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# Revised Guidance Note on Measurement of Cloud Computing

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Amazon Web Services data centers near the Great Oak neighborhood in Prince William County

Source: [As data centers expand in Northern Virginia, some are noisy neighbors - \*The Washington Post\*, Feb. 10, 2023](#)

# Overview of the GN on Measuring Cloud Computing

This GN defines cloud computing, discusses the economics of cloud computing, identifies the measurement issues, and provides recommendations. Issues discussed include:

- Definition of cloud computing and a broader data center computing activity that includes colocation/hosting
- Measuring the fixed capital assets of cloud computing providers and customers, including long-term software licenses and financial leases
- Measuring international transactions in cloud computing services and FDI
- Measuring prices and volumes of cloud services

GN recommends adding further detail to existing aggregates rather than creating a new high-level classes of cloud computing assets and services

Existing guidelines still apply, but their implementation is not always clear

# Outcomes of the Global Consultation

Most respondents (40 of 47) agreed that the GN covers all relevant aspects

38 provided written comments

Almost all the comments could be handled by revisions to the GN

But detailed compilation guidance on classification is beyond the scope of the GN, and detailed compilation guidance on international flows of services within MNEs will have to wait until we have more experience with measuring cloud computing

# Revisions to the GN: The Definition of Cloud Computing

The most important revision is to the definition of cloud computing

Respondents found the reference to pay-as-you-go pricing in the definition unclear, so it has been moved into the paragraph explaining the definition

The definition now reads:

Cloud computing services consist of computing, data storage, software, and related IT services accessed remotely over a network, supplied on demand and with measured resource usage.

# Measurement of Fixed Assets of Cloud Computing Providers and Clients

Revisions in response to comments concerning measurement of fixed assets clarified:

- The treatment of long-term software licenses and subscriptions as fixed assets of their owner and the advantages of including 1-year licenses in software assets
  - customers who have their own software license still consume IaaS or PaaS
- IT assets of cloud computing enterprises fall within existing categories of IT fixed assets, but further decompositions are needed so they can be shown separately
- Split between IT assets of colocation/hosting data centers and data center tenants

Further research needed on whether pay-as-you-go software license charges of cloud computing providers are rentals of software copy assets of the cloud computing provider, or rentals of software assets of the software publisher

# Cross-border Flows and Activities of Cloud-computing MNEs

Revisions in response to comments clarified measurement of cross-border cloud services, including determining the location of consumption, and measurement of flows within cloud computing MNEs

However, more experience with compiling international transactions of cloud computing MNEs is needed before detailed guidelines can be provided – we don't know the feasibility of collecting information on gross flows of cross-border computing services

## Other Clarifications and Additions

Clarified the distinction between services produced with cloud computing inputs, which often go to final uses, and cloud computing services, almost all of which are used for intermediate consumption

Added a brief treatment of free cloud services using the approach of GN DZ.3

A subsequent comment indicated the need to amend the discussion of own-account investment in equipment to mention cloud computing providers' reliance on contract manufacturers to assemble or fabricate models that they design



## Question for the AEG and BOPCOM members

Do the AEG and BOPCOM endorse the guidance note, as amended to incorporate feedback from the global consultation?