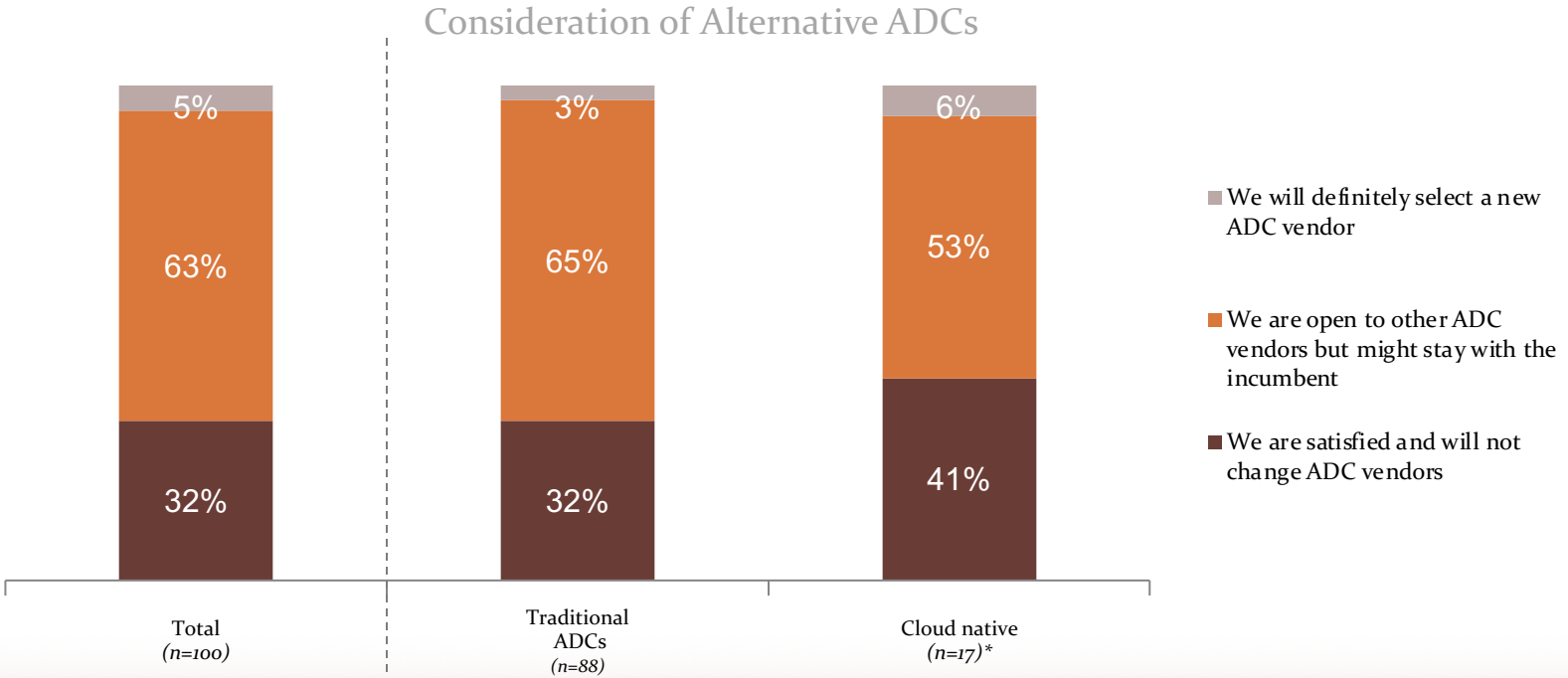
Legacy multi-tier and agile applications are identified as being supported equally with ADCs.



Q8. Which types of applications are you supporting with the ADCs?

** Caution: Small sample size*

Across the UK market, nearly two-thirds of those surveyed acknowledge they would be open to considering a change from the incumbent vendor.

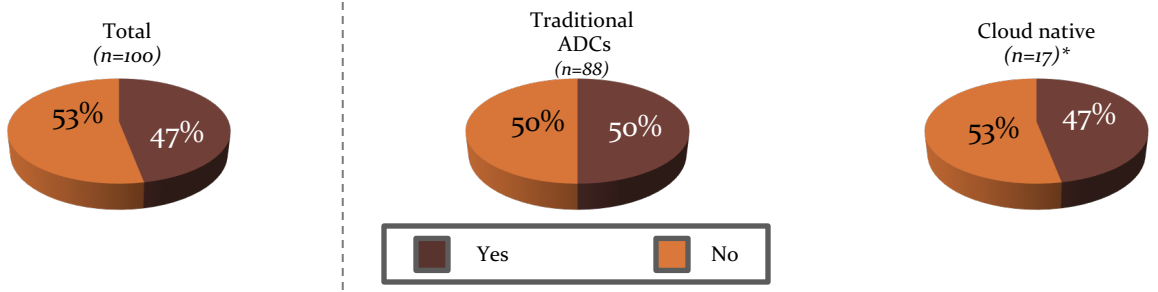


Q9. As you plan to migrate from mode 1 to mode 2 applications will you consider alternative ADCs?

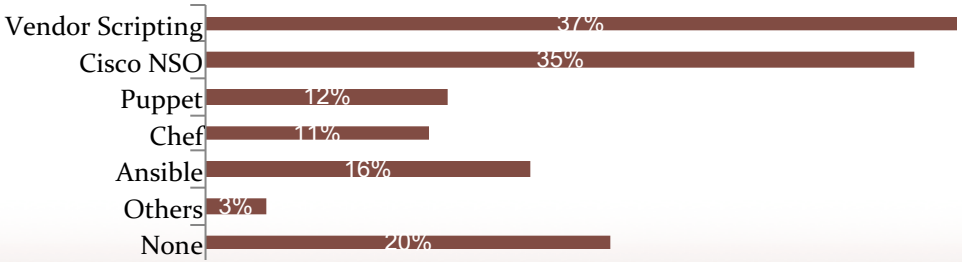
** Caution: Small sample size*

Approximately half of those surveyed indicate they do not have the ability to automate configuration changes to the ADC. Among those that do, Vendor Scripting and Cisco NSO are the most commonly utilized tools.

Ability to Automate Configuration Changes to an ADC



Automation Tools Utilized

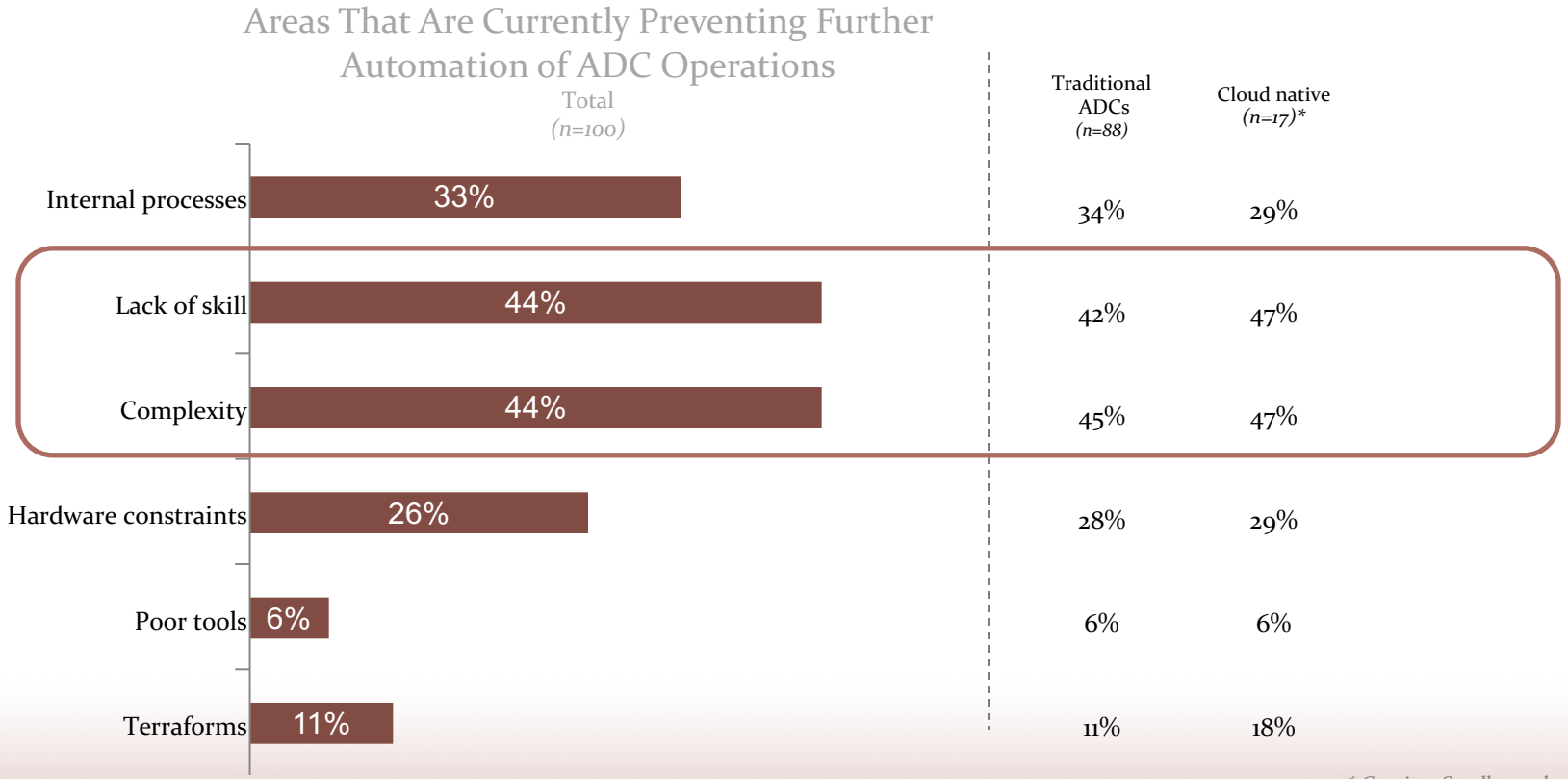


	Traditional ADCs (n=86)	Cloud native (n=10)*
Vendor Scripting	38%	53%
Cisco NSO	39%	29%
Puppet	11%	12%
Chef	13%	18%
Ansible	16%	18%
Others	2%	0%
None	18%	18%

Q10. Do you have the ability to automate configuration changes to an ADC?
Q11. What automation tools / frameworks do you use?

** Caution: Small sample size*

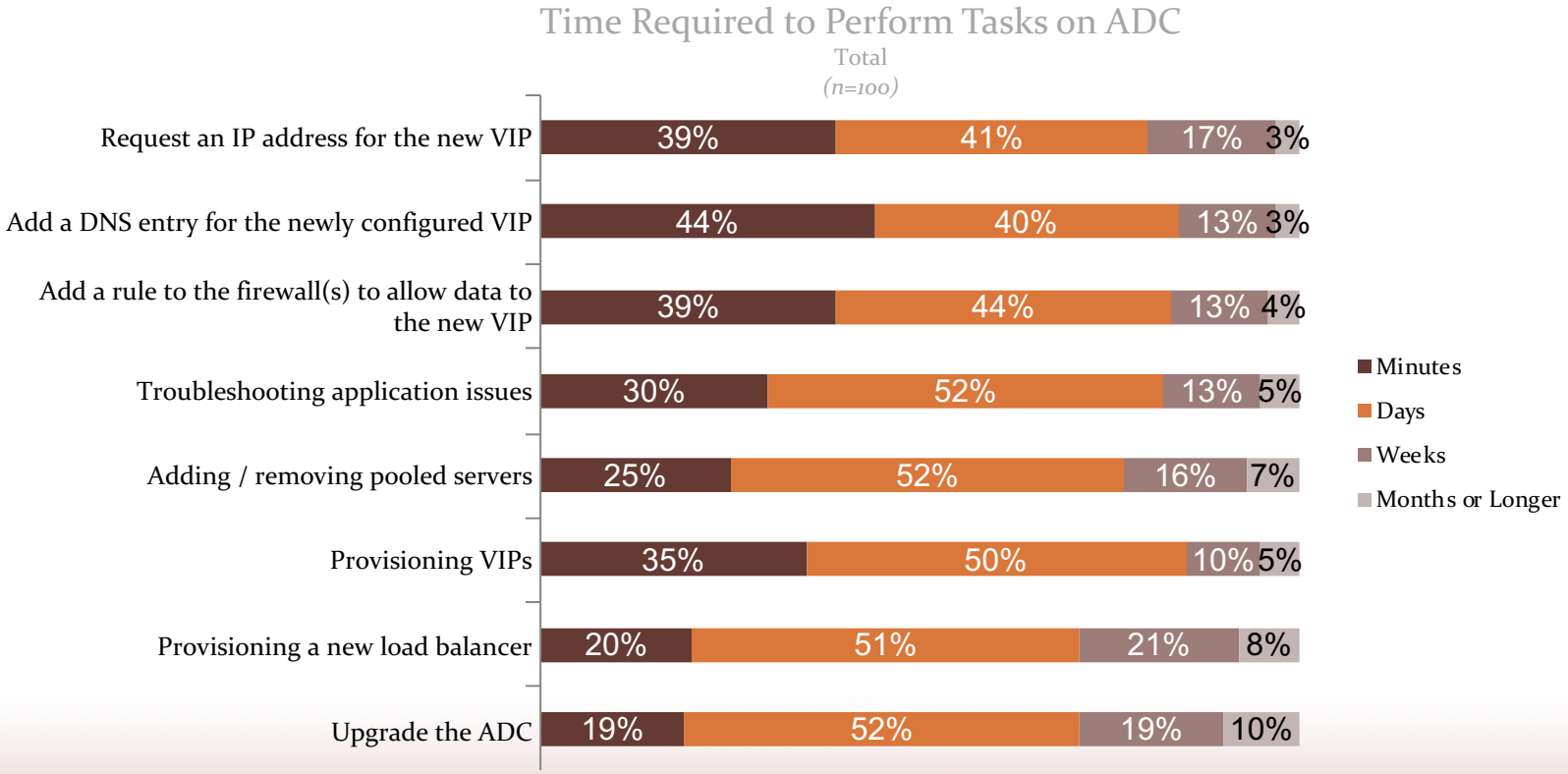
Lack of skill and overall complexity are most often identified as the greatest barriers preventing further automation on ADC operations.



* *Caution: Small sample size*

Q12. Please pick up to 3 things that prevents you from automating more ADC operations.

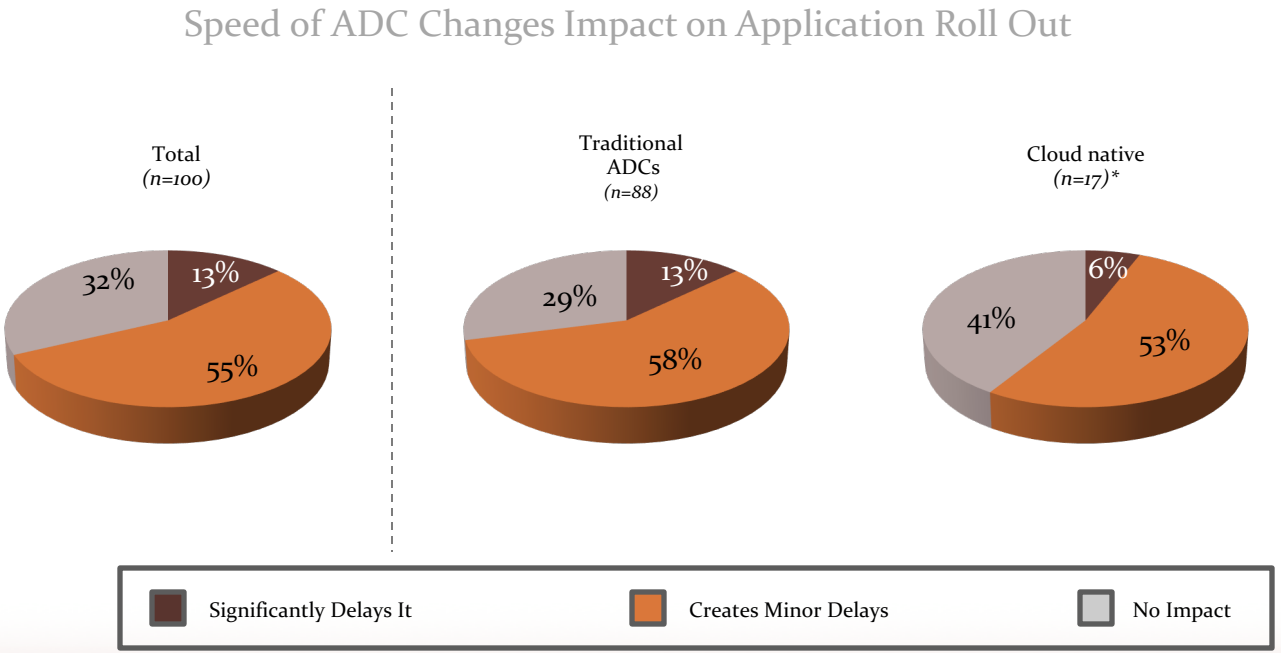
For the tasks performed on ADC, roughly two-thirds can be addressed in minutes or days.



* *Caution: Small sample size*

Q13 How long does it take you to perform the following tasks on your ADC?

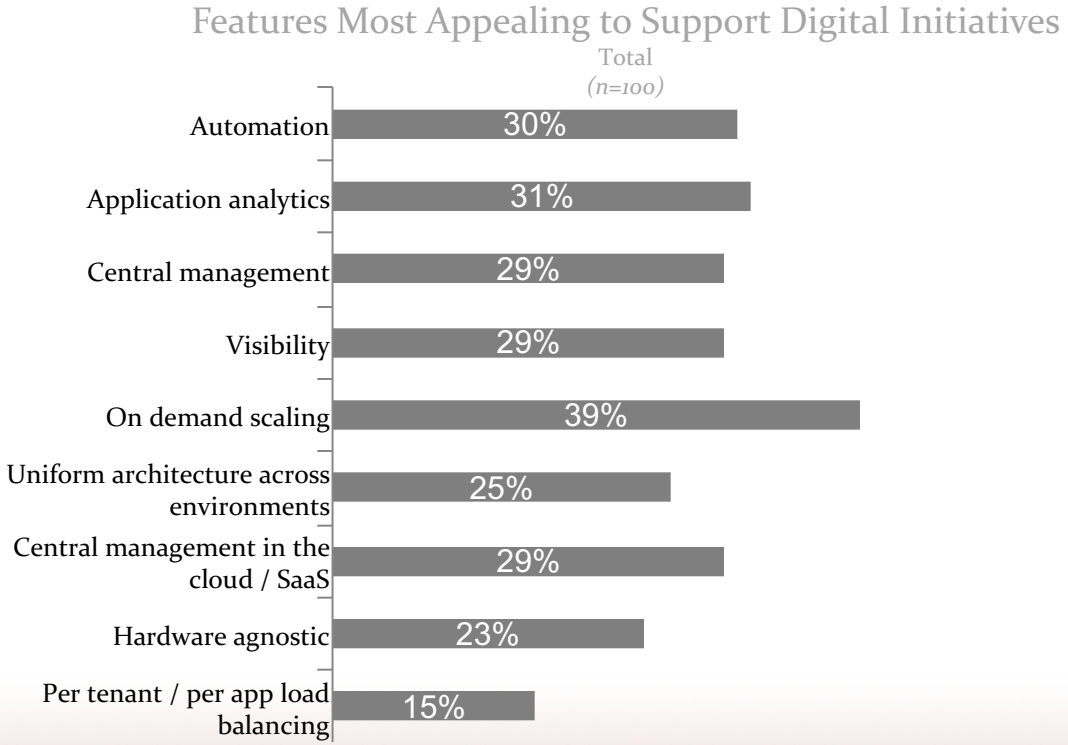
The vast majority, over 80%, of ADC changes have limited impact on application roll out and only account for minor delays.



Q14. How does the speed at which you can make ADC changes impact the speed at which apps are rolled out?

** Caution: Small sample size*

While many features are rated similarly, on demand scaling is recognized most often as the feature that is most appealing to support digital initiatives.



	Traditional ADCs *(n=88)*	Cloud native *(n=17)**
Automation	31%	29%
Application analytics	30%	35%
Central management	31%	24%
Visibility	28%	35%
On demand scaling	40%	29%
Uniform architecture across environments	24%	24%
Central management in the cloud / SaaS	30%	41%
Hardware agnostic	24%	29%
Per tenant / per app load balancing	15%	18%

** Caution: Small sample size*

Q16. Please select up to 3 features that would be most appealing in your ability to support your digital initiatives.

Demographics

Industry	Total	US	UK
Banking	3%	3%	4%
Consumer	1%	0%	2%
Education - K -12	2%	2%	0%
Education - Higher Education	5%	7%	2%
Engineering	3%	1%	6%
Energy	1%	2%	0%
Consumer Goods	1%	0%	1%
Financial Services	6%	7%	5%
Government - federal	3%	3%	2%
Government - state	1%	1%	0%
Government - local	4%	4%	5%
Healthcare	9%	10%	5%
Insurance	4%	5%	2%
Manufacturing	12%	12%	12%
Real estate	1%	0%	1%
Retail	6%	4%	9%
Technology	26%	25%	28%
Telecommunications	5%	4%	7%
Transportation (Travel)	4%	3%	5%
Electronics	1%	0%	2%
Not-for-Profit	1%	2%	0%

Company Size	Total	US	UK
300-1000	18%	10%	33%
1001-2000	16%	17%	14%
2001-3000	9%	9%	8%
3001-5000	13%	14%	12%
5001-10000	11%	11%	10%
10000+	33%	38%	23%

Title	Total	US	UK
CIO	11%	7%	19%
Consultant	3%	2%	4%
IT Manager	40%	39%	42%
Network Engineer/Architect	9%	9%	10%
Other IT employee	33%	39%	21%
Other	4%	4%	4%