SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 6-K

Report of Foreign Private Issuer Pursuant to Rule 13a-16 or 15d-16 of the Securities Exchange Act of 1934

May 2018

Commission File Number: 001-37925

GDS Holdings Limited

(Registrant's name)

2/F, Tower 2, Youyou Century Place 428 South Yanggao Road Pudong, Shanghai 200127 People's Republic of China (Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F ⊠ Form 40-F o

Indicate by check mark if the registrant is submitting the Form 6-K on paper as permitted by Regulation S-T Rule 101(b)(1): o

Indicate by check mark if the registrant is submitting the Form 6-K on paper as permitted by Regulation S-T Rule 101(b)(7): o

EXHIBITS

Exhibit 99.1—Press release—GDS Holdings Limited Announces Proposed Offering of US\$250 Million Convertible Senior Notes

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GDS Holdings Limited

Date: May 29, 2018 By: /s/ WILLIAM WEI HUANG

Name: William Wei Huang
Title: Chief Executive Officer

3

QuickLinks

EXHIBITS SIGNATURES

GDS Holdings Limited Announces Proposed Offering of US\$250 Million Convertible Senior Notes

SHANGHAI, CHINA, May 29, 2018—GDS Holdings Limited ("GDS Holdings," "GDS" or the "Company") (Nasdaq: GDS), a leading developer and operator of high-performance data centers in China, today announced that it proposes to offer up to US\$250 million in aggregate principal amount of convertible senior notes due 2025 (the "Notes", the "Notes Offering"). The Notes will mature on June 1, 2025. The conversion rate and other terms of the Notes have not been finalized and will be determined at the time of pricing of the Notes Offering. The Company intends to grant the initial purchasers in the Notes Offering a 30-day option to purchase up to an additional US\$50 million aggregate principal amount of the Notes solely to cover over-allotments, if any. The offering is subject to market conditions and other factors.

The Notes will be convertible into American Depositary Shares ("ADSs") of the Company, at the option of the holders, in integral multiples of US\$1,000 principal amount, at any time prior to the close of business on the third scheduled trading day immediately preceding June 1, 2025. GDS will not have the right to redeem the Notes prior to maturity, unless certain changes in tax law or related events occur. It is contemplated that the holders of the Notes may require the Company to repurchase all or part of their Notes in cash on June 1, 2023, or in the event of certain fundamental changes, in each case at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, *plus* any accrued and unpaid interest to, but excluding, the repurchase date.

The Company intends to use the net proceeds from the Notes Offering for the development and acquisition of new data centers, repayment of outstanding indebtedness, general corporate purposes and working capital needs.

The Notes, the ADSs deliverable upon conversion of the Notes and the Class A ordinary shares represented thereby have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), or any state securities laws. They may not be offered or sold within the United States or to U.S. persons absent registration, except to qualified institutional buyers in reliance on the exemption from registration provided by Rule 144A under the Securities Act and/or to certain non-U.S. persons in offshore transactions in reliance on Regulation S under the Securities Act.

This press release shall not constitute an offer to sell or a solicitation of an offer to purchase any of these securities, nor shall there be a sale of the securities in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful.

This press release contains information about the pending offerings of the Notes, and there can be no assurance that any of the offerings will be completed.

Safe Harbor Statement

This announcement contains forward-looking statements. These statements are made under the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995. These forward-looking statements can be identified by terminology such as "aim," "anticipate," "believe," "continue," "estimate," "expect," "future," "guidance," "intend," "is/are likely to," "may," "ongoing," "plan," "potential," "target," "will," and similar statements. Among other things, statements that are not historical facts, including statements about GDS Holdings' beliefs and expectations regarding the growth of its businesses and its revenue for the full fiscal year, the business outlook and quotations from management in this announcement, as well as GDS Holdings' strategic and operational plans, are or contain forward-looking statements. GDS Holdings may also make written or oral forward-looking statements in its periodic reports to the U.S. Securities and Exchange Commission (the "SEC") on Forms 20-F and 6-K, in its annual report to shareholders, in press releases and other written materials and in oral statements made by its officers, directors or employees to third parties. Forward-looking statements involve inherent risks and uncertainties. A number of factors could cause GDS Holdings' actual results or financial performance to differ materially from those contained in any forward-looking statement, including but not limited to the following: GDS Holdings' goals and strategies; GDS

Holdings' future business development, financial condition and results of operations; the expected growth of the market for high-performance data centers, data center solutions and related services in China; GDS Holdings' expectations regarding demand for and market acceptance of its high-performance data centers, data center solutions and related services; GDS Holdings' expectations regarding building, strengthening and maintaining its relationships with new and existing customers; the continued adoption of cloud computing and cloud service providers in China; risks and uncertainties associated with increased investments in GDS Holdings' business and new data center initiatives; risks and uncertainties associated with strategic acquisitions and investments; GDS Holdings' ability to maintain or grow its revenue or business; fluctuations in GDS Holdings' operating results; changes in laws, regulations and regulatory environment that affect GDS Holdings' business operations; competition in GDS Holdings' industry in China; security breaches; power outages; and fluctuations in general economic and business conditions in China and globally and assumptions underlying or related to any of the foregoing. Further information regarding these and other risks is included in GDS Holdings' annual report on Form 20-F for the fiscal year ended December 31, 2017 filed with the SEC on March 29, 2018 and other filings with the SEC. All information provided in this press release is as of the date of this press release and are based on assumptions that GDS Holdings believes to be reasonable as of such date, and GDS Holdings does not undertake any obligation to update any forward-looking statement, except as required under applicable law.

About GDS Holdings Limited

GDS Holdings Limited (Nasdaq: GDS) is a leading developer and operator of high-performance data centers in China. The Company's facilities are strategically located in China's primary economic hubs where demand for high-performance data center services is concentrated. The Company's data centers have large net floor area, high power capacity, density and efficiency, and multiple redundancy across all critical systems. GDS is carrier and cloud neutral, which enables customers to connect to all major PRC telecommunications carriers, and to access a number of the largest PRC cloud service providers, whom GDS hosts in its facilities. The Company offers colocation and managed services, including direct private connection to major cloud platforms. The Company has a 17-year track record of service delivery, successfully fulfilling the requirements of some of the largest and most demanding customers for outsourced data center services in China. The Company's base of customers consists predominantly of hyper-scale cloud service providers, large internet companies, financial institutions, telecommunications and IT service providers, and large domestic private sector and multinational corporations.

For investor and media inquiries, please contact:

GDS Holdings Limited

Laura Chen

Phone: +86 (21) 2033-0295 Email: ir@gds-services.com

The Piacente Group, Inc.

Ross Warner

Phone: +86 (10) 5730-6200 Email: GDS@tpg-ir.com

Alan Wang

Phone: +1 (212) 481-2050 ext. 401

Email: GDS@tpg-ir.com

QuickLinks

Exhibit 99.1