GLOBAL EDITION

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2021 Thales Cloud Security Study

The Challenges of Cloud Data Protection in a Hybrid and Multicloud World



#2021CloudSecurity

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Part 1 - Multicloud Adoption

Of the following cloud Infrastructure-as-a-Service (IaaS) providers, which does your organization use?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
AWS	53%	59%	58%	57%	50%	56%	55%	50%	56%	54%	55%	43%	46%	44%	51%	54%	53%
Microsoft Azure	33%	39%	38%	42%	46%	55%	45%	51%	41%	36%	29%	37%	47%	44%	39%	36%	41%
Google Cloud	27%	25%	22%	16%	22%	21%	16%	21%	24%	23%	22%	27%	25%	28%	21%	19%	21%
IBM	22%	16%	14%	22%	14%	15%	22%	18%	24%	25%	24%	20%	26%	17%	24%	23%	20%
Oracle	18%	23%	25%	27%	17%	17%	22%	18%	15%	18%	22%	19%	15%	15%	18%	19%	20%
Alibaba	17%	13%	11%	16%	13%	9%	10%	14%	7%	12%	12%	14%	8%	4%	13%	14%	12%
Other (please specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

How many Software-as-a-Service (SaaS) applications does your organization use?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
0-10	5%	24%	21%	18%	17%	19%	16%	13%	17%	15%	12%	11%	19%	19%	6%	12%	15%
11-25	22%	17%	20%	21%	25%	20%	27%	28%	24%	18%	18%	17%	18%	17%	18%	19%	20%
26-50	51%	39%	29%	36%	38%	33%	37%	27%	36%	48%	51%	37%	41%	47%	45%	34%	37%
51-100	16%	14%	15%	15%	10%	16%	8%	22%	15%	17%	16%	18%	13%	14%	18%	20%	16%
101-500	6%	6%	13%	7%	10%	10%	10%	10%	7%	1%	2%	15%	7%	4%	10%	12%	9%
501+	0%	0%	2%	2%	1%	2%	1%	0%	2%	1%	2%	3%	2%	0%	2%	2%	2%
Don't Know	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

How many Platform-as-a-Service (PaaS) providers does your organization use?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
1	21%	25%	28%	26%	28%	25%	28%	24%	20%	23%	22%	26%	26%	39%	28%	29%	27%
2	49%	48%	45%	42%	50%	49%	43%	44%	52%	46%	45%	46%	43%	46%	40%	43%	45%
3	26%	21%	20%	26%	13%	19%	20%	26%	18%	23%	31%	20%	25%	11%	24%	19%	21%
4	4%	6%	6%	6%	8%	7%	8%	6%	8%	7%	2%	7%	7%	5%	6%	8%	7%
5	0%	0%	2%	0%	1%	0%	0%	0%	2%	1%	0%	1%	0%	0%	2%	1%	1%
More than 5	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

AU - Australia
BR - Brazil
DE - Germany
FR - France
HK - Hong Kong
IN - India
JP - Japan
KR - South Korea
MX - Mexico
NL - Netherlands
NZ - New Zealand
SE - Sweden
SG - Singapore
UAE - United Arab Emirates
UK - United Kingdom
US - United States

Part 2 - Managing Cloud Security

How do you decide and enforce policies and standards for cloud security?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
Policies and standards are defined centrally by security team and enforced by the security team using tooling of their choice.	34%	39%	41%	39%	36%	40%	39%	34%	40%	25%	35%	32%	26%	36%	35%	38%	37%
Policies are defined centrally by security team but defining technical standards and enforcing them is up to individual cloud delivery teams.	47%	48%	42%	46%	42%	42%	37%	41%	43%	58%	41%	46%	52%	49%	53%	45%	45%
Policies and standards, as well as enforcement, is up to the individual cloud delivery teams.	20%	13%	17%	14%	23%	19%	23%	25%	18%	17%	24%	23%	22%	16%	13%	17%	18%
Other (please specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Part 3 - Cloud Complexity

To what extent do you agree with the following statement: It is more complex to manage privacy and data protection regulations in a cloud environment than on-premises networks within my organization.

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
Strongly agree	29%	16%	13%	18%	17%	30%	20%	26%	20%	17%	18%	22%	15%	19%	25%	26%	22%
Agree	33%	28%	19%	24%	21%	19%	18%	23%	21%	39%	35%	25%	29%	28%	30%	23%	24%
Disagree	15%	20%	22%	21%	17%	17%	21%	14%	23%	17%	24%	17%	22%	20%	17%	20%	19%
Strongly Disagree	13%	18%	27%	20%	28%	23%	22%	17%	21%	10%	10%	18%	21%	22%	16%	20%	20%
Don't Know	11%	18%	19%	17%	18%	10%	17%	20%	16%	17%	14%	19%	14%	12%	13%	11%	15%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Part 4 - Cloud Migration

For our IaaS or PaaS cloud applications our organizations split between:

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
"Lift and shift" from on-premises to IaaS	24%	24%	21%	23%	26%	19%	20%	12%	21%	18%	14%	23%	24%	33%	22%	28%	23%
Re-architecting applications for the cloud and PaaS	31%	14%	9%	19%	10%	9%	11%	18%	12%	21%	20%	19%	16%	18%	18%	16%	16%
Mostly lift and shift	27%	35%	30%	32%	28%	42%	34%	27%	44%	36%	41%	29%	30%	29%	33%	31%	33%
Equal split between lift and shift and re-architect	14%	17%	33%	22%	28%	21%	22%	33%	18%	19%	24%	25%	18%	16%	20%	21%	22%
Mostly re-architect	5%	10%	6%	5%	9%	9%	12%	10%	6%	6%	2%	5%	13%	5%	7%	5%	7%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

AU - Australia
BR - Brazil
DE - Germany
FR - France
HK - Hong Kong
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JP - Japan
KR - South Korea
MX - Mexico
NL - Netherlands
NZ - New Zealand
SE - Sweden
SG - Singapore
UAE - United Arab Emirates
UK - United Kingdom
US - United States

Part 5 - Securing Cloud Environments

Which security technologies is your organization is using to protect sensitive data in the cloud?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
Encryption	74%	62%	65%	61%	65%	66%	70%	69%	57%	62%	59%	67%	63%	58%	60%	58%	63%
Key Management	60%	59%	51%	55%	58%	53%	60%	50%	61%	65%	69%	45%	60%	60%	61%	56%	57%
Multi-factor authentication	47%	41%	53%	52%	61%	44%	48%	56%	38%	57%	53%	51%	50%	50%	52%	49%	50%
Access management (an integrated solution that offers authentication, cloud SSO and policy based access controls)	34%	49%	36%	36%	36%	42%	37%	47%	43%	44%	29%	49%	39%	46%	38%	44%	40%
DLP	25%	29%	33%	39%	40%	33%	40%	29%	40%	19%	29%	41%	33%	30%	29%	32%	33%
Tokenization/data masking	69%	45%	47%	52%	48%	52%	52%	51%	53%	42%	45%	45%	45%	52%	48%	57%	51%
Other (please specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

What percentage of your organization's workloads and data resides in the cloud (external cloud provider)?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
0-10%	0%	0%	0%	0%	0%	2%	0%	1%	1%	1%	0%	0%	2%	0%	0%	1%	1%
11-20%	11%	9%	5%	7%	10%	5%	9%	4%	3%	6%	14%	5%	5%	9%	6%	7%	7%
21-30%	26%	18%	12%	16%	13%	9%	6%	14%	9%	27%	10%	13%	14%	20%	23%	14%	15%
31-40%	26%	26%	21%	16%	16%	23%	18%	29%	20%	15%	27%	29%	24%	20%	23%	24%	22%
41-50%	18%	30%	33%	33%	30%	37%	30%	32%	39%	27%	27%	28%	37%	26%	26%	30%	31%
>50%	20%	16%	27%	24%	32%	23%	33%	18%	26%	24%	22%	25%	17%	23%	22%	24%	24%
Don't Know	0%	1%	3%	4%	0%	0%	3%	2%	3%	0%	0%	1%	2%	3%	0%	0%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

What percentage of your data stored in the cloud is sensitive?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
0-10%	0%	4%	0%	1%	1%	1%	1%	0%	0%	2%	0%	1%	2%	0%	0%	1%	1%
11-20%	2%	5%	5%	6%	9%	4%	5%	9%	3%	3%	4%	3%	8%	7%	6%	4%	5%
21-30%	17%	22%	20%	15%	17%	18%	12%	23%	17%	21%	25%	23%	18%	18%	14%	16%	17%
31-40%	28%	31%	23%	22%	22%	27%	28%	31%	27%	31%	20%	24%	21%	29%	35%	28%	27%
41-50%	28%	22%	35%	33%	30%	33%	36%	20%	30%	20%	25%	27%	30%	23%	20%	27%	28%
>50%	26%	16%	17%	23%	22%	16%	18%	17%	24%	23%	25%	23%	21%	24%	25%	24%	21%
Don't Know	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

AU - Australia
BR - Brazil
DE - Germany
FR - France
HK - Hong Kong
IN - India
JP - Japan
KR - South Korea
MX - Mexico
NL - Netherlands
NZ - New Zealand
SE - Sweden
SG - Singapore
UAE - United Arab Emirates
UK - United Kingdom
US - United States

What percentage of your sensitive data in the cloud is encrypted?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
0-10%	0%	2%	1%	3%	6%	1%	2%	4%	0%	2%	0%	1%	3%	2%	0%	1%	2%
11-20%	14%	11%	7%	9%	9%	8%	12%	6%	10%	16%	4%	9%	7%	12%	7%	9%	9%
21-30%	29%	20%	17%	19%	13%	17%	12%	19%	14%	18%	20%	25%	13%	19%	23%	15%	18%
31-40%	28%	31%	23%	22%	23%	27%	21%	26%	21%	26%	25%	21%	22%	18%	29%	32%	26%
41-50%	22%	22%	32%	30%	32%	30%	30%	33%	29%	24%	25%	31%	37%	31%	24%	26%	28%
>50%	8%	14%	20%	17%	18%	17%	22%	12%	27%	14%	25%	14%	18%	19%	16%	17%	17%
Don't Know	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

How does your organization encrypt data in IaaS/PaaS environments?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
We use cloud provider encryption only	12%	18%	17%	19%	20%	27%	20%	23%	12%	12%	20%	18%	16%	22%	14%	17%	18%
We bring our own encryption only	16%	23%	13%	16%	12%	13%	14%	8%	17%	20%	14%	18%	12%	13%	15%	14%	15%
All or mostly we use cloud provider encryption	50%	26%	32%	33%	35%	29%	33%	27%	40%	47%	33%	30%	45%	42%	46%	41%	37%
All or mostly we bring our own encryption	17%	22%	26%	22%	19%	16%	21%	30%	20%	16%	24%	28%	17%	16%	19%	20%	21%
We bring our own encryption for select workloads, use provider encryption otherwise	3%	8%	9%	8%	13%	10%	11%	9%	7%	3%	8%	5%	6%	4%	4%	6%	7%
N/A - We don't encrypt	3%	3%	2%	3%	2%	4%	1%	3%	5%	2%	2%	2%	5%	4%	2%	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Part 6 - Key Management for Cloud

For data encrypted in the cloud, who controls the encryption keys?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
We control all encryption keys	15%	26%	11%	13%	13%	13%	10%	13%	8%	12%	10%	12%	11%	14%	12%	11%	12%
Cloud provider controls all encryption keys	30%	23%	17%	28%	24%	26%	22%	26%	24%	26%	24%	26%	29%	34%	33%	27%	26%
All or mostly we control encryption keys	19%	21%	23%	23%	16%	16%	23%	21%	24%	26%	33%	29%	20%	11%	22%	21%	21%
All or mostly cloud provider controls encryption keys	33%	24%	40%	30%	37%	38%	38%	37%	38%	33%	27%	31%	33%	32%	30%	36%	34%
Shared- we control key generation material but provider control keys	4%	6%	9%	6%	11%	7%	6%	3%	7%	3%	6%	3%	8%	10%	4%	5%	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

AU - Australia
BR - Brazil
DE - Germany
FR - France
HK - Hong Kong
IN - India
JP - Japan
KR - South Korea
MX - Mexico
NL - Netherlands
NZ - New Zealand
SE - Sweden
SG - Singapore
UAE - United Arab Emirates
UK - United Kingdom
US - United States

How does your organization specifically control encryption keys?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
We manage them in cloud consoles	41%	40%	52%	59%	66%	53%	46%	41%	59%	53%	50%	59%	32%	56%	62%	52%	52%
We bring our own keys and manage them in cloud consoles	24%	45%	23%	37%	31%	34%	36%	32%	25%	24%	27%	37%	45%	20%	24%	31%	31%
We bring our own keys and manage them using our [pipe: Def_Q47] solution	47%	36%	33%	40%	31%	34%	36%	47%	28%	55%	41%	41%	55%	44%	41%	43%	40%
We hold our own key solutions	26%	30%	34%	20%	24%	27%	25%	18%	25%	21%	23%	17%	19%	28%	33%	28%	26%
We generate key generation material but use provider key management infrastructure/ service	47%	43%	34%	28%	28%	32%	34%	44%	41%	37%	50%	29%	19%	32%	28%	32%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Part 7 - Data Breaches and Compliance Issues

Has your organization ever experienced a data breach involving data and applications that reside in the cloud?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
Yes	45%	32%	40%	37%	36%	35%	29%	37%	35%	52%	51%	50%	41%	39%	44%	44%	40%
No	55%	68%	60%	63%	64%	65%	71%	63%	65%	48%	49%	50%	59%	61%	56%	56%	60%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Has your organization experienced a breach or failed an audit involving data and applications stored in the cloud this past year?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
Yes	50%	32%	42%	42%	42%	33%	30%	36%	48%	44%	43%	50%	35%	49%	52%	48%	43%
No	50%	68%	58%	58%	58%	67%	70%	64%	52%	56%	57%	50%	65%	51%	48%	52%	57%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

AU - Australia
BR - Brazil
DE - Germany
FR - France
HK - Hong Kong
IN - India
JP - Japan
KR - South Korea
MX - Mexico
NL - Netherlands
NZ - New Zealand
SE - Sweden
SG - Singapore
UAE - United Arab Emirates
UK - United Kingdom
US - United States

Part 8 - Zero Trust Security

Where are you on your Zero Trust journey?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
Execution: We have a formal strategy and are actively embracing Zero Trust policy	34%	27%	36%	30%	29%	35%	42%	28%	30%	26%	25%	38%	30%	27%	27%	24%	30%
Evaluation: We are planning and researching to develop a Zero Trust Strategy	21%	26%	19%	22%	20%	16%	15%	27%	22%	30%	22%	22%	23%	25%	27%	22%	22%
Consideration: We are considering it, but have no formal plans	25%	25%	19%	23%	27%	25%	19%	22%	20%	26%	25%	18%	22%	23%	21%	27%	23%
No Strategy: We currently have no Zero Trust Strategy	21%	22%	26%	24%	25%	24%	23%	23%	29%	18%	27%	23%	26%	26%	24%	26%	25%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

To what extent does Zero Trust security shape your cloud security strategy?

	AU	BR	DE	FR	HK	IN	JP	KR	MX	NL	NZ	SE	SG	UAE	UK	US	Global
To a great extent	30%	29%	35%	34%	31%	39%	40%	32%	29%	24%	25%	38%	35%	38%	27%	26%	32%
We rely on some concepts of Zero Trust security	50%	50%	36%	43%	43%	37%	37%	46%	35%	55%	63%	44%	41%	42%	50%	49%	44%
Zero Trust security does not affect our cloud security strategy	20%	21%	29%	23%	27%	24%	23%	22%	37%	21%	12%	19%	25%	21%	22%	25%	24%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

AU - Australia
BR - Brazil
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FR - France
HK - Hong Kong
IN - India
JP - Japan
KR - South Korea
MX - Mexico
NL - Netherlands
NZ - New Zealand
SE - Sweden
SG - Singapore
UAE - United Arab Emirates
UK - United Kingdom
US - United States

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