01 پ ˛ ˚ g

Ὼ ΰ ﬞﬞ ﻧ Ṏ ق Ḥ ă ˝Y ‶Ḥ Ὼ ΰ U Ὼ ΰ א ￼ ῶ ˜Ḥ	03
Ὼ ΰ ﬞ Ṫ ﬞ ụ ῴ ܟ ܟ ܬ › ܝ ܐ ܢ ת Ὸ و ي ￼ ڽ ˜	03
Ὼ ΰ ﬞ ụ Ὼ ΰ ₦ ——2020ẉ Ὼ ΰ ȓ ừ	03
Ὼ ΰ ﬞ ܐ ẉ ṕ ك ῷ ﬞ ụ 2020ẉ Ὼ ΰ ܐ ˝ ‶E Φ ừ ܐ ẉ	04
ẵ Ẉ ڻ Ὰ ȉ ܝ ⁄ Ọ Ḥ ܬ ⊢ ܝ ܐ ă ˝ ẵ ₯ .	04

02 ܝ Φ ỗ

ڻ ˜Ḥ Ỵ Ụ Ọ ܟ و ي ȓ ￼ Ỵ ŏ	05
Ṫ ﬞ " " ۮ Ụ Ḥ Ὸ ȓ ḥ	05
˘ ܬ Ḥ ῶ ں ặ Ẁ Ậ ۷ ΰ ↑ " ṇ	05
ܝ ۏ Ẋ پ ˜Ὼ Ω . ΰ ث ẵ ẍ ȉ ặ ˜Ḥ ặ	06
ܝ ۏ ▌ Ὸ ṋ ڃ ▌ ί ΰ 100% ΰ ܐ Ṡ ȋ ˜Ḥ	06
ˊ ﬞ 12	06

03 Ὼ ΰ Φ ỗ

ῴ ڗ 2022ẉ ˜Ḥ Ỵ Ά ܟ › ῴ ˝ ȓ ˚ ي ῗ ۷ ￼ ڽ ˜	07
ῴ ڗ 2022ẉ א ȉ Ὼ ΰ و ي ῴ ẉ ˚ ي ῗ ۷ ￼ ڽ ˜	07
א ȉ Ὼ ΰ و ي ῴ ẉ ˚ ي ܢ ת |	07
‶Ḥ Ὰ ẵ ܟ و ي — ò Ỹ خ ܐ Ὼ Ὰ ȓ	08
ṛ ȍ ò ق Ὼ ΰ ܐ ܐ IPv6 ḥ ₩ ﬞ	08
ܝ ܐ ẵ ₯ ￼ ▄ Ὼ ΰ Ụ ȓ	08

04 ݣ ˚ g

▌ ĭ Ὼ ά ڷ ȉ ܝ	09
▌ fl ܐ ص Ὼ ά ₭ E ڷ ق ܝ ܐ APAN Ẁ	09
ℵ ╖ ظ ܭ CEO ȉ ˝ ˊ ܬ Ḥ ṭ Ẓ ί Ḥ ‶ I ℵ ╖ ܓ ܝ ܐ ﬞ ￼ ﬞ ặ	10
ق ˜ ܓ AWSῴ 5G ܝ	10
LG U+ LS ۏ ȉ _ ẵ SD WAN ˜ ₯ Ạ ܝ	10
ˊ ܟ ܬ Ὼ ΰ Ụ ụ 2022ẉ 10 IT ṇ ێ	11
ܪ Ὼ ΰ ܝ Jisc ˝Y	11
Jisc Ὼ ụ ‶Ὼ Ḥ ȋ έ ặ ừ ق Φ ڒ	11

05 ܓ Ὰ ĭ

	12

Õմհ ڒ˝Y “ ˜ΗѺ ŭ Ụ Ѻ ŭ א ⃞ω ˜Ḥ ò Ȁ ˜ ɸ Ạ ấ
ɸ ώ و ۱ Ѻ ŭ ˚ ◊ Ẉ ή ۷ Ѻ ŭ ˚ ◊ ấ ɸ Ẓ ɾ ồ ב ›
ã̃ ɀ ۷ Ή ̧ ấ ɸ ĭ ♯ ڃ ؤ ⁄ Ọ Ή ؤ ۤ ב و ̧ ۷ Ή Ȁ Ȏ
۷ Ή₅ ۱₅ Ặ ₌ ■ Ѻ ŭ ۤ ´ Ȁ ồ Ȁ Ή Ѻ ŭ ۧ ۤ ´ . ڻ “ ”
ↄ ■ | ⌂ Ѻ Ặ ` ò ف ב “ ↕ Ẉ Ѻ ŭ Ấ

ڀ ȴ ˚ g

2020

Ĭ ˜ 2020ẉ Ὼ ΰ ⏋¯ Ở ̃H 53033.87 ⅝ ẉ50178.12
ذ 5.69% ك ῴ ớ Ὼ ΰ ⏋¯ 42908.15 ⅝ ẉ ذ 7.15%
GDP⅝ 4.22% “ ” Ọ ڗ ̒Y ʌ “ 4% ” ف ĩ ₅ 2012ẉ ̃
ف ʌ ʍ ẉ “ 4% ” ˝Y “ 4%´ ‰ ” ệ א ĩ Ὼ
ΰ ⏋¯ ⏊ Ὼ ΰ ڀ ȴ ⅝ ‘ . ڕ ̃H ⏌ ₌ ת
Ṯ ˈ ʍ ڈ ئ ʍ ف ʌ 9ẉ ᾰ´ ‰ “ 4%̀H ” Ὼ ΰ ⏋¯ ̃H ⏌ ₌ ớ
ą ʌ ̈ ├

ệ ├ Y ĩ ⏋ ɰ ⏊ Ὼ ΰ ɨ ˘ ỉ ∨ “ Ὼ ΰ ⏋¯ ” “ Ὼ ΰ ¯
̃Ḥ ” “ ɂ ⏋¯ ̃Ḥ ” ذ ừ ˝Y‰ ὦ ˝ ڹ ح › ف ˝Y‰
א ̀H ꜛ ȭ ẫ ɲ “ ˝ ڴ ɨ ᾰ ح ʍ Ὼ ΰ Ẕ ỉ ڀ
⏊ ⏋¯ ̃H ʍ ڝ ك ῴ ớ ⏋¯ ̊ ك ῴ ớ ⏋¯ Ẕ ỉ ش Ẋ ڨ
ᾰ̋ ̃Ḥ ٧ ح و ۑ ŗ ˝ ح ʍ Ὼ ΰ ʍ ”

̃ ◊ Ὼ ΰ ɰ̃h ᾰ Ὼ ΰ Ụ ᾰ

ڽ Ṛ ⏌ ʌ ᾰ ˝ o Ṫ ˥ ٹ ٹ ▌ ⏌ ʌ ˥ ⏌ ʌ
ʍ ڗ ˥ ٹ ٹ ذ ẫ Ẉ ˘ ˜ ⏌ ʌ ᾰ ˝ ĩ ۿ ´ ĩ ⏌ ŗ ᾰ̋ ɨ ˥ Ά ⏊
˜ ᾰ ˝ ẻ ȭ ĩ א ⏊ ˜ ᾰ ˝ ڨ ℓ ڀ ȴ ‰ Ȭ Ặ ⏌ ʌ ᾰ ˝ ẫ ф ĩ ò ڨ
˜ ⏋̄ ᾰ ˝ ẫ ф ώ ح ˜ ᾰ ˝ ˥ ẙ ọ ɫ ȴ ∂ ĩ ȍ ẫ ф ⏌ ʌ Ậ
₌ ẫ ф ˜ א ڀ ȴ ĩ ⏌ / Ọ̇H ⏌ ʌ ᾰ ˝ ẫ ф
ʍ ẫ Ẉ ر Ά ₌ ộ ᾰ̋ ʍ ĩ ⏌ / Ọ̇H Ὰ ĩ ⏌ ʌ ʍ ڗ ᾰ ˝ ◊ ⌡
˝E ọ ɫ ⏌ ʌ ʍ ڗ ộ ỳ Ậ ۏ ᾰ ΰ ێ ǃ ẫ ф ʍ ĩ ⏌ / Ọ̇H
Ὰ ĩ ⏌ ʌ ʍ ڗ ⌂ ת ̃Ḥ ₅ í ọ ɫ ˜ ĩ ⏌ ʌ ʍ ڗ Φ h̤ ɨ ȭ ⌂ ת
ᾰ ˝ ẫ ʍ ĩ ⏌ / Ọ̇H Ὰ ĩ ⏌ ʌ ʍ ڗ ŗ ọ ɫ
⏌ ʌ ʍ ڗ ɨ ȭ ע א ⏊ ظ

̃ ◊ Ὼ ΰ ˥ ɰ ∨ ⏌ ᾰ

ᾰ ⱻ ᛡ “ ʽY ̀A ݬ ἕ ڿ ṝ ̀A ܟ ” “ Ặ ˥ ʽH ̀A Ậ ݒ ”

ώ “ ἳ ♯ ̀A Ụ ʽH ΰ ἴ ڿ ˥ ݒ Ạ ἥ ݐ ˥ ʽH ˚ ˊ

Ẕ ݛ ˜ ̤ ˚ ˊ Ậ ̀A ݘ ݘ Ụ̰ Ọ ݫ ṵ ṕ ṝ Ὢ

ɹ ╝ ɺ ⱻ ˥ ڹ 5G ɹ ⱻ Ṫ ΰ ἴ ɰ ˥ Ὢ Ὢ ἳ ɹ ƞ

ⱻ

12

≛ Ƙ Ȁ ▌ OBJ ═ ѽ12 Ȁ ヽ Ή

■ ѽ ں - ṣ ヽ ỉ ɔ ѽ ں ỉ ò ỷ ɾ و ヽ . ヽ Ọ

▬ ヽ ỉ ɔ Peaktek ѽ ں ヽ ˀ ˌ Ή ŭ ѽ ں

∓ ˀ ˌ Ụ Ή ѽ ں ḥ ŭ Ợ ɔ ヽ Ήѽ ں ḥ ˇ ش ヽ Ή

ѽ ں ך ṣ ƀ

ﻝ ŭ ˊ ~ Ȁ Ȁ ﻭ ˉ ֆ ヽ OBJ Ȁ ﻭ OBJ ICT

Ȁ ⁵ ف

2022

⁞ ˜Ω ِ˜ ώ ژ ˜Ḥ'Y Ά ح › ώ ˊ ī ° ﷺ أ ١ ٨ 313 ≤ ˚
ﷺ ئ ٨ 32

IPv6

“ 2021 IPv6 ” … IPv6 … IPv6 … IPv6 … IPv6 … IPv6 …

… 5G …

CIOE

12 ώ 14 ή ݣ ĭ ܘ ų 2021 ẉ “ ĭ ܘ ” ǰ ᾰ
CERNET ܘ ᄉ Ọ ▌ ɔ Ṫ ᅵ ᄊ ĭ Ὡ ά ǰ

1998 ẉ ĭ Ὡ ά Ὑ ã ᅥ ᄊ IPv6 ؛ ڃ Ẑ CERNET-6BONE Ȁ ڤΦ ĭ ܘ ᅵ Ẋ₇ ȷ IPv4 IPv6 ĭ ڽ ڎ ێ IPv4 IPv6 ɲ ܘ Ẉ ◌ ص ■ ᾰ ɋ ớ ǒ ێ % ۋ . ᅵ ڬ ˝ ṇ ꜛ õ ˇ ʿ Ἡ IVI ᄀ IPv4 ᄊ ڙ ሐ ī IPv6 ᄊ ڙ Ἡ ī ᾰ IPv6 ٻ ᄉ IPv6 ؚ Ἰ Ἡ ᅵ | ȷ ؚ ῶ ں IPv4 ˜ ˜ IPv6 Ἡ ώ ᾰ ڿ ớ ȷ IPv6Ẉ ◌ ص ■ Ἡ ǒ ێ

ĭ ܘ The Internet Hall of Fame ݣ ĭ ܘ Internet Society ISOC ã 2012 ẉ Ἐ ᅠ ۵ ᄀ ĭ ܘ ṝ ٻ ɭ ˈ – ⊦ ɋ ɒ ĭ ᄀ ĭ ܘ ˜ ώ ܚ ɳ

ꜛ ◊ ↓ ή ĭ ᾰ

APAN

ﬂ ᄉ ص Ὡ ά ĭ ᄉ ã Ẉ ڻ ᄊ ▌ Ὡ ά ᾰ ڤ APAN Ẉ ĭ ڤ ܘ ᄉ APAN 1996 ẉ 3 ώ ή ᄊ ᒻAPEC ɲ Ὡ ڙ ã ⁝ Ὡ ȷ ő ẹ 1997 ẉ 6 ώ ᾰ ᅥ ή ˏ ☻ Ȁ ɦ ᄊ 21 ᾰ ݿ ` ᄊ ɥ ₇ ڨ ĭ ܘ Ἡ Ẕ ؚ ṝ . ᅵ APAN Δ ĭ ᒣ ═ ᾰ Ẁ ת ǰ ɋ ĭ ܘ ₆ ᄀ ĭ ܘ ۋ ሁ ῶ ʼ ڈ پ

ꜛ ◊ Ὡ ǚ ʏ ɰ ᅵ ܘ ᾰ

13 CEO

! כ ʃ ڗ 11 ˛ ༽ ╖ כ ظ Դ ثẀ‶EΦ ۼ Ω̣ ˊ ˜ ؎ ˥ Ḣ ṭ Ẕ Ỉ ʼH ‶I ༽ ╖ כ ˩ ᕕ ⴖ ⴖ ἅ ڢ إ ᕕ ፣ ༽ ╖ כ ˩ ᕕ Ὼ ɹ ˊ ‰ ĩ Netflix Facebook ˥ ؎ ṷ̰ ṭ

ɞ ˊ

ED

Ὼ ȕ

‰ ȉ ấ

ڈ Ղ

ـ ⌊ ռ

ל

ᾅ ȶ ẙ

ת

ټ

ж ǒ

ل ˓ ǐ

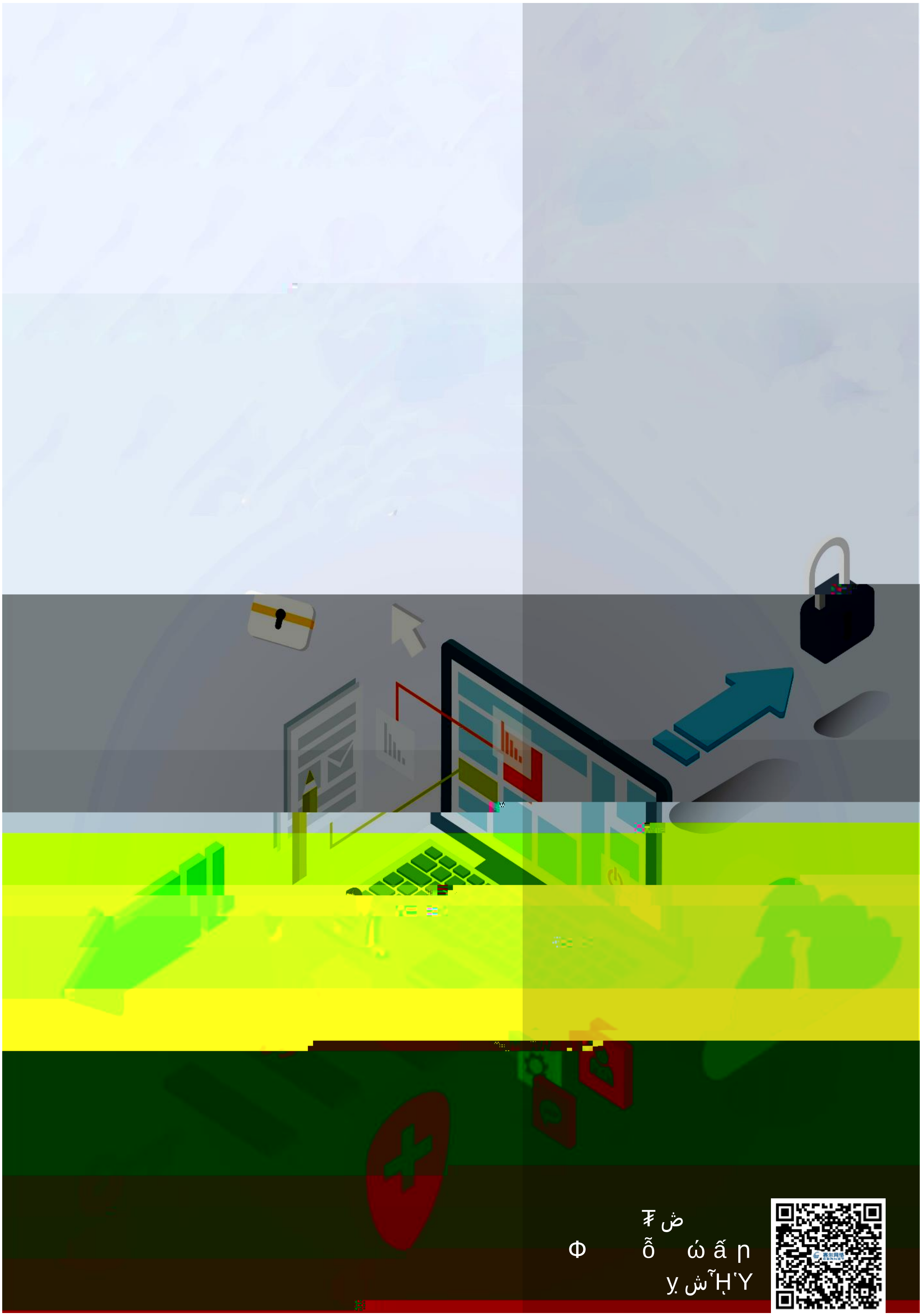
ـ Ὤ

Gartner 2021-2023

ˈ 437 IT ۲ ˩ 111 ˚ À Ḣ پ ३ ɰ Φ ɥ ₽ ὢ ۈ Gartner ṵ 2021-2023 À Ḣ ٹ ۲ ĭ ʟ ₽ ῶ 1. ɺ ʌ ĭ IT ˜ Փ Ạ ĩ ═ پ ʟ ˚

- _____
-

3 ÄÅ ñ



₮ ض
Φ õ ώ ấ ɲ
ỵ ش̄Ḥ'Y

ɔ ؟ 6260 3794 ٧ ٩ scgl@cernet.com