PRELIMINARY ANALYSIS OF SETTING UP AI DATA CENTERS IN THE US FOR YOVOLE

有孚网络在美国设立智能数据中心初步分析

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VC Technologies
Authored by: Glenn Tse / Chad A Dozier

Background of Yovole Network

From our previous discussions, we understand that Yovole Network was founded in 2001. The company has become a leading enterprise-level cloud computing and data center management company in China. It has multiple high-level cloud computing data centers in first-tier cities such as Beijing, Shanghai, and Shenzhen. Yovole can provide rich cloud computing data center services to medium and large customers across the country. Some significant customers of Yovole are in the health care and financial industry.

Although the cost of public cloud is relatively low, it cannot fully adapt to the specific business needs of each enterprise. There are also concerns about security issues. Yovole's solution is to provide to each enterprise with independent hardware which are not mixed with other public applications. The private clouds can be separated in different groups hosted in Yovole's data centers with interconnection. These clouds will be uniformly managed through Yovole's cloud and business management platform, making the allocation and service of the resources more convenient and controllable.

The goals of setting up AI data centers in the US

1. To expand and improve the cloud network with the advance technological environment available in the US.
2. To expand to the US market to expand to provide services to new customers.
3. To acquire or create local power companies to provide low-cost energy to the data centers.
4. To establish a US-based company which may go public to invite more investment capitals.

Considerations in setting up AI data centers

It cannot be guaranteed that all elements of a client network can be set up in one single private cloud because the client business has grown or the underlying environment is changed. Expanding a private cloud is fairly inflexible. In our preliminary recommendations to you, we include the following considerations:

- Location
- Business climate & tax incentive
- Power reliability / energy cost
- Government support / professional support
- Construction method – scalability & fast deployment

Location

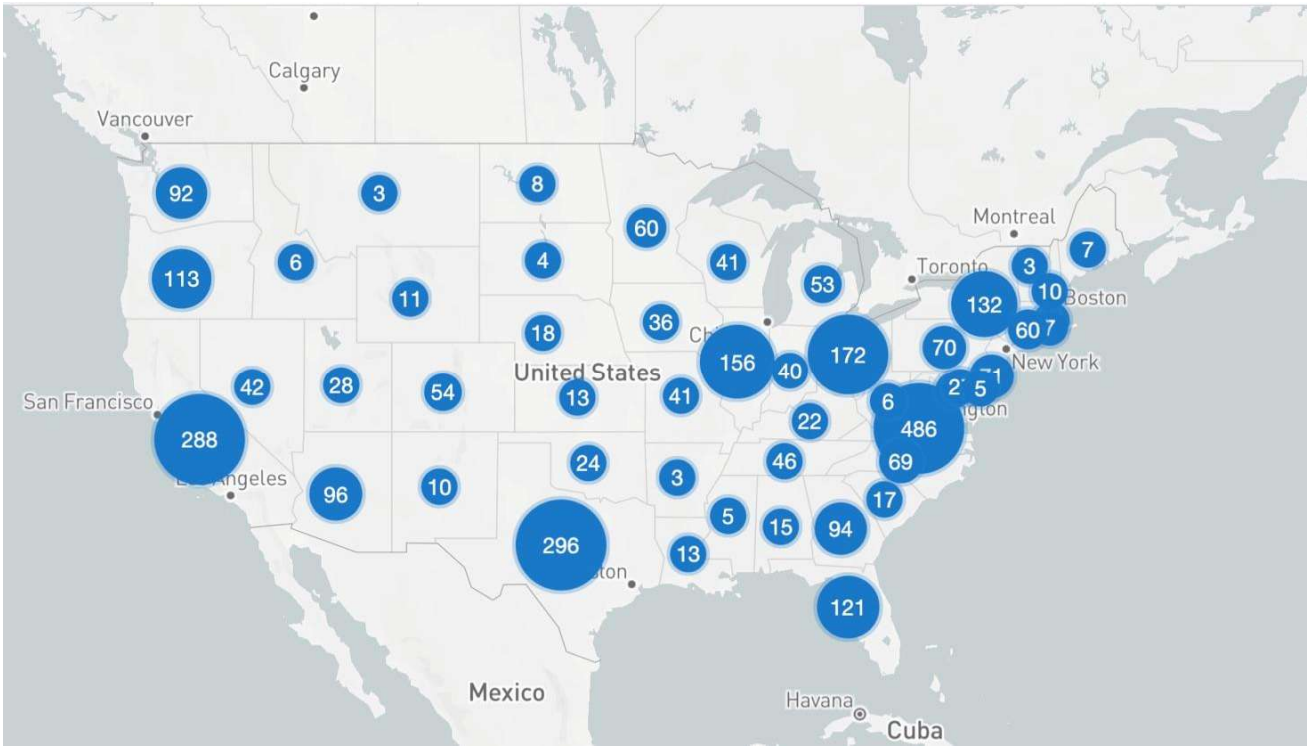

Figure 1. Number of Data Centers in Each State

As indicated in the above map, the north east states and the west coast states have the most of data centers. For instance, Virginia alone has 486 data centers. West coast including California, Oregon and Washington have 393 data centers. We do not recommend to host your data centers in those states because the land costs in these states are very high. Virginia land can cost an average of $100K to $200K per acre, while land in California can cost between $20K to $30K per acre. Extreme weather and natural disasters could happen quite often in these states. For instance, earth quakes, wind storms and wild fires happened many times in California in the later years. There are frequent winter storms, flooding and hurricanes in the north east states such as Virginia.

On the other hand, Texas has 296 data centers while many of those are in Dallas-Fort Worth area. Mississippi/Alabama has 20 data centers. The land in these states is relatively inexpensive. The average land cost is about $3,500, $3,000, $12K per acre in Texas, Mississippi and Alabama, respectively. We will choose areas not in a flood zone designated by FEMA. Though hurricanes may land on these three states, if we choose a location in-land enough (150 kilometers or more), we can avoid most of the storm, rain and flooding from the hurricanes. Location-wise, we recommend to build one or two data centers in Dallas-Fort Worth area, a data center in Mississippi and/or a data center in Alabama. Warm summers in these states are still manageable with efficient data center systems.

Business Climate & Tax Incentive

Texas

Texas has no state income tax. The energy market is deregulated. Thus, the competition of the electric suppliers has created many low-cost electricity plans for customers. Texas also has many pro-business policies which include competitive tax incentives and abatements for large-scale developments.

Dallas-Fort Worth region offers residents affordable living, great education opportunities, and many fun attractions. The region has been a magnet for corporate headquarters and major company operations, attracting 50 Fortune 1000 companies. Dallas-Fort Worth has a workforce with depth and breadth. The business is diversified from high tech industry, telecommunications, logistics, and finance to consumer brands that impact the daily lives. The diversity of business drives the region's economic strength, so that growth is possible even during economic downturns.

Mississippi

Mississippi has a progressive tax rate up to 5%. Tax incentives can be negotiated with the local governments. Mississippi offers a high quality of life with a low cost of living nearly 20% below the national average, a rich cultural heritage, and a reasonable regulatory environment and friendly business climate. The state also has a strong economy and a growing job market, making it a great place to start or grow a business. Mississippi offers great value for employers and employees.

Alabama

Alabama has a 6.5% tax rate. Alabama excelled in several key areas for doing business. Among 50 states, Alabama earns a No. 1 ranking for its property tax environment, No. 3 rankings for workforce training, cost of doing business, and favorable regulatory environment, No. 5 in business incentives programs, No. 6 in energy availability and cost and site readiness programs, No. 10 in access to qualified Labor. Overall, Alabama is a preferable state to start a business.

Power reliability / energy cost

Texas

Texas provides access to alternative power sources, including renewable energy, which is attracting builders. Relatively low energy costs and a favorable climate for natural cooling further enhance its

appeal. The cost of producing and transporting electricity from different sources, like natural gas, wind, and solar can affect the energy cost.

Mississippi

Mississippi maintained reliable electricity availability with no anticipated rate increases in the near future. VC Technologies is in the process of negotiating to acquire a local electricity company for use with our own data center in Mississippi.

Alabama

Factors that affect electricity costs in Alabama includes

1. Fuel costs: Lower fuel costs can lead to rate reductions.
2. Inflation: Inflation can lead to rate adjustments.
3. Grid resilience investments: Investments in grid resilience can lead to rate adjustments.

Government Support & Professional Support

The management team of VC Technologies has strong relationship with many government officials at the federal, state and city government levels in Texas, Mississippi and Alabama. We can facilitate negotiations for land, facilities with the government and request special investment incentives and tax abatements with the government. All three states have similar engineering regulations for mechanical, lectrical, plumbing, civil and structural engineering. The governments are also very efficient in granting permits and engineering approvals.

There are many Mexican and Central America immigrants in these states. This benefits the states with a robust construction industry with competitive labor rates and lower overall construction costs.

Construction method – scalability & fast deployment

In order to control the initial investment requirement and facility rapid expansion as necessary, we recommend a modular approach to data construction. Data centers are built using prefabricated modules where all essential components are assembled off-site in a controlled factory environment,

then transported and simply connected on location, allowing for faster deployment, greater flexibility and easier scalability as compared to traditional on-site construction method. The finished modules are usually in the form of 40 ft containers. The Port Houston (Texas), Port of Mobile (Mississippi) and Gulf Port (Alabama) logistically allow the shipment of the finished modules to the Mexico Gulf coast conveniently. Then the modules are hauled to the in-land site quickly through interstate highways. Some companies have already commissioned data centers using the modular approach.

Key points about modular data center construction

1. Prefabricated modules: Individual units containing power, cooling, and equipment racks are built in a factory, completely pre-wired and tested before delivery to the site.
2. Scalability: Modules can be added or removed as needed to adapt to changing computing demands.
3. Faster deployment: Since most work is done off-site, construction time on location is significantly reduced.
4. Flexibility in location: Modular data centers can be installed in various locations, including outdoor areas, due to their self-contained design.
5. Quality control: Factory-controlled environment ensures consistent quality and minimizes construction errors.

Components of a modular data center module

1. Power distribution units: Manage power supply to IT equipment
2. Cooling systems: Chillers and air handling units to maintain optimal temperature
3. Rack systems: Cabinets to hold servers and network equipment
4. Uninterruptible power supplies (UPS): Backup power source in case of power outages
5. Monitoring systems: To track and manage data center operations

Benefits of modular data centers

1. Reduced design and architectural drawing time.
2. Reduced construction time: Faster deployment compared to traditional building methods.
3. Cost efficiency: Potential for cost savings due to streamlined construction process
4. Improved reliability: Factory-tested components and systems minimize potential issues.
5. Scalability: Easily expand capacity by adding additional modules as needed.

Laws and policies that regulate data centers

Yovole is unlikely to trigger anti-trust laws in the US when she enters the data center business in the US. We cannot make any judgement without further details about the current operations of Yovole and any target acquisition of data centers in the US. The United States has several laws and policies that regulate data centers, including the Data Center Optimization Initiative (DCOI), the Energy Act of 2020, and the Federal Data Center Enhancement Act of 2023.

Data Center Optimization Initiative (DCOI)

This policy was established in 2016 to help federal agencies consolidate data centers and improve their efficiency. The DCOI requires agencies to develop strategies to:

1. Consolidate inefficient infrastructure.
2. Optimize existing facilities.
3. Improve security.
4. Save costs.
5. Transition to more efficient infrastructure.

Energy Act of 2020

This law includes measures to improve the energy efficiency of data centers. It requires:

1. Federal agencies to evaluate their data centers for energy efficiency every four years.
2. The Department of Energy to update a study on data center energy use.
3. Federal agencies to purchase and use energy-efficient technologies.

Federal Data Center Enhancement Act of 2023

This bill would establish minimum requirements for new data centers. These requirements would include:

1. Using sustainable energy sources.
2. Protecting against power failures.
3. Protecting against physical intrusions and natural disasters.
4. Meeting information security requirements.
5. Data centers may also need to comply with privacy and consumer laws, such as the California Consumer Privacy Act (CCPA).

Donald Trump pro-crypto currency and investment in data centers

On Jan 7, 2025, President-elect Donald Trump has announced that Hussain Sajwani, an Emirati billionaire businessman who founded the property development giant DAMAC Properties, will invest $20 billion in new data centers across the United States.

The first phase of the multi-year investment will fund data centers in Arizona, Illinois, Indiana, Louisiana, Michigan, Ohio, Oklahoma, and Texas, Trump said during a press conference at his Mar-a-Lago home on Tuesday. The data centers will primarily support AI and cloud technologies.

有沃网络背景

从我们之前的交流中我们了解到，有孚网络成立于 2001 年，目前已成为国内领先的企业级云计算及数据中心管理公司，在北京、上海、深圳等一线城市拥有多个高水准的云计算数据中心，可为全国中大型客户提供丰富的云计算数据中心服务，医疗健康、金融等行业是有孚网络的重要客户。

公有云虽然成本相对较低，但无法完全适应每个企业特定的业务需求，也存在安全问题的担忧。有孚的解决方案是，为每家企业提供独立的硬件，不与其他公有应用混杂，私有云可以分成不同的组，托管在有孚的数据中心，并实现互联互通。这些云将通过有孚的云及业务管理平台进行统一管理，使资源的分配和服务更加便捷可控。

美国设立人工智能数据中心的目标

1. 利用美国先进的技术环境来扩展和完善云网络。
2. 拓展美国市场，为新客户提供更多服务。
3. 收购或创建本地电力公司，为数据中心提供低成本能源。
4. 建立一家可能上市的美国公司，以吸引更多投资资本。

建立人工智能数据中心的注意事项

由于客户业务增长或底层环境发生变化，无法保证客户网络的所有元素都可以在单个私有云中设置。扩展私有云相当不灵活。在我们向您提供的初步建议中，我们包括以下注意事项：

位置
商业环境和税收激励
电力可靠性/能源成本
政府支持/专业支持
建设方法——可扩展性和快速部署

位置

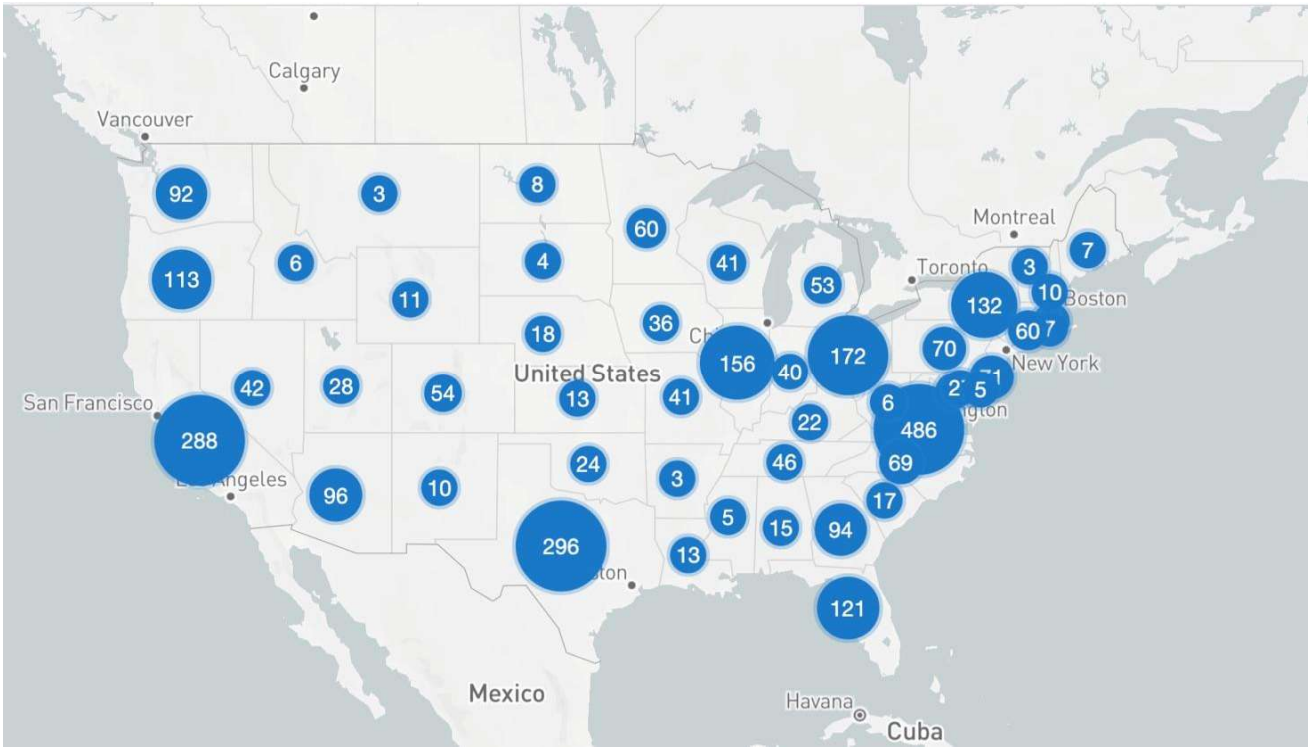

图 1. 各州数据中心数量

如上图所示，美国东北部和西海岸各州拥有最多的数据中心。例如，仅弗吉尼亚州就有 486 个数据中心。包括加利福尼亚州、俄勒冈州和华盛顿州在内的西海岸共有 393 个数据中心。我们不建议在这些州设立数据中心，因为这些州的土地成本非常高。弗吉尼亚州的土地平均每英亩 10 万至 20 万美元，而加利福尼亚州的土地平均每英亩 2 万至 3 万美元。这些州可能时常发生极端天气和自然灾害。例如，加利福尼亚州在最近几年多次发生地震、风暴和野火。弗吉尼亚州等东北部各州经常出现冬季风暴、洪水和飓风。

另一方面，德克萨斯州有 296 个数据中心，其中许多位于达拉斯-沃斯堡地区。密西西比州/阿拉巴马州有 20 个数据中心。这些州的土地相对便宜。德克萨斯州、密西西比州和阿拉巴马州的平均土地成本分别约为每英亩 3,500 美元、3,000 美元和 12,000 美元。我们将选择不在 FEMA 指定的洪水区内的区域。虽然飓风可能会登陆这三个州，但如果我们选择一个足够靠近内陆（150 公里或更远）的位置，我们可以避免飓风带来的大部分风暴、降雨和洪水。在位置方面，我们建议在达拉斯-沃斯堡地区建立一两个数据中心，在密西西比州建立数据中心和/或在阿拉巴马州建立数据中心。这些州的炎热夏季仍然可以在高效的数据中心系统下进行管理。

商业环境和税收优惠

德克萨斯州

德克萨斯州没有州所得税。能源市场不受管制。因此，电力供应商之间的竞争为客户创造了许多低成本电力计划。德克萨斯州还有许多有利于企业的政策，包括有竞争力的税收激励措施和大规模开发项目的减免。

达拉斯-沃斯堡地区为居民提供负担得起的生活、良好的教育机会和许多有趣的景点。该地区一直是企业总部和大型公司运营的磁石，吸引了 50 家财富 1000 强企业。达拉斯-沃斯堡拥有一支深度和广度兼具的劳动力队伍。该地区的业务范围广泛，从高科技行业、电信、物流和金融到影响日常生活的消费品牌。业务的多样性推动了该地区的经济实力，因此即使在经济低迷时期也有可能实现增长。

密西西比州

密西西比州实行最高 5% 的累进税率。税收优惠政策可与当地政府协商。密西西比州生活质量高，生活成本低，比全国平均水平低近 20%，文化遗产丰富，监管环境合理，商业氛围友好。该州经济强劲，就业市场不断增长，是创业或发展企业的理想之地。密西西比州为雇主和雇员提供了巨大的价值。

阿拉巴马州

阿拉巴马州的税率为 6.5%。阿拉巴马州在开展业务的几个关键领域表现出色。在 50 个州中，阿拉巴马州的房地产税环境排名第一，劳动力培训、经商成本和有利的监管环境排名第三，商业激励计划排名第五，能源可用性和成本以及场地准备计划排名第六，合格劳动力获取排名第十。总体而言，阿拉巴马州是创业的理想州。

电力可靠性/能源成本

德克萨斯州

德克萨斯州提供替代能源，包括可再生能源，这吸引了建筑商。相对较低的能源成本和有利于自然冷却的气候进一步增强了它的吸引力。从天然气、风能和太阳能等不同来源生产和运输电力的成本会影响能源成本。

密西西比州

密西西比州的电力供应稳定，预计近期不会涨价。VC Technologies 正在谈判收购一家当地电力公司，用于我们在密西西比州的数据中心。

阿拉巴马州

影响阿拉巴马州电力成本的因素包括

- 燃料成本：燃料成本降低可导致电费降低。
- 通货膨胀：通货膨胀可导致电费调整。
- 电网弹性投资：电网弹性投资可导致电费调整。

政府支持和专业支持

VC Technologies 的管理团队与德克萨斯州、密西西比州和阿拉巴马州的许多联邦、州和市政府官员有着密切的关系。我们可以促进与政府就土地、设施进行谈判，并向政府申请特殊的投资激励和减税。这三个州对机械、电气、管道、土木和结构工程都有类似的工程法规。政府在颁

发许可证和工程审批方面也非常高效。这些州有许多墨西哥和中美洲移民。这使这些州的建筑业蓬勃发展，劳动力价格具有竞争力，总体建筑成本较低。

构建方法——可扩展、快速部署

为了控制初期投资需求和设施在必要时的快速扩张，我们建议采用模块化方法进行数据建设。数据中心采用预制模块建造，所有必要组件都在受控的工厂环境中进行异地组装，然后运输并在现场进行简单连接，与传统的现场施工方法相比，可以实现更快的部署、更大的灵活性和更容易的可扩展性。成品模块通常采用 40 英尺集装箱的形式。休斯顿港（德克萨斯州）、莫比尔港（密西西比州）和海湾港（阿拉巴马州）在物流方面允许将成品模块方便地运送到墨西哥湾沿岸。然后，模块通过州际公路快速运送到内陆站点。一些公司已经使用模块化方法委托了数据中心。

模块化数据中心建设要点

1. 预制模块：包含电源、冷却和设备机架的单个单元在工厂内建造，在交付到现场之前完全预接线和测试。
2. 可扩展性：可以根据需要添加或移除模块，以适应不断变化的计算需求。
3. 部署更快：由于大多数工作都是在场外完成的，因此现场施工时间大大减少。
4. 位置灵活性：模块化数据中心采用独立设计，可以安装在各种位置，包括室外区域。
5. 质量控制：工厂控制的环境可确保始终如一的质量，并最大限度地减少施工错误。

模块化数据中心模块的组件

1. 配电单元：管理 IT 设备的电源
2. 冷却系统：冷却器和空气处理单元，以保持最佳温度
3. 机架系统：用于容纳服务器和网络设备的机柜
4. 不间断电源 (UPS)：断电时的备用电源
5. 监控系统：跟踪和管理数据中心运营

模块化数据中心的优势

1. 缩短设计和建筑绘图时间。
2. 缩短施工时间：与传统建筑方法相比，部署速度更快。
3. 成本效率：简化施工流程，节省成本
4. 提高可靠性：工厂测试的组件和系统可最大限度地减少潜在问题。
5. 可扩展性：根据需要添加其他模块，轻松扩展容量。

监管数据中心的法律和政策

有孚网络进入美国数据中心业务不太可能触发美国反垄断法。如果没有关于 有孚网络当前运营情况以及美国数据中心收购目标的进一步详细信息，我们无法做出任何判断。美国有多项监管数据中心的法律和政策，包括数据中心优化计划 (DCOI)、2020 年能源法案和 2023 年联邦数据中心增强法案。

数据中心优化计划 (DCOI)

该政策于 2016 年制定，旨在帮助联邦机构整合数据中心并提高其效率。DCOI 要求各机构制定以下策略：

1. 整合低效的基础设施。
2. 优化现有设施。
3. 提高安全性。
4. 节省成本。

5. 过渡到更高效的基础设施。

2020 年能源法案

该法律包括提高数据中心能源效率的措施。它要求：

1. 联邦机构每四年评估一次其数据中心的能源效率。
2. 能源部更新数据中心能源使用情况的研究。
3. 联邦机构购买和使用节能技术。

2023 年联邦数据中心增强法案

该法案将制定新数据中心的最低要求。这些要求包括：
使用可持续能源。

1. 防止断电。
2. 防止物理入侵和自然灾害。
3. 满足信息安全要求。
4. 数据中心可能还需要遵守隐私和消费者法律，例如《加州消费者隐私法案》（CCPA）。

特朗普支持加密货币并投资数据中心

2025 年 1 月 7 日，当选总统唐纳德·特朗普宣布，创立房地产开发巨头达马克地产的阿联酋亿万富翁商人侯赛因·萨瓦尼将在美国各地投资 200 亿美元建立新的数据中心。

特朗普周二在海湖庄园举行的新闻发布会上表示，这项多年期投资的第一阶段将资助亚利桑那州、伊利诺伊州、印第安纳州、路易斯安那州、密歇根州、俄亥俄州、俄克拉荷马州和德克萨斯州的数据中心。这些数据中心将主要支持人工智能和云技术。