

Memorandum

Software Technology

May 25, 2023

To: Members of the Board
From: Josh R. Williams, Senior Analyst
Thru: Monica R. Valentine, Executive Director
Subject: **Software Technology Guidance Updates** (Topic B)

INTRODUCTION

At the April 2023 meeting, staff presented a cost-benefit analysis that considered potential preparer burdens and user benefits for financial reporting options for cloud-service arrangements. The Board overwhelmingly agreed with staff's recommendation that reporting guidance should require federal entities to disclose cloud-service expenses.

The attached issues paper recommends a definition and scope for a draft proposal on guidance requiring expense disclosures for cloud-service arrangements. Staff is requesting the Board's feedback on the proposed definition and scope language.

REQUEST FOR FEEDBACK BY June 8, 2023

Prior to the Board's June meeting, please review the attached issues paper and respond to the questions by June 8, 2023.

Please submit responses to Josh Williams at WilliamsJR@fasab.gov with a cc to Monica Valentine at ValentineM@fasab.gov.

NEXT STEPS

Pending Board feedback, staff plans to begin developing proposed reporting requirement language for the Board's consideration. Staff will coordinate with the working group and reach out to other stakeholders to research categories and characteristics of cloud-service expenses that would be useful as financial report disclosures.

ATTACHMENTS

1. Issues Paper
2. Prior Board Meeting Timeline

3. FASAB Software Technology Definitions
4. Intangible Assets Project Plan

Issues Paper

Software Technology

May 25, 2023

CONTEXT

Background

In prior Board meetings, members deliberated cloud-based information technology (IT) services in the federal environment with the goal of ultimately developing financial reporting guidance for cloud-service arrangements. Specifically, members previously discussed:

- Different service and payment characteristics of cloud-service arrangements in the federal environment
- Whether cloud-service arrangements possessed the asset characteristics from SFFAC 5, *Definitions of Elements and Basic Recognition Criteria for Accrual-Basis Financial Statements*
- Whether cloud-service arrangements represent right-to-use assets or service contracts
- A cost-benefit analysis of potential preparer burdens and user benefits for financial reporting options for cloud-service arrangements

During the April 2023 meeting, the Board overwhelmingly supported staff's recommendation that proposed reporting guidance should require federal entities to disclose cloud-service expenses. Most members agreed that expense disclosure was optimal after considering the potential preparer burdens and user benefits of each reporting option¹.

Staff then began the process of developing a draft exposure draft for guidance requiring expense disclosures for cloud-service arrangements. This issues paper proposes a definition and scope for the Board's consideration.

Research

Staff researched prior Board meeting minutes, working group correspondence, and definition and scope sections from previously issued FASAB standards for insight for the proposals in this issues paper. For the definition proposal, staff also considered existing cloud-computing definitions from other sources, including:

¹ See Attachment 2 for a summary of each previous Board meeting deliberation on cloud-service arrangements.

- National Institute of Standards and Technology, *The NIST Definition of Cloud Computing*, Special Publication 800-145, September 2011
- Technical Release 16, *Implementation Guidance for Internal Use Software*
- GASB Statement No. 96, *Subscription-Based Information Technology Arrangements*
- FASB Accounting Standards Update 2018-15, *Intangibles – Goodwill and Other Internal-Use Software (Subtopic 350-40)*
- Office of the Federal Chief Information Officer, Federal Cloud Computing Strategy, *Redefining Cloud Computing*, <https://cloud.cio.gov/strategy/>
- IBM, *What is cloud computing?* <https://www.ibm.com/cloud/learn/cloud-computing-gbl>
- AWS, *What is cloud computing?* <https://aws.amazon.com/what-is-cloud-computing/>
- Microsoft Azure, *What is cloud computing?* <https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-cloud-computing>
- Google Cloud, *What is cloud computing?* <https://cloud.google.com/learn/what-is-cloud-computing>

Staff also obtained feedback on the proposed definition and scope from the working group. Working group insights are included in the proposal analyses.

RECOMMENDATIONS AND ANALYSES

This issues paper provides two recommendations for the Board to consider for a draft proposal for cloud-service arrangement reporting guidance:

- 1) A definition for cloud computing
- 2) Scope parameters for the reporting guidance

Staff requests that the Board review the recommendations and accompanying analyses and provide feedback on the proposed guidance language. Pending Board feedback, staff will input the definition and scope language in the draft exposure draft.

RECOMMENDATION

CLOUD-COMPUTING DEFINITION

Staff previously presented cloud-computing definitions to the Board so that members would have a collective understanding of cloud-based resources in the federal environment as they deliberated asset characteristics and guidance framework decisions. However, staff is now proposing a cloud-computing definition for members to consider for the actual reporting guidance language.

The analysis will consider the following cloud-computing definitions:

- 1) NIST developed definition
- 2) Staff-developed definition

Staff requests that members provide feedback on which cloud-computing definition they prefer for the draft exposure draft.

ANALYSIS

For principles-based guidance, staff believes that the cloud-computing definition should be informative yet flexible so that preparers across the federal government can apply the definition and accompanying reporting guidance to a wide range of different cloud-based resources now and in the future. Therefore, the definition should sufficiently explain cloud computing at a high level but not be overly detailed or prescriptive. An overly detailed and prescriptive definition could require frequent updating and unintentionally exclude cloud-based resources the Board intends to apply to the reporting guidance.

NIST cloud-computing definition

The National Institute of Standards and Technology (NIST) is a U.S. federal agency that is part of the Department of Commerce. The NIST's mission is to "To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life."²

In 2011, the NIST issued Special Publication 800-145³ that provides recommended base guidelines on cloud computing for both consumers and providers. The guidelines were prepared for federal agencies, although nongovernmental organizations can also use them.

² See the NIST website for further information - <https://www.nist.gov/about-nist>

³ National Institute of Standards and Technology, *The NIST Definition of Cloud Computing*, Special Publication 800-145, September 2011

Staff proposes the following cloud-computing definition based on the special publication:

Cloud computing – The National Institute of Standards and Technology (NIST) defines cloud computing as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. The NIST considers the following as essential characteristics of cloud computing: on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service.

The special publication explains the essential characteristics in detail and explains that that the NIST cloud model is composed of three service models⁴ and four deployment models⁵.

Pros

Based on research and working group discussions, it appears to staff that federal entities as well as private companies⁶ that provide cloud services to federal entities reference the NIST definition, essential characteristics, and models extensively. For example, the Office of Management and Budget Cloud Smart strategy⁷, General Services Administration Cloud Information Center⁸, GAO Information Technology Center⁹, and several other federal entities reference the NIST special publication when discussing cloud computing on their websites or reports. Additionally, the Board previously referenced the NIST special publication when providing guidance on accounting for software licenses associated with cloud-computing agreements in TR 16.

In addition to the proposed definition, the reporting guidance could reference the entire NIST special publication so that preparers could refer to the publication for further information about the cloud-computing essential characteristics, service models, and deployment models if needed. This would allow the Board to defer to the “experts” in explaining cloud computing.

Staff believes the NIST definition provides an informative, yet high-level description of cloud computing that offers flexibility for federal entities to apply across a spectrum of cloud-based resources¹⁰. Additionally, the computing-resource examples (e.g. networks

⁴ The three service models are: Software as a Service (SaaS), Platform as a Service (PaaS), Infrastructure as a Service (IaaS)

⁵ The four deployment models are: Private Cloud, Community Cloud, Public Cloud, Hybrid Cloud

⁶ GSA eLibrary provides a source for the latest GSA contract award information - <https://www.gsaelibrary.gsa.gov/ElibMain/home.do>

⁷ <https://cloud.cio.gov/strategy/>

⁸ <https://cic.gsa.gov/basics/cloud-basics>

⁹ GAO-19-58, CLOUD COMPUTING – Agencies Have Increased Usage and Realized Benefits, but Cost and Savings Data Need to Be Better Tracked, April 2019

¹⁰ The NIST Special Publication 800-145 states: Cloud computing is an evolving paradigm. The NIST definition characterizes important aspects of cloud computing and is intended to serve as a means for broad comparisons of cloud services and deployment strategies, and to provide a baseline for discussion from what is cloud computing to how to best use cloud computing.

servers, storage, applications, and services) in the definition helps explain different IT resources that cloud computing applies to without expressly excluding other possibilities.

Cons

If the FASAB reporting guidance utilizes the NIST cloud-computing definition and references the special publication, there is risk that NIST could later update or rescind the special publication, making the definition and reference obsolete. Additionally, the federal-cloud environment could evolve beyond what the NIST special publication addresses. This has already occurred to an extent. For example, the special publication notes the three cloud-computing service models as Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). While these services still appear to be the primary cloud-computing services, research indicates that other types of cloud-service models exist, such as Container as a Service. Additionally, some federal IT professionals have indicated that in reality, providers do not always deliver cloud services in such clearly defined categories.

Furthermore, staff believes that the NIST definition has some unnecessary words that provide subjective descriptions of cloud computing. For example, the definition refers to cloud computing as “convenient” and that it requires “minimal management effort”. Staff does not believe these descriptors are necessary for financial reporting guidance. Additionally, federal IT professionals have provided differing opinions on whether cloud computing actually comes with the benefit of “minimal” management effort.

Staff developed cloud-computing definition

Staff researched several cloud-computing definitions on the internet from significant private cloud-service providers including, IBM¹¹, AWS¹², Microsoft Azure¹³, and Google Cloud¹⁴. Using inspiration from these examples, staff developed the following definition of cloud computing for the Board’s consideration:

Cloud computing - is the on-demand access of information technology resources such as software applications, physical or virtual servers, data storage, development tools, and networking capabilities that are delivered and managed by a service provider over a network.

Pros

Staff based this definition on cloud-computing definitions from websites of multiple private companies that provide the federal government cloud services. Staff believes

¹¹ <https://www.ibm.com/cloud/learn/cloud-computing-gbl>

¹² <https://aws.amazon.com/what-is-cloud-computing/>

¹³ <https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-cloud-computing>

¹⁴ <https://cloud.google.com/learn/what-is-cloud-computing>

that this definition uses plain language to describe the critical elements of cloud computing in a concise manner.

Additionally, staff believes this definition is both informative and flexible for federal entities to apply now and in the future. Finally, the staff-developed definition does not rely on a direct reference to another entity's guidance and therefore runs less risk of becoming obsolete and/or requiring amendments in the future.

Cons

However, because the staff-developed definition does not reference guidance from a federal government technology standard-setting body, the definition could lack credibility, making the financial reporting guidance less effective. Additionally, the staff-developed definition could lead to some confusion for federal entities that are used to applying the NIST definition for operational and procurement purposes in the federal space.

Staff analysis

Staff believes that both proposed definitions offer an informative description of the foundational characteristics of cloud computing. That is that cloud computing essentially provides a federal entity the ability to access and use the service capacity of another entity's IT resources over a network rather than generally owning and/or possessing the IT resource.

Staff believes the primary benefit of the NIST definition is that a U.S. federal entity that specializes in technology standards and guidelines (NIST) previously established the definition through a special publication used throughout the federal environment. However, the NIST definition could become obsolete after the Board issues financial reporting guidance if NIST later decides to update or rescind the definition.

On the other hand, staff believes the staff-developed definition is more flexible than the NIST definition for future applicability due to the concise description and does not run the risk of becoming obsolete from the actions of another entity. However, a federal government technology standard-setting body did not develop the definition.

Working group feedback

Working group members mostly agreed with the pros and cons of each definition but had differing opinions on the preferred definition for the exposure draft. Additionally, some working group members provided suggested edits for the staff-developed definition. The proposed staff-developed definition includes some of those suggested edits. However, staff did not alter the NIST definition.

Some working group members preferred the NIST definition primarily because it is a well-established definition from a renowned U.S. technology standard-setting agency

used universally throughout the federal environment. One working group member favored adopting the existing NIST definition because it is confusing and difficult for federal entities to have to apply multiple definitions from different federal standard-setting bodies for the same resource. One federal IT professional preferred the NIST definition because it more accurately and thoroughly explains the level of service that consumers experience from cloud services.

On the other hand, some working group members favored the staff-developed definition because they found it more concise, current, and easier to understand for the average reader. Some working group members found the NIST definition too technical and wordy. However, one working group member found the staff-developed definition too generic.

Some working group members suggested adding parts of the NIST special publication to the staff-developed definition, such as the NIST essential characteristics of cloud computing. However, staff prefers not to mix and match parts of the NIST special publication with a staff-developed definition because doing so could compromise the overall meaning and effectiveness of the NIST's guidance on cloud computing.

One working group member emphasized that in order to apply financial reporting guidance effectively, the reader needs to understand the different service levels of cloud computing and be able to distinguish the difference between cloud computing applications and basic compute or data-storage capabilities. Staff believes both proposed definitions touch on this at a high-level. However, the NIST definition and accompanying special publication goes into more detail.

One working group member suggested that the definition include a description of service delivery and payment characteristics of cloud-service arrangements, such as the increasingly common pay-as-you-go model. The Board has deliberated extensively about the different payment terms of cloud-service arrangements during asset framework discussions. However, staff does not believe the definition or scope section of the financial reporting guidance needs to address this because the reporting guidance should theoretically require expense disclosures of cloud-service arrangements as incurred regardless of the payment and service terms. The Board could address pay-as-you-go and other types of cloud-service arrangements in the reporting requirement section if needed.

Staff recommendation

After considering working group feedback and weighing the pros and cons of each definition, staff believes that the NIST definition is the optimal definition to use for the cloud-service arrangement financial reporting guidance. Staff recommends the NIST definition primarily because a U.S. technology standards-setter developed the definition and associated special publication that is used universally in the federal-cloud space. Furthermore, if the NIST were to update the cloud-computing definition after the Board

issues the financial reporting guidance, the Board could then update the definition through an omnibus amendment.

Staff recommends including the NIST definition in a “Definitions” section of the exposure draft, similar to paragraphs 8 and 9 of SFFAS 10, *Accounting for Internal Use Software* and paragraphs 4 and 5 of SFFAS 52, *Tax Expenditures*. The Board could include other relevant definitions to the exposure draft as members continue to deliberate the reporting guidance requirements. Furthermore, staff suggests that the financial reporting guidance reference the entire NIST special publication so that readers could further understand the essential characteristics of cloud computing, as well as cloud-service and deployment models when applying the financial reporting requirements.

Question for the Board:

1. Which cloud-computing definition do members prefer for the draft exposure draft?

RECOMMENDATION

REPORTING-GUIDANCE SCOPE

The previously proposed definitions provide a high-level understanding of cloud computing in general. However, the purpose of the proposed scope language is to provide a framework for which cloud-based economic transactions in the federal environment will apply to the expense disclosure requirements in the financial reporting guidance.

Staff requests that members provide feedback on the proposed scope language for the draft exposure draft.

ANALYSIS

Scope language proposal

In drafting this scope language, staff drew inspiration from the scope formats of recent FASAB pronouncements, such as SFFAS 49, *Public-Private Partnerships: Disclosure Requirements*, SFFAS 52, and SFFAS 54, *Leases*. Additionally, staff researched GASB Statement No. 96 for scope-out considerations. Staff also considered working group comments and suggested edits on the scope language. Some of the working group suggested edits are included in the final proposed language below.

Staff proposes the following scope language for the draft exposure draft:

This Statement applies to federal entities that present general purpose federal financial reports, including the consolidated financial report of the U.S. Government (CFR), in conformance with generally accepted accounting principles, as defined by paragraphs 5 through 8 of Statement of Federal Financial Accounting Standards (SFFAS) 34, The Hierarchy of Generally Accepted Accounting Principles, Including the Application of Standards Issued by the Financial Accounting Standards Board.

*For purposes of applying this Statement, a **cloud-service arrangement** is defined as a contract or agreement that provides a federal entity access to information technology (IT) resources over a network, provided by a vendor in exchange for consideration, without the federal entity taking possession of the IT resource.*

This Statement applies to cloud services that federal entities acquire from nongovernmental vendors for internal use purposes in accordance with paragraph 2 of SFFAS 10, Accounting for Internal Use Software, as amended.

This Statement does not apply to

- cloud-based IT services acquired from other federal entities (shared services),*
- internally developed or purchased commercial off-the-shelf software that is reported in accordance with SFFAS 10 and TR 16, Implementation Guidance For Internal Use Software,*
- licensed software that allows the federal entity to possess and control the underlying software resource on its own hardware or systems that is reported in accordance with SFFAS 10 and TR 16,*
- arrangements that provide the federal entity the right to control the use of property, plant, and equipment in accordance with SFFAS 54, Leases, as amended.*

Staff analysis

The first paragraph is standard language that previous FASAB Statements utilize. The purpose of the paragraph is to state that the reporting guidance will apply to federal entities that present general-purpose federal financial reports in accordance with GAAP as defined in SFFAS 34.

Cloud-service arrangement term

This section of the analysis focuses on the term “cloud-service arrangement” from the second paragraph in the scope language. As discussed previously, cloud computing is a universal term that encompasses IT resources accessed over a network. However, the financial reporting guidance will ultimately focus on the economic costs of the

arrangements that federal entities enter into with providers to acquire cloud-computing based IT resources and services.

It appears that FASB and GASB have chosen not to use the word “cloud” for their reporting guidance. For example, FASB uses “hosting arrangement” and GASB uses “subscription-based information technology arrangement”, or “SBITA”. Staff understands that FASB and GASB did not use the word “cloud” because they were concerned that it could be a trendy IT term that could evolve with time and they did not want the guidance to unintentionally scope out future IT resources that fit the definition and scope of the guidance but are not necessarily labeled as cloud computing.

However, staff believes that “cloud” is now a universal word used to describe these types of IT resources and is the most appropriate word to use for the term in financial reporting guidance. As time passes, it seems that “cloud” has become an entrenched term.

Staff chose to include the words “service arrangement” in the term to denote that federal entities typically incur economic costs through contracts or agreement with vendors that provide service capacity of cloud-computing based IT resources. As stated earlier, NIST uses “service” when describing the different cloud-computing models.

Furthermore, previous research and discussions with federal IT professionals indicate that cloud technology does not just provide compute capabilities, but data storage and software application capabilities. Therefore, staff believes using the word “service” rather than “computing” better encompasses the many resources that federal entities acquire through cloud-based IT resources.

Most working group members agreed with using “cloud” in the term because the word has been commonly used in the federal IT environment for quite some time now. However, one working group member suggested the term “internet-based computing” and another working group member suggested the terms “utility computing” or “consumption-based computing” as possible alternatives.

One working group member agreed with using the word “service” in the term because federal procurement offices frequently use the phrase “as a service” through product service codes to describe cloud-based IT arrangements. Another working group member questioned if “agreement” would be better than “arrangement”. However, staff chose to use “arrangement” so as to encompass both cloud-service contracts and other non-contract agreements, such as utility-like agreements to pay per usage.

Question for the Board:

2. Do members agree with staff’s recommendation to use the term “cloud-service arrangement” in the reporting guidance scope?

Cloud-service arrangement definition

Paragraph two in the proposed scope language states “For purposes of applying this Statement, a cloud-service arrangement is defined as a contract or agreement that provides a federal entity access to IT resources over a network, provided by a vendor in exchange for consideration, without the federal entity taking possession of the IT resource.”

The intent of this section is to further clarify the cloud-computing definition in order for preparers and auditors to apply the financial reporting guidance to cloud-service economic transactions. The scope section should not conflict with or confuse the previous cloud-computing definition, but expand upon it for purposes of applying the reporting requirements.

Staff believes that the cloud-service arrangement definition clearly establishes that the guidance is referring to any type of contract or agreement in which a federal entity can:

- access IT resources, such as software or server capacity
- over a network, such as the internet
- from a vendor, such as AWS or Google Cloud
- in an exchange or exchange-like transaction
- without owning or controlling the IT resource

Staff believes this definition clearly establishes that cloud-service arrangements are different from typical purchased or internally developed IT resources that a federal entity would possess on its own hardware or systems.

Some working group members questioned staff’s previous use of the word “internet” when describing how providers deliver cloud services to end users. End users also access cloud-based IT resources from other networks besides directly from the internet, such as a cellular network or intranet. In fact, some working group members questioned whether cellular services were part of this scope. Staff believes that any cloud-service accessed over a network, including internet, intranet, and cellular, should be included in the scope of this guidance. Therefore, staff replaced the word “internet” with “network”.

Staff had previously suggested another sentence in the scope that stated, “Cloud-service arrangements can include a combination of IT resource service capacity and professional labor services.” along with a statement that scoped out arrangements that exclusively provide professional IT labor services. Research and previous working group input indicates that cloud-service arrangements provide both access to an IT resource and a labor-service component to deliver, manage, secure, and maintain the

IT resource. Staff understands that cloud-service arrangements often display both IT resource and labor service components together as one deliverable and price.

However, the statements caused confusion for several working group members who were not sure what types of cloud-related labor support the statement was referring to or if the statement was referring to cloud-service arrangements with multiple-cost components. For example, some federal entities procure cloud-related labor support as a separate arrangement. Staff ultimately determined that it would be better for financial reporting guidance to address these different categories of cloud-service costs in more detailed reporting requirement language.

One working group member was concerned that the scope does not mention specific costs associated with cloud-services, such as upgrades, patching, cybersecurity, and maintenance costs. Similar to labor costs, staff also believes it is best to address these specific types of cloud-related costs in the actual reporting requirement language because the scope should provide a high-level framework for applying the guidance.

Question for the Board:

3. Do members agree with staff's recommended definition of cloud-service arrangement in the scope language?

Scope in and scope out language

Paragraph three of the proposed scope language states “This Statement applies to cloud services that federal entities acquire from nongovernmental vendors for internal use purposes in accordance with paragraph 2 of SFFAS 10, *Accounting for Internal Use Software*, as amended.” This paragraph ties the cloud-service arrangement guidance to existing software guidance to establish that reporting requirements only apply to cloud-service arrangements that a federal entity acquires for internal use purposes¹⁵, as opposed to external use purposes¹⁶.

This paragraph also makes it clear that the guidance will only apply to cloud services that federal entities acquire from private, nongovernmental vendors, such as AWS or Google Cloud. The first bullet point in the fourth paragraph complements this assertion by stating “This Statement does not apply to cloud-based IT services acquired from other federal entities (shared services)...” Staff's intent with this language is to scope out shared services in which a federal entity receives cloud-based IT resource service capacity from another federal entity. Shared services are a major topic in the current

¹⁵ SFFAS 10, paragraph 2 states that internal use software consists of software for the purposes of operating an entity's programs and producing an entity's goods or services.

¹⁶ External use software is software developed for the purposes of being sold, licensed, or marketed to others. FASAB has not issued guidance for external use software.

software technology project scope that staff plans to address as a separate reporting guidance topic after cloud-service arrangements.

The second bullet of the fourth paragraph states “This Statement does not apply to...internally developed or purchased commercial off-the-shelf software that is reported in accordance with SFFAS 10 and TR 16, *Implementation Guidance For Internal Use Software*...” This language scopes out internal use software for which existing FASAB guidance already requires asset recognition. Staff believes that this scope out will help prevent reporting overlap between cloud services and software assets.

The third bullet of the fourth paragraph states “This Statement does not apply to...licensed software that allows the federal entity to possess and control the underlying software resource on its own hardware or systems that is reported in accordance with SFFAS 10 and TR 16...” TR 16 provides asset recognition requirements for perpetual software licenses¹⁷ in accordance with the internal use software guidance from SFFAS 10. While TR 16 does not define a software license, staff believes the context of the guidance along with paragraphs 66 and 67 of SFFAS 10 indicates that a software license is generally an asset if it provides a federal entity a contractual right to the underlying software on a federal entity’s hardware or systems and is analogous to internally developed and purchased software.

One working group member requested that software licenses be addressed in a separate bullet from internally developed and purchased software because software licenses have more risk of overlapping with cloud-service arrangements in regards to financial reporting guidance. During the June 2022 Board meeting, an IT professional from the General Services Administration explained that a traditional software license allows a federal entity to possess, control, and alter an underlying software resource on its own hardware. He further stated that cloud-service arrangements rarely include a software license in that sense. With a cloud-service arrangement, a federal entity is merely accessing and using the underlying software code remotely on a temporary basis.

It appears to staff that it is common in the IT environment to use the word “license” to describe user access rights to a cloud-based SaaS, even though the user cannot possess the underlying software. Therefore, staff believes it is important to clearly scope out non-cloud related software licenses that meet asset requirements in SFFAS 10 and TR 16. Staff plans to propose reporting guidance ideas for term-based software licenses to the Board later as a separate topic.

The fourth bullet of the fourth paragraph states “This Statement does not apply to...arrangements that provide the federal entity the right to control the use of property, plant, and equipment in accordance with SFFAS 54, *Leases*, as amended.” Based on conversations with staff, auditors, and federal entities, there is potential ambiguity between some cloud-service arrangements and right-to-use tangible assets. For

¹⁷ TR 16 also requires preparers to account for term-based software licenses in accordance with capital lease guidance. However, SFFAS 54 will make this requirement obsolete.

example, management could theoretically determine that a private IaaS cloud-service arrangement provides the federal entity exclusive control of an underlying tangible server. Therefore, the purpose of this language is to scope out potential right-to-use tangible assets part of a cloud-service arrangement that could fall under the umbrella of SFFAS 54. Staff believes that this will help prevent reporting overlap and ambiguity in assessing the scope and applicability of Board pronouncements.

Some working group members requested that the language scope out other specific cloud-related items such as private on-premises cloud resources, in-house cloud resources, and feasibility studies associated with potential cloud-service arrangements. Staff does not believe that the scope language should exclude such specific topics from principles-based guidance. The Board could address these topics in the reporting requirement language if needed.

Question for the Board:

4. Do members agree with staff's recommended scope in and scope out language?

Final thoughts and next steps

Staff believes the combination of the NIST cloud-computing definition along with the reference to the special publication, and the proposed scope language would effectively explain how to apply the cloud-service arrangement reporting guidance. Staff believes these two proposals serve as a good foundation for which to develop reporting requirements for cloud-service arrangements. Staff notes that the Board could revisit the proposed language if a need arises during later deliberations.

Pending Board feedback, staff plans to begin developing proposed reporting-requirement language for the Board's consideration. Staff will coordinate with the working group and reach out to other stakeholders to research categories and characteristics of cloud-service expenses that would be useful as financial report disclosures. As previously stated, some working group members have already suggested different costs for disclosure consideration.

Staff also plans to propose reporting requirement language for other significant financial reporting issues pertaining to cloud-service arrangements, such as implementation costs¹⁸ and pre-paid cloud credits. Staff believes the Board should consider potential asset recognition requirements for these topics separately.

¹⁸ FASB ASU 2018-15, *Intangibles – Goodwill and Other Internal-Use Software* (Subtopic 350-40) requires capitalization of certain implementation costs associated with hosting arrangements even when the service-cost aspect of the hosting arrangement is considered an operating expense.

Prior Board Meeting Timeline

February 2022

At the February 2022 meeting, staff presented an issues paper that provided a framework for developing reporting guidance updates for software technology assets. Specifically, the issues paper recommended a scope and project plan for developing updates for software guidance based on specific needs identified during research. The scope consists of four major categories of software resources that staff plans to address individually in the following order:

1. Cloud-service arrangements
2. Shared services
3. Internal use software updates
4. Other software technology

The Board overwhelmingly supported staff's recommended scope and planned approach. Additionally, members supported staff's approach of addressing each scope category separately but noted that the categories would ultimately overlap and relate to one another.

The Board decided to first focus on reporting-guidance needs for cloud-service arrangements. Research indicated that federal entities are using cloud services at an increasing rate for operational purposes similar to internally developed software, generally due to the need for less investment risk and more flexibility to alter the amount and type of services received based on current needs. Therefore, it is critical to address reporting guidance for this commonly used software-technology resource to ensure reporting consistency throughout the federal government.

April 2022

At the April 2022 meeting, staff presented characteristics of cloud-service arrangements along with an asset-guidance framework for which to apply the characteristics. The framework analyzes previous asset-guidance decisions that will assist the Board when deliberating whether cloud-service arrangements can represent assets in the federal government. There were three primary takeaways from the discussion:

- The National Institute of Standards and Technology's (NIST) cloud-computing characteristics are widely accepted and used in the federal government.
- Based on the asset-guidance framework, it is appropriate to approach cloud-service arrangements as lease-type transactions that provide a federal entity

access to a provider's software technology resources for the federal entity to use as internal use software for a specified period.

- More research and outreach is needed to develop an informed decision on whether cloud-service arrangements can meet all of the essential characteristics of an asset established in SFFAC 5, Definitions of Elements and Basic Recognition Criteria for Accrual-Basis Financial Statements.

The Board supported using the NIST's cloud-computing characteristics for developing financial reporting guidance for cloud-service arrangements. Several members agreed with staff's observation that federal entities widely use the NIST cloud-computing characteristics and that it is practical to defer to the information technology (IT) professionals when describing cloud-service arrangements.

The Board agreed with staff's proposed asset-guidance framework and observation that it is particularly important to continue to research and deliberate whether cloud-service arrangements can meet the essential characteristics of an asset from SFFAC 5. Some members noted that for an asset to exist, the cloud-service arrangement must represent economic benefits and services that the federal government can use in the future. Other members stated that it is critical to determine whether a consumer of a cloud service could control access to the economic benefits and service of the underlying resource and, particularly, if the user could deny or regulate access to others in accordance with the arrangement.

June 2022

At the June 2022 meeting, two panelists from the General Services Administration (GSA) provided the Board an educational session on cloud-service arrangements. The panelists provided members an overview of the characteristics, service models, and deployment models of cloud computing and discussed ways that federal entities procure and pay for cloud services. Additionally, Board members, staff, and panelists discussed potential financial reporting needs and challenges associated with cloud-service arrangements.

August 2022

During the August 2022 meeting, the Board continued deliberations on reporting guidance for cloud-service arrangements. Staff presented an issues paper that proposed:

- A framework of cloud-service arrangements that could meet the essential characteristics of an asset for financial reporting purposes
- Potential benefits and challenges of reporting cloud service arrangements as assets in federal financial reports

The Board generally supported staff's analysis on whether certain cloud-service arrangement categories could meet the SFFAC 5 essential characteristics of an asset. Some members recommended more research to better understand how federal entities typically incur costs for long-term cloud-service arrangements. One member recommended more research and deliberation on whether cloud-service arrangements are typical service contracts or if they are more akin to leases or right-to-use assets. Another member recommended consideration of how other standard-setters made their determinations on asset reporting for cloud-service arrangements.

The Board also generally agreed with staff's analysis on the user benefits and preparer challenges with reporting cloud-service arrangements as assets in federal financial reports. One member stated that the identified reporting challenges were valid but thought that they could be overcome with proper guidance. A few members suggested further research and deliberation on the financial reporting benefits with note disclosure options versus asset recognition in financial statements. One member added that it was important to continue to seek out a wide range of federal financial report users that have an interest in cloud-service arrangement reporting.

October 2022

During the October 2022 meeting, the Board continued deliberations on reporting guidance for cloud-service arrangements. Staff presented an issues paper that:

- Analyzes how other standard-setting bodies have deliberated the differences between a service contract and a right-to-use asset, along with how those positions have influenced their cloud-service reporting guidance; and
- Examines FASAB's previous discussions of tangible right-to-use assets and service contracts and analyzes whether cloud-service arrangements in the federal environment resemble right-to-use assets or service contracts.

The Board had different opinions on whether multi-year cloud-service arrangements were right-to-use assets or service contracts. One member favored referring to cloud-service arrangements as service contracts because it was difficult to conceive how an entity could exclude others from using an intangible right-to-use asset. Another member stated that cloud services and other types of service contracts possessed a spectrum of right-to-use asset and service components and was concerned that deciding cloud-service arrangements are right-to-use assets could open the door to considering whether other types of service contracts include right-to-use assets.

Several members agreed it was reasonable to conceptualize cloud-service arrangements as right-to-use assets but were concerned that the associated preparer burden and lack of reporting benefits may not justify the need for asset recognition on the balance sheet. The members suggested that disclosures could adequately provide

information about the extent that federal entities use cloud-services for mission and operational needs versus purchasing or developing the IT resource internally.

April 2023

At the April 2023 meeting, staff presented a cost-benefit analysis that considered potential preparer burdens and user benefits for the following financial reporting options for cloud-service arrangements:

1. Balance sheet recognition
2. Commitment disclosure
3. Expense disclosure
4. Expense recognition only

The Board overwhelmingly agreed with the cost-benefit analysis and supported staff's recommendation that reporting guidance should require federal entities to disclose cloud-service expenses. Most members agreed that expense disclosure was optimal after considering the potential preparer burdens and user benefits of each reporting option. Additionally, the majority of members initially favored disclosing cloud-service expenses in required supplementary information rather than financial statement notes.

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Software Technology Definitions

Agile development – an umbrella term used to describe software development methods that incrementally deliver working segments of a product in short iterative cycles instead of delivering a usable product only once at the end of a sequential process. This typically involves cross-functional collaboration among development, operational, and security interests to leverage constant feedback from the end-user in order to improve the functionality of the product through multiple iterations and provide constant support.

Application programming interface (API) - a set of definitions and protocols for building and integrating application software that enables applications to exchange data and functionality.

Application software – a type of computer program that performs a specific function for an end-user.

Blockchain - refers to the technological infrastructure and protocols that allow simultaneous access, validation, and record updating across a network in a decentralized manner. Blockchain technology is used with cryptocurrency and smart contracts, among other things.

Bundled IT products and services - services offered as part of acquiring commercial off the shelf software (COTS), licenses, or cloud services that is separate but complementary to the acquired resource (e.g., training, maintenance, data conversion, reengineering, and rights to future upgrades and enhancements).

Cloud bursting – a configuration in which an application runs in a private cloud or data center and surges into a public cloud when the demand for computing capacity spikes during peak times.

Cloud computing - a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

Cloud-service arrangement – a contract or agreement that provides a federal entity access to IT resources over a network, provided by a vendor in exchange for consideration, without the federal entity taking possession of the IT resource.

Commercial-off-the-shelf software (COTS) – ready-made application software that is purchased or licensed from a vendor to utilize the software as intended for internal-use.

Community cloud - the cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be owned,

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managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

Computer network – A set of computers that are connected for the purpose of communicating data electronically.

Computer system – a combination of functional and related hardware and software components to perform a desired outcome.

Computing infrastructure – consists of essential and foundational compute, storage, and networking resources required to operate and manage information technology environments. Examples include servers, data centers, and routers, operating systems and firewalls.

Computing platform - a group of technologies or that are used as a foundation upon which software applications are developed and implemented. Examples include coding language, middleware, database management systems, operating systems, application programming interface (API), and firewalls.

Container – a software module that packages code and its necessary elements and dependencies so that the applications runs in any environment. Containers virtualize the operating system and run anywhere, from a private data center to the public cloud.

Container as a service – a cloud service that allows users to manage and deploy software applications using container-based abstraction. Container as a service is considered a kind of subset of Infrastructure-as-a-Service and is found between IaaS and Platform-as-a-Service.

Cryptocurrency - a digital currency in which transactions are verified and records maintained by a decentralized system using blockchain technology, rather than by a centralized authority.

Data conversion – the process of modifying and converting the format of data to transfer it to a more useful format based on a target system. Data conversion enables the data to be read, altered, and executed in an application or database other than that in which it was created.

Data migration – the process of transferring data between formats or systems.

Development, modernization, and enhancement (DME) - refers to projects and activities that lead to new IT assets/systems, or change or modify existing IT assets to substantively improve capability or performance.

Enhancements – any modification that significantly increases computer system capabilities beyond its original functions.

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External-use software - software developed by an entity to be sold, licensed, or made publically available solely for the end user's needs.

Hardware – refers to the tangible parts of computer systems that store and run instructions provided by software and makes the processing of data and supports baseline functions.

Hybrid cloud - the cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).

Impairment - occurs when software or another IT asset no longer provides substantive service potential or a significant reduction occurs in the capabilities, functions, or uses of the asset prior to end of its estimated useful life.

Information technology (IT) - the development, implementation, maintenance, and use of computer hardware, software, systems, cloud services, and networks to organize, communicate, and secure information electronically.

Information technology security – a set of strategies, objectives, and methods used to prevent unauthorized access to an organization's IT resources, such as hardware, networks, software, and data.

Infrastructure as a service – the capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

Internet domain - An identification string that defines a realm of administrative autonomy, authority or control within the Internet.

Internet domain name – The internet address of a website. Domain names usually end in a generic name such as .com, .org, or .gov.

Intranet – a network for sharing information, collaboration tools, operational systems, and other computing services within an organization, usually to the exclusion of access by outsiders.

Internal-use software – acquired or developed software that is operated by an entity strictly for its own administrative, security, operational, or mission needs, with no intent of selling or licensing the software.

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Internally developed software - software that an entity is actively developing through internal employees, contractors, or a combination of both. This includes significant modifications that adds additional capabilities to new software and existing or purchased COTS software.

Legacy modernization - rewriting or updating a legacy system to modern computer programming languages, architectures, data formats, software applications, or hardware platforms. Legacy systems are often modernized to maintain functionality, add features, or add security.

Legacy system - an old technology, computer system, or application program relating to or being an outdated, inefficient, and/or incompatible computer system that is still in use and may pose inoperability and compatibility issues or risks to other systems without modernization.

Load balancing – the process of distributing traffic and workloads across computing resources in a cloud environment to ensure that no single server or machine is under-loaded, overloaded, or idle.

Maintenance and repair – the process of monitoring, updating, and preserving software applications and IT infrastructure currently in use to sustain computer system security and operability without adding new capabilities or functions.

Operating system – the software that supports a computer system's basic operations by communicating with hardware and directing the processing of programs. Also called system software.

Platform as a service - the capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

Private cloud - the cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

Prototyping – the activity of creating working models of software applications used to gather end-user feedback for further design and implementation considerations for the final product. Prototyping can be utilized as part of agile development methods.

Public cloud - the cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government

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organization, or some combination of them. It exists on the premises of the cloud provider.

Robotic process automation – software automation technologies that imitate mundane rules-based business processes traditionally performed by humans, such as extracting data, filling in forms, and moving files.

Shared service - a mission, operation, or administrative support function provided by a federal entity to other federal entities (interagency) or to separate components within the same entity (intra-agency).

Software - a set of instructions that tell a computer to operate and perform specific tasks. Software is often used to describe the intangible functional aspects of a computer and includes application and operating system programs, procedures, rules, and any associated instructions pertaining to the operation of a computer system or program.

Software as a service – the capability provided to the consumer is to use the provider’s applications running on a cloud infrastructure . The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

Software-hardware integrated asset – application software that is integrated into and necessary to operate general PP&E and does not serve another purpose separate from the hardware. Also referred to as “integrated or embedded systems”.

Software in development – the accumulated cost of developing an internal use software asset that is not yet complete. Similar to construction in process (CIP) for PP&E.

Software license - a legal instrument governing permissions and restrictions for use of a software application, source code, or related product. A software license is a product that gives the consumer various intellectual property rights over a vendor’s underlying software resource. The acquired license in this scenario generally allows the consumer to possess the underlying software resource on their own hardware and/or IT systems. A license can apply to individuals or entire organizations and can provide perpetual or term-based rights.

Thick client – Thick clients IT devices are full featured computers with all the standard hardware and locally installed operating system and applications.

Thin client - Thin clients are IT devices that connect remotely into a separate server or data center that does all the work in a virtual environment.

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Update – a way to fine-tune a product to keep it running in an optimal manner. Software updates usually consist of small and frequent changes to correct security issues or coding bugs.

Upgrade – A new version of software that replaces the old product and is used for significant changes and/or major improvements.

Waterfall development model – a non-iterative development method that breaks down activities into sequential and exclusive phases where each phase depends on the deliverables of the previous one and a usable product is produced after all phases occur. Also referred to as “Linear development model”.

Web applications – an application software that is accessed through a website.

Web page – a document written in hypertext that can be viewed by an internet browser.

Website - collection of internally or publicly accessible, interlinked web pages that share a single domain name.

[illegible]